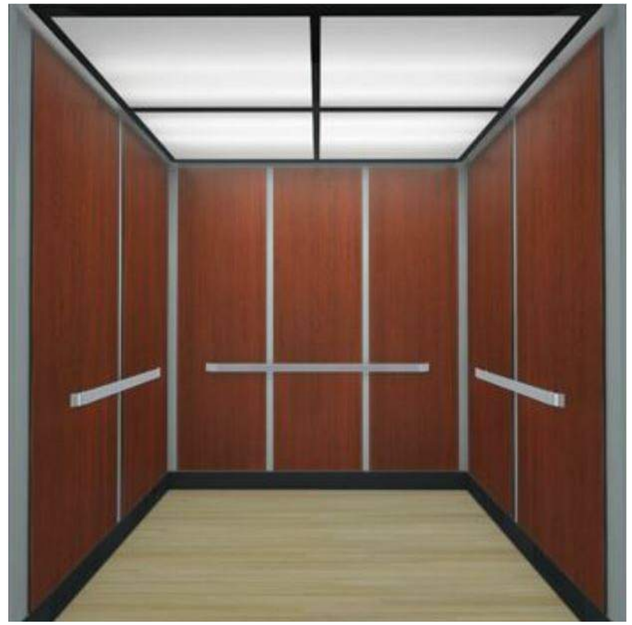
LEON JOHNSON HALL PASSENGER ELEVATORS COMPLIANCE UPGRADES

MONTANA STATE UNIVERSITY
BOZEMAN, MT



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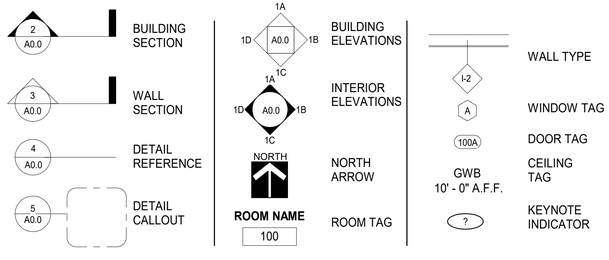
ABBREVIATIONS

A	A.F.F.	ABOVE FINISHED FLOOR
	AHU.	AIR HANDLING UNIT
	ALT.	ALTERNATE
	ALUM.	ALUMINUM
	AMP.	AMPERE
	APPROX.	APPROXIMATE
	APT.	APARTMENT
	ARCH.	ARCHITECT
B	B	BELOW FINISH FLOOR
	B.O.	BOTTOM OF
	BD.	BOARD
	BLDG.	BUILDING
	BM.	BEAM
	BOT.	BOTTOM
	BRG.	BEARING
	BSMT.	BASEMENT
	BTUH	BRITISH THERMAL UNIT PER HOUR
C	C.O.	CLEAN OUT
	CAP.	CAPACITY
	CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
	CFOI	CONTRACTOR FURNISHED, OWNER INSTALLED
	CL	CENTERLINE
	CLG.	CEILING
	CLO.	CLOSET
	CLR.	CLEAR
	CMU	CONCRETE MASONRY UNIT
	COL.	COLUMN
	CONC.	CONCRETE
	CONST.	CONSTRUCTION
	CONT.	CONTINUOUS
	CORR.	CORRIDOR
	CPT	CARPET
	CT	CERAMIC TILE
	CW	COLD WATER
D	D.S.	DOWNSPOUT
	DBL.	DOUBLE
	DEPT.	DEPARTMENT
	DF	DRINKING FOUNTAIN
	DIA.,D.	DIAMETER
	DIAG.	DIAGONAL
	DIM.	DIMENSION
	DISP.	DISPENSER
	DIST.	DISTANCE
	DN	DOWN
	DTL.	DETAIL
	DW	DISHWASHER
E	E	EAST
	EA.	EACH
	E.I.F.S.	EXTERIOR INSULATION FINISH SYSTEM
	E.J.	EXPANSION JOINT
	ELEC.	ELECTRICAL
	ELEV.	ELEVATION
	EMERG.	EMERGENCY
	EPDM	ETHYLENE PROPYLENE DIENEMONOMER
	EPS	EXTRUDED POLYSTYRENE
	EQ.	EQUAL
	EQUIP.	EQUIPMENT
	EXIST	EXISTING
	EXT.	EXTERIOR
F	F.C.O.	FLOOR CLEAN OUT
	FD	FLOOR DRAIN
	FE	FIRE EXTINGUISHER
	FEC	FIRE EXTINGUISHER CABINET
	F.F.E.	FINISH FLOOR ELEVATION
	FIN.	FINISH
	FLR.	FLOOR
	FLUOR.	FLUORESCENT
	FT.	FOOT, FEET
	FTG.	FOOTING
	FURN.	FURNACE, FURNITURE
G	GA.	GAUGE
	GALV.	GALVANIZED
	G.C.	GENERAL CONTRACTOR
	G.C.O.	GROUND CLEAN OUT
	G.D.	GARBAGE DISPOSAL
	GFI	GROUND FAULT INTERRUPTER
	GLU-LAM	GLUE LAMINATED WOOD
	GND	GROUND
	GPM	GALLONS PER MINUTE
	GWB.	GYPSUM WALL BOARD
	G.E.J.	GUTTER EXPANSION JOINT
H	HDWR.	HARDWARE
	HM	HOLLOW METAL
	HORIZ.	HORIZONTAL
	HR.	HOUR
	HT.	HEIGHT
	HVAC	HEATING, VENTILATING, & AIR CONDITIONING
	HW	HOT WATER
I	IN.	INCHES
	INFO.	INFORMATION
	INST.	INSTALLATION
	INSUL.	INSULATION
	INT.	INTERIOR
J	JAN.	JANITOR
	JST	JOIST
	JT.	JOINT
K	K.O.	KNOCK OUT
	KIP	1000 POUNDS
	KIT.	KITCHEN
L	LAB.	LABORATORY
	LAM.	LAMINATED
	LBS.	POUNDS
	LH	LEFT HAND
M	MACH.	MACHINE
	MAINT.	MAINTENANCE
	MATL	MATERIAL
	MAX.	MAXIMUM
	MECH.	MECHANICAL
	MEZZ.	MEZZANINE
	MFR.	MANUFACTURER
	MIN.	MINIMUM
	MIR.	MIRROR
	MISC.	MISCELANEOUS
	MTL	METAL
N	N	NORTH
	N.I.C.	NOT IN CONTRACT
	N.T.S.	NOT TO SCALE
	NO.,#	NUMBER
O	O.C.	ON CENTER
	OFOI	OWNER FURNISHED, OWNER INSTALLED
	OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
	OFF.	OFFICE
	OPNG	OPENING
	OSB	ORIENTED STRAND BOARD
	OZ.	OUNCE
P	P.C.	PRECAST
	PART.	PARTITION
	PERP.	PERPENDICULAR
	PLAM	PLASTIC LAMINATE
	PLAS.	PLASTIC
	PLY	PLYWOOD
	PR.	PAIR
	PREFAB	PREFABRICATED
	PSF	POUNDS PER SQUARE FOOT
	PSI	POUNDS PER SQUARE INCH
	PT	PAINT
	PTD	PAPER TOWEL DISPENSER
Q	QT	QUARRY TILE
R	R.	RADIUS
	R.C.P.	REFLECTED CEILING PLAN
	R.O.	ROUGH OPENING
	R.O.W.	RIGHT OF WAY
	RD	ROOF DRAIN
	REBAR.	REINFORCING BAR
	RECEPT.	RECEPTION
	REFL.	REFLECTED
	REG	REGISTERED
	REINF.	REINFORCED
	REQ'D	REQUIRED
	REV.	REVISION
	RF	REFRIGERATOR
	RH	RIGHT HAND
	RM	ROOM
	RR	RESTROOM
S	S.	SEALED
	S.	SOUTH
	SAN.	SANITARY
	SC	SOLIDCORE
	SCHED	SCHEDULE
	SD	SOAP DISPENSER
	SEC.	SECOND
	SECT.	SECTION
	SHT	SHEET
	SHTG	SHEETING
	SPEC.	SPECIFICATION
	SQ.	SQUARE
	SS	STAINLESS STEEL
	STC	SOUND TRANSMISSION LEVEL
	STL	STEEL
	STRUCT.	STRUCTURAL
	SURF.	SURFACE
	SUSP.	SUSPENDED
	SVF	SHEET VINYL FLOORING
T	T&B	TOP & BOTTOM
	T&G	TONGUE & GROOVE
	TEL.	TELEPHONE
	TEMP.	TEMPORARY
	TER	TERRAZZO
	T.F.E.	TOP OF FOOTING ELEVATION
	T.O.	TOP OF FOOTING
	TPD	TOILET PAPER DISPENSER
	TV	TELEVISION
	TYP.	TYPICAL
U	U.L.	UNDERWRITER'S LABORATORY
	UNFIN.	UNFINISHED
	UNO	UNLESS NOTED OTHERWISE
	UTIL.	UTILITY
V	VAR.	VARIES
	VB	VINYLBASE
	VCT	VINYL COMPOSITION TILE
	VERT.	VERTICAL
	VEST.	VESTIBULE
W	W	WEST
	W/	WITH
	W/O	WITH OUT
	WC	WATER CLOSET
	WD	WOOD
	WH	WATER HEATER
	WT.	WEIGHT
	W.W.F.	WELDED WIRE FABRIC

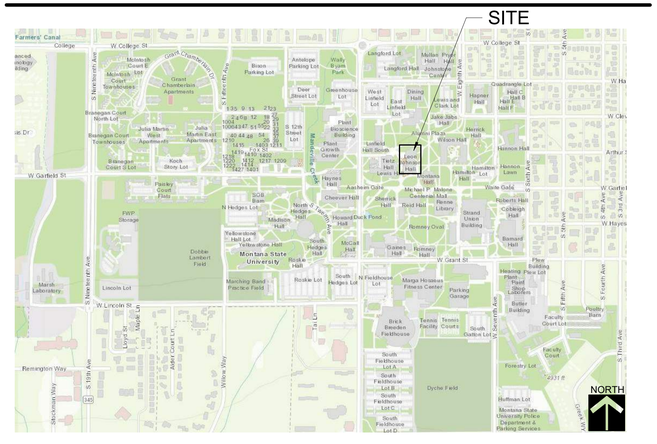
PROJECT SPECIFIC NOTES

1. THE DOCUMENTS CONSIST OF THESE DRAWINGS AND SPECIFICATIONS MANUAL EXCLUSIVELY.
2. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NEW MATERIALS (U.N.O.) AND QUALIFIED CRAFTS PERSONS TO COMPLETE THE WORK.
3. DOCUMENTS SHOW THE DESIGN INTENT OF THE PROJECT AND MAY NOT SHOW MINOR DETAILS OF PROPOSED INSTALLATIONS. THE INCLUSION OF THESE MINOR DETAILS IS IMPLIED TO PROVIDE A COMPLETE PROJECT AND ARE TO BE INCLUDED AS PART OF THE BID.
4. IT IS THE GENERAL CONTRACTORS RESPONSIBILITY TO INSPECT THE SITE AND EXISTING CONDITIONS PRIOR TO PROCEEDING WITH EACH INSTALLATION OF PART OF THE WORK. DISCREPANCIES MUST BE REPORTED TO THE ARCHITECT PRIOR TO PROCEEDING.
5. THE GENERAL CONTRACTOR IS TO COORDINATE THE INSTALLATION OF MATERIALS AND WORK OF OTHERS WHO ARE NOT SUB-CONTRACTORS TO THE G.C., YET ARE REQUIRED TO PROVIDE A COMPLETE PROJECT. AREAS OF WORK REQUIRING COORDINATION INCLUDE BUT ARE NOT LIMITED TO THOSE INDICATED AS N.I.C. IN THE CONSTRUCTION DOCUMENTS.
6. DIMENSIONS ARE SHOWN ON THE DRAWINGS. DO NOT SCALE THE DRAWINGS.
7. ALL DIMENSIONS ARE DETERMINED AS FOLLOWS: EXISTING CONSTRUCTION: FACE OF EXISTING WALL MATERIAL. SIPS PANELS: OUTSIDE FACE OF OSB. NEW CONSTRUCTION: FACE OF STUD.
8. ALL HEIGHTS ARE DIMENSIONAL FROM THE TOP OF FINISHED FLOOR (A.F.F.) UNLESS NOTED OTHERWISE.
9. ALL SHOP DRAWINGS DIMENSIONS TO BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR.
10. IN THE CASE OF CONTRADICTIONS, ASSUME THE MORE COSTLY APPROACH FOR BIDDING PURPOSES. BRING ALL CONTRADICTIONS TO THE ATTENTION OF THE ARCHITECT.
11. WHERE CONDITION OF FINISH ARISES THAT NO DETAIL OR NOTE COVERS, MATCH DETAIL TO EXISTING SITUATION OF SIMILAR CONDITION
12. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE REPAIR AND REFINISHING OF ALL HOLES OR DAMAGE ENCOUNTERED IN WORK AS A RESULT OF NECESSARY CUTTING, PATCHING, OR DEMOLITION BY ALL TRADES PERFORMING WORK.
13. GENERAL CONTRACTOR TO PROVIDE ALL REQUIRED BLOCKING, ANCHORAGES FOR ACCESSORIES, MILLWORK, GRAB BARS, MECHANICAL AND ELECTRICAL ITEMS.
14. WHERE COLUMNS AND STUD WALLS ALIGN, GYPSUM BOARD TO BE CONTINUOUS OVER COLUMNS.
15. SEAL ALL PENETRATIONS IN FLOORS, WALLS AND ROOF TIGHT AROUND DUCTS, PIPES, VENTS, SOIL-PIPES, TRAPS, ETC. CONTRACTOR TO COORDINATE.
16. ALL MECHANICAL AND ELECTRICAL LINES TO BE INSTALLED TIGHT TO STRUCTURE WHERE POSSIBLE IN ALL INSTANCES.
17. IN PAINTED OR FINISHED ROOMS, ALL HORIZONTAL AND VERTICAL PIPING AND CONDUITS SHALL BE FURRED TO MATCH ROOM FINISH AS INDICATED. WHEN DUCT WORK, PIPES, MECHANICAL UNITS, JUNCTION BOXES AND CONDUIT ARE EXPOSED IN PAINTED ROOMS, PAINT TO MATCH ADJACENT FINISH.

GRAPHIC SYMBOLS



VICINITY MAP



INDEX OF DRAWINGS

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MONTANA STATE UNIVERSITY

LEON JOHNSON HALL
PASSENGER ELEVATORS
COMPLIANCE UPGRADES

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DRAWN BY: KAA
REVIEWED BY: SWC

REV.	DESCRIPTION	DATE

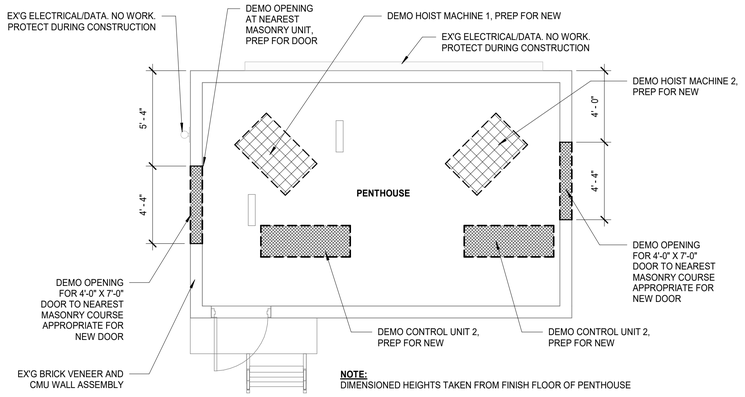
LICENSED ARCHITECT
SCOTT W. CROMWELL
NO. 2551
HELENA, MT
05-10-19
STATE OF MONTANA

PPA#18-2067

SHEET TITLE
COVER SHEET

SHEET
G0.1

DATE
05/20/2019



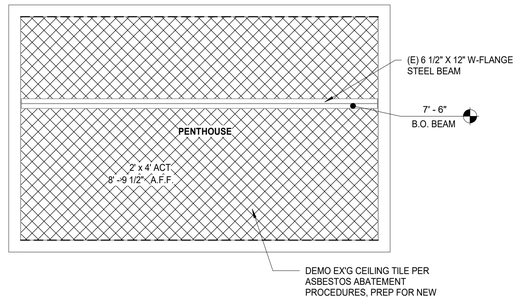
NOTE:
DIMENSIONED HEIGHTS TAKEN FROM FINISH FLOOR OF PENTHOUSE

ELEVATOR CABS TO REMAIN AND RECEIVE NEW FINISHES

CONCRETE FLOOR TO BE PATCHED AND REPAIRD AS REQUIRED

NORTH

1 DEMOLITION PENTHOUSE PLAN
1/4" = 1'-0"



NOTE:
DIMENSIONED HEIGHTS TAKEN FROM FINISH FLOOR OF PENTHOUSE

ELEVATOR CABS TO REMAIN AND RECEIVE NEW FINISHES

2 DEMOLITION PENTHOUSE REFLECTED CEILING PLAN
1/4" = 1'-0"

GENERAL DEMOLITION NOTES

1. SEE SPECIFICATIONS FOR A DETAILED SCHEDULE OF SELECTIVE DEMOLITION ITEMS.
2. ALL EQUIPMENT, FURNITURE, ETC. LEFT IN AREAS WHERE DEMOLITION IS TO COMMENCE IS TO BE COORDINATED WITH OWNER, PRIOR TO REMOVING FROM THE PREMISES.
3. PROTECT ALL ITEMS/ELEMENTS NOT SPECIFIED AS BEING DEMO'D, AND PATCH AND REPAIR ALL DAMAGED ITEMS/ELEMENTS TO REMAIN.
4. PATCH AND INFILL ALL MECHANICAL, ELECTRICAL & PLUMBING WORK THAT ARE OUTLINED IN THEIR SHEETS, EVEN IF NOT CALLED OUT IN THE ARCHITECTURAL SHEETS.
5. THE CONTRACTOR SHALL PROVIDE ALL DEMOLITION INCIDENTAL TO OR REQUIRED FOR NEW AND RENOVATION CONSTRUCTION WHETHER OR NOT IT IS SPECIFICALLY NOTED, INCLUDING, BUT NOT LIMITED TO, ALL OTHER WORK THAT MIGHT REASONABLY BE REQUIRED TO BE REMOVED IN PREPARATION FOR SPECIFIED FINISHES. DEMOLITION SHALL BE PERFORMED IN A MANNER THAT WILL NOT DAMAGE ANY ITEMS OR SURFACES INDICATED TO REMAIN. ITEMS OR SURFACES SHALL BE PATCHED IF NECESSARY TO PROVIDE A SUITABLE SUB-STRATA FOR NEW FINISHES.
6. PRIOR TO BIDDING, THE CONTRACTOR SHALL VISIT THE FACILITY AND THOROUGHLY FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS.
7. THE CONTRACTOR SHALL MAINTAIN AND ADHERE TO ALL CURRENT LIFE-SAFETY AND INTERIM LIFE-SAFETY RULES AND REGULATIONS THROUGHOUT THE CONSTRUCTION OF THIS PROJECT.

SYMBOL LEGEND

EXISTING CEILING/FLOOR IS TO BE DEMOLISHED, FIELD VERIFY TYPES AND CONDITIONS

EXISTING WALL/ITEM/ELEMENT TO BE DEMOLISHED, FIELD VERIFY TYPES AND CONDITIONS

EXISTING WALL/ITEM/ELEMENT TO REMAIN AND BE PROTECTED, FIELD VERIFY TYPES AND CONDITIONS

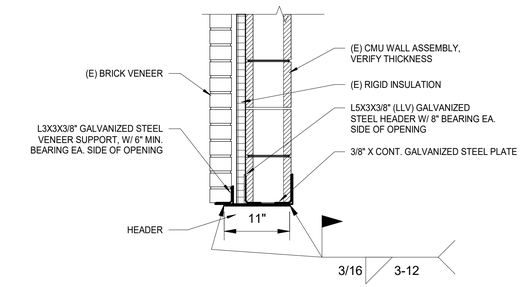
GENERAL NOTES

1. THE INTENT OF THE DRAWINGS IS TO PROVIDE INFORMATION FOR CONSTRUCTION. IT IS IMPORTANT FOR THE CONTRACTOR TO VERIFY FIELD DIMENSIONS AND CONDITIONS BEFORE EXECUTION OF THE WORK. CONTACT THE ARCHITECT SHOULD DISCREPANCIES EXIST.
2. CONTRACTOR AND SUBCONTRACTORS SHALL PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT TO COMPLETE ALL WORK SHOWN ON PLANS, CALLED FOR IN SPECIFICATION, OR REASONABLY IMPLIED FOR A COMPLETE INSTALLATION EVEN THOUGH NEITHER SHOWN ON PLANS OR CALLED OUT IN SPECIFICATIONS.
3. ALL NEW WALLS ARE TO EXTEND TO DECK, UNLESS OTHERWISE NOTED.
4. WHERE FLOOR IS TRANSITIONING TO A DIFFERENT MATERIAL, INSTALL A TRANSITION STRIP.
5. DIMENSIONS ARE FROM FACE OF EXISTING WALL FINISH, OR FACE OF NEW STUD UNLESS OTHERWISE NOTES.
6. DEBRIS SHALL BE PROMPTLY REMOVED FROM THE BUILDING AND THE SITE AND DISPOSED OF IN A LEGAL MANNER. SURFACES IN THE CONSTRUCTION AREA SHALL BE MAINTAINED IN A BROOM CLEAN CONDITION AT THE END OF EACH WORK DAY.
7. THE CONTRACTOR SHALL PROVIDE ALL DEMOLITION INCIDENTAL TO OR REQUIRED FOR NEW AND RENOVATION CONSTRUCTION WHETHER OR NOT IT IS SPECIFICALLY NOTED, INCLUDING, BUT NOT LIMITED TO, ALL OTHER WORK THAT MIGHT REASONABLY BE REQUIRED TO BE REMOVED IN PREPARATION FOR SPECIFIED FINISHES. DEMOLITION SHALL BE PERFORMED IN A MANNER THAT WILL NOT DAMAGE ANY ITEMS OR SURFACES INDICATED TO REMAIN. ITEMS OR SURFACES SHALL BE PATCHED IF NECESSARY TO PROVIDE A SUITABLE SUB-STRATA FOR NEW FINISHES.

SYMBOL LEGEND

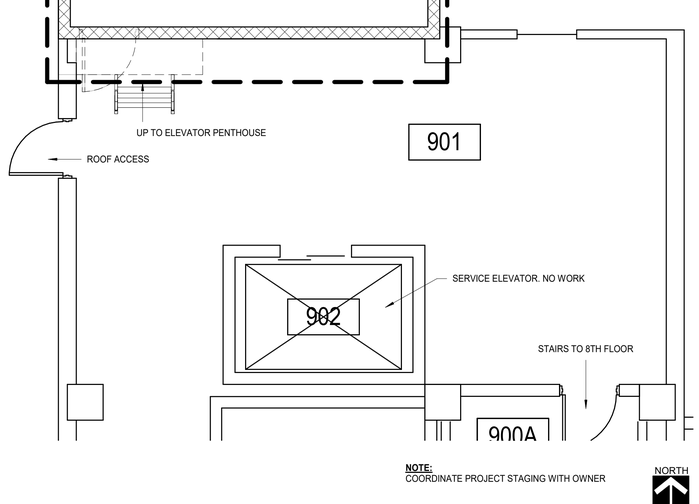
NEW WALL/ITEM/ELEMENT TO BE CONSTRUCTED, FIELD VERIFY TYPES AND CONDITIONS

EXISTING WALL/ITEM/ELEMENT TO REMAIN AND BE PROTECTED, FIELD VERIFY TYPES AND CONDITIONS



NOTE 1. CONSTRUCTION SEQUENCE: SAW CUT HORIZONTALLY TO ALLOW ANGLE TO BE INSERTED INTO CMU WALL PRIOR TO REMOVING ANY MASONRY. INSERT ANGLE ON EACH SIDE OF OPENING (ENSURE 8" MIN BEARING PROVIDED AT EACH SIDE OF OPENING) PRIOR TO REMOVING MASONRY. ONCE STEEL SUPPORT ANGLES ARE INSTALLED, REMOVE MASONRY TO EXTENTS AS INDICATED. INSERT CONTINUOUS PLATE BELOW AND PROVIDE STITCH WELDING PER DETAIL.

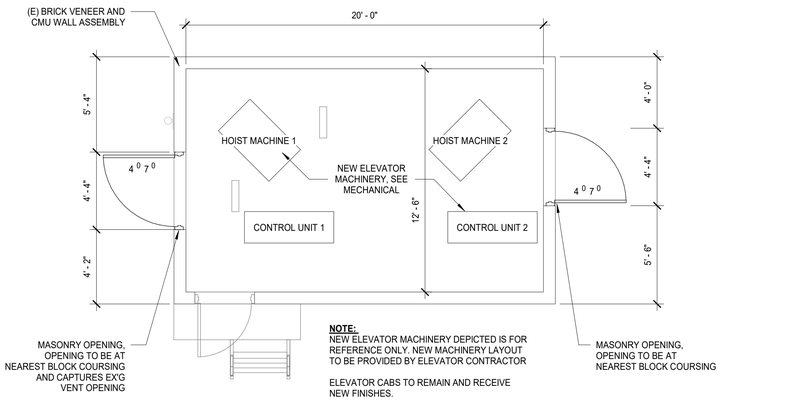
5 MASONRY OPENING DETAIL - STRUCTURAL
1" = 1'-0"



NOTE:
COORDINATE PROJECT STAGING WITH OWNER

NORTH

3 NINTH FLOOR
1/4" = 1'-0"



NOTE:
NEW ELEVATOR MACHINERY DEPICTED IS FOR REFERENCE ONLY. NEW MACHINERY LAYOUT TO BE PROVIDED BY ELEVATOR CONTRACTOR

ELEVATOR CABS TO REMAIN AND RECEIVE NEW FINISHES.

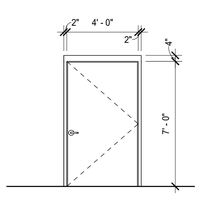
BACKER ROD AND SEALANT ALL WALL NEW WALL PENETRATIONS

NORTH

4 PENTHOUSE FLOOR PLAN
1/4" = 1'-0"

DOOR SCHEDULE

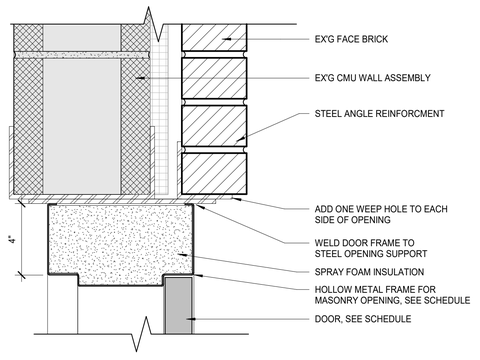
DOOR NO.	TYPE	DOOR THICKNESS	DOOR WIDTH	DOOR HEIGHT	DOOR MATERIAL	DOOR FINISH	FRAME MATERIAL	FRAME FINISH	FIRE RATING	HARDWARE	DETAILS HEAD	DETAILS JAMB	DETAILS SILL	COMMENTS
104	A	1 3/4"	4' - 0"	7' - 0"	INSULATED HM	PNT	HM	PNT	NA	H1	7/A2.1	8/A2.1	6/A2.1	
105	A	1 3/4"	4' - 0"	7' - 0"	INSULATED HM	PNT	HM	PNT	NA	H1	7/A2.1	8/A2.1	6/A2.1	



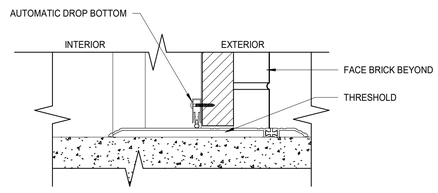
DOOR AND FRAME ELEVATION
1/4" = 1'-0"

HARDWARE SCHEDULE

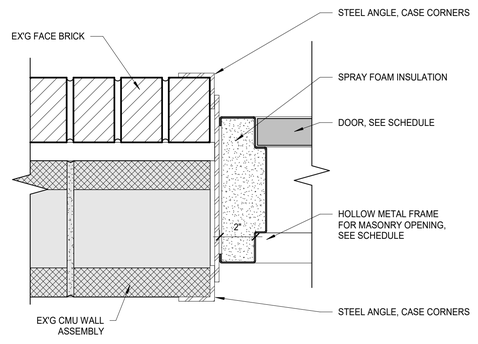
HARDWARE SET - "H1"
- 1 1/2 PAIR HINGES
- 1 CLOSER -EXTRA HEAVY DUTY ARM W/ HOLD OPEN
- 1 LEVER LOCKSET - STOREROOM FUNCTION
- 1 BLANK (EXTERIOR)
- 1 SET OF SILENCERS



7 EXTERIOR MASONRY HM DOOR DETAIL - HEAD
3" = 1'-0"



6 HM DOOR THREASHOLD DETAIL
3" = 1'-0"



8 EXTERIOR MASONRY HM DOOR DETAIL - JAMB
3" = 1'-0"

MONTANA STATE UNIVERSITY

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DRAWN BY: Author
REVIEWED BY: Checker

REV.	DESCRIPTION	DATE

LICENSED ARCHITECT
SCOTT W. CROMWELL
NO. 2551
HELENA, MT
05-20-19
STATE OF MONTANA

PPA#18-2067

SHEET TITLE
ENLARGED FLOOR PLANS

SHEET
A2.1

DATE
05/20/2019

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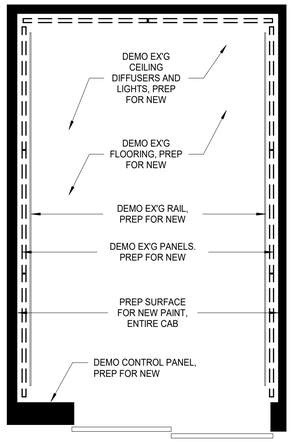
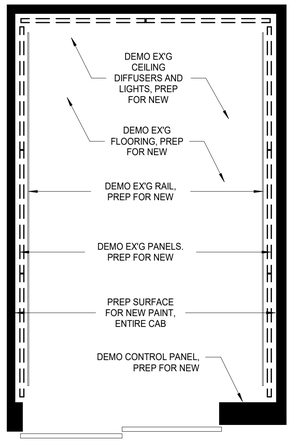
GENERAL FINISH NOTES

1. THE INTENT OF THE DRAWINGS IS TO PROVIDE INFORMATION FOR CONSTRUCTION. IT IS IMPORTANT FOR THE CONTRACTOR TO VERIFY FIELD DIMENSIONS AND CONDITIONS BEFORE EXECUTION OF THE WORK. CONTACT THE ARCHITECT SHOULD DISCREPANCIES EXIST.
2. CONTRACTOR AND SUBCONTRACTORS SHALL PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT TO COMPLETE ALL WORK SHOWN ON PLANS, CALLED FOR IN SPECIFICATION, OR REASONABLY IMPLIED FOR A COMPLETE INSTALLATION EVEN THOUGH NEITHER SHOWN ON PLANS OR CALLED OUT IN SPECIFICATIONS.
3. WHERE CARPET IS TRANSITIONING TO EXISTING FLOOR FINISH THAT IS ANYTHING OTHER THAN CARPET, INSTALL A TRANSITION STRIP.



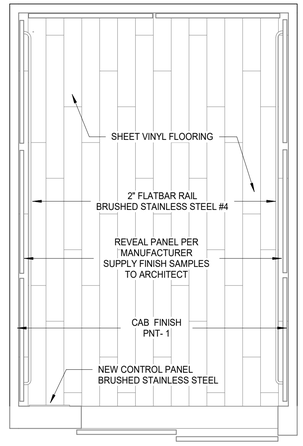
ELEVATOR CAB #2



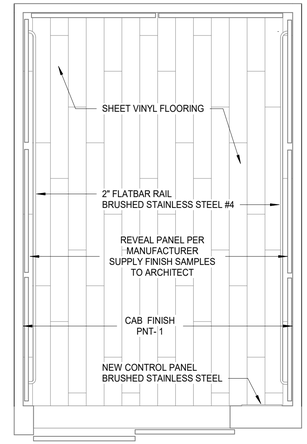
ELEVATOR CAB #1

NOTE:
- DEMOLITION IS FOR FINISHES ONLY. EX'G ELEVATOR CABS TO REMAIN
- DEMOLITION TO APPLY TO BOTH ELEVATOR CABS
- ELEVATOR CAB DIMENSIONS TO BE FIELD VERIFIED BY CONTRACTOR

1 DEMOLITION ELEVATOR CAB
3/4" = 1'-0"



ELEVATOR CAB #2

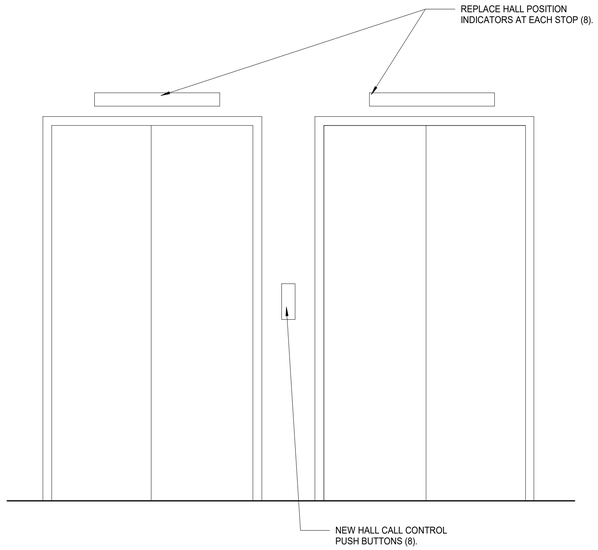


ELEVATOR CAB #1

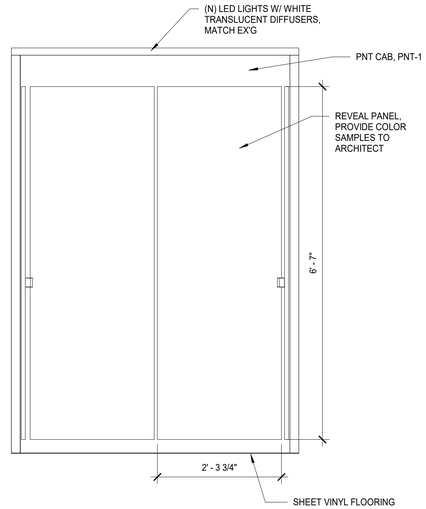
NOTE: ELEVATOR CABS TO RECEIVE NEW LED LIGHT FIXTURES AND DIFFUSERS SIMILAR TO EXISTING

NORTH

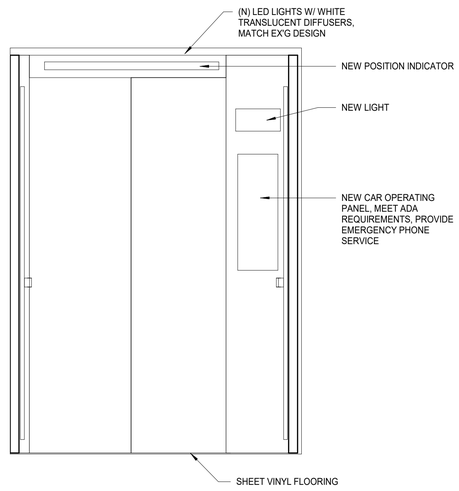
2 ELEVATOR CAB PLANS
3/4" = 1'-0"



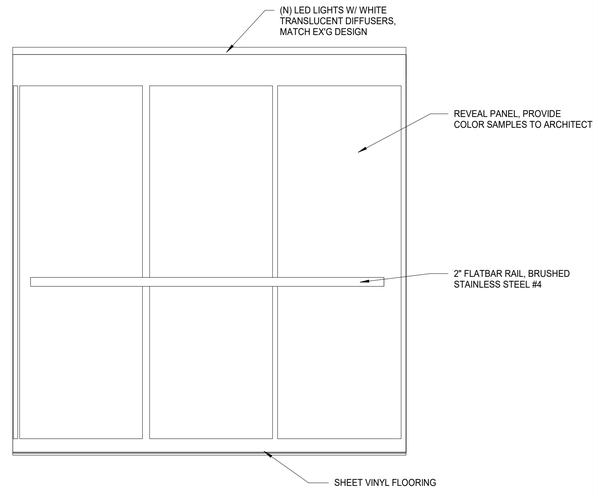
6 ELEVATOR LOBBY ELEVATION (EACH FLOOR)
3/4" = 1'-0"



3 INTERIOR BACK ELEVATION
3/4" = 1'-0"



4 INTERIOR FRONT DOOR ELEVATION
3/4" = 1'-0"



5 INTERIOR SIDE ELEVATION
3/4" = 1'-0"

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DRAWN BY: Author
REVIEWED BY: Checker

REV.	DESCRIPTION	DATE

LICENSED ARCHITECT
SCOTT W. CROMWELL
NO. 2551
HELENA, MT.
05-20-19
STATE OF MONTANA

PPA#18-2067

SHEET TITLE
ELEVATOR CAB FINISH PLANS

SHEET
A2.2

DATE
05/20/2019

SPLIT SYSTEM FANCOIL SCHEDULE (R-410a)

MARK	MFGR	MODEL #	CONDENSING UNIT	SUPPLY AIR (CFM)	NOMINAL COOLING CAPACITY (BTU/HR)	SENSIBLE COOLING CAPACITY (BTU/HR)	MTG HEIGHT (FT-IN)	ELECTRICAL DATA			ADDITIONAL DETAILS
								VOLTAGE	PHASE	MCA	SEE NOTES
FC-1	DAIKIN	FTXS36LVJU	CU-1	706	36,000	22,890	7' - 6"	--	--	--	SEE NOTES
FC-2	DAIKIN	FTXS36LVJU	CU-2	706	36,000	22,890	7' - 6"	--	--	--	SEE NOTES

NOTES: COOLING CAPACITY IS BASED ON 80F DB / 67F WB INDOOR AND 95F DB / 75F WB OUTDOOR. PROVIDE INTEGRAL CONDENSATE PUMP. PROVIDE A SINGLE WIRELESS THERMOSTAT/ CONTROLLER TO CONTROL BOTH UNITS SIMULTANEOUSLY. INDOOR UNIT TO BE POWERED BY OUTDOOR CONDENSING UNIT. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

SPLIT SYSTEM CONDENSING UNIT SCHEDULE (R-410a)

MARK	MFR	MODEL NUMBER	TYPE	DESCRIPTION	COOLING DATA		ELECTRICAL DATA			ADDITIONAL DETAILS
					TOTAL CAPACITY (BTU/HR)	SEER	VOLTAGE	PHASE	MCA	
CU-1	DAIKIN	RKS36LVJU	AIR COOLED CONDENSING UNIT	3-TON SPLIT SYSTEM UNIT	36,000	17.9	208	1	19.5	SEE NOTES
CU-2	DAIKIN	RKS36LVJU	AIR COOLED CONDENSING UNIT	3-TON SPLIT SYSTEM UNIT	36000	17.9	208	1	19.5	SEE NOTES

NOTES: COOLING CAPACITY IS BASED ON 80F DB / 67F WB INDOOR AND 95F DB / 75F WB OUTDOOR. DISCONNECT PROVIDED AND INSTALLED BY EC. PROVIDE UNITS WITH ULTRA LOW AMBIENT KIT FOR COOLING OPERATION TO -40ºF.

PIPE MATERIAL SCHEDULE

SYSTEM	INSTALLATION LOCATION	SIZE RANGE	MATERIAL	FITTING TYPE	INSULATION R-VALUE	ADDITIONAL DETAILS
REFRIGERANT	OUTDOOR EXPOSED	$\frac{3}{8}$ - 1"	TYPE ACR COPPER	BRAZED	$\frac{3}{4}$" THICK ELASTOMERIC	SEE NOTES
REFRIGERANT	INDOOR EXPOSED	$\frac{3}{8}$ - 1"	TYPE ACR COPPER	BRAZED	$\frac{3}{4}$" THICK ELASTOMERIC	SEE NOTES
DRAIN	INDOOR EXPOSED	$\frac{3}{4}$ - 2"	TYPE M COPPER	SOLDER	NONE	SEE NOTES

NOTES: INSTALL AND SUPPORT ALL PIPING PER MANUFACTURERS INSTRUCTIONS. INSULATE ALL PIPING IN ACCORDANCE WITH THE INTERNATIONAL ENERGY CONSERVATION CODE.

HVAC LEGEND

18x12	RECTANGULAR DUCTWORK		VERTICAL TRANSITION- ROUND RETURN DUCT
16 Ø	ROUND DUCTWORK		VERTICAL TRANSITION- RECTANGULAR EXHAUST DUCT
# CFM	AIR DEVICE NUMBER AND CFM		VERTICAL TRANSITION- ROUND EXHAUST DUCT
	CEILING SUPPLY DIFFUSER		TURNING VANE
	CEILING RETURN GRILLE		MANUAL VOLUME DAMPER
	CEILING EXHAUST GRILLE		REMOTE VOLUME DAMPER
	CEILING SLOT DIFFUSER		MOTORIZED DAMPER
	FLOOR REGISTER		ZONE DAMPER
	SIDEWALL DIFFUSER OR GRILLE		FIRE DAMPER
	VERTICAL TRANSITION- RECTANGULAR SUPPLY DUCT		SMOKE DAMPER
	VERTICAL TRANSITION- ROUND SUPPLY DUCT		FIRE/SMOKE DAMPER
	VERTICAL TRANSITION- RECTANGULAR RETURN DUCT		

MECHANICAL SPECIFICATIONS

GENERAL

1. THE MECHANICAL CONTRACTOR SHALL INCLUDE ALL ITEMS, ARTICLES, MATERIALS, OPERATIONS AND METHODS LISTED, MENTIONED, OR SCHEDULED IN THESE SPECIFICATIONS AND THE ACCOMPANYING DRAWINGS. ALL MATERIAL, EQUIPMENT, AND LABOR SHALL BE FURNISHED TOGETHER WITH ALL INCIDENTAL ITEMS REQUIRED BY GOOD PRACTICE TO PROVIDE THE COMPLETE SYSTEMS DESCRIBED.
2. EXAMINE AND REFER TO ALL ARCHITECTURAL, CIVIL, STRUCTURAL, ELECTRICAL, UTILITY, LANDSCAPE AND MECHANICAL DRAWINGS AND SPECIFICATIONS FOR CONSTRUCTION CONDITIONS WHICH MAY AFFECT THE MECHANICAL WORK. INSPECT THE BUILDING SITE AND EXISTING FACILITIES FOR VERIFICATION OF PRESENT CONDITIONS. MAKE PROPER PROVISIONS FOR THESE CONDITIONS IN PERFORMANCE OF THE WORK AND COST THEREOF.
3. ALL WORK ON THE PROJECT SHALL CONFORM TO ALL LOCAL CITY, STATE AND NATIONAL CODES AND REGULATIONS, INCLUDING BUT NOT LIMITED TO THE N.F.P.A., N.E.C., I.B.C., I.E.C.C., I.M.C., U.P.C., THE LOCAL UTILITY SERVING COMPANIES AND THE AUTHORITY HAVING JURDISCTION.
4. THE MECHANICAL AND ELECTRICAL CONTRACTORS SHALL BE RESPONSIBLE FOR AND PAY FOR ALL FEES AND PERMITS REQUIRED FOR WORK UNDER THEIR CONTRACT AND UNDER THEIR SUPERVISION BY SUBCONTRACT.
5. ALL USAGE CONTRACTS BETWEEN THE OWNER AND THE SERVING UTILITIES COMPANY, SUCH AS MEMBERSHIP AND USAGE CHARGES OR FEES, ETC., FOR THE PURPOSE OF OBTAINING THE SERVICES FOR THE UTILITY COMPANY SHALL BE APPLIED FOR AND PAID FOR BY THE OWNER.
6. SMOKING SHALL NOT BE PERMITTED ANYWHERE IN THIS FACILITY.

MATERIALS AND EQUIPMENT

1. MANUFACTURER'S TRADE NAMES AND CATALOG NUMBERS ARE LISTED TO INDICATE SPECIAL CONDITIONS AND QUALITY OF MATERIALS OR EQUIPMENT TO BE SUPPLIED AND INSTALLED. ALTERNATIVE EQUIPMENT OR MATERIALS MAY BE SUBMITTED FOR REVIEW FOR APPROVAL PRIOR TO ANY BIDDING. NO SUBSTITUTIONS SHALL BE ALLOWED AFTER BIDDING.
2. WRITTEN PRIOR APPROVAL FOR SUBSTITUTIONS MUST BE SUBMITTED TO AND RECEIVED BY THE ARCHITECT/ENGINEER TEN (10) DAYS PRIOR TO BID OPENING. REQUESTS FOR SUBSTITUTION ARE TO BE SUBMITTED SUFFICIENTLY AHEAD OF THE DEADLINE TO GIVE AMPLE TIME FOR EXAMINATION. PRIOR APPROVAL REQUEST FOR SUBSTITUTION MUST INDICATE THE SPECIFIC ITEM OR ITEMS TO BE FURNISHED IN LIEU OF THOSE SCHEDULED, TOGETHER WITH COMPLETE TECHNICAL AND COMPARATIVE DATA ON SCHEDULED ITEMS AND ITEMS PROPOSED FOR SUBSTITUTION.
3. HIGH ALTITUDE OPERATION: CAPACITY OF ALL EQUIPMENT IS TO BE SIZED AND MANUFACTURED TO PERFORM AT THE ELEVATION OF THE PROJECT SITE. IF NOT SPECIFICALLY INDICATED IN THE EQUIPMENT SCHEDULE OR IN THE SPECIFICATIONS PROVIDE ALL REQUIRED ACCESSORIES AND EQUIPMENT FOR PROPER OPERATION AT ELEVATION OF THE PROJECT SITE.
4. STORE MATERIALS AND EQUIPMENT INDOORS AT THE JOB SITE OR, IF THIS IS NOT POSSIBLE, STORE ON RAISED PLATFORMS AND PROTECT FROM THE WEATHER BY MEANS OF WATERPROOF COVERS. COVERINGS SHALL PERMIT CIRCULATION OF AIR AROUND THE MATERIALS TO PREVENT CONDENSATION OF MOISTURE. SCREEN OR CAP OPENINGS IN EQUIPMENT TO PREVENT THE ENTRY OF VERMIN.
5. ALL PIPING INSULATION SHALL HAVE A SPREAD NOT EXCEEDING 25 AND A SMOKE DEVELOPMENT RATING NOT EXCEEDING 50. REFRIGERANT PIPING SHALL BE 1/2" THICK CLOSED CELL ELASTOMERIC - ARMACELL BY ARMAFLEX OR EQUAL.
6. ALL NEW PIPING SHALL BE IDENTIFIED WITH SETON SET MARK PIPE MARKERS, LETTERED TO MATCH EXISTING AND MARKED AT A MAXIMUM OF EVERY 25 FT. ALSO, ALL NEW VALVES SHALL BE IDENTIFIED WITH BRASS OR ALUMINUM VALVE TAGS.
7. SEE THE MECHANCIAL PIPING SCHEDULE AND THE DOMESTIC PIPING SCHEDULE ON THE DRAWINGS FOR MATERIAL AND INSULATION REQUIREMENTS.
8. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR FIRE-CAULKING ALL FIRE-RATED OR SMOKE-RATED WALL PENETRATIONS OF PIPING, DUCT WORK, ETC.

INTENT OF DRAWINGS

1. THE DRAWINGS ARE PARTLY DIAGRAMMATIC AND DO NOT NECESSARILY SHOW EXACT LOCATION OF PIPING AND DUCTWORK UNLESS SPECIFICALLY DIMENSIONED. RISER AND OTHER DIAGRAMS ARE SCHEMATIC AND DO NOT NECESSARILY SHOW THE PHYSICAL ARRANGEMENT OF THE EQUIPMENT. THEY SHALL NOT BE USED FOR OBTAINING LINEAL RUNS OF PIPING OR DUCTWORK, NOR SHALL THEY BE USED FOR SHOP DRAWINGS FOR PIPING AND DUCTWORK FABRICATION OR ORDERING. DISCREPANCIES SHOWN ON DIFFERENT PLANS, OR BETWEEN PLANS AND ACTUAL FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER FOR RESOLUTION.

RESPONSIBILITY

1. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF A SATISFACTORY AND COMPLETE SYSTEM IN ACCORDANCE WITH THE INTENT OF THE DRAWING AND SPECIFICATIONS. PROVIDE, AT NO EXTRA COST, ALL INCIDENTAL ITEMS, MATERIALS, ACCESSORIES AND LABOR REQUIRED FOR COMPLETION OF THE WORK EVEN THOUGH THEY ARE NOT SPECIFICALLY MENTIONED OR INDICATED ON THE DRAWINGS OR IN THE SPECIFICATIONS.
2. THE DRAWINGS DO NOT ATTEMPT TO SHOW COMPLETE DETAILS OF THE BUILDING CONSTRUCTION WHICH AFFECT THE MECHANICAL INSTALLATION; AND REFERENCE IS THEREFORE REQUIRED TO THE ARCHITECTURAL, CIVIL, STRUCTURAL, LANDSCAPE AND ELECTRICAL DRAWINGS AND SPECIFICATIONS AND TO SHOP DRAWINGS OF ALL TRADES FOR ADDITIONAL DETAILS WHICH AFFECT THE INSTALLATION OF THE WORK COVERED UNDER THIS DIVISION OF THE CONTRACT.
3. LOCATION OF MECHANICAL SYSTEM COMPONENTS SHALL BE CHECKED FOR CONFLICTS WITH OPENINGS, STRUCTURAL MEMBERS AND COMPONENTS OF OTHER SYSTEMS HAVING FIXED LOCATIONS. IN THE EVENT OF ANY CONFLICTS, THE ARCHITECT/ENGINEER SHALL BE CONSULTED AND HIS DECISION SHALL GOVERN. NECESSARY CHANGES SHALL BE MADE AT THE CONTRACTOR'S EXPENSE.
4. TAKE EXTREME CAUTION NOT TO INSTALL WORK THAT CONNECTS TO EQUIPMENT UNTIL SUCH TIME AS COMPLETE SHOP DRAWINGS OF SUCH EQUIPMENT HAVE BEEN APPROVED BY THE ARCHITECT/ENGINEER. ANY WORK INSTALLED BY THE CONTRACTOR, PRIOR TO APPROVAL OF SHOP DRAWINGS, WILL BE AT THE CONTRACTOR'S RISK.
5. ALL MODIFICATIONS AND CHANGES REQUIRED DUE TO INSTALLATION OF EQUIPMENT OTHER THAN THE EQUIPMENT SCHEDULES AND SPECIFIED SHALL BE MADE AT THE CONTRACTOR'S EXPENSE, THIS INCUDEDS WORK BY OTHER TRADES. IF THE INSTALLTION OF EQUIPMENT OTHER THAN THE SCHEDULED AND SPECIFIED EQUIPMENT REQUIRES MODIFICATIONS TO STRUCTURE, ELECTRICAL SYSTEMS, PLUMBING SYSTEMS, FIRE PROTECTION OR FIRE ALARM SYSTEMS, ANY AND ALL CHANGES SHALL BE MADE AT THE MECHANICAL CONTRACTORS EXPENSE.
6. ALL WORK TO BE PERFORMED SHALL FIRST BE SCHEDULED AND SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR ACCEPTANCE.
7. THE CONTRACTOR SHALL BE CAREFUL NOT TO BLOCK ANY PATHS OF EGRESS WHILE PERFORMING THE WORK SPECIFIED.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANUP OF ALL MATERIALS RESULTING FROM HIS/HER WORK. CLEANUP SHALL BE PERFORMED TO THE LEVEL OF ACCEPTANCE OF THE OWNER'S REPRESENTATIVE & THE ENGINEER.
9. THE CONTRACTOR SHALL AND HEREBY DOES WARRANT AND GUARANTEE THAT ALL WORK EXECUTED UNDER HIS/HER CONTRACT SHALL BE FREE OF DEFECTS OF MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE(1) YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.

REVIEW & SITE INSPECTIONS

1. ALL WORK AND MATERIAL IS SUBJECT TO REVIEW AT ANY TIME BY THE ARCHITECT/ENGINEER OR HIS REPRESENTATIVE. IF THE ARCHITECT/ENGINEER OR HIS REPRESENTATIVE FINDS MATERIAL THAT DOES NOT CONFORM TO THESE SPECIFICATIONS OR THAT IS NOT PROPERLY INSTALLED OR FINISHED, CORRECT THE DEFICIENCIES IN A MANNER SATISFACTORY TO THE ARCHITECT/ENGINEER AT THE CONTRACTOR'S EXPENSE.

SHOP DRAWINGS AND SUBMITTALS

1. WITHIN 30 DAYS AFTER AWARDING OF THE MECHANICAL CONTRACT, THE MECHANICAL CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND SUBMITTALS FOR THE FOLLOWING PRODUCTS:
   a. PACKAGED ROOF TOP AIR HANDLING UNIT INCLUDING ALL ACCESSORIES AND ROOF CURB.
   b. REGISTER GRILLES & DIFFUSERS
   c. PLUMBING FIXTURES AND TRIM
   d. DOMESTIC WATER HEATERS AND ASSOCIATED ACCESSORIES
   e. DOMESTIC WATER PIPING, SANITARY WASTE AND VENT PIPING
2. ALL SHOP DRAWINGS AND SUBMITTALS SHALL BE IN THE FORM OF ELECTRONICALLY TRANSMITTED PDFS. SHOP DRAWINGS AND SUBMITTALS SHALL INCLUDE SHOP DRAWINGS AND LITERATURE SHOWING ITEM TO BE USED, SIZE, DIMENSIONS, CAPACITY, ROUGH IN, ETC., AS REQUIRED FOR COMPLETE CHECK AND INSTALLATION. MANUFACTURER'S LITERATURE SHOWING MORE THAN ONE ITEM SHALL BE CLEARLY MARKED AS TO WHICH ITEM IS BEING FURNISHED OR IT WILL BE REJECTED AND RETURNED WITHOUT REVIEW.
3. EACH ITEM SUBMITTED MUST BE CLEARLY MARKED AS FOLLOWS FOR PURPOSES OF IDENTIFICATION AND RECORD. SUBMITTALS NOT MARKED (TYPEWRITTEN ONLY) AS DESCRIBED BELOW WILL BE REJECTED AND RETURNED WITHOUT REVIEW.
   DATE, NAME OF PROJECT, BRANCH OF WORK, SUBMITTED BY, SPECIFICATION OR PLAN REFERENCE:
4. PRIOR TO THEIR SUBMISSION, EACH SUBMITTAL SHALL BE THOROUGHLY CHECKED BY THE CONTRACTOR FOR COMPLIANCE WITH THE CONTRACT DOCUMENT REQUIREMENTS. EACH SUBMITTAL SHALL THEN BEAR A STAMP EVIDENCING SUCH CHECKING AND SHALL SHOW CORRECTIONS MADE, IF ANY. SUBMITTALS REQUIRING EXTENSIVE CORRECTIONS SHALL BE REVISED BEFORE SUBMISSION TO THE ENGINEER. EACH SUBMITTAL NOT STAMPED AND SIGNED BY THE CONTRACTOR EVIDENCING SUCH CHECKING WILL BE REJECTED AND RETURNED WITHOUT REVIEW.
5. REVIEW OF THE SHOP DRAWINGS AND LITERATURE BY THE ENGINEER SHALL NOT RELIEVE THE CONTRACTOR FOR RESPONSIBILITY FOR DEVIATIONS FOR THE DRAWINGS OR SPECIFICATIONS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS IN THE SHOP DRAWINGS OR LITERATURE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE MATERIALS AND EQUIPMENT WHICH MEET THE SPECIFICATIONS AND JOB REQUIREMENTS.

STARTUP, TESTING AND OWNER TRAINING

1. ENGAGE A FACTORY AUTHORIZED REPRESENTATIVE TO CONDUCT AN INSPECTION OF THE INSTALLATION OF THEIR COMPANIES EQUIPMENT PRIOR TO START-UP OF ANY EQUIPMENT. THE REPRESENTATIVE SHALL SUBMIT A REPORT IDENTIFYING AND DEFICIENCIES TO THE ARCHITECT, ENGINEER AND CONSTRUCTION MANAGER. ANY DEFICIENCIES IDENTIFIED SHALL BE ADDRESSED PRIOR TO START-UP. START-UP SHALL BE CONDUCTED BY A FACTORY AUTHORIZED REPRESENTATIVE. STARTUP REPORTS SHALL BE SUBMITTED TO THE ARCHITECT AND ENGINEER ONCE COMPLETED.
2. ENTIRE NEW AIR AND WATER SYSTEMS SHALL BE COMPLETELY BALANCED TO THE SATISFACTION OF THE ENGINEER IN ACCORDANCE WITH THE STANDARDS OF NEBB. APPROVED TEST AND BALANCE CONTRACTORS ARE: AIR COMMANDER, TEST COMM, RGO INC.
3. CONTRACTOR SHALL COMPLY WITH THE OWNER'S STANDARD FOR TESTING, TRAINING, INSTALLATION AND OPERATION MANUALS, AND SUBMITTALS. REFER TO DIVISION 01 SPECIFICATION SECTIONS FOR DETAILED INFORMATION.

Printed On: 4/5/2019 8:57:08 AM

CONSTRUCTION DRAWINGS

MONTANA STATE UNIVERSITY

LEON JOHNSON HALL
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REVIEWED BY: MWC

REV.	DESCRIPTION	DATE

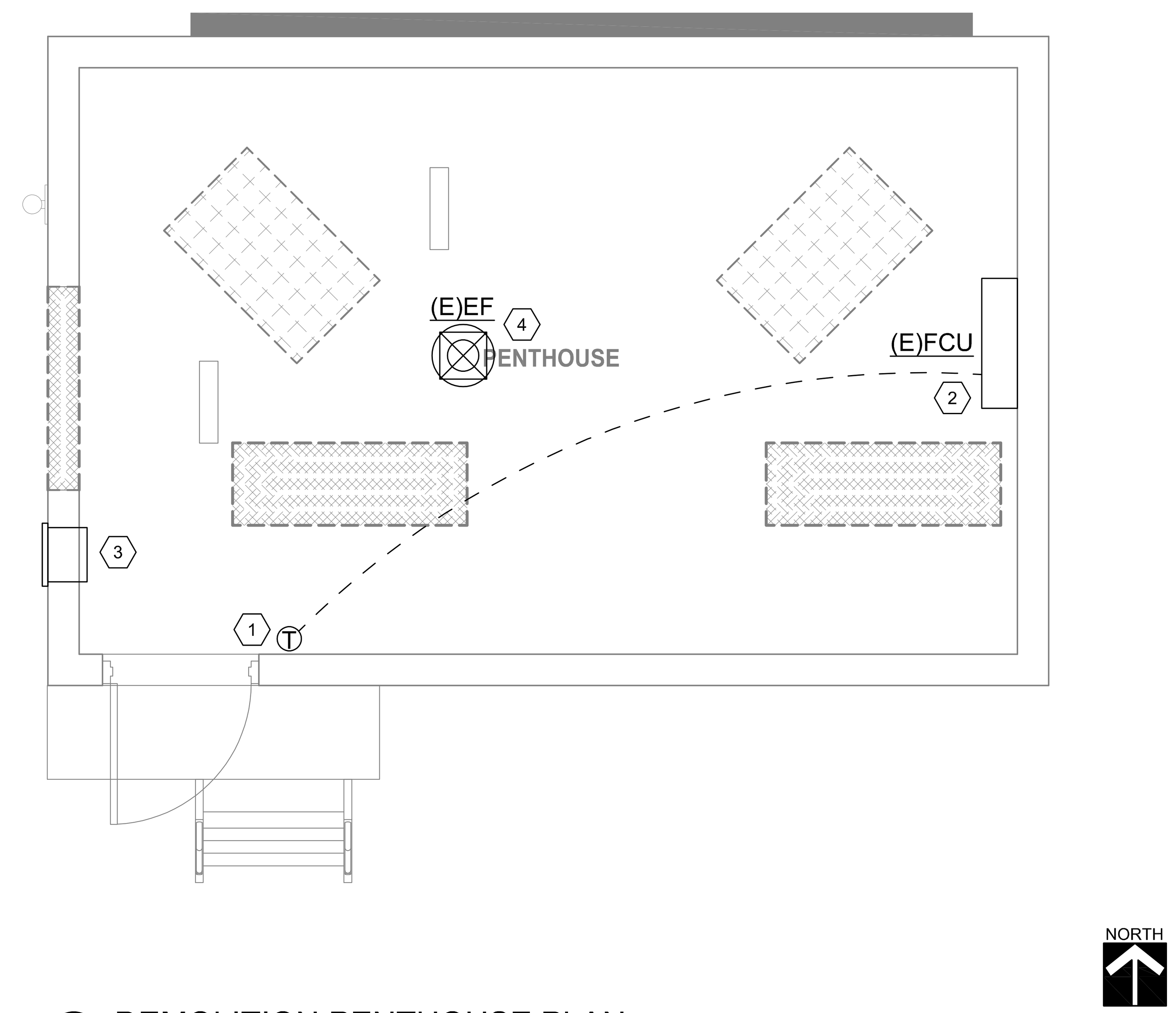
MONTANA
MATTHEW W. CARR
LICENSED PROFESSIONAL ENGINEER

PPA#18-2067

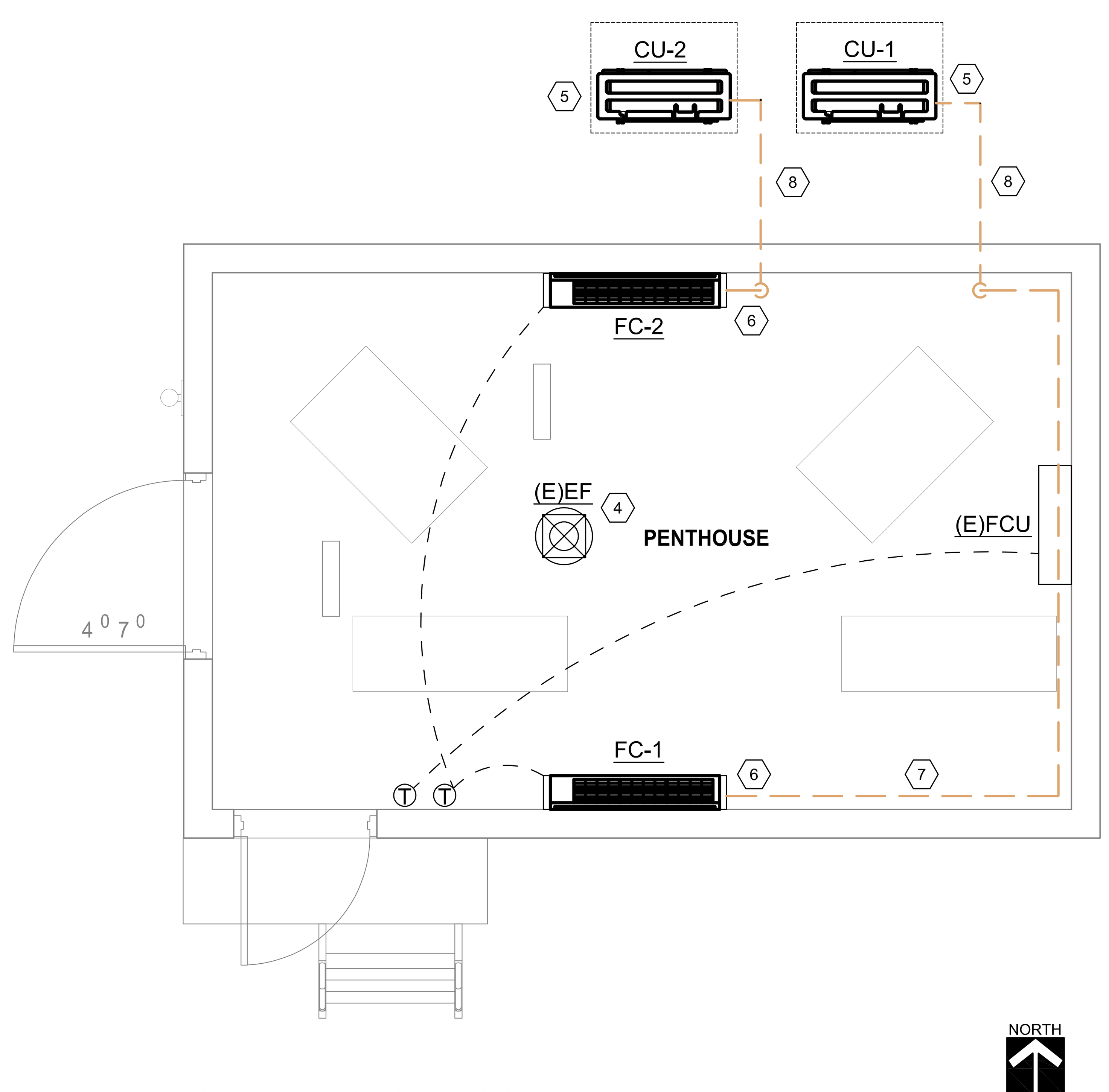
SHEET TITLE
MECHANICAL SPECIFICATIONS & LEGENDS

SHEET
M1.1

DATE
04/20/2019



1 DEMOLITION PENTHOUSE PLAN
3/8" = 1'-0"



2 PENTHOUSE FLOOR PLAN
3/8" = 1'-0"

DEMO GENERAL NOTES

A. IT IS ABSOLUTELY NECESSARY FOR ALL TRADES INVOLVED TO COORDINATE WITH EACH OTHER AND VERIFY THAT THERE ARE NO CONFLICTS IN LOCATION OF DUCTS, CONDUITS, DIFFUSERS, BOXES AND OTHER ITEMS THROUGHOUT THIS PROJECT BEFORE FINAL PLACEMENT OF MATERIALS.

B. ALL DIMENSIONS AND EXACT UNIT LOCATIONS ARE TO BE FIELD VERIFIED. THESE DRAWINGS REPRESENT SCHEMATIC SYSTEMS.

C. COORDINATE AVAILABLE SPACE FOR EQUIPMENT AND PIPING SYSTEMS WITH OTHER TRADES. REFER TO ARCHITECTURAL, STRUCTURAL, PLUMBING, AND ELECTRICAL DRAWINGS AND FIRE PROTECTION SHOP DRAWINGS FOR ADDITIONAL DETAILS NECESSARY FOR COORDINATION.

D. ALL GRAYSCALE DUCTWORK/PIPING/EQUIPMENT IS TO LEFT ALONE. BLACK IS TO BE REMOVED.

E. COORDINATE ALL CONCRETE PENETRATIONS WITH STRUCTURAL DRAWINGS TO VERIFY HOW AND WHERE CONCRETE CAN BE CUT.

F. COORDINATE REMOVAL OF PIPING WITH ASBESTOS ABATEMENT CONTRACTOR.

KEYNOTES

1. EXISTING THERMOSTAT FOR HEATING ONLY (E)FCU TO REMAIN.
2. EXISTING FAN COIL UNIT AND ASSOCIATED THERMOSTAT TO REMAIN.
3. REMOVE EXISTING BACKDRAFT DAMPER AND CAP DUCTWORK.
4. EXISTING EXHAUST FAN (E)EF LOCATED ON ROOF IS TO BE ABANDONED IN PLACE. CAP EXHAUST DUCTWORK AT CEILING.
5. INSTALL CONDENSING UNIT ON MODULAR STEEL FRAME WITH RUBBER ROOF SUPPORTS (COOPER B-LINE OR EQUAL) ON ROOF. FIELD VERIFY INSTALLATION LOCATION. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
6. ROUTE REFRIGERANT PIPING TO ASSOCIATED CONDENSING UNIT. ROUTE 3/4" CONDENSATE DRAIN LINE ALONG THE SAME PATH AS REFRIGERANT LINE AND THROUGH THE SAME EXTERIOR WALL PIPING PENETRATION AND TERMINATE 12" ABOVE ROOF.
7. ROUTE REFRIGERANT LINE AND 3/4" CONDENSATE LINE ALONG WALL AS HIGH AS POSSIBLE.
8. REFRIGERANT PIPING ROUTED OVER THE ROOF MEMBRANE SHALL BE SUPPORTED BY DURA-BLOK OR EQUAL TYPE PIPE SUPPORTS.

HVAC GENERAL NOTES

A. ALL NEW PIPING, DUCTWORK AND EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH THE 2012 INTERNATIONAL MECHANICAL CODE AND THE 2012 INTERNATIONAL BUILDING CODE REQUIREMENTS.

B. DRAWINGS ARE DIAGRAMMATIC IN NATURE AND DO NOT NECESSARILY SHOW EXACT LOCATIONS AND SIZES OF ALL EXISTING DUCTWORK, PIPING, SYSTEM AND EQUIPMENT UNLESS SPECIFICALLY DIMENSIONED. IT IS NOT THE INTENT OF THESE DRAWINGS TO GRAPHICALLY REPRESENT ALL OF THE WORK REQUIRED FOR A COMPLETE INSTALLATION IN EVERY RESPECT. THE PURPOSE OF THESE PLANS IS TO INDICATE THE INTENDED SIZES, APPROXIMATE LOCATION AND ROUTING OF MAJOR COMPONENTS. ADJUST TO FIELD CONDITIONS. ACTUAL CONDITIONS AND LOCATIONS SHALL BE FIELD VERIFIED.

C. EXAMINE AND REFER TO ALL ARCHITECTURAL, STRUCTURAL, ELECTRICAL, MECHANICAL, FIRE PROTECTION AND SITE CIVIL DRAWINGS FOR CONSTRUCTION CONDITIONS WHICH MAY AFFECT THE CONTRACTORS WORK. INSPECT THE EXISTING FACILITIES (IF EXIST) FOR VERIFICATION OF EXISTING CONDITIONS AND SYSTEMS WHICH MAY HAVE AN EFFECT ON HIS/HER WORK PROR TO SUBMISSION OF BID.

D. IT IS NECESSARY FOR ALL TRADES INVOLVED TO COORDINATE WITH EACH OTHER AND VERIFY THAT THERE ARE NO CONFLICTS IN LOCATION OF DUCTS, CONDUITS, DIFFUSERS, BOXES AND OTHER ITEMS THROUGHOUT THIS PROJECT BEFORE FINAL PLACEMENT OF MATERIALS. REFER TO ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS AND FIRE PROTECTION SHOP DRAWINGS FOR ADDITIONAL DETAILS NECESSARY FOR COORDINATION.

E. THE CONTRACTOR IS TO PROVIDE MATERIALS, LABOR, TRANSPORTATION, TOOLS, PERMITS, FEES, INSPECTIONS, UTILITIES AND INCIDENTALS NECESSARY FOR THE COMPLETE INSTALLATION OF THE WORK INDICATED AND DESCRIBED IN THESE CONTRACT DOCUMENTS.

F. LOCATIONS AND DIMENSIONS OF EXISTING FACILITIES IDENTIFIED ON THIS DRAWING ARE APPROXIMATE AND REPRESENT THE BEST AVAILABLE INFORMATION BASED ON A COMBINATION OF FIELD INVESTIGATIONS AND VARIOUS DESIGN AND RECORD DRAWINGS AVAILABLE AT THE TIME OF DESIGN. FIELD VERIFY LOCATIONS AND DIMENSIONS PRIOR TO ORDERING EQUIPMENT AND DURING PERFORMANCE OF THE WORK. PROVIDE ALL DEMOLITION WORK, NECESSARY FITTINGS, TRANSITIONS, AND OTHER COMPONENTS AS REQUIRED FOR A COMPLETE AND OPERATIONAL INSTALLATION OF NEW SYSTEMS AT NO ADDITIONAL COST TO THE OWNER.

G. THE CONTRACTOR IS TO BE RESPONSIBLE FOR ANY ADDITIONAL DETAILS OR SPECIAL CONSTRUCTION REQUIRED IN ORDER TO COMPLETE THE INSTALLATION, WHETHER MENTIONED OR NOT. THE CONTRACTOR IS TO PROVIDE ALL MATERIALS AND EQUIPMENT THAT ARE TO BE FURNISHED FOR THE PROPER INSTALLATION OF THE TYPE OF EQUIPMENT AND SYSTEMS INDICATED.

H. ALL EQUIPMENT SHALL BE INSTALLED LEVEL, PLUMB, AND FIRMLY ANCHORED IN LOCATIONS INDICATED. OBSERVE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND RECOGNIZED INDUSTRY PRACTICES TO INSURE THAT PRODUCTS SERVE THEIR INTENDED FUNCTION.

I. FOLLOW MANUFACTURES WRITTEN INSTALLATION INSTRUCTION FOR RUNNING THE COMBUSTION AIR AND VENT PIPING AS WELL AS THE TERMINATION THROUGH THE ROOF. FOLLOW ALL SAFETY INSTRUCTIONS.

J. PROVIDE SEISMIC BRACING OF ALL EQUIPMENT, PIPING, AND DUCTWORK AS REQUIRED BY LOCAL CODES.

K. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL FIRE BARRIERS, FIRE PARTITIONS, FIRE WALLS OR ANY OTHER FIRE AND/OR SMOKE SEPARATION WITHIN THE BUILDING AS DEFINED BY THE ARCHITECTURAL CODE PLAN WITH A UL LISTED FIRE AND/OR SMOKE STOP SYSTEM.

L. ALL MATERIAL IN A PLENUM RATED SPACE SHALL HAVE A SPREAD NOT EXCEEDING 25 AND A SMOKE DEVELOPMENT RATING NOT EXCEEDING 50.

M. PROVIDE ACCESS DOORS TO ALLOW SERVICE AND INSPECTION OF EQUIPMENT, VALVES, DAMPERS, DEVICES INSTALLED ABOVE NON-REMOVABLE CEILINGS.

N. ALL ELEMENTS PENETRATING BUILDING COMPONENTS (ROOF ASSEMBLIES, WALL ASSEMBLIES, ETC.) SHALL BE SEALED WEATHER AND WATER TIGHT.

O. ALL NEW PIPING SHALL BE IDENTIFIED WITH SETON SETMARK PIPE MARKERS, LETTERED TO MATCH EXISTING AND MARKED AT A MAXIMUM OF EVERY 25 FT. ALSO, ALL NEW VALVES SHALL BE IDENTIFIED WITH BRASS OR ALUMINUM VALVE TAGS.

P. PROVIDE PIPE GUIDES, EXPANSION JOINTS, AND HANGERS PER MANUFACTURER'S RECOMMENDATIONS.

Q. ALL PIPING WALL PENETRATIONS SHALL HAVE A CHROME ESCUTCHEON PLATE. ALL SOLDER TO BE LEAD-FREE TYPE. AT THE CONTRACTORS OPTION MECHANICAL COMPRESSION TYPE FITTING (I.E. PRO-PRESS) MAY BE USED.

R. VERIFY THE LOCATION OF ALL THERMOSTATS AND SENSORS WITH THE ENGINEER AND ARCHITECT PRIOR TO INSTALLATION. INSTALL THERMOSTATS 60" ABOVE FINISHED FLOOR PER ADA REQUIREMENTS.

S. ALL DUCT WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST REQUIREMENTS OF SMACNA DUCT WORK CONSTRUCTION MANUALS, MINIMUM GAUGE OF 24, GALVANIZED STEEL. DUCTWORK SHALL BE AIRTIGHT (5% LEAKAGE). ALL TRANSVERSE JOINTS AND LONGITUDINAL SEAMS SHALL BE SEALED. FABRICATE ELBOWS WITH CENTERLINE RADIUS EQUAL TO 1.5 TIMES THE DUCT WIDTH IN THE PLANE OF THE TURN; AND FABRICATE TO INCLUDE FACTORY MANUFACTURED TURNING VANES IN ELBOWS WHERE SHORTER RADIUS IS NECESSARY.

T. PROVIDE FLEX CONNECTIONS FROM ALL DUCT WORK TO EQUIPMENT CONNECTIONS ON THIS PROJECT.

U. FLEXIBLE DUCT SHALL NOT BE USED IN PLACE OF ELBOWS.

V. A COMPLETE AIR AND WATER SYSTEM TEST AND BALANCE (T&B) SHALL BE PERFORMED BY A NEBB OR AABC CERTIFIED T&B CONTRACTOR FOR ALL NEW AND MODIFIED DEVICES. MECHANICAL CONTRACTOR SHALL MODIFY EQUIPMENT AS DIRECTED BY BALANCING CONTRACTOR, IF REQUIRED, TO ACHIEVE DESIGN PARAMETERS WITH NO EXTRA COST TO THE OWNER. T&B REPORT SHALL BE PREPARED AND SUBMITTED TO ENGINEER. REPORT SHALL INCLUDE ALL AIR AND WATER FLOW READINGS, ALL TEMPERATURE AND PRESSURE SETPOINTS AND ALL ELECTRICAL CONDITIONS FOR ALL DEVICES. REPORT SHALL ALSO VERIFY PROPER OPERATION OF ENTIRE CONTROL SYSTEM. WHERE REQUIRED FOR AIR BALANCING, INSTALL ADDITIONAL MANUAL VOLUME DAMPERS.

W. THE MECHANICAL CONTRACTOR SHALL PROVIDE THE OWNER REPRESENTATIVE WITH UP TO 4 HOURS OF TRAINING TO ENSURE PROPER OPERATION AND MAINTENANCE OF THE SYSTEMS.

CONSTRUCTION DRAWINGS

MONTANA STATE UNIVERSITY

LEON JOHNSON HALL
PASSENGER ELEVATORS COMPLIANCE UPGRADES

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DRAWN BY: CMH
REVIEWED BY: MWC

REV.	DESCRIPTION	DATE

MONTANA MATTHEW W. CARR LICENSED PROFESSIONAL ENGINEER

PPA#18-2067

SHEET TITLE
MECHANICAL PLAN

SHEET
M2.1

DATE
05/20/2019

Printed On: 4/5/2019 8:57:08 AM

ELECTRICAL SPECIFICATIONS

RACEWAY:
- MINIMUM RACEWAY SIZE: 3/4-INCH TRADE SIZE.

OUTDOORS:
- EXPOSED CONDUIT: RIGID STEEL CONDUIT.
- CONCEALED CONDUIT, ABOVE GROUND: EMT.
- CONNECTION TO VIBRATING EQUIPMENT (INCLUDING TRANSFORMERS AND HYDRAULIC, PNEUMATIC, ELECTRIC SOLENOID, OR MOTOR-DRIVEN EQUIPMENT): LFMC.
- BOXES AND ENCLOSURES, ABOVE GROUND: NEMA 250, TYPE 3R.

INDOOR:
- EXPOSED, NOT SUBJECT TO PHISICAL DAMAGE: EMT.
- EXPOSED AND SUBJECT TO SEVERE PHYSICAL DAMAGE: RIGID STEEL CONDUIT.
- CONCEALED IN NEW CEILINGS AND INTERIOR WALLS AND PARTITIONS: EMT.
- CONNECTION TO VIBRATING EQUIPMENT (INCLUDING TRANSFORMERS AND HYDRAULIC, PNEUMATIC, ELECTRIC SOLENOID, OR MOTOR-DRIVEN EQUIPMENT): FMC, EXCEPT USE LFMC IN DAMP OR WET LOCATIONS.
- DAMP OR WET LOCATIONS: RIGID STEEL CONDUIT.
- BOXES AND ENCLOSURES: NEMA 250, TYPE 1, EXCEPT USE NEMA 250, TYPE 3R, NONMETALLIC IN DAMP OR WET LOCATIONS.
- RACEWAY FITTINGS: COMPATIBLE WITH RACEWAYS AND SUITABLE FOR USE AND LOCATION.
- RIGID AND INTERMEDIATE STEEL CONDUIT: USE THREADED RIGID STEEL CONDUIT FITTINGS, UNLESS NOTED OTHERWISE.

CONDUCTORS:
- ALL CONDUCTORS IN RACEWAY: TYPE THHN-THWN, SINGLE CONDUCTORS.
- COPPER. SOLID FOR NO. 10 AWG AND SMALLER, STRANDED FOR NO. 8 AWG AND LARGER.
- CONCEALED IN NEW CEILINGS AND WALLS: TYPE THHN-THWN, SINGLE CONDUCTORS.

PANELBOARDS:
- ALL PANELBOARDS SHALL BE FULLY RATED.
- ALL PANELBOARDS AND DISCONNECTS TO BE HARD-LABELED (HARD PLASTIC ENGRAVED).

DISCONNECTS:
- ALL DISCONNECTS SHALL BE HEAVY DUTY RATED.

WIRING DEVICES:
GFCI RECEPTACLES:
- GENERAL DESCRIPTION: STRAIGHT BLADE, NON-FEED-THROUGH TYPE. COMPLY WITH NEMA WD 1, NEMA WD 6, UL 498, AND UL 943, CLASS A, AND INCLUDE INDICATOR LIGHT THAT IS LIGHTED WHEN DEVICE IS TRIPPED.
- DUPLEX GFCI CONVENIENCE RECEPTACLES: 125 V, 20 A.
- COOPER: GF20.
- UNFINISHED SPACES: PROVIDE GRAY DEVICE IN 4-SQUARE BOX WITH GALVANIZED STEEL COVERS.
- FINISHED SPACES: PROVIDE WHITE DEVICE IN 4-SQUARE BOX WITH WHITE NYLON COVERS.

SWITCHES:
- 120/277V 20A: COMPLY WITH NEMA WD 1 AND UL20.
- COOPER: 2221 (SINGLE POLE)
- HUBBELL: CS1221 (SINGLE POLE)
- LEVITON: 1221-2 (SINGLE POLE)

FIRE ALARM:
- EXISTING SYSTEM IS SIMPLEX-GRINNELL (JCI).
- COORDINATE ALL REQUIREMENTS FOR SYSTEM TIE-IN WITH SIMPLEX-GRINNELL (JCI) PRIOR TO BID.

PROJECT NOTES

1. PRIOR TO BID CONTRACTOR SHALL VISIT THE SITE. NOT ALL WORK REQUIRED TO COMPLETE THE PROJECT IS SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL BECOME THOROUGHLY FAMILIAR WITH ALL THE WORK REQUIRED TO COMPLETE THE PROJECT IN ADDITION TO THE LOCAL CONDITIONS AND INCLUDE SAID WORK IN THE BID.
2. GENERAL WORK PRACTICES FOR ELECTRICAL CONSTRUCTION SHALL BE IN ACCORDANCE WITH NECA 1, "STANDARD PRACTICES FOR GOOD WORKMANSHIP IN ELECTRICAL CONTRACTING." THIS PUBLICATION IS AVAILABLE FROM NECA BY TELEPHONE AT 301-215-4500 OR ON-LINE AT WWW.NECANET.ORG.
3. CONDUCTORS ARE SIZED PER THE 75 DEGREE C RATING COLUMN OF NEC TABLE 310.16. IF THE TERMINAL USED FOR A TERMINATION OF A PARTICULAR CONDUCTOR IS NOT MARKED, OR THE TERMINAL IS MARKED FOR 60 DEGREE C CONDUCTORS, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO EITHER ADJUST THE AMPACITY OF THE CONDUCTOR TO MATCH THE 60 DEGREE COLUMN OF TABLE 310.16, OR REPLACE THE TERMINAL WITH ONE RATED FOR AT LEAST 75 DEGREES C.
4. FOR CIRCUIT RUNS EXTENDING BEYOND 300 LINEAR FEET. CONDUCTOR SIZE SHALL BE A MINIMUM OF #10 CU.
5. DURING DEMOLITION, THE CONTRACTOR SHALL NOTE ALL EXISTING RACEWAY (BOTH SURFACE AND CONCEALED) TO THE EXTENT POSSIBLE. THESE RACEWAYS SHALL BE REUSED TO THE GREATEST EXTENT POSSIBLE TO ENSURE A CLEAN FINISHED PRODUCT.
6. CONTRACTOR SHALL REMOVE, TRANSPORT, AND LEGALLY DISPOSE OF LAMPS AND BALLASTS OFF-SITE. IT IS ASSUMED THE BALLASTS DO NOT CONTAIN PCBs. CONTRACTOR SHALL NOTIFY OWNER IMMEDIATELY IT IF IS SUSPECTED THAT BALLASTS CONTAIN PCBs.
7. ALL POWER INTERRUPTIONS SHALL BE COORDINATED WITH OWNER. ANY DISRUPTION OF WORKERS IN THE SPACE SHALL BE KEPT TO A MINIMUM AND BE COORDINATED WITH THE OWNER PRIOR TO WORK COMMENCING IN THAT SPACE.
8. PROVIDE A DEDICATED NEUTRAL CONDUCTOR FOR EACH 120V BRANCH CIRCUIT.
9. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OF ANY EXISTING CIRCUITS THAT ARE INTENDED TO REMAIN THAT ARE CUT OR INTERRUPTED AS PART OF THE DEMOLITION PROCESS. PROVISION FOR THIS WORK SHALL BE INCLUDED IN THE BID.
10. ELECTRICAL DRAWINGS SHOWING EXISTING BUILDING CONDITIONS ARE BASED ON RECORD DRAWINGS AND SITE VISITS. IF ACTUAL EXISTING CONDITIONS DIFFER FROM THOSE SHOWN ON DRAWINGS, PLEASE NOTIFY ENGINEER.

ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTIONS	MOUNTING HEIGHT, UNO
P - 1 DEVICE	PANEL AND CIRCUIT DESIGNATION ARE SHOWN NEXT TO EACH DEVICE (PANEL NAME - CIRCUIT NUMBER). BRANCH CIRCUIT WIRE SIZE IS #12 UNLESS NOTED OTHERWISE. A SINGLE INSULATED GREEN GROUND CONDUCTOR SHALL BE PROVIDED WITH EACH HOME RUN. PROVIDE A SEPARATE NEUTRAL FOR EACH CIRCUIT. HOME RUNS SHALL HAVE NO MORE THAN THREE CIRCUITS. LINE VOLTAGE AND LOW VOLTAGE WIRING IS NOT SHOWN ON PLANS.	
	MOTOR CONNECTION	
(M)	METER	
	LINE BREAK	
1	KEY NOTE. REFER TO SPECIFIC NOTE ON SAME DRAWING SHEET.	
	SURFACE FLUORESCENT TO SCALE. STEM INDICATES WALL MOUNTED.	
$	SWITCH: SINGLE POLE	46"
(D)	MOTION DETECTOR. WATT STOPPER DLM LMDC-100 DUAL TECHNOLOGY CEILING MOUNT OR EQUAL.	
(D)	WALL MOTION DETECTOR. WATT STOPPER DLM LMDX-100 DUAL TECHNOLOGY WALL MOUNT OR EQUAL	46"
(P)	PHOTOCELL. WATT STOPPER DLM LMLS-400 CEILING MOUNT OR EQUAL	
	DUPLEX RECEPTACLE.	18"
	4PLEX RECEPTACLE.	18"
(J)	JUNCTION BOX	
	FUSED DISCONNECT SWITCH	
	MERSEN POWER MODULE	
	BRANCH CIRCUIT PANELBOARD	
	BREAKER	
	GROUNDING BUS	
	PUSHBUTTON	54"
F	FIRE ALARM MANUAL STATION	46"
F	HORN/STROBE	82"
F	STROBE	82"
D	DOOR HOLDER	
(H)	RATE-OF-RISE HEAT DETECTOR	
(SD)	SMOKE DETECTOR	
(SD) D	SMOKE DETECTOR "D" INDICATES DUCT DETECTOR. DUCT DETECTOR FURNISHED BY ELEC, INSTALLED BY MECH, AND WIRED BY ELEC.	
	ANALOG TELEPHONE OUTLET WITH TWO ANALOG CABLE DROPS U.N.O. (1)	18"
	TELEPHONE/DATA OUTLET WITH TWO DATA AND ONE VOICE CABLE DROPS. U.N.O. (1)	18"

NOTE (1): FOR EACH TELEPHONE AND/OR DATA OUTLET, INSTALL REQUIRED BACKCAN, CONDUIT (1" MINIMUM) w/ INSULATED THROAT BUSHING AND PULL CORD, TO ACCESSIBLE SPACE BELOW OR ABOVE CEILINGS, UNLESS NOTED OTHERWISE.

1. THESE SYMBOLS COMPRISE A STANDARD LIST; NOT ALL SYMBOLS APPEAR ON THIS PROJECT.
2. ALL MOUNTING HEIGHTS ARE TO CENTER OF DEVICE ABOVE FINISHED FLOOR. MOUNTING HEIGHTS INDICATED ON ARCHITECTURAL WALL ELEVATIONS OR AS NOTED SPECIFICALLY ON THE DRAWINGS OR IN THE SPECIFICATIONS SHALL TAKE PRECEDENCE OVER MOUNTING HEIGHTS LISTED.

NEW PENTHOUSE SUBPANEL PP1 — PANEL SCHEDULE

PROJECT: LEON JOHNSON

120/240V, 1Ph, 60A Bus — SURFACE MOUNTED — 10 KAIC

Ckt. No.	Description / Location	Load (VA)	Load Type	C.B. Amp	C.B. Pole	Phase	C.B. Amp	C.B. Pole	Load (VA)	Load Type	Description / Location	Ckt. No.
1	CU-1	1622	M	20	2	A	20	2	1622	M	CU-2	2
3		1622	M			B			1622	M		4
5	* CAB 1 LIGHTS	500	L	20	1	A	20	1			SPARE	6
7	* CAB 1 CONTROLS	500	G	20	1	B	20	1			SPARE	8
9	* CAB 2 LIGHTS	500	L	20	1	A	20	1			SPARE	10
11	* CAB 2 CONTROLS	500	G	20	1	B	20	1			SPARE	12
13	SPARE			20	1	A	20	1			SPARE	14
15	SPARE			20	1	B	20	1			SPARE	16

Total Connected Load: Ph A 4,244 VA 35.4 A
Total Connected Load: Ph B 4,244 VA 35.4 A
Total Connected Load (2 X Maximum): 8.5 KVA 35.4 AMPS Total Demand Load: 8.5 KVA 35.4 AMPS

* PROVIDE LOCKABLE GFI CIRCUIT BREAKER

ELECTRICAL ABBREVIATIONS

A, AMP	AMPERES
AF	AMP FUSE
AS	AMP SWITCH
C	CONDUIT / RACEWAY
CKT	CIRCUIT
CU	COPPER
EX	EXISTING
FA	FIRE ALARM
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
J-BOX	JUNCTION BOX
KAIC	THOUSAND AMP INTERRUPTING CURRENT
MLO	MAIN LUG ONLY
P	POLE
PH	PHASE
REC	RECEPTACLE
TTB	TELEPHONE TERMINAL BOARD
V	VOLT
W	WATTS
WP	WEATHERPROOF

CONSTRUCTION DRAWINGS

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DRAWN BY: RPM
REVIEWED BY: RJH

REV.	DESCRIPTION	DATE

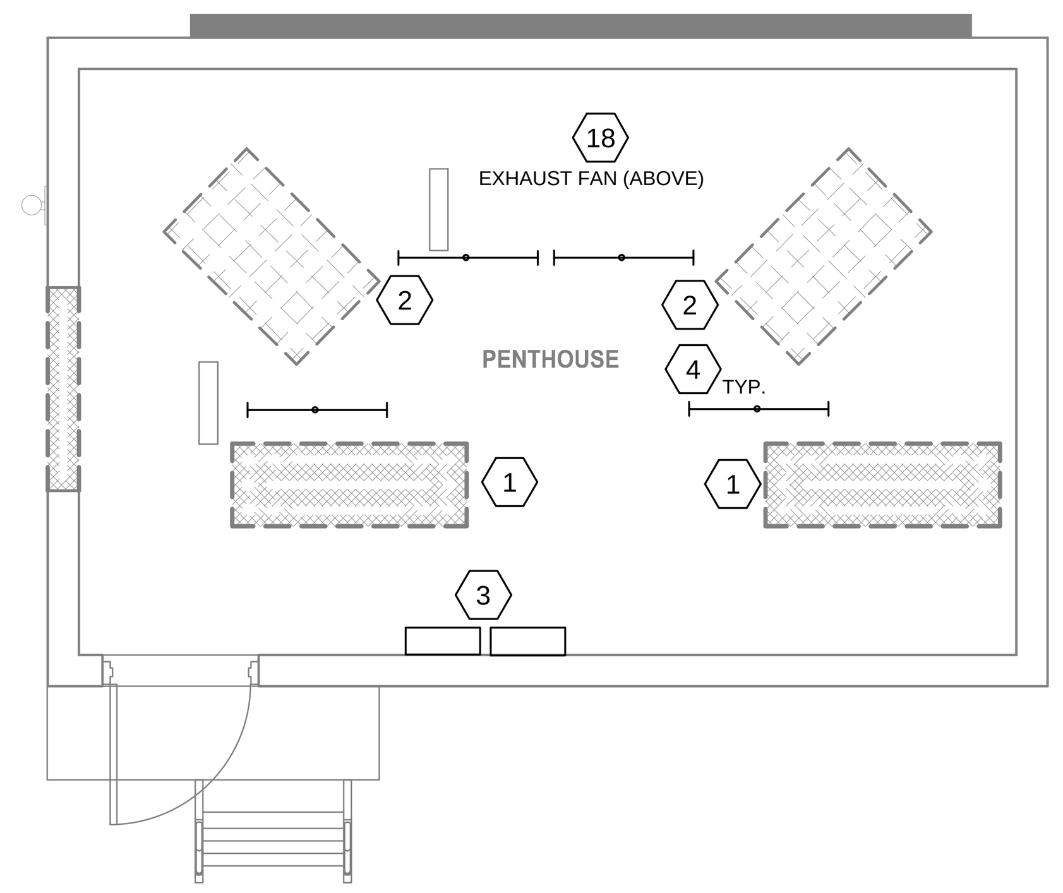
MONTANA LICENSED PROFESSIONAL ENGINEER

PPA#18-2067

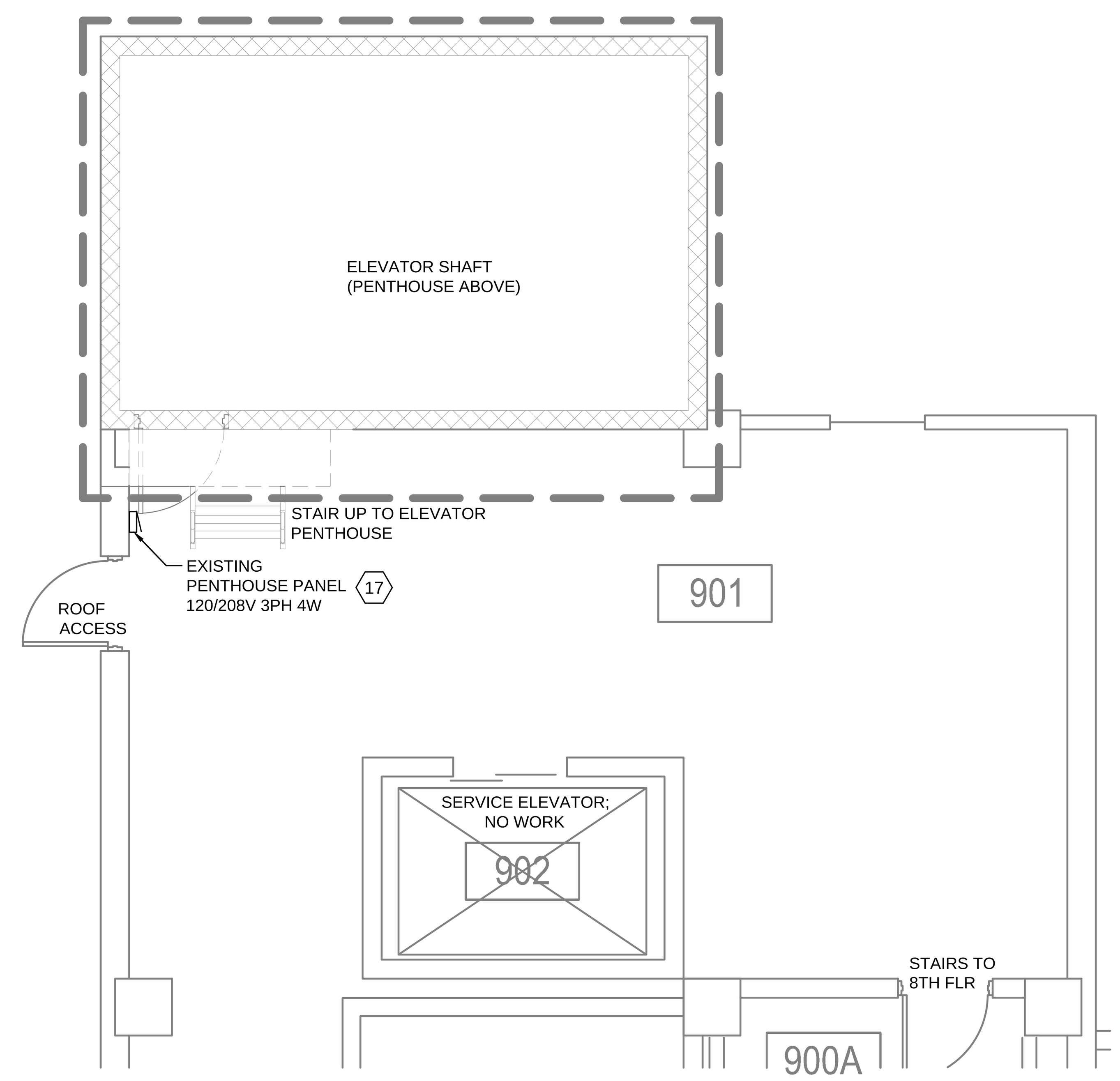
SHEET TITLE
ELECTRICAL SPECIFICATIONS & LEGENDS

SHEET
E1.1

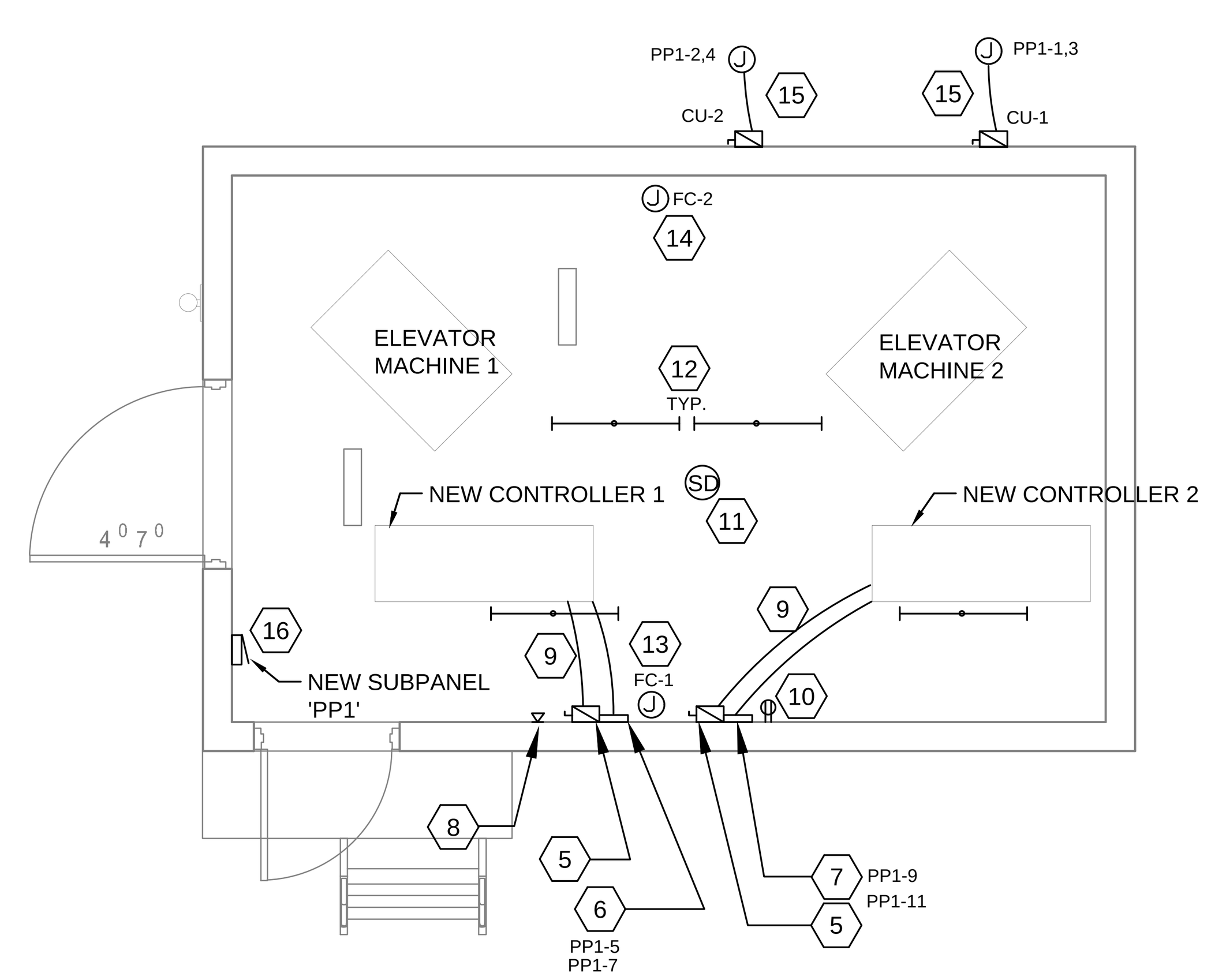
DATE
05/20/2019



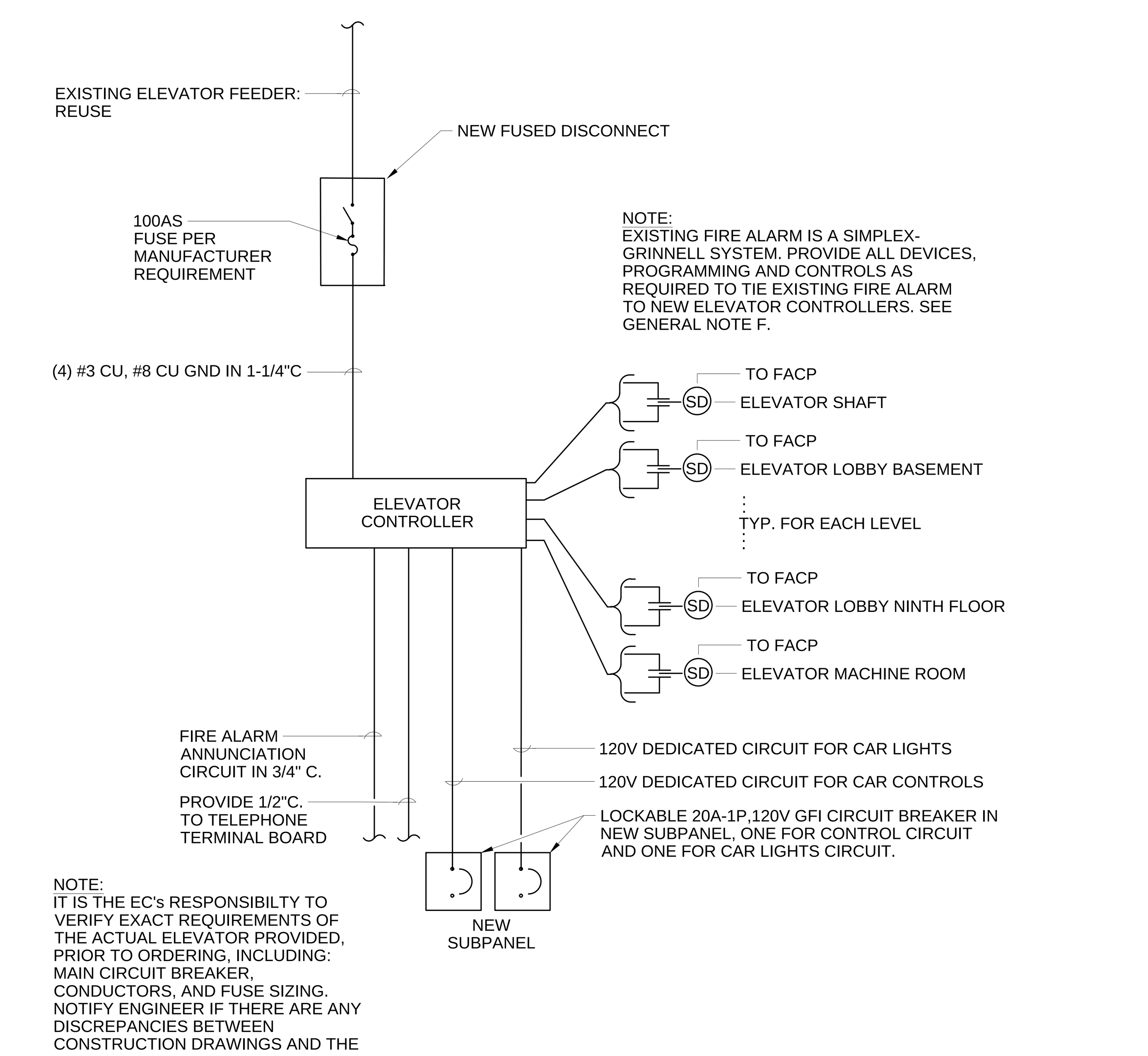
1 ELECTRICAL DEMOLITION PLAN
1/4" = 1'-0"



2 9TH FLOOR ELECTRICAL PLAN
1/4" = 1'-0"



3 PENTHOUSE ELECTRICAL PLAN
1/4" = 1'-0"



4 ELEVATOR ELECTRICAL DETAIL (TYP. FOR EACH ELEVATOR 1 & 2)
N.T.S.

ELECTRICAL GENERAL NOTES

A. IT IS ABSOLUTELY NECESSARY FOR ALL TRADES INVOLVED TO COORDINATE WITH EACH OTHER AND VERIFY THAT THERE ARE NO CONFLICTS IN LOCATION OF DUCTS, CONDUITS, DIFFUSERS, BOXES AND OTHER ITEMS THROUGHOUT THIS PROJECT BEFORE FINAL PLACEMENT OF MATERIALS.

B. ALL DIMENSIONS AND EXACT UNIT LOCATIONS ARE TO BE FIELD VERIFIED. THESE DRAWINGS REPRESENT SCHEMATIC SYSTEMS.

C. COORDINATE AVAILABLE SPACE FOR EQUIPMENT AND PIPING SYSTEMS WITH OTHER TRADES. REFER TO ARCHITECTURAL, STRUCTURAL, PLUMBING, AND ELEVATOR SHOP DRAWINGS FOR ADDITIONAL DETAILS NECESSARY FOR COORDINATION.

D. COORDINATE ALL CONCRETE PENETRATIONS WITH STRUCTURAL ENGINEER TO VERIFY HOW AND WHERE CONCRETE CAN BE CUT.

E. ALL ELECTRICAL CONNECTIONS FROM THE ELEVATOR CONTROLLER LOAD SIDE ARE TO BE MADE BY THE ELEVATOR CONTRACTOR.

F. CONTRACTOR SHALL CONNECT EXISTING FIRE ALARM DEVICES TO NEW ELEVATOR CONTROLLER. ENSURE FIRE ALARM MAINTAINS FULL FUNCTIONALITY. EXISTING DEVICES INCLUDE, BUT ARE NOT LIMITED TO: THE SMOKE DETECTORS IN THE LOBBIES OF EACH FLOOR.

G. COORDINATE WITH MSU TO ENSURE PATHWAY REMAINS INTACT TO EXISTING ELEVATOR CAMERA.

KEYNOTES

1. EXISTING ELEVATOR CONTROLS TO BE DEMOLISHED.
2. EXISTING ELEVATOR MOTORS TO BE DEMOLISHED.
3. DEMO EXISTING ELECTRICAL DISCONNECTS. KEEP EXISTING FEEDERS FROM THIS LOCATION BACK TO 480V PANEL FOR REUSE WITH NEW ELEVATORS.
4. DEMO FLUORESCENT LIGHT FIXTURES. SALVAGE CIRCUIT & CONTROL FOR REUSE.
5. PROVIDE NEW FUSED DISCONNECT. SEE DETAIL 4 ON SHEET E2.1. REUSE EXISTING FEEDER FROM EXISTING 480V PANEL AS DESCRIBED IN KEYNOTE 3.
6. CIRCUIT CAR 1 LIGHTS AND CONTROLS AS SHOWN.
7. CIRCUIT CAR 2 LIGHTS AND CONTROLS AS SHOWN.
8. PROVIDE 1" CONDUIT W/ PULL STRING TO TTB LOCATED ON MAIN FLOOR. COORDINATE W/ MSU IT AND PROVIDE THE REQUIRED TELEPHONE CABLING.
9. PROVIDE (4) #3 AND #8 GND IN 1 $\frac{1}{4}$"C, FROM MERSEN POWER MODULE TO CONTROLLER.
10. REPLACE EXISTING 120V DUPLEX RECEPTACLE WITH NEW 120V 20A GFI DUPLEX RECEPTACLE
11. SEE GENERAL NOTE F AND DETAIL 4. INSTALL NEW INTELLIGENT RELAY(S) FOR ELEVATOR CONTROLS AND CONNECT ALL EXISTING SMOKE DETECTOR(S) AS REQUIRED.
12. REPLACE (4) EXISTING STRIP FIXTURES IN PENTHOUSE. PROVIDE NEW LED LUMINAIRE COOPER METALUX 4SLSTP4040DD-UNV, OR APPROVED EQUAL. REUSE EXISTING LIGHTING CONTROL & CIRCUIT IN ROOM.
13. PROVIDE FEEDER BETWEEN CU-1 & FC-1: $\frac{3}{4}$"C, (2) #12, #12 GND.
14. PROVIDE FEEDER BETWEEN CU-2 & FC-2: $\frac{3}{4}$"C, (2) #12, #12 GND.
15. POWER CONNECTION TO NEW CONDENSING UNIT. PROVIDE FUSED DISCONNECT: 30AS, 20AF, NEMA 3R. CIRCUIT AS SHOWN.
16. PROVIDE NEW 60A 120/208V 1PH 3W MLO LOAD CENTER. CIRCUIT FROM EXISTING PENTHOUSE 120/208V 3PH PANEL; PROVIDE NEW 60A 2P BREAKER IN EXISTING PANEL. PROVIDE 1"C, (3) #6, #10 GND.
17. VERIFY AVAILABLE CAPACITY OF EXISTING PANEL PER NEC 220.87 PRIOR TO CIRCUITING NEW SUBPANEL.
18. COORDINATE DEMOLITION OF EXISTING EXHAUST FAN WITH MECHANICAL CONTRACTOR.

CONSTRUCTION DRAWINGS

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