REID HALL ELEVATOR REPLACEMENT

PERMIT-BID SET

OWNER

MONTANA STATE UNIVERSITY
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JAY FISCHER, PE

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JEFF KRAFT, PE

FIRE SPRINKLER AND FIRE ALARM

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751 OSTERMAN DR., #104, BOZEMAN, MT 59715
T. 406-404-7162

JASON ANDERSON, PE

GENERAL CONSTRUCTION NOTES

CONSTRUCTION DOCUMENTS:

1. THE CONSTRUCTION CONTRACT INCLUDES THE EXECUTED, SIGNED AGREEMENT BETWEEN THE OWNER AND THE CONTRACTOR, AND THE CONSTRUCTION DOCUMENTS, WHICH INCLUDES THE DRAWINGS, THE GENERAL CONDITIONS, THE SUPPLEMENTARY CONDITIONS, AND THE DRAWINGS.
2. BY EXECUTION OF THE CONSTRUCTION CONTRACT, THE CONTRACTOR REPRESENTS THAT HE OR SHE HAS (1) READ AND UNDERSTANDS THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS, (2) VISITED THE PROJECT-SITE, (3) BECOME FAMILIAR WITH THE LOCAL CONDITIONS UNDER WHICH THE WORK WILL BE PERFORMED, (4) CORRELATED PERSONAL OBSERVATIONS WITH REQUIREMENTS OF THE CONTRACT DOCUMENTS, AND (5) THAT HE OR SHE WILL COMPLY WITH ALL REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS.
3. THE INTENT OF THE CONSTRUCTION DOCUMENTS IS TO INCLUDE ALL ITEMS NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE CONSTRUCTION WORK - AND TO PROVIDE (FURNISH AND INSTALL) ALL PRODUCTS, MATERIALS, EQUIPMENT AND ACCESSORIES REQUIRED FOR PROPER OPERATION, IN ACCORDANCE WITH THEIR MANUFACTURER'S REQUIREMENTS.
4. THE CONTRACT DOCUMENTS ARE COMPLEMENTARY - WHAT IS REQUIRED BY ONE SHALL BE AS BINDING AS IF REQUIRED BY ALL. WHILE PREPARED WITH DUE CARE AND DILIGENCE, PERFECTION IS NOT POSSIBLE. DESIGN AND CONSTRUCTION ARE COMPLEX - EVERY POSSIBLE CONDITION OR CONTINGENCY CANNOT BE ANTICIPATED OR FULLY INDICATED WITHIN THE DOCUMENTS.
5. CAREFULLY STUDY AND COMPARE THE VARIOUS DRAWINGS (INCLUDING BUT NOT LIMITED TO ARCHITECTURAL, STRUCTURAL, MECHANICAL OR ELECTRICAL) AND OTHER CONTRACT DOCUMENTS WITH THE EXISTING CONDITIONS AT THE PROJECT-SITE BEFORE STARTING CONSTRUCTION. REPORT ERRORS, INCONSISTENCIES OR OMISSIONS DISCOVERED FOR CLARIFICATION. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIR OR CORRECTION COSTS IF WORK IS EXECUTED WITH KNOWLEDGE THAT IT INVOLVES AN ERROR, INCONSISTENCY OR OMISSION - WITHOUT THE ABOVE NOTICE.
6. IN THE EVENT OF CONFLICT OR AMBIGUITY WITHIN THE CONSTRUCTION DOCUMENTS, THE CONTRACTOR WILL BE DEEMED TO HAVE AGREED TO PROVIDE THE GREATER QUANTITY AND / OR BETTER QUALITY OF MATERIALS AND / OR WORK. OMISSIONS IN THE DESCRIPTION OF THE WORK DO NOT RELIEVE THE CONTRACTOR FROM PROVIDING A COMPLETE PROJECT.

GENERAL SCOPE OF WORK:

7. PERFORM ALL CONSTRUCTION WORK INDICATED OR OTHERWISE REQUIRED FOR COMPLETION OF THE PROJECT - EXCEPT AS NOTED OTHERWISE.
8. SCHEDULE AND COORDINATE THE WORK OF THE COMPLETE PROJECT TO ASSURE AN EFFICIENT AND ORDERLY SEQUENCE OF INSTALLATION OF ALL ELEMENTS - WITH PROVISIONS FOR ACCOMMODATING ITEMS TO BE INSTALLED LATER.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK.
10. PROVIDE ALL REQUISITIONS FOR PERMITS, INSPECTIONS AND APPROVALS OF THE WORK BY THE AUTHORITY HAVING JURISDICTION. THE MOST RESTRICTIVE CODE REQUIREMENTS AS INTERPRETED BY LOCAL OFFICIALS WILL APPLY.
11. VERIFY LOCATIONS OF EXISTING UTILITY SERVICE CONNECTIONS SERVING THE PROJECT BEFORE STARTING CONSTRUCTION. LOCATIONS OF EXISTING UTILITIES NOTED ARE APPROXIMATE, AND MAY BE BASED ON UN-VERIFIED INFORMATION. PROVIDE ALL CONNECTIONS REQUIRED AT UTILITY CONNECTION POINTS AT NO ADDITIONAL COST TO THE OWNER.
12. PROVIDE SUBCONTRACTORS WITH A FULL-SET OF THE CONSTRUCTION DOCUMENTS TO ENSURE COORDINATION BETWEEN ALL TRADES AND EACH SUBCONTRACTOR.
13. ALL CONSTRUCTION WORK MUST BE OF GOOD QUALITY - FREE FROM DEFECTS AND IN ACCORDANCE WITH REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS - OR THE WORK MAY BE CONSIDERED DEFECTIVE - AND SUBJECT TO CORRECTION OR REPLACEMENT BY THE CONTRACTOR WITHIN A PERIOD OF ONE (1) YEAR AFTER SUBSTANTIAL COMPLETION.

COORDINATION WITH SEPARATE CONTRACTORS:

14. COORDINATE WITH THE OWNER'S SEPARATE CONTRACTORS OR SUPPLIERS FOR WORK INDICATED AS BEING OWNER-FURNISHED & CONTRACTOR INSTALLED (OFCI), OR NOT-IN-CONTRACT (NIC). PROVIDE SCHEDULED DATES WHEN THE PROJECT WILL BE READY FOR DELIVERY OR INSTALLATION OF OWNER FURNISHED PRODUCTS, AS APPLICABLE.
15. COORDINATE THIS WORK OF THIS PROJECT WITH OTHER CONTRACTORS AT SEPARATE CONSTRUCTION PROJECTS WITHIN THE SAME DEVELOPMENT, SO THAT THIS WORK WILL NOT INTERFERE WITH OR DELAY THEIR OPERATIONS.
16. COORDINATE REQUIRED ELEVATOR FIRE ALARM AND FIRE SPRINKLER SCOPES WITH ONGOING REID HALL FIRE ALARM AND FIRE SPRINKLER PROJECT.

INSTALLATION OF OWNER-FURNISHED PRODUCTS:

17. COORDINATE, RECEIVE AT SITE, VERIFY RECEIPT, HANDLE, STORE ON-SITE (IF REQUIRED), PROTECT AND INSTALL OWNER-FURNISHED PRODUCTS, AND PROVIDE SERVICE CONNECTIONS AS APPLICABLE.
18. NOTIFY THE ARCHITECT/OWNER WITHIN SEVEN (7) DAYS OF RECEIPT OF ANY ITEMS ARE MISSING, DAMAGED OR OTHERWISE DEFECTIVE. LACK OF NOTIFICATION WILL BE CONSIDERED PRESUMPTIVE PROOF THAT ALL ITEMS DID ARRIVE UNDAMAGED AND IN PROPER QUANTITIES, AND ANY REPLACEMENT OR REPAIRS NECESSARY WILL THEN BE THE RESPONSIBILITY OF THE CONTRACTOR.
19. REPAIR DAMAGE TO OWNER-FURNISHED PRODUCTS CAUSED BY CONSTRUCTION OPERATIONS TO THE OWNER'S SATISFACTION.

TEMPORARY FACILITIES, UTILITIES & CONTROLS:

20. PROVIDE BARRIERS, FENCES AND OTHER CONTROLS TO PREVENT PUBLIC ENTRY TO CONSTRUCTION AREAS, AND TO PROTECT CONSTRUCTION WORKERS AND THE PUBLIC FROM HAZARDS OF CONSTRUCTION.
21. PROVIDE PROTECTION OF CONSTRUCTION MATERIALS FROM LOSS, DAMAGE, FIRE OR THEFT, AND PROTECT EXISTING CONSTRUCTION FROM DAMAGE BY CONSTRUCTION OPERATIONS.
22. PROVIDE TEMPORARY FIRE-PREVENTION MEASURES AND PROCEDURES INCLUDING FIRE-EXTINGUISHERS PER CITY REQUIREMENTS.
23. PROVIDE DUMPSTERS AND COLLECT WASTE DAILY. DISPOSE OF MATERIAL IN A LAWFUL MANNER. PLACE DUMPSTER IN LOCATION APPROVED BY OWNER.

GENERAL PRODUCT REQUIREMENTS:

24. STORE PRODUCTS PER MANUFACTURER'S INSTRUCTIONS, PROTECTED FROM DAMAGE OR ABUSE, AND WITH VENTILATION TO AVOID CONDENSATION.
25. APPLICATION OF A MATERIAL OR EQUIPMENT ITEM TO WORK INSTALLED BY OTHERS CONSTITUTES ACCEPTANCE OF THAT WORK AND ASSUMPTION OF RESPONSIBILITY FOR SATISFACTORY INSTALLATION AND PERFORMANCE.
26. INSPECT EACH ITEM OF MATERIAL OR EQUIPMENT IMMEDIATELY PRIOR TO INSTALLATION. REJECT DAMAGED AND DEFECTIVE ITEMS.

COORDINATION WITH FIXTURES, FURNISHINGS & EQUIPMENT (FF&E):

27. REVIEW THE OWNER'S SEPARATE CASEWORK/FIXTURES, FURNISHINGS, EQUIPMENT, & SIGNAGE DRAWINGS FOR UNIT SIZES, WEIGHTS, SERVICE-CONNECTIONS AND CLEARANCES REQUIRED - WHETHER FURNISHED OR INSTALLED BY THE CONTRACTOR OR OTHERS. VERIFY THAT REQUIRED ROUGH-INS, CONNECTIONS AND CLEARANCES WILL BE PROVIDED. PROVIDE OPENINGS AND DELIVERY ACCESS FOR FF&E ITEMS, AND PROVIDE STAGING SPACE FOR THEIR INSTALLATION. REPORT DISCREPANCIES OR OMISSIONS OF EQUIPMENT REQUIREMENTS PRIOR TO INSTALLATION.
28. PROVIDE ALL HVAC, PLUMBING, GAS OR ELECTRIC SERVICE CONNECTIONS TO CASEWORK / FIXTURES, SIGNAGE, OR EQUIPMENT INDICATED (WHETHER UNITS ARE INSTALLED BY CONTRACTOR OR BY OTHERS)

GENERAL EXECUTION OF THE WORK:

29. ESTABLISH AND MAINTAIN DURABLE MARKERS TO LOCATE ALL ELEMENTS OF THE WORK, INCLUDING BUT NOT LIMITED TO PARTITIONS, CASEWORK, FIXTURES, EQUIPMENT AND LIGHT-FIXTURES, AND THEIR RELATED MECHANICAL, ELECTRICAL AND PLUMBING CONNECTIONS.
30. AT PROJECTIONS OF FINISHED SURFACES, INCLUDING PILASTERS OR THICKENED WALLS, RETURN ALL EXPOSED SURFACE FINISHES BACK TO THE PRIMARY SURFACE EVEN IF NOT SPECIFICALLY NOTED.
31. PERFORM ALL CUTTING, PATCHING AND FITTING TO ACCOMMODATE CONSTRUCTION WORK AND TO ACHIEVE THE INTENT OF THE CONSTRUCTION DOCUMENTS. CUT & PATCH PARTITIONS FOR INSTALLATION OF PLUMBING OR ELECTRICAL SERVICES AND FOR INSTALLATION OF WALL BLOCKING, IF NECESSARY. PROVIDE ESCUTCHEONS, GROMMETS AND SIMILAR SURFACE CLOSURE OR FINISHED TRIMS AT EXPOSED PENETRATIONS OF FINISHED SURFACES.

COORDINATION WITH ADJACENT CONSTRUCTION:

32. LIMIT WORK TO OCCUR WITHIN THE PROJECT SITE, OR WITHIN OTHER AREAS DESIGNATED OR APPROVED FOR USE BY THE OWNER / LANDLORD / OR DEVELOPER. CONNECT TO EXISTING UTILITY SERVICES BEYOND THE PROJECT-SITE IN THE MOST EXPEDITIOUS MANNER POSSIBLE WITH MINIMAL DISTURBANCE OF EXISTING ELEMENTS OR FINISHES.

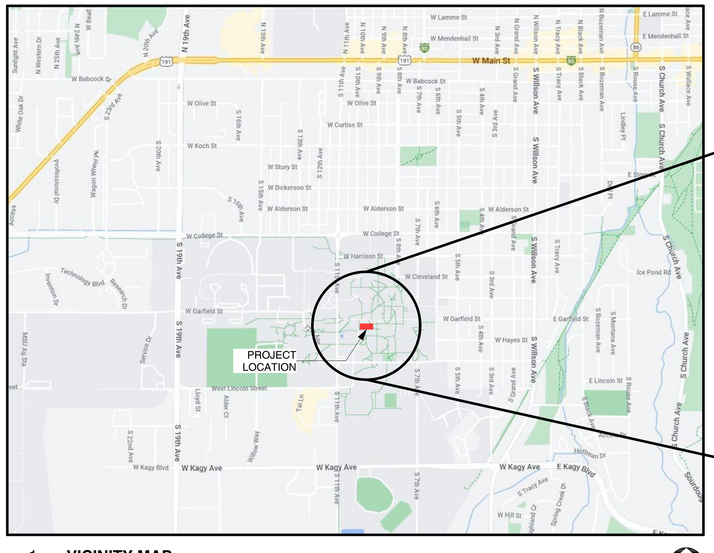
FINAL CLEANING:

33. JUST BEFORE OWNER OCCUPANCY, CLEAN ALL SURFACES INCLUDING FIXTURES AND EQUIPMENT FOR THE OWNER'S USE AND OPERATION. POLISH GLASS AND PLUMBING FIXTURES TO BE WITHOUT NOTICEABLE STREAKS. VACUUM CLEAN FLOORS AND DAMP WIPE WALLS, FIXTURES AND EQUIPMENT TO BE DUST-FREE WITHOUT STAINS, FILMS OR OTHER DISTRACTING SUBSTANCES.
34. CLEAN THE PROJECT SITE OF RUBBISH, LITTER AND OTHER FOREIGN SUBSTANCES. BROOM CLEAN PAVED AREAS AND REMOVE STAINS, SPILLS AND OTHER FOREIGN DEPOSITS. RAKE GROUNDS THAT ARE NEITHER PAVED NOR PLANTED, TO A SMOOTH EVEN-TEXTURED SURFACE.

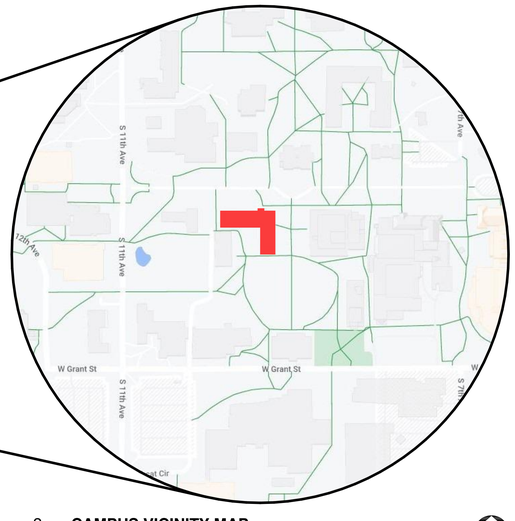
TURN-OVER / CLOSE-OUT REQUIREMENTS:

35. SET ALL TIME CLOCKS, THERMOSTATS AND SIMILAR DEVICES TO THE CURRENT LOCAL TIME. PROVIDE A PRINTED LIST OF NAMES, ADDRESSES AND PHONE NUMBERS OF ALL SUB-CONTRACTORS AND MATERIAL SUPPLIERS USED. ARRANGE FOR ALL INSPECTIONS AND FURNISH OWNER WITH CERTIFICATE OF OCCUPANCY.
36. SUBMIT OPERATION AND MAINTENANCE DATA TO INCLUDE EMERGENCY INSTRUCTIONS, SPARE PARTS LISTS, PRODUCT WARRANTIES, WIRING DIAGRAMS, INSPECTION PROCEDURES, AND APPLICABLE SHOP DRAWINGS AND PRODUCT DATA.
37. SUBMIT AS-BUILT MARKED-UP DRAWINGS INDICATING ANY CHANGES MADE AND WITH DIMENSIONED LOCATIONS OF CONCEALED WORK AND LEAVE A COPY AT THE PROJECT SITE.

SHEET INDEX

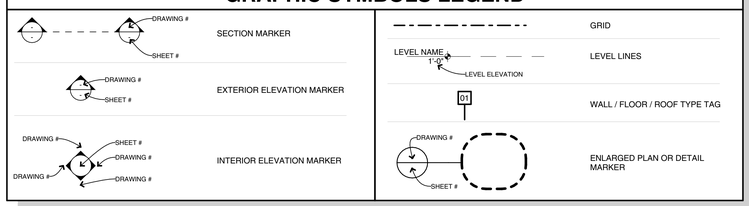


1 VICINITY MAP
G001



2 CAMPUS VICINITY MAP
G001

GRAPHIC SYMBOLS LEGEND



TYPICAL ABBREVIATIONS

@	AT	EX STR	EXPOSED STRUCTURE	PL	PLATE
AB.	ANCHOR BOLTS	EXP	EXPANSION	PL	PROPERTY LINE
ACT	ACOUSTIC CEILING TILE	EXT	EXTERIOR	PR	PAIR
ADJ	ADJUSTABLE	FD	FLOOR DRAIN	PREFIN	PREFINISHED
AFF	ABOVE FINISH FLOOR	FEC	FIRE EXTINGUISHER CABINET	PTD	PAINTED
ALUM	ALUMINUM	FF	FINISH FLOOR	R	RISER
APPROX	APPROXIMATELY	FIN	FINISH	RB	RESILIENT BASE
B/	BOTTOM OF	FLR	FLOOR	REF	REFERENCE
BD	BOARD	FP	FILLER PANEL	REQ	REQUIRED
BLDG	BUILDING	FRP	FIBERGLASS REINF. PANEL	REQ'D	REQUIRED
BLKG	BLOCKING	FT	FOOT/FEET	RO	ROUGH OPENING
BM	BEAM	GA	GAUGE	ROW	RIGHT OF WAY
BOC	BACK OF CURB	GALV	GALVANIZED	SF	SQUARE FEET
	BACK OF CHANNEL	GB	GYPSUM BOARD	SG	SAFETY GLASS
BOT	BOTTOM	GYP	BD GYPSUM BOARD	SPEC	SPECIFICATIONS
BR	BRICK	GC	GENERAL CONTRACTOR	SV	SHEET VINYL
BRG	BEARING	GEN	GENERAL	SIM	SIMILAR
BRZ	BRONZE	GL	GLASS	SB	SPLASH BLOCK
C/CPT	CARPET	GRG	GLASS FIBER REINF. GYPSUM	SC	SEALED CONCRETE
CIP	CAST IN PLACE	H	HIGH/HEIGHT	SLR	SEALER
CJ	CONTROL JOINT	HAS	HEADED ANCHOR STUDS	STL	STEEL
CL/C	CENTER LINE	HD	HAND	STN	STONE
CLG	CEILING	HM	HOLLOW METAL	STRUCT	STRUCTURAL
CLR	CLEAR	HORIZ	HORIZONTAL	T	TREAD
CMU	CONCRETE MASONRY UNIT	HR	HOUR	T	TERRAZZO
CO	CLEAR OPENING	INSUL	INSULATION	T/	TOP OF
	CLEAN OUT	INT	INTERIOR	TB	TILE BACKER BOARD
COL	COLUMN	JT	JOINT	TD	TRAVEL DISTANCE
CONC	CONCRETE	LC	LANDSCAPING CONTRACTOR	TF	TOP OF FOOTING
COORD	COORDINATE	MAX	MAXIMUM	THK	THICK
CONT	CONTINUOUS	MECH	MECHANICAL	TOB	TOP OF BEAM
CT	CERAMIC TILE	MFG	MANUFACTURER	TOC	TOP OF CONCRETE
DAT	DATUM	MIN	MINIMUM	TYP	TYPICAL
DEFS	DIRECT-APPLIED EXT. FINISH SYSTEM	MIN	MINUTES	UNO	UNLESS NOTED OTHERWISE
DET/DTL	DETAIL	MO	MASONRY OPENING	VCT	VINYL COMPOSITION TILE
DIA	DIAMETER	MTL	METAL	VERT	VERTICAL
DN	DOWN	NA	NOT APPLICABLE	VWC	VINYL WALL COVERING
DR	DOOR	NR	NOT RATED	W	WIDE/WIDTH
DS	DOWNSPOUT	NIC	NOT IN CONTRACT	W/	WITH
DWG	DRAWING	NTS	NOT TO SCALE	WD	WOOD
EC	ELECTRICAL CONTRACTOR	OC	ON CENTER	WM	WALK-OFF MAT
ELEC	ELECTRICAL	OPNG	OPENING	WP	WORK POINT
ELEV/EL	ELEVATION	OPP	OPPOSITE		
EP	ELECTRICAL PANEL	P	PAINT		
EQ	EQUAL	PLAM	PLASTIC LAMINATE		

COLLABORATIVE DESIGN ARCHITECTS
2280 GRANT ROAD, SUITE C
BILLINGS, MT 59102 406.248.3443
www.cd-mt.com

22-0680 - REID HALL ELEVATOR REPLACEMENT
REID HALL, BOZEMAN, MT 59715

CONSTRUCTION DOCUMENTS MUST BE PRINTED IN COLOR TO BE OFFICIAL. IF THE COLOR OF THIS TEXT IS NOT RED, THE CONSTRUCTION DOCUMENTS ARE NOT TO BE USED.

ISSUE DATES:

- 3/15/2024 - PERMIT-BID SET
- -
- -
- -
- -
- -

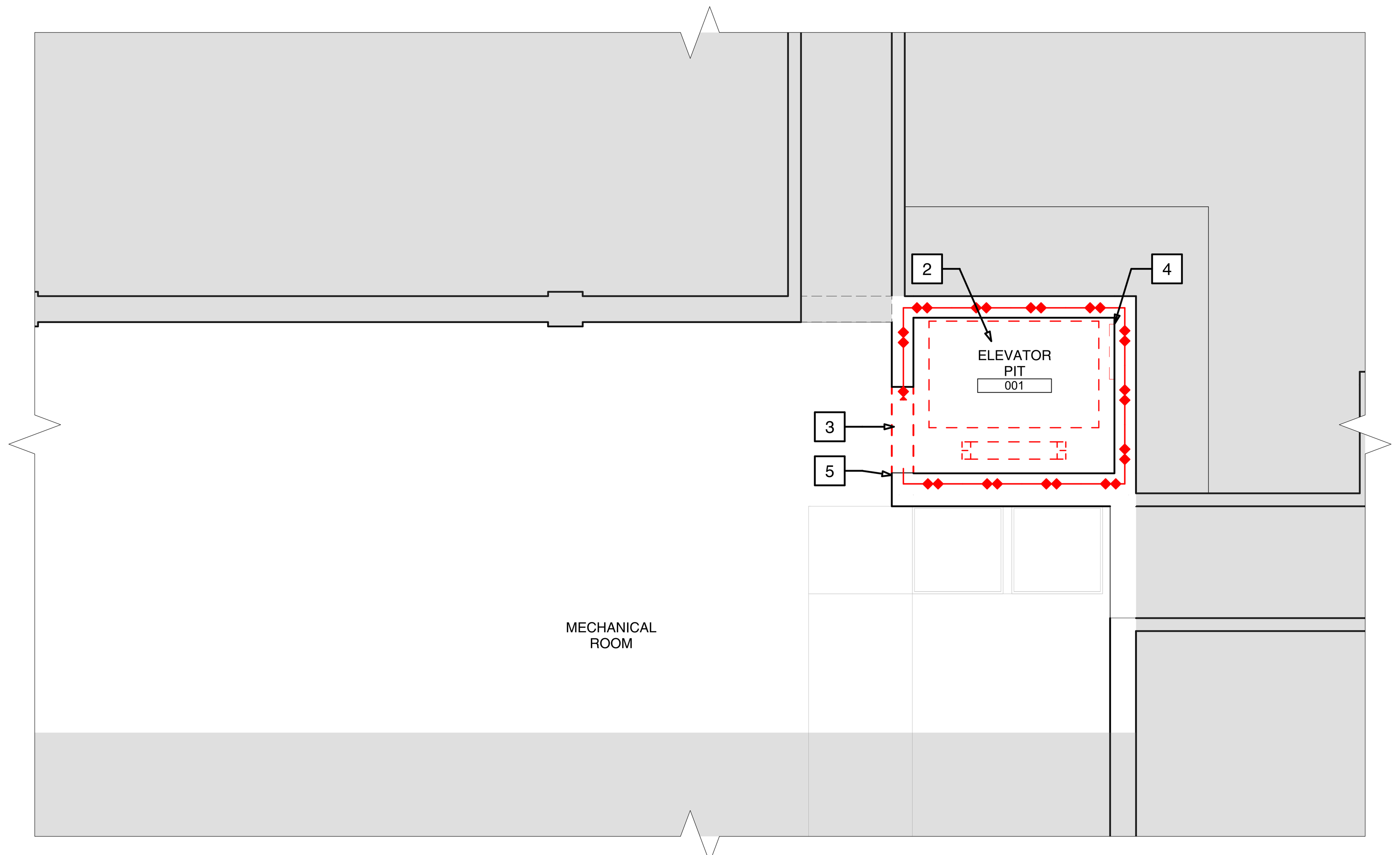
PERMIT-BID SET

REID HALL ELEVATOR REPLACEMENT
REID HALL, BOZEMAN, MT 59715

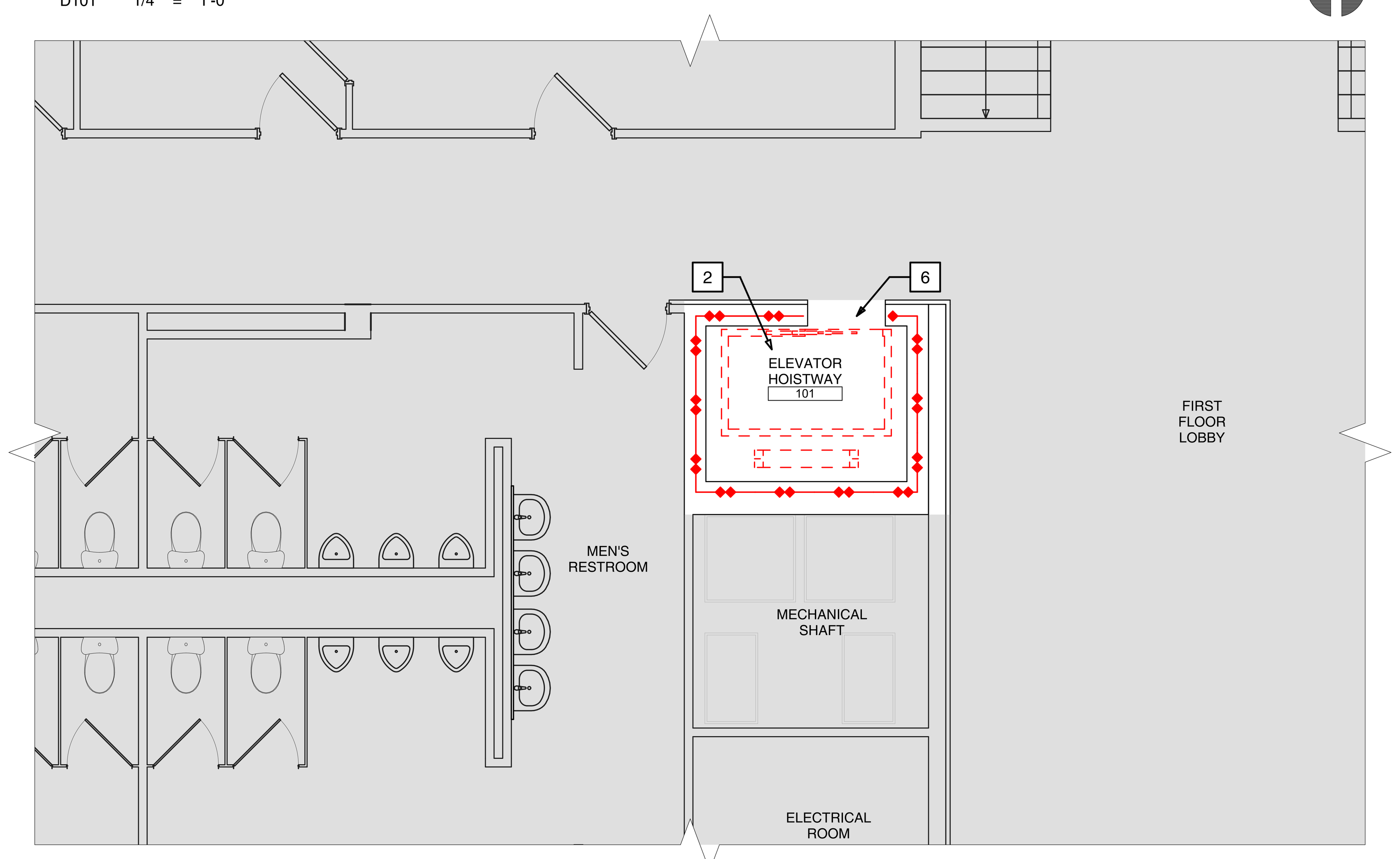
- **PREPARED FOR:** EVAN BURNETT
- **PROJECT ARCHITECT:** TRAVIS SMITH, AIA
- **MSU PPA#:** 22-0680
- **ARCHITECT'S PROJECT NUMBER:** 2347

LICENSED ARCHITECT
TRAVIS W. SMITH
No. 15067
BILLINGS, MT
STATE OF MONTANA

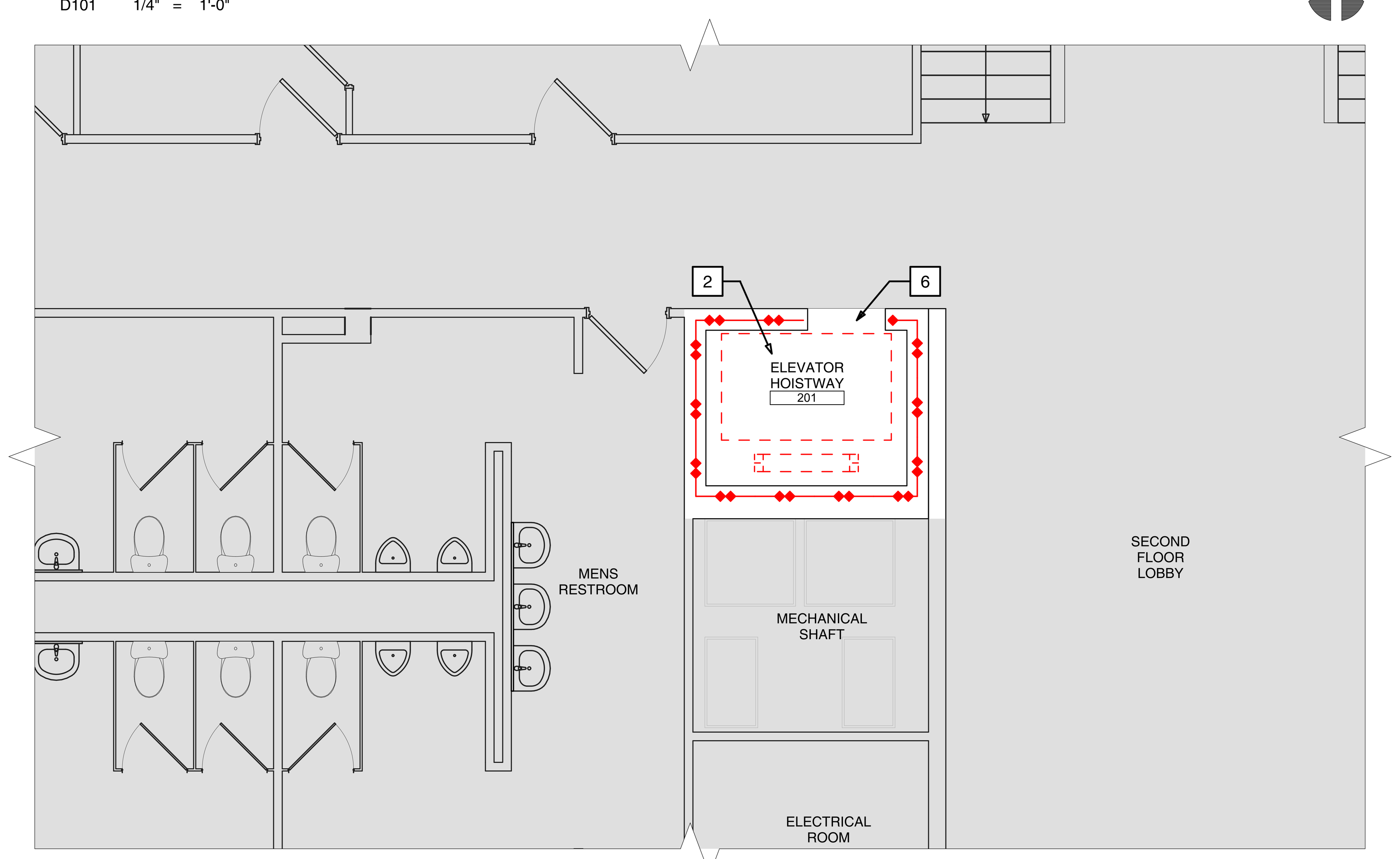
G001
COVER SHEET



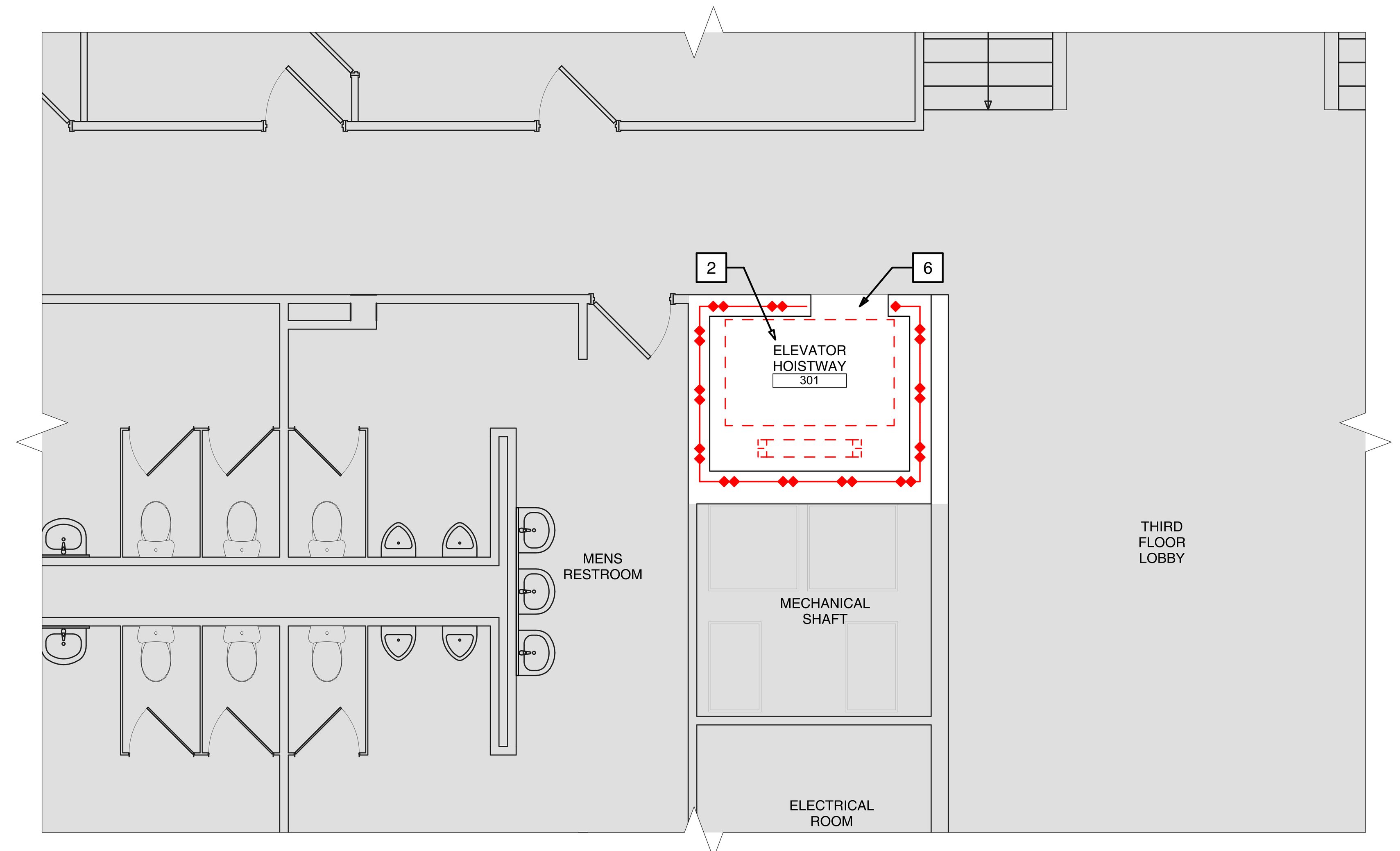
1 **BASEMENT DEMO PLAN**
D101 1/4" = 1'-0"



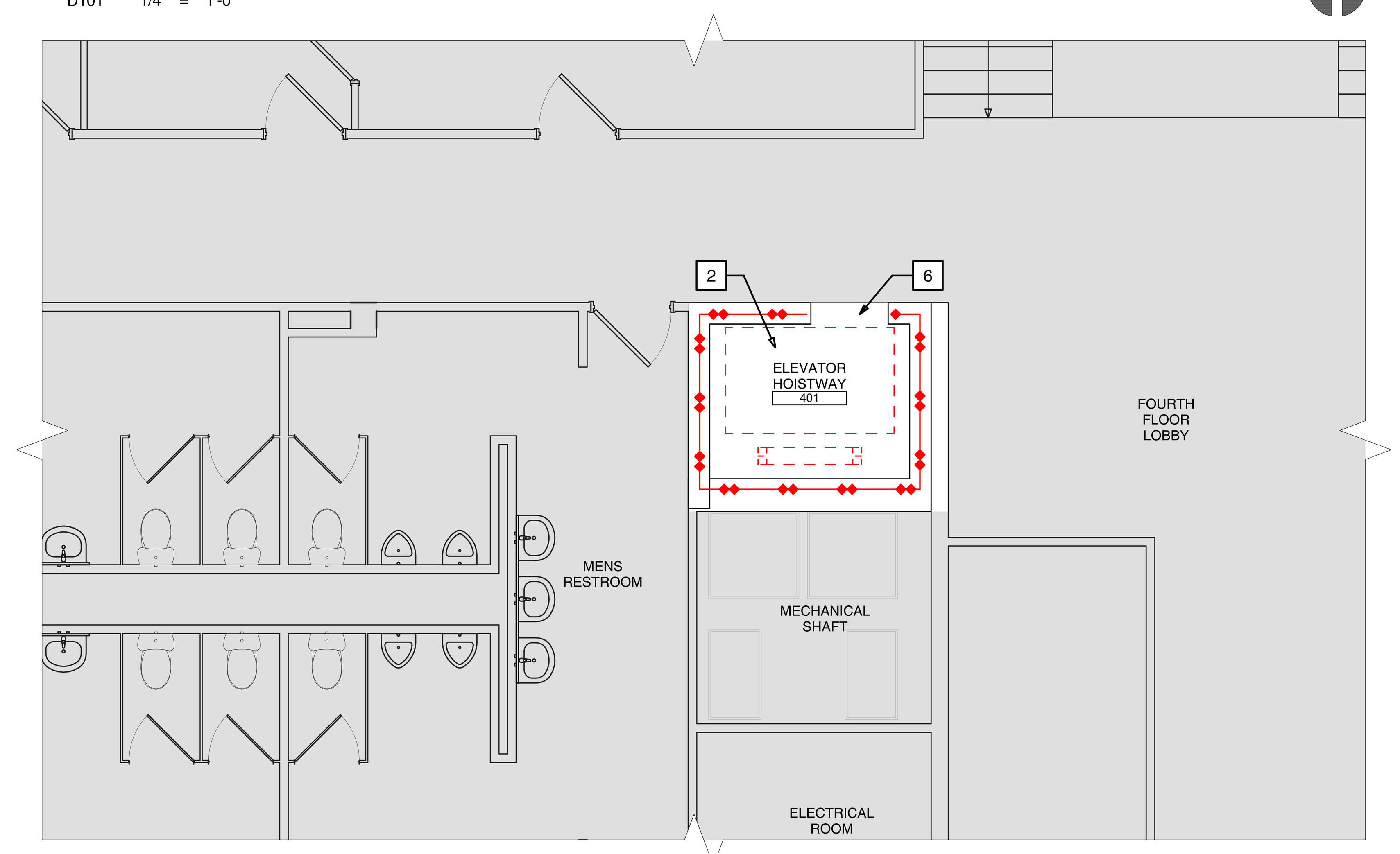
2 **FIRST FLOOR DEMO PLAN**
D101 1/4" = 1'-0"



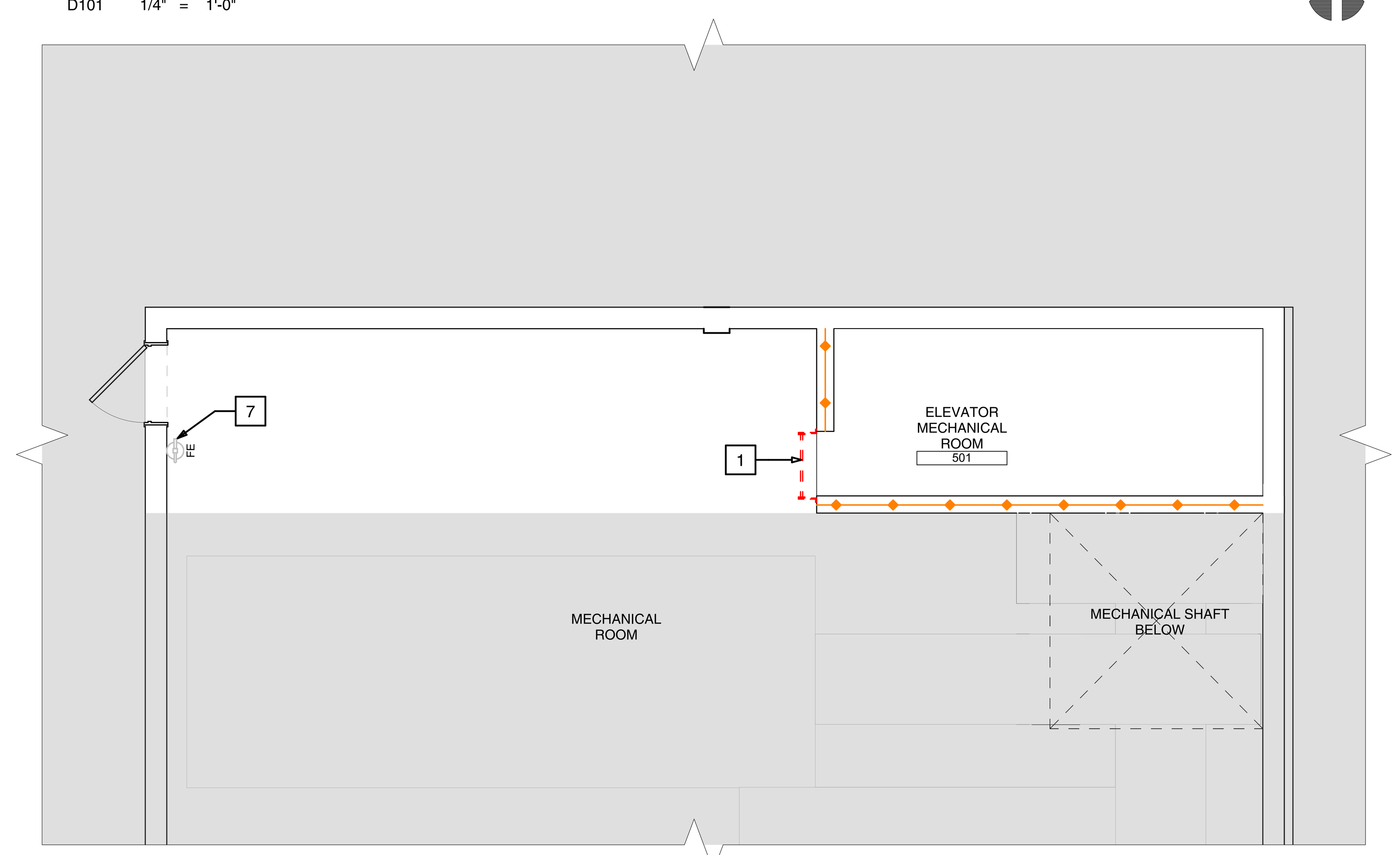
3 **SECOND FLOOR DEMO PLAN**
D101 1/4" = 1'-0"



4 **THIRD FLOOR DEMO PLAN**
D101 1/4" = 1'-0"



5 **FOURTH FLOOR DEMO PLAN**
D101 1/4" = 1'-0"



6 **ROOF DEMO PLAN**
D101 1/4" = 1'-0"

DEMOLITION GENERAL NOTES

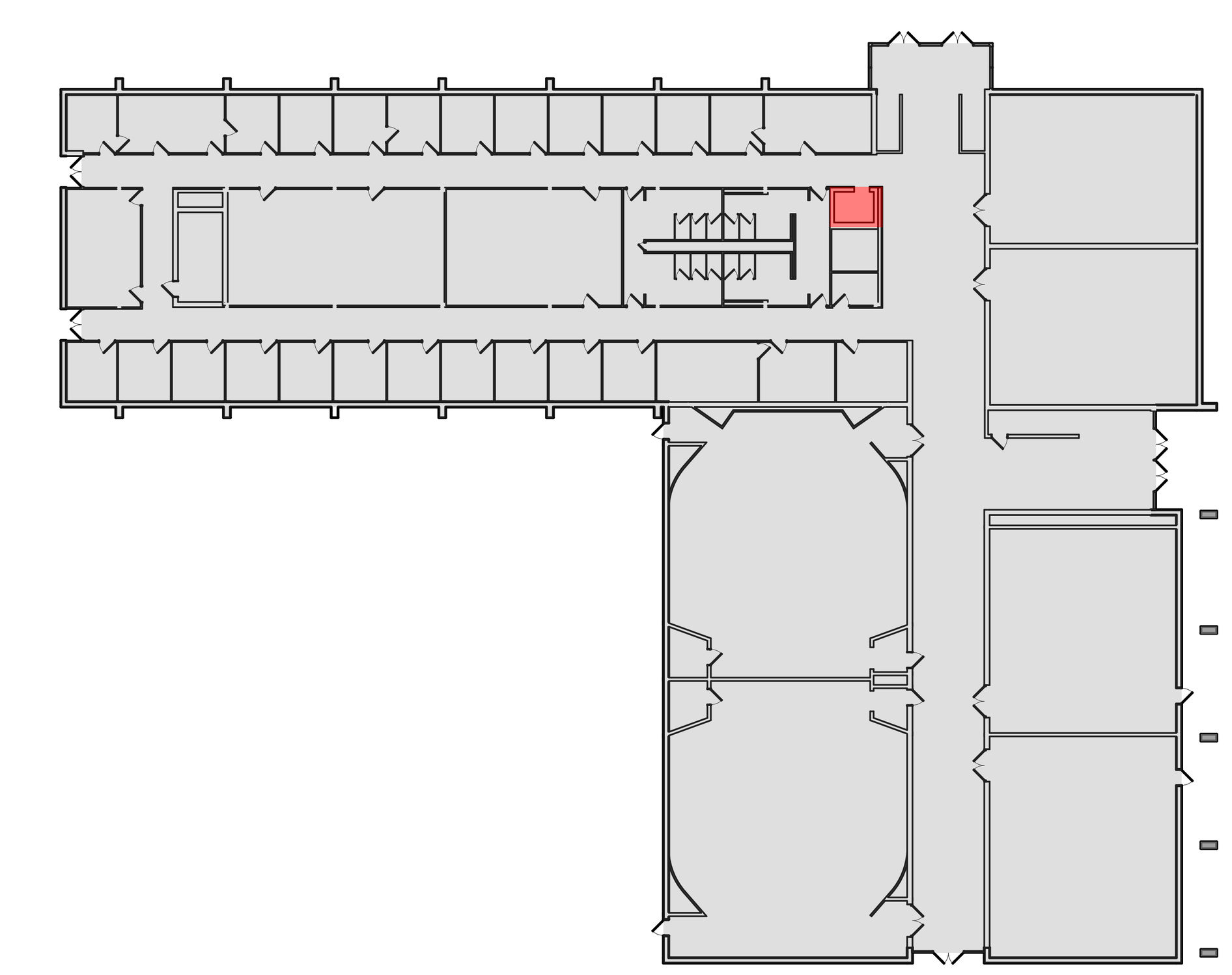
A. NOT ALL DEMOLITION ITEMS ARE SPECIFICALLY NOTED
B. "DEMOLISH" AND "DEMO" SHALL MEAN CAREFULLY REMOVE, DISMANTLE, SAWCUT, AND LEGALLY DISPOSE OF OFF-SITE ITEMS INDICATED.
C. "PATCH" SHALL MEAN: RESTORE FINISH TO SURFACES DAMAGED OR MARRED DURING DEMOLITION TO MATCH THE EXISTING, ADJACENT UNDAMAGED SURFACES TO REMAIN. PATCHING SHALL INCLUDE USING NEW SKIM-COAT , PAINTING AND NEW PAINTING TO A CLEAN LINE OF DEMARCATION. ALL PATCHING SHALL BE NEAT IN APPEARANCE AND CORRECTIONS SHALL BE MADE TO THE SATISFACTION OF THE ARCHITECT. IF A SUCCESSFUL MATCH CANNOT BE MADE ON GYPSUM BOARD OR OTHER WALL SURFACES, THE CONTRACTOR SHALL LAMINATE NEW GYPSUM WALL BOARD OVER THE EXISTING SURFACES AND MODIFY THE NEW WORK ACCORDINGLY TO PROVIDE AN ACCEPTABLE FINISHED APPEARANCE.
D. DO NOT PERFORM DEMOLITION WORK BEYOND AREAS OR ITEMS INDICATED, CONTRACTOR SHALL BE FINANCIALLY RESPONSIBLE FOR REPLACING ITEMS OR RESTORING SURFACES ACCIDENTALLY DEMOLISHED BEYOND SCOPE OF DEMO WORK TO PRE-DEMOLITION CONDITIONS.
E. SEE STRUCTURAL DRAWINGS FOR DETAILS AND PROCEDURES FOR THE DEMOLITION OF BUILDING STRUCTURAL ELEMENTS. EXCEPT AS INDICATED, DO NOT DEMOLISH, CUT, OR IN ANY WAY MODIFY ANY STRUCTURAL ELEMENT WITHOUT FIRST CONTACTING THE ARCHITECT AND STRUCTURAL ENGINEER FOR ANALYSIS. CONTRACTOR SHALL BE FINANCIALLY RESPONSIBLE FOR RESTORING STRUCTURAL INTEGRITY TO STRUCTURAL ELEMENTS DEMOLISHED WITHOUT SUCH CONSULTATION.
F. INSTALL AND MAINTAIN TEMPORARY WORK LIGHTING DURING DEMOLITION OPERATIONS.
G. PRIOR TO DEMOLITION ACTIVITIES, REMOVE ELECTRICAL DEVICES, LIGHT FIXTURES, EQUIPMENT, ETC., AND DISCONNECT CONDUCTORS AT BOTH ENDS OF CIRCUITS FOR ELECTRICAL WORK PART OF CEILING OR WALL CONSTRUCTION INDICATED AS TO BE DEMOLISHED. IN CONSTRUCTION TO REMAIN, RETAIN ELECTRICAL DEVICES, CONDUIT, WIRING ETC., LABEL ALL CIRCUIT. CONTRACTOR SHALL BE FINANCIALLY RESPONSIBLE FOR RESTORING ELECTRICAL SERVICE TO AREAS ACCIDENTLY DEMOLISHED OR REMOVED DURING DEMOLITION ACTIVITIES. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION AND REQUIREMENTS. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL REQUIREMENTS FOR ELECTRICAL DEMOLITION.
H. SHOULD SUSPECTED HAZARDOUS MATERIALS OR SUBSTANCES BE DISCOVERED AS PART OF THE DEMOLITION WORK, NOTIFY THE ARCHITECT AND OWNER IMMEDIATELY. AFTER CONSULTATION, ARRANGEMENTS SHALL BE MADE FOR THE ADDITIONAL SAMPLING AND TESTING OF MATERIALS.
I. REFER TO MECHANICAL DRAWINGS FOR ALL DEMOLITION WORK REQUIRED FOR INSTALLATION OF NEW MECHANICAL ITEMS.
J. BIDDING: THE GENERAL CONTRACTOR AND BIDDING SUBCONTRACTORS ARE TO BE AWARE THAT THIS IS A REMODELING PROJECT IN AN EXISTING STRUCTURE AND TO EXPECT THAT UNKNOWN CONDITIONS WILL BE UNCOVERED AS PART OF DEMOLITION ACTIVITIES. SUBCONTRACTORS SHALL VISIT THE WORK AREA PRIOR TO PREPARING PRICING FOR THE PROJECT TO INVESTIGATE THE EXTENT AND TYPE OF MATERIALS AND BUILDING SYSTEMS THAT WILL NEED TO BE DEMOLISHED, AND TO BECOME FAMILIAR WITH THE SURROUNDING SPACES, AREAS TO BE PROTECTED, STAGING AREAS, DUMPING COSTS/REGULATIONS, & THE EXISTING PROJECT CONDITIONS.
K. PATCH ALL EXISTING SURFACES TO A 'LIKE' NEW LOOK WHERE REQUIRED.

DEMOLITION PLAN LEGEND

EXISTING WALL TO BE REMOVED
EXISTING WALL TO REMAIN
EXISTING DOOR TO BE REMOVED
EXISTING DOOR TO REMAIN
EXISTING 2 HR FIRE RATING TO REMAIN
EXISTING 1 HR FIRE RATING TO REMAIN
AREA NOT IN PROJECT SCOPE. NO ALTERATIONS

DEMO PLAN KEYNOTES

1. REMOVE EXISTING LADDER AND ALL ASSOCIATED EQUIPMENT.
2. REMOVE EXISTING ELEVATOR PER VERTICAL TRANSPORTATION ENGINEER
3. DEMO EXISTING WALL FOR NEW OPENING. SEE FLOOR PLAN FOR DIMENSIONS AND LOCATION
4. REMOVE EXISTING PIT LADDER.
5. RELOCATE EXISTING FIRE SPRINKLER AS NECESSARY WITH NEW OPENING.
6. EXISTING ELEVATOR DOOR OPENING FRAME TO REMAIN
7. EXISTING FIRE EXTINGUISHER TO REMAIN



7 **KEY PLAN**
D101

22-0680 - REID HALL ELEVATOR REPLACEMENT
REID HALL, BOZEMAN, MT 59715

C O L L A B O R A T I V E D E S I G N A R C H I T E C T S
2280 GRANT ROAD, SUITE C BILLINGS, MT 59102 406.248.3443 www.cd-mt.com

ARCHITECTS

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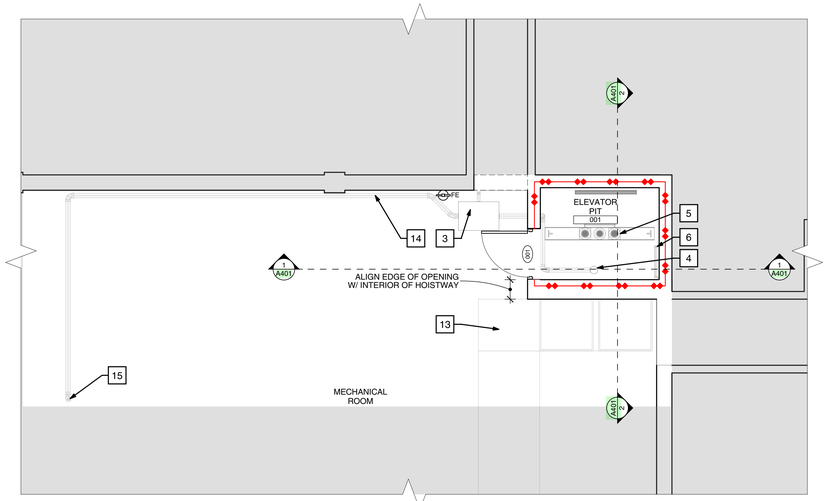
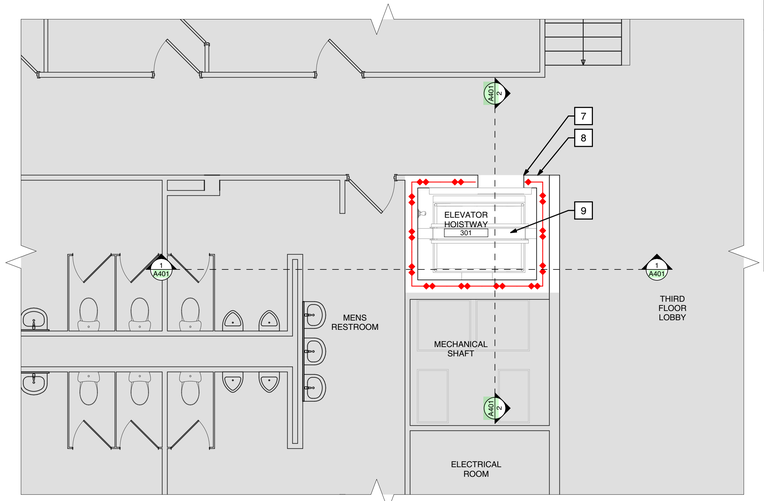
REID HALL, BOZEMAN, MT 59715

PREPARED FOR: EVAN BURNETT
PROJECT ARCHITECT: TRAVIS SMITH, AIA
MSU PPA#: 22-0680
ARCHITECT'S PROJECT NUMBER: 2347

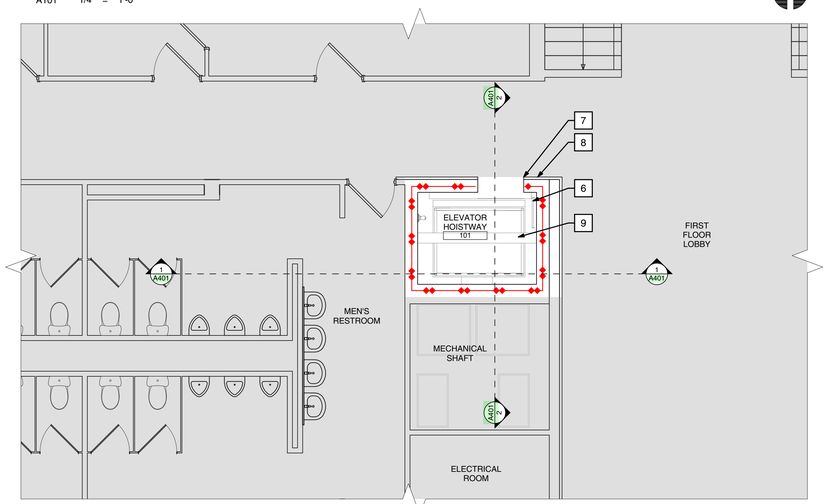
LICENSED ARCHITECT TRAVIS W. SMITH No. 13987 BILLINGS, MT STATE OF MONTANA



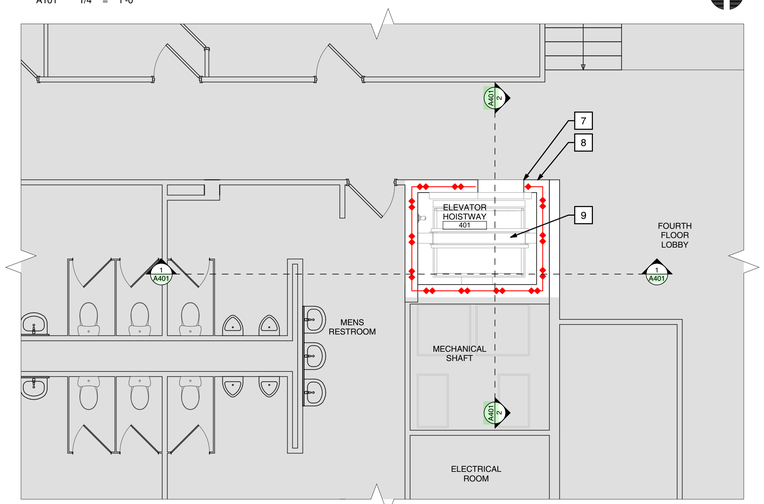
1 **BASEMENT PLAN**
A101 1/4" = 1'-0"



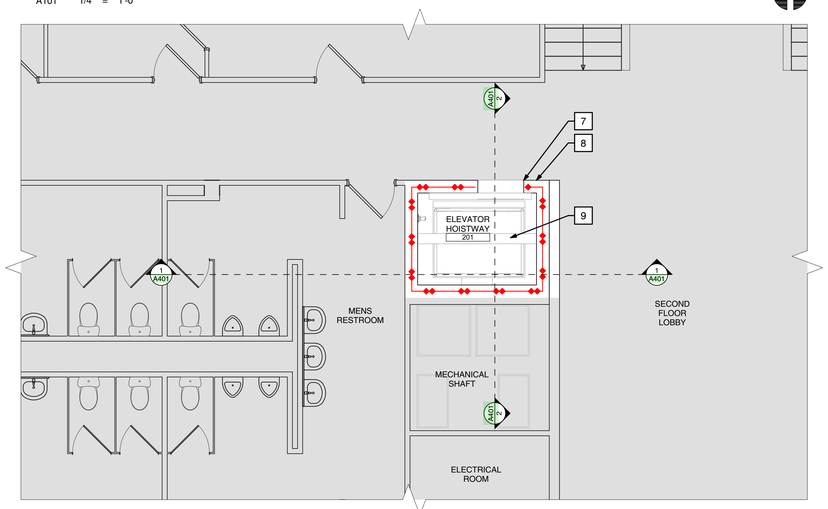
4 **THIRD FLOOR PLAN**
A101 1/4" = 1'-0"



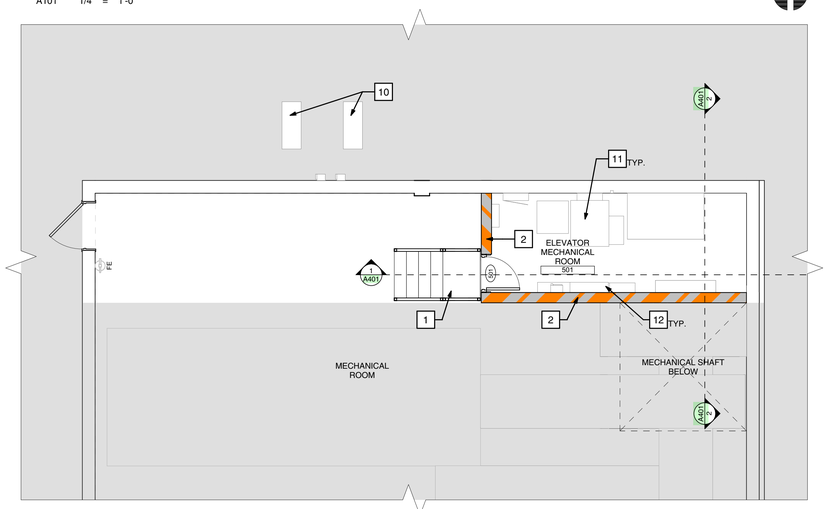
2 **FIRST FLOOR PLAN**
A101 1/4" = 1'-0"



5 **FOURTH FLOOR PLAN**
A101 1/4" = 1'-0"



3 **SECOND FLOOR PLAN**
A101 1/4" = 1'-0"



6 **ROOF PLAN**
A101 1/4" = 1'-0"

FLOOR PLAN KEYNOTES

1. MAINTENANCE ACCESS STEP LADDER WITH INTEGRATED HANDRAILS AND PLATFORM.
2. NEW RATED WALL FRAMED ON TOP OF EXISTING WALL TO EXTEND NECESSARY RATING TO B.O. ROOF DECK. SEE DETAILS ON SHEET A501.
3. NEW SAND / OIL INTERCEPTOR PER MECHANICAL.
4. NEW SUMP PUMP LOCATION PER MECHANICAL.
5. COORDINATE DRILLING FOR NEW ELEVATOR AS NECESSARY. CONTRACTOR TO PROVIDE GEOTECHNICAL REPORT IF NECESSARY.
6. NEW LADDER PER VERTICAL TRANSPORTATION ENGINEER.
7. EXISTING ELEVATOR DOOR OPENING FRAME TO BE REFINISHED TO MATCH NEW ELEVATOR DOORS.
8. NEW ELEVATOR CONTROLS PER VERTICAL TRANSPORTATION ENGINEER.
9. NEW ELEVATOR PER VERTICAL TRANSPORTATION ENGINEER.
10. NEW ROOF MOUNTED MECHANICAL EQUIPMENT PER MECHANICAL.
11. ELEVATOR MECHANICAL EQUIPMENT PER VERTICAL TRANSPORTATION ENGINEER.
12. ELECTRICAL EQUIPMENT PER ELECTRICAL
13. EXISTING MECHANICAL DUCTWORK TO REMAIN
14. NEW PIPING SLOPED TO DRAIN ABOVE FLOOR PER MECHANICAL
15. EXISTING FLOOR DRAIN

FLOOR PLAN GENERAL NOTES

A. ALL WALLS TO CONTINUE TO UNDERSIDE OF ROOF / FLOOR DECKING THAT:
   1) PROVIDE SHEAR STRENGTH PER STRUCTURAL
   2) ACOUSTIC RATING
   3) FIRE / SMOKE RATING PER A501
   4) SPECIFICALLY NOTED ON ENLARGED PLANS
B. COORDINATE REQUIRED ELEVATOR FIRE ALARM AND FIRE SPRINKLER SCOPES WITH ONGOING REID HALL FIRE ALARM AND FIRE SPRINKLER PROJECT.

PARTITION GRAPHIC LEGEND

GRAPHIC	DESCRIPTION	PRIORITY
	EXISTING 1 HOUR RATING	HIGH ↓
	EXISTING 2 HOUR RATING	
	NEW 1 HOUR RATING	LOW

A. HIGHEST PRIORITY PARTITIONS ARE LISTED FIRST IN THE LEGEND. SUBSEQUENT PARTITIONS DECREASE IN PRIORITY. HIGHER PRIORITY WALLS TAKE PRECEDENCE AND REMAIN CONTINUOUS WHEN INTERSECTED BY LESSER PRIORITY WALLS.
B. SEE DETAILS ON SHEET A501 FOR ASSEMBLY INFORMATION AND UL LISTINGS

FLOOR PLAN LEGEND

	AREA NOT IN PROJECT SCOPE. NO ALTERATIONS
5LB FE	NEW 5LB FIRE EXTINGUISHER ON WALL BRACKET
FE	EXISTING FIRE EXTINGUISHER

DOOR AND FRAME SCHEDULE

DOOR NO.	WIDTH	HEIGHT	TYPE	DOOR			FRAME		FIRE RATING	HARDWARE SET NO	U-VALUE	SHGC	NOTES
				MATERIAL	FINISH	GLAZING	MATL	FINISH					
001	3'-0"	3'-0"	A	HM	PNT-1	-	HM	PNT-1	90	01	-	-	D-1
501	2'-2"	6'-10"	B	HM	PNT-1	-	HM	PNT-1	60	02	-	-	D-2

NOTES:
D-1: VERIFY DOOR SIZE WITH EXISTING PIPES, ELEVATOR EQUIPMENT, AND OTHER CONSTRAINTS PRIOR TO CONSTRUCTION.
D-2: VERIFY DOOR SIZE WITH EXISTING OPENING PRIOR TO CONSTRUCTION

DOOR TYPES

TYPE	A	B
FRONT ELEVATION		

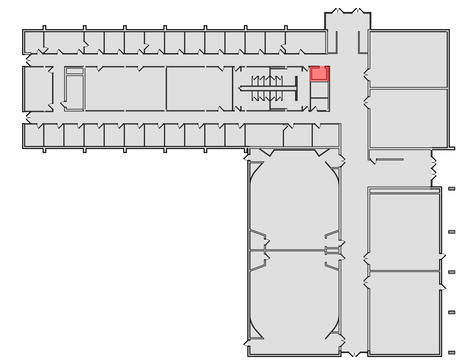
FINISH MATERIAL SCHEDULE - BASIS OF DESIGN

MATERIAL ID	PRODUCT	MANUFACTURER	COLLECTION - COLOR - DESCRIPTION	GENERAL NOTES
PNT-1	PAINT	SHERWIN WILLIAMS	**COLOR:** GRIZZLE GREY SW7068	**DOORS:** SEMI-GLOSS FINISH
HM	HOLLOW METAL DOOR	-	**COLOR:** PER DOOR SCHEDULE	SEE DOOR SCHEDULE FOR RATINGS AND HARDWARE INFORMATION

ELEVATOR CAB FINISH SCHEDULE - BASIS OF DESIGN

WALL PANELS	#4 BRUSHED STAINLESS STEEL WALL PANELS
CEILING	6 PANEL STAINLESS STEEL WITH DOWN LIGHTS
FLOORING	PATCRAFT - INSET - IRON SILVER-V2 00575 18"X36" RESILIENT LVT/PLANK - STYLE 1577V - STAGGER INSTALLATION

NOTE: REFER TO SPECIFICATIONS FOR FURTHER ELEVATOR CAB INTERIOR FINISH INFORMATION



7 **KEY PLAN**
A101

COLLABORATIVE DESIGN ARCHITECTS
2280 GRANT ROAD, SUITE C
BILLINGS, MT 59102 406.248.3443
www.cd-mt.com

22-0680 - REID HALL ELEVATOR REPLACEMENT
REID HALL, BOZEMAN, MT 59715

ISSUE DATES:
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REID HALL ELEVATOR REPLACEMENT
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PREPARED FOR: EVAN BURNETT
PROJECT ARCHITECT: TRAVIS SMITH, AIA
MSU PPA#: 22-0680
ARCHITECT'S PROJECT NUMBER: 2347

LICENSED ARCHITECT — TRAVIS W. SMITH — NO. 15987 — BILLINGS, MT — STATE OF MONTANA

A101
FLOOR PLANS

SECTION GENERAL NOTES

A. **STRUCTURAL STEEL.** REFERENCE STRUCTURAL DRAWINGS FOR ALL STRUCTURAL MEMBER SIZING & CONNECTION INFORMATION AS WELL AS FOR ALL CONCRETE SLAB AND FOUNDATION WALL INFORMATION.

B. **INTERIOR WALL FRAMING.** REFERENCE FLOOR PLANS / DETAILS FOR ALL METAL STUD WALL FRAMING.

C. **MEP EQUIPMENT.** SHOWN AS REFERENCE ONLY. REFER TO THE RESPECTIVE DISCIPLINE'S SHEET FOR MORE DETAILS.

D. **ELEVATOR.** SHOWN AS REFERENCE ONLY. REFER TO VERTICAL TRANSPORTATION ENGINEER FOR ELEVATOR INFORMATION. REFER TO ELEVATOR MATERIALS SCHEDULE ON SHEET A101 AND SPECIFICATIONS FOR ELEVATOR CAB INTERIOR FINISHES.

PARTITION GRAPHIC LEGEND

GRAPHIC	DESCRIPTION	PRIORITY
	EXISTING 1 HOUR RATING	HIGH ↓
	EXISTING 2 HOUR RATING	
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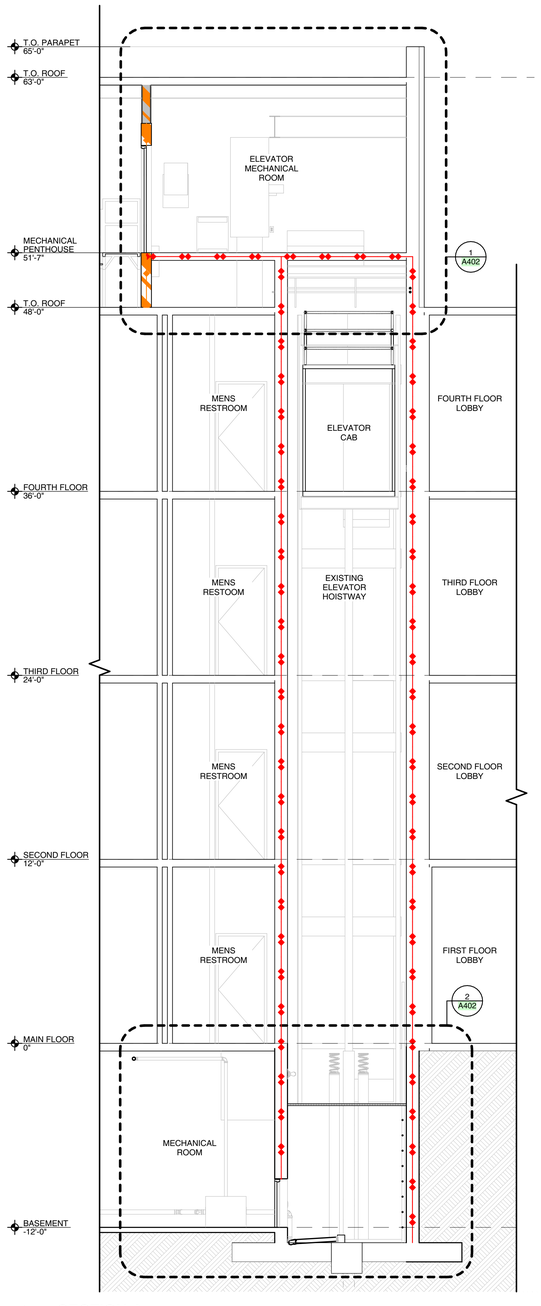
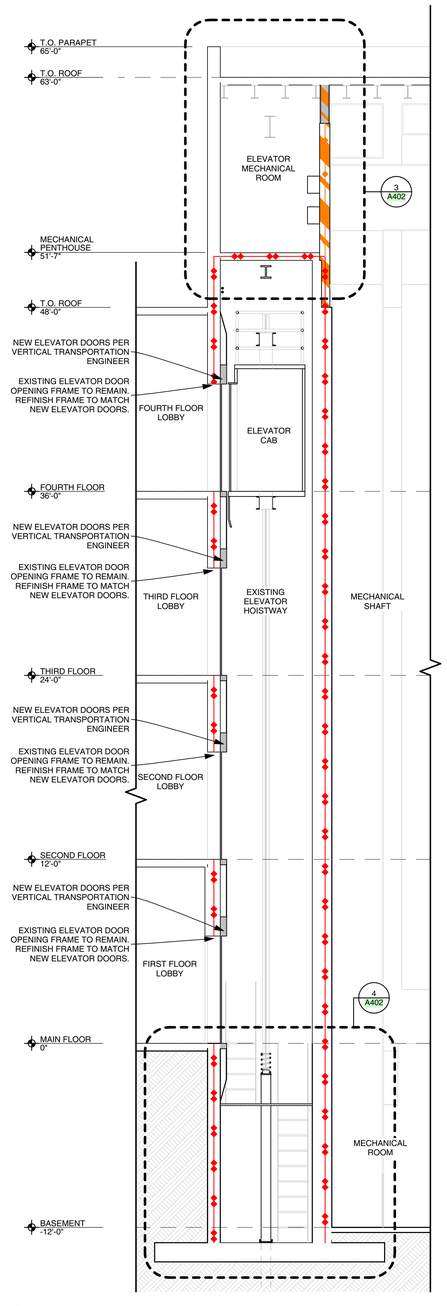
A. HIGHEST PRIORITY PARTITIONS ARE LISTED FIRST IN THE LEGEND. SUBSEQUENT PARTITIONS DECREASE IN PRIORITY. HIGHER PRIORITY WALLS TAKE PRECEDENCE AND REMAIN CONTINUOUS WHEN INTERSECTED BY LESSER PRIORITY WALLS.

B. SEE DETAILS ON SHEET A501 FOR ASSEMBLY INFORMATION AND UL LISTINGS



1 SECTION A
A401 1/4" = 1'-0"



2 SECTION B
A401 1/4" = 1'-0"

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MSU PPA#: 22-0680
ARCHITECT'S PROJECT NUMBER: 2347

LICENSED ARCHITECT — TRAVIS W. SMITH — No. 13082 — BILLINGS, MT — STATE OF MONTANA

A401

ELEVATOR SECTIONS

22-0680 - REID HALL ELEVATOR REPLACEMENT
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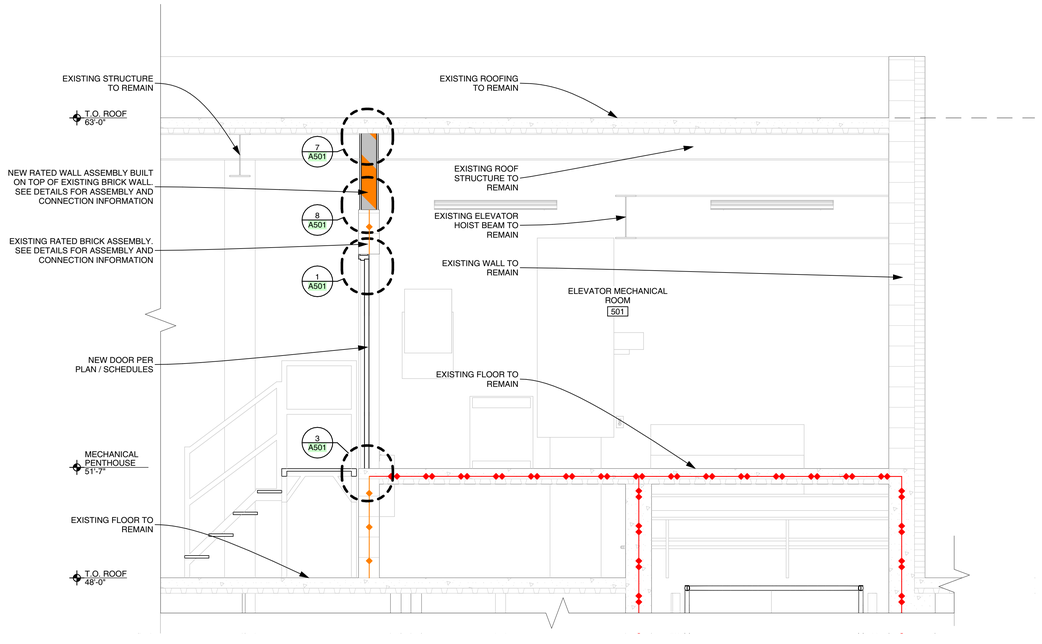
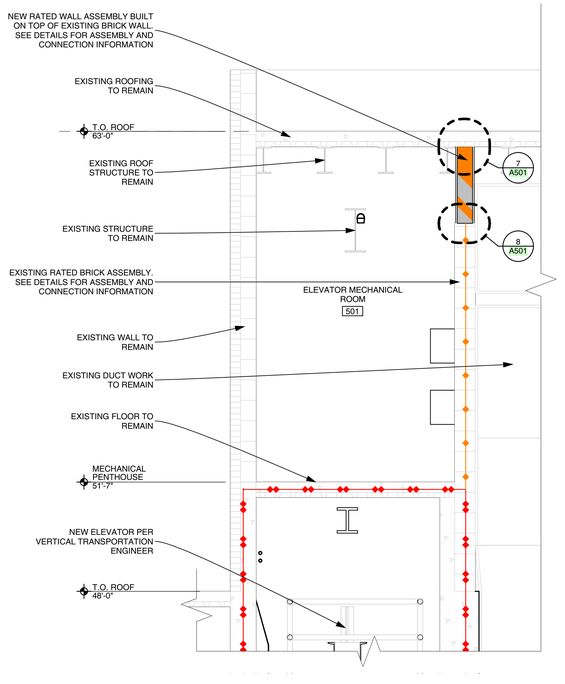
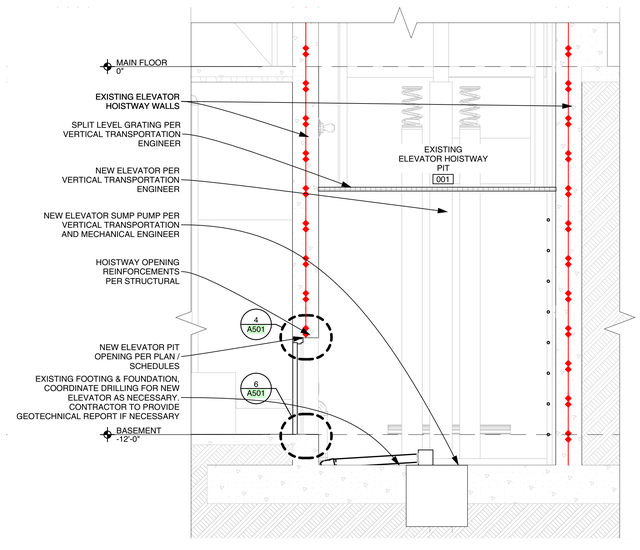


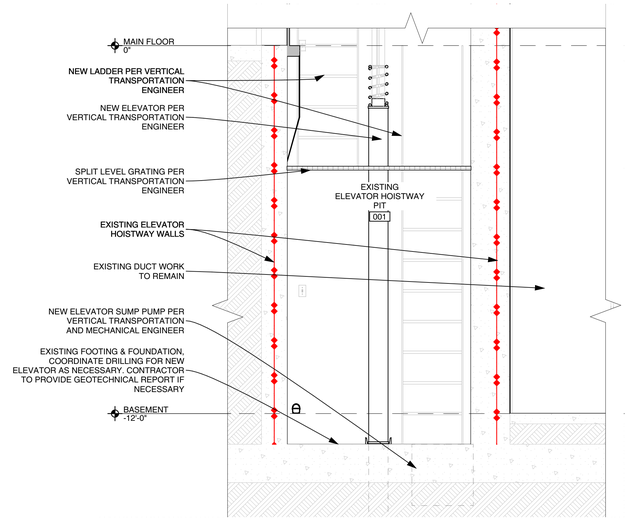
1 A402 **ENLARGED SECTION A - ELEVATOR MECHANICAL ROOM**
1/2" = 1'-0"



3 A402 **ENLARGED SECTION B - ELEVATION MECHANICAL ROOM**
1/2" = 1'-0"



2 A402 **ENLARGED SECTION A - ELEVATOR PIT**
1/2" = 1'-0"



4 A402 **ENLARGED SECTION B - ELEVATOR PIT**
1/2" = 1'-0"

SECTION GENERAL NOTES

A. **STRUCTURAL STEEL.** REFERENCE STRUCTURAL DRAWINGS FOR ALL STRUCTURAL MEMBER SIZING & CONNECTION INFORMATION AS WELL AS FOR ALL CONCRETE SLAB AND FOUNDATION WALL INFORMATION.

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B. SEE DETAILS ON SHEET A501 FOR ASSEMBLY INFORMATION AND UL LISTINGS

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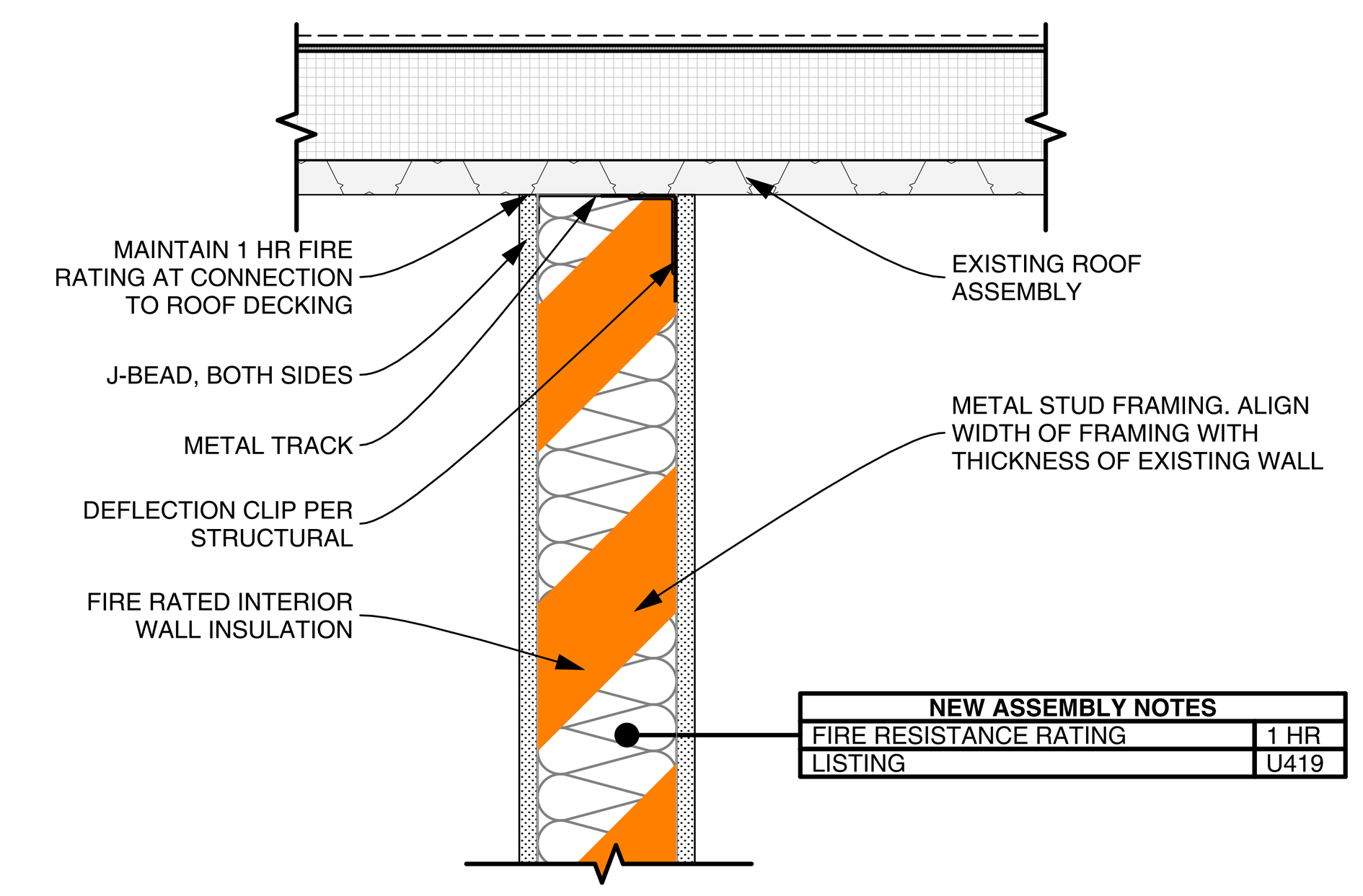
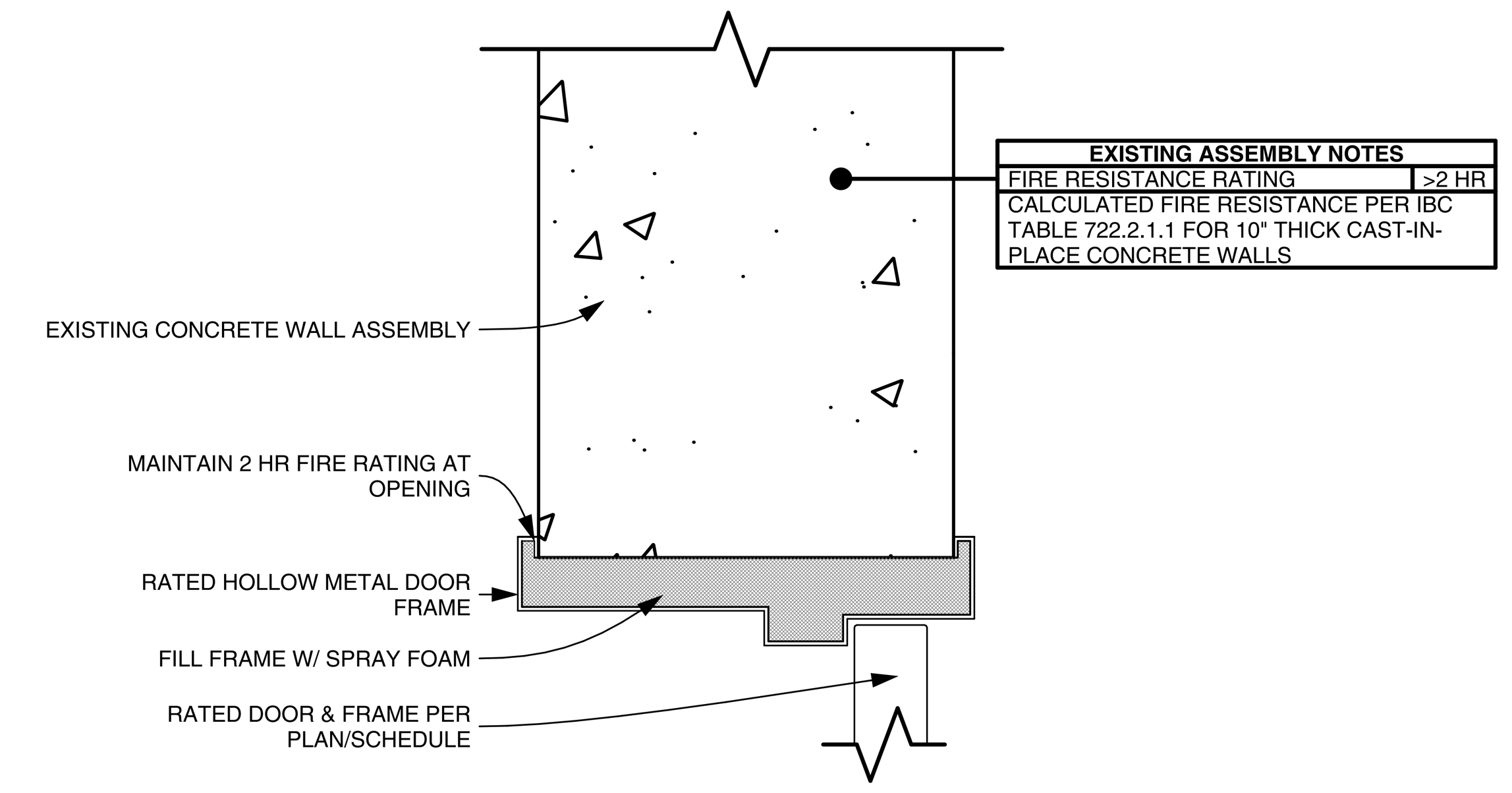
PREPARED FOR: EVAN BURNETT
PROJECT ARCHITECT: TRAVIS SMITH, AIA
MSU PPA#: 22-0680
ARCHITECT'S PROJECT NUMBER: 2347

LICENSED ARCHITECT — TRAVIS W. SMITH — No. 15067 — BILLINGS, MT — STATE OF MONTANA

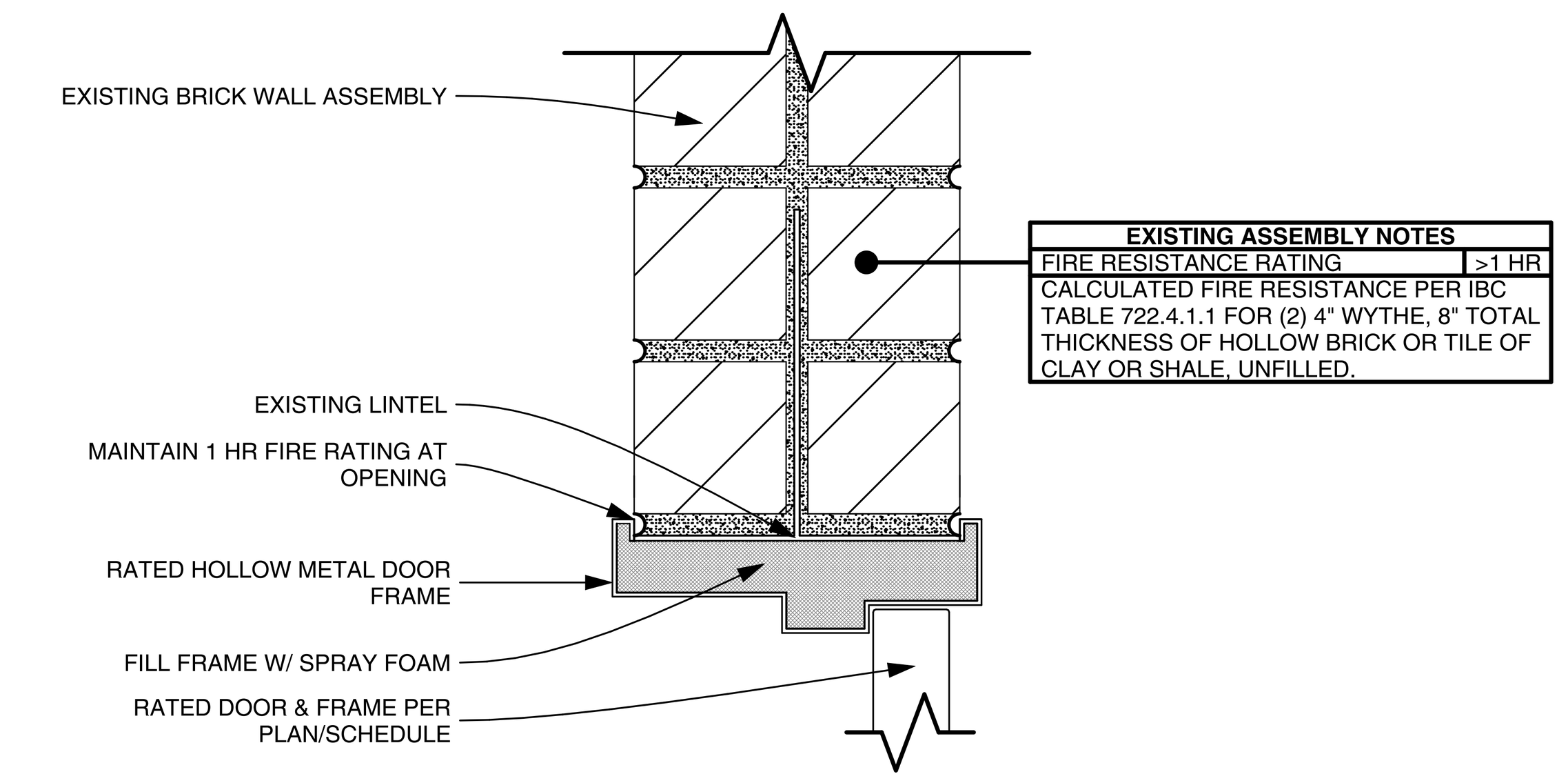
A402
ELEVATOR SECTIONS ENLARGED



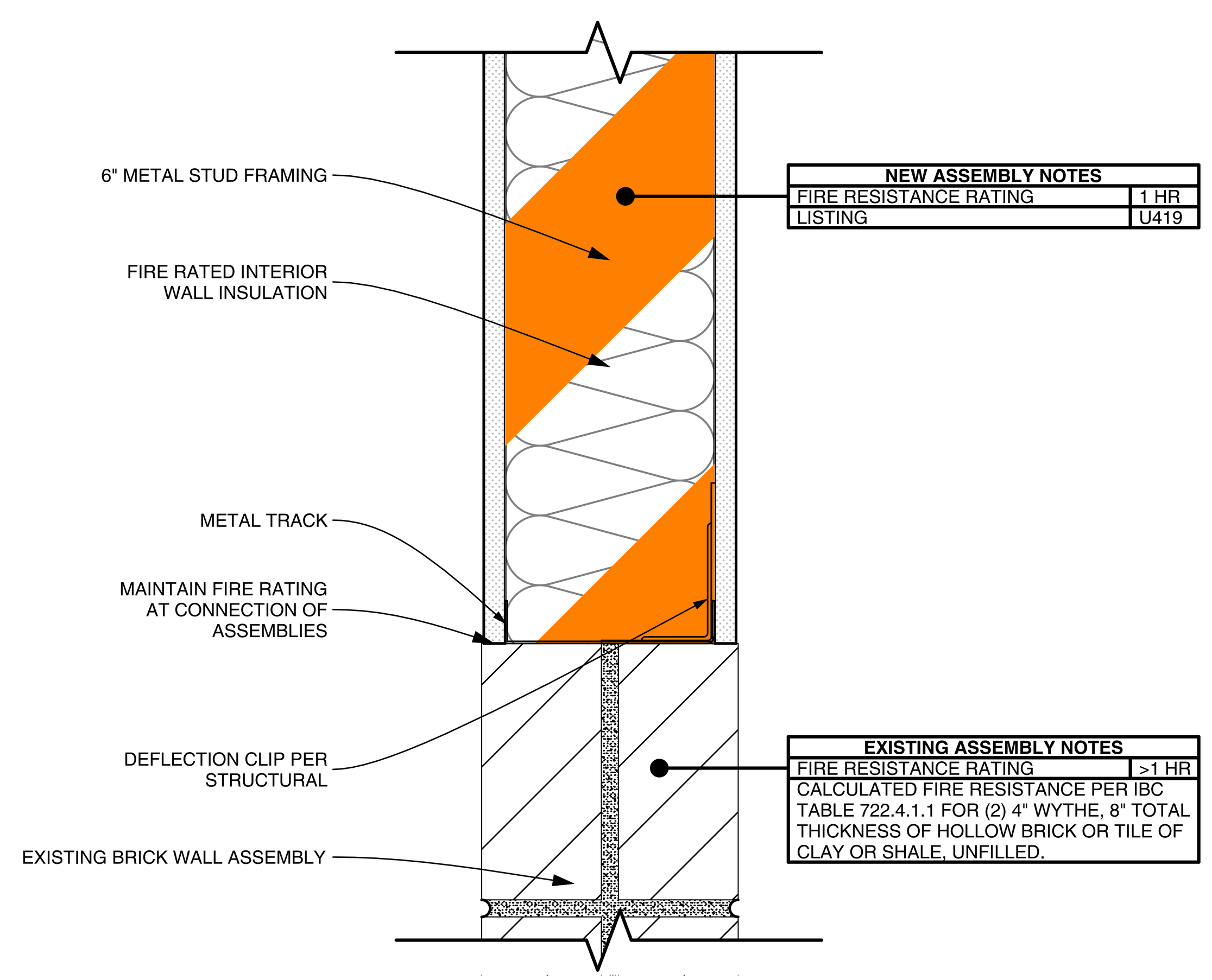
7 **INTERIOR WALL BRACING TO EXISTING STRUCTURE**
A501 1 1/2" = 1'-0"



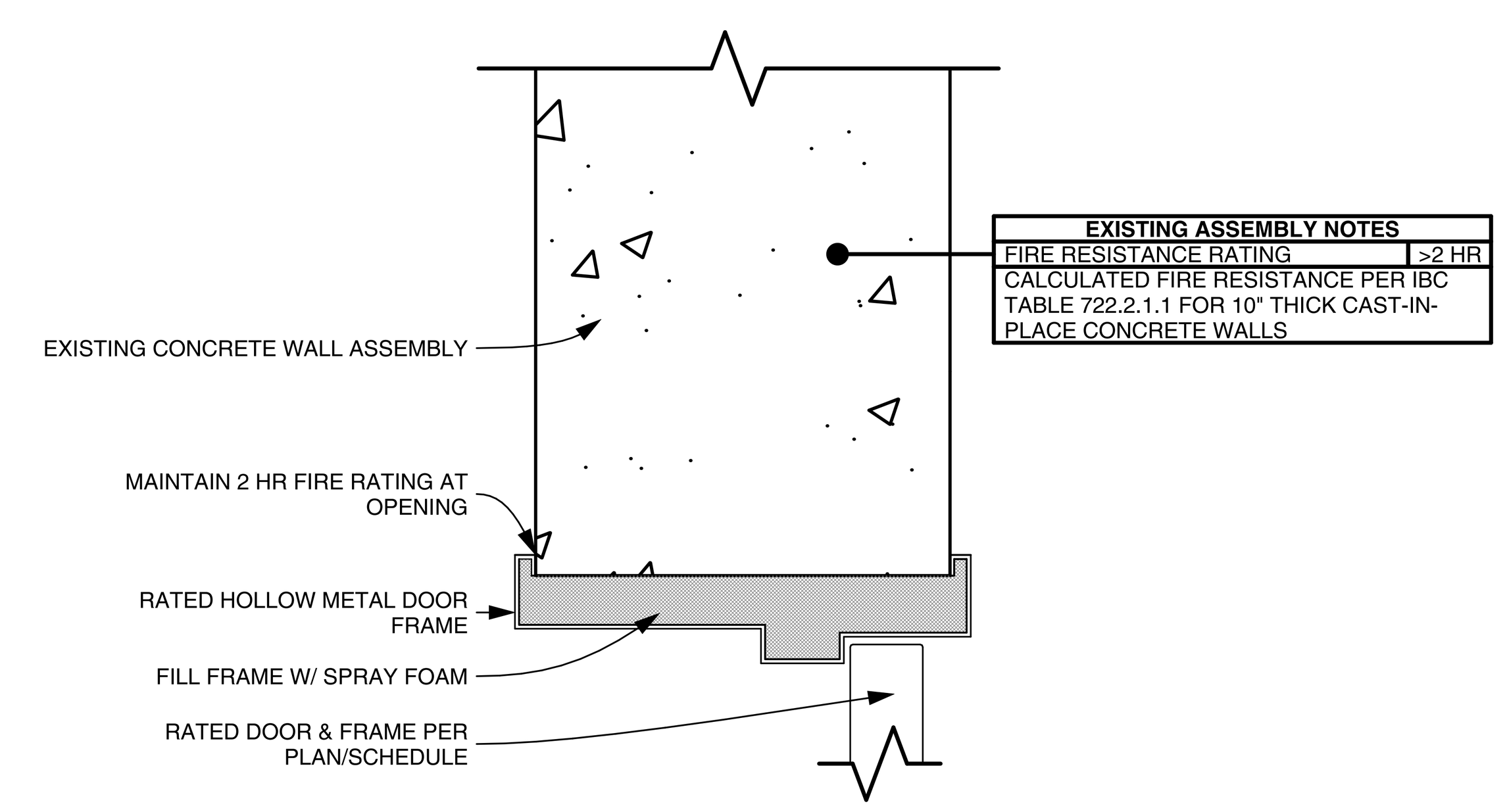
4 **HM DOOR HEAD - EXISTING CONCRETE WALL**
A501 3" = 1'-0"



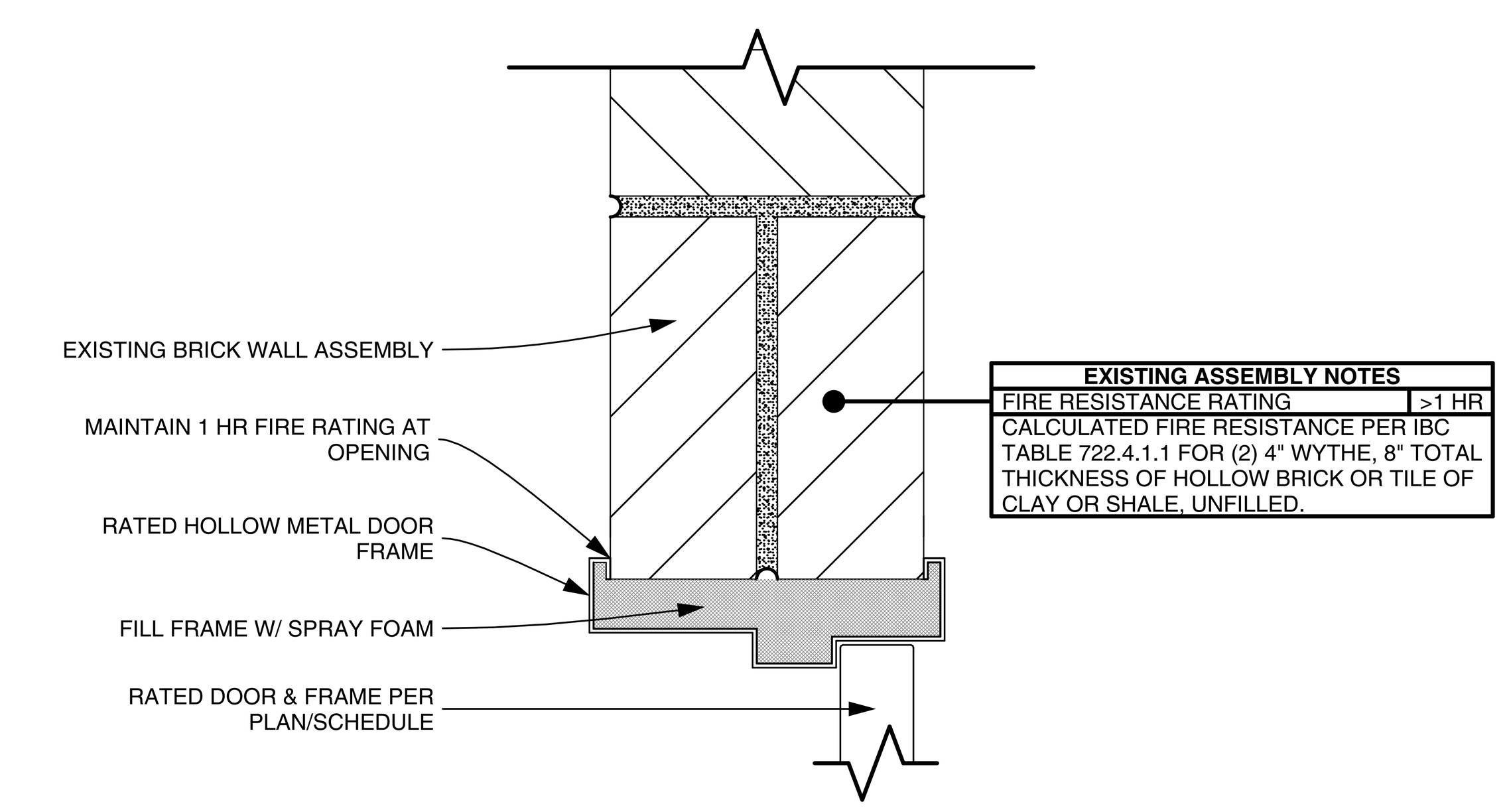
1 **HM DOOR HEAD - EXISTING MASONARY WALL**
A501 3" = 1'-0"



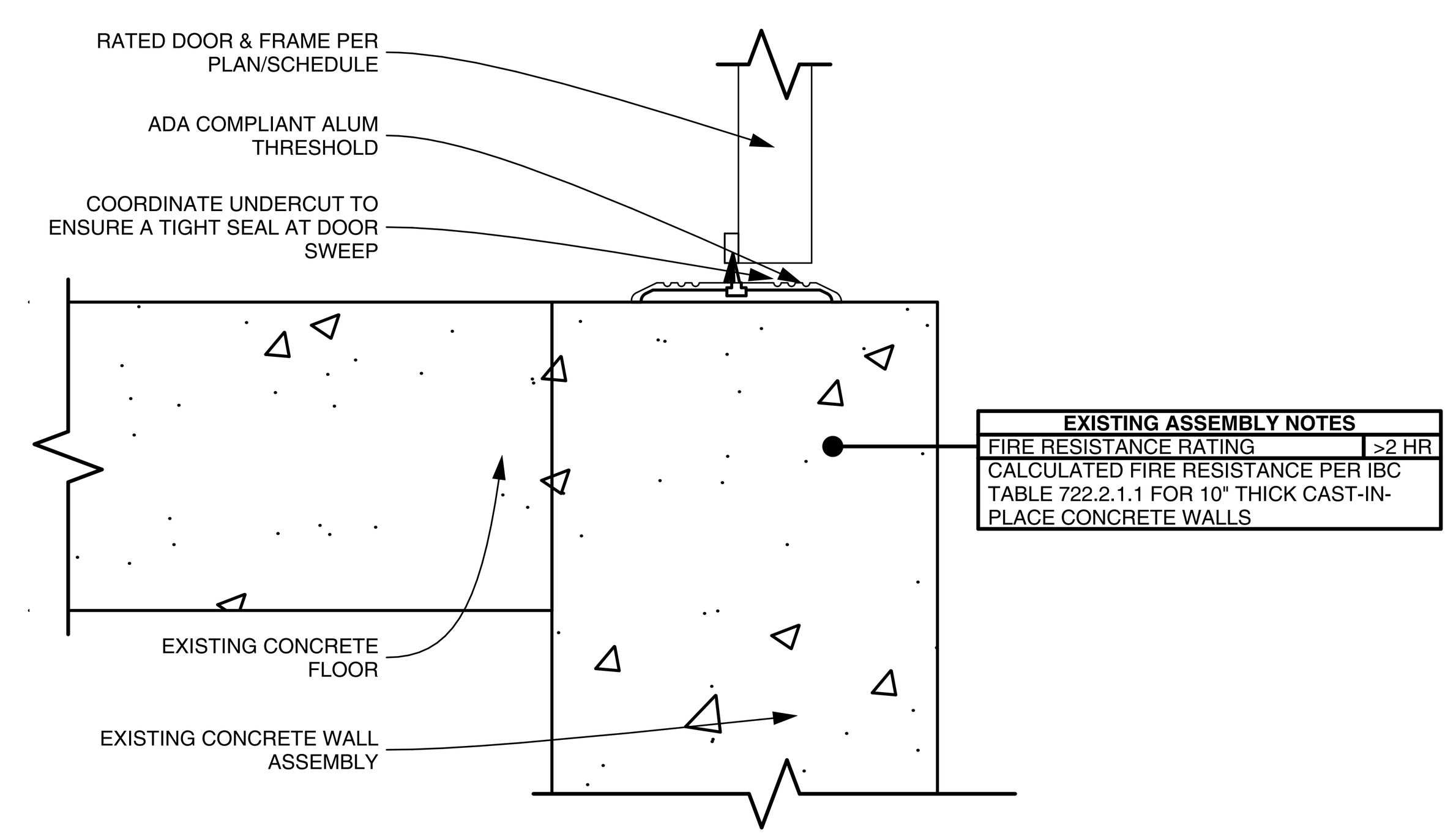
8 **1 HR RATED WALL TO EXISTING BRICK ASSEMBLY**
A501 3" = 1'-0"



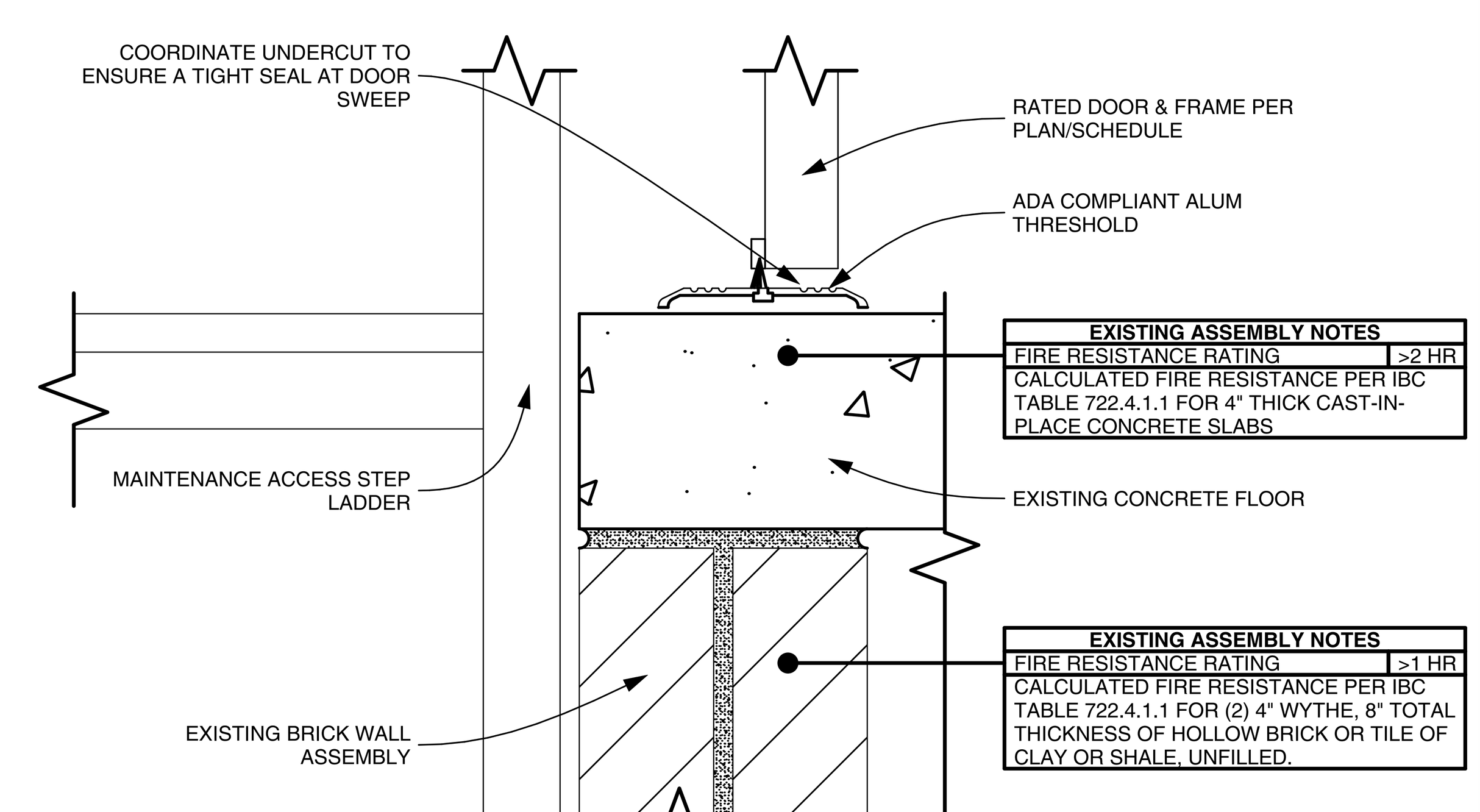
5 **HM DOOR JAMB - EXISTING CONCRETE WALL**
A501 3" = 1'-0"



2 **HM DOOR JAMB - EXISTING MASONARY WALL**
A501 3" = 1'-0"



6 **HOISTWAY DOOR TO EXISTING CONCRETE FLOOR**
A501 3" = 1'-0"



3 **HM DOOR TRANSITION TO LADDER**
A501 3" = 1'-0"

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MSU PPA#: 22-0680
ARCHITECT'S PROJECT NUMBER: 2347

LICENSED ARCHITECT TRAVIS W. SMITH No. 13987 BILLINGS, MT STATE OF MONTANA

A501
DETAILS

1 INDEX OF DRAWINGS
VT01 SCALE: NTS

ELEVATOR NUMBER	CAPACITY (#)	SPEED (FPM)	APPLICATION
1	2000	150	IN-GROUND HYDRAULIC

2 SUMMARY OF ELEVATORS
VT01 SCALE: NTS

AFF	ABOVE FINISH FLOOR
A/C	AIR CONDITIONING
ALT.	ALTERNATE
AC	ALTERNATING CURRENT
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
AMP	AMPERE
APPROX.	APPROXIMATE
ARCH.	ARCHITECTURAL
AHJ	AUTHORITY HAVING JURISDICTION
AUX	AUXILIARY
BSMT	BASEMENT
Btu/h	BRITISH THERMAL UNITS PER HOUR
BOCA	BUILDING OFFICIALS AND CODE ADMINISTATION
CLG	CEILING
°C	CELSIUS
℄	CENTERLINE
cm	CENTIMETERS
CLR	CLEAR
COL.	COLUMN
CONC.	CONCRETE
CMU	CONCRETE MASONRY UNITS
CONT.	CONTINUOUS
CONTR.	CONTRACTOR
CNTRL	CONTROLLER
COORD	COORDINATE
CWT	COUNTERWEIGHT
CYL.	CYLINDER
DEH	DEAD END HITCH
°	DEGREES
DTL	DETAIL
ø	DIAMETER
DIM.	DIMENSION
DC	DIRECT CURRENT
DISC.	DISCONNECT
DBG	DISTANCE BEWEEN GUIDE RAILS
DN	DOWN
DWG	DRAWING
EA.	EACH
ELEC.	ELECTRICAL
EL.	ELEVATION
ELEV.	ELEVATOR
ETS	EMERGENCY TERMINAL SLOWDOWN
EQ	EQUAL
EQUIP.	EQUIPMENT
ESCL.	ESCALATOR
(E)	EXISTING
°F	FAHRENHEIT
FPM	FEET PER MINUTE
F.V.	FIELD VERIFY
F.F.	FINISH FLOOR
FLR	FLOOR
FT (')	FOOT (FEET)
fc	FOOTCANDLE
F	FRONT OPENING
FUT.	FUTURE
GA.	GAUGE
GOV.	GOVERNOR
G	GRAVITY
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
HT	HEIGHT
HZ	HERTZ
HSTWY	HOISTWAY
HORIZ.	HORIZONTAL
hp	HORSEPOWER
hr	HOUR
HYDRO	HYDRAULIC
in. (")	INCH (INCHES)
IGBT	INSULATED GATE BIPOLAR TRANSDUCER
IBC	INTERNATIONAL BUILDING CODE
J/s	JOULES PER SECOND
Kcal	KILOCALORIE
kg	KILOGRAMS
kN	KILONEWTONS
kPa	KILOPASCALS
kVA	KILOVOLT-AMPERE
kWh	KILOWATT HOUR
kW	KILOWATTS
K	KIPS
LT	LIGHT
MACH.	MACHINE
MRL	MACHINE ROOM-LESS
MAX.	MAXIMUM
m	METER
m/s	METERS PER SECOND
MEZZ.	MEZZANINE
mm	MILLIMETERS
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MG	MOTOR-GENERATOR
MTD.	MOUNTED
NEC	NATIONAL ELECTRICAL CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
(N)	NEW
N	NEWTONS
N/A	NOT APPLICABLE
NTS	NOT TO SCALE
NO.	NUMBER
O.C.	ON CENTER
OPNG	OPENING
OPP.	OPPOSITE
O.A.	OVERALL
OVHD	OVERHEAD
PL	PLATE
PLTFM	PLATFORM
#	POUNDS
psi	POUNDS PER SQUARE INCH
PRELIM.	PRELIMINARY
RAD.	RADIUS
R	REAR OPENING
REQ.	REQUIRED
REV.	REVISION
RM	ROOM
R.O.	ROUGH OPENING
SEC.	SECONDARY
SECT.	SECTION
SHT	SHEET
SCCR	SHORT CIRCUIT CURRENT RATING
SCR	SILICON CONTROL RECTIFIER
SIM.	SIMILAR
SPEC.	SPECIFICATION
sq.ft	SQUARE FEET
sq.in	SQUARE INCH(ES)
sq.m	SQUARE METERS
sq.mm	SQUARE MILLIMETERS
STD	STANDARD
SBC	STANDARD BUILDING CODE
STL	STEEL
STRUCT.	STRUCTURAL
SW.	SWITCH
TBD	TO BE DETERMINED
T.O.	TOP OF
(TYP.)	TYPICAL
UBC	UNIFORM BUILDING CODE
UNO	UNLESS NOTED OTHERWISE
V.I.F.	VERIFY IN FIELD
VERT.	VERTICAL
V.	VOLT
W.	WIDE
W/	WITH
WP	WORKPOINT

3 ABBREVIATIONS
VT01 SCALE: NTS

POWER FEEDER REQUIREMENTS (MAIN POWER SUPPLY: 480-3-60 ASSUMED)									
					STARTING AMPS (PER MOTOR)			FULL LOAD AMPS (PER MOTOR)	HEAT RELEASE
ELEVATOR NUMBER	CAPACITY (#)	SPEED (FPM)	NUMBER OF MOTORS	HYDRO PUMP HP (PER MOTOR)	LOCKED ROTOR	SOLID STATE	WYE DELTA	RUNNING	MACHINE SPACE BTUH PER CAR
1	2000	150	1	50	371	201	117	67	*31,500

ADDITIONAL POWER AND DISCONNECT REQUIREMENTS IN MACHINE ROOM			
AUXILIARY SYSTEM	SUPPLY TERMINAL	SUPPLY VOLTAGE	CIRCUIT CAPACITY
CAR LIGHT AND FAN WITH LOCKABLE DISCONNECT	EACH CONTROLLER	120-1-60	17 AMP PER CAR
INTERCOM SYSTEM (IF APPLICABLE)	AT AMPLIFIER	120-1-60	1800 WATTS (15 AMP MIN)
SEISMIC SWITCH WITH LOCKABLE CIRCUIT	EACH DISCONNECT	120-1-60	20 AMP MIN. PER MACHINE/CONTROL ROOM

* HEAT RELEASE BASED ON 120 UPSTARTS/HR

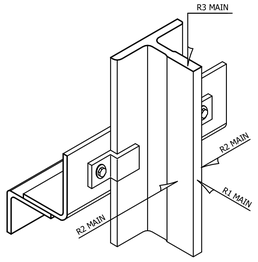
NOTES:

1. ELECTRIC POWER AND CURRENT ARE BASED ON THREE (3) PHASE A.C. POWER SUPPLY.
2. MAIN POWER TO BE PROVIDED AT EACH CONTROLLER THROUGH DISCONNECTING MEANS MEETING NEC REQUIREMENTS.
3. MAIN POWER SUPPLY FEEDERS TO LIMIT VOLTAGE DROP TO LESS THAN 5%. MAX SCCR FOR ALL DISCONNECT FEEDER DESIGNS BASED ON 5KA RATING (NEC SECTION 409.022 AND UL506A SUPPLEMENT SB.
4. USE COPPER CONDUCTORS ONLY.
5. FEEDER DEMAND FACTORS (NEC SECTION 430.026 AND 620.014)= (2) CARS= 95% (3) CARS= 90% (4) CARS= 85% (5) CARS= 82% (6) CARS= 79% (7) CARS= 77% (8) CARS= 75% (9) CARS= 73% (10) CARS= 72%
6. MACHINE/CONTROL ROOM OR MACHINE/CONTROL SPACE TEMPERATURE TO BE MIN. 55° F (13° C), MAX. 90° F (32° C). TO BE MEASURED 6'-0" (1838 mm) ABOVE FINISH FLOOR AT APPROXIMATELY CENTER OF ROOM.
7. RELATIVE HUMIDITY MAX. 80% NON-CONDENSING.
8. THE SELECTION OF MAIN POWER SUPPLY DISCONNECTING MEANS OVERCURRENT PROTECTION TO BE SIZED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE, SECTIONS 620.051 AND 430.052.
9. PROVIDE LOCAL TELEPHONE SERVICE LINE TO EACH CAR CONTROLLER (IF APPLICABLE.)
10. PROVIDE GFCI CONVENIENCE OUTLETS PIT, MACHINE ROOM AND MACHINERY SPACES. IN PIT, PROVIDE ONE NON-GFCI OUTLET FOR SUMP PUMP AND/OR OIL RETURN PUMP.
11. PROVIDE HOIST MACHINE WITH VOLTAGE TO MATCH SUPPLY VOLTAGE INDICATED, U.N.O.
12. MAIN POWER SUPPLY FEEDERS TO LIMIT VOLTAGE DROP TO LESS THAN 5%. MAX SCCR FOR ALL DISCONNECT FEEDER DESIGNS BASED ON 5kA RATING (NEC SECTION 409.022 AND UL506A SUPPLEMENT SB.)

4 ELEVATOR ELECTRICAL AND MECHANICAL REQUIREMENTS
VT01 SCALE: NTS

1. THESE DRAWINGS ARE FOR GENERAL INFORMATION ONLY. REQUIREMENTS OF INDIVIDUAL VENDORS MAY VARY.
2. THESE DRAWINGS ARE TO BE DISTRIBUTED TO APPROPRIATE CONSULTING AND ENGINEERING FIRMS, INCLUDING ARCHITECT, STRUCTURAL, ELECTRICAL AND MECHANICAL ENGINEERS.
3. ROUGH OPENING DIMENSIONS FOR ELEVATOR ENTRANCES APPLY ONLY IN CASE OF MASONRY OR CONCRETE CONSTRUCTION.
4. VERTICAL STRUCTURE SUPPORT FOR RAIL BRACKETING IS PROVIDED BY HOISTWAY WALLS IN THE CASE OF REINFORCED CONCRETE HOISTWAY CONSTRUCTION.

5 GENERAL NOTES
VT01 SCALE: NTS



RAIL FORCES OCCURING ON:

NORMAL FORCES:
CAR R1 - FORCE APPLIED TO FACE OF MAIN RAIL
CAR R2 - FORCE APPLIED TO SIDE OF MAIN RAIL - LOADING OR RUNNING
CAR R3 - FORCE TRANSMITTED TO PIT STRUCTURE AT CAR SAFETY APPLICATION[1]
CWT R3 - FORCE TRANSMITTED TO PIT STRUCTURE AT CWT SAFETY APPLICATION[1]

IBC SEISMIC FORCES
CAR R1 - FORCE APPLIED TO FACE OF MAIN RAIL[3]
CAR R2 - FORCE APPLIED TO SIDE OF MAIN RAIL - LOADING OR RUNNING[3]
CWT R1 - FORCE APPLIED TO FACE OF CWT RAIL[3]
CWT R2 - FORCE APPLIED TO SIDE OF CWT RAIL[3]

NORMAL FORCES:

BUILDING SUPPORTS TO RESIST HORIZONTAL FORCES, AT THE POINT OF SUPPORT, WITH A TOTAL MAXIMUM DEFLECTION NOT TO EXCEED 1/8" (3 mm) UNDER NORMAL CONDITIONS. ALLOWABLE DEFLECTION CRITERIA TO BE DIVIDED IN HALF BETWEEN STRUCTURAL (1/16") AND AWARDED MANUFACTURER (1/16").

- [1] = THESE REACTIONS DO NOT OCCUR SIMULTANEOUSLY WITH PIT BUFFER REACTIONS.
- [2] = BUILDING SUPPORTS TO RESIST HORIZONTAL FORCES, AT THE POINT OF SUPPORT, WITH A TOTAL MAXIMUM DEFLECTION NOT TO EXCEED 1/4" (6.4 mm) BASED UPON 0.5 G ACCELERATION DURING SEISMIC CONDITIONS. ALLOWABLE DEFLECTION CRITERIA TO BE DIVIDED IN HALF BETWEEN STRUCTURAL (1/8") AND AWARDED MANUFACTURER (1/8").

ELEVATOR NUMBER	NORMAL FORCES (FORCES IN KIPS)				IBC SEISMIC FORCES (FORCES IN KIPS)			
	CAR R1	CAR R2	CAR R3	CWT R3	CAR R1	CAR R2	CWT R1	CWT R2
1	0.7	0.5	N/A	N/A	1.2	0.6	N/A	N/A

SEISMIC INFORMATION			
SEISMIC DESIGN CATEGORY	ELEVATOR IMPORTANCE FACTOR	SDS	HORIZONTAL ACCELERATION EQUIVALENT (FOR REFERENCE ONLY)
D	1.0	0.568 G	0.5

7 RAIL FORCES
VT01 SCALE: NTS

FOR PROCUREMENT ONLY

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REID HALL ELEVATOR REPLACEMENT

BOZEMAN, MT

No.	Description	Date

GENERAL ELEVATOR INFORMATION

PERMIT-BID SET

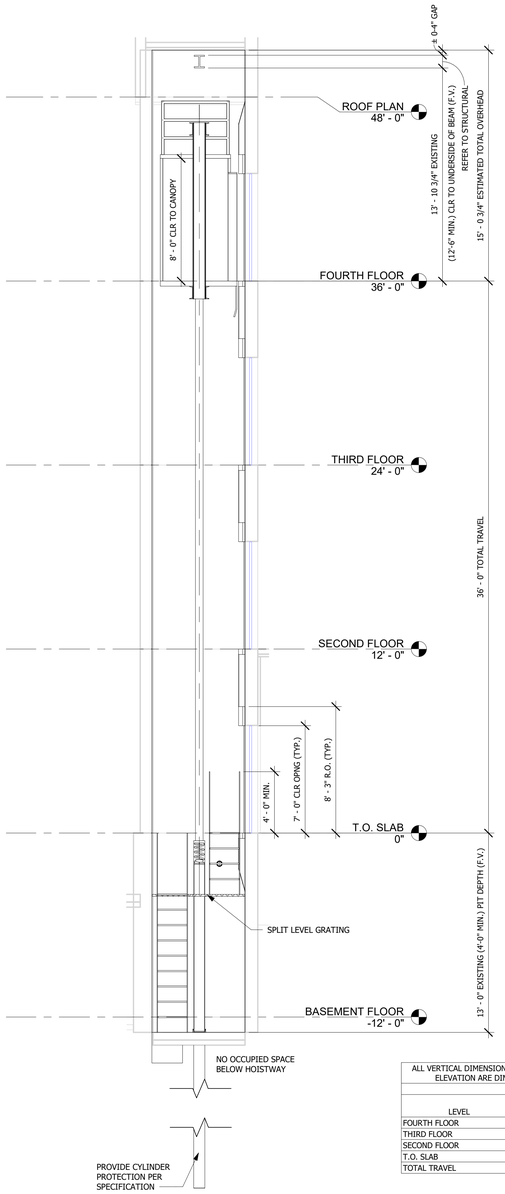
LB Project Number 100049641
Governing Codes ASME A17.1
Date 03/15/2024
Drawn By NG
Checked By LB

VT01

Scale NTS

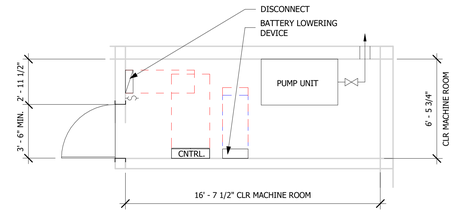
3/22/2024 9:39:14 AM

FIELD VERIFY ALL DIMENSIONS - REFER TO SPECIFICATION FOR DISPOSITION OF EQUIPMENT.

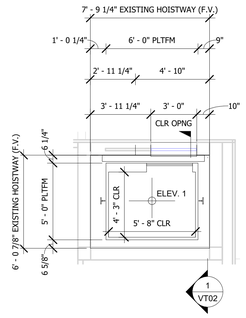


ALL VERTICAL DIMENSIONS THAT ARE DIMENSIONED FROM A BUILDING FLOOR ELEVATION ARE DIMENSIONED TO THE FINISH FLOOR ELEVATION.			
ELEVATOR 1			
	OPENINGS		
LEVEL	REAR	FRONT	FLOOR TO FLOOR HEIGHT
FOURTH FLOOR		F	0' - 0"
THIRD FLOOR		F	12' - 0"
SECOND FLOOR		F	12' - 0"
T.O. SLAB		F	12' - 0"
TOTAL TRAVEL			36' - 0"

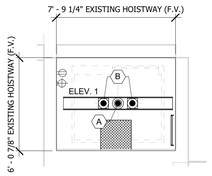
1 VT02 HOISTWAY SECTION - ELEVATOR 1
SCALE: 1/4" = 1'-0"



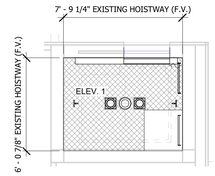
5 VT02 MACHINE ROOM PLAN - ROOF PLAN - ELEVATOR 1
SCALE: 1/4" = 1'-0"



4 VT02 HOISTWAY PLAN - T.O. SLAB - ELEVATOR 1
SCALE: 1/4" = 1'-0"



2 VT02 LOWER PIT PLAN - T.O. SLAB - ELEVATOR 1
SCALE: 1/4" = 1'-0"



3 VT02 UPPER PIT PLAN - T.O. SLAB - ELEVATOR 1
SCALE: 1/4" = 1'-0"

ELEVATOR NUMBER	DUTY
1	2000# @ 150 FPM - IN-GROUND HYDRAULIC

HOISTWAY NOTES:

1. PROVIDE SMOKE VENTING PER LOCAL CODE REQUIREMENTS.
2. ELEVATOR CONTRACTOR TO PROVIDE 42" (1070 mm) HIGH CAR TOP RAILING PER CODE.
3. PROVIDE HOIST BEAM TO SUPPORT 7,400#. VERIFY HOIST BEAM LOCATION AND LOAD REQUIREMENTS WITH ELEVATOR CONTRACTOR.
4. PROVIDE 2 LIFELINE ATTACHMENTS AT THE TOP FRONT OF EACH HOISTWAY. EACH ATTACHMENT SHALL BE CAPABLE OF WITHSTANDING 5000# (2268 Kg) LOAD PER OSHA. COORDINATE LOCATION OF ATTACHMENTS WITH ELEVATOR CONTRACTOR.
5. PROVIDE STRUCTURAL SUPPORT FOR CAR GUIDE RAIL FASTENING AT 12'-0" (3658 mm) MAX. VERTICAL SPACING THROUGH TOP OF HOISTWAY. IF THIS SPACING CANNOT BE PROVIDED BY HOISTWAY PERIMETER BEAMS AT EACH FLOOR, AND IF ELEVATOR CONTRACTOR CANNOT PROVIDE BRACKETING FROM TOP AND BOTTOM FLANGE OF HOISTWAY PERIMETER BEAMS TO REDUCE THE SPAN AS NEEDED, PROVIDE INTERMEDIATE SUPPORT BEAMS OR CONTINUOUS VERTICAL STRUCTURE BETWEEN FLOOR BEAMS.
6. ALL VERTICAL DIMENSIONS THAT ARE DIMENSIONED FROM A BUILDING FLOOR ELEVATION ARE DIMENSIONED TO THE FINISH FLOOR ELEVATION.
7. VERTICAL OR ADDITIONAL HORIZONTAL STRUCTURAL SUPPORT FOR RAIL BRACKETING AS REQUIRED FOR CAR BOTH SIDES OF HOISTWAY TO MEET BRACKET SPACING CRITERIA INDICATED IN SECTION.
8. ELEVATOR CONTRACTOR TO PROVIDE CONTINUOUS FASCIA AS REQUIRED.
9. ADDITIONAL STEEL MAY BE REQUIRED ABOVE HOISTWAY ENTRANCES WITH FLOOR-TO-FLOOR HEIGHTS TALLER THAN 14'-0".
10. PROVIDE MIN. 75º BEVEL GUARD AT ANY LEDGE GREATER THAN 4" (100 mm) AT REAR OR SIDE WALLS OF HOISTWAY TYPICAL.

RAIL SUPPORT TABLE	
MAX SPAN 15# RAILS	
CAR GUIDE RAIL	CWT GUIDE RAIL
12'-0"	N/A

MACHINE ROOM NOTES:

1. PROVIDE SELF-CLOSING, SELF-LOCKING MACHINE ROOM ACCESS DOOR.
2. PROVIDE 8" X 8" (200 mm X 200 mm) BLOCKOUT FOR HYDRAULIC OIL LINE, AND 6" X 6" (150 mm X 150 mm) BLOCKOUT FOR ELECTRICAL CONDUIT FOR EACH ELEVATOR. VERIFY LOCATION WITH ELEVATOR CONTRACTOR.
3. VERIFY PATH OF OIL LINE WITH ELEVATOR CONTRACTOR. THE MACHINE ROOM AND HOISTWAY SHALL BE LOCATED ON THE SAME SIDE OF AN EXPANSION JOINT.
4. PROVIDE ADEQUATE LIGHTING TO MAINTAIN MIN. 200 LUX (19 FC) ILLUMINATION AT MACHINE ROOM FLOOR.
5. COORDINATE LIGHT FIXTURES AND UTILITY OUTLETS LOCATION WITH ELEVATOR CONTRACTOR.
6. PROVIDE 3-PHASE MAINLINE POWER FEEDER WITH DISCONNECTING MEANS FOR EACH ELEVATOR CONTROLLER. PROVIDE 1-PHASE FEEDER WITH DISCONNECTING MEANS FOR CAR LIGHTING, VENTILATION SYSTEM AND RECEPTACLE FOR EACH ELEVATOR. THESE DISCONNECTING MEANS SHALL INCLUDE OVERCURRENT PROTECTION, SHALL BE LOCATED IN THE MACHINE ROOM, AND SHALL MEET N.E.C. REQUIREMENTS.
7. LOCATE MACHINE ROOM WITHIN 40'-0" OF HOISTWAY.

PIT NOTES:

1. PROVIDE ADEQUATE LIGHTING TO MAINTAIN MIN. 100 LUX (10 FC) ILLUMINATION AT PIT FLOOR.
2. PROVIDE PIT ACCESS LADDER(S) OR DOOR(S), LIGHT SWITCH(ES), LIGHT(S), AND GFCI-PROTECTED UTILITY OUTLET(S).
3. PROVIDE 8" X 8" (200 mm X 200 mm) BLOCKOUT FOR HYDRAULIC OIL LINE, AND 6" X 6" (150 mm X 150 mm) BLOCKOUT FOR ELECTRICAL CONDUIT FOR EACH ELEVATOR. VERIFY LOCATION WITH ELEVATOR CONTRACTOR.
4. VERIFY PATH OF OIL LINE WITH ELEVATOR CONTRACTOR.
5. COORDINATE LIGHT FIXTURES AND UTILITY OUTLETS LOCATION WITH ELEVATOR CONTRACTOR.
6. PROVIDE ADEQUATE STRUCTURAL SUPPORT AS REQUIRED FOR BUFFER AND HYDRAULIC CYLINDER REACTIONS.
7. PROVIDE INDIRECT PIT DRAIN OR 24"x24"x24" SUMP PUMP, WITH GRATING COVER, LEVEL WITH PIT FLOOR. PROVIDE MINIMUM SUMP PUMP/DRAIN CAPACITY OF 3000 GALLONS/HOUR PER ELEVATOR.
8. ELEVATOR CONTRACTOR PROVIDE PERMANENT MEANS TO ACCESS UNDERSIDE OF CAR AS REQUIRED.
9. REACTIONS HAVE BEEN DOUBLED FOR IMPACT.
10. REACTIONS DO NOT OCCUR SIMULTANEOUSLY, EXCEPT AS NOTED.

PIT REACTION TABLE			
KEY	REACTION (FORCES IN KIPS)		DESCRIPTION
A	16.3		CAR CYLINDER
B	10.1	EACH	CAR BUFFER

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REID HALL ELEVATOR REPLACEMENT

BOZEMAN, MT

No.	Description	Date

PLANS AND HOISTWAY SECTION - ELEVATOR 1

PERMIT-BID SET

LB Project Number	100049641
Governing Codes	ASME A17.1
Date	03/15/2024
Drawn By	NG
Checked By	LB

VT02

Scale 1/4" = 1'-0"

3/22/2024 9:39:15 AM

GENERAL STRUCTURAL NOTES:

GENERAL:

1. THESE DRAWINGS HAVE BEEN PREPARED SOLELY FOR USE IN THE CONSTRUCTION OF THE 'REID HALL - ELEVATOR REPACEMENT' AT THE LOCATION OF REID HALL, MONTANA STATE UNIVERSITY IN BOZEMAN, MT 59715. POSSESSION OF THESE DRAWINGS DOES NOT GRANT A LICENSE TO CONSTRUCT OR FABRICATE THE WHOLE, OR PARTS OF THIS PROJECT IN OTHER LOCATIONS.

2. STRUCTURAL DRAWINGS ARE A PORTION OF THE CONTRACT DOCUMENTS AND ARE INTENDED TO BE USED WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND SITE CIVIL DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE REQUIREMENTS FROM THESE DRAWINGS INCLUDING BUT NOT LIMITED TO DIMENSIONS, BLOCKOUTS, OPENINGS, SLEEVES, EMBEDDED ITEMS, ETC. INTO THEIR SHOP DRAWINGS AND WORK. NOTIFY THE ARCHITECT/STRUCTURAL ENGINEER OF RECORD OF ANY DISCREPANCIES OR IF ACTUAL CONDITIONS DIFFER FROM THOSE SHOWN OR NOTED.

3. DO NOT SCALE THE DRAWINGS

4. THESE GENERAL NOTES SUPPLEMENT THE PROJECT SPECIFICATIONS. REFER TO THE PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. NOTES AND DETAILS ON THE STRUCTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER THE GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.

5. WHERE DESCREPANCIES OCCUR BETWEEN THE GENERAL STRUCTURAL NOTES, SPECIFICATIONS, PLANS/DETAILS OR REFERENCE STANDARDS, THE ARCHITECT/ENGINEER SHALL DETERMINE WHICH SHALL GOVERN. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE WORK. SHOULD ANY DISCREPANCY BE FOUND IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL INCLUDE IN THE PRICE THE MOST EXPENSIVE WAY OF COMPLETING THE WORK, UNLESS PRIOR TO THE SUBMISSION OF THE PRICE, THE CONTRACTOR ASKS FOR A DECISION FROM THE ARCHITECT AS TO WHICH SHALL GOVERN. CONFLICTS BETWEEN THE CONTRACT DOCUMENTS SHALL NOT BE A BASIS FOR ADJUSTMENT IN CONTRACT PRICE.

6. THE CONTRACTOR SHALL FURNISH THE PRODUCTS SPECIFIED ON THE DRAWINGS. SUBSTITUTIONS WILL BE CONSIDERED ONLY IF THE CONTRACTOR PROVIDES DOCUMENTATION TO PROVE THE ALTERNATIVE EQUALS OR EXCEEDS THE STRUCTURAL PERFORMANCE CHARACTERISTICS OF THE SPECIFIED PRODUCT.

7. **CODE REQUIREMENTS:**
   A. ALL WORK SHALL BE IN STRICT COMPLIANCE WITH:
   B. 2021 INTERNATIONAL BUILDING CODE (IBC) AS AMENDED BY THE STATE OF MONTANA (INTERNATIONAL BUILDING CODE, 2021 EDITION, EFFECTIVE JUNE 11, 2022)
   C. 2021 INTERNATIONAL BUILDING CODE (IEBC) AS AMENDED BY THE STATE OF MONTANA (INTERNATIONAL EXISTING BUILDING CODE, 2021 EDITION, EFFECTIVE JUNE 11, 2022)
   D. ALL OTHER STATE AND LOCAL BUILDING REQUIREMENTS THAT APPLY.

8. **TEMPORARY CONDITIONS:**
   A. CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY SUPPORT PRIOR TO COMPLETION OF VERTICAL AND LATERAL LOAD SYSTEMS. MORRISON-MAIERLE HAS NOT BEEN RETAINED TO PROVIDE ANY SERVICES RELATED TO JOB SITE SAFETY PRECAUTIONS, OR TO REVIEW THE MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES FOR THE CONTRACTOR TO PERFORM WORK. UNLESS WE ARE SPECIFICALLY RETAINED AND COMPENSATED TO DO OTHERWISE, OUR WORK IS LIMITED TO THE FINAL DESIGN OF THE WORK DESCRIBED ON OUR DRAWINGS FOR THIS PROJECT.
   B. CONTRACTOR'S CONSTRUCTION AND/OR ERECTION SEQUENCES SHALL RECOGNIZE AND CONSIDER THE EFFECTS OF THERMAL MOVEMENTS OF STRUCTURAL ELEMENTS DURING THE CONSTRUCTION PERIOD.
   C. BASEMENT WALLS WHICH TIE TO UPPER SLABS SHALL NOT BE BACKFILLED UNTIL THE UPPER SLABS REACH FULL STRENGTH UNLESS ADEQUATE BRACING IS PROVIDED AT THE TOP OF THE WALL.

9. **EXISTING CONDITIONS:**
   A. EXISTING BUILDING/SITE DIMENSIONS AND ASSUMED CONDITIONS ARE TO BE VERIFIED IN THE FIELD AND ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/STRUCTURAL ENGINEER OF RECORD OF ALL DISCREPANCIES WHICH REQUIRE A SIGNIFICANT CHANGE IN THE DESIGN AND/OR CONSTRUCTION FROM THAT SHOWN ON THE DRAWINGS.

DESIGN CRITERIA:

1. DESIGN IS BASED ON THE FOLLOWING LOADING FOR THE BASIS OF STRENGTH, PERFORMANCE, AND SERVICEABILITY OF THE STRUCTURE:

DESIGN CRITERIA

LIVE LOAD CRITERIA (IBC 1603.1.1)

FLOOR LIVE LOADS:	UNIFORM LOAD	CONCENTRATED LOAD
ASSEMBLY AREAS: LOBBIES	100 PSF (NON-REDUCABLE)	N/A
OFFICE BUILDINGS: OFFICES	50 PSF + PARTITIONS	2000 LBS
OFFICE BUILDINGS: CORRIDORS	80 PSF	2000 LBS
SCHOOLS: CLASSROOMS	40 PSF	1000 LBS
STORAGE: LIGHT	125 PSF (NON-REDUCABLE)	N/A
STORAGE: HEAVY	250 PSF (NON-REDUCABLE)	N/A
STAIRS AND EXIT WAYS	100 PSF	300 LBS

ROOF LIVE LOAD CRITERIA (IBC 1603.1.2)

ORDINARY FLAT, PITCHED, CURVED	20 PSF (SEE SNOW LOAD)	N/A

SNOW LOAD CRITERIA (IBC 1603.1.3)

DESIGN ROOF SNOW LOAD	**50 PSF MINIMUM (MSU MINIMUM)**
SNOW DRIFT	PER ASCE 7-16 AS SHOWN ON PLANS
GROUND SNOW LOAD	Pg = 40.6 PSF (REF. MONTANA GROUND SNOW LOAD FINDER)
FLAT ROOF SNOW LOAD	Pf = 31.3 PSF
SNOW EXPOSURE FACTOR	Ce = 1.0
SNOW LOAD IMPORTANCE FACTOR	Is = 1.10
THERMAL FACTOR	Ct = 1.0

WIND LOAD CRITERIA (IBC 1603.1.4)

BASIC DESIGN WIND SPEED	V = 114 MPH
RISK CATEGORY	III
WIND EXPOSURE	C

SEISMIC LOAD CRITERIA (IBC 1603.1.5)

RISK CATEGORY	III	
SEISMIC IMPORTANCE FACTOR	Ie = 1.25	
MAPPED SPECTRAL RESPONSE	Ss = 0.680	S1 = 0.214
SITE CLASS	D (ASSUMED)	
DESIGN SPECTRAL RESPONSE	Sds = 0.569	Sd1 = 0.277
SEISMIC DESIGN CATEGORY	D	

GEOTECHNICAL CRITERIA (IBC 1603.1.6)

DESIGN BASIS	PRESUMPTIVE VALUES OF SOILS (IBC 1806)	
DESIGN SOIL BEARING PRESSURE	1500 PSF (DL + LL)	2000 PSF (EL / WL INCLUDED)
RETAINING WALLS EQ. FLUID PRESSURE	35 PCF (ACTIVE)	55 PCF (AT REST)
PASSIVE BEARING PRESSURE	250 PSF/FT	
COEFFICIENT OF SLIDING FRICTION	0.3	

STRUCTURAL OBSERVATIONS:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE ENGINEER OF RECORD A MINIMUM OF 24 HOURS IN ADVANCE OF REQUIRED/LISTED OBSERVATION STAGES BELOW. CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE AND ACCESS FOR THE OBSERVER. APPROVAL BY THE MUNICIPAL INSPECTOR DOES NOT PRECLUDE OBSERVATIONS BY THE ENGINEER OF RECORD AND APPROVAL BY THE ENGINEER OF RECORD DOES NOT PRECLUDE THE INSPECTION PROCESS BY THE MUNICIPAL INSPECTOR AND ANY OTHER CODE REQUIREMENTS FOR INSPECTION.

2. UPON COMPLETION OF WORK THE STRUCTURAL OBSERVER SHALL SUBMIT A REPORT TO THE OWNER AND BUILDING OFFICIAL ATTESTING TO THE VISUAL OBSERVATION MADE. THE REPORT SHALL IDENTIFY ANY REPORTED DEFICIENCIES WHICH HAVE NOT BEEN RESOLVED.

STRUCTURAL OBSERVATIONS

STAGE	COMMENTS
AS REQUIRED TO ADDRESS STRUCTURAL ISSUES	

SUBMITTALS:

1. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO FABRICATION AND CONSTRUCTION OF ALL STRUCTURAL PRODUCTS, INCLUDING THE FOLLOWING:

SUBMITTALS

ITEM	SUBMITTAL	DEFERRED SUBMITTAL
CONCRETE MIX DESIGNS	X	
CONCRETE REINFORCEMENT	X	
CONCRETE ANCHORAGES	X	
EMBEDDED STEEL ITEMS	X	
STRUCTURAL STEEL	X	
STEEL WELDING PROCEDURES	X	
METAL GRATING	X	
STAIRS, LADDERS AND RAILINGS	X	X
MEP EQUIPMENT ANCHORAGE AND BRACING	X	X

2. SHOP DRAWINGS SUBMITTALS SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO FABRICATION AND CONSTRUCTION FOR ALL STRUCTURAL PRODUCTS DELIVERED TO THE PROJECT. IF THE SHOP DRAWINGS DEVIATE FROM OR ADD TO THE DESIGN OF THE STRUCTURAL DRAWINGS, THEY SHALL BEAR THE SEAL AND SIGNATURE OF A STRUCTURAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED. ANY CHANGES TO THE STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT AND ARE SUBJECT TO REVIEW AND ACCEPTANCE OF THE STRUCTURAL ENGINEER OF RECORD.

3. DEFERRED SUBMITTAL DESIGN DRAWINGS, SHOP DRAWINGS, AND CALCULATIONS FOR THE DESIGN AND FABRICATION OF ITEMS THAT ARE DESIGNED BY OTHERS SHALL BEAR THE SEAL AND SIGNATURE OF A STRUCTURAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED. THE DEFERRED SUBMITTAL SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO FABRICATION AND ARE SUBJECT TO REVIEW AND ACCEPTANCE OF THE STRUCTURAL ENGINEER FOR LOADS IMPOSED ON THE SUPPORTING STRUCTURE. CALCULATIONS SHALL BE INCLUDED FOR ALL CONNECTIONS TO THE STRUCTURE, CONSIDERING LOCALIZED EFFECTS ON STRUCTURAL ELEMENTS INDUCED BY THE CONNECTION LOADS. DESIGN SHALL BE BASED ON THE REQUIREMENTS OF THE CODES AND DESIGN CRITERIA NOTED IN THESE GENERAL STRUCTURAL NOTES.

4. THE CONTRACTOR SHALL COORDINATE SEISMIC RESTRAINTS OF MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT, MACHINERY AND ASSOCIATED PIPING WITH THE STRUCTURE. CONNECTIONS TO STRUCTURE SHALL BE DESIGNED BY AN ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED AND SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO CONSTRUCTION.

5. FIELD ENGINEERED DETAILS DEVELOPED BY THE CONTRACTOR THAT DEVIATE FROM OR ADD TO THE STRUCTURAL DRAWINGS SHALL BEAR THE SEAL AND SIGNATURE OF A STRUCTURAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED AND SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO CONSTRUCTION.

6. THE USE OF REPRODUCTIONS OR PHOTOCOPIES OF THE CONTRACT DOCUMENTS SHALL NOT BE PERMITTED. WHEN CAD OR REVIT FILES ARE PROVIDED TO THE CONTRACTOR OR SUBCONTRACTORS, IT IS THE RESPONSIBILITY OF THE DETAILERS TO REMOVE ALL INFORMATION NOT DIRECTLY RELEVANT TO THE CREATION OF THE PLACING DRAWINGS AS WELL AS ALL REFERENCES TO THE OUTSIDE SOURCE FILES.

7. SUBMITTAL DOCUMENTS SHALL BE REVIEWED BY THE CONTRACTOR PRIOR TO BEING SUBMITTED TO THE ARCHITECT FOR REVIEW.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE REVIEWED SUBMITTAL TO THE BUILDING DEPARTMENT FOR DEFERRED PERMIT APPLICATION. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THEIR DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.

EARTHWORK:

1. **PRESCRIPTIVE EARTHWORK:**
   A. AT THE OWNERS DIRECTION, A GEOTECHNICAL INVESTIGATION HAS NOT BEEN PERFORMED. IF ANY OF THE FOLLOWING CONDITIONS ARE DISCOVERED DURING CONSTRUCTION AT THE BUILDING SITE, A GEOTECHNICAL INVESTIGATION SHALL BE COMMISSIONED IN ACCORDANCE WITH CHAPTER 18 OF THE INTERNATIONAL BUILDING CODE:
      a. QUESTIONABLE SOIL
      b. EXPANSIVE SOIL
      c. GROUND-WATER TABLE IS ABOVE OR WITHIN 5 FEET BELOW THE ELEVATION OF THE LOWEST FLOOR LEVEL WHERE SUCH FLOOR IS LOCATED BELOW THE FINISHED GROUND LEVEL ADJACENT TO THE FOUNDATION.
      d. ROCK STRATA OF VARIABLE OR DOUBTFUL CHARACTERISTICS
      e. EXCAVATIONS THAT WILL REMOVE THE LATERAL SUPPORT OF AN ADJACENT, EXISTING FOUNDATION
      f. USE OF COMPACTED FILL MATERIAL BELOW SHALLOW FOUNDATIONS IN EXCESS OF 12 INCHES IN DEPTH
      g. USE OF CONTROLLED LOW-STRENGTH MATERIAL (CLSM)

   B. THE SITE WORK DESCRIBED BELOW IS BASED ON RECOMMENDATIONS FROM THE PRESCRIPTIVE REQUIREMENTS IN THE INTERNATIONAL BUILDING CODE CHAPTER 18.
      a. REMOVE ALL ORGANIC MATERIAL AND TOPSOIL FROM AREAS UNDER THE BUILDING OR UNDER PAVED AREAS.
      b. FOUNDATIONS SHALL BE BUILT ON UNDISTURBED SOIL OR COMPACTED FILL MATERIAL 12 INCHES OR LESS IN DEPTH. IF PROVIDED, COMPACTED FILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 8" AND HAVE AN IN-PLACE DRY DENSITY NOT LESS THAN 95 PERCENT OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT DETERMINED IN ACCORDANCE WITH ASTM D1557. IF THE COMPACTED FILL MATERIAL EXCEEDS 12 INCHES IN DEPTH OR CLSM IS USED, PLACEMENT SHALL COMPLY WITH THE PROVISIONS OF AN APPROVED GEOTECHNICAL INVESTIGATION AND REPORT.
      c. THE BOTTOM OF ALL EXTERIOR FOOTINGS AND FOOTINGS SUSCEPTIBLE TO FROST HEAVE SHALL EXTEND A MINIMUM DEPTH BELOW LOWEST ADJACENT FINISHED GRADE OF **18 INCHES**.
      d. THE EXCAVATION OUTSIDE THE FOUNDATION SHALL BE BACKFILLED WITH SOIL THAT IS FREE OF ORGANIC MATERIAL, CONSTRUCTION DEBRIS, COBBLES AND BOULDERS, OR WITH CLSM. THE BACKFILL SHALL BE PLACED IN LIFTS AND COMPACTED IN A MANNER THAT DOES NOT DAMAGE THE FOUNDATION OR THE WATERPROOFING OR DAMPPROOFING MATERIAL, IF PRESENT. CLSM NEED NOT BE COMPACTED.
      e. DAMPPROOFING, WATERPROOFING, AND FOUNDATION DRAINS: COMPLY WITH SECTION 1805 OF THE IBC. DESIGN/SPECIFICATION OF THESE SYSTEMS IS TO BE BY OTHERS.

   C. THE SUBGRADE OF SLABS-ON-GRADE SHALL BE STRIPPED, TILLED, AND RE-COMPACTED TO PRODUCE A UNIFORM SURFACE. THE SUBGRADE SHALL BE OVERLAIN WITH 6 INCHES, MINIMUM, OF CLEAN, DENSELY-GRADED, CRUSHER-RUN BASE MATERIAL WITH A BALANCED FINE CONTENT THAT SATISFIES THE REQUIREMENTS OF ASTM D1241, TYPE 1 MIXTURE, GRADATION C. THE BASE MATERIAL SHALL BE COMPACTED TO A DRY DENSITY NOT LESS THAN 95 PERCENT OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT DETERMINED IN ACCORDANCE WITH ASTM D1557. THE SURFACE OF THE BASE MATERIAL SHALL BE CHOKED OFF WITH SAND OR FINE GRAVEL AND COMPACTED TO PROVIDE A SMOOTH, PLANAR SURFACE FOR THE CONCRETE SLABS-ON-GRADE.

   D. PROVIDE A VAPOR RETARDER DIRECTLY AS REQUIRED BY THE ARCHITECT BELOW SLABS-ON-GRADE AND ABOVE THE GRANULAR BASE MATERIAL. THE VAPOR RETARDER SHALL COMPLY WITH ASTM E1745 AND SHALL BE 10 MILS THICK, MINIMUM.

CAST-IN-PLACE CONCRETE:

1. CONCRETE SHALL BE IN ACCORDANCE WITH ACI 301, *SPECIFICATION FOR STRUCTURAL CONCRETE*, AND ACI 117, *SPECIFICATION FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS*, UNLESS NOTED OTHERWISE.

2. AVERAGE CONCRETE STRENGTH DETERMINED BY JOB CAST LAB CURED CYLINDER TO BE AS INDICATED BELOW PLUS INCREASE DEPENDING ON THE PLANT'S STANDARD DEVIATION AS SPECIFIED IN ACI 318. MINIMUM CONCRETE PROPERTIES SHALL BE AS FOLLOWS:

CONCRETE PROPERTIES

USE	EXPOSURE	MIN COMPRESSIVE STRENGTH	TEST AGE DAYS	AIR CONTENT	MAX WATER TO CEMENT RATIO	MAX AGGERGATE SIZE
INTERIOR SLABS/FOOTINGS AND WALLS	N/A	4,500 PSI	28	N/A	0.45	1"

3. THE CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGNS ALONG WITH TEST DATA A MINIMUM OF TWO WEEKS PRIOR TO PLACING CONCRETE.

4. CONDUITS EMBEDDED IN SLABS SHALL NOT BE LARGER IN OUTSIDE DIMENSION THAN ONE THIRD OF THE THICKNESS OF THE SLAB AND SHALL NOT BE SPACED CLOSER THAN THREE DIAMETERS ON CENTER.

5. CURING OF CONCRETE SHALL COMPLY WITH ACI 308, UNLESS NOTED OTHERWISE.

6. WHERE CONCRETE IS PLACED AGAINST EXISTING CONCRETE, THE EXISTING CONCRETE SURFACE SHALL BE CLEANED AND ROUGHENED TO A MINIMUM 1/4" AMPLITUDE.

7. PROVIDE 3/4" CHAMFERS ON ALL EXPOSED CONCRETE CORNERS UNLESS NOTED OTHERWISE.

8. SHORING DESIGN IS THE CONTRACTOR'S RESPONSIBILITY. SHORING FORMWORK SHALL NOT BE REMOVED FROM HORIZONTAL MEMBERS BEFORE CONCRETE STRENGTH IS AT LEAST 70 PERCENT OF DESIGN STRENGTH AS DETERMINED BY FIELD CURED CYLINDERS.

REINFORCING STEEL:

1. REINFORCING STEEL SHALL CONFORM TO THE FOLLOWING PROPERTIES:

REINFORCEMENT STEEL PROPERTIES

USE	REINFORCEMENT SIZE	SPECIFICATION
GENERAL USE	#7 & SMALLER	ASTM A615, GRADE 60
BEAMS AND COLUMNS	#8 & LARGER	ASTM A706
LONGITUDINAL FLEXURAL REINFORCEMENT IN BEAMS, COLUMNS AND SHEARWALLS	ALL	ASTM A706
REINFORCEMENT TO BE WELDED	ALL	ASTM A706
WELDED WIRE REINFORCEMENT	ALL	ASTM A1064

2. REINFORCING STEEL TO BE WELDED SHALL USE ONLY LOW HYDROGEN ELECTRODES. ALL WELDING TO BE IN COMPLIANCE WITH AWS D1.4. WELD REINFORCING STEEL ONLY WHERE INDICATED ON THE DRAWINGS. WELDING OR TACK WELDING OF REINFORCEMENT BARS TO OTHER BARS OR STEEL COMPONENTS IS PROHIBITED.

3. REINFORCING STEEL IN BEAMS AND SLABS SHALL BE SUPPORTED ON CONCRETE DOBBIES, OR APPROVED CHAIRS IN SUFFICIENT NUMBERS TO SUPPORT THE BARS WITHOUT SETTLEMENT. FABRICATE AND INSTALL REINFORCING STEEL ACCORDING TO THE MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES - ACI STANDARD 315.

4. CONTACT LAP ALL REINFORCING BARS PER THE TYPICAL LAP SPLICE LENGTH SCHEDULE, EXCEPT AS NOTED ON DRAWINGS. MECHANICAL SPLICES NOTED ON THE DRAWINGS SHALL BE DAYTON SUPERIOR BAR-LOCK OR APPROVED WITH A CURRENT ICC-ES OR IAPMO-ES EVALUATION REPORT.

GRADE 60 REINFORCING STEEL LAP SPLICE LENGTH AND DEVELOPMENT LENGTH

	f'c = 3,000 PSI					f'c = 4,000 PSI					f'c = 5,000 PSI				
BAR SIZE	MISC BARS		TOP BARS (SEE NOTE 3)		HOOK BARS	MISC BARS		TOP BARS (SEE NOTE 3)		HOOK BARS	MISC BARS		TOP BARS (SEE NOTE 3)		HOOK BARS
	Ld	LAP	Ld	LAP	Ldh	Ld	LAP	Ld	LAP	Ldh	Ld	LAP	Ld	LAP	Ldh
#3	17	22	22	28	9	15	19	29	25	8	13	17	17	22	7
#4	22	29	29	38	11	19	25	25	33	10	17	23	23	29	9
#5	28	36	36	47	14	24	31	31	41	12	22	28	28	36	11
#6	33	43	43	56	17	29	37	37	49	15	26	34	34	44	13
#7	48	63	63	81	20	42	54	54	71	17	38	49	49	63	15
#8	55	72	72	93	22	48	62	62	81	19	43	56	56	72	17
#9	62	81	81	105	25	54	70	70	91	22	48	63	63	81	20
#10	70	91	91	118	28	61	79	79	102	25	54	71	71	92	22
#11	78	101	101	131	31	67	87	87	114	27	60	78	78	102	24

1. ALL TABULATED VALUES ARE IN INCHES, FOR GRADE 60, UNCOATED REINFORING, NORMAL WEIGHT CONCRETE WITH CLEAR SPACING AND CLEAR COVER GREATER THAN THE BAR DIAMETER.
2. IT SHALL BE PERMITTED TO INTERPOLATE BETWEEN CONCRETE STRENGTHS OR USE THE NEXT LOWER CONCRETE STRENGTH.
3. TOP BARS ARE ANY HORIZ BAR PLACED SUCH THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE BAR IN ANY SINGLE POUR. HORIZ WALL BARS ARE CONSIDERED TOP BARS.
4. LAP SPLICES ARE FOR NON-LATERAL LOAD RESISTING ELEMENTS. FOR REBAR LAPS SPLICES AT LATERAL LOAD RESISTING ELEMENTS, REFERENCE PLANS AND ELEVATIONS.
5. Ld = DEVELOPMENT LENGTH IN TENSION OF DEFORMED BAR
   Ldh = DEVELOPMENT LENGTH IN TENSION OF DEFORMED BAR OR DEFORMED WIRE WITH A STANDARD...
   LAP = LAP SPLICE LENGTH OF DEFORMED BAR OR DEFORMED WIRE

5. REINFORCING STEEL SHALL BE PROTECTED BY PLACING BARS WITH A MINIMUM COVER, UNLESS NOTED OTHERWISE.

REINFORCING STEEL CONCRETE COVER

USE	CLEAR COVER
SLABS	3/4"
BEAMS AND COLUMNS	1-1/2" (TO STIRRUPS OR TIES)
WALLS (INTERIOR FACES)	3/4"
CONCRETE CAST AGAINST EARTH	3"
CONCRETE EXPOSED TO WEATHER OR EARTH	1-1/2" (FOR #5 OR SMALLER), 2" (FOR #6 AND LARGER)

6. PROVIDE DOWELS FROM FOOTINGS TO MATCH ALL VERTICAL WALL, PILASTER AND COLUMN REINFORCING. PROVIDE CORNER BARS TO MATCH HORIZONTAL REINFORCING IN WALLS AND FOOTINGS AT ALL CORNERS AND INTERSECTIONS. CONTINUE HORIZONTAL WALL BARS THROUGH PILASTERS COLUMNS AND INTERSECTING WALLS.

7. ALL ANCHOR BOLTS, HOLDDOWNS AND OTHER REQUIRED ACCESSORIES SHALL BE SECURED IN PLACE PRIOR TO INSPECTION AND CONCRETE PLACEMENT. DO NOT STAB THE ABOVE LISTED ITEMS INTO FRESH CONCRETE AFTER PLACEMENT. PROPERLY VIBRATE AROUND INSTALLED ITEMS TO ENSURE PROPER CONSOLIDATION OF CONCRETE.

CONCRETE CONNECTORS:

1. STEEL HEADED STUD ANCHORS SHALL BE NELSON GRANULAR FLUX-FILLED HEADED STUDS OR PRIOR APPROVED EQUAL AND BE MANUFACTURED FROM ASTM A29-12 / A108, GRADES 1010-1020 COLD ROLLED CARBON STEEL WITH A MINIMUM TENSILE STRENGTH OF 60,000 PSI. DEFORMED BAR ANCHORS SHALL BE NELSON, TYPE D2L. STUDS AND DEFORMED BAR SHALL BE AUTOMATICALLY END WELDED WITH A STUD WELDING GUN TO FULLY DEVELOP THE CONNECTOR.

2. UNLESS A SPECIFIC ANCHOR PRODUCT IS NOTED IN THE DRAWINGS, POST-INSTALLED ANCHORS MAY USE ONE OF THE ANCHORS LISTED BELOW FOR THE REQUIRED TYPE.

POST INSTALLED CONCRETE ANCHORS

TYPE	PRODUCT	REPORT #
ADHESIVE ANCHORS & DOWELS	SIMPSON SET-XP	ICC-ES ESR-2508
	SIMPSON AT-XP	IAPMO-UES ER-263
	HILTI HIT-HY 200	ICC-ES ESR-3187
EXPANSION ANCHOR	SIMPSON STRONG-BOLT 2	ICC-ES ESR-3037
	HILTI KWIK BOLT TZ	ICC-ES ESR-1917
SCREW ANCHOR	SIMPSON TITEN HD	ICC-ES ESR-2713
	HILTI KWIK HUS-EZ	ICC-ES ESR-3027

3. ALL ANCHORS SHALL BE INSTALLED IN STRICT CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND PRODUCT EVALUATION REPORTS.

4. EMBEDMENTS SPECIFIED ON DRAWINGS ARE "EFFECTIVE" EMBEDMENTS. REFERENCE MANUFACTURER LITERATURE FOR CORRESPONDING ACTUAL EMBEDMENT DEPTHS.

5. ANCHORS RODS EXPOSED TO EARTH OR WEATHER SHALL BE PROTECTED FROM CORROSION BY HOT-DIP GALVANIZING OR USE OF STAINLESS STEEL. POST INSTALLED EXPANSION AND SCREW ANCHORS EXPOSED TO EARTH OR WEATHER SHALL BE STAINLESS STEEL.

6. FOR POST-INSTALLED ANCHORS, LOCATE REINFORCEMENT AND CONFIRM FINAL ANCHOR LOCATIONS PRIOR TO FABRICATING PLATES, MEMBERS, OR OTHER STEEL ASSEMBLIES ATTACHED.

7. IF REINFORCEMENT IS ENCOUNTERED DURING DRILLING, ABANDON AND SHIFT THE HOLE LOCATION TO AVOID THE REINFORCEMENT. PROVIDE A MINIMUM OF (2) ANCHOR DIAMETERS OR 1 INCH, WHICHEVER IS LARGER, OF SOUND CONCRETE BETWEEN THE ANCHOR AND THE ABANDONED HOLE. FILL THE ABANDONED HOLE WITH NON-SHRINK GROUT. IF THE ANCHOR OR DOWEL MANY NOT BE SHIFTED AS NOTED ABOVE, SEEK GUIDANCE FROM THE STRUCTURAL ENGINEER OF RECORD.

8. SPECIAL INSPECTION OF ANCHOR INSTALLATION IS REQUIRED UNLESS SPECIFICALLY NOTED OTHERWISE IN DRAWINGS. SEE SPECIAL INSPECTION AND MATERIALS TESTING PROGRAM AND NOTES.

STRUCTURAL STEEL

1. DESIGN FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF AISC SPECIFICATIONS AND AISC CODE OF STANDARD PRACTICE. STRUCTURAL STEEL SHALL BE:

STRUCTURAL STEEL

SHAPE	MATERIAL SPECIFICATION AND GRADE
WIDE FLANGE (W-SHAPES)	ASTM A992, GRADE 50
CHANNELS (C-SHAPES)	ASTM A36, GRADE 36
ANGLES (L-SHAPES)	ASTM A36, GRADE 36
STRUCTURAL TEES (WT-SHAPES)	ASTM A992, GRADE 50
HOLLOW STRUCTURAL SECTIONS (HSS)	ASTM A500, GRADE C
STRUCTURAL PIPES	ASTM A53, GRADE B
PLATES	ASTM A36, GRADE 36
PLATES NOTED AS "GR. 50"	ASTM A572, GRADE 50

2. BOLTS SHALL CONFORM TO THE ASTM AND RCSC SPECIFICATIONS FOR JOINTS USING GROUP A OR GROUP B HIGH STRENGTH BOLTS. BOLTS SHALL BE INSTALLED SNUG-TIGHT UNLESS NOTED OTHERWISE.

3. ANCHOR RODS SHALL CONFORM TO ASTM F1554, GRADE 36 UNLESS NOTED OTHERWISE. ANCHOR RODS TO BE WELDED SHALL CONFORM TO ASTM F1554, GRADE 55. THREADED RODS SHALL CONFORM TO ASTM A36 UNLESS NOTED OTHERWISE.

4. WELDING SHALL CONFORM TO AWS D1.1, *STRUCTURAL WELDING CODE - STEEL* WITH PREQUALIFIED WELDING PROCESSES EXCEPT AS MODIFIED BY AISC 360 SECTION J2. WELDING SHALL BE COMPLETED BY AWS-CERTIFIED WELDERS.

5. WELDS SHALL BE MADE USING E70XX ELECTRODES FOR SHIELDED METAL ARC WELDING (SMAW) AND E71TX WIRE FOR FLUX-CORED ARC WELDING (FCAW) PROCESSES. FOR COMPLETE JOINT PENETRATION WELDS ASSOCIATED WITH MEMBER SPLICES AND CONNECTIONS NOT PART OF THE SEISMIC FORCE RESISTING SYSTEM, WELDS SHALL BE MADE WITH FILLER METAL THAT HAS A MINIMUM CVN TOUGHNESS OF 20 FT-LBS AT 40°F.

6. FIELD WELDING SYMBOLS HAVE NOT NECESSARLY BEEN INDICATED ON THE DRAWING. WHERE SHOWN, PROPER FIELD WELDING PER AWS SHALL BE USED. WHERE NO FIELD WELDING SYMBOLS ARE SHOWN, IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE USE OF SHOP AND FIELD WELDS.

7. ERECTION AIDS ARE TO BE DETERMINED AND PROVIDED BY THE CONTRACTOR. THE CONTRACTOR'S ERECTOR AND FABRICATOR SHALL COORDINATE THE TYPE AND QUANTITY OF ERECTION AIDS. THE CONTRACTOR IS SOLELY REPONSIBLE FOR ERECTION SEQUENCING, TEMPORARY BRACING, SAFTEY OF WORKERS, AND OVERALL COMPLIANCE WITH APPLICABLE OSHA REQUIREMENTS.

8. PROVIDE WEEP HOLES AT EXTERIOR CLOSED SECTIONS WHERE MOISTURE MAY ACCUMULATE.

9. INTERIOR FRAMING THAT IS TO BE PAINTED SHALL HAVE A SHOP APPLIED PRIMER. EXTERIOR FRAMING SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123 AND EXTERIOR FASTENERS SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A153. REPAIR GALVANIZING AFTER ERECTION IS COMPLETE IN ACCORDANCE WITH ASTM A780.

10. STRUCTURAL STEEL MEMBERS AND THEIR CONNECTIONS THAT ARE IDENTIFIED ON PLAN AS ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS) AND THAT ARE EXPOSED TO VIEW SHALL MEET THE STANDARDS OF AISC 303, *CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES*.

STRUCTURAL SHEET INDEX

22-0680 REID HALL ELEVATOR REPLACEMENT
REID HALL, BOZEMAN, MT 59715

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ARCHITECTS

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MMI Project #: PROJECT NUMBER

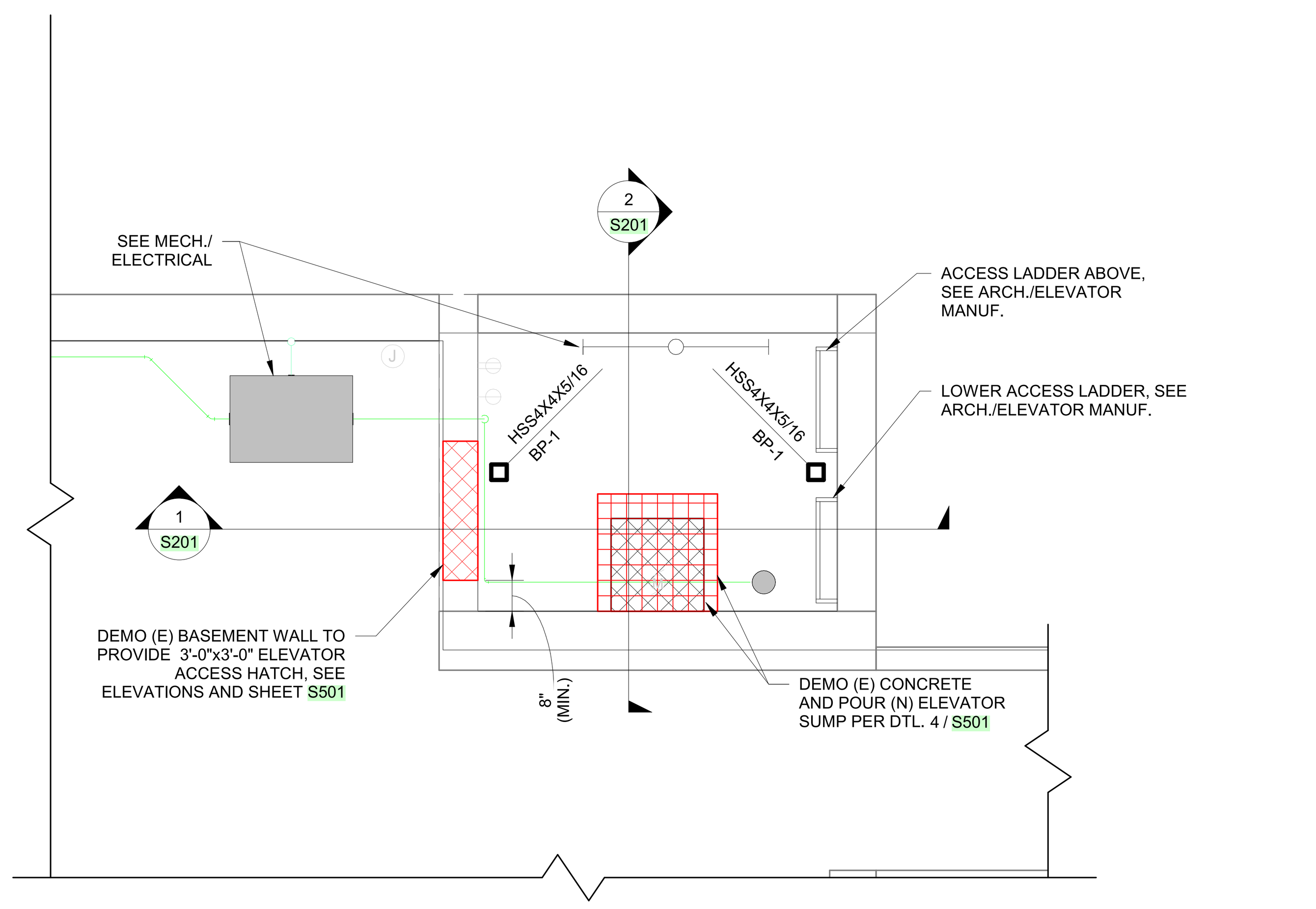
PERMIT-BID SET

REID HALL ELEVATOR REPLACEMENT
REID HALL, BOZEMAN, MT 59715

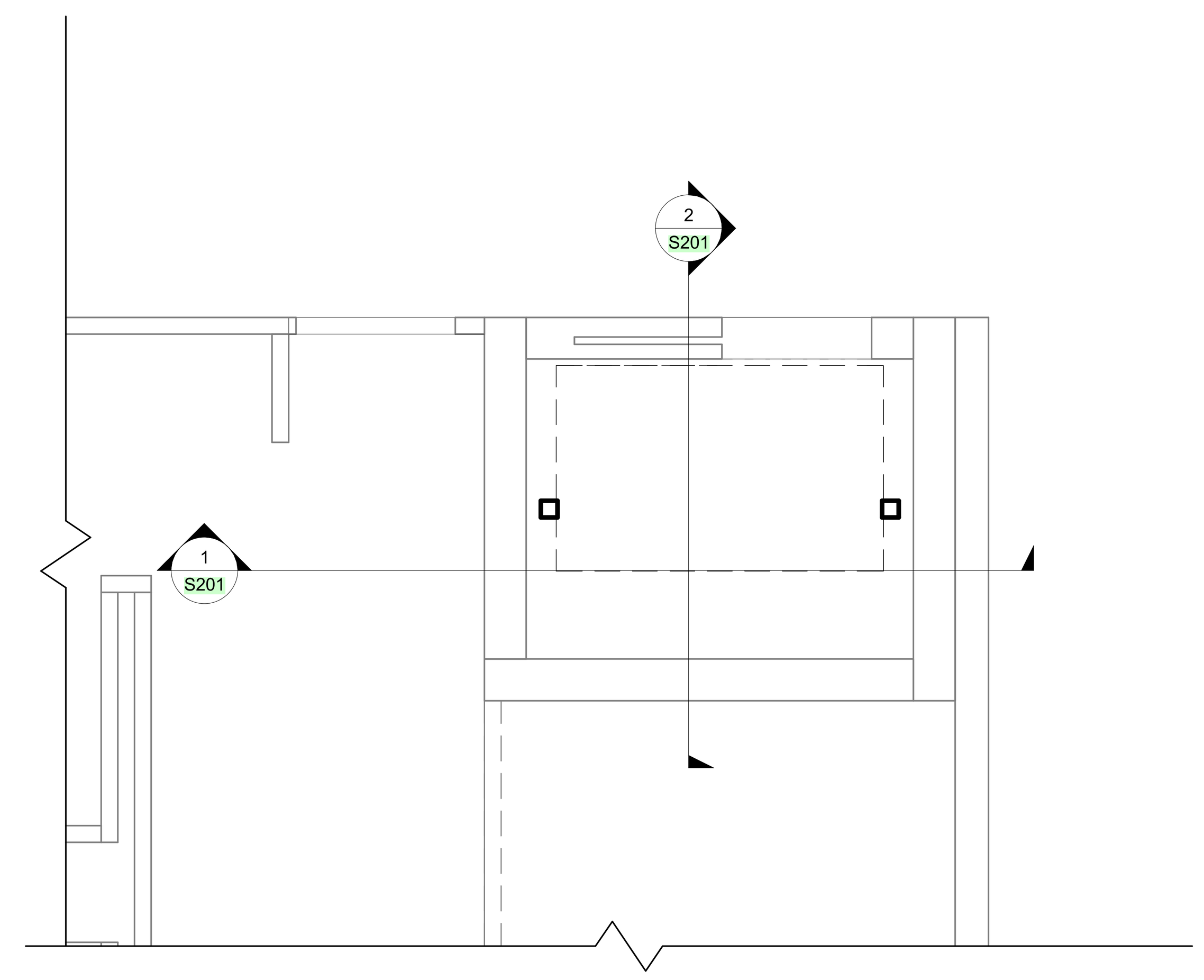
PREPARED FOR: EVAN BURNETT
PROJECT ARCHITECT: TRAVIS SMITH, AIA
PROJECT NUMBER: 2347

MONTANA
AUSTIN MICHAEL BATSON
Austin Batson
No. 85485PE
3-1-2024
LICENSED
PROFESSIONAL ENGINEER

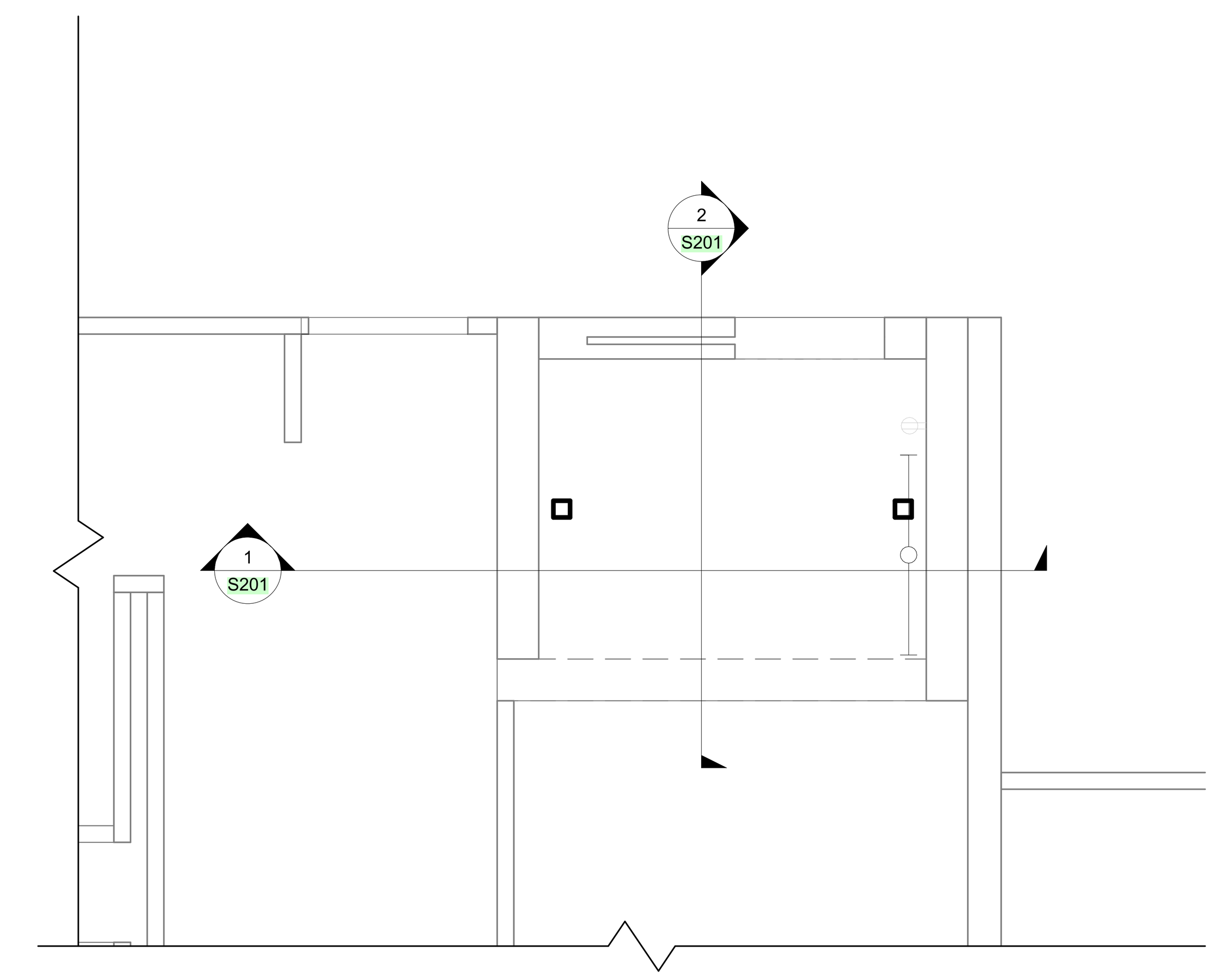
S000
GENERAL STRUCTURAL NOTES



1 BASEMENT FLOOR
3/8" = 1'-0"



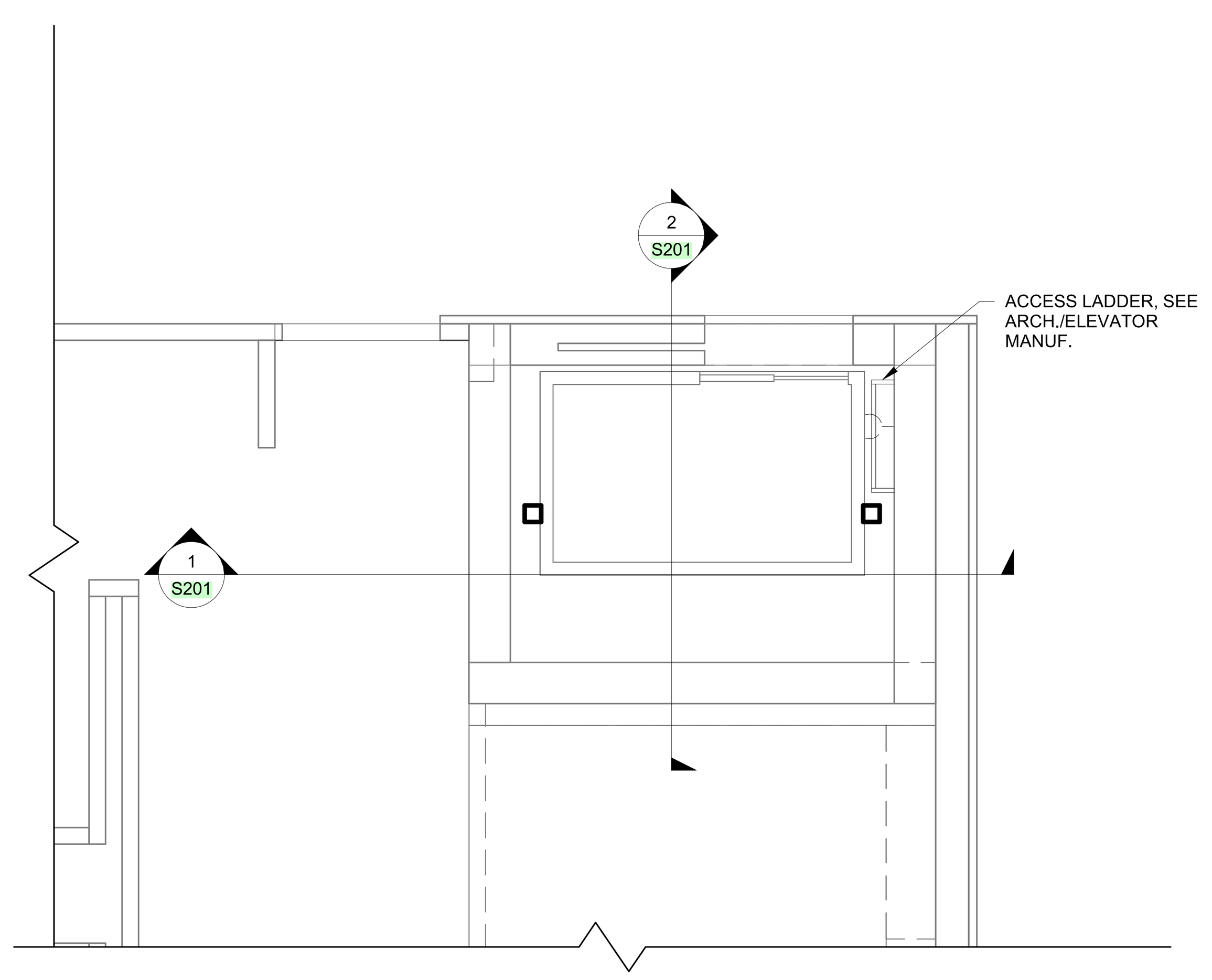
3 SECOND FLOOR
3/8" = 1'-0"



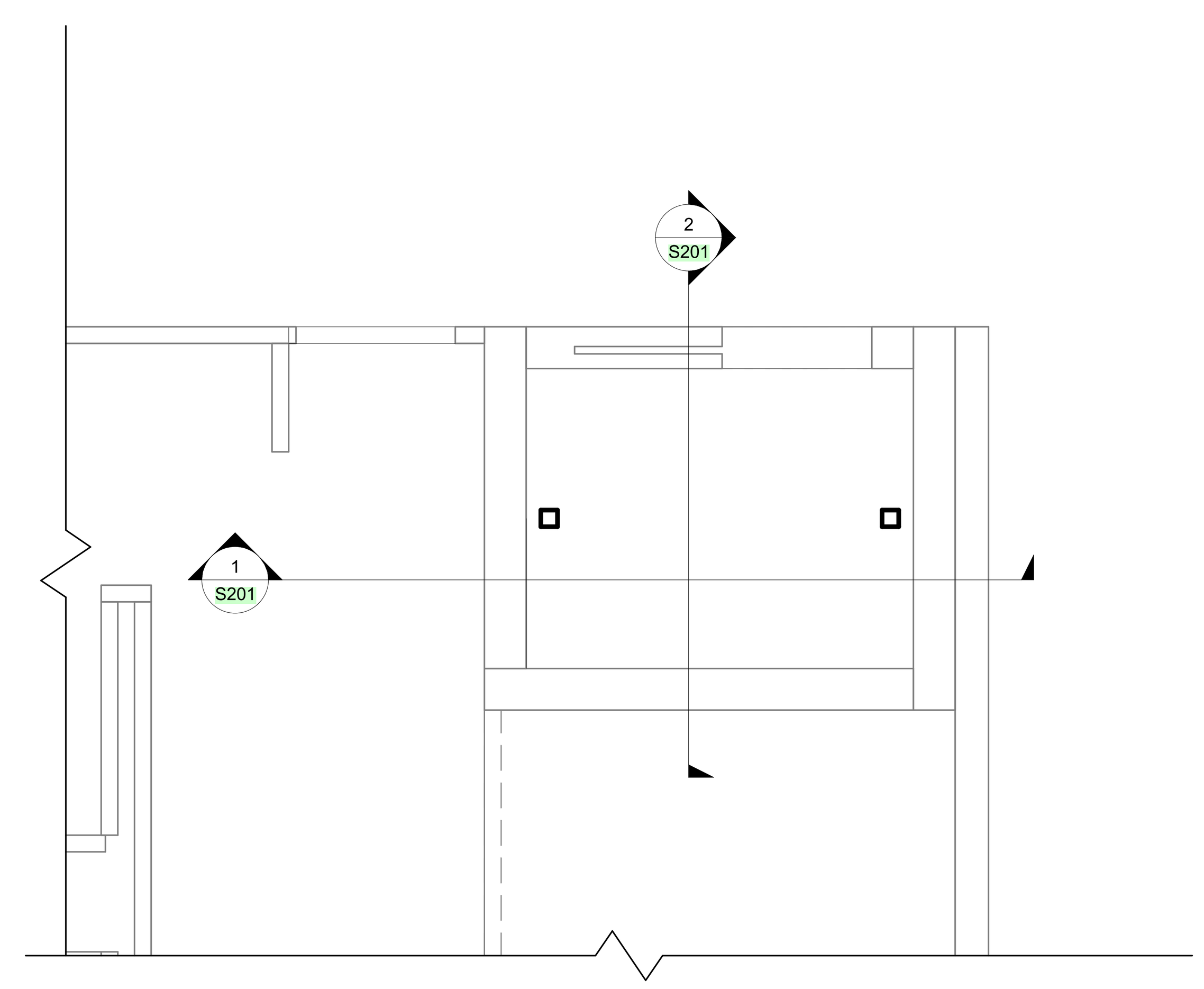
5 FOURTH FLOOR
3/8" = 1'-0"

PLAN NOTES

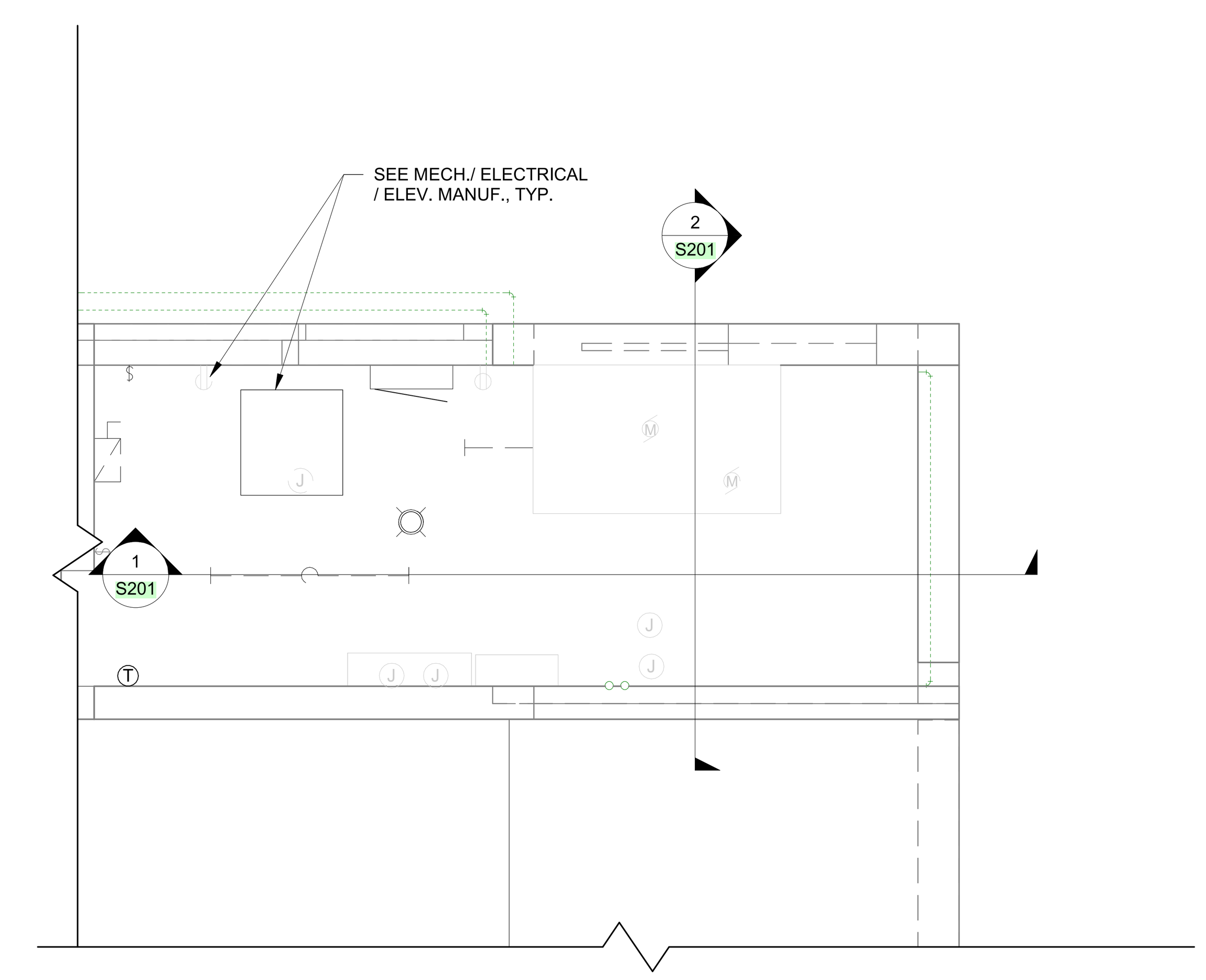
1. PROJECT DATUM ELEVATION = 0' - 0" AT TOP OF FIRST FLOOR SLAB-ON-GRADE. ALL SPOT ELEVATIONS ARE IN REFERENCE TO THE DATUM ELEVATION.
2. REFER TO THE GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.
3. REFER TO DRAWING S501 FOR TYPICAL CONCRETE AND STEEL DETAILS. TYPICAL DETAILS ARE NOT NECESSARILY REFERENCED BY CALLOUTS ON PLAN; IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW THE REQUIREMENTS OF THE DETAILS AT THE LOCATION AT WHICH THEY OCCUR.
4. COORDINATE THE FOLLOWING ITEMS WITH DRAWINGS OF OTHER DISCIPLINES:
   - SIZES AND LOCATIONS OF OPENINGS AND PENETRATIONS THROUGH WALLS AND FLOORS; SEE ARCHITECTURAL, ELECTRICAL, MECHANICAL, AND PLUMBING DRAWINGS.
   - ELEVATOR SUMP PITS; SEE ARCHITECTURAL AND ELEVATOR SUPPLIER DRAWINGS. SEE SHEET S501 FOR CONCRETE REINFORCING FOR SUMP.
   - LOCATION, SIZE, AND ANCHORAGE OF ELECTRICAL MECHANICAL, AND PLUMBING EQUIPMENT; SEE ELECTRICAL, MECHANICAL, AND PLUMBING DRAWINGS.
5. CONSTRUCTION JOINT LOCATIONS FOR CONCRETE WORK ARE NOT SHOWN. THE CONTRACTOR SHALL SUBMIT PROPOSED LOCATIONS FOR REVIEW AND APPROVAL.



2 T.O. SLAB / FIRST FLOOR
3/8" = 1'-0"



4 THIRD FLOOR
3/8" = 1'-0"



6 ROOF PLAN
3/8" = 1'-0"

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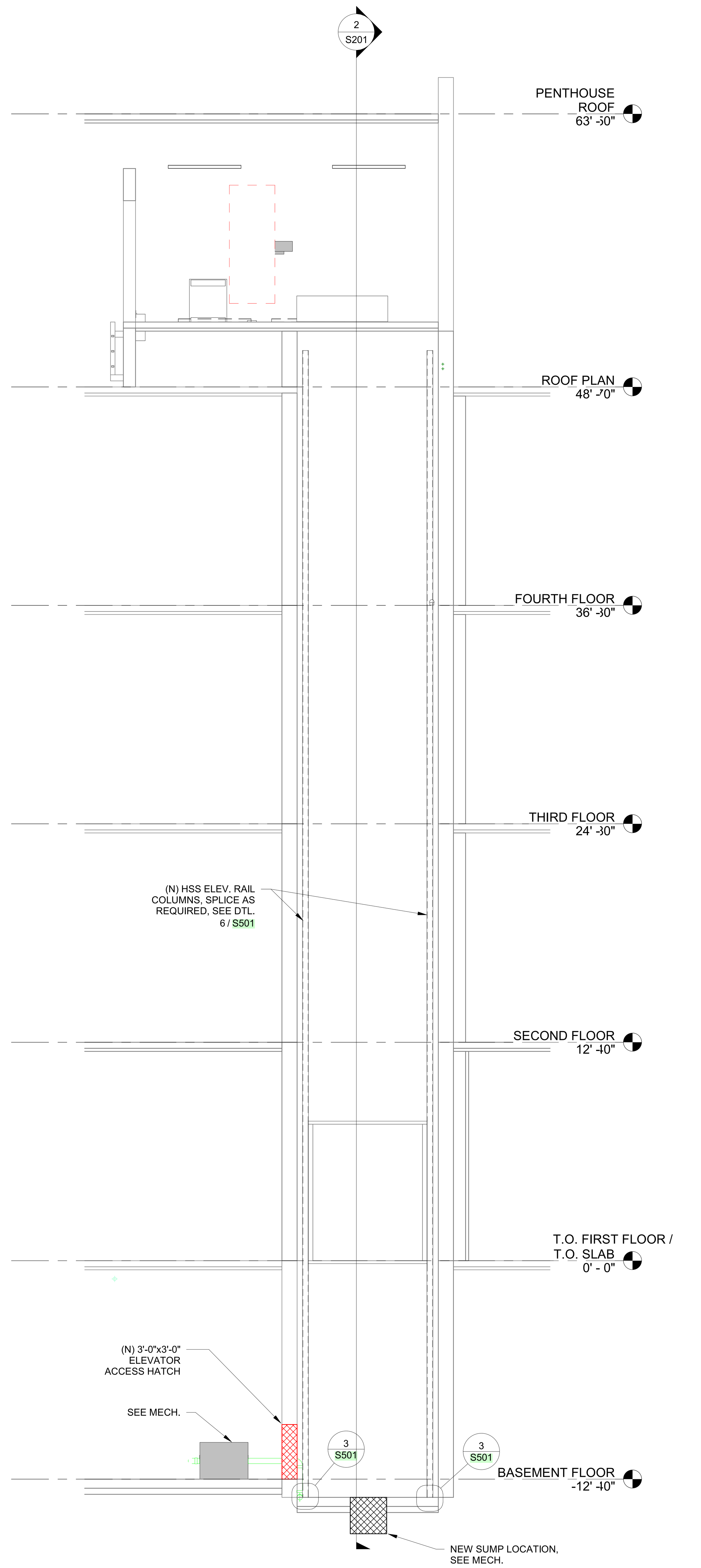
REID HALL, BOZEMAN, MT 59715

PREPARED FOR: EVAN BURNETT **PROJECT ARCHITECT:** TRAVIS SMITH, AIA **PROJECT NUMBER:** 2347

MONTANA AUSTIN MICHAEL BATSON No. 85485PE 3-1-2024 LICENSED PROFESSIONAL ENGINEER

S101
ELEVATOR PLAN VIEWS



1 WEST-EAST ELEVATION
1/4" = 1'-0"

2 NORTH-SOUTH ELEVATION
1/4" = 1'-0"

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COLLABORATIVE DESIGN ARCHITECTS
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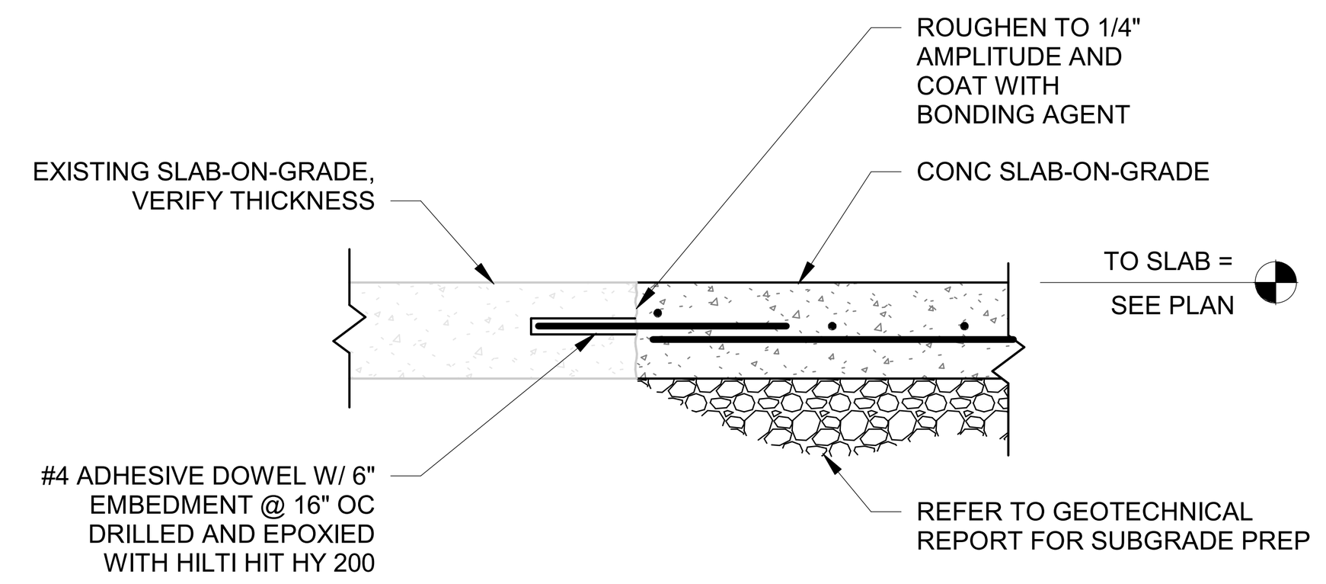
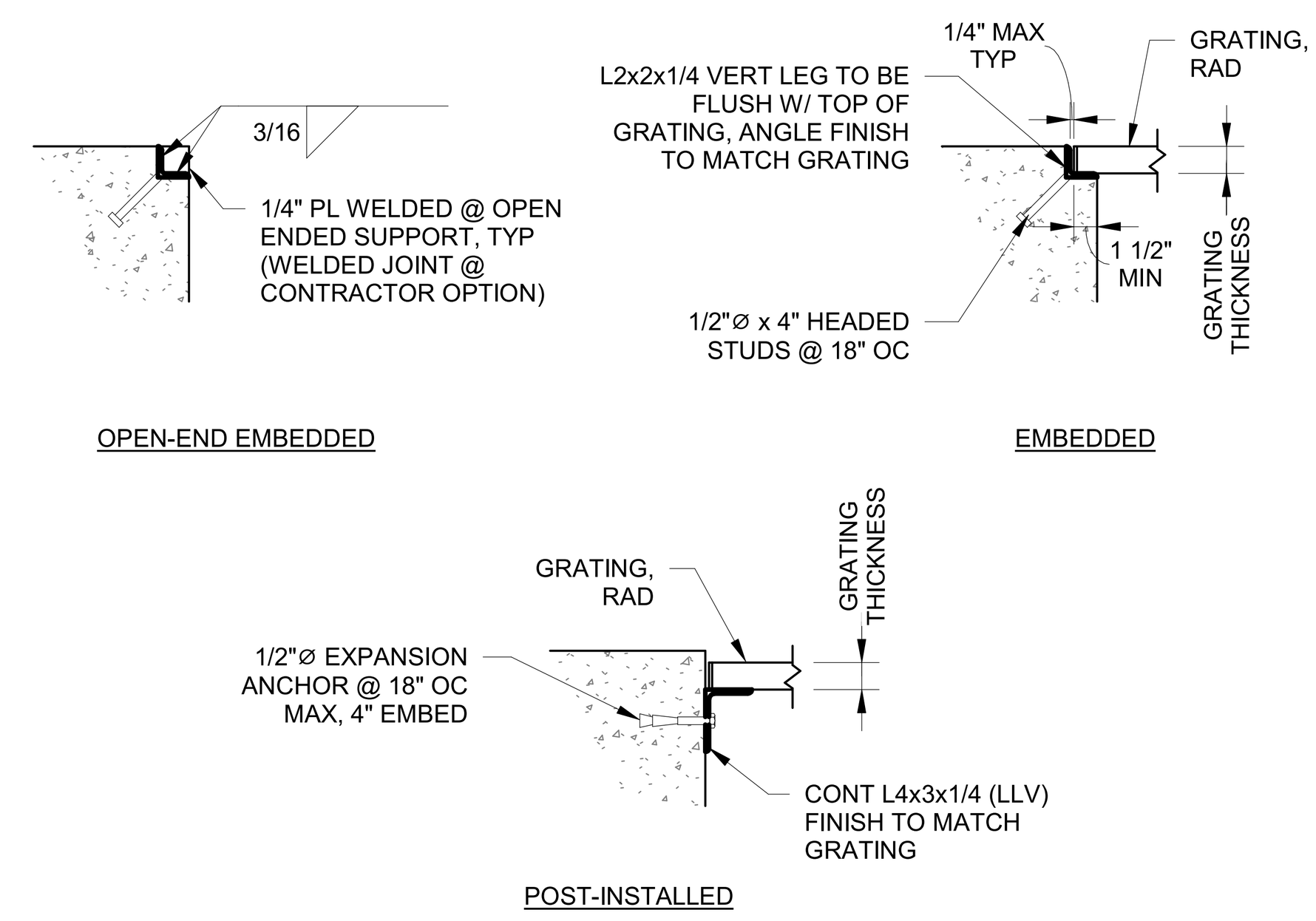
AUSTIN MICHAEL BATSON
No. 85485PE
3-1-2024
LICENSED PROFESSIONAL ENGINEER

S201
ELEVATOR ELEVATIONS

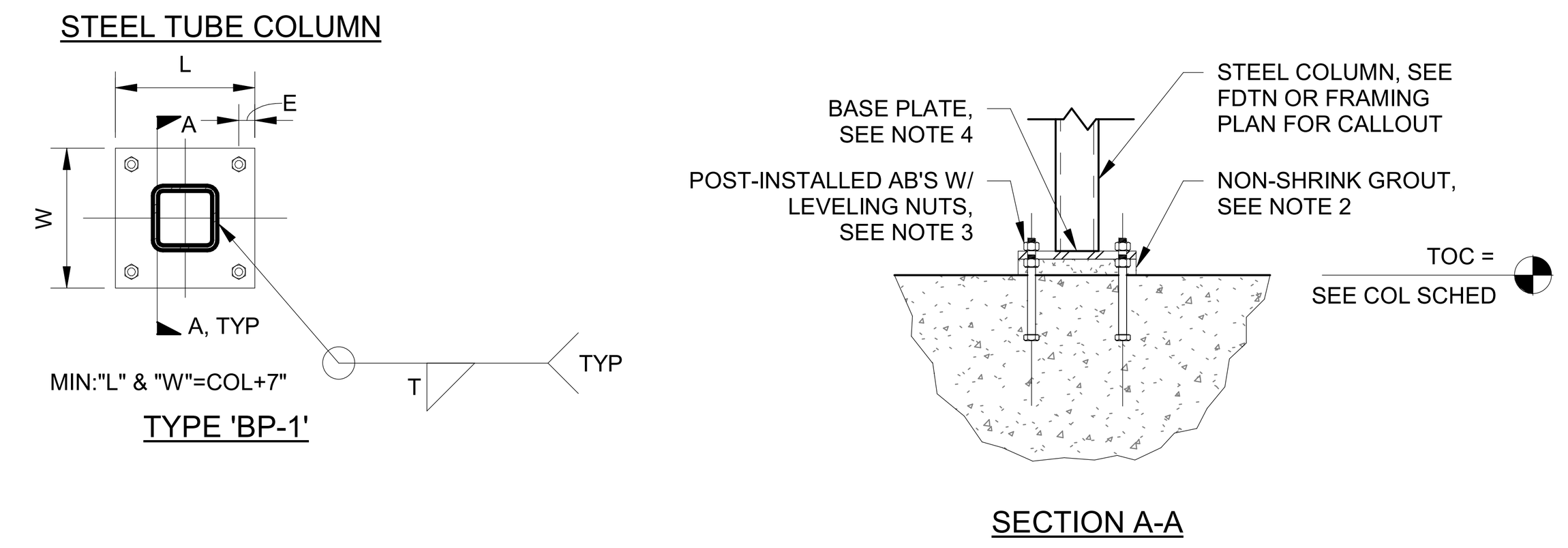


1 INFILL SLAB
NTS



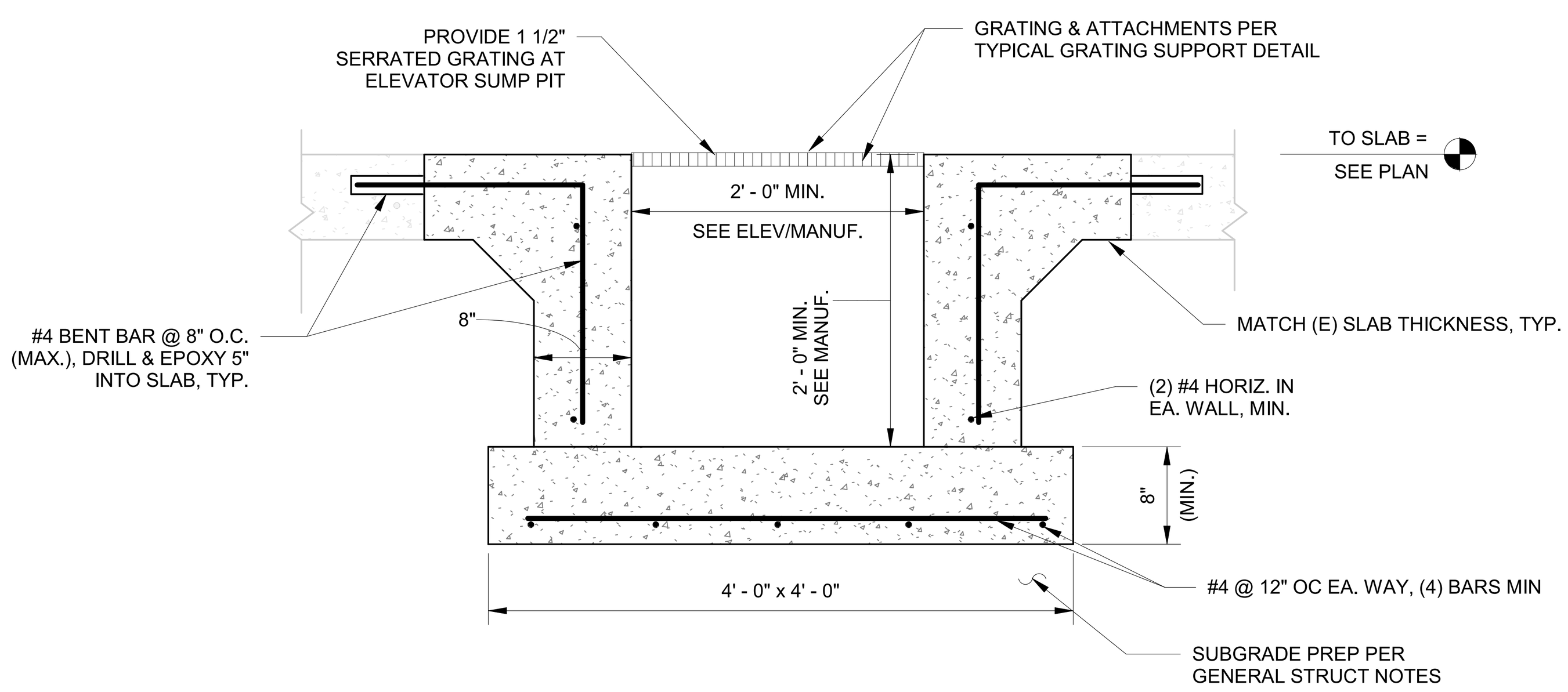
NOTES:
1. FASTEN GRATING TO EMBEDDED STEEL ANGLE IN ACCORDANCE WITH THE GRATING MANUFACTURER'S RECOMMENDATIONS.
2. PROVIDE A MINIMUM OF (2) FASTENED CONNECTIONS PER SECTION OF GRATING PER SIDE (4 TOTAL PER GRATING SECTION).

2 GRATING SUPPORT
NTS

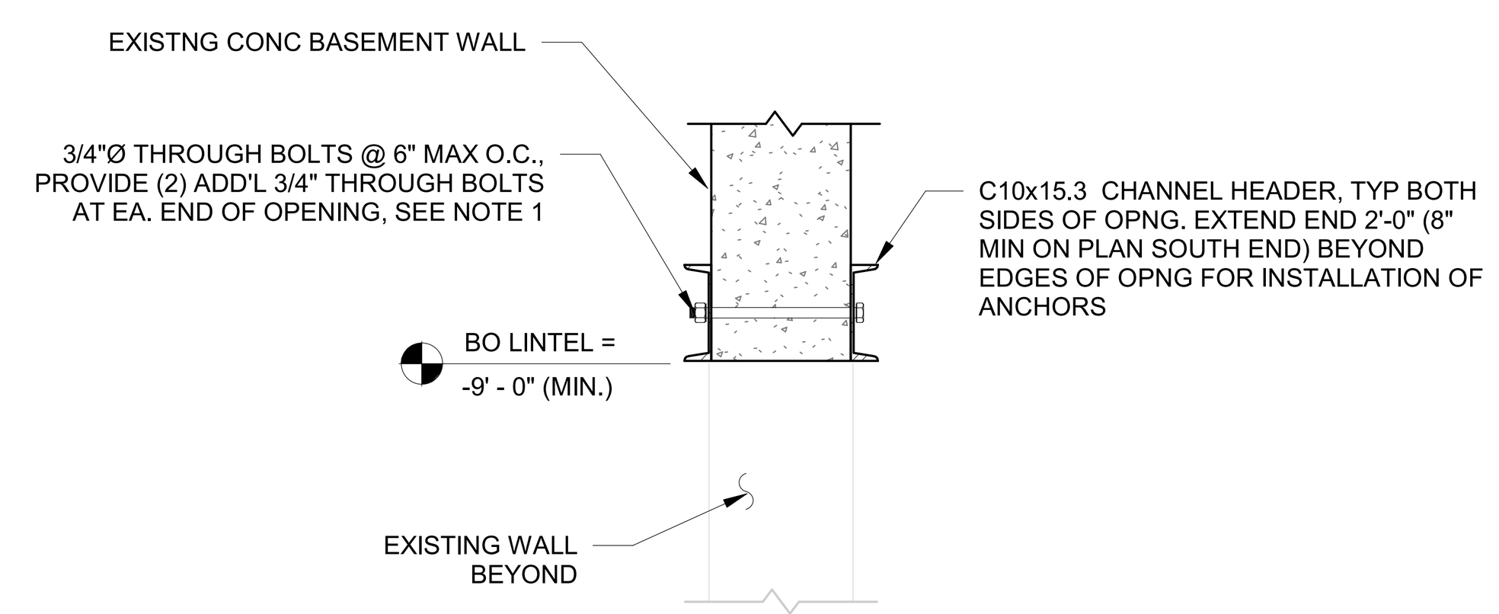


NOTES:
1. SEE COLUMN SCHEDULE FOR BASE PLATE TYPE. WHERE NO SIZE IS INDICATED, USE MINIMUM LENGTH AND WIDTH INDICATED FOR EACH BASEPLATE TYPE.
2. PROVIDE NON-SHRINK GROUT UNDER BASE PLATES, THICKNESS SHALL BE 2 TIMES ANCHOR BOLT DIAMETER OR 1 1/2" MINIMUM.
3. ANCHOR BOLTS SHALL BE 3/4" DIAMETER, DRILLED & EPOXIED W/ 6" EMBED, HEADED (A307) OR NUTTED (F1554, Fy=36 KSI), FURNISHED W/ LEVELING NUTS, (UNO).
4. MINIMUM BASE PLATE THICKNESS SHALL BE 3/4".
5. "T" = COLUMN WALL THICKNESS, OR 5/16" MAXIMUM.
6. "E" = EDGE DISTANCE, SHALL BE 1-1/2" MINIMUM.
7. "W" = BASE PLATE WIDTH
8. "L" = BASE PLATE LENGTH
9. PROVIDE 5/16" OVERSIZED ANCHOR BOLT HOLES, UNO
10. TWO BOLT COLUMN ANCHORAGE INDICATED IN THIS DETAIL ASSUMES COLUMN WEIGHS LESS THAN 300 POUNDS FOR EXEMPTION FROM OSHA 4 BOLT COLUMN ANCHORAGE.

3 COL BASE PL
NTS

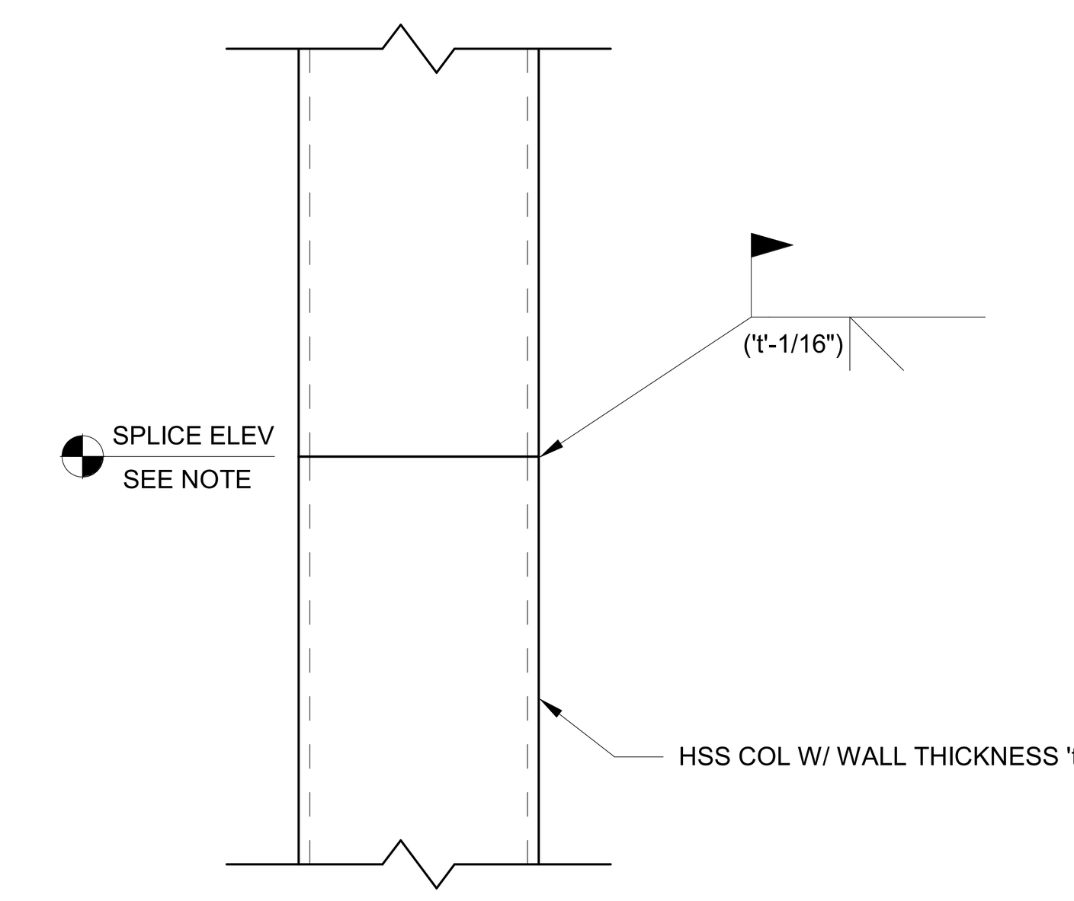


4 ELEVATOR SUMP SECTION
1" = 1'-0"



NOTES:
1. CONSTRUCTION SEQUENCE:
PLACE C-CHANNELS AT ANCHORS ON CONCRETE PRIOR TO CUTTING AND REMOVING OF CONCRETE. ONCE C-CHANNELS ARE PLACED, REMOVE CONCRETE AS REQUIRED.

5 NEW HEADER IN EXISTING CONCRETE WALL
NTS



NOTE:
SPLICE SHALL BE LOCATED A MINIMUM OF 4' - 0" FROM THE TOP AND BOTTOM OF THE COLUMN.

6 TYPICAL HSS COLUMN SPLICE
NTS

22-0680 REID HALL ELEVATOR REPLACEMENT
REID HALL, BOZEMAN, MT 59715

C O L L A B O R A T I V E D E S I G N A R C H I T E C T S
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PERMIT-BID SET

REID HALL ELEVATOR REPLACEMENT
REID HALL, BOZEMAN, MT 59715

PREPARED FOR: EVAN BURNETT
PROJECT ARCHITECT: TRAVIS SMITH, AIA
PROJECT NUMBER: 2347

MONTANA
AUSTIN MICHAEL BATSON
No. 85485PE
3-1-2024
LICENSED
PROFESSIONAL ENGINEER

S501
CONCRETE AND STEEL DETAILS

ABBREVIATIONS

ACC	AIR COOLED CONDENSER
ACU	AIR CONDITIONING UNIT
AD	ACCESS DOOR
ADJ	ADJUSTABLE
AF	AIR FOIL
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AFR	ABOVE FINISHED ROOF
AFS	AIR FLOW STATION
AHU	AIR HANDLING UNIT
AP	ACCESS PANEL
ATC	AUTOMATIC TEMPERATURE CONTROL
ATM	ATMOSPHERE
AWG	AMERICAN WIRE GAUGE
B	BOILER
BB	BASEBOARD
BC	BACKWARD CURVED
BD	BACKDRAFT DAMPER
BF	BOILER FEED
BHP	BRAKE HORSEPOWER
BI	BACKWARD INCLINED
BMS	BUILDING MANAGEMENT SYSTEM
BOD	BOTTOM OF DUCT
BOJ	BOTTOM OF JOIST
BOS	BOTTOM OF STEEL
BTU	BRITISH THERMAL UNIT
C	COMMON
CAV	CONSTANT AIR VOLUME
CC	COOLING COIL
CCW	COUNTER CLOCKWISE
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
C&I	CONTROLS & INSTRUMENTATION
CLG	CEILING
CMU	CONCRETE MASONRY UNIT
CND	CONDENSATE
CONT	CONTINUATION
CORR	CORRIDOR
CT	COOLING TOWER
CU	CONDENSING UNIT
CH	CABINET HEATER
CV	CONTROL VALVE
CVS	CONTROL VALVE STATION
CW	CLOCKWISE
dB	DECIBEL
DB	DRY BULB TEMPERATURE (°F)
DDC	DIRECT DIGITAL CONTROL
DH	DUCT HEATER
DP	DEW POINT TEMPERATURE (°F)
DX	DIRECT EXPANSION
E	EXHAUST
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE (°F)
EC	ELECTRICAL CONTRACTOR
EDR	EQUIVALENT DIRECT RADIATION
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
EFF	EFFICIENCY
ELEV	ELEVATION
ERV	ENERGY RECOVERY VENTILATOR
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EWT	ENTERING WATER TEMPERATURE (°F)
F&T	FLOAT & THERMOSTATIC
FA	FACE AREA
FC	FORWARD CURVED
FC	FAN COIL
FP	FIRE PROTECTION
FPM	FEET PER MINUTE
FT	FEET
GA	GAUGE OR GAGE
GC	GENERAL CONTRACTOR
GEN	GENERATOR
GH	GRAVITY HOOD
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
H	HUMIDIFIER
HC	HEATING COIL
HG	MERCURY
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
HR	HOUR
HX	HEAT EXCHANGER
ID	INSIDE DIAMETER
IFB	INTEGRAL FACE & BYPASS
IGV	INLET GUIDE VANES
IPS	IRON PIPE SIZE
IU	INDUCTION UNIT
KW	KILOWATTS
KWH	KILOWATT HOUR
LAT	LEAVING AIR TEMPERATURE (°F)
LF	LINEAR FEET
LWT	LEAVING WATER TEMPERATURE (°F)
M	MOTOR OPERATED
MAU	MAKEUP AIR UNIT
MB	MIXING BOX
MBH	1000 BTU/HR
MC	MECHANICAL CONTRACTOR
MFR	MANUFACTURER
MS	MINI-SPLIT
NC	NOISE CRITERIA
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NPS	NOMINAL PIPE SIZE
OA	OUTSIDE AIR
OAD	OUTSIDE AIR DAMPER
OBD	OPPOSED BLADE DAMPER
P	PUMP
PC	PLUMBING CONTRACTOR
PD	PRESSURE DROP
PH	PHASE
PHC	PREHEAT COIL
PPM	PART PER MILLION
PROP	PROPELLER
PRV	PRESSURE REDUCING VALVE
PSIA	PSI, ABSOLUTE
PSIG	PSI, GAUGE
QTY	QUANTITY
R	REGISTER
RA	RETURN AIR
RD	RADIAL DAMPER
RF	RETURN/RELIEF AIR FAN
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
SA	SUPPLY AIR
SAF	SUPPLY AIR FAN
SC	SENSIBLE COOLER
SCFM	CFM, STANDARD CONDITIONS
SD	SMOKE DETECTOR
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SENS	SENSIBLE
SP	STATIC PRESSURE
SPS	STATIC PRESSURE SENSOR
SS	STAINLESS STEEL
T	THERMOSTAT
TA	TRANSFER AIR
TCC	TEMPERATURE CONTROL CONTRACTOR
TCP	TEMPERATURE CONTROL PANEL
TG	TRANSFER GRILL
TOD	TOP OF DUCT
TOP	TOP OF PIPE
TOS	TOP OF STEEL
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UH	UNIT HEATER
UNC	UNDERCUT
UV	UNIT VENTILATOR
VA	VOLT-AMPERE
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VEL	VELOCITY
VFD	VARIABLE FREQUENCY DRIVE
VRF	VARIABLE REFRIGERANT FLOW
WB	WET BULB TEMPERATURE (°F)
WC	WATER COLUMN
WG	WATER GAUGE
WSHP	WATER SOURCE HEAT PUMP
ΔT	TEMPERATURE DIFFERENCE (°F)

MECHANICAL LEGEND

ANNOTATION SYMBOLS

- X / X — 3D VIEW NUMBER / SHEET NUMBER
- X / X — DETAIL NUMBER / SHEET NUMBER
- X / X — SECTION NUMBER / SHEET NUMBER
- X / CFM — AIR DEVICE MARK AND CFM
- X / CFM / OBD — AIR DEVICE MARK AND CFM - PROVIDE OPPOSED BLADE DAMPER
- X / CFM / RD — AIR DEVICE MARK AND CFM - PROVIDE RADIAL DAMPER
- ME-# — MECHANICAL EQUIPMENT MARK
- (E) ME-# — EXISTING MECHANICAL EQUIPMENT
- (D) ME-# — DEMOLISHED MECHANICAL EQUIPMENT
- POINT OF NEW CONNECTION
- POINT OF DISCONNECTION

HVAC CONTROL SYMBOLS

- T — THERMOSTAT
- T# — ZONED THERMOSTAT
- T#M — ZONED THERMOSTAT - MASTER
- T — THERMOSTAT W/ LOCKABLE COVER
- S — WALL SWITCH
- H — HUMIDISTAT
- T — ROOM TEMPERATURE SENSOR
- T^ — ADJUSTABLE ROOM TEMPERATURE SENSOR
- T C — COMBO ROOM TEMPERATURE & CO2 SENSOR
- T C/A — ADJUSTABLE COMBO ROOM TEMP & CO2 SENSOR
- H — ROOM HUMIDITY SENSOR
- C — ROOM CO2 SENSOR
- P — BUILDING PRESSURE SENSOR
- SP — STATIC PRESSURE SENSOR
- DP — DIFFERENTIAL PRESSURE SENSOR
- CO/NO — CARBON MONOXIDE / NITRIC OXIDE SENSOR

NOTE: THIS IS A STANDARD LEGEND. NOT ALL PIPE TYPES AND SYMBOLS ARE NECESSARILY UTILIZED IN THE DRAWINGS.

HVAC DUCTWORK

- W"xD" — RECTANGULAR DUCT WIDTH x DEPTH
- X"ø — ROUND DUCT DIAMETER
- W"/D" — OVAL DUCT WIDTH/DEPTH
- X"ø — FLEXIBLE DUCT DIAMETER
- FLOOR/CEILING SUPPLY DIFFUSER
- FLOOR/CEILING RETURN GRILLE
- FLOOR/CEILING EXHAUST GRILLE
- SIDEWALL SUPPLY DIFFUSER
- SIDEWALL RETURN/EXHAUST GRILLE
- SUPPLY DUCT (SECTION VIEW)
- RETURN DUCT (SECTION VIEW)
- EXHAUST DUCT (SECTION VIEW)
- OUTDOOR AIR DUCT (SECTION VIEW)
- DUCT UP (PLAN VIEW)
- DUCT DOWN (PLAN VIEW)
- R — INCLINED RISE - IN DIRECTION OF AIRFLOW
- D — INCLINED DROP - IN DIRECTION OF AIRFLOW
- INTERNAL DUCT LINING
- ELBOW WITH TURNING VANES
- RADIUS ELBOW
- MANUAL VOLUME DAMPER
- R — REMOTE VOLUME DAMPER
- BD — BACKDRAFT DAMPER
- ZN — ZONE DAMPER
- BP — BYPASS DAMPER
- M — MOTORIZED DAMPER
- FL — FIRE DAMPER
- S/FL — FIRE/SMOKE DAMPER
- SD — SMOKE DAMPER

GENERAL

- (E) NAME — EXISTING PIPE TO REMAIN
- (D) NAME — EXISTING PIPE TO BE DEMOLISHED
- NAME — NEW PIPING
- DIRECTION OF FLOW

HVAC PIPING

- HWS — HEATING WATER SUPPLY
- HWR — HEATING WATER RETURN
- CWS — CHILLED WATER SUPPLY
- CWR — CHILLED WATER RETURN
- CTS — COOLING TOWER SUPPLY
- CTR — COOLING TOWER RETURN
- HPWS — HEAT PUMP WATER SUPPLY
- HPWR — HEAT PUMP WATER RETURN
- HPS — HIGH PRESSURE STEAM
- MPS — MEDIUM PRESSURE STEAM
- LPS — LOW PRESSURE STEAM
- CND — STEAM CONDENSATE RETURN
- ATV — ATMOSPHERIC VENT
- REF — REFRIGERANT (LIQUID AND SUCTION)
- NG — NATURAL GAS
- LPG — LIQUIFIED PETROLEUM GAS

PIPE FITTINGS

- ELBOW
- PIPE BREAK
- PIPE UP
- PIPE DOWN
- CHANGE IN ELEVATION OF PIPE
- SIDE CONNECTION OR TEE FITTING
- TOP CONNECTION
- BOTTOM CONNECTION
- UNION
- FLANGE
- CAPPED OUTLET
- BLIND FLANGE

VALVES

- COMBINATION Y-STRAINER & SHUTOFF VALVE
- COMBINATION AUTOFLOW & SHUTOFF VALVE
- MANUAL BALANCING VALVE
- AUTOFLOW VALVE
- ISOLATION VALVE - SEE SPECIFICATIONS FOR TYPE
- 3-WAY VALVE
- BUTTERFLY VALVE
- HOSE END DRAIN
- STRAINER
- MANUAL BALANCING VALVE
- AUTOFLOW VALVE
- CHECK VALVE
- BACKFLOW PREVENTER
- PRESSURE REDUCING VALVE
- TEMPERATURE AND PRESSURE RELIEF VALVE
- S — SOLENOID VALVE
- M — 2-WAY TEMPERATURE CONTROL VALVE
- M — 3-WAY TEMPERATURE CONTROL VALVE

PIPING SPECIALTIES

- AUTOMATIC AIR VENT
- MANUAL AIR VENT - 1/4" BALL VALVE WITH 12" SOFT COPPER TUBE
- PRESSURE / TEMPERATURE PORT
- T — DDC TEMPERATURE SENSOR
- P — DDC PRESSURE SENSOR
- PIPE WELL - EMPTY
- FS — FLOW SWITCH
- PS — PRESSURE SWITCH
- P — PRESSURE GAUGE
- P — PRESSURE GAUGE & COCK
- T — TEMPERATURE GAUGE
- SCHEMATIC PUMP
- FLEXIBLE CONNECTOR
- PIPE GUIDES
- ANCHOR
- THERMAL EXPANSION LOOP

MECH. GENERAL NOTES

INSTALLATION:

A. NEW PIPING, DUCTWORK AND EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH THE CURRENTLY ADOPTED UNIFORM PLUMBING CODE, INTERNATIONAL MECHANICAL AND INTERNATIONAL BUILDING CODES.
B. EQUIPMENT SHALL BE INSTALLED LEVEL, PLUMB, AND FIRMLY ANCHORED IN LOCATIONS INDICATED ON PLAN. OBSERVE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT PRODUCTS SERVE THEIR INTENDED FUNCTION.
C. INSTALL EQUIPMENT, DUCTWORK, AND PIPING SO AS TO MAINTAIN CODE REQUIRED CLEARANCES FOR ELECTRICAL AND TELECOMMUNICATION EQUIPMENT.
D. ELEMENTS PENETRATING BUILDING COMPONENTS (ROOF ASSEMBLIES, WALL ASSEMBLIES, ETC.) SHALL BE SEALED WEATHER AND WATER TIGHT. COORDINATE PENETRATIONS WITH GENERAL CONTRACTOR TO PATCH TO THE SATISFACTION OF THE ARCHITECT OR ENGINEER.
E. EQUIPMENT MANUFACTURED AFTER 1/1/2023 SHALL MEET MINIMUM SEER2 RATINGS.
F. DRAWINGS ARE DIAGRAMMATIC IN NATURE. THE PURPOSE OF THESE PLANS IS TO INDICATE THE INTENDED SIZES, APPROXIMATE LOCATION AND ROUTING OF MAJOR COMPONENTS. ACTUAL CONDITIONS AND LOCATIONS SHALL BE FIELD VERIFIED AND ADJUSTED IF NECESSARY.
G. PROVIDE AND INSTALL SEISMIC BRACING FOR EQUIPMENT AND PIPING PER THE REQUIREMENTS OF THE CURRENTLY ADOPTED INTERNATIONAL BUILDING CODE.
H. MATERIAL THAT IS IN CONTACT WITH POTABLE DOMESTIC WATER SHALL BE NSF CERTIFIED LEAD FREE.

COORDINATION:

A. IT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO FIELD COORDINATE THE LOCATION OF EQUIPMENT, ROUTING OF DUCTWORK, AND ROUTING OF PIPING WITH OTHER TRADES.
B. IT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO REVIEW THE DRAWINGS OF OTHER DISCIPLINES AND PROVIDE THE NECESSARY LABOR AND MATERIALS REQUIRED FOR A COMPLETE INSTALLATION.
C. COORDINATE THE INSTALLATION OF GRILLES, REGISTERS AND DIFFUSERS WITH THE ARCHITECTURAL REFLECTED CEILING PLANS, THE ELECTRICAL LIGHTING PLANS, AND IF RELEVANT, THE TELECOMMUNICATION AND FIRE SPRINKLER PLANS.

ELECTRICAL COORDINATION:

A. SEE THE MEP COORDINATION SCHEDULE FOR ELECTRICAL INFORMATION. COORDINATE WITH OTHER TRADES TO ENSURE THAT ELECTRICAL DISCONNECTS, MOTOR STARTERS, VARIABLE FREQUENCY DRIVES, CONTROLS, AND ELECTRICAL ACCESSORIES ARE FURNISHED AND/OR INSTALLED BY THE APPROPRIATE TRADE.

SITE ELEVATION:

A. EQUIPMENT SHALL BE SELECTED FOR THE PROJECT ELEVATION OF 5,000'.

MECH. SHEET INDEX

DESIGN ARCHITECTS
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COLLABORATIVE
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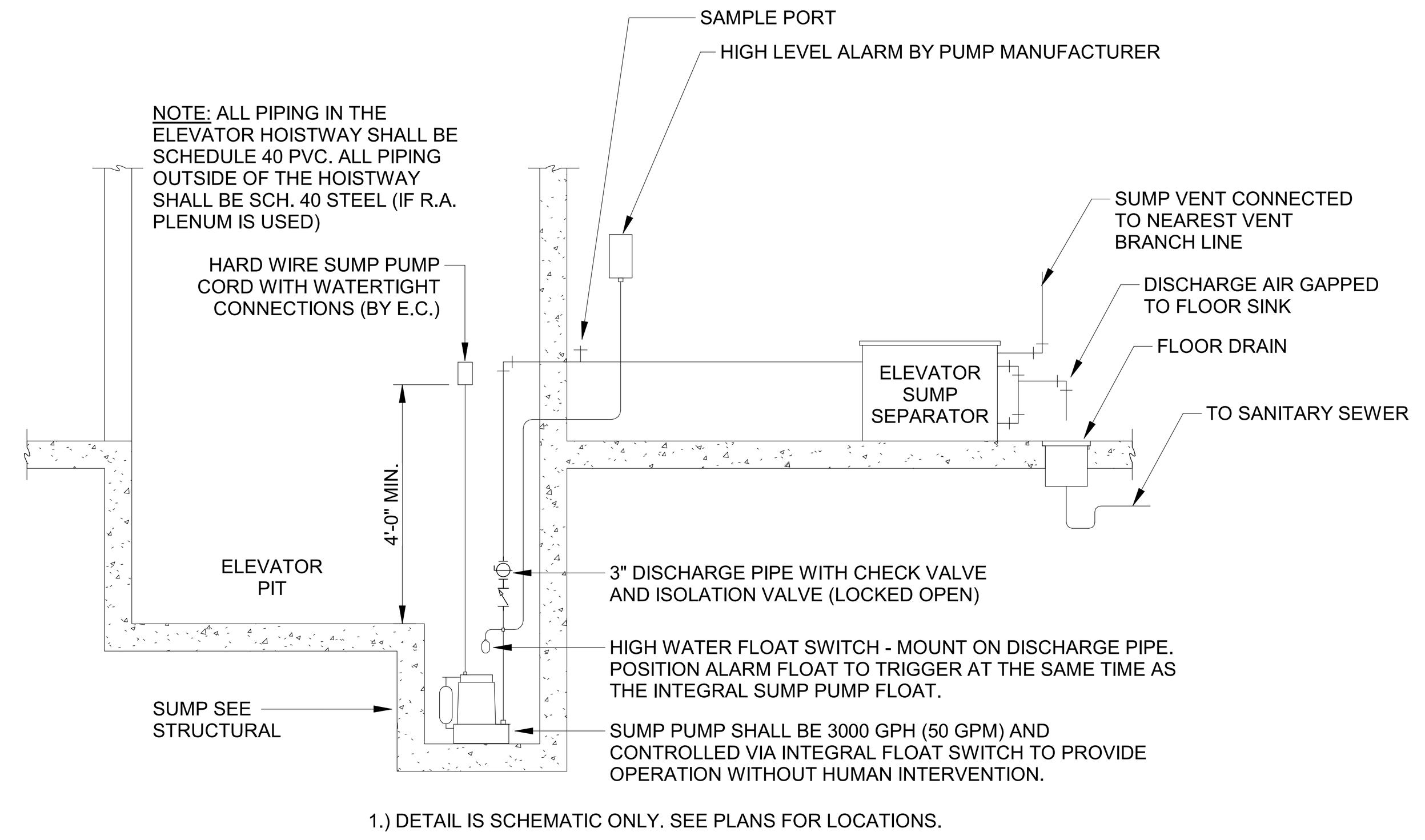
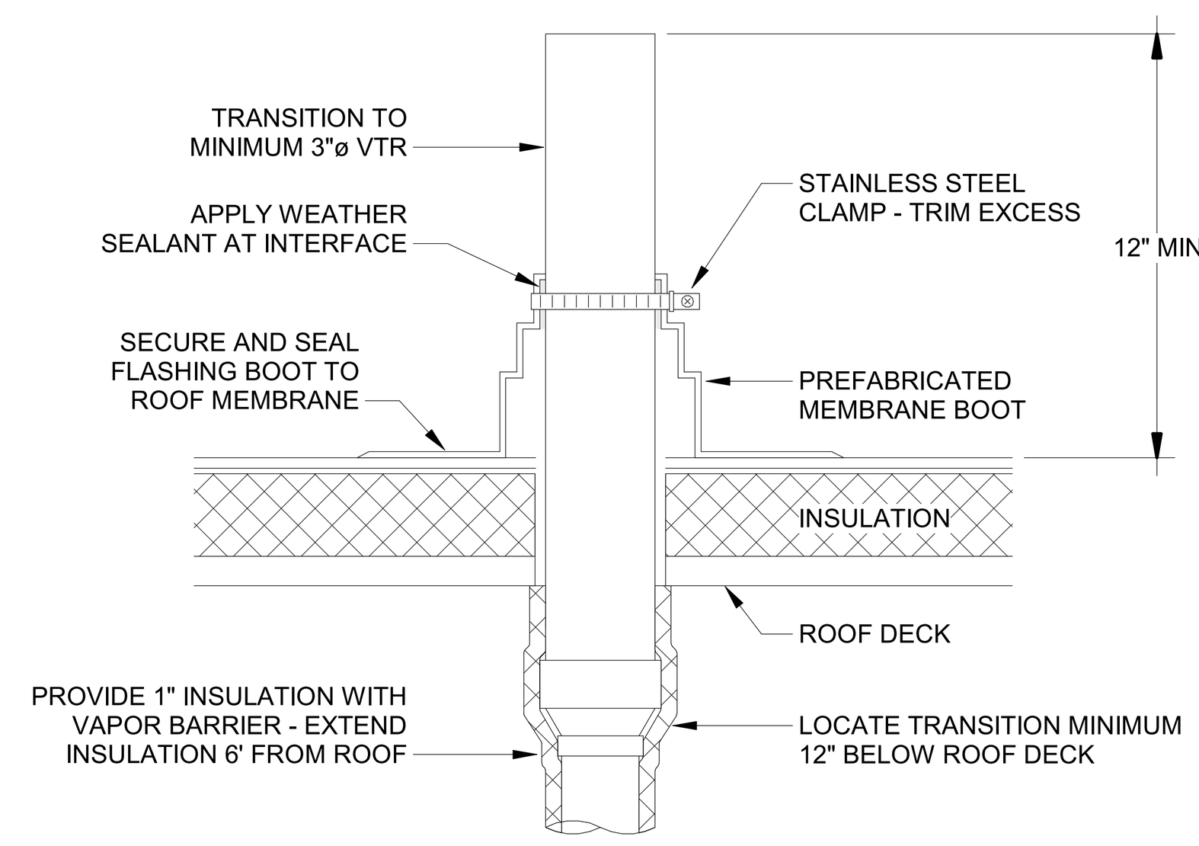
PREPARED FOR: EVAN BURNETT
PROJECT ARCHITECT: TRAVIS SMITH, AIA
MSU PP#: 22-0680
CDA PROJECT NUMBER: 2347

MONTANA — RYAN THOMSON JOHNSON — No. 15757 PE — 3-1-2024 — PROFESSIONAL ENGINEER

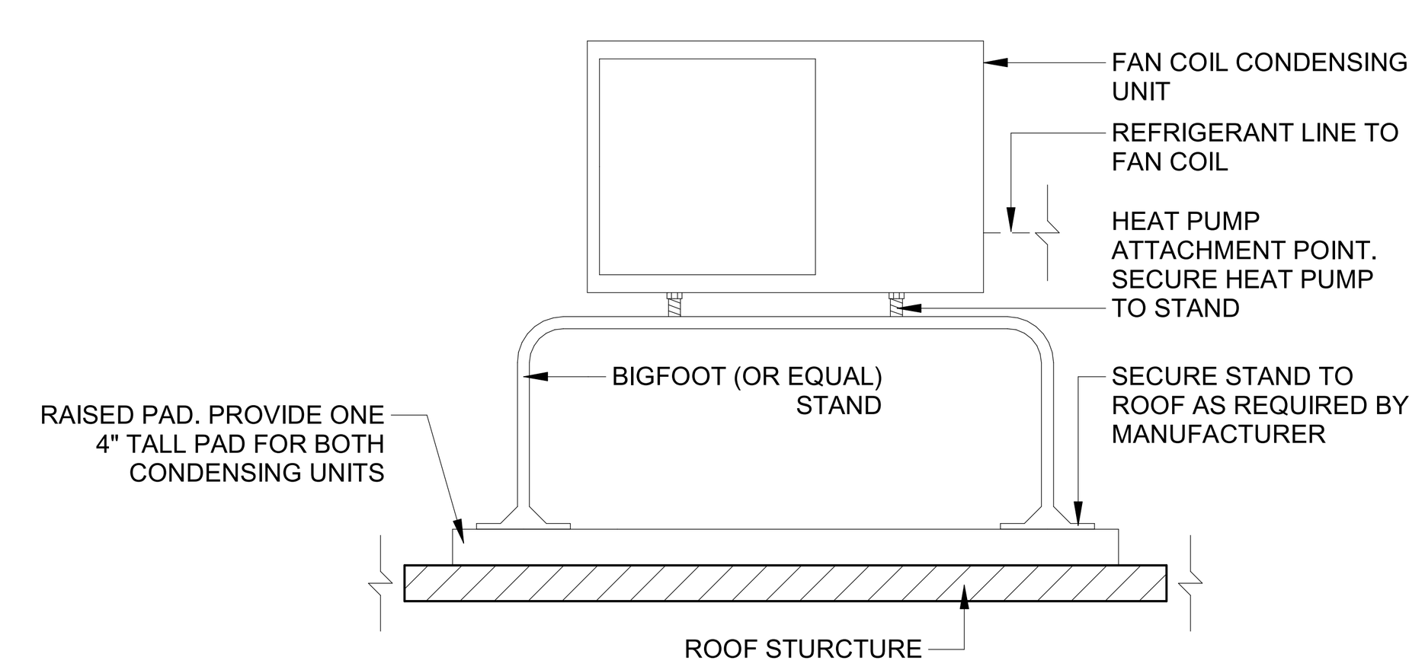
M001
MECHANICAL COVER SHEET



1 ELEVATOR SUMP PUMP DETAIL
N.T.S.



2 VENT THRU ROOF DETAIL
N.T.S.



3 FAN COIL HEAT PUMP DETAIL
N.T.S.

FAN COIL SCHEDULE (R-410A)

ACCESSORIES:
1. WIRED REMOTE CONTROLLER
2. INLINE CONDENSATE PUMP. CONTRACTOR TO ROUTE TO FLOOR DRAIN OR FLOOR SINK.

CONTROLS:
1. 7-DAY PROGRAMMABLE THERMOSTAT. PROVIDE TIE IN TO DDC SYSTEM.

REMARKS:
1. FAN COIL REFRIGERANT PIPING TO DIRECTLY CONNECT TO OUTDOOR UNIT. NO BRANCH BOX REQUIRED.

RATING TEMPERATURE DATA:
1. COOLING: 80°F DB / 67°F WB INDOOR RETURN AIR, 95°F / 75°F WB OUTDOOR AIR

ELECTRICAL DATA:
SEE MEP COORDINATION SCHEDULE FOR STARTER/DISCONNECT AND ALL OTHER ELEC. DATA.

MARK	MANUF.	MODEL	TYPE	AIRFLOW DATA			COOLING INFORMATION			PHYSICAL DATA
				MAX AIRFLOW (CFM)	A-WEIGHTED SOUND POWER (dBA)	ESP (IN WC)	COOLING CAPACITY (MBH)	SEER	EER	WEIGHT (LBS)
FC-1	DAIKIN	FTXS36LVJU	WALL MOUNTED	770	49	-	36.0	17.9	8.35	38
FC-2	DAIKIN	FTXS36LVJU	WALL MOUNTED	770	49	-	36.0	17.9	8.35	38

AIR-SOURCE HEAT PUMP SCHEDULE (R-410A)

ACCESSORIES:
1. DRAIN PAN HEATER
2. ELEVATED MOUNTING SUPPORTS
3. SNOW HOOD

REMARKS:
1. INDOOR UNIT REFRIGERANT PIPING TO DIRECTLY CONNECT TO HEAT PUMP. NO BRANCH BOX REQUIRED.

RATING TEMPERATURE DATA:
1. COOLING: 80°F DB / 67°F WB INDOOR RETURN AIR, 95°F / 75°F WB OUTDOOR AIR

ELECTRICAL DATA:
SEE MEP COORDINATION SCHEDULE FOR STARTER/DISCONNECT AND ALL OTHER ELEC. DATA

MARK	MANUF.	MODEL	COMPRESSOR TYPE	A-WEIGHTED SOUND POWER (dBA)	COOLING INFORMATION			PHYSICAL DATA
					CAPACITY (MBH)	SEER	EER	WEIGHT (LBS)
HP-1	DAIKIN	RKS36LVJU	SWING	54	36.0	17.9	8.35	179
HP-2	DAIKIN	RKS36LVJU	SWING	54	36.0	17.9	8.35	179

ELECTRIC HEATER SCHEDULE

ACCESSORIES:
1. CEILING MOUNTED UNIT TO BE CONTROLLED BY FAN COIL THERMOSTAT WHICH SHALL BE TIED INTO DDC SYSTEM. SEE PLANS.
3. INTEGRAL DISCONNECTING MEANS AND THERMAL OVERLOADS.

ELECTRICAL DATA:
SEE MEP COORDINATION SCHEDULE FOR STARTER/DISCONNECT AND ALL OTHER ELECTRICAL DATA.

MARK	MANUF.	MODEL	HEAT OUTPUT (MBH)	FINISH	MOUNTING
EH-1	REZNOR	ECS 7	25.6	STANDARD	CEILING SURFACE

PUMP SCHEDULE

ACCESSORIES:
1. PROVIDE FACTORY CONTROLLER AND ALL ACCESSORIES REQUIRED. CONTRACTOR IS RESPONSIBLE TO COORDINATE CONTROLLER PLACEMENT AND ANY REQUIRED WORK FOR CONTROLLER. CONTROLLER SHALL HAVE HOA SWITCH, LATCHING ALARM, ALARM SILENCE, REMOTE ALARM CONTACTS AND INTEGRAL OR SEPARATE FLOW LIMITING DEVICE.
2. CONNECT SYSTEM TO MSU CALL-OUT SYSTEM. PROVIDE CELL DIALER FROM MOUNTAIN ALARM OR EQUAL. PROVIDE EITHER DRY CONTACT FROM PUMP OR STAND ALONE SENSOR TO ACTIVATE DIALER. VERIFY DIALER GETS NEEDED SIGNAL. PROVIDE REMOTE ANTENNA IF REQUIRED.

REMARKS:
1. PROVIDE ALL NECESSARY VALVING AND ACCESSORIES REQUIRED FOR A COMPLETE INSTALLATION.

CONTROLS:
1. FOLLOW MANUFACTURER CONTROL SEQUENCE.

ELECTRICAL DATA:
SEE MEP COORDINATION SCHEDULE FOR STARTER/DISCONNECT AND ALL OTHER ELEC. DATA.

MARK	MANUF.	MODEL	DESCRIPTION	FLOW (GPM)	HEAD (FT)
SP-1	LIBERTY	ELV280	ELEVATOR SUMP PUMP	50	14

SAND/OIL INTERCEPTOR SCHEDULE

REMARKS:
1. PROVIDE 50 GPM ELEVATOR OIL SEPARATOR. SEE DETAIL FOR ACCESSORIES.

MARK	MANUF.	MODEL	FLOW RATE (GPM)	STORAGE CAPACITY (GAL.)
SOI-1	ZURN	Z1186	50	30

MEP COORDINATION SCHEDULE

CONTROL TYPE:
- BAS BUILDING AUTOMATION SYSTEM
- CO CARBON MONOXIDE DETECTOR
- CONT CONTINUOUS OPERATION
- EF INTERLOCK WITH EXHAUST FAN
- HCP HOOD CONTROL PANEL
- INT INTEGRAL
- L LIGHT SWITCH
- MS MANUAL SWITCH
- OS OCCUPANCY SENSOR
- PS PRESSURE SWITCH
- T THERMOSTAT
- TC TIME CLOCK
- UC UNIT CONTROLLER
- VE VEHICLE EXHAUST DETECTION SYSTEM
- N/A NOT APPLICABLE

DISCONNECT/STARTER TYPE:
- CB PANELBOARD CIRCUIT BREAKER WITHIN SIGHT OF EQUIPMENT
- CSFD COMBINATION STARTER/DISCONNECT - HOA
- FD FUSED DISCONNECT
- FST FUSTAT
- FW FACTORY-WIRED SINGLE POINT CONNECTION
- MOCP MOTOR OVER-CURRENT PROTECTION
- MSS MANUAL STARTER SWITCH WITH THERMAL OVERLOADS (1-, 2- OR 3-POLE AS REQUIRED)
- NFD NON-FUSED DISCONNECT
- RCPT 20A DUPLEX RECEPTACLE (GFCI PROTECTED AS REQUIRED), CORD AND PLUG
- RVSS REDUCED VOLTAGE SOLID-STATE
- VFD VARIABLE FREQUENCY DRIVE - HOA
- N/A NOT APPLICABLE

DIVISION OF RESPONSIBILITIES:
- 22/22 FURNISHED AND INSTALLED BY DIV. 22, WIRED BY DIV. 22
- 22/26 FURNISHED AND INSTALLED BY DIV. 22, WIRED BY DIV. 26
- 23/23 FURNISHED AND INSTALLED BY DIV. 23, WIRED BY DIV. 23
- 23/26 FURNISHED AND INSTALLED BY DIV. 23, WIRED BY DIV. 26
- 26/26 FURNISHED AND INSTALLED BY DIV. 26, WIRED BY DIV. 26

NOTES:
1. INTEGRAL DISCONNECTS AND OVERLOADS
2. INTEGRAL OVERLOADS
3. SINGLE POINT CONNECTION
4. PROVIDE RECEPTACLE AND DATA CONNECTION FOR PANEL
5. MOUNT ON UNI-STRUT IN FRONT OF UNIT
6. SIZE FUSES IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES FOR INSTALLED EQUIPMENT
7. INTEGRAL VARIABLE FREQUENCY DRIVE
8. DUCT SMOKE DETECTOR(S) REQUIRED

GENERAL NOTES:
A. CONTROL WIRING SHALL BE CONCEALED WITHIN WALL CONSTRUCTION, ABOVE CEILING, OR RUN IN CONDUIT. EXPOSED CONTROL WIRING IS UNACCEPTABLE.
B. UNLESS SPECIFICALLY NOTED, ALL FEEDERS SHALL INCLUDE A FULL SIZE NEUTRAL. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY WITH THE MANUFACTURER OF THE ACTUAL EQUIPMENT BEING SUPPLIED WHETHER A NEUTRAL IS REQUIRED PRIOR TO ROUGH-IN.
C. ALL DUCT SMOKE DETECTORS FURNISHED BY DIV. 26, INSTALLED BY DIV. 23, AND WIRED BY DIV. 26. DIV. 26 SHALL WIRE ALL FANS TO SHUT DOWN WHEN ALARM IS INITIATED BY ANY DUCT SMOKE DETECTOR.

MARK	DESCRIPTION	ELECTRICAL DATA		CONTROL		NOTES	DISCONNECT / STARTER		DISCONNECT				FEEDER	
		LOAD	VOLT-PHASE	TYPE	DIV		TYPE	DIV	SIZE (NEMA)	SWITCH (AMPS)	FUSE (AMPS)	ENCLOSURE (NEMA)	COPPER WIRE (AWG)	CONDUIT (INCHES)
EH-1	ELECTRIC HEATER	7.5 kW	208-1	T	23/23	1	FW	23/23	-	-	-	-	#8	1"
FC-1	FAN COIL	FROM HP	FROM HP	T	23/23	-	N/A	-	-	30A	-	NEMA 1	#12	3/4"
FC-2	FAN COIL	FROM HP	FROM HP	T	23/23	-	N/A	-	-	30A	-	NEMA 1	#12	3/4"
HP-1	HEAT PUMP	19.5 MCA	208-1	INT	23/23	6	FD	26/26	-	30A	NOTE 6	NEMA 3R	#10	3/4"
HP-2	HEAT PUMP	19.5 MCA	208-1	INT	23/23	6	FD	26/26	-	30A	NOTE 6	NEMA 3R	#10	3/4"
SP-1	SUMP PUMP	1/2 HP	120-1	UC	23/23	-	RCPT	26/26	-	-	-	-	#12	3/4"

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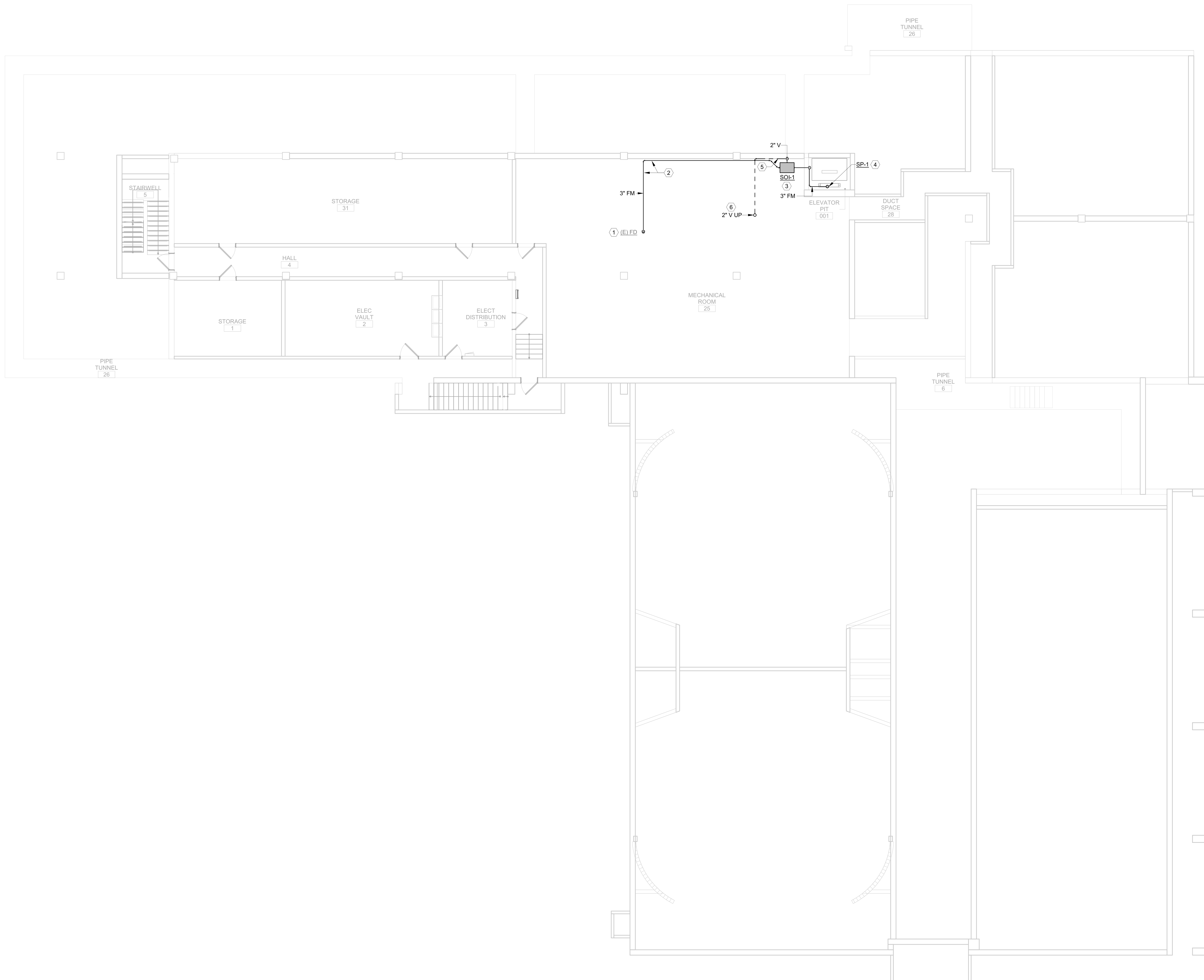
PERMIT-BID SET

REID HALL ELEVATOR REPLACEMENT
REID HALL, BOZEMAN, MT 59715

PREPARED FOR: EVAN BURNETT
PROJECT ARCHITECT: TRAVIS SMITH, AIA
MSU PPA#: 22-0680
CDA PROJECT NUMBER: 2347

MONTANA RYAN T. THOMSON No. 15757 PE 3-1-2024 LICENSED PROFESSIONAL ENGINEER

M002
MECHANICAL SCHEDULES



1 MECHANICAL BASEMENT PLAN

1/8" = 1'-0"

MECHANICAL PLAN NOTES

A. VERIFY THE LOCATION OF THERMOSTATS AND SENSORS WITH THE ARCHITECT AND ENGINEER PRIOR TO INSTALLATION. INSTALL THERMOSTATS 48" ABOVE FINISHED FLOOR PER ADA REQUIREMENTS.
B. PROVIDE AND INSTALL SEISMIC BRACING FOR EQUIPMENT, DUCTWORK AND PIPING PER THE REQUIREMENTS OF THE CURRENTLY ADOPTED INTERNATIONAL BUILDING CODE.
C. FLEXIBLE DUCTWORK BETWEEN BRANCH DUCTS AND GRILLES, REGISTERS, OR DIFFUSERS SHALL BE LIMITED TO 5 FT. FLEXIBLE DUCT SHALL NOT BE USED IN PLACE OF ELBOWS.
D. PROVIDE AND INSTALL FIRE, SMOKE, OR COMBINATION FIRE/SMOKE DAMPERS WHERE DUCTWORK PASSES THROUGH RATED ASSEMBLIES. ASSOCIATED DUCT DETECTORS SHALL BE ADDRESSABLE. SMOKE DAMPERS AND COMBINATION SMOKE/FIRE DAMPERS SHALL INCLUDE A KEYED REMOTE TEST SWITCH LOCATED IN AN ACCESSIBLE LOCATION. FIELD COORDINATE THE LOCATION OF TEST SWITCHES WITH THE ARCHITECT AND ENGINEER PRIOR TO INSTALLATION.
E. SEAL DUCT AND PIPE PENETRATIONS THROUGH FIRE RATED ASSEMBLIES WITH A UL-APPROVED FIRE STOP SYSTEM.
F. MAINTAIN THE INTEGRITY OF DRAFTSTOPPING WHERE DUCTWORK AND PIPING PENETRATE DRAFTSTOPPING MATERIALS.
G. PROVIDE ACCESS DOORS TO ALLOW SERVICE AND INSPECTION OF EQUIPMENT, VALVES, DAMPERS AND DEVICES INSTALLED ABOVE NON-REMOVABLE CEILINGS. COORDINATE SUCH INSTALLATIONS WITH THE ARCHITECT AND ENGINEER.
H. PIPING SHALL BE IDENTIFIED WITH PIPE LABELS MARKED AT A MAXIMUM OF EVERY 25 FT. VALVES SHALL BE IDENTIFIED WITH BRASS OR ALUMINUM VALVE TAGS.
I. PROVIDE AND INSTALL PIPE GUIDES, EXPANSION JOINTS, AND HANGERS PER MANUFACTURER'S RECOMMENDATIONS.
J. PIPING WALL PENETRATIONS SHALL SHALL BE FINISHED WITH A CHROME ESCUTCHEON PLATE.

KEY NOTES:

1. APPROXIMATE LOCATION OF EXISTING FLOOR DRAIN. ROUTE DISCHARGE LINE FROM SAND AND OIL INTERCEPTOR TO FLOOR DRAIN AS SHOWN ON PLANS. COORDINATE DRILLING THROUGH ELEVATOR SHAFT WALL WITH GENERAL CONTRACTOR.
2. ROUTE DISCHARGE LINE FROM SAND AND OIL INTERCEPTOR ALONG EDGE OF WALL AND UNDER EXISTING EQUIPMENT TO FLOOR DRAIN.
3. SAND AND OIL INTERCEPTOR TO BE MOUNTED ON FLOOR. COORDINATE WITH STRUCTURAL ELEVATOR ACCESS DOOR.
4. COORDINATE SUMP PUMP WITH SUMP PUMP PIT LOCATION. ROUTE PIPING FROM SUMP PUMP TO SAND AND OIL INTERCEPTOR ALONG ROUTE THAT DOES NOT INTERFERE WITH ELEVATOR SYSTEMS.
5. MOUNT PUMP CONTROLLER ON WALL.
6. ROUTE VENT UP WATER CLOSET SPACE BETWEEN RESTROOMS OR ANOTHER ROUTE TO ROOF. ROUTE PIPE IN CEILING SPACE ON THIRD FLOOR TO A LOCATION FOR ROOF TERMINATION. TRANSITION TO 3" VTR. COORDINATE EXACT LOCATION OF VTR ON ROOF TO MAINTAIN 10' CLEARANCE FROM ANY FRESH AIR INTAKES OR OPENINGS.

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C O L L A B O R A T I V E   D E S I G N   A R C H I T E C T S
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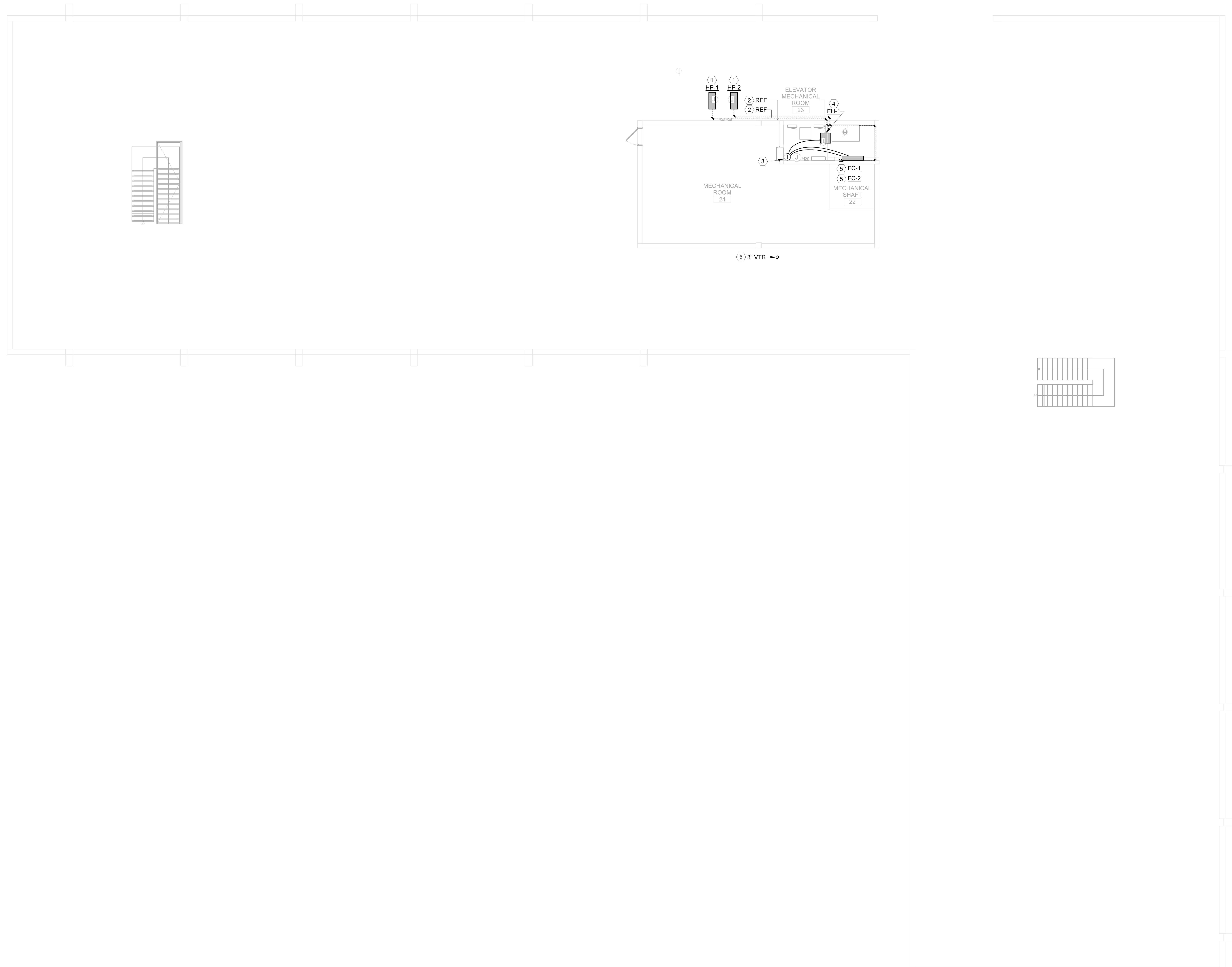
M100
MECHANICAL BASEMENT PLAN



1 MECHANICAL ROOF PLAN
1/8" = 1'-0"

MECHANICAL PLAN NOTES

A. VERIFY THE LOCATION OF THERMOSTATS AND SENSORS WITH THE ARCHITECT AND ENGINEER PRIOR TO INSTALLATION. INSTALL THERMOSTATS 48" ABOVE FINISHED FLOOR PER ADA REQUIREMENTS.
B. PROVIDE AND INSTALL SEISMIC BRACING FOR EQUIPMENT, DUCTWORK AND PIPING PER THE REQUIREMENTS OF THE CURRENTLY ADOPTED INTERNATIONAL BUILDING CODE.
C. FLEXIBLE DUCTWORK BETWEEN BRANCH DUCTS AND GRILLES, REGISTERS, OR DIFFUSERS SHALL BE LIMITED TO 5 FT. FLEXIBLE DUCT SHALL NOT BE USED IN PLACE OF ELBOWS.
D. PROVIDE AND INSTALL FIRE, SMOKE, OR COMBINATION FIRE/SMOKE DAMPERS WHERE DUCTWORK PASSES THROUGH RATED ASSEMBLIES. ASSOCIATED DUCT DETECTORS SHALL BE ADDRESSABLE. SMOKE DAMPERS AND COMBINATION SMOKE/FIRE DAMPERS SHALL INCLUDE A KEYED REMOTE TEST SWITCH LOCATED IN AN ACCESSIBLE LOCATION. FIELD COORDINATE THE LOCATION OF TEST SWITCHES WITH THE ARCHITECT AND ENGINEER PRIOR TO INSTALLATION.
E. SEAL DUCT AND PIPE PENETRATIONS THROUGH FIRE RATED ASSEMBLIES WITH A UL-APPROVED FIRE STOP SYSTEM.
F. MAINTAIN THE INTEGRITY OF DRAFTSTOPPING WHERE DUCTWORK AND PIPING PENETRATE DRAFTSTOPPING MATERIALS.
G. PROVIDE ACCESS DOORS TO ALLOW SERVICE AND INSPECTION OF EQUIPMENT, VALVES, DAMPERS AND DEVICES INSTALLED ABOVE NON-REMOVABLE CEILINGS. COORDINATE SUCH INSTALLATIONS WITH THE ARCHITECT AND ENGINEER.
H. PIPING SHALL BE IDENTIFIED WITH PIPE LABELS MARKED AT A MAXIMUM OF EVERY 25 FT. VALVES SHALL BE IDENTIFIED WITH BRASS OR ALUMINUM VALVE TAGS.
I. PROVIDE AND INSTALL PIPE GUIDES, EXPANSION JOINTS, AND HANGERS PER MANUFACTURER'S RECOMMENDATIONS.
J. PIPING WALL PENETRATIONS SHALL SHALL BE FINISHED WITH A CHROME ESCUTCHEON PLATE.

KEY NOTES:

1. COORDINATE PLACEMENT OF HEAT PUMP WITH EXISTING HEAT PUMPS ON ROOF IN THIS AREA. PROVIDE NEW PAD. MAINTAIN 10' CLEARANCE FROM EQUIPMENT TO ROOF EDGE.
2. ROUTE REFRIGERANT LINES FROM HEAT PUMP TO FAN COIL. COORDINATE WITH EXISTING SYSTEMS AS REQUIRED.
3. THERMOSTAT TO CONTROL COOLING AND HEATING SUCH THAT THEY CAN NOT OPERATE AT THE SAME TIME. THERMOSTAT SHALL BE TIED INTO DDC SYSTEM SUCH THAT IT CAN BE MONITORED AND CONTROLLED FROM DDC SYSTEM. SYSTEM MUST BE TESTED IN FORMAL MEETING WITH MSU FACILITY MANAGMENT.
4. COORDINATE LOCATION OF HEATER WITH STRUCTURE AND LIFTING POINTS.
5. COORDINATE EXACT LOCATIONS OF FAN COILS WITH ALL EQUIPMENT IN THE ROOM. STACK FAN COILS. FOLLOW MANUFACTURER'S CLEARANCES.
6. INTERCEPTOR VENT TERMINATION. COORDINATE LOCATION SUCH THAT IT IS AT LEAST 10' FROM ANY FRESH AIR INTAKES OR OPENINGS.

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COLLABORATIVE DESIGN ARCHITECTS
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M501
MECHANICAL ROOF PLAN

ELECTRICAL ABBREVIATIONS LEGEND

A, AMP	AMPERES	MAG	MAGNETIC STARTER
AC	ALTERNATING CURRENT	MAN	MANUAL
A/C	AIR CONDITIONING	MAX	MAXIMUM
AF	AMP FUSE	MC	MECHANICAL CONTRACTOR
AFC	AVAILABLE FAULT CURRENT	MCA	MINIMUM CIRCUIT AMPACITY
AFCI	ARC FAULT CIRCUIT INTERRUPTER	MCC	MOTOR CONTROL CENTER
AFF	ABOVE FINISHED FLOOR	MDP	MAIN DISTRIBUTION PANEL
AFG	ABOVE FINISHED GRADE	MECH	MECHANICAL
AHU	AIR HANDLING UNIT	MEP	MECHANICAL, ELECTRICAL, PLUMBING
AL	ALUMINUM	MH	METAL HALIDE
AS	AMP SWITCH	MIN	MINIMUM
ATS	AUTOMATIC TRANSFER SWITCH	MSS	MOTOR STARTER SWITCH WITH THERMAL OVERLOADS
BAS	BUILDING AUTOMATION SYSTEM	N	NEUTRAL
BKR	BREAKER	NC	NORMALLY CLOSED
BOF	BOTTOM OF FIXTURE	NEC	NATIONAL ELECTRIC CODE
C	RACEWAY/CONDUIT	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
CB	CIRCUIT BREAKER		
CCT	COLOR RENDERING TEMPERATURE	NFD	NON-FUSED DISCONNECT
CCTV	CLOSED CIRCUIT TELEVISION	NL	NIGHT LIGHT, UN-SWITCHED 24/7 OPERATION
CKT	CIRCUIT	NIC	NOT IN CONTRACT
CLG	CEILING	NO	NORMALLY OPEN
C.O.	RACEWAY/CONDUIT ONLY, WITH PULL STRING	#	NUMBER
COD	CENTER OF DEVICE	OAE	OR APPROVED EQUAL
CNTRL	CONTROL	OC	ON CENTER
CU	COPPER	OCPD	OVERCURRENT PROTECTIVE DEVICE
(D)	EXISTING TO BE DEMOLISHED	OH	OVERHEAD
DISC	DISCONNECT	P	POLE
DIST	DISTRIBUTION	PB	PUSHBUTTON
DPDT	DOUBLE POLE DOUBLE THROW	PC	PLUMBING CONTRACTOR
DWG	DRAWING	PH	PHASE
EA	EACH	PNL	PANEL
EC	ELECTRICAL CONTRACTOR	PVC	POLYVINYL CHLORIDE CONDUIT
EF	EXHAUST FAN	PWR	POWER
ELEC	ELECTRIC	(R)	EXISTING TO REMAIN
EMT	ELECTRICAL METALLIC TUBING	RCPT	RECEPTACLE
EQUIP	EQUIPMENT	RECEPT	RECEPTACLE
EX, EXIST	EXISTING	RGS	RIGID GALVANIZED STEEL
FA	FIRE ALARM	RM	ROOM
FAA	FIRE ALARM ANNUNCIATOR	RVNR	REDUCED VOLTAGE NON-REVERSING
FACP	FIRE ALARM CONTROL PANEL	RVR	REDUCED VOLTAGE REVERSING
FD	FUSED DISCONNECT	SP	SINGLE POLE TOGGLE SWITCH
FLR	FLOOR	SPD	SURGE PROTECTIVE DEVICE (TVSS)
FO	FIBER OPTIC	SPEC	SPECIFICATION
FSD	FIRE SMOKE DAMPER RELAY, CONTROLLED BY ASSOCIATED SMOKE DETECTOR AND CIRCUITED BACK TO FACP	SPST	SINGLE POLE SINGLE THROW
		SSPB	START-STOP PUSHBUTTON
		SW	SWITCH
FVNR	FULL VOLTAGE NON-REVERSING	SWBD	SWITCHBOARD
FVR	FULL VOLTAGE REVERSING	SWGR	SWITCHGEAR
GEC	GROUNDED ELECTRODE CONDUCTOR	TB	TELEPHONE BOARD
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	TC	TIME CLOCK
GFI	GROUND FAULT INTERRUPTER	TD	TIME DELAY
GFP	GROUND FAULT PROTECTION	TEL	TELEPHONE
GND	GROUND	TR	TAMPER RESISTANT
GRC	GALVANIZED RIGID CONDUIT	TSP	TWISTED SHIELDED PAIR
HID	HIGH INTENSITY DISCHARGE	TTB	TELEPHONE TERMINAL BOARD
HOA	HAND-OFF-AUTOMATIC	TYP	TYPICAL
HP	HORSEPOWER	UG	UNDERGROUND
HPS	HIGH PRESSURE SODIUM	UH	UNIT HEATER
HTR	HEATER	UNO	UNLESS NOTED OTHERWISE
HVAC	HEATING, VENTILATION & AIR CONDITIONING	V	VOLT
HZ	HERTZ	VA	VOLT-AMPERES
J-BOX	JUNCTION BOX	VFD	VARIABLE FREQUENCY DRIVE
KVA	KILOVOLT-AMPERES	W	WATTS
KW	KILOWATTS	WAO	WORK AREA OUTLET
LCP	LIGHTING CONTROL PANEL	WP	WEATHERPROOF
LPW	LUMENS PER WATT	W/O	WITHOUT
LTG	LIGHTING	XFMR	TRANSFORMER
LM	LUMENS	Y	WYE-CONNECTED
LV	LOW VOLTAGE	Δ	DELTA-CONNECTED
		ø	PHASE

ELECTRICAL LIGHTING FIXTURE LEGEND

- RECESSED LED FIXTURE - "a" & "b" DESIGNATES SWITCH
- RECESSED EMERGENCY LED FIXTURE - "a" & "b" DESIGNATES SWITCH
- SURFACE LED FIXTURE - "a" & "b" DESIGNATES SWITCH
- SURFACE EMERGENCY LED FIXTURE - "a" & "b" DESIGNATES SWITCH
- SURFACE WALL MOUNT LED FIXTURE
- LED STRIP OR INDUSTRIAL, SURFACE OR CHAIN HUNG
- EMERGENCY LED STRIP OR INDUSTRIAL, SURFACE OR CHAIN HUNG
- POLE MOUNTED FIXTURE
- LIGHTED BOLLARD
- PENDANT FIXTURE; HIGH BAY, LOW BAY, DECORATIVE
- EXIT SIGN - WALL MOUNT, CEILING MOUNT. ARROW INDICATES DIRECTION OF TRAVEL, SHADING INDICATES LIGHTED FACE.
- COMBINATION EXIT SIGN/ EGRESS LIGHTING UNIT - WALL MOUNT, CEILING MOUNT. ARROW INDICATES DIRECTION OF TRAVEL, SHADING INDICATES LIGHTED FACE.
- DUAL HEAD EMERGENCY EGRESS BATTERY PACK, WALL MOUNT OR CEILING MOUNT
- WALL MOUNTED SCONCE
- SURFACE DOWNLIGHT
- SURFACE EMERGENCY DOWNLIGHT
- RECESSED CAN DOWNLIGHT
- RECESSED CAN EMERGENCY DOWNLIGHT
- RECESSED CAN WALL WASHER
- TRACK LIGHTING. SEE FIXTURE SCHEDULE AND LIGHTING PLANS.

ELECTRICAL LIGHTING CONTROL LEGEND

STANDARD LIGHTING CONTROLS: SWITCHES AND LINE VOLTAGE DIMMERS

- $X — TOGGLE SWITCH (MOUNT AT +48", UNO)
  "X" INDICATES TYPE:
  - BLANK - SINGLE POLE
  - 3 - INDICATES THREE-WAY
  - 4 - INDICATES FOUR-WAY
  - D - INDICATES DIMMER SWITCH PHILIPS SUNRISE - ON/OFF
  - K - INDICATES KEYED SWITCH
  - T - INDICATES TIMER
  - P - INDICATES PILOT LIGHT
  - OS - INDICATES WALL SWITCH OCC SENSOR WATTSTOPPER DW100 (SINGLE OR DUAL DW-200 SWITCH)
  - OSD - INDICATES WALL SWITCH OCC SENSOR WITH 0-10V DIMMING - WATTSTOPPER DW-311
  - a - INDICATES SINGLE POLE LIGHTING SWITCH ZONE FOR ZONE a
  - b - INDICATES SINGLE POLE LIGHTING SWITCH ZONE FOR ZONE b
  - ab - INDICATES LIGHTING SWITCHES WITH MULTIPLE ZONES
- OS — OCCUPANCY SENSOR - DUAL TECHNOLOGY
  CEILING MOUNT: WATTSTOPPER DT-300, OR EQUAL
  WALL MOUNT: WATTSTOPPER DT-200, OR EQUAL
  WALL MOUNTED SHALL BE AT +96", UNO
  PROVIDE WITH BZ-50 POWER PACKS AS NEEDED.
- P — PHOTOCELL - CEILING MOUNT, WATTSTOPPER LS-301, OR EQUAL
- PL — PLUG LOAD CONTROL RELAY
- TSD — UL1008 TRANSFER SWITCH DEVICE BODINE GTD20A, OR EQUAL
- EB — UL924 LIGHTING CONTROLS EMERGENCY BYPASS WATTSTOPPER ELCU-200, OR EQUAL

DIGITAL LIGHTING CONTROLS: ROOM CONTROLLERS AND LOW VOLTAGE DEVICES

- OS LV — OCCUPANCY SENSOR - DUAL TECHNOLOGY
  CEILING MOUNT: WATTSTOPPER LMDC-100, OR EQUAL
  WALL MOUNT: WATTSTOPPER LMDX-100, OR EQUAL
  WALL MOUNT AT +96", UNO
- P LV — PHOTOCELL - CEILING MOUNT WATTSTOPPER LMLS-400, OR EQUAL
- R1 — ON/OFF ROOM CONTROLLER WITH (1) RELAY WATTSTOPPER DLM LMRC-101, OR EQUAL
- R2 — ON/OFF ROOM CONTROLLER WITH (2) RELAYS WATTSTOPPER DLM LMRC-102, OR EQUAL
- R3 — ON/OFF/0-10V ROOM CONTROLLER WITH (2) RELAYS WATTSTOPPER DLM LMRC-212, OR EQUAL
- R4 — ON/OFF/0-10V ROOM CONTROLLER WITH (3) RELAYS WATTSTOPPER DLM LMRC-213, OR EQUAL
- $LVD — LOW VOLTAGE DIMMING SWITCH WATTSTOPPER DLM LMDM-101, OR EQUAL
- $LV — LOW VOLTAGE SWITCH, # INDICATES NUMBER OF BUTTONS. NO "#" IS A 2 BUTTON SWITCH. WATTSTOPPER DLM LMSW-10#, OR EQUAL

ELECTRICAL ONE-LINE LEGEND

- CT AND CUSTOMER POWER METER
- MOTOR
- UTILITY ELECTRIC METER AND BASE (BASE BY CUSTOMER)
- SPD — SURGE PROTECTION DEVICE
- L — LIGHTNING ARRESTER, TYPE 1 SPD, MOUNTED ON EXTERIOR OF MAIN SWITCHGEAR (SQUARE D. SDSA SERIES, OAE)
- STRESS RELIEF CONE
- PFC — POWER FACTOR CORRECTION CAPACITOR
- $X — EQUIPMENT TOGGLE DISCONNECT SWITCH
  "X" INDICATES TYPE:
  - F - FUSTAT
  - M - MOTOR STARTER SWITCH W/ THERMAL OVERLOADS
- CONTACTOR NORMALLY OPEN, NORMALLY CLOSED
- TRANSFORMER, 3-PH, 3-WIRE DELTA CONNECTION
- TRANSFORMER, 3-PH, 4-WIRE GROUNDED WYE CONNECTION
- AUTOMATIC TRANSFER SWITCH
- VFD — VARIABLE FREQUENCY DRIVE
- FIXED MOUNT LV BREAKER
- FUSED SWITCH ("XXAS/XXAF" - SW AND FUSE AMP RATING)
- G — GENERATOR
- CB — WALL MOUNTED BREAKER
- THERMAL OVERLOAD ELEMENT
- DISCONNECT SWITCH ("XXAS" = SWITCH AMP RATING)
- FUSED DISCONNECT SWITCH ("XXAS/XXAF" = SW AND FUSE AMP RATING)
- COMBINATION MOTOR STARTER (STR SIZE, TYP, AS, AF, SEE MEP COORDINATION SCHEDULE)
- PNL A 208Y/120V 3ø, 4W — SWITCHBOARD OR PANELBOARD; NAME, VOLTAGE, PHASE, NUMBER OF WIRES WHEN INDICATED

ELECTRICAL POWER LEGEND

- D-1 X — PANEL AND CIRCUIT DESIGNATION ARE NEXT TO EACH DEVICE (PANEL NAME - CIRCUIT NUMBER). MINIMUM BRANCH CIRCUIT WIRE SIZE IS #12, UNO. 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.
  "X" INDICATES TYPE:
  - C - AUTOMATIC CONTROL
  - GFI - GROUND FAULT INTERRUPTER
  - WP - WEATHERPROOF WHILE-IN-USE COVER
  - U - PROVIDE WITH (2) USB PORTS
  - TR - TAMPER RESISTANT
- SIMPLEX RECEPTACLE - CEILING MOUNT, WALL MOUNT (+18", UNO)
- DUPLEX RECEPTACLE - CEILING MOUNT, WALL MOUNT (+18", UNO)
- QUADRUPLEX RECEPTACLE - CEILING MOUNT, WALL MOUNT (+18", UNO)
- ABOVE COUNTER RECEPTACLE - MOUNT AT +4" ABOVE BACKSPLASH
- FLOOR BOX WITH (2) DUPLEX RECEPTACLES - FURNISH WITH (1) 3/4" MIN. CONDUIT FOR POWER FROM BOX. INCLUDE ALL HARDWARE/ACCESSORIES AS REQUIRED FOR COMPLETE INSTALLATION. PROVIDE COVER (COORDINATE WITH ARCHITECT FOR FLOORING TYPE AND FINISH).
  "X" INDICATES TYPE:
  - A - 4-GANG FLOOR BOX, CORROSION RESISTANT COATING FOR CONCRETE FLOORS (3" MIN. POUR DEPTH), (HUBBELL NO. CFB4G30CR, OAE)
  - B - 4-GANG FLOOR BOX FOR RAISED ACCESS FLOORS, (HUBBELL NO. AFB4G50, OAE)
  - C - FIRE RATED POKE-THROUGH FLOOR BOX FOR ELEVATED CONCRETE SLABS, 3" DIA. CORE (HUBBELL NO. PT7FSD, OAE)
  - D - 8" DIA., FIRE RATED POKE-THROUGH FLOOR BOX FOR ELEVATED CONCRETE* SLABS, (HUBBELL NO. S1R8PTFIT1, OAE)
  - E - FLUSH, ROUND SINGLE SERVICE FLOOR BOX FOR CONCRETE* FLOORS, UP TO 1" CONDUIT FEED (HUBBELL NO. B2506, OAE)
  - F - TOMBSTONE PEDESTAL FLOOR BOX, 1" CONDUIT FEED (HUBBELL NO. 6301, OAE)

  *POKE-THROUGH FLOOR BOXES CAN ALSO BE USED FOR TILE, CARPET, OR WOOD FLOORS.
- FLOOR BOX WITH ADDITIONAL C.O. FOR DATA. FURNISH (1) 1-1/4" DEDICATED CONDUIT FROM EACH DATA COMPARTMENT, COMPLETE WITH PULL STRINGS OVER TO AND UP WALL INTO ACCESSIBLE CEILING SPACE, UNO.
- PANELBOARD OR LOAD CENTER
- SPECIAL PURPOSE RECEPTACLE (MOUNT AT +18", UNO)
  "X" INDICATES TYPE:
  - A - NEMA 5-20R, #12 CU;
  - B - NEMA 5-30R, #10 CU;
  - C - NEMA 5-50R, #6 CU;
  - D - NEMA 6-20R, #12 CU;
  - E - NEMA 6-30R, #10 CU;
  - F - NEMA 6-50R, #6 CU;
  - G - NEMA 14-20R, #12 CU;
  - H - NEMA 14-30R, #10 CU;
  - I - NEMA 14-50R, #6 CU*

  * +4" AFF FOR RANGE
- PUSHBUTTON (MOUNT AT +48", UNO)
  "X" INDICATES TYPE:
  - EPO - EMERGENCY POWER OFF
  - ADA - HANDICAPPED ACCESSIBLE DOOR (DEVICE BY OTHERS)
  - ODO - OVERHEAD DOOR OPERATOR (DEVICE BY OTHERS)
- RECESSED TV BOX, WITH BLANK COVERS FOR LOW VOLTAGE OPENINGS. MOUNT AT +72", UNO.
  X INDICATES TYPE:
  - A - 2-GANG, WITH DUPLEX RECEPTACLE & SINGLE GANG DATA OPENING. HUBBELL RACO NSAV62M, WITH NSAV6C COVER
  - B - 3-GANG, WITH DUPLEX RECEPTACLE, LOW VOLTAGE DIVIDER, SINGLE GANG FOR DATA (CENTER), AND REMOVABLE SINGLE GANG FOR AUDIO/VISUAL (SIDE). ARLINGTON TVBS507

  NOTE: ROUTE (1) 1" C. TO DATA OPENING AND (1) 1-1/4" C. TO AUDIO/VISUAL OPENING, FROM TOP OF GANG IN WALL INTO ACCESSIBLE CEILING SPACE. ALSO ROUTE 1-1/4" C. FROM AUDIO/VISUAL OPENING TO FLOOR BOX WHERE APPLICABLE.
- J — JUNCTION BOX
- J — DROP-DOWN RECEPTACLE
- PS-X — SURFACE MOUNTED PLUGSTRIP
  "X" INDICATES TYPE:
  - A - PLUGSTRIP, POWER ONLY, OUTLET EVERY 3' OC
  - B - WIREMOLD SERIES 4000 POWER AND DATA
  - C - WIREMOLD SERIES 5000 POWER AND DATA
- SURFACE MOUNTED RACEWAY
- RACEWAY CONCEALED IN WALL, FLOOR, OR CEILING IN FINISHED SPACES, EXPOSED IN UNFINISHED SPACES
- RACEWAY BELOW FLOOR OR BELOW GRADE
- RACEWAY STUB-OUT WITH CAPPED END
- RACEWAY STUB-OUT WITH BUSHED END
- GROUNDING BUS

ELECTRICAL LOW VOLTAGE LEGEND

FIRE ALARM SYSTEM

- PS — SPRINKLER PRESSURE SWITCH
- FS — SPRINKLER FLOW SWITCH
- TS — SPRINKLER TAMPER SWITCH
- H — HEAT DETECTOR
- SD — SMOKE DETECTOR - PHOTO-ELECTRIC
- SD D — DUCT SMOKE DETECTOR
- SS — SINGLE-STATION SMOKE DETECTOR. PROVIDE 120V AND MONITOR AT FACP VIA RELAY.
- CO — CARBON MONOXIDE DETECTOR
- D — DOOR HOLDER
- F — MANUAL STATION (MOUNT AT +48", UNO)
- F — STROBE - WALL MOUNT (+90"), CEILING MOUNT
- HORN/STROBE - WALL MOUNT (+90"), CEILING MOUNT
- S — SPEAKER STROBE - WALL MOUNT (+90"), CEILING MOUNT

TELEPHONE/DATA SYSTEM

- VOICE-DATA OUTLET (MOUNT AT +18", UNO).
- AP — WIRELESS ACCESS POINT
- CABLE TRAY OR BASKET TRAY - LENGTH AND HEIGHT PER PLAN

SECURITY SYSTEM

- CR — CARD READER
- RE — REQUEST TO EXIT MOTION DETECTOR
- DC — DOOR CONTACTS
- ES — ELECTRIC STRIKE
- EL — ELECTRIC LOCK
- MD — MOTION DETECTOR
- GB — GLASS BREAK DETECTOR
- C — CCTV CAMERA - CEILING MOUNT OR WALL MOUNT.

ABBREVIATIONS AND SYMBOLS GENERAL NOTES

A. THE ABBREVIATIONS ON THIS SHEET COMPRISE A STANDARD LIST; NOT ALL ABBREVIATIONS APPEAR ON THIS PROJECT.
B. THE SYMBOLS ON THIS SHEET COMPRISE A STANDARD LIST; NOT ALL SYMBOLS APPEAR ON THIS PROJECT.
C. ALL MOUNTING HEIGHTS ARE TO CENTER OF DEVICE ABOVE FINISHED FLOOR, UNLESS NOTED OTHERWISE. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER CONTRACTORS, MAKING ADJUSTMENTS AS REQUIRED TO AVOID INTERFERENCE WITH EQUIPMENT SUCH AS BASEBOARD FIN-TUBE, CABINET UNIT HEATERS, ETC. ARCHITECT/ENGINEER SHALL BE NOTIFIED OF ALL SUCH HEIGHT ADJUSTMENTS. 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.

ELECTRICAL PROJECT GENERAL NOTES

A. 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.
B. 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 301-657-3110 OR ON-LINE AT WWW.NECANET.ORG.
C. IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE WITH MECHANICAL FOR PLENUM SPACES AND PROVIDE PLENUM RATED CABLES WHERE REQUIRED FOR LIGHTING CONTROL, DATA, AND ALL OTHER L.V. SYSTEMS NOT INSTALLED IN CONDUIT. VERIFY CONDUIT REQUIREMENTS ON DRAWINGS AND SPECIFICATIONS.
D. FIRE-RESISTANCE: PROVIDE A MINIMUM HORIZONTAL DISTANCE OF 24" BETWEEN OUTLET BOXES LOCATED ON OPPOSITE SIDES OF FIRE-RESISTANCE RATED WALLS. WHERE THIS IS NOT POSSIBLE INSTALL UL LISTED PUTTY PADS ON ALL OUTLET BOXES NOT MEETING THE 24" SEPARATION. PROVIDE A UL LISTED THROUGH -PENETRATION FIRESTOP FOR PENETRATIONS OF FIRE-RESISTANCE RATED ASSEMBLIES.
E. 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.
F. BASED ON ACTUAL HOMERUN LENGTHS REQUIRED IN THE FIELD, THE CONTRACTOR SHALL CALCULATE AND INCREASE THE WIRE SIZES AS REQUIRED TO LIMIT BRANCH CIRCUIT VOLTAGE DROP TO 3%. FOR 20A BRANCH CIRCUITS THE MINIMUM CONDUCTOR SIZES SHALL BE AS FOLLOWS: #10 AWG CU FOR RUNS BETWEEN 100 AND 200 LINEAR FEET, #8 AWG CU FOR RUNS BETWEEN 200 AND 325 LINEAR FEET, AND AS CALCULATED BY THE CONTRACTOR FOR CIRCUITS EXTENDING BEYOND 325 LINEAR FEET. IN ALL CASES WHERE WIRE SIZES INCREASE, THE CONTRACTOR SHALL PROVIDE LARGER CONDUITS AS REQUIRED.
G. PROVIDE A DEDICATED NEUTRAL CONDUCTOR FOR EACH 120V BRANCH CIRCUIT.

ELECTRICAL PROJECT DEMO NOTES

A. 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 INSURE A CLEAN FINISHED PRODUCT. WHERE PRACTICAL, AND ALLOWED PER CODE, FISHING THROUGH WALLS WITH MC CABLE IS PREFERRED TO SURFACE-MOUNTED CONDUIT.
B. CONTRACTOR SHALL REMOVE, TRANSPORT, AND LEGALLY DISPOSE OF LAMPS AND BALLASTS OFF-SITE. IT IS ASSUMED THAT THE BALLASTS DO NOT CONTAIN PCBs. THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY IF IT IS SUSPECTED THAT BALLASTS CONTAIN PCBs.
C. 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.
D. CONTRACTOR SHALL EXTEND UNSWITCHED HOT LEG FROM EXISTING EMERGENCY FIXTURE LOCATION TO NEW EMERGENCY FIXTURES, AS NEEDED. SEE DEMO PLANS FOR AN APPROXIMATION OF EXISTING EMERGENCY FIXTURE LOCATIONS. FIELD VERIFY EXACT LOCATION PRIOR TO BID.
E. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OF ANY EXISTING CONDUIT OR FEEDER CIRCUITS THAT ARE INTENDED TO REMAIN THAT ARE SAW-CUT, OR OTHERWISE DAMAGED, AS PART OF THE DEMOLITION PROCESS. PROVISION FOR THIS WORK SHALL INCLUDE, BUT NOT BE LIMITED TO: ALL NECESSARY CONDUIT AND CONDUCTORS, MOUNTING ACCESSORIES AND LABOR, TO RESTORE THE SYSTEM TO ITS INTENDED FUNCTION.
F. ELECTRICAL DRAWINGS SHOWING EXISTING BUILDING CONDITIONS, SUCH AS DEMOLITION DRAWINGS, EXISTING PANEL SCHEDULES, ETC ARE BASED ON RECORD DRAWINGS AND SITE VISITS. IF ACTUAL EXISTING CONDITIONS DIFFER FROM THOSE SHOWN ON DRAWINGS, PLEASE NOTIFY ENGINEER.

FIRE ALARM SYSTEM NOTE

THE EXISTING FACILITY FIRE ALARM SYSTEM IS CURRENTLY BEING UPGRADED AS A SEPARATE PROJECT WITHIN THE BUILDING. ALL FIRE ALARM SCOPE, INCLUDING FIRE ALARM WORK ASSOCIATED WITH THE INTERFACE OF THE NEW ELEVATOR WITH THE FIRE ALARM SYSTEM, IS BY OTHERS. TIMING AND INSTALLATION OF DEVICES AND EQUIPMENT WITHIN THIS ELEVATOR REPLACEMENT PROJECT SHALL BE COORDINATED WITH THE BUILDING FIRE ALARM CONTRACTOR IN ORDER TO FACILITATE PROPER TIE-INS AND SCHEDULING OF SCOPES OF WORK.

ELECTRICAL SHEET INDEX

22-0680 - REID HALL ELEVATOR REPLACEMENT
REID HALL, BOZEMAN, MT 59715

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REID HALL, BOZEMAN, MT 59715

PREPARED FOR: EVAN BURNETT
PROJECT ARCHITECT: TRAVIS SMITH, AIA
MSU PPA#: 22-0680
CDA PROJECT NUMBER: 2347

JACOB L. GARWOOD PE
PROFESSIONAL ENGINEER - MONTANA

E001
ELECTRICAL COVER SHEET

MEP COORDINATION SCHEDULE

CONTROL TYPE:

- BAS BUILDING AUTOMATION SYSTEM
- CO CARBON MONOXIDE DETECTOR
- CONT CONTINUOUS OPERATION
- EF INTERLOCK WITH EXHAUST FAN
- HCP HOOD CONTROL PANEL
- INT INTEGRAL
- L LIGHT SWITCH
- MS MANUAL SWITCH
- OS OCCUPANCY SENSOR
- PS PRESSURE SWITCH
- T THERMOSTAT
- TC TIME CLOCK
- UC UNIT CONTROLLER
- VE VEHICLE EXHAUST DETECTION SYSTEM
- N/A NOT APPLICABLE

DISCONNECT/STARTER TYPE:

- CB PANELBOARD CIRCUIT BREAKER WITHIN SIGHT OF EQUIPMENT
- CSFD COMBINATION STARTER/DISCONNECT - HOA
- FD FUSED DISCONNECT
- FST FUSTAT
- FW FACTORY-WIRED SINGLE POINT CONNECTION
- MOCP MOTOR OVER-CURRENT PROTECTION
- MSS MANUAL STARTER SWITCH WITH THERMAL OVERLOADS (1-, 2- OR 3-POLE AS REQUIRED)
- NFD NON-FUSED DISCONNECT
- RCPT 20A DUPLEX RECEPTACLE (GFCI PROTECTED AS REQUIRED), CORD AND PLUG
- RVSS REDUCED VOLTAGE SOLID-STATE
- VFD VARIABLE FREQUENCY DRIVE - HOA
- N/A NOT APPLICABLE

DIVISION OF RESPONSIBILITIES:

- 22/22 FURNISHED AND INSTALLED BY DIV. 22, WIRED BY DIV. 22
- 22/26 FURNISHED AND INSTALLED BY DIV. 22, WIRED BY DIV. 26
- 23/23 FURNISHED AND INSTALLED BY DIV. 23, WIRED BY DIV. 23
- 23/26 FURNISHED AND INSTALLED BY DIV. 23, WIRED BY DIV. 26
- 26/26 FURNISHED AND INSTALLED BY DIV. 26, WIRED BY DIV. 26

NOTES:

1. INTEGRAL DISCONNECTS AND OVERLOADS
2. INTEGRAL OVERLOADS
3. SINGLE POINT CONNECTION
4. PROVIDE RECEPTACLE AND DATA CONNECTION FOR PANEL
5. MOUNT ON UNI-STRUT IN FRONT OF UNIT
6. SIZE FUSES IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES FOR INSTALLED EQUIPMENT
7. INTEGRAL VARIABLE FREQUENCY DRIVE
8. DUCT SMOKE DETECTOR(S) REQUIRED

GENERAL NOTES:

A. CONTROL WIRING SHALL BE CONCEALED WITHIN WALL CONSTRUCTION, ABOVE CEILING, OR RUN IN CONDUIT. EXPOSED CONTROL WIRING IS UNACCEPTABLE.
B. UNLESS SPECIFICALLY NOTED, ALL FEEDERS SHALL INCLUDE A FULL SIZE NEUTRAL. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY WITH THE MANUFACTURER OF THE ACTUAL EQUIPMENT BEING SUPPLIED WHETHER A NEUTRAL IS
C. REQUIRED PRIOR TO ROUGH-IN.
ALL DUCT SMOKE DETECTORS FURNISHED BY DIV. 26, INSTALLED BY DIV. 23, AND WIRED BY DIV. 26. DIV. 26 SHALL WIRE ALL FANS TO SHUT DOWN WHEN ALARM IS INITIATED BY ANY DUCT SMOKE DETECTOR.

MARK	DESCRIPTION	ELECTRICAL DATA		CONTROL		NOTES	DISCONNECT / STARTER		DISCONNECT				FEEDER	
		LOAD	VOLT-PHASE	TYPE	DIV		TYPE	DIV	SIZE (NEMA)	SWITCH (AMPS)	FUSE (AMPS)	ENCLOSURE (NEMA)	COPPER WIRE (AWG)	CONDUIT (INCHES)
EH-1	ELECTRIC HEATER	7.5 kW	208-1	T	23/23	1	FW	23/23	-	-	-	-	#8	1"
FC-1	FAN COIL	FROM HP	FROM HP	T	23/23	-	N/A	-	-	30A	-	NEMA 1	#12	3/4"
FC-2	FAN COIL	FROM HP	FROM HP	T	23/23	-	N/A	-	-	30A	-	NEMA 1	#12	3/4"
HP-1	HEAT PUMP	19.5 MCA	208-1	INT	23/23	6	FD	26/26	-	30A	NOTE 6	NEMA 3R	#10	3/4"
HP-2	HEAT PUMP	19.5 MCA	208-1	INT	23/23	6	FD	26/26	-	30A	NOTE 6	NEMA 3R	#10	3/4"
SP-1	SUMP PUMP	1/2 HP	120-1	UC	23/23	-	RCPT	26/26	-	-	-	-	#12	3/4"

LUMINAIRE SCHEDULE

TYPE	LAMPS	LOAD (W)	OUTPUT (LM, NOMINAL)	CCT (K)	DESCRIPTION	MFR	CATALOG NO. OR SERIES	MOUNTING	VOLTAGE	NOTES
S1	LED	44 W	5,000	3500	4' VAPOR TIGHT, IP65 RATED, LED STRIP LIGHT.	METALUX	4VT3 LD5 5 W UNV L835 CD1	WALL	120 V	-
S2	LED	38 W	4,500	3500	4' LED LENSED STRIP LIGHT AND A CHAIN HANG SET.	METALUX	4SNLED LD5 44SL LW UNV L835 CD 1 U AYC-CHAIN/SET	SUSPENDED	120 V	-

Branch Panel: PHP

Location: ELEVATOR MECHANICAL ROOM 23
Supply From: P
Mounting: Surface
Enclosure: Type 1
Volts: 277/480 Wye
Phases: 3
Wires: 4
A.F.C.: 10,005
Mains Type: MLO
Mains Rating: 125 A

Notes:
PROVIDE WITH INTEGRAL SURGE PROTECTION DEVICE.

CKT	Circuit Description	Load Classification	Trip	Poles	A		B		C		Poles	Trip	Load Classification	Circuit Description	CKT
1		Lighting; Other;			5291	0					1	20 A	--	SPARE	2
3	T-PLP	Power; Motor;	45 A	3			4956	0			1	20 A	--	SPARE	4
5		Cooling;...							7000	0	1	20 A	--	SPARE	6
7					17182	0					1	20 A	--	SPARE	8
9	ELEVATOR HOIST MOTOR	HVAC; Motor	100 A	3			17182	--			1	--	--	SPACE	10
11									17182	--	1	--	--	SPACE	12
13	SPACE	--	--	1	--	0									14
15	SPACE	--	--	1			--	0			3	30 A	--	SPD	16
17	SPACE	--	--	1					--	0					18
				Total Load:	22472 VA		22138 VA		24182 VA						
				Total Amps:	81 A		80 A		87 A						

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Cooling	6500 VA	100.00%	6500 VA		
Heating	7500 VA	100.00%	7500 VA	Total Conn. Load:	68792 VA
Lighting	1013 VA	125.00%	1267 VA	Total Est. Demand:	81929 VA
Motor	52722 VA	124.44%	65609 VA	Total Conn.:	83 A
Other	500 VA	100.00%	500 VA	Total Est. Demand:	99 A
Power	30 VA	100.00%	30 VA		
Receptacle	540 VA	100.00%	540 VA		

Notes:

Branch Panel: PLP

Location: ELEVATOR MECHANICAL ROOM 23
Supply From: T-PLP
Mounting: Surface
Enclosure: Type 1
Volts: 120/208 Wye
Phases: 3
Wires: 4
A.F.C.: 3,885
Mains Type: MCB
Mains Rating: 125 A
MCB Rating: 100 A

Notes:

CKT	Circuit Description	Load Classification	Trip	Poles	A		B		C		Poles	Trip	Load Classification	Circuit Description	CKT
1	RCPT - ELEVATOR MECH ROOM	Receptacle	20 A	1	180	0					1	20 A	--	SPARE	2
3	SUMP PUMP SP-1	Power; Motor	20 A	1			1206	0			1	20 A	--	SPARE	4
5	LTS - ELEVATOR MECH ROOM	Lighting	20 A	1					76	0	1	20 A	--	SPARE	6
7	<1>ELEVATOR CAB LIGHTS	Lighting; Other	20 A	1	1000	0					1	20 A	--	SPARE	8
9	HEAT PUMP HP-1, FAN COIL FC-1	Power; Cooling	30 A	2			1625	0			1	20 A	--	SPARE	10
11									1625	0	1	20 A	--	SPARE	12
13	RCTPS, LTS - ELEVATOR SHAFT	Lighting;...	20 A	1	371	0					1	20 A	--	SPARE	14
15	<1>ELEVATOR CAB CONTROLS	Lighting	20 A	1			500	0			1	20 A	--	SPARE	16
17	ELEC HEATER EH-1	Heating	50 A	2					3750	0	1	20 A	--	SPARE	18
19					3750	0					1	20 A	--	SPARE	20
21	HEAT PUMP HP-2, FAN COIL FC-2	Power; Cooling	30 A	2			1625	0			1	20 A	--	SPARE	22
23									1625	0	1	20 A	--	SPARE	24
25	SPACE	--	--	1	--	--					1	--	--	SPACE	26
27	SPACE	--	--	1			--	--			1	--	--	SPACE	28
29	SPACE	--	--	1					--	--	1	--	--	SPACE	30
				Total Load:	5291 VA		4956 VA		7000 VA						
				Total Amps:	45 A		41 A		59 A						

Legend:

<1> PROVIDE WITH LOCKING HARDWARE

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Cooling	6500 VA	100.00%	6500 VA		
Heating	7500 VA	100.00%	7500 VA	Total Conn. Load:	17247 VA
Lighting	1013 VA	125.00%	1267 VA	Total Est. Demand:	17791 VA
Motor	1176 VA	125.00%	1470 VA	Total Conn.:	48 A
Other	500 VA	100.00%	500 VA	Total Est. Demand:	49 A
Power	30 VA	100.00%	30 VA		
Receptacle	540 VA	100.00%	540 VA		

Notes:

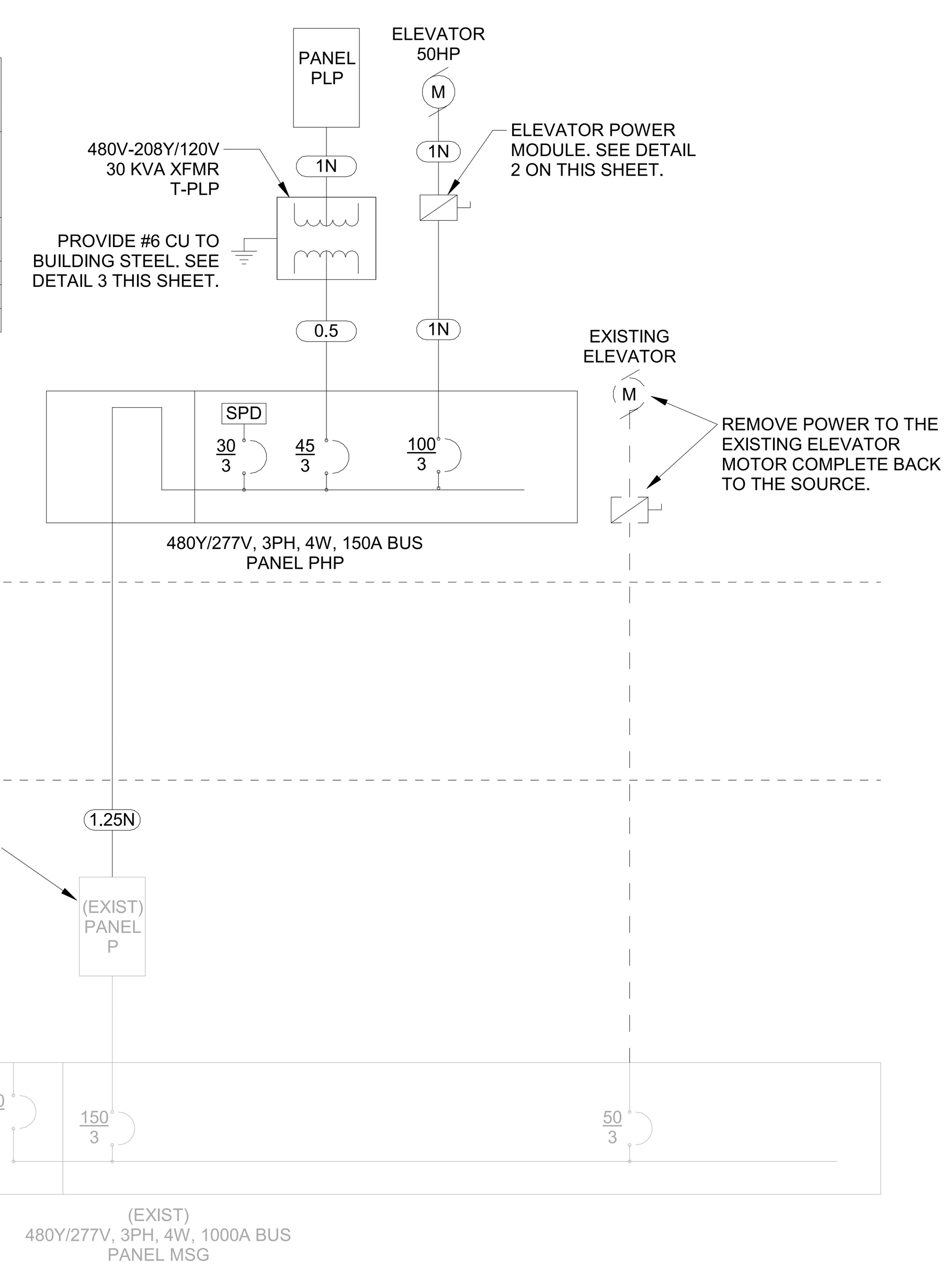
FEEDER SCHEDULE - COPPER

SCHEDULE IS BASED ON 75 DEGREE COPPER CONDUCTORS IN NEC 310.60 TABLE.

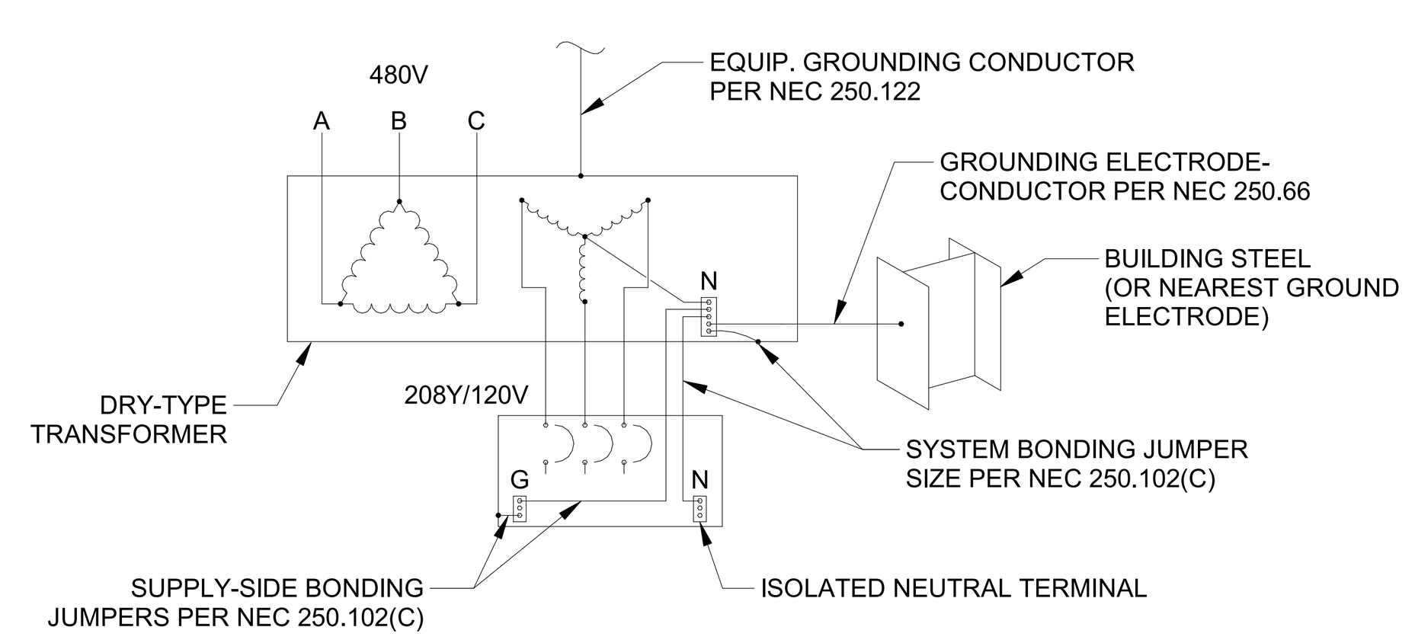
FEEDER NUMBER KEY:
N = INCLUDES NEUTRAL CONDUCTOR

NOTE: GROUNDING CONDUCTOR IS SIZED ACCORDING TO NEC 250.122 TABLE, UNLESS FEEDER NUMBER IS FOLLOWED BY AN ASTERISK (*) INDICATING THAT THE GROUNDING CONDUCTOR IS SIZED ACCORDING TO NEC 250.66 TABLE.

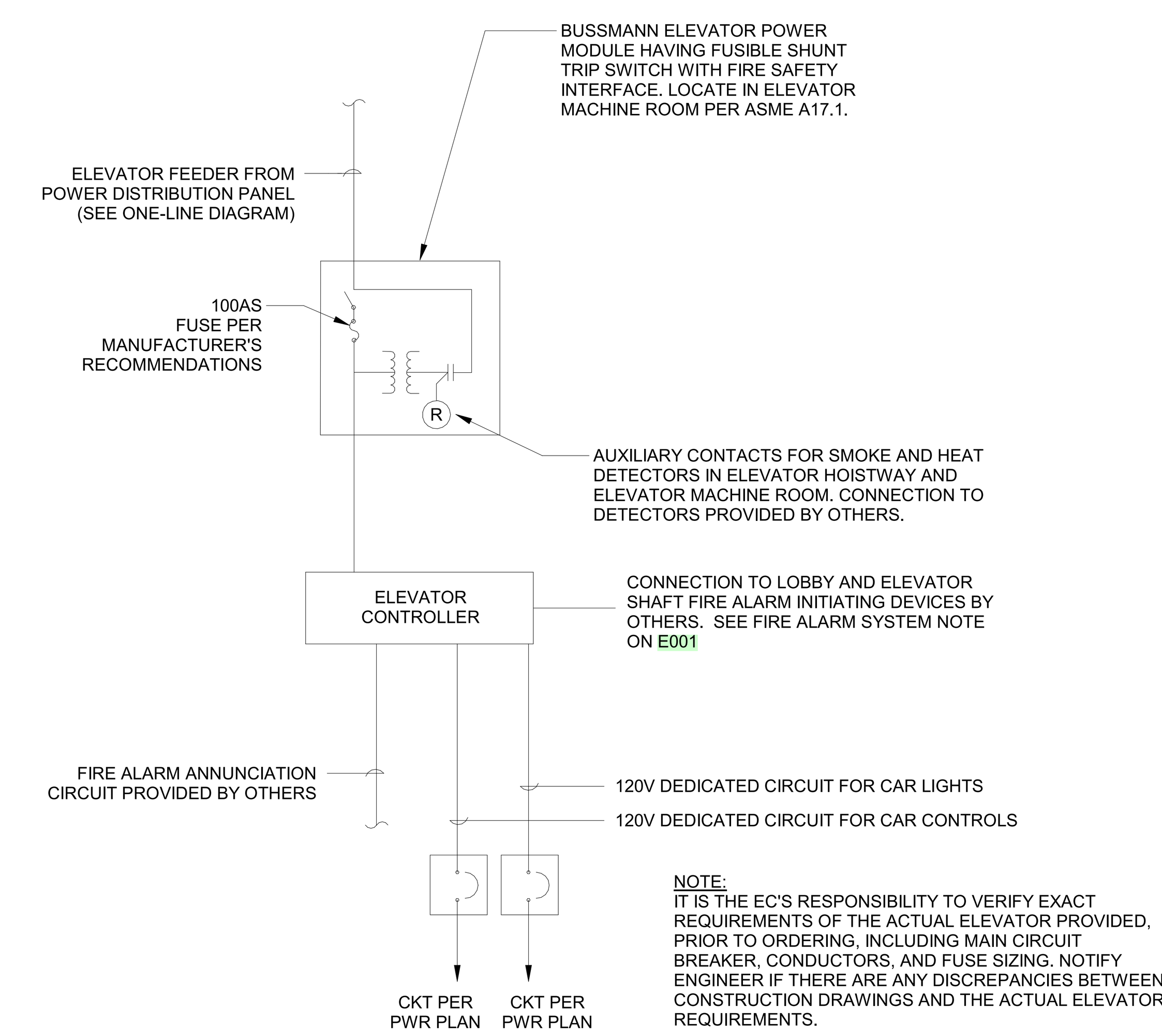
FEEDER NUMBER	AMPERAGE	SETS IN PARALLEL	CONDUIT SIZE	PHASE WIRE QTY	PHASE AWG	NEUTRAL QTY	NEUTRAL AWG	GROUND AWG
0.5	50 A	1	3/4"C	3	#8			#10
1N	100 A	1	1-1/4"C	3	#2	1	#2	#8
1.25N	125 A	1	1-1/2"C	3	#1	1	#1	#6



1 ONE LINE DIAGRAM
N.T.S.



3 TRANSFORMER GROUNDING RISER DIAGRAM
N.T.S.



NOTE:
IT IS THE EC'S RESPONSIBILITY TO VERIFY EXACT REQUIREMENTS OF THE ACTUAL ELEVATOR PROVIDED, PRIOR TO ORDERING, INCLUDING MAIN CIRCUIT BREAKER, CONDUCTORS, AND FUSE SIZING. NOTIFY ENGINEER IF THERE ARE ANY DISCREPANCIES BETWEEN CONSTRUCTION DRAWINGS AND THE ACTUAL ELEVATOR REQUIREMENTS.

2 ELEVATOR CONNECTION DETAIL
N.T.S.

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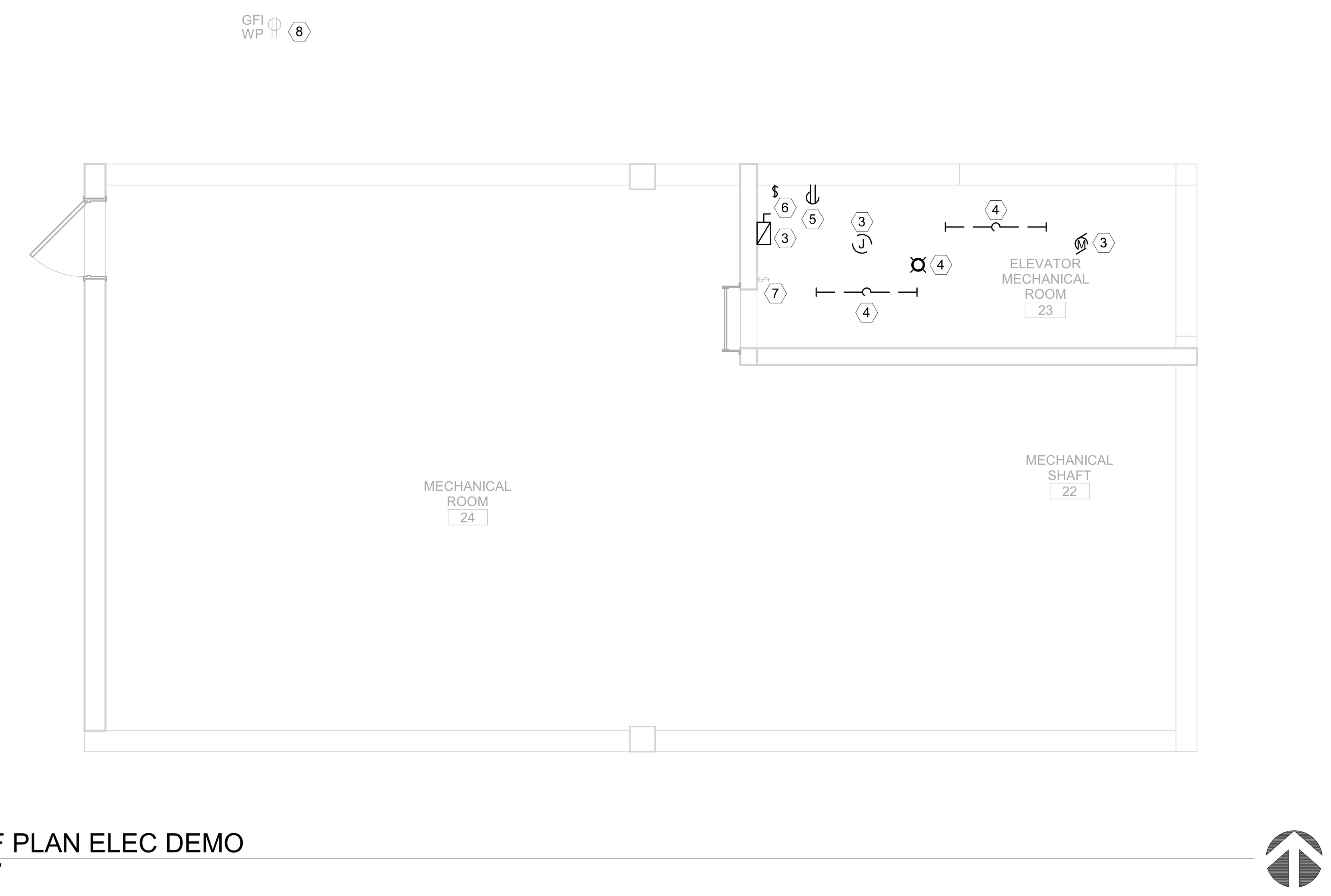
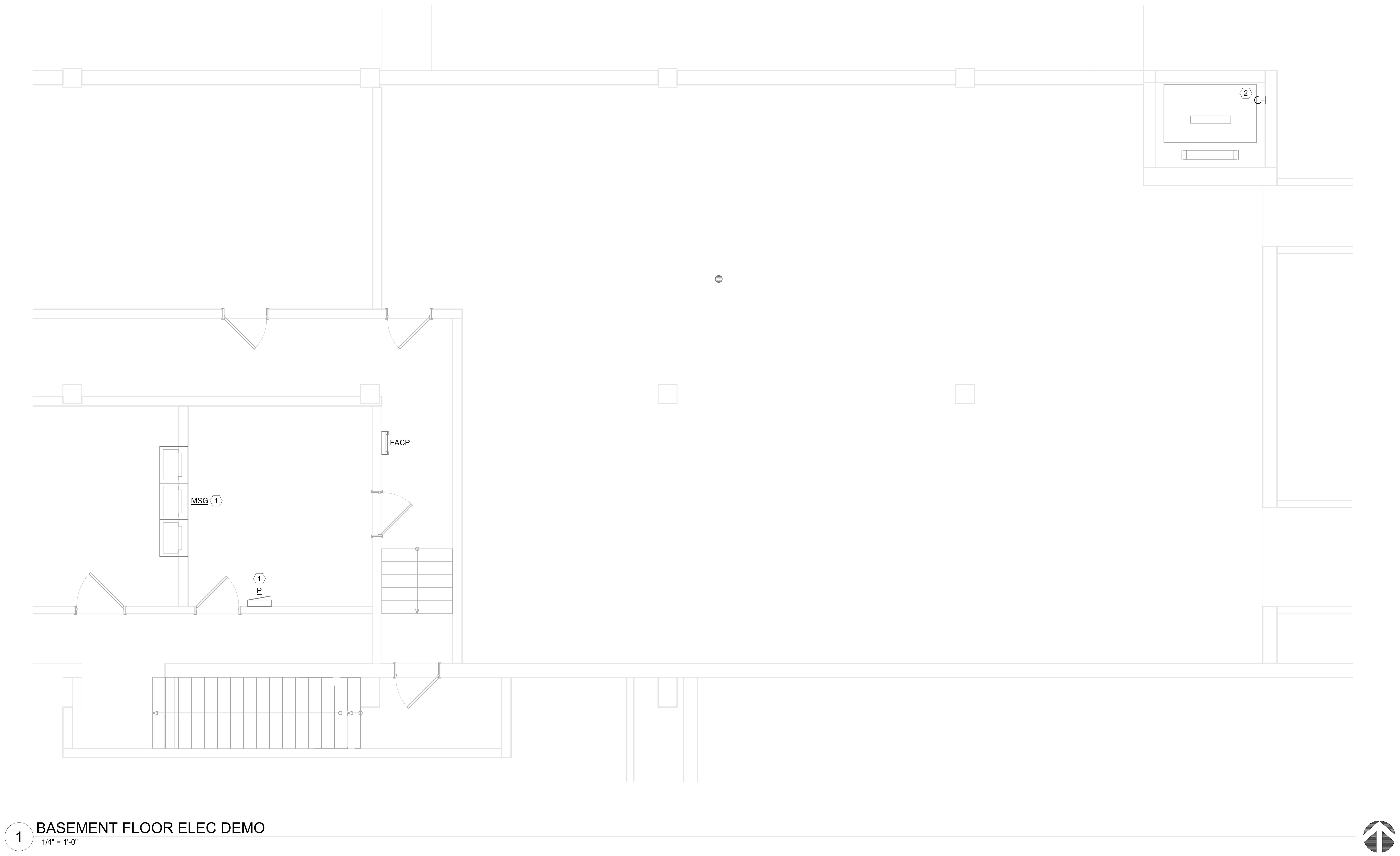
REID HALL ELEVATOR REPLACEMENT
REID HALL, BOZEMAN, MT 59715

PREPARED FOR: EVAN BURNETT
PROJECT ARCHITECT: TRAVIS SMITH, AIA
MSU PPA#: 22-0680
CDA PROJECT NUMBER: 2347

JACOB L. GARWOOD No. 87191 PE 3-1-2024 MONTANA PROFESSIONAL ENGINEER LICENSED



2 ROOF PLAN ELEC DEMO
1/4" = 1'-0"



1 BASEMENT FLOOR ELEC DEMO
1/4" = 1'-0"

ELECTRICAL DEMO 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. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING OF FLOORS, WALLS, CEILINGS, AND ROOFS TO PERFORM THE REQUIRED WORK DEPICTED IN THESE DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR ALL PATCHING OF HOLES TO THE SATISFACTION OF THE ARCHITECT/ENGINEER.
C. ALL WALL REGIONS SHOWN DASHED ARE EXISTING, TO BE DEMO'D, OR IN SOME CASES ARE EXISTING DOORWAYS TO BE WALLED IN. CONTRACTOR SHALL FIELD-VERIFY AFFECTED POWER, LIGHTING AND SIGNAL, PRIOR TO BID.
D. DASHED WALLS, EQUIPMENT, FIXTURES AND DEVICES SHOWN BLACK, OR BLACK AND DASHED ARE EXISTING FOR DEMO, AND ITEMS IN GRAY AND SOLID ARE EXISTING TO REMAIN, UNLESS SPECIFICALLY NOTED OTHERWISE.
E. ALL ITEMS NOTED FOR DEMO SHALL BE COMPLETELY DEMO'D, INCLUDING DISCONNECTS, CONDUIT AND CONDUCTORS BACK TO SOURCE, UNLESS SPECIFICALLY NOTED OTHERWISE.
F. NOT ALL EXISTING DEVICE LOCATIONS HAVE BEEN VERIFIED OR SHOWN ON THESE PLANS. THE CONTRACTOR SHALL FIELD-VERIFY EXISTING CONDITIONS, PRIOR TO BID.

KEY NOTES:

#	
1	EXISTING ELECTRICAL GEAR TO REMAIN. SEE ELECTRICAL RISER DIAGRAM FOR WORK.
2	REMOVE THE EXISTING ELEVATOR PIT LIGHT AND LIGHT SWITCH COMPLETE BACK TO THE SOURCE.
3	REMOVE POWER TO THE EXISTING ELEVATOR HOIST MOTOR, CONTROLLER AND DISCONNECT COMPLETE BACK TO THE SOURCE.
4	REMOVE THE EXISTING LIGHT FIXTURES IN THE ELEVATOR MACHINE ROOM.
5	REMOVE THE EXISTING RECEPTACLE IN THE ELEVATOR MACHINE ROOM. PROVIDE STAINLESS COVER OVER THE EXISTING JUNCTION BOX.
6	REMOVE THE EXISTING CAB LIGHT DISCONNECT COMPLETE BACK TO THE SOURCE.
7	EXISTING LIGHT SWITCH TO REMAIN FOR REUSE IN THE REMODEL.
8	EXISTING WEATHER RESISTANT RECEPTACLE TO REMAIN.

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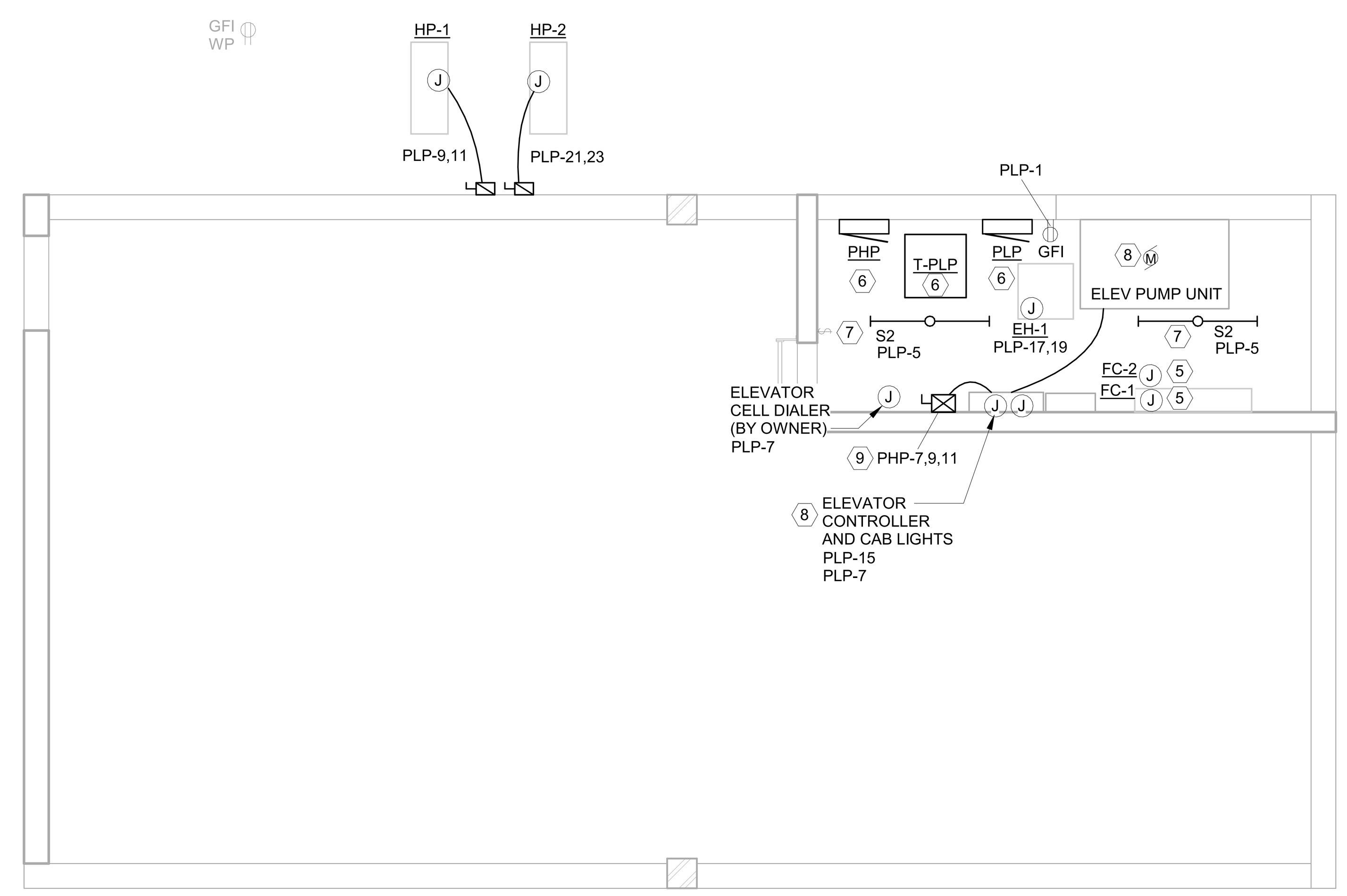
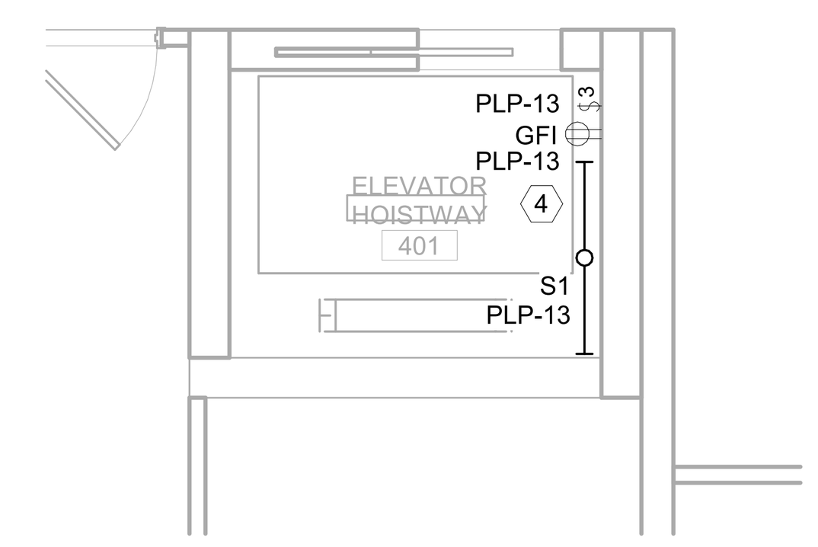
MONTANA JACOB L. GARWOOD No. 87191 PE 3-1-2024 LICENSED PROFESSIONAL ENGINEER

E101
ELECTRICAL DEMOLITION PLAN



3 ROOF PLAN ELEC
1/4" = 1'-0"



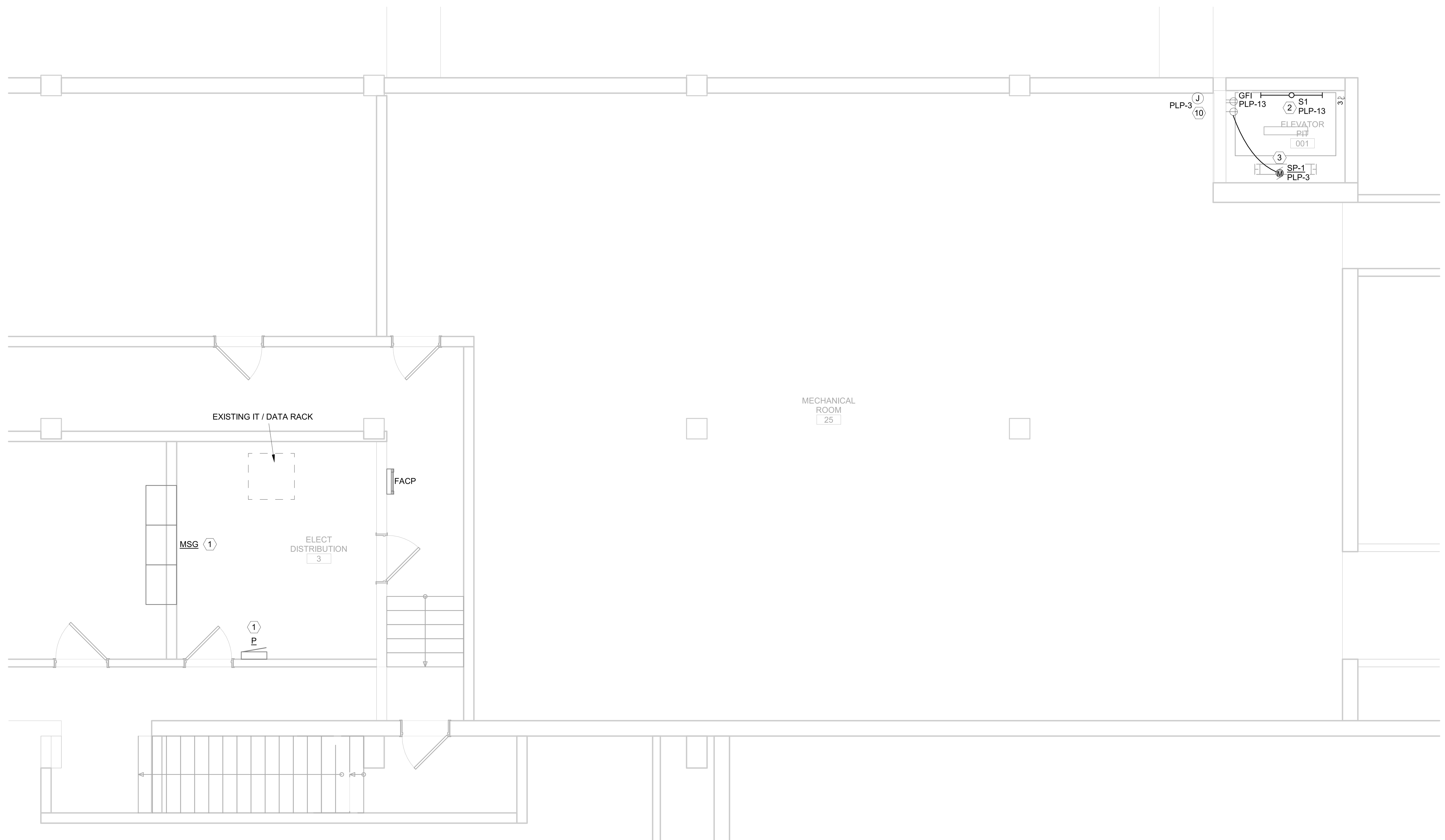
2 FOURTH FLOOR ELECTRICAL PLAN
1/4" = 1'-0"

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. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING OF FLOORS, WALLS, CEILINGS, AND ROOFS TO PERFORM THE REQUIRED WORK DEPICTED IN THESE DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR ALL PATCHING OF HOLES TO THE SATISFACTION OF THE ARCHITECT/ENGINEER.
C. SEE FIRE ALARM SYSTEM NOTE ON SHEET E001.

KEY NOTES:

1 REFER TO THE ELECTRICAL RISER DIAGRAM FOR WORK REQUIDRED TO THE EXISTING ELECTRICAL GEAR.
2 INSTALL RECEPTACLE AND LIGHT FIXTURE IN THE ELEVATOR PIT WHERE SPACE PERMITS. LOCATE THE SWITCH AT THE ENTRANCE INTO THE PIT. CIRCUIT LIGHT, SWITCH AND RECEPTACLE SUCH THAT THE LIGHTING IS NOT GFCI PROTECTED.
3 COORDINATE SUMP PUMP INSTALLATION WITH THE PLUMBING CONTRACTOR.
4 INSTALL LIGHT FIXTURE AT THE TOP OF THE ELEVATOR SHAFT WHERE SPACE PERMITS. LOCATE THE SWITCH AND RECEPTACLE AT THE ENTRANCE INTO THE SHAFT. CIRCUIT LIGHT, SWITCH AND RECEPTACLE SUCH THAT THE LIGHTING IS NOT GFCI PROTECTED.
5 FAN COIL POWER IS DERIVED FROM ASSOCIATED HEAT PUMP. PROVIDE 3/4" C., (2) #12, AND #12G FROM THE FAN COIL TO THE HEAT PUMP. COORDINATE WITH THE MECHANICAL CONTRACTOR.
6 REFER TO THE ELECTRICAL RISER DIAGRAM FOR WORK REQUIRED WITH THE NEW ELECTRICAL DISTRIBUTION EQUIPMENT.
7 CIRCUIT THE NEW LIGHT FIXTURES TO THE EXISTING LIGHT SWITCH IN THE SPACE.
8 REFER TO DETAIL 2/E002 FOR ADDITIONAL INFORMATION FOR THE ELEVATOR CONNECTIONS AND COORDINATE WITH THE ELEVATOR INSTALLER PRIOR TO ROUGH-IN OF ANY ELECTRICAL POWER.
9 PROVIDE NEW BUSSMAN ELEVATOR POWER MODULE. SEE DETAIL 2/E002 FOR ADDITIONAL INFORMATION FOR THE ELEVATOR CONNECTIONS AND COORDINATE WITH THE ELEVATOR INSTALLER PRIOR TO ROUGH-IN OF ANY ELECTRICAL POWER.
10 COORDINATE LOCATION OF SUMP PUMP CELLULAR DIALER WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.



1 BASEMENT FLOOR ELECTRICAL PLAN
1/4" = 1'-0"

22-0680 - REID HALL ELEVATOR REPLACEMENT
REID HALL, BOZEMAN, MT 59715

COLLABORATIVE DESIGN ARCHITECTS
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REID HALL ELEVATOR REPLACEMENT

REID HALL, BOZEMAN, MT 59715

PREPARED FOR: EVAN BURNETT
PROJECT ARCHITECT: TRAVIS SMITH, AIA
MSU PPA#: 22-0680
CDA PROJECT NUMBER: 2347

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E201
ELECTRICAL REMODEL PLAN