

07.15.2025
100% CONSTRUCTION DOCUMENTS
MONTANA STATE UNIVERSITY
BARNARD HALL 111 LITHO LAB RENOVATION
FOR CONSTRUCTION
PPA# 25-1223



FOR VISUALIZATION PURPOSES ONLY

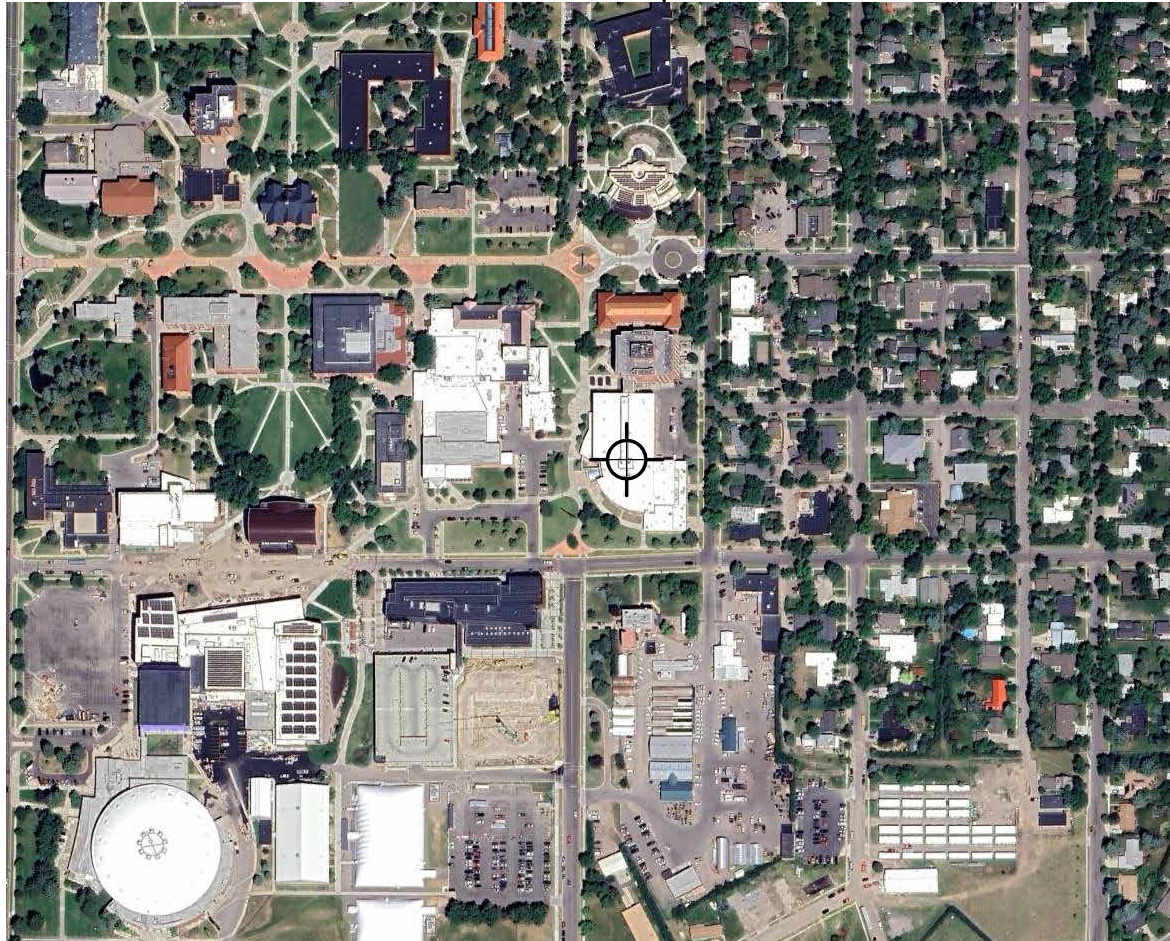
AGENCY
Montana State Univsity Planning Design & Construction
Plew Building 6th Ave. & Grant St.
Bozeman, MT 59715
406.994.5413

ARCHITECT/ENGINEER
Cushing Terrell
411 East Main St. Ste 101
Bozeman, MT 59715
406.556.7100
Contact: Sky Cook

PROJECT LOCATION

BARNARD HALL
1325-1399 S 6th Ave
Bozeman, MT 59715

VICINITY MAP: *Locator*



NORTH REF

SHEET INDEX

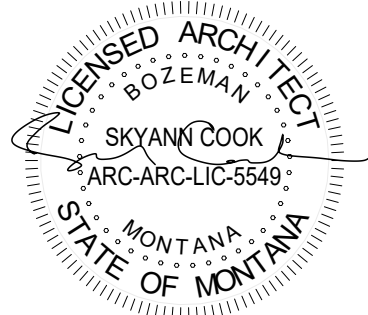
GENERAL	
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G101	CODE PLANS
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AD901	FIRST FLOOR DEMOLITION REFLECTED CEILING PLAN
A101	FIRST FLOOR PLAN
A601	SCHEDULES AND DETAILS
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M100	HVAC PLANS
M200	HYDRONIC PIPING PLANS
ELECTRICAL	
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E003	ELECTRICAL SPECIFICATIONS
ED300	DEMOLITION POWER PLANS
E200	LIGHTING PLANS
E300	POWER PLANS
E400	SPECIAL SYSTEMS PLANS

SCHEDULE OF ALTERNATES

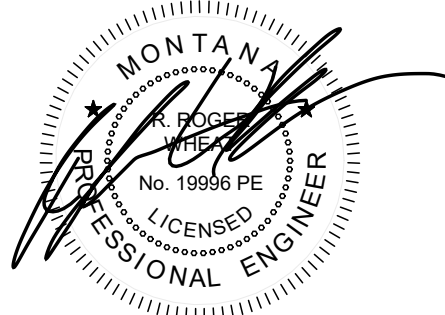
BID ALTERNATE #1: ADD NEW INTERIOR WINDOW.
BID ALTERNATE #2: ADDITION OF WALL MOUNTED HUMIDIFIER.

GENERAL NOTES

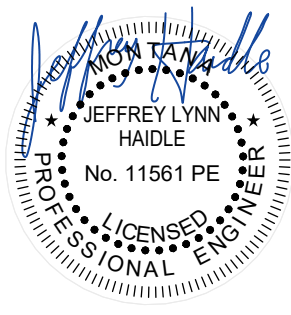
- A. GENERAL PROJECT NOTES ON THE COVER SHEET APPLY TO ALL WORK TO BE PERFORMED ON THIS BUILDING.
- B. SEE OTHER SHEETS IN SET FOR ADDITIONAL INFORMATION. GENERAL NOTES ARE INTENDED TO CLARIFY OR EMPHASIZE THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. IN THE EVENT OF A CONFLICT BETWEEN THE DRAWINGS, SPECIFICATIONS, AND THESE NOTES, THE CONTRACTOR SHALL COMPLY WITH THE MORE STRINGENT REQUIREMENT.
- C. THE CONTRACTOR SHALL PROVIDE PROTECTION WHERE NECESSARY TO PROTECT THE PUBLIC AND ADJACENT AREAS OF BUILDING DURING CONSTRUCTION.
- D. ALL WORK UNDER THIS CONTRACT SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, AND REGULATIONS.
- E. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO THE START OF CONSTRUCTION, AND NOTIFY ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES.
- F. THE CONTRACTOR SHALL PROVIDE DEMOLITION AND PATCHING NOT SHOWN BUT REQUIRED FOR THE INSTALLATION OF THE NEW DETAILS OR AS REQUIRED FOR THE WORK.
- G. PATCH ALL EXPOSED OPENINGS WITH MATERIAL TO MATCH AND BLEND SEAMLESSLY WITH EXISTING ADJACENT SURFACES, UNLESS NOTED OTHERWISE.
- H. DEMOLITION NOTES PROVIDE A GENERAL DESCRIPTION OF ITEMS AND AREAS REQUIRING REMOVAL. THE CONTRACTOR SHALL FIELD VERIFY ACTUAL QUANTITIES AND LOCATIONS OF ITEMS AS NECESSARY TO COMPLETE THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- I. DEMOLITION, REMOVAL, AND PATCHING WORK SHOWN ON THE DRAWINGS SHALL BE REQUIRED TO COMPLETE THE WORK SHOWN FOR THE INTENDED ARE REUSE. KEYNOTE PLACEMENT DOES NOT LIMIT THEIR APPLICATION TO OTHER AREAS IF REQUIRED TO COMPLETE THE WORK.
- J. ALL MATERIALS AND EQUIPMENT THAT ARE SCHEDULED FOR DEMOLITION SHALL BE REMOVED FROM SITE AND DISPOSED OF PROPERLY. FOLLOW LOCAL AND STATE REQUIREMENTS FOR REMOVAL AND DISPOSAL. CONTRACTOR SHALL BE ALLOWED TO RETAIN FEES RECEIVED FOR SALVAGING OF ALL SCRAP MATERIAL UNLESS NOTED OTHERWISE.
- K. PROTECT ALL ADJACENT SPACES, SURFACES, STRUCTURE, EQUIPMENT, FIXTURES, AND UTILITIES FROM DAMAGE AND INTERRUPTION OR SOILING DUE TO WORK UNDER THIS CONTRACT. RESTORE OR REPLACE AS REQUIRED. ALL ADJACENT WORK SOILED OR DAMAGED DUE TO WORK UNDER THIS CONTRACT, PHOTO-DOCUMENT EXISTING CONDITIONS PRIOR TO START OF WORK.
- L. CONTRACTOR TO COORDINATE WORK BY OTHER.
- M. COORDINATE WITH OWNER PRIOR TO DEMOLITION FOR EXTENT OF EQUIPMENT AND FURNITURE THEY PLAN TO REMOVE AND REPLACE.
- N. DO NOT SCALE FROM DRAWINGS.
- O. PROVIDE BLOCKING AS NEEDED FOR WALL HUNG ELEMENTS.
- P. THE BUILDING WILL BE OCCUPIED DURING CONSTRUCTION OF THIS PROJECT. COORDINATE SCHEDULE WITH OWNER PRIOR TO MOBILIZING OR COMMENCEMENT OF WORK.
- Q. COMPLY WITH MSU DESIGN GUIDELINES.
- R. COORDINATE WITH OWNER'S VENDER FOR ALL OWNER PROVIDED EQUIPMENT REQUIREMENTS. INSTALLATION, AND SCHEDULES.



ARCHITECT
SKYANN COOK
07.15.2025



MECHANICAL
ROGER WHEAT
07.15.2025



ELECTRICAL
JEFFREY HAIDLE
07.15.2025

**BARNARD HALL 111 LITHO
LAB RENOVATION
MONTANA STATE
UNIVERSITY**

**Cushing
Terrell**

cushingterrell.com
800.757.9522

DRAWN BY: **SLEVIN**
REVIEWED BY: **COOK**

REV.	DESCRIPTION	DATE

PPA# 25-1223

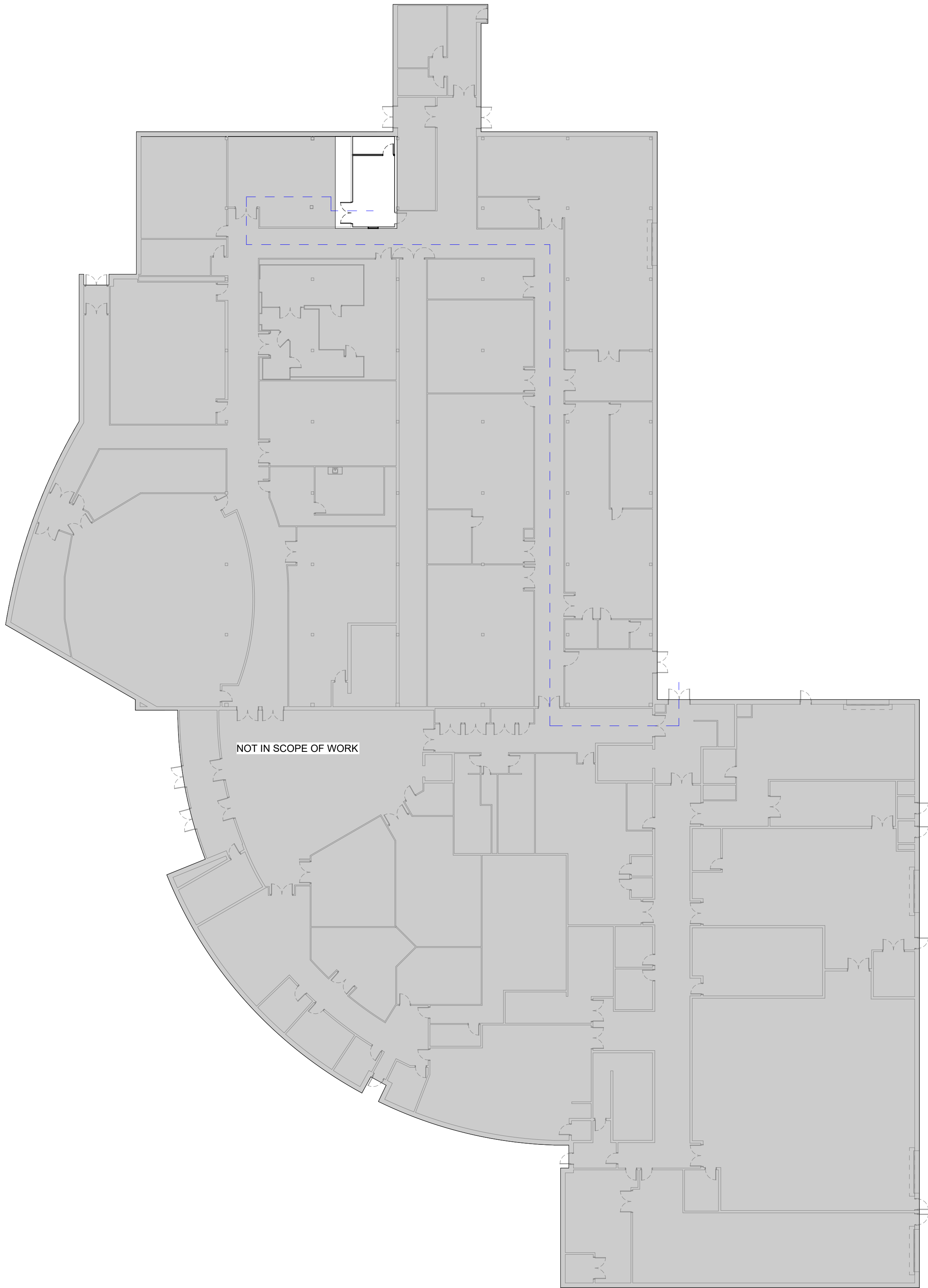
SHEET TITLE
COVER

SHEET
G001

DATE
07.15.2025



MSU-CPDC
MONTANA STATE UNIVERSITY
BOZEMAN, MONTANA
PHONE: 406.994.5413
FAX: 406.994.5665



1 OVERALL FIRST FLOOR PLAN
G101 3/64" = 1'-0"



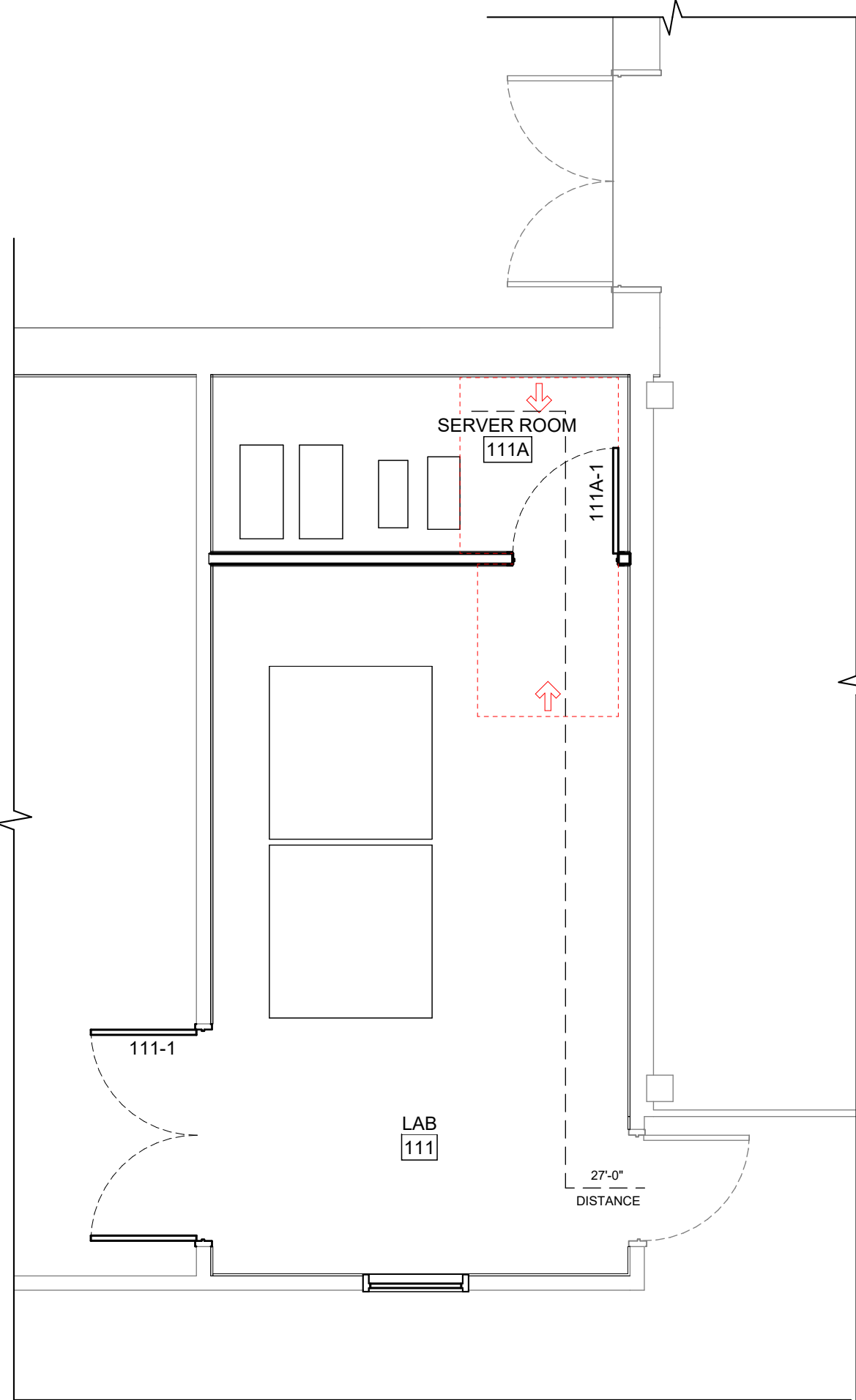
CODE PLAN LEGEND

- OCCUPANCY TAG:
- NAME ROOM / AREA NAME
 - 101 ROOM / AREA NUMBER
 - Area ROOM / AREA SQFT
- EXIT PATH
- 1 HOUR FIRE BARRIER - SEAL PERIMETER AND PENETRATIONS PER DETAILS ON THIS SHEET
- NO WORK IN PROJECT SCOPE
- - - - - PATH FOR EQUIPMENT (NOT RELATED TO EXIT PATH)

NOTE: SEE ELECTRICAL FOR ILLUMINATED EXIT SIGNS.

CODE REVIEW INFORMATION

- GOVERNING CODES:
- 2021 INTERNATIONAL BUILDING CODE
 - 2021 INTERNATIONAL MECHANICAL CODE
 - 2021 INTERNATIONAL ENERGY CONSERVATION CODE
 - 2021 INTERNATIONAL EXISTING BUILDING CODE
 - 2021 UNIFORM PLUMBING CODE
 - 2020 NATIONAL ELECTRICAL CODE
 - 2010 AMERICANS DISABILITY ASSOCIATION (ADA)
- SUMMARY:**
- THE EXISTING BUILDING USE, OCCUPANCY, AND FOOTPRINT TO REMAIN AS IS FOR THIS LIMITED AREA INTERIOR REMODEL.
 - ADDITION OF A WALL AND A DOOR TO DIVIDE ROOM 111 INTO TWO SEPARATE SPACES.
 - ADDITION OF A DOUBLE DOOR BETWEEN ROOM 110 AND 111 TO ALLOW ACCESS FOR EQUIPMENT INSTALLATION.
 - NO CHANGES IN EGRESS, ENVELOPE, OR CONSTRUCTION TYPES TO OR FROM SPACES BEING RENOVATED.
- OCCUPANCY CLASSIFICATION: B
- FIRE SPRINKLER SYSTEM: PROVIDED (EXISTING)
- AREA OF WORK**
- APPROXIMATELY 305 SF
- CONSTRUCTION TYPE: EXISTING (ANTICIPATED) IIB
- TYPE IIB FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS = 0 HOURS FOR ALL BUILDING ELEMENTS
 - BUILDING ELEMENTS MUST BE OF NONCOMBUSTIBLE MATERIALS, EXCEPT AS PERMITTED IN SECTION 603 AND ELSEWHERE IN THIS CODE.
- BASIC ALLOWABLE HEIGHT AND AREA FROM TABLE 504.3 AND TABLE 506.2
- ALLOWABLE HEIGHT: 3 STORIES, 75 FEET
- ALLOWABLE AREA: 69,000 SF PER B
- TOTAL EXISTING GROSS BUILDING AREA
- BASEMENT: APPROXIMATELY 13,858 SF
- FIRST FLOOR: APPROXIMATELY 55,581 SF
- SECOND FLOOR: APPROXIMATELY 43,862 SF
- THIRD FLOOR: APPROXIMATELY 39,078 SF



2 ENLARGED CODE PLAN
G101 1/4" = 1'-0"

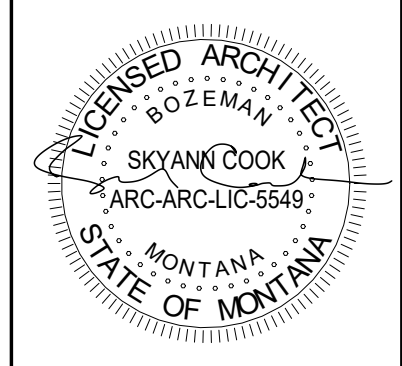


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BOZEMAN, MONTANA
PHONE: 406.994.5413
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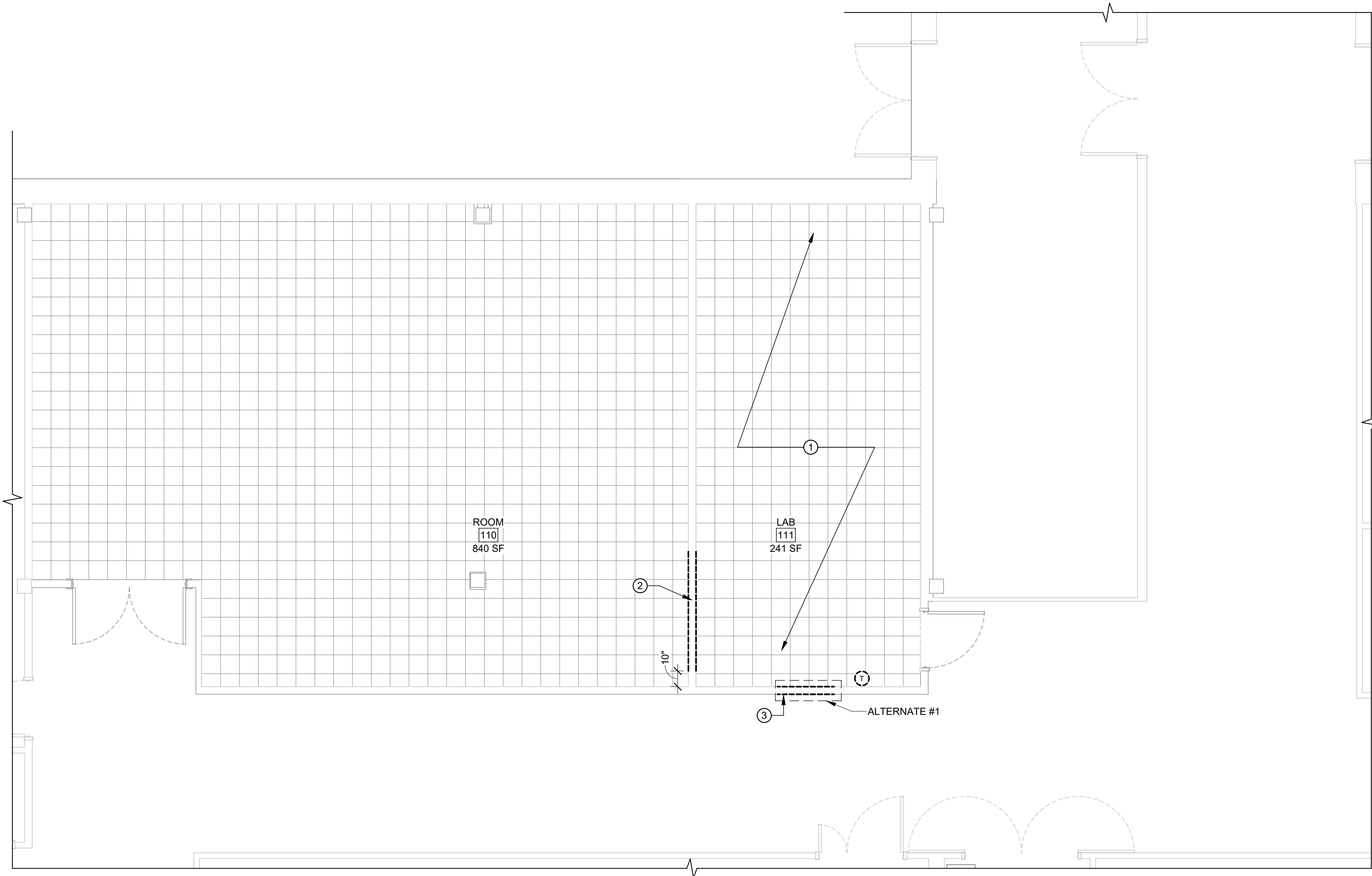


PPA# 25-1223

SHEET TITLE
CODE PLANS

SHEET
G101

DATE
07.15.2025



1 FIRST FLOOR DEMOLITION PLAN
AD101 1/4" = 1'-0"



GENERAL DEMOLITION NOTES

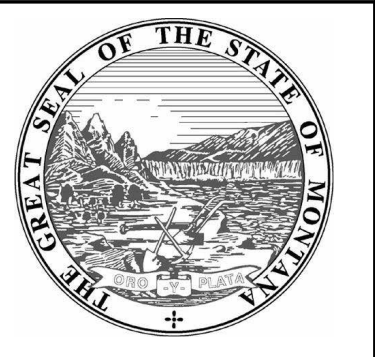
A. REFERENCE NOTES ON COVER G001.

DEMOLITION PLAN LEGEND

- (X) — DEMOLITION KEYNOTE
——— EXISTING CONSTRUCTION TO REMAIN
----- EXISTING CONSTRUCTION TO BE DEMOLISHED
NAME — ROOM NAME AND NUMBER
101
+ — DIMENSION TO FACE OF FRAMING
+ — DIMENSION TO GRID LINE
+ — DIMENSION TO CENTER LINE

DEMO FLOOR PLAN KEYNOTES

- 1 DEMOLISH EXISTING FLOORING DOWN TO SUBFLOOR. PREPARE SUBFLOOR FOR NEW FLOORING. DEMOLISH RUBBER WALL BASE.
- 2 DEMOLISH PORTION OF WALL AS NEEDED FOR NEW DOOR. COORDINATE DEMO WITH ELECTRICAL FOR DEMO OF EXISTING POWER/DATA IN THIS AREA.
- 3 DEMOLISH PORTION OF WALL AS NEEDED FOR NEW OPENING/WINDOW. THIS IS TIED TO ALTERNATE #1. SEE WINDOW TYPES FOR SIZE OF OPENING TO DEMO.

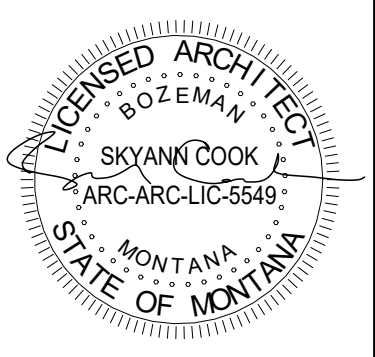


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MONTANA STATE UNIVERSITY
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SHEET TITLE
FIRST FLOOR
DEMOLITION
PLAN

SHEET
AD101

DATE
07.15.2025

DEMOLITION PLAN LEGEND

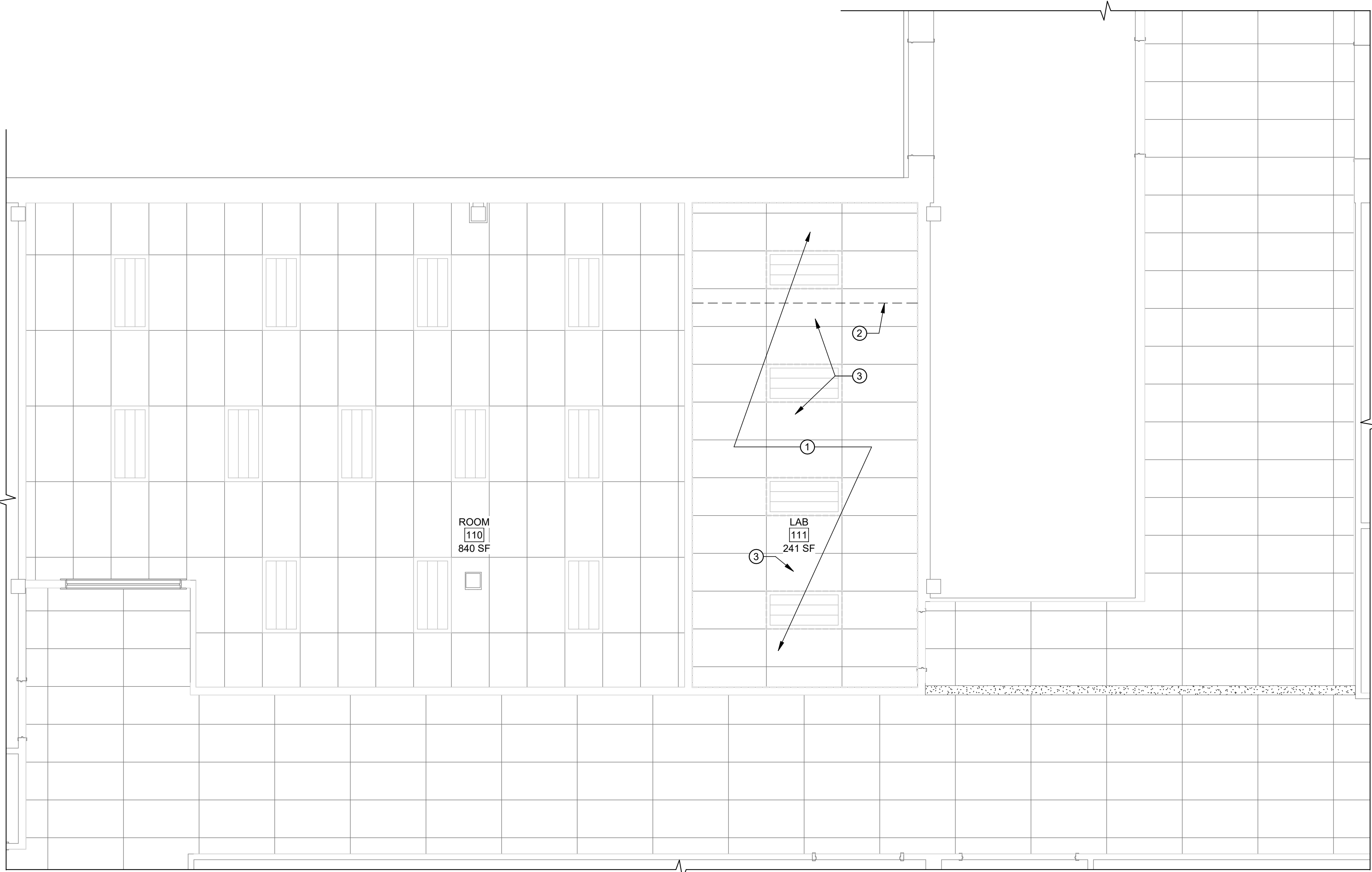
- ⊗ DEMOLITION KEYNOTE
- EXISTING CONSTRUCTION TO REMAIN
- - - EXISTING CONSTRUCTION TO BE DEMOLISHED
- NAME ROOM NAME AND NUMBER
- 101
- DIMENSION TO FACE OF FRAMING
- DIMENSION TO GRID LINE
- DIMENSION TO CENTER LINE

DEMO RCP GENERAL NOTES

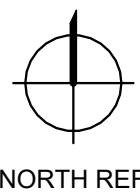
- A. EXISTING LIGHTING TO REMAIN - SEE ELECTRICAL.
- B. EXISTING CEILING GRID TO REMAIN - EXCEPT AS NEEDED FOR NEW WALL WITHIN THE ROOM.

DEMO RCP KEYNOTES

- 1 REMOVE ACOUSTIC CEILING TILES. COORDINATE SALVAGE FOR ATTIC STOCK WITH OWNER. CLEAN ABOVE CEILING SPACE PRIOR TO INSTALLING NEW CEILING TILES.
- 2 PROVIDE NEW GRID COMPONENTS AS NEEDED TO MATCH EXISTING FOR NEW WALL/CEILING CONNECTIONS.
- 3 SEE OTHER DISCIPLINES FOR ADDITIONAL DEMOLITION SCOPE.



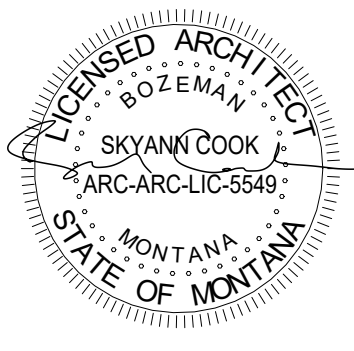
1 FIRST FLOOR REFLECTED CEILING DEMOLITION PLAN
AD901 1/4" = 1'-0"



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SHEET TITLE
FIRST FLOOR
DEMOLITION
REFLECTED
CEILING PLAN

SHEET
AD901

DATE
07.15.2025

WALL TYPE LEGEND

SCALE: 1" = 1'-0"

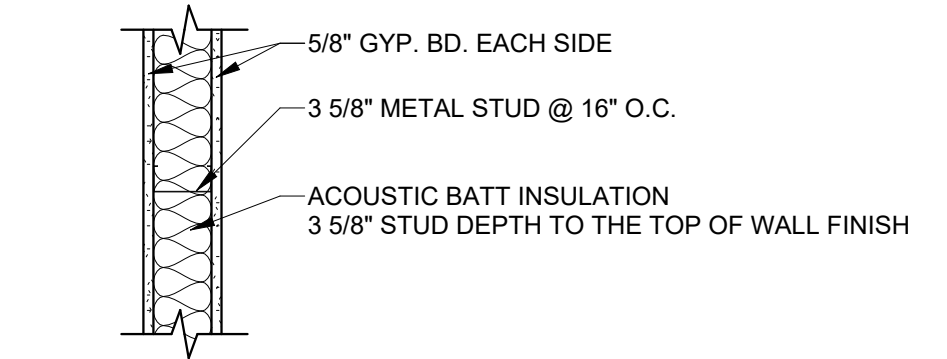
GENERAL WALL TYPE NOTES:

A. PROVIDE BLOCKING AS REQUIRED TO SECURE WALL HUNG COMPONENTS.

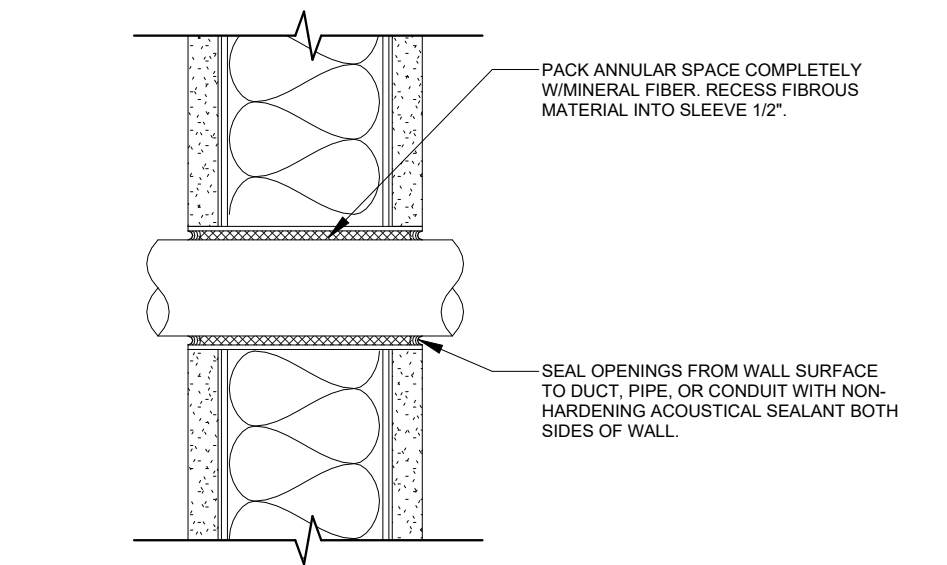
B. EXTEND WALL FRAMING TO UNDERSIDE OF DECK, UNLESS NOTED OTHERWISE.

WALL TYPE MODIFIERS:

1. NOT USED.



W1 INTERIOR STUD WALL

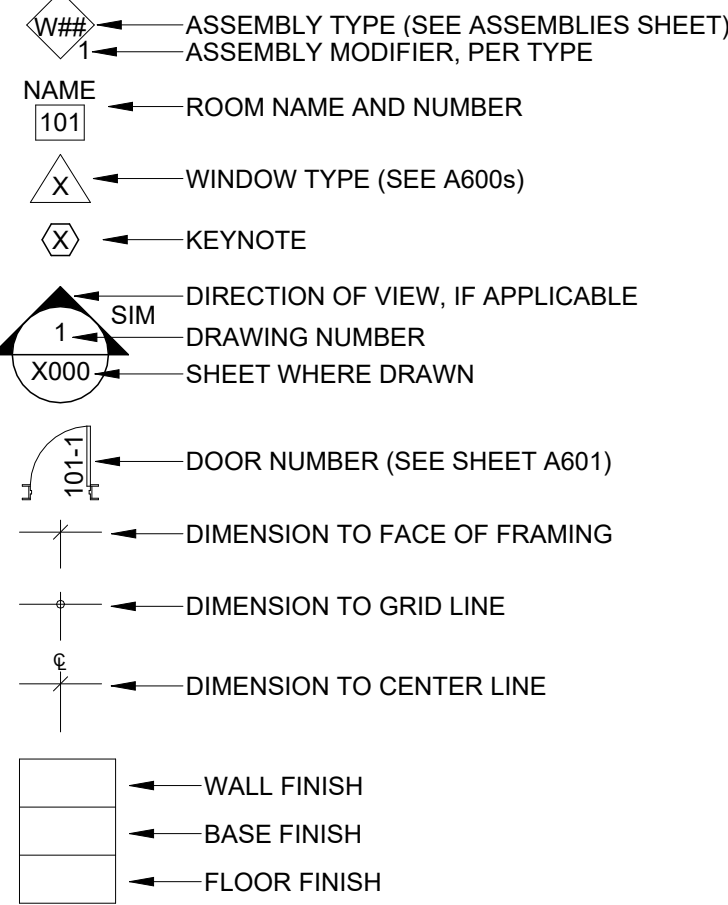


5 WALL PENETRATION
A101 3" = 1'-0"

MATERIALS LIST

ITEM NO	PRODUCT TYPE	MANUFACTURER	DESCRIPTION	COLOR	SIZE	NOTES
BASE						
RB1	RESILENT BASE	JOHNSONITE	STANDARD RUBBER COVE BASE	PEWTER	4" HIGH	BASIS OF DESIGN. OTHER MANUFACTURERS TO BE CONSIDERED. MITERED CORNERS. ROLLED GOODS.
FLOOR						
ES1	ELECTRIC STATIC FLOOR	STATICWORX	AMERIWORX CLASSICS ESD SOLID VINYL TILE	ADIRONDACK RIDGE	12X12	BASIS OF DESIGN. OTHER MANUFACTURERS TO BE CONSIDERED. COORDINATE GROUNDING FOR COPPER WIRE WITH ELECTRICAL. GC TO PROVIDE SELF-LEVELING COMPOUND COMPLIANT WITH ESD SYSTEM. BASIS OF DESIGN: ARDEX RAPID MC. MOISTURE TESTING REQUIRED. SUBSTRATE MUST WITHSTAND 1250 KG/SQM.
TRANSITIONS						
TR1	TRANSITION PROFILE	SCHLUTER SYSTEMS	STAINLESS STEEL	N/A	GC TO DETERMINE SIZE/HEIGHT	GC TO VERIFY PROFILE SIZE AND HEIGHT ON SITE FOR HEIGHT OF ADJACENT EXISTING MATERIALS AND NEW FLOORING
WALL						
P1	PAINT	SHERMIN WILLIAMS	ZERO VOC HARMONY INTERIOR LATEX PAINT	MATCH COLOR TO EXISTING WHITE PAINT ON SITE	N/A	BASIS OF DESIGN. OTHER MANUFACTURERS TO BE CONSIDERED. CEILINGS: FLAT FINISH. WALLS EGG-SHELL FINISH

PLAN LEGEND

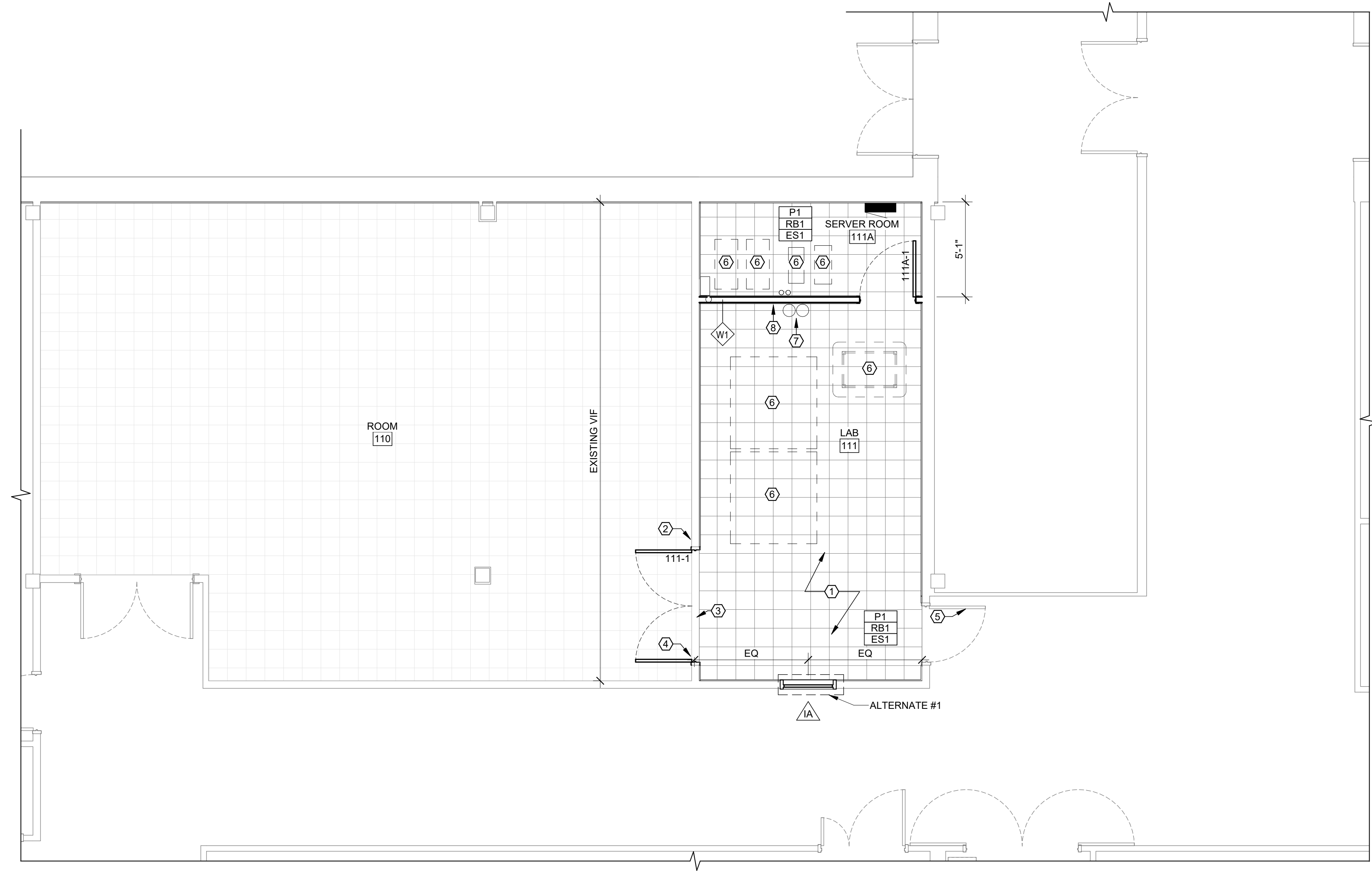


GENERAL NOTES

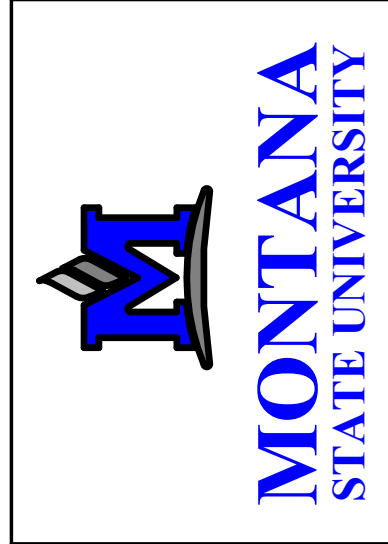
- VERIFY ALL CONDITIONS AND DIMENSIONS IN FIELD PRIOR TO FABRICATION.
- ALL PRODUCTS ARE TO BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS, USING MANUFACTURER'S ADHESIVES, TOOLS, AND METHODS.
- REFER TO SPECIFICATIONS ON DRAWINGS AND MATERIAL FINISH LIST FOR ALL FINISH MATERIAL PRODUCT INFORMATION.
- FOR CEILING HEIGHTS AND ADDITIONAL FINISHES SEE: A901.
- ALL FLOOR TRANSITIONS ARE TO OCCUR DIRECTLY BENEATH DOORS OR CENTERED IN OPENING. TRANSITIONS ARE TO BE ADA COMPLIANT.
- ALL NEW WALLS TO BE PAINTED TO MATCH EXISTING WALL UNLESS OTHERWISE NOTED. BLEND AND MATCH EXACT TO ADJACENT WALL COLOR, TEXTURE, SHEEN AND FINISH.
- ALL GYPSUM CEILINGS AND SOFFITS TO BE PAINTED P1 UNLESS OTHERWISE NOTED ON REFLECTED CEILING PLAN.
- ALL HOLLOW METAL FRAMES TO BE PAINTED TO MATCH ADJACENT WALL COLOR.
- ALL METAL ACCESS PANELS, COVER PLATES, VENTS, AND GRILLES TO BE PAINTED TO MATCH THE SURFACE IT IS LOCATED ON.

FLOOR PLAN KEYNOTES

- LEVEL SUBFLOOR PRIOR TO NEW FLOORING INSTALLATION. PROVIDE SELF LEVELING SUBSTRATE OVER EXISTING SUBFLOOR TO LEVEL OUT ALL UN-EVENNESS ACROSS THE ROOM. SEE FINISH SCHEDULE.
- PATCH AND REPAINT AS NECESSARY ON ROOM 110 SIDE OF WALL FOR NEW DOOR INSTALL. MATCH PAINT WITH EXISTING.
- PROVIDE METAL FLOORING TRANSITION PROFILE 'TR1' BETWEEN MATERIALS. TRANSITION TO BE ADA COMPLIANT.
- MODIFY/ADD NEW STUD FRAMING TO ACCOMODATE NEW OPENING.
- EXISTING DOOR/FRAME TO REMAIN.
- EQUIPMENT PROVIDED BY OWNER'S VENDOR. COORDINATE EQUIPMENT INFORMATION AND SCHEDULE OF INSTALLATION WITH OWNER.
- WALL BLOCKING AS REQUIRED FOR TANK MOUNTING. PROVIDE GAS CYLINDER WALL BRACKET. BOD: GAS CYLINDER WALL BRACKET - 2 CYLINDER CAPACITY, MODEL H-10677. COORDINATE EXACT LOCATION WITH ARCHITECT AND OWNER.
- WALL PENTRATION FOR EQUIPMENT HOSES AND CONDUIT. APPROXIMATE SIZE WILL VARY PENDING ON GROUPED ITEMS. COORDINATE FINAL LAYOUT AND ACTUAL SIZE IN THE FIELD WITH OWNER & ARCHITECT FOR ALL REQUIRED PENETRATIONS RELATED TO OWNER PROVIDED EQUIPMENT. SEE 5/A101 DETAIL FOR WALL PENETRATIONS.



1 FIRST FLOOR PLAN
A101 1/4" = 1'-0"



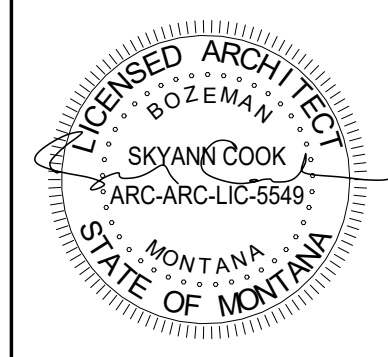
MSU-CPDC
MONTANA STATE UNIVERSITY
BOZEMAN, MONTANA
PHONE: 406.994.5413
FAX: 406.994.5665

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UNIVERSITY

Cushing Terrell

cushingterrell.com
800.757.9522

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REVIEWED BY: COOK		
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SHEET TITLE
FIRST FLOOR
PLAN

SHEET
A101

DATE
07.15.2025



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MONTANA STATE UNIVERSITY
BOZEMAN, MONTANA
PHONE: 406.994.5413
FAX: 406.994.5665

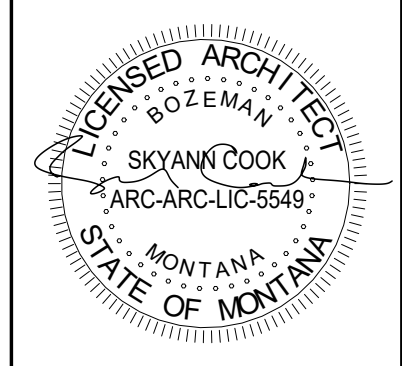
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PPA# 25-1223

SHEET TITLE
SCHEDULES AND
DETAILS

SHEET
A601

DATE
07.15.2025

DOOR, FRAME AND HARDWARE SCHEDULE															
DOOR NUMBER	ROOM NUMBER	ROOM NAME	DOOR							FRAME			FIRE RATING	HARDWARE	
			SIZE			MTL	TYPE	GLAZE	NOTES	MTL	TYPE	NOTES		GROUP #	NOTES
			W	H	T										
111-1	111	LAB	6'-0"	7'-0"	1 3/4"	WD	NL			HM	2			1	
111A-1	111A	SERVER ROOM	3'-0"	7'-0"	1 3/4"	WD	F			HM	1			2	

DOOR HARDWARE

ABBREVIATIONS

HM HOLLOW METAL
WD WOOD
BOD BASIS OF DESIGN

GENERAL NOTES

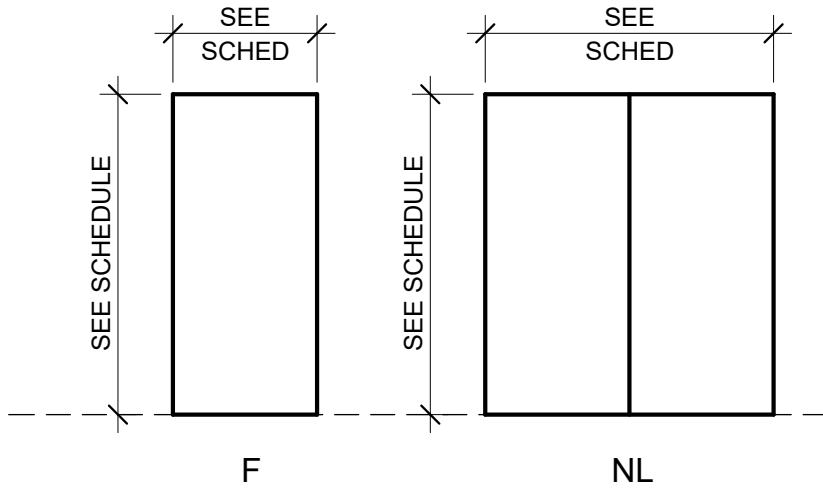
A. DOUBLE DOORS TO HAVE HARDWARE FOR BOTH DOORS.
B. PAINT FRAME TO MATCH ADJACENT WALL.
C. ALL DOOR OPENINGS ARE TO BE INSTALLED 4" FROM ADJACENT WALLS UNLESS NOTED OTHERWISE.
D. ALL DIMENSIONS ARE TO BE FIELD VERIFIED BY CONTRACTOR.
E. ANY CENTER MULLIONS AT DOUBLE DOORS ARE TO BE REMOVABLE.

HARDWARE GROUP #01 - DOUBLE DOOR

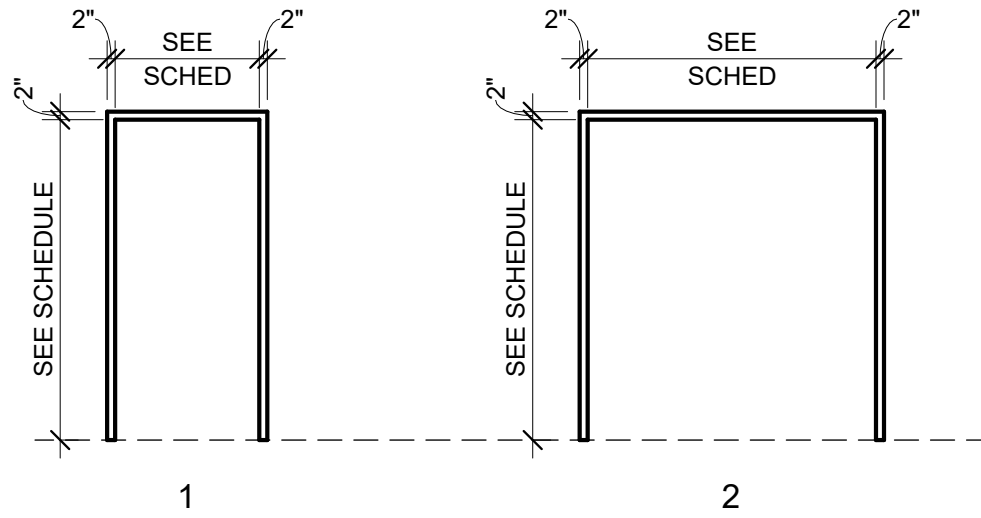
THRESHOLD: DOOR SWEEP (BOD: PEMKO, BRUSH INSERT, ALUMINUM, SURFACE MOUNTED - MATCH DOOR LEAF SIZE).
HINGES: 1.5 PAIR HINGES PER DOOR LEAF (BOD: IVES HARDWARE 5B81HW, HEAVY WEIGHT, GRADE 1).
LOCKSET: STOREROOM LEVER ON ACTIVE LEAF, FIXED LEVER ON INACTIVE LEAF (MATCH EXISTING DOOR TO ROOM LEVER STYLE - BOD: ALLEGIAN/SCHLAGE ND SERIES; COORDINATE KEYING SCHEDULE WITH MSU).
STOP: WALL STOP.
SEAL: PROVIDE DOOR GASKETING AT FRAME (BOD: PEMKO, S88 SERIES, COLOR TO MATCH EXISTING DOOR TO ROOM SEALS).
ASTRAGAL: OVERLAPPING SURFACE MOUNTED WITH SPONGE EPDM INSERT (BOD: PEMKO 375, FINISH/COLOR TO MATCH DOOR HARDWARE).

HARDWARE GROUP #02

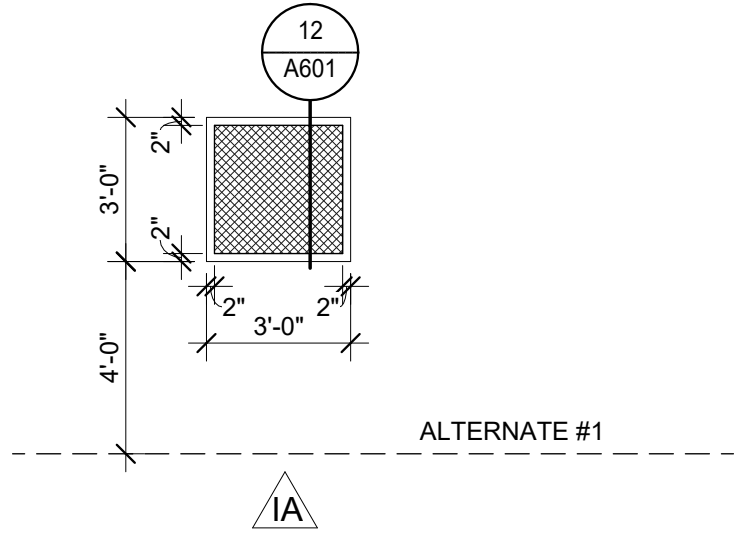
THRESHOLD: DOOR SWEEP (BOD: PEMKO, BRUSH INSERT, ALUMINUM, SURFACE MOUNTED - MATCH DOOR LEAF SIZE).
HINGES: 1.5 PAIR HINGES PER DOOR LEAF (BOD: IVES HARDWARE 5B81HW, HEAVY WEIGHT, GRADE 1).
LOCKSET: PASSAGE LEVER (MATCH EXISTING DOOR TO ROOM LEVER STYLE - BOD: ALLEGIAN/SCHLAGE ND SERIES).
STOP: WALL STOP.
SEAL: PROVIDE DOOR GASKETING AT FRAME (BOD: PEMKO, S88 SERIES, COLOR TO MATCH EXISTING DOOR TO ROOM SEALS).



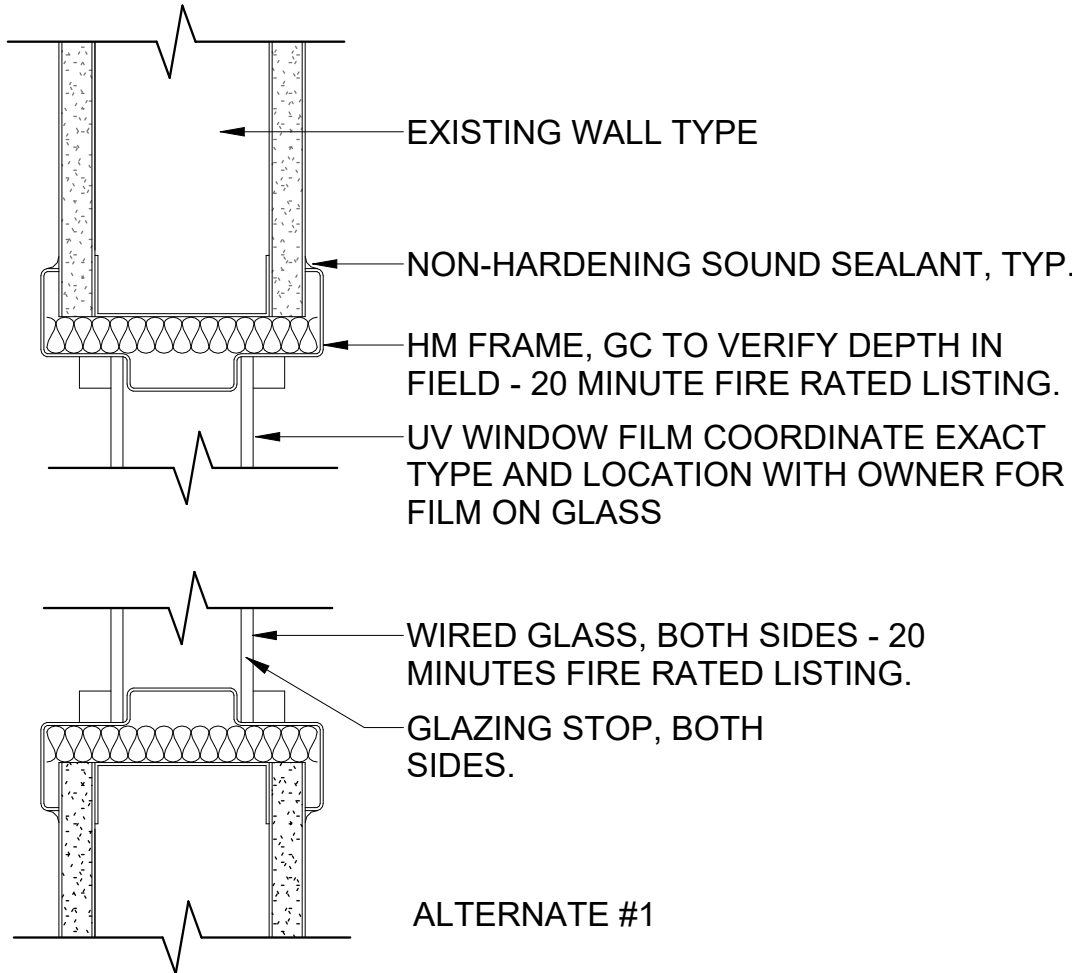
DOOR TYPES



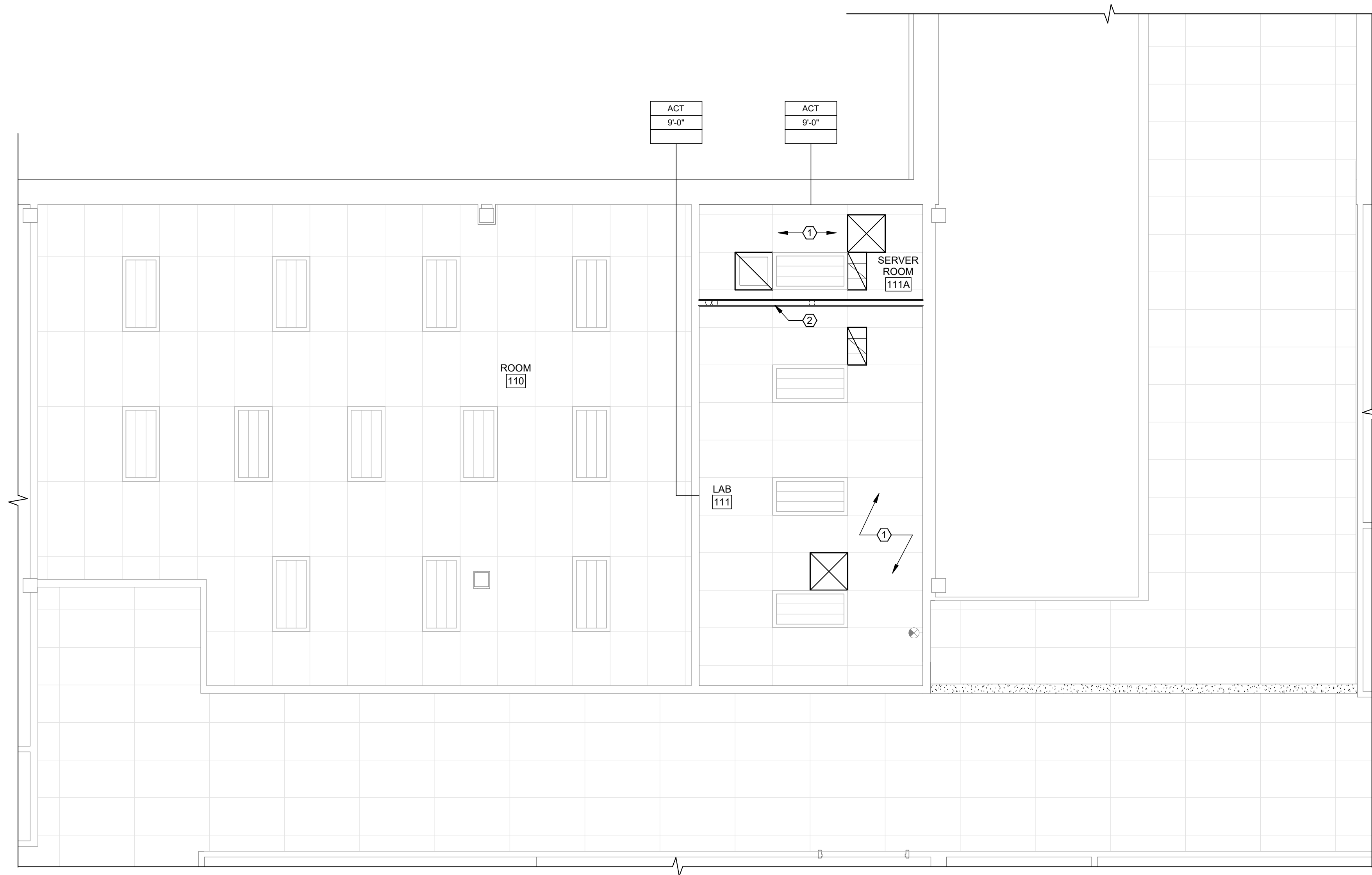
FRAME TYPES



WINDOW TYPES



INTERIOR HM WINDOW - HEAD / SILL DETAIL
3" = 1'-0"

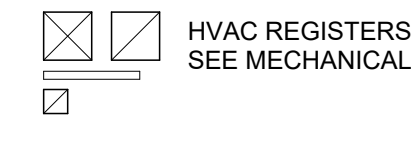
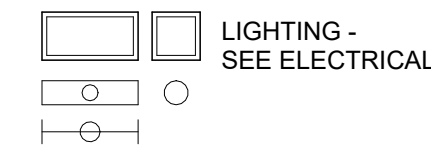
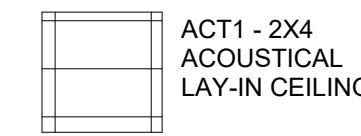


1
A901
FIRST FLOOR REFLECTED CEILING PLAN
1/4" = 1'-0"



REFLECTED CEILING LEGEND

CEILING MATERIAL	ACT
CEILING HEIGHT	VARIES
ADDITIONAL NOTES	NOTES



ADDITIONAL NOTES

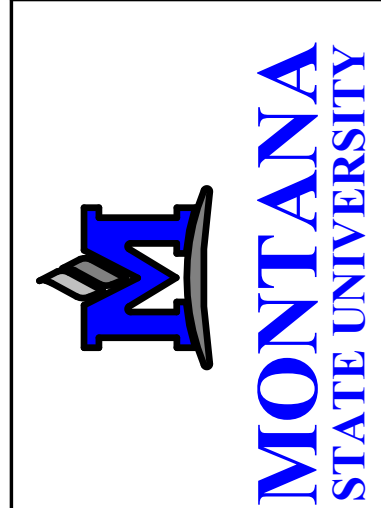
- NOT USED.

REFLECTED CEILING GENERAL NOTES

- EXISTING LIGHTING TO REMAIN - SEE ELECTRICAL.
- EXISTING CEILING GRID TO REMAIN - EXCEPT AS NEEDED FOR NEW WALL WITHIN THE ROOM.
- COORDINATE WITH MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL ITEMS TO BE PROVIDED AT THE CEILING PLANE.
- SEE A101 MATERIALS LIST FOR AC1 CEILING TILE BASIS OF DESIGN.

KEYNOTES

- PROVIDE NEW CEILING TILE IN EXISTING GRID, TYP.
- EXTEND WALL FINISH 8" ABOVE ACT GRID HEIGHT.



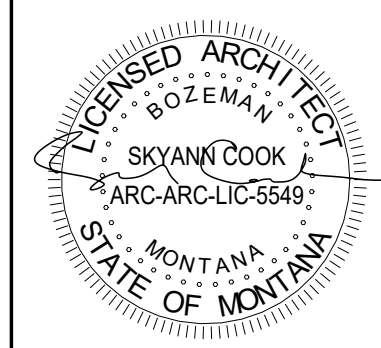
MSU-CPDC
MONTANA STATE UNIVERSITY
BOZEMAN, MONTANA
PHONE: 406.994.5413
FAX: 406.994.5665

BARNARD HALL 111 LITHO
LAB RENOVATION
MONTANA STATE
UNIVERSITY

Cushing
Terrell

cushingterrell.com
800.757.9522

DRAWN BY: SLEVIN		
REVIEWED BY: COOK		
REV.	DESCRIPTION	DATE



PPA# 25-1223

SHEET TITLE
FIRST FLOOR
REFLECTED
CEILING PLAN

SHEET
A901

DATE
07.15.2025

HUMIDIFIER SCHEDULE											
PLAN CODE	MANUFACTURER	MODEL	HUMIDITY OUTPUT (LBS/HR)	FILL RATE (GPM)	DRAIN RATE (GPM)	MIN HUMIDITY RANGE	MAX HUMIDITY RANGE	POWER			
								V/PH/HZ	KW	MCA	MOC/P
H-1	CONDAIR	RH2	8	0.13	1.6	20%	100%	120/1/60	3	12.7 A	20A

NOTES:
1) PROVIDE SELF ACTUATING CONDENSAT DRAIN WATER COOLER
2) PROVIDE ELECTRIC SUMP PUMP
3) PROVIDE IN LINE WATER FILTER. FILTER SHALL BE PROVIDED WITH TWO REPLACEMENT 5 MICRON DISPOSABLE CARTRIGES.

WATER HAMMER ARRESTOR					
PLAN CODE	MANUFACTURER	MODEL	PDI SYMBOL	PIPE SIZE	FIXTURE UNIT CAPACITY
SA-1	SIoux CHIEF	652-A	A	1/2"	5-11

ALTERNATE #2

GRILLES, REGISTERS, & DIFFUSERS SCHEDULE										
PLAN CODE	MFGR	MODEL	NOMINAL FACE SIZE	NECK SIZE	FLEX SIZE	MAX CFM	MATERIAL	FINISH	STYLE	NOTES
S-1	PRICE	AMCD	24 X 24	8 X 8	NA	200	ALUM	WHITE	LAY-IN	1,2
S-2	PRICE	AMCD	24 X 24	14 X 14	NA	570	ALUM	WHITE	LAY-IN	1,3
R-1	PRICE	80	24 X 24	18 X 18	NA	670	ALUM	WHITE	LAY-IN	-
T-1	PRICE	60	24 X 12	10 X 8	NA	200	ALUM	WHITE	LAY-IN	-
NOTES:										
1) PROVIDE WITH INTEGRAL OPPOSED BLADE DAMPER										
2) ADJUSTABLE CORE, SET TO DELIVER TO ALL FOUR SIDES.										
3) ADJUSTABLE CORE, SET TO DELIVER TO NORTH. WEST. AND EAST WALLS.										

HVAC SPECIFICATIONS

- A. REVIEW ARCHITECTURAL AND ELECTRICAL PLANS THOROUGHLY TO BECOME FAMILIAR WITH THIS PROJECT. ARCHITECTURAL, MECHANICAL, AND ELECTRICAL PLANS AND SPECIFICATIONS COMPRISE ONE DOCUMENT OF WHICH THIS SHEET IS ONLY A PART.
- B. BECAUSE OF THE NATURE OF THIS REMODEL WORK, UNKNOWN CONDITIONS MAY ARISE DURING CONSTRUCTION. NOTIFY ENGINEER IMMEDIATELY IF ANY SUCH CONDITIONS ARISE WHICH ALTER THE SCOPE OR INTENT TO THESE CONSTRUCTION DOCUMENTS.
- C. ALL WORK SHALL COMPLY WITH THE 2021 IMC CODE AND APPLICABLE CODES OF LOCAL JURISDICTION.
- D. MECHANICAL CONTRACTOR SHALL GUARANTEE THAT ALL MATERIAL FURNISHED BE ACCEPTABLE IN EVERY RESPECT AND, IF NOT, WILL REPLACE SAME IMMEDIATELY. ALL MATERIAL AND WORKMANSHIP SHALL BE GUARANTEED FOR ONE (1) YEAR FROM DATE OF SUBSTANTIAL COMPLETION.
- E. PIPING AND DUCTWORK SHOWN ARE DIAGRAMMATIC ONLY. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING ANY REMODEL WORK.
- F. ALL DUCTWORK UNLESS STATED OTHERWISE SHALL BE GALVANIZED SHEET STEEL, LOCK-FORMING QUALITY; ASTM A 653A/653M, G90 COATING DESIGNATION. ALL HARD ROUND DUCTWORK SHALL BE SPIRAL. SNAPPY DUCT WILL NOT BE ACCEPTED. CONSTRUCT DUCTWORK TO COMPLY WITH THE LATEST EDITION OF SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE." COMPLY WITH REQUIREMENTS FOR METAL THICKNESS, REINFORCING TYPES AND INTERVALS, TIE-ROD APPLICATIONS, AND JOINT TYPES AND INTERVALS. SEAL JOINTS WITH WATER-BASED SEALANT TO MEET SMACNA SEAL CLASS A. DUCT TAPE WILL NOT BE ACCEPTED.
- G. COORDINATE LOCATIONS OF DUCTWORK WITH OTHER TRADES PRIOR TO INSTALLATION.
- H. TURNING VANES: INSTALL SINGLE-THICKNESS TURNING VANES IN ALL SQUARE AND RECTANGULAR ELBOWS OF SUPPLY, RETURN, AND EXHAUST AIR SYSTEMS. FABRICATE TO COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE."
- I. WATER PIPING SHALL BE TYPE L COPPER TUBE WITH ASME B16.18 CAST COPPER ALLOY OR ASME B16.22 WROUGHT COPPER AND BRONZE FITTINGS. INSULATE PIPING WITH 1/2" PRE-FORMED FIBERGLASS INSULATION.
- J. COMPRESSED AIR PIPING SHALL BE TYPE L COPPER TUBE WITH ASME B16.24 CAST COPPER ALLOY OR ASME B16.22 WROUGHT COPPER AND BRONZE FITTINGS.
- K. TEST AND BALANCE: EMPLOY THE SERVICES OF AN INDEPENDENT TESTING, ADJUSTING, AND BALANCING AGENCY TO BE THE SINGLE SOURCE OF RESPONSIBILITY TO TEST, ADJUST, AND BALANCE THE BUILDING'S MECHANICAL AIR AND WATER SYSTEMS. SERVICES SHALL INCLUDE CHECKING INSTALLATIONS FOR CONFORMITY TO DESIGN, MEASUREMENT OF THE MECHANICAL SYSTEMS AS REQUIRED TO MEET DESIGN SPECIFICATION, AND RECORDING AND REPORTING THE RESULTS. UPON COMPLETION, PROVIDE TYPED REPORT TO THE BUILDING INSPECTOR, MECHANICAL ENGINEER, AND TWO COPIES TO THE BUILDING OWNER.
- L. CONTRACTOR SHALL MAINTAIN A SET OF RED-LINED AS-BUILT DRAWINGS DURING CONSTRUCTION AND SUBMIT TO OWNER AT PROJECT COMPLETION.
- M. CONTRACTOR TO REUSE FUNCTIONAL EXISTING DIFFUSERS WHERE APPLICABLE. CONTRACTOR TO CLEAN DIFFUSER PRIOR TO INSTALLATION.
- N. LOCATION OF CEILING DIFFUSERS ARE APPROXIMATE AND MAY NEED TO SHIFT TO SUIT ACTUAL CONSTRUCTION CONDITIONS.
- O. CONTRACTOR SHALL VERIFY WITH OWNER TO DISPOSE OF OR SALVAGE ALL REMOVED MATERIALS. CONTRACTOR SHALL DISPOSE OF ALL DEMOLISHED MATERIAL PROPERLY.
- P. ALL EXPOSED DUCTWORK MATERIAL SHALL BE "PAINT-LOCK" SUITABLE FOR FIELD PAINTING BY G.C.
- Q. METAL EDGED CONNECTORS: FACTORY FABRICATED WITH A FABRIC STRIP 2 INCHES WIDE ATTACHED TO TWO STRIPS OF 2-3/4 INCH WIDE, GALVANIZED SHEET STEEL. PROVIDE METAL COMPATIBLE WITH CONNECTED DUCTS.
- R. INDOOR SYSTEM, FLEXIBLE CONNECTOR FABRIC: GLASS FABRIC DOUBLE COATED WITH NEOPRENE.
a. MINIMUM WEIGHT 26 OZ./SQ. YD.
b. TENSILE STRENGTH 480 LBF/INCH IN THE WARP AND 360 LBF/INCH IN THE FILLING
c. SERVICE TEMPERATURE MINUS 40 DEG F TO PLUS 200 DEG F.
- S. DUCT LINER SHALL BE FIBROUS-GLASS DUCT LINER COMPLYING WITH ASTM C1071. MAXIMUM THERMAL CONDUCTIVITY OF 0.27 BTU/IN/HR/SQ FT AT 75 DEG F FOR TYPE I FLEXIBLE LINER USED FOR ROUND DUCT. MAXIMUM THERMAL CONDUCTIVITY OF 0.23 BTU/IN/HR/SQ FT AT 75 DEG F FOR TYPE II RIGID LINER USED FOR RECTANGULAR DUCT. ADHERE TO INTERIOR SIDE OF DUCT. ABUTTING EDGES SHALL BE SEALED WITH MANUFACTURER'S APPROVED COATING. EXPOSED EDGES SHALL BE PROVIDED WITH SHEET METAL NOSING.
- T. ADHESIVES TO BE WATER-BASED, RECOMMENDED BY LINER MANUFACTURER. COMPLY WITH NFPA 90A AND ASTM C916.
- U. ANCHOR PINS TO BE CAPACITOR WELDED STICK PINS CAPABLE OF SUPPORTING 20 POUNDS EACH. PROVIDE ANCHOR PINS AND SPEED WASHERS OF SIZES AND DIAMETERS AS RECOMMENDED BY THE MANUFACTURER FOR LINER TYPE AND THICKNESS.
- V. JOHNSON CONTROLS IS TO PERFORM ALL REMOVAL, MODIFICATION, AND INSTALLATION OF NEW CONTROLS. CONTACT JOHNSON CONTROLS TO COORDINATE REQUIREMENTS FOR THIS PROJECT.

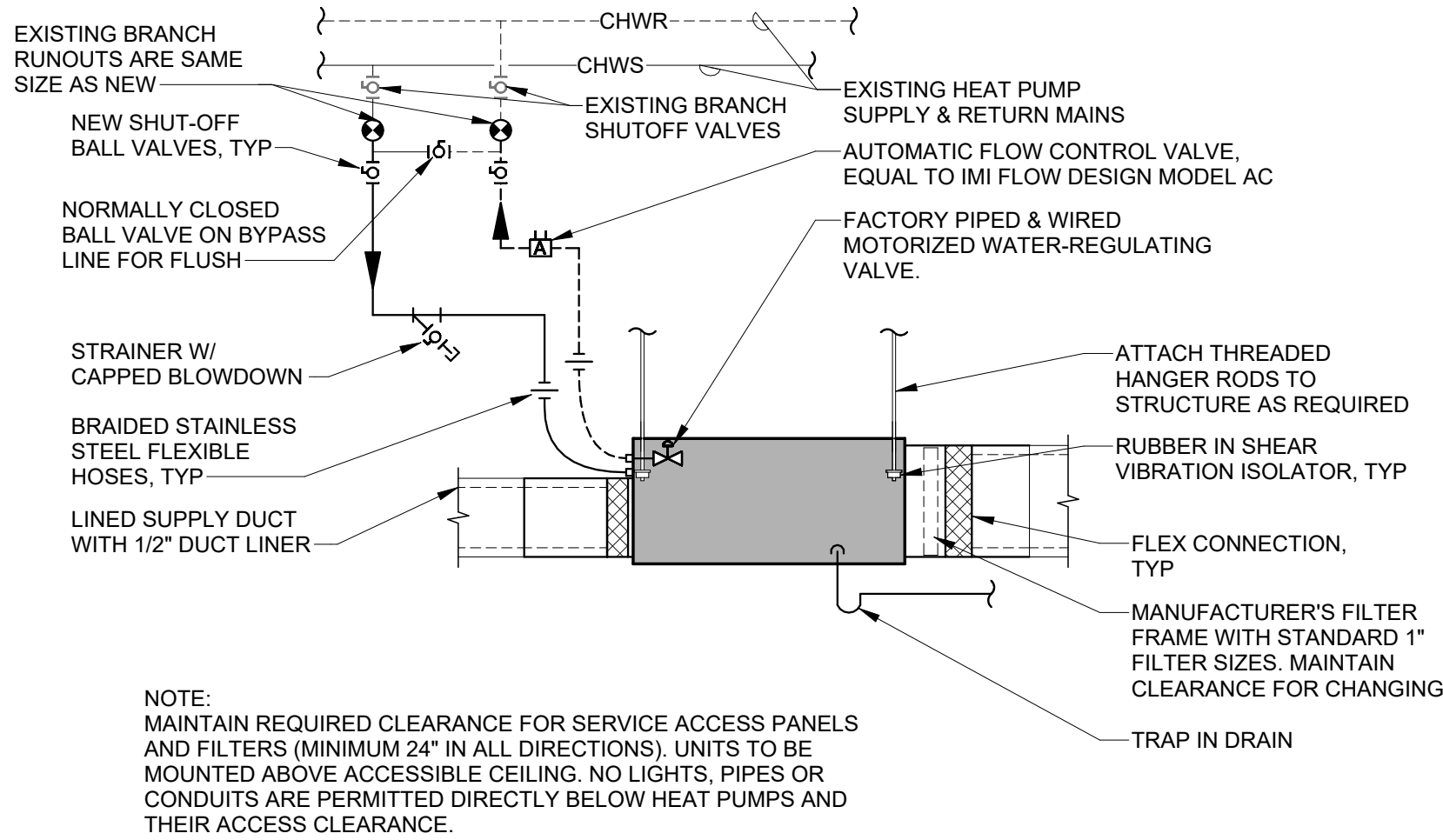
MECHANICAL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
—CHWS—	CHILLED WATER SUPPLY		ACOUSTICALLY LINED SHEET METAL DUCT
---CHWR---	CHILLED WATER RETURN		MANUAL BALANCING DAMPER
-----CD-----	CONDENSATE DRAIN		FLEX CONNECTOR
	GATE VALVE		TURNING VANE ELBOW
	BALL VALVE		HIGH EFFICIENCY BRANCH TAKE-OFF "HETO" WITH VOLUME DAMPER & FLEXIBLE DUCT
	FLEX CONNECTOR		HIGH EFFICIENCY BRANCH TAKE-OFF "HETO" WITH VOLUME DAMPER & RIGID DUCT
	HOSE END DRAIN VALVE		SUPPLY DIFFUSER, 4-WAY THROW UNLESS INDICATED OTHERWISE (W/ FLEXIBLE DUCT)
	TEE UP		RETURN GRILLE
	TEE DOWN		
	ELBOW UP		
	ELBOW DOWN		
	PIPE SIZE CHANGE		
	DIRECTION OF FLOW		
	MANUAL FLOW BALANCING VALVE (CIRCUIT SETTER)		
	AUTOMATIC FLOW BALANCING VALVE		
	CONNECT NEW WORK TO EXISTING		
	POINT OF DISCONNECT		
(E)	EXISTING		
(R)	RELOCATE / RELOCATED		
	THERMOSTAT/TEMPERATURE SENSOR		
	HUMIDISTAT		

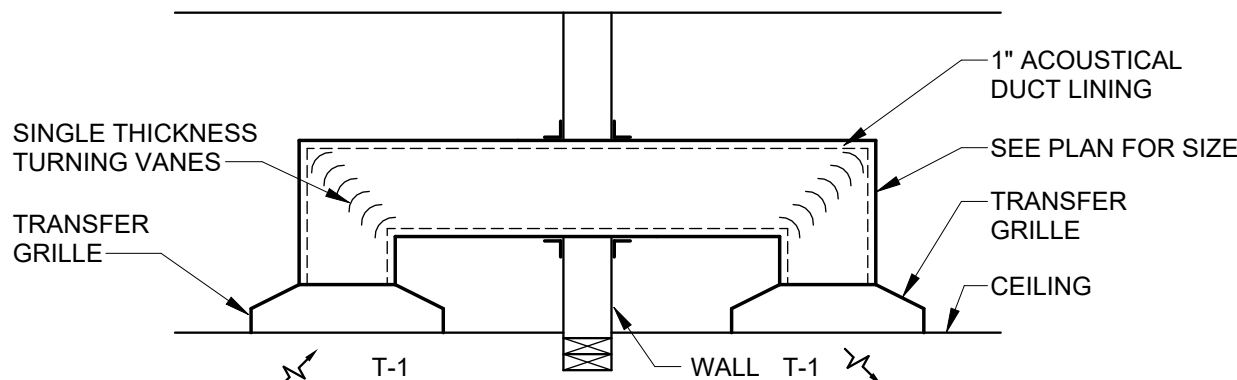
HVAC ABBREVIATIONS

%	PERCENT	LAT	LEAVING AIR TEMPERATURE
ACFM	ACTUAL CFM	LWT	LEAVING WATER TEMPERATURE
AFF	ABOVE FINISHED FLOOR	MAX	MAXIMUM
AMP	AMPERE (AMP, AMPS)	MBH	BTU PER HOUR (THOUSAND)
APD	AIR PRESSURE DROP	MC	MECHANICAL CONTRACTOR
APPROX	APPROXIMATE	MIN	MINIMUM
BHP	BRAKE HORSEPOWER, BOILER HORSEPOWER	OBD	OPPOSED BLADE DAMPER
BOD	BOTTOM OF DUCT	PD	PRESSURE DROP
BTU	BRITISH THERMAL UNIT	PH	PHASE (ELECTRICAL)
C	COMMON	RA	RETURN AIR
CFM	CUBIC FEET PER MINUTE	RPM	REVOLUTIONS PER MINUTE
DB	DRY-BULB TEMPERATURE	SA	SUPPLY AIR
DIA	DIAMETER	SH	SENSIBLE HEAT
EC	ELECTRICAL CONTRACTOR	SP	STATIC PRESSURE
EDB	ENTERING DRY BULB TEMPERATURE	SPEC	SPECIFICATION
EWB	ENTERING WET BULB TEMPERATURE	T STAT	THERMOSTAT
EWT	ENTERING WATER TEMPERATURE	V	VOLT
EXP	EXPANSION	VAC	VACUUM
F	FAHRENHEIT	VEL	VELOCITY
GC	GENERAL CONTRACTOR	VFD	VARIABLE FREQUENCY DRIVE
GPM	GALLONS PER MINUTE	VOL	VOLUME
HP	HORSEPOWER	W/	WITH
HZ	FREQUENCY	WPD	WATER PRESSURE DROP

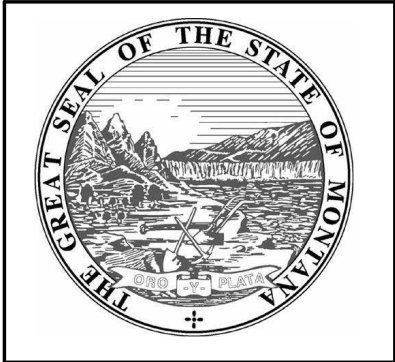
WATER SOURCE HEAT PUMP SCHEDULE																												
PLAN CODE	MANF.	MODEL	AREA SERVED	NOM SIZE (TON)	AIRFLOW (CFM)	ESP (IN H2O)	WATER FLOW (GPM)	WPD (FT)	COOLING (3)						HEATING (3)				WEIGHT	POWER (1)			PIPING RUNOUT SIZE			MIN EFF (2)		NOTES
									EDB (F)	EWB (F)	EWT (F)	LAT (F)	CAPACITY (MBH)	SENSIBLE (MBH)	EDB (F)	EWT (F)	LAT (F)	CAPACITY (MBH)		V/Hz/PH	MCA	MAX FUSE	SUPPLY / RETURN	DRAIN	EER	COP		
HP-2	WATER FURNACE	VERSATEC 024	111, 111A	2	745	0.5	4	1.2	80	67	80	54.8	22.2	16.7	70	30	92.9	15.21	176	208/60/1	15.4	20	3/4"	3/4"	18.2	3.2	4, 5, 6, 7	
NOTES:																												
1) FACTORY SUPPLIED DISCONNECT																												
2) BASED ON ARI TEST CONDITIONS																												
3) SOURCE WATER IS A MIXTURE OF 35% PROPYLENE GLYCOL.																												
4) PROVIDE ADVANCED CONTROLLER.																												
5) PROVIDE MODULATING 2-WAY WATER CONTROL VALVE.																												
6) PROVIDE DEDICATED TEMPERATURE SENSOR AND DEDICATED HUMIDITY SENSOR INSTALLED BY MC.																												
7) HEAT PUMP SHALL BE CONTROLLED THROUGH BACNET SYSTEM.																												



1 HEAT PUMP DETAIL
M001 NOT TO SCALE



2 TRANSFER DUCT DETAIL
M001 NOT TO SCALE

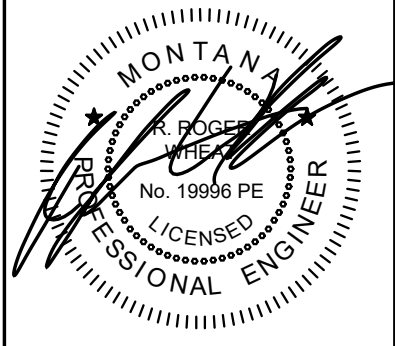


MSU-CPDC
MONTANA STATE UNIVERSITY
BOZEMAN, MONTANA
PHONE: 406.994.5413
FAX: 406.994.5665

BARNARD HALL 111 LITHO
LAB RENOVATION
MONTANA STATE
UNIVERSITY

Cushing Terrell
cushingterrell.com
800.757.9522

DRAWN BY: MITCHELL		
REVIEWED BY: WHEAT		
REV.	DESCRIPTION	DATE



SHEET TITLE
MECHANICAL
SCHEDULES &
LEGENDS

SHEET
M001

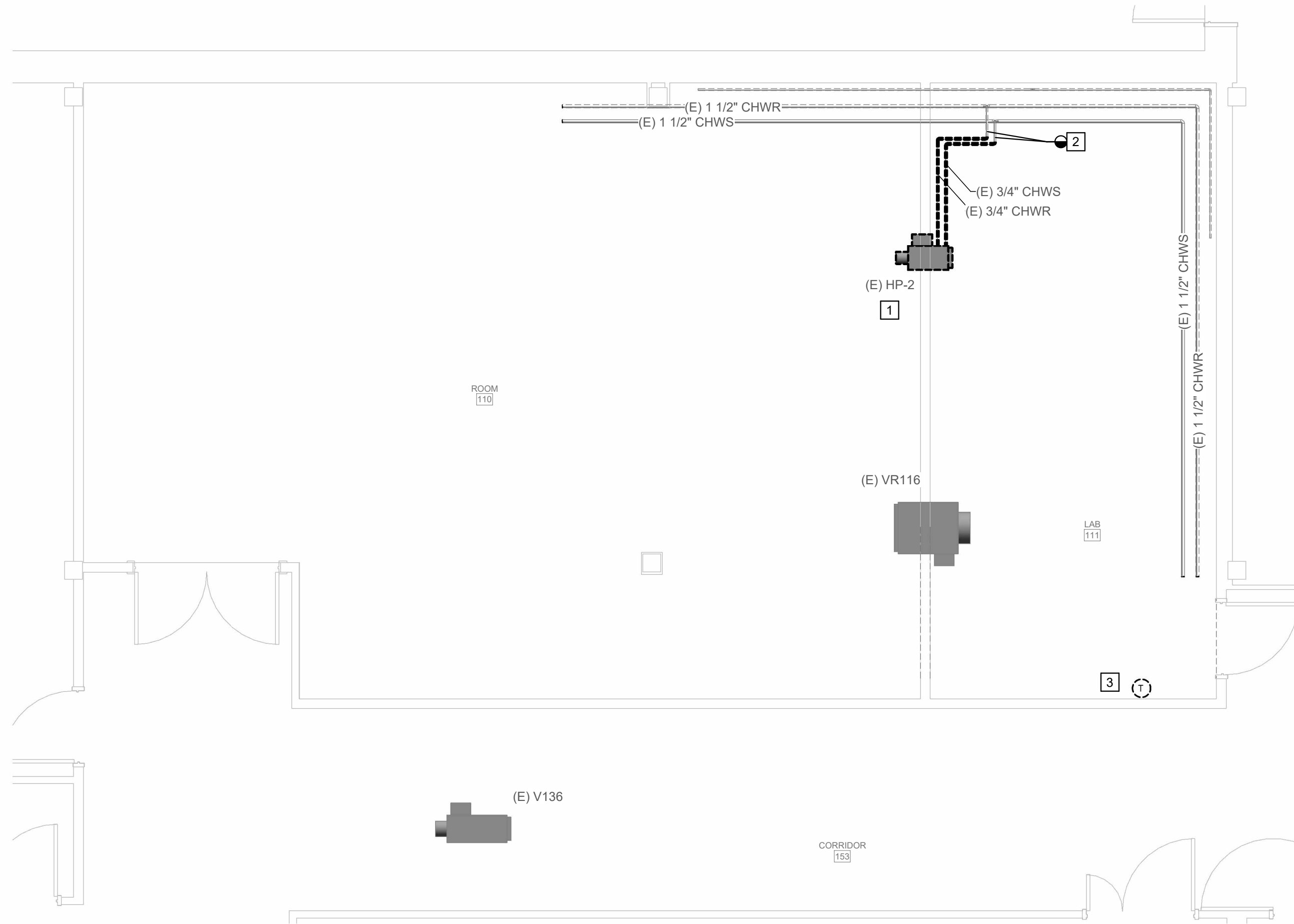
DATE
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DEMOLITION KEYNOTES

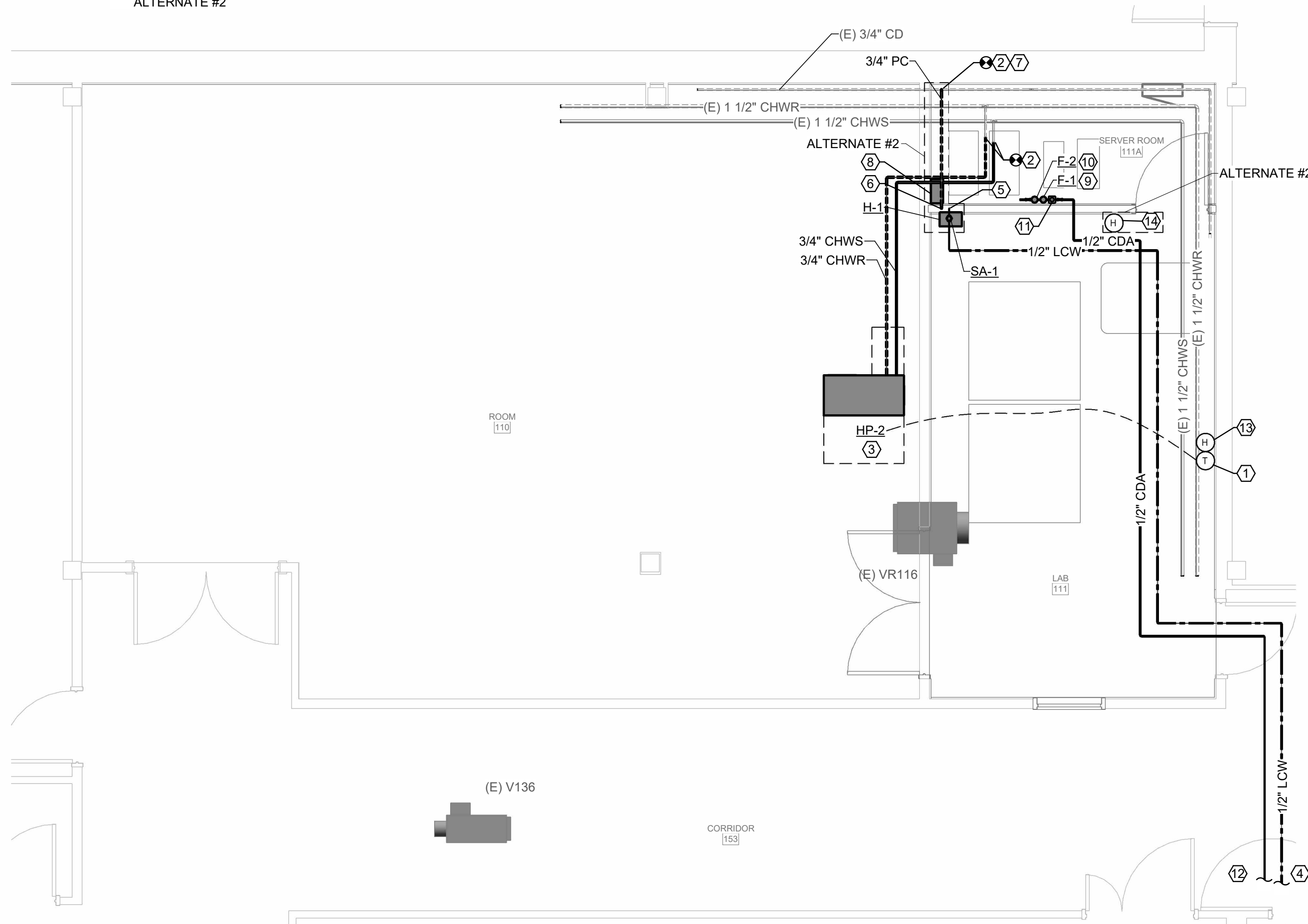
1. REMOVE EXISTING HEAT PUMP AND ACCESSORIES COMPLETE. NEARBY CONDENSATE PUMP TO BE SALVAGED AND REUSED WITH THE NEW HP-2.
2. REMOVE EXISTING CHILLED WATER TO EXTENT SHOWN, PREPARE PIPE FOR NEW CONNECTION. USE BRANCH ISOLATION VALVES IN THE RISERS OFF THE MAINS.
3. REMOVE AND RETAIN EXISTING THERMOSTAT IN WORKING CONDITION. GC TO PATCH WALL TO MATCH EXISTING.

KEYNOTES

1. REINSTALL EXISTING THERMOSTAT INSTALL AT 44" AFF AWAY FROM HEAT PRODUCING EQUIPMENT. ROUGHED IN BY EC INSTALLED BY MC. MOUNT THERMOSTAT AT 48" AFF TO CENTER. UTILIZE EXISTING JOHNSON CONTROLS BUILDING MANAGEMENT SYSTEM.
2. CONNECT PIPING FIELD VERIFY LOCATION AND ELEVATION.
3. CONNECT NEW CONDENSATE PIPING FROM HP-2 TO EXISTING CONDENSATE PUMP. VERIFY LOCATION OF EXISTING CONDENSATE PUMP AND RELOCATE AS REQUIRED. INSULATE CONDENSATE PIPING WITH 1/2" THICK FLEXIBLE ELASTOMERIC INSULATION FROM HP-2 TO THE CONDENSATE PUMP. THIS WORK IS TIED TO ALTERNATE #2.
4. CONNECT LAB COLD WATER PIPE TO LAB COLD WATER IN MECHANICAL CHASE. THIS WORK IS TIED TO ALTERNATE #2.
5. 1/2" LAB COLD WATER DOWN. THIS WORK IS TIED TO ALTERNATE #2.
6. 3/4" PUMPED CONDENSATE DOWN. CONDENSATE PIPING TO BE TYPE L OR M COPPER WITH DRAINAGE PATTERN FITTINGS. SLOPE PIPE AT 1/8" PER FOOT TO THE CONDENSATE MAIN. THIS WORK IS TIED TO ALTERNATE #2.
7. CONNECT NEW CONDENSATE TO EXISTING CONDENSATE PIPING. ROUTE DIRECTLY AS POSSIBLE. THIS WORK IS TIED TO ALTERNATE #2.
8. SUMP PUMP SUPPLIED WITH HUMIDIFIER. INSTALL PER ALL MANUFACTURERS WRITTEN INSTRUCTIONS. THIS WORK IS TIED TO ALTERNATE #2.
9. COALESCING FILTER: INGERSOLL-RAND FA301 GRADE G OR APPROVED EQUAL. INSTALL AT 4'-6" AFF TO CENTERLINE.
10. COALESCING FILTER: INGERSOLL-RAND FA301 GRADE H OR APPROVED EQUAL. INSTALL AT 4'-6" AFF TO CENTERLINE. CONTRACTOR TOP PROVIDE CONNECTOR TO 6MM POLY TUBE AT TERMINATION OF COMPRESSED AIR PIPING.
11. PRESSURE REGULATOR: INGERSOLL-RAND ARO R37231-600-VS, 0-140 PSI RANGE, OR APPROVED EQUAL. INSTALL IN ACCESSIBLE LOCATION. COORDINATE WITH ALL TRADES.
12. CONNECT COMPRESSED AIR PIPE TO CLEAN DRY COMPRESSED AIR MAIN IN MECHANICAL CHASE.
13. NEW HUMIDISTAT, INSTALL AT 44" AFF. ROUGHED IN BY EC, INSTALLED BY MC. UTILIZE EXISTING JOHNSON CONTROL BUILDING CONTROLS SYSTEM TO TRACK TRENDS.
14. HUMIDITY CONTROLLER PROVIDED WITH HUMIDIFIER. INSTALL AT 44" AFF, ROUGH IN BY EC, INSTALLED BY MC. THIS WORK IS TIED TO ALTERNATE #2

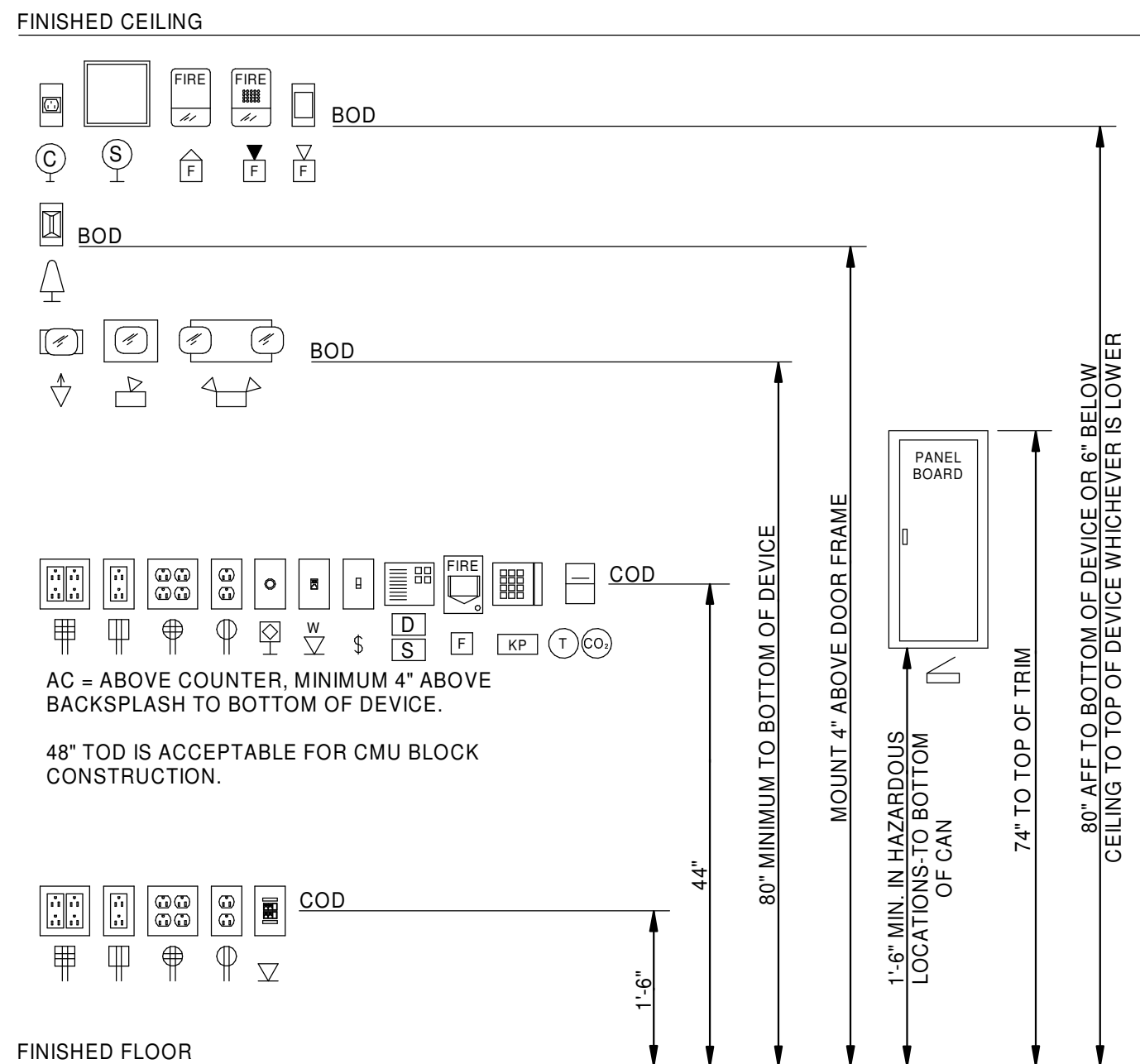


1 FIRST FLOOR HYDRONIC DEMOLITION PLAN
M200 1/4" = 1'-0" NORTH REF

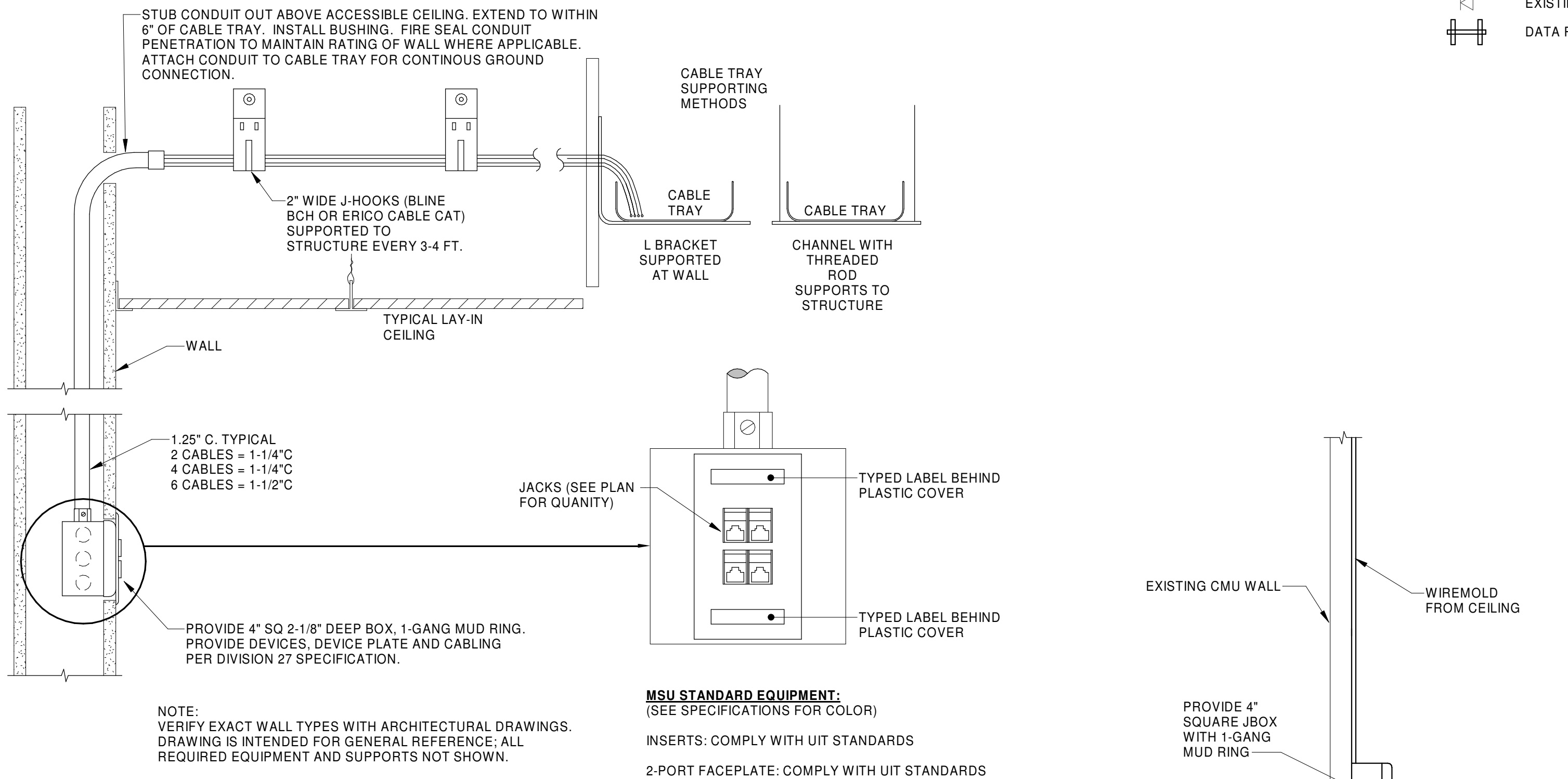


2 FIRST FLOOR HYDRONIC REMODEL PLAN
M200 1/4" = 1'-0" NORTH REF

INTERIOR BOX MOUNTING HEIGHTS



NOT ALL SYMBOLS MAY APPLY



ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	LAY-IN OR RECESSED FIXTURE, SIZE ON PLANS
	WALL MOUNTED FIXTURE, SIZE ON PLANS
	SURFACE MOUNTED FIXTURE, SIZE ON PLANS
	PENDANT OR SURFACE MOUNTED FIXTURE, SIZE ON PLANS
	PENDANT MOUNTED FIXTURE, SIZE ON PLANS
	SHADED FIXTURE INDICATES FIXTURE IS UNSWITCHED AND ALSO INDICATES EMERGENCY POWER.
	RECESSED DOWNLIGHT FIXTURE
	SURFACE MOUNTED FIXTURE
	WALL WASH OR DIRECTIONAL FIXTURE
	WALL SCONCE FIXTURE
	TRACK FIXTURE, SEE PLAN FOR SIZE AND HEADS
	CEILING FAN FIXTURE
	CEILING MOUNTED, WALL MOUNTED EXIT LIGHT (W/ DIRECTIONAL ARROWS)
	1 HEAD REMOTE EMERGENCY LIGHT
	2 HEAD EMERGENCY LIGHT BATTERY PACK
	1 HEAD REMOTE EMERGENCY LIGHT BATTERY PACK
	2 HEAD LIGHT WITH MOTION SENSOR
	SQUARE POLE MOUNTED FIXTURE, EXTERIOR
	ROUND POLE MOUNTED FIXTURE, EXTERIOR
	POST TOP FIXTURE, EXTERIOR
	BOLLARD FIXTURE, EXTERIOR
	DIRECTIONAL INGROUND FIXTURE, EXTERIOR

COMMUNICATIONS

SYMBOL	DESCRIPTION
	CATV JACK, WALL MOUNTED
	CATV JACK CEILING MOUNTED
	MICROPHONE OUTLET
	SPEAKER, SPEAKER WALL MOUNTED
	CLOCK HANGER RECEPTACLE
	VOICE/DATA JACK
	NUMERICAL SUBSCRIPT INDICATES NUMBER OF CABLES/JACKS, NO SUBSCRIPT ASSUMES TWO CABLES/JACKS
	WALL MOUNT TELEPHONE READY JACK
	WIRELESS ACCESS POINT
	VOICE/DATA JACK MOUNTED IN FLOORBOX
	NUMERICAL SUBSCRIPT INDICATES NUMBER OF CABLES/JACKS, NO SUBSCRIPT INDICATES TWO CABLES/JACKS
	EXISTING VOICE/DATA JACK
	DATA RACK

ABBREVIATIONS AND MISCELLANEOUS

SYMBOL	DESCRIPTION
AC	ABOVE COUNTER, 4" BACK SPLASH
ATS	AUTOMATIC TRANSFER SWITCH
AFG	ABOVE FINISHED GRADE
AFF	ABOVE FINISHED FLOOR
BLG	BELOW GRADE
BOD	BOTTOM OF DEVICE
C	CONDUIT
CAS	CARD ACCESS SYSTEM
CCTV	CLOSED CIRCUIT TV
CLG	CEILING
COD	CENTER OF DEVICE
CU	COPPER
DVR	DIGITAL VIDEO RECORDER
(E)	EXISTING
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
GC	GENERAL CONTRACTOR
GND	GROUND
LSI	FIELD ADJUSTABLE LONG TIME, SHORT TIME AND INSTANTANEOUS
LSIG	FIELD ADJUSTABLE LONG TIME, SHORT TIME, INSTANTANEOUS AND GROUND FAULT
MC	MECHANICAL CONTRACTOR
(N)	NEW
NL	NIGHT LIGHT
PTZ	PAN-TILT-ZOOM
QTY	QUANTITY
(R)	RELOCATED
SF	SURFACE
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TC	TEMPERATURE CONTROL CONTRACTOR
TMB	TELECOMMUNICATIONS MAIN GROUNDING BUS BAR
TTB	TELEPHONE TERMINAL BOARD
TYP	TYPICAL
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
W/	WITH
WM	WIRE MOLD
WP	WEATHER PROOF (WHILE IN USE)
XFMR	TRANSFORMER
a,b,c etc	SWITCH DESIGNATION
BN1L-2,4,6	CIRCUIT DESIGNATION, PANEL BN1L, CIRCUITS 2,4,6
1/E501	INDICATES DETAIL 1 ON SHEET E501
#	SHEET WORK NOTE
#	SHEET DEMO WORK NOTE
	HOME RUN TO PANEL
	CONDUIT CONCEALED IN CEILING OR WALL
	CONDUIT CONCEALED UNDER FLOOR
	LOW VOLTAGE CIRCUIT
	FIBER OPTIC CABLE
	CABLE TRAY
	CIRCUIT, NUMBER OF HASH MARKS INDICATES NUMBER OF CONDUCTORS IN CABLE/RACEWAY, GROUND WIRE IS NOT SHOWN BUT SHALL BE INCLUDED. NO HASH MARKS INDICATES 2 CONDUCTORS PLUS GROUND.

SECURITY SYSTEM

SYMBOL	DESCRIPTION
	CARD READER
	SPEAKER SIGNAL DEVICE
	DOOR CONTROLLER
	DOOR SWITCH CONTACT
	KEYPAD
	POWER TRANSFER SWITCH
	MOTION SENSOR REQUEST TO EXIT
	MANUAL REQUEST TO EXIT
	POWER SUPPLY W/BATTERY, BY DIV 8, INSTALLED AND CONNECTED BY DIV 27
	CONNECTION TO REQUEST TO EXIT & LATCH BOLT MONITORING
	CONNECTION TO PANIC REQUEST TO EXIT
	CONNECTION TO MAGNETIC DOOR LOCK
	CONNECTION TO MAGNETIC DOOR POSITION SWITCH
	CONNECTION TO ELECTRIC DOOR STRIKE
	CONNECTION TO ELECTRIC LATCH
	CONNECTION TO ELECTRIC AUTO OPENER
	CONNECTION TO FIRE ALARM CONTACT
	INDICATES SECURITY DOOR 1
	PANEL
	SCP SECURITY CONTROL PANEL
	SDC SECURITY DOOR CONTROLLERS

DEVICES AND POWER

SYMBOL	DESCRIPTION
	SWITCH - SPST
	SINGLE POLE, DOUBLE THROW
	THREEWAY
	FOURWAY
	KEY OPERATED
	PILOT LIGHT
	WEATHERPROOF
	OCCUPANCY SENSOR
	DIMMER
	SPOT-MOMENTARY CONTACT
	LOW VOLTAGE
	TIMER SWITCH
	TEST SWITCH
	OCCUPANCY SENSOR (CEILING) - SUBSCRIPT IS TYPE
	RECEPTACLE - SIMPLEX
	RECEPTACLE - DUPLEX, MOUNTING IN CEILING
	GFI RECEPTACLE - DUPLEX, MOUNTING IN CEILING
	RECEPTACLE - DUPLEX
	DEVICE RECEPTACLE W/ USB-A & USB-C PORTS
	DROP CORD
	WEATHERPROOF COVER & WEATHER RESISTANT RECEPTACLE
	TAMPER RESISTANT
	SURGE PROTECTED
	ISOLATED GROUND
	FILLED CENTER INDICATES HOSPITAL GRADE EMERGENCY RECEPTACLE
	RECEPTACLE - DUPLEX WITH TOP HALF CONTROLLED AND PERMANENTLY MARKED "CONTROLLED"
	- SAME INDICATORS AS SHOWN FOR DUPLEX RECEPTACLE
	GFI RECEPTACLE - DUPLEX (GROUND FAULT INTERRUPT)
	- SAME INDICATORS AS SHOWN FOR DUPLEX RECEPTACLE
	RECEPTACLE - DOUBLE DUPLEX
	GFI RECEPTACLE - DOUBLE DUPLEX
	- SAME INDICATORS AS SHOWN FOR DUPLEX RECEPTACLE
	RECEPTACLE - DOUBLE DUPLEX WITH TOP HALF CONTROLLED AND PERMANENTLY MARKED "CONTROLLED"
	- SAME INDICATORS AS SHOWN FOR DUPLEX RECEPTACLE
	RECEPTACLE - 208V
	RANGE - NEMA 14-50R
	DRYER - NEMA 14-30R
	WELDER - NEMA 14-50R
	NEMA CONFIGURATION AS NOTED
	208V RECEPTACLE IN RECESSED FLOORBOX
	DUPLEX RECEPTACLE/GFI IN RECESSED FLOORBOX
	- SAME INDICATORS AS SHOWN FOR DUPLEX RECEPTACLE
	DOUBLE DUPLEX RECEPTACLE/GFI IN RECESSED FLOORBOX
	- SAME INDICATORS AS SHOWN FOR DUPLEX RECEPTACLE
	J-BOX - BOX INDICATES FLOOR MOUNTING - 4"x4"x2-1/8" DEEP UNLESS OTHERWISE NOTED
	POWER POLE
	THERMOSTAT/TEMPERATURE SENSOR BY MC OR TC, J-BOX AND CONDUIT TO CEILING BY EC
	CARBON MONOXIDE DETECTOR BY MC, J-BOX & CONDUIT TO CEILING BY EC
	MANUAL MOTOR DISCONNECT/STARTER SWITCH
	EMERGENCY PUSHBUTTON
	RELAY
	PHOTOCELL, PHOTOCELL WALL MOUNTED
	SPECIAL PURPOSE CONNECTION - BOX INDICATES FLOOR MOUNTING - WORK AS NOTED
	ELECTRIC MOTOR CONNECTION
	COMBINATION STARTER/DISCONNECT SWITCH
	DISCONNECT SWITCH
	CONTACTOR
	CIRCUIT BREAKER
	VARIABLE FREQUENCY DRIVE
	CONTROL PANEL
	LIGHTING RELAY PANEL
	TEMPERATURE CONTROL PANEL
	GENERATOR ANNUNCIATOR PANEL
	PA CONTROL PANEL
	MED GAS ALARM PANEL
	TIME CLOCK
	EXISTING PANELBOARD, SURFACE MOUNTED
	EXISTING PANELBOARD, FLUSH MOUNTED
	PANELBOARD, SURFACE MOUNTED
	PANELBOARD, FLUSH MOUNTED
	ELECTRIC METER, BUILDING MOUNTED
	TRANSFORMER, INTERIOR
	TRANSFORMER, EXTERIOR

ELECTRICAL SHEET INDEX

E005	LEGENDS, SCHEDULES AND PANELS
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E002	ELECTRICAL SPECIFICATIONS
ED300	DEMOLITION POWER PLANS
E200	LIGHTING PLANS
E300	POWER PLANS
E400	SPECIAL SYSTEMS PLANS

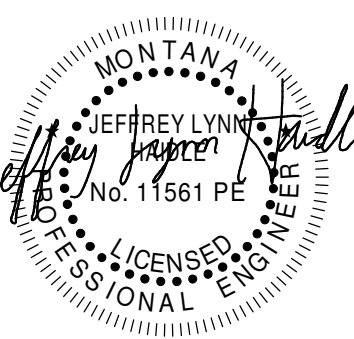


MSU-CPDC
MONTANA STATE UNIVERSITY
BOZEMAN, MONTANA
PHONE: 406.994.5413
FAX: 406.994.5665

BARNARD HALL 111 LITHO
LAB RENOVATION
MONTANA STATE
UNIVERSITY

Cushing Terrell
cushingterrell.com
800.757.9522

DRAWN BY: RESTAD		
REVIEWED BY: HAIDLE		
REV.	DESCRIPTION	DATE



PPA# 25-1223

SHEET TITLE
LEGENDS,
SCHEDULES AND
PANELS

SHEET
E001

DATE
07.15.2025

PANEL:MDP2L

LOCATION:

MOUNTING TYPE: SURFACE

MANUFACTURER: SQUARE D

MODEL TYPE: I-LINE

AMPS: 400 A

VOLTAGE: 120/208 Wye

PHASES: 3

WIRES: 4

MAIN TYPE: 400A MCB

MINIMUM AIC RATING: SEE ONE-LINE DIAGRAM

FED FROM:

ENCLOSURE: NEMA 1

NOTES: EXISTING PANEL

CIRCUIT DESCRIPTION	CKT NO	POLE	FRAME	BKR AMP	A	B	C
PANEL 1N9L	1	3	100	100	0	0	0
PANEL 1N12L	2	3	100	100	0	0	0
PANEL 1N10L	3	3	250	200	0	0	0
PANEL THIS RM	4	3	150	150	0	0	0
PANEL 1N11L	5	3	100	100	0	0	0
1N19L (NOTE 3)	6	3	100	100	2776	3380	1300
TOTAL PHASE VA:					2776	3380	1300
TOTAL PHASE AMPS:					25	30.1	10.8

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
EQUIPMENT	6760	100.00%	6760	TOTAL CONNECTED LOAD:	7456
RECEPTACLES	696	100.00%	696	TOTAL CONNECTED AMPS:	21 A
				TOTAL EST. DEMAND:	7456
				TOTAL EST. DEMAND AMPS:	21 A

NOTES: 1. LOAD SHOWN ON PANEL ONLY REFLECTS NEW LOADS.

2. HALFTONE LOADS ARE EXISTING TO REMAIN. BOLD LOADS ARE NEW.

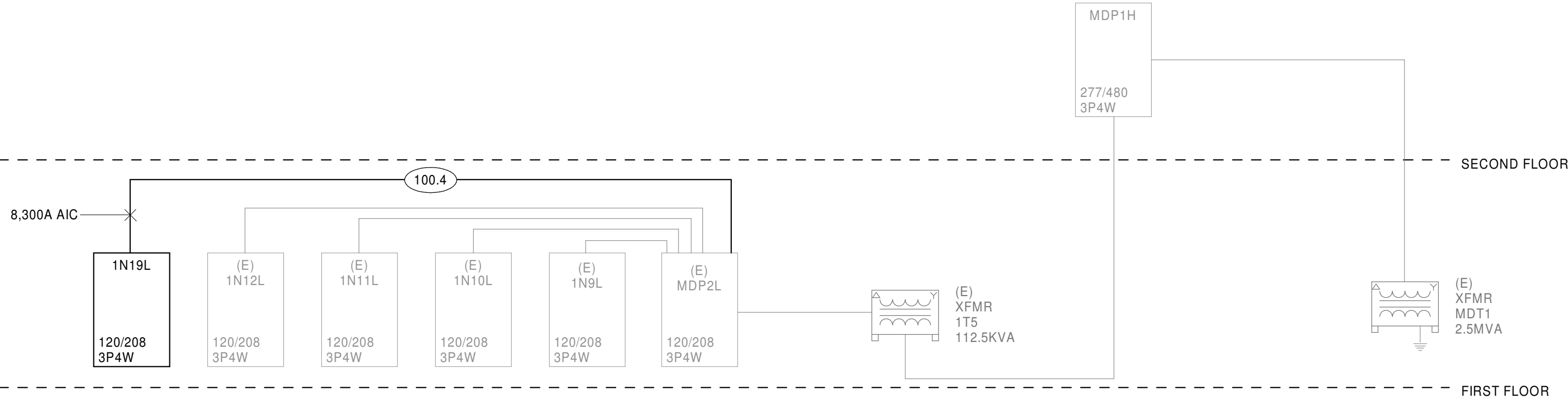
3. PROVIDE NEW 100A3P BREAKER.

EXISTING PANEL

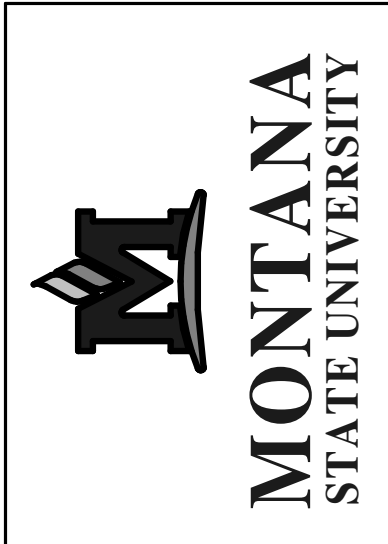
PANEL: 1N19L										NEW PANEL									
LOCATION: SERVER ROOM 111A					AMPS: 100 A					TYPE OF MAIN: MLO					MINIMUM AIC RATING: SEE ONE-LINE DIAGRAM MDP2L NEMA 1 PROVIDE 120KA SPD				
MOUNTING TYPE: SURFACE					VOLTAGE: 120/208 Wye					FED FROM:									
MANUFACTURER: SQUARE D					PHASES: 3					ENCLOSURE:									
MODEL TYPE: PANELBOARD					WIRES: 4					NOTES:									
LOAD NAME		CKT NO	BKR AMP	POLE	A		B		C		POLE	BKR AMP	CKT NO	LOAD NAME					
LITHOGRAPHY MACHINE		1	30	2	2080	696					1	20	2	ALTERNATE 2: CP-1					
SPARE		3	--	--			2080	1300			2	20	4	ALTERNATE 2: H-1					
SPARE		5	20	1						0	1300	--	6	--					
SPARE		7	20	1	0	0						1	20	8	SPARE				
SPARE		9	20	1			0	0				1	20	10	SPARE				
SPARE		11	20	1					0	0		1	20	12	SPARE				
SPARE		13	20	1	0	0					1	20	14	SPARE					
		15												16					
		17												18					
		19												20					
		21												22					
		23												24					
		25												26					
		27												28					
		29												30					
					2776		3380		1300		TOTAL CONNECTED PHASE VA								
					25		30.1		10.8		TOTAL CONNECTED PHASE AMPS								
LOAD CLASSIFICATION			CONNECTED LOAD			DEMAND FACTOR			ESTIMATED DEMAND			PANEL TOTALS							
EQUIPMENT			6760			100.00%			6760			TOTAL CONNECTED LOAD: 7456							
RECEPTACLES			696			100.00%			696			TOTAL CONNECTED AMPS: 20.7							
												TOTAL EST. DEMAND: 7456							
												TOTAL EST. DEMAND AMPS: 20.7							
NOTES:																			

CONTROL EQUIPMENT SCHEDULE																	
NOTES: 1) EC SHALL PROVIDE ROUGH IN FOR ALL THERMOSTATS						*ALL COMB FVNR STARTERS SHALL HAVE HOA AND (2) N/O AUX CONTACTS. *SIZE FUSES PER MANUFACTURERS RECOMMENDATIONS IF OTHER THAN SPECIFIED.						SCHEDULE ABBREVIATIONS: NF = NON-FUSIBLE F = FUSIBLE (60A/2P = 60 AMP, 2 POLE FUSIBLE) COMB FVNR = COMBINATION FULL LOAD NON-REVERSING...				EC = ELECTRICAL CONTRACTOR TC = TEMPERATURE CONTROL CONTRACTOR CB = ENCLOSED CIRCUIT BREAKER	
UNIT	ITEMS BY OTHERS							ITEMS BY ELECTRICAL CONTRACTOR					CONTROL DEVICES	INSTALLED BY	FURNISHED BY	NOTES	
	DESCRIPTION	VOLTAGE	PHASE	FLA	MCA	VA	HP	STARTER	DISCONNECT								
								DESCRIPTION	DESCRIPTION	NEMA ENCLOSURE	MOCP						
HP-2	HEAT PUMP	277 V	1	11 A	12.7A	3,019.3	1/2	INTEGRAL TO UNIT	MANUFACTURER PROVIDED	-	-	-	TSTAT	TC	TC	1	

ALTERNATE 2 - CONTROL EQUIPMENT SCHEDULE																	
NOTES: 1) NONE								*ALL COMB FVNR STARTERS SHALL HAVE HOA AND (2) N/O AUX CONTACTS. *SIZE FUSES PER MANUFACTURERS RECOMMENDATIONS IF OTHER THAN SPECIFIED.				SCHEDULE ABBREVIATIONS: NF = NON-FUSIBLE F = FUSIBLE (60A/2P = 60 AMP, 2 POLE FUSIBLE) COMB FVNR = COMBINATION FULL LOAD NON-REVERSING...				EC = ELECTRICAL CONTRACTOR TC = TEMPERATURE CONTROL CONTRACTOR CB = ENCLOSED CIRCUIT BREAKER	
UNIT	ITEMS BY OTHERS							ITEMS BY ELECTRICAL CONTRACTOR					CONTROL DEVICES	INSTALLED BY	FURNISHED BY	NOTES	
	DESCRIPTION	VOLTAGE	PHASE	FLA	MCA	VA	HP	STARTER	DISCONNECT								
								DESCRIPTION	DESCRIPTION	NEMA ENCLOSURE	MOCP						
CP-1	CONDENSATE PUMP	120 V	1	6 A	7.25A	696	1/5	INTEGRAL TO UNIT	CORD AND PLUG		5-20R	20A	NONE				
H-1	HUMIDIFIER	208 V	1	13 A	15A	2,600		INTEGRAL TO UNIT	30A2P - FUSED		1	20A					



ELECTRICAL SPECIFICATIONS DIVISION 26 - ELECTRICAL SCOPE The provisions, terms and requirements of Division 1 and 2, the applicable Drawings and Technical Specifications herein shall apply to work under this Division. This Work consists of, but is not necessarily limited to, the furnishing of all labor, equipment, appliances and materials and the performance of all operations in connection with the installation of all electrical work completed, in strict accordance with Specifications and/or Drawings, applicable codes, including incidental materials necessary and required for their completion. "PROVIDE" = Furnished and installed complete. "OR EQUAL" = Or equal as approved to quote by Engineer, 10 days prior to Bid via addendum. 260000 - COMMON WORK RESULTS A. Intent of Drawings: Drawings are partly diagrammatic and do not show exact location of conduit unless specifically dimensioned. B. Workmanship: 1. Work shall be accomplished by workmen skilled in particular trade, in conformance with best practices and accepted standards. 2. Work shall contribute to efficiency of operation, accessibility, maintenance and appearance. No part of installation shall interfere with operation of any other system or part of building. 3. Non-satisfactory work shall be corrected at no additional expense to Owner. C. Responsibility: 1. The Electrical Contractor is responsible for installation of satisfactory and complete work in accordance with the intent of Drawings and Specifications. Provide, at no extra cost, incidental items required for completion of work even though not specifically mentioned or indicated in Specifications or on Drawings. 2. If, at any time, and in any case, change in location of conduit, outlets, fixtures, switches, panels, electrical equipment or associated components, etc., becomes necessary due to obstacles or installation of other trades, such required changes shall be made by Contractor at no extra cost. 3. Conflicts discovered during construction shall be immediately called to the attention of the Engineer for decision. Do not proceed with installation in area of question until conflict has been fully resolved. 4. Coordinate all electrical work with other trades to prevent unnecessary delays in the construction schedule. 5. Excavation and backfill required by electrical installations shall be accomplished in accordance with Division 2 by this Contractor. 6. Provide temporary electrical power and lighting for all trades that require service during the course of this Project. Provide temporary service and distribution as required. Comply with the NFPA 70 and OSHA requirements. (Energy costs by General Contractor.) D. Guarantee-Warranty: This Contractor shall and hereby does warrant and guarantee: 1. That all work executed under this Section will be free from defects of materials and workmanship for a period of one year from the date of final acceptance of this work. 2. The Contractor agrees to, at the Contractor's own expense, repair and replace all such defective materials and work and all other work damaged thereby which becomes defective during the term of warranty. Agreement does not include damages done by Owner. E. Permits, Tests, Codes and Standards: 1. Electrical Contractor to pay for all permits and fees in connection with this work. 2. WORK SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITIONS OF ADOPTED LOCAL, STATE AND NATIONAL CODES AND ORDINANCES, THE STATE FIRE MARSHAL, AND UTILITY COMPANY REGULATIONS. 3. Electrical work shall conform to National Electrical Codes, latest editions, as a minimum requirement. 4. All material to conform with applicable standards. F. Discrepancies: Prior to submitting Bid, Contractor shall refer any apparent discrepancies or omissions to engineer for clarification. G. Prior Approvals: All proposed substitutions shall be received by the Engineer 10 days prior to Bid. Priors received after 3 p.m. of the 10th day will be rejected. Supply technical data, photometrics and dimensional Drawings showing that substitutes are equal to product specified. H. Shop Drawing Submittals: 1. In addition to distribution requirements for submittals specified in Division 1 Section "Submittals," submit Electronic Drawings in pdf format for final and official approval through the General Contractor as listed below. Provide pdf bookmark tabs for each type and section. Provide separate pdf for each spec section; do not combine sections together unless they are 5 pages or less. If the Authority Having Jurisdiction requires Shop Drawings to have a Registered Engineers Stamp Affixed, this shall be the sole responsibility of the Contractor to acquire such stamp at Contractor's cost. Additional copies may be required by individual Sections of these Specifications. Copies of price list sheets are not acceptable. Manufacturer's name and address must appear on each sheet. All copies shall be legible. Shop Drawings shall include a completed specification sheet of all equipment along with fabrication, installation drawings, setting diagrams, schedules, patterns, templates and similar Drawings. Installation drawings for fire alarm shall be done with a computer cadd program and include no other system. A basic floor plan in pdf electronic format can be obtained through the General Contractor. Autocad .dwg format will not be available. I. Project Close-Out Record Documents: 1. Provide three full size sets, unless more are called for under Division 1 (one for Engineer and one for Owner). In addition to requirements called for under Division 1, indicate the following installed conditions: a. Actual location of all electrical service gear/feeders, panel/motor/special equipment feeders, all major underground or underslab conduits, all conduit stubs for future use, any change in branch circuitry from Drawings, key junction boxes and pull boxes not indicated on Drawings, any control locations or indicator lights not shown on Drawings. b. Addendum items, change order items and all changes made to Drawings from Bidding phase through to Project completion. c. Actual equipment and materials installed. Where manufacturer and catalog number are indicated on Drawings, generally or in fixture or equipment schedules, change to reflect actual products installed. d. Change service panel and branch panel breaker locations and schedules to reflect actual installed conditions. 2. Turn over to Owner all spare equipment and devices specified and shown. J. Project Close-out Maintenance Manuals: 1. Prepare 3 copies, unless more are called for under Division 1 (one for Engineer, two for Owner). In addition to requirements under Division 1, provide heavy duty, durable 3-ring vinyl covered loose-leaf binder for each manual sized to receive 8.5 inch by 11 inch paper. Provide a clear plastic sleeve on the spine to hold labels and pockets in the cover to receive folded sheets. In manual, include all Shop Drawings, installation/operation/maintenance data furnished with electrical equipment, voice/data test reports, and letters from manufacturer's representatives that the fire alarm, has been completed and tested to satisfy requirements/codes. List project name, date, and Contractor's name, address and telephone number. Include index sheet for each Specification Section indicating equipment, with supplier and supplier's telephone number. Provide tabbed dividers indicating major groupings of equipment. 2. Turn over to Owner all spare equipment and devices specified and shown. K. Supporting Equipment: 1. Unless otherwise indicated, fasten electrical items and their supporting hardware securely to the building structure, including conduits, raceways, cables, cable trays, busways, cabinets, panelboards, transformers, boxes, disconnect switches, and control components. Fasten by means of wood screws or screw-type nails on wood, toggle bolts on hollow masonry units, concrete inserts or expansion bolts on concrete or solid masonry, and machine screws, welded threaded studs, or spring-tension clamps on steel. Threaded studs driven by a power charge and provided with lock washers and nuts may be used instead of expansion bolts and machine or wood screws. Do not weld conduit, pipe straps, or items other than threaded studs to steel structures. In partitions of light steel construction, use sheet metal screws. All device boxes in sheetrock walls will be tight before, during and after installation of sheetrock. 2. Provide supports for electrical items in accordance with NFPA 70 and all other applicable codes. 3. Contractor responsible for providing watertight conduit penetrations at all watertight walls, floors roofs and membranes. Contractor also responsible to maintain fire rating of walls, floors, roofs and membranes penetrated. 4. When applicable, center within insulation any electrical conduit routed in attic space. Provide sealing as per NFPA 70 300-7 for all conduits exposed to different temperatures.	260000 - COMMON WORK RESULTS (continued) L. Electrical Identification: 1. Apply circuit/control/item designation labels of engraved plastic laminate for disconnect switches, breakers, pushbuttons, pilot lights, FA duct detection, motor starters, panelboards and main control panel and similar systems. 2. Identify all 120 VAC and 208 VAC power receptacle cover plates with panel and circuit number utilizing a clear label with black designations. Designation example: L1-38. 3. Identify underground exterior electrical circuits by installation of continuous underground plastic marker, 6 - 8 inches below grade. 260300 - REMODEL WORK A. The Contractor shall carefully examine the Drawings and Specifications, visit the project site, and make note of all existing conditions, dimensions and limitations prior to Bid and make allowances thereto. B. No Change Orders will be issued for Contractor's failure to visit site, remodel work necessary for a complete installation of systems shown, and due to Contractor's lack of understanding of amount or difficulty of work involved. C. The Contractor shall also notify all corporations, companies, individuals or local authorities owning, or having jurisdiction over existing utilities and services which interfere in any manner with the execution of the work under this Contract, and shall remove, relocate or protect such utilities or equipment as required by the parties having jurisdiction over same. D. If existing active or non-active services (which may not be shown on plans) are encountered that require relocation or disconnecting, the Electrical Contractor shall make written request for decision on proper handling of the services. The Electrical Contractor shall not proceed with the work until so authorized by the Architect. E. When areas of the existing buildings are adjacent to the area of construction in which work is going on and are occupied, then this Contractor shall arrange the work so as to reduce to a minimum the periods of interruption or outages in the various services. F. Not less than one week before any system is to be put out of service, the Contractor shall notify and coordinate with other trades and the Owner of such necessity including the extent of the work to be done during the outage, possible length of time required for that phase of the work, and the desired time at which the outage is to begin. G. Balance additional loads to existing circuitry between phases. Furnish a revised, typed panel directory on existing panelboards where loads have been added or changed on this project. H. Carefully lay out all work in advance to minimize cutting, channeling or drilling. Where necessary, all cutting and patching shall be done in a manner approved by the Architect. Do not endanger the stability of the structure. Restore any damaged surfaces to original conditions. Contractor at fault to assume all costs. I. Remove or relocate existing conduits, wires, equipment, devices or fixtures indicated on Drawings and as required by remodel operations. Where the reuse of existing conduits, wires, devices, or fixture is permitted, verify that wiring is continuous. Existing outlets or junction boxes shall not be rendered inaccessible by structural changes made to the building. J. Where existing walls are being turred out or refinished, extend existing outlets and devices to new surface as required. K. Existing equipment which is indicated as being removed and not indicated for re-use shall be disposed of unless stated otherwise. Light fixture ballasts may contain PCB's and shall be disposed of according to environmental regulations. 260519 - CONDUCTORS AND CABLES A. Submit Shop Drawings in accordance with the "Common Work Results" Section. B. Feeders: Copper THHN-THWN. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger. C. Branch Circuits: Copper THHN-THWN. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger. D. Multi-conductor Cable: Copper Type AC and Type MC with separate insulated ground wire. E. Aluminum conductors are not acceptable F. Conductor Insulation: Comply with NEMA WC-70 for types THHN-THWN. Utilize other types of insulation only where specifically noted or required by code for the installed condition. G. Tighten electrical connectors and terminals, including screws and bolts, in accordance with manufacturer's published torque tightening valves or as specified in UL Codes. H. Color code secondary service, feeder, and branch circuit conductors with factory applied color to match existing building color code. 260526 - GROUNDING AND BONDING A. Submit Shop Drawings in accordance with the "Common Work Results" Section. B. Install separate insulated equipment grounding conductors for feeder and branch circuits in compliance with NFPA 70 Article 250. 260533 - RACEWAYS AND BOXES A. Submit Shop Drawings in accordance with the "Common Work Results" section. B. Conduit Raceway: 1. Indoors, use the following, unless otherwise stated: a. Concealed: EMT or MC cable. b. Exposed: EMT, IMC or RMC. 2. Outdoors, use the following, unless otherwise stated: a. Concealed: RMC or IMC. b. Exposed: RMC or IMC. c. Underground: Schedule 40 PVC with Schedule 80 PVC fittings. d. Connection to Vibrating Equipment: Liquid tight flexible metal conduit. 3. ENT IS NOT ALLOWED. 4. Conceal conduit and cable, unless otherwise noted; conduit is permitted to be exposed in equipment rooms. All conduits shall have insulated ground wire installed. Do not install conduit embedded in slabs. EMT fittings shall be steel, compression or set screw type. All raceways shall be installed and supported in accordance with NFPA 70 and applicable codes. C. Outlet Boxes: 1. Conform to UL 514A, "Metallic Boxes, Electrical," and UL 514B, "Fittings for Conduit and Outlet Boxes." Outlet boxes shall be metallic and installed flush in all areas, except mechanical rooms, above lay-in ceilings, or as otherwise indicated. Minimum size to be 4 inches square by 2-1/8 inches deep. Boxes shall be of type, shape, size and depth to suit each location and application. All fittings shall be steel. D. Pull and Junction Boxes: 1. Comply with UL 50, "Electrical Cabinets and Boxes," for boxes over 100 cubic inches volume. Boxes shall have screwed or bolt-on covers, shall be suitable for the intended application and shall be labeled. E. All materials shall be UL listed, appropriate for intended application. Entire raceway system shall be in accordance with NFPA 70, ANSI, NEMA, UL, and all other applicable codes. 260923 - LIGHTING CONTROL DEVICES A. Submit Shop Drawings in accordance with the "Common Work Results" Section. Shop drawings shall include background floor plans with device layouts and wiring/wire types, and coverages to demonstrate how this system will function to meet the design intent and the energy code. B. Manufacturer: As scheduled on the drawings. C. Perform the following tests and inspections: 1. Operational Test: After installing time switches and sensors, and after electrical circuitry has been energized, start units to confirm proper unit operation. 2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment. D. Provide letter of verification that the system has been completed and successfully tested. Letter to be included in As-Built manuals.	262726 - WIRING DEVICES A. Submit Shop Drawings in accordance with the "Common Work Results" Section. B. Acceptable Manufacturers: Pass & Seymour, Bryant, GE, Hubbell, Leviton. C. Devices: 1. General light switches shall be 20 amp, 120/277 volt AC rated and Industrial Grade. 2. General receptacles shall be self-grounding 5-20R and Industrial Grade. Hospital Grade receptacles with led light indication shall be used for patient bed, critical care areas, emergency critical and emergency life safety. a. GFCI receptacles shall be 20 amp feed through type with two utilization points. Do not connect downstream devices to load side of GFCI. b. Tamper-Resistance receptacles shall comply with NFPA 70 tamper-resistant requirements. 3. Dimmers shall be as scheduled on the construction documents. 4. General device color shall be white. Emergency power device color shall be red only. D. Device Plates: 1. Device plates shall have opening for device intended and shall be Lexan. General device color shall be white. 2. All device plates shall have a clear label with the panel and circuit number designation in black. E. Weatherproof receptacle covers shall be a corrosion resistant die cast metal, minimum 3 inch deep, flip cover with latch and with pad locking provisions. 262816 - CIRCUIT AND MOTOR DISCONNECTS A. Submit Shop Drawings in accordance with the "Common Work Results for Electrical" Section. B. Manufacturer: Square D. C. Disconnects shall be heavy duty type with Class R rejection feature when required to be fusible. Voltage rating shall be at or greater than the application voltage. Provide NEMA 3R enclosure for exterior locations. Service switches shall be UL listed for use as service equipment. 262416 - PANELBOARDS A. Submit Shop Drawings in accordance with the "Common Work Results" Section. B. Manufacturer: Square-D. C. Load centers are not acceptable. D. Branch Panelboards shall have aluminum bus including neutral and ground bars. Breakers shall be bolt on type. Provide hinged front cover and hinged door (door in door) and feed through lugs. If indicated on the Panel Schedule, provide internal SPD with a 120 kA per phase surge rating and protect L-N, L-G and N-G modes; include status indicator. All panels shall be fully rated for the available AIC; series ratings are not allowed. E. Provide typed circuit schedules for existing panelboards where loads have changed and framed, typed circuit schedules for all new panelboards with identification of items controlled by each individual breaker. Indicate room numbers of items controlled or room name where appropriate for Owner's convenience. 262813 - OVER CURRENT PROTECTION DEVICES A. Submit Shop Drawings in accordance with the "Common Work Results" Section. B. Manufacturer: Bussman, Gould, Littlefuse or Brush. C. Fuses: 1. Motor or combination motor/branch circuit: UL listed RK-5. 2. Feeder Loads: UL listed RK-1. 3. Plug fuses shall be dual element Type S with adapter. 262816 - CIRCUIT AND MOTOR DISCONNECTS A. Submit Shop Drawings in accordance with the "Common Work Results for Electrical" Section. B. Manufacturer: Same as panelboard manufacturer. C. Disconnects shall be heavy duty type with Class R rejection feature when required to be fusible. Voltage rating shall be at or greater than the application voltage. Provide NEMA 3R enclosure for exterior locations. Service switches shall be UL listed for use as service equipment. DIVISION 27 - COMMUNICATIONS 270500 - TELE-DATA COMMUNICATIONS A. Submit Shop Drawings in accordance with DIVISION 01 requirements. B. Approved manufacturers: 1. Commscope C. Applicable Standards: 1. NFPA 70 – "National Electrical Code" 2. NECA 1-2015 – "Standard for Good Workmanship in Electrical Construction" 3. UL910 – "Standard for Safety Test for Flame-Propagation and Smoke-Density" 4. UL 969-2017 – "Standard for Marking and Labeling Systems" 5. TIA-569-D – "Telecommunications Pathways and Spaces" 6. TIA-568-D – "Telecommunications Structured Cabling Standards" 7. TIA-604 – "Fiber Optic Interchangeability Standard" 8. TIA-607-C – "Telecommunications Bonding and Grounding for Customers Premises" 9. TIA-526-14-B – "Optical Power Loss Measurements of Installed Multimode Fiber" 10. TIA-606-C – "Administration Standard for Telecommunications Infrastructure" D. Communications Rooms: Existing E. Voice/Data Workstation Rough-Ins: Provide 4 inch square, 2-1/8-inch deep 1-gang rough-in with 1-1/4" conduit stubbed to ceiling space with a 90 degree bend and insulated throat bushing, unless otherwise stated. F. Workstation Outlet Assemblies: Comply with UIT Standards with 760 series categor 6, Light Almond. See construction drawings for number of jacks. 1. Voice only Wall Jack Assemblies: Category 6, T568A terminated RJ45 module and blank module in a modular style faceplate. Comply with UIT Standards with 760 series categor 6, Light Almond. 2. Data only Wall Jack Assemblies: Category 6, T568A terminated RJ45 module and blank module in a modular style faceplate. Comply with UIT Standards with 760 series categor 6, Light Almond. 3. Combination Voice/Data Wall Jack Assemblies: Category 6, T568A terminated RJ45 modules and blank modules (minimum 2) in a modular style faceplate. Comply with UIT Standards with 760 series categor 6, Light Almond. G. Cables: 1. Horizontal Workstation Cabling: Category 6 unshielded twisted pair (UTP) cable, color Gray. Plenum rated cable shall be used in spaces used for air handling. 2. Fiber Optic Backbone Cabling: Existing H. Racks: Existing I. Workstation Patch Panels: Existing J. Fiber Backbone Patch Panels: Existing 270500 - TELE-DATA COMMUNICATIONS (continued) K. Patch Cords (UTP): Provide 4 pair cables in appropriate lengths for each workstation patch panel port (used or unused), Category 6 rated and terminated with an RJ-45 plug at each end. Cables to be routed from workstation patch panels to telephone patch panel above or Owner's hub equipment below. Length shall be long enough to be routed from the workstation port through the front cable manager, through the side cable manager, through the front cable manager to the telephone patch port or Owner's hub port. Also, provide 6 foot, Category 6 rated patch cords for each workstation jack at the user end. L. Fiber Backbone Patch Cords: Existing M. Workstation Wiring Installation: 1. Install cable without damaging conductors or jacket. Do not bend cable to a smaller radius than minimum recommended by manufacturer. Do not exceed manufacturer's recommended pulling tensions. Pull cables simultaneously where more than one is being installed in the same raceway or at the same location. Use pulling compound or lubricant where necessary. Compound used must not damage conductor or insulation. Use pulling methods that will not damage cable or raceway, including fish tape, cable, rope, and wire-cable grips. 2. Wiring shall be a minimum of 48 inches from Transformers and motors >= 5 HP and minimum of 5 inches from light fixtures. 3. Wiring Support Methods a. UTP Wiring Method: Install wiring above accessible ceilings exposed and supported to structure with Erico Cable Cat or Bline 2-inch-wide J hooks, supported to structure every 30 inches to 60 inches to corridor cable tray. Install all other wiring in EMT conduit concealed. Conceal raceway except in unfinished spaces as indicated. 4. Wiring in Wire Closets and Cabinets: Install conductors parallel to and at right angles to walls. Bundle, lace, and train the conductors to terminal points with no excess. Use wire distribution spools at points where cables are fanned or conductors turned. Connect conductors that are terminated, spliced, or interrupted to terminal blocks. Label each terminal with designations approved in accordance with EIA/TIA Standards. 5. Conductor Terminations: Terminate conductors of cables on terminal blocks, patch panels and devices using tools recommended by manufacturer. N. Identification: 1. Comply with UIT standards. 2. Patch Panel Labeling: Existing 3. Rack Labeling: Existing 4. Communications Room: Existing 5. Cable Schedule/Map: Existing O. Field Quality Control: 1. Testing Agency: Provide a qualified NRTL, BICSI certified testing agency to perform tests and inspections. 2. Perform tests and inspections as follows: a. Visually inspect UTP and optical fiber cable jacket materials for NRTL certification markings. Inspect cabling terminations in communications equipment rooms for compliance with color-coding for pin assignments, and inspect cabling connections for compliance with TIA-568-D. b. Visually confirm Category 6, marking of outlets, cover plates, outlet/connectors, and patch panels. c. Visually inspect cable placement, cable termination, grounding and bonding, equipment and patch cords, and labeling of all components. d. UTP Performance Tests: Test for each outlet and multi-user outlet assembly. Perform the following tests in accordance with TIA-568-0-D. 3. Retesting: Correct deficiencies indicated by tests and completely retest work affected by such deficiencies. Verify that the total system meets the Specifications and complies with applicable standards. Contractor will be reimbursed for replacement of existing cable upon approval of engineer. Report of Tests and Inspections: Prepare a written record of inspections, tests, and detailed test results in the form of a test log. All tests (pass and failed) shall be submitted in native format of the tester being used. Retested links shall be identified as retest when corrected. Names of technicians performing tests shall be reported in the test report.
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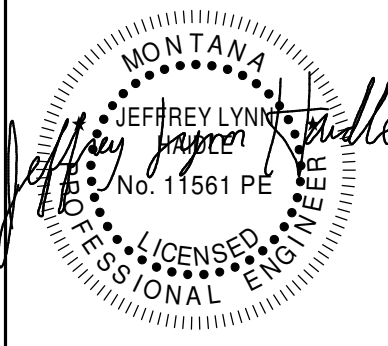
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MONTANA STATE UNIVERSITY
BOZEMAN, MONTANA
PHONE: 406.994.5413
FAX: 406.994.5665

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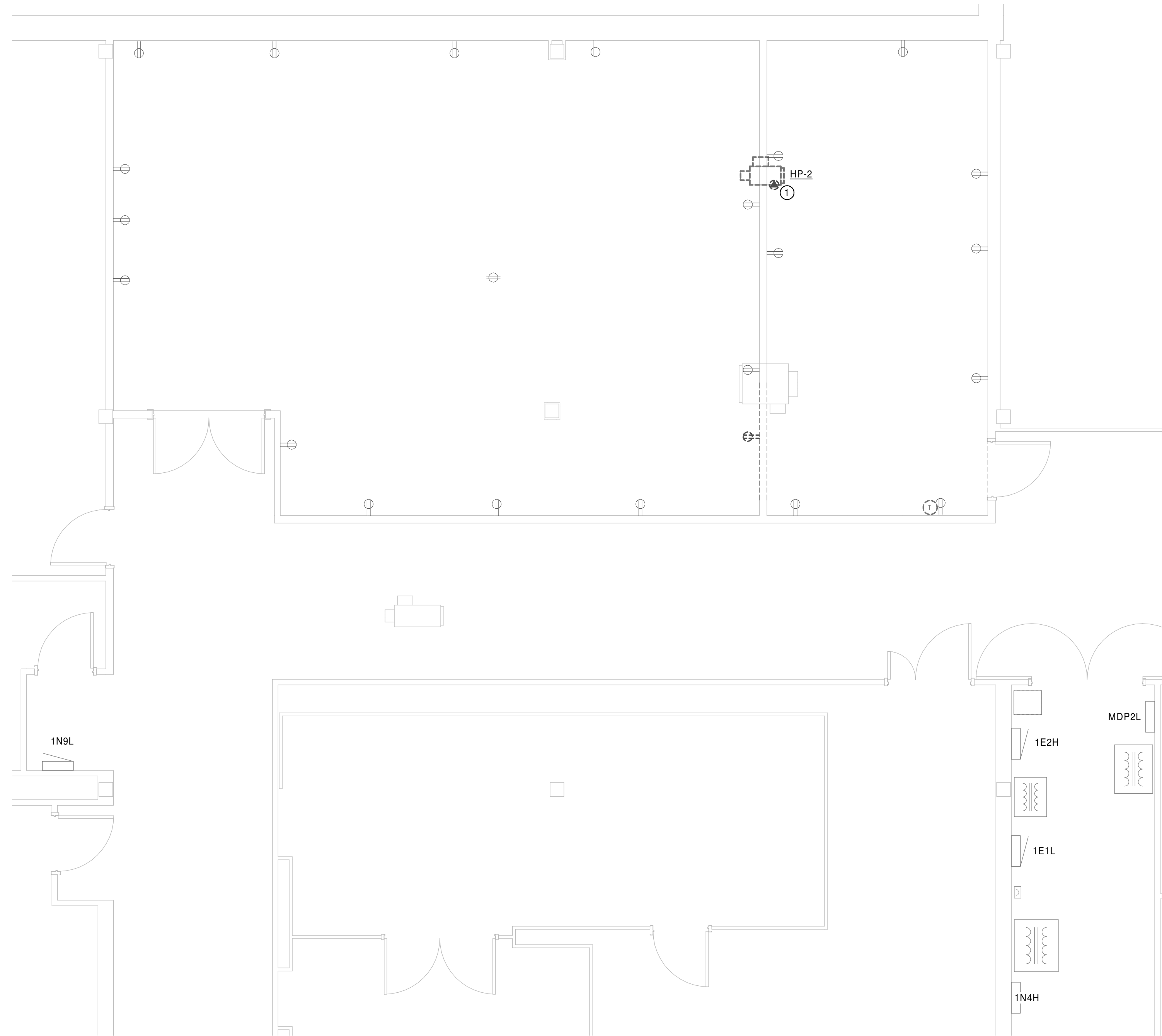


PPA# 25-1223

SHEET TITLE
ELECTRICAL
SPECIFICATIONS

SHEET
E003

DATE
07.15.2025



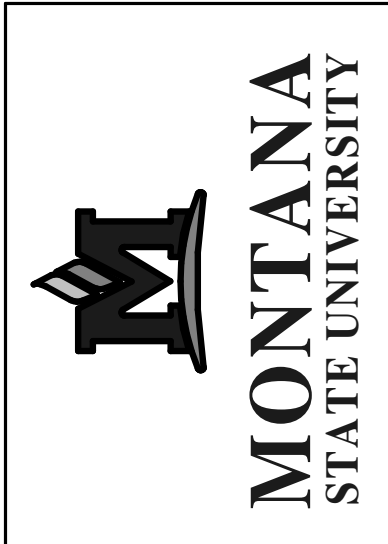
1 FIRST FLOOR DEMOLITION POWER PLAN
ED300 1/4" = 1'-0"

GENERAL DEMOLITION NOTES

- A. ELECTRICAL WORK IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. PATCHING AND PAINTING IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
- B. DISCONNECT ALL ELECTRICAL ITEMS WHICH ARE TO BE REMOVED AND/OR RELOCATED WHILE MAINTAINING CONTINUITY OF REMAINING CIRCUITRY.
- C. PROVIDE NEW CONDUCTORS, RACEWAYS, ETC., AS REQUIRED TO MAINTAIN OPERATION OF EXISTING OUTLETS, EQUIPMENT, ETC. WHICH REMAIN OR ARE RELOCATED.
- D. NO EXISTING WIRING MAY BE REUSED IN THE NEW ELECTRICAL WORK UNLESS OTHERWISE NOTED.
- E. ALL EXISTING CIRCUITS, CONDUIT AND WIRE THAT ARE NOT IN USE AFTER DEMOLITION IS COMPLETED SHALL BE REMOVED.
- F. EXISTING LIGHT FIXTURES WHICH ARE NOT REUSED SHALL BE DELIVERED TO THE OWNER.
- G. EXISTING CONDUITS IN THE FLOOR WHICH ARE NOT USED AND WHICH ARE ABANDONED SHALL BE TRIMMED TO FLOOR SURFACE, GROUND FLUSH AND FILLED WITH GROUT. FINISH FLOOR TO MATCH EXISTING.
- H. WORK SHALL BE PERFORMED WITH NO DISRUPTION OF THE OWNER'S BUSINESS. ALL ELECTRICAL POWER DISRUPTIONS SHALL BE SCHEDULED AND APPROVED BY THE OWNER.
- I. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH NEC, STATE AND LOCAL BUILDING CODE.
- J. ALL DASHED ITEMS ON DEMOLITION PLANS ARE TO BE REMOVED UNLESS NOTED OTHERWISE. SOLID ITEMS ARE TO REMAIN OR TO BE RELOCATED AS NOTED. NOTE - ITEMS SHOWN IN THE DEMOLITION PLANS ARE BASED ON FIELD OBSERVATIONS. ADDITIONAL ELECTRICAL ITEMS MAY BE ENCOUNTERED THAT ARE NOT SHOWN - ALL GENERAL ELECTRICAL ITEMS ARE TO BE REMOVED THAT ARE NOT SHOWN, BUT ARE IN AREAS OF COMPLETE REMODEL.

KEYNOTES

- 1. REMOVE CONNECTION TO EXISTING HEAT PUMP. RETAIN BRANCH CIRCUIT FOR REUSE IN NEW CONSTRUCTION.

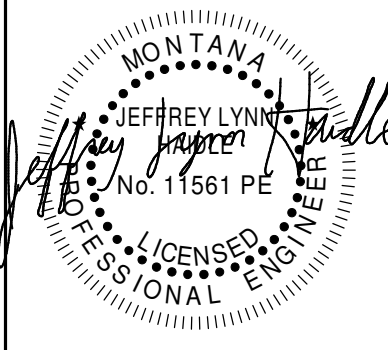


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BOZEMAN, MONTANA
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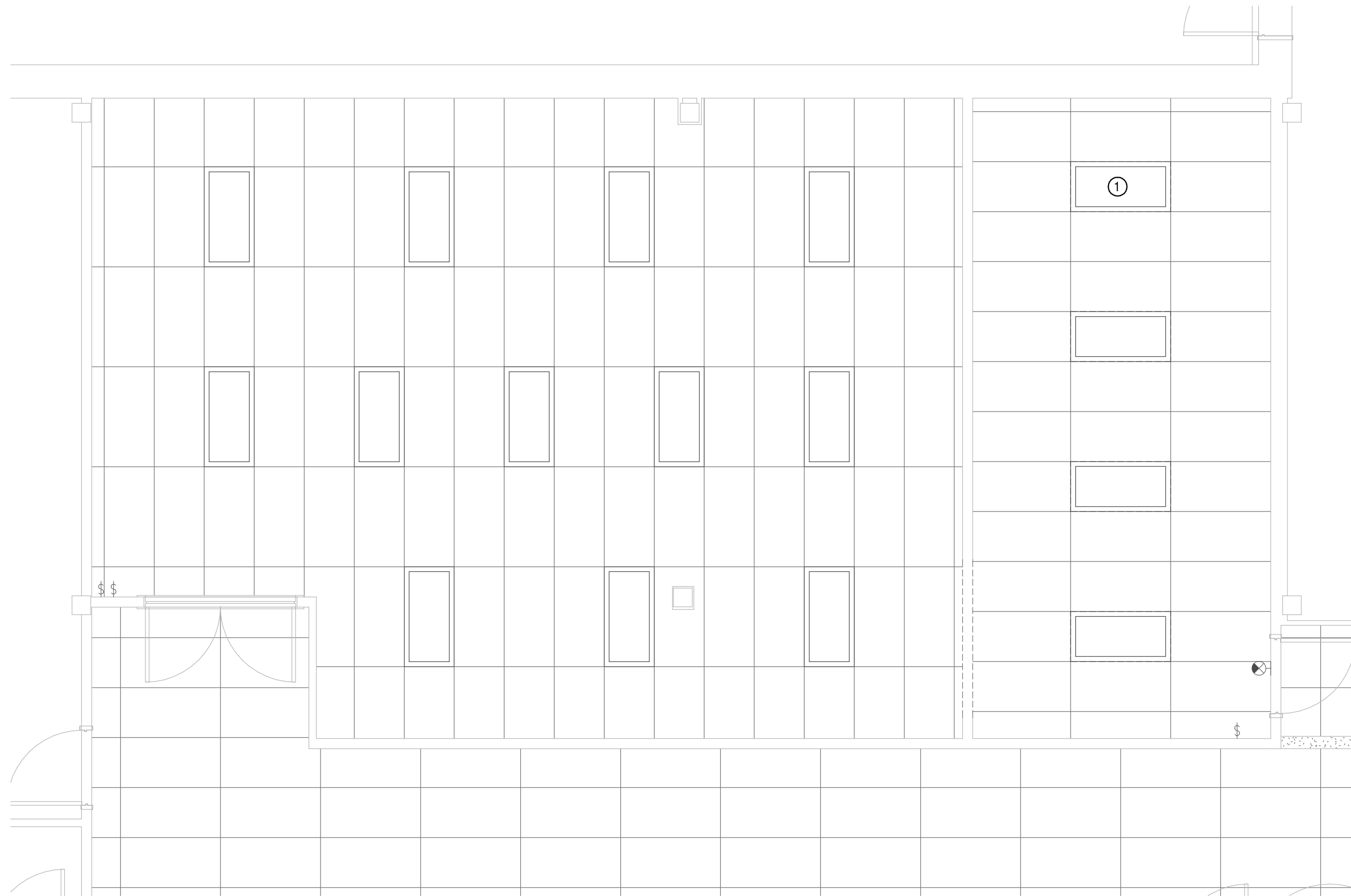
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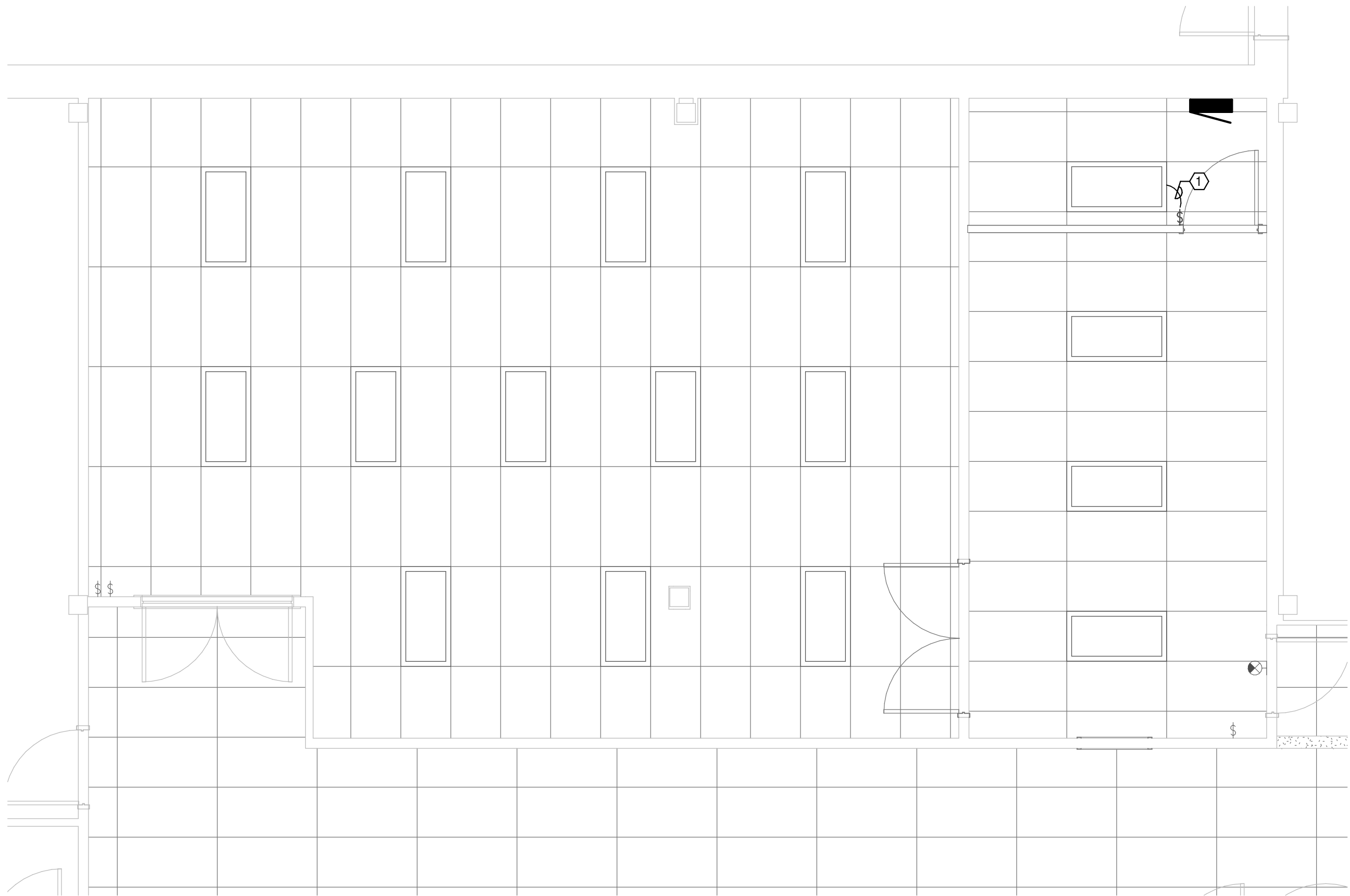
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PPA# 25-1223
SHEET TITLE
DEMOLITION
POWER PLANS
SHEET
ED300
DATE
07.15.2025



1 FIRST FLOOR DEMOLITION LIGHTING PLAN
E200 1/4" = 1'-0"



2 FIRST FLOOR REMODEL LIGHTING PLAN
E200 1/4" = 1'-0"

GENERAL DEMOLITION NOTES

- A. ELECTRICAL WORK IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. PATCHING AND PAINTING IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
- B. DISCONNECT ALL ELECTRICAL ITEMS WHICH ARE TO BE REMOVED AND/OR RELOCATED WHILE MAINTAINING CONTINUITY OF REMAINING CIRCUITRY.
- C. PROVIDE NEW CONDUCTORS, RACEWAYS, ETC., AS REQUIRED TO MAINTAIN OPERATION OF EXISTING OUTLETS, EQUIPMENT, ETC. WHICH REMAIN OR ARE RELOCATED.
- D. NO EXISTING WIRING MAY BE REUSED IN THE NEW ELECTRICAL WORK UNLESS OTHERWISE NOTED.
- E. ALL EXISTING CIRCUITS, CONDUIT AND WIRE THAT ARE NOT IN USE AFTER DEMOLITION IS COMPLETED SHALL BE REMOVED.
- F. EXISTING LIGHT FIXTURES WHICH ARE NOT REUSED SHALL BE DELIVERED TO THE OWNER.
- G. EXISTING CONDUITS IN THE FLOOR WHICH ARE NOT USED AND WHICH ARE ABANDONED SHALL BE TRIMMED TO FLOOR SURFACE, GROUND FLUSH AND FILLED WITH GROUT. FINISH FLOOR TO MATCH EXISTING.
- H. WORK SHALL BE PERFORMED WITH NO DISRUPTION OF THE OWNER'S BUSINESS. ALL ELECTRICAL POWER DISRUPTIONS SHALL BE SCHEDULED AND APPROVED BY THE OWNER.
- I. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH NEC, STATE AND LOCAL BUILDING CODE.
- J. ALL DASHED ITEMS ON DEMOLITION PLANS ARE TO BE REMOVED UNLESS NOTED OTHERWISE. SOLID ITEMS ARE TO REMAIN OR TO BE RELOCATED AS NOTED. NOTE - ITEMS SHOWN IN THE DEMOLITION PLANS ARE BASED ON FIELD OBSERVATIONS. ADDITIONAL ELECTRICAL ITEMS MAY BE ENCOUNTERED THAT ARE NOT SHOWN - ALL GENERAL ELECTRICAL ITEMS ARE TO BE REMOVED THAT ARE NOT SHOWN, BUT ARE IN AREAS OF COMPLETE REMODEL.

DEMOLITION KEYNOTES

- 1. REMOVE EXISTING FIXTURE FROM SWITCH CIRCUIT SHOWN IN ROOM. CONNECT TO NEW SWITCH SHOWN ON 2/E200.

GENERAL NOTES

- A. COMPLY WITH LATEST ADOPTED NEC AND APPLICABLE CODES/STANDARDS.
- B. SHARED NEUTRALS ARE NOT ALLOWED FOR SINGLE PHASE BRANCH CIRCUITS.

REMODEL KEYNOTES

- 1. CONNECT EXISTING FIXTURE TO NEW ON/OFF TOGGLE SWITCH.



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MONTANA STATE UNIVERSITY
BOZEMAN, MONTANA
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FAX: 406.994.5665

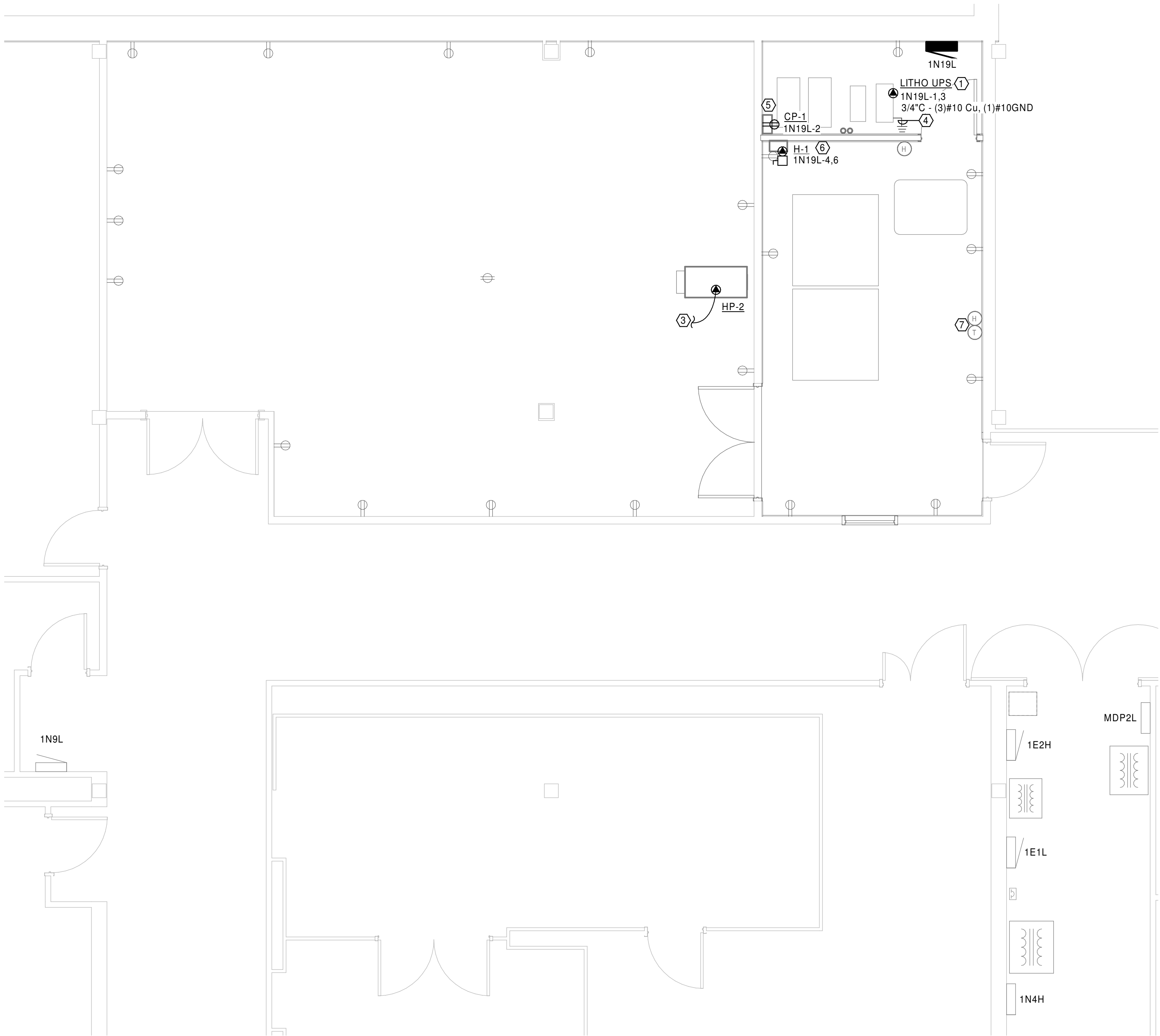
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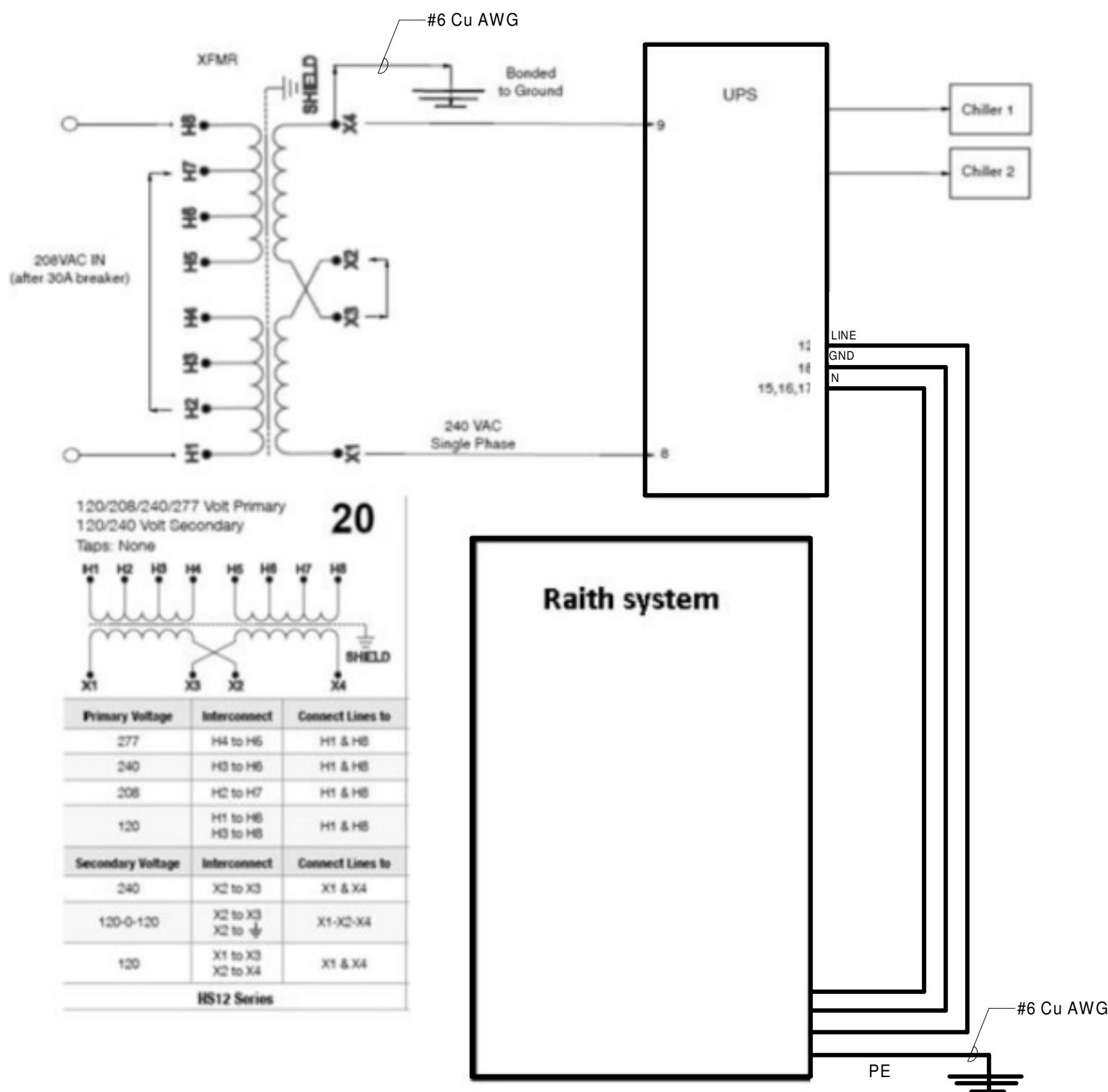
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PPA# 25-1223
SHEET TITLE
LIGHTING PLANS
SHEET
E200
DATE
07.15.2025



2 FIRST FLOOR REMODEL POWER PLAN
E300 1/4" = 1'-0"



1 RAITH WIRING SCHEMATIC
E300 NOT TO SCALE

GENERAL NOTES

- COMPLY WITH LATEST ADOPTED NEC AND APPLICABLE CODES/STANDARDS.
- SHARED NEUTRALS ARE NOT ALLOWED FOR SINGLE PHASE BRANCH CIRCUITS.

KEYNOTES

- PROVIDE CONNECTION TO UPS. CONNECT PER MANUFACTURERS SPECIFICATIONS.
- NOT USED.
- CONNECT TO EXISTING HEAT PUMP CIRCUIT MADE AVAILABLE DURING DEMOLITION. EXTEND BRANCH CIRCUIT AS NECESSARY.
- PROVIDE CONNECTION FROM NEW LITHOGRAPHY EQUIPMENT TO BUILDING STEEL. SEE 1/E300 FOR ADDITIONAL INFORMATION WIRING AND GROUNDING OF SYSTEM.
- ALTERNATE 2: PROVIDE ALTERNATE COST FO CP-1. RECEPTACLE SHALL SERVE CONDENSATE PUMP FOR HUMIDIFIER H-1. COORDINATE LOCATION OF RECEPTACLE WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH IN.
- ALTERNATE 2: PROVIDE ALTERNATE COST FOR HUMIDIER H-1. DISCONNECT AND ALL ASSOCIATED BRANCH CIRCUIT.
- EC SHALL PROVIDE ROUGH IN FOR THERMOSTAT. SEE 2/E001 FOR THERMOSTAT ROUGH IN DETAIL.

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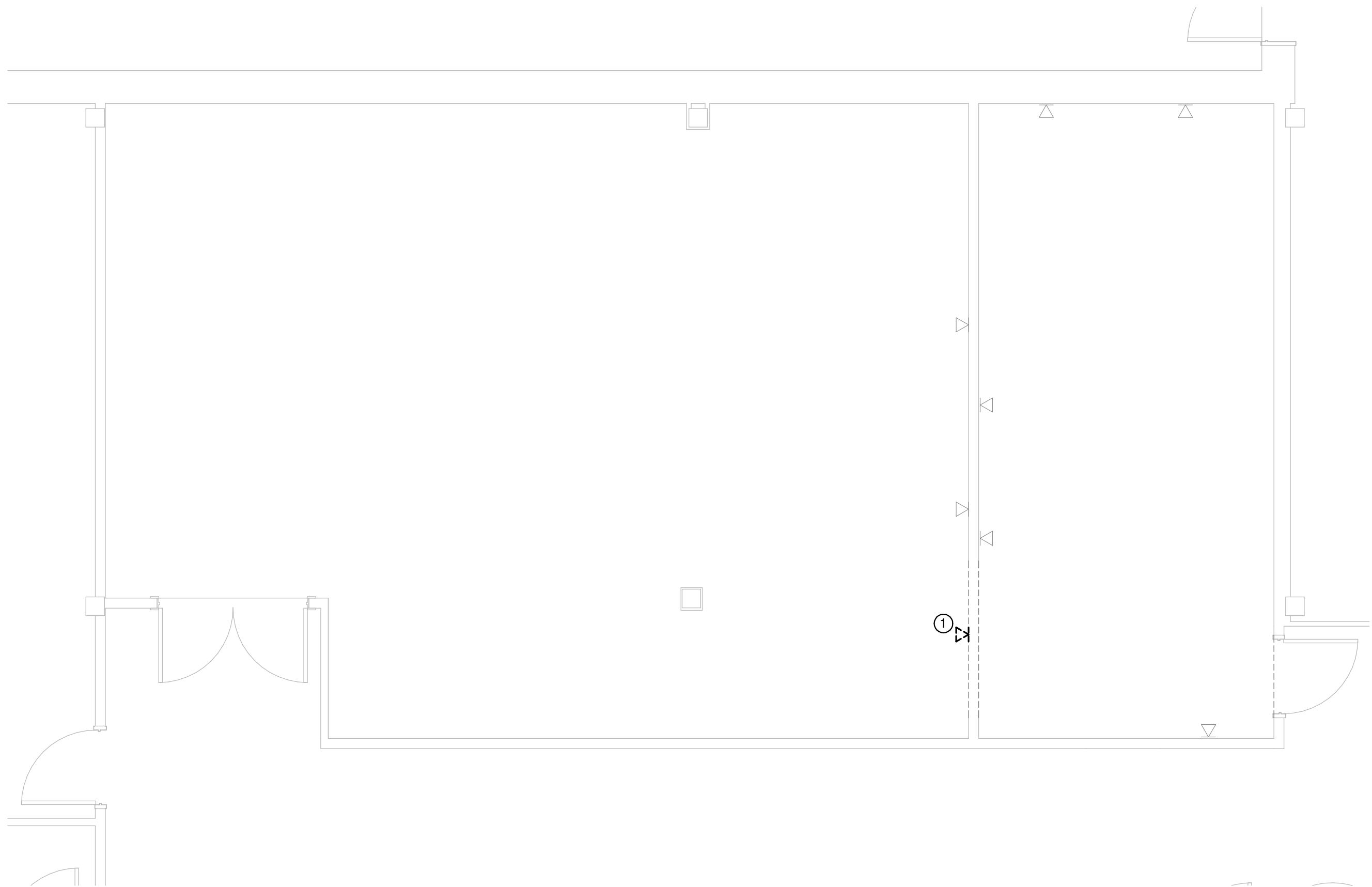
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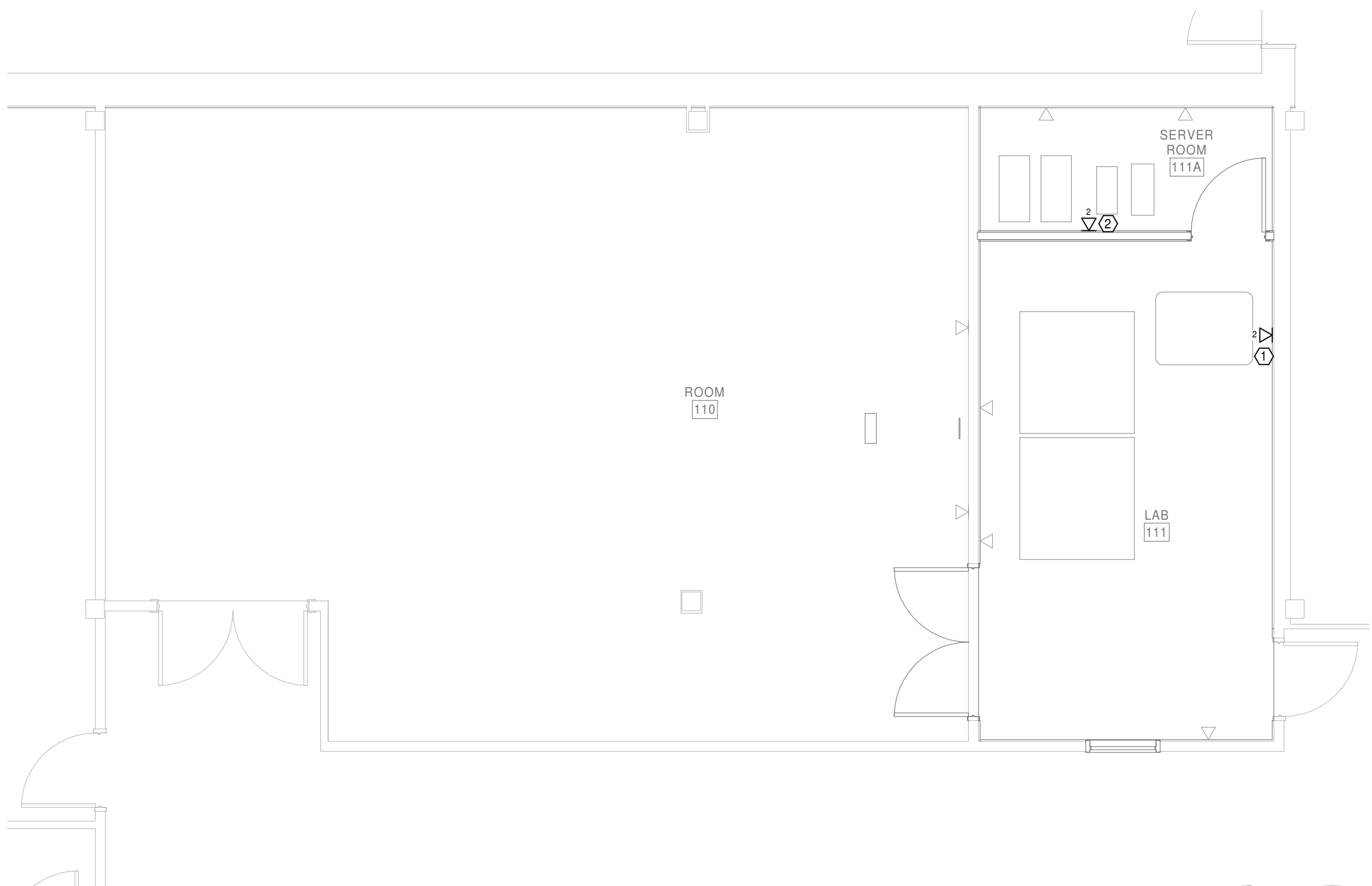
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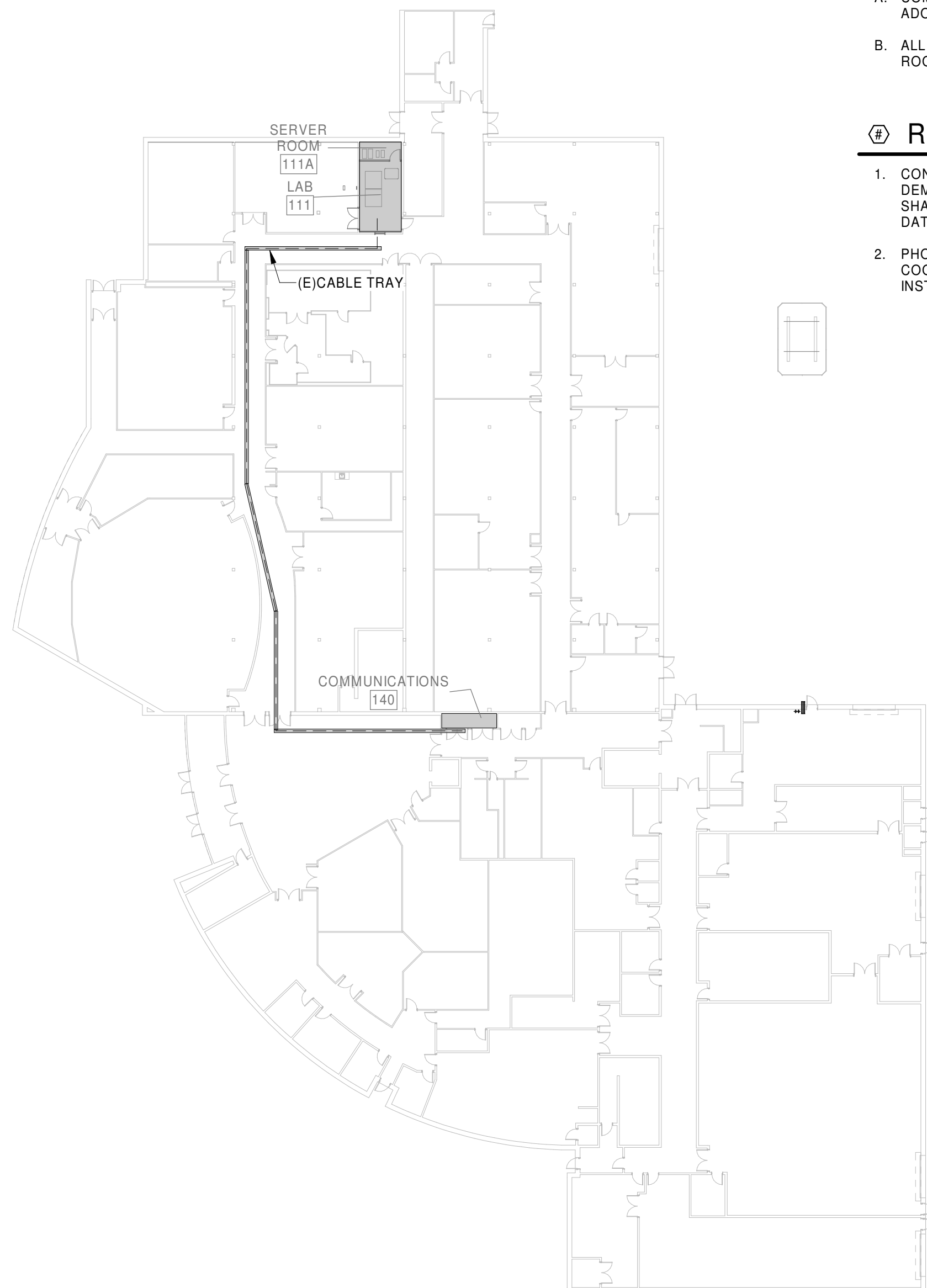
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1 FIRST FLOOR DEMOLITION SPECIAL SYSTEMS PLAN
E400 1/4" = 1'-0"



2 FIRST FLOOR REMODEL SPECIAL SYSTEMS PLAN
E400 1/4" = 1'-0"



5 DATA KEYPLAN
E400 1" = 30'-0"

GENERAL DEMOLITION NOTES

- ELECTRICAL WORK IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. PATCHING AND PAINTING IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
- DISCONNECT ALL ELECTRICAL ITEMS WHICH ARE TO BE REMOVED AND/OR RELOCATED WHILE MAINTAINING CONTINUITY OF REMAINING CIRCUITRY.
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- EXISTING LIGHT FIXTURES WHICH ARE NOT REUSED SHALL BE DELIVERED TO THE OWNER.
- EXISTING CONDUITS IN THE FLOOR WHICH ARE NOT USED AND WHICH ARE ABANDONED SHALL BE TRIMMED TO FLOOR SURFACE, GROUND FLUSH AND FILLED WITH GROUT. FINISH FLOOR TO MATCH EXISTING.
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- ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH NEC, STATE AND LOCAL BUILDING CODE.
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DEMOLITION KEYNOTES

- RETAIN EXISTING CATEGORY 6 CABLING FROM DATA OUTLET THAT IS REMOVED.

GENERAL NOTES

- COMPLY WITH LATEST ADOPTED NEC, NFPA 72 AND LATEST ADOPTED IBC/IFC.
- ALL NEW DATA SHALL BE CAT 6 ROUTED TO COMMUNICATIONS ROOM 140.

REMODEL KEYNOTES

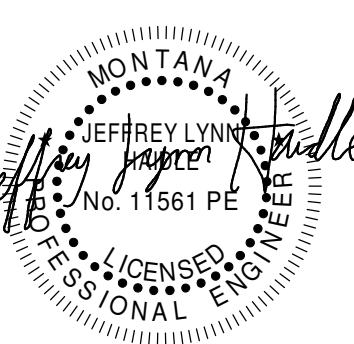
- CONTRACTOR SHALL USE EXISTING CATEGORY 6 CABLING RETAINED FROM DEMOLITION AND RE-ROUTE TO EXTENT POSSIBLE. ALL REUSED CABLING SHALL PASS CABLE TESTING. PROVIDE NEW CABLING BACK TO EXISTING DATA ROOM IF ANY CABLING FAILS TEST.
- PHONE LINE AND LAN CONNECTION FOR NEW LITHOGRAPHY MACHINE. COORDINATE EXACT LOCATION OF DATA OUTLET WITH EQUIPMENT INSTALLER BEFORE ROUGH IN.

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SYSTEMS PLANS

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E400

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