MISSOURI STATE UNIVERSITY
BUILDING RENOVATION, CHEEK HALL

MSU PROJECT NO: 230123-069 / CHRISTNER PROJECT NO: 23025.000

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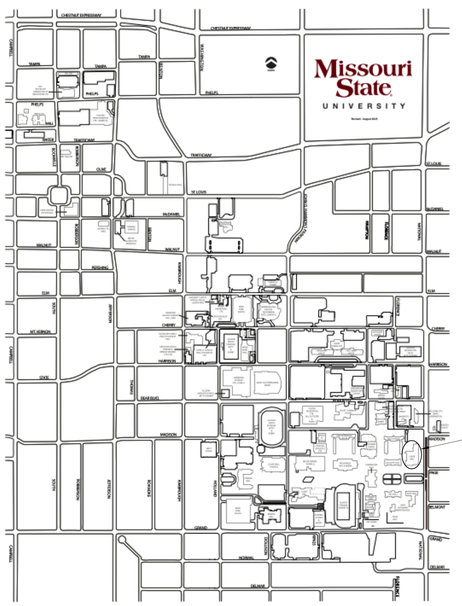

CHEEK HALL
825 S NATIONAL AVE
SPRINGFIELD, MO 65897

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COVER SHEET

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ABBREVIATIONS

AB	ANCHOR BOLT	FT	FEET (FOOT)	RAF	RESILIENT ATHLETIC FLOORING
ACC	ACCESSIBLE	FTD	FACIAL TISSUE DISPENSER	RAG	RETURN AIR GRILLE
AD	AREA DRAIN	FTG	FOOTING	RB	RESILIENT BASE
ADJ	ADJACENT	FURG	FURRING	RB HK	ROBE HOOK
ADMIN	ADMINISTRATION	FURN	FURNITURE	RCP	REFLECTED CEILING PLAN
AFF	ABOVE FINISH FLOOR	FUT	FUTURE	RCPTN	RECEPTION
AGGR	AGGREGATE	FV	FLEXIBLE VINYL	RD	ROOF DRAIN
AIB	AIR INFILTRATION BARRIER	G	GROUND	RE	REFER TO
ALT	ALTERNATE	GA	GAUGE	REC	RECESSED
ALUM	ALUMINUM	GALV	GALVANIZED	REF	REFERENCE
APC	ACOUSTICAL PANEL CEILING	GB	GRAB BAR	REGIN	REGISTRATION
APPROX	APPROXIMATE(LY)	GF	GLAZING FILM	REING	REINFORCING
ARCH	ARCHITECTURAL / ARCHITECT	GFRC	GLASS-FIBER REINFORCED CONCRETE	REQD	REQUIRED
AS	ACTIVATION SWITCH	GL	GLASS	REQ'S	REQUIREMENTS
ASPH	ASPHALT	GLT	GLASS TILE	RES	RESINOUS FLOORING
AT	ACOUSTICAL CEILING	GLU LAM	GLUE LAMINATED	RESIL	RESILIENT
ATTN	ATTENTION		WOOD	RESW	RESINOUS EPOXY
AWW	ARCHITECTURAL WOODWORK	GR	GRADE		WALL SYSTEM
BD	BOARD	GRD	GROUND	REV	REVISION
BF	BRICK FLOORING	GRG	GLASS-REINFORCED GYPSUM	RFG	ROOFING
BG	BUMPER GUARD	GRTG	GRATING	RFS	ROOM FINISH SCHEDULE
BITUM	BITUMINOUS	GSB	GYPSUM SHEATHING BOARD	RFT	RUBBER FLOOR TILE
BKG	BACKING			RM	ROOM
BL	BRICK LEDGE	GT	GROUT	RND	ROUND
BLDG	BUILDING	GYM	GYMNASIUM	RO	ROUGH OPENING
BLKG	BLOCKING	GYP	GYPSUM	RP	RESIN PANEL
BLST	BALLAST	GYP BD	GYPSUM BOARD	RR	RUB RAIL
BLT	BORROW LIGHT	GYP PLAS	GYPSUM PLASTER	RSF	RESILIENT SHEET FLOORING
BM	BEAM	H	HIGH/HEIGHT	RST	RUBBER STAIR TREAD
BO_	BOTTOM OF ___	HB	HOSE BIBB	RTF	RESILIENT TILE FLOORING
BOD	BOTTOM OF DECK	HCP	HANDICAP	RTU	ROOF TOP UNIT
BOT	BOTTOM	HCWD	HOLLOW CORE WOOD DOOR	RVL	REVEAL
BPR	BED PAN RACK	HDW	HARDWARE	SAB	SOUND ATTENUATION BLANKET
BR	BRICK	HDWD	HARDWOOD	SAG	SUPPLY AIR GRILLE
BRG	BEARING	HDWL	HEADWALL	SAN	SANITARY
BRR	BUMPER RAIL	HM	HOLLOW METAL	SAW	SOUND-ABSORBING WALL UNITS
BSMT	BASEMENT	HORIZ	HORIZONTAL	SB	SPLASH BLOCK
BUR	BUILT UP ROOFING	HPC	HIGH PERFORMANCE COATINGS	SBSTR	SUBSTRATE
C-	CHANNEL (SIZE)	HPT	HIGH POINT	SC	SPECIAL COATING
CAB(S)	CABINET(S)	HR	HAND RAIL	SCD	SEAT COVER DISPENSER
CALC	CALCULATE	HSKPG	HOUSEKEEPING	SCHED	SCHEDULE
CB	CATCH BASIN	HT	HEIGHT	SCONC	SEALED CONCRETE
CBB	CEMENTITIOUS BACKER BOARD	HVAC	HEATING, VENTILATING AND AIR CONDITIONING	SCR	SHOWER CURTAIN
CUC	CUBICLE CURTAIN	ID	INSIDE DIAMETER	SCWD	SOLID CORE WOOD DOOR
CCT	CUBICLE CURTAIN TRACK	IN	INCH	SD	SOAP DISPENSER
CEM	CEMENT	INFO	INFORMATION	SECT	SECTION
CF/CI	CONTRACTOR FURNISHED/ CONTRACTOR INSTALLED	INSUL	INSULATION	SF	SQUARE FEET
CF/OI	CONTRACTOR FURNISHED / OWNER INSTALLED	INT	INTERIOR	SFRM	SPRAYED FIRE RESISTIVE MATERIAL
CFLG	COUNTERFLASHING	IP	IN PATIENT	SHR	SHOWER
CFMF	COLD-FORMED METAL FRAMING	ISO	ISOLATION	SHTHG	SHEATHING
CG	CORNER GUARD	IVT	IV TRACK	SHV	SHELF/ SHELVING
CHR	CHAIR RAIL	JAN	JANITOR	SIM	SIMILAR
CH	COAT HOOK	JST	JOIST	SLNT	SEALANT
CJ	CONTROL JOINT	JT	JOINT	SM	SOLID SURFACE MATERIAL
CL	CENTER LINE	KIT	KITCHEN	SNDU	SANITARY NAPKIN DISPOSAL UNIT
CLG	CEILING	KOP	KNOCK OUT PANEL	SO	SOUTH
CLO	CLOSET	LAB	LABORATORY	SP	STAND PIPE
CLR	CLEAR	LAM	LAMINATE	SPEC	SPECIFICATION
CLRM	CLASSROOM	LAV	LAVATORY	SPTB	SPECIMEN PASS-THROUGH BOX
CMU	CONCRETE MASONRY UNIT	LBR	LUMBER	SPTC	SPECIMEN PASS-THROUGH CABINET
CO	CLEAN OUT	LF	LINOLEUM FLOORING	SQ	SQUARE
COG	CASED OPENING	LIB	LIBRARY	SRF	STATIC-CONTROL RESILIENT FLOORING
COL	COLUMN	LKR	LOCKER	SS	STAINLESS STEEL
CONC	CONCRETE	LKR RM	LOCKER ROOM	ST	STONE (CAST)
CONF	CONFERENCE	LL	LEAD LINED	STC	SOUND TRANSMISSION CLASS
CONN	CONNECT/ CONNECTION	LLH	LONG LEG HORIZONTAL	STD	STANDARD
CONSTR	CONSTRUCTION	LLV	LONG LEG VERTICAL	STL	STEEL
CON	CONTINUOUS	LMC	LINEAR METAL CEILING	STN	STONE (NATURAL)
CONTR	CONTRACTOR	LOC	LOCATION	STOR	STORAGE
CORR	CORRIDOR	LPT	LOW POINT	STRUCT	STRUCTURAL
CP	CARPET (BROADLOOM)	LT	LIGHT	SUSP	SUSPENDED
CPT	CARPET TILE	LVR	LOUVER	SYMM	SYMMETRICAL
CR	CARD READER	LVT	LUXURY VINYL TILE	T	TREAD
CRR	CRASH RAIL	MACH	MACHINE	T&B	TOP AND BOTTOM
CSK	COUNTERSINK (SUNK)	MAIN	MAINTENANCE	T&G	TONGUE AND GROOVE
CSWK	CASEWORK	MATL	MATERIAL	TB	TACKBOARD
CT	CERAMIC TILE	MAX	MAXIMUM	TD	TOWEL DISPENSER
CTR	COUNTERTOP	MB	MARKER BOARD	TEL	TELEPHONE
CUC	CUBICLE CURTAIN	MBH	MOP/BROOM HOLDER	TEMP	TEMPORARY
CUH	CABINET UNIT HEATER	MC	MEDICINE CABINET	TH	THICK
CW	CURTAIN WALL	MECH	MECHANICAL	THK	THICKNESS
D	DEEP/DEPTH	MEMB	MEMBRANE	THRU	THROUGH
DBL	DOUBLE	MEZZ	MEZZANINE	TKB	TACKBOARD
DCS	DIAPER CHANGING STATION	MFR	MANUFACTURER	TKS	TACK SURFACE
DEFS	DIRECT EXTERIOR FINISH SYSTEM	MH	MANHOLE	TLT	TOILET
DEG	DEGREE	MH	MOP HOLDER	TMPD	TEMPERED
DET	DETAIL	MIN	MINIMUM	TO_	TOP OF ___
DF	DRINKING FOUNTAIN	MIN	MINUTE	TOC	TOP OF CURB/TOP OF CONCRETE
DG	DECORATIVE GLAZING	MISC	MISCELLANEOUS	TOM	TOP OF MASONRY
DIA	DIAMETER	MO	MASONRY OPENING	TOP	TOP OF PAVEMENT/ TOP OF PARAPET
DIAG	DIAGONAL	MOD BIT	MODIFIED BITUMEN	TOS	TOP OF STEEL
DIFF	DIFFUSER	MP	MOVEABLE PARTITION	TOW	TOP OF WALL
DIM	DIMENSION	MR	MIRROR	TP	TOILET PARTITION
DISP	DISPENSER	MS	MASONRY	TPIN	TOWEL PIN
DN	DOWN	MTD	MOUNTED	TR	TOWEL RACK
DR	DOOR	MTL	METAL	TRG	TOWEL RING
DS	DOWNSPOUT	MU	MIRROR UNIT	TRTD	TREATED
DT	DRAIN TILE	MULL	MULLION	TS-	TUBE STEEL (SIZE)
DWG(S)	DRAWING(S)	MWP	MEMBRANE WATERPROOFING	TSH	TOWEL SHELF
DWR	DRAWER	N	NORTH	TTD	TOILET TISSUE DISPENSER
E	EAST	NA	NOT APPLICABLE	TV	TELEVISION
EA	EACH	NEG	NEGATIVE	TWB	TOWEL BAR
EFS	EXTERIOR FINISH SYSTEM	NIC	NOT IN CONTRACT	TYP	TYPICAL
EIFS	EXTERIOR INSULATION FINISH SYSTEM	NO	NUMBER	TZ	TERRAZZO
EJ	EXPANSION JOINT	NOM	NOMINAL	UC	UNDER CUT
EL	ELEVATION	NSMF	NON-STRUCTURAL METAL FRAMING	UCL	UNDER-CABINET LIGHT
ELEC	ELECTRIC/ELECTRICAL	NTS	NOT TO SCALE	UCR	UNDER-COUNTER REFRIGERATOR
ELEV	ELEVATOR	NUT	NUTRITION	UH	UNIT HEATER
ENCL	ENCLOSURE	O/HD	OVER HEAD	UL	UNDERWRITERS LABORATORY
ENGR	ENGINEER	O/O	OUT-TO-OUT	UNEX	UNEXCAVATED
ENTR	ENTRANCE	OA	OVER ALL	UNFIN	UNFINISHED
EQ	EQUAL	OC	ON CENTER	UNO	UNLESS NOTED OTHERWISE
EQUIP	EQUIPMENT	OD	OUTSIDE DIAMETER	UON	UNLESS OTHERWISE NOTED
ESCAL	ESCALATOR	OF/CI	OWNER FURNISHED/ CONTRACTOR INSTALLED	UR	URINAL
ESMT	EASEMENT	OF/OI	OWNER FURNISHED/ OWNER INSTALLED	US	URINAL SCREEN
ETR	EXISTING TO REMAIN	OFF	OFFICE	UTS	UTILITY SHELF
EW	EACH WAY	OH DR	OVERHEAD DOOR	VAR	VARIES
EWC	ELECTRIC WATER COOLER	OPH	OPPOSITE HAND	VB	VIEW BOX
EX	EXIST(ING)	OPNG	OPENING	VERT	VERTICAL
EXH	EXHAUST	OPP	OPPOSITE	VEST	VESTIBULE
EXIST	EXISTING	OPR	OPERABLE	VIF	VERIFY IN FIELD
EXP	EXPANSION	ORD	OVERFLOW ROOF DRAIN	VLR	VENTILATOR
EXP	EXPOSED	PCC	PRECAST CONCRETE	VND	VENDOR
EXP BT	EXPANSION BOLT	PERF	PERFORATED	VPB	VENEER PLASTER BASE
EXT	EXTERIOR	PG	PLASTIC GLAZING	VPO	VENEER PLASTER
F	FEMALE	PHAR	PHARMACY	VTR	VENT THROUGH ROOF
FA	FIRE ALARM	PL	PLASTIC LAMINATE	VWC	VINYL WALL COVERING
FAWP	FLUID APPLIED WATERPROOFING	PLAM	PLASTIC LAMINATE	W	WEST
FB	FIRE BLANKET	PLAS	PLASTER	W/(O)	WITH/(OUT)
FCU	FAN COIL UNIT	PLYWD	PLYWOOD	WAD	WARM-AIR-DRYER
FD	FLOOR DRAIN	PM	PAINT/MATCH	WB	WOOD BASE
FDPS	FOLD-DOWN PURSE SHELF	PNL	PANEL/ PANELING	WBL	WOOD BLOCKING
FDTN	FOUNDATION	POL	POLISHED	WC	WALL COVERING
FDVC	FIRE DEPARTMENT VALVE CABINET	PORT	PORTABLE	WD	WOOD
FE	FIRE EXTINGUISHER	POS	POSITIVE	WDC	WOOD CHAIR RAIL
FEC	FIRE EXTINGUISHER CABINET	PP	PUSH-PLATE	WDP	WOOD PANELING
FF	FINISHED FLOOR	PR	PAIR	WDS	WOOD SIDING
FG	FOOT GRILLE	PRCST	PRECAST	WDT	WOOD TRIM
FH	FLAT HEAD	PREFAB	PREFABRICATED	WDW	WINDOW
FHC	FIRE HOSE CABINET	PRKG	PARKING	WF	WOOD FLOORING
FIN	FINISH	PROJ	PROJECT	WG	WALL GUARD
FIN FLR	FINISH FLOOR	PROP	PROPERTY	WH	WATER HEATER
FIN GR	FINISH GRADE	PS	PROJECTION SCREEN	WID	WIDTH
FLASH	FLASHING	PSQF	PER SQUARE FOOT	WMP	WIRE MESH PARTITION
FLL	FLOW LINE	PSQI	PER SQUARE INCH	WP	WALL PROTECTION
FLR	FLOOR	PT	PAINT	WPT	WORKING POINT
FLUOR	FLUORESCENT	PT/WR	PAPER TOWEL DISPENSER/WASTE RECEPTACLE	WRL	WASTE RECEPTACLE
FMT	FLOOR MAT	PTD	PAPER TOWER DISPENSER	WS	WOOD STAIN
FOC	FACE OF CONCRETE	PTN	PARTITION	WSCT	WAINSCOT
FOF	FACE OF ___	PTS	PNEUMATIC TUBE STATION	WT	WINDOW TREATMENT
FPL	FIREPLACE	PVC	POLYVINYL CHLORIDE	WWF	WELDED WIRE FABRIC
FR	FRAME	PVG	PAVING	YDR	YARD DRAIN
FRP	FIBER REINFORCED PANELING	QT	QUARRY TILE	YH	YARD HYDRANT
FRTP	FIRE RETARDANT TREATED PLYWOOD	QTR	QUARTER		
FRTW	FIRE RETARDANT TREATED WOOD	QTZ	QUARTZ AGGLOMERATE		
FSS	FOLDING SHOWER SEAT	R	RISER		
		R-#	R-VALUE		
		R=	RADIUS		
		RA	RESILIENT ACCESSORIES		

MATERIAL LEGEND

BRICK
CONCRETE
RIGID INSULATION
EARTH
INSULATION - BATT
CONCRETE MASONRY UNIT
ASPHALT
STEEL
GYPSUM BOARD / PLASTER
WOOD FRAMING OR BLOCKING - CONTINUOUS
FINISH WOOD
WOOD SHIM OR BLOCKING - INTERRUPTED
BASE COURSE/GRANULAR FILL

SPECIALTIES AND ACCESSORIES LEGEND

FIRE PROTECTION SPECIALTIES

FB — FIRE BLANKET
FE — FIRE EXTINGUISHER AND BRACKET
FDVC — FIRE DEPARTMENT VALVE CABINET
FEC — FIRE EXTINGUISHER CABINET

IMPACT RESISTANT WALL PROTECTION

CHR — SYMBOL
CHR: CHAIR RAIL
HR: HANDRAIL
WG: WALL GUARD

CG: CORNER GUARD (TYPE CG-1, UNO) FULL HEIGHT

X — CORNER GUARD HEIGHT WHEN OTHER THAN TYPICAL (TOP OF UNIT AFF)
CORNER GUARD MATERIAL WHEN OTHER THAN TYPICAL
SST: STAINLESS STEEL

VISUAL DISPLAY BOARD

MBX - 48 48 — MBD: MARKER BOARD; TKB: TACK BOARD
HEIGHT
WIDTH
TYPE

PROJECTION SCREEN

PSX - 72 48 — PS: PROJECTION SCREEN
HEIGHT
WIDTH
TYPE

TOILET PARTITION AND SCREENS

TOILET PARTITION TP-(TYPE)
URINAL SCREEN US-(TYPE)

DOOR CONTROL

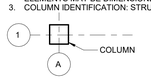
AS: ACTIVATION SWITCH
CR: CARD READER
PP: PUSH PLATE
XX - XXXX
OPENING NO OF DOOR TO BE OPERATED
DOOR CONTROL DEVICE

SYMBOLS LEGEND

1 / A4.01 — SECTION DETAIL
PLAN DETAIL OR ENLARGED PLAN
A3.01 / 1 — EXTERIOR ELEVATION
2 / 4 / A5.01 / 1 / 3 — INTERIOR ELEVATION
WORK POINT
ROOM / 12345 — ROOM NAME; ROOM NUMBER
XXX — PARTITION TYPE
XXX — DEMOLITION KEYED NOTE
XXX — KEYED NOTE
x — REVISION
CEILING GRID STARTING POINT
XXX — ELEVATION INDICATOR
X'-y" — CEILING HEIGHT
XXX — EXISTING COLUMN DESIGNATION
XXX — NEW COLUMN DESIGNATION
NORTH ARROW

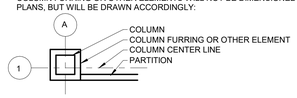
DIMENSIONING

1. IN MANY OF THE INTERIOR SPACES, THE ACTUAL DIMENSION MAY BE LESS IMPORTANT THAN IF THE ELEMENTS IN THE SPACE WERE TO BE EQUAL. IN THESE CASES THE WORD "EQUAL"(OR "EQ") IS USED IN LIEU OF THE ACTUAL DIMENSIONS.
2. WHEN ROOM CENTERLINE IS INDICATED ONLY ONE SIDE OF THE ROOM'S ELEMENTS MAY BE DIMENSIONED.
3. COLUMN IDENTIFICATION: STRUCTURAL DOCUMENTS GOVERN.

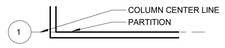


4. PARTITION CENTERED ON COLUMN LINES WILL NOT BE DIMENSIONED ON PLANS, BUT WILL BE DRAWN ACCORDINGLY:

5. PARTITION WITH FINISHED FACE FLUSH (ALIGNED) WITH FINISHED FACE OF COLUMN FURRING OR OTHER ELEMENTS WILL NOT BE DIMENSIONED ON PLANS, BUT WILL BE DRAWN ACCORDINGLY:



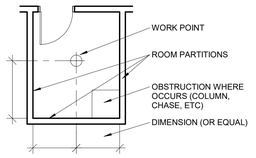
6. PARTITION WITH FINISHED FACE ON COLUMN LINE WILL NOT BE DIMENSIONED ON PLANS, BUT WILL BE DRAWN ACCORDINGLY:



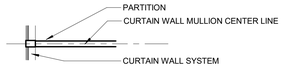
7. OPENING LOCATIONS: OPENINGS (DOOR, BORROW LIGHT, AND/OR SIDELIGHT FRAME) ARE LOCATED BY ONE OF THE FOLLOWING:
A. ONE JAMB LOCATED BY PARTITION AT RIGHT ANGLE

B. AS DIMENSIONED OR C. AS ADA REQUIRES

8. WORK POINTS ARE USED TO ORGANIZE ELEMENTS WITHIN A SPACE.



9. PARTITION CENTERED ON CURTAIN WALL MULLIONS WILL NOT BE DIMENSIONED ON PLANS, BUT WILL BE DRAWN ACCORDINGLY:



REFLECTED CEILING PLAN LEGEND

4'X4' ACOUSTICAL CEILING PANELS AND GRID
2'X4' ACOUSTICAL CEILING PANELS AND GRID
2'X2' ACOUSTICAL CEILING PANELS AND GRID
GYPSUM BOARD CEILING
CEILING MOUNTED EQUIPMENT SUPPORT
BRACING (ABOVE CEILING)
SUPPORT
CCT — CUBICLE CURTAIN TRACK
IVT-72 — IV TRACK
LENGTH WHEN INDICATED
MOTOR — MOTORIZED ROLLER WINDOW SHADE
ROLLER WINDOW SHADE

ARCHITECTURAL GENERAL NOTES

1. DO NOT SCALE DRAWINGS, USE DIMENSIONS. DIMENSIONS NOTED "AS REQUIRED", "VERIFY", "VERIFY IN FIELD" OR "MATCH EXISTING" ARE TO BE VERIFIED BY THE CONTRACTOR.
2. "ALIGN" MEANS TO ALIGN FINISH MATERIALS OF ELEMENTS INDICATED.
3. PARTITIONS ARE DIMENSIONED TO FACE OF GYPSUM BOARD OR MASONRY, UNLESS NOTED OTHERWISE. REFER TO PARTITION SCHEDULE FOR PARTITION THICKNESSES.
4. FLOOR ELEVATIONS INDICATED ARE TO TOP OF CONCRETE, UNLESS NOTED OTHERWISE.
5. REFER TO A9.20 AND A9.21 FOR TYPICAL CEILING DETAILS
6. REFER TO A0.20 FOR TYPICAL EQUIPMENT MOUNTING DETAILS.

PLAN LEGEND

NEW CONSTRUCTION
HIDDEN FEATURES OR NOT IN CONTRACT (LABELED NIC)
OPENING NUMBER — xxxx
NEW DOOR AND FRAME.
xxxx — OPENING NUMBER; BORROW LIGHT
XXX — OPENING NUMBER / TYPE
ML — AX.XX / AX.XX — MATCH LINE
CONTRACT LIMIT LINE
CENTER LINE

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Project Title:
BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **2/19/2025**

Drawn By: **HG**

SHEET REVISIONS

#	Date / Description
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3	
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Sheet Title:
ABBREVIATIONS, LEGENDS, & NOTES

Sheet #:
A0.01

SPECIAL INSPECTIONS

STATEMENT OF SPECIAL INSPECTIONS

1. REFER TO STRUCTURAL AND MECHANICAL DRAWINGS FOR ADDITIONAL SPECIAL INSPECTION REQUIREMENTS.
2. THE OWNER SHALL EMPLOY ONE OR MORE ESTABLISHED AND RECOGNIZED AGENCY REGULARLY ENGAGED IN CONDUCTING TESTS OR FURNISHING INSPECTION SERVICES FOR SPECIAL INSPECTIONS. THIS AGENCY SHALL BE ACCEPTABLE TO THE BUILDING OFFICIAL.
3. SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, OWNER, ARCHITECT, STRUCTURAL ENGINEER AND CONTRACTOR. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL, OWNER, ARCHITECT, STRUCTURAL ENGINEER AND CONTRACTOR PRIOR TO THE COMPLETION OF THAT PHASE OF THE WORK. A FINAL REPORT OF INSPECTIONS DOCUMENTING REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED AT A POINT IN TIME AGREED UPON BY THE OWNER AND THE BUILDING OFFICIAL PRIOR TO THE START OF WORK.
4. THE FOLLOWING ITEMS REQUIRE SPECIAL INSPECTIONS. REFER TO INDIVIDUAL SPECIFICATION SECTIONS FOR SPECIFIC TESTING AND INSPECTING REQUIREMENTS.

WIND-RESISTING COMPONENTS

SPECIAL INSPECTION ITEM	TYPE OF INSPECTION		REMARKS
	CONTINUOUS	PERIODIC	
COLD-FORMED STEEL LIGHT-FRAME CONSTRUCTION - WELDING OPERATIONS OF ELEMENTS OF THE MAIN WIND FORCE-RESISTING SYSTEM		X	
COLD-FORMED STEEL LIGHT-FRAME CONSTRUCTION - SCREW ATTACHMENT, BOLTING, ANCHORING AND OTHER FASTENING OF COMPONENTS WITHIN THE MAIN WIND FORCE-RESISTING SYSTEM, INCLUDING SHEAR WALLS, BRACES, DIAPHRAGMS, COLLECTORS (DRAG STRUTS) AND HOLD-DOWNS.		X	SEE NOTE 2
ROOF CLADDING SYSTEM AND COMPONENTS		X	

REMARK NOTES:

1. SPECIAL INSPECTION IS NOT REQUIRED FOR WOOD SHEAR WALLS SHEAR PANELS AND DIAPHRAGMS, INCLUDING NAILING, BOLTING, ANCHORING AND OTHER FASTENING TO OTHER COMPONENTS OF THE MAIN WIND FORCE-RESISTING SYSTEM, WHERE THE FASTENER SPACING OF THE SHEATHING IS MORE THAN 4 INCHES ON CENTER.
2. SPECIAL INSPECTION IS NOT REQUIRED FOR COLD-FORMED STEEL LIGHT-FRAME SHEAR WALLS, BRACES, DIAPHRAGMS, COLLECTORS (DRAG STRUTS) AND HOLD-DOWNS WHERE EITHER OF THE THE FOLLOWING APPLY: a. THE SHEATHING IS GYPSUM BOARD OR FIBERBOARD OR b. THE SHEATHING IS WOOD STRUCTURAL PANEL OR STEEL SHEETS ON ONLY ONE SIDE OF THE SHEAR WALL, SHEAR PANEL OR DIAPHRAGM ASSEMBLY AND THE FASTENER SPACING OF THE SHEATHING IS MORE THAN 4 INCHES ON CENTER.

FIRE-RESISTANT PENETRATIONS AND JOINTS

SPECIAL INSPECTION ITEM	TYPE OF INSPECTION		REMARKS
	CONTINUOUS	PERIODIC	
THROUGH-PENETRATIONS		X	SEE NOTES 1 AND 2
MEMBRANE PENETRATION FIRESTOPS		X	SEE NOTES 1 AND 3 ASTM E 2174
FIRE RESISTANT JOINT SYSTEMS		X	SEE NOTES 1 AND 4 ASTM E 2393
PERIMETER FIRE BARRIER SYSTEMS		X	SEE NOTES 1 AND 5 ASTM E 2307

REMARK NOTES:

1. SPECIAL INSPECTION REQUIRED IN HIGH-RISE BUILDINGS OR IN BUILDINGS ASSIGNED TO RISK CATEGORY III OR IV IN ACCORDANCE WITH IBC 2012 1604.5.
2. TESTING SHALL BE IN ACCORDANCE WITH ASTM E 814 OR UL 1479, WITH A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 Pa) OF WATER SHALL HAVE AN F RATING OF NOT LESS THAN THE REQUIRED FIRE-RESISTANCE RATING OF THE WALL PENETRATED.
3. TESTING SHALL BE IN ACCORDANCE WITH ASTM E 2174. MEMBRANE PENETRATION FIRESTOPS SHALL BE INSTALLED AS TESTED IN THE APPROVED FIRE-RESISTANCE-RATED ASSEMBLY OR SHALL BE PROTECTED BY AN APPROVED THROUGH-PENETRATION FIRESTOP SYSTEM INSTALLED AND TESTED IN ACCORDANCE WITH ASTM E 814 OR UL 1479, WITH A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH OF WATER (2.49 Pa). THE SYSTEM SHALL HAVE AN F RATING/T RATING OF NOT LESS THAN 1 HOUR BUT NOT LESS THAN THE REQUIRED RATING OF THE FLOOR PENETRATED. FLOOR PENETRATIONS AND LOCATED WITHIN THE CAVITY OF A WALL ABOVE THE FLOOR OR BELOW THE FLOOR DO NOT REQUIRE A T RATING. FLOOR PENETRATIONS BY FLOOR DRAINS, TUB DRAINS OR SHOWER DRAINS CONTAINED AND LOCATED WITHIN THE CONCEALED SPACE OF A HORIZONTAL ASSEMBLY DO NOT REQUIRE A T RATING.
4. TESTING SHALL BE IN ACCORDANCE WITH ASTM E 2393. TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF EITHER ASTM E 1966 OR UL 2079. NONSYMMETRICAL WALL JOINT SYSTEMS SHALL BE TESTED WITH BOTH FACES EXPOSED TO THE FURNACE, AND THE FIRE-RESISTANCE RATING SHALL BE THE SHORTEST DURATION OBTAINED FROM THE TWO TESTS. WHEN EVIDENCE IS FURNISHED TO SHOW THAT THE WALL WAS TESTED WITH THE LEAST FIRE-RESISTANT SIDE EXPOSED TO THE FURNACE, SUBJECT TO THE ACCEPTANCE OF THE BUILDING OFFICIAL, THE WALL NEED NOT BE SUBJECTED TO TESTS FROM THE OPPOSITE SIDE. FOR EXTERIOR WALLS WITH A HORIZONTAL FIRE SEPARATION DISTANCE GREATER THAN 5 FEET, THE JOINT SYSTEM SHALL BE REQUIRED TO BE TESTED FOR INTERIOR FIRE EXPOSURE ONLY.
5. TESTING SHALL BE IN ACCORDANCE WITH ASTM E 2307. EXTERIOR CURTAIN WALL/FLOOR INTERSECTION. WHERE FIRE-RESISTANCE-RATED FLOOR OR FLOOR/CEILING ASSEMBLIES ARE REQUIRED, VOIDS CREATED AT THE INTERSECTION OF THE EXTERIOR CURTAIN WALL ASSEMBLIES AND SUCH FLOOR ASSEMBLIES SHALL BE SEALED WITH AN APPROVED SYSTEM TO PREVENT THE INTERIOR SPREAD OF FIRE. SUCH SYSTEMS SHALL BE SECURELY INSTALLED AND TESTED IN ACCORDANCE WITH ASTM E 2307 TO PROVIDE AN F RATING FOR A TIME PERIOD AT LEAST EQUAL TO THE FIRE-RESISTANCE RATING OF THE FLOOR ASSEMBLY. VOIDS CREATED AT THE INTERSECTION OF THE EXTERIOR CURTAIN WALL ASSEMBLIES AND SUCH FLOOR ASSEMBLIES WHERE THE VISION GLASS EXTENDS TO THE FINISHED FLOOR LEVEL SHALL BE PERMITTED TO BE SEALED WITH AN APPROVED MATERIAL TO PREVENT THE INTERIOR SPREAD OF FIRE. SUCH MATERIAL SHALL BE SECURELY INSTALLED AND CAPABLE OF PREVENTING THE PASSAGE OF FLAME AND HOT GASES SUFFICIENT TO IGNITE COTTON WASTE WHERE SUBJECTED TO ASTM E 119 TIME-TEMPERATURE FIRE CONDITIONS UNDER A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH OF WATER COLUMN (2.5 Pa) FOR THE TIME PERIOD AT LEAST OF EQUAL TO THE FIRE-RESISTANCE RATING OF THE FLOOR ASSEMBLY.

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Sheet Title:

SPECIAL INSPECTIONS

Sheet #:

A0.02

PARTITION TYPES SCHEDULE

TYPE	WIDTH	WALL ASSEMBLY FINISH 1	WALL ASSEMBLY MATERIAL	WALL ASSEMBLY FINISH 2	SAB	FIRE RESISTANCE RATING (MINUTES)	TEST NUMBER (GENERAL NOTE C)	STC RATING (GENERAL NOTE E)	KEYED NOTES	SECTION TYPE
A0d	1 1/2"	1 LAYER 5/8" GYP BD	7/8" FURRING CHANNELS @ 16" OC		---	---	---	---	---	TD (sim)
A0t	1 1/2"	1 LAYER 5/8" GYP BD	7/8" FURRING CHANNELS @ 16" OC		---	---	---	---	---	TC (sim)
A1d	2 1/4"	1 LAYER 5/8" GYP BD	1-5/8" STL STUDS @ 16" OC		1-1/2" (NOTE 1)	---	---	---	3	TD (sim)
A2d	3 1/8"	1 LAYER 5/8" GYP BD	2-1/2" STL STUDS @ 16" OC		2-1/2" (NOTE 1)	---	---	---	3	TD (sim)
A2t	3 1/8"	1 LAYER 5/8" GYP BD	2-1/2" STL STUDS @ 16" OC		2-1/2" (NOTE 1)	---	---	---	3	TC (sim)
A3d	4 1/4"	1 LAYER 5/8" GYP BD	3-5/8" STL STUDS @ 16" OC		3-1/2" (NOTE 1)	---	---	---	3	TD (sim)
A3t	4 1/4"	1 LAYER 5/8" GYP BD	3-5/8" STL STUDS @ 16" OC		3-1/2" (NOTE 1)	---	---	---	3	TC (sim)
A4d	4 5/8"	1 LAYER 5/8" GYP BD	4" STL STUDS @ 16" OC		3-1/2" (NOTE 1)	---	---	---	3	TD (sim)
A6d	6 5/8"	1 LAYER 5/8" GYP BD	6" STL STUDS @ 16" OC		5-1/2" (NOTE 1)	---	---	---	3	TD (sim)
A6t	6 5/8"	1 LAYER 5/8" GYP BD	6" STL STUDS @ 16" OC		5-1/2" (NOTE 1)	---	---	---	3	TC (sim)
B2d	3 3/4"	1 LAYER 5/8" GYP BD	2-1/2" STL STUDS @ 16" OC	1 LAYER 5/8" GYP BD	2-1/2" (NOTE 1)	---	---	---	---	TD
B3d	4 7/8"	1 LAYER 5/8" GYP BD	3-5/8" STL STUDS @ 16" OC	1 LAYER 5/8" GYP BD	3-1/2" (NOTE 1)	---	---	46	---	TD
B3f	4 7/8"	1 LAYER 5/8" GYP BD	3-5/8" STL STUDS @ 16" OC	1 LAYER 5/8" GYP BD	3-1/2" (NOTE 1)	60 (NOTE 2)	U419 (NOTE 2)	46	---	TD
B6d	7 1/4"	1 LAYER 5/8" GYP BD	6" STL STUDS @ 16" OC	1 LAYER 5/8" GYP BD	5-1/2" (NOTE 1)	---	---	51	---	TD
B6f	7 1/4"	1 LAYER 5/8" GYP BD	6" STL STUDS @ 16" OC	1 LAYER 5/8" GYP BD	5-1/2" (NOTE 1)	60 (NOTE 2)	U419 (NOTE 2)	51	---	TD
C3f	6 1/8"	2 LAYERS 5/8" GYP BD	3-5/8" STL STUDS @ 16" OC	2 LAYERS 5/8" GYP BD	3-1/2" (NOTE 1)	120 (NOTE 2)	U419 (NOTE 2)	49	---	TD
P1	5 1/2"		3-5/8" STL STUDS @ 16" OC	3 LAYERS 5/8" GYP BD	3-1/2" (NOTE 1)	60 (NOTE 2)	U497	---	---	
P2	6 3/4"	1 LAYERS 5/8" GYP BD	3-5/8" STL STUDS @ 16" OC	4 LAYERS 5/8" GYP BD	5-1/2" (NOTE 1)	120 (NOTE 2)	U497	---	---	
P3	6 1/8"	1 LAYERS 5/8" GYP BD	3-5/8" STL STUDS @ 16" OC	4 LAYERS 5/8" GYP BD	5-1/2" (NOTE 1)	120 (NOTE 2)	U497	---	---	

GENERAL NOTES:

A. SECTION TYPE REFERENCES APPLY TO THIS SHEET UNO

B. HEIGHTS OF PARTITION ELEMENTS ARE AS FOLLOWS:
TC TO ABOVE CEILING.
TD TO DECK ABOVE.
PART PARTIAL HEIGHT PARTITION.

C. TEST NUMBERS ARE FOR UNDERWRITERS' LABORATORIES (UL) ASSEMBLIES UNO

D. SEAL PENETRATIONS OF FIRE, SMOKE, AND/OR SOUND RATED PARTITIONS, AND PENETRATIONS OF CORRIDOR SIDE OF PARTITIONS DESIGNATED TO LIMIT THE TRANSFER OF SMOKE.

E. STC RATING APPLIES WHERE PARTITION TAG SUB LETTER "S" IS INDICATED.

F. REFER TO SPECIFICATION CRITERIA FOR CONDITIONS OF USE FOR GYPSUM BOARD TYPES AND CEMENTITIOUS BACKER UNITS. WHERE CEMENTITIOUS BACKER UNITS OCCUR AT FIRE- RESISTANCE RATED ASSEMBLIES, INSTALL PER UL-U457 (60 MINUTES) OR UL-U474 (120 MINUTES).

G. REFER TO A0.12 AND A0.13 FOR TYPICAL STEEL STUD AND GYPSUM BOARD PARTITION DETAILS.

H. NOT USED

J. PROVIDE STENCILED IDENTIFICATION OF RATED PARTITION. REFER TO C5/THIS SHEET.

K. NOT USED

L. NOT USED

M. NOT USED

N. REFER TO E5/A0.12 FOR TYPICAL GYPSUM BOARD PARTITION PERIMETER RELIEF AND HEAD-OF-WALL JOINT SYSTEMS.

P. NOT USED

KEYED NOTES:

1. PROVIDE SAB OF INDICATED THICKNESS WHERE PARTITION TAG SUB LETTER "S" IS INDICATED.

2. SEE LIFE SAFETY PLAN FOR LOCATIONS AND RATINGS OF SMOKE- AND FIRE-RATED PARTITIONS. REFERENCED TEST NUMBERS APPLY ONLY TO PARTITIONS INDICATED TO BE RATED.

3. OFFSET STUDS FROM FACE OF WALL OR COLUMN AS REQUIRED FOR PLAN DIMENSIONS. BRACE STUD FRAMING TO ADJOINING CONSTRUCTION AT 1/4-POINTS OF PARTITION HEIGHT; EXCEPT STUD FRAMING SHALL BE TO DECK ABOVE AND UNBRACED WHERE ADJOINING BUILDING EXPANSION JOINTS. REFER TO D5/A0.13 FOR TYPICAL FURRING OFFSET DIMENSIONS.

4. PARTITION THICKNESS VARIES--SEE PLANS.

5. NOT USED

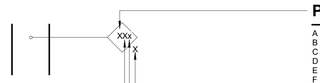
6. FIRE-RESISTANCE RATING IS BASED ON RATING OF THE OPENING PROTECTIVES; REFER TO DOOR SCHEDULE.

7. SPECIAL PARTITION TYPES ARE NUMBERED SEQUENTIALLY (P1, P2, P3). THE SIZE AND CONSTRUCTION ELEMENTS OF THE PARTITION TAG PLAN SYMBOL DO NOT APPLY.

8. SEE SECTION TYPE FOR HEIGHT, UNLESS NOTED OTHERWISE ON FLOOR PLAN.

PARTITION TYPES LEGEND

PARTITION TAG PLAN SYMBOL:



PARTITION TYPES:

A FURRING- STEEL FURRING CHANNELS OR STUDS
B PARTITIONS- STEEL STUDS
C PARTITIONS- STEEL STUDS
D PLUMBING CHASE OR SOUND WALL- STEEL STUDS
E PLUMBING CHASE OR SOUND WALL- STEEL STUDS
F SHAFT WALL
G SHAFT WALL
H CMU PARTITIONS
I NOT USED
J CMU PARTITIONS
K FURRING- WOOD FURRING STRIPS OR STUDS
L PARTITIONS- WOOD STUDS
M PARTITIONS- WOOD STUDS
N PLUMBING CHASE OR SOUND WALL- WOOD STUDS
O NOT USED
P SPECIAL PARTITION TYPES AS DETAILED
Q PLUMBING CHASE OR SOUND WALL- WOOD STUDS
R PARTITIONS- RESILIENT FURRING CHANNELS AND STEEL STUDS
S PARTITIONS- STAGGERED STEEL STUDS

SUB LETTERS:

S SOUND ATTENUATION BLANKETS
T THERMAL INSULATION
XX" HEIGHT OF PARTIAL HEIGHT PARTITION

SIZES:

NUMBER DESIGNATES NOMINAL THICKNESS OF STUD OR CMU IN INCHES.

	STEEL STUDS	WOOD STUDS	CMU
-	NO STUDS OR FURRING	NO STUDS OR FURRING	NOT USED
0	7/8" FURRING CHANNELS	1X FURRING STRIPS	NOT USED
1	1-5/8"	NOT USED	NOT USED
2	2-1/2"	NOT USED	2"
3	3-5/8"	2 X 3	NOT USED
4	4"	2 X 4	4"
5	NOT USED	NOT USED	NOT USED
6	6"	2 X 6	6"
7	NOT USED	NOT USED	NOT USED
8	8"	2 X 8	8"
10	NOT USED	NOT USED	10"
12	NOT USED	NOT USED	12"

PARTITION CONSTRUCTION:

b SMOKE BARRIER PARTITION CONSTRUCTION TO DECK ABOVE

c COMBINATION FIRE-RATED/SMOKE BARRIER PARTITION CONSTRUCTION TO DECK ABOVE

d PARTITION CONSTRUCTION TO DECK ABOVE

f FIRE-RATED PARTITION CONSTRUCTION TO DECK ABOVE

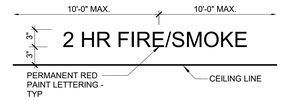
g PARTITION CONSTRUCTION TO UNDERSIDE OF CEILING

h PARTITION CONSTRUCTION TO LIMIT THE TRANSFER OF SMOKE

p PARTIAL HEIGHT PARTITION CONSTRUCTION

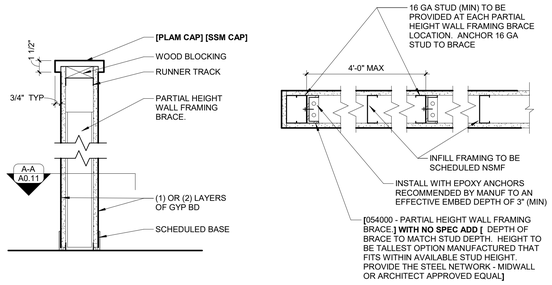
t PARTITION CONSTRUCTION TO ABOVE CEILING

x SPECIAL TYPE FOR ADDITIONAL FIRE RATING

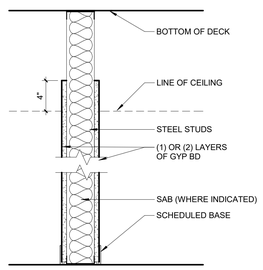


NOTES:
1. PROVIDE PAINTED STENCIL LETTERING, 3" HIGH, ABOVE THE CEILING TO INDICATE PARTITION RATINGS.
2. LETTERED STENCILS SHALL BE APPLIED TO EACH SIDE OF RATED PARTITIONS AT 10'-0" INTERVALS; BUT NO LESS THAN ONCE PER PARTITION LENGTH.
3. USE THE FOLLOWING LANGUAGE FOR STENCILS:
"2 HR FIRE AND SMOKE BARRIER"
"2 HR FIRE BARRIER "
"1 HR FIRE AND SMOKE BARRIER"
"1 HR FIRE BARRIER "
"SMOKE BARRIER"
"SMOKE PARTITION (IBC)/LIMIT TRANSFER OF SMOKE (NFPA)

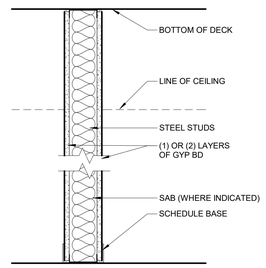
C5 RATING LETTERED STENCILS
1 1/2" = 1'-0"



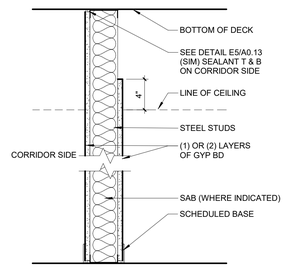
F3 SECTION - PARTIAL HT PARTN
1 1/2" = 1'-0"



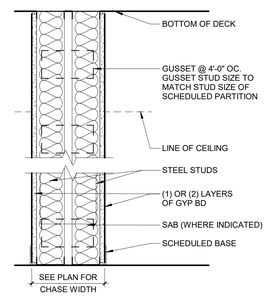
TC SECTION - PARTITION THROUGH CEILING
1 1/2" = 1'-0"



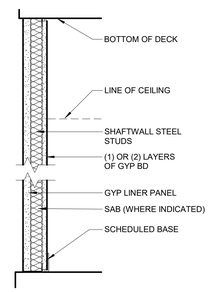
TD SECTION - PARTITION TO DECK
1 1/2" = 1'-0"



LT SECTION - LT PARTITION
1 1/2" = 1'-0"



PC SECTION - PLUMBING CHASE
1 1/2" = 1'-0"



SW SECTION - SHAFT WALL
1 1/2" = 1'-0"

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Project Title:
BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **2/19/2025**

Drawn By: **Author**

SHEET REVISIONS

#	Date / Description
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2	
3	
4	

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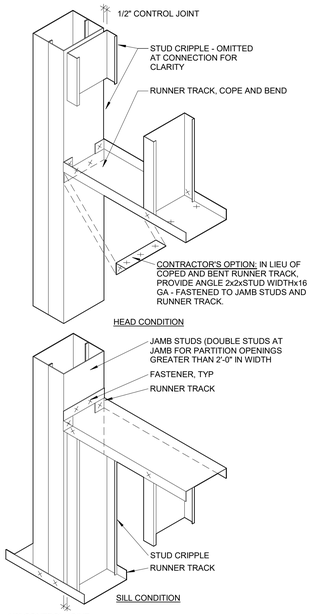
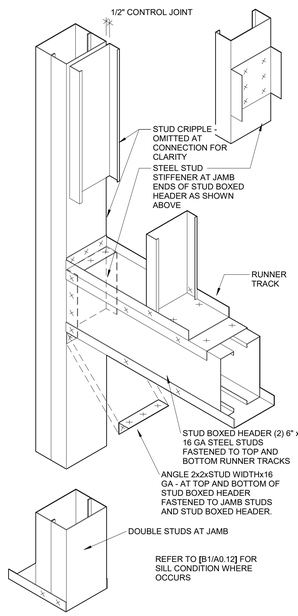
Sheet Title:
PARTITION TYPE SCHEDULE & SECTIONS

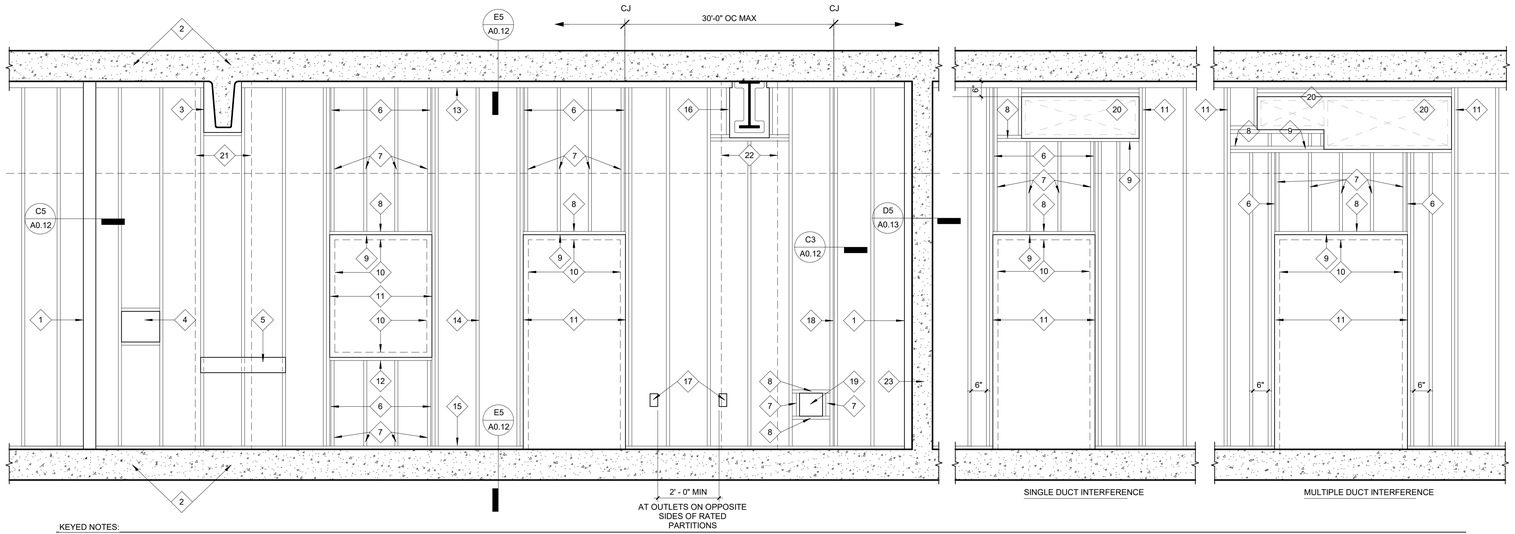
Sheet #:
A0.11



B1 DETAIL - TYP PTN OPENING (LESS THAN 4'-0" IN WIDTH)
1 1/2" = 1'-0"



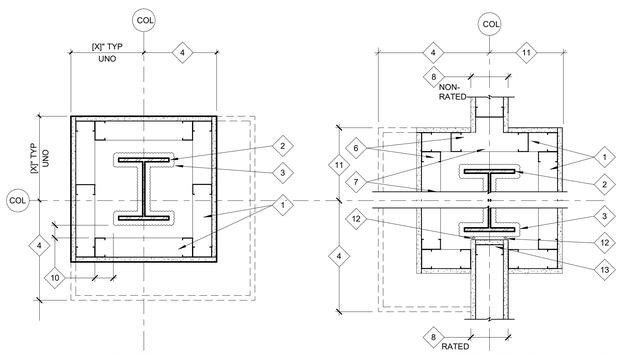
B2 DETAIL - TYPICAL PTN OPENING (4'-0" TO 8'-0")
1 1/2" = 1'-0"



KEYED NOTES:

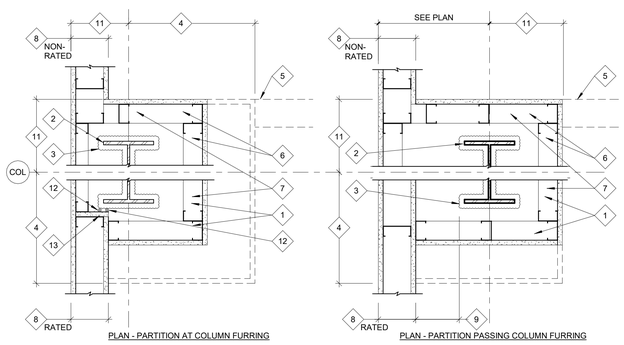
1. PARTITION FRAMING PERPENDICULAR TO ELEVATION.
2. FLOOR/ROOF STRUCTURE.
3. PARTITION FRAMING CLOSURE AT CONCRETE STRUCTURE (RE: E3/A0.13).
4. OPENINGS AND RECESSED ITEMS THROUGH GYPSUM BOARD ON ONE SIDE OF FIRE RATED PARTITION GREATER THAN 100 SQUARE INCHES IN ANY 100 SQUARE FEET OF PARTITION AREA SHALL BE PROTECTED BY 5-SIDED GYPSUM BOARD ASSEMBLY (RE: E6/A0.13).
5. HORIZONTAL STEEL BACKING PLATE AT PARTITION MOUNTED ITEMS (RE: D6/A0.13).
6. CONTROL JOINT AT JAMBS OF PARTITION OPENING ON BOTH FACES OF PARTITION (RE: C3/A0.12).
7. STEEL STUD CRIPPLES.
8. STEEL RUNNER TRACK FOR SPANS UP TO 4'-0" IN WIDTH (RE: B1/A0.12).
9. STEEL RUNNER TRACK ON STUD BOXED HEADER FOR SPANS GREATER THAN 4'-0" WIDTH (RE: B2/A0.12).
10. PARTITION OPENING (DOOR, BORROW LIGHT, DUCT, ETC. - SHOWN DASHED).
11. JAMB STUDS (DOUBLE-STUDS TO STRUCTURE ABOVE AT PARTITION OPENINGS GREATER THAN 2'-0" IN WIDTH).
12. STEEL RUNNER TRACK AT OPENING SILL (RE: B1/A0.12 - SILL CONDITION).
13. SLIP-TYPE HEAD JOINT TRACK. ANCHOR TO STRUCTURE AT 24" OC MAX.
14. STEEL STUD FRAMING.
15. STEEL RUNNER TRACK.
16. PARTITION FRAMING CLOSURE AT STEEL STRUCTURE (RE: E3/A0.12).
17. OPENINGS FOR STEEL ELECTRICAL OUTLET BOXES THAT DO NOT EXCEED 16 SQUARE INCHES IN AREA ARE PERMITTED IN FIRE RATED ASSEMBLIES. OUTLET BOXES ON OPPOSITE SIDES OF FIRE RATED ASSEMBLIES SHALL BE SEPARATED BY A MINIMUM HORIZONTAL DISTANCE OF 2'-0" (RE: E5/A0.13).
18. CONTROL JOINT ON BOTH FACES OF PARTITION.
19. OPENINGS THROUGH GYPSUM BOARD ON ONE SIDE OF FIRE RATED PARTITION SHALL NOT EXCEED 100 SQUARE INCHES IN ANY 100 SQUARE FEET OF PARTITION AREA AND THE OPENINGS SHALL BE FIRE BLOCKED.
20. DUCT SHOWN DASHED. SEE MECHANICAL.
21. TYPICAL COLUMN FURRING AT CONCRETE STRUCTURE (RE: E1/A0.13).
22. TYPICAL COLUMN FURRING AT STEEL STRUCTURE (RE: E1/A0.12).
23. CONCRETE, MASONRY OR EXISTING WALL PERPENDICULAR TO ELEVATION.

B3 ELEVATION - TYPICAL GYPSUM BOARD PARTITION FRAMING
1/2" = 1'-0"



PLAN - TYP INTERIOR COLUMN FURRING

PLAN - PARTITION INTERSECTING COLUMN FURRING



PLAN - PARTITION AT COLUMN FURRING

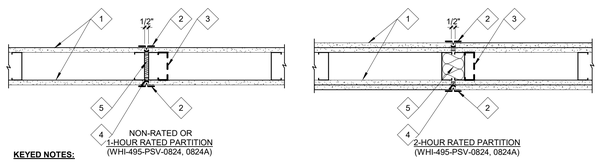
PLAN - PARTITION PASSING COLUMN FURRING

KEYED NOTES:

1. TYP COLUMN FURRING - PARTITION TYPE A2t .
2. STEEL COLUMN.
3. SPRAYED FIRE RESISTIVE MATERIAL (WHEN SPECIFIED)
4. SEE PLAN FOR COLUMN FURRING DIMENSION WHERE OTHER THAN TYPICAL DIMENSION.
5. INTERSECTING PARTITION WHERE OCCURS.
6. WHERE INTERSECTING PARTITION CONSTRUCTION EXTENDS TO BOTTOM OF STRUCTURE. EXTEND COLUMN FURRING PARTITION TO BOTTOM OF STRUCTURE TO MATCH INTERSECTING PARTITION CONSTRUCTION.
7. WHERE INTERSECTING PARTITION INDICATES SAB, PROVIDE SAB WITHIN STUD FRAMING OF COLUMN FURRING.
8. SCHEDULED PARTITION TYPE.
9. DETAIL APPLICABLE WHERE FACE OF PARTITION PASSES SPRAYED FIRE RESISTIVE MATERIAL AT FIRE-RATED PARTITIONS. SCHEDULED PARTITION TYPE GYP BD CONTINUES PAST COLUMN FURRING.
10. 1" MIN CLEARANCE BETWEEN STEEL STUDS AND SPRAYED FIRE RESISTIVE MATERIAL.
11. REFER TO "PLAN - TYP INTERIOR COLUMN FURRING" FOR TYPICAL DIMENSION.
12. 3/8" GAP MAX, FIRE-RATED SEALANT.
13. FIRE RATED AND/OR SMOKE BARRIER PARTITION INTERSECTING COLUMN FURRING. TERMINATE PARTITION AT SPRAYED FIRE RESISTIVE MATERIAL. CONTINUE GYP BD AROUND END STUD (LAYERS AS REQUIRED BY SCHEDULED PARTITION).

NOTE: REFER TO PROJECT DETAILS FOR FIRE RATED GYP BD COLUMN ENCLOSURE (WITHOUT SPRAYED FIRE RESISTIVE MATERIAL)

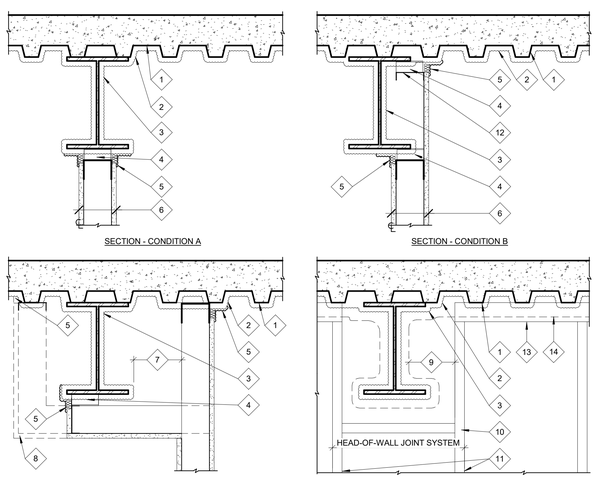
E1 TYPICAL GYPSUM BOARD COLUMN FURRING AT STEEL FRAMING MEMBERS
1 1/2" = 1'-0"



KEYED NOTES:

1. GYPSUM BOARD.
2. CONTROL JOINT: LOCATE ABOVE AND BELOW INTERIOR OPENINGS AND AT LONG UNINTERRUPTED EXPANSES AT NOT MORE THAN 30'-0" OC.
3. ADDITIONAL STUD AT PARTITION OPENINGS (SHOWN DASHED).
4. ACOUSTICAL SEALANT BETWEEN STEEL STUDS BEHIND CONTROL JOINT ON EACH SIDE OF THE PARTITION.
5. PACK CAVITY TIGHT WITH FIRE BLANKET INSULATION.

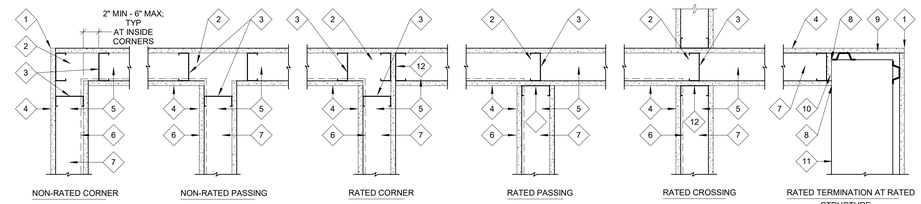
C3 PLAN DETAIL - TYPICAL GYPSUM BOARD CONTROL JOINTS
1 1/2" = 1'-0"



KEYED NOTES:

1. STEEL DECK
2. SPRAYED FIRE RESISTIVE MATERIAL ON STEEL DECK (WHEN SPECIFIED).
3. SPRAYED FIRE RESISTIVE MATERIAL ON STEEL FRAMING MEMBER (WHEN SPECIFIED).
4. Z-FURRING CHANNEL CLIP AT 1'-0" OC.
5. INSTALL SLIP-TYPE HEAD JOINT TRACK. Z-FURRING CHANNEL AND OTHER SIMILAR ELEMENTS PRIOR TO APPLYING SPRAYED FIRE RESISTIVE MATERIAL. REMOVE EXCESS MATERIAL FROM TRACK AND FURRING MEMBER FLANGE BEYOND REQUIRED THICKNESS. SEAL JOINT PER E5/A0.11.
6. SCHEDULED PARTITION TYPE.
7. CONDITION C IS APPLICABLE WHEN FACE OF STEEL STUD IS LESS THAN 1'-0" FROM STEEL FRAMING MEMBER OR SPRAYED FIRE RESISTIVE MATERIAL (WHEN SPECIFIED).
8. AT EXTERIOR WALLS EXTEND FRAMING, GYPSUM BOARD, VAPOR RETARDER, INSULATION, ETC. TO BOTTOM OF STEEL DECK; UNO.
9. 6" MAX CANTILEVER OF UNSUPPORTED GYPSUM BOARD BEYOND STEEL STUD FRAMING.
10. PROVIDE HEAD-OF-WALL JOINT SYSTEM AROUND STEEL FRAMING MEMBERS PENETRATING RATED PARTITIONS.
11. SCHEDULED PARTITION TYPE STUD SPACING.
12. STEEL RUNNER TRACK.
13. SLIP-TYPE HEAD JOINT TRACK.
14. EDGE OF GYPSUM BOARD (SHOWN DASHED).

E3 SECTION - TYP GYPSUM BOARD PARTITION CLOSURES AT STEEL STRUCTURES
1 1/2" = 1'-0"



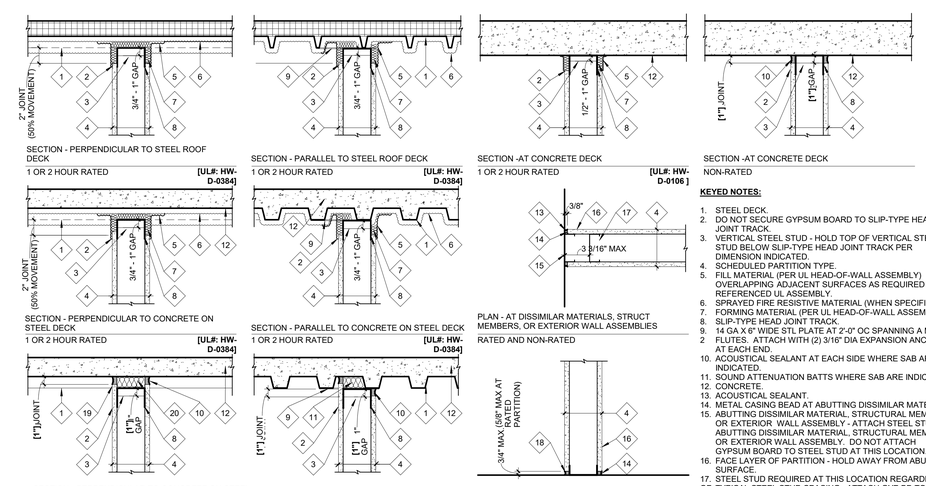
KEYED NOTES:

1. CORNER BEAD REQUIRED AT OUTSIDE CORNERS.
2. AT PARTITION INTERSECTIONS SECURE STUDS TO HEAD AND FLOOR TRACKS AND TO INTERSECTING PARTITION FRAMING.
3. LOCATE STUD AT THIS LOCATION AT PARTITION INTERSECTIONS REGARDLESS OF SPECIFIED STUD SPACING.
4. GYPSUM BOARD.
5. RUNNER TRACK BELOW.
6. LEAD LINING ON PROTECTED ROOM SIDE WHERE SCHEDULED.
7. SEE PARTITION TYPE FOR STUD SIZE AND SPACING TYPE GYP BD CONTINUES PAST COLUMN FURRING.
8. 3/8" GAP MAX. ACOUSTICAL SEALANT.
9. GYPSUM BOARD ON FURRING CHANNELS OR STUDS - SEE SCHEDULED PARTITION.
10. CONTINUE GYPSUM BOARD AROUND END STUD - PROVIDE LAYERS AS REQUIRED BY PARTITION TYPES.
11. RATED MASONRY, CONCRETE, OR STRUCTURE.
12. RUN GYPSUM BOARD CONTINUOUS PAST INTERSECTIONS AT FIRE AND SMOKE RATED PARTITIONS, IN ACCORDANCE WITH THE PRIORITY CHART.

PRIORITY CHART (LISTED FROM HIGHEST PRIORITY TO LOWEST PRIORITY):

A. 2 HOUR FIRE-RATED/SMOKE BARRIER
B. 2 HOUR FIRE-RATED
C. 1 HOUR FIRE-RATED/SMOKE BARRIER
D. 1 HOUR FIRE-RATED
E. SMOKE BARRIER
F. LIMIT TRANSFER OF SMOKE
G. NON-RATED WALL

C5 PLAN DETAIL - TYPICAL PARTITION INTERSECTIONS
1 1/2" = 1'-0"



KEYED NOTES:

1. STEEL DECK.
2. DO NOT SECURE GYPSUM BOARD TO SLIP-TYPE HEAD JOINT TRACK.
3. VERTICAL STEEL STUD - HOLD TOP OF VERTICAL STEEL STUD BELOW SLIP-TYPE HEAD JOINT TRACK PER DIMENSION INDICATED.
4. SCHEDULED PARTITION TYPE.
5. FILL MATERIAL (PER UL HEAD-OF-WALL ASSEMBLY) OVERLAPPING ADJACENT SURFACES AS REQUIRED BY THE REFERENCED UL ASSEMBLY.
6. SPRAYED FIRE RESISTIVE MATERIAL (WHEN SPECIFIED).
7. FORMING MATERIAL (PER UL HEAD-OF-WALL ASSEMBLY).
8. SLIP-TYPE HEAD JOINT TRACK.
9. 14 GA X 6" WIDE STL PLATE AT 2'-0" OC SPANNING A MIN OF 2 FLUTES. ATTACH WITH (2) 3/16" DIA EXPANSION ANCHORS AT EACH END.
10. ACOUSTICAL SEALANT AT EACH SIDE WHERE SAB ARE INDICATED.
11. SOUND ATTENUATION BATTS WHERE SAB ARE INDICATED.
12. CONCRETE.
13. ACOUSTICAL SEALANT.
14. METAL CASING BEAD AT ABUTTING DISSIMILAR MATERIALS.
15. ABUTTING DISSIMILAR MATERIAL, STRUCTURAL MEMBER, OR EXTERIOR WALL ASSEMBLY - ATTACH STEEL STUD TO ABUTTING DISSIMILAR MATERIAL, STRUCTURAL MEMBER, OR EXTERIOR WALL ASSEMBLY. DO NOT ATTACH GYPSUM BOARD TO STEEL STUD AT THIS LOCATION.
16. FACE LAYER OF PARTITION - HOLD AWAY FROM ABUTTING SURFACE.
17. STEEL STUD REQUIRED AT THIS LOCATION REGARDLESS OF TYPICAL STEEL STUD SPACING. ATTACH GYP BD TO STEEL STUD AT THIS LOCATION.
18. ACOUSTICAL SEALANT AT EACH SIDE AT FIRE RATED AND SMOKE RATED PARTITIONS AND WHERE SAB INDICATED.
19. TOP OF GYP BD AT HIGH SIDE OF FLUTES. COPE GYP BD TO FIT DECK PROFILE. 1" GAP BETWEEN GYP BD AND BOTTOM OF STEEL DECK.
20. SAB IN FLUTES OF STEEL DECK WHERE SAB ARE INDICATED.

E5 TYPICAL GYPSUM BOARD PARTITION PERIMETER RELIEF
1 1/2" = 1'-0"

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Project Title:

BUILDING RENOVATION, CHEEK HALL

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Drawn By: **Author**

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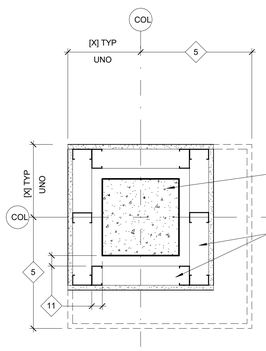
Sheet Title:

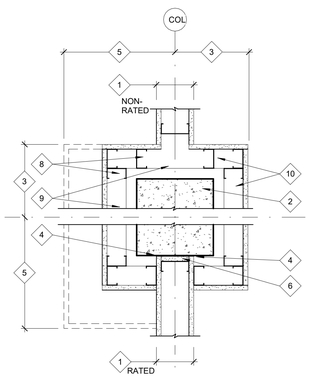
TYPICAL PARTITION DETAILS

Sheet #:

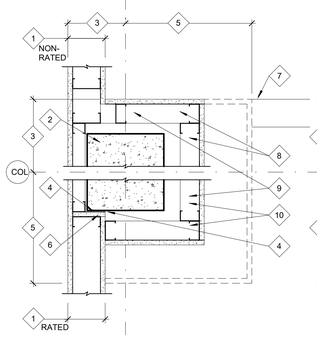
A0.12



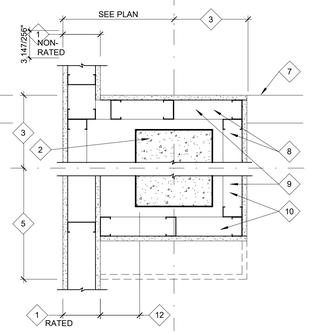
PLAN - TYP INTERIOR COLUMN FURRING



PLAN - PARTITION INTERSECTING COLUMN FURRING



PLAN - PARTITION AT COLUMN FURRING

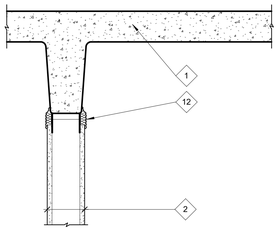


PLAN - PARTITION PASSING COLUMN FURRING

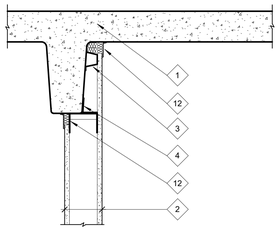
KEYED NOTES:

1. SCHEDULED PARTITION TYPE.
2. CONCRETE COLUMN.
3. REFER TO "PLAN - TYP INTERIOR COLUMN FURRING" FOR TYPICAL DIMENSION.
4. 1/8" GAP MAX, SEAL WITH FIRE RESISTIVE JOINT SYSTEM.
5. SEE PLAN FOR COLUMN FURRING DIMENSION WHERE OTHER THAN TYPICAL DIMENSION.
6. FIRE RATED AND/OR SMOKE BARRIER PARTITION INTERSECTING COLUMN FURRING. TERMINATE PARTITION AT FACE OF COLUMN. CONTINUE GYP BD AROUND END STUD (LAYERS AS REQUIRED BY SCHEDULED PARTITION)
7. INTERSECTING PARTITION WHERE OCCURS.
8. WHERE INTERSECTING PARTITION CONSTRUCTION EXTENDS TO BOTTOM OF STRUCTURE, EXTEND COLUMN FURRING PARTITION TO BOTTOM OF STRUCTURE TO MATCH INTERSECTING PARTITION CONSTRUCTION
9. WHERE INTERSECTING PARTITION INDICATES SAB, PROVIDE SAB WITHIN STUD FRAMING OF COLUMN FURRING.
10. TYP COLUMN FURRING - PARTITION TYPE A1T.
11. 1" MIN CLEARANCE BETWEEN STEEL STUDS AND FACE OF COLUMN.
12. DETAIL APPLICABLE WHERE FACE OF PARTITION PASSES CONCRETE COLUMN AT FIRE-RATED PARTITIONS. SCHEDULED PARTITION TYPE GYP BD CONTINUES PAST COLUMN FURRING.

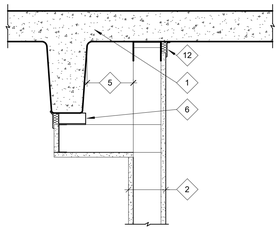
E1 PLAN - PTN TYP GYP BD COLUMN FURRING AT CONCRETE COLUMNS
1 1/2" = 1'-0"



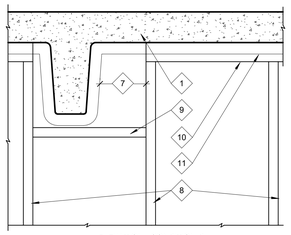
SECTION - CONDITION A



SECTION - CONDITION B



SECTION - CONDITION C

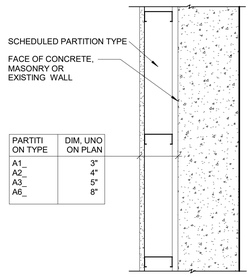


ELEVATION - CONDITION D

KEYED NOTES:

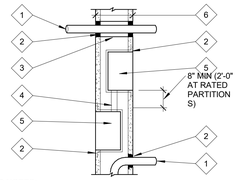
1. CONCRETE STRUCTURE
2. SCHEDULED PARTITION TYPE
3. FURRING CHANNEL
4. 12 GA ANGLE - 2x2x6 - AT 24" OC WHEN LESS THAN HALF OF THE RUNNER TRACK'S WIDTH IS IN CONTACT WITH THE STRUCTURE.
5. CONDITION - C IS APPLICABLE WHEN FACE OF STEEL STUD IS LESS THAN 1'-0" FROM CONCRETE STRUCTURE.
6. Z-FURRING CLIP AT 1'-0" OC MAX.
7. 6" MAX CANTILEVER OF UNSUPPORTED GYPSUM BOARD BEYOND STEEL STUD FRAMING.
8. SCHEDULED PARTITION TYPE STUD SPACING.
9. PROVIDE HEAD-OF-WALL JOINT SYSTEM AROUND FRAMING MEMBERS PENETRATING RATED PARTITION.
10. SLIP-TYPE HEAD JOINT TRACK.
11. EDGE OF GYPSUM BOARD SHOWN DASHED.
12. SEAL JOINT PER E5/A0.12.

E3 SECTION - PTN TYP GYP BD PARTITION CLOSURES AT CONCRETE STRUCTURES
1 1/2" = 1'-0"



PARTITI ON TYPE	DIM, UNO ON PLAN
A1_	3"
A2_	4"
A3_	5"
A6_	8"

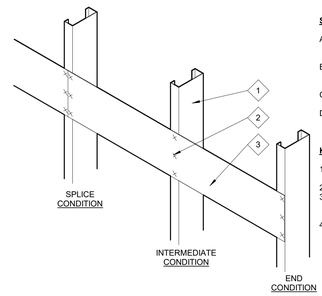
D5 SECTION - PTN TYP GYP BD FURRING AT WALLS
1 1/2" = 1'-0"



KEYED NOTES:

1. PENETRATING CONDUIT, PIPE, ETC.
2. CLOSE PERIMETER JOINT AROUND PENETRATING WORK. USE ACOUSTICAL SEALANT AT NON-RATED PARTITIONS. USE THRU-PENETRATION FIRE-STOP SYSTEM AT RATED PARTITIONS.
3. PIPE SLEEVE - CLOSE PERIMETER JOINT WITH GYP COMPOUND AT GYP BD PARTITIONS (MORTAR AT MASONRY PARTITIONS).
4. OFFSET "BACK-TO-BACK" BOXES - CONNECT WITH CONDUIT, PLUG CONDUIT WITH SOUND SEAL MASTIC AFTER WIRING IS PULLED THROUGH.
5. WALL BOX FOR WALL MOUNTED DEVICES - COAT OUTSIDE SURFACES WITH SOUND SEAL MASTIC TO CLOSE JOINTS AND GAPS, AND SEAL HOLES AT GYP BD PARTITIONS (GROUT SOLID AROUND DEVICE AT MASONRY).
6. SCHEDULED PARTITION TYPE.

E5 SECTION - PARTITION PENETRATIONS
1 1/2" = 1'-0"



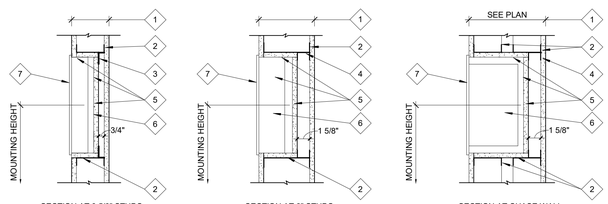
STEEL BACKING PLATE GENERAL NOTES:

A. TYPICAL STEEL BACKING PLATE ASSEMBLY FOR HANDRAILS, GRAB BARS, TOILET ACCESSORIES, CASEWORK AND OTHER ELEMENTS REQUIRING SUPPLEMENTAL SUPPORT.
B. COORDINATE STEEL BACKING PLATE LOCATIONS WITH MOUNTING HEIGHT AND ACCESSORY MANUFACTURER MOUNTING INSTRUCTIONS.
C. STEEL BACKING PLATE ASSEMBLY FOR LOADS UP TO 100 LBS/FT OR A 250 LBS POINT LOAD.
D. NOTCHING OR CUTTING OF STEEL BACKING PLATE IS NOT PERMITTED.

KEYED NOTES:

1. PROVIDE MIN 20 GA STEEL STUDS AT STEEL BACKING PLATE. DOUBLE STUDS AT END OF PARTITIONS.
2. 3 - #8 PAN HEAD SHEET METAL SCREWS.
3. MIN 6"x16 GA STEEL BACKING PLATE ACROSS A MINIMUM OF 3 STUDS AND TO THE NEXT STUD PAST THE ENDS OF THE SUPPORTED ELEMENT.
4. PARTITION STUD SPACING 16" OC MAX. REDUCE SCHEDULED PARTITION SPACING AS REQUIRED.

D6 ISOMETRIC - PTN TYP STEEL BACKING PLATE
1 1/2" = 1'-0"



SECTION AT 3 5/8" STUDS (PLAN SIMILAR)

SECTION AT 6" STUDS (PLAN SIMILAR)

SECTION AT CHASE WALL (PLAN SIMILAR)

KEYED NOTES:

1. SCHEDULED PARTITION.
2. STEEL RUNNER TRACK.
3. 3/4"x1 1/2"x16 GA CONTINUOUS ANGLE TOP AND BOTTOM OF RECESS.
4. 1 5/8" STEEL STUDS AND TRACK (16" OC MAX SPACING).
5. GYPSUM BOARD ON 5-SIDES OF OPENING RECESS - MATCH THE NUMBER OF LAYERS GYPSUM BOARD OF THE SCHEDULED PARTITION.
6. WHERE DEVICE WIDTH IS GREATER THAN TYP STUD SPACING, PROVIDE SUPPLEMENTAL FRAMING WITHIN 5-SIDED GYPSUM BOARD ASSEMBLY FOR DEVICE ANCHORAGE AND TO LIMIT GYPSUM BOARD CANTILEVER TO 6" MAX.
7. RECESSED DEVICE (MAXIMUM DEPTH INDICATED).

E6 SECTION - PTN TYP 5-SIDED GYP BD ASSEMBLY
1 1/2" = 1'-0"

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Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **2/19/2025**

Drawn By: **Author**

SHEET REVISIONS

#	Date / Description
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2	
3	
4	

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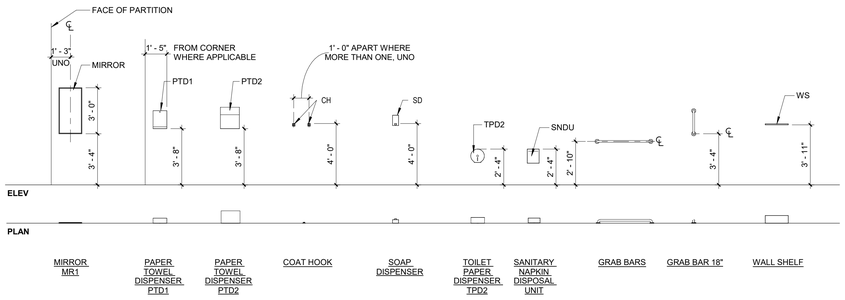
Sheet Title:

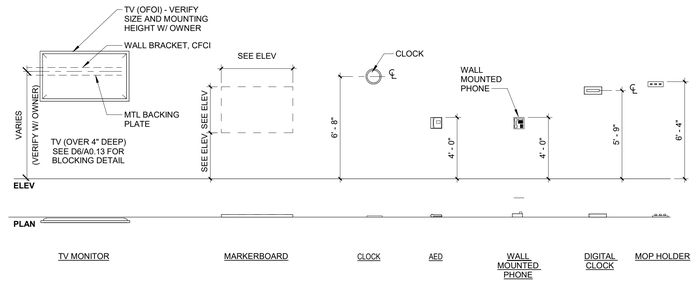
TYPICAL PARTITION DETAILS

Sheet #:

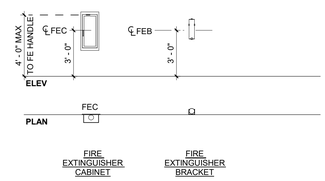
A0.13



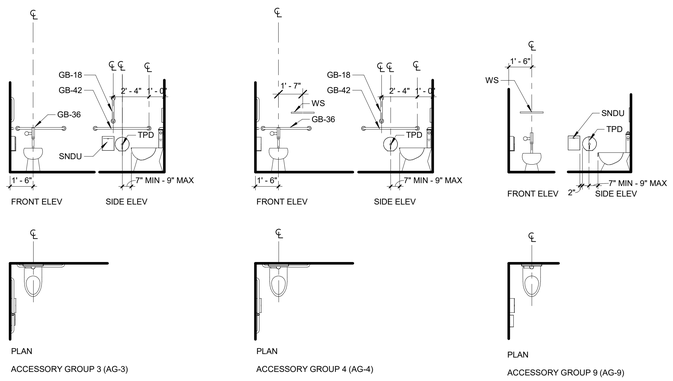
TOILET ACCESSORIES MOUNTING HEIGHTS
1/4" = 1'-0"

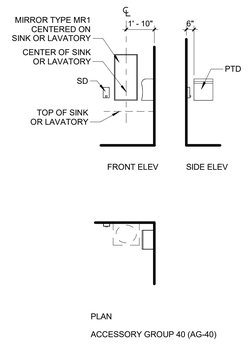


EQUIPMENT MOUNTING HEIGHTS
1/4" = 1'-0"

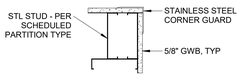


FIRE PROTECTION SPECIALTIES MOUNTING HEIGHTS
1/4" = 1'-0"





TOILET ACCESSORY GROUP MOUNTING LOCATIONS
1/4" = 1'-0"



E1 STAINLESS STEEL CORNER GUARD
1 1/2" = 1'-0"

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Sheet Title:
TYPICAL MOUNTING HEIGHTS AND DETAILS

Sheet #:
A0.20

SINKS INTEGRAL WITH COUNTERTOPS

TAG	MATERIAL	WIDTH X DEPTH X BOWL DEPTH	MODEL
IS-3		1' - 7 1/2" X 1' - 2 1/4" X 5"	

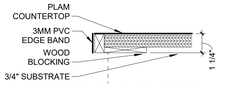
ADJ. OPEN SHELVING DESIGNATION LEGEND

60 12 36-84 - 4

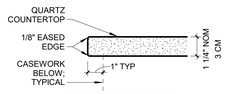
- **DESIGNATION** (SEE INTERIOR ELEVATIONS) — 60
- **WIDTH OF SHELVING** (IN INCHES) 20" - 96" — 12
- **DEPTH OF SHELVING** (IN INCHES) 8" - 24" IN 2" INCREMENTS — 36
- **SHELF STANDARD LENGTH** (IN INCHES) 24" - 96" IN 12" INCREMENTS — 84
- **HT. TO TOP OF SHELF STANDARD** (IN INCHES) — 4
- **NUMBER OF SHELVES** (SEE CASEWORK TYPE ELEVATIONS THIS SHEET)

ADJUSTABLE OPEN SHELVING NOTES

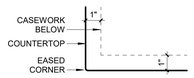
1. REFER TO ROOM FINISH SCHEDULE FOR ADJUSTABLE OPEN SHELVING FINISH DESIGNATIONS.
2. ADJUSTABLE OPEN SHELVING SHALL BE PLASTIC-LAMINATE-FACED, UNO. REFER TO FLOOR PLAN KEYED NOTES FOR LOCATIONS.
3. AT SIDE-BY-SIDE ADJUSTABLE OPEN SHELVING CONDITIONS, WIDTH OF SHELVING SHALL BE REDUCED 1/4" FOR A GAP BETWEEN ADJACENT UNITS.
4. AT "WALL-TO-WALL" ADJUSTABLE OPEN SHELVING CONDITIONS, WIDTH OF SHELVING SHALL BE THE OPEN SPACE MINUS 1".
5. AT ADJOINING CONSTRUCTION CONDITIONS, WIDTH OF SHELVING SHALL BE REDUCED 1/4" FOR A GAP.



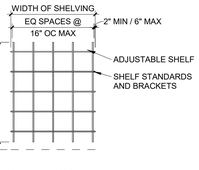
PLASTIC LAMINATE EDGE CONDITION



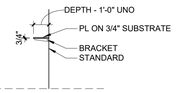
QUARTZ EDGE CONDITION



PLAN CONDITION AT OUTSIDE CORNER
FOR ALL COUNTERTOP MATERIALS



ELEVATION - ADJUSTABLE OPEN SHELVING
1/4"=1'-0"



SECTION - ADJUSTABLE OPEN SHELVING
1/4"=1'-0"

B1 SECTION - TYP CNTR TOP EDGES
3" = 1'-0"

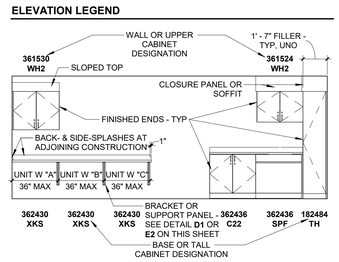
CASEWORK DESIGNATION LEGEND

36 24 34 B HL

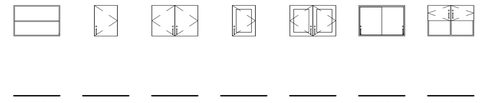
- **DESIGNATION** (SEE INTERIOR ELEVATIONS)
- **UNIT OR OPENING WIDTH** (IN INCHES) WIDTH OF WALL, TALL, UPPER AND BASE AND CABINETS WIDTH OF CLEAR OPENING AT XKS BLANK DIMENSIONS (--) TO BE VERIFIED IN FIELD — 36
- **UNIT OR OPENING DEPTH** (IN INCHES) OPENING DEPTH IS 1" LESS THAN COUNTERTOP DEPTH DEPTH OF TALL, WALL, BASE AND UPPER CABINETS — 24
- **UNIT OR OPENING HEIGHT** (IN INCHES) HEIGHT OF COUNTERTOP AT BASE CABINETS OR OPENINGS HEIGHT OF WALL CABINETS — 34
- **UNIT CATEGORY** (SEE CASEWORK ELEVATIONS - THIS SHEET) — B
- **UNIT SPECIFICATIONS** (SEE CASEWORK TYPE ELEVATIONS THIS SHEET) — HL

B = BASE CABINET
C = COMBINATION BASE CABINET
D = DRAWER BASE CABINET
S = SINK BASE CABINET
T = TALL CABINET
U = UPPER CABINET
W = WALL CABINET
X = UNDERCOUNTER OPENING

ELEVATION LEGEND

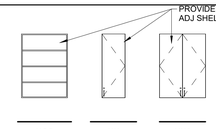


UNIT WIDTH "**A**" = FACE OF ADJ WALL OR CABINET TO CENTERLINE OF BRACKET.
UNIT WIDTH "**B**" = CENTERLINE OF BRACKET TO CENTERLINE OF BRACKET.
UNIT WIDTH "**C**" = CENTERLINE OF BRACKET TO EDGE OF BRACKET.



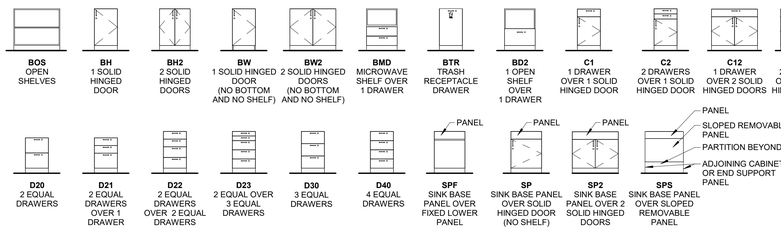
WOS OPEN SHELVES | **WH** 1 SOLID HINGED DOOR | **WH2** 2 SOLID HINGED DOORS | **WG** 1 FRAMED GLASS HINGED DOOR | **WG2** 2 FRAMED GLASS HINGED DOORS | **WSS** 2 SOLID SLIDING DOORS | **WS2** 2 SOLID HINGED DOORS OVER OPEN SHELF

ELEVATION - WALL CABINETS (PROVIDE 1 ADJUSTABLE SHELF AT UNITS WITH A HEIGHT LESS THAN 24" AND 2 ADJUSTABLE SHELVES UNITS FOR UNITS WITH A HEIGHT 24" OR GREATER)
1/4"=1'-0"



UOS OPEN SHELVES | **UH** 1 SOLID HINGED DOOR | **UH2** 2 SOLID HINGED DOORS

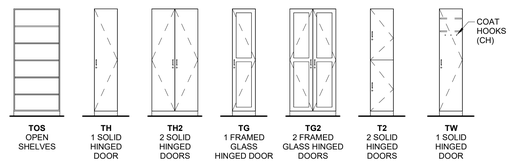
ELEVATION - UPPER CABINETS
1/4"=1'-0"



BOS OPEN SHELVES | **BH** 1 SOLID HINGED DOOR | **BH2** 2 SOLID HINGED DOORS | **BW** 1 SOLID HINGED DOOR (NO BOTTOM AND NO SHELF) | **BW2** 2 SOLID HINGED DOORS (NO BOTTOM AND NO SHELF) | **BMD** MICROWAVE SHELF OVER 1 DRAWER | **BTR** TRASH RECEPTACLE DRAWER | **BD2** 1 OPEN SHELF OVER 1 DRAWER | **C1** 1 DRAWER OVER 1 SOLID HINGED DOOR | **C2** 2 DRAWERS OVER 1 SOLID HINGED DOOR | **C12** 1 DRAWER OVER 2 SOLID HINGED DOORS | **C22** 2 DRAWERS OVER 2 SOLID HINGED DOORS

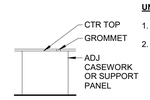
D20 2 EQUAL DRAWERS | **D21** 2 EQUAL DRAWERS OVER 1 DRAWER | **D22** 2 EQUAL DRAWERS OVER 2 EQUAL DRAWERS | **D23** 2 EQUAL OVER 3 EQUAL DRAWERS | **D30** 3 EQUAL DRAWERS | **D40** 4 EQUAL DRAWERS | **SPF** SINK BASE PANEL OVER FIXED LOWER PANEL | **SP** SINK BASE PANEL OVER SOLID HINGED DOOR (NO SHELF) | **SP2** SINK BASE PANEL OVER 2 SOLID HINGED DOORS | **SPS** SINK BASE PANEL OVER SLOPED REMOVABLE PANEL

ELEVATION - BASE CABINETS (PROVIDE 1 ADJUSTABLE SHELF AT CABINETS, UNO)
1/4"=1'-0"



TOS OPEN SHELVES | **TH** 1 SOLID HINGED DOOR | **TH2** 2 SOLID HINGED DOORS | **TG** 1 FRAMED GLASS HINGED DOOR | **TG2** 2 FRAMED GLASS HINGED DOORS | **T2** 2 SOLID HINGED DOORS | **TW** 1 SOLID HINGED DOOR

ELEVATION - TALL CABINETS (PROVIDE 1 FIXED SHELF AT CENTER AND 4 ADJUSTABLE SHELVES, UNO)
1/4"=1'-0"



XKS (W=30,36,42,48) KNEE SPACE

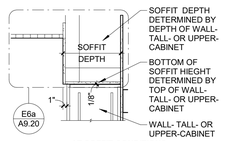
UNDERCOUNTER OPENING NOTES:

1. PROVIDE END SUPPORT PANEL AT END OF COUNTER TOP.
2. PROVIDE A GROMMET AT EACH UNDERCOUNTER OPENING: WHERE TWO OR MORE UNDERCOUNTER OPENINGS ARE ADJACENT, A GROMMET SHALL BE PROVIDED AT EACH UNDERCOUNTER OPENING OR EVERY 3'-0" (AS RECOMMENDED BY MANUFACTURER).

ELEVATION - UNDERCOUNTER OPENING
1/4"=1'-0"

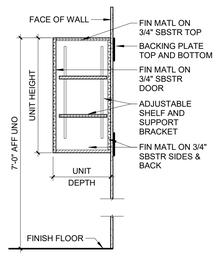
GENERAL CASEWORK NOTES

1. NOT ALL CASEWORK TYPES ON THIS SHEET ARE USED. REFER TO INTERIOR ELEVATIONS FOR LOCATIONS AND TYPES REQUIRED. REFER TO FLOOR PLANS AND INTERIOR ELEVATIONS FOR OTHER CUSTOM CASEWORK ASSEMBLIES NOT IDENTIFIED BY CASEWORK TYPE DESIGNATIONS.
2. CASEWORK ILLUSTRATED ON THIS SHEET MAY BE HANDED (LEFT SWINGING DOOR / RIGHT SWINGING DOOR). REFER TO THE INTERIOR ELEVATIONS FOR THE HANDING OF CASEWORK.
3. REFER TO ROOM FINISH SCHEDULE FOR CASEWORK AND COUNTERTOP FINISH DESIGNATIONS.
4. CASEWORK SHALL BE PLASTIC LAMINATED, UNO. REFER TO FLOOR PLAN AND INTERIOR ELEVATIONS FOR LOCATIONS AND QUANTITIES OF PLASTIC LAMINATE CASEWORK.
5. COUNTERTOPS SHALL BE QUARTZ OR PLASTIC LAMINATE, UNO. |REFER TO INTERIOR ELEVATIONS FOR LOCATIONS OF COUNTERTOP MATERIALS
6. OVERALL LENGTH OF COUNTERTOPS SHALL BE DETERMINED BY CASEWORK TYPE SIZES PLUS FILLER(S), AND/OR DIMENSIONS INDICATED. COUNTERTOPS SHALL OVERHANG 1" AT ENDS OF CABINET RUNS, UNO.
7. PROVIDE MINIMUM 1" FILLER BETWEEN CASEWORK UNIT AND ADJOINING CONSTRUCTION. PROVIDE FILLER PANELS BETWEEN BACKS OF CABINETS AND THE ADJOINING CONSTRUCTION, AND AT EXPOSED ENDS WHERE CABINETS ARE SET BACK-TO-BACK.
8. AT "WALL-TO-WALL" CASEWORK ASSEMBLIES WHERE UNDERCOUNTER OPENINGS OCCUR, DIMENSIONS FOR OPEN SPACES SHALL BE DETERMINED IN THE FIELD. IF MORE THAN ONE OPEN SPACE IS INDICATED, THE AVAILABLE SPACE SHALL BE EVENLY DISTRIBUTED, UNO.
9. DRAWER UNITS IDENTIFIED AS "FILE" SHALL BE SIZED TO ACCOMMODATE HANGING FILE FOLDERS.
10. PROVIDE FULL THICKNESS (1-1/2") COUNTERTOP AT UNDERCOUNTER OPENINGS FOR ALL COUNTERTOPS, UNO.
11. COORDINATE UTILITY ROUGH-IN PROVISIONS FOR EQUIPMENT TO BE LOCATED INSIDE OF CABINETS. REFER TO MECHANICAL/ELECTRICAL DOCUMENTS FOR DEVICES TO BE MOUNTED IN CABINETS.
12. REFER TO FLOOR PLAN KEYED NOTES AND ELEVATIONS FOR GROMMET LOCATIONS AT DESKTOP SURFACES. COORDINATE WITH ELECTRICAL DRAWINGS.

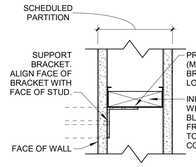


AT SOFFIT CONDITIONS
PROVIDE AT LOCATIONS INDICATED

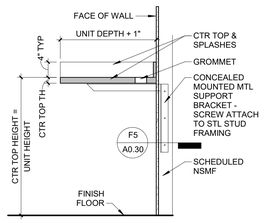
E6 SECTION - TYP CABINET TOP TERMINATIONS
3/4" = 1'-0"



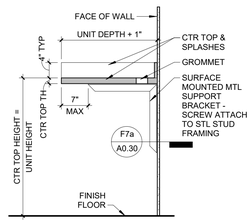
E7a SECTION - TYP WALL CABINET
3/4" = 1'-0"



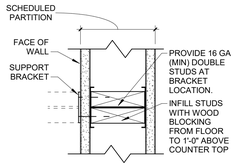
F5 DETAIL - CONCEALED MTD BRACKET
3" = 1'-0"



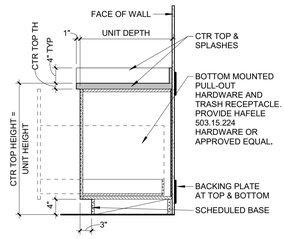
F6 SECTION - CNT BRACKET (CONCEALED)
3/4" = 1'-0"



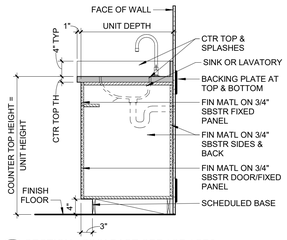
F7 SECTION - CNT BRACKET (SURFACE)
3/4" = 1'-0"



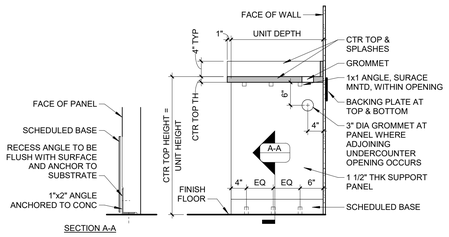
F7a DETAIL - SURFACE MTD BRACKET
3" = 1'-0"



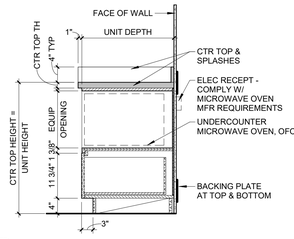
G3 SECTION - BASE CABINET BTR
3/4" = 1'-0"



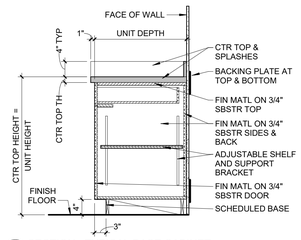
G4 SECTION - SINK BASE SPF / SP / SP2
3/4" = 1'-0"



G5a SECTION - TYPICAL END PANEL / INTERMEDIATE PANEL
3/4" = 1'-0"



G6 SECTION - BASE CABINET BD2
3/4" = 1'-0"



G7 SECTION - TYPICAL BASE CABINET
3/4" = 1'-0"

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CERTIFICATE OF AUTHORITY - E2017008530

Project Title:
BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069
Other Project #: **23025.000**
Issue Date: **2/19/2025**
Drawn By: **Author**

SHEET REVISIONS

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Sheet Title:
TYPICAL CASEWORK ELEVATIONS

Sheet #:
A0.30

INTERNATIONAL BUILDING CODE

CHAPTER 3 - USE AND OCCUPANCY:

OCCUPANCY CLASSIFICATION(S):
A-3 = ASSEMBLY
B = BUSINESS
S-1 = STORAGE
S-2 = STORAGE

CHAPTER 6 - TYPES OF CONSTRUCTION:

CONSTRUCTION TYPE (TABLE 601): IIB UNPROTECTED, NON-COMBUSTIBLE (NO CHANGE)

PRIMARY FRAME	0 HOUR
BEARING WALLS - EXTERIOR	0 HOUR
BEARING WALLS - INTERIOR	0 HOUR
NON BEARING WALLS AND PARTITIONS - EXTERIOR (FROM TABLE 602)	
FIRE SEPARATION DISTANCE:	
LESS THAN 5 FT	1 HOUR
BETWEEN 5 FEET AND LESS THAN 10 FEET	1 HOUR
BETWEEN 10 FEET AND LESS THAN 30 FEET	1 HOUR
GREATER THAN 30 FEET	0 HOUR
NON BEARING WALLS AND PARTITIONS - INTERIOR	0 HOUR
FLOOR CONSTRUCTION AND SECONDARY MEMBERS	0 HOUR
ROOF CONSTRUCTION AND SECONDARY MEMBERS	1 HOUR

CHAPTER 7 - FIRE AND SMOKE PROTECTION:

SHAFT ENCLOSURES (713.4):

3 STORIES OR LESS	1 HOUR
4 STORIES OR MORE	2 HOURS

CHAPTER 10 - MEANS OF EGRESS:

COMMON PATH OF EGRESS TRAVEL (TABLE 1014.3):
75 FEET FOR USE GROUP(S) A, B, S IN NON-SPRINKLERED BUILDING

SPACES WITH ONE EXIT (TABLE 1015.1):
MAXIMUM OCCUPANT LOAD OF 49 FOR USE GROUP(S) A, B, E, M
MAXIMUM OCCUPANT LOAD OF 29 FOR USE GROUP S

SPACES WITH THREE OR MORE EXITS (1015.1.1.1):
THREE EXITS REQUIRED FOR SPACES WITH AN OCCUPANT LOAD OF 501 TO 1,000.

EXIT ACCESS TRAVEL DISTANCE (TABLE 1016.2):
200 FEET

CORRIDOR FIRE-RESISTANCE RATING (TABLE 1018.1):
1 HOUR FOR USE GROUP(S) A, B, E, F, M, S, U

CORRIDOR CLEAR WIDTH (TABLE 1018.2):	
ANY FACILITIES NOT LISTED BELOW	44 INCHES
ACCESS TO AND UTILIZATION OF MECHANICAL, PLUMBING OR ELECTRICAL SYSTEMS OR EQUIPMENT	24 INCHES
WITH A REQUIRED OCCUPANCY CAPACITY LESS THAN 50	36 INCHES

DEAD ENDS (1018.4):
20 FEET

DEAD ENDS (IEBC 805.6):
35 FEET

CH 30 - ELEVATORS & CONVEYING SYSTEMS:

ELEVATOR LOBBIES (3006):
NOT REQUIRED - SECTION 713.14.1 EXCEPTION NO 6

INTERNATIONAL EXISTING BUILDING CODE

CHAPTER 3 - COMPLIANCE METHOD

COMPLIANCE METHOD:
WORK AREA (301.3.2)

CHAPTER 6 - CLASSIFICATION OF WORK

CLASSIFICATION:
ALTERATION LEVEL 2 (603)

CHAPTER 8 - ALTERATIONS - LEVEL 2

VERTICAL OPENINGS (803.2):
EXISTING VERTICAL OPENINGS 1 HOUR

CHAPTER 10 - CHANGE IN OCCUPANCY CLASSIFICATION

PROPOSED CHANGES IN OCCUPANCY CLASSIFICATION DO NOT RESULT IN A CHANGE TO A HIGHER LEVEL OF RELATIVE HAZARD.

CODE INFORMATION

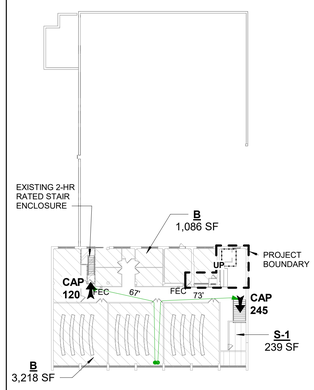
GENERAL NOTES:
1. REFER TO ENGINEERING DRAWINGS FOR FIRE PROTECTION SYSTEMS, FIRE ALARM SYSTEMS, EXIT SIGNS AND EXIT LIGHTS, AND MEANS OF EGRESS LIGHTING.

LIST OF APPLICABLE CODES:
WHERE MORE THAN ONE CODE APPLIES, MOST STRINGENT REQUIREMENTS APPLY.

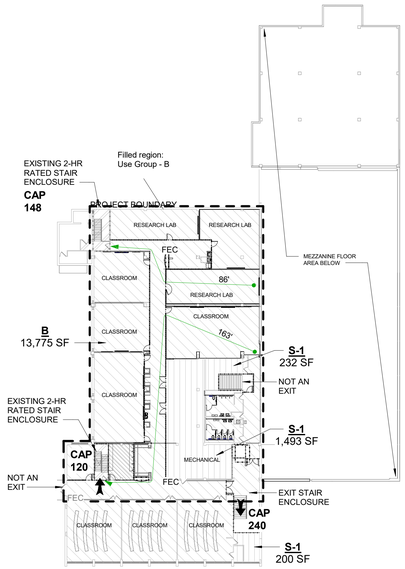
BUILDING:	2012 INTERNATIONAL BUILDING CODE
MECHANICAL:	2012 INTERNATIONAL MECHANICAL CODE
FUEL GAS:	2012 INTERNATIONAL FUEL GAS CODE
PLUMBING:	2012 INTERNATIONAL PLUMBING CODE
ELECTRICAL:	2011 NATIONAL ELECTRICAL CODE
FIRE PROTECTION:	2012 INTERNATIONAL FIRE PROTECTION CODE

LEGEND

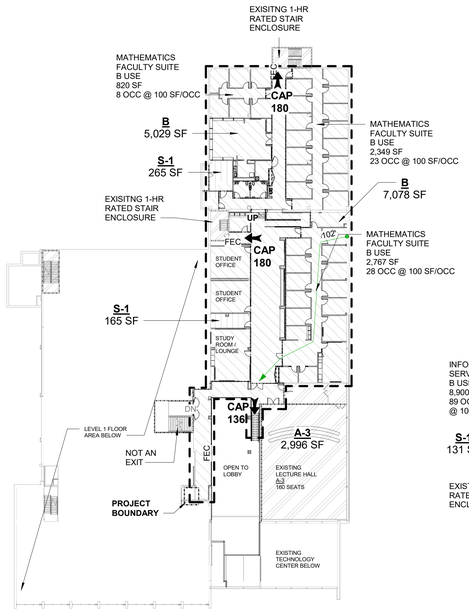
2 HOUR FIRE RATED	
EXISTING 2 HOUR FIRE RATED	
2 HOUR FIRE RATED AND SMOKE BARRIER	
EXISTING 2 HOUR FIRE RATED AND EXISTING SMOKE BARRIER	
1 HOUR FIRE RATED	
EXISTING 1 HOUR FIRE RATED	
1 HOUR FIRE RATED AND SMOKE BARRIER	
EXISTING 1 HOUR FIRE RATED AND SMOKE BARRIER	
SMOKE PARTITION (LIMIT THE TRANSFER OF SMOKE)	
HEx	HORIZONTAL EXIT
SC X-X	SMOKE COMPARTMENT IDENTIFICATION
SC	SMOKE COMPARTMENT LOCATOR
CAP XXX	EXIT CAPACITY
	EXIT LOCATOR
	EXIT ENCLOSURE
	EXISTING EXIT ENCLOSURE



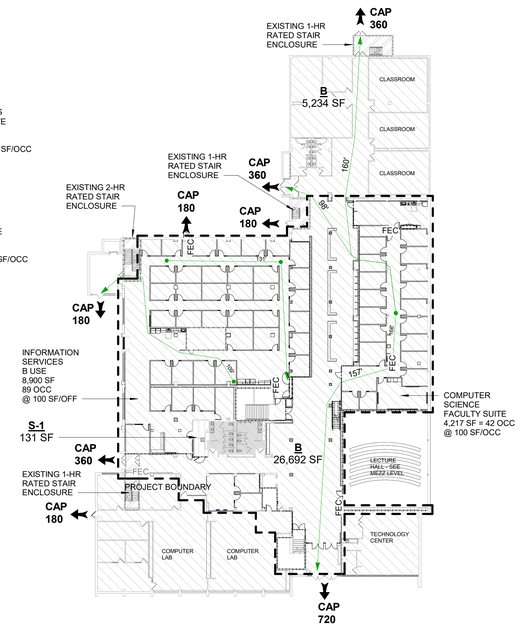
E1 LEVEL 3 LIFE SAFETY PLAN
1/32" = 1'-0"



E2 LEVEL 2 LIFE SAFETY PLAN
1/32" = 1'-0"



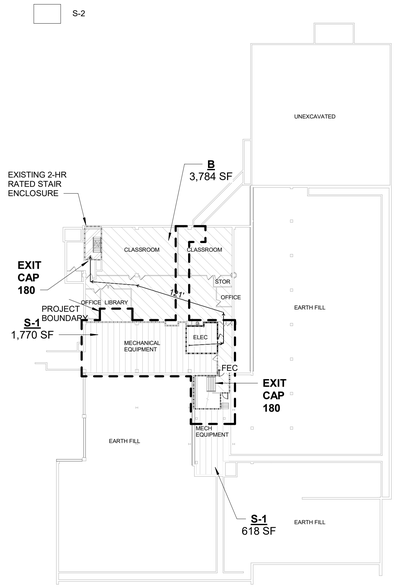
E3 MEZZANINE LEVEL LIFE SAFETY PLAN
1/32" = 1'-0"



E5 LEVEL 1 LIFE SAFETY PLAN
1/32" = 1'-0"

OCCUPANCY

A-3
B
S-1
S-2



E6 BASEMENT LEVEL LIFE SAFETY PLAN
1/32" = 1'-0"

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Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **2/19/2025**

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Sheet Title:

LIFE SAFETY PLANS & BLDG CODE DATA

Sheet #:

A1.00

DEMOLITION LEGEND:

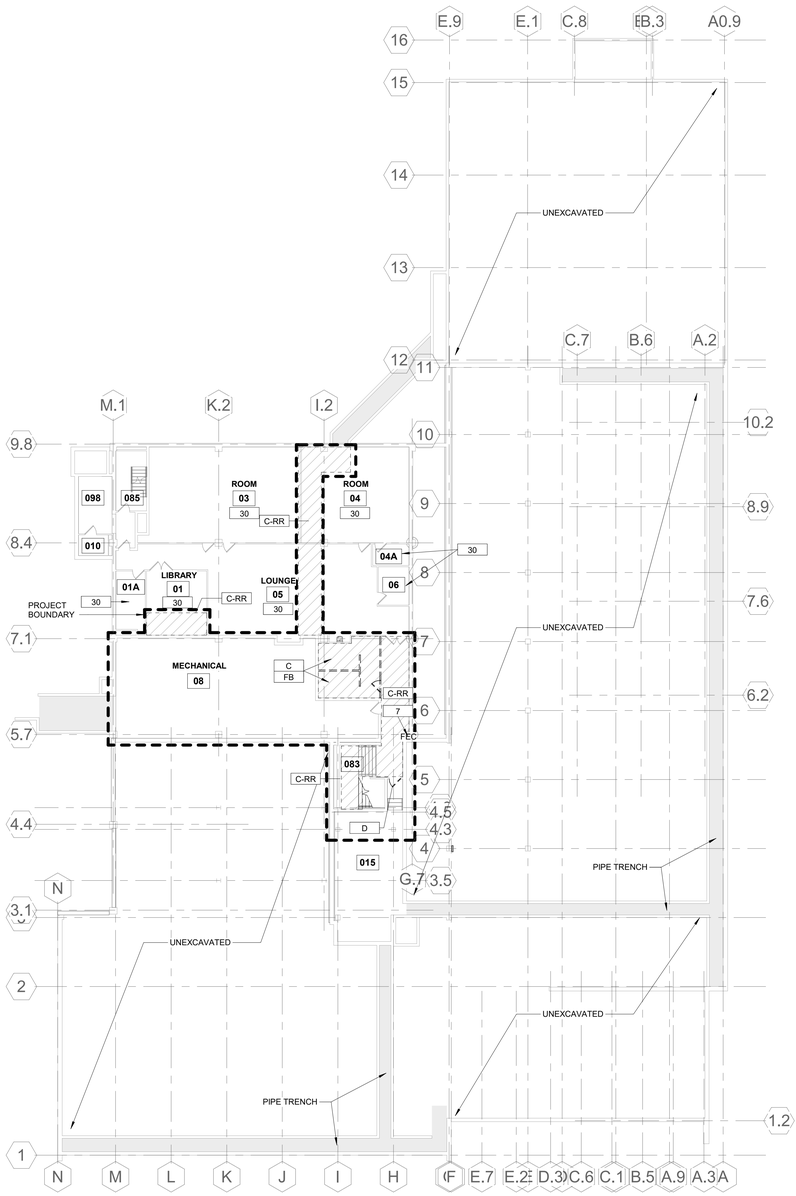
- EXISTING CONSTRUCTION TO REMAIN.
- REMOVE EXISTING PARTITION IN ITS ENTIRETY.
- REMOVE PORTION OF EXISTING PARTITION AS REQUIRED BY NEW WORK. COORDINATE EXTENT OF REMOVAL WITH NEW WORK.
- REMOVED EXISTING MILLWORK (BASE CABINETS, COUNTERTOPS, WALL CABINETS, AND / OR TALL CABINETS).
- REMOVE EXISTING PLUMBING FIXTURE. REFER TO PLUMBING FOR MORE INFORMATION.
- REMOVE EXISTING DOOR AND DOOR FRAME (AND ASSOCIATED SIDELIGHT, WHERE OCCURS).
- REMOVE EXISTING BORROW LITE.
- REMOVE EXISTING PARTITIONS, FLOOR FINISHES, DOORS, DOOR FRAMES, CASEWORK, COUNTERTOPS AND FINISH CEILING IN AREA INDICATED BY HATCH PATTERN.

GENERAL DEMOLITION NOTES:

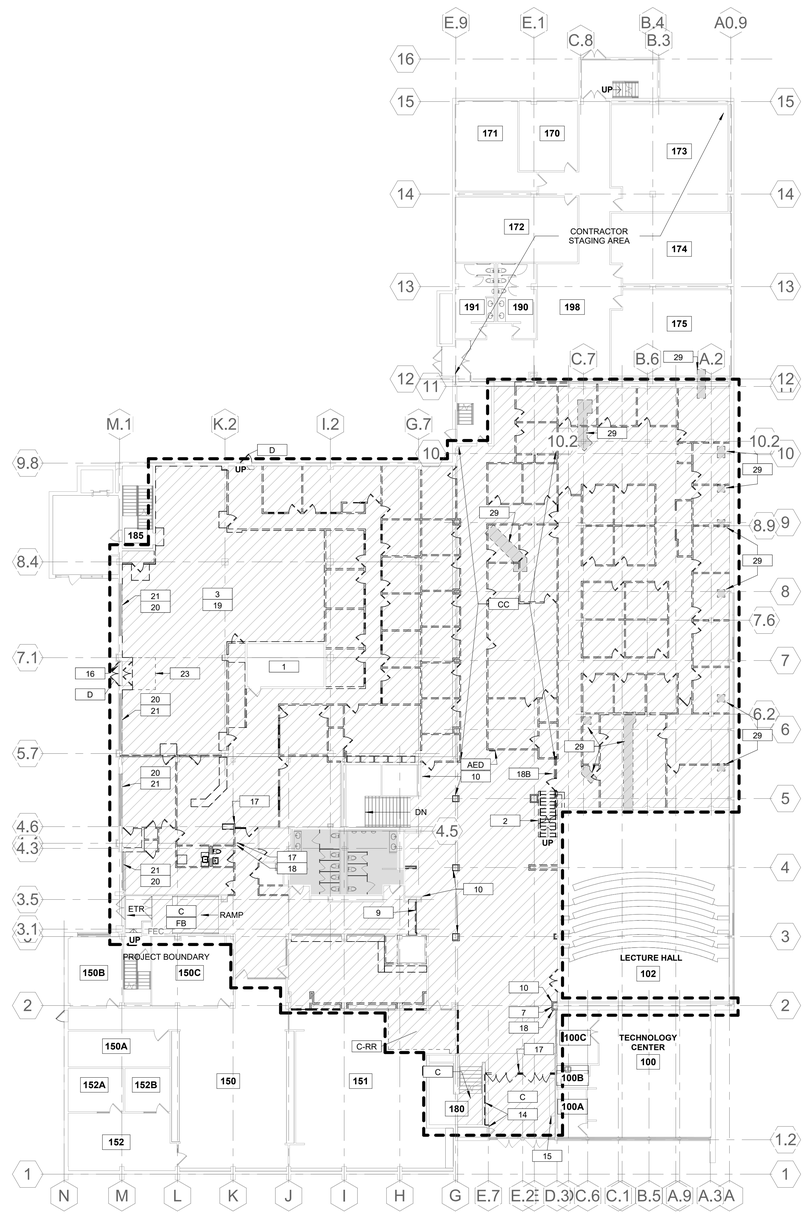
A. DEMOLITION WORK SHALL BE PERFORMED IN MULTIPLE PHASES OF WORK AS DETERMINED BY THE OWNER AND CONTRACTOR. COORDINATION OF THE DEMOLITION PHASING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL VERIFY THE EXTENT OF PHASING REQUIRED FOR THE DEMOLITION WORK PRIOR TO SUBMITTING A BID.
B. ROOMS OUTSIDE OF PROJECT BOUNDARY WILL REMAIN OWNER-OCCUPIED EXCEPT WHERE NOTED OTHERWISE. CONTRACTOR TO COORDINATE WORK ACTIVITIES TO MAINTAIN ACCESS.
C. THE OWNER RESERVES THE RIGHT TO CEASE ANY OR ALL DEMOLITION WORK AT ANY TIME WHEN SUCH WORK INTERFERES WITH THE OPERATION OF THE OWNER'S FACILITY, AND/OR CREATES A HEALTH OR SAFETY RISK TO VISITORS OR THE OWNER'S EMPLOYEES.
D. CONTRACTOR SHALL NOT COMMENCE ANY DEMOLITION WORK INVOLVING EXISTING MECHANICAL, PLUMBING, ELECTRICAL, TECHNOLOGY, FIRE PROTECTION OR OTHER UTILITY SYSTEMS WITHOUT THE APPROVAL OF THE OWNER.
E. PRIOR TO THE PERFORMANCE OF DEMOLITION WORK BY THE CONTRACTOR, THE OWNER SHALL REMOVE AND STORE ALL ITEMS OF VALUE TO THE OWNER FOR RE-USE. THE CONTRACTOR SHALL VERIFY WITH THE OWNER THAT THE OWNER'S WORK HAS BEEN COMPLETED BEFORE THE CONTRACTOR PROCEEDS WITH THE DEMOLITION WORK
F. THE LOCATION OF TEMPORARY ENCLOSURE PARTITIONS DURING AND AFTER DEMOLITION SHALL BE DETERMINED BY THE OWNER AND CONTRACTOR.
G. DEMOLISH AND SAFELY DISPOSE OF ITEMS INDICATED WITH DASHED LINES.
H. CONTRACTOR SHALL FIELD VERIFY CONDITIONS PRIOR TO DEMOLITION WORK AND INFORM OWNER AND ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK.
I. CONTRACTOR SHALL PATCH SURFACES AFFECTED BY DEMOLITION WITH NEW FINISH MATERIAL TO MATCH EXISTING ADJACENT SURFACES. PRIOR TO SUBMITTING A BID, CONTRACTOR SHALL SURVEY THE EXISTING CONDITIONS TO DETERMINE THE EXTENT OF WORK REQUIRED.
J. EXISTING ITEMS TO REMAIN THAT ARE AFFECTED BY THE CONTRACTOR'S DEMOLITION WORK SHALL BE PROTECTED IN PLACE FROM DAMAGE OR, AT THE CONTRACTOR'S OPTION, REMOVED AND REINSTALLED UPON COMPLETION OF THE DEMOLITION WORK.
K. CONTRACTOR SHALL SALVAGE AND SAFELY STORE IN GOOD REUSABLE CONDITION THOSE ITEMS IDENTIFIED IN SPECIFICATION SECTION 024119, IF ANY, OR AS DIRECTED BY OWNER.
L. PROTECT ADJACENT STRUCTURES AND SURFACES TO REMAIN.
M. PROTECT ADJACENT SPACES NOT PART OF DEMOLITION WORK.
N. ALL CORE-DRILLING AND SAW CUTTING IN THE EXISTING BUILDING SHALL PENETRATE IN THE PAN SPACE AND NOT THRU THE JOIST, BEAMS OR SUPPORT RIBS. PILOT HOLES SHALL BE DRILLED FROM THE UNDER SIDE OF THE SLAB TO LOCATE PENETRATIONS IN THE PAN SPACE.
O. REFER TO MECHANICAL, PLUMBING, ELECTRICAL, TECHNOLOGY AND FIRE PROTECTION CONTRACT DOCUMENTS FOR ADDITIONAL DEMOLITION REQUIREMENTS.

KEYED DEMOLITION NOTES

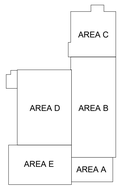
1	ROOM TO REMAIN OPERATIONAL AT ALL TIMES DURING CONSTRUCTION ACTIVITIES. COORDINATE WORK ACTIVITIES TO MAINTAIN OWNER ACCESS TO SPACE.
2	DEMOLISH EXISTING STAIR STRUCTURE, INCLUDING STRINGERS AND HANDRAILS
3	REMOVE EXISTING RAISED FLOOR SYSTEM, INCLUDING FLOOR FINISHES BELOW
7	REMOVE AND REINSTALL: REMOVE EXISTING FIRE EXTINGUISHER CABINET AND REINSTALL WHERE INDICATED
9	REMOVE EXISTING OVERHEAD DOOR, FRAME AND SUPPORTING STRUCTURE
10	REMOVE WOOD CHAIR RAIL, MAP RAIL, OR CORNICE
14	REMOVE EXISTING GLAZING ASSEMBLY, INCLUDING FRAMING, ABOVE EXISTING STONE WALL
15	EXISTING GRANITE CLAD DISPLAY CASE TO REMAIN
16	EXISTING SECURITY CAMERA TO BE RELOCATED BY OWNER
17	REMOVE AND SALVAGE: ADA PUSH BUTTON AND AUTO OPERATOR
18	REMOVE AND REINSTALL: REMOVE EXISTING CARD READER AND REINSTALL WHERE INDICATED
18B	REMOVE AND RETURN: REMOVE EXISTING CARD READER AND RETURN TO OWNER
19	REMOVE EXISTING WALL PANELS THROUGHOUT ROOM, INCLUDING ADHESIVES AND MECHANICAL FASTENERS. PATCH EXISTING WALLS SCHEDULED TO REMAIN.
20	REMOVE WINDOW ASSEMBLY
21	REMOVE EXISTING WINDOW STOOL
23	DEMO EXISTING RAMP AND BUILT-UP CONCRETE DOWN TO EXISTING LEVEL 1 FLOOR SLAB.
29	SAWCUT FLOOR SLAB AS REQUIRED FOR BELOW-SLAB WORK. SEE PLUMBING.
30	ALTERNATE NO 4: REMOVE RESILIENT FLOORING AND WALL BASE.
AED	REMOVE EMERGENCY DEFIBRILLATOR CABINET AND REINSTALL WHERE INDICATED
C	REMOVE EXISTING FINISH CEILING.
C-RR	REMOVE AND REINSTALL: REMOVE EXISTING FINISH CEILING AS REQUIRED FOR INSTALLATION OF NEW WORK. UPON COMPLETION OF NEW WORK REINSTALL FINISH CEILING.
CC	REMOVE EXISTING CEILING ABOVE FINISH CEILING - FIELD VERIFY EXTENTS
D	REMOVE EXISTING DOOR, DOOR FRAME, AND DOOR HARDWARE
FB	REMOVE EXISTING FINISH FLOOR AND WALL BASE



1 BASEMENT DEMOLITION PLAN
1/16" = 1'-0"



E1 LEVEL 1 DEMOLITION PLAN
1/16" = 1'-0"



KEY PLAN
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Sheet Title:
DEMOLITION PLANS - BASEMENT & LEVEL 1

Sheet #:
A1.11

DEMOLITION LEGEND:

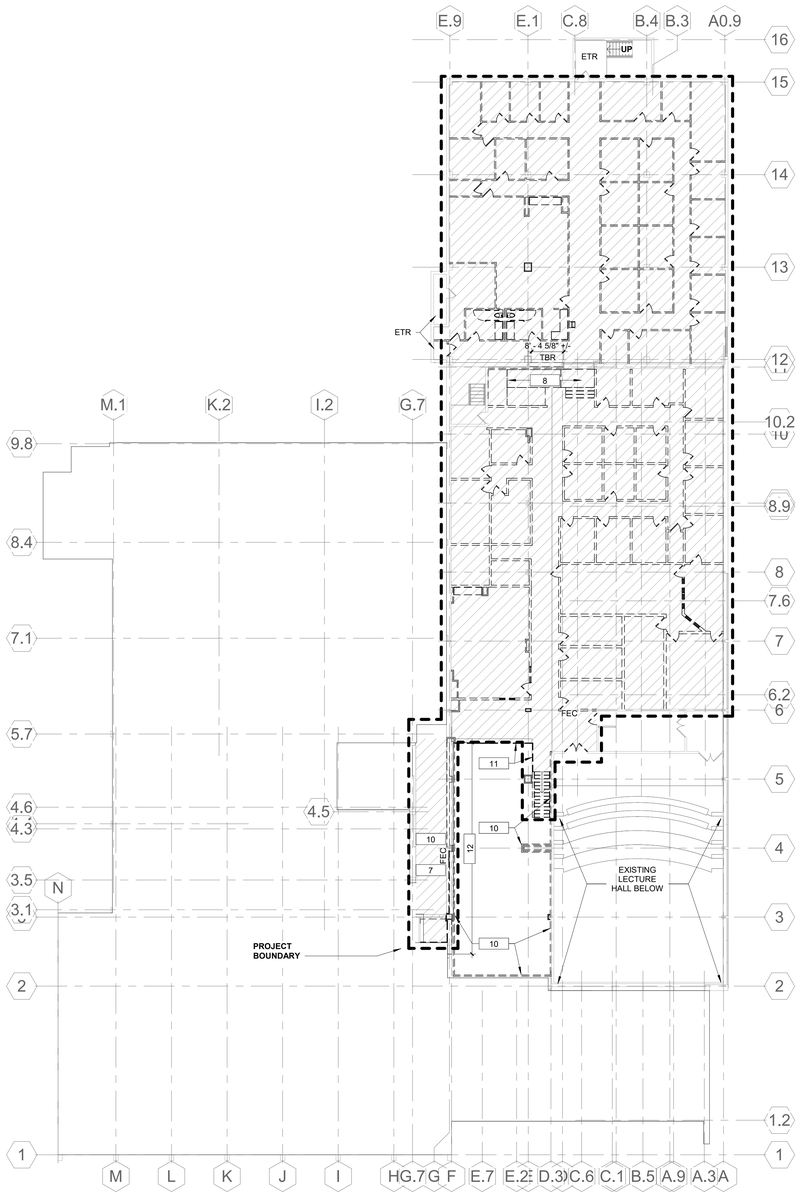
- EXISTING CONSTRUCTION TO REMAIN.
- REMOVE EXISTING PARTITION IN ITS ENTIRETY.
- REMOVE PORTION OF EXISTING PARTITION AS REQUIRED BY NEW WORK. COORDINATE EXTENT OF REMOVAL WITH NEW WORK.
- REMOVED EXISTING MILLWORK (BASE CABINETS, COUNTERTOPS, WALL CABINETS, AND / OR TALL CABINETS).
- REMOVE EXISTING PLUMBING FIXTURE. REFER TO PLUMBING FOR MORE INFORMATION.
- REMOVE EXISTING DOOR AND DOOR FRAME (AND ASSOCIATED SIDELIGHT, WHERE OCCURS).
- REMOVE EXISTING BORROW LITE.
- REMOVE EXISTING PARTITIONS, FLOOR FINISHES, DOORS, DOOR FRAMES, CASEWORK, COUNTERTOPS AND FINISH CEILING IN AREA INDICATED BY HATCH PATTERN.

GENERAL DEMOLITION NOTES:

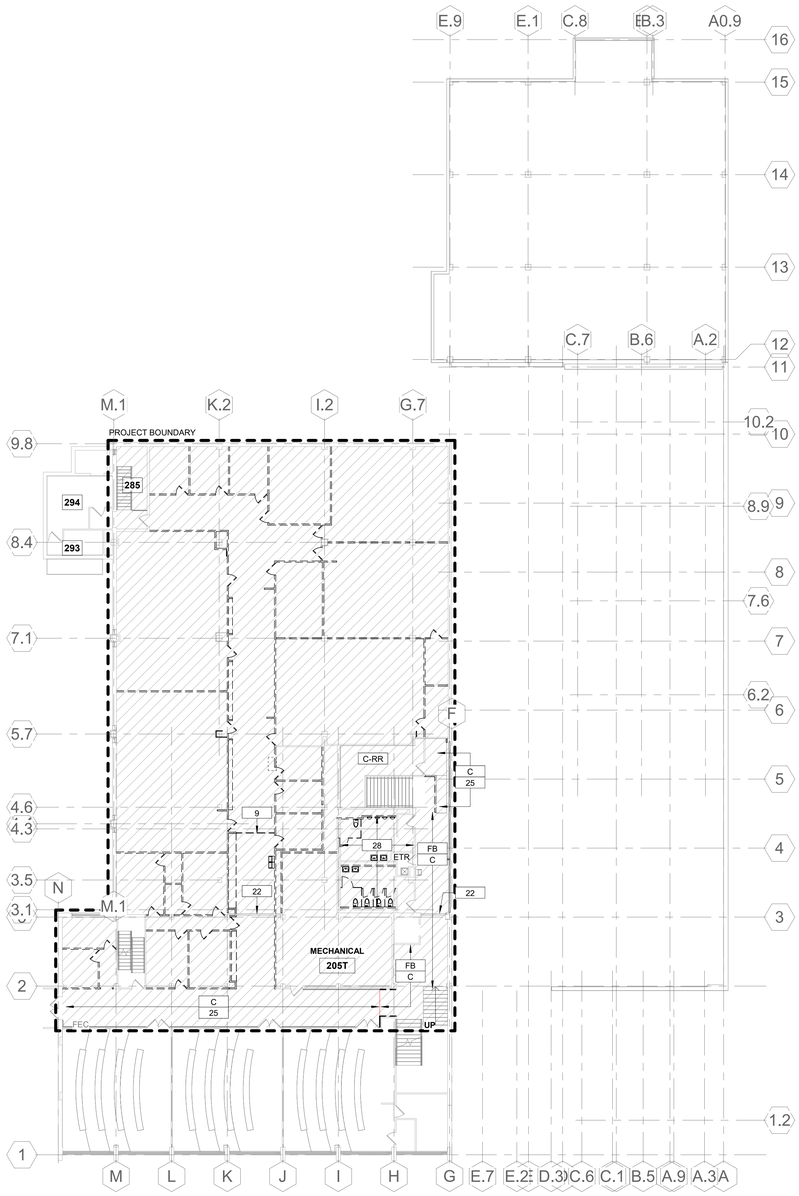
A. DEMOLITION WORK SHALL BE PERFORMED IN MULTIPLE PHASES OF WORK AS DETERMINED BY THE OWNER AND CONTRACTOR. COORDINATION OF THE DEMOLITION PHASING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL VERIFY THE EXTENT OF PHASING REQUIRED FOR THE DEMOLITION WORK PRIOR TO SUBMITTING A BID.
B. ROOMS OUTSIDE OF PROJECT BOUNDARY WILL REMAIN OWNER-OCCUPIED EXCEPT WHERE NOTED OTHERWISE. CONTRACTOR TO COORDINATE WORK ACTIVITIES TO MAINTAIN ACCESS.
C. THE OWNER RESERVES THE RIGHT TO CEASE ANY OR ALL DEMOLITION WORK AT ANY TIME WHEN SUCH WORK INTERFERES WITH THE OPERATION OF THE OWNER'S FACILITY, AND/OR CREATES A HEALTH OR SAFETY RISK TO VISITORS OR THE OWNER'S EMPLOYEES.
D. CONTRACTOR SHALL NOT COMMENCE ANY DEMOLITION WORK INVOLVING EXISTING MECHANICAL, PLUMBING, ELECTRICAL, TECHNOLOGY, FIRE PROTECTION OR OTHER UTILITY SYSTEMS WITHOUT THE APPROVAL OF THE OWNER.
E. PRIOR TO THE PERFORMANCE OF DEMOLITION WORK BY THE CONTRACTOR, THE OWNER SHALL REMOVE AND STORE ALL ITEMS OF VALUE TO THE OWNER FOR RE-USE. THE CONTRACTOR SHALL VERIFY WITH THE OWNER THAT THE OWNER'S WORK HAS BEEN COMPLETED BEFORE THE CONTRACTOR PROCEEDS WITH THE DEMOLITION WORK
F. THE LOCATION OF TEMPORARY ENCLOSURE PARTITIONS DURING AND AFTER DEMOLITION SHALL BE DETERMINED BY THE OWNER AND CONTRACTOR.
G. DEMOLISH AND SAFELY DISPOSE OF ITEMS INDICATED WITH DASHED LINES.
H. CONTRACTOR SHALL FIELD VERIFY CONDITIONS PRIOR TO DEMOLITION WORK AND INFORM OWNER AND ARCHITECT OF ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK.
I. CONTRACTOR SHALL PATCH SURFACES AFFECTED BY DEMOLITION WITH NEW FINISH MATERIAL TO MATCH EXISTING ADJACENT SURFACES. PRIOR TO SUBMITTING A BID, CONTRACTOR SHALL SURVEY THE EXISTING CONDITIONS TO DETERMINE THE EXTENT OF WORK REQUIRED.
J. EXISTING ITEMS TO REMAIN THAT ARE AFFECTED BY THE CONTRACTOR'S DEMOLITION WORK SHALL BE PROTECTED IN PLACE FROM DAMAGE OR, AT THE CONTRACTOR'S OPTION, REMOVED AND REINSTALLED UPON COMPLETION OF THE DEMOLITION WORK.
K. CONTRACTOR SHALL SALVAGE AND SAFELY STORE IN GOOD REUSABLE CONDITION THOSE ITEMS IDENTIFIED IN SPECIFICATION SECTION 024119, IF ANY, OR AS DIRECTED BY OWNER.
L. PROTECT ADJACENT STRUCTURES AND SURFACES TO REMAIN.
M. PROTECT ADJACENT SPACES NOT PART OF DEMOLITION WORK.
N. ALL CORE-DRILLING AND SAW CUTTING IN THE EXISTING BUILDING SHALL PENETRATE IN THE PAN SPACE AND NOT THRU THE JOIST, BEAMS OR SUPPORT RIBS. PILOT HOLES SHALL BE DRILLED FROM THE UNDER SIDE OF THE SLAB TO LOCATE PENETRATIONS IN THE PAN SPACE.
O. REFER TO MECHANICAL, PLUMBING, ELECTRICAL, TECHNOLOGY AND FIRE PROTECTION CONTRACT DOCUMENTS FOR ADDITIONAL DEMOLITION REQUIREMENTS.

KEYED DEMOLITION NOTES

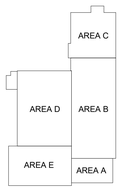
7	REMOVE AND REINSTALL: REMOVE EXISTING FIRE EXTINGUISHER CABINET AND REINSTALL WHERE INDICATED
8	ALTERNATE NO. 3: MEZZANINE RAMP AND STAIR REPLACEMENT. DEMOLISH EXISTING MEZZANINE STAIR AND RAMP STRUCTURE, INCLUDING STRINGERS AND HANDRAILS
9	REMOVE EXISTING OVERHEAD DOOR, FRAME AND SUPPORTING STRUCTURE
10	REMOVE WOOD CHAIR RAIL, MAP RAIL, OR CORNICE
11	REMOVE GUARDRAIL, INCLUDING FLOOR ANCHORS
12	REMOVE NON-LOAD-BEARING WALLS. EXISTING COLUMNS TO REMAIN.
22	EXISTING EXPANSION JOINT COVER.
25	EXISTING FINISH FLOOR TO REMAIN. PROTECT.
28	ALTERNATE NO. 2 - RESTROOM RENOVATION. REMOVE FLOOR, CEILING AND WALL FINISHES. REMOVE PLUMBING FIXTURES, TOILET PARTITIONS AND TOILET ACCESSORIES AS INDICATED. DEMOLISH PARTITIONS WHERE INDICATED ON PLAN.
C	REMOVE EXISTING FINISH CEILING.
C-RR	REMOVE AND REINSTALL: REMOVE EXISTING FINISH CEILING AS REQUIRED FOR INSTALLATION OF NEW WORK. UPON COMPLETION OF NEW WORK REINSTALL FINISH CEILING.
FB	REMOVE EXISTING FINISH FLOOR AND WALL BASE



E1 LEVEL 1 MEZZANINE DEMOLITION PLAN
1/16" = 1'-0"



1 LEVEL 2 DEMOLITION PLAN
1/16" = 1'-0"



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MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **2/19/2025**

Drawn By: **Author**

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Sheet Title:
DEMOLITION PLANS - MEZZANINE & LEVEL 2

Sheet #:
A1.12

DEMOLITION LEGEND:

- EXISTING CONSTRUCTION TO REMAIN.
- REMOVE EXISTING PARTITION IN ITS ENTIRETY.
- REMOVE PORTION OF EXISTING PARTITION AS REQUIRED BY NEW WORK. COORDINATE EXTENT OF REMOVAL WITH NEW WORK.
- REMOVED EXISTING MILLWORK (BASE CABINETS, COUNTERTOPS, WALL CABINETS, AND / OR TALL CABINETS).
- REMOVE EXISTING PLUMBING FIXTURE. REFER TO PLUMBING FOR MORE INFORMATION.
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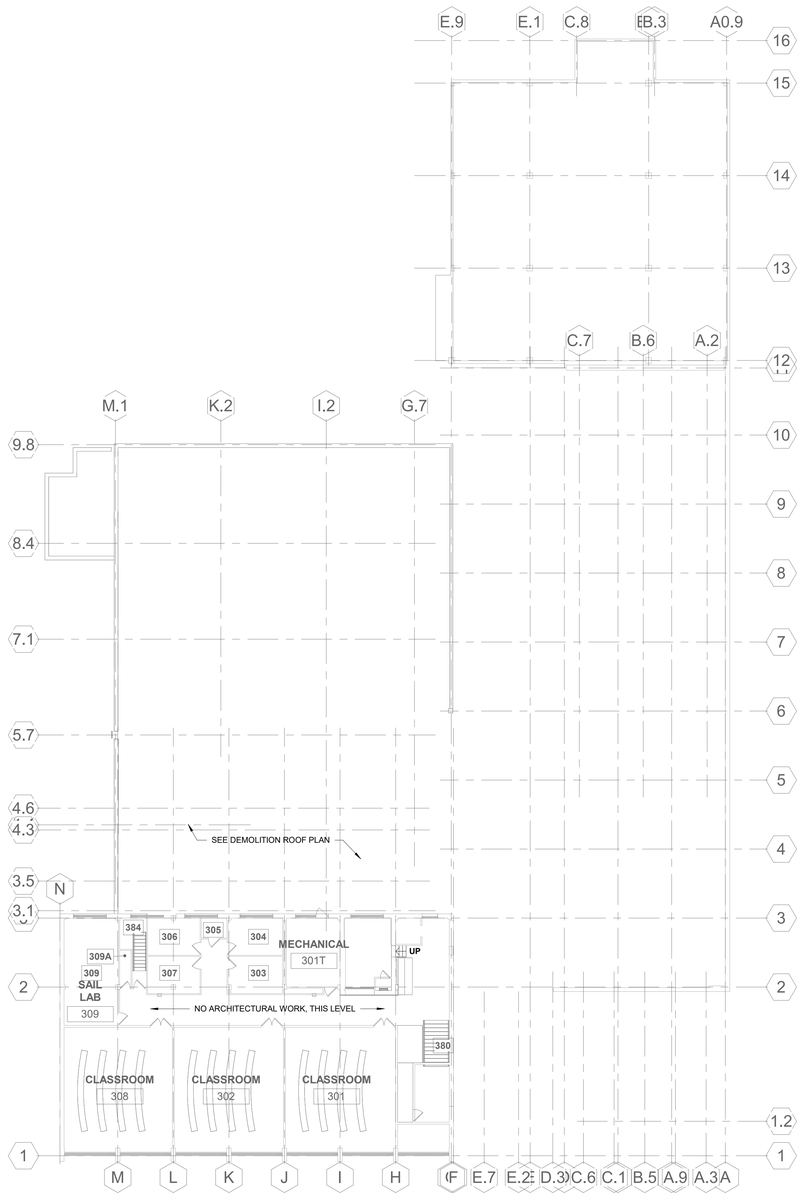
O. REFER TO MECHANICAL, PLUMBING, ELECTRICAL, TECHNOLOGY AND FIRE PROTECTION CONTRACT DOCUMENTS FOR ADDITIONAL DEMOLITION REQUIREMENTS.

KEYED DEMOLITION NOTES

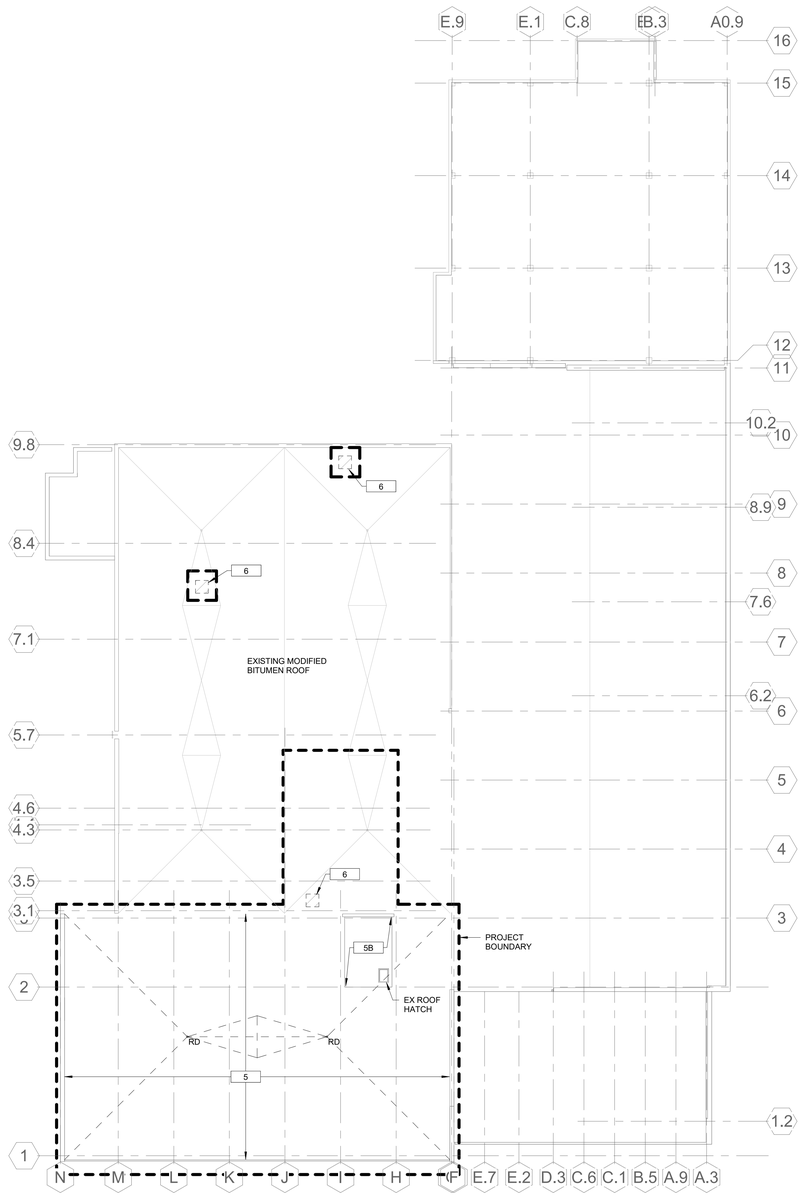
5 ALTERNATE NO. 1: REMOVE EXISTING BUILT-UP ROOFING SYSTEM AND INSULATION DOWN TO EXISTING CONCRETE ROOF DECK. REMOVE PERIMETER COPINGS. PREP FOR NEW ROOF.

5B ALTERNATE NO. 1: REMOVE EXISTING BUILT-UP ROOFING SYSTEM AND INSULATION DOWN TO EXISTING METAL ROOF DECK AND PREP FOR NEW ROOF.

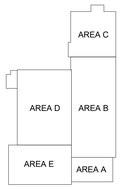
6 EXISTING ROOFTOP EQUIPMENT TO BE REMOVED. REFER TO MECHANICAL DRAWINGS.



E1 LEVEL 3 DEMOLITION PLAN
1/16" = 1'-0"



E4 ROOF DEMOLITION PLAN
1/16" = 1'-0"



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Issue Date: **2/19/2025**
Drawn By: **Author**

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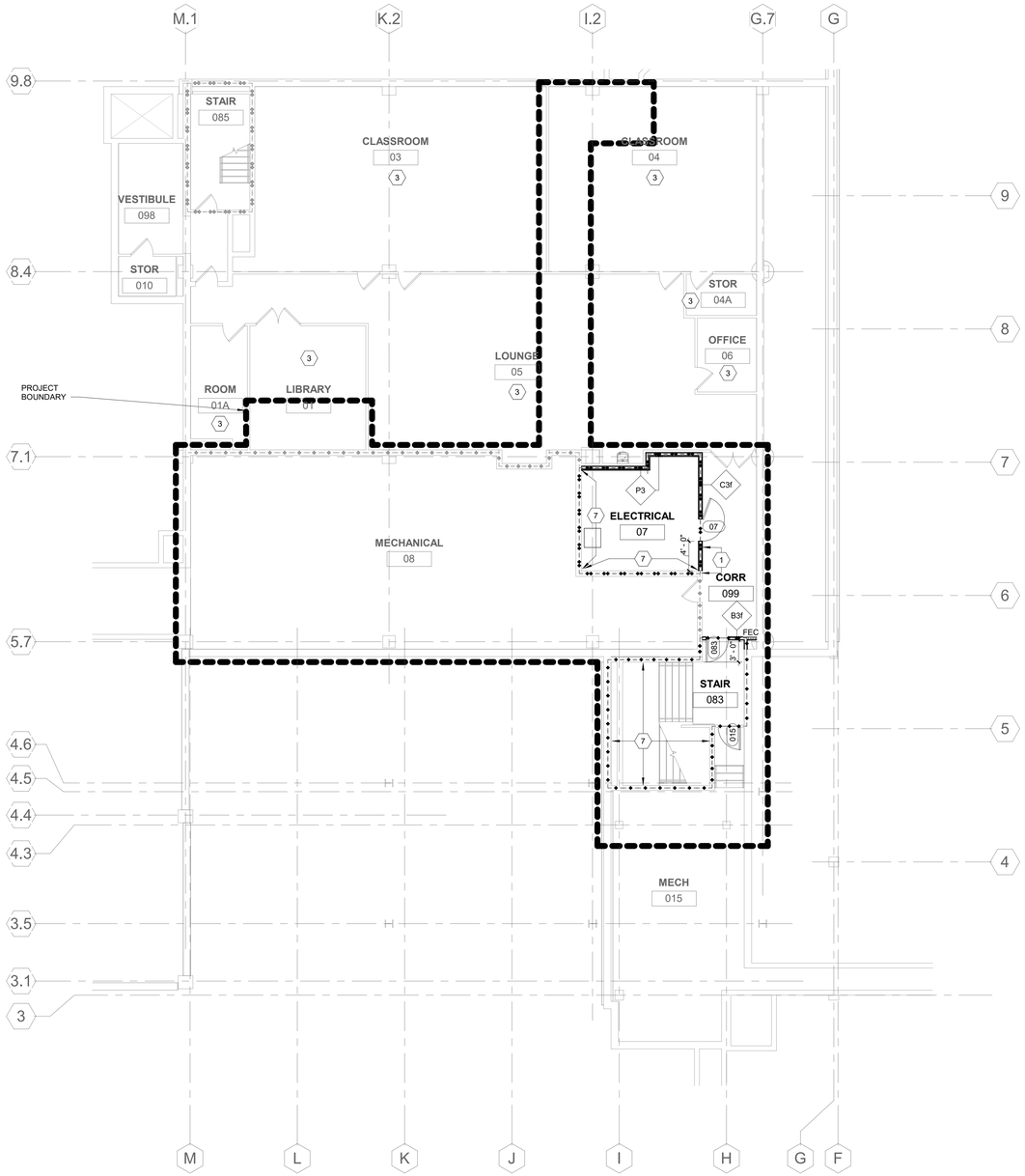
Sheet Title:
DEMOLITION PLANS - LEVEL 3 AND ROOF

Sheet #:
A1.13



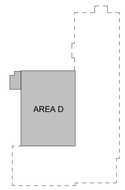
1 BASEMENT PLAN
1/8" = 1'-0"

GENERAL NOTES - FLOOR PLAN

A. NOT ALL KEYED NOTES MAY BE USED ON THIS SHEET.
B. SEE SHEET A0.20 FOR ACCESSORY GROUP TYPES. ACCESSORY GROUPS DEFINE TOILET ACCESSORIES, MIRROR TYPES, EQUIPMENT, ETC. ACCESSORY GROUPS ALSO DEFINE HORIZONTAL AND VERTICAL DIMENSIONS FOR PLUMBING FIXTURES, TOILET ACCESSORIES, MIRROR TYPES, EQUIPMENT, ETC.
C. FOR TYPICAL COLUMN FURRING, SEE DETAILS E1/A0.12 & E1/A0.13
D. CONTRACTOR TO FIELD VERIFY TOP OF CONCRETE, TOP OF DECK AND TOP OF STEEL ELEVATIONS LISTED FOR EXISTING CONDITIONS PRIOR TO THE COMMENCEMENT OF SHOP DRAWING AND SUPPORTING CONSTRUCTION THAT IS TO ALIGN WITH EXISTING TOP OF CONCRETE, TOP OF DECK AND/OR TOP OF STEEL. NOTIFY ARCHITECT OF ANY DISCREPANCIES.
E. UNLESS TAGGED OTHERWISE, ALL PARTITIONS SHALL BE: B3d S
F. PATCH SURFACES AFFECTED BY DEMOLITION WITH NEW FINISH MATERIAL TO MATCH EXISTING ADJACENT SURFACES.
G. PATCH SURFACES AFFECTED BY INSTALLATION OF NEW WORK IN EXISTING CONSTRUCTION WITH NEW FINISH MATERIAL TO MATCH EXISTING ADJACENT SURFACES
H. WHERE NEW MATERIAL ABUTS, ALIGNS, OR ADJOINS EXISTING MATERIAL, MAKE SMOOTH AND EVEN TRANSITION AND ELIMINATE EVIDENCE OF PATCHING AND REFINISHING FINISH NEW WORK TO MATCH EXISTING ADJACENT UNDISTURBED SURFACES.
I. WHERE HANDRAILS, GRAB BARS, CABINETS, WALL MOUNTED DOOR STOPS, COAT HOOKS, TOILET ACCESSORIES, EQUIPMENT, OR OTHER WALL-HUNG ITEMS ARE TO BE ATTACHED TO PARTITIONS PROVIDE STEEL BACKING PLATES.

KEYED NOTES - FLOOR PLAN

1 ALIGN
3 NO ARCHITECTURAL SCOPE. THIS AREA. REFER TO ELECTRICAL DRAWINGS FOR FIRE ALARM REVISIONS.
7 CONTRACTOR TO SURVEY PARTITION AND SEAL ALL EXISTING AND NEW PENETRATIONS WITH UL-APPROVED FIRE STOP SYSTEMS.



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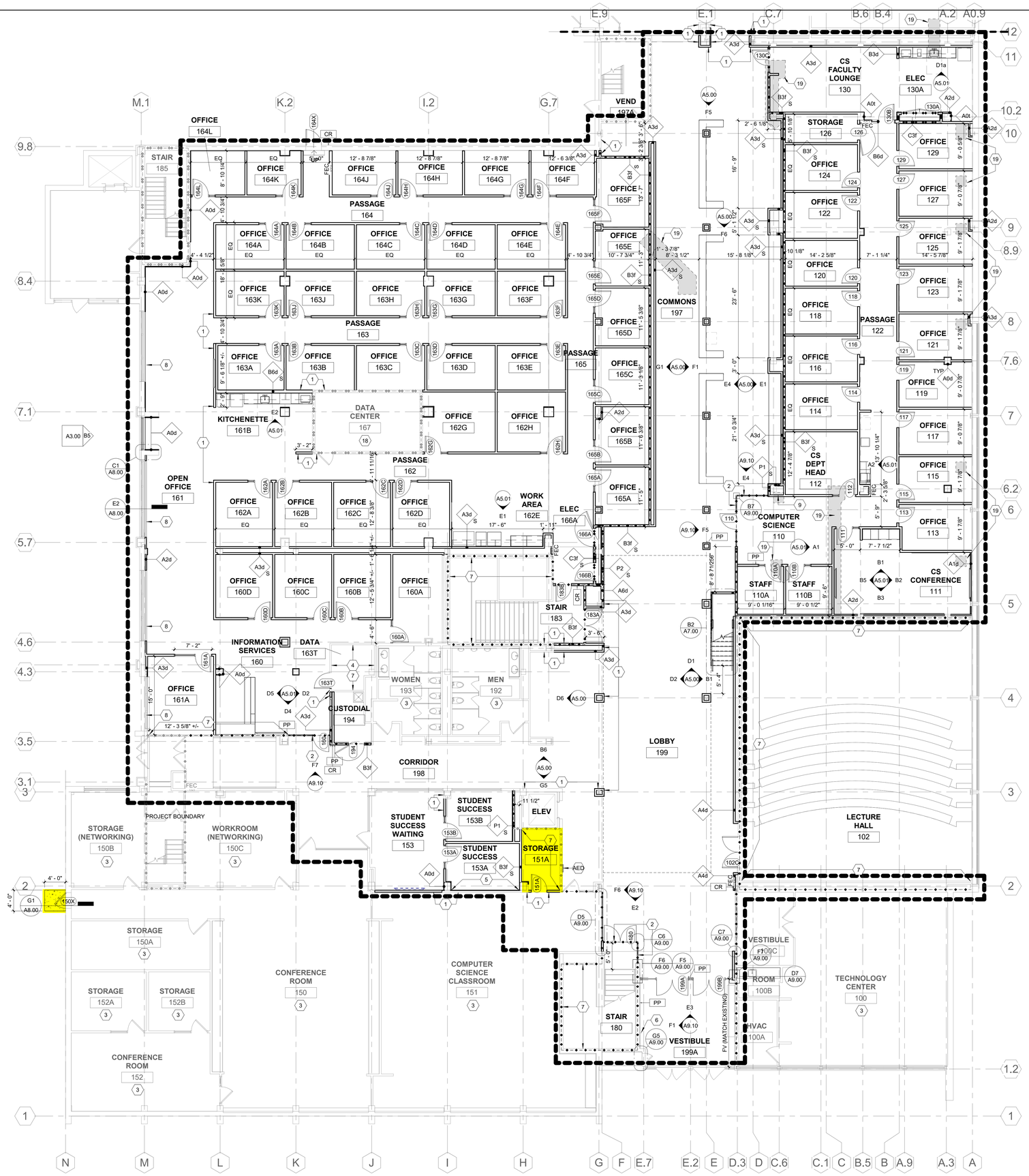
Sheet Title:

BASEMENT LEVEL PLAN

Sheet #:

A2.10



1 LEVEL 1 PLAN - AREAS A, B, D & E
1/8" = 1'-0"

GENERAL NOTES - FLOOR PLAN

A. NOT ALL KEYED NOTES MAY BE USED ON THIS SHEET.
B. SEE SHEET A0.20 FOR ACCESSORY GROUP TYPES. ACCESSORY GROUPS DEFINE TOILET ACCESSORIES, MIRROR TYPES, EQUIPMENT, ETC. ACCESSORY GROUPS ALSO DEFINE HORIZONTAL AND VERTICAL DIMENSIONS FOR PLUMBING FIXTURES, TOILET ACCESSORIES, MIRROR TYPES, EQUIPMENT, ETC.
C. FOR TYPICAL COLUMN FURRING, SEE DETAILS E1/A0.12 & E1/A0.13
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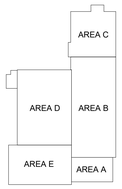
KEYED NOTES - FLOOR PLAN

1 ALIGN
2 084123 - FIRE-RATED STEEL FRAMED ENTRANCE
3 NO ARCHITECTURAL SCOPE. THIS AREA. REFER TO ELECTRICAL DRAWINGS FOR FIRE ALARM REVISIONS.
4 FRT PLYWOOD TERMINAL BOARD - REFER TO TECHNOLOGY DRAWINGS FOR REQUIREMENTS
5 APPLY ONE (1) LAYER 5/8" GYP BD TO EXISTING METAL STUD FRAMING. SURVEY EXISTING SOUND BATTS AND FILL VOIDS.
6 EXISTING ADA PUSH PLATE - RECONNECT TO EXTERIOR DOOR.
7 CONTRACTOR TO SURVEY PARTITION AND SEAL ALL EXISTING AND NEW PENETRATIONS WITH UL-APPROVED FIRE STOP SYSTEMS.
8 INSTALL NEW WINDOW STOOL AT EXISTING OPENING. REFER TO COLOR & MATERIAL LEGEND.
9 12"x12" ACCESS PANEL
18 ROOM TO REMAIN IN USE THROUGH ALL STAGES OF CONSTRUCTION. OWNER ACCESS TO BE MAINTAINED AT ALL TIMES.
19 PATCH AND PREP CONCRETE FLOOR AS REQUIRED IN AREAS INDICATED BY HATCH FILL.
AED RELOCATED AED CABINET



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Sheet Title:

LEVEL 1 PLANS

Sheet #:

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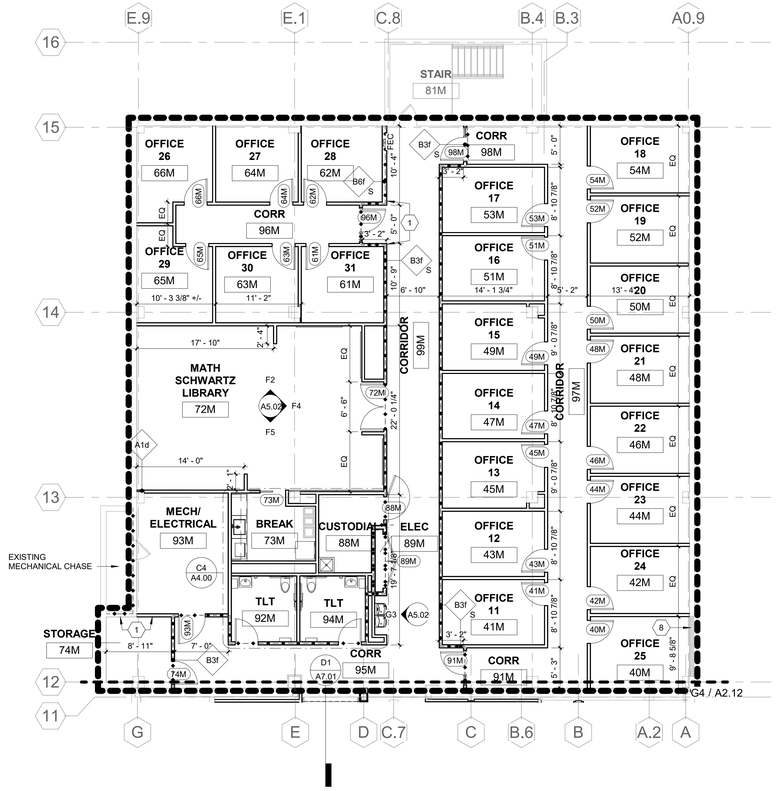
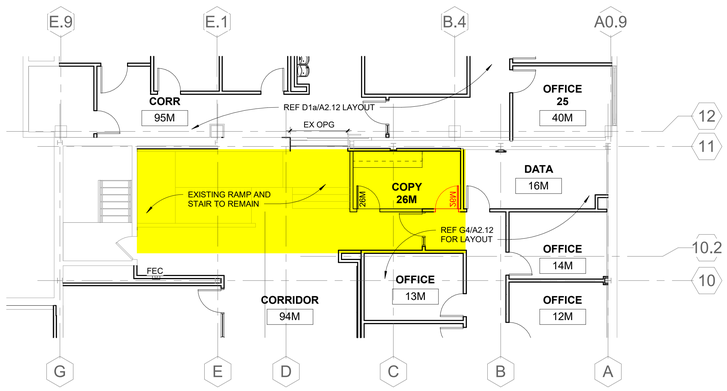
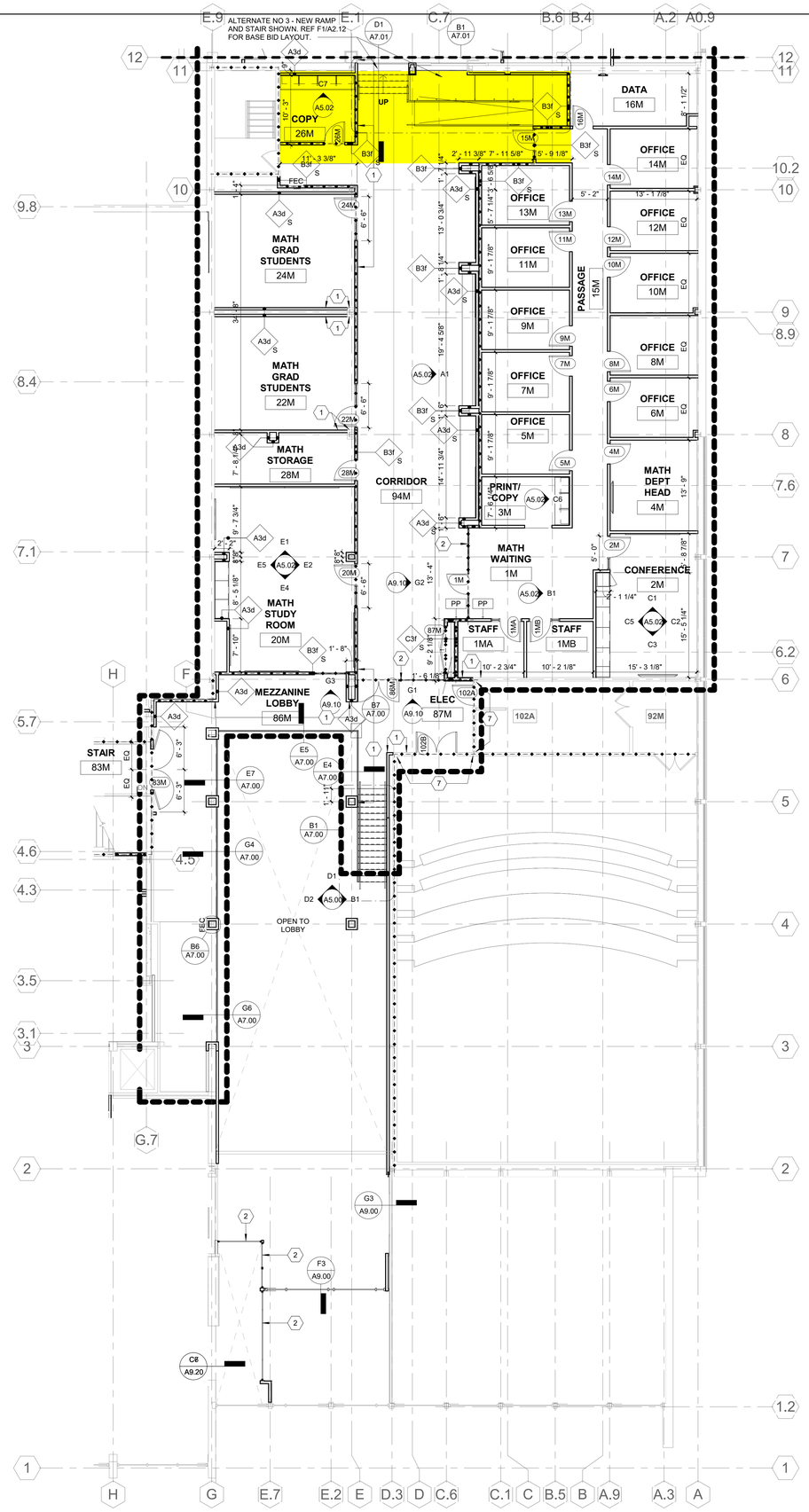


D1a MEZZANINE PLAN - AREA C
1/8" = 1'-0"



F1 MEZZANINE RAMP-STAIR BASE BID
1/8" = 1'-0"



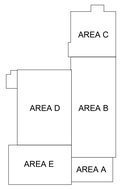
G4 MEZZANINE PLAN - AREAS A & B
1/8" = 1'-0"

GENERAL NOTES - FLOOR PLAN

A. NOT ALL KEYED NOTES MAY BE USED ON THIS SHEET.
B. SEE SHEET A0.20 FOR ACCESSORY GROUP TYPES. ACCESSORY GROUPS DEFINE TOILET ACCESSORIES, MIRROR TYPES, EQUIPMENT, ETC. ACCESSORY GROUPS ALSO DEFINE HORIZONTAL AND VERTICAL DIMENSIONS FOR PLUMBING FIXTURES, TOILET ACCESSORIES, MIRROR TYPES, EQUIPMENT, ETC.
C. FOR TYPICAL COLUMN FURRING, SEE DETAILS E1/A0.12 & E1/A0.13
D. CONTRACTOR TO FIELD VERIFY TOP OF CONCRETE, TOP OF DECK AND TOP OF STEEL ELEVATIONS LISTED FOR EXISTING CONDITIONS PRIOR TO THE COMMENCEMENT OF SHOP DRAWING AND SUPPORTING CONSTRUCTION THAT IS TO ALIGN WITH EXISTING TOP OF CONCRETE, TOP OF DECK AND/OR TOP OF STEEL. NOTIFY ARCHITECT OF ANY DISCREPANCIES.
E. UNLESS TAGGED OTHERWISE, ALL PARTITIONS SHALL BE: B3d S
F. PATCH SURFACES AFFECTED BY DEMOLITION WITH NEW FINISH MATERIAL TO MATCH EXISTING ADJACENT SURFACES.
G. PATCH SURFACES AFFECTED BY INSTALLATION OF NEW WORK IN EXISTING CONSTRUCTION WITH NEW FINISH MATERIAL TO MATCH EXISTING ADJACENT SURFACES
H. WHERE NEW MATERIAL ABUTS, ALIGNS, OR ADJOINS EXISTING MATERIAL, MAKE SMOOTH AND EVEN TRANSITION AND ELIMINATE EVIDENCE OF PATCHING AND REFINISHING FINISH NEW WORK TO MATCH EXISTING ADJACENT UNDISTURBED SURFACES.
I. WHERE HANDRAILS, GRAB BARS, CABINETS, WALL MOUNTED DOOR STOPS, COAT HOOKS, TOILET ACCESSORIES, EQUIPMENT, OR OTHER WALL-HUNG ITEMS ARE TO BE ATTACHED TO PARTITIONS PROVIDE STEEL BACKING PLATES.

KEYED NOTES - FLOOR PLAN

1 ALIGN
2 084123 - FIRE-RATED STEEL FRAMED ENTRANCE
7 CONTRACTOR TO SURVEY PARTITION AND SEAL ALL EXISTING AND NEW PENETRATIONS WITH UL-APPROVED FIRE STOP SYSTEMS.
8 INSTALL NEW WINDOW STOOL AT EXISTING OPENING. REFER TO COLOR & MATERIAL LEGEND.



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Project Title:
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MSU Project #: 231023-069
Other Project #: **23025.000**
Issue Date: **2/19/2025**
Drawn By: **Author**

SHEET REVISIONS

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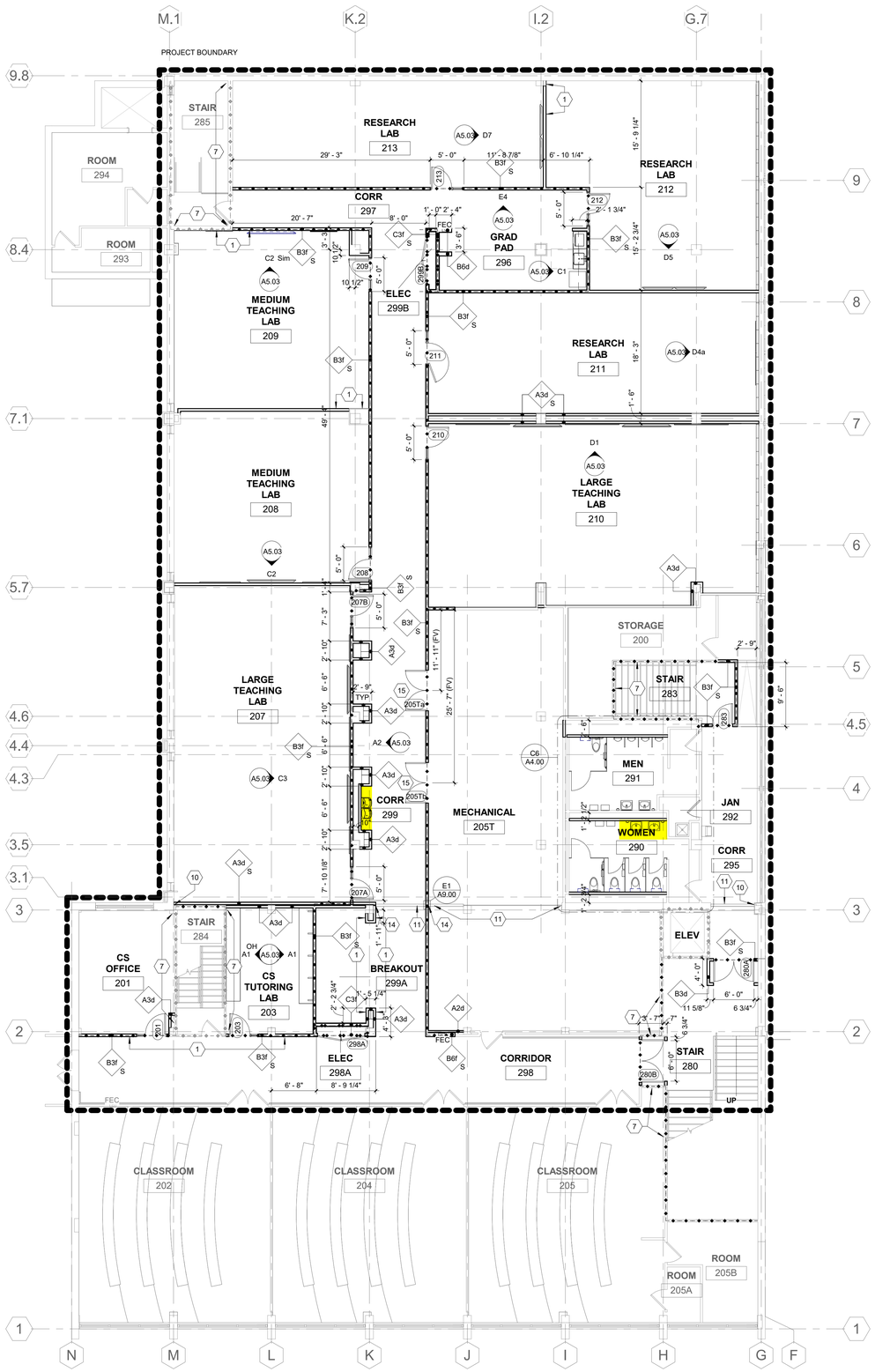
Sheet Title:
MEZZANINE LEVEL PLANS

Sheet #:
A2.12



G1 LEVEL 2 PLAN
1/8" = 1'-0"

GENERAL NOTES - FLOOR PLAN

A. NOT ALL KEYED NOTES MAY BE USED ON THIS SHEET.
B. SEE SHEET A0.20 FOR ACCESSORY GROUP TYPES. ACCESSORY GROUPS DEFINE TOILET ACCESSORIES, MIRROR TYPES, EQUIPMENT, ETC. ACCESSORY GROUPS ALSO DEFINE HORIZONTAL AND VERTICAL DIMENSIONS FOR PLUMBING FIXTURES, TOILET ACCESSORIES, MIRROR TYPES, EQUIPMENT, ETC.
C. FOR TYPICAL COLUMN FURRING, SEE DETAILS E1/A0.12 & E1/A0.13.
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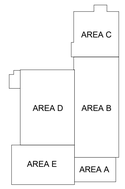
KEYED NOTES - FLOOR PLAN

1 ALIGN
7 CONTRACTOR TO SURVEY PARTITION AND SEAL ALL EXISTING AND NEW PENETRATIONS WITH UL-APPROVED FIRE STOP SYSTEMS.
10 EXISTING VERTICAL EXPANSION JOINT TO REMAIN
11 EXISTING FLOOR EXPANSION JOINT TO REMAIN - REMOVE AND REINSTALL AS REQUIRED FOR FLOORING REPLACEMENT
14 INTERIOR EXPANSION JOINT IEJ-4: WALL TO WALL (FIRE-RATED).
15 COORDINATE EXACT LOCATION OF DOOR OPENING WITH MECHANICAL ROOM EQUIPMENT TO PROVIDE ACCESS. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.



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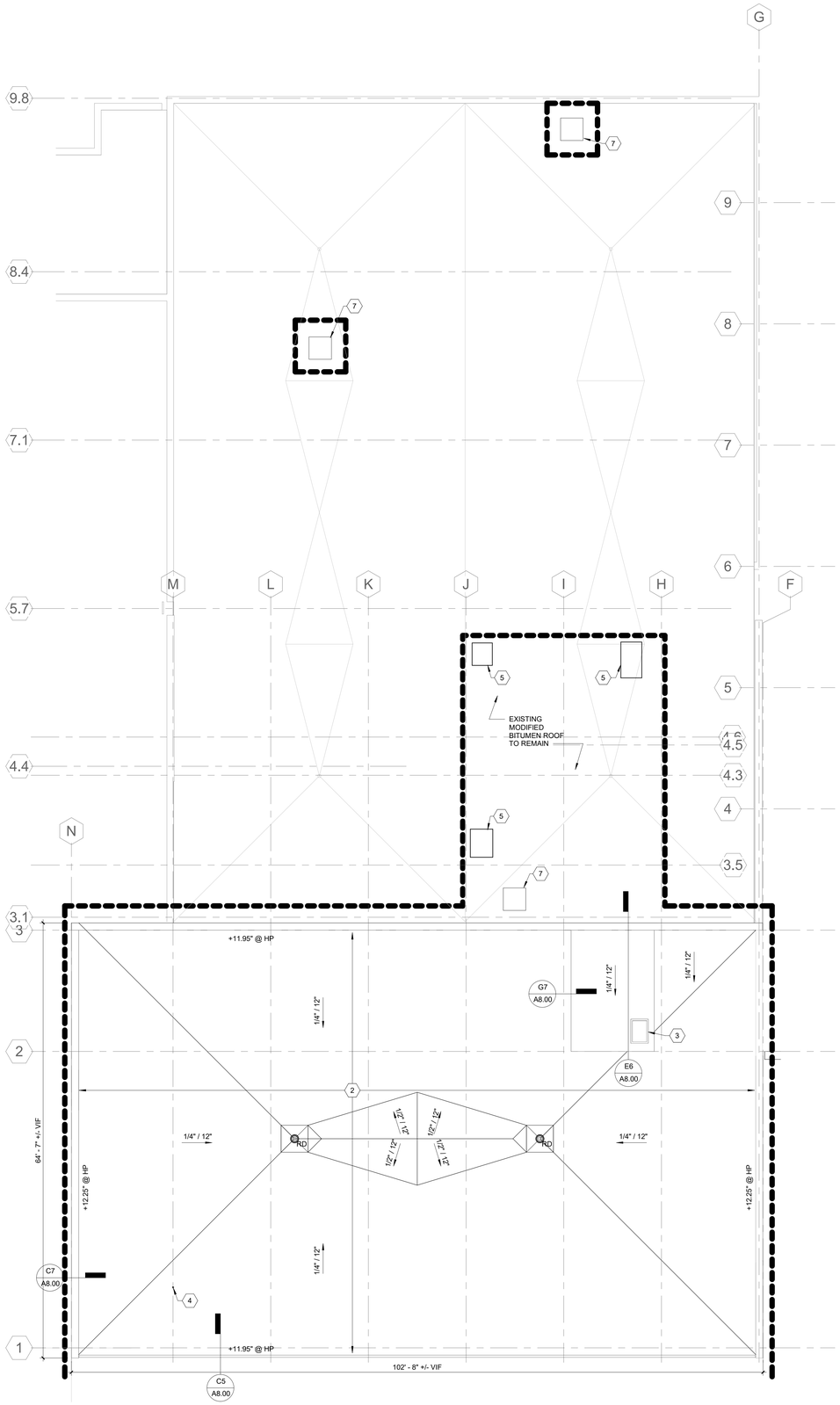
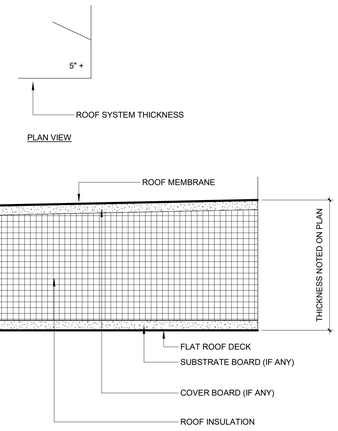
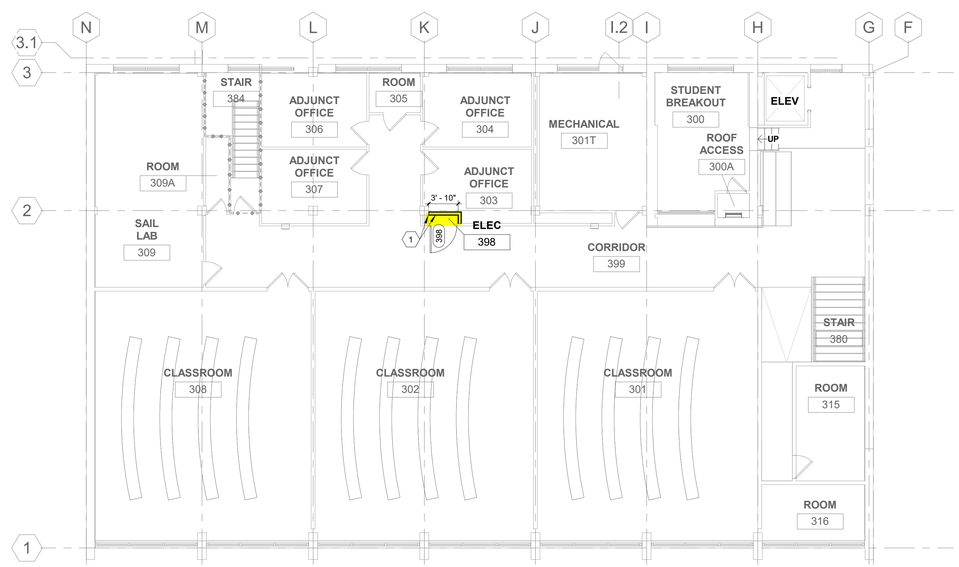
Sheet Title:
LEVEL 2 PLAN

Sheet #:
A2.13



G1 ROOF PLAN - AREA E
1/8" = 1'-0"





G4 LEVEL 3 PLAN - AREA E
1/8" = 1'-0"

GENERAL NOTES - FLOOR PLAN

A. NOT ALL KEYED NOTES MAY BE USED ON THIS SHEET.
B. SEE SHEET A0.20 FOR ACCESSORY GROUP TYPES. ACCESSORY GROUPS DEFINE TOILET ACCESSORIES, MIRROR TYPES, EQUIPMENT, ETC. ACCESSORY GROUPS ALSO DEFINE HORIZONTAL AND VERTICAL DIMENSIONS FOR PLUMBING FIXTURES, TOILET ACCESSORIES, MIRROR TYPES, EQUIPMENT, ETC.
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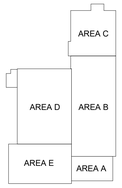
KEYED NOTES - FLOOR PLAN

1 ALIGN

KEYED NOTES - ROOF PLAN

2 ALTERNATE NO 1: AREA E ROOF REPLACEMENT. DEMOLISH EXISTING MODIFIED BITUMEN ROOFING SYSTEM, INCLUDING METAL COPINGS AND INSULATION, DOWN TO EXISTING CONCRETE ROOF DECK. INSTALL NEW LOW-SLOPE TPO ROOF SYSTEM OVER TAPERED INSULATION - MIN R-25
3 EXISTING ROOF HATCH
4 EXISTING ROOF ANCHOR
5 NEW ROOF PENETRATION - SEE MECHANICAL DRAWINGS
7 INFILL OPENING IN ROOF DECK AND PATCH ROOFING TO MATCH ADJANCENT MATERIALS.



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Sheet Title:
LEVEL 3 & ROOF PLANS

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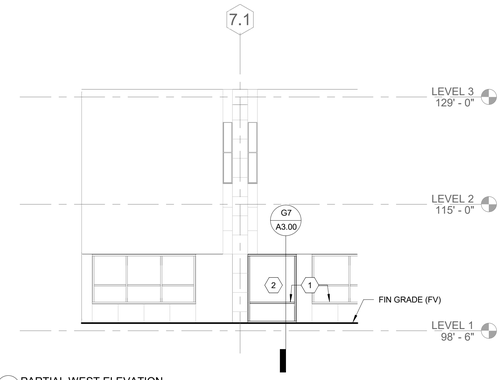
A2.14



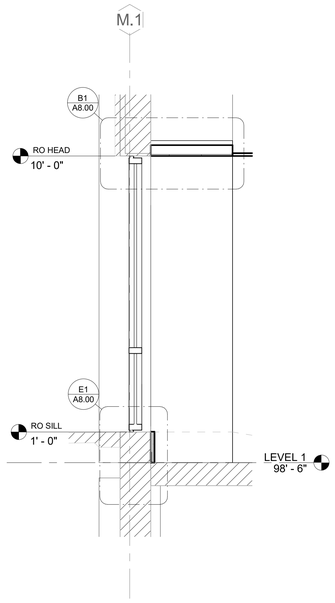
B5 PARTIAL WEST ELEVATION
1/8" = 1'-0"

ELEVATION GENERAL NOTES:

1. NOT ALL KEYED NOTES USED ON ALL SHEET

KEYED NOTES - ELEVATION

1 ALIGN
2 08 41 13 ALUMINUM STOREFRONT, CLEAR ANODIZED FINISH



G7 SECTION - EXTERIOR STOREFRONT
1/2" = 1'-0"

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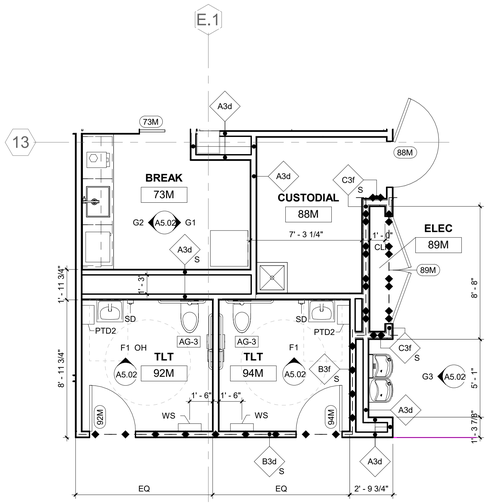
Sheet Title:

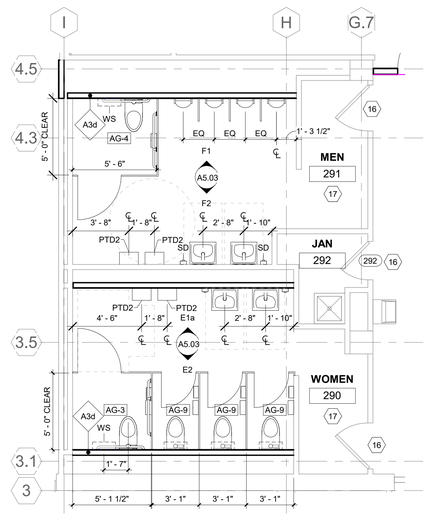
EXTERIOR ELEVATIONS & WALL SECTIONS

Sheet #:

A3.00



C4 MEZZANINE LEVEL RESTROOMS
1/4" = 1'-0"



C6 LEVEL 2 RESTROOMS - ALTERNATE
1/4" = 1'-0"

KEYED NOTES - FLOOR PLAN

16 EXISTING DOOR TO REMAIN, CLEAN AND PAINT; SEE FINISH PLAN
17 WORK SHOWN IN THIS ROOM TO BE PERFORMED IN ALTERNATE NO 2.

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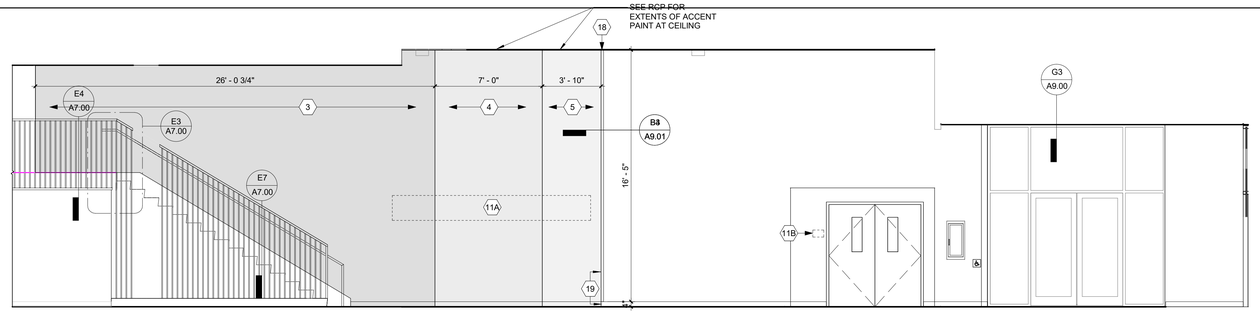
Sheet Title:

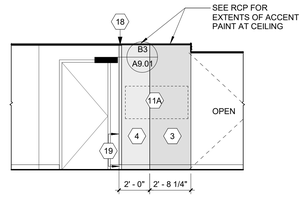
ENLARGED FLOOR PLANS

Sheet #:

A4.00



B1 LOBBY - EAST
1/4" = 1'-0"



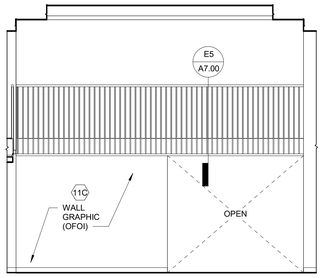
B6 L1 - CORRIDOR 198 - PARTIAL NORTH ELEVATION
1/4" = 1'-0"

GENERAL NOTES - INTERIOR ELEVATION

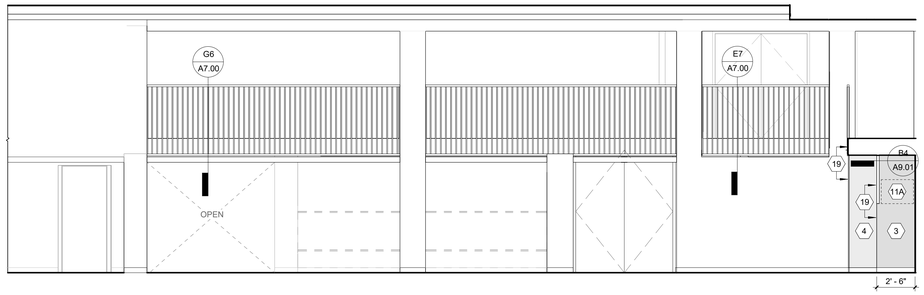
A. NOT ALL KEYED NOTES MAY BE USED ON THIS SHEET.
B. SEE SHEET A0.30 FOR CASEWORK TYPES.

KEYED NOTES - INTERIOR ELEVATION

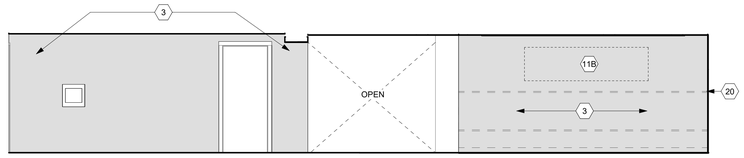
1 INSTALL FABRIC WRAPPED PANEL; SEAMS SHOWN FOR DESIGN INTENT.
3 PAINT; PT-2 RE CML
4 PAINT; PT-3 RE CML
5 PAINT; PT-4 RE CML
6 PAINT; PT-5 RE CML
9 RAKKS 18" COUNTERTOP BRACKET
10 COORDINATE WHITEBOARD PLACEMENT WITH MONITORS; WB-1 RE CML
11A WALL-MOUNTED SIGNAGE, CFCI; PROVIDE BACKING WHERE INDICATED WITH DASHED LINE. PROVIDE POWER AT THIS LOCATION FOR SIGNAGE - COORDINATE POWER REQUIREMENTS WITH FUTURE SIGNAGE PACKAGE & SIGNAGE VENDOR
11B WALL-MOUNTED SIGNAGE,CFCI; PROVIDE BACKING WHERE INDICATED WITH DASHED LINE.
11C WALL GRAPHIC, CFCI; PROVIDE LEVEL 5 FINISH AT THIS LOCATION
12 EXISTING EQUIPMENT, RELOCATED; OFOI. CONTRACTOR TO COORDIANTE POWER REQUIREMENTS
13 PROVIDE PLYWOOD BLOCKING FOR OFOI DISPLAY
14 COUNTERTOP, QUARTZ QZ-2 RE CML
15 END PANEL, QUARTZ QZ-2 RE CML
16 TILE BACKSPLASH, FULL HEIGHT; CT-1 RE CML
17 TILE; CT-2 RE CML
18 SEE RCP FOR FIXTURE CONTINUATION
19 ALIGN
20 FURNITURE BY OTHERS



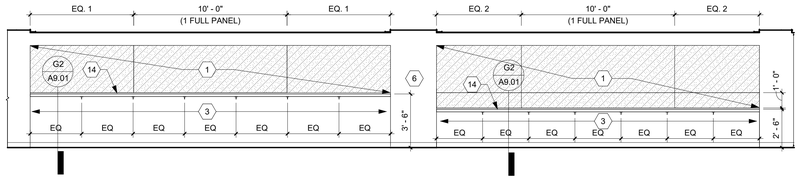
D1 L1 - LOBBY - NORTH
1/4" = 1'-0"



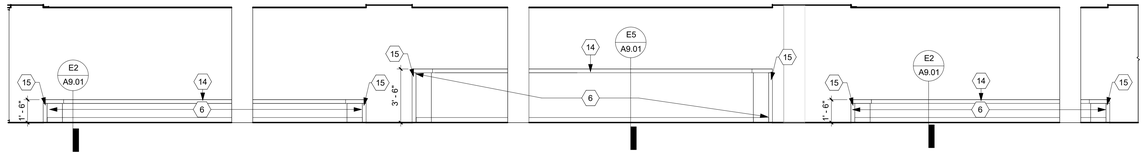
D2 L1 - LOBBY - WEST
1/4" = 1'-0"



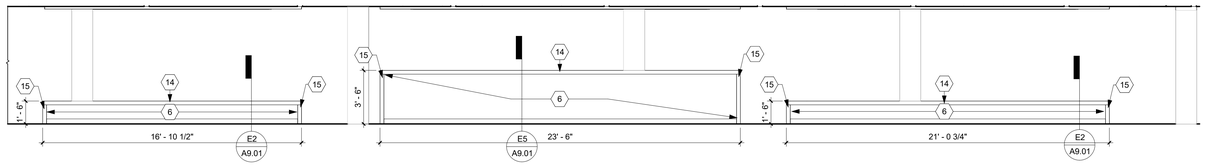
D6 2 - a
1/4" = 1'-0"



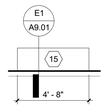
E1 L1 COMMONS - EAST
1/4" = 1'-0"



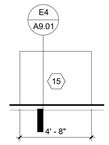
E4 L1 COMMONS - WEST
1/4" = 1'-0"



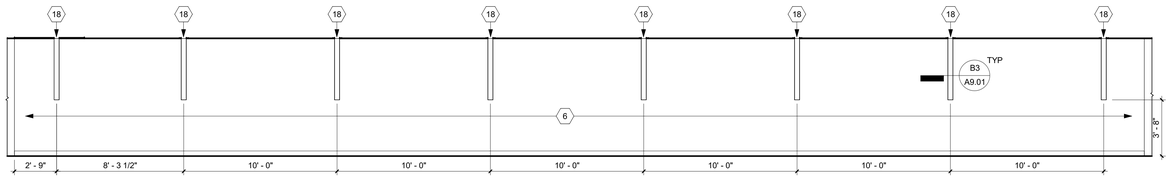
F1 L1 COMMONS
1/4" = 1'-0"



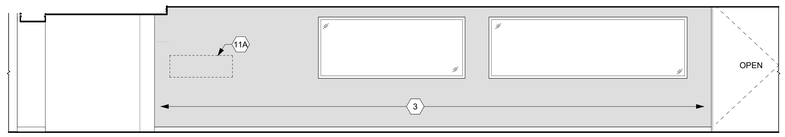
F5 L1 COMMONS BENCH - END (TYP)
1/4" = 1'-0"



F6 L1 COMMONS LOW WALL - END (TYP)
1/4" = 1'-0"



G1 L1 COMMONS - WEST ELEV
1/4" = 1'-0"



G5 L1 - CORRIDOR 198 - PARTIAL SOUTH ELEVATION
1/4" = 1'-0"

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Project Title:
BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **2/19/2025**

Drawn By: **Author**

SHEET REVISIONS

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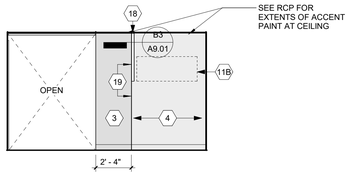
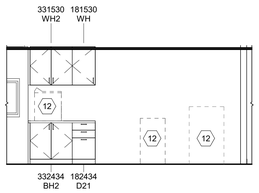
Sheet Title:
INTERIOR ELEVATIONS - LOBBY & COMMONS

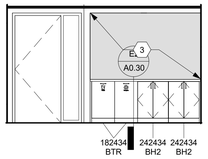
Sheet #:
A5.00



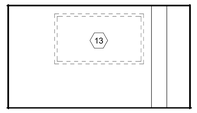
A1 CS RECEPTION - EAST
1/4" = 1'-0"



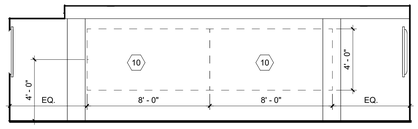
A2 CS PRINT/ COPY
1/4" = 1'-0"



B1 CS CONFERENCE RM - NORTH
1/4" = 1'-0"



B2 CS CONFERENCE - EAST
1/4" = 1'-0"



B3 CS CONFERENCE - SOUTH
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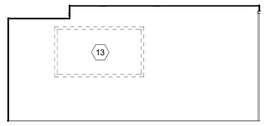
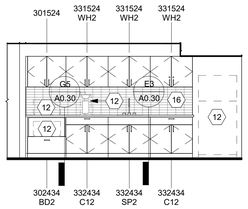


B5 CS CONFERENCE - WEST
1/4" = 1'-0"



D1a CS FACULTY LOUNGE - NORTH
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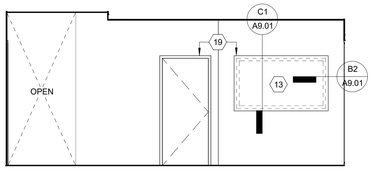

D2 INFO SERVICES RECEPTION - EAST
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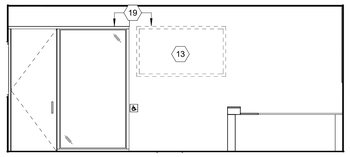

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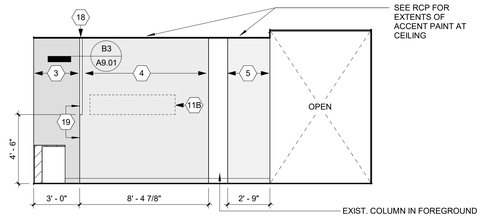
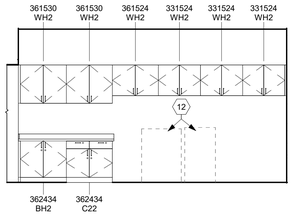
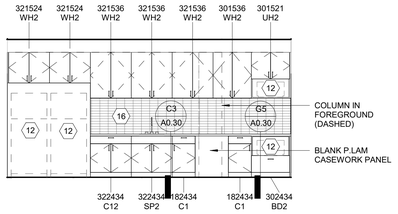


D5 INFO SERVICES RECEPTION - WEST
1/4" = 1'-0"



E1 INFO SERVICES WORK AREA - SOUTH
1/4" = 1'-0"



E2 INFO SERVICES KITCHEN - NORTH
1/4" = 1'-0"

GENERAL NOTES - INTERIOR ELEVATION

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B. SEE SHEET A0.30 FOR CASEWORK TYPES.

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3 PAINT; PT-2 RE CML
4 PAINT; PT-3 RE CML
5 PAINT; PT-4 RE CML
6 PAINT; PT-5 RE CML
9 RAKKS 18" COUNTERTOP BRACKET
10 COORDINATE WHITEBOARD PLACEMENT WITH MONITORS; WB-1 RE CML
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11B WALL-MOUNTED SIGNAGE,CFCI; PROVIDE BACKING WHERE INDICATED WITH DASHED LINE.
11C WALL GRAPHIC, CFCI; PROVIDE LEVEL 5 FINISH AT THIS LOCATION
12 EXISTING EQUIPMENT, RELOCATED; OFOI. CONTRACTOR TO COORDIANTE POWER REQUIREMENTS
13 PROVIDE PLYWOOD BLOCKING FOR OFOI DISPLAY
14 COUNTERTOP, QUARTZ QZ-2 RE CML
15 END PANEL, QUARTZ QZ-2 RE CML
16 TILE BACKSPLASH, FULL HEIGHT; CT-1 RE CML
17 TILE; CT-2 RE CML
18 SEE RCP FOR FIXTURE CONTINUATION
19 ALIGN
20 FURNITURE BY OTHERS

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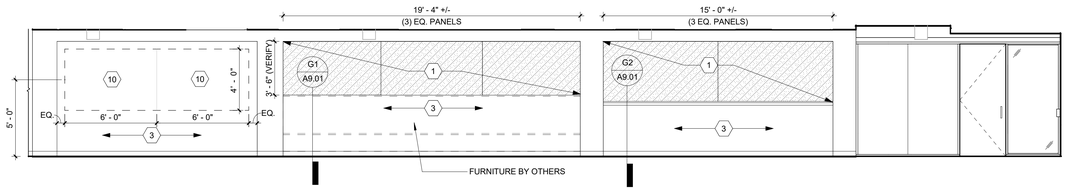
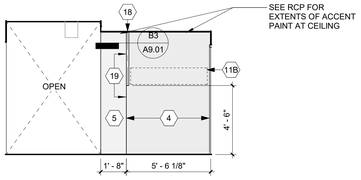
Sheet Title:
INTERIOR ELEVATIONS - LEVEL 1

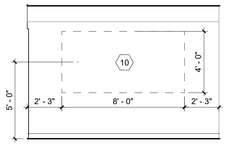
Sheet #:
A5.01



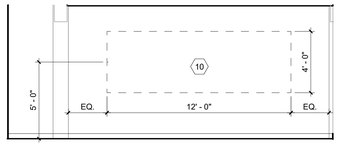
A1 MEZZANINE BOULEVARD - EAST
1/4" = 1'-0"



B1 MATHEMATICS RECEPTION - EAST
1/4" = 1'-0"



C1 MATHEMATICS CONFERENCE RM - NORTH
1/4" = 1'-0"



C2 MATHEMATICS CONFERENCE RM - EAST
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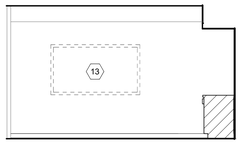
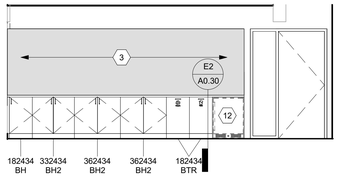
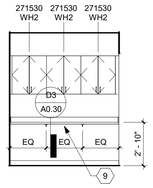


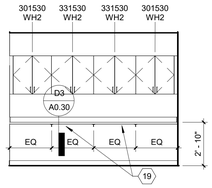
C3 MATHEMATICS CONFERENCE RM - SOUTH
1/4" = 1'-0"



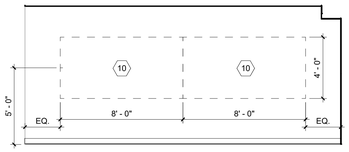
C5 MATHEMATICS CONFERENCE RM - WEST
1/4" = 1'-0"



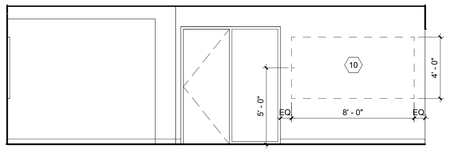
C6 MATHEMATICS COPY RM 1 - EAST
1/4" = 1'-0"



C7 MATHEMATICS COPY RM 2 - NORTH
1/4" = 1'-0"



E1 MATH STUDY ROOM - NORTH
1/4" = 1'-0"



E2 MATH STUDY ROOM - EAST
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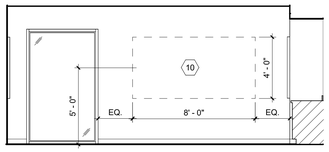
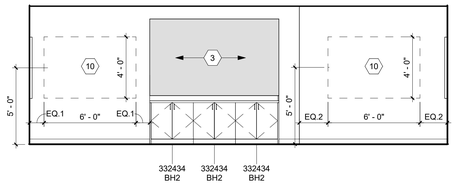
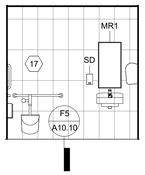


E4 MATH STUDY ROOM - SOUTH
1/4" = 1'-0"



E5 MATH STUDY ROOM - WEST
1/4" = 1'-0"



F1 MEZZANINE NORTH - TOILET RM
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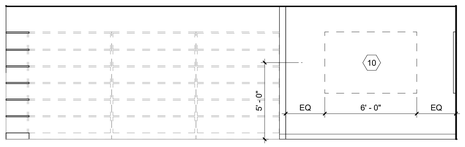

F2 MATHSCHWARTZ LIBRARY - NORTH
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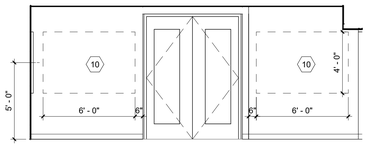
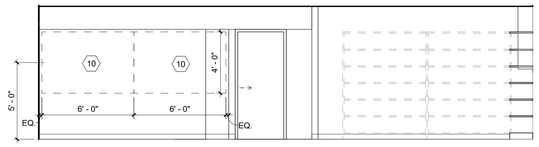
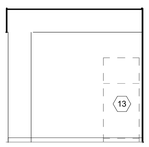


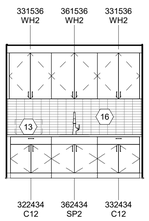
F4 MATH SCHWARTZ LIBRARY - EAST
1/4" = 1'-0"



F5 MEZZANINE SCHWARTZ LIBRARY SOUTH
1/4" = 1'-0"



G1 MEZZANINE BREAK 73M - EAST
1/4" = 1'-0"



G2 MEZZANINE BREAK 73M - WEST
1/4" = 1'-0"

G3 MEZZANINE NORTH - CORR - WEST
1/4" = 1'-0"

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Project Title:
BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069
Other Project #: **23025.000**
Issue Date: **2/19/2025**
Drawn By: **Author**

SHEET REVISIONS

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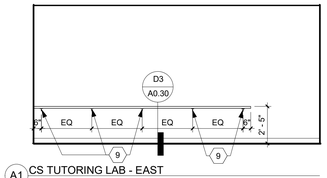
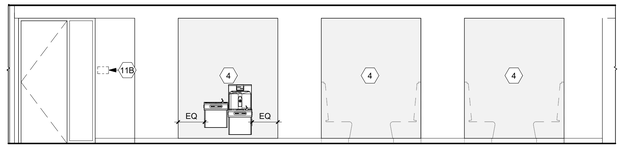
Sheet Title:
INTERIOR ELEVATIONS - MEZZANINE

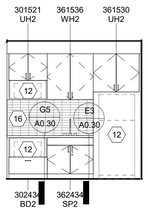
Sheet #:
A5.02



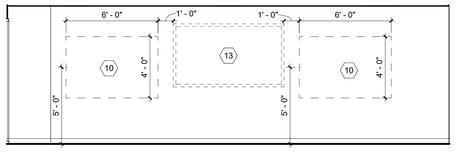
A1 CS TUTORING LAB - EAST
1/4" = 1'-0"



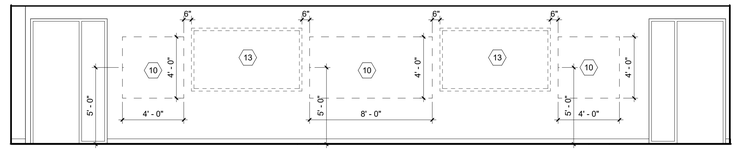
A2 CORRIDOR 299 - PARTIAL WEST ELEV
1/4" = 1'-0"



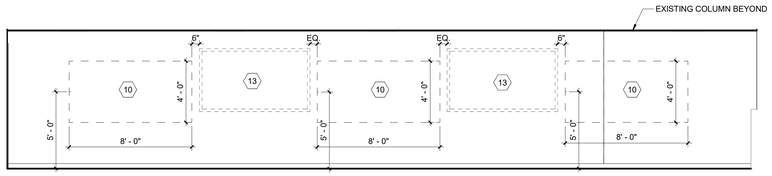
C1 CS GRAD PAD KITCHENETTE
1/4" = 1'-0"



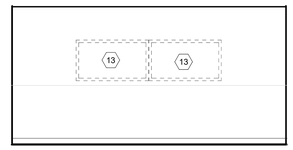
C2 MEDIUM TEACHING LAB - TEACHING WALL
1/4" = 1'-0"



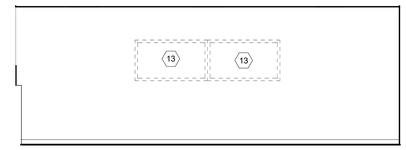
C3 LARGE TEACHING LAB - EAST
1/4" = 1'-0"



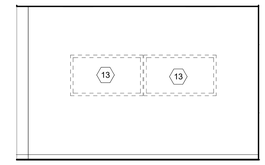
D1 LARGE TEACHING LAB 210 - NORTH
1/4" = 1'-0"



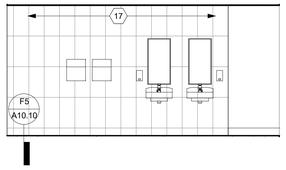
D4a RESEARCH LAB 211 - EAST
1/4" = 1'-0"



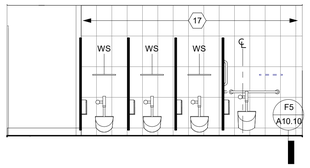
D5 RESEARCH LAB 212 - SOUTH
1/4" = 1'-0"



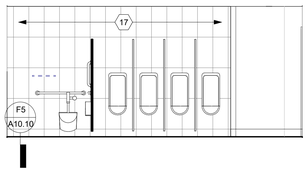
D7 RESEARCH LAB 213 - EAST
1/4" = 1'-0"



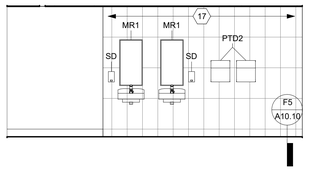
E1a WOMEN 290 - NORTH
1/4" = 1'-0"



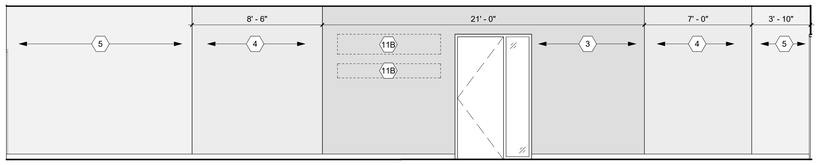
E2 WOMEN 290 - SOUTH
1/4" = 1'-0"



F1 MEN 291 - NORTH
1/4" = 1'-0"



F2 MEN 291 - SOUTH
1/4" = 1'-0"



E4 CORRIDOR 297 - NORTH ELEVATION
1/4" = 1'-0"

GENERAL NOTES - INTERIOR ELEVATION

A. NOT ALL KEYED NOTES MAY BE USED ON THIS SHEET.
B. SEE SHEET A0.30 FOR CASEWORK TYPES.

KEYED NOTES - INTERIOR ELEVATION

1 INSTALL FABRIC WRAPPED PANEL; SEAMS SHOWN FOR DESIGN INTENT.
3 PAINT; PT-2 RE CML
4 PAINT; PT-3 RE CML
5 PAINT; PT-4 RE CML
6 PAINT; PT-5 RE CML
9 RAKKS 18" COUNTERTOP BRACKET
10 COORDINATE WHITEBOARD PLACEMENT WITH MONITORS; WB-1 RE CML
11A WALL-MOUNTED SIGNAGE, CFCI; PROVIDE BACKING WHERE INDICATED WITH DASHED LINE. PROVIDE POWER AT THIS LOCATION FOR SIGNAGE - COORDINATE POWER REQUIREMENTS WITH FUTURE SIGNAGE PACKAGE & SIGNAGE VENDOR
11B WALL-MOUNTED SIGNAGE,CFCI; PROVIDE BACKING WHERE INDICATED WITH DASHED LINE.
11C WALL GRAPHIC, CFCI; PROVIDE LEVEL 5 FINISH AT THIS LOCATION
12 EXISTING EQUIPMENT, RELOCATED; OFOI. CONTRACTOR TO COORDIANTE POWER REQUIREMENTS
13 PROVIDE PLYWOOD BLOCKING FOR OFOI DISPLAY
14 COUNTERTOP, QUARTZ QZ-2 RE CML
15 END PANEL, QUARTZ QZ-2 RE CML
16 TILE BACKSPLASH, FULL HEIGHT; CT-1 RE CML
17 TILE; CT-2 RE CML
18 SEE RCP FOR FIXTURE CONTINUATION
19 ALIGN
20 FURNITURE BY OTHERS

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Drawn By: **Author**

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Sheet Title:
INTERIOR ELEVATIONS - LEVEL 2

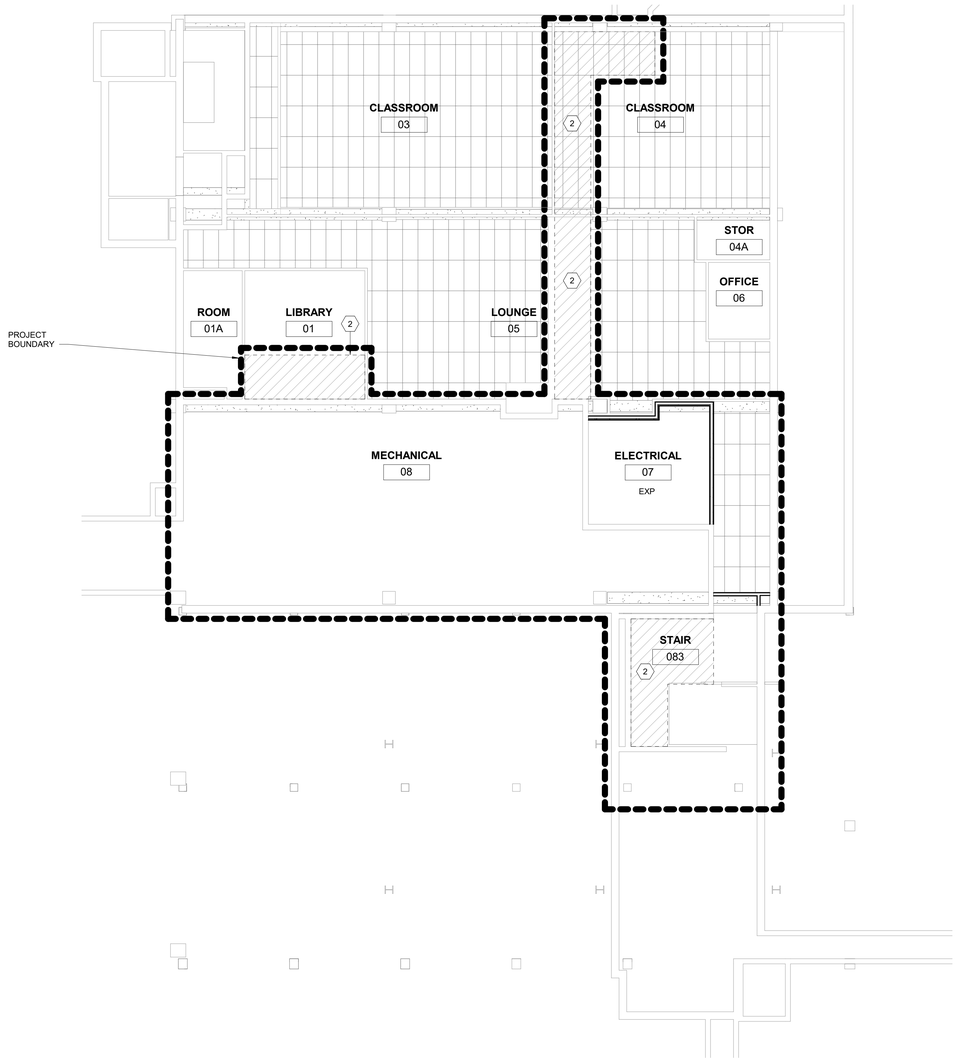
Sheet #:
A5.03

RCP - GENERAL NOTES:

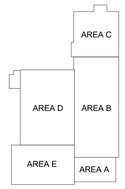
A. NOT ALL KEYED NOTES USED ON THIS SHEET.
B. REFER TO SHEET A9.20 FOR TYPICAL CEILING DETAILS.
C. GYPSUM WALL BOARD SOFFITS AND BULKHEADS ARE 1" BELOW ADJOINING ACOUSTICAL CEILING, UNO.
D. CENTER ACOUSTICAL TILE GRID BOTH DIRECTIONS IN ALL ROOMS UNO
E. REFER TO FINISH SCHEDULES FOR GYPSUM BOARD CEILING PAINT COLORS

RCP KEYED NOTES

2 REMOVE AND REINSTALL CEILING AND CEILING-MOUNTED DEVICES AS REQUIRED FOR ABOVE-CEILING WORK.



E3 BASEMENT LEVEL RCP
1/8" = 1'-0"



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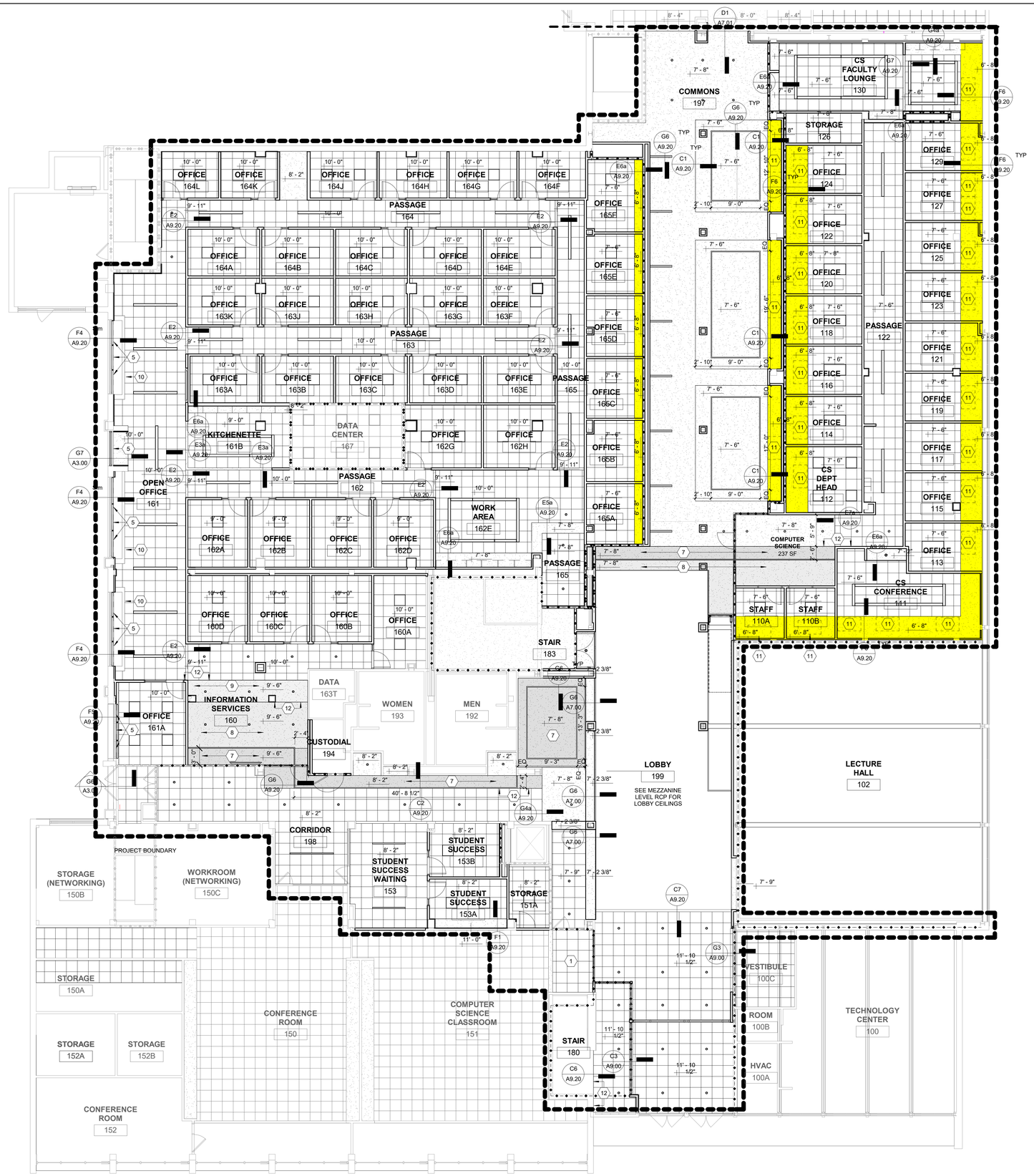
Sheet Title:
BASEMENT LEVEL REFLECTED CEILING PLAN

Sheet #:
A6.00



G1 LEVEL 1 RCP
1/8" = 1'-0"

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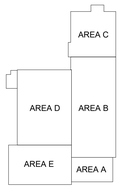
E. REFER TO FINISH SCHEDULES FOR GYPSUM BOARD CEILING PAINT COLORS

RCP KEYED NOTES

1 NEW 24"x24" ACOUSTICAL PANEL CEILING, CENTERED IN ROOM. CEILING HEIGHT TO MATCH EXISTING (FIELD VERIFY).
5 MANUAL ROLLER SHADE
7 PAINT DRYWALL CEILING PT-2. REFER TO FINISH PLAN.
8 PAINT DRYWALL CEILING PT-3. REFER TO FINISH PLAN.
9 PAINT DRYWALL CEILING PT-4. REFER TO FINISH PLAN.
10 EXISTING SOFFIT TO REMAIN
11 FAN COIL UNIT, SEE MECHANICAL
12 ALIGN



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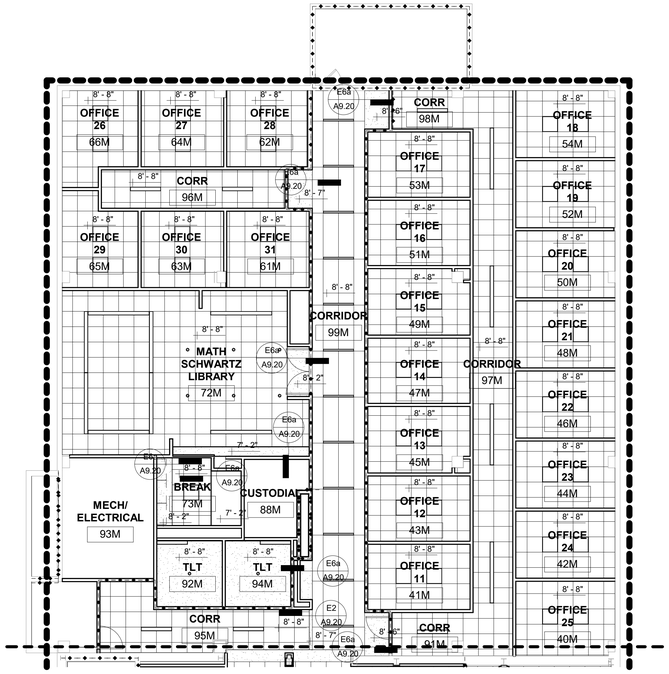
Sheet Title:

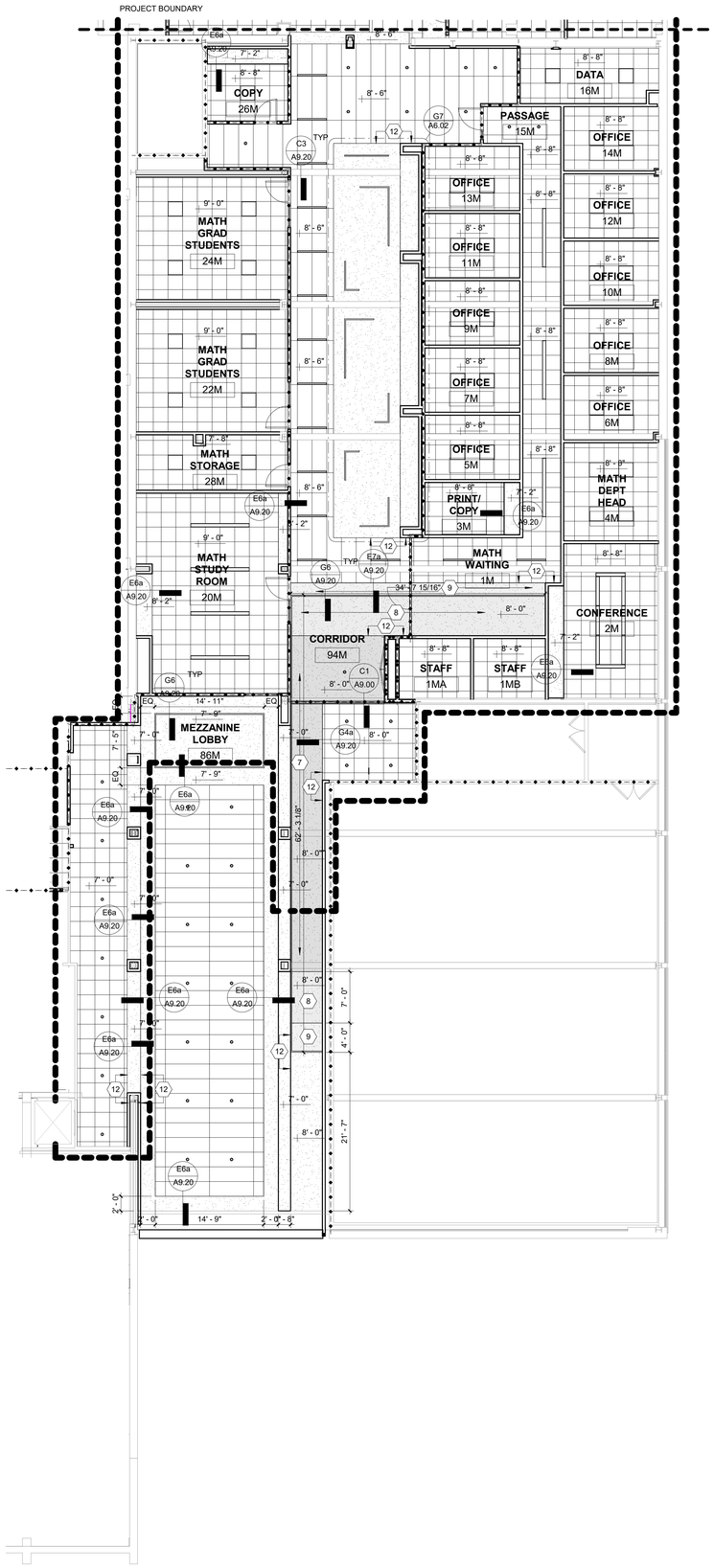
LEVEL 1 REFLECTED CEILING PLAN

Sheet #:

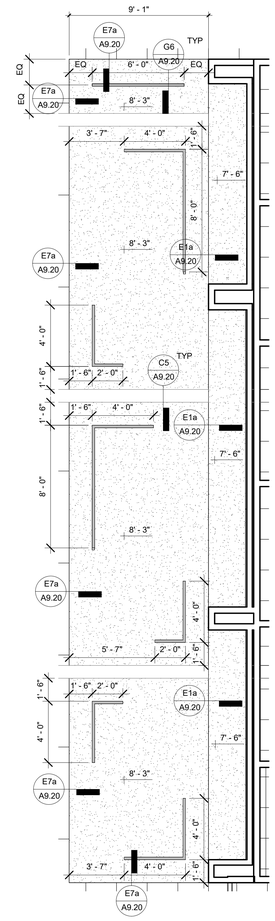
A6.01



D1 LEVEL 1-MEZZANINE RCP - AREA C
1/8" = 1'-0"



G4 MEZZANINE RCP - AREAS A & B
1/8" = 1'-0"



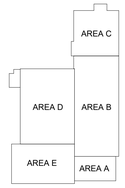
G7 MEZZANINE ENLARGED RCP - CORRIDOR
1/4" = 1'-0"

RCP - GENERAL NOTES:

A. NOT ALL KEYED NOTES USED ON THIS SHEET.
B. REFER TO SHEET A9.20 FOR TYPICAL CEILING DETAILS.
C. GYPSUM WALL BOARD SOFFITS AND BULKHEADS ARE 1" BELOW ADJOINING ACOUSTICAL CEILING, UNO.
D. CENTER ACOUSTICAL TILE GRID BOTH DIRECTIONS IN ALL ROOMS UNO
E. REFER TO FINISH SCHEDULES FOR GYPSUM BOARD CEILING PAINT COLORS

RCP KEYED NOTES

7 PAINT DRYWALL CEILING PT-2. REFER TO FINISH PLAN.
8 PAINT DRYWALL CEILING PT-3. REFER TO FINISH PLAN.
9 PAINT DRYWALL CEILING PT-4. REFER TO FINISH PLAN.
12 ALIGN



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Sheet Title:
MEZZANINE LEVEL REFLECTED CEILING PLANS

Sheet #:
A6.02

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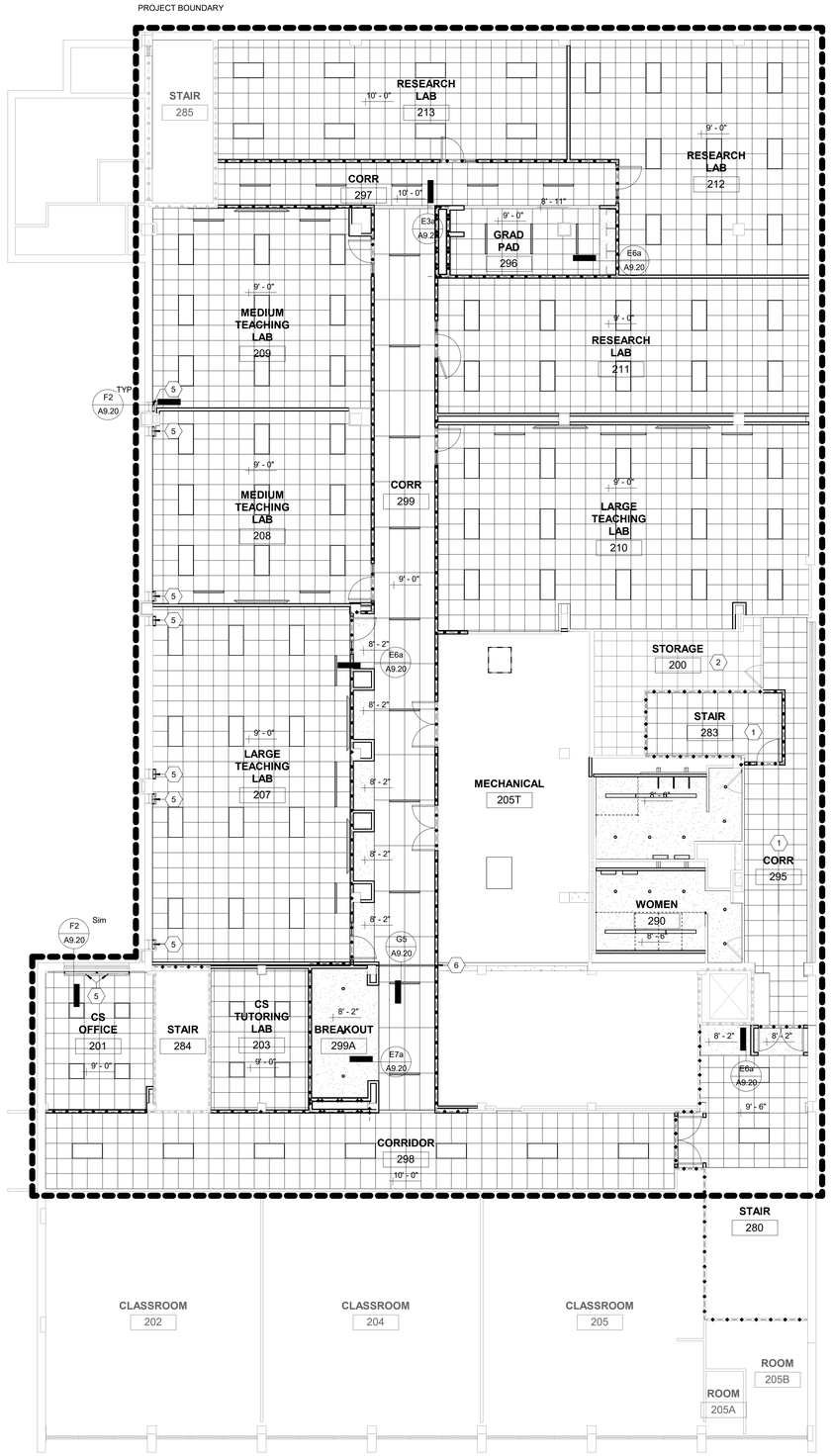
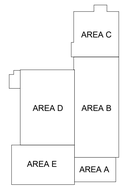
RCP KEYED NOTES

1 NEW 24"x24" ACOUSTICAL PANEL CEILING, CENTERED IN ROOM. CEILING HEIGHT TO MATCH EXISTING (FIELD VERIFY).
2 REMOVE AND REINSTALL CEILING AND CEILING-MOUNTED DEVICES AS REQUIRED FOR ABOVE-CEILING WORK.
5 MANUAL ROLLER SHADE
6 ACOUSTICAL CEILING EXPANSION JOINT COVER



1 LEVEL 2 RCP - AREAS D & E
1/8" = 1'-0"



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Sheet Title:
LEVEL 2 REFLECTED CEILING PLAN

Sheet #:
A6.03

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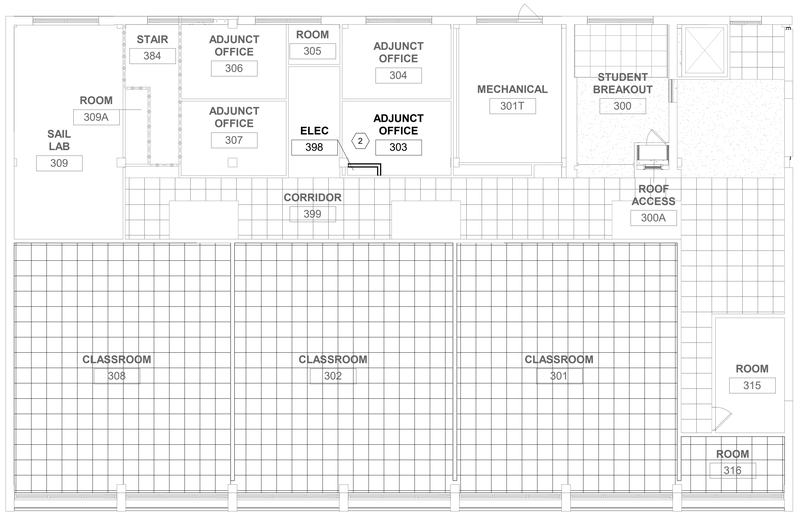
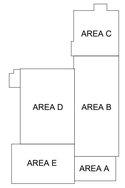
B. REFER TO SHEET A9.20 FOR TYPICAL CEILING DETAILS.
C. GYPSUM WALL BOARD SOFFITS AND BULKHEADS ARE 1" BELOW ADJOINING ACOUSTICAL CEILING, UNO.
D. CENTER ACOUSTICAL TILE GRID BOTH DIRECTIONS IN ALL ROOMS UNO
E. REFER TO FINISH SCHEDULES FOR GYPSUM BOARD CEILING PAINT COLORS

RCP KEYED NOTES

2 REMOVE AND REINSTALL CEILING AND CEILING-MOUNTED DEVICES AS REQUIRED FOR ABOVE-CEILING WORK.



C4 LEVEL 3 RCP
1/8" = 1'-0"



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MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **2/19/2025**

Drawn By: **Author**

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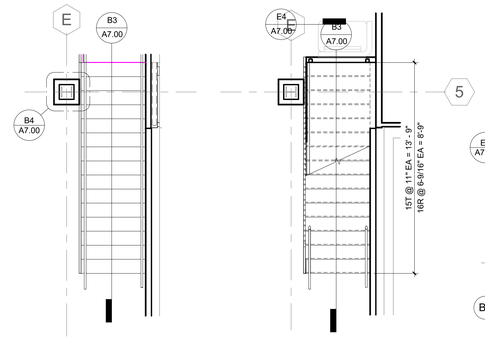
Sheet Title:

LEVEL 3 REFLECTED CEILING PLAN

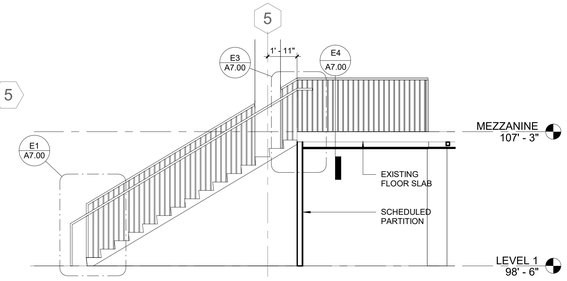
Sheet #:

A6.04

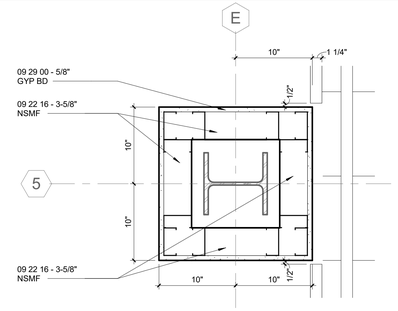


B2 LEVEL 1 ENLARGED FLOOR PLAN - LOBBY STAIR
1/4" = 1'-0"

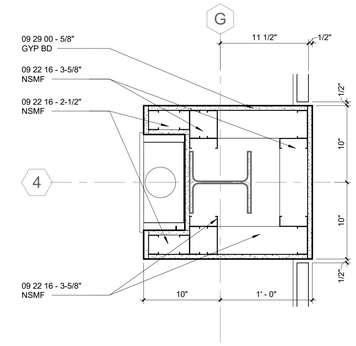
B1 MEZZANINE LEVEL ENLARGED FLOOR PLAN - LOBBY STAIR
1/4" = 1'-0"



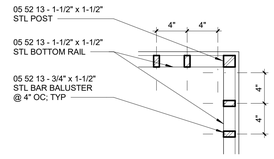
B3 SECTION - OPEN STAIR
1/4" = 1'-0"



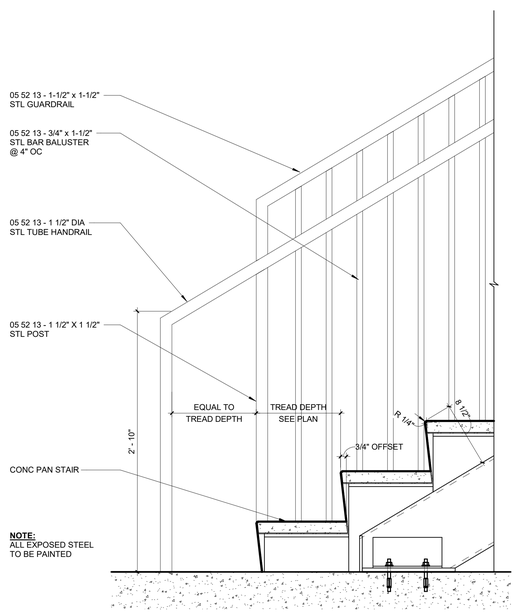
B4 PLAN DETAIL - STAIR AT COLUMN
1 1/2" = 1'-0"



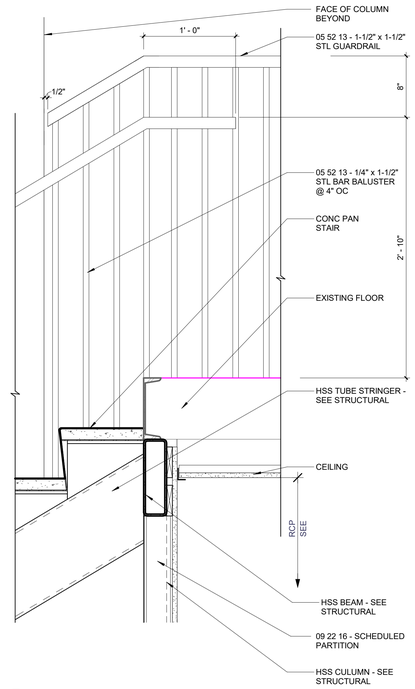
B6 PLAN DETAIL - GUARDRAIL AT COLUMN
1 1/2" = 1'-0"



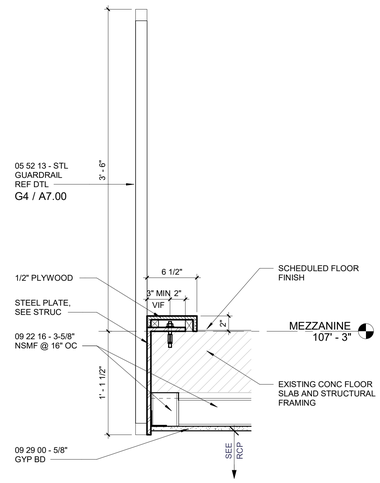
B7 PLAN DETAIL - GUARDRAIL CORNER
1 1/2" = 1'-0"



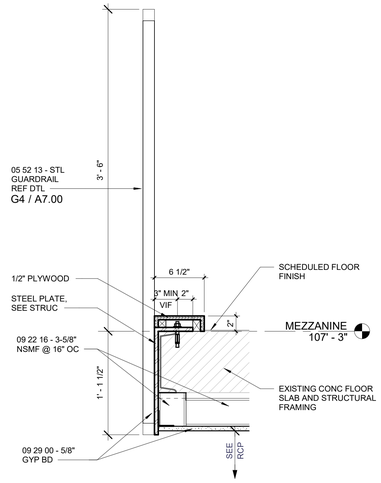
E1 SECTION - BOTTOM LEVEL
1 1/2" = 1'-0"



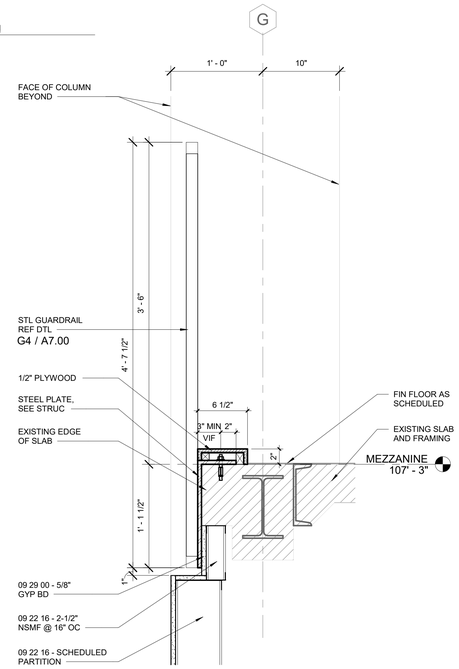
E3 SECTION - TOP LEVEL
1 1/2" = 1'-0"



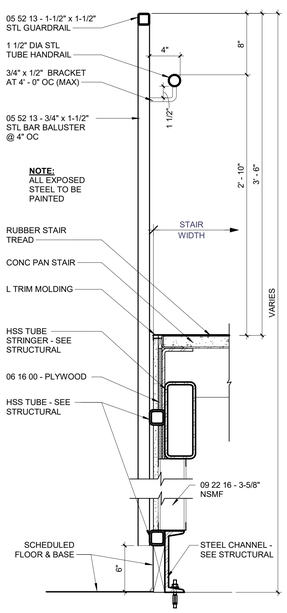
E4 SECTION - GUARDRAIL AT EXISTING 8-IN SLAB 2
1 1/2" = 1'-0"



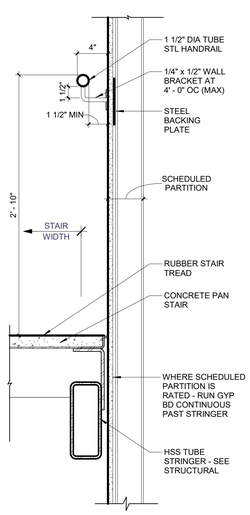
E5 SECTION - GUARDRAIL AT MEZZANINE LOBBY
1 1/2" = 1'-0"



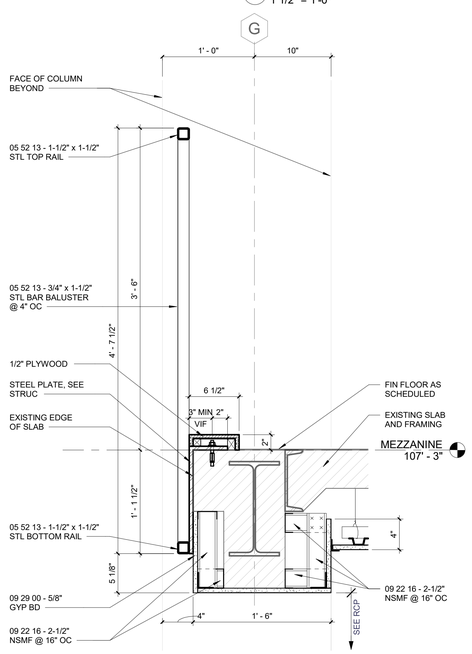
E7 SECTION - GUARDRAIL AT EXISTING 5-IN SLAB 2
1 1/2" = 1'-0"



G1 SECTION - GUARDRAIL @ MEZZ STAIR
1 1/2" = 1'-0"



G3 SECTION - TYP HANDRAIL @ WALL
1 1/2" = 1'-0"



G4 SECTION - GUARDRAIL AT EXISTING 5-IN SLAB 1
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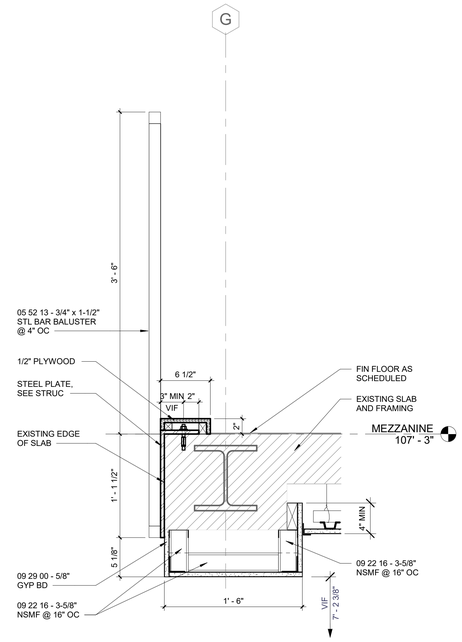
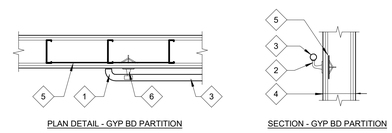


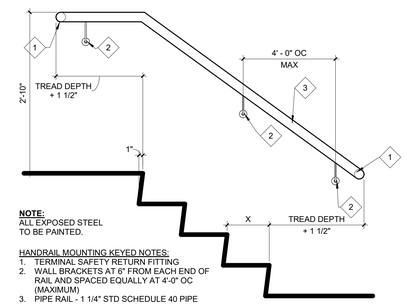
G6 SECTION - GUARDRAIL AT EXISTING 6 1/2-IN SLAB
1 1/2" = 1'-0"



NOTE:
ALL EXPOSED STEEL TO BE PAINTED.

HANDRAIL MOUNTING KEYED NOTES:
1. TERMINAL SAFETY RETURN FITTING.
2. WALL BRACKETS AT 6" FROM EACH END OF RAIL AND SPACED EQUALLY AT 4'-0" OC MAXIMUM.
3. PIPE RAIL - 1 1/4" STD SCHEDULE 40 PIPE.
4. SCHEDULED PARTITION TYPE- SEE FLOOR PLAN FOR REFERENCES.
5. STEEL BACKING PLATE.
6. 3/8" TOGGLE BOLT TO SECURE WALL BRACKET TO GYP BD PARTITIONS.
7. 3/8" EXPANSION BOLT TO SECURE WALL BRACKET TO MASONRY OR CONCRETE PARTITIONS.

F7 TYPICAL HANDRAIL DETAILS
3/4" = 1'-0"



NOTE:
ALL EXPOSED STEEL
TO BE PAINTED.

HANDRAIL MOUNTING KEYED NOTES:
1. TERMINAL SAFETY RETURN FITTING
2. WALL BRACKETS AT 6" FROM EACH END OF RAIL AND SPACED EQUALLY AT 4'-0" OC (MAXIMUM)
3. PIPE RAIL - 1 1/4" STD SCHEDULE 40 PIPE

G7 TYPICAL HANDRAIL AT STAIRS
3/4" = 1'-0"

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MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **2/19/2025**

Drawn By: **KAD**

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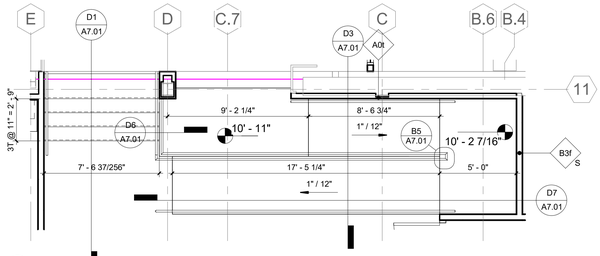
Sheet Title:

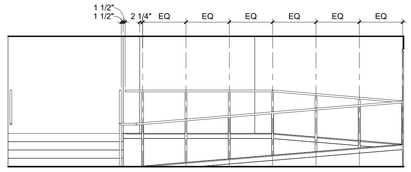
STAIR PLANS, SECTIONS AND DETAILS

Sheet #:

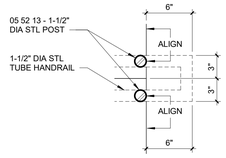
A7.00



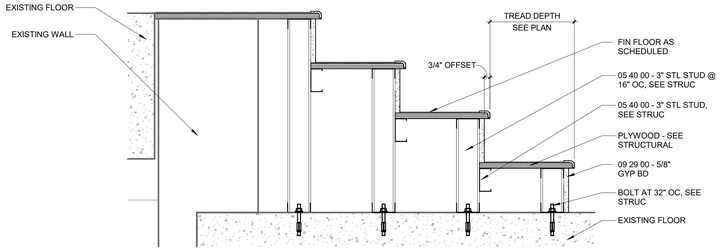
B1 ALTERNATE NO 3 -MEZZANINE NEW RAMP & STAIR
1/4" = 1'-0"



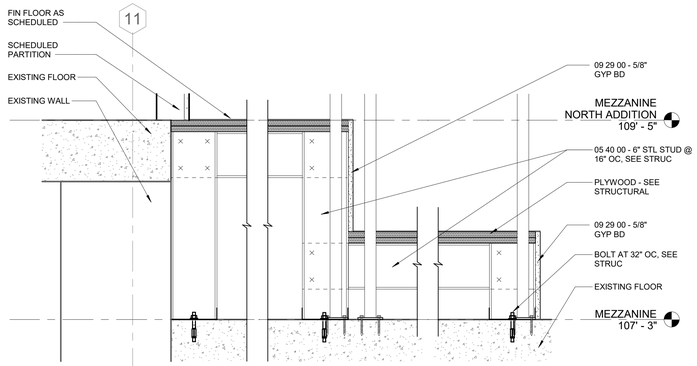
B3 MEZZANINE RAMP
1/4" = 1'-0"



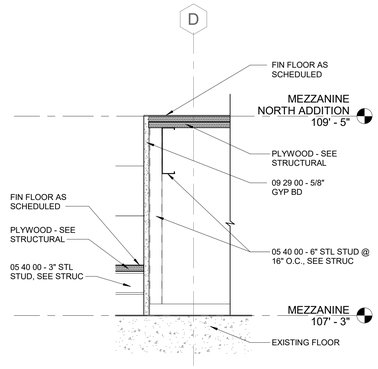
B5 MEZZANINE NEW RAMP & STAIR - HANDRAIL
1 1/2" = 1'-0"



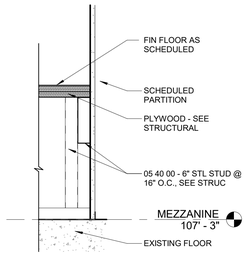
D1 SECTION THRU MEZZANINE STAIR
1 1/2" = 1'-0"



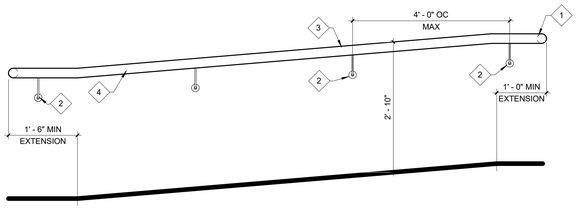
D3 SECTION THRU MEZZANINE RAMP
1 1/2" = 1'-0"



D6 SECTION - RAMP TO STAIR
1 1/2" = 1'-0"



D7 SECTION - RAMP LANDING
1 1/2" = 1'-0"



NOTE:
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3. PIPE RAIL - 1 1/4" STD SCHEDULE 40 PIPE

G7 TYPICAL HANDRAIL AT RAMPS
3/4" = 1'-0"

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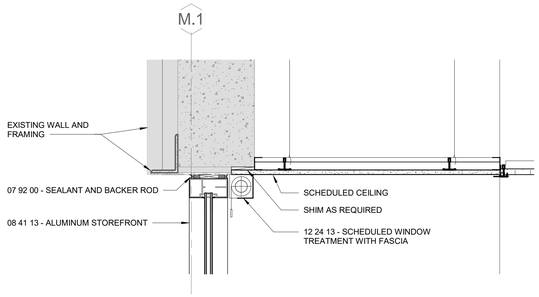
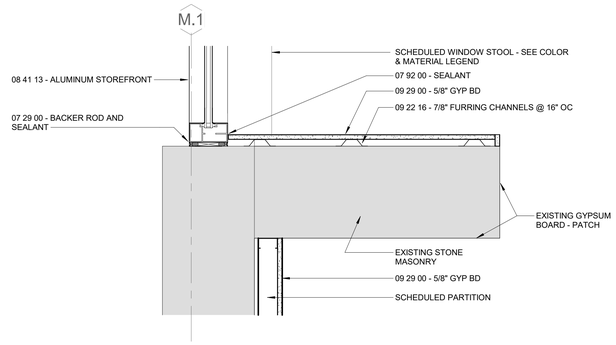
MEZZANINE RAMP AND STAIR DETAILS

Sheet #:

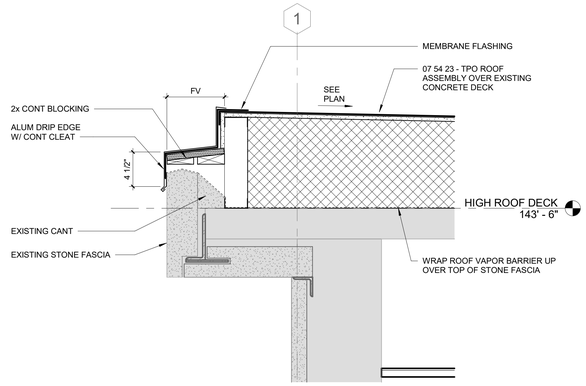
A7.01



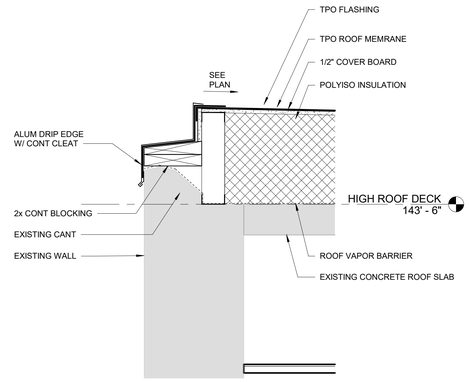
B1 DETAIL - STOREFRONT HEAD
1 1/2" = 1'-0"



C1 DETAIL - STOREFRONT JAMB
1 1/2" = 1'-0"



C5 SECTION DETAIL - ROOF EDGE AT SOUTH WALL
1 1/2" = 1'-0"



C7 SECTION DETAIL - TYPICAL ROOF EDGE
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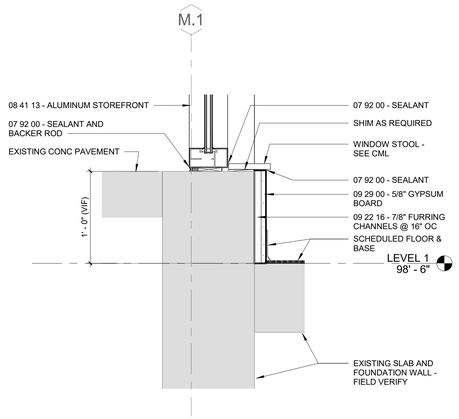
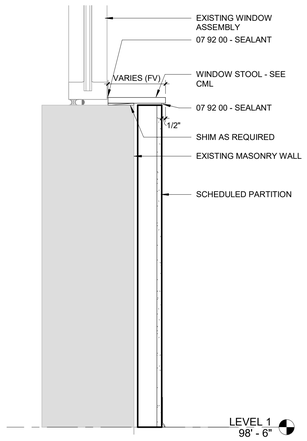
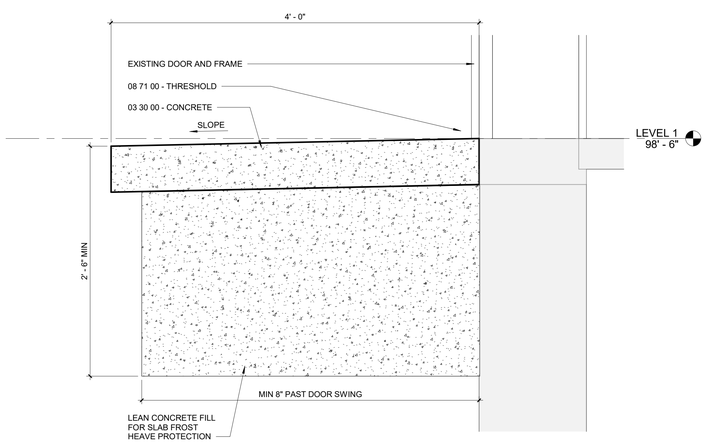


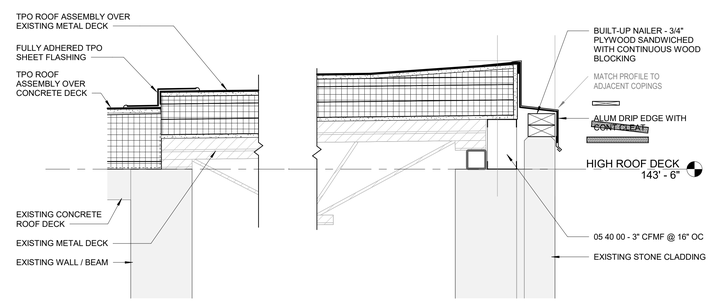
E1 DETAIL - STOREFRONT SILL
1 1/2" = 1'-0"



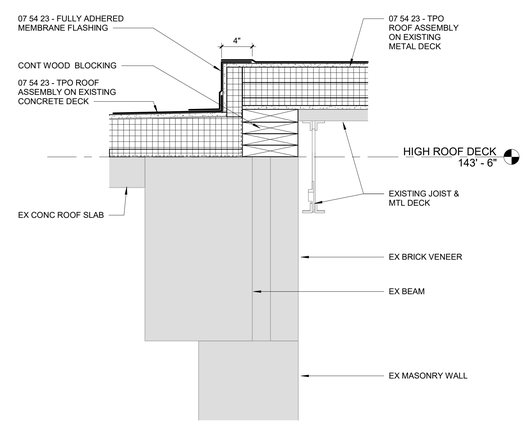
E2 SECTION DETAIL - WINDOW STOOL AT EXISTING OPENING
1 1/2" = 1'-0"



G1 SECTION DTL NEW ENTRY SLAB
1 1/2" = 1'-0"



E6 SECTION DTL - ROOF TRANSITION2
1 1/2" = 1'-0"



G7 SECTION DTL - ROOF TRANSITION
1 1/2" = 1'-0"

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CERTIFICATE OF AUTHORITY - E2017008530

Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **2/19/2025**

Drawn By: **Author**

SHEET REVISIONS

#	Date / Description
1	
2	
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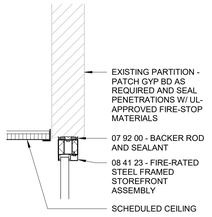
Sheet Title:

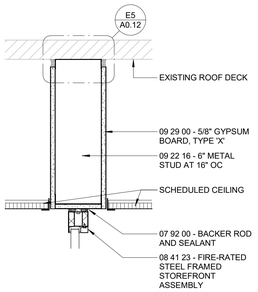
EXTERIOR DETAILS

Sheet #:

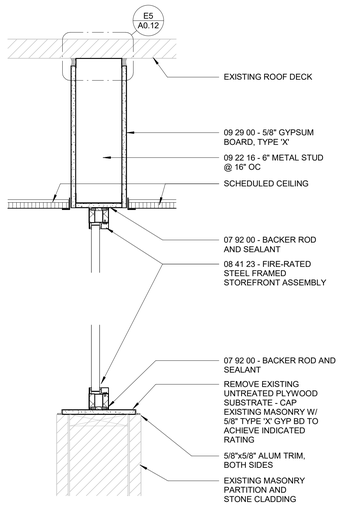
A8.00



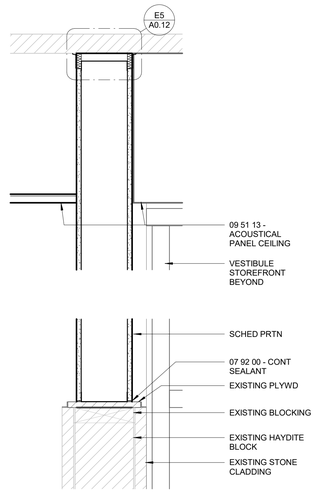
B1 SECTION DTL - SF HEAD AT EXISTING OPENING
1 1/2" = 1'-0"



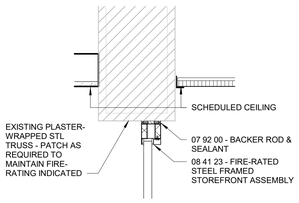
B2 SECTION DETAIL - FRG HEAD AT S STAIR
1 1/2" = 1'-0"



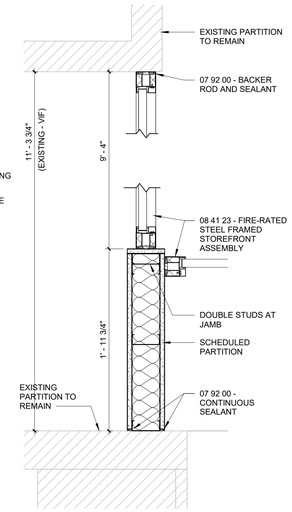
C3 SECTION DETAIL - SOUTH STAIR ENCLOSURE
1 1/2" = 1'-0"



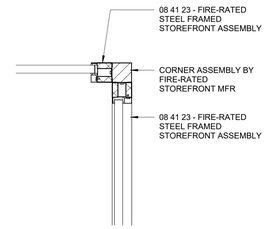
C4 SECTION DETAIL - SOUTH STAIR ENCLOSURE2
1 1/2" = 1'-0"



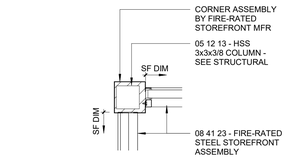
C1 SECTION - FRG HEAD AT MEZZ BEAM
1 1/2" = 1'-0"



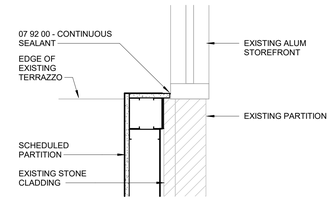
D5 PLAN DETAIL - JAMB AT CS CLASSROOM SF
1 1/2" = 1'-0"



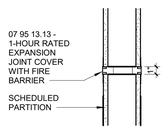
C6 PLAN DETAIL - JAMB AT CORNER
1 1/2" = 1'-0"



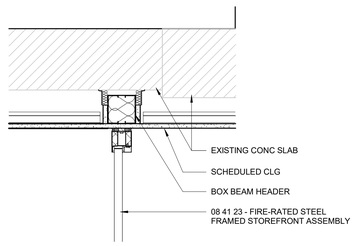
B7 PLAN DTL - CS ENTRY CORNER
1 1/2" = 1'-0"



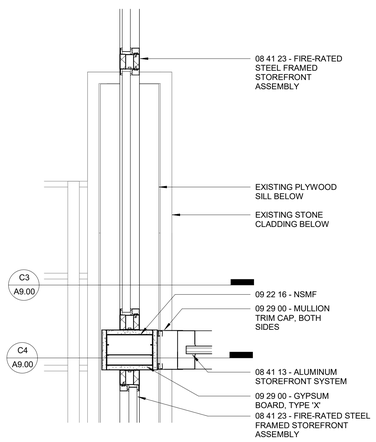
C7 PLAN DTL - LOBBY FURRING AT EXISTING SF
1 1/2" = 1'-0"



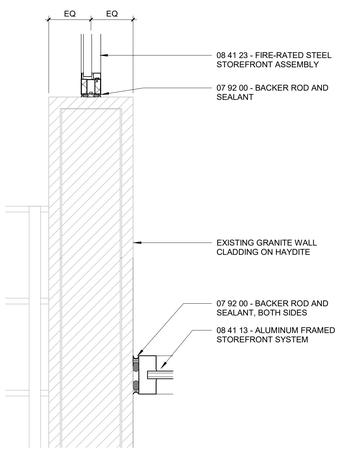
E1 PLAN DETAIL - FIRE-RATED INTERIOR EXP JT IEJ-2
1 1/2" = 1'-0"



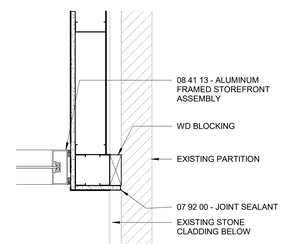
D3 SECTION DTL - CS ENTRY HEAD
1 1/2" = 1'-0"



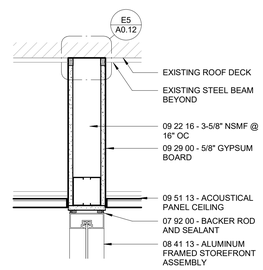
F5 PLAN DETAIL - JAMB AT S STAIR AND VESTIBULE - UPPER
1 1/2" = 1'-0"



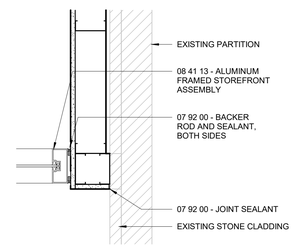
F6 PLAN DETAIL - JAMB AT S STAIR AND VESTIBULE - LOWER
1 1/2" = 1'-0"



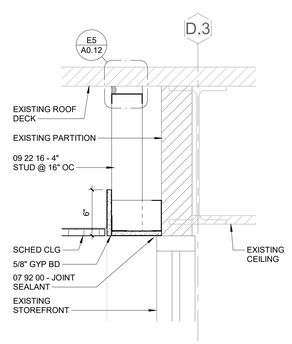
D7 PLAN DTL - JAMB AT VESTIBULE SF - UPPER
1 1/2" = 1'-0"



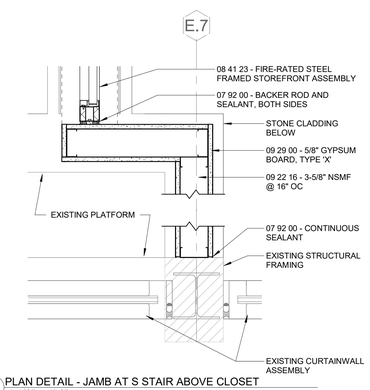
F3 SECTION - VESTIBULE SF HEAD
1 1/2" = 1'-0"



F7 PLAN DTL - JAMB AT VESTIBULE SF - LOWER
1 1/2" = 1'-0"



G3 SECTION - FURRING AT EXIST TECH CENTER SF
1 1/2" = 1'-0"



G5 PLAN DETAIL - JAMB AT S STAIR ABOVE CLOSET
1 1/2" = 1'-0"

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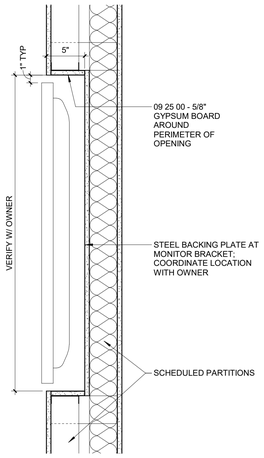
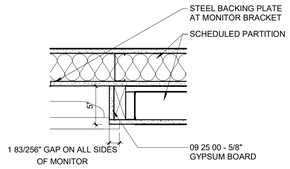
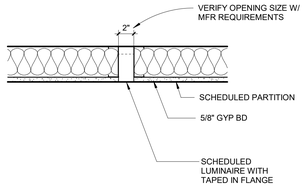
A9.00



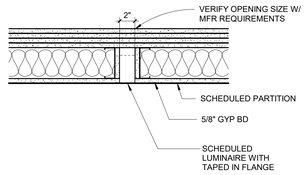
C1 SECTION DTL - MONITOR POCKET
1 1/2" = 1'-0"



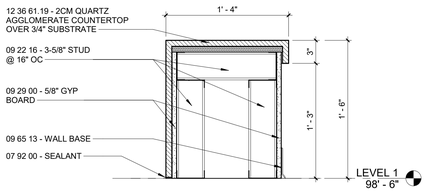
B2 PLAN DTL - TYPICAL MONITOR RECESS
1 1/2" = 1'-0"



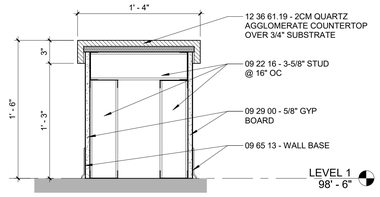
B3 PLAN DTL - 2" LIGHT POCKET
1 1/2" = 1'-0"



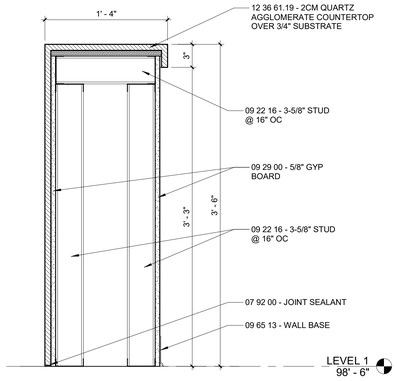
B4 PLAN DTL - 2" LIGHT POCKET IN RATED WALL
1 1/2" = 1'-0"



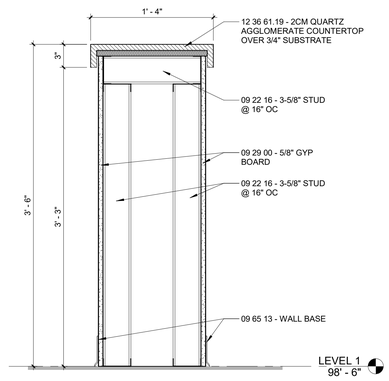
E1 SECTION - BENCH END WITH WATERFALL
1 1/2" = 1'-0"



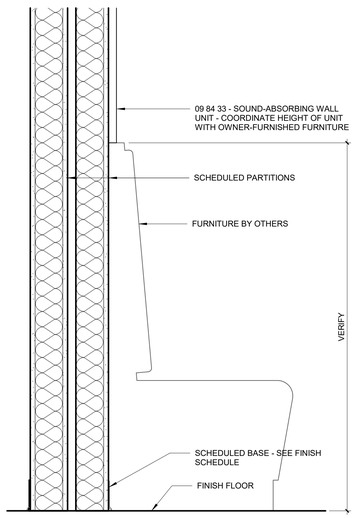
E2 SECTION DETAIL - BENCH AT COMMONS
1 1/2" = 1'-0"



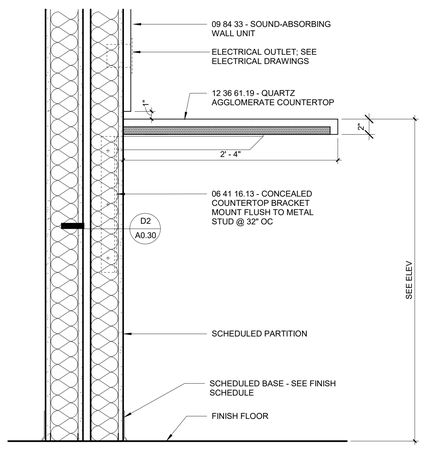
E4 SECTION - LOW WALL END WITH WATERFALL (TYP)
1 1/2" = 1'-0"



E5 SECTION DETAIL - LOW WALL AT COMMONS
1 1/2" = 1'-0"



G1 SECTION - FWP AT BENCH
1 1/2" = 1'-0"



G2 SECTION - FWP AT COUNTER
1 1/2" = 1'-0"

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Sheet Title:

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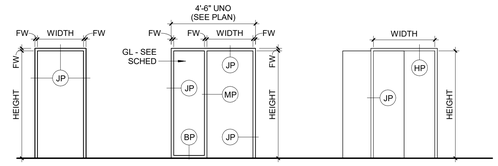
A9.01

FRAME PROFILE MEMBER (FROM FRAME ELEVATION)

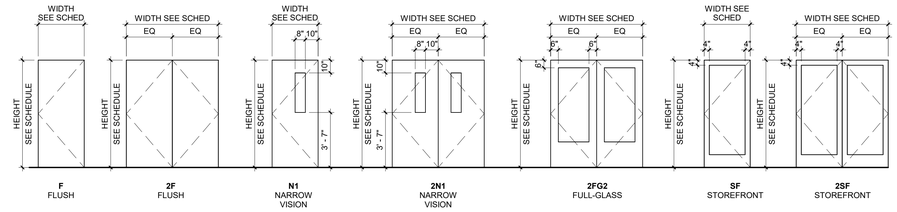
CP CORNER PROFILE						
HP SPECIAL HEAD PROFILE		1/2" GYP BD PTN THK 1/2"; 2 1/4"; HEIGHT; FW= 2"; REMOVABLE FASCIA; DOOR	FRAME THK-SEE JP AT SIDELIGHT; FW=SEE JP AT SIDELIGHT; HEIGHT	FRAME THK SEE JP; SLIP CONNECTION; FW=SEE JP AT SIDELIGHT; HEIGHT		
JP JAMB/HEAD PROFILE	1/2" GYP BD PTN THK 1/2"; FRAME THK @ GYP BD PTN (CALCULATED); FW= 2"; WIDTH/HEIGHT; 5/8"; DT+3/16" VARIES; 1 9/16"	GYP BD; DOOR		4"; HEIGHT; FW= 1 3/4"		HEIGHT; FW= 2 3/4"
MP MULLION PROFILE			FW=SEE JP AT SIDELIGHT; WIDTH; FRAME THK SEE JP AT SIDELIGHT	FRAME THK SEE JP; FW=SEE JP AT SIDELIGHT; WIDTH/HEIGHT; WIDTH/HEIGHT	FW=3 9/16"; WIDTH/HEIGHT	WIDTH/HEIGHT; FW=3 9/16"; WIDTH/HEIGHT
BP BASE PROFILE	SEE JP; HEIGHT; GLAZING AND STOP - WHERE OCCURS, TYP; 1/2"; VARIES; 1/2"; FRAME THK SEE JP		AT DOOR OPENING(S)	FW=2"; HEIGHT; FRAME THK SEE JP; AT SIDELIGHT(S)	AT DOOR OPENING(S)	FW= 2 3/4"; HEIGHT; FRAME THK SEE JP; AT SIDELIGHT(S)
	UR UNEQUAL RABBET	FP POCKET FRAME	AS SINGLE GLAZING		STL FIRE RATED GLAZING	
	FRAME MATERIAL: HM (HOLLOW METAL) UNO IN OPENING SCHEDULE		FRAME MATERIAL: ALUMINUM		FRAME MATERIAL: FIRE-RATED STEEL	
	FRAME PROFILE GROUP (FROM OPENING SCHEDULE)					



F1 F5 FP

FRAME TYPES

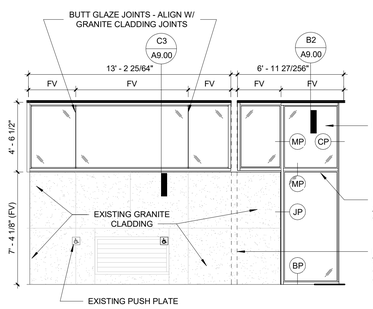
1/4"=1'-0"



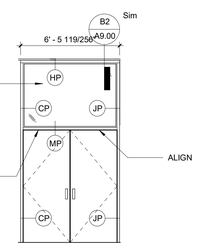
F FLUSH; 2F FLUSH; N1 NARROW VISION; 2N1 NARROW VISION; 2FG2 FULL-GLASS; SF STOREFRONT; 2SF STOREFRONT

DOOR TYPES

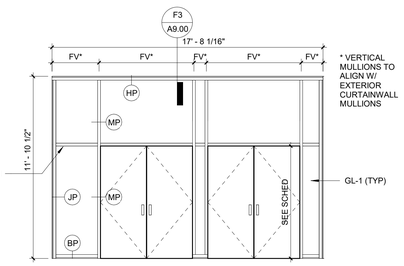
1/4"=1'-0"



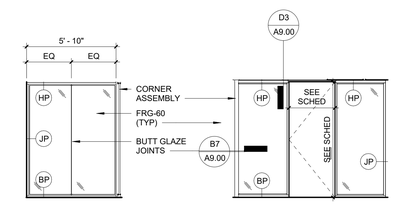
F1 VESTIBULE WEST STOREFRONTS
1/4" = 1'-0"



E2 SOUTH STAIR ENCLOSURE
1/4" = 1'-0"

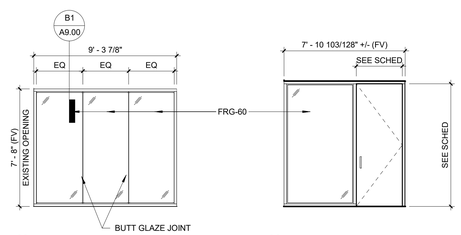


E3 VESTIBULE STOREFRONT
1/4" = 1'-0"



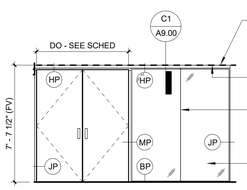
E4 CS ENTRY SIDE
1/4" = 1'-0"

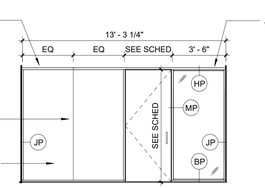
F5 CS ENTRY FRONT
1/4" = 1'-0"

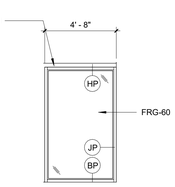


F6 CLASSROOM 151 ENTRY
1/4" = 1'-0"

F7 INFO SERVICES ENTRY
1/4" = 1'-0"







G1 MEZZANINE ENTRY
1/4" = 1'-0"

G2 MATHEMATICS ENTRY FRONT
1/4" = 1'-0"

G3 MATH STUDY RM
1/4" = 1'-0"

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Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **2/19/2025**

Drawn By: **Author**

SHEET REVISIONS

#	Date / Description
1	
2	
3	
4	

Seal:

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Sheet Title:

DOOR AND FRAME TYPES

Sheet #:

A9.10

DOOR SCHEDULE

DOOR NO	DOORS TYPE	DOORS MATERIAL	SIZE WIDTH (DW)	SIZE HEIGHT (DH)	SIZE THICKNESS	DOOR FRAMES ELEVATION	DOOR FRAMES PROFILE GROUP	PERIMETER DETAILS HEAD	PERIMETER DETAILS JAMB	PERIMETER DETAILS SILL	FIRE RATING	HARDWARE GROUP	GLAZING TYPE	NOTES	REVISIONS
Basement - 1965 Bldg															
07	F	HM	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	90 MIN	09.08			
015	F	HM	3' - 0"	7' - 0"	1 3/4"	F1	UR	G7/A9.11	G7/A9.11	--	45 MIN	09.01		2	
083	F	HM	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	45 MIN	05.01			
LEVEL 1															
102C	2N1	HM	6' - 0"	6' - 8"	1 3/4"	F1	UR	G7/A9.11	G7/A9.11	--	45 MIN	08.08	FRG-45	2	
110	SF	STL	3' - 0"	7' - 6 57/128"		SEE ELEV	STL	SEE ELEV	SEE ELEV	SEE ELEV	60 MIN	02.04	FRG-60		
110A	F	WD	3' - 0"	7' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.02	GL-1		
110B	F	WD	3' - 0"	7' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.02	GL-1		
111	F	WD	3' - 0"	7' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	05.02	GL-1		
112	F	WD	3' - 0"	7' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.02	GL-1		
113	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
114	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
115	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
116	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
117	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
118	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
119	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
120	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
121	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
122	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
123	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
124	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
125	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
126	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	09.11			
127	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
129	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
130A	2F	HM	7' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	90 MIN	09.09			
130B	F	WD	3' - 0"	7' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--		05.03	GL-1		
130C	F	HM	3' - 0"	7' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/9.11	--	20 MIN	09.03	FRG-45		
150X	EX	EX	3' - 0"	7' - 0"	1 3/4"	EX	EX	--	--	--		00.2		5	
151A	F	HM	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--		08.01			
153A	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
153B	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--		07.03	GL-1		
160	SF	STL	3' - 0"	8' - 0"		SEE ELEV	STL	SEE ELEV	SEE ELEV	SEE ELEV	60 MIN	02.04	FRG-60		
160A	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
160B	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
160C	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
160D	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
161A	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
162A	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
162B	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
162C	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
162D	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
162G	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
162H	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
163A	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
163B	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
163C	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
163D	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
163E	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
163F	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
163G	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
163H	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
163J	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
163K	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
163T	F	HM	3' - 0"	7' - 0"	1 3/4"	F1	UR	G7/A9.11	G7/A9.11	--	45 MIN	09.02		2	
164A	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
164B	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
164C	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
164D	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
164E	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
164F	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
164G	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
164H	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
164J	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
164K	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
164L	F	WD	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.03	GL-1		
164X	F	HM	3' - 0"	6' - 8"	1 3/4"	F1	UR				--	01.01		2	
165A	F	WD	3' - 0"	7' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.02	GL-1		
165B	F	WD	3' - 0"	7' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.02	GL-1		
165C	F	WD	3' - 0"	7' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.02	GL-1		
165D	F	WD	3' - 0"	7' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.02	GL-1		
165E	F	WD	3' - 0"	7' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.02	GL-1		
165F	F	WD	3' - 0"	7' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.02	GL-1		
166A	F	HM	3' - 6"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	90 MIN	09.04			
166B	F	HM	3' - 6"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	90 MIN	09.04			
180	2SF	STL	6' - 1 17/32"	7' - 4"		SEE ELEV	STL	SEE ELEV	SEE ELEV		60 MIN	02.07	FRG-60		
183A	2F	HM	6' - 4"	8' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	45 MIN	02.06		3	
183B	F	HM	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	45 MIN	02.02			
194	F	HM	3' - 0"	8' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	20 MIN	09.06			
199A	2SF	AL	6' - 0"	7' - 4"		SEE ELEV	AS	SEE ELEV	SEE ELEV	SEE ELEV	--	02.01	GL-1		
199B	2SF	AL	6' - 0"	7' - 4"		SEE ELEV	AS	SEE ELEV	SEE ELEV	SEE ELEV	--	04.01	GL-1		
MEZZANINE															

DOOR SCHEDULE

DOOR NO	DOORS TYPE	DOORS MATERIAL	SIZE WIDTH (DW)	SIZE HEIGHT (DH)	SIZE THICKNESS	DOOR FRAMES ELEVATION	DOOR FRAMES PROFILE GROUP	PERIMETER DETAILS HEAD	PERIMETER DETAILS JAMB	PERIMETER DETAILS SILL	FIRE RATING	HARDWARE GROUP	GLAZING TYPE	NOTES	REVISIONS
1M	SF	STL	3' - 0"	7' - 4"		SEE ELEV	STL	SEE ELEV	SEE ELEV	SEE ELEV	60 MIN	02.04	FRG-60		
1MA	F	WD	3' - 0"	7' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.02	GL-1		
1MB	F	WD	3' - 0"	7' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	07.02	GL-1		
2M	F	WD	3' - 0"	7' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	--	05.02	GL-1		
4M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
5M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
6M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
7M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
8M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
9M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
10M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
11M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
12M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
13M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
14M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
15M	F	HM	3' - 0"	7' - 6"	1 3/4"	F5	UR	G5/A9.11	G5/9.11	--	20 MIN	09.07	FRG-45		
16M	F	HM	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	45 MIN	09.05			
20M	F	HM	3' - 0"	7' - 6"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	20 MIN	08.04	FRG-45		
22M	F	HM	3' - 0"	7' - 6"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	20 MIN	08.02	FRG-45		
24M	F	HM	3' - 0"	7' - 6"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	20 MIN	08.02	FRG-45		
26M	F	HM	3' - 0"	7' - 6"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	20 MIN	08.04			
28M	F	HM	3' - 0"	7' - 6"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	20 MIN	09.01			
83M	2F	HM	6' - 0"	6' - 10"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	45 MIN	02.05		3	
86M	2SF	STL	6' - 0"	7' - 4"		SEE ELEV	STL	SEE ELEV	SEE ELEV		60 MIN	02.07	FRG-60	3	
87M	2F	HM	7' - 0"	7' - 4"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	90 MIN	09.09			
102A	N1	HM	3' - 0"	7' - 0"	1 3/4"	F1	UR	G7/A9.11	G7/A9.11	--	45 MIN	08.06	FRG-45	2	
102B	2N1	HM	6' - 0"	7' - 0"	1 3/4"	F1	UR	G7/A9.11	G7/A9.11	--	45 MIN	08.08	FRG-45	2	
MEZZANINE NORTH ADDITION															
40M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
41M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
42M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
43M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
44M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
45M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
46M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
47M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
48M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
49M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
50M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
51M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
52M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
53M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
54M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
61M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
62M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
63M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
64M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
65M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
66M	F	WD	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	--	07.02			
72M	2FG2	WD	6' - 0"	8' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11		45 MIN	08.10	FRG-45		
73M	F	WD	3' - 0"	7' - 0"	1 3/4"	FP	FP				--	04.02			
74M	F	HM	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	20 MIN	09.02			
88M	F	HM	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	20 MIN	09.02			
89M	2F	HM	7' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	90 MIN	02.07			
91M	F	HM	3' - 0"	7' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/9.11	--	20 MIN	07.01	FRG-45		
92M	F	HM	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	20 MIN	06.01			
93M	F	HM	3' - 6"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	45 MIN	09.08			
94M	F	HM	3' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	20 MIN	06.01			
96M	F	HM	3' - 0"	7' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/9.11	--	20 MIN	07.01	FRG-45		
98M	F	HM	3' - 0"	7' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/9.11	--	20 MIN	07.01	FRG-45		
LEVEL 2															
201	F	WD	3' - 0"	7' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	20 MIN	07.04	FRG-45		
203	F	WD	3' - 0"	7' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	20 MIN	08.09	FRG-45		
205Ta	2F	HM	6' - 0"	8' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	45 MIN	09.10			
205Tb	2F	HM	6' - 0"	8' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	45 MIN	09.10			
207A	F	HM	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	20 MIN	08.07	FRG-45		
207B	F	HM	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	20 MIN	08.07	FRG-45		
208	F	HM	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	20 MIN	08.03	FRG-45		
209	F	HM	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	20 MIN	08.03	FRG-45		
210	F	HM	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	20 MIN	08.03	FRG-45		
211	F	HM	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	20 MIN	08.03	FRG-45		
212	F	HM	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	20 MIN	08.05	FRG-45		
213	F	HM	3' - 0"	8' - 0"	1 3/4"	F5	UR	G5/A9.11	G5/A9.11	--	20 MIN	08.05	FRG-45		
280A	2F	HM	6' - 0"	8' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	45 MIN	02.06		3	
280B	2F	HM	6' - 4"	8' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	45 MIN	02.06		3	
283	F	HM	3' - 0"	8' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	45 MIN	02.03		3	
292	EX	EX	2' - 6"	7' - 0"	1 3/4"	EX	EX	--	--	--		00.1		1	
298A	2F	HM	7' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	90 MIN	09.09			
299B	2F	HM	7' - 0"	7' - 0"	1 3/4"	F1	UR	G5/A9.11	G5/A9.11	--	90 MIN	09.09			

GENERAL NOTES - DOOR SCHEDULE

1. SEE SHEET A9.10 FOR DOOR TYPE ELEVATIONS.
2. SEE SHEET A9.10 FOR FRAME TYPE ELEVATIONS.
3. PROFILE GROUP ON OPENING SCHEDULE REFERS TO THE "FRAME PROFILE MATRIX," SEE SHEET A9.10.
4. WHEN MORE THAN ONE GLAZING TYPE OCCURS IN AN OPENING FRAME, REFER TO FRAME ELEVATIONS FOR GLAZING TYPE LOCATIONS.
5. REFER TO COLOR AND MATERIAL LEGEND AND ROOM FINISH SCHEDULE FOR DOOR AND FRAME FINISHES.
6. REFER TO THIS SHEET FOR TYPICAL HOLLOW METAL FRAME DETAILS AT GYPSUM BOARD PARTITIONS, UNO.
7. NOT USED
8. LEAF WHERE DOOR NUMBER IS SHOWN ON PLAN INDICATES ACTIVE LEAF, UNO.
9. ALL DOORS INDICATED WITH A FIRE RATING ARE TO BE SELF-CLOSING AND SELF-LATCHING. REFER TO DOOR HARDWARE SPECIFICATIONS FOR CLOSURE TYPES.

DOOR TYPE LEGEND:

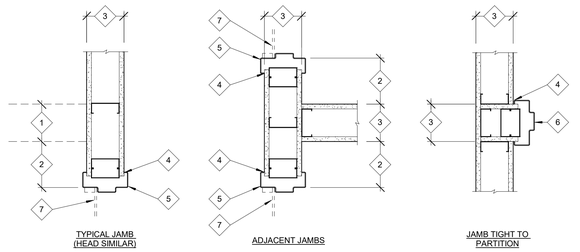
AL = ALUMINUM
HM = HOLLOW METAL
STL = FIRE-RATED STEEL
WD = FLUSH WOOD DOOR, WOOD VENEER FACES

GLAZING TYPE LEGEND:

FRG-XX= FIRE RESISTANT GLASS; 'XX' DENOTES RATING IN MINUTES
GL-1 = CLEAR, FULLY TEMPERED GLASS; 1/4" THICK
IGA-1 = INSULATED GLAZED ASSEMBLY

DOOR SCHEDULE KEYED NOTES

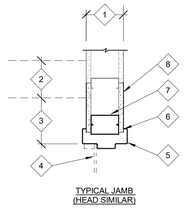
1. EXISTING DOOR TO REMAIN. PROVIDE NEW ADA-COMPLIANT DOOR PULL.
2. NEW DOOR AND FRAME IN EXISTING OPENING. FIELD VERIFY OPENING SIZE.
3. PROVIDE WALL-MOUNTED MAGNETIC HOLD-OPENS AND CONNECT TO FIRE ALARM SYSTEM.
4. CONNECT TO ADA ACTUATOR. LOCATION OF ACTUATOR TO BE DETERMINED.
5. EXISTING DOOR TO REMAIN. REPLACE LOCKSET.
6. PROVIDE CARD READER ACCESS.
7. NEW DOOR IN EXISTING FRAME. FIELD VERIFY OPENING SIZE.



G5 TYPICAL HOLLOW METAL JAMB CONDITIONS AT GYPSUM BOARD PARTITIONS
1 1/2" = 1'-0"

KEYED NOTES:

1. SCHEDULED PARTITION TYPE - WHERE OCCURS.
2. 6" UNO.
3. SCHEDULED PARTITION TYPE.
4. SEALANT EACH SIDE OF FRAME.
5. FRAME (SEE DOOR SCHEDULE FOR MORE INFORMATION).
6. FRAME (SEE DOOR SCHEDULE FOR MORE INFORMATION) INSTALLED TIGHT TO SCHEDULED PARTITION.
7. REMOVABLE STOP AND GLAZING (WHERE OCCURS).



G7 TYP HM JAMB CONDITIONS AT EX GYP BD PARTITIONS
1 1/2" = 1'-0"

KEYED NOTES:

1. EXISTING PARTITION.
2. ADJOINING PARTITION - WHERE OCCURS.
3. 6" UNO.
4. REMOVABLE STOP AND GLAZING (WHERE OCCURS).
5. FRAME (SEE DOOR SCHEDULE FOR MORE INFORMATION).
6. SEALANT EACH SIDE OF FRAME.
7. INSTALL NEW STUDS MATCHING SIZE OF EXISTING PARTITION FRAMING AS REQUIRED TO FRAME NEW OPENING
8. INSTALL NEW SUBSTRATE AND FINISH TO MATCH EXISTING PARTITION.

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MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **2/19/2025**

Drawn By: **Author**

SHEET REVISIONS

#	Date / Description
1	
2	
3	
4	

Seal:

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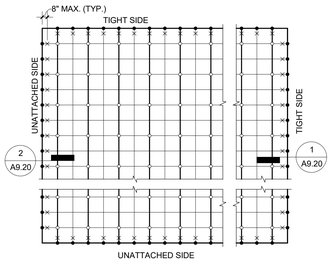
Sheet Title:
DOOR SCHEDULE

Sheet #:
A9.11



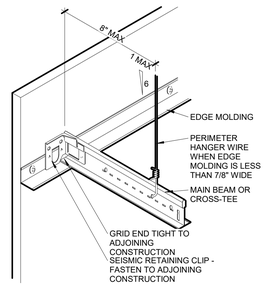
3 C-II/III - PLAN - CEILING SUSPENSION DIAGRAM AND SEISMIC CRITERIA
1/8" = 1'-0"

LEGEND:

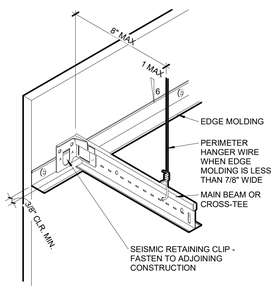
- MAIN BEAM
- CROSS-TEE
- HANGER WIRE
- PERIMETER HANGER WIRE - WHERE REQUIRED
- SEISMIC RETAINING CLIP

SUSPENDED CEILING GENERAL NOTES:

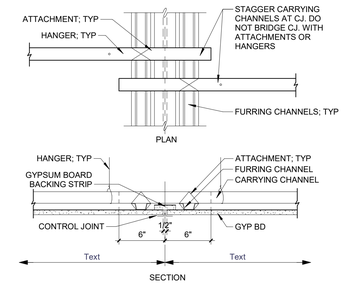
1. HANGER WIRES: 4'-0" O.C. EACH WAY (MAX.); NOT MORE THAN 6:1 OUT OF PLUMB UNLESS COUNTER SLOPING WIRES PROVIDED.
2. PARTITION ATTACHMENT: CEILING SYSTEM MAY NOT BE USED TO SUPPORT WALLS OR PARTITIONS. ANY ATTACHMENT MECHANISM MUST ALLOW THE CEILING TO MOVE LATERALLY UP TO 3/8".
3. PERIMETER CLOSURE: EDGE MOLDING, 7/8" WIDE (MIN.), UNLESS OTHERWISE SPECIFIED.
4. SEISMIC DESIGN CRITERIA: COMPLY WITH THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE.
5. PERIMETER CLOSURE CLEARANCE: 3/8" CLEARANCE BETWEEN END OF GRID AND ADJOINING CONSTRUCTION ON 2 SIDES; END OF GRID TIGHT TO ADJOINING CONSTRUCTION ON THE OTHER 2 SIDES. PERMANENT ATTACHMENT OF GRID TO PERIMETER CLOSURE IS NOT PERMITTED.
6. PERIMETER SUPPORT: WHEN PERIMETER CLOSURE IS SPECIFIED TO BE LESS THAN 7/8" WIDE, PROVIDE PERIMETER HANGER WIRES AT ENDS OF MAIN BEAMS AND CROSS-TEES AT 8" (MAX) FROM EACH WALL OR CHANGE IN PLANE.
7. PERIMETER SPACERS: PROVIDE SEISMIC RETAINING CLIP AT ENDS OF MAIN BEAMS AND CROSS-TEES TO PREVENT SPREADING. ANCHOR CLIP TO ADJOINING CONSTRUCTION ON EACH SIDE.
8. PENETRATIONS: CEILING PENETRATIONS (COLUMNS, WALLS, SPRINKLERS, ETC.) AND INDEPENDENTLY SUPPORTED FIXTURES OR SERVICES ARE TO BE TREATED AS PERIMETER CLOSURES AND SHALL MAINTAIN CLEARANCE AT END OF GRID (3/8" WHERE SEISMIC RETAINING CLIP IS NOT USED) WITH SUITABLE ESCUTCHEONS OR CLOSURES.
9. FIXTURES AND SERVICES: REFER TO MEP/FP DOCUMENTS AND CISCA REQUIREMENTS FOR SUPPORT OF LIGHT FIXTURES AND OTHER SERVICES WITHIN THE CEILING.



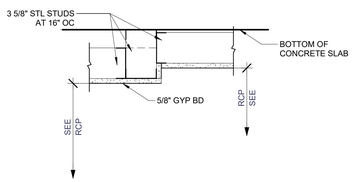
1 C-II/III - ISOMETRIC - TIGHT SIDE
3" = 1'-0"



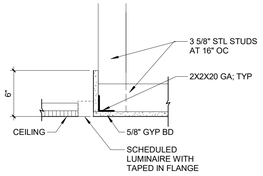
2 C-II/III - ISOMETRIC - UNATTACHED SIDE
3" = 1'-0"



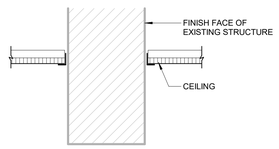
B7 SECTION - CLG TYPICAL GYP BOARD CONTROL JOINT
1 1/2" = 1'-0"



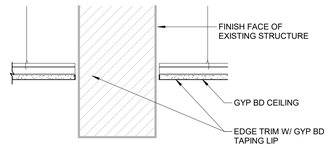
C1 SECTION - CLG GYP CLG TO SOFFIT 2
1 1/2" = 1'-0"



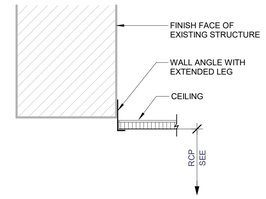
C2 SECTION - LIGHTING @ CLG TRANSITION
1 1/2" = 1'-0"



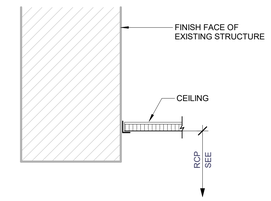
C3 SECTION - CLG TYPICAL @ EXISTING BEAM
1 1/2" = 1'-0"



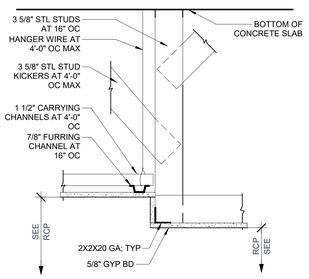
C5 SECTION - GYP CLG @ EXISTING BEAM
1 1/2" = 1'-0"



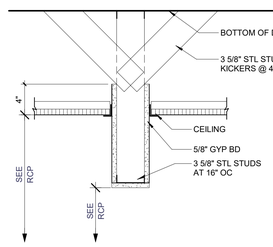
C6 SECTION - ACT TRANSITION TO EXISTING BULKHEAD
1 1/2" = 1'-0"



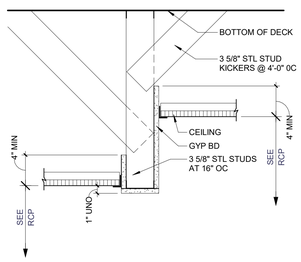
C7 SECTION - ACT EDGE CONDITION @ EXISTING BULKHEAD
1 1/2" = 1'-0"



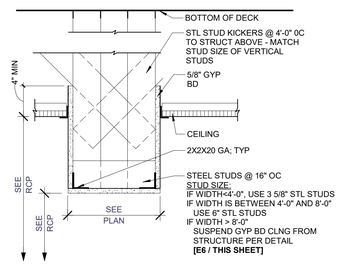
E1a SECTION - CLG GYP CLG TO SOFFIT
1 1/2" = 1'-0"



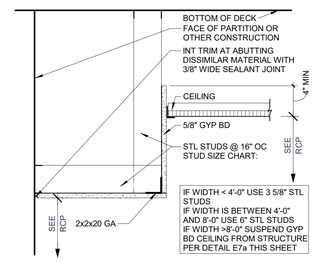
E2 SECTION - CLG TYPICAL BULKHEAD
1 1/2" = 1'-0"



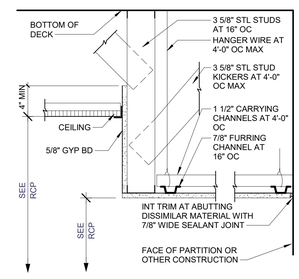
E3a SECTION - CLG TYPICAL DROP BULKHEAD
1 1/2" = 1'-0"



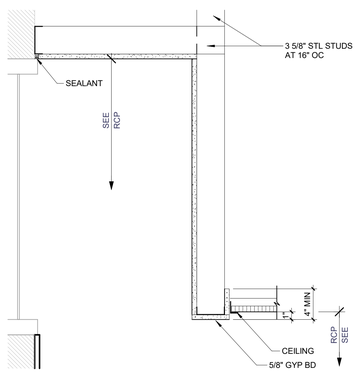
E5a SECTION - CLG TYPICAL WIDE BULKHEAD
1 1/2" = 1'-0"



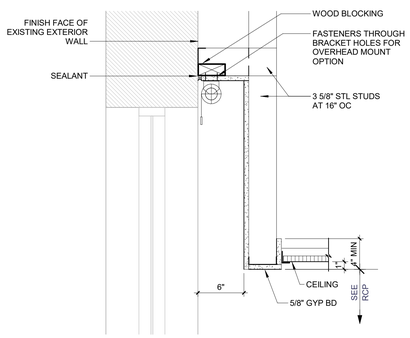
E6a SECTION - CLG TYPICAL WALL SOFFIT
1 1/2" = 1'-0"



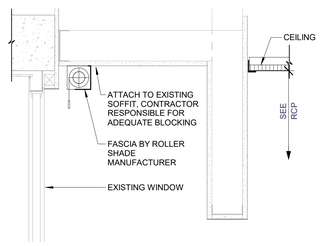
E7a SECTION - CLG TYPICAL LARGE AREA SOFFIT / CEILING
1 1/2" = 1'-0"



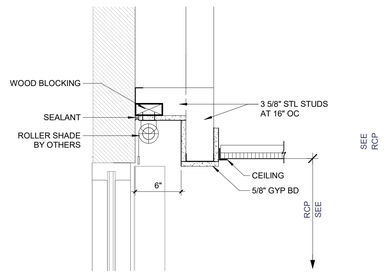
F1 SECTION - CLG POCKET AT CLERESTORY
1 1/2" = 1'-0"



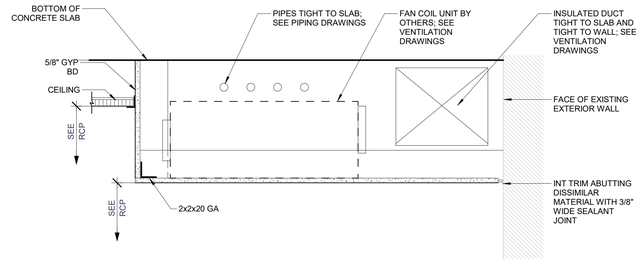
F2 SECTION - L2 CLG TYPICAL ROLLER SHADE POCKET
1 1/2" = 1'-0"



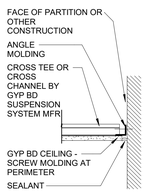
F4 SECTION - CLG ROLLER SHADE AT EXISTING SOFFIT
1 1/2" = 1'-0"



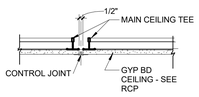
F5 SECTION - CEILING @ ROLLER SHADE POCKET
1 1/2" = 1'-0"



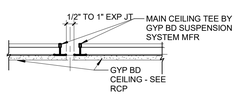
F6 SECTION - CLG WALL SOFFIT @ FAN COIL UNIT
1 1/2" = 1'-0"



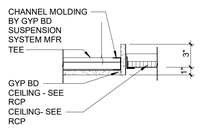
G1 SECTION @ GYP BD CEILING AT PERIMETER
1 1/2" = 1'-0"



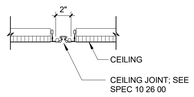
G2 SECTION @ GYP BD CEILING CONTROL JOINT
1 1/2" = 1'-0"



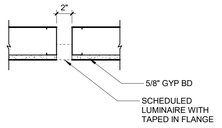
G3 SECTION @ GYP BD CEILING EXPANSION JOINT
1 1/2" = 1'-0"



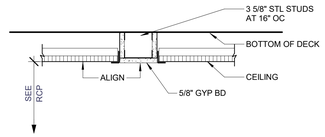
G4a SECTION @ GYP BD TRANSITION TO ACOUSTICAL
1 1/2" = 1'-0"



G5 SECTION - CLG TRANSITION @ EXPANSION JOINT
1 1/2" = 1'-0"



G6 SECTION - CLG TYPICAL RECESSED LIGHTING IN GYP BD
1 1/2" = 1'-0"



G7 SECTION - CLG FLUSH BULKHEAD
1 1/2" = 1'-0"

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CERTIFICATE OF AUTHORITY - E2017008530

Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **2/19/2025**

Drawn By: **Author**

SHEET REVISIONS

#	Date / Description
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Sheet Title:

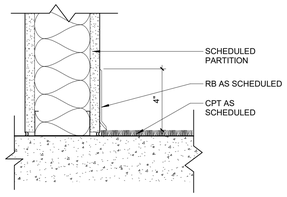
CEILING DETAILS

Sheet #:

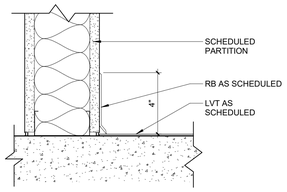
A9.20

COLOR AND MATERIAL LEGEND

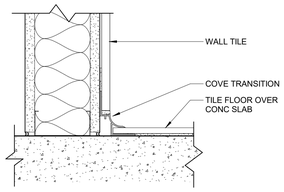
ITEM	PRODUCT	MANUFACTURER	STYLE	COLOR NAME/NUMBER	COMMENTS	REVISIONS
CARPET						
CPT-1	CARPET TILE (PLANK SIZE: 9.845" X 39.38")	INTERFACE	OPEN AIR 408	107728 OAT	ASHLAR INSTALL, CONTACT: JACLYN DAVIS 314.660.6372	
CPT-2	CARPET TILE (PLANK SIZE: 9.845" X 39.38")	INTERFACE	OPEN AIR 408	106954 GRANITE	ASHLAR INSTALL, CONTACT: JACLYN DAVIS 314.660.6372	
CPT-3	CARPET TILE (PLANK SIZE: 9.845" X 39.38")	INTERFACE	OPEN AIR 408	106956 LINEN	ASHLAR INSTALL, CONTACT: JACLYN DAVIS 314.660.6372	
CPT-4	KINETEX CARPET TILE (24" X 24")	J&J INVISION	DIGITAL 1859	MAIN FRAME 3571	QUARTER TURN INSTALL, CONTACT: NANCY WASER 314.502.2325	
CPT-5	KINEXTEX CARPET TILE (24" X 24")	J&J INVISION	INCOGNITO 7069	OPERATIVE 1837	MONOLITHIC, CONTACT: NANCY WASER 314.502.2325	
CASEWORK MATERIALS						
CABHW-1	CABINET HARDWARE	MOCKETT	DP128 SERIES	SATIN STAINLESS		
PL-1	PLASTIC LAMINATE	WILSONART	SATIN STAINLESS	4830K-18	LINEARITY FINISH	
PL-2	PLASTIC LAMINATE	FENIX	BIANCO KOS	J0032	SOLID CORE	
QTZ-1	QUARTZ	DALTILE	ONE QUARTZ - MONOCHROMATIC	NQ76 SIMPLY WHITE	3CM THICK, CONTACT: JOANNA WHITTAKER 314.997.6970	
QTZ-2	QUARTZ	CAMBRIA	---	BERKSHIRE STEEL SCULPTED	3CM THICK, CONTACT: SARA MCCOY 952.944.1676	
QTZ-3	QUARTZ	DALITLE	ONE QUARTZ - MONOCHROMATIC	OQ30 SIMPLY GREY	WINDOW SILLS, 3CM THICK, CONTACT: JOANNA WHITTAKER 314.997.6970	
CEILINGS						
ACT-1	ACOUSTICAL CEILING TILE (24" X 24")	ARMSTRONG	ULTIMA	1941	GRID: 15/16" ANGLED TEGULAR	
ACT-2	ACOUSTICAL CEILING TILE (24" X 72")	ARMSTRONG	ULTIMA	1436	GRID: 15/16" ANGLED TEGULAR	
EXP-1	---	---	---	EXPOSED CEILING		
GYP. BD.						
EXISTING CONDITIONS						
ETR-1	EXISTING TO REMAIN					
PM-1	PATCH AND MATCH EXISTING					
FLOOR FINISHES - MISCELLANEOUS						
SCONC-1	SEALED CONCRETE					
MISCELLANEOUS						
FWP-1	FABRIC WRAPPED PANEL	GOLTERMAN & SABO	ACOUSTI-PANEL (AP), 1" THICK	DESIGNTEX GAMUT PORT 3468-305		
TB-1	TACK BOARD	FORBO	BULLETIN BOARD PINBOARD LINOLEUM	COLOR: 2204 POPPY SEED	INCLUDE FRAME BY FORBO, FINAL SIZE(S) TO BE DETERMINED.	
TP-1	TOILET PARTITION	BOBRICK	DURALINE SERIES CGL ,1180 SERIES	1182G, COLOR: WILSONART SATIN STAINLESS 4830-60	PROVIDE STANDARD HARDWARE; INCLUDE MATCHING URINAL SCREEN #1185 AS PER PLAN	
WB-1	WHITE BOARD (DRY ERASE)	CLARIDGE	CLARIDGE GLASS DRY ERASE WHITEBOARD - MAGNETIC	BRILLIANT WHITE	MOUNT: INVISI-MOUNT, REFER TO FINISH PLAN FOR LOCATIONS/SIZES, CONFIRM MOUNTING HEIGHTS AND FINAL QUANTITIES WITH ARCHITECT	
WD-1	WOOD DOOR FINISH	N/A	N/A	N/A	WOOD FINISH TO MATCH VT INDUSTRIES SELECT WHITE BIRCH, RIVERSTONE RI18	
WT-1	WINDOW TREATMENT	SWF CONTRACT	R SERIES MANUAL SOLAR SHADE	SUMMIT, 5% OPEN, C7811 GRANITE	SURFACE MOUNT FASCIA, FINISH: CLEAR ANODIZED	
PAINT						
PT-1	PAINT	SHERWIN WILLIAMS	MAIN/ FIELD	SW7056 RESERVED WHITE	SHEEN: EGGSHELL	
PT-2	PAINT	WOLF GORDON SCUFFMASTER	SCRUBTOUGH	GOH 34306493	DARK BURGUNDY ACCENT, PREP WALLS AND APPLY ACCORDING TO MFR. INSTRUCTIONS. PROVIDE RANDOM TOUCH-UP IN FIELD. CONTACT: DAVID SMITH, 314.302.8002	
PT-3	PAINT	WOLF GORDON SCUFFMASTER	SCRUBTOUGH	GOH 34306494	MEDIUM BURGUNDY ACCENT, PREP WALLS AND APPLY ACCORDING TO MFR. INSTRUCTIONS. PROVIDE RANDOM TOUCH-UP IN FIELD. CONTACT: DAVID SMITH, 314.302.8002	
PT-4	PAINT	WOLF GORDON SCUFFMASTER	SCRUBTOUGH	GOH 34306495	LIGHT BURGUNDY ACCENT, PREP WALLS AND APPLY ACCORDING TO MFR. INSTRUCTIONS. PROVIDE RANDOM TOUCH-UP IN FIELD. CONACT: DAVID SMITH, 314.302.8002	
PT-5	PAINT	WOLF GORDON SCUFFMASTER	SCRUBTOUGH	GOH 34306496	WHITE, PREP WALLS AND APPLY ACCORDING TO MFR. INSTRUCTIONS. CONTACT: DAVID SMITH, 314.302.8002	
PT-6	PAINT	SHERWIN WILLIAMS	DOOR FRAMES	SW7056 RESERVED WHITE	SHEEN: SEMI-GLOSS	
RESILIENT BASE AND ACCESSORIES						
RA-1	RESILIENT ACCESSORIES	ROPPE	#50 TILE/CARPET JOINER	123 CHARCOAL		
RA-2	RESILIENT ACCESSORIES	ROPPE	#34 UNDERLAP CARPET EDGE	123 CHARCOAL		
RA-3	RESILIENT ACCESSORIES	ROPPE	#23 REDUCER STRIP	123 CHARCOAL		
RB-1	RESILIENT BASE	ROPPE	PINNACLE - TYPE TS	123 CHARCOAL	4" HIGH X 1/4" THICK; STANDARD TOE	
RB-2	RESILIENT BASE	ROPPE	PINNACLE - TYPE TS	161 SNOW	4" HIGH X 1/4" THICK; STANDARD TOE	
RESILIENT FLOORING						
LVT-1	LUXURY VINYL TILE (18" X 36")	J&J INVISION	TATAMI V5003	KYOTO 1018	MFR RECOMMENDED PARQUET INSTALL, CONTACT: NANCY WASER 314.502.2325	
RFT-1	RUBBER FLOOR TILE (39.5" X 39.5")	NORA (INTERFACE)	NORAMENT SATURA, HAMMERED	5109 ORION	3.5MM THICK, NO WELD SEAMS, CONTACT: ALAINA BAUER 314.705.1856	
RFT-2	RUBBER FLOOR TILE (39.5" X 39.5")	NORA (INTERFACE)	NORAMENT SATURA, HAMMERED	5110 ARA	3.5MM THICK, NO WELD SEAMS, CONTACT: ALAINA BAUER 314.705.1856	
RST-1	RUBBER STAIR TREADS	NORA (INTERFACE)	NORAMENT SATURA STAIRTREAD	5110 ARA	(LOBBY #199) ONE-PIECE PRODUCT CONSTRUCTION INCLUDES NOSING, RISER AND TREAD.	
RST-2	RUBBER STAIR TREADS	NORA (INTERFACE)	NORAMENT SATURA STAIRTREAD	5109 ORION	(LOBBY #199) ONE-PIECE PRODUCT CONSTRUCTION INCLUDES NOSING, RISER AND TREAD.	
TILING						
CT-1	WALL TILE (3" X 8")	MARAZZI	RICE	BIANCO RECTANGLE	INSTALL: VERTICAL STACK, GROUT: BOSTIK MISTY GRAY H144, CONTACT: JILL THOMPSON (VIRGINIA TILE) 314.250.1993	
CT-2	FLOOR/ WALL TILE (12" X 24")	DALTILE	VOLUME 1.0	STEREO GREY VL73	INSTALL: STRAIGHT STACK, ALIGN WALL/ FLOOR JOINTS, GROUT: BOSTIK DELOREAN GRAY H160, CONTACT: JOANNA WHITTAKER 314.997.6970	
CTB-2	TILE BASE (6" HIGH COVE)	DALTILE	VOLUME 1.0	STEREO GREY VL73	GROUT: BOSTIK DELOREAN GRAY H160, CONTACT: JOANNA WHITTAKER 314.997.6970	
WALL AND DOOR PROTECTION						
WP-1	WALL PROTECTION	INPRO	SURFACE MOUNT STAINLESS STEEL CORNER GUARD, 4'-0" HIGH	STAINLESS STEEL		



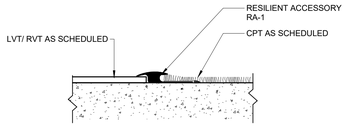
F1 BASE TRANSITION - CPT WITH RESILIENT COVE BASE
3" = 1'-0"



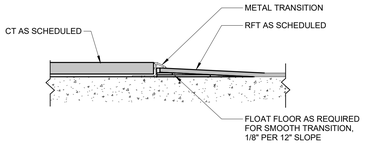
F2 BASE TRANSITION - LVT WITH RESILIENT COVE BASE
3" = 1'-0"



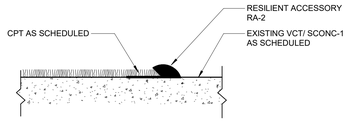
F5 BASE TRANSITION - TILE BASE
3" = 1'-0"



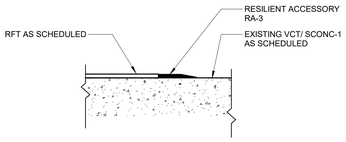
G1 SECTION - FLOORING TRANSITION - LVT/ RVT TO CPT
6" = 1'-0"



G2 SECTION - FLOORING TRANSITION - CT TO RFT
6" = 1'-0"



G3 SECTION - FLOORING TRANSITION - CPT TO VCT/ SCONC
6" = 1'-0"



G4 SECTION - FLOORING TRANSITION - RFT TO VCT/ SCONC
6" = 1'-0"

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BUILDING RENOVATION, CHEEK HALL

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Sheet Title:

COLOR & MATERIAL LEGEND

Sheet #:

A10.10

ROOM FINISH SCHEDULE - LEVELS 0 & 1

ROOM NUMBER	ROOM NAME	FLOOR FINISH		BASE FINISH	WALL FINISH		CASE WORK	COUNTER TOPS	CEILING FINISH	REMARK	REVISIONS
		FLOOR OVERALL	FLOOR ACCENT		WALL OVERALL	WALL ACCENT					
Basement - 1965 Bldg											
07	ELECTRICAL	SCONC-1		RB-1	PT-1				EXP-1		
083	STAIR	ETR-1		PM-1	PM-1				ETR-1		
099	CORR	ETR-1		PM-1	PT-1				ETR-1		
LEVEL 1											
	ELEV	LVT-1									
102	LECTURE HALL	ETR-1		ETR-1	ETR-1						
110	COMPUTER SCIENCE	CPT-1	Yes	RB-1	PT-1	Yes	N/A	N/A	GYP. BD.	1	
110A	STAFF	CPT-1		RB-1	PT-1		N/A	PL-2	ACT-1		
110B	STAFF	CPT-1		RB-1	PT-1				ACT-1		
111	CS CONFERENCE	CPT-1		RB-1	PT-1	Yes			ACT-1	1	
112	CS DEPT HEAD	CPT-1	No	RB-1	PT-1				ACT-1		
113	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
114	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
115	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
116	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
117	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
118	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
119	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
120	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
121	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
122	PASSAGE	CPT-1	Yes	RB-1	PT-1		N/A	N/A	ACT-1		
122	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
123	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
124	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
125	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
126	STORAGE	CPT-2	No	RB-1	PT-1		N/A	N/A	ACT-1		
127	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
129	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
130	CS FACULTY LOUNGE	LVT-1		RB-1	PT-1	No	PL-1	QTZ-1	ACT-1		
130A	ELEC	LVT-1		RB-1	PT-1						
151	COMPUTER SCIENCE CLASSROOM	ETR-1		ETR-1	ETR-1				ETR-1		
151A	STORAGE	RFT-1		RB-1	PT-1						
153	STUDENT SUCCESS WAITING	CPT-1	Yes	RB-1	PT-1	Yes			ACT-1		
153A	STUDENT SUCCESS	CPT-1		RB-1	PT-1	Yes			ACT-1		
153B	STUDENT SUCCESS	CPT-1		RB-1	PT-1	Yes			ACT-1		
160	INFORMATION SERVICES	CPT-2	Yes	RB-1	PT-1	Yes	N/A	N/A	GYP. BD.	1	
160A	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
160B	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
160C	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
160D	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
161	OPEN OFFICE	CPT-2	Yes	RB-1	PT-1				ACT-1		
161A	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
161B	KITCHENETTE	LVT-1		RB-1	PT-1	Yes	PL-1	QTZ-1	ACT-1	1	
162	PASSAGE	CPT-2	Yes	RB-1	PT-1				ACT-1		
162A	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
162B	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
162C	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
162D	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
162E	WORK AREA	CPT-2		RB-1	PT-1		PL-2	PL-1	ACT-1		
162G	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
162H	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
163	PASSAGE	CPT-2	Yes	RB-1	PT-1				ACT-1		
163A	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
163B	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
163C	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
163D	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
163E	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
163F	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
163G	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
163H	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
163J	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
163K	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
163T	DATA	PM-1		RB-1	PT-1				ETR-1		
164	PASSAGE	CPT-1	Yes	RB-1	PT-1				ACT-1		
164A	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
164B	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
164C	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
164D	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
164E	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
164F	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
164G	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
164H	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
164J	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
164K	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
164L	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
165	PASSAGE	CPT-1	Yes	RB-1	PT-1				ACT-1		
165A	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
165B	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
165C	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
165D	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
165E	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
165F	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
166A	ELEC	CPT-2		RB-1	PT-1						
167	DATA CENTER	PM-1		RB-1	PT-1				ACT-1		
180	STAIR	PM-1		PM-1	PM-1				ACT-1		
183	STAIR	RB-1		RB-1	PT-1				ETR-1		
194	CUSTODIAL	RFT-2		RB-1	PT-1				ETR-1		
197	COMMONS	RFT-2	Yes	RB-1	PT-1	Yes			GYP. BD.		
197A	VEND	RFT-2		RB-1	PT-1				GYP. BD.		
198	CORRIDOR	RFT-2	Yes	RB-1	PT-1	Yes			ACT-1	1	
199	LOBBY	RFT-1	Yes	RB-1	PT-1	Yes			ACT-1	1	
199A	VESTIBULE	ETR-1		ETR-1	ETR-1						

REMARKS - ROOM FINISH SCHEDULE

1. REFER TO FINISH PLAN AND ELEVATIONS FOR WALL ACCENT INFORMATION.

GENERAL FINISH NOTES

A. NOT ALL KEYED NOTES MAY BE USED ON THIS SHEET.

B. REFER TO FLOOR FINISH PLANS, INTERIOR ELEVATION SHEETS AND INTERIOR DETAILS FOR CLARIFICATION OF ADDITIONAL FINISH LOCATIONS.

C. REFER TO SHEET A10.10 FOR COLOR AND MATERIAL LEGEND (CML).

MISCELLANOUS FINISH NOTES

A. ALL CABINET HARDWARE TO BE CABHW-1.

STAIRWAY FINISH NOTES

A. UNDERSIDE OF STAIRS: PT-6. SEE CML.

B. WALL BASE: AS SCHEDULED

C. ALL STAIR GUARDRAILS, HANDRAILS, STRINGERS, RISERS, GATES AND OTHER EXPOSED METAL TO BE PAINTED PT-6.

FLOORING FINISH NOTES

A. REFER TO SHEET **A10.10** FOR FLOORING TRANSITION DETAILS.

B. SUB FLOOR TO BE FEATHERED UP AS NEEDED WHERE TWO DIFFERENT FLOOR FINISHES MEET. REFER TO TRANSITION DETAILS.

C. IN ROOM FINISH SCHEDULE, WHERE FLOOR ACCENT INDICATES "YES", REFER TO INTERIOR FINISH PLAN FOR FLOOR PATTERN AND FLOOR TYPE LOCATIONS. WHERE FLOOR ACCENT INDICATES "NO", FLOOR OVERALL MATERIAL OCCURS IN ENTIRE ROOM.

WALL FINISH NOTES

A. IN ROOM FINISH SCHEDULE, WHERE WALL ACCENT INDICATES "YES", REFER TO INTERIOR FINISH PLAN & INTERIOR ELEVATIONS FOR ADDITIONAL MATERIAL TYPES AND LOCATIONS. WHERE WALL ACCENT INDICATES "NO", WALL OVERALL MATERIAL OCCURS ON ALL WALLS.

B. FREESTANDING COLUMNS TO BE PAINTED PT-1

DOORS, OPENING, & WINDOWS

A. WHERE FLOOR FINISHES CHANGE AT DOORWAYS, THE JOINT BETWEEN FLOORING MATERIALS SHALL BE CENTERED UNDERNEATH THE DOOR IN THE CLOSED POSITION.

B. WHERE FLOOR FINISHES CHANGE AT CASED OPENINGS, THE JOINT BETWEEN FLOORING MATERIALS SHALL BE LOCATED ALONG THE CENTERLINE OF THE CASED OPENING, UNO.

C. NEW WOOD DOOR FINISH SHALL BE WD-1. SEE CML.

D. PAINT ALL HOLLOW METAL DOORS AND FRAMES PT-6, UNO. SEE CML.

E. PAINT BORROWED LIGHT FRAMES PT-6. SEE CML.

F. USE WT-1 IN ALL WINDOWS IN LOCATIONS NOTED ON RCP. SEE CML.

CEILING FINISH NOTES

A. SOFFIT FACE/UNDERSIDE TO MATCH ADJACENT WALL COLOR, UNO.

B. BULKHEADS TO BE PAINTED TO MATCH ADJACENT WALL COLOR, UNO.

C. WHERE CEILING MATERIAL IS LISTED IN ROOM FINISH SCHEDULE, BUT NO CEILING OCCURS IN THE ROOM, PAINT EXPOSED CEILING ELEMENTS PAINT COLOR INDICATED.

D. INSTALL ACOUSTICAL PANELS WITH UNDAMAGED EDGES AND FIT ACCURATELY INTO SUSPENSION-SYSTEM RUNNERS AND EDGE MOLDINGS. SCRIBE AND CUT PANELS AT BORDERS AND PENETRATIONS TO PROVIDE A NEAT, PRECISE FIT. PAINT CUT EDGES OF PANEL REMAINING EXPOSED AFTER INSTALLATION; MATCH COLOR OF EXPOSED PANEL SURFACES USING COATING RECOMMENDED IN WRITING FOR THIS PURPOSE BY ACOUSTICAL PANEL MANUFACTURER."

E. PAINT CUT EDGES OF PANEL EXPOSED AFTER INSTALLATION; MATCH COLOR OF EXPOSED PANEL SURFACES USING COATING RECOMMENDED IN WRITING FOR THIS PURPOSE BY ACOUSTICAL PANEL MANUFACTURER

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MSU Project #: 231023-069

Other Project #: **23025.000**

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Drawn By: **Author**

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Sheet Title:

ROOM FINISH SCHEDULE - BASEMENT & LEVEL 1

Sheet #:

A10.11

ROOM FINISH SCHEDULE - LEVELS M, 2, 3

ROOM NUMBER	ROOM NAME	FLOOR FINISH		BASE FINISH	WALL FINISH		CASE WORK	COUNTER TOPS	CEILING FINISH	REMARK	REVISIONS
		FLOOR OVERALL	FLOOR ACCENT		WALL OVERALL	WALL ACCENT					
MEZZANINE											
1M	MATH WAITING	CPT-1	Yes	RB-1	PT-1	Yes	N/A	N/A	GYP. BD.	1	
1MA	STAFF	CPT-1		RB-1	PT-1				ACT-1		
1MB	STAFF	CPT-1		RB-1	PT-1		N/A	N/A	ACT-1		
2M	CONFERENCE	CPT-1		RB-1	PT-1	Yes	PL-1	QTZ-1	ACT-1	1	
3M	PRINT/ COPY	CPT-1		RB-1	PT-1		PL-1	PL-2	ACT-1		
4M	MATH DEPT HEAD	CPT-1		RB-1	PT-1				ACT-1		
5M	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
6M	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
7M	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
8M	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
9M	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
10M	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
11M	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
12M	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
13M	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
14M	OFFICE	CPT-1		RB-1	PT-1				ACT-1		
15M	PASSAGE	CPT-3	Yes	RB-1	PT-1				ACT-1		
16M	DATA	PM-1		RB-1	PT-1				ACT-1		
20M	MATH STUDY ROOM	CPT-4		RB-1	PT-1	Yes	PL-1	PL-2	ACT-1		
22M	MATH GRAD STUDENTS	CPT-4		RB-1	PT-1				ACT-1		
24M	MATH GRAD STUDENTS	CPT-4		RB-1	PT-1		PL-2	PL-2	ACT-1		
26M	COPY	RFT-1		RB-1	PT-1		PL-1	PL-2	ETR-1		
28M	MATH STORAGE	RFT-1		RB-1	PT-1				ACT-1		
83M	STAIR	ETR-1		PM-1	PM-1				ETR-1		
86M	MEZZANINE LOBBY	RFT-1	Yes	RB-1	PT-1	Yes			GYP. BD.	1	
87M	ELEC	RFT-2		RB-1	PT-1				ETR-1		
94M	CORRIDOR	RFT-1	Yes	RB-1	PT-1	Yes		QTZ-1	GYP. BD.	1	
217	CORRIDOR	RFT-1		RB-1	PT-1				ACT-1	1	
EL-M	ELEV	LVT-1							ETR-1		
MEZZANINE NORTH ADDITION											
40M	OFFICE 25	CPT-1		RB-1	PT-1				ACT-1		
41M	OFFICE 11	CPT-1		RB-1	PT-1				ACT-1		
42M	OFFICE 24	CPT-1		RB-1	PT-1				ACT-1		
43M	OFFICE 12	CPT-1		RB-1	PT-1				ACT-1		
44M	OFFICE 23	CPT-1		RB-1	PT-1				ACT-1		
45M	OFFICE 13	CPT-1		RB-1	PT-1				ACT-1		
46M	OFFICE 22	CPT-1		RB-1	PT-1				ACT-1		
47M	OFFICE 14	CPT-1		RB-1	PT-1				ACT-1		
48M	OFFICE 21	CPT-1		RB-1	PT-1				ACT-1		
49M	OFFICE 15	CPT-1		RB-1	PT-1				ACT-1		
50M	OFFICE 20	CPT-1		RB-1	PT-1				ACT-1		
51M	OFFICE 16	CPT-1		RB-1	PT-1				ACT-1		
52M	OFFICE 19	CPT-1		RB-1	PT-1				ACT-1		
53M	OFFICE 17	CPT-1		RB-1	PT-1				ACT-1		
54M	OFFICE 18	CPT-1		RB-1	PT-1				ACT-1		
61M	OFFICE 31	CPT-1		RB-1	PT-1				ACT-1		
62M	OFFICE 28	CPT-1		RB-1	PT-1				ACT-1		
63M	OFFICE 30	CPT-1		RB-1	PT-1				ACT-1		
64M	OFFICE 27	CPT-1		RB-1	PT-1				ACT-1		
65M	OFFICE 29	CPT-1		RB-1	PT-1				ACT-1		
66M	OFFICE 26	CPT-1		RB-1	PT-1				ACT-1		
72M	MATH SCHWARTZ LIBRARY	CPT-2	No	RB-1	PT-1				ACT-1		
73M	BREAK	LVT-1		RB-1	PT-1	Yes			ACT-1		
81M	STAIR	ETR-1		ETR-1	ETR-1				ACT-1		
88M	CUSTODIAL	SCONC-1		RB-1	PT-1				ACT-1		
89M	ELEC	RFT-1		RB-1	PT-1				GYP. BD.		
91M	CORR	CPT-1		RB-1	PT-1				ACT-1		
92M	TLT	CT-2		CTB-2	PT-1	Yes			GYP. BD.	1	
93M	MECH/ ELECTRICAL	SCONC-1		RB-1	PT-1				EXP-1		
94M	TLT	CT-2		CTB-2	PT-1	Yes			GYP. BD.	1	
95M	CORR	RFT-1		RB-1	PT-1				ACT-1		
96M	CORR	CPT-1		RB-1	PT-1				ACT-1		
97M	CORRIDOR	CPT-1		RB-1	PT-1				ACT-1		
98M	CORR	CPT-1		RB-1	PT-1				ACT-1		
99M	CORRIDOR	RFT-1		RB-1	ACT-2						
LEVEL 2											
201	CS OFFICE	CPT-1		RB-1	PT-1				ACT-1		
203	CS TUTORING LAB	CPT-4		RB-1	PT-1			PL-2	ACT-1		
205T	MECHANICAL	SCONC-1		RB-1	PT-1				EXP-1		
207	LARGE TEACHING LAB	CPT-4		RB-1	PT-1	Yes			ACT-1		
208	MEDIUM TEACHING LAB	CPT-4		RB-1	PT-1	Yes			ACT-1		
209	MEDIUM TEACHING LAB	CPT-4		RB-1	PT-1	Yes			ACT-1		
210	LARGE TEACHING LAB	CPT-4		RB-1	PT-1	Yes			ACT-1		
211	RESEARCH LAB	CPT-4		RB-1	PT-1	Yes			ACT-1		
212	RESEARCH LAB	CPT-4		RB-1	PT-1	Yes			ACT-1		
213	RESEARCH LAB	CPT-4		RB-1	PT-1	Yes			ACT-1		
283	STAIR	PM-1		PM-1	PM-1				ACT-1		
290	WOMEN	CT-2		CTB-2	PT-1	Yes			GYP. BD.	1	
291	MEN	CT-2		CTB-2	PT-1	Yes			GYP. BD.	1	
295	CORR	RFT-2	No	RB-1	PT-1	Yes			ACT-1	1	
296	GRAD PAD	RFT-2		RB-1	PT-1	Yes			ACT-1		
297	CORR	RFT-1	Yes	RB-1	PT-1	Yes			ACT-1		
298	CORRIDOR	PM-1		PM-1	PM-1				ACT-1		
298A	ELEC	PM-1		RB-1	PT-1				ETR-1		
299	CORR	RFT-1	Yes	RB-1	PT-1				ACT-2		
299A	BREAKOUT	CPT-4		RB-1	PT-1				GYP. BD.		
299B	ELEC	RFT-2		RB-1	PT-1				ETR-1		
EL-2	ELEV	LVT-1									
LEVEL 3											
300	STUDENT BREAKOUT	PM-1		PM-1	PM-1				PM-1		
300A	ROOF ACCESS	ETR-1		ETR-1	ETR-1				ETR-1		
380	STAIR	ETR-1		ETR-1	ETR-1				ETR-1		
399	CORRIDOR	ETR-1		PM-1	PM-1				PM-1		
EL-3	ELEV	LVT-1									

REMARKS - ROOM FINISH SCHEDULE

1. REFER TO FINISH PLAN AND ELEVATIONS FOR WALL ACCENT INFORMATION.

GENERAL FINISH NOTES

A. NOT ALL KEYED NOTES MAY BE USED ON THIS SHEET.

B. REFER TO FLOOR FINISH PLANS, INTERIOR ELEVATION SHEETS AND INTERIOR DETAILS FOR CLARIFICATION OF ADDITIONAL FINISH LOCATIONS.

C. REFER TO SHEET A10.10 FOR COLOR AND MATERIAL LEGEND (CML).

MISCELLANOUS FINISH NOTES

A. ALL CABINET HARDWARE TO BE CABHW-1.

STAIRWAY FINISH NOTES

A. UNDERSIDE OF STAIRS: PT-6. SEE CML.

B. WALL BASE: AS SCHEDULED

C. ALL STAIR GUARDRAILS, HANDRAILS, STRINGERS, RISERS, GATES AND OTHER EXPOSED METAL TO BE PAINTED PT-6.

FLOORING FINISH NOTES

A. REFER TO SHEET **A10.10** FOR FLOORING TRANSITION DETAILS.

B. SUB FLOOR TO BE FEATHERED UP AS NEEDED WHERE TWO DIFFERENT FLOOR FINISHES MEET. REFER TO TRANSITION DETAILS.

C. IN ROOM FINISH SCHEDULE, WHERE FLOOR ACCENT INDICATES "YES", REFER TO INTERIOR FINISH PLAN FOR FLOOR PATTERN AND FLOOR TYPE LOCATIONS. WHERE FLOOR ACCENT INDICATES "NO", FLOOR OVERALL MATERIAL OCCURS IN ENTIRE ROOM.

WALL FINISH NOTES

A. IN ROOM FINISH SCHEDULE, WHERE WALL ACCENT INDICATES "YES", REFER TO INTERIOR FINISH PLAN & INTERIOR ELEVATIONS FOR ADDITIONAL MATERIAL TYPES AND LOCATIONS. WHERE WALL ACCENT INDICATES "NO", WALL OVERALL MATERIAL OCCURS ON ALL WALLS.

B. FREESTANDING COLUMNS TO BE PAINTED PT-1

DOORS, OPENING, & WINDOWS

A. WHERE FLOOR FINISHES CHANGE AT DOORWAYS, THE JOINT BETWEEN FLOORING MATERIALS SHALL BE CENTERED UNDERNEATH THE DOOR IN THE CLOSED POSITION.

B. WHERE FLOOR FINISHES CHANGE AT CASED OPENINGS, THE JOINT BETWEEN FLOORING MATERIALS SHALL BE LOCATED ALONG THE CENTERLINE OF THE CASED OPENING, UNO.

C. NEW WOOD DOOR FINISH SHALL BE WD-1. SEE CML.

D. PAINT ALL HOLLOW METAL DOORS AND FRAMES PT-6, UNO. SEE CML.

E. PAINT BORROWED LIGHT FRAMES PT-6. SEE CML.

F. USE WT-1 IN ALL WINDOWS IN LOCATIONS NOTED ON RCP. SEE CML.

CEILING FINISH NOTES

A. SOFFIT FACE/UNDERSIDE TO MATCH ADJACENT WALL COLOR, UNO.

B. BULKHEADS TO BE PAINTED TO MATCH ADJACENT WALL COLOR, UNO.

C. WHERE CEILING MATERIAL IS LISTED IN ROOM FINISH SCHEDULE, BUT NO CEILING OCCURS IN THE ROOM, PAINT EXPOSED CEILING ELEMENTS PAINT COLOR INDICATED.

D. INSTALL ACOUSTICAL PANELS WITH UNDAMAGED EDGES AND FIT ACCURATELY INTO SUSPENSION-SYSTEM RUNNERS AND EDGE MOLDINGS. SCRIBE AND CUT PANELS AT BORDERS AND PENETRATIONS TO PROVIDE A NEAT, PRECISE FIT. PAINT CUT EDGES OF PANEL REMAINING EXPOSED AFTER INSTALLATION; MATCH COLOR OF EXPOSED PANEL SURFACES USING COATING RECOMMENDED IN WRITING FOR THIS PURPOSE BY ACOUSTICAL PANEL MANUFACTURER."

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MSU Project #: 231023-069

Other Project #: **23025.000**

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Drawn By: **Author**

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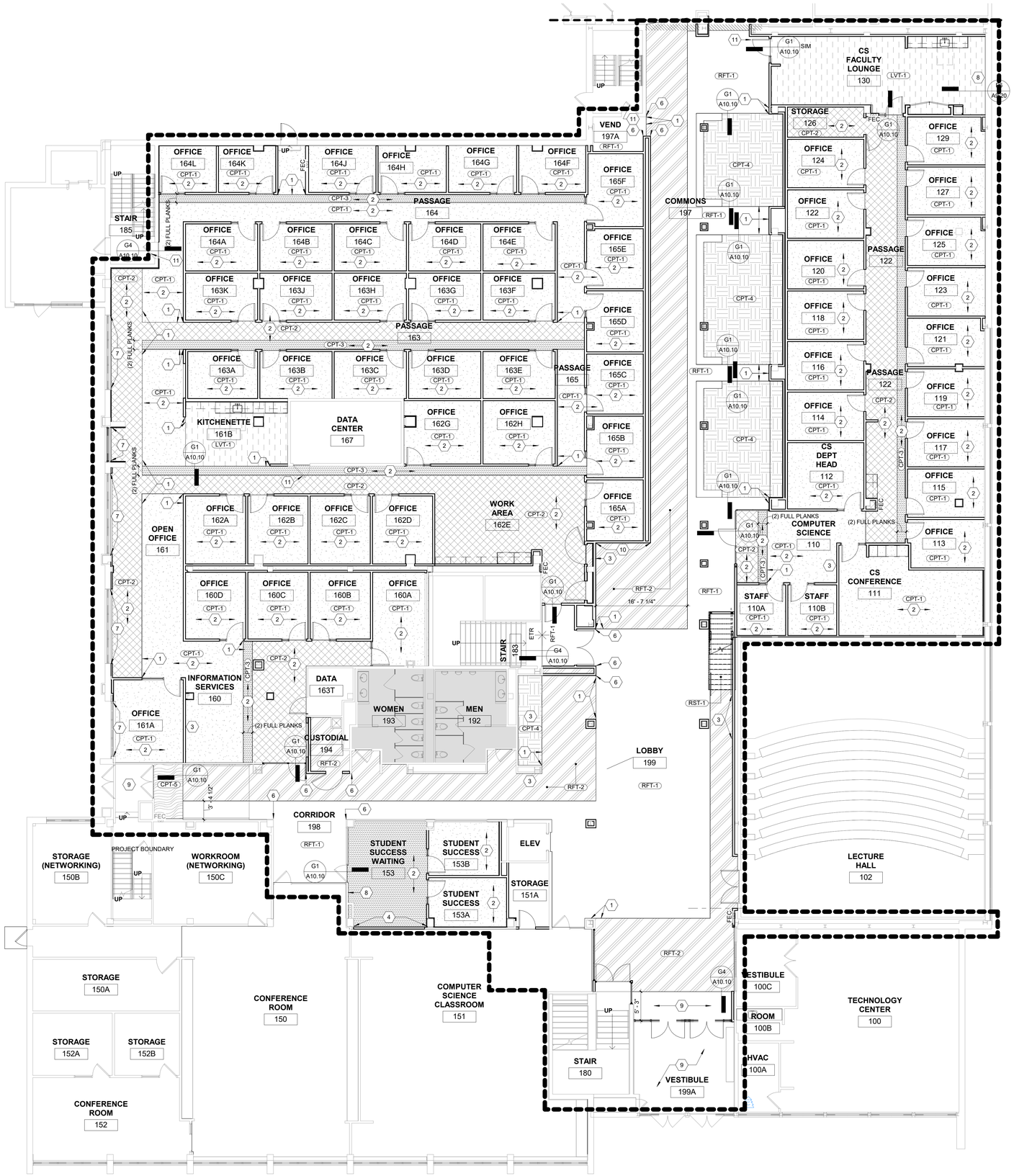
Sheet Title:

ROOM FINISH SCHEDULE - MEZZANINE, LEVEL 2, LEVEL 3

Sheet #:

A10.12



1 FLOOR FINISH PLAN - LEVEL 1
1/8" = 1'-0"

GENERAL NOTES - FINISH PLAN

A. NOT ALL KEYED NOTES MAY BE USED ON THIS SHEET.

B. SEE SHEET A10.10 FOR COLOR AND MATERIAL LEGEND (CML).

C. SEE SHEETS A10.11 AND A10.12 FOR ROOM FINISH SCHEDULES.

D. FLOORING TRANSITIONS SHALL OCCUR AT THE CENTERLINE OF DOORS/ THRESHOLDS, UNO.

E. INSTALL SCHEDULED FLOORING UNDERNEATH NEW MILLWORK, UNO.

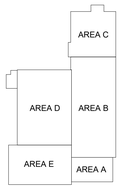
F. PATCH/ REPAIR ALL SURFACES NOT SCHEDULED TO RECEIVE A NEW FINISH AS NEEDED DUE TO CONSTRUCTION. MATCH ADJACENT MATERIAL, COLOR, SHEEN, ETC. FOR CONSISTENT APPEARANCE.

KEYED NOTES - FINISH PLAN

1 ALIGN FLOORING TRANSITION
2 INSTALL FLOORING IN DIRECTION OF ARROWS
3 WALL/ CEILING PAINT ACCENT. COORDINATE WITH ELEVATIONS AND RCP.
4 PAINT WALL PT-2. REFER TO CML.
5 ACCOMMODATE EXISTING 4 1/4" EXP. JOINT COVER AT NEW SCHED. FLOORING
6 CORNER GUARD, WP-1. REFER TO CML.
7 NEW WINDOW SILLS AT EXISTING WINDOWS, QTZ-3. REFER TO CML.
8 TACK BOARD, TB-1. REFER TO CML.
9 EXISTING FLOOR FINISH TO REMAIN. PROTECT DURING CONSTRUCTION.
10 PROVIDE LEVEL 5 FINISH FOR OFOI WALL GRAPHIC
11 PAINT SCHED. DOOR AND FRAME PT-6
12 SPLIT PAINT FINISH AT EXISTING DOOR AND FRAME. PT-6 AT RESTROOM/ CLOSET SIDE. PT-2 AT CORRIDOR SIDE.
13 CONTINUE FINISHES AS SCHEDULED FOR CORRIDOR #295, THIS AREA.
14 COORDINATE WITH ARCHITECT ON BEST TRANSITION OPTIONS BETWEEN RFT AND EXISTING STAIR TREAD.

FLOOR PATTERN LEGEND

RFT-1 / ETR (SEE SCHEDULE)
RFT-2
CPT-1
CPT-2
CPT-3
CPT-4
CPT-5
CT-2



KEY PLAN
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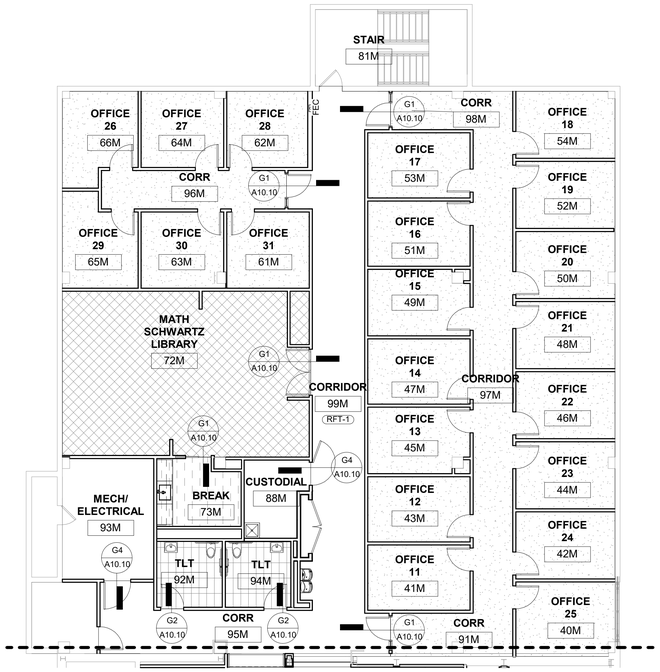
Sheet Title:

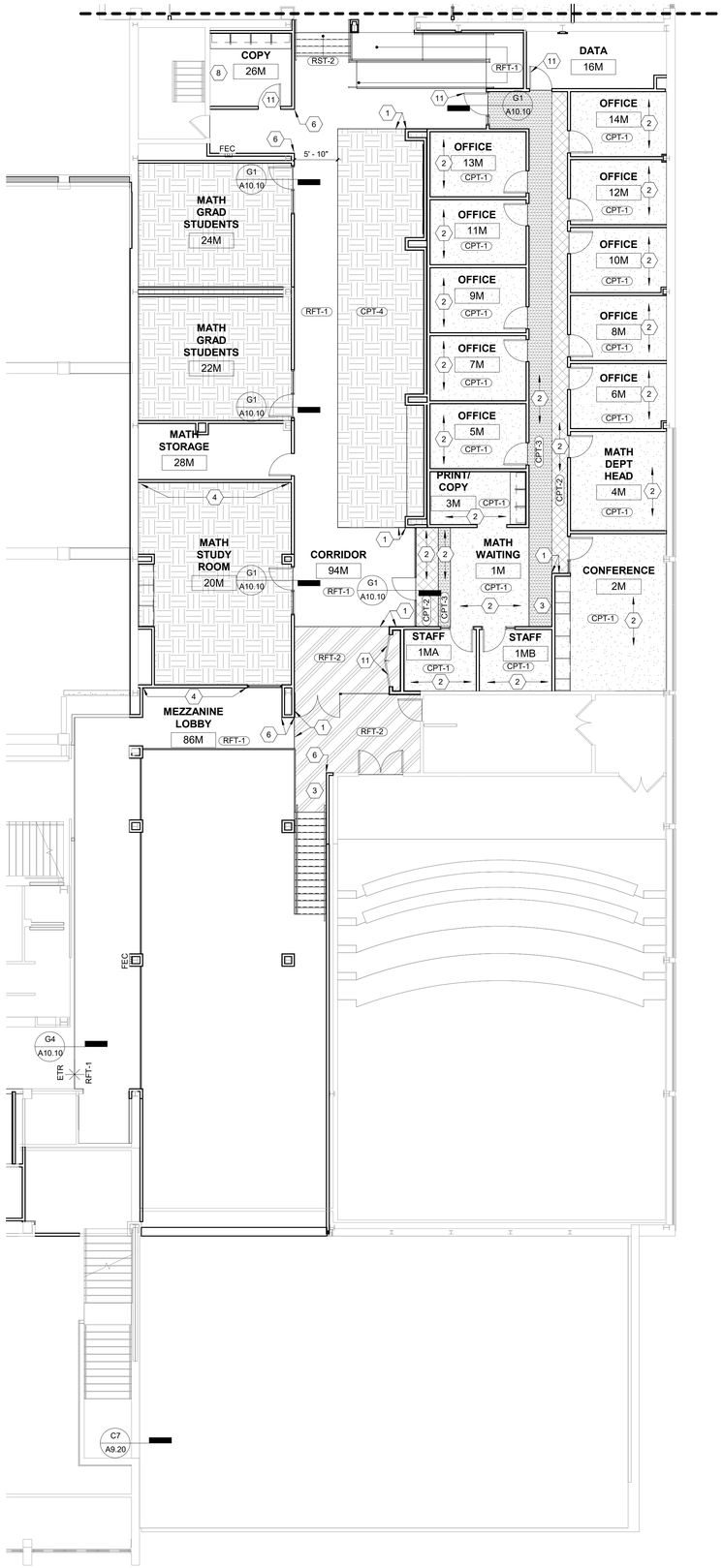
LEVEL 1 FINISH PLAN

Sheet #:

A10.20



2 FINISH PLAN - MEZZANINE LEVEL - AREA C
1/8" = 1'-0"



1 FINISH PLAN - MEZZANINE LEVEL SOUTH
1/8" = 1'-0"

GENERAL NOTES - FINISH PLAN

A. NOT ALL KEYED NOTES MAY BE USED ON THIS SHEET.

B. SEE SHEET A10.10 FOR COLOR AND MATERIAL LEGEND (CML).

C. SEE SHEETS A10.11 AND A10.12 FOR ROOM FINISH SCHEDULES.

D. FLOORING TRANSITIONS SHALL OCCUR AT THE CENTERLINE OF DOORS/ THRESHOLDS, UNO.

E. INSTALL SCHEDULED FLOORING UNDERNEATH NEW MILLWORK, UNO.

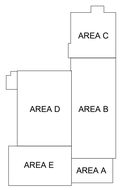
F. PATCH/ REPAIR ALL SURFACES NOT SCHEDULED TO RECEIVE A NEW FINISH AS NEEDED DUE TO CONSTRUCTION. MATCH ADJACENT MATERIAL, COLOR, SHEEN, ETC. FOR CONSISTENT APPEARANCE.

KEYED NOTES - FINISH PLAN

1 ALIGN FLOORING TRANSITION
2 INSTALL FLOORING IN DIRECTION OF ARROWS
3 WALL/ CEILING PAINT ACCENT. COORDINATE WITH ELEVATIONS AND RCP.
4 PAINT WALL PT-2. REFER TO CML.
5 ACCOMMODATE EXISTING 4 1/4" EXP. JOINT COVER AT NEW SCHED. FLOORING
6 CORNER GUARD, WP-1. REFER TO CML.
7 NEW WINDOW SILLS AT EXISTING WINDOWS, QTZ-3. REFER TO CML.
8 TACK BOARD, TB-1. REFER TO CML.
9 EXISTING FLOOR FINISH TO REMAIN. PROTECT DURING CONSTRUCTION.
10 PROVIDE LEVEL 5 FINISH FOR OFOI WALL GRAPHIC
11 PAINT SCHED. DOOR AND FRAME PT-6
12 SPLIT PAINT FINISH AT EXISTING DOOR AND FRAME. PT-6 AT RESTROOM/ CLOSET SIDE. PT-2 AT CORRIDOR SIDE.
13 CONTINUE FINISHES AS SCHEDULED FOR CORRIDOR #295, THIS AREA.
14 COORDINATE WITH ARCHITECT ON BEST TRANSITION OPTIONS BETWEEN RFT AND EXISTING STAIR TREAD.

FLOOR PATTERN LEGEND

RFT-1 / ETR (SEE SCHEDULE)
RFT-2
CPT-1
CPT-2
CPT-3
CPT-4
CPT-5
CT-2



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CERTIFICATE OF AUTHORITY - E2017008530

Project Title:
BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **2/19/2025**

Drawn By: **Author**

SHEET REVISIONS	
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Sheet Title:
MEZZANINE LEVEL FINISH PLANS

Sheet #:
A10.21

GENERAL NOTES - FINISH PLAN

A. NOT ALL KEYED NOTES MAY BE USED ON THIS SHEET.

B. SEE SHEET A10.10 FOR COLOR AND MATERIAL LEGEND (CML).

C. SEE SHEETS A10.11 AND A10.12 FOR ROOM FINISH SCHEDULES.

D. FLOORING TRANSITIONS SHALL OCCUR AT THE CENTERLINE OF DOORS/ THRESHOLDS, UNO.

E. INSTALL SCHEDULED FLOORING UNDERNEATH NEW MILLWORK, UNO.

F. PATCH/ REPAIR ALL SURFACES NOT SCHEDULED TO RECEIVE A NEW FINISH AS NEEDED DUE TO CONSTRUCTION. MATCH ADJACENT MATERIAL, COLOR, SHEEN, ETC. FOR CONSISTENT APPEARANCE.

KEYED NOTES - FINISH PLAN

1 ALIGN FLOORING TRANSITION
2 INSTALL FLOORING IN DIRECTION OF ARROWS
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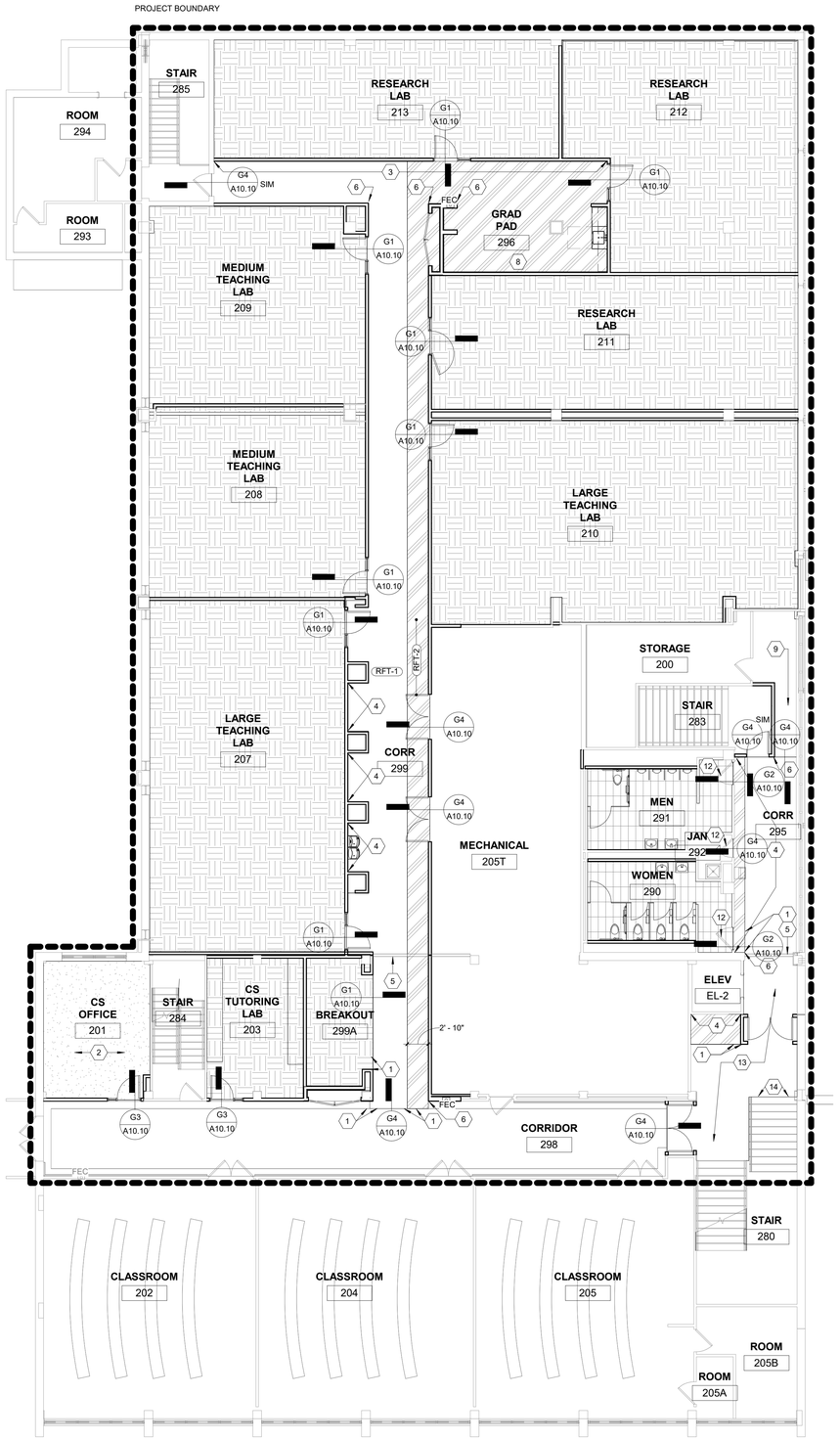
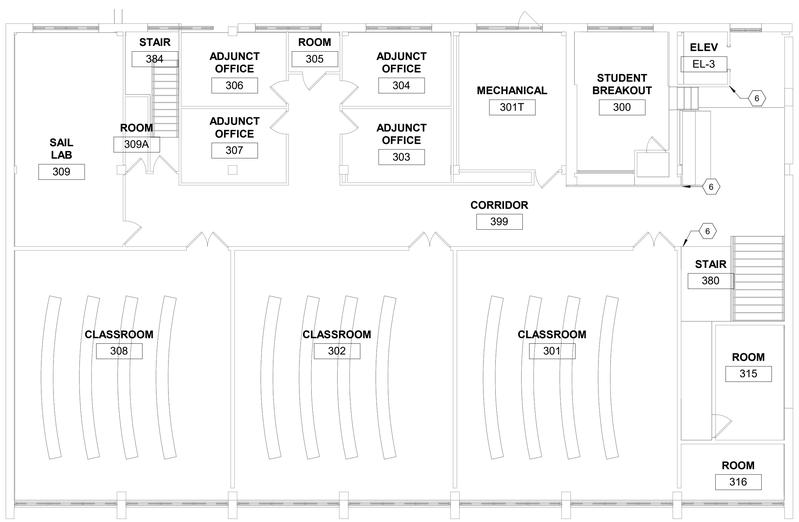
13 CONTINUE FINISHES AS SCHEDULED FOR CORRIDOR #295, THIS AREA.
14 COORDINATE WITH ARCHITECT ON BEST TRANSITION OPTIONS BETWEEN RFT AND EXISTING STAIR TREAD.

FLOOR PATTERN LEGEND

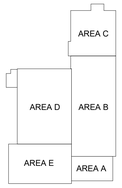
- RFT-1 / ETR (SEE SCHEDULE)
- RFT-2
- CPT-1
- CPT-2
- CPT-3
- CPT-4
- CPT-5
- CT-2



1 FINISH PLAN - LEVEL 2
1/8" = 1'-0"



2 FINISH PLAN - LEVEL 3
1/8" = 1'-0"



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MSU Project #: 231023-069
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Drawn By: **Author**

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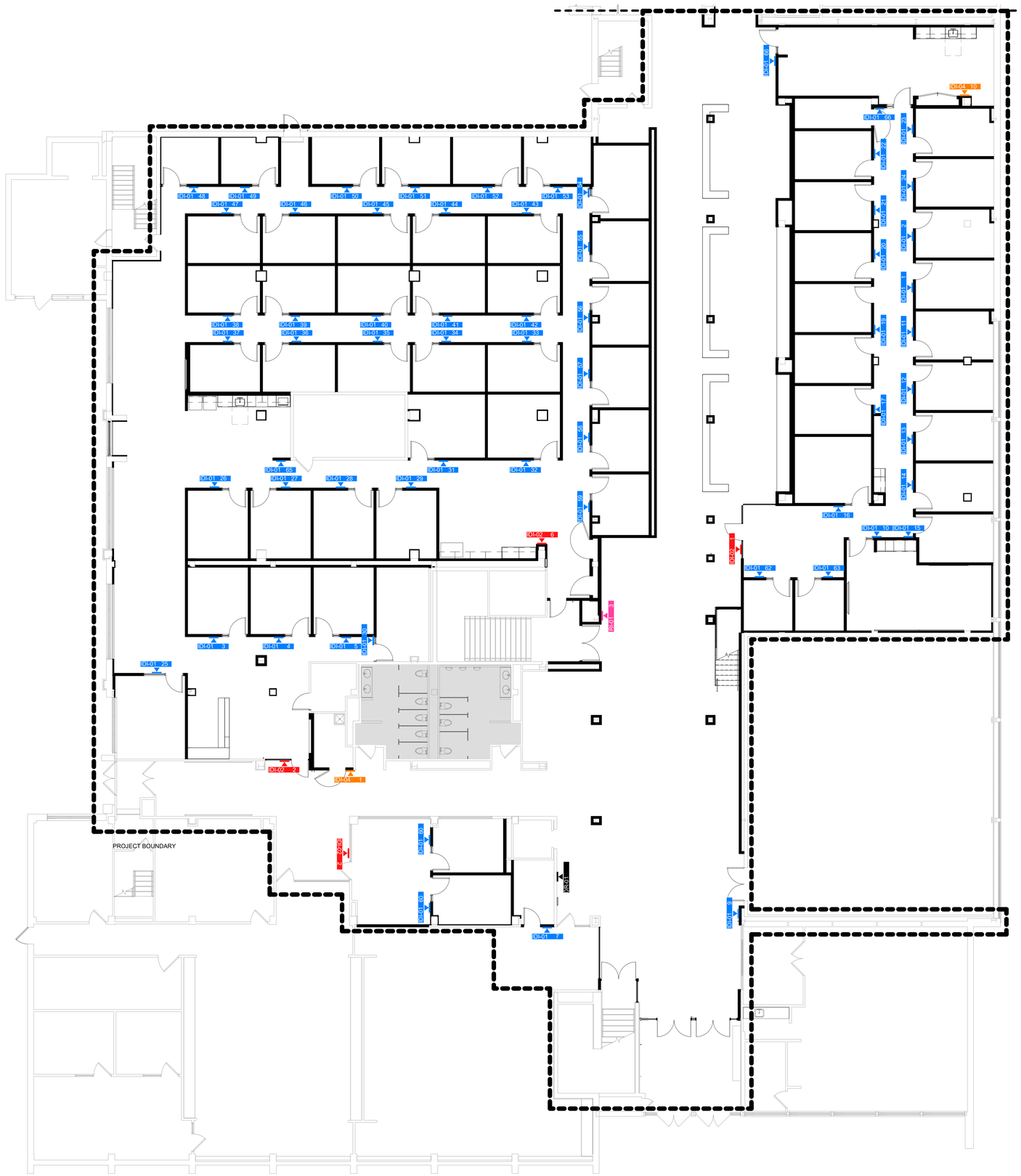
Sheet Title:
LEVEL 2 & LEVEL 3 FINISH PLANS

Sheet #:
A10.22



G1 SIGNAGE PLAN - LEVEL 1
1/8" = 1'-0"

INTERIOR MESSAGE SCHEDULE

Level	Room Number	Room Name	Type	Mark	Sign - Message	Notes
LEVEL 1	123	OFFICE	IDI-01	1	OFFICE	
LEVEL 1	110	COMPUTER SCIENCE	IDI-02	1	COMPUTER SCIENCE DEPARTMENT	
LEVEL 1	125	OFFICE	IDI-01	2	OFFICE	
LEVEL 1	160D	OFFICE	IDI-01	3	OFFICE	
LEVEL 1	160C	OFFICE	IDI-01	4	OFFICE	
LEVEL 1	160B	OFFICE	IDI-01	5	OFFICE	
LEVEL 1	194	CUSTODIAL	IDI-04	1	SECURE STORAGE	
LEVEL 1	160	INFORMATION SERVICES	IDI-02	2	INFORMATION SERVICES	
LEVEL 1	150	CONFERENCE ROOM	IDI-01	6	CONFERENCE	
LEVEL 1	150A	STORAGE	IDI-04	2	SECURE STORAGE	
LEVEL 1	151	COMPUTER SCIENCE CLASSROOM	IDI-01	7	COMPUTER SCIENCE CLASSROOM	
LEVEL 1	152	CONFERENCE ROOM	IDI-01	8	CONFERENCE	
LEVEL 1	152A	STORAGE	IDI-04	3	STORAGE	
LEVEL 1	152B	STORAGE	IDI-04	4	STORAGE	
LEVEL 1	150B	STORAGE (NETWORKING)	IDI-04	5	SECURE STORAGE	
LEVEL 1	185	STAIR	RI-01	1		
LEVEL 1	102	LECTURE HALL	IDI-01	9	LECTURE HALL	
LEVEL 1	EL-1	ELEV	DR-01	1		
LEVEL 1	111	CS CONFERENCE	IDI-01	10	CONFERENCE	
LEVEL 1	121	OFFICE	IDI-01	11	OFFICE	
LEVEL 1	119	OFFICE	IDI-01	12	OFFICE	
LEVEL 1	117	OFFICE	IDI-01	13	OFFICE	
LEVEL 1	115	OFFICE	IDI-01	14	OFFICE	
LEVEL 1	113	OFFICE	IDI-01	15	OFFICE	
LEVEL 1	112	CS DEPT HEAD	IDI-01	16	COMPUTER SCIENCE DEPARTMENT HEAD	
LEVEL 1	114	OFFICE	IDI-01	17	OFFICE	
LEVEL 1	116	OFFICE	IDI-01	18	OFFICE	
LEVEL 1	118	OFFICE	IDI-01	19	OFFICE	
LEVEL 1	120	OFFICE	IDI-01	20	OFFICE	
LEVEL 1	122	OFFICE	IDI-01	21	OFFICE	
LEVEL 1	124	OFFICE	IDI-01	22	OFFICE	
LEVEL 1	129	OFFICE	IDI-01	23	OFFICE	
LEVEL 1	127	OFFICE	IDI-01	24	OFFICE	
LEVEL 1	161A	OFFICE	IDI-01	25	OFFICE	
LEVEL 1	162A	OFFICE	IDI-01	26	OFFICE	
LEVEL 1	162B	OFFICE	IDI-01	27	OFFICE	
LEVEL 1	162C	OFFICE	IDI-01	28	OFFICE	
LEVEL 1	162D	OFFICE	IDI-01	29	OFFICE	
LEVEL 1	160A	OFFICE	IDI-01	30	OFFICE	
LEVEL 1	162E	WORK AREA	IDI-04	6	COPY/PRINT	
LEVEL 1	162G	OFFICE	IDI-01	31	OFFICE	
LEVEL 1	162H	OFFICE	IDI-01	32	OFFICE	
LEVEL 1	163E	OFFICE	IDI-01	33	OFFICE	
LEVEL 1	163D	OFFICE	IDI-01	34	OFFICE	
LEVEL 1	163C	OFFICE	IDI-01	35	OFFICE	
LEVEL 1	163B	OFFICE	IDI-01	36	OFFICE	
LEVEL 1	163A	OFFICE	IDI-01	37	OFFICE	
LEVEL 1	163K	OFFICE	IDI-01	38	OFFICE	
LEVEL 1	163J	OFFICE	IDI-01	39	OFFICE	
LEVEL 1	163H	OFFICE	IDI-01	40	OFFICE	
LEVEL 1	163G	OFFICE	IDI-01	41	OFFICE	
LEVEL 1	163F	OFFICE	IDI-01	42	OFFICE	
LEVEL 1	164E	OFFICE	IDI-01	43	OFFICE	
LEVEL 1	164D	OFFICE	IDI-01	44	OFFICE	
LEVEL 1	164C	OFFICE	IDI-01	45	OFFICE	
LEVEL 1	164B	OFFICE	IDI-01	46	OFFICE	
LEVEL 1	164A	OFFICE	IDI-01	47	OFFICE	
LEVEL 1	164L	OFFICE	IDI-01	48	OFFICE	
LEVEL 1	164K	OFFICE	IDI-01	49	OFFICE	
LEVEL 1	164J	OFFICE	IDI-01	50	OFFICE	
LEVEL 1	164H	OFFICE	IDI-01	51	OFFICE	
LEVEL 1	164G	OFFICE	IDI-01	52	OFFICE	
LEVEL 1	164F	OFFICE	IDI-01	53	OFFICE	
LEVEL 1	165F	OFFICE	IDI-01	54	OFFICE	
LEVEL 1	165E	OFFICE	IDI-01	55	OFFICE	
LEVEL 1	165D	OFFICE	IDI-01	56	OFFICE	
LEVEL 1	165C	OFFICE	IDI-01	57	OFFICE	
LEVEL 1	165B	OFFICE	IDI-01	58	OFFICE	
LEVEL 1	165A	OFFICE	IDI-01	59	OFFICE	
LEVEL 1	153	STUDENT SUCCESS WAITING	IDI-02	3	STUDENT SUCCESS	
LEVEL 1	153B	STUDENT SUCCESS	IDI-01	60	OFFICE	
LEVEL 1	153A	STUDENT SUCCESS	IDI-01	61	OFFICE	
LEVEL 1	151A	STORAGE	IDI-04	7	STORAGE	
LEVEL 1	110A	STAFF	IDI-01	62	OFFICE	
LEVEL 1	110B	STAFF	IDI-01	63	OFFICE	
LEVEL 1	161	OPEN OFFICE	IDI-01	64	OFFICE	
LEVEL 1	161B	KITCHENETTE	IDI-01	65	KITCHENETTE	
LEVEL 1	126	STORAGE	IDI-04	8	STORAGE	
LEVEL 1	183	STAIR	RI-02	3		
LEVEL 1	130	CS FACULTY LOUNGE	IDI-01	66	COMPUTER SCIENCE FACULTY LOUNGE	
LEVEL 1	166A	ELEC	IDI-04	9	SECURE STORAGE	
LEVEL 1	130A	ELEC	IDI-04	10	SECURE STORAGE	

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Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **2/19/2025**

Drawn By: **Author**

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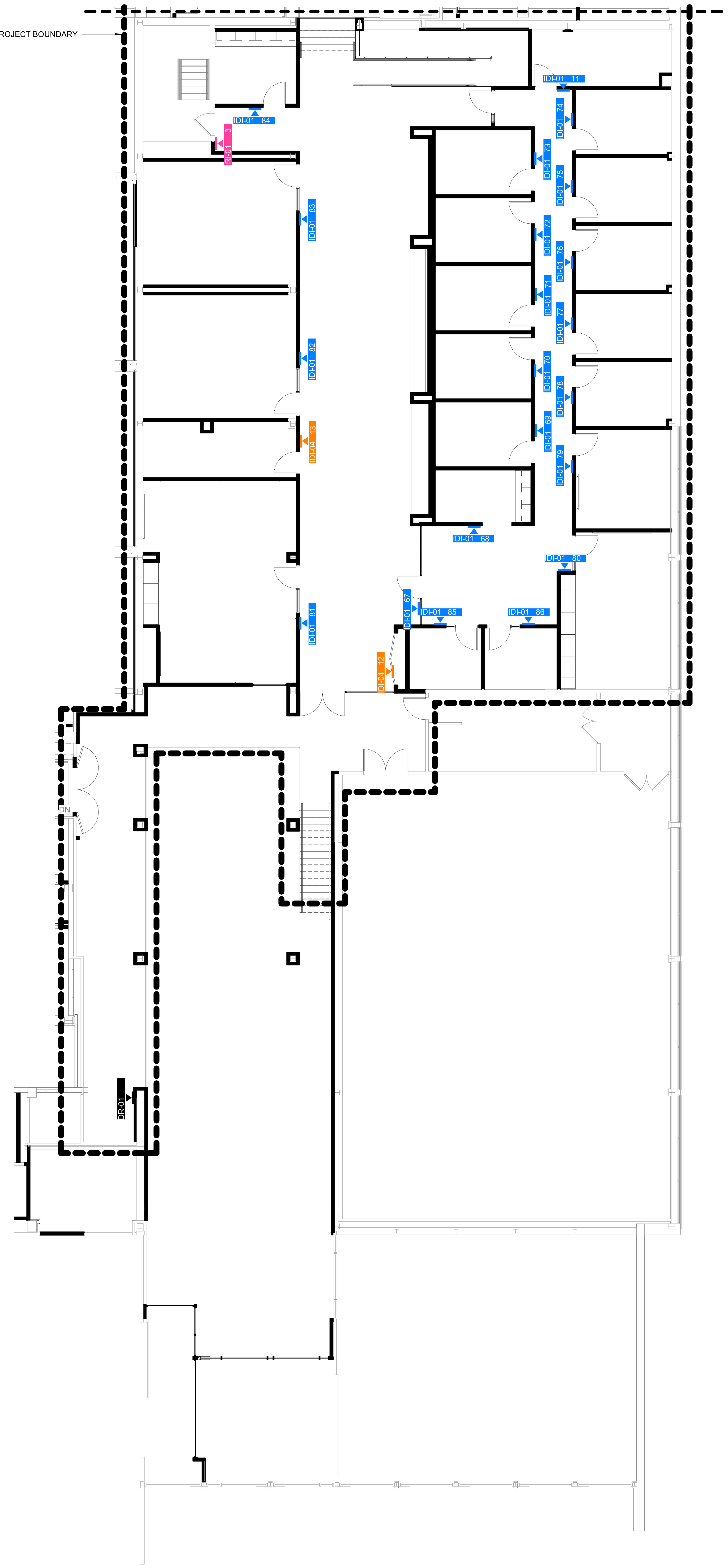
Sheet Title:

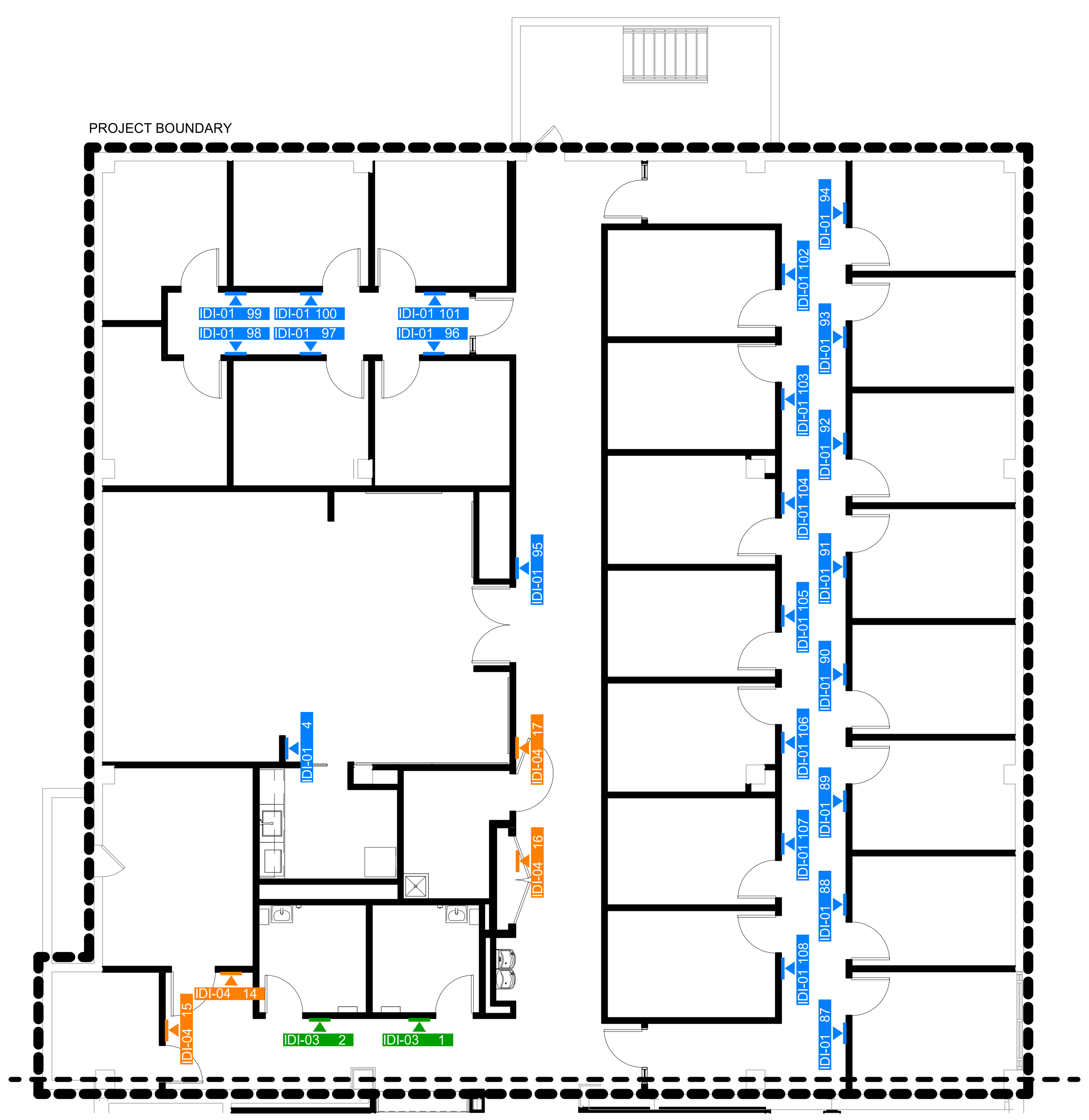
ROOM SIGNAGE PLAN - LEVEL 1

Sheet #:

A11.01



G3 SIGNAGE PLAN - MEZZANINE
1/8" = 1'-0"



G1 SIGNAGE PLAN - MEZZANINE - AREA C RENOVATION ALTERNATE
1/8" = 1'-0"

INTERIOR MESSAGE SCHEDULE

Level	Room Number	Room Name	Type	Mark	Sign - Message	Notes
MEZZANINE	1M	MATH WAITING	IDI-01	67	MATH DEPARTMENT	
MEZZANINE	3M	PRINT/ COPY	IDI-01	68	PRINT/COPY	
MEZZANINE	5M	OFFICE	IDI-01	69	OFFICE	
MEZZANINE	7M	OFFICE	IDI-01	70	OFFICE	
MEZZANINE	9M	OFFICE	IDI-01	71	OFFICE	
MEZZANINE	11M	OFFICE	IDI-01	72	OFFICE	
MEZZANINE	13M	OFFICE	IDI-01	73	OFFICE	
MEZZANINE	16M	DATA	IDI-04	11	SECURE	
MEZZANINE	14M	OFFICE	IDI-01	74	OFFICE	
MEZZANINE	12M	OFFICE	IDI-01	75	OFFICE	
MEZZANINE	10M	OFFICE	IDI-01	76	OFFICE	
MEZZANINE	8M	OFFICE	IDI-01	77	OFFICE	
MEZZANINE	6M	OFFICE	IDI-01	78	OFFICE	
MEZZANINE	4M	MATH DEPT HEAD	IDI-01	79	MATH DEPARTMENT HEAD	
MEZZANINE	2M	CONFERENCE	IDI-01	80	CONFERENCE	
MEZZANINE	20M	MATH STUDY ROOM	IDI-01	81	MATH STUDY	
MEZZANINE	22M	MATH GRAD STUDENTS	IDI-01	82	MATH GRAD STUDENTS	
MEZZANINE	24M	MATH GRAD STUDENTS	IDI-01	83	MATH GRAD STUDENTS	
MEZZANINE	26M	COPY	IDI-01	84	COPY/PRINT	
MEZZANINE	EL-M	ELEV	DR-01	2		
MEZZANINE	83M	STAIR	RI-01	2		
MEZZANINE	87M	ELEC	IDI-04	12	SECURE STORAGE	
MEZZANINE	1MA	STAFF	IDI-01	85	OFFICE	
MEZZANINE	1MB	STAFF	IDI-01	86	OFFICE	
MEZZANINE	28M	MATH STORAGE	IDI-04	13	STORAGE	
MEZZANINE	-	STAIR	RI-01	3		
MEZZANINE NORTH ADDITION	40M	OFFICE	IDI-01	87	OFFICE	
MEZZANINE NORTH ADDITION	42M	OFFICE	IDI-01	88	OFFICE	
MEZZANINE NORTH ADDITION	44M	OFFICE	IDI-01	89	OFFICE	
MEZZANINE NORTH ADDITION	46M	OFFICE	IDI-01	90	OFFICE	
MEZZANINE NORTH ADDITION	48M	OFFICE	IDI-01	91	OFFICE	
MEZZANINE NORTH ADDITION	50M	OFFICE	IDI-01	92	OFFICE	
MEZZANINE NORTH ADDITION	52M	OFFICE	IDI-01	93	OFFICE	
MEZZANINE NORTH ADDITION	54M	OFFICE	IDI-01	94	OFFICE	
MEZZANINE NORTH ADDITION	94M	TLT	IDI-03	1	ADA Glyph	
MEZZANINE NORTH ADDITION	73M	BREAK	IDI-02	4	BREAK AREA	
MEZZANINE NORTH ADDITION	93M	MECH/ ELECTRICAL	IDI-04	14	SECURE STORAGE	
MEZZANINE NORTH ADDITION	74M	STORAGE	IDI-04	15	STORAGE	
MEZZANINE NORTH ADDITION	72M	MATH SCHWARTZ LIBRARY	IDI-01	95	SCHWARTZ LIBRARY	
MEZZANINE NORTH ADDITION	61M	OFFICE	IDI-01	96	OFFICE	
MEZZANINE NORTH ADDITION	63M	OFFICE	IDI-01	97	OFFICE	
MEZZANINE NORTH ADDITION	65M	OFFICE	IDI-01	98	OFFICE	
MEZZANINE NORTH ADDITION	66M	OFFICE	IDI-01	99	OFFICE	
MEZZANINE NORTH ADDITION	64M	OFFICE	IDI-01	100	OFFICE	
MEZZANINE NORTH ADDITION	62M	OFFICE	IDI-01	101	OFFICE	
MEZZANINE NORTH ADDITION	53M	OFFICE	IDI-01	102	OFFICE	
MEZZANINE NORTH ADDITION	51M	OFFICE	IDI-01	103	OFFICE	
MEZZANINE NORTH ADDITION	49M	OFFICE	IDI-01	104	OFFICE	
MEZZANINE NORTH ADDITION	47M	OFFICE	IDI-01	105	OFFICE	
MEZZANINE NORTH ADDITION	45M	OFFICE	IDI-01	106	OFFICE	
MEZZANINE NORTH ADDITION	43M	OFFICE	IDI-01	107	OFFICE	
MEZZANINE NORTH ADDITION	41M	OFFICE	IDI-01	108	OFFICE	
MEZZANINE NORTH ADDITION	81M	STAIR	RI-01	4		
MEZZANINE NORTH ADDITION	89M	ELEC	IDI-04	16	SECURE STORAGE	
MEZZANINE NORTH ADDITION	92M	TLT	IDI-03	2	ADA Glyph	
MEZZANINE NORTH ADDITION	88M	CUSTODIAL	IDI-04	17	STORAGE	

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Sheet Title:

ROOM SIGNAGE PLAN - MEZZANINE

Sheet #:

A11.02

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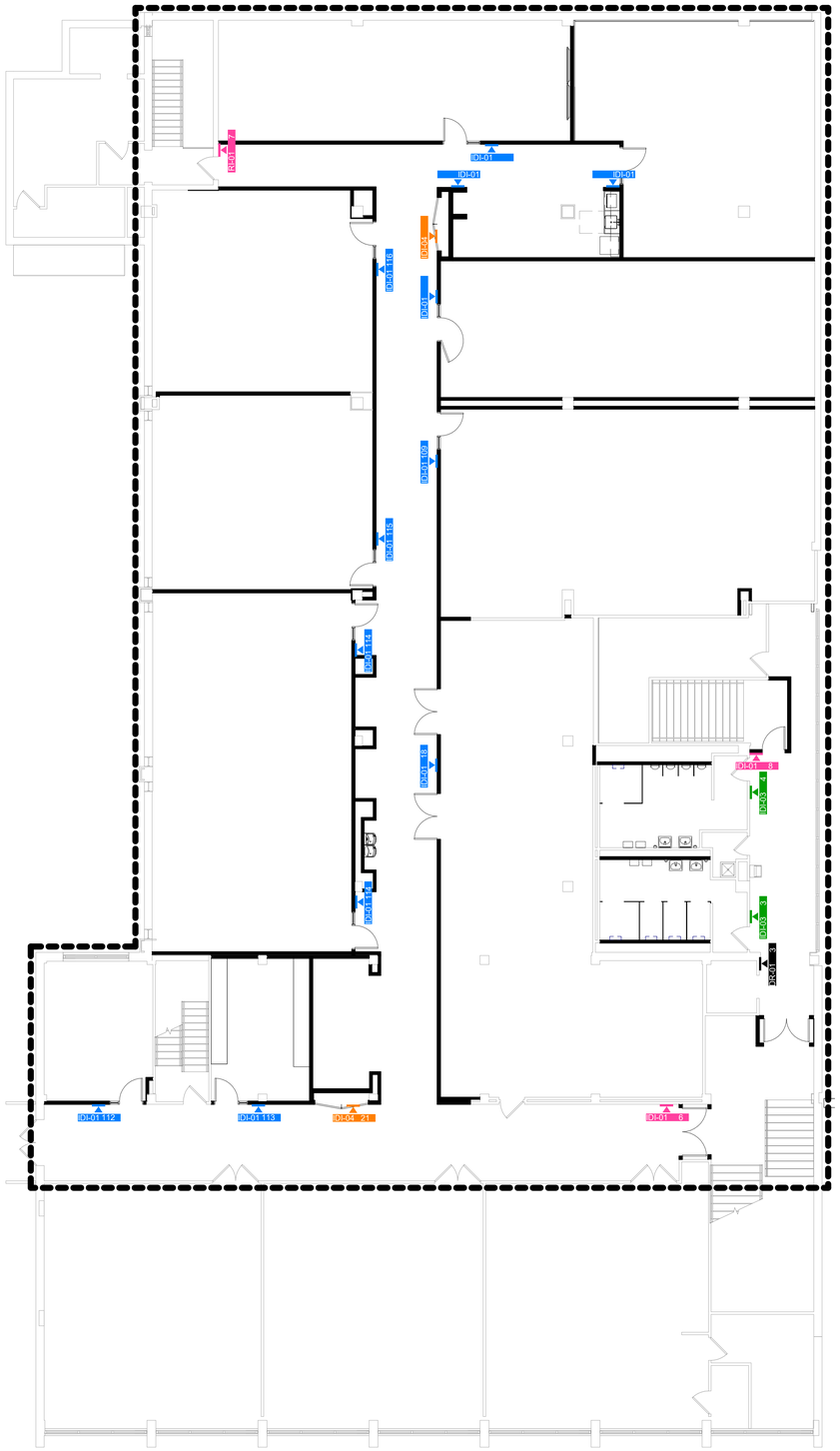
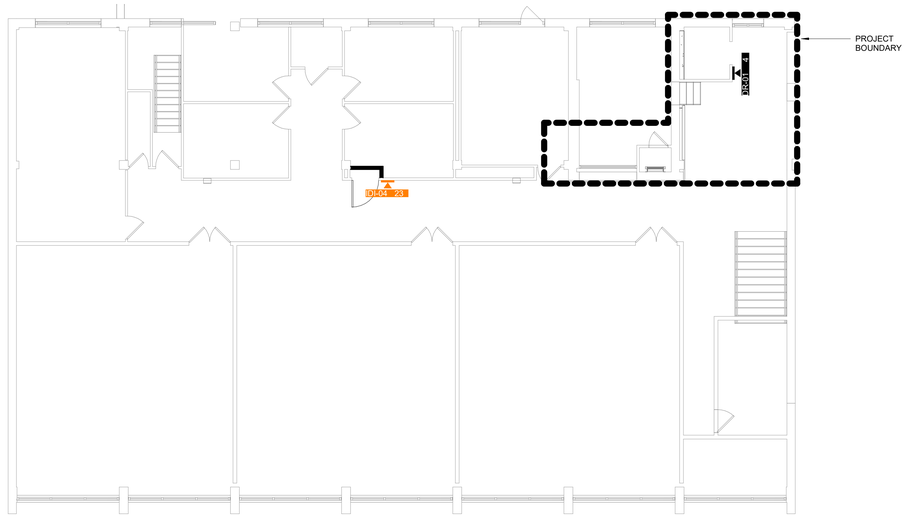


G1 SIGNAGE PLAN - LEVEL 2
1/8" = 1'-0"

INTERIOR MESSAGE SCHEDULE						
Level	Room Number	Room Name	Type	Mark	Sign - Message	Notes
LEVEL 2	205T	MECHANICAL	IDI-04	18	SECURE STORAGE	
LEVEL 2	210	LARGE TEACHING LAB	IDI-01	109	TEACHING LAB	
LEVEL 2	211	RESEARCH LAB	IDI-01	110	RESEARCH LAB	
LEVEL 2	212	RESEARCH LAB	IDI-01	111	RESEARCH LAB	
LEVEL 2	290	WOMEN	IDI-03	3	Women's Glyph, ADA Glyph	Alternate
LEVEL 2	291	MEN	IDI-03	4	Men's Glyph, ADA Glyph	Alternate
LEVEL 2	292	JAN	IDI-04	19	SECURE STORAGE	
LEVEL 2	201	CS OFFICE	IDI-01	112	OFFICE	
LEVEL 2	203	CS TUTORING LAB	IDI-01	113	TUTORING LAB	
LEVEL 2	207	LARGE TEACHING LAB	IDI-01	114	TEACHING LAB	
LEVEL 2	208	MEDIUM TEACHING LAB	IDI-01	115	TEACHING LAB	
LEVEL 2	209	MEDIUM TEACHING LAB	IDI-01	116	TEACHING LAB	
LEVEL 2	213	RESEARCH LAB	IDI-01	117	RESEARCH LAB	
LEVEL 2	299A	BREAKOUT	IDI-01	118	BREAKOUT	
LEVEL 2	284	STAIR	RI-01	5		
LEVEL 2	205	CLASSROOM	IDI-01	119	CLASSROOM	
LEVEL 2	204	CLASSROOM	IDI-01	120	CLASSROOM	
LEVEL 2	202	CLASSROOM	IDI-01	121	CLASSROOM	
LEVEL 2	280	STAIR	RI-01	6		
LEVEL 2	285	STAIR	RI-01	7		
LEVEL 2	EL-2	ELEV	DR-01	3		
LEVEL 2	283	STAIR	RI-01	8		
LEVEL 2	299B	ELEC	IDI-04	20	SECURE STORAGE	
LEVEL 2	298A	ELEC	IDI-04	21	SECURE STORAGE	
LEVEL 2	296	GRAD PAD	IDI-01	122	GRAD PAD	
LEVEL 3	300A	ROOF ACCESS	IDI-04	22	SECURE	
LEVEL 3	EL-3	ELEV	DR-01	4		
LEVEL 3	300	STUDENT BREAKOUT	IDI-01	123	STUDENT BREAKOUT	
LEVEL 3	398	ELEC	IDI-04	23	SECURE STORAGE	



G4 SIGNAGE PLAN - LEVEL 3
1/8" = 1'-0"

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CERTIFICATE OF AUTHORITY - E2017008530

Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **2/19/2025**

Drawn By: **Author**

SHEET REVISIONS

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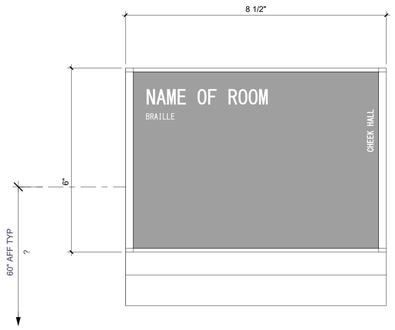
Sheet Title:

ROOM SIGNAGE PLAN - LEVEL 2 & LEVEL 3

Sheet #:

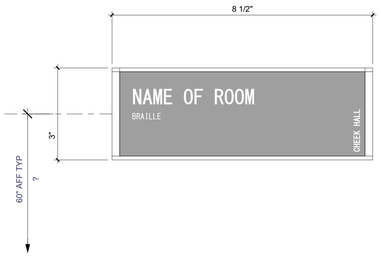
A11.03

TYPICAL CODE SIGN - SIZES ARE SHOWN
SIGNAGE PER MSU SIGNAGE STANDARDS
MOUNTING: MECHANICAL FASTNERS (MFH)
FRAME: PRODUCT: FVS5585 (V) / COLOR: NATURAL SATIN
SIGN INSERT: PART CODE: FV301A-1 (CLEAR ADA) / PART COLOR: CLEAR / PRINT RIGHT SUB-SURFACE / RULE: A54 GRAPHITE
RAISED GRAPHICS: TYPESTYLE: ALTERNATE GOTHIC #3 / SIZE: 5/8" / COLOR: A01 WHITE (BRAILLE COLOR: SAME AS BACKGROUND)
DROPPED OUT GRAPHICS: TYPESTYLE: ALTERNATE GOTHIC #3 / SIZE: 9/32" (ROTATE 90° CCW)



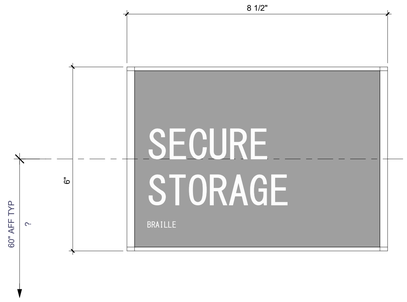
IDI-01 ROOM NUMBER FIXED NAME

NOT TO SCALE



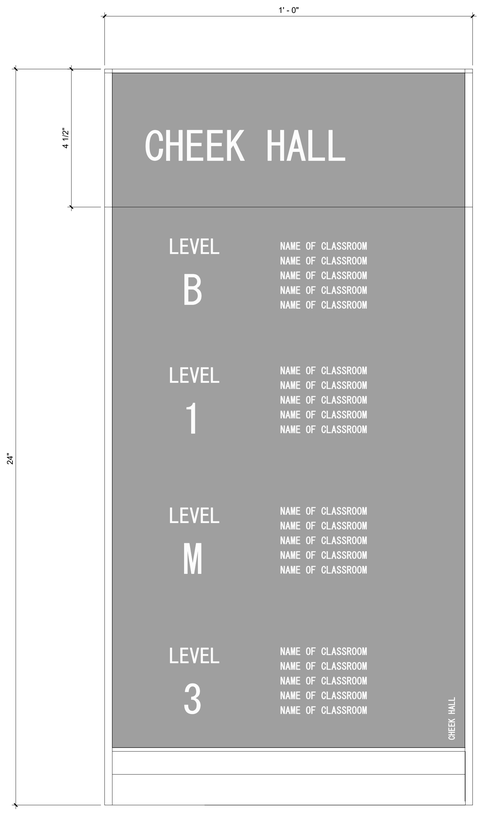
IDI-02 ROOM NAME ONLY

NOT TO SCALE



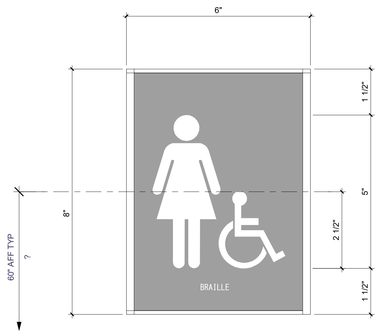
IDI-03 ONE OR TWO-LINE BACK OF HOUSE

NOT TO SCALE



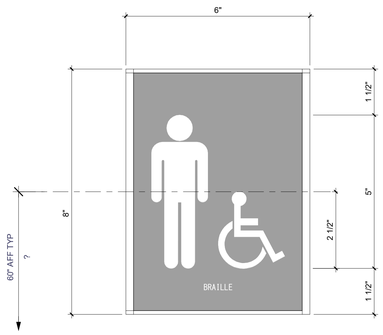
DR-01 BUILDING DIRECTORY WITH PRINTED INSERT

NOT TO SCALE



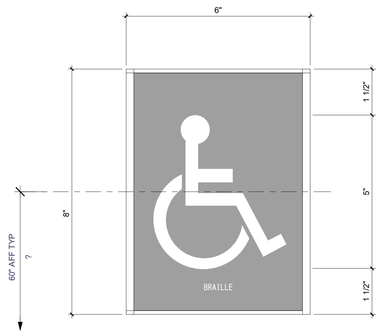
IDI-04 WOMEN - RESTROOM

NOT TO SCALE



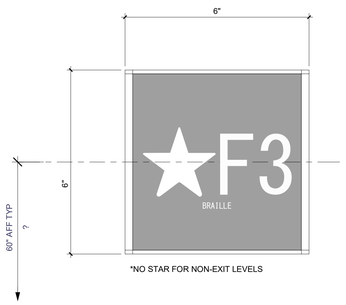
IDI-04 MEN - RESTROOM

NOT TO SCALE



IDI-04 INCLUSIVE RESTROOM

NOT TO SCALE



*NO STAR FOR NON-EXIT LEVELS

R1-01 BACK OF HOUSE

NOT TO SCALE

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MSU Project #: 231023-069

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Drawn By: **Author**

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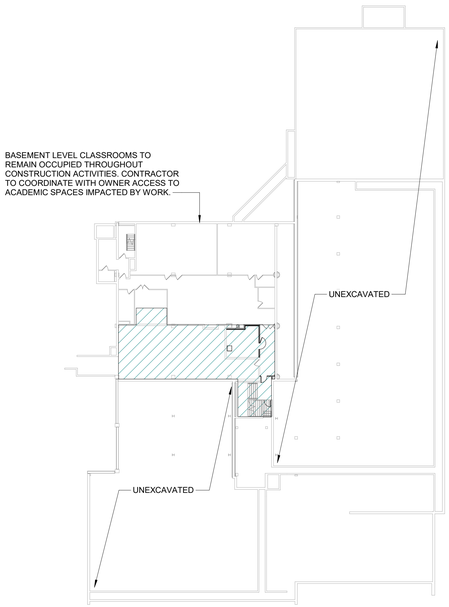
Sheet Title:

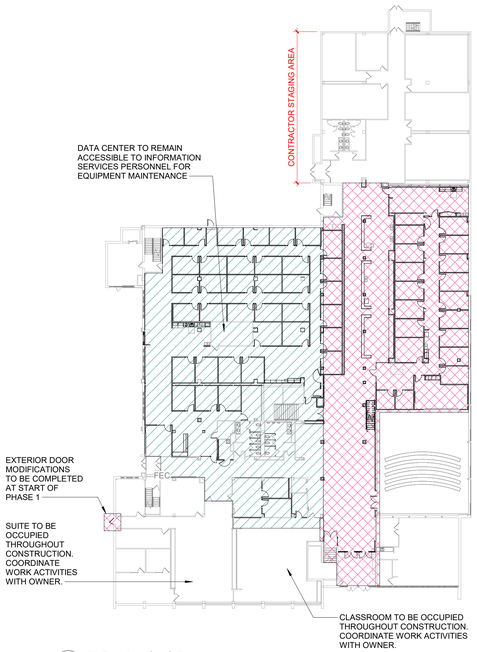
ROOM SIGNAGE

Sheet #:

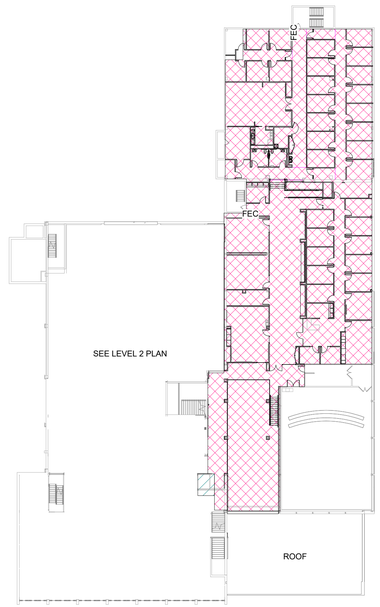
A11.04



D1 BASEMENT LEVEL PHASING PLAN
1" = 30'-0"



D3 LEVEL 1 PHASING PLAN
1" = 30'-0"



D4 MEZZANINE LEVEL PHASING PLAN
1" = 30'-0"

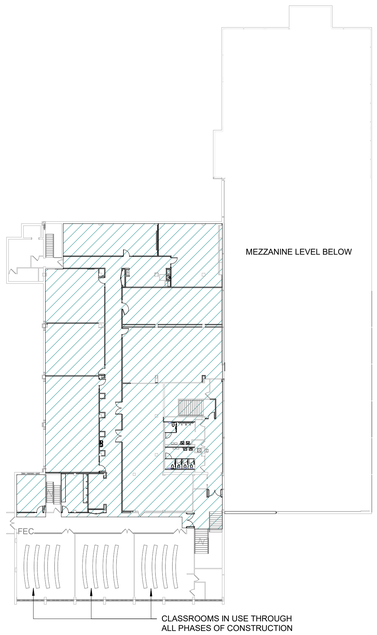
PHASING PLAN LEGEND

PHASE 1 WORK AREA
WORK TO BE COMPLETED FOR OWNER OCCUPANCY BY PHASE 1 SUBSTANTIAL COMPLETION

PHASE 2 WORK AREA

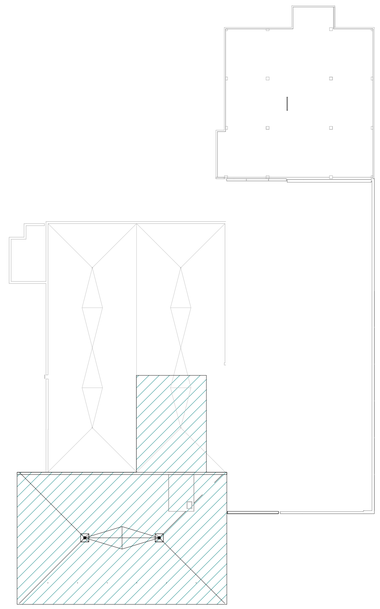
PHASING PLAN GENERAL NOTES

1. PHASING PLANS ARE INTENDED TO SHOW AREAS OF MAJOR RENOVATION ACTIVITIES. CONTRACTOR TO COORDINATE WITH OWNER ANY WORK ANTICIPATED TO OCCUR OUTSIDE OF PRIMARY PHASE.
2. SPACES OUTSIDE OF WORK AREA WILL BE OWNER-OCCUPIED.



F1 LEVEL 2 PHASING PLAN
1" = 30'-0"

F3 LEVEL 3 PHASING PLAN
1" = 30'-0"



F4 ROOF PHASING PLAN
1" = 30'-0"

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Sheet Title:
PHASING PLANS

Sheet #:
PH2.00

DESIGN CRITERIA

1. STRUCTURE HAS BEEN DESIGNED TO COMPLY WITH IBC 2012, ASCE7-10, AND SUBSEQUENT REFERENCE STANDARDS.
2. RISK CATEGORY: III
3. SNOW:

GROUND SNOW	15 PSF
SNOW EXPOSURE FACTOR	1.0
THERMAL FACTOR	1.0
IMPORTANCE FACTOR	1.1
FLAT-ROOF SNOW	16.5 PSF
RAIN-ON-SNOW SURCHARGE	5 PSF
DESIGN SNOW	22 PSF

4. SEISMIC:

SEISMIC DESIGN CATEGORY	C
IMPORTANCE FACTOR	1.25
SITE CLASS	D
SS	0.194 g
S1	0.104 g
SDS	0.207 g
SD1	0.165 g

5. WIND:

BASIC WIND SPEED	VULT = 120 MPH VASD = 72 MPH		
EXPOSURE CLASS	B		
INTERNAL PRESSURE COEFFICIENT, GCpi	±0.18		
MAIN WIND FORCE PRESSURE (STRENGTH LEVEL)	28 PSF		
COMPONENTS & CLADDING:			
ROOF COMPONENTS	ZONE 1	ZONE 2	ZONE 3
SUPPORT BEAMS (A>100 SF)	26.6 PSF	31.5 PSF	31.5 PSF
ROOF SHEATHING (A=50 SF)	27.3 PSF	36.7 PSF	44.1 PSF
DECK FASTENERS (A=10 SF)	29.0 PSF	48.7 PSF	73.3 PSF
WALL COMPONENTS	ZONE 4	ZONE 5	
A=200 SF	23.7 PSF	25.2 PSF	
A=50 SF	26.0 PSF	30.0 PSF	
A=20 SF	28.8 PSF	35.4 PSF	

C & C NOTES:
   a. THE PRESSURES LISTED ARE IN ACCORDANCE IBC AND ASCE 7, AND THE DESIGN FORCES USED BY THE SUBCONTRACTOR FOR A SPECIFIC APPLICATION ARE THE RESPONSIBILITY OF THE SUBCONTRACTOR.
   b. WIND PRESSURES ARE ULTIMATE DESIGN LEVEL.
   c. SEE ASCE 7 FOR ZONE DEFINITIONS AND EXTENT OF ZONES.
   d. SUBMIT DESIGN CALCULATIONS SIGNED AND SEALED BY A LICENSED ENGINEER IN THE PROJECT'S JURISDICTION FOR ANY DESIRED MODIFICATION TO THE STATED PRESSURES.

GENERAL

1. DURING THE CONSTRUCTION PERIOD, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF PERSONNEL AND PROPERTY ON AND AROUND THE JOBSITE. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING, BRACING, GUYS, ETC. IN ACCORDANCE WITH ALL NATIONAL, STATE, AND LOCAL SAFETY ORDINANCES. TEMPORARY BRACING, SHORING, GUYING, ETC. SHALL AVOID EXCESSIVE STRESSES AND HOLD STRUCTURAL ELEMENTS IN PLACE DURING CONSTRUCTION. THE STRUCTURE SHOULD NOT BE CONSIDERED STABLE UNTIL ALL STRUCTURAL ELEMENTS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
2. ALL DRAWINGS AND SPECIFICATIONS ARE CONSIDERED TO BE A PART OF THE CONTRACT DOCUMENTS. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO THE START OF CONSTRUCTION SO A CLARIFICATION CAN BE ISSUED. ANY WORK THAT DEVIATES FROM OR IS PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE REQUIREMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT THEIR OWN EXPENSE AND AT NO EXPENSE TO THE OWNER OR THE DESIGN PROFESSIONALS.
3. THE CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING ALLOWABLE CONSTRUCTION LOADS AND FOR DETERMINING SEQUENCES OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE AND SAFETY OF WORKERS DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO: FALSEWORK, FORMWORK, STAGING, BRACING, AND SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. OBSERVATION VISITS TO THE SITE BY THE ARCHITECT SHALL NOT INCLUDE INSPECTION OR APPROVAL OF THE ABOVE ITEMS AND DO NOT IN ANY WAY RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITIES FOR THE ABOVE. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN AND ENSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION.
4. ALL DIMENSIONS AND SITE CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE JOBSITE PRIOR TO BID SUBMITTAL, START OF SHOP DRAWINGS, START OF CONSTRUCTION, AND/OR FABRICATION OF MATERIALS. IF DISCREPANCIES ARE ENCOUNTERED, OR CONDITIONS DEVELOP THAT ARE NOT COVERED BY THE CONTRACT DOCUMENTS, THE ARCHITECT SHALL BE NOTIFIED FOR CLARIFICATION.
5. STRUCTURAL SUBSTITUTIONS MAY BE ALLOWED WITH THE APPROVAL OF THE STRUCTURAL ENGINEER. SUPPLIER SHALL PROVIDE SIGNED AND SEALED DESIGN CALCULATIONS OR SUITABLE PRODUCT LITERATURE FOR THE COMPONENTS. ALL PRODUCT SUBSTITUTIONS SHALL INCLUDE A CODE EVALUATION REPORT SPECIFIC TO THE BUILDING CODE LISTED IN THE DESIGN CRITERIA.
6. STRUCTURAL DRAWINGS INCLUDE DESIGN REQUIREMENTS AND DIMENSIONS FOR STRUCTURAL INTEGRITY BUT DO NOT SHOW ALL DETAIL DIMENSIONS TO FIT INTRICATE ARCHITECTURAL AND MECHANICAL DETAILS. CONTRACTOR SHALL CONSTRUCT THE WORK SO IT WILL CONFORM TO THE CLEARANCES REQUIRED BY ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DESIGN.
7. ALL SYMBOLS AND ABBREVIATIONS USED ON THE DRAWINGS ARE CONSIDERED TO BE CONSTRUCTION STANDARDS. IF CLARIFICATION IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO PROCEEDING WITH THE WORK.
8. DO NOT SCALE DRAWINGS. PRINTED DIMENSIONS HAVE PRECEDENCE OVER SCALED DRAWINGS AND LARGE-SCALE OVER SMALL-SCALE DRAWINGS. CONTRACTOR TO DETERMINE FINAL DIMENSION WITH ARCHITECT.
9. TYPICAL DETAILS SHALL APPLY TO SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY REFERENCED. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.
10. SEE ARCHITECTURAL, ELECTRICAL, AND MECHANICAL DRAWINGS FOR DETAILS, CONDITIONS, PITS, TRENCHES, PADS, DEPRESSIONS, ROOF / FLOOR OPENINGS, TOP OF WALL ELEVATIONS, STAIRS, SLEEVES, ITEMS TO BE EMBEDDED OR ATTACHED TO STRUCTURAL ELEMENTS, ETC., NOT SHOWN ON THE STRUCTURAL DRAWINGS. FOR THESE NON-STRUCTURAL ELEMENTS SHOWN ON STRUCTURAL DRAWINGS, THEY ARE FOR GENERAL INFORMATION ONLY.
11. ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR MECHANICAL, ELECTRICAL, AND PLUMBING WITH APPROPRIATE TRADE CONTRACTORS. OPENING SIZES AND LOCATIONS SHOWN FOR DUCTS, PIPE, INSERTS, AND OTHER PENETRATIONS WHEN SHOWN ARE FOR GENERAL INFORMATION ONLY AND SHALL BE VERIFIED PRIOR TO FORMING.
12. PROVIDE TEMPORARY BLOCKOUTS AND TEMPORARY OPENINGS IN THE STRUCTURE AS REQUIRED TO PERMIT INSTALLATION OF ALL WORK. BLOCKOUTS AND TEMPORARY OPENINGS SHALL BE LOCATED, CONFIGURED, DETAILED, AND INFILLED IN A MANNER THAT ALTERS NEITHER THE STRENGTH OF THE STRUCTURAL FRAMING NOR THE STRENGTH OF CONNECTIONS. INFILL ALL BLOCKOUTS AND TEMPORARY OPENINGS USING THE MATERIALS SPECIFIED FOR THE FRAMING AT THE LOCATIONS WHERE THE BLOCKOUTS AND OPENINGS OCCUR. SUBMIT DRAWINGS INDICATING THE LOCATIONS, DIMENSIONS, AND DETAILS OF ALL PROPOSED BLOCKOUTS AND OPENINGS AND DETAILS INDICATING THE MANNER IN WHICH THE BLOCKOUTS AND OPENINGS WILL BE INFILLED.
13. NO HOLES, NOTCHES, BLOCK-OUTS, ETC. ARE ALLOWED IN STRUCTURAL ELEMENTS UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER.
14. PENETRATIONS IN CONCRETE SHALL BE CAST-IN-PLACE AND SHALL NOT BE PERMITTED EXCEPT AS SHOWN IN THE STRUCTURAL DRAWINGS.
15. BEFORE SUBMITTING A PROPOSAL FOR THIS WORK, CONTRACTOR SHALL VISIT THE PREMISES AND BECOME FULLY ACQUAINTED WITH FIELD CONDITIONS, TEMPORARY CONSTRUCTION REQUIRED, QUANTITIES AND TYPE OF EQUIPMENT, ETC. THE PROPOSAL SHALL INCLUDE ALL SUMS REQUIRED TO DO THE WORK.
16. ELEMENTS SUCH AS NON-BEARING PARTITIONS, ETC. ATTACHED TO AND/OR SUPPORTED BY THE STRUCTURE SHALL TAKE INTO ACCOUNT DEFLECTIONS AND OTHER STRUCTURAL MOVEMENTS. THE STRUCTURAL FRAMING WAS DESIGNED TO LIMIT DRIFT AND DEFLECTION OF THE STRUCTURAL SYSTEM TO LESS THAN THE MAXIMUM PERMITTED DEFLECTIONS LISTED IN THE BUILDING CODE. THE CONTRACTOR SHALL COORDINATE THE WORK OF OTHER TRADES TO ACCOMMODATE THESE DEFLECTIONS AND TO ACCOMMODATE CONSTRUCTION TOLERANCES.
17. FIRE PROTECTION FOR ALL STRUCTURAL PARTS SHALL BE PROVIDED AS SPECIFIED BY THE ARCHITECTURAL DRAWINGS. UL FIRE RESISTANCE RATING RESTRAINT CLASSIFICATION AS FOLLOWS:
   a. "PRIMARY STRUCTURAL FRAME", AS DEFINED BY IBC SECTION 202 IS "RESTRAINED" EXCEPT AS INDICATED IN FOLLOWING NOTE.
   b. THE FOLLOWING FRAMING IS "UNRESTRAINED":
      1. FRAMING SUPPORTED BY BEARING WALLS, OTHER THAN CAST-IN-PLACE CONCRETE WALLS, IN END BAYS AND OTHER LOCATIONS WHERE THE END OF THE FRAMING IS NOT ABUTTING FRAMING IN AN ADJACENT BAY.

SUBMITTALS

1. SUBMITTALS ARE:
   a. CONCRETE MIX DESIGNS
   b. MATERIAL PRODUCT DATA FOR STRUCTURAL MATERIALS
   c. CONCRETE AND MASONRY REINFORCING
   d. STEEL DECK
   e. COLD FORMED STEEL FRAMING AND CONNECTIONS
2. SUBMITTALS SHALL BE REVIEWED AND COORDINATED PRIOR TO SUBMITTING TO THE ARCHITECT. EACH SHOP DRAWING SUBMITTED SHALL BE STAMPED INDICATING REVIEW BY THE CONSTRUCTION MANAGER/GENERAL CONTRACTOR AND REVIEW BY THE ARCHITECT SHALL NOT BEGIN UNTIL THIS IS COMPLETE. WORK SHALL NOT BEGIN WITHOUT REVIEW BY THE DESIGN PROFESSIONALS.
3. SUBMITTALS SHALL BE REVIEWED BY THE DESIGN PROFESSIONALS FOR GENERAL CONFORMANCE WITH DESIGN CONCEPT ONLY. NOTATIONS MADE BY THE DESIGN PROFESSIONALS ON THE SHOP DRAWINGS DO NOT RELIEVE THE CONTRACTOR FROM COMPLYING WITH THE REQUIREMENTS OF THE DRAWINGS.
4. FOR ADDITIONAL INFORMATION ON REQUIRED SUBMITTALS, SEE INDIVIDUAL MATERIAL SECTIONS.

DELEGATED DESIGN

1. DELEGATED DESIGNS PER SECTION 107.3.4.1 SHALL BE SUBMITTED TO THE BUILDING OFFICIAL AND THE DESIGN PROFESSIONALS AND REVIEWED PRIOR TO INSTALLATION.
2. DELEGATED DESIGNS ARE:
   a. STAIRS, ACCESS LADDERS, HANDRAILS, GUARDRAILS, AND GRATING
3. ALL DELEGATED DESIGNS SHALL BE SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE PROJECT'S JURISDICTION RESPONSIBLE FOR THE PREPARATION OF THESE DOCUMENTS.
4. STAIRS:
   a. STEEL STAIRS IN STEEL FRAMED STRUCTURES SHALL BE CONFIGURED SO THE STAIR STRINGERS CONNECT TO THE WEBS OF SUPPORTING STRUCTURAL STEEL FLOOR FRAMING MEMBERS. STAIR STRINGERS MAY NOT CONNECT TO SLABS ON DECK. STAIR STRINGER AND HANGER CONNECTIONS SHALL BE CONFIGURED SO THEY CONNECT TO THE SUPPORTING STRUCTURAL STEEL IN A MANNER THAT IMPOSES NO TORSION UPON THE SUPPORTING STRUCTURAL MEMBER. WHERE STAIR HANGERS MUST FRAME ECCENTRIC TO THE SUPPORTING STEEL, SUPPLEMENTAL FRAMING SHALL BE PROVIDED AS INDICATED ON THE CONTRACT DOCUMENTS TO PREVENT TORSION ON THE SUPPORTING STEEL FRAMING.
   b. DESIGN FRAMING MEMBERS IN COMMUNICATING STAIRS AND MONUMENTAL STAIRS TO LIMIT LIVE LOAD DEFLECTION TO THE SMALLER OF L/600 OR 1/4". SIZE STAIR FRAMING MEMBERS TO PROVIDE A STAIR ASSEMBLY WITH A NATURAL FREQUENCY > 5 HERTZ AND PEAK ACCELERATION, ap/g = 0.015, AS COMPUTED PER AISC DESIGN GUIDE 11 EQUATION 2.3 USING INDOOR FOOTBRIDGE CRITERIA.
   c. SEE ARCHITECTURAL DRAWINGS FOR STEEL STAIR DETAILS. DESIGN OF FRAMING MEMBERS AND CONNECTIONS TO BE BY SPECIALTY ENGINEER, WORKING DIRECTLY WITH THE STAIR DETAILER AND FABRICATOR. WHERE SUPPORT POSTS ARE REQUIRED, PROVIDE 3'-0" SQUARE x 1'-0" THICKENED SLAB WITH (4)#5 BOTTOM AT BASE OF STAIR.

EXISTING CONDITIONS / DEMOLITION

1. EXISTING CONDITIONS:
   a. EXISTING STRUCTURAL INFORMATION SHOWN WAS OBTAINED FROM EXISTING DRAWINGS.
      1. DATED MARCH 16, 1954 BY ESTERLY & AMSPACHER ARCHITECTS.
      2. DATED APRIL 15, 1965 BY A. C. ESTERLY ARCHITECT.
      3. DATED JULY 31, 1980 BY HOOD-RICH ARCHITECTS & CONSULTING ENGINEERS.
   b. ALL INFORMATION SHOWN ON THE DRAWINGS RELATIVE TO EXISTING CONDITIONS IS GIVEN AS THE BEST PRESENT KNOWLEDGE. CONTRACTOR TO VERIFY EXISTING INFORMATION, DIMENSIONS, AND SIZES AS REQUIRED TO COMPLETE THEIR WORK. WHERE ACTUAL CONDITIONS CONFLICT WITH THE DRAWINGS, THEY SHALL BE REPORTED TO THE ARCHITECT SO CLARIFICATION MAY BE MADE. MODIFICATION OF CONSTRUCTION DETAILS SHALL NOT BE MADE WITHOUT WRITTEN APPROVAL OF THE ARCHITECT.
2. EXISTING BUILDING MATERIAL PROPERTIES:
   a. CONCRETE STRENGTH: 3000 PSI PER 1954 DRAWINGS
3. ALL DEMOLITION SHALL BE CARRIED OUT IN SUCH A WAY TO PREVENT DAMAGE TO EXISTING ELEMENTS WHICH ARE TO REMAIN.
4. ALL ELEMENTS WHICH ARE TO REMAIN AND WHICH ARE DAMAGED DURING DEMOLITION WORK SHALL BE REPLACED AT NO ADDED COST. CONTRACTOR SHALL PROVIDE AND BE RESPONSIBLE FOR THE PROTECTION AND REPAIR OF ADJACENT EXISTING SURFACES AND AREAS WHICH MAY BE DAMAGED AS A RESULT OF NEW WORK.
5. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS OF EXISTING STRUCTURE AND SITES THAT ARE AFFECTED BY NEW WORK BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION.
6. ALL CONSTRUCTION IS NEW UNLESS IDENTIFIED AS EXISTING, "(E)". THE CONTRACTOR SHALL VERIFY ALL EXISTING BUILDING INFORMATION AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES PRIOR TO FABRICATION OF ANY STRUCTURAL COMPONENT. NEW SLABS ARE TO BE AT THE SAME ELEVATIONS AS ADJACENT EXISTING SLABS UON. FOUNDATION ELEVATIONS OR COLUMN LENGTHS SHALL BE ADJUSTED WITH THE APPROVAL OF THE STRUCTURAL ENGINEER TO ACHIEVE MATCHING SLAB ELEVATIONS.
7. REINFORCING STEEL IN EXISTING CONCRETE SHALL BE LOCATED PRIOR TO INSTALLATION OF NEW OPENINGS OR CORING OF HOLES IN THE CONCRETE. REINFORCING STEEL MAY NOT BE CUT WITHOUT APPROVAL FROM THE ENGINEER.

EARTHWORK

1. FOUNDATION DESIGN IS IN ACCORDANCE WITH THE INFORMATION SHOWN ON THE EXISTING BUILDING DRAWINGS. NO NEW GEOTECHNICAL REPORT HAS BEEN PROVIDED BY THE OWNER FOR THIS PROJECT.
2. SOIL PROPERTIES:

SOIL BEARING PRESSURE	6000 PSF PER 1954 DRAWINGS
FROST DEPTH	1'-3"

3. CONTRACTOR SHALL PROVIDE DE-WATERING OF EXCAVATIONS FROM SURFACE WATER, GROUNDWATER, OR SEEPAGE. IF GROUNDWATER IS ENCOUNTERED DURING EXCAVATION, PROCEDURES SHALL BE IMPLEMENTED AS RECOMMENDED BY A GEOTECHNICAL ENGINEER.
4. ANY REQUIRED IMPORT FILL SHALL HAVE A LOW POTENTIAL FOR EXPANSION.
5. ALL REQUIRED BACKFILL AND UTILITY TRENCH BACKFILL WITHIN THE BUILDING AREA SHALL BE COMPACTED.

REINFORCING STEEL

1. ALL REINFORCING STEEL SHALL BE DETAILED AND PLACED IN CONFORMANCE WITH ACI 318, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", AND ACI 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE", UON.
2. CONCRETE REINFORCING STEEL SHALL CONFORM TO THE FOLLOWING STANDARDS:

REINFORCING STEEL UON	ASTM A615, GR 60	Fy=60 KSI
WELDED WIRE REINFORCING	ASTM A1064	Fy=65 KSI

3. MINIMUM CONCRETE COVER SHALL BE PROVIDED AS FOLLOWS TO THE OUTERMOST REINFORCING BARS:

CONCRETE EXPOSURE	MEMBER	REINFORCEMENT	COVER (IN)
CAST AGAINST AND PERMANENTLY IN CONTACT WITH GROUND	ALL	ALL	3
EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	ALL	#6 TO #18	2
		#5 AND SMALLER	1 1/2
NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	SLABS, JOISTS, AND WALLS	#11 AND SMALLER	3/4
OTHER	BOUNDARY ELEMENTS	ALL	1 1/2

4. REINFORCING STEEL SHALL BE INSTALLED TO WITHIN THE FOLLOWING TOLERANCES. INDICATED TOLERANCES ARE PER ACI 117, "SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS".

ITEM FOR WHICH TOLERANCE IS BEING MEASURED	PERMITTED TOLERANCE
CONCRETE COVER FOR SLAB TOP AND BOTTOM BARS	±1/4"
COVER FOR OTHER REINFORCING STEEL	±3/8"
SPECIFIED SPACING BETWEEN PARALLEL BARS IN SLAB	± (SPECIFIED SPACING/4) BUT NOT TO EXCEED 1"
HORIZONTAL DEVIATION FROM SPECIFIED LOCATION UON	±3"
LOCATION OF ENDS OF BARS PERPENDICULAR TO SLAB EDGES	±1"

THE ABOVE LIST OF PERMITTED TOLERANCES SHALL BE PROVIDED ON ALL REINFORCING STEEL PLACING DRAWINGS AND ON ALL POST-TENSIONED TENDON PLACING DRAWINGS. PLACING DRAWINGS THAT DO NOT PROVIDE THIS LIST OF TOLERANCES WILL BE REJECTED.

5. FIELD BENDING OF REINFORCING STEEL IS NOT PERMITTED UON.
6. ALL WELDED WIRE REINFORCING SHALL BE LAP SPLICED 2 PANELS (1'-0" MIN).
7. SPLICING:
   a. SPLICES IN REINFORCING STEEL SHALL BE MADE ONLY AT THOSE LOCATIONS WHERE SPLICES ARE SHOWN ON THE STRUCTURAL DRAWINGS AND AT THOSE LOCATIONS WHERE SPLICES HAVE BEEN DETAILED ON THE REINFORCING STEEL PLACING DRAWINGS THAT HAVE BEEN REVIEWED AND APPROVED BY THE STRUCTURAL ENGINEER. ALL SPLICES SHALL BE CLASS B TENSION LAP SPLICES UON.
   b. MECHANICAL SPLICE COUPLERS MAY BE USED INSTEAD OF TENSION LAP SPLICES AT THE CONTRACTOR'S OPTION AT ANY LOCATION. MECHANICAL SPLICE COUPLERS MUST BE USED WHERE SPLICING #14 AND LARGER BARS, INCLUDING WHERE SPLICING #14 AND LARGER BARS TO #11 AND SMALLER BARS. STAGGER MECHANICAL SPLICES IN ADJACENT BARS 30" MINIMUM.
   c. COMPRESSION LAP SPLICES MAY BE USED ONLY AT THOSE LOCATIONS WHERE SUCH SPLICES ARE SPECIFICALLY INDICATED. STAGGER SPLICES WHERE REQUIRED TO PROVIDE 1 1/2" MINIMUM CLEAR SPACING BETWEEN REINFORCING STEEL AT SPLICE LOCATIONS.
8. ALL HOOKS SHALL BE STANDARD HOOKS OR STANDARD STIRRUP HOOKS UON. STANDARD STIRRUP HOOKS SHALL HAVE CONTINUOUS BAR AT INSIDE CORNER OF HOOK.
9. VERTICAL REINFORCING STEEL IN CONCRETE AND MASONRY WALLS WITH ONE LAYER OF REINFORCING BARS SHALL BE INSTALLED IN THE CENTER OF THE WALL UON.
10. STANDARD STIRRUP HOOKS FOR #3, #4, AND #5 BARS SHALL BE PROVIDED IN SLABS LESS THAN 9" THICK.
11. DOWELS SHALL MATCH GRADE, SIZE, SPACING, AND QUANTITY OF LAPPED REINFORCING STEEL UON. EXTEND ALL DOWELS FOR FULL DEPTH OF SUPPORTING ELEMENT AND PROVIDE HOOKS UON. DOWELS SHALL NOT BE POST-INSTALLED INTO FRESH CONCRETE.
12. HEADED DEFORMED BARS MAY ONLY BE USED ON #11 AND SMALLER BARS. THREADED OR FORGED HEADS CAN BE USED AT THE FABRICATOR'S DISCRETION.
13. CUTTING OF REINFORCING STEEL IS PROHIBITED.
14. HEATING OF BARS FOR BENDING IS PROHIBITED.
15. REINFORCING STEEL PLACING DRAWINGS SHALL BE PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 315. THE PLACING DRAWINGS SHALL SHOW ALL INFORMATION NECESSARY TO FABRICATE AND PLACE THE REINFORCING STEEL.
16. REINFORCING STEEL SPACINGS ARE CENTER-TO-CENTER DIMENSIONS UON. REINFORCING STEEL SHOWN IN SECTION PERPENDICULAR TO THE CUT ARE CONTINUOUS UON.
17. THE SPACING OF ALL REINFORCING STEEL MUST BE COMPUTED BY THE REINFORCING STEEL DETAILER AND MUST BE INDICATED ON THE PLACING DRAWINGS. EXTENT ARROWS MUST BE USED TO CLEARLY INDICATE THE LOCATIONS WHERE GROUPS OF REINFORCING BARS ARE TO BE INSTALLED.
18. A LIST OF ALL APPLICABLE REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE INDICATED ON ALL REINFORCING STEEL PLACING DRAWINGS. PLACING DRAWINGS THAT DO NOT SHOW SUFFICIENT INFORMATION NEEDED TO PLACE THE REINFORCING STEEL WILL BE REJECTED.

CAST-IN-PLACE CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF ACI 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, AND ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE UON.
2. CONCRETE MATERIALS SHALL CONFORM TO:

PORTLAND LIMESTONE CEMENT	ASTM C595, TYPE IL
FLY ASH	ASTM C618, TYPE C OR F
SLAG CEMENT	ASTM C989
FINE AND COARSE AGGREGATE	ASTM C33
LIGHTWEIGHT AGGREGATE	ASTM C330
WATER	POTABLE
AIR-ENTRAINING ADMIXTURE	ASTM C260
WATER REDUCING ADMIXTURE	ASTM C494

3. AIR ENTRAINMENT:

NOMINAL MAXIMUM AGGREGATE SIZE	REQUIRED AIR CONTENT PER EXPOSURE CATEGORY	
	F1	F2
3/8"	6%	7.5%
1/2"	5.5%	7%
3/4"	5%	6%
1"	4.5%	6%

   a. AIR ENTRAINMENT SHALL CONFORM TO UL RATING REQUIREMENTS FOR FIRE RESISTANCE.
4. CONCRETE STRENGTHS SHALL CONFORM TO:

LOCATION	f'c AT 28 DAYS (PSI)	MAX PERMITTED W/C	EXPOSURE CLASS
ALL FOUNDATION CONCRETE UON	4000	0.45	F0 F1 F2
SLAB-ON-GRADE UON	4000	0.55	
NORMAL-WEIGHT SLAB ON DECK	4000	0.55	

5. REQUIRED NOMINAL MAXIMUM COARSE AGGREGATE SIZE:

CONCRETE ELEMENT	REQUIRED NOMINAL MAXIMUM COARSE AGGREGATE SIZE*
ALL CONCRETE UON	1"
VOIDED FILIGREE SLABS	3/4"
TOPPING SLABS LESS THAN 3" THICK	3/8"

* SMALLER NOMINAL MAXIMUM COARSE AGGREGATE SIZE SHALL BE USED WHERE REQUIRED PER ACI 318.

6. ALL FOUNDATION ELEMENTS SHALL BE CENTERED UNDER WALLS, PIERS, OR COLUMNS UON.
7. "ROUGH JOINTS" ARE JOINTS ROUGHENED TO AN AMPLITUDE OF 1/4" AND FREE AND CLEAN OF LAITANCE. PROVIDE ROUGH JOINTS AT ALL CONSTRUCTION JOINTS UON.
8. INSTALLATION OF ELECTRICAL CABLE, CONDUIT, AND PIPING IN OR THROUGH CONCRETE COLUMNS AND WALLS IS PROHIBITED UNLESS APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION. INSTALLATION OF PIPING IN CAST-IN-PLACE CONCRETE IS PROHIBITED UNLESS APPROVED BY STRUCTURAL ENGINEER PRIOR TO INSTALLATION. DRAWINGS SHALL BE SUBMITTED FOR REVIEW SHOWING PROPOSED PLACEMENT OF ELECTRICAL CABLE AND CONDUIT IN SLABS. THOSE DRAWINGS SHALL SHOW SIZES AND DIMENSIONED LOCATIONS OF ALL CABLE AND CONDUIT.
9. ELECTRICAL CABLE AND CONDUIT (HEREAFTER REFERRED TO AS CONDUIT) MAY BE INSTALLED IN SLABS ON DECK SUBJECT TO THE FOLLOWING CONSTRAINTS:
   a. CONDUIT SHALL BE NO LARGER THAN 1 1/2" MAXIMUM OUTSIDE DIAMETER.
   b. PARALLEL CONDUITS SHALL BE INSTALLED IN A SINGLE LAYER AND SHALL BE SPACED NO CLOSER THAN 3".
   c. CONDUIT RUNNING PERPENDICULAR OR SKEWED TO THE DECK SPAN MAY BE INSTALLED DIRECTLY ON TOP OF THE DECK. CONDUIT RUNNING PARALLEL TO THE DECK SPAN SHALL BE INSTALLED 1" CLEAR ABOVE THE TOP OF THE DECK.
   d. REQUIRED MINIMUM CLEAR COVER BETWEEN TOP OF SLAB AND TOP OF CONDUIT EQUALS 1".
   e. ONLY ONE LAYER OF CONDUIT MAY CROSS OVER ANOTHER LAYER OF CONDUIT AT ANY LOCATION.
   f. INSTALLATION OF CONDUIT ON TOP OF THE CONTINUOUS WELDED WIRE FABRIC SLAB REINFORCING STEEL IS NOT PERMITTED.
   g. LOCATIONS WHERE MULTIPLE CONDUITS EXIST VERTICALLY FROM THE SLAB SHALL BE TREATED AS A MULTIPLE SLAB OPENING AND ADDITIONAL REINFORCING STEEL SHALL BE PROVIDED AROUND THE EFFECTIVE SLAB OPENING AS REQUIRED.
   h. COORDINATED DRAWINGS SHALL BE SUBMITTED FOR REVIEW SHOWING THE PROPOSED LOCATIONS OF ALL SLAB-EMBEDDED ELECTRICAL CONDUIT. THESE DRAWINGS SHALL SHOW "DRAWN TO SCALE" CONDUIT RUNS, LOCATIONS, AND DIMENSIONS WHERE GROUPED CONDUITS EXIT THE SLABS ALONG WITH LOCATIONS AND DIMENSIONS OF SLAB-EMBEDDED ELECTRICAL BOXES.
   i. INSTALLATION OF CONDUIT IN PARKING LEVEL SLABS AND SLABS EXPOSED TO WEATHER IS NOT PERMITTED.
10. PROVIDE CONTINUOUS BENTONITE WATERSTOPS IN ALL CONSTRUCTION JOINTS IN BELOW GRADE CONCRETE CONSTRUCTION. COORDINATE WATERSTOPS WITH ARCHITECTURAL DRAWINGS.
11. PROJECTING CORNERS OF BEAMS, WALLS, COLUMNS, ETC. SHALL BE FORMED WITH A 3/4" CHAMFER UON ON ARCHITECTURAL DRAWINGS.
12. SLOPE SLABS TO DRAINS. SEE ARCHITECTURAL AND MEP DRAWINGS FOR DRAIN LOCATIONS AND SLOPE REQUIREMENTS. SLAB THICKNESSES SHOWN ON DRAWINGS ARE MINIMUMS.
13. NO LOADS SHALL BE PLACED ON STRUCTURAL CONCRETE SLABS ON DECK WITHIN 7 DAYS AFTER CONCRETE IS PLACED.
14. AFTER CONCRETE IS PLACED, IN NO CASE SHALL THE SUPERIMPOSED CONSTRUCTION LOADS BE GREATER THAN SPECIFIED DESIGN LIVE LOADS UNLESS THE WORK IS SHORED.
15. NOTIFY THE ARCHITECT 48 HOURS MINIMUM PRIOR TO ALL POURS.
16. CONTRACTOR SHALL SURVEY ALL CONCRETE WORK WITHIN 48 HOURS OF PLACING CONCRETE TO ENSURE PLACEMENT IS IN ACCORDANCE WITH PROJECT REQUIREMENTS.
17. CONCRETE FILL THICKNESS SHOWN ON FRAMING PLANS AND DETAIL SHEETS IS MINIMUM THICKNESS. PROVIDE ALLOWANCES FOR ADDITIONAL CONCRETE FILL REQUIRED TO COMPENSATE FOR BEAM OR DECK DEFLECTIONS AND TO MAINTAIN SURFACE TOLERANCES SPECIFIED.
18. CORING OF CONCRETE IS NOT PERMITTED UNLESS APPROVED BY THE STRUCTURAL ENGINEER. SUBMIT LOCATIONS OF PROPOSED CONCRETE CORES.
19. REINFORCING STEEL SHALL NOT BE DAMAGED WHEN DRILLING CONCRETE.
20. ADHERE TO ACI 305R AND ACI 306R FOR HOT AND COLD WEATHER CONCRETE CONSTRUCTION.
21. DRYPACK AND GROUT SHALL HAVE A MINIMUM 28-DAY STRENGTH OF 7000 PSI.
22. THE PROPOSED MATERIALS AND MIX DESIGN SHALL BE FULLY DOCUMENTED AND REVIEWED BY THE TESTING AND INSPECTION AGENCY. RESPONSIBILITY FOR OBTAINING THE REQUIRED DESIGN STRENGTH IS THE CONTRACTOR'S. SUBMIT TEST DATA ON EACH PROPOSED MIX FOR REVIEW IN ACCORDANCE WITH THE APPLICABLE CODE. MIX DESIGNS SUBMITTED WITHOUT THE REQUIRED TEST DATA WILL BE RETURNED WITHOUT REVIEW.
23. CONTRACTOR SHALL SUBMIT A SINGLE DIMENSIONED AND COORDINATED DRAWING FOR EACH LEVEL SHOWING THE LOCATIONS OF THE FOLLOWING:
   a. SLAB OPENINGS AND PENETRATIONS
   b. SLEEVES, CAST-IN-PLACE AND POST-INSTALLED FIELD CORED
   c. SLAB-EMBEDDED ELECTRICAL CABLE AND CONDUIT
   d. EMBEDDED PLATES AND ALL OTHER EMBEDDED ITEMS
24. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS, LOCATIONS, AND DETAILS OF ALL ARCHITECTURAL FEATURES IN THE CONCRETE. SEE ARCHITECTURAL DRAWINGS AND PROJECT SPECIFICATIONS FOR REQUIREMENTS FOR ALL CONCRETE FINISHES.

STEEL

1. STRUCTURAL STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "DETAILING FOR STEEL CONSTRUCTION" AND FABRICATED AND ERECTED IN ACCORDANCE WITH THE "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS".
2. STRUCTURAL STEEL SHALL CONFORM TO ASTM STANDARDS AS NOTED BELOW:

WIDE FLANGE AND WT SHAPES	ASTM A992	Fy=50 KSI
CHANNEL SHAPES	ASTM A992	Fy=50 KSI
ANGLE SHAPES	ASTM A572	Fy=50 KSI
HSS SECTIONS, SQ/RECT	ASTM A500, GR C	Fy=50 KSI
PLATES	ASTM A572	Fy=50 KSI
ANCHOR RODS	ASTM F1554, GR 36	Fy=36 KSI
HIGH STRENGTH BOLTS	ASTM F3125, GR A325	Fu=120 KSI
HEAVY HEX NUTS	ASTM A563	
ELECTRODES FOR ARC WELDING	AWS 5.1, E70XX	

3. ALL BOLTED CONNECTIONS SHALL BE GRADE A325N BEARING TYPE BOLTS UON. ALL BOLTS SHALL BE INSTALLED TO A MINIMUM SNUG TIGHT CONDITION UON.
4. FIELD CONNECTIONS SHALL BE WELDED OR BOLTED. SHOP CONNECTIONS SHALL BE WELDED UON. WELDS INDICATED WITH A SHOP WELD SYMBOL MAY BE MADE IN THE FIELD WITH THE APPROVAL OF THE STRUCTURAL ENGINEER. LOCATIONS OF ALL FIELD WELDS SHALL BE CLEARLY SHOWN ON THE SHOP DRAWINGS. WELDS SHALL BE DESIGNED TO BE FULLY EQUIVALENT IN STRENGTH TO BOLTED CONNECTIONS DETAILED TO MINIMIZE BENDING IN THE CONNECTION.
5. WELD LENGTHS INDICATED ON THE DRAWINGS ARE THE NET EFFECTIVE LENGTH REQUIRED. WHERE WELD LENGTH IS NOT SPECIFIED, PROVIDE WELD ALONG ENTIRE INTERSECTION OF THE JOINED PARTS. WHERE FILLET WELD SYMBOL IS GIVEN WITHOUT INDICATION OF SIZE, USE MINIMUM WELD SIZE AS SPECIFIED IN AISC 360, TABLE J2.4.
6. ALL WELDING OF STRUCTURAL STEEL SHALL BE PERFORMED BY CERTIFIED WELDERS WITH EXPERIENCE AND CERTIFICATION IN THE TYPES OF WELDING INDICATED. WELDERS SHALL HAVE BEEN RECENTLY QUALIFIED AS PRESCRIBED IN "QUALIFICATION PROCEDURES" OF THE AMERICAN WELDING SOCIETY (AWS).
7. BEAMS SHALL BE CAMBERED UPWARD WHERE SHOWN ON THE DRAWINGS. WHERE NO UPWARD CAMBER IS INDICATED, ANY MILL CAMBER SHALL BE DETAILED UPWARD IN THE BEAMS.
8. SPLICING OF STEEL MEMBERS WHERE NOT DETAILED ON THE DRAWINGS IS PROHIBITED WITHOUT THE PRIOR APPROVAL OF THE STRUCTURAL ENGINEER AS TO LOCATION, TYPE OF SPLICE, AND CONNECTION TO BE MADE.
9. PROVIDE ONE SHOP COAT OF PAINT ON ALL STRUCTURAL STEEL NOT COVERED WITH CONCRETE, FIREPROOFING, MASONRY, OR AT CONTACT SURFACES AT HIGH STRENGTH BOLTS.
10. ALL STEEL EXPOSED TO WEATHER OR AS NOTED ON PLAN SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 G60. ABRADED AREAS TO BE TOUCHED UP WITH COLD GALVANIZING COMPOUND IN ACCORDANCE WITH ASTM A780.
11. ALL GALVANIZED HOLLOW SECTIONS SHALL HAVE WELDED CAP PLATES TO SEAL EXPOSED ENDS.
12. CUTS, HOLES, OPENINGS, ETC. REQUIRED IN STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES SHALL BE SHOWN ON THE SHOP DRAWINGS. BURNING OR TORCHING OF HOLES, CUTS, AND OTHER FIELD MODIFICATIONS SHALL NOT BE ALLOWED, EXCEPT BY WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER.
13. SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL, ETC. FOR MISCELLANEOUS STEEL NOT DETAILED SPECIFICALLY ON THE STRUCTURAL DRAWINGS.
14. GROUT FOR BASE AND BEARING PLATES SHALL BE A NON-SHRINK, NON-METALLIC PRODUCT. MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE 10,000 PSI. INSTALL GROUT PRIOR TO APPLYING SIGNIFICANT LOADING TO MEMBER.
15. THE STRUCTURAL STEEL FABRICATOR SHALL FURNISH SHOP DRAWINGS OF ALL STRUCTURAL STEEL FOR REVIEW AND APPROVAL BEFORE FABRICATION.
16. ALL WELDING ELECTRODES SHALL BE E70XX UON.

STEEL DECK

1. MATERIAL, DETAILING, DESIGN, MANUFACTURE, AND ERECTION OF STEEL DECKS SHALL BE IN ACCORDANCE WITH THE STEEL DECK INSTITUTE (SDI) SPECIFICATION.
2. DECK SIZE AND GAUGE INDICATED ON THE DRAWINGS ARE BASED ON THE FOLLOWING:
   a. CURRENT VERSION OF VULCRAFT CATALOG FOR GRAVITY DESIGN LOADS AND UNSHORED CONSTRUCTION SPANS
   b. SDI DIAPHRAGM DESIGN MANUAL 4 FOR DIAPHRAGM LOADS
3. PROVIDE MINIMUM DECK BEARING AND LAP LENGTHS PER MANUFACTURER'S RECOMMENDATIONS.
4. FOR PENETRATIONS LESS THAN OR EQUAL TO 12"Ø OR 12"x12", FRAMING OF OPENINGS FOR OTHER TRADES SHALL BE THE RESPONSIBILITY OF THE TRADES INVOLVED. HOLES LOCATED AND DIMENSIONED ON THE DRAWINGS SHALL BE THE RESPONSIBILITY OF THE DECK ERECTOR. SEE STRUCTURAL FRAMING DETAILS FOR ANY OPENING EXCEEDING LIMITS NOTED.
5. SUBMIT SHOP DRAWINGS SHOWING DECKING LAYOUT, DECK GAUGE, DECK DIRECTION, FASTENERS, AND FASTENING PATTERN FOR REVIEW AND APPROVAL.
6. FURNISH DECKING IN MINIMUM LENGTHS TO ACHIEVE 3-SPAN CONDITION UON.
7. NON-COMPOSITE (FORM) DECK:
   a. ALL NON-COMPOSITE DECK SHALL BE GALVANIZED TO CONFORM TO ASTM A653 WITH A MINIMUM COATING OF G60.
   b. CONDUITS SHALL NOT BE PLACED IN SLAB ON DECK WITHOUT COORDINATION WITH THE STRUCTURAL ENGINEER UON.
   c. COORDINATE ALL PENETRATIONS, EMBEDS, AND RECESSES IN SLAB ON DECK WITH THE STRUCTURAL ENGINEER UON.
   d. FORM DECK GAUGES SHOWN ON THE DRAWINGS ARE INTENDED TO SUPPORT THE WEIGHT OF THE WET CONCRETE PLUS A CONSTRUCTION LIVE LOAD OF 20 PSF WITHOUT INTERMEDIATE SHORING BASED ON A 3-SPAN CONTINUOUS CONDITION. DECK MANUFACTURER SHALL EVALUATE OTHER SPAN CONDITIONS FOR DEFLECTION WHICH SHALL NOT EXCEED L/180 NOR 1/4" UNDER UNIFORMLY DISTRIBUTED CONCRETE DEAD LOAD. PROVIDE SHORING OR ALTERNATE MEANS OF CONTROLLING DEFLECTION AND MEETING ALLOWABLE STRESSES.
   e. DECK MANUFACTURER SHALL PROVIDE ALL CLOSURE PLATES AND POUR STOPS NOT PROVIDED BY THE STEEL FABRICATOR.

COLD-FORMED STEEL (CFS)

1. ALL COLD-FORMED STEEL FRAMING AND CONNECTIONS SHALL CONFORM TO THE AISI SPECIFICATION FOR THE DESIGN OF COLD-FORMED STRUCTURAL METALS, AISI S100.
2. THE STRUCTURAL DRAWINGS DO NOT REFLECT THE ENTIRE SCOPE OF WORK REQUIRED FOR COLD-FORMED STEEL FRAMING AND CONNECTIONS. COLD-FORMED STEEL FRAMING SHALL BE PROVIDED FOR AND COORDINATED WITH ARCHITECTURAL, MEP, AND OTHER DRAWINGS.
3. SSMA MEMBER DESIGNATIONS ARE SPECIFIED ON THE CONTRACT DOCUMENTS UON. WHERE SPECIFIC MANUFACTURERS ARE SPECIFIED AND PROPRIETARY FRAMING DESIGNATIONS INDICATED, FRAMING BY OTHER MANUFACTURERS MAY BE USED PROVIDED THOSE FRAMING MEMBERS HAVE DIMENSIONS EQUIVALENT TO THE SPECIFIED FRAMING AND ENGINEERING PROPERTIES EQUIVALENT TO OR GREATER THAN THE SPECIFIED FRAMING. SUCH PROPOSED SUBSTITUTIONS ARE PERMITTED ONLY IF APPROVED IN WRITING BY THE DESIGN PROFESSIONALS.
4. STRUCTURAL COLD-FORMED STEEL IS DEFINED AS THE FOLLOWING:
   a. ANY COLD-FORMED STEEL THICKER THAN 20GA (33 MIL)
   b. ANY EXTERIOR COLD-FORMED FRAMING AND CONNECTIONS
   c. ANY LOAD-BEARING MEMBER
   d. ANY MEMBER CALLED OUT AND SPECIFIED IN THE STRUCTURAL DRAWINGS
   e. ALL OTHER COLD-FORMED STEEL IS NON-STRUCTURAL AND NOT A PART OF THE STRUCTURAL PACKAGE
5. STRUCTURAL COLD-FORMED STEEL (ROLLED SECTIONS, CONNECTION MATERIAL, AND STIFFENER PLATES) SHALL CONFORM TO THE FOLLOWING STANDARDS:

18GA (43 MIL) AND THINNER	ASTM A653, GR 33	Fy=33 KSI
16GA (54 MIL) AND THICKER	ASTM A653, GR 50	Fy=50 KSI
CONNECTION MATERIAL > 3/16"	ASTM A36	Fy=36 KSI
HOT-DIP COATING	ASTM A924, G60	
ELECTRO-PLATE COATING	ASTM A591	
ALUMINUM-ZINC COATING	ASTM A792, GR 40	
ELECTRODES FOR ARC WELDING	AWS 5.1 E60XX	

6. COLD-FORMED STEEL COMPONENTS SHALL BE CUT SQUARELY FOR ATTACHMENT TO PERPENDICULAR MEMBERS OR AS REQUIRED FOR A FULL ANGULAR FIT AGAINST ABUTTING MEMBERS. MEMBERS SHALL BE SECURED IN PLACE UNTIL PROPERLY ATTACHED.
7. CUTOUTS, HOLES, OR NOTCHES ARE NOT PERMITTED IN COLD-FORMED STEEL ROOF AND FLOOR JOISTS, HEADERS, OR BEAMS WITHOUT PRIOR WRITTEN APPROVAL OF EITHER THE STRUCTURAL ENGINEER OR THE COLD-FORMED STEEL ENGINEER. ROUTE MEP SYSTEMS THROUGH FACTORY PUNCHED HOLES.
8. SCREW CONNECTIONS:
   a. SCREWS LARGER THAN SPECIFIED MAY BE USED, PROVIDED THE MINIMUM SPACING AND EDGE DISTANCE REQUIREMENTS ARE MET.
   b. SCREWS SHALL BE FULLY DRIVEN AND HAVE A MINIMUM PENETRATION OF THREE THREADS THROUGH THE LAST MATERIAL JOINED.
   c. SCREWS SHALL HAVE PROTECTIVE COATING TO COMPLY WITH THE RECOGNIZED DESIGN STANDARD FOR THE PROJECT ENVIRONMENTAL CONDITIONS.
9. CUTTING OF COLD-FORMED STEEL MEMBERS SHALL BE ACCOMPLISHED WITH A SAW OR SHEARS. TORCH CUTTING OF SUCH MEMBERS IS NOT PERMITTED. THE CUTTING OF ANY LOAD BEARING MEMBER IS PROHIBITED.
10. ALL WELDS SHALL COMPLY WITH THE REQUIREMENTS OF THE NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS, AISI S100, AND THE STRUCTURAL WELDING CODE - SHEET STEEL, AWS D1.3.
11. TOUCH UP ALL WELDS WITH ZINC RICH PAINT.
12. FOR AXIAL LOAD BEARING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE TO ENSURE ADEQUATE BRACING IS IN PLACE UNTIL SHEATHING IS PROPERLY ATTACHED TO BOTH STUD FLANGES.
13. WALL PANELS SHALL BE SET LEVEL AND PLUMB. SHIM, GROUT, OR DRY PACK BELOW BOTTOM TRACK FOR COMPLETE AND FINAL BEARING.
14. BRIDGING SHALL BE SPACED AT NO MORE THAN 48" UON.
15. CONSTRUCTION SHALL NOT BEGIN UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED BY THE DESIGN PROFESSIONALS. SUBMIT COMPLETE TECHNICAL INFORMATION ON ALL COLD-FORMED STEEL FRAMING AND CONNECTIONS, INCLUDING SECTION PROPERTIES, ALLOWABLE DESIGN STRESSES, DESCRIPTION OF CONNECTIONS AND FINISHES. DO NOT PROCEED WITH INSTALLATION UNTIL SUBMITTALS HAVE BEEN REVIEWED AND RETURNED.

STRUCTURAL SHEET INDEX

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SHEET REVISIONS

#	Date / Description
1	
2	
3	
4	

Seal:

NOT FOR CONSTRUCTION

Place Holder - Engineer

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Sheet Title:

GENERAL NOTES

Sheet #:

S000

POST-INSTALLED ANCHORS

1. BASIS OF DESIGN ANCHORS:

INSTALLATION CONDITION	ANCHOR TYPE
EXPANSION ANCHORS INTO CONCRETE	HILTI KWIK BOLT TZ2 (ESR-4266)
SCREW ANCHORS > 1/4"Ø INTO CONCRETE	HILTI KWIK HUS-EZ (ESR-3027)
ADHESIVE ANCHORS INTO CONCRETE	HILTI SAFE-SET SYSTEM w/ HIT-HY 200 V3 AND HIT-Z ROD (ESR-4868)or HILTI SAFE-SET SYSTEM w/ HIT-HY 200 V3 AND HAS-E THREADED ROD (ESR-4868) or HILTI SAFE-SET SYSTEM w/ HIT-RE 500 V3 AND HAS-E THREADED ROD (ESR-3814) FOR ALL ADHESIVE ANCHORS, HOLES SHALL BE HAMMER DRILLED AND HOLES MAY BE DRY OR WATER SATURATED.
EXPANSION ANCHORS INTO GROUTED CMU	HILTI KWIK TZ2 (ESR-4561)
SCREW ANCHORS > 1/4"Ø INTO GROUTED CMU	HILTI KWIK HUS-EZ (ESR-3056)
SCREW ANCHORS = 1/4"Ø INTO CONCRETE OR GROUTED CMU	HILTI KWIK-CON II+
ADHESIVE ANCHORS IN GROUTED CMU OR SOLID BRICK	HILTI HIT-HY 270 SYSTEM w/ HAS-E THREADED ROD (ESR-4143)
ADHESIVE ANCHORS INTO HOLLOW CMU, BRICK OR MULTI-WYTHE BRICK WALLS	HILTI HIT-HY 270 SYSTEM w/ HAS-E THREADED ROD AND APPROPRIATE SCREEN TUBE (ESR-4144)
ADHESIVE DOWELING FOR ANCHORING REINFORCING BARS INTO (E) CONCRETE	HILTI SAFE-SET SYSTEM w/ HIT-HY 200 V3 ADHESIVE (ESR-4868) or HILTI SAFE-SET SYSTEM w/ HIT-RE 500 V3 ADHESIVE (ESR-3814)
POWDER-ACTUATED FASTENERS (PAF's) IN CONCRETE	HILTI X-U FASTENERS (ESR-2269)

2. ALTERNATIVE ANCHORS MAY BE USED IF APPROVED IN WRITING BY THE STRUCTURAL ENGINEER. THE CONTRACTOR SHALL SUBMIT CALCULATIONS SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE PROJECT'S JURISDICTION VERIFYING PROPOSED ALTERNATIVE ANCHORS WILL PROVIDE THE SAME OR GREATER LOAD-CARRYING CAPACITY AS THE SPECIFIED ANCHORS. THE CONTRACTOR SHALL SUBMIT EVALUATION REPORTS. EACH ANCHOR CONFIGURATION SHALL BE EVALUATED AND COMPARED TO THE SPECIFIED ANCHOR.
3. CRACKED CONCRETE IS ASSUMED FOR ALL ANCHORAGE DESIGN CONDITIONS UNLESS IT CAN BE DEMONSTRATED THROUGH ENGINEERING ANALYSIS THAT THE CONCRETE REMAINS UNCRACKED DURING THE GOVERNING ULTIMATE LOAD STATE.
4. POST-INSTALLED ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS.
5. THE CONTRACTOR SHALL ARRANGE FOR AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR EACH SPECIFIED ANCHOR TYPE. THE STRUCTURAL ENGINEER SHALL RECEIVE DOCUMENTATION VERIFYING ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS HAVE BEEN TRAINED PRIOR TO COMMENCEMENT OF INSTALLING ANCHORS.
6. INSTALLATION OF ADHESIVE ANCHORS SHALL BE PERFORMED BY PERSONNEL CERTIFIED BY AN APPROVED CERTIFICATION PROGRAM. CERTIFICATION SHALL INCLUDE WRITTEN AND PERFORMANCE TESTS IN ACCORDANCE WITH THE ACI/CRSI ADHESIVE ANCHOR INSTALLER CERTIFICATION PROGRAM OR EQUIVALENT. THE ACCEPTABILITY OF CERTIFICATIONS OTHER THAN THE ACI/CRSI ADHESIVE INSTALLER CERTIFICATION WILL BE DETERMINED BY THE STRUCTURAL ENGINEER.
7. CONCRETE SHALL HAVE ACHIEVED DESIGN STRENGTH PRIOR TO INSTALLING POST-INSTALLED ANCHORS. ADHESIVE ANCHORS SHALL BE INSTALLED IN CONCRETE THAT HAS CURED FOR A MINIMUM OF 21 DAYS.
8. ANCHOR CAPACITY IS DEPENDENT UPON SPACING BETWEEN ANCHORS AND PROXIMITY OF ANCHORS TO EDGES OF CONCRETE OR MASONRY. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.
9. POST-INSTALLED ANCHORS AND DOWELS SHALL BE INSTALLED IN A MANNER THAT DOES NOT DAMAGE REINFORCING STEEL, CONDUIT OR OTHER EMBEDDED ITEMS. REINFORCING STEEL SHALL BE LOCATED BY NON-DESTRUCTIVE MEANS PRIOR TO DRILLING HOLES. PLATES AND BRACKETS THROUGH WHICH ANCHORS WILL BE INSTALLED SHALL NOT BE FABRICATED UNTIL AFTER REINFORCING STEEL IS LOCATED AND ANCHOR LOCATIONS ARE ADJUSTED. CONTRACTOR SHALL NOTIFY STRUCTURAL ENGINEER TO OBTAIN ALTERNATIVE ANCHOR LAYOUT WHERE ANCHORS MUST BE RELOCATED TO AVOID INTERFERENCE WITH REINFORCING STEEL.
10. ADHESIVE ANCHORING SYSTEMS ARE PERMITTED TO BE USED FOR INSTALLATION OF REINFORCING STEEL INTO EXISTING CONCRETE ONLY WHERE SPECIFICALLY INDICATED IN THE CONTRACT DOCUMENTS OR WITH APPROVAL FROM THE STRUCTURAL ENGINEER. LOCATIONS WHERE REINFORCING STEEL WAS INCORRECTLY PLACED OR MISSED SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
11. WHERE POST-INSTALLED MECHANICAL ANCHOR EMBEDMENT DEPTHS ARE SPECIFIED, THOSE DEPTHS ARE THE REQUIRED MINIMUM NOMINAL EMBEDMENT DEPTHS. WHERE MECHANICAL ANCHOR EMBEDMENT DEPTHS ARE NOT INDICATED, THE ANCHORS SHALL BE INSTALLED TO THE MAXIMUM EMBEDMENT DEPTH NOTED IN THE MANUFACTURER'S PRODUCT TECHNICAL GUIDE.
12. ADHESIVE ANCHORS SHALL BE INSTALLED WITH A MINIMUM 6" EMBEDMENT DEPTH UON.
13. ANCHORS SHALL BE QUALIFIED FOR USE IN CRACKED CONCRETE UNDER EARTHQUAKE LOADING IN ACCORDANCE WITH ACI 355.2 (MECHANICAL ANCHORS) OR ACI 355.4 (ADHESIVE OR EPOXY ANCHORS).

TESTING, INSPECTIONS, AND OBSERVATIONS

1. THE STRUCTURAL ENGINEER DOES NOT PROVIDE INSPECTIONS OF CONSTRUCTION. STRUCTURAL ENGINEER MAY MAKE PERIODIC OBSERVATIONS OF THE CONSTRUCTION. SUCH OBSERVATIONS SHALL NOT REPLACE REQUIRED INSPECTIONS BY THE GOVERNING AUTHORITIES OR SERVE AS "SPECIAL INSPECTIONS" AS MAY BE REQUIRED BY CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE.
2. SEE ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS OR SPECIFICATIONS FOR TESTING AND INSPECTION REQUIREMENTS OF NON-STRUCTURAL COMPONENTS.
3. DUTIES OF THE INSPECTION AGENCY PER IBC CHAPTER 17:
   a. SUBMIT A PROPOSED TESTING AND INSPECTION PROGRAM TO THE OWNER, THE ARCHITECT AND THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO COMMENCEMENT OF WORK.
   b. PERFORM ALL TESTING AND INSPECTION REQUIRED PER APPROVED TESTING AND INSPECTION PROGRAM.
   c. FURNISH INSPECTION REPORT TO THE BUILDING OFFICIAL, THE OWNER, THE ARCHITECT, STRUCTURAL ENGINEER AND THE GENERAL CONTRACTOR. THE REPORTS SHALL BE COMPLETED AND FURNISHED WITHIN 48 HOURS OF INSPECTED WORK.
   d. SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE SPECIAL INSPECTION AGENCY'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.
4. SPECIAL INSPECTIONS AND TESTS ARE REQUIRED FOR MATERIALS AND SYSTEMS REQUIRED TO BE INSTALLED IN ACCORDANCE WITH ADDITIONAL MANUFACTURER'S INSTRUCTIONS THAT PRESCRIBE REQUIREMENTS NOT CONTAINED IN CHAPTER 17 OF THE IBC OR IN STANDARDS REFERENCED BY THE IBC. THESE ITEMS INCLUDE:
   a. POST-INSTALLED ANCHORS - INSPECTION
5. THE FOLLOWING WORK SHALL BE INSPECTED BY THE SPECIAL INSPECTOR UNLESS SPECIFICALLY WAIVED BY THE BUILDING OFFICIAL.

VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC	MATERIAL STD REFERENCE	IBC REFERENCE
CONCRETE CONSTRUCTION				
1. INSPECT REINFORCEMENT AND VERIFY PLACEMENT		X	ACI 318: CH 20, 25.2, 25.3, 26.2.1-26.6.3	1908.4
2. MATERIAL IDENTIFICATION OF REINFORCING (TYPE/GRADE)		X		
3. REINFORCING STEEL HAS NOT BEEN REBENT IN THE FIELD		X		
4. REINFORCING STEEL HAS BEEN TIED AND SUPPORTED AS REQUIRED		X		
5. REINFORCING STEEL CLEARANCES HAVE BEEN PROVIDED		X		
6. COMPOSITE STEEL MEMBERS HAVE REQUIRED SIZE		X		
7. REINFORCING BAR WELDING:				
a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706		X	AWS D1.4	
b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"; AND		X	ACI 318: 26.6.4	
c. INSPECTS ALL OTHER WELDS	X			
8. INSPECT ANCHORS CAST IN CONCRETE		X	ACI 318: 17.8.2	
9. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS:				
a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS	X		ACI 318: 17.8.2.4	
b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 9.a		X	ACI 318: 17.8.2	
10. VERIFY USE OF REQUIRED DESIGN MIX		X	ACI 318: CH 19, 26.4.2, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
11. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	X		ASTM C172, ASTM C31, ACI 318: 26.5, 26.12	1907.10
12. INSPECT CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	X		ACI 318: 26.5	1908.6, 1908.7, 1908.8
13. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES		X	ACI 318: 26.5.3-26.5.5	1908.9
14. INSPECT FORMWORK FOR SHAPE, LOCATION, AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED		X	ACI 318: 26.11.2(b)	

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE
STRUCTURAL STEEL - FABRICATION			
1. FABRICATION FACILITY			X
2. CONNECTION ERECTION AND ASSEMBLY	X	X	
3. SINGLE PASS FILLET WELDS 5/16" OR LESS	X	X	X
4. ALL OTHER WELDS INCLUDING COMPLETE AND PARTIAL PENETRATION WELDS	X	X	X
5. SHEAR STUD PLACEMENT	X	X	

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE
STRUCTURAL STEEL - ERECTION			
1. STRUCTURAL STEEL ERECTION	X	X	
2. CONNECTION ERECTION AND ASSEMBLY	X	X	
3. PRETENSIONED AND SLIP-CRITICAL BOLTS/JOINTS USING TURN-OF-NUT METHOD WITHOUT MATCHMAKING OF CALIBRATED WRENCH METHODS OF INSTALLATION	X	X	
4. SINGLE PASS FILLET WELDS 5/16" OR LESS	X	X	X
5. ALL OTHER WELDS INCLUDING COMPLETE AND PARTIAL PENETRATION WELDS	X	X	X
6. SHEAR STUD PLACEMENT	X	X	

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE	RCSC CAUSES
STRUCTURAL STEEL PRIOR TO BOLTING - MINIMUM INSPECTION				
1. MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	O	P	TABLE C-N5.6-1	2.1, 9.1
2. FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	O	O	TABLE C-N5.6-1	6.5.1
3. CORRECT FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM THE SHEAR PLANE)	O	O	TABLE C-N5.6-1	2.3.2, 2.7.2, 9.1
4. CORRECT BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	O	O	TABLE C-N5.6-1	4, 8
5. CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS	O	O	TABLE C-N5.6-1	TABLE 6.1(2)
6. PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED	P[1]	O[1]	TABLE C-N5.6-1	3, 9.1, 9.3
7. PROTECTION STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS, AND OTHER FASTENER COMPONENTS	O	O	TABLE C-N5.6-1	2.2, 8, 9.1

1 DOCUMENT - THE INSPECTOR SHALL PREPARE REPORTS INDICATING THE WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE REPORTS NEED NOT PROVIDE DETAILED MEASUREMENTS FOR JOINT FIT-UPS, WPS SETTINGS, COMPLETED WELDS, OR OTHER INDIVIDUAL ITEMS LISTED IN THE TABLES. FOR SHOP FABRICATION, THE REPORT SHALL INDICATE THE PIECE MARK OF THE PIECE INSPECTED. FOR FIELD WORK, THE REPORT SHALL INDICATE THE REFERENCE GRID LINES AND FLOOR OR ELEVATION INSPECTED. WORK NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS AND WHETHER THE NONCOMPLIANCE HAS BEEN SATISFACTORILY REPAIRED SHALL BE NOTED IN THE INSPECTION.

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE	RCSC CLAUSES
STRUCTURAL STEEL DURING BOLTING - MINIMUM INSPECTION				
1. FASTENER ASSEMBLIES PLACED IN ALL HOLES AND WASHERS AND NUTS ARE POSITIONED AS REQUIRED	O	P	TABLE C-N5.6-2	7.1(1), 8.1, 9.1
2. JOINT BROUGHT TO THE SNUG-TIGHT CONFITION PRIOR TO THE PRETENSIONING OPERATION	O	O	TABLE C-N5.6-2	8.1, 9.1
3. FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING	O	O	TABLE C-N5.6-2	8.2, 9.2
4. FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARDS THE FREE EDGES	O	O	TABLE C-N5.6-2	8.2, 9.2

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE	RCSC CLAUSES
STRUCTURAL STEEL AFTER BOLTING - MINIMUM INSPECTION				
1. DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	P	P	TABLE C-N5.6-3	N/A

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE	AWS D1.1 CLAUSES
STRUCTURAL STEEL PRIOR TO WELDING - MINIMUM INSPECTION				
1. WELDING PROCEDURE SPECIFICATIONS (WPS) AVAILABLE	P	P	TABLE C-N5.4-1	6.3
2. MANUFACTURER CERTIFICATES FOR WELDING CONSUMABLES AVAILABLE	P	P	TABLE C-N5.4-1	6.2
3. MATERIAL IDENTIFICATION	O	O	TABLE C-N5.4-1	6.2
4. WELDER IDENTIFICATION	O	O	TABLE C-N5.4-1	6.4 (WELDER QUALIFICATION)
5. FIT-UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY)	O	O	TABLE C-N5.4-1	
a. JOINT PREPARATION	O	O	TABLE C-N5.4-1	6.5.2
b. DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL)	O	O	TABLE C-N5.4-1	5.22
c. CLEANLINESS (CONDITION OF STEEL SURFACE)	O	O	TABLE C-N5.4-1	5.14
d. TACKING (TACK WELD QUALITY AND LOCATION)	O	O	TABLE C-N5.4-1	5.17
e. BACKING TYPE AND FIT (IF APPLICABLE)	O	O	TABLE C-N5.4-1	5.9, 5.21.1.1
6. FIT-UP OF CJP GROOVE WELDS OF HSS T-, Y- & K--JOINTS WITHOUT BACKING (INCLUDING JOINT GEOMETRY)	P/O[1]	O	TABLE C-N5.4-1	9.11.2
a. JOINT PREPARATION	P/O[1]	O	TABLE C-N5.4-1	9.11.2
b. DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL)	P/O[1]	O	TABLE C-N5.4-1	9.11.2
c. CLEANLINESS (CONDITION OF STEEL SURFACE)	P/O[1]	O	TABLE C-N5.4-1	9.11.2
d. TACKING (TACK WELD QUALITY AND LOCATION)	P/O[1]	O	TABLE C-N5.4-1	9.11.2
7. CONFIGURATION AND FINISH OF ACCESS HOLES	O		TABLE C-N5.4-1	6.5.2, 5.16 (& SEE AISC 360 SECT. J1.6)
8. FIT-UP OF FILLET WELDS	P/O[1]	O	TABLE C-N5.4-1	
a. DIMENSIONS (ALIGNMENT, GAPS AT ROOT)	P/O[1]	O	TABLE C-N5.4-1	5.21.1
b. CLEANLINESS (CONDITION OF STEEL SURFACES)	P/O[1]	O	TABLE C-N5.4-1	5.14
c. TACKING (TACK WELD QUALITY AND LOCATION)	P/O[1]	O	TABLE C-N5.4-1	5.17
9. CHECK WELDING EQUIPMENT	O	O	TABLE C-N5.4-1	6.2, 5.10

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE	AWS D1.1 CLAUSES
STRUCTURAL STEEL DURING WELDING - MINIMUM INSPECTION				
1. USE OF QUALIFIED WELDERS	O	O	TABLE C-N5.4-2	6.4
2. CONTROL AND HANDLING OF WELDING CONSUMABLES	O	O	TABLE C-N5.4-2	6.2
a. PACKAGING	O	O	TABLE C-N5.4-2	5.3.1
b. EXPOSURE CONTROL	O	O	TABLE C-N5.4-2	5.3.2 (FOR SMAW), 5.3.3 (FOR SAW)
3. ENVIRONMENT CONDITIONS	O	O	TABLE C-N5.4-2	
a. WIND SPEED WITHIN LIMITS	O	O	TABLE C-N5.4-2	5.11.1
b. PRECIPITATION AND TEMPERATURE	O	O	TABLE C-N5.4-2	5.11.2
4. WPS FOLLOWED	O	O	TABLE C-N5.4-2	6.3.3, 6.5.2, 5.5, 5.20
a. SETTINGS ON WELDING EQUIPMENT	O	O	TABLE C-N5.4-2	
b. TRAVEL SPEED	O	O	TABLE C-N5.4-2	
c. SELECTED WELDING MATERIALS	O	O	TABLE C-N5.4-2	
d. SHIELDING GAS TYPE/FLOW RATE	O	O	TABLE C-N5.4-2	
e. PREHEAT APPLIED	O	O	TABLE C-N5.4-2	5.6, 5.7
f. INTERPASS TEMPERATURE MAINTAINED (MIN/MAX)	O	O	TABLE C-N5.4-2	
g. PROPER POSITION (F, V, H, OH)	O	O	TABLE C-N5.4-2	
h. INTERMIX OF FILLER METALS AVOIDED UNLESS APPROVED	O	O	TABLE C-N5.4-2	
5. WELDING TECHNIQUES	O	O	TABLE C-N5.4-2	6.5.2, 6.5.3, 5.23
a. INTERPASS AND FINAL CLEANING	O	O	TABLE C-N5.4-2	5.29.1
b. EACH PASS WITHIN PROFILE LIMITATIONS	O	O	TABLE C-N5.4-2	
c. EACH PASS MEETS QUALITY REQUIREMENTS	O	O	TABLE C-N5.4-2	

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE	AWS D1.1 CLAUSES
STRUCTURAL STEEL AFTER WELDING - MINIMUM INSPECTION				
1. WELDS CLEANED	O	O	TABLE C-N5.4-3	5.29.1
2. SIZE, LENGTH AND LOCATION OF WELDS	P	P	TABLE C-N5.4-3	6.5.1
3. WELDS MEET VISUAL ACCEPTANCE CRITERIA	P[2]	P[2]	TABLE C-N5.4-3	6.5.3
a. CRACK PROHIBITION	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(1)
b. WELD/BASE-METAL FUSION	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(2)
c. CRATER CROSS-SECTION	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(3)
d. WELD PROFILES	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(4), 5.24
e. WELD SIZE	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(6)
f. UNDERCUT	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(7)
g. POROSITY	P[2]	P[2]		TABLE 6.1(8)
4. ARC STRIKES	P	P	TABLE C-N5.4-3	5.28
5. K-AREA[3]	P[2]	P[2]	TABLE C-N5.4-3	N/A
6. WELD ACCESS HOLES IN ROLLED HEAVY SHAPES AND BUILT-UP HEAVY SHAPES	P	P	TABLE C-N5.4-3	5.16, 6.5.2 (& SEE AISC 360 SECT. J1.6)
7. BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)	P[2]	P[2]	TABLE C-N5.4-3	5.9, 5.30
8. REPAIR ACTIVITIES	P	P[2]	TABLE C-N5.4-3	6.5.3, 5.25
9. DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	P	P	TABLE C-N5.4-3	6.5.4, 6.5.5
10. PLACEMENT OF REINFORCING OR CONTOURING FILLET WELDS (IF REQUIRED)	P[2]	P[2]	TABLE C-N5.4-3	6.5.4, 6.5.5

1 FOLLOWING PERFORMANCE OF THIS INSPECTION TASK FOR TEN WELDS TO BE MADE BY A GIVEN WELDER, WITH THE WELDER DEMONSTRATING UNDERSTANDING OF REQUIREMENTS AND POSSESSION OF THE SKILLS TO VERIFY THESE ITEMS, THE PERFORM DESIGNATION OF THIS TASK SHALL BE REDUCED TO OBSERVE, AND THE WELDER SHALL PERFORM THIS TASK. SHOULD THE INSPECTOR DETERMINE THE WELDER HAS DISCONTINUED PERFORMANCE OF THIS TASK, THE TASK SHALL BE RETURNED TO PERFORM UNTIL SUCH TIME AS THE INSPECTOR HAS RE-ESTABLISHED ADEQUATE ASSURANCE THE WELDER WILL PERFORM THE INSPECTION TASKS LISTED.

2 DOCUMENT - THE INSPECTOR SHALL PREPARE REPORTS INDICATING THE WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE REPORT NEED NOT PROVIDE DETAILED MEASUREMENTS FOR JOINT FIT-UPS, WPS SETTINGS, COMPLETED WELDS, OR OTHER INDIVIDUAL ITEMS LISTED IN THE TABLES. FOR SHOP FABRICATION, THE REPORT SHALL INDICATE THE PIECE MARK OF THE PIECE INSPECTED. FOR FIELD WORK, THE REPORT SHALL INDICATE THE REFERENCE GRID LINES AND FLOOR OR ELEVATION INSPECTED. WORK NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS AND WHETHER THE NONCOMPLIANCE HAS BEEN SATISFACTORILY REPAIRED SHALL BE NOTED IN THE INSPECTION.

3 WHEN WELDING OF DOUBLER PLATES, CONTINUITY PLATES OR STIFFENERS HAS BEEN PERFORMED IN THE K-AREA, VISUALLY INSPECT THE WEB K-AREA FOR CRACKS WITHIN 3" OF THE WELD. THE VISUAL INSPECTION SHALL BE PERFORMED NO SOONER THAN 48 HOURS FOLLOWING COMPLETION OF THE WELDING.

VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC	MATERIAL STD REFERENCE	IBC REFERENCE
STRUCTURAL DECKING				
1. DECK PLACEMENT AND ATTACHMENT	X	X		

VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC	MATERIAL STD REFERENCE	IBC REFERENCE
COLD-FORMED STEEL FRAMING				
1. EXTERIOR WALLS AND CONNECTIONS	X	X		
2. COLD-FORMED STEEL TRUSS SPANNING 60 FEET OR GREATER:				
a. TEMPORARY AND PERMANENT INSTALLATION RESTRAINT/BRACING		X		1705.2.4

VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC	MATERIAL STD REFERENCE	IBC REFERENCE
SOILS				
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY		X		
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL		X		
3. PERFORM CLASSIFICATIONS AND TESTING OF COMPACTED FILL MATERIAL		X		
4. VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	X			
5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY		X		

STRUCTURAL ABBREVIATION KEY

ABBR:	DESCRIPTION:
#	NUMBER OR POUNDS
@	AT
°	DEGREE
Ø	DIAMETER
(E)	EXISTING
A.B.	ANCHOR BOLT
ARCH	ARCHITECT, -URE, -URAL
B.O.	BOTTOM OF
bf	BEAM FLANGE WIDTH
BF	BRACE FRAME
BM	BEAM
B.N.	BOUNDARY NAILING
BOTT	BOTTOM
BTWN	BETWEEN
CFSF	COLD FORM STEEL FRAMING
CGS	CENTER OF GRAVITY OF THE TENDON
CJP	COMPLETE JOINT PENETRATION WELD
CLR	CLEAR
CL	CENTERLINE
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATION
DIA	DIAMETER
DL	DEAD LOAD
DET	DETAIL
DWG	DRAWING
DWL	DOWEL
EA	EACH
EF	EACH FACE
EFF	EFFECTIVE
EL	ELEVATION
ELEC	ELECTRICAL
EMBED	EMBEDMENT
E.N.	EDGE NAILING
EOD	EDGE OF DECK
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
ETC	ETCETERA
EW	EACH WAY
EXP	EXPANSION
EXT	EXTERIOR
f 'c	CONCRETE COMPRESSIVE STRENGTH
FDN	FOUNDATION
F.N.	FIELD NAILING
FT	FOOT
FTG	FOOTING
Fy	YIELD STRESS
GA	GAGE OR GAUGE
GALV	GALVANIZED
GLB	GLULAM BEAM
GT	GIRDER TRUSS
HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHOR
HSB	HIGH STRENGTH BOLT
JT	JOINT
K, KIP	KILOPOUND (1,000 POUNDS)
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
L	LENGTH
LBS	POUNDS
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONG.	LONGITUDINAL
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
LT WT	LIGHTWEIGHT
MAX	MAXIMUM
MECH	MECHANICAL
MANUF	MANUFACTURER
MIN	MINIMUM
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
OH	OPPOSITE HAND
OPNG	OPENING
OSB	ORIENTED STRAND BOARD
PCF	POUNDS PER CUBIC FOOT
P.H.	PENTHOUSE
PJP	PARTIAL JOINT PENETRATION WELD
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POST-TENSION, -ED, -ING
R	RADIUS
REINF	REINFORCING, -MENT, -ED
REQD	REQUIRED
RTU	ROOF TOP UNIT
SC	SLIP CRITICAL
SCHED	SCHEDULE
SFRS	SEISMIC FORCE-RESISTING SYSTEM
SIM	SIMILAR
SL	SNOW LOAD
S.M.S.	SHEET METAL SCREW
SP	SPACE(S)
SPECS	SPECIFICATION(S)
SQ	SQUARE
STIFF	STIFFENER
STL	STEEL
SYM	SYMMETRICAL
T&B	TOP AND BOTTOM
T.O.	TOP OF
TC	PRE-TENSIONED BOLT
TEMP	TEMPERATURE
tf	BEAM FLANGE THICKNESS
THK	THICK
TRANS	TRANSVERSE
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
VERT	VERTICAL
VIF	VERIFY IN FIELD
w/	WITH
WP	WORK POINT
WT	WEIGHT
WWR	WELDED WIRE REINFORCING

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Project Title:
BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.100**

Issue Date: **2/18/2025**

Drawn By: **HITMIS**

SHEET REVISIONS

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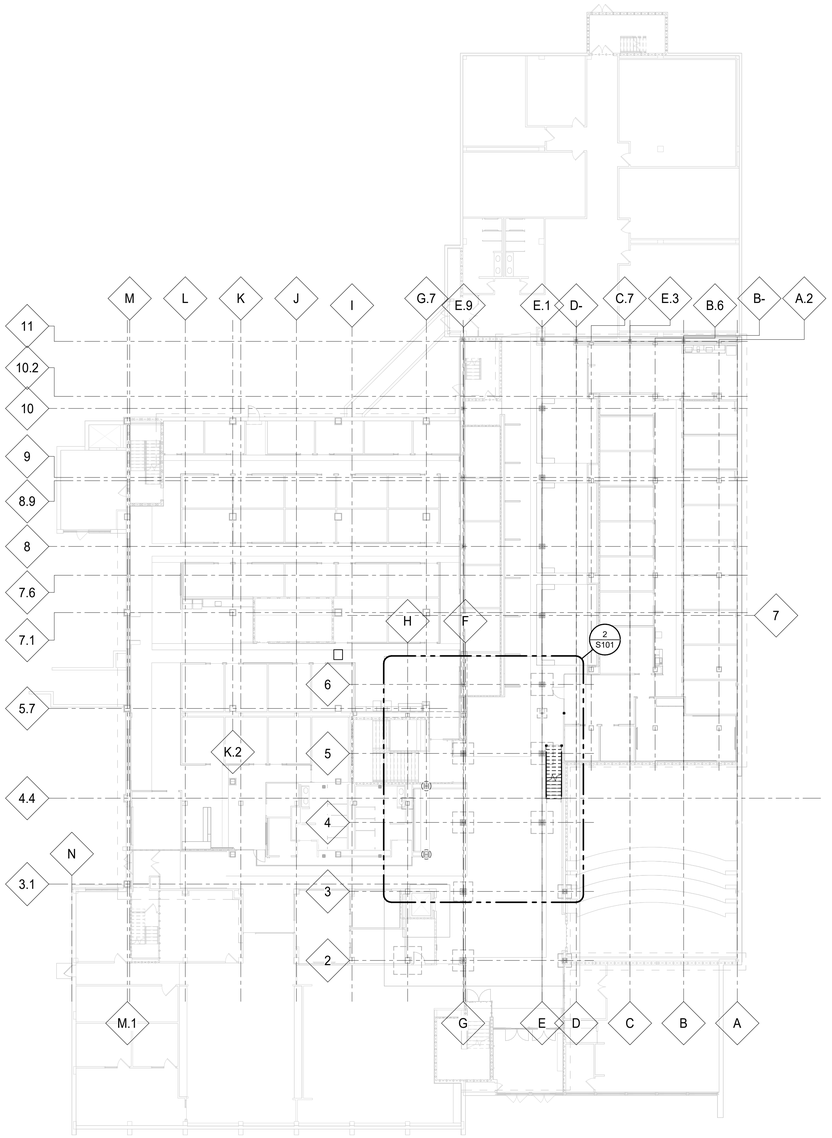
Sheet Title:
TESTING AND INSPECTIONS

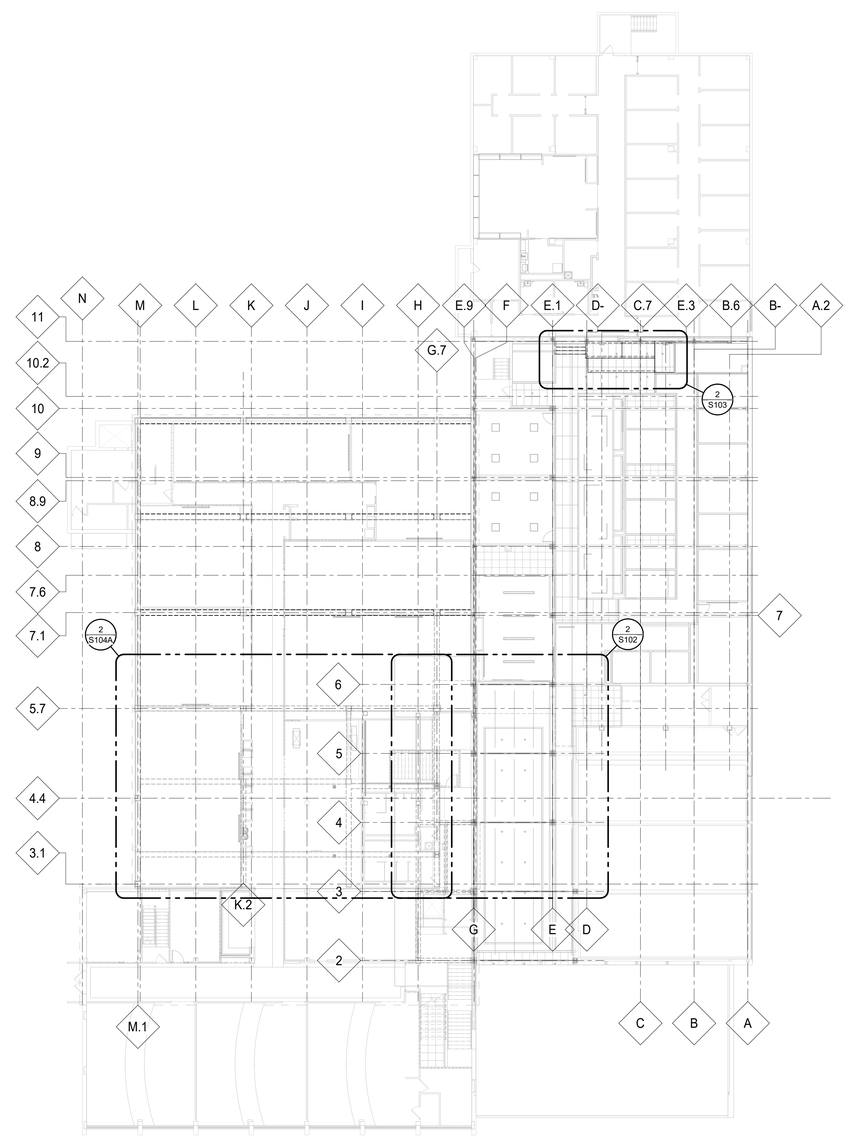
Sheet #:
S001



NORTH

1 FOUNDATION PLAN OVERALL

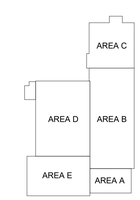
1/16" = 1'-0"



NORTH

2 SECOND FLOOR AND MEZZANINE FRAMING PLAN OVERALL

1/16" = 1'-0"



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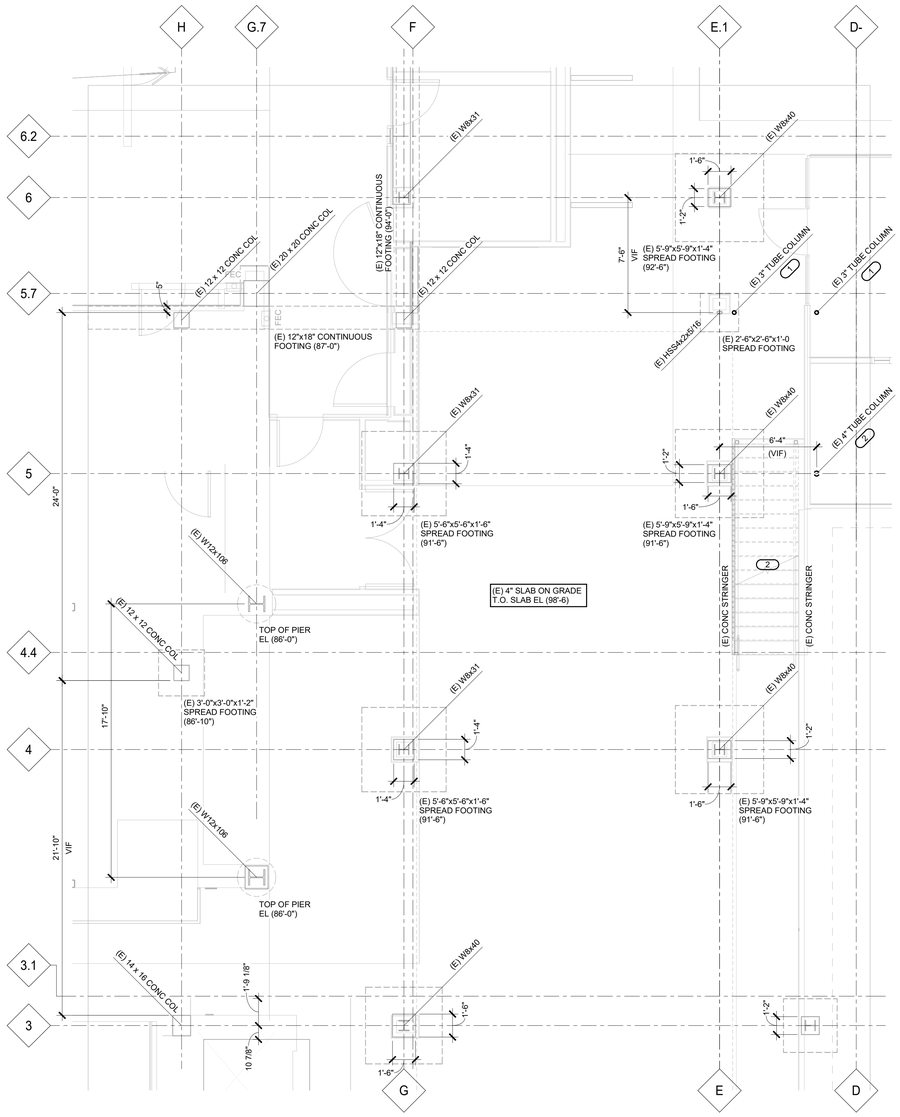
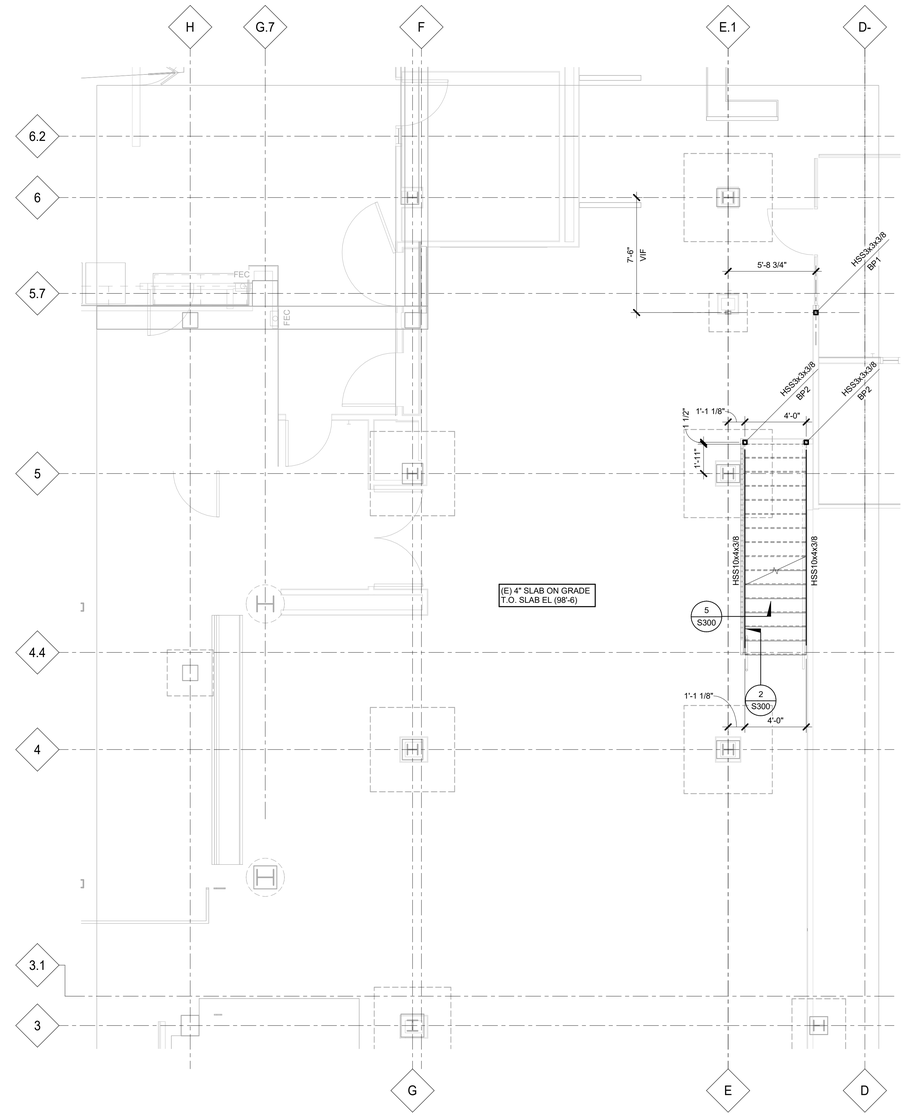
Sheet Title:
FOUNDATION PLAN AND SECOND FLOOR PLAN OVERALL

Sheet #:
S100



1 FOUNDATION DEMOLITION PLAN

1/4" = 1'-0"



2 FOUNDATION PLAN

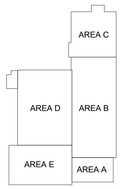
1/4" = 1'-0"

NOTES:

1. BP# INDICATES STEEL BASE PLATE. SEE 8/S500 FOR TYPICAL BASE PLATE DETAILS.
2. FOOTING ELEVATIONS PROVIDED ARE TOP OF FOOTING.
3. PATCH (E) SLAB ON GRADE AS NECESSARY AT DEMO LOCATIONS PER 1/S300.

KEYNOTES: #

1. DEMO (E) HSS4x2x5/16 AND (2) 3"Ø COLUMNS.
2. DEMO (E) CONCRETE STAIRS AND (E) 4" TUBE COLUMN.



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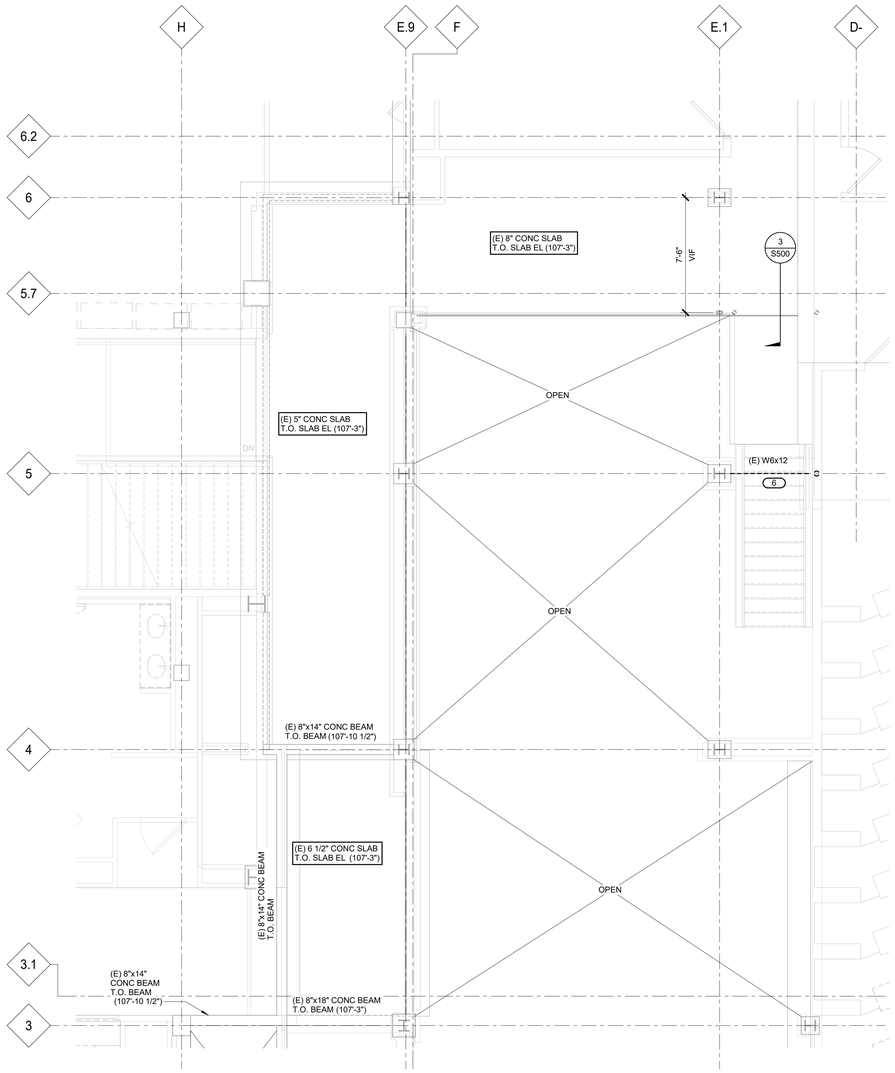
Sheet Title:

FOUNDATION DEMOLITION AND FOUNDATION PLAN

Sheet #:

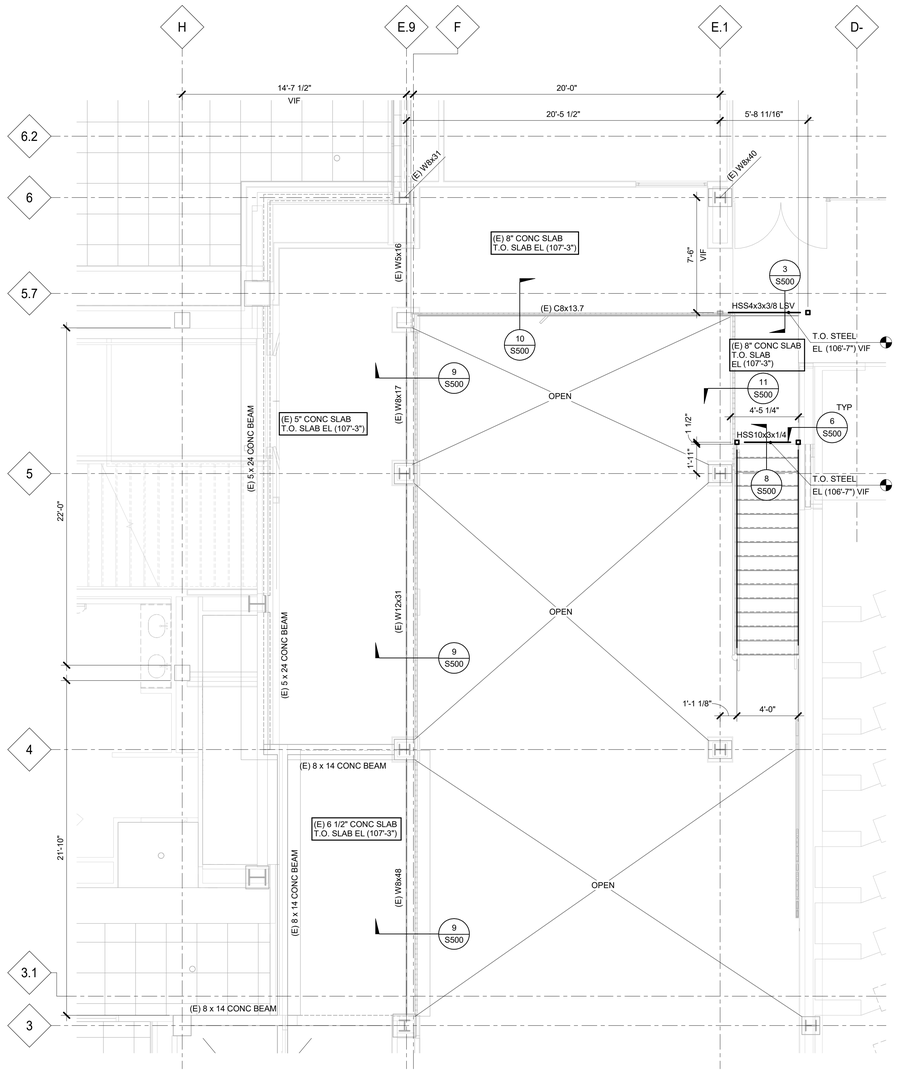
S101



NORTH

1 MEZZANINE DEMOLITION PLAN

1/4" = 1'-0"



NORTH

2 MEZZANINE FRAMING PLAN

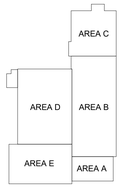
1/4" = 1'-0"

NOTES:

1. SEE S500 FOR TYPICAL STEEL CONNECTION DETAILS.
2. AT ALL NEW MECH OPENINGS LESS THAN 12"x12", FOLLOW 7/S500. SEE VENTILATION PLANS FOR LOCATIONS.

KEYNOTES: #

1. DEMO (E) W6x12.



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Sheet Title:
MEZZANINE DEMOLITION AND MEZZANINE FRAMING PLAN

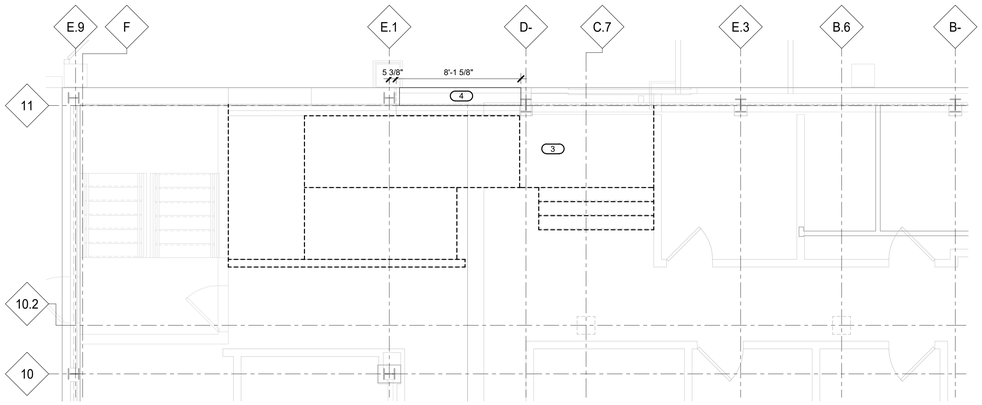
Sheet #:
S102

NOTES:

1. RAMP AND STAIR RAILING TO ATTACH TO (E) CONCRETE SLAB. RAILING DESIGN AND ANCHORAGE BY SUPPLIER.

KEYNOTES: #

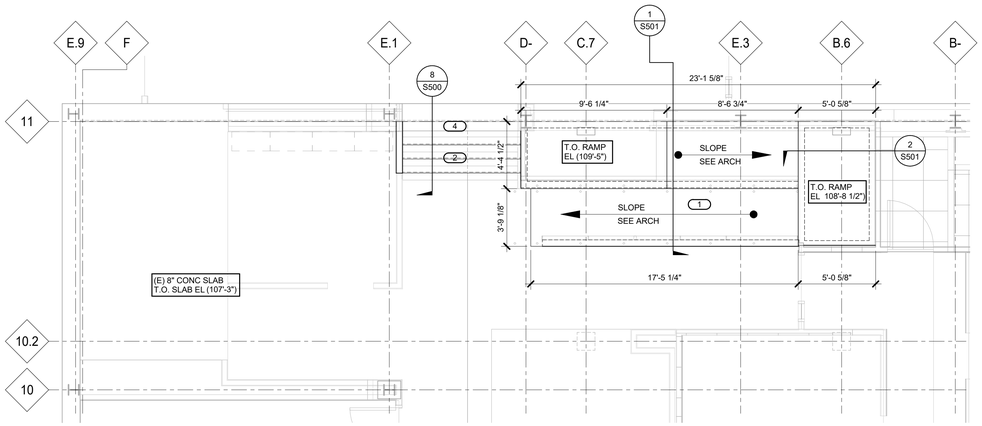
1. NEW COLD-FORM RAMP. SEE S501 FOR DETAILS.
2. DEMO (E) RAMP AND STAIRS.
3. NEW OPENING AND SQUEEZE LINTEL PER 4/S500



NORTH

1 MEZZANINE DEMOLITION PLAN FOR STAIR AND RAMP ALTERNATE

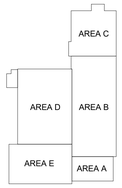
1/4" = 1'-0"



NORTH

2 MEZZANINE FRAMING PLAN FOR STAIR AND RAMP ALTERNATE

1/4" = 1'-0"



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Sheet Title:

MEZZ DEMO AND MEZZ FRAMING PLAN FOR STAIR AND RAMP

Sheet #:

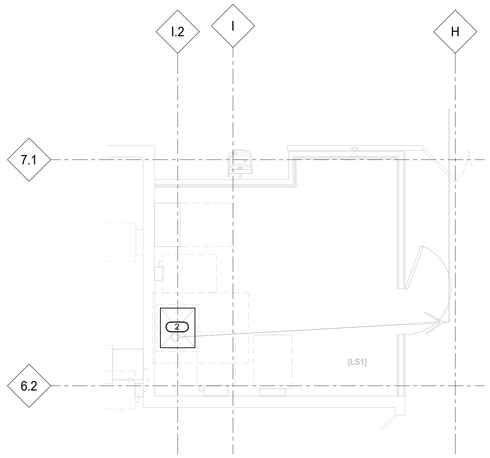
S103

NOTES:

1. SEE S500 FOR TYPICAL STEEL CONNECTION DETAILS.

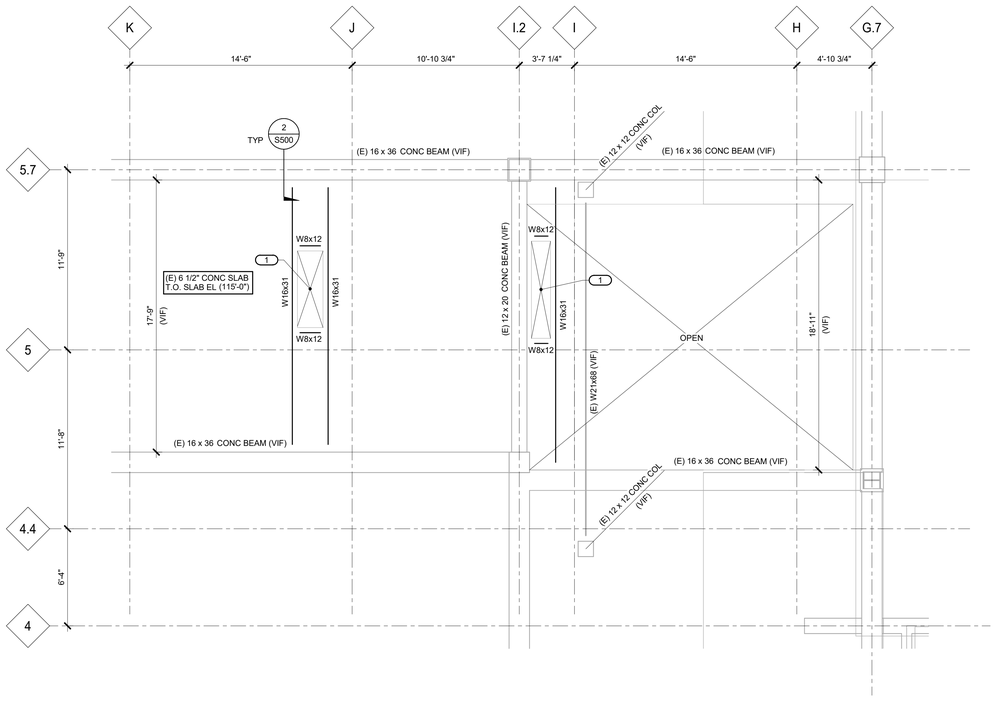
KEYNOTES: (#)

1. NEW OPENING FOR NEW MECH WORK. SEE MECH FOR EXACT DIMENSIONS AND LOCATIONS.
2. HOUSEKEEPING PAD. SEE 3/S300. SEE ELECTRICAL FOR REQUIRED LOCATION AND DIMENSIONS.



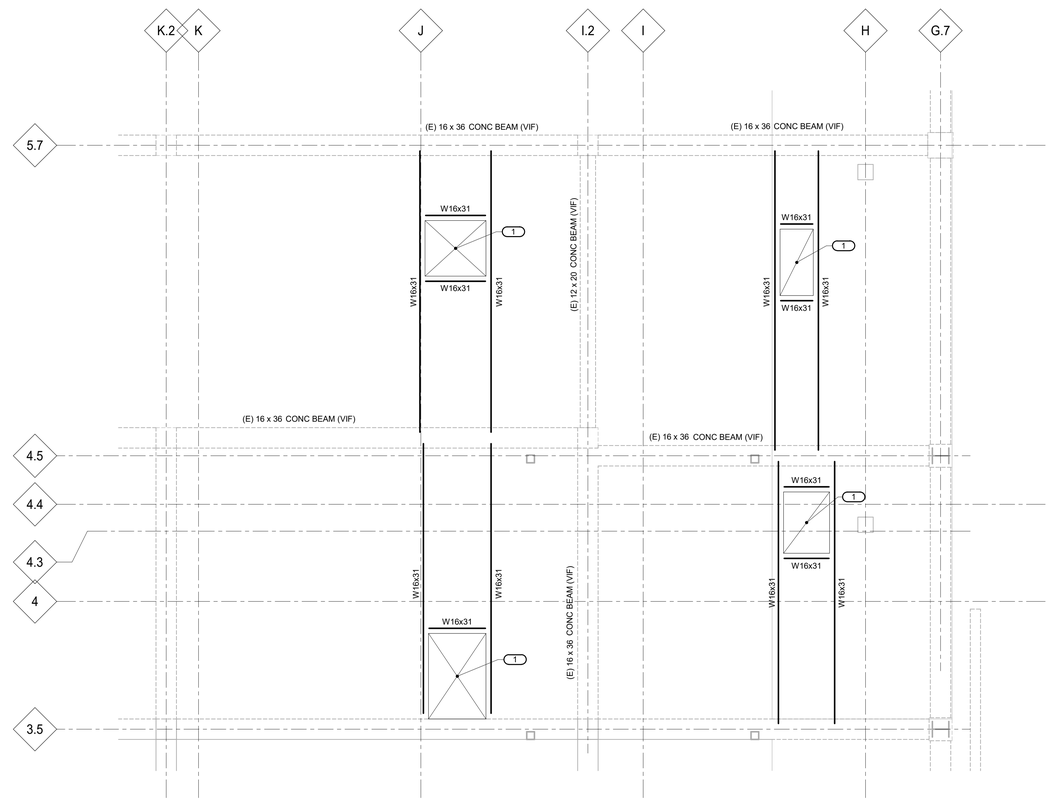
1 BASEMENT PLAN

1/4" = 1'-0"



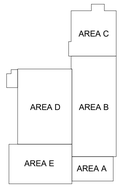
2 SECOND FLOOR FRAMING PLAN AT 1965 ADDITION

1/4" = 1'-0"



3 ROOF FRAMING PLAN AT 1965 ADDITION

1/4" = 1'-0"



KEY PLAN

NTS

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Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.100**

Issue Date: **2/18/2025**

Drawn By: **HITMIS**

SHEET REVISIONS

#	Date / Description
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3	
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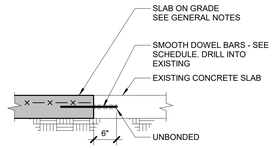
Sheet Title:

SECOND AND ROOF FRAMING PLAN AT 1965 ADDITION

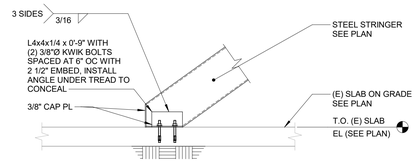
Sheet #:

S104A

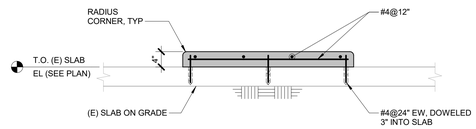


SLAB THICKNESS	SMOOTH DOWEL BAR
4"	1/2"Ø x 1'-4" @ 18" OC

1 NEW TO EXISTING SLAB DETAIL
3/4" = 1'-0"



2 STAIR STRINGER TO (E) SLAB
3/4" = 1'-0"



NOTES:

1. COORD LOCATIONS AND DIMENSIONS OF EQUIPMENT SUPPORT PADS WITH MEP DWGS, MECHANICAL CONTRACTOR AND EQUIPMENT MANUF.
2. VERIFY ADEQUACY OF PAD DESIGN INDICATED WITH EQUIPMENT MANUF.
3. COORDINATE VIBRATION ISOLATION REQUIREMENTS WITH MEP DWGS/SPECS AND EQUIPMENT MANUF.
4. DO NOT OVERDRILL FOR EPOXY ANCHOR TO AVOID PENETRATING THE BOTTOM OF THE SLAB.

3 HOUSEKEEPING PAD
3/4" = 1'-0"
2030-03

CLASS B TENSION LAP SPLICE LENGTH

REINF STEEL, Fy	BAR SIZE	BAR LOCATION	CONCRETE STRENGTH, f'c 4 KSI
60 KSI	#4	TOP	2'-9"
		OTHER	2'-1"
	#5	TOP	3'-5"
		OTHER	2'-7"

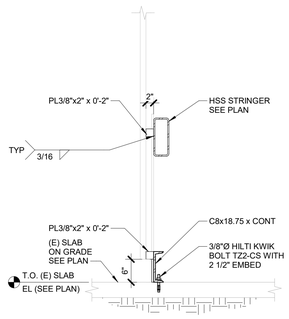
NOTES:

1. SPLICE LENGTHS SHOWN ARE APPLICABLE FOR SPLICES OCCURRING UNDER THE FOLLOWING CONDITIONS.
   A. NORMAL-WEIGHT CONCRETE
   B. MIN BAR SPACING REQUIREMENTS:
      a. CLEAR SPACING BETWEEN BARS AT SPLICE LOCATION > db, CLEAR COVER TO BARS ≥ db, AND TIES OR STIRRUPS OCCUR PER CODE SPACING WITHIN LENGTH OF SPLICE; OR
      b. CLEAR SPACING BETWEEN BARS AT SPLICE ≥ 2.0 db AND CLEAR COVER > db
2. INDICATED SPLICE LENGTHS SHALL BE INCREASED BY THE LISTED FACTORS WHERE THE FOLLOWING CONDITIONS EXIST.

	CONDITION	SPLICE LENGTH MULTIPLIER*
A.	BAR SPACING OR CLEAR COVER IS LESS THAN REQUIRED PER NOTE 1	1.5

3. TOP BARS ARE HORIZ BARS LOCATED WHERE MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE BARS.
4. USE SMALLER BAR SIZE TO DETERMINE LENGTH WHERE SPLICING BARS OF DIFFERENT SIZES.

4 CLASS B TENSION LAP SPLICE LENGTHS
3/4" = 1'-0"



5 RAILING ANCHORAGE TO (E) SLAB ON GRADE
3/4" = 1'-0"

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Sheet Title:
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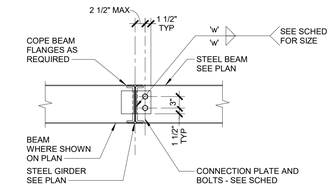


GRAVITY BEAM CONNECTION SCHEDULE

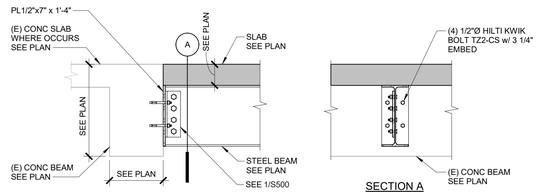
BEAM SIZE	NO. OF BOLTS (2) (3)	CONNECTION WITH 3/4"Ø BOLTS	
		PL THICK	PL WELD (1)
W8	2	1/4"	3/16"
W16	4	1/4"	3/16"

NOTES:

1. FILLET WELD SIZE, 'w', SHALL BE AS SHOWN UNLESS A LARGER SIZE IS REQUIRED BY AISC STEEL CONSTRUCTION MANUAL, TABLE J2.4.
2. WHERE NUMBER OF BOLTS NOTED IN SCHED CANNOT BE IN A SINGLE ROW, ADD SECOND ROW WITH TWO BOLTS MINIMUM.
3. BOLT SIZE AND QUANTITY SHALL BE TYP FOR ALL CONDITIONS UNLESS DETAILED OTHERWISE.

1 TYPICAL BEAM-TO BEAM CONNECTION DETAIL

3/4" = 1'-0"

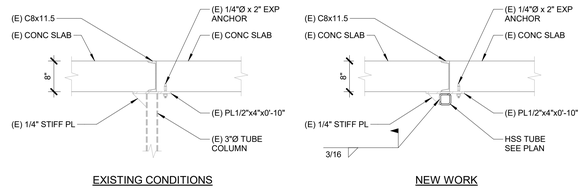


NOTES:

1. DO NOT CUT (E) REINFORCEMENT FOR ANCHOR INSTALLATION.
2. GROUT ABANDONED HOLES WITH NON-SHRINK GROUT.

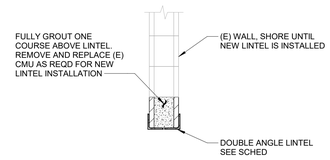
2 WF BEAM TO (E) CONC BEAM CONNECTION

3/4" = 1'-0"



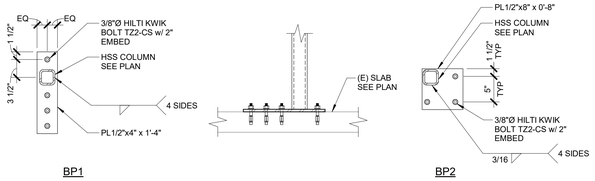
3 SLAB RE-SUPPORT AT MEZZANINE

3/4" = 1'-0"



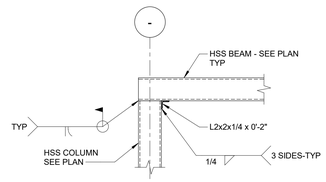
4 DOUBLE ANGLE LINTEL AT EXISTING

3/4" = 1'-0"



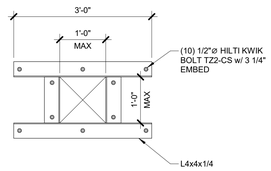
5 HSS COLUMN BASE PLATE AT EXISTING SLAB

1" = 1'-0"
5160-10



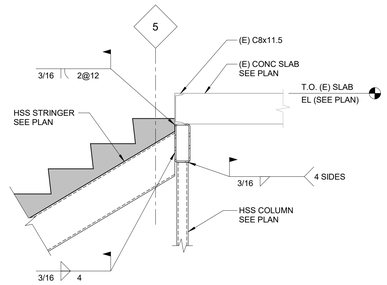
6 HSS BEAM TO HSS COLUMN CONNECTION

3/4" = 1'-0"
5160-10



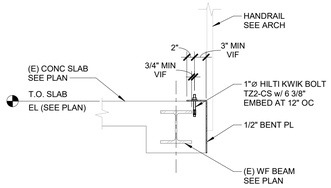
7 OPENING AT TWO-WAY SLAB

3/4" = 1'-0"



8 STRINGER TO HSS BEAM CONNECTION

3/4" = 1'-0"

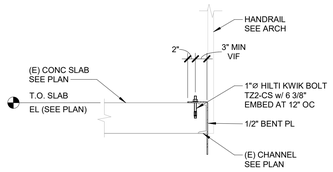


NOTE:

1. GC TO VERIFY MINIMUM DIMENSIONS. IF MINIMUM DIMENSIONS ARE NOT MET, CONSULT STRUCTURAL ENGINEER.

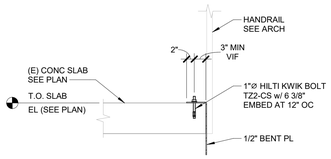
9 RAILING AT (E) WF BEAM IN CONCRETE

3/4" = 1'-0"



10 RAILING AT (E) CHANNEL

3/4" = 1'-0"



11 RAILING AT (E) SLAB

3/4" = 1'-0"

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Other Project #: **23025.100**

Issue Date: **2/18/2025**

Drawn By: **HITMIS**

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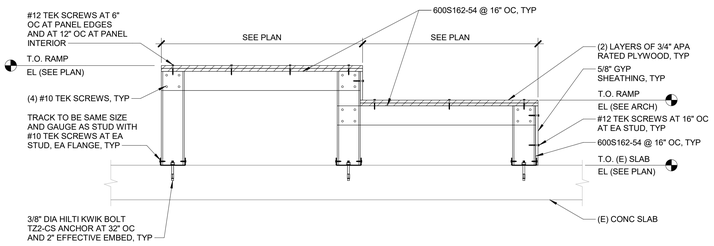
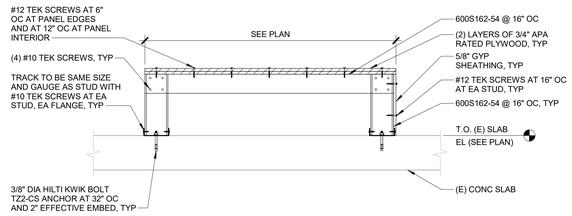
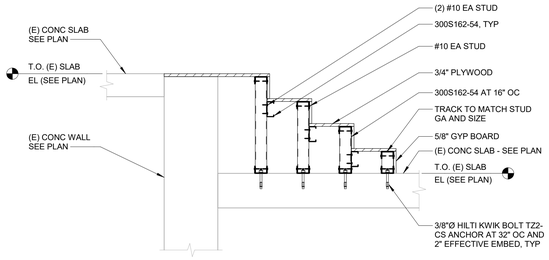


1 RAMP SECTION
3/4" = 1'-0"



2 RAMP LANDING SECTION
3/4" = 1'-0"



NOTE:

1. SEE ARCH FOR DIMENSIONS NOT LISTED HERE.

3 COLD FORM STAIRS
3/4" = 1'-0"

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Sheet Title:
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PROJECT #23008968.00

VIEW KEY

NAME — LEVEL NAME
10'-0" — HEIGHT ABOVE PROJECT 0'-0"

1 — KEYNOTE: INDICATES NOTE USED TO DESCRIBE ADDITIONAL INFORMATION ABOUT WORK REQUIRED, SPECIFIC TO THE SHEET AND/OR DETAIL

INDICATES DIRECTION OF TRUE NORTH
PLAN OR DETAIL NUMBER
PLAN OR DETAIL NAME

NORTH — 1 — **VIEW NAME** — 1/8" = 1'-0" — PLAN OR DETAIL SCALE

INDICATES SIMILAR DETAIL, REFERENCED IN MULTIPLE LOCATIONS (SIM)
DETAIL REFERRED TO BY SECTION CUT (1)
SHEET DETAIL IS LOCATED ON (M101 → T101)

LINE TYPE AND TAG KEY:

NEW WORK BY THIS CONTRACTOR (WIDE LINE)
- NEW
- EXISTING TO BE REMOVED (SHORT DASHED PATTERN)
- NEW UNDERFLOOR OR UNDERGROUND (LONG DASHED PATTERN)

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

HALFTONING DOES NOT MODIFY SCOPE.

'TAG'-E — TAGS WITH DASH 'E' INDICATES THE REFERENCED OBJECT IS EXISTING

TAG-1 — UNDERLINED TAG INDICATES OBJECT IS IN-SCOPE. IF NEW, ADDITIONAL INFORMATION IS AVAILABLE IN A SCHEDULE, MATERIAL LIST, OR SYMBOL LIST

INDICATES AN EXISTING SYSTEM'S POINT OF CONNECTION/REMOVAL

FIRE / SMOKE BARRIER DESIGNATIONS

THE LINE TYPES SHOWN ARE FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR MUST VERIFY RATINGS WITH THE LATEST SET OF ARCHITECTURAL PLANS AND FURNISH ALL MATERIALS REQUIRED TO COMPLY WITH THOSE RATINGS WHETHER SHOWN OR NOT.

ALL [FLOOR, FLOOR CEILING, AND ROOF CEILING] ASSEMBLIES MUST BE DESIGNATED AS 1, 2 HOUR FIRE, BARRIER(S), UNLESS NOTED OTHERWISE ON THE PLANS.

FIRE PARTITION	— Ⓘ — Ⓘ — Ⓘ — Ⓘ — Ⓘ — Ⓘ —
1 HOUR FIRE BARRIER	— ◆ — ◆ — ◆ — ◆ — ◆ — ◆ —
2 HOUR FIRE BARRIER OR WALL	— ◆◆ — ◆◆ — ◆◆ — ◆◆ —

CONTRACTOR ABBREVIATION KEY

NOT ALL SYMBOLE MAY APPLY.

ABBR:	DESCRIPTION:
E.C.	ELECTRICAL CONTRACTOR
G.C.	GENERAL CONTRACTOR
M.C.	MECHANICAL CONTRACTOR
P.C.	PLUMBING CONTRACTOR
T.C.	TECHNOLOGY CONTRACTOR
T.C.C.	TEMPERATURE CONTROL CONTRACTOR
V.C.	VENTILATION CONTRACTOR

PIPING SYMBOL LIST

NOT ALL SYMBOLS MAY APPLY.

SYMBOL:	DESCRIPTION:
CWR	CHILLED WATER RETURN
CWS	CHILLED WATER SUPPLY
DPP	DRAIN
HWR	HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
LIQ	REFRIGERANT LIQUID
LPC	LOW PRESSURE CONDENSATE (0 TO 15 PSIG)
LPS	LOW PRESSURE STEAM (0 TO 15 PSIG)
PC	PUMPED CONDENSATE
PD	PUMPED DISCHARGE
REF	REFRIGERANT
SUC	REFRIGERANT SUCTION
	PIPE CAP
	PIPE DOWN
	PIPE UP OR UP/DOWN
	PITCH PIPE IN DIRECTION
	DIRECTION OF FLOW IN PIPE
	DIELECTRIC CONNECTION
	UNION/FLANGE
	SHUTOFF VALVE NORMALLY OPEN
	SHUTOFF VALVE NORMALLY CLOSED
	THROTTLING VALVE
	BALANCING VALVE (NUMBER INDICATES GPM)
	AUTOMATIC BALANCING VALVE
	MIXING VALVE
	CONTROL VALVE (THREE-WAY)
	CONTROL VALVE (TWO-WAY)
	SOLENOID VALVE
	CHECK VALVE
	BACKFLOW PREVENTER
	SAFETY/RELIEF VALVE
	SAFETY RELIEF VALVE W/ DRIP PAN ELBOW
	PRESSURE REDUCING VALVE (STEAM)
	TRIPLE DUTY VALVE (ANGLE TYPE)
	TRIPLE DUTY VALVE (IN-LINE TYPE)
	PUMP
	VACUUM BREAKER
	"WYE" - STRAINER
	"WYE" - STRAINER W/SHUTOFF VALVE AND HOSE CONNECTION WITH CAP
	BASKET STRAINER
	FLEXIBLE CONNECTION
	PRESSURE/TEMPERATURE TEST PLUG
	REDUCER - REFERENCE SPECIFICATION FOR CONCENTRIC/ECCENTRIC AND FOT/FOB
	SUCTION DIFFUSER WITH SUPPORT FOOT
	AUTOMATIC AIR VENT
	MANUAL AIR VENT
	DRAIN VALVE WITH HOSE CONNECTION AND CAP
P	PRESSURE SENSOR (FURNISHED WITH BALL VALVE)
P	PRESSURE GAUGE (FURNISHED WITH BALL VALVE)
SP	STATIC SWITCH
FM	FLOW METER
F	FLOW SWITCH
FS	FLOW SENSOR
T	THERMOSTAT
T	THERMOSTAT/SENSOR WITH HEAVY DUTY ENCLOSURE
	TEMPERATURE SENSOR
T	TEMPERATURE SENSOR WITH WELL
T	THERMOMETER WITH WELL (DIAL TYPE)
T	THERMOMETER WITH WELL (FILLED TYPE)
T T-*	STEAM TRAP (REFER TO SCHEDULE)
T-*	F&T STEAM TRAP (REFER TO SCHEDULE)
T-*	INVERTED BUCKET STEAM TRAP (REFER TO SCHEDULE)
	ALIGNMENT GUIDE
	PIPE ANCHOR
EJ-# (#.#")	EXPANSION JOINT #.#" IS THE EXPANSION TRAVEL INCHES
M	METER
###	TERMINAL AIR BOX w/REHEAT COIL (REFER TO SCHEDULE)
H	HUMIDIFIER
H	HUMIDISTAT SENSOR
	HUMIDISTAT / SENSOR
CO	CARBON MONOXIDE SENSOR
CO_2	CARBON DIOXIDE SENSOR
CO_2	CARBON DIOXIDE SENSOR
O	OCCUPANCY SENSOR

PIPING ABBREVIATION KEY

ABBR:	DESCRIPTION:
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
C	COMMON
CO	CLEANOUT
DN	DOWN
DPG (0-2")	DIFFERENTIAL PRESSURE GAUGE (RANGE)
DPS	DIFFERENTIAL PRESSURE SWITCH
EP	ELECTRICAL TO PNEUMATIC VALVE
MV	MIXING VALVE
N.C.	NORMALLY CLOSED
NIC	NOT IN CONTRACT
N.O.	NORMALLY OPEN
PS	PRESSURE SWITCH
SCCR	SHORT CIRCUIT CURRENT RATING
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED

MECHANICAL RENOVATION NOTES:

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO VENTILATION, PIPING, AND PLUMBING.

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

MECHANICAL PHASING NOTES:

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, PLUMBING, VENTILATION AND PIPING.

1. REFER TO ARCHITECTURAL DRAWINGS FOR GENERAL DESCRIPTION OF PHASES. REFER TO GENERAL CONTRACTOR'S INSTRUCTIONS FOR MORE DETAILS AND PHASING SCHEDULES AND FOR CONCURRENT WORK. MECHANICAL, ELECTRICAL AND TECHNOLOGY DRAWINGS DEPICT THE INTENT OF THE FINAL DESIGN. THE MECHANICAL, ELECTRICAL, AND TECHNOLOGY DRAWINGS DO NOT DEPICT THE MEANS AND METHODS TO MEET THE REQUIREMENTS OF THE PHASING CRITERIA.
2. REVIEW PROJECT PHASING PLANS TO COORDINATE DEMOLITION WORK, OUTAGES, ETC. WITH AFFECTED ADJACENT AREAS.
3. PROVIDE TEMPORARY DUCTWORK, PIPING, SHUTOFF VALVES, ZONE VALVES, ZONE ALARMS, ETC. AS NEEDED TO MAINTAIN SERVICE TO ALL AREAS DURING ALL PHASES OF PROJECT.
4. INSTALL TEMPORARY DUCTWORK, PIPING, SHUTOFF VALVES, ETC. AS NECESSARY TO KEEP ALL OCCUPIED SPACES OPERATIONAL THROUGHOUT ALL PHASES OF THE PROJECT
5. PHASE DEMOLITION WORK TO MINIMIZE DOWNTIME.

PIPING GENERAL NOTES:

1. PIPE DRAIN LINES FROM EQUIPMENT TO NEAREST FLOOR DRAIN.
2. INSTALL ALL REFRIGERANT LIQUID AND SUCTION PIPING SIZED PER EQUIPMENT MANUFACTURER RECOMMENDATIONS.

MECHANICAL GENERAL NOTES:

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO VENTILATION, PIPING, AND PLUMBING.

1. DRAWINGS SHOWING LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, ETC. ARE DIAGRAMMATIC AND MAY NOT ALWAYS REFLECT EXACT INSTALLATION CONDITIONS. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF DUCTWORK, PIPING, EQUIPMENT, ETC., AND MAY NOT INCLUDE ALL OFFSETS AND FITTINGS REQUIRED FOR COMPLETE INSTALLATION. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING CONSTRUCTION AND THE WORK OF OTHERS WILL PERMIT.
2. CATALOG AND MODEL NUMBERS SHALL NOT BE CONSIDERED COMPLETE, BUT ARE GIVEN AS AN AID TO THE CONTRACTOR AND TO INDICATE THE QUALITY REQUIRED. CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE DESCRIPTION OF MATERIAL SCHEDULED ON THESE DRAWINGS AND IN THE SPECIFICATIONS BEFORE ORDERING. THE DESCRIPTION OF THE MATERIAL AND SCHEDULED PERFORMANCE TAKES PRECEDENCE OVER THE MODEL NUMBER. THE FIRST MANUFACTURER SCHEDULED IS THE BASIS OF DESIGN.
3. DETERMINATION OF QUANTITIES OF MATERIAL AND EQUIPMENT REQUIRED SHALL BE MADE BY THE CONTRACTOR FROM THE DOCUMENTS. WHERE MATERIAL AND/OR QUANTITY DISCREPANCIES ARISE BETWEEN DRAWINGS, SCHEDULES AND/OR SPECIFICATIONS, THE HIGHER QUALITY/ GREATER NUMBER SHALL GOVERN.
4. DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS AND CLEARANCES FROM ARCHITECTURAL, STRUCTURAL, SUBMITTALS, AND OTHER APPROPRIATE DRAWINGS OR PHYSICALLY AT SITE. REVIEW ALL DRAWINGS, INCLUDING THOSE OF OTHER TRADES.
5. COORDINATE ALL WORK WITH ALL OTHER TRADES PRIOR TO INSTALLATION TO PROVIDE CLEARANCES REQUIRED FOR OPERATION, MAINTENANCE, CODE COMPLIANCE, AND TO VERIFY NON-INTERFERENCE WITH OTHER WORK. DO NOT FABRICATE PRIOR TO VERIFICATION OF NECESSARY CLEARANCES FOR ALL TRADES. BRING ANY INTERFERENCES OR CONFLICTS TO THE ATTENTION OF THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH FABRICATION OR EQUIPMENT ORDERS.
6. REVIEW SPACE REQUIREMENTS OF EQUIPMENT SPECIFIED OR SUBSTITUTED AND MAKE REASONABLE ACCOMMODATIONS IN LAYOUT AND POSITIONING TO PROVIDE PROPER ACCESS.
7. ANY CHANGES REQUIRED TO ELIMINATE CONFLICTS OR THAT RESULT FROM A FAILURE TO COORDINATE SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL COST OR EXPENSE TO OTHERS.
8. EACH CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ELECTRICAL CHANGES REQUIRED FOR EQUIPMENT PROPOSED THAT DIFFERS FROM THE BASIS OF DESIGN.
9. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, TECHNOLOGY AUDIO/VISUAL, AND OTHER MECHANICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED DEVICES, OTHER THAN SPRINKLERS.
10. EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO WALLS, FLOORS, CEILINGS, AND ROOFS. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND FINISH.
11. IN AREAS WITH DRYWALL CEILINGS COORDINATE LOCATIONS OF ACCESS PANELS WITH THE GC FOR ACCESS TO VALVES, DUCTWORK ACCESSORIES, DAMPERS, ETC. COORDINATE PANEL TYPE AND COLOR WITH ARCHITECT. NOTIFY THE GC OF THE REQUIRED ACCESS PANELS PRIOR TO BIDDING.
12. SEAL ALL FLOOR, WALL, AND ROOF PENETRATIONS AIRTIGHT WHERE CONDUITS, PIPING, AND DUCTS PENETRATE. PENETRATIONS THROUGH EXTERIOR WALLS AND ROOF SHALL BE SEALED AIRTIGHT WITH WATERPROOFING MATERIALS RECOMMENDED BY MANUFACTURER FOR OUTDOOR USE.
13. CAULK ALL PIPE AND DUCT PENETRATIONS OF FULL HEIGHT NON-FIRE RATED WALL, PARTITION, FLOOR, AND ROOF ASSEMBLIES. THIS IS ESSENTIAL TO PREVENT NOISE TRANSMISSION FROM ONE ROOM TO ANOTHER AND TO PROVIDE THE DESIRED NC LEVELS WITHIN ROOMS.
14. WHERE PIPES AND DUCTS ARE SHOWN TO PENETRATE FLOORS, PROVIDE SLEEVED OPENINGS WITH THE TOP EDGE RAISED ABOVE FLOOR SURFACE IN ACCORDANCE WITH ALL RELEVANT SPEC SECTIONS. SEAL SLEEVE PERIMETER TO BE WATERTIGHT.
15. EQUIPMENT SIZES AND SERVICE CLEARANCE REQUIREMENTS VARY AMONG DIFFERENT MANUFACTURERS. CONSULT APPROVED SHOP DRAWINGS FOR EQUIPMENT SIZES AND REQUIRED SERVICE CLEARANCES. COORDINATE WITH LAYOUT OF EQUIPMENT PADS, PIPING, DUCTWORK, ETC.
16. DO NOT BLOCK TUBE PULL OR EQUIPMENT SERVICE CLEARANCES.
17. MAINTAIN A MINIMUM WORKING CLEARANCE OF 3'-6" IN FRONT OF ALL ELECTRICAL EQUIPMENT REQUIRING MAINTENANCE, INSPECTION, AND TESTING INCLUDING BUT NOT LIMITED TO PANELS, DISTRIBUTION PANELS, SWITCHBOARDS, MOTOR CONTROL CENTERS, TRANSFORMERS, EQUIPMENT DISCONNECTS AND STARTERS.
18. MAINTAIN THE DEDICATED ELECTRICAL EQUIPMENT SPACE DEFINED BY THE WIDTH / DEPTH OF ELECTRICAL EQUIPMENT MEASURED FROM THE FLOOR TO A HEIGHT 6'-0" ABOVE THE EQUIPMENT OR THE STRUCTURAL CEILING, WHICHEVER IS LOWER. SYSTEMS FOREIGN TO THE ELECTRICAL DISTRIBUTION SYSTEM ARE NOT ALLOWED IN THE DEDICATED ELECTRICAL SPACE INCLUDING: DUCTWORK, PIPING, ETC.
19. PROVIDE CONCRETE EQUIPMENT PAD FOR ALL FLOOR MOUNTED EQUIPMENT. PAD SHALL EXTEND MINIMUM 6" BEYOND ALL SIDES OF EQUIPMENT EXCEPT WHERE PAD EXTENSION WOULD INTERFERE WITH WORKING SPACE AT EQUIPMENT CONTROL PANELS AND ELECTRICAL PANELS. ADDITIONALLY, CONCRETE EQUIPMENT PAD HEIGHTS SHALL BE A MINIMUM OF 3.5". PAD HEIGHT SHALL BE ADJUSTED AS NECESSARY TO ALLOW FOR ADEQUATE INSTALLATION REQUIREMENTS.
20. DO NOT EXCEED 25 LBS PER HANGER AND A MINIMUM SPACING OF 2'-0" ON CENTER WHEN ATTACHING TO METAL ROOF DECKING (LIMITATION NOT REQUIRED WITH CONCRETE ON METAL DECK). THIS 25 LBS. LOAD AND 2'-0" SPACING INCLUDE ADJACENT ELECTRICAL AND ARCHITECTURAL ITEMS HANGING FROM DECK. IF THE HANGER RESTRICTIONS CANNOT BE ACHIEVED, SUPPLEMENTAL FRAMING OFF STEEL FRAMING SHALL BE ADDED. ANCHORS EMBEDDED IN CONCRETE SHALL BE CRACKED CONCRETE APPROVED IN ACCORDANCE WITH SPECIFICATIONS.

PIPE INSULATION SCHEDULE (HVAC)

GENERAL NOTES:
1. REFER TO THE SPECIFICATIONS FOR TYPE DESCRIPTIONS AND JACKETING REQUIREMENTS. VALUES LISTED BELOW ARE BASED ON ASHRAE / IECC REQUIREMENTS.
2. TYPE A INSULATION IS NOT ALLOWED IN NON-AIR CONDITIONED SPACES, SUCH AS MECHANICAL ROOMS, EXTERIOR, ATTICS, ETC.
3. TYPE B INSULATION GREATER THAN 1" THICK SHALL BE INSTALLED USING MULTIPLE LAYERS OF 3/4" OR 1" WITH STAGGERED SEAMS.
4. PROVIDE RIGID INSERT AT HANGERS, EITHER PRE-MANUFACTURED COUPLINGS (REFER TO PIPE HANGER AND SUPPORTS SPECIFICATIONS) OR TYPE C INSULATION. SEE SPEC. FOR MORE DETAILS.
5. DIRECT BUIRED PIPING SHALL ONLY USE TYPE C. REDUCTION IN THICKNESS FOR DIRECT BURED PIPING IS ALLOWED PER ASHRAE / IECC AS APPLICABLE.

PIPE SYSTEM	INSULATION TYPE	INSULATION THICKNESS PER NOMINAL PIPE OR TUBE SIZE				NOTES
		< 1"	1" TO < 1.5"	1.5" TO < 4"	4" TO < 8"	
CWR - CHILLED WATER RETURN	B (Elasto)	1.5"	1.5"	2"	2"	
CWS - CHILLED WATER SUPPLY	B (Elasto)	1.5"	1.5"	2"	2"	
DPP - DRAIN - PIPING	B (Elasto)	0.5"	0.5"	1"	1"	APPLY INSULATION ONLY TO LOW TEMP DRAINS (55 DEG AND LOWER IE: COOLING COIL CONDENSATE, ICE MACHINE DRAINS, ETC.)
HWR - HEATING WATER RETURN	A (GlsFbr)	1.5"	1.5"	2"	2"	
HWS - HEATING WATER SUPPLY	A (GlsFbr)	1.5"	1.5"	2"	2"	
MISC RELIEF VENTS, INTAKES, AND DISCHARGES	A (GlsFbr), B (Elasto)	0.5"	0.5"	1"	1"	APPLY INSULATION ONLY WITHIN 10' OF EXTERIOR PENETRATION ON COMPRESSOR INTAKES, VACUUM DISCHARGES, VENT/RELIEF LINES, ETC.
HG - REFRIGERANT HOT GAS	A (GlsFbr)	1"	1"	1"	1"	
LIQ - REFRIGERANT LIQUID	A (GlsFbr)	0.5"	0.5"	1"	1"	
SUC - REFRIGERANT SUCTION	B (Elasto)	0.5"	0.5"	1"	1"	
LPC - LOW PRESSURE CONDENSATE (0 to 15 psig)	A (GlsFbr)	2.5"	2.5"	2.5"	3"	
LPS - LOW PRESSURE STEAM (0 to 15 psig)	A (GlsFbr)	2.5"	2.5"	2.5"	3"	
MPC - MEDIUM PRESSURE CONDENSATE (>15 to 125 psig)	A (GlsFbr)	3"	4"	4.5"	4.5"	
MPS - MEDIUM PRESSURE STEAM (>15 to 125 psig)	A (GlsFbr)	3"	4"	4.5"	4.5"	
PC - PUMPED CONDENSATE	A (GlsFbr)	2.5"	2.5"	2.5"	3"	

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Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS

#	Date / Description
1	
2	
3	
4	

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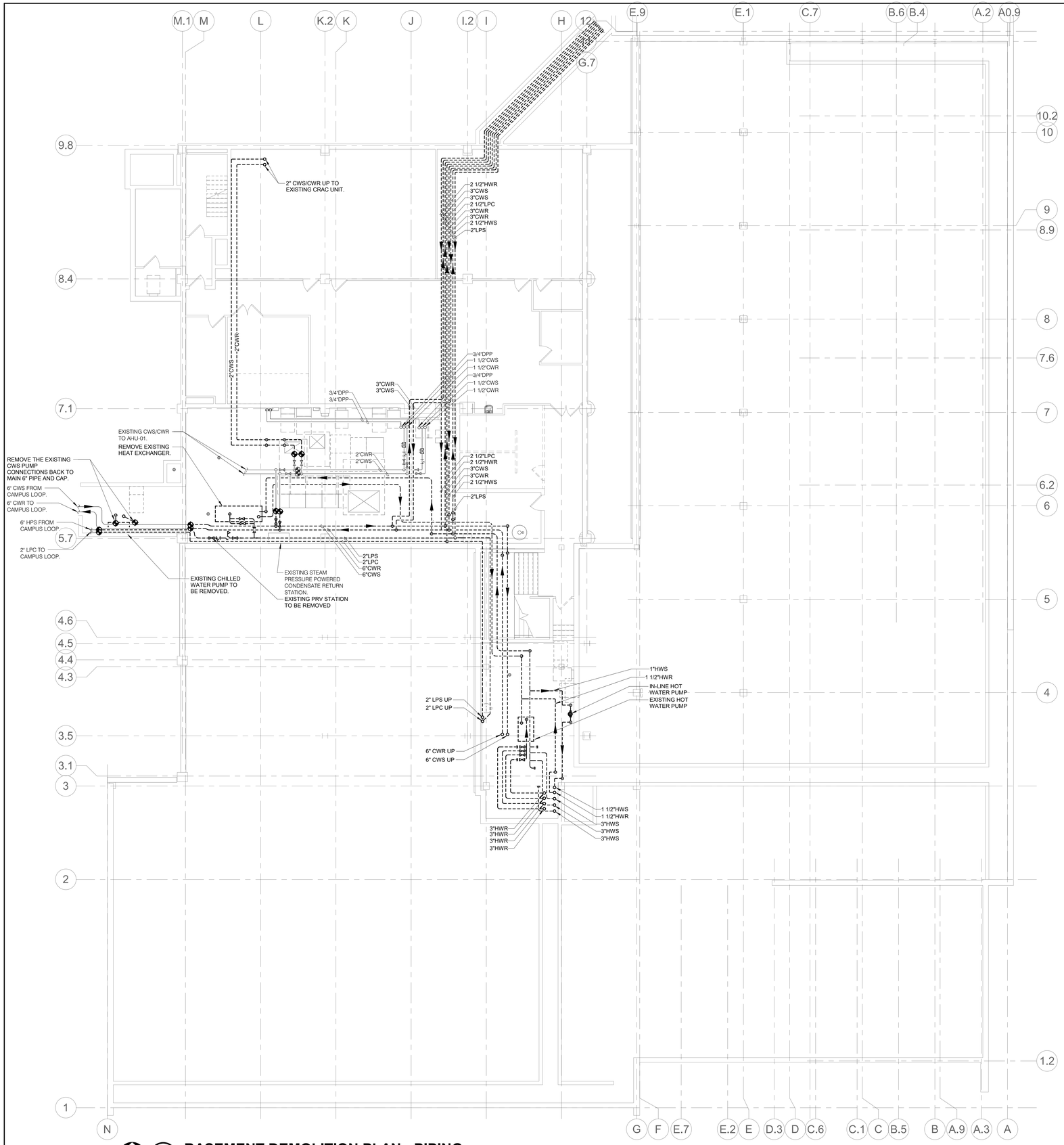
Sheet Title:

PIPING COVERSHEET

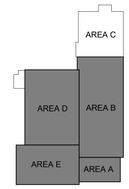
Sheet #:

MP0.00



NORTH

1 **BASEMENT DEMOLITION PLAN - PIPING**
1/8" = 1'-0"



KEY PLAN
NTS

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MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS

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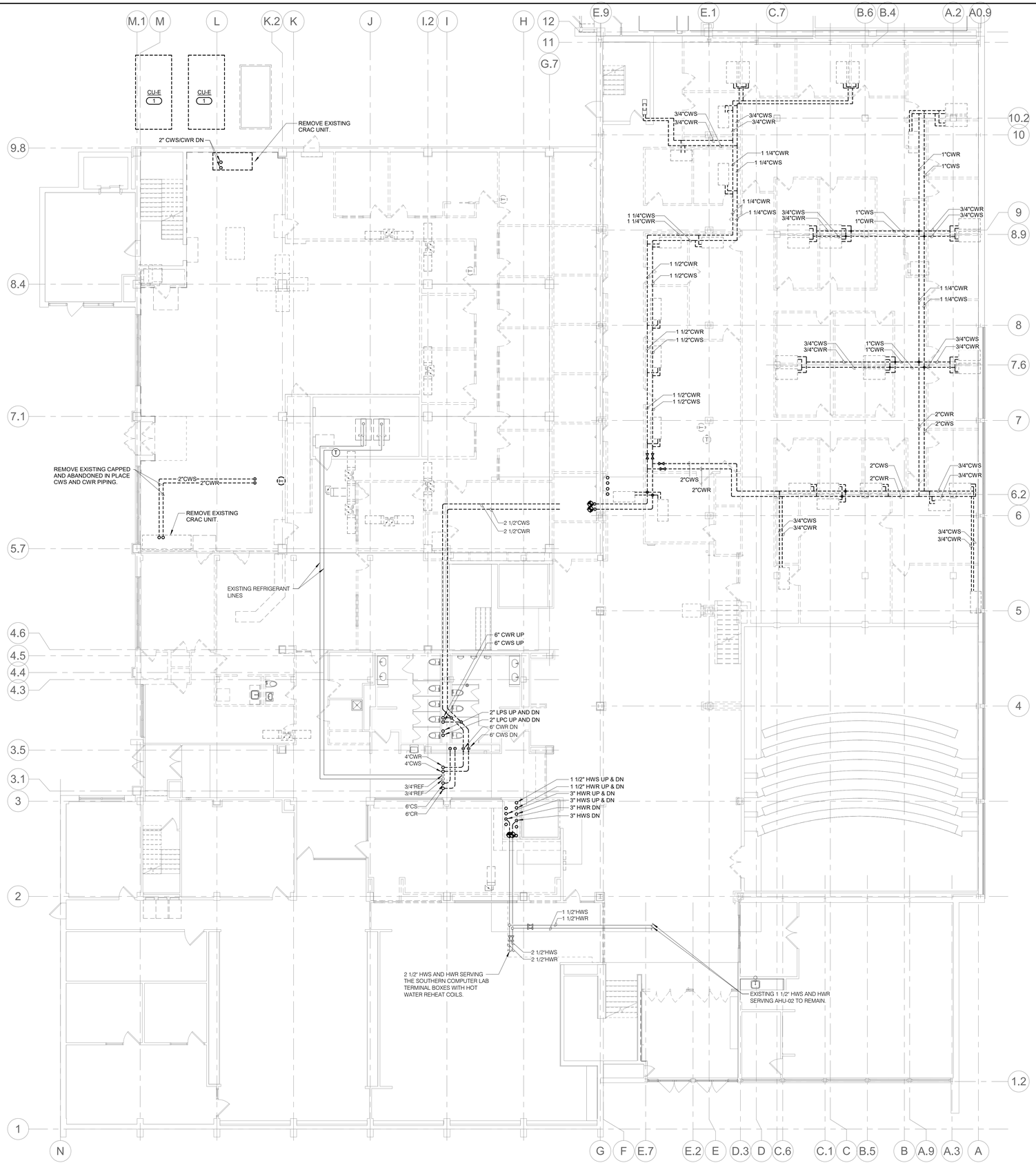
Sheet Title:

BASEMENT DEMOLITION PLAN - PIPING

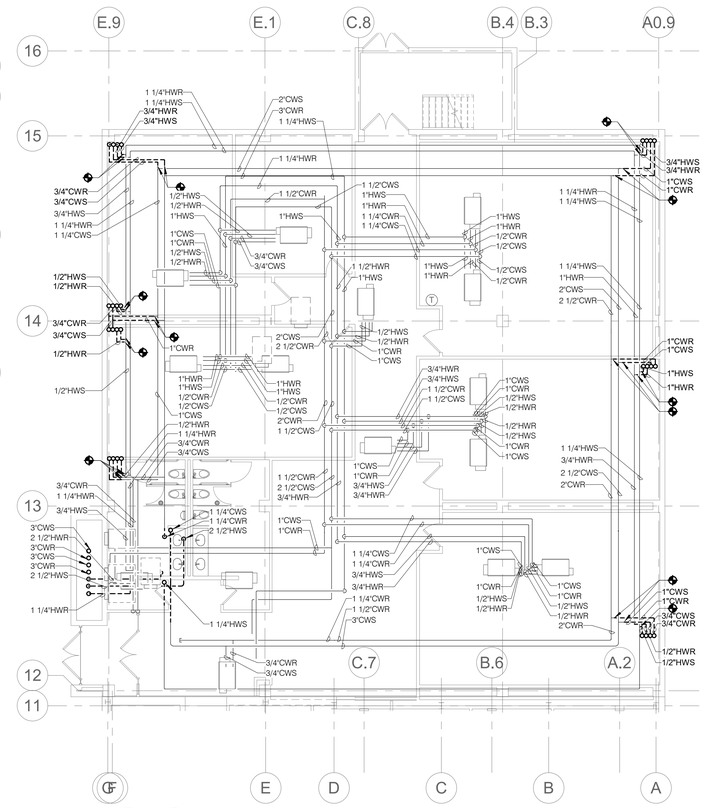
Sheet #:

MP1.10



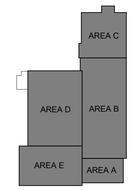
1 LEVEL 01 DEMOLITION PLAN - PIPING

1/8" = 1'-0"



2 LEVEL 01 DEMOLITION PLAN - PIPING - AREA C

1/8" = 1'-0"



KEY PLAN

NTS

GENERAL NOTES:

1. REFER TO MP0.00 FOR ADDITIONAL INFORMATION.
2. FIELD VERIFY ALL EXISTING CONDTIONS PRIOR TO PERFORMING WORK.
3. REFER TO ARCHITECTURAL PLANS FOR PATCHING REQUIRMENTS. CONTRACTOR SHALL PATCH WALLS AND CEILINGS TO MATCH EXISTING CONDITIONS.
4. COORDINATE SYSTEM SHUTDOWNS WITH OWNER AND CONSTRUCTION MANAGER.

KEYNOTES: (#)

1. REMOVE EXISTING AIR COOLED CONDENSER AND ALL PIPING TO THE INDOOR COMPUTER ROOM UNITS.

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CERTIFICATE OF AUTHORITY - E2017008530

Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

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Sheet Title:

LEVEL 01 DEMOLITION PLAN - PIPING

Sheet #:

MP1.11

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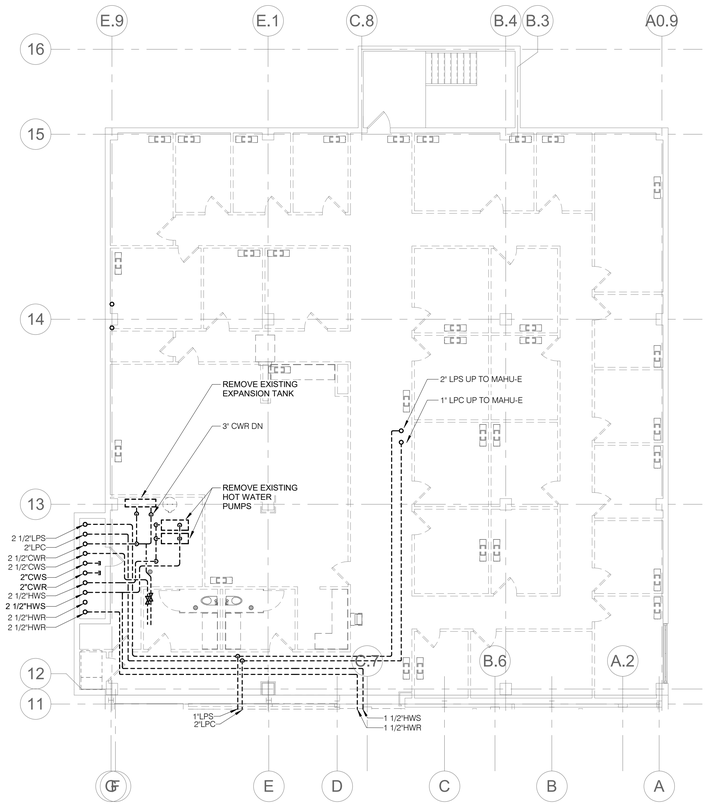
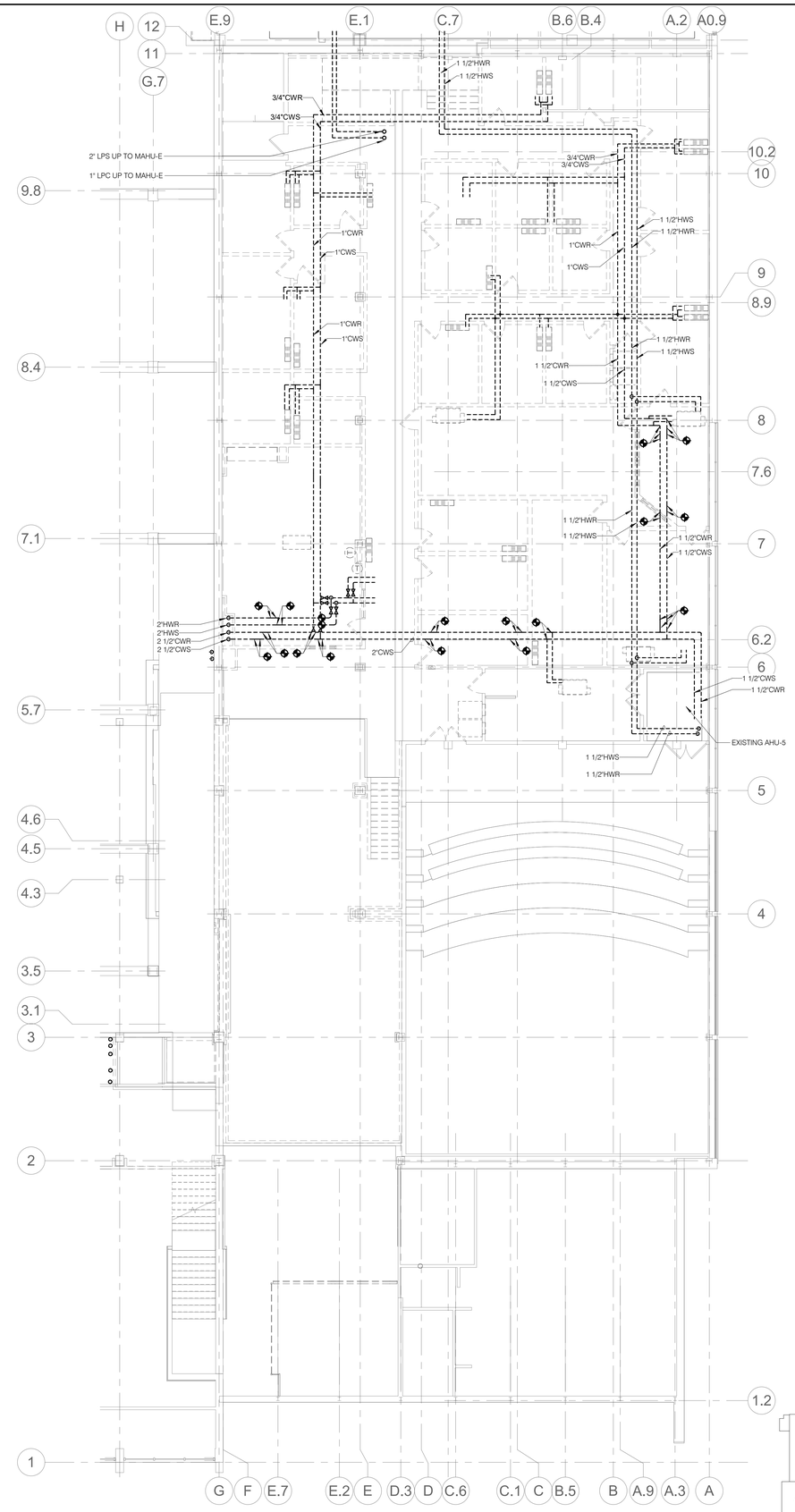
Autodesk Docs://MSU Cheek Hall/MEPT23_23008968.00_MSU-Springfield- MO-Cheek Hall Reno_C.rvt



NORTH

2 MEZZANINE DEMOLITION PLAN - PIPING - AREA C

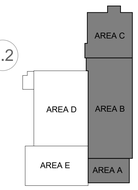
1/8" = 1'-0"



NORTH

3 MEZZANINE DEMOLITION PLAN - PIPING - AREAS A & B

1/8" = 1'-0"



KEY PLAN

NTS

GENERAL NOTES:

1. REFER TO MP0.00 FOR ADDITIONAL INFORMATION.
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3. REFER TO ARCHITECTURAL PLANS FOR PATCHING REQUIRMENTS. CONTRACTOR SHALL PATCH WALLS AND CEILINGS TO MATCH EXISTING CONDITIONS.
4. COORDINATE SYSTEM SHUTDOWNS WITH OWNER AND CONSTRUCTION MANAGER.

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MEZZANINE DEMOLITION PLANS - PIPING

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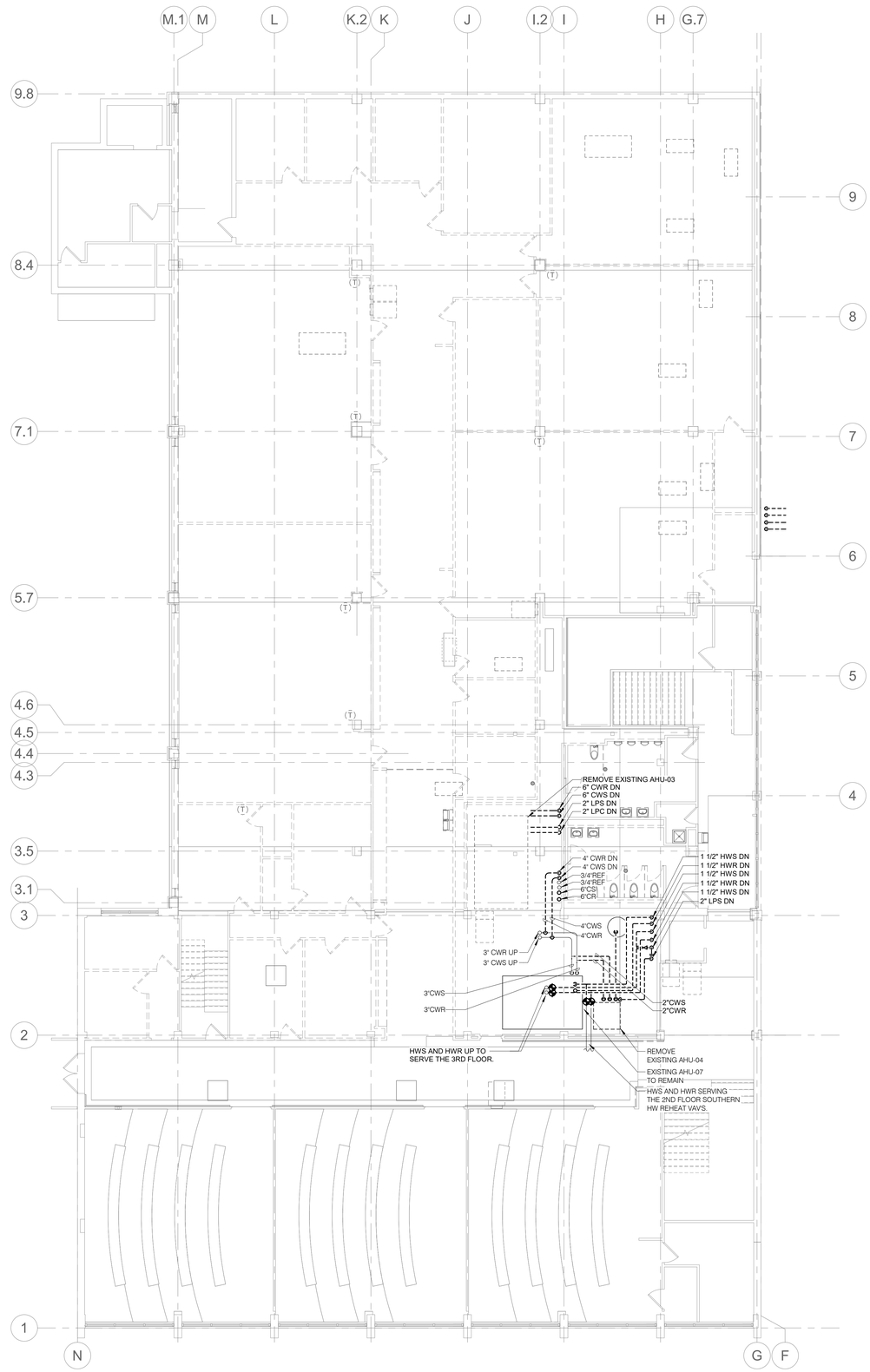
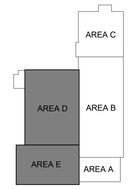


NORTH

1 **LEVEL 02 DEMOLITION PLAN - PIPING**
1/8" = 1'-0"



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Other Project #: **23025.000**

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Drawn By: **Author**

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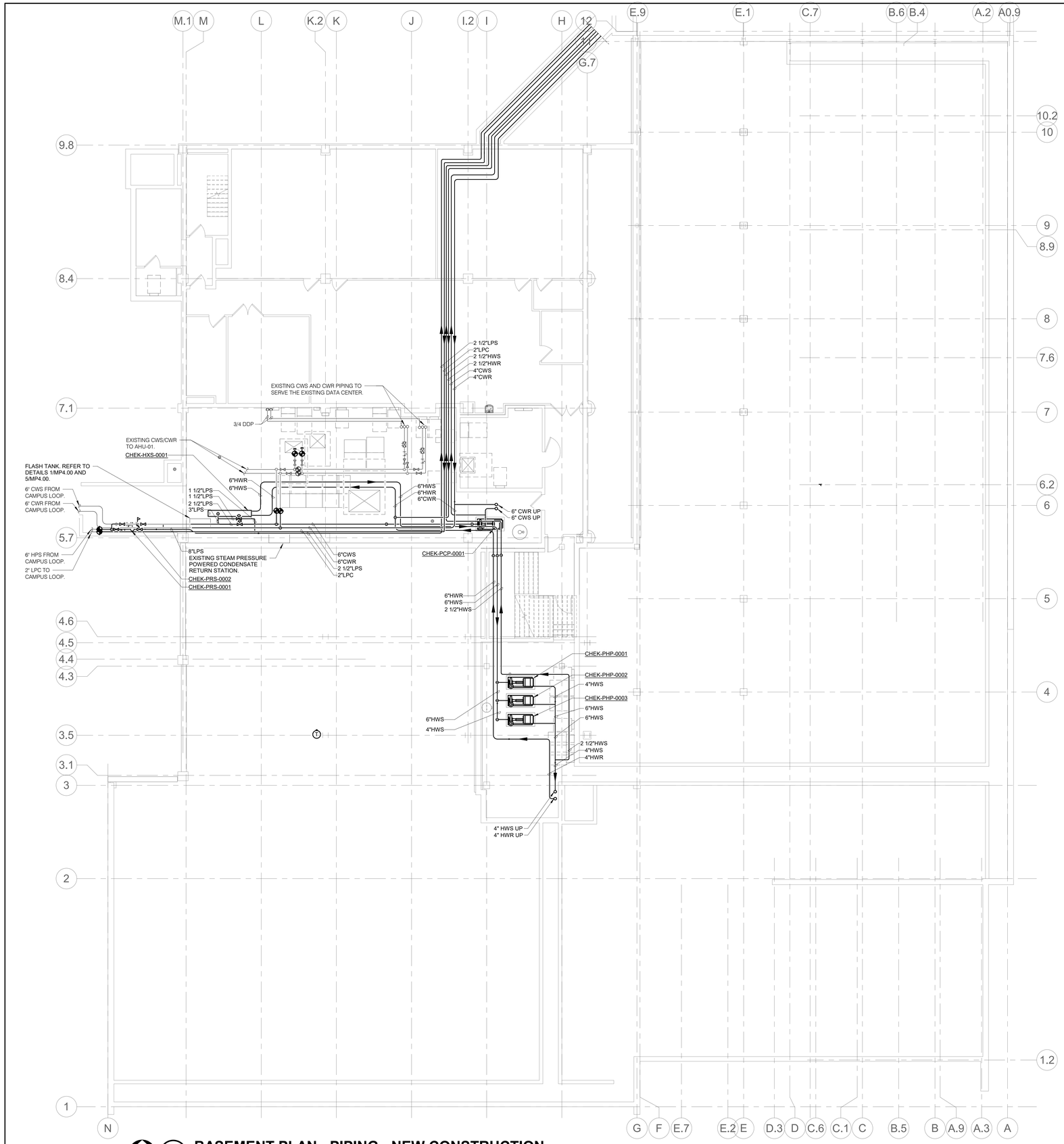

1 BASEMENT PLAN - PIPING - NEW CONSTRUCTION

1/8" = 1'-0"

NORTH

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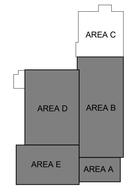

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BASEMENT PLAN - PIPING

Sheet #:

MP2.10

GENERAL NOTES:

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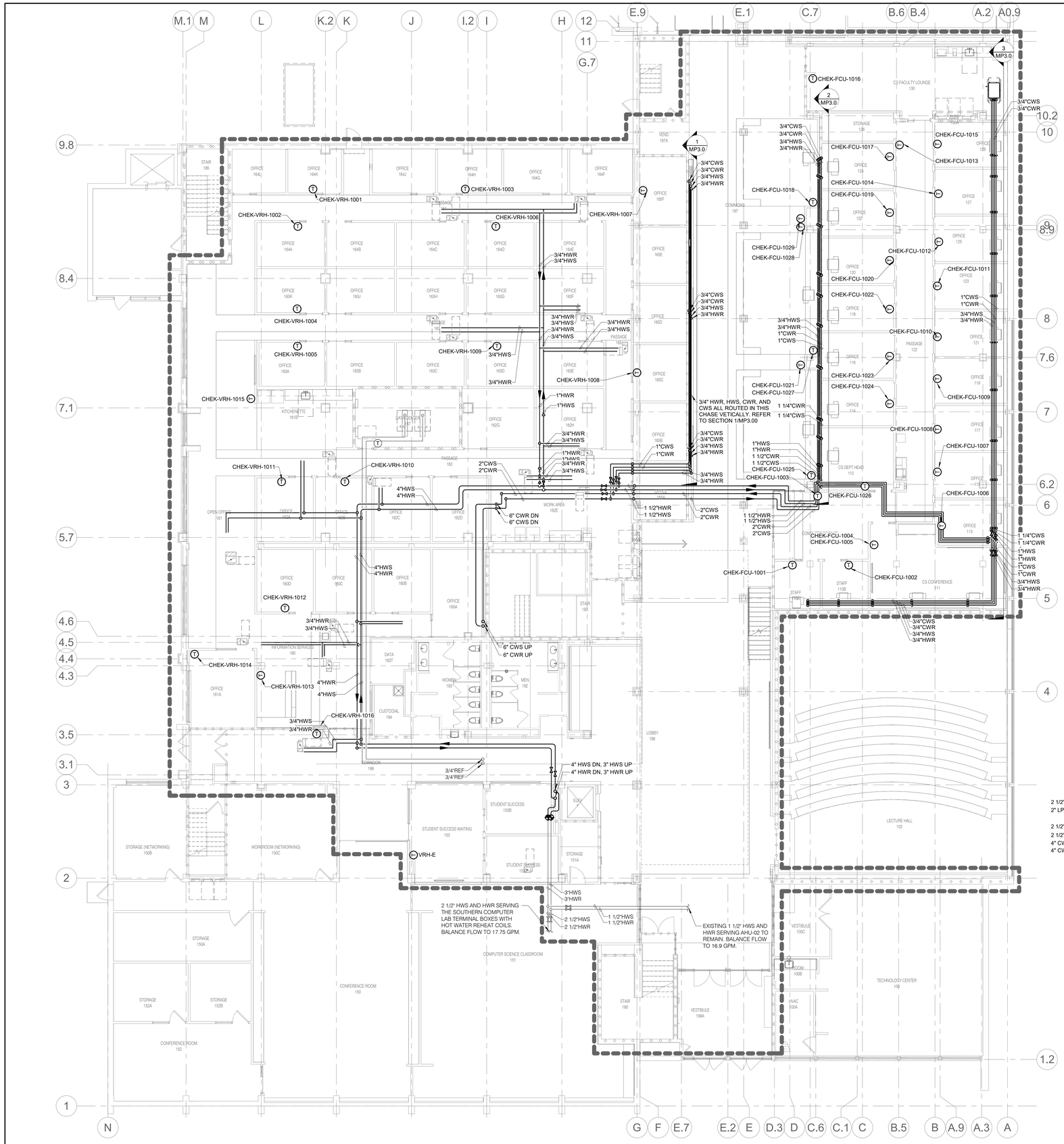
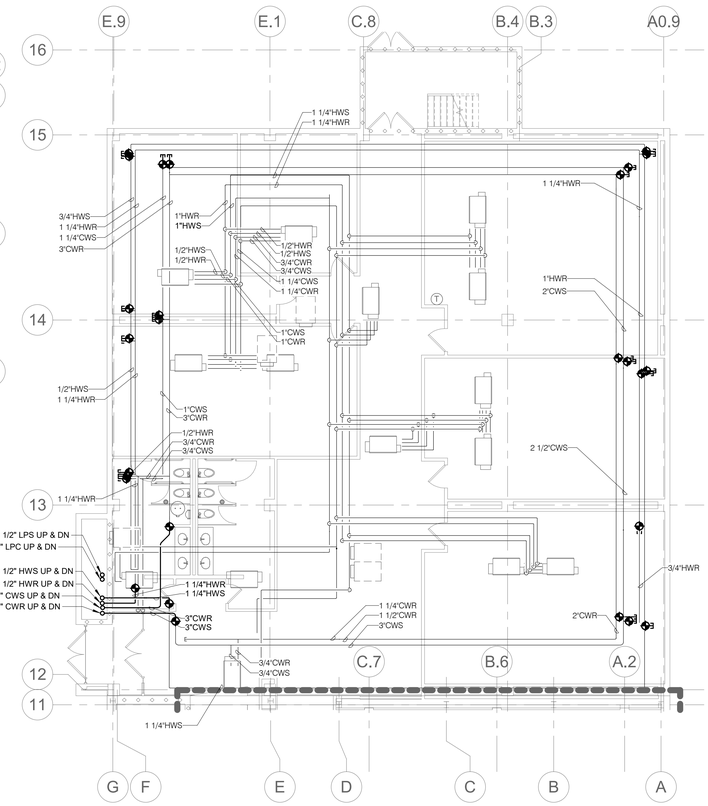
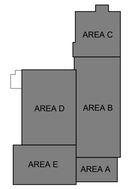


1 **LEVEL 01 PLAN - PIPING**
1/8" = 1'-0"



2 **LEVEL 01 PLAN - PIPING - AREA C**
1/8" = 1'-0"



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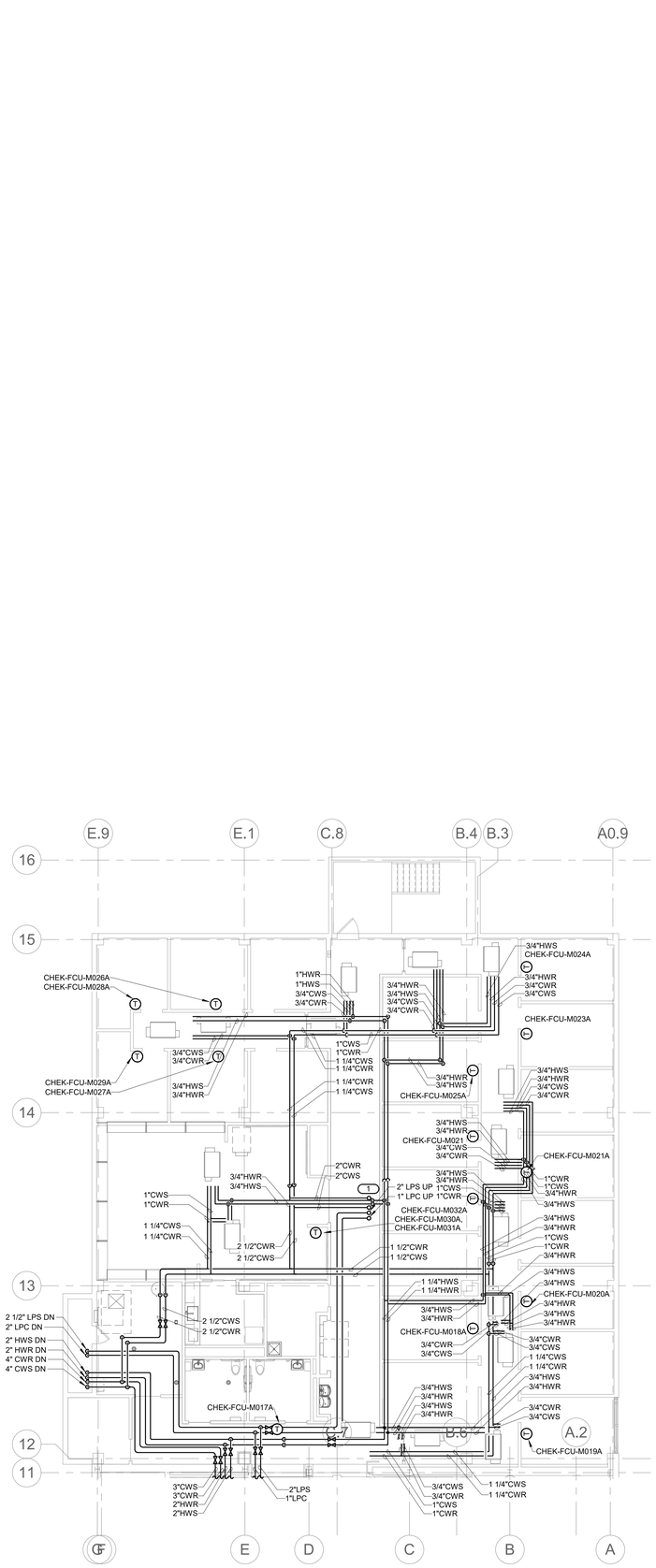
LEVEL 01 PLAN - PIPING

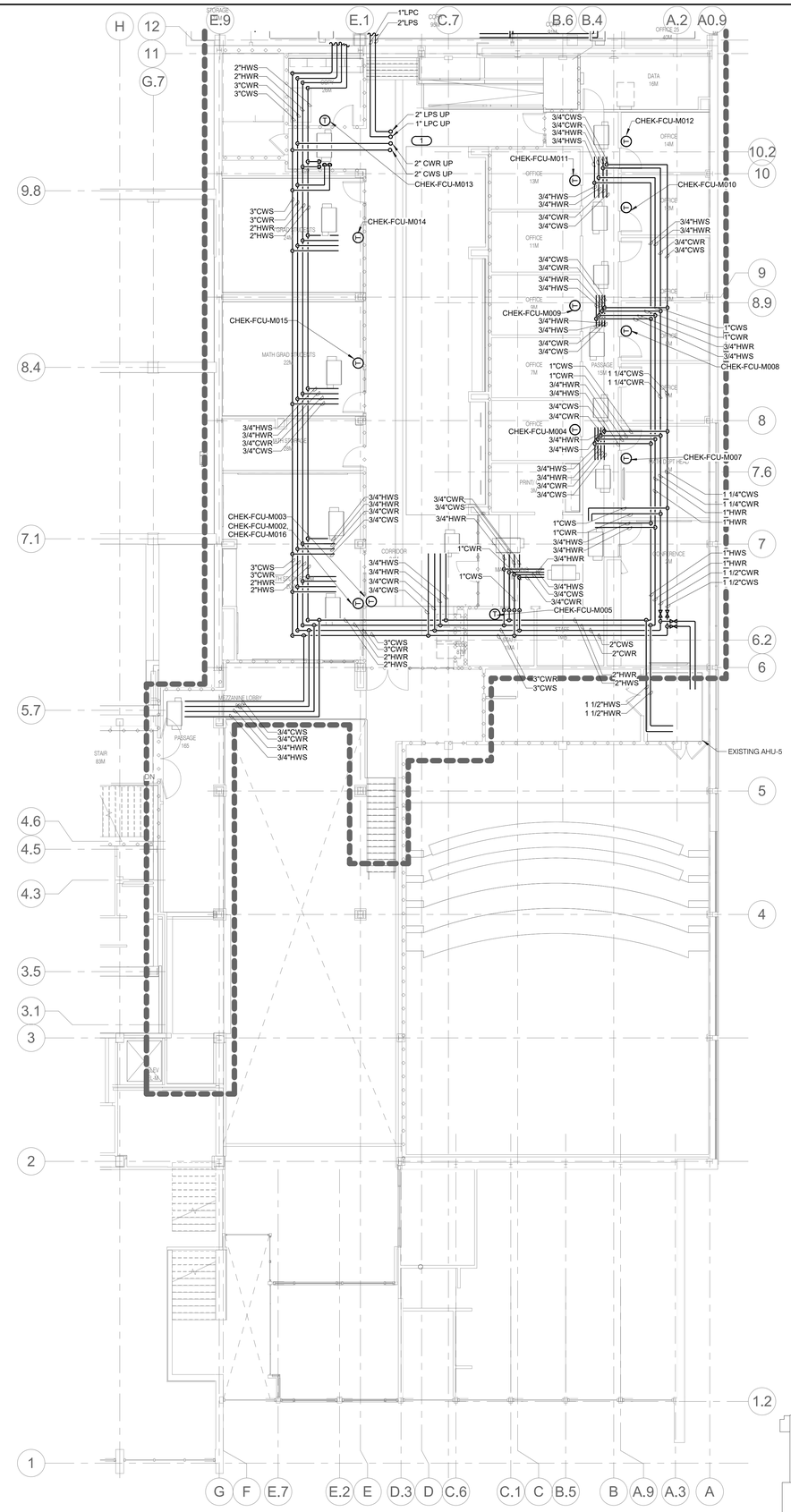
Sheet #:

MP2.11



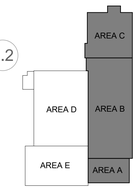
1 MEZZANINE PLAN - PIPING - AREA C

1/8" = 1'-0"



2 MEZZANINE PLAN - PIPING - AREAS A & B

1/8" = 1'-0"



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KEYNOTES: #

1. NEW 2" CWS ABD CWR UP TO SERVE EXISTING MAKE UP AIR UNIT.

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MEZZANINE LEVEL PLANS - PIPING

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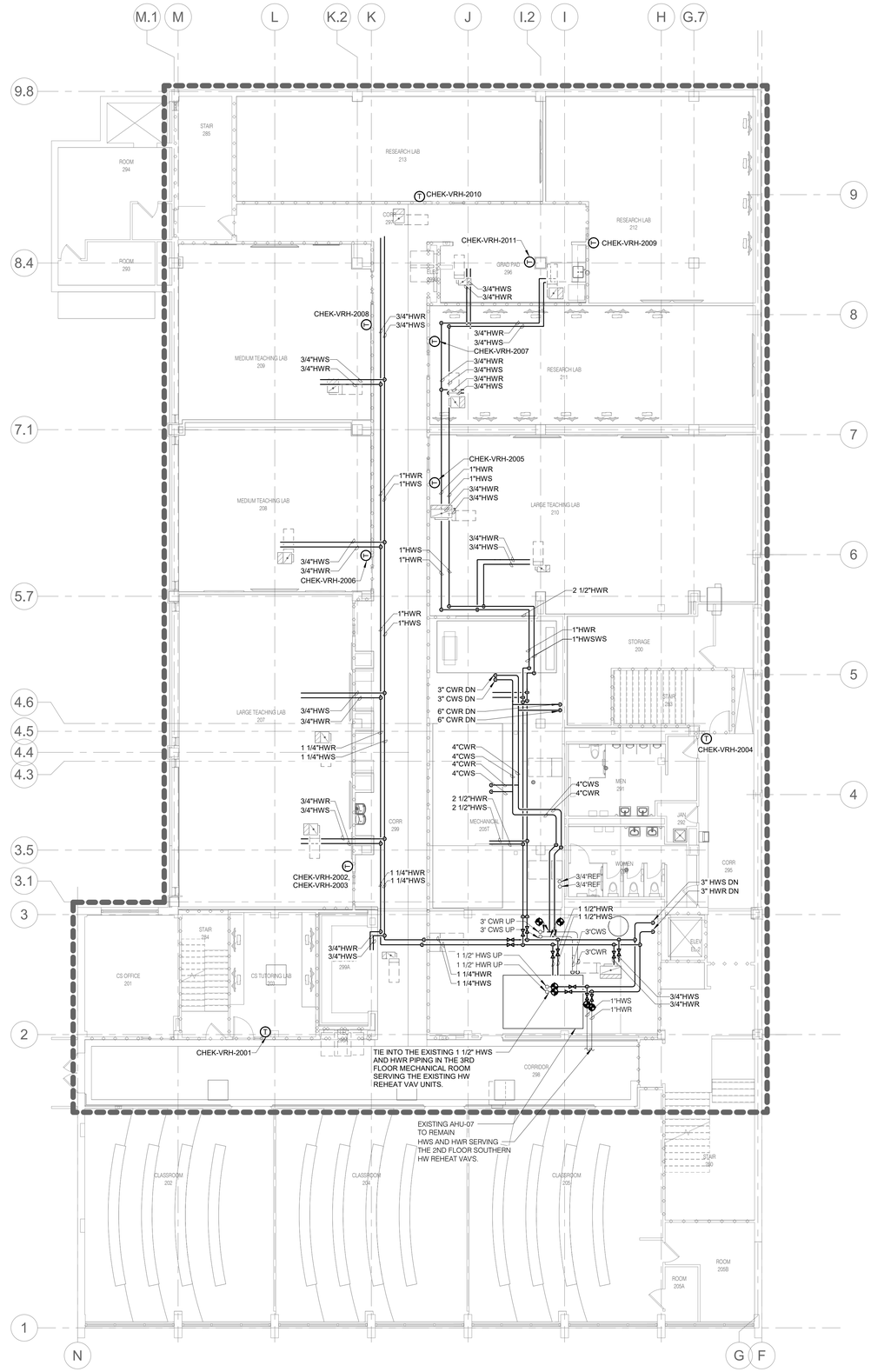
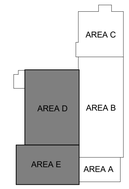


NORTH

1 LEVEL 02 PLAN - PIPING

1/8" = 1'-0"



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LEVEL 02 PLAN - PIPING

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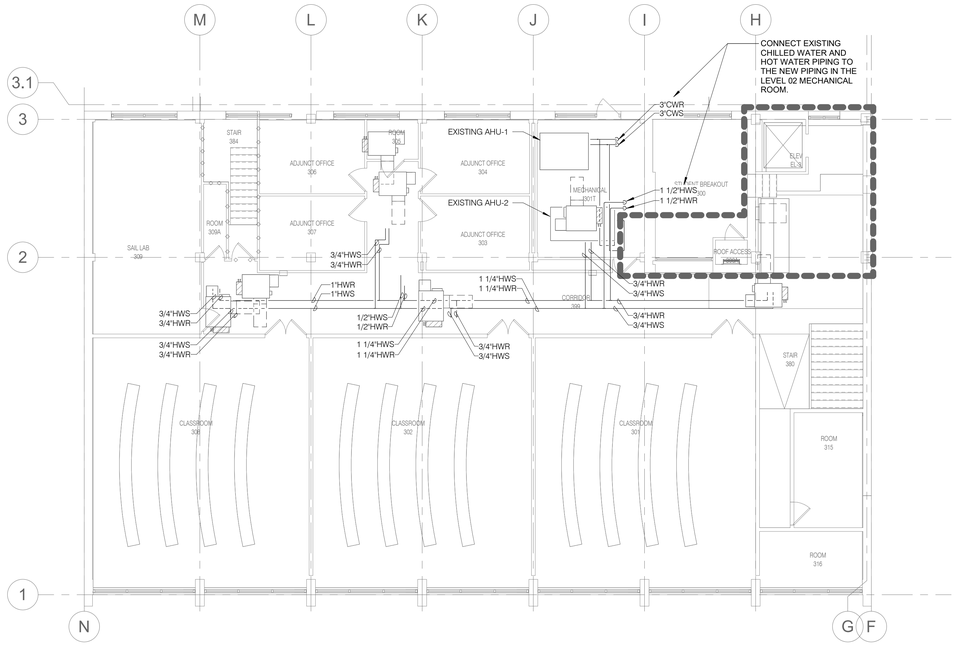
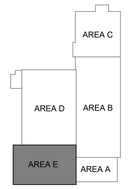
MP2.13



NORTH

1 LEVEL 03 PLAN - PIPING

1/8" = 1'-0"



KEY PLAN

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PROJECT #23008968.00

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CERTIFICATE OF AUTHORITY - E2017008530

Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS

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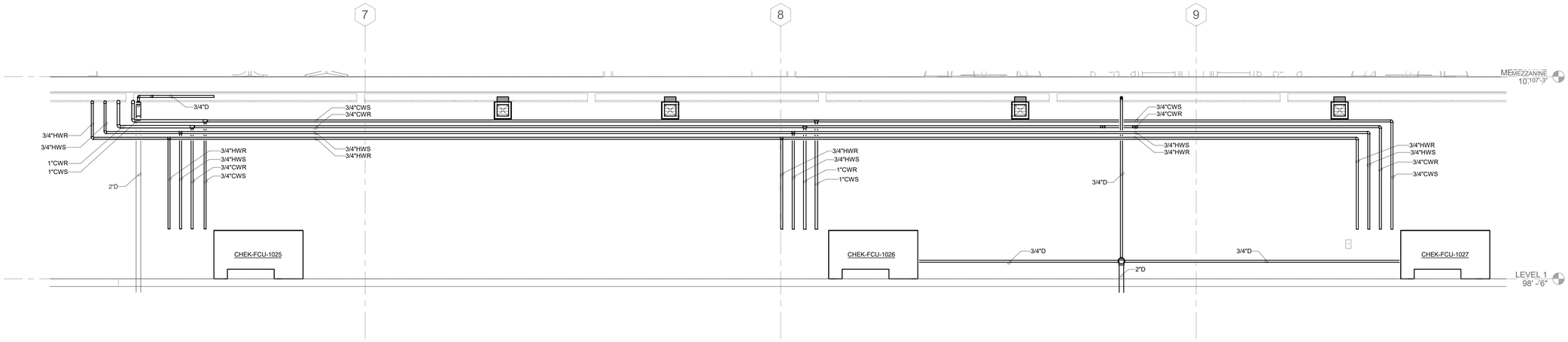
Sheet Title:

LEVEL 03 & ROOF PLAN - PIPING

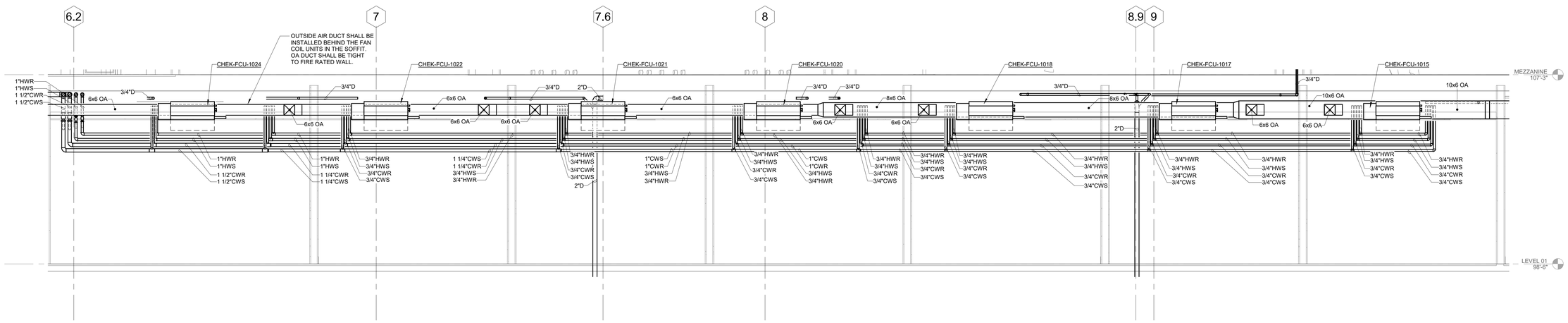
Sheet #:

MP2.14



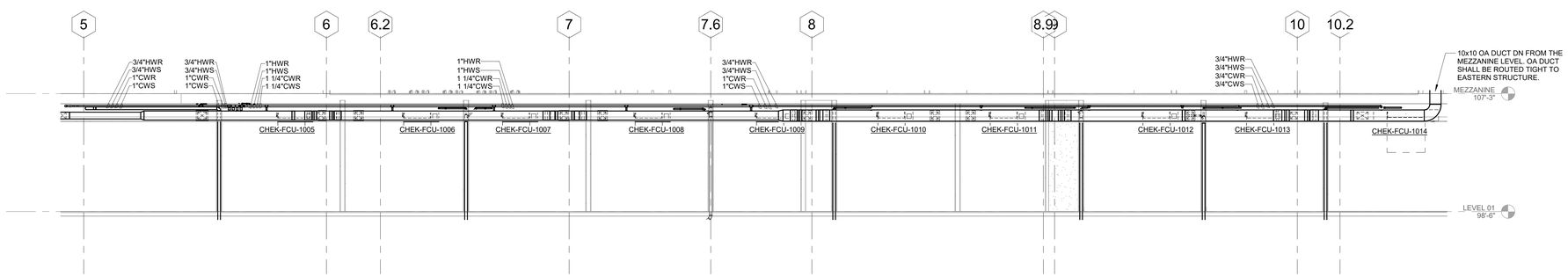
1 SECTION VIEW LEVEL 01

1/2" = 1'-0"



2 SECTION VIEW LEVEL 01

1/2" = 1'-0"



3 SECTION VIEW LEVEL 01

1/4" = 1'-0"

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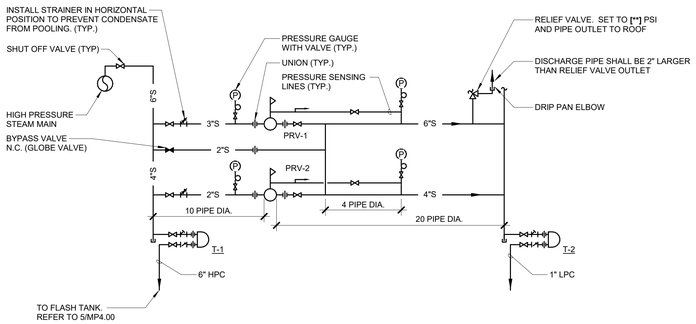
Sheet Title:

PIPING DIAGRAMS

Sheet #:

MP3.0

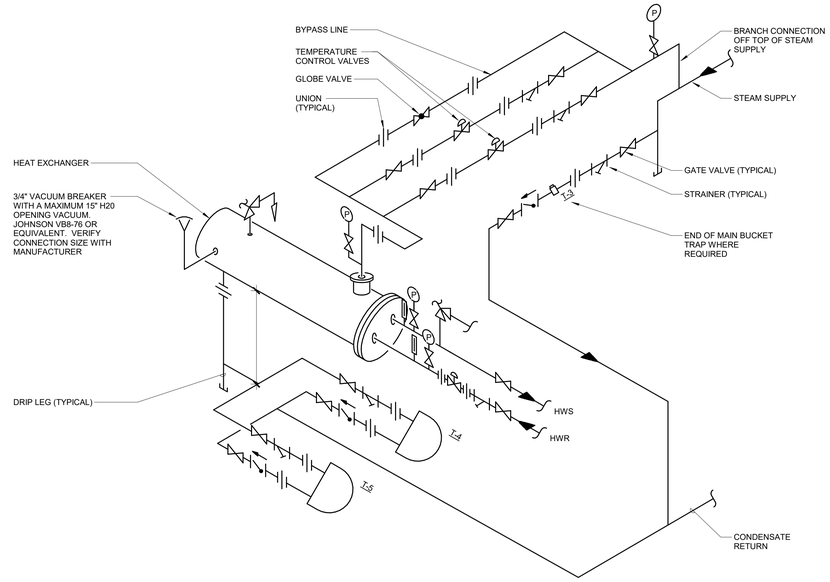


1 STEAM - PRESSURE REDUCING STATION PARALLEL

NO SCALE

NOTES:

1. CV OF BYPASS VALVE SHALL NOT BE GREATER THAN CV OF LARGEST PRV.
2. PRV'S ARE DESIGNED TO REDUCE 1/3 AND 2/3 OF THE TOTAL STEAM LOAD. THE 2/3 PRV SHALL BE SET 2-3 PSI BELOW THE 1/3 CAPACITY PRV.

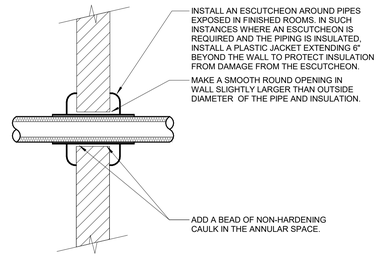


2 HEAT EXCHANGER - SHELL AND TUBE PIPING

NO SCALE

NOTES:

1. 1/3 - 2/3 VALVES ARE REQUIRED WHEN THE STEAM FLOW IS LARGER THAN THE CAPABILITY OF A 1 1/4" VALVE, AT THE PRESCRIBED PRESSURE DROP.
2. INSTALL A 1" INLET/OUTLET ASME "UV" RELIEF VALVE SET AT 125 PISG. PIPE TO A FLOOR DRAIN WITH AIR GAP. RELIEF VALVE TO BE ON EXCHANGER SIDE OF SHUT-OFF VALVE.
3. BALL VALVE IN PIPING 2" AND SMALLER. BUTTERFLY VALVE IN PIPING ABOVE 2" (TYPICAL).
4. GLOBE VALVE TO BE ONE HALF THE SIZE OF LARGER TEMPERATURE CONTROL VALVE.
5. LINE SIZE TWO-POSITION MOTORIZED VALVE FOR ISOLATION AND BALANCING.
6. CONTRACTOR MUST VERIFY NUMBER OF HEAT EXCHANGERS AND APPLY THIS DETAIL TO EACH HEAT EXCHANGER.

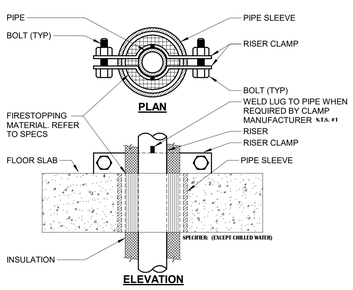


3 WALL PENETRATION - NON-FIRE RATED

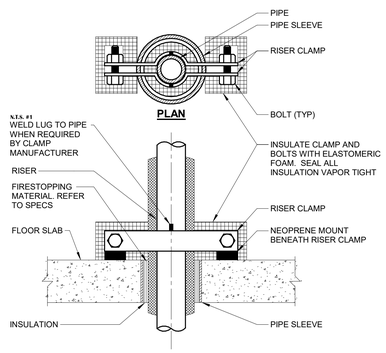
NO SCALE

NOTES:

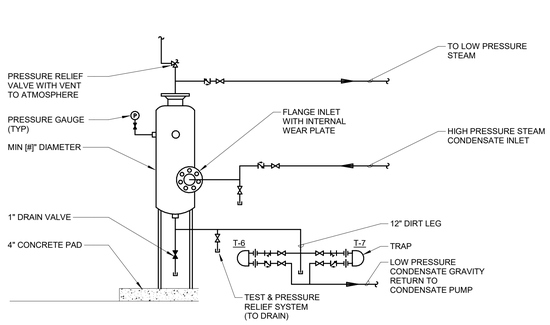
1. THIS DETAIL APPLIES TO ALL PIPES. THE INTENTION IS TO CONTINUE THE INSULATION AND VAPOR BARRIER THROUGH ALL PENETRATIONS. PERMIT THERMAL EXPANSION WITHOUT DAMAGING
2. INSULATION, AND TO SEAL AIRTIGHT AROUND INSULATED AND UNINSULATED PIPES FOR NOISE SEE SPECIFICATION SECTIONS (SECTION 22 05 03 - PLUMBING AND (SECTION 22 05 29 - PLUMBING) FOR ADDITIONAL INFORMATION.



INSULATED HOT PIPE RISER SUPPORT



INSULATED COLD PIPE RISER SUPPORT

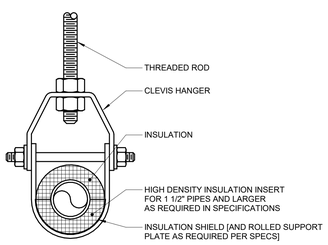


5 STEAM - FLASH TANK

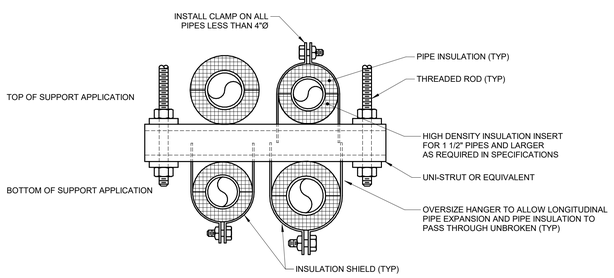
NO SCALE

6 CONDENSATE METER DETAIL

NO SCALE



INSULATED COLD PIPE HANGER



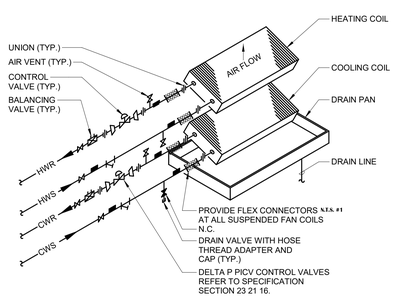
TRAPEZE HANGER

4 PIPE - HANGERS AND SUPPORTS

NO SCALE

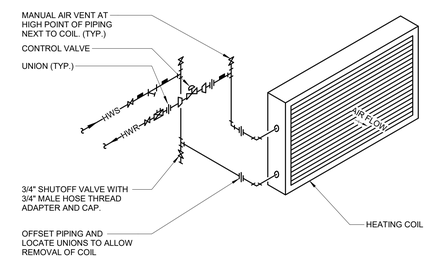
NOTES:

1. REFER TO SPECIFICATION SECTIONS (SECTION 22 05 29-PLUMBING, SECTION 23 05 29-HVAC) & (SECTION 22 07 19-PLUMBING, SECTION 23 07 19-HVAC).



7 FAN COIL UNIT - 4-PIPE PIPING DIAGRAM

NO SCALE



8 COIL - HOT WATER PIPING DIAGRAM W/2-WAY VALVE

NO SCALE

NOTES:

1. SEE SPECIFICATION SECTION 23 21 00 - HYDRONIC PIPING FOR BALANCE VALVE SIZING REQUIREMENTS.

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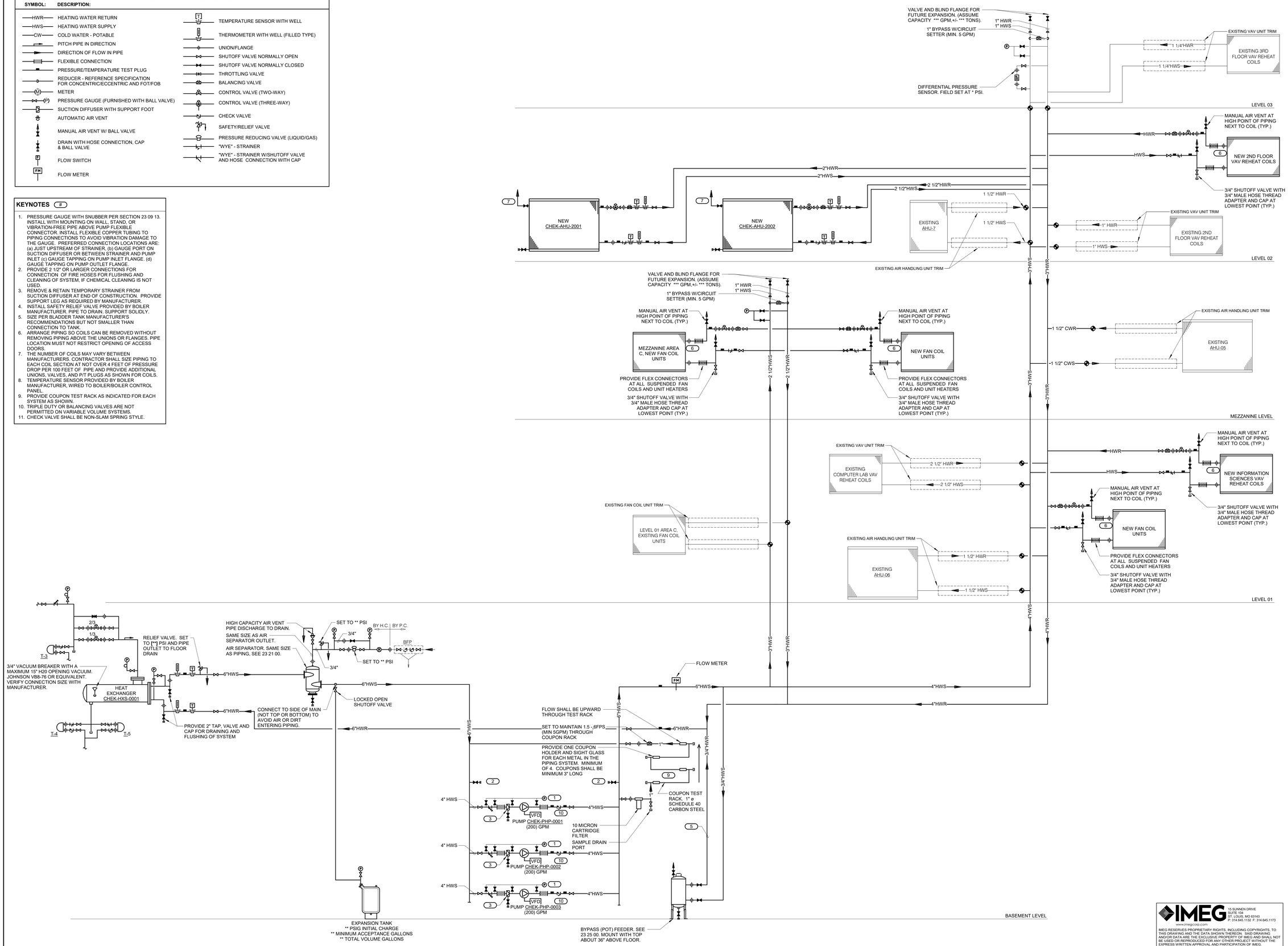
HEATING WATER FLOW DIAGRAM SYMBOL LIST

SYMBOL:	DESCRIPTION:
HWR	HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
CW	COLD WATER - POTABLE
	PITCH PIPE IN DIRECTION
	DIRECTION OF FLOW IN PIPE
	FLEXIBLE CONNECTION
	PRESSURE/TEMPERATURE TEST PLUG
	REDUCER - REFERENCE SPECIFICATION FOR CONCENTRIC/ECCENTRIC AND FOT/FOB
M	METER
P	PRESSURE GAUGE (FURNISHED WITH BALL VALVE)
	SUCTION DIFFUSER WITH SUPPORT FOOT
	AUTOMATIC AIR VENT
	MANUAL AIR VENT W/ BALL VALVE
	DRAIN WITH HOSE CONNECTION, CAP & BALL VALVE
F	FLOW SWITCH
FM	FLOW METER
T	TEMPERATURE SENSOR WITH WELL
	THERMOMETER WITH WELL (FILLED TYPE)
	UNION/FLANGE
	SHUTOFF VALVE NORMALLY OPEN
	SHUTOFF VALVE NORMALLY CLOSED
	THROTTLING VALVE
	BALANCING VALVE
	CONTROL VALVE (TWO-WAY)
	CONTROL VALVE (THREE-WAY)
	CHECK VALVE
	SAFETY/RELIEF VALVE
	PRESSURE REDUCING VALVE (LIQUID/GAS)
	"WYE" - STRAINER
	"WYE" - STRAINER W/SHUTOFF VALVE AND HOSE CONNECTION WITH CAP

KEYNOTES (#)

1. PRESSURE GAUGE WITH SNUBBER PER SECTION 23 09 13. INSTALL WITH MOUNTING ON WALL, STAND, OR VIBRATION-FREE PIPE ABOVE PUMP FLEXIBLE CONNECTOR. INSTALL FLEXIBLE COPPER TUBING TO PIPING CONNECTIONS TO AVOID VIBRATION DAMAGE TO THE GAUGE. PREFERRED CONNECTION LOCATIONS ARE: (a) JUST UPSTREAM OF STRAINER, (b) GAUGE PORT ON SUCTION DIFFUSER OR BETWEEN STRAINER AND PUMP INLET (c) GAUGE TAPPING ON PUMP INLET FLANGE. (d) GAUGE TAPPING ON PUMP OUTLET FLANGE.
2. PROVIDE 2 1/2" OR LARGER CONNECTIONS FOR CONNECTION OF FIRE HOSES FOR FLUSHING AND CLEANING OF SYSTEM, IF CHEMICAL CLEANING IS NOT USED.
3. REMOVE & RETAIN TEMPORARY STRAINER FROM SUCTION DIFFUSER AT END OF CONSTRUCTION. PROVIDE SUPPORT LEG AS REQUIRED BY MANUFACTURER.
4. INSTALL SAFETY RELIEF VALVE PROVIDED BY BOILER MANUFACTURER. PIPE TO DRAIN. SUPPORT SOLIDLY.
5. SIZE PER BLADDER TANK MANUFACTURER'S RECOMMENDATIONS BUT NOT SMALLER THAN CONNECTION TO TANK.
6. ARRANGE PIPING SO COILS CAN BE REMOVED WITHOUT REMOVING PIPING ABOVE THE UNIONS OR FLANGES. PIPE LOCATION MUST NOT RESTRICT OPENING OF ACCESS DOORS.
7. THE NUMBER OF COILS MAY VARY BETWEEN MANUFACTURERS. CONTRACTOR SHALL SIZE PIPING TO EACH COIL SECTION AT NOT OVER 4 FEET OF PRESSURE DROP PER 100 FEET OF PIPE AND PROVIDE ADDITIONAL UNIONS, VALVES, AND P/T PLUGS AS SHOWN FOR COILS.
8. TEMPERATURE SENSOR PROVIDED BY BOILER MANUFACTURER, WIRED TO BOILER/BOILER CONTROL PANEL.
9. PROVIDE COUPON TEST RACK AS INDICATED FOR EACH SYSTEM AS SHOWN.
10. TRIPLE DUTY OR BALANCING VALVES ARE NOT PERMITTED ON VARIABLE VOLUME SYSTEMS.
11. CHECK VALVE SHALL BE NON-SLAM SPRING STYLE.



1 HEATING PLANT - HEAT EXCHANGER VARIABLE/PRIMARY FLOW DIAGRAM

12" = 1'-0"

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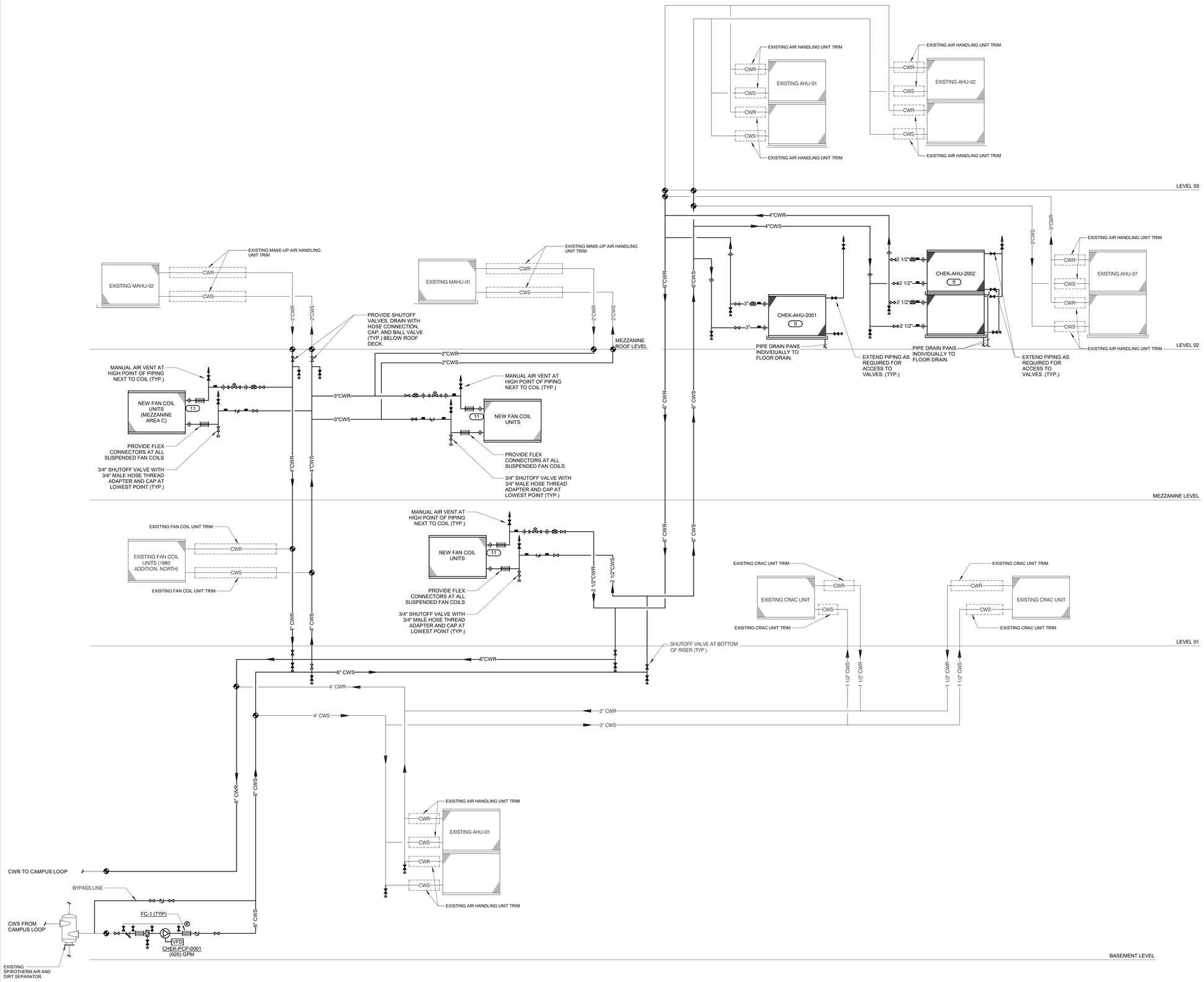

1 CAMPUS CHILLED WATER SYSTEM FLOW DIAGRAM

NO SCALE

KEYNOTES:

1. PRESSURE GAUGE WITH SNUBBER PER SPECIFICATIONS. MOUNT ON WALL, STAND, OR VIBRATION-FREE PIPE BRACKET ABOVE PUMP. INSTALL FLEXIBLE COPPER TUBING TO PIPING CONNECTIONS TO AVOID VIBRATION DAMAGE TO THE GAUGE. GAUGE SHALL BE GLYCERIN FILLED. PREFERRED CONNECTION LOCATIONS ARE: (a) JUST UPSTREAM OF STRAINER, (b) GAUGE PORT ON SUCTION DIFFUSER OR BETWEEN STRAINER & PUMP INLET, (c) GAUGE TAPPING ON PUMP INLET FLANGE, (d) GAUGE TAPPING ON PUMP OUTLET FLANGE.
2. WELD/THREADED COPPER OR STEEL CONNECTIONS ARRANGED TO PERMIT PULLING OF TUBES WITH REMOVAL OF MINIMUM AMOUNT OF PIPE. MINIMUM OF THREE FLEXIBLE GROOVED COUPLINGS OR FC-1 FOR VIBRATION ISOLATION. REFER TO SPECIFICATIONS.
3. CHILLED WATER SIDE SAFETY RELIEF VALVES PER ASME. 3/4" SRV-1. REFER TO SPECIFICATIONS.
4. PRESSURE GAUGES SHALL BE GLYCERIN FILLED.
5. REMOVE & RETAIN TEMPORARY STRAINER FROM SUCTION DIFFUSER AT END OF CONSTRUCTION. PROVIDE SUPPORT LEG AS REQUIRED BY MANUFACTURER.
6. DIFFERENTIAL PRESSURE SENSOR USED TO CONTROL VFD'S. PIPE PER MANUFACTURER'S RECOMMENDATIONS. VERIFY FINAL LOCATION WITH ENGINEER.
7. CHILLED WATER MAKE-UP WATER METER. MONITORED BY BUILDING AUTOMATION SYSTEM.
8. PROVIDE SIGN "DO NOT SHUT DURING SYSTEM OPERATION".
9. THE NUMBER OF COILS MAY VARY BETWEEN MANUFACTURERS. CONTRACTOR SHALL SIZE PIPING TO EACH COIL SECTION AT NOT OVER 4 FEET OF PRESSURE DROP PER 100 FEET OF PIPE AND PROVIDE ADDITIONAL UNIONS, VALVES, AND P/T PLUGS AS SHOWN FOR COILS.
10. ARRANGE PIPING SO COILS CAN BE REMOVED WITHOUT REMOVING PIPING ABOVE THE UNIONS OR FLANGES. PIPE LOCATION MUST NOT RESTRICT OPENING OF ACCESS DOORS.
11. TRIPLE DUTY OR BALANCING VALVES ARE NOT PERMITTED ON VARIABLE FLOW SYSTEMS. USE FLOW METER VENTURI FOR PUMP FLOW TESTING.

FLOW DIAGRAM SYMBOLS LIST

SYMBOL:	DESCRIPTION:
CW	COLD WATER - POTABLE
CWR	CHILLED WATER RETURN
CWS	CHILLED WATER SUPPLY
D	DRAIN LINE
NCW	NON-POTABLE COLD WATER
	PITCH PIPE IN DIRECTION
	DIRECTION OF FLOW IN PIPE
	UNION/FLANGE
	SHUTOFF VALVE NORMALLY OPEN
	SHUTOFF VALVE NORMALLY CLOSED
	VENTURI VALVE
	THROTTLING VALVE
0.5	BALANCING VALVE (NO. INDICATES GPM)
	AUTOMATIC DRAIN VALVE
	CONTROL VALVE (THREE-WAY)
	CONTROL VALVE (TWO-WAY)
	SOLENOID/TWO POSITION VALVE
	CHECK VALVE
	SAFETY/RELIEF VALVE
	PRESSURE REDUCING VALVE (LIQUID/GAS)
	"WYE" - STRAINER
	"WYE" - STRAINER W/SHUTOFF VALVE AND HOSE CONNECTION WITH CAP
	FLEXIBLE CONNECTION
	PRESSURE/TEMPERATURE TEST PLUG
	REDUCER - REFERENCE SPECIFICATION FOR CONCENTRIC/ECCENTRIC AND FOT/FOB
M	METER
P	PRESSURE GAUGE (FURNISHED WITH BALL VALVE)
	SUCTION DIFFUSER WITH SUPPORT FOOT
	AUTOMATIC AIR VENT
	MANUAL AIR VENT W/ BALL VALVE
	DRAIN WITH HOSE CONNECTION, CAP & BALL VALVE
T	TEMPERATURE SENSOR WITH WELL
	THERMOMETER WITH WELL (FILLED TYPE)
F	FLOW SWITCH
FM	FLOW METER

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CERTIFICATE OF AUTHORITY - E2017008530

Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS

#	Date / Description
1	
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3	
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Sheet Title:

PIPING CONTROLS

Sheet #:

MP5.01

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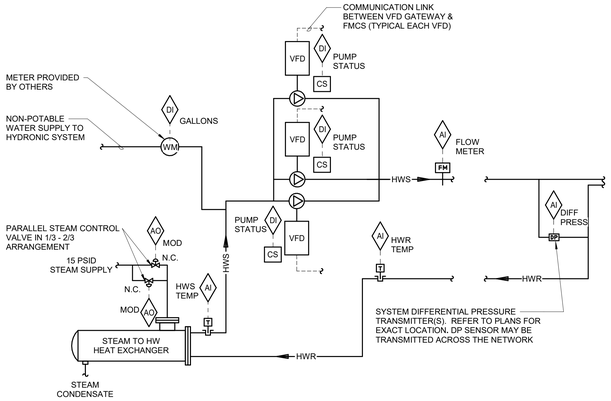
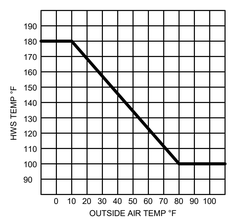
PROJECT #23008968.00





HWS TEMP RESET SCHEDULE

SEQUENCE OF OPERATION:
THE STEAM CONTROL VALVES SHALL MODULATE TO THE HEAT EXCHANGER AS REQUIRED TO MAINTAIN SYSTEM SUPPLY TEMP AS FOLLOWS:

- THE 1/3 CAPACITY STEAM CONTROL VALVE SHALL BE MODULATED IN ORDER TO MAINTAIN THE HEATING WATER SUPPLY TEMPERATURE.
- IF THE 1/3 CAPACITY CONTROL VALVE IS 100% OPEN AND THE HEAT EXCHANGER IS UNABLE TO MAINTAIN SETPOINT, THE 1/3 CAPACITY CONTROL VALVE SHALL CLOSE AND THE 2/3 CAPACITY STEAM CONTROL VALVE SHALL MODULATE TO MAINTAIN SETPOINT.
- IF THE 2/3 CAPACITY CONTROL VALVE IS 100% OPEN AND IS UNABLE TO MAINTAIN SETPOINT, THE 2/3 CAPACITY CONTROL VALVE SHALL REMAIN OPEN AND THE 1/3 CAPACITY CONTROL VALVE SHALL ALSO MODULATE OPEN TO MAINTAIN SETPOINT.
- ON A DECREASE IN LOAD, THE 2/3 CAPACITY STEAM CONTROL VALVE SHALL REMAIN OPEN AND THE 1/3 CAPACITY STEAM CONTROL VALVE SHALL MODULATE CLOSED UNTIL SETPOINT IS ACHIEVED.
- ON A FURTHER DECREASE IN LOAD, THE 1/3 CAPACITY STEAM CONTROL VALVE SHALL REMAIN SHUT AND THE 2/3 CAPACITY STEAM CONTROL VALVE SHALL MODULATE CLOSED UNTIL SETPOINT IS ACHIEVED OR UNTIL IT REACHES 40% (ADJ.) OPEN.
- IF THE 2/3 CAPACITY STEAM CONTROL VALVE REACHES 40% (ADJ.) OPEN AND SETPOINT IS STILL NOT ACHIEVED, THE 2/3 CAPACITY STEAM CONTROL VALVE SHALL CLOSE AND THE 1/3 CAPACITY STEAM CONTROL VALVE SHALL MODULATE OPEN UNTIL SETPOINT IS ACHIEVED.

STEAM CONTROL VALVE OPERATION SHALL NOT BE ENABLED UNLESS ONE HW PUMP IS RUNNING AS PROVEN BY VFD STATUS. FMCS SHALL LIMIT THE HWS TEMP TO MAX. 190°F (ADJ.).

THE FMCS SHALL MODULATE OUTPUT TO THE VFD AS REQUIRED TO MAINTAIN DP SETPOINT AT THE LOCATION OF THE DP TRANSMITTER. THE DP SETPOINT SHOULD BE MAINTAINED AT THE BOTH DP TRANSMITTERS. FMCS SHALL RESET THE DP SETPOINT UNTIL ONE MODULATING CONTROL VALVE IS 95% OPEN. IN NO CASE SHALL DP SETPOINT EXCEED 10 PSID (ADJ.) OR DROP BELOW 2 PSID.

HWS TEMP SETPOINT:
FMCS SHALL RESET THE HWS TEMP IN ACCORDANCE WITH HWS RESET SCHEDULE.

HEATING WATER PUMP CONTROL:
START/STOP: THE FMCS SHALL START THE LEAD PUMP VIA THE VFD AND SHALL RUN CONTINUOUSLY. HEATING WATER PUMPS SHALL BE STARTED AND STOPPED THROUGH A HAND-OFF-AUTO SWITCH ON THE FACE OF THE VFD. WHEN PLACED IN THE HAND POSITION, PUMP MOTOR SHALL RUN CONTINUOUSLY. WHEN PLACED IN THE AUTO POSITION, THE FMCS SHALL CONTROL PUMP OPERATION. WHEN PLACED IN THE OFF POSITION, THE PUMP MOTOR SHALL BE DE-ENERGIZED.

THE FMCS SHALL MODULATE OUTPUT TO THE VFD AS REQUIRED TO MAINTAIN DP SETPOINT AT THE LOCATION OF THE DP TRANSMITTER. FMCS SHALL RESET THE DP SETPOINT UNTIL ONE SYSTEM COIL MODULATING CONTROL VALVE IS 95% OPEN. IN NO CASE SHALL DP SETPOINT EXCEED 10 PSID (ADJ) OR DROP BELOW 2 PSID.

PUMP SETTING: IF THE OPERATING PUMP(S) CANNOT MAINTAIN THE DIFFERENTIAL PRESSURE SETPOINT FOR 10 MINUTES (ADJ). THE OPERATING PUMP(S) SPEED SHALL BE REDUCED TO 60% (ADJ). AND THE LAG PUMP SHALL START. ONCE ALL OPERATING PUMP(S) ARE AT 60% (ADJ) SPEED. THE PUMPS SHALL MODULATE IN UNISON TO MAINTAIN THE DIFFERENTIAL PRESSURE SETPOINT.

WHEN THE OPERATING PUMP(S) SPEED BELOW 40% (ADJ) FOR 15 MINUTES (ADJ). TURN OFF THE LAG PUMP. THE REMAINING OPERATING PUMPS SHALL MODULATE IN UNISON TO MAINTAIN THE DIFFERENTIAL PRESSURE SETPOINT.

THE FMCS SHALL CHANGE THE LEAD/LAG PUMPS ON A WEEKLY BASIS AT 10 AM ON TUESDAY. INCLUDE GRAPHIC TOGGLE ON OPERATOR WORKSTATION GRAPHICAL SCREEN TO ALLOW OPERATOR TO MANUALLY SELECT WHICH PUMP IS LEAD AND WHICH IS LAG.

ALARMS, INTERLOCKS & SAFETIES:
FMCS SHALL INDICATE AN ALARM TO THE FMCS OPERATOR WORKSTATION IN THE EVENT THE FOLLOWING OCCUR:

- SHOULD THE FMCS COMMAND THE LEAD HW PUMP TO OPERATE AND THE PUMP FAILS TO DO SO AS DETERMINED BY THE VFD STATUS, AN ALARM SHALL BE INDICATED AT THE FMCS OPERATOR WORKSTATION AND THE LAG HW PUMP SHALL AUTOMATICALLY START.
- AN ALARM CONDITION OCCURS AT ANY VFD.
- WHEN 2 GALLONS (ADJ.) OF HYDRONIC SYSTEM MAKE-UP WATER FLOWS THROUGH METER AFTER THE LAST ACKNOWLEDGEMENT. WHEN ALARM IS MANUALLY ACKNOWLEDGED, THE FMCS SHALL RE-ZERO THE COUNTER.
- IF HEATING WATER SUPPLY TEMPERATURE IS MORE THAN 5°F (ADJ.) ABOVE OR BELOW SETPOINT FOR MORE THAN 10 MINUTES (ADJ.).
- IF SYSTEM DIFFERENTIAL PRESSURE IS NOT MAINTAINED FOR MORE THAN 15 MINUTES (ADJ.).

HEATING SYSTEM REPORT GENERATION

FMCS SHALL MONITOR THE FOLLOWING POINTS ON 5 MINUTE (ADJ.) INTERVALS WITHIN A SINGLE TREND. THE TREND SHALL RUN FOR A 14-DAY (ADJ.) DURATION AT WHICH POINT THE NEWEST VALUES SHALL OVERWRITE THE OLDEST VALUES:

- DATE
- TIME
- GLOBAL OUTSIDE AIR TEMP. (°F)
- HEATING WATER SUPPLY TEMP. (°F)
- HEATING WATER RETURN TEMP. (°F)
- HEATING WATER FLOWRATE (GPM)
- HEATING SYSTEM LOAD (BTU/HR.)
- OPERATIONAL STATUS OF EACH HEAT EXCHANGER AND PUMP

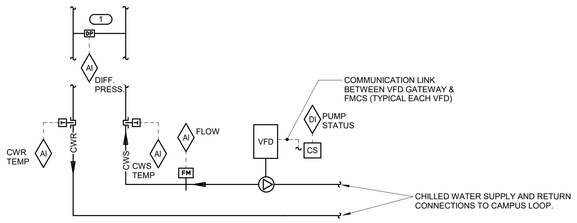
THIS INFORMATION SHALL BE ACCESSIBLE TO VIEW IN EITHER TABULAR OR GRAPHICAL FORM ON THE FMCS OPERATOR INTERFACE.

TRENDING REQUIREMENTS:
DIGITAL POINTS: RECORD EVERY CHANGE OF ACTION WITH CORRESPONDING TIME STAMP FOR POINTS LISTED.
ANALOG POINTS: RECORD EVERY [15 MINUTES] WITH CORRESPONDING TIME STAMP FOR POINTS LISTED.
[INCLUDE MEETING TO ESTABLISH CUSTOM REPORTS TO OVERLAY [#]# POINTS DESCRIBED ABOVE AS DESIRED BY OWNER]
THIS INFORMATION SHALL BE STORED TO A MEMORY LOCATION ON THE FMCS OPERATOR WORKSTATION THAT IS MAINTAINED FOR A PERIOD OF ONE YEAR.

HEATING WATER SYSTEM REPORT GENERATION

1 HEATING PLANT - HEATING CONTROL - HEAT EXCHANGER VARIABLE/PRIMARY

NO SCALE



KEYNOTES:

1. SYSTEM DIFFERENTIAL PRESSURE TRANSMITTER(S). REFER TO PLANS FOR EXACT LOCATION. DP SENSOR MAY BE TRANSMITTED ACROSS THE NETWORK
2. REDUNDANT DIFFERENTIAL PRESSURE TRANSMITTER. DP TRANSMITTER SIGNAL SHALL BE WIRED DIRECTLY TO THE CONTROLLER SERVING PUMP VFD (SIGNAL SHALL NOT BE TRANSMITTED ACROSS THE NETWORK/FMCS)

SEQUENCE OF OPERATION

CHILLED WATER PUMP CONTROL:
THE FMCS SHALL MODULATE OUTPUT TO THE PUMP VFD AS REQUIRED TO MAINTAIN DP SETPOINT AT THE LOCATION OF THE DP TRANSMITTER. FMCS SHALL RESET THE DP SETPOINT UNTIL ONE MODULATING CONTROL VALVE IS 95% OPEN AS DETERMINED BY THE VALVE FEEDBACK. IN NO CASE SHALL DP SETPOINT EXCEED 10 PSID (ADJ.) OR DROP BELOW 2 PSID (ADJ.).

ALARMS, INTERLOCKS AND SAFETIES:
AN ALARM SHALL BE INDICATED AT THE FMCS WHEN THE FOLLOWING OCCUR:

- IF CHILLED WATER SUPPLY TEMPERATURE IS MORE THAN 5°F (ADJ.) ABOVE OR BELOW SETPOINT FOR MORE THAN 10 MINUTES (ADJ.).
- SHOULD THE FMCS COMMAND THE PUMP TO OPERATE AND THE PUMP FAILS TO DO SO AS DETERMINED BY THE VFD STATUS, AN ALARM SHALL BE INDICATED AT THE FMCS OPERATOR WORKSTATION AND THE FMCS SHALL START THE LAG PUMP.
- AN ALARM CONDITION OCCURS AT ANY VFD.
- IF SYSTEM DIFFERENTIAL PRESSURE IS NOT MAINTAINED FOR MORE THAN 15 MINUTES (ADJ.).

CHILLER PLANT REPORT GENERATION:
FMCS SHALL MONITOR THE FOLLOWING POINTS ON 10 MINUTE (ADJ.) INTERVALS WITHIN A SINGLE TREND. THE TREND SHALL RUN FOR A 14-DAY (ADJ.) DURATION AT WHICH POINT THE NEWEST VALUES SHALL OVERWRITE THE OLDEST VALUES:

- DATE
- TIME
- GLOBAL OUTSIDE AIR TEMP [°F]
- GLOBAL OUTSIDE AIR DEWPOINT [°F]
- CHILLED WATER SUPPLY TEMP [°F]
- CHILLED WATER RETURN TEMP [°F]
- TOTAL CHILLED WATER FLOWRATE [GPM]
- TOTAL CHILLED WATER SYSTEM LOAD [TONS]

THIS INFORMATION SHALL BE ACCESSIBLE TO VIEW IN EITHER TABULAR OR GRAPHICAL FORM ON THE FMCS OPERATOR WORKSTATION.

TRENDING REQUIREMENTS:
DIGITAL POINTS: RECORD EVERY CHANGE OF ACTION WITH CORRESPONDING TIME STAMP FOR POINTS LISTED.
ANALOG POINTS: RECORD EVERY [15 MINUTES] WITH CORRESPONDING TIME STAMP FOR POINTS LISTED.
[INCLUDE MEETING TO ESTABLISH CUSTOM REPORTS TO OVERLAY [#]# POINTS DESCRIBED ABOVE AS DESIRED BY OWNER]
THIS INFORMATION SHALL BE STORED TO A MEMORY LOCATION ON THE FMCS OPERATOR WORKSTATION THAT IS MAINTAINED FOR A PERIOD OF ONE YEAR.

CHILLER PLANT REPORT GENERATION

2 CHILLED WATER PLANT VARIABLE PRIMARY

NO SCALE

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PIPING CONTROLS

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MP5.02

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PROJECT #23008968.00

PUMP SCHEDULE

NOTES:
1.PROVIDE SHAFT GROUNDING AS REQUIRED IN THE MOTOR SPECIFICATION ----{15170].[22 05 13].[23 05 13].

							ELECTRICAL (NOTE 1)									MAX. DIMENSIONS						
											DISCONNECT		CONTROLLER/ STARTER									
TAG NAME	AREA SERVED	GPM	PUMP FT. HEAD AT DESIGN	MINIMUM PUMP EFFICIENCY	INLET SIZE	IMPELLER SIZE (IN.)	HP (NOTE E)	RPM	VOLTAGE	PHASES	BY (NOTE A)	TYPE (NOTE B)	BY (NOTE A)	TYPE (NOTE C)	EMERGENCY POWER	LENGTH	WIDTH	HEIGHT	WEIGHT	MANUFACTURER	MODEL	NOTES
CHEK-PCP-0001	CHILLED WATER SYSTEM	920.0	48.00	84.6	6"	8.250	15	1800	208	3	EC	NF	EC	VFD	No	45"	21"	25"	625	B & G	1510 SERIES	
CHEK-PHP-0001	HEATING WATER SYSTEM	200.0	55.00	73.2	6"	7.750	5	1800	208	3	EC	NF	EC	VFD	No	34"	17"	16"	255	B & G	1510 SERIES	
CHEK-PHP-0002	HEATING WATER SYSTEM	200.0	55.00	73.2	6"	7.750	5	1800	208	3	EC	NF	EC	VFD	No	34"	17"	16"	255	B & G	1510 SERIES	
CHEK-PHP-0003	HEATING WATER SYSTEM	200.0	55.00	73.2	6"	7.750	5	1800	208	3	EC	NF	EC	VFD	No	34"	17"	16"	255	B & G	1510 SERIES	

HEAT EXCHANGER SCHEDULE - STEAM TO WATER

NOTES:
1. STEAM PRESSURE INDICATED IS THE PRESSURE AVAILABLE DOWNSTREAM OF THE CONTROL VALVE.
2. PROVIDE HEAT EXCHANGER WITH COPPER-NICKEL TUBING.

		WATER				STEAM (NOTE 1)				MAX. DIMENSIONS		WEIGHT				
TAG NAME	AREA SERVED	GPM	W.P.D. FT. HEAD	EWT °F	LWT °F	PSIG	LB/HR	HEATING SURFACE FT²	FOULING FACTOR	LENGTH	DIAMETER	DRY (LBS.)	OPERATING (LBS.)	MANUFACTURER	MODEL	NOTES
CHEK-HXS-0001	HEATING WATER SYSTEM	400.0	1.21	180	140	8	8154.57	208.0	0.0005	101"	1'-8"	882	1388	B&G	SU 147-2	NOTES 1, 2

PRESSURE REDUCING VALVE SCHEDULE

NOTES:
1. PRV STATION BASIS OF DESIGN SELECTED AS 1/3 (CHEK-PRV-0002) - 2/3 (CHEK-PRV-0001) ORIENTATION.

TAG NAME	AREA SERVED	LB/HR	INLET PRESSURE PSI	OUTLET PRESSURE PSI	VALVE SIZE	MANUFACTURER	MODEL	NOTES
CHEK-PRS-0001	STEAM SYSTEM	7735	95	15	2 1/2"	SPENCE	E	NOTE 1
CHEK-PRS-0002	STEAM SYSTEM	2738	95	15	1 1/2"	SPENCE	E	NOTE 1

TRAP SCHEDULE

NOTES:
1.CAPACITY LISTED IS FOR EACH TRAP AND INCLUDES SAFETY FACTOR.
2.SUITABLE TO 125 PSIG, SIDE INLET & OUTLET, SS FLOAT MECHANISM AND VALVE, CAST IRON BODY, BALANCED PRESSURE THERMOSTATIC AIR VENT, ALL INTERNALS REPLACEABLE IN-LINE.
3.CAPACITY AT OTHER DIFFERENTIAL PRESSURES SHALL BE AT LEAST 525#/HR AT 10 PSID, AND 1080#/HR AT 75 PSID. 1/8" ORIFICE.
4.WITH INTEGRAL VACUUM BREAKER.
5.SIDE INLET AND OUTLET INVERTED BUCKET TRAP. 250 PSIG RATED. CAST IRON BODY, ALL INTERNAL COMPONENTS OF STAINLESS STEEL AND REPLACEABLE IN-LINE.
6.CAPACITY AT OTHER DIFFERENTIAL PRESSURES SHALL BE AT LEAST 150#/HR AT 10 PSID, 310#/HR AT 40 PSID, & 420#/HR AT 75 PSID. #38 ORIFICE.

TAG NAME	AREA SERVED	TYPE	SAFETY FACTOR	SIZE	CAPACITY LB HR (NOTE 1)	PRESSURE DIFFERENTIAL	MANUFACTURER	MODEL	NOTES
T-1	STEAM SYSTEM	INVERTED BUCKET	1.5	3/4"	1100	95	ITT	FT125H	
T-2	STEAM SYSTEM	INVERTED BUCKET	1.5	3/4"	1600	15	ITT	FT015H	
T-3	STEAM SYSTEM	INVERTED BUCKET	2	1/2"	1700	15	ITT	B1015B-2	
T-4	STEAM SYSTEM	FLOAT & THERMOSTATIC	1.5	2 1/2"	20000	0.5	ITT	FT015C	
T-5	STEAM SYSTEM	FLOAT & THERMOSTATIC	1.5	2 1/2"	20000	0.5	ITT	FT015C	
T-6	STEAM SYSTEM	FLOAT & THERMOSTATIC	1.5	3/4"	680	1	ITT	FT015H	
T-7	STEAM SYSTEM	FLOAT & THERMOSTATIC	1.5	3/4"	680	1	ITT	FT015H	

SCHEDULE GENERAL NOTES:

A. DISCONNECT AND CONTROLLER STARTER FURNISHED AND INSTALLED BY:
MFR = MANUFACTURER
EC = ELECTRICAL CONTRACTOR.
MC = FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR.
MFR/EC = FURNISHED LOOSE BY MANUFACTURER INSTALLED BY ELECTRICAL CONTRACTOR.
TCC = TEMPERATURE CONTROL CONTRACTOR

B. DISCONNECT TYPE:
CB = CIRCUIT BREAKER
F = FUSED
NF = NON-FUSED
PLUG = PLUG AND CORD

C. CONTROLLER STARTER TYPE:
FV = FULL VOLTAGE
WYE = WYE-DELTA
SS = SOLID STATE (SOFT START)
MS = MANUAL STARTER
VFD = VARIABLE FREQUENCY DRIVE
VFD/B = VARIABLE FREQUENCY DRIVE WITH BYPASS
YD = WYE - DELTA
ECM = ELECTRONICALLY COMMUTATED MOTOR

D. FAN RPM SHALL NOT EXCEED 110% OF SCHEDULED VALUE, WITH THE SCHEDULED WHEEL TYPE. SUBSTITUTION OF BI OR BIA FANS FOR FC IS ACCEPTABLE IF EFFICIENCY IS NOT LOWER.

E. NO EQUIPMENT SHALL BE SELECTED ABOVE 90% OF MOTOR NAME PLATE RATING.

F. MUST BE WITHIN +/- 10% OF SCHEDULED RPM.

G. CURB TYPE:
MFR = STANDARD CURB BY MANUFACTURER
GC = BY GENERAL CONTRACTOR
SAC = SOUND ATTENUATOR CURB

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Sheet Title:

PIPING SCHEDULES

Sheet #:

MP6.00

VIEW KEY

NAME — LEVEL NAME
10'-0" — HEIGHT ABOVE PROJECT 0'-0"

1 — KEYNOTE: INDICATES NOTE USED TO DESCRIBE ADDITIONAL INFORMATION ABOUT WORK REQUIRED, SPECIFIC TO THE SHEET AND/OR DETAIL

INDICATES DIRECTION OF TRUE NORTH
PLAN OR DETAIL NUMBER
PLAN OR DETAIL NAME

NORTH — 1 — VIEW NAME — 1/8" = 1'-0" — PLAN OR DETAIL SCALE

SIM — INDICATES SIMILAR DETAIL REFERENCED IN MULTIPLE LOCATIONS
1 / M101 — DETAIL REFERRED TO BY SECTION CUT
SIM — 4 / 3 — SHEET DETAIL IS LOCATED ON — T101

LINE TYPE AND TAG KEY:

NEW WORK BY THIS CONTRACTOR (WIDE LINE)
NEW
EXISTING TO BE REMOVED (SHORT DASHED PATTERN)
NEW UNDERFLOOR OR UNDERGROUND (LONG DASHED PATTERN)

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

HALFTONING DOES NOT MODIFY SCOPE.

'TAG'-E — TAGS WITH DASH 'E' INDICATES THE REFERENCED OBJECT IS EXISTING

TAG-1 — UNDERLINED TAG INDICATES OBJECT IS IN-SCOPE. IF NEW, ADDITIONAL INFORMATION IS AVAILABLE IN A SCHEDULE, MATERIAL LIST, OR SYMBOL LIST

INDICATES AN EXISTING SYSTEM'S POINT OF CONNECTION/REMOVAL

CONTRACTOR ABBREVIATION KEY

NOT ALL SYMBOLE MAY APPLY.

ABBR:	DESCRIPTION:
E.C.	ELECTRICAL CONTRACTOR
G.C.	GENERAL CONTRACTOR
M.C.	MECHANICAL CONTRACTOR
P.C.	PLUMBING CONTRACTOR
T.C.	TECHNOLOGY CONTRACTOR
T.C.C.	TEMPERATURE CONTROL CONTRACTOR
V.C.	VENTILATION CONTRACTOR

FIRE / SMOKE BARRIER DESIGNATIONS

THE LINE TYPES SHOWN ARE FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR MUST VERIFY RATINGS WITH THE LATEST SET OF ARCHITECTURAL PLANS AND FURNISH ALL MATERIALS REQUIRED TO COMPLY WITH THOSE RATINGS WHETHER SHOWN OR NOT.

ALL (FLOOR, FLOOR CEILING, AND ROOF CEILING) ASSEMBLIES MUST BE DESIGNATED AS 1, 2 HOUR FIRE, BARRIER(S), UNLESS NOTED OTHERWISE ON THE PLANS.

FIRE PARTITION	— ① — ① — ① — ① — ① —
1 HOUR FIRE BARRIER	— ◆ — ◆ — ◆ — ◆ — ◆ —
2 HOUR FIRE BARRIER OR WALL	— ◆◆ — ◆◆ — ◆◆ — ◆◆ —

MECHANICAL SYMBOL LIST

NOT ALL SYMBOLS MAY APPLY.

SYMBOL:	DESCRIPTION:
	DIRECTION OF AIR FLOW
	FLEXIBLE DUCT
	MANUAL VOLUME DAMPER
R	RISE IN DIRECTION OF AIR FLOW
D	DROP IN DIRECTION OF AIR FLOW
	DUCT CAP
	DUCT DOWN
	DUCT UP
	SUPPLY/OUTSIDE AIR DUCT SECTION
	RETURN AIR DUCT SECTION
	EXHAUST/RELIEF AIR DUCT SECTION
	4-WAY DIFFUSER WITH BLANKOFF IN ONE DIRECTION
SD-1 / 6/115	AIR TERMINAL PROPERTIES SYMBOL / NECK SIZE/CFM
###	TERMINAL AIR BOX w/REHEAT COIL (REFER TO SCHEDULE)
H	HUMIDIFIER
	OPPOSED BLADE DAMPER (REFER TO SCHEDULE)
	PARALLEL BLADE DAMPER (REFER TO SCHEDULE)
XX-Y	AIRFLOW MEASUREMENT SYMBOL XX - AHU SYMBOL Y - SEQUENTIAL NUMBER
ACT	ACTUATOR
DS	DOOR SWITCH
DP	DIFFERENTIAL PRESSURE SWITCH
CS	CURRENT SWITCH
VS	VIBRATION SWITCH
FM	FLOW METER
	FAN
MTR	MOTOR
R	CONTACTOR
	PUMP
	NORMALL CLOSED CONTACT
	NORMALLY OPEN CONTACT
FM	FLOW METER
F	FLOW SWITCH
FS	FLOW SENSOR
FS	AIR FLOW SWITCH
FM	DUCT FLOW METER
P	PRESSURE SWITCH
	MONITOR SWITCH
P	PRESSURE SENSOR (FURNISHED WITH BALL VALVE)
P	PRESSURE GAUGE (FURNISHED WITH BALL VALVE)
P	PRESSURE SENSOR (DUCT MOUNTED)
SP	STATIC SWITCH
T	THERMOSTAT
T	TEMPERATURE SENSOR (DUCT MOUNTED)
H	HUMIDISTAT SENSOR
CO_2	CARBON DIOXIDE SENSOR

MECHANICAL ABBREVIATION KEY

ABBR:	DESCRIPTION:
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
BFP	BACKFLOW PREVENTER
C	COMMON
CB	CATCH BASIN
CFSD	CONTROL/FIRE/SMOKE DAMPER
CI	CAST IRON
CO	CLEANOUT
CS	CLINICAL SINK
DB	DIALYSIS BOX
DF	DRINKING FOUNTAIN
DI	DUCTILE IRON
DN	DOWN
DPG (0-2")	DIFFERENTIAL PRESSURE GAUGE (RANGE)
DPS	DIFFERENTIAL PRESSURE SWITCH
E	EXISTING
EE	EMERGENCY EYEWASH
EP	ELECTRICAL TO PNEUMATIC VALVE
ES	EMERGENCY SHOWER
ESE	EMERGENCY SHOWER/EYEWASH
EWC	ELECTRIC WATER COOLER
FCO	FLOOR CLEANOUT
FD	FIRE DAMPER
FM	FLOW METER
FMCS	FACILITY MANAGEMENT AND CONTROL SYSTEM
FOB	FLAT ON BOTTOM
FOT	FLAT ON TOP
FS	FLOOR SINK
FSD	FIRE/SMOKE DAMPER
GV	GRAVITY VENTILATORS
HB	HOSE BIBB
I.E.	INVERT ELEVATION (FOR REFERENCE ONLY)
L or LAV	LAVATORY
MB	MOP BASIN
MH	MANHOLE
MV	MANUFACTURERS.
N.C.	NORMALLY CLOSED
NIC	NOT IN CONTRACT
N.O.	NORMALLY OPEN
PS	PRESSURE SWITCH
RD	ROOF DRAIN
SCCR	SHORT CIRCUIT CURRENT RATING
SD	SMOKE DAMPER
SH	SHOWER
SK	SINK
SS	SERVICE SINK
TAB	TERMINAL AIR BOX
TD	TRANSFER DUCT
TP	TRAP PRIMER
TYP	TYPICAL
UB	UTILITY BOX
UC-1	DOOR UNDERCUT BY OTHERS (1" TYPICAL)
UR	URINAL
VTR	VENT THROUGH ROOF
WC	WATER CLOSET
WCO	WALL CLEANOUT
WF	WASH FOUNTAIN
WH	WATER HEATER
WMF	WASHING MACHINE FIXTURE
WS	WATER SOFTENER
YCO	YARD CLEANOUT

DUCT ABBREVIATION KEY

ABBR.	DESCRIPTION
EA	EXHAUST AIR
OA	OUTSIDE AIR
RA	RETURN/RELIEF AIR
SA	SUPPLY AIR
SAC	SUPPLY AIR COLD

TAB POST-CONSTRUCTION NOTES:

1. AFTER CONSTRUCTION ACTIVITIES ARE COMPLETE, TESTING, ADJUSTING (TAB) AND BALANCING CONTRACTOR SHALL REBALANCE AIR HANDLING UNITS AND EXHAUST FANS AS REQUIRED TO ACHIEVE THE NEW AIRFLOW VALUES SHOWN ON THE CONSTRUCTION DRAWINGS.
2. AREAS SERVED BY THIS EQUIPMENT WHICH WERE NOT RENOVATED SHALL BE RE-BALANCED TO THE AIRFLOW RATES MEASURED BEFORE THE RENOVATION OCCURRED (REFER TO THE FINAL PRE- DEMOLITION REPORT).
3. TAB CONTRACTOR SHALL COMPLE AND SUBMIT COPIES OF THE FINAL POST-CONSTRUCTION TAB REPORT AS REQUIRED BY SECTION 23 05 93.
4. THE FINAL POST CONSTRUCTION REPORT SHALL INCLUDE ALL ITEMS REQUIRED IN THE SPECIFICATIONS.

MECHANICAL GENERAL NOTES:

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO VENTILATION, PIPING, AND PLUMBING.

1. DRAWINGS SHOWING LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, ETC. ARE DIAGRAMMATIC AND MAY NOT ALWAYS REFLECT EXACT INSTALLATION CONDITIONS. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF DUCTWORK, PIPING, EQUIPMENT, ETC., AND MAY NOT INCLUDE ALL OFFSETS AND FITTINGS REQUIRED FOR COMPLETE INSTALLATION. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING CONSTRUCTION AND THE WORK OF OTHERS WILL PERMIT.
2. CATALOG AND MODEL NUMBERS SHALL NOT BE CONSIDERED COMPLETE, BUT ARE GIVEN AS AN AID TO THE CONTRACTOR AND TO INDICATE THE QUALITY REQUIRED. CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE DESCRIPTION OF MATERIAL SCHEDULED ON THESE DRAWINGS AND IN THE SPECIFICATIONS BEFORE ORDERING. THE DESCRIPTION OF THE MATERIAL AND SCHEDULED PERFORMANCE TAKES PRECEDENCE OVER THE MODEL NUMBER. THE FIRST MANUFACTURER SCHEDULED IS THE BASIS OF DESIGN.
3. DETERMINATION OF QUANTITIES OF MATERIAL AND EQUIPMENT REQUIRED SHALL BE MADE BY THE CONTRACTOR FROM THE DOCUMENTS. WHERE MATERIAL AND/OR QUANTITY DISCREPANCIES ARISE BETWEEN DRAWINGS, SCHEDULES AND/OR SPECIFICATIONS, THE HIGHER QUALITY/ GREATER NUMBER SHALL GOVERN.
4. DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS AND CLEARANCES FROM ARCHITECTURAL, STRUCTURAL, SUBMITTALS; AND OTHER APPROPRIATE DRAWINGS OR PHYSICALLY AT SITE. REVIEW ALL DRAWINGS, INCLUDING THOSE OF OTHER TRADES.
5. COORDINATE ALL WORK WITH ALL OTHER TRADES PRIOR TO INSTALLATION TO PROVIDE CLEARANCES REQUIRED FOR OPERATION, MAINTENANCE, CODE COMPLIANCE, AND TO VERIFY NON-INTERFERENCE WITH OTHER WORK. DO NOT FABRICATE PRIOR TO VERIFICATION OF NECESSARY CLEARANCES FOR ALL TRADES. BRING ANY INTERFERENCES OR CONFLICTS TO THE ATTENTION OF THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH FABRICATION OR EQUIPMENT ORDERS.
6. REVIEW SPACE REQUIREMENTS OF EQUIPMENT SPECIFIED OR SUBSTITUTED AND MAKE REASONABLE ACCOMMODATIONS IN LAYOUT AND POSITIONING TO PROVIDE PROPER ACCESS.
7. ANY CHANGES REQUIRED TO ELIMINATE CONFLICTS OR THAT RESULT FROM A FAILURE TO COORDINATE SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL COST OR EXPENSE TO OTHERS.
8. EACH CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ELECTRICAL CHANGES REQUIRED FOR EQUIPMENT PROPOSED THAT DIFFERS FROM THE BASIS OF DESIGN.
9. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, TECHNOLOGY AUDIO/VISUAL, AND OTHER MECHANICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED DEVICES, OTHER THAN SPRINKLERS.
10. EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO WALLS, FLOORS, CEILINGS, AND ROOFS. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND FINISH.
11. IN AREAS WITH DRYWALL CEILINGS COORDINATE LOCATIONS OF ACCESS PANELS WITH THE GC FOR ACCESS TO VALVES, DUCTWORK ACCESSORIES, DAMPERS, ETC. COORDINATE PANEL TYPE AND COLOR WITH ARCHITECT. NOTIFY THE GC OF THE REQUIRED ACCESS PANELS PRIOR TO BIDDING.
12. SEAL ALL FLOOR, WALL, AND ROOF PENETRATIONS AIRTIGHT WHERE CONDUITS, PIPING, AND DUCTS PENETRATE. PENETRATIONS THROUGH EXTERIOR WALLS AND ROOF SHALL BE SEALED AIRTIGHT WITH WATERPROOFING MATERIALS RECOMMENDED BY MANUFACTURER FOR OUTDOOR USE.
13. CAULK ALL PIPE AND DUCT PENETRATIONS OF FULL HEIGHT NON-FIRE RATED WALL, PARTITION, FLOOR, AND ROOF ASSEMBLIES. THIS IS ESSENTIAL TO PREVENT NOISE TRANSMISSION FROM ONE ROOM TO ANOTHER AND TO PROVIDE THE DESIRED NC LEVELS WITHIN ROOMS.
14. WHERE PIPES AND DUCTS ARE SHOWN TO PENETRATE FLOORS, PROVIDE SLEEVED OPENINGS WITH THE TOP EDGE RAISED ABOVE FLOOR SURFACE IN ACCORDANCE WITH ALL RELEVANT SPEC SECTIONS. SEAL SLEEVE PERIMETER TO BE WATERTIGHT.
15. EQUIPMENT SIZES AND SERVICE CLEARANCE REQUIREMENTS VARY AMONG DIFFERENT MANUFACTURERS. CONSULT APPROVED SHOP DRAWINGS FOR EQUIPMENT SIZES AND REQUIRED SERVICE CLEARANCES. COORDINATE WITH LAYOUT OF EQUIPMENT PADS, PIPING, DUCTWORK, ETC.
16. DO NOT BLOCK TUBE PULL OR EQUIPMENT SERVICE CLEARANCES.
17. MAINTAIN A MINIMUM WORKING CLEARANCE OF 3'-6" IN FRONT OF ALL ELECTRICAL EQUIPMENT REQUIRING MAINTENANCE, INSPECTION, AND TESTING INCLUDING BUT NOT LIMITED TO PANELS, DISTRIBUTION PANELS, SWITCHBOARDS, MOTOR CONTROL CENTERS, TRANSFORMERS, EQUIPMENT DISCONNECTS AND STARTERS.
18. MAINTAIN THE DEDICATED ELECTRICAL EQUIPMENT SPACE DEFINED BY THE WIDTH / DEPTH OF ELECTRICAL EQUIPMENT MEASURED FROM THE FLOOR TO A HEIGHT 6'-0" ABOVE THE EQUIPMENT OR THE STRUCTURAL CEILING, WHICHEVER IS LOWER. SYSTEMS FOREIGN TO THE ELECTRICAL DISTRIBUTION SYSTEM ARE NOT ALLOWED IN THE DEDICATED ELECTRICAL SPACE INCLUDING: DUCTWORK, PIPING, ETC.
19. PROVIDE CONCRETE EQUIPMENT PAD FOR ALL FLOOR MOUNTED EQUIPMENT. PAD SHALL EXTEND MINIMUM 6" BEYOND ALL SIDES OF EQUIPMENT EXCEPT WHERE PAD EXTENSION WOULD INTERFERE WITH WORKING SPACE AT EQUIPMENT CONTROL PANELS AND ELECTRICAL PANELS. ADDITIONALLY, CONCRETE EQUIPMENT PAD HEIGHTS SHALL BE A MINIMUM OF 3.5". PAD HEIGHT SHALL BE ADJUSTED AS NECESSARY TO ALLOW FOR ADEQUATE INSTALLATION REQUIREMENTS.
20. DO NOT EXCEED 25 LBS PER HANGER AND A MINIMUM SPACING OF 2'-0" ON CENTER WHEN ATTACHING TO METAL ROOF DECKING (LIMITATION NOT REQUIRED WITH CONCRETE ON METAL DECK). THIS 25 LBS. LOAD AND 2'-0" SPACING INCLUDE ADJACENT ELECTRICAL AND ARCHITECTURAL ITEMS HANGING FROM DECK. IF THE HANGER RESTRICTIONS CANNOT BE ACHIEVED, SUPPLEMENTAL FRAMING OFF STEEL FRAMING SHALL BE ADDED. ANCHORS EMBEDDED IN CONCRETE SHALL BE CRACKED CONCRETE APPROVED IN ACCORDANCE WITH SPECIFICATIONS.

MECHANICAL RENOVATION NOTES:

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO VENTILATION, PIPING, AND PLUMBING.

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

VENTILATION GENERAL NOTES:

1. UNLESS NOTED OTHERWISE, THE SIZE OF EACH BRANCH DUCT TO A TERMINAL AIR BOX (TAB) SHALL MATCH THE INLET SIZE UNLESS THE BRANCH IS GREATER THAN 6 FEET IN LENGTH, IN WHICH CASE THE BRANCH DUCT SHALL BE SIZED AT A PRESSURE DROP OF 0.07" W.C. PER 100' OF DUCTWORK.
2. UNLESS NOTED OTHERWISE, THE SIZE OF EACH BRANCH DUCT TO AN AIR TERMINAL SHALL MATCH THE INLET SIZE.
3. ALIGN TEMPERATURE SENSORS WITH LIGHT SWITCHES AND WHEN IN CLOSE PROXIMITY TO EACH OTHER.
4. PROVIDE ACCESS DOORS AT ALL DUCT MOUNTED EQUIPMENT.
5. EXISTING AIR INLET AND OUTLET CFM SHOWN ON DRAWINGS ARE FROM EXISTING DRAWINGS, AND ARE FOR REFERENCE ONLY. CONTRACTOR SHALL USE PRE-BALANCE VALUES, AND NOT EXISTING CFM SHOWN ON DRAWINGS.
6. CONTRACTOR MAY REUSE PORTIONS OF EXISTING DUCT PROVIDED SIZES AND PRESSURE CLASSES ARE CORRECT. DUCT IS THOROUGHLY CLEANED AND FREE OF DEFECTS, AND ALL TRANSVERSE JOINTS, LONGITUDINAL SEAMS, AND DUCT WALL PENETRATIONS ARE SEALED AS SPECIFIED FOR NEW DUCTWORK.

MECHANICAL PHASING NOTES:

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, PLUMBING, VENTILATION AND PIPING.

1. REFER TO ARCHITECTURAL DRAWINGS FOR GENERAL DESCRIPTION OF PHASES. REFER TO GENERAL CONTRACTOR'S INSTRUCTIONS FOR MORE DETAILS AND PHASING SCHEDULES AND FOR CONCURRENT WORK. MECHANICAL, ELECTRICAL AND TECHNOLOGY DRAWINGS DEPICT THE INTENT OF THE FINAL DESIGN. THE MECHANICAL, ELECTRICAL, AND TECHNOLOGY DRAWINGS DO NOT DEPICT THE MEANS AND METHODS TO MEET THE REQUIREMENTS OF THE PHASING CRITERIA.
2. REVIEW PROJECT PHASING PLANS TO COORDINATE DEMOLITION WORK, OUTAGES, ETC. WITH AFFECTED ADJACENT AREAS.
3. PROVIDE TEMPORARY DUCTWORK, PIPING, SHUTOFF VALVES, ZONE VALVES, ZONE ALARMS, ETC. AS NEEDED TO MAINTAIN SERVICE TO ALL AREAS DURING ALL PHASES OF PROJECT.
4. INSTALL TEMPORARY DUCTWORK, PIPING, SHUTOFF VALVES, ETC. AS NECESSARY TO KEEP ALL OCCUPIED SPACES OPERATIONAL THROUGHOUT ALL PHASES OF THE PROJECT
5. PHASE DEMOLITION WORK TO MINIMIZE DOWNTIME.

TAB PRE-DEMOLITION NOTES:

1. BEFORE ANY DEMOLITION WORK IS BEGUN A COMPLETE AIR BALANCE TEST SHALL BE PERFORMED BY THE TESTING, ADJUSTING AND BALANCING (TAB) CONTRACTOR ON EXISTING AIR HANDLERS AND EXHAUST FANS SERVING THE AREAS AFFECTED BY CONSTRUCTION. EQUIPMENT TO BE DEMOLISHED DOES NOT REQUIRE TESTING. PROVIDE AIR BALANCE TESTING ONLY ON EQUIPMENT THAT WILL CONTINUE TO BE USED TO SERVE RENOVATED AREAS AFTER THE CONSTRUCTION PHASE IS COMPLETED.
2. TAB CONTRACTOR SHALL COMPILE AND SUBMIT FOUR COPIES OF THE FINAL PRE-DEMOLITION REPORT WITHIN 10 WORKING DAYS AFTER THE FIELD MEASUREMENTS ARE COMPLETED. FINAL TAB REPORT SHALL BE SUBMITTED FOR REVIEW TO THE ARCHITECT/ENGINEER. TESTING SHALL INCLUDE ALL ITEMS REQUIRED IN THE SPECIFICATIONS.
3. GRILLE AND DIFFUSER READINGS SHALL BE DESIGNATED WITH THE ROOM NAME AND NUMBER AS MARKED ON THE DRAWINGS. IF THE DRAWINGS DO NOT HAVE UNIQUE ROOM NAMES AND NUMBERS, TAB CONTRACTOR SHALL INCLUDE FLOOR PLANS WITH UNIQUE NUMBER DESIGNATIONS ASSIGNED TO GRILLES, AND DIFFUSERS THAT MATCH THOSE USED IN THE FINAL PRE-DEMOLITION REPORT. SIMILAR ROOM NAMES, NUMBERS, OR DESIGNATIONS SHALL BE USED TO SIMPLIFY THE CROSS- REFERENCING OF READINGS TAKEN BETWEEN PRE-DEMOLITION AND POST-CONSTRUCTION REPORTS.
4. BALANCING CONTRACTOR SHALL PRE-BALANCE ALL EXISTING SYSTEMS TO REMAIN PER SPECIFICATION SECTION 23 05 93. BALANCE READINGS WILL BE REQUIRED AT AIR OUTLETS AND DUCT TRAVERSES TO VERIFY EXISTING AIRFLOW TO UNAFFECTED SPACES.

MECHANICAL DESIGN CONDITIONS:

DESIGN CONDITIONS: **BASED ON WEATHER DATA FOR: SPRINGFIELD, MISSOURI**

SUMMER: 96°F DRY BULB, 75°F WET BULB

TYPICAL ROOM SETPOINTS:

SUMMER DESIGN: 72°F DRY BULB, 60% RELATIVE HUMIDITY {NO HUMIDITY REQUIREMENT}

REFER TO CONTROL DIAGRAMS FOR ROOM SPECIFICS.

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REF. SCALE IN INCHES PROJECT #23008968.00

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Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS

#	Date / Description
1	
2	
3	
4	

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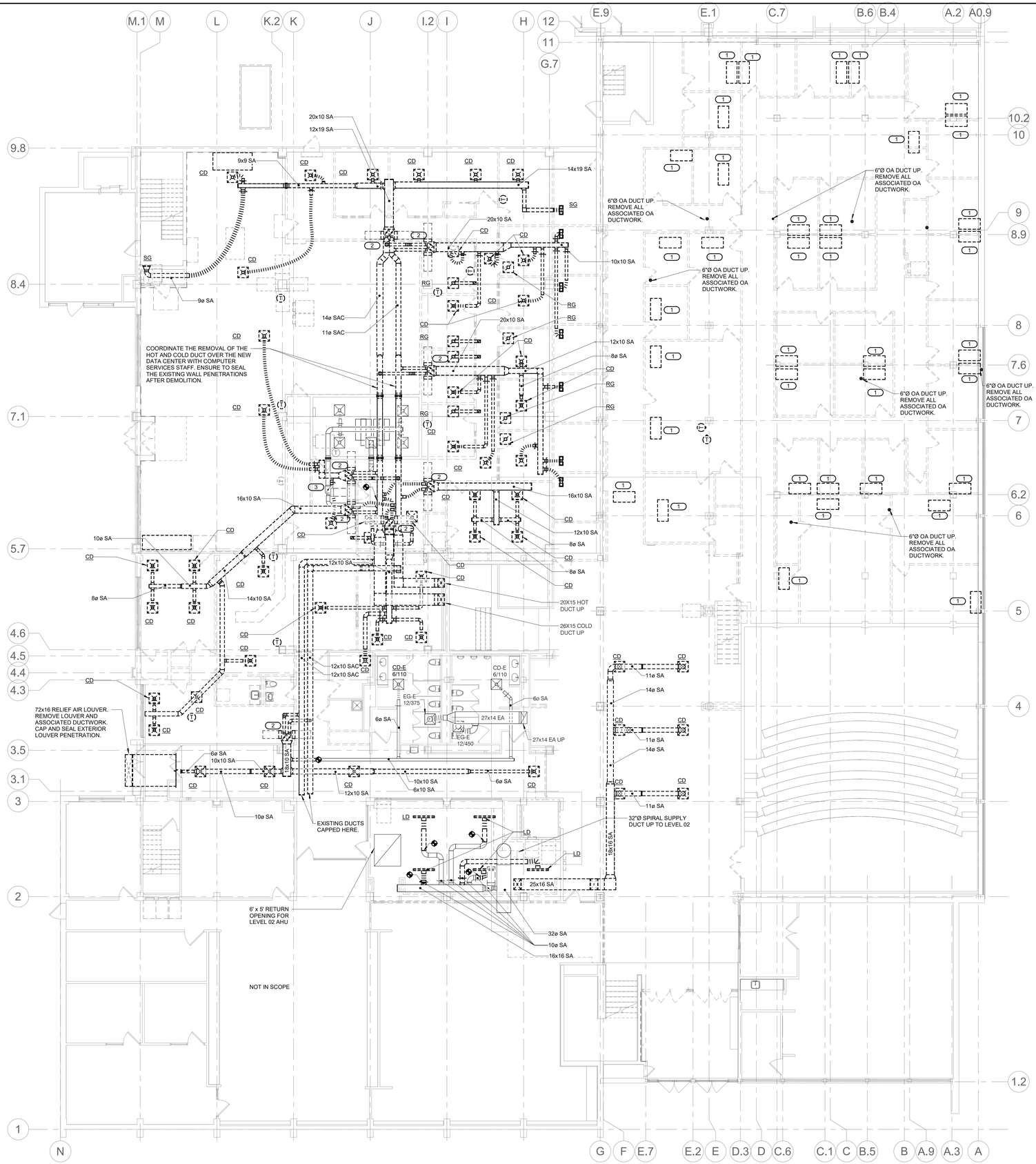
Sheet Title:

MECHANICAL COVERSHEET - VENTILATION

Sheet #:

V0.00



NORTH

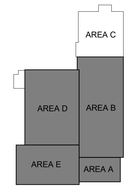
1 **LEVEL 01 DEMOLITION PLAN - VENTILATION**
1/8" = 1'-0"

GENERAL NOTES:

1. REFER TO V0.00 FOR ADDITIONAL INFORMATION.
2. FIELD VERIFY ALL EXISTING CONDTIONS PRIOR TO PERFORMING WORK.
3. REFER TO ARCHITECTURAL PLANS FOR PATCHING REQUIRMENTS. CONTRACTOR SHALL PATCH WALLS AND CEILINGS TO MATCH EXISTING CONDITIONS.
4. COORDINATE SYSTEM SHUTDOWNS WITH OWNER AND CONSTRUCTION MANAGER.

KEYNOTES: (#)

1. REMOVE EXISTING FAN COIL UNIT AND ASSOCIATED THERMOSTAT.
2. REMOVE EXISTING DUAL DUCT MIXING BOXES. REMOVE ALL ASSOCIATED DUCTWORK AND THERMOSTATS.
3. EXISTING VAV BOX TO SERVING THE DATA CENTER TO REMAIN. ALL ASSOCIATED BRANCH DUCTWORK AND THERMOSTAT TO REMAIN EXISTING.



KEY PLAN
NTS

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Project Title:
BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS	
#	Date / Description
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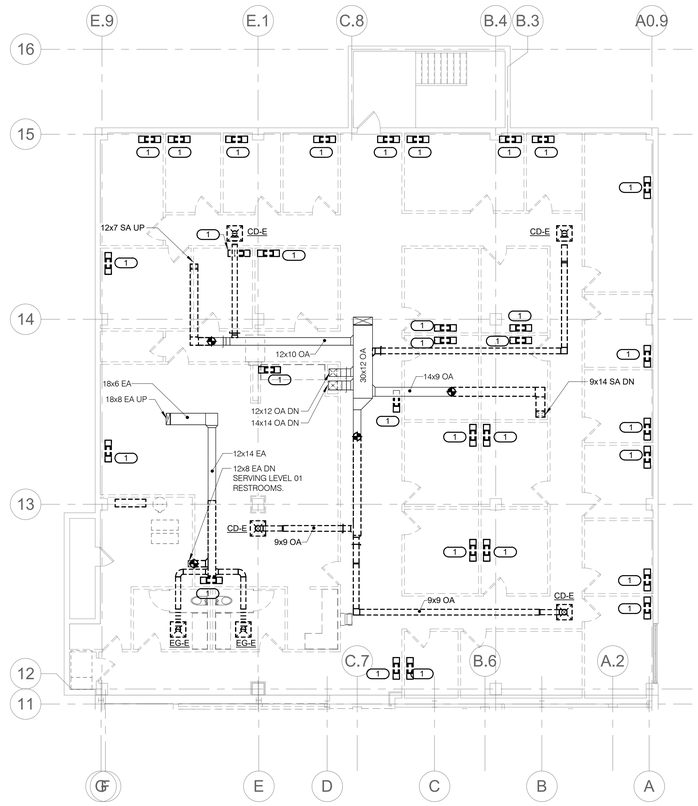
Sheet Title:
LEVEL 01 DEMOLITION PLAN - VENTILATION

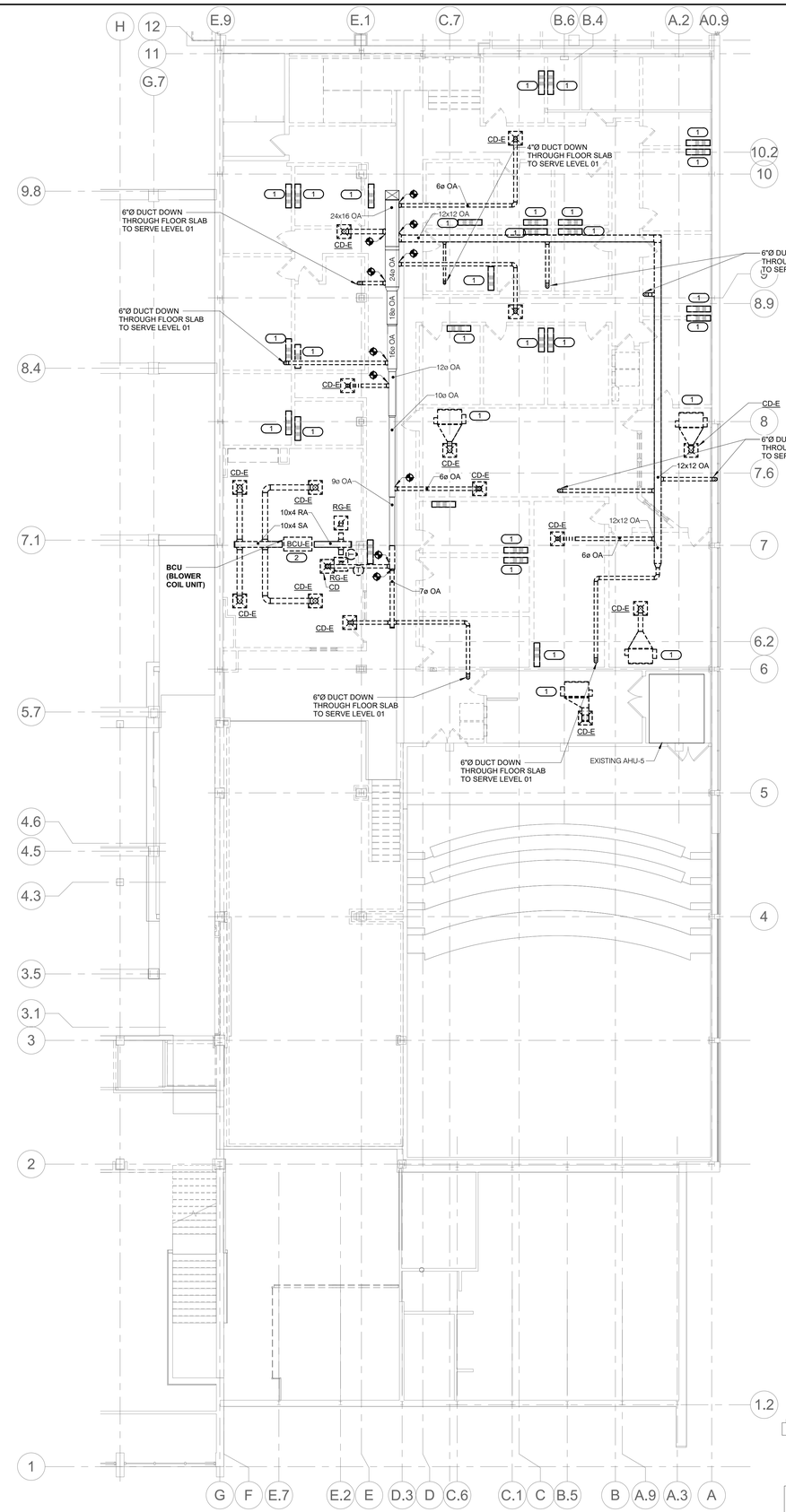
Sheet #:
V1.11



NORTH

2 MEZZANINE DEMOLITION PLAN - VENTILATION - AREA C

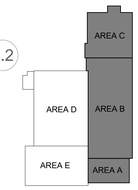
1/8" = 1'-0"



NORTH

3 MEZZANINE DEMOLITION PLAN - VENTILATION - AREAS A & B

1/8" = 1'-0"



KEY PLAN

NTS

GENERAL NOTES:

1. REFER TO V0.00 FOR ADDITIONAL INFORMATION.
2. FIELD VERIFY ALL EXISTING CONDTIONS PRIOR TO PERFORMING WORK.
3. REFER TO ARCHITECTURAL PLANS FOR PATCHING REQUIRMENTS. CONTRACTOR SHALL PATCH WALLS AND CEILINGS TO MATCH EXISTING CONDITIONS.
4. COORDINATE SYSTEM SHUTDOWNS WITH OWNER AND CONSTRUCTION MANAGER.

KEYNOTES: (#)

1. REMOVE EXISTING FAN COIL UNIT AND ASSOCIATED THERMOSTAT.
2. REMOVE EXISTING DUAL DUCT MIXING BOXES. REMOVE ALL ASSOCIATED DUCTWORK AND THERMOSTATS.

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CERTIFICATE OF AUTHORITY - E2017008530

Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS

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Sheet Title:

MEZZANINE DEMOLITION PLANS - VENTILATION

Sheet #:

V1.12

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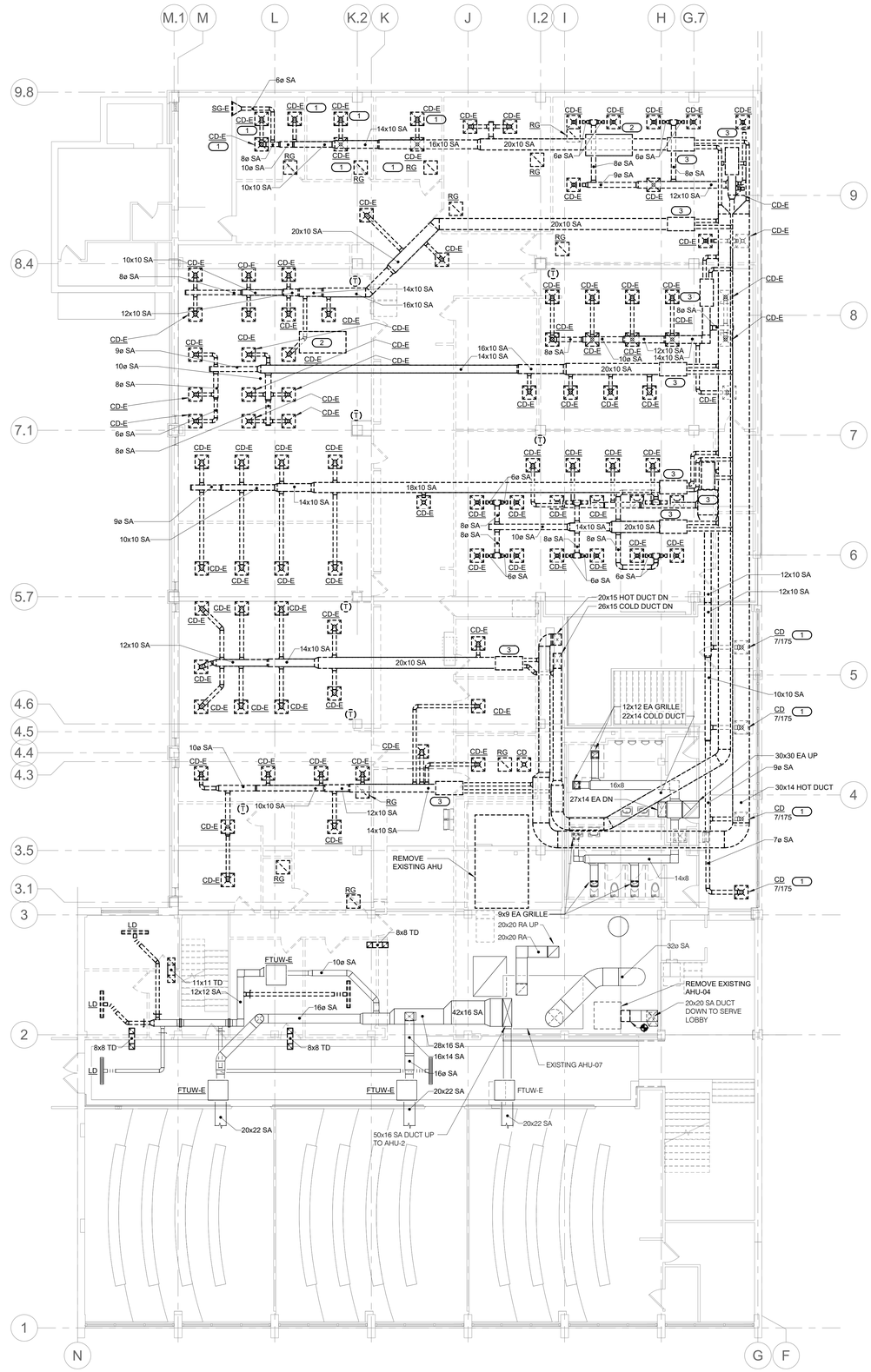


NORTH

1 LEVEL 02 DEMOLITION PLAN - VENTILATION

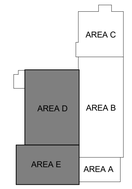
1/8" = 1'-0"

GENERAL NOTES:

1. REFER TO V0.00 FOR ADDITIONAL INFORMATION.
2. FIELD VERIFY ALL EXISTING CONDTIONS PRIOR TO PERFORMING WORK.
3. REFER TO ARCHITECTURAL PLANS FOR PATCHING REQUIRMENTS. CONTRACTOR SHALL PATCH WALLS AND CEILINGS TO MATCH EXISTING CONDITIONS.
4. COORDINATE SYSTEM SHUTDOWNS WITH OWNER AND CONSTRUCTION MANAGER.
5. MOST OF THE DIFFUSERS BEING REMOVED WITHIN THE SCOPE OF WORK ON THE 2ND LEVEL ARE TROFFER STYLE SUPPLY AIR DIFFUSERS.

KEYNOTES: (#)

1. DIFFUSERS ARE LIGHT TROFFER STYLE.
2. REMOVE EXISTING DX UNITS. REMOVE ASSOCIATED PIPING, AIR TERMINAL DEVICES, DUCTWORK, AND CONDENSING UNITS LOCATED ON THE ROOF.
3. REMOVE EXISTING DUAL DUCT MIXING BOXES. REMOVE ALL ASSOCIATED DUCTWORK AND THERMOSTATS.



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MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

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LEVEL 02 DEMOLITION PLAN - VENTILATION

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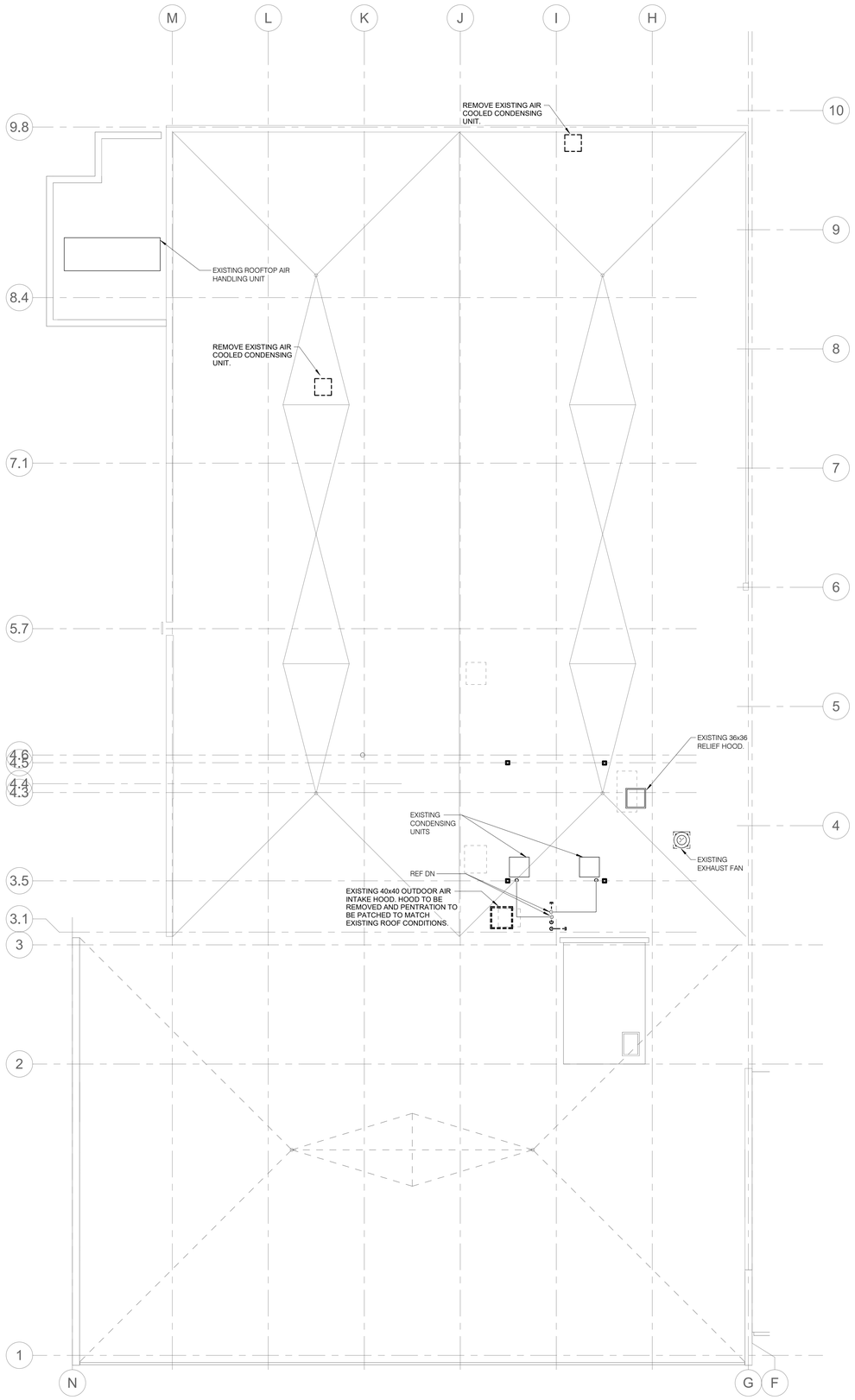
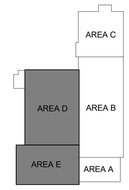


NORTH

3 ROOF PLAN - VENTILATION - DEMOLITION

1/8" = 1'-0"



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ROOF DEMOLITION PLAN - VENTILATION

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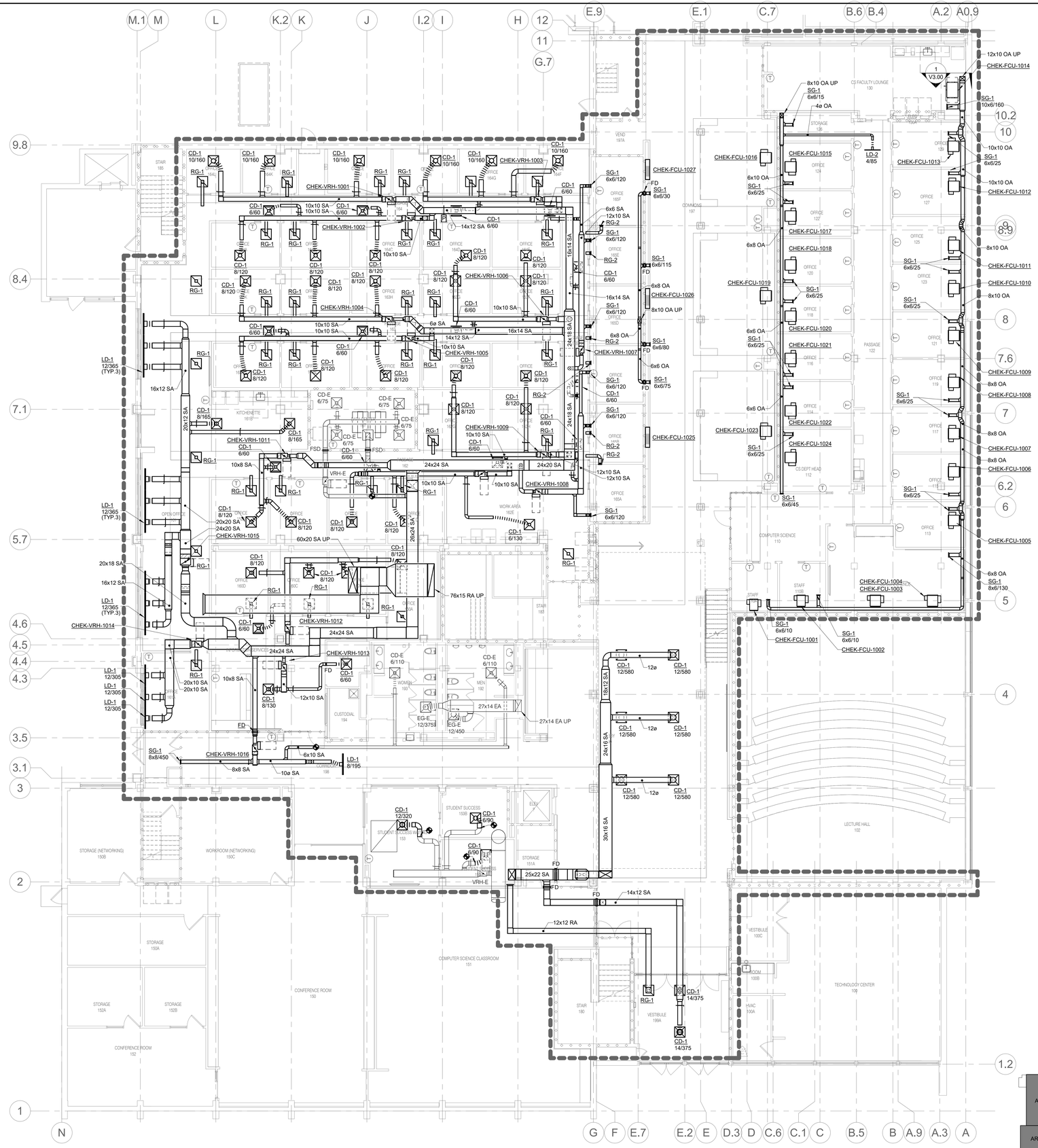
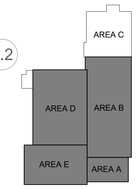


1 LEVEL 01 PLAN - VENTILATION
1/8" = 1'-0"

NORTH



KEY PLAN
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GENERAL NOTES:

1. WITHIN THE LEVEL 01 AREA WITH LIMITED PLENUM SPACE, PLEASE CONSIDER SPECIALTY, NON-STANDARD HANGERS TO SUPPORT EQUIPMENT LOCATED WITHIN THE TIGHT AREA.

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LEVEL 01 PLAN - VENTILATION

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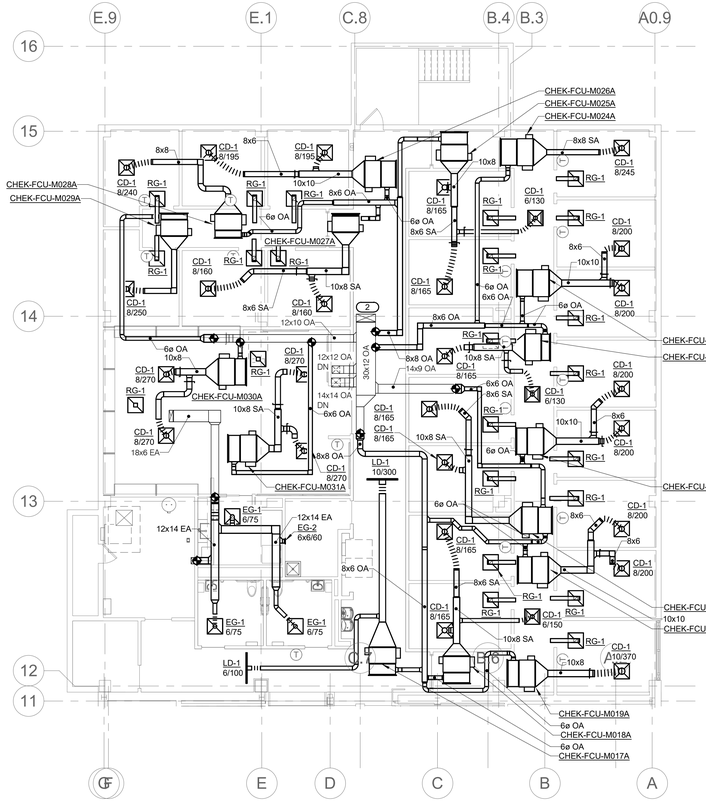
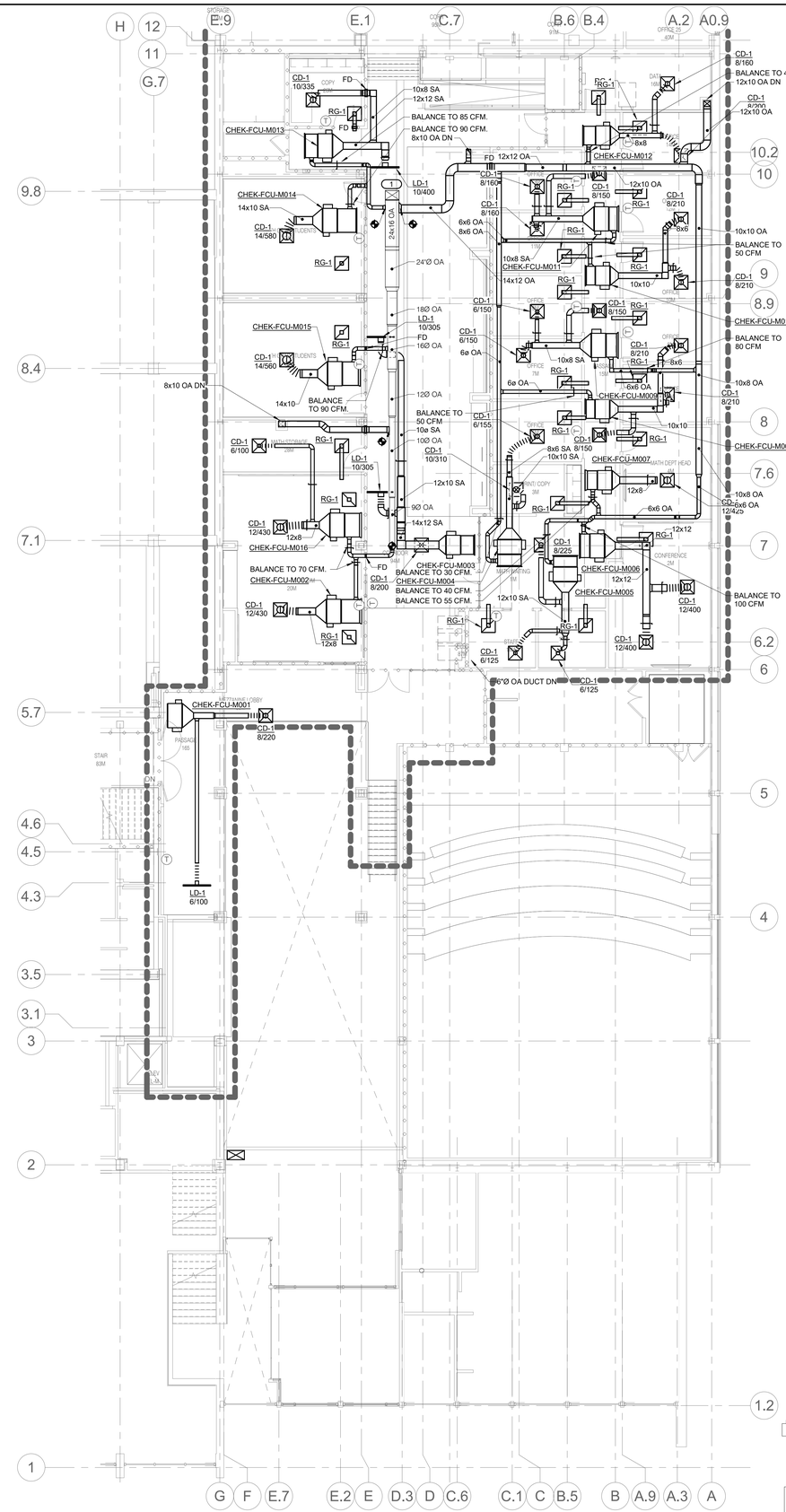


1 MEZZANINE PLAN - VENTILATION - AREA C

1/8" = 1'-0"

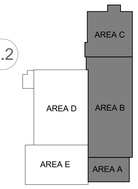


2 MEZZANINE PLAN - VENTILATION - AREAS A & B

1/8" = 1'-0"

KEYNOTES: #

1. EXISTING 24X16 OUTSIDE AIR DUCT UP TO EXISTING MAHU-1.
2. EXISTING 30X12 OUTSIDE AIR DUCT UP TO EXISTING MAHU-2.



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MEZZANINE LEVEL PLANS - VENTILATION

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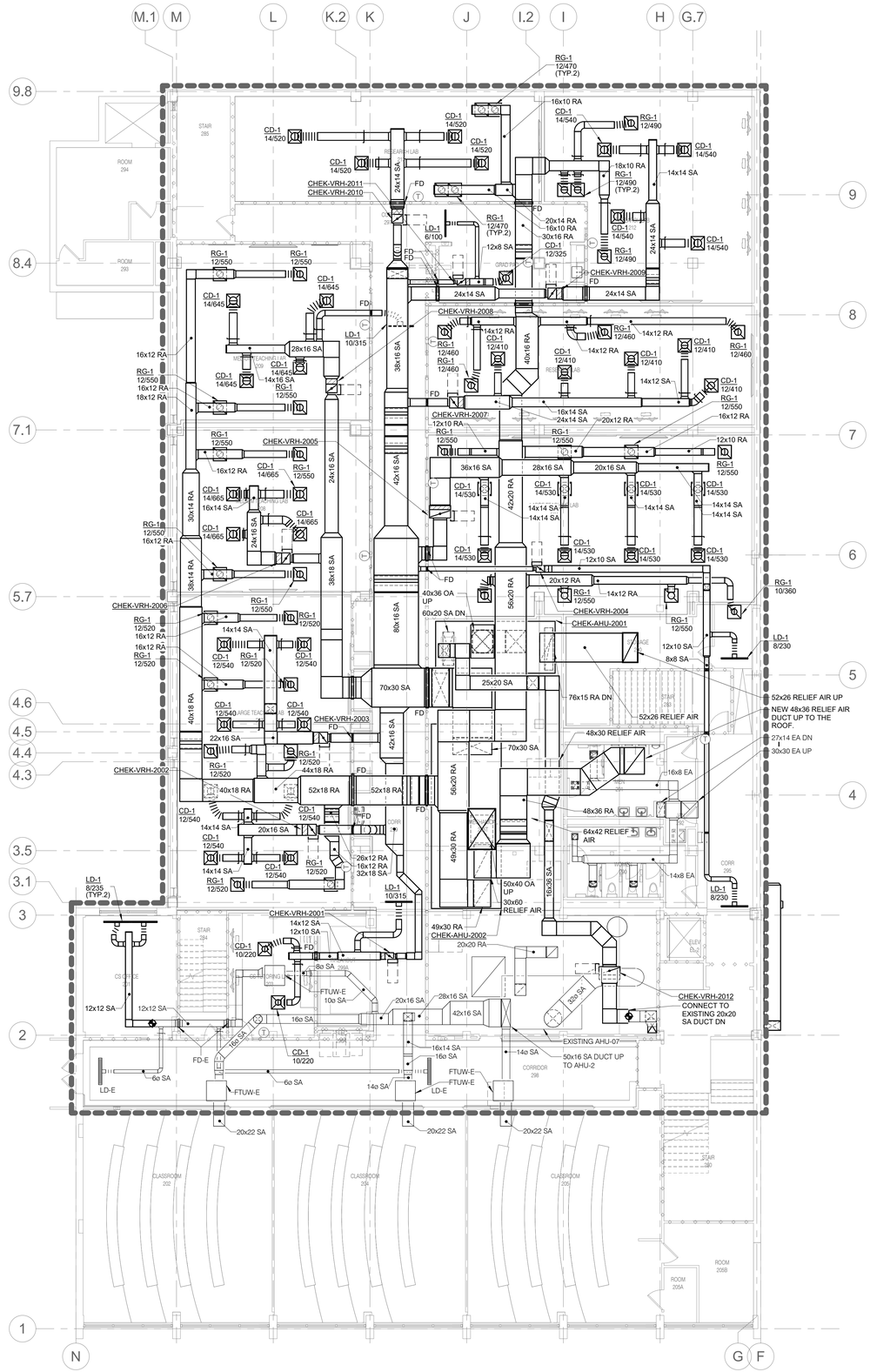
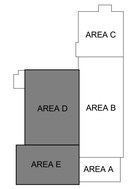


1 LEVEL 02 PLAN - VENTILATION

1/8" = 1'-0"



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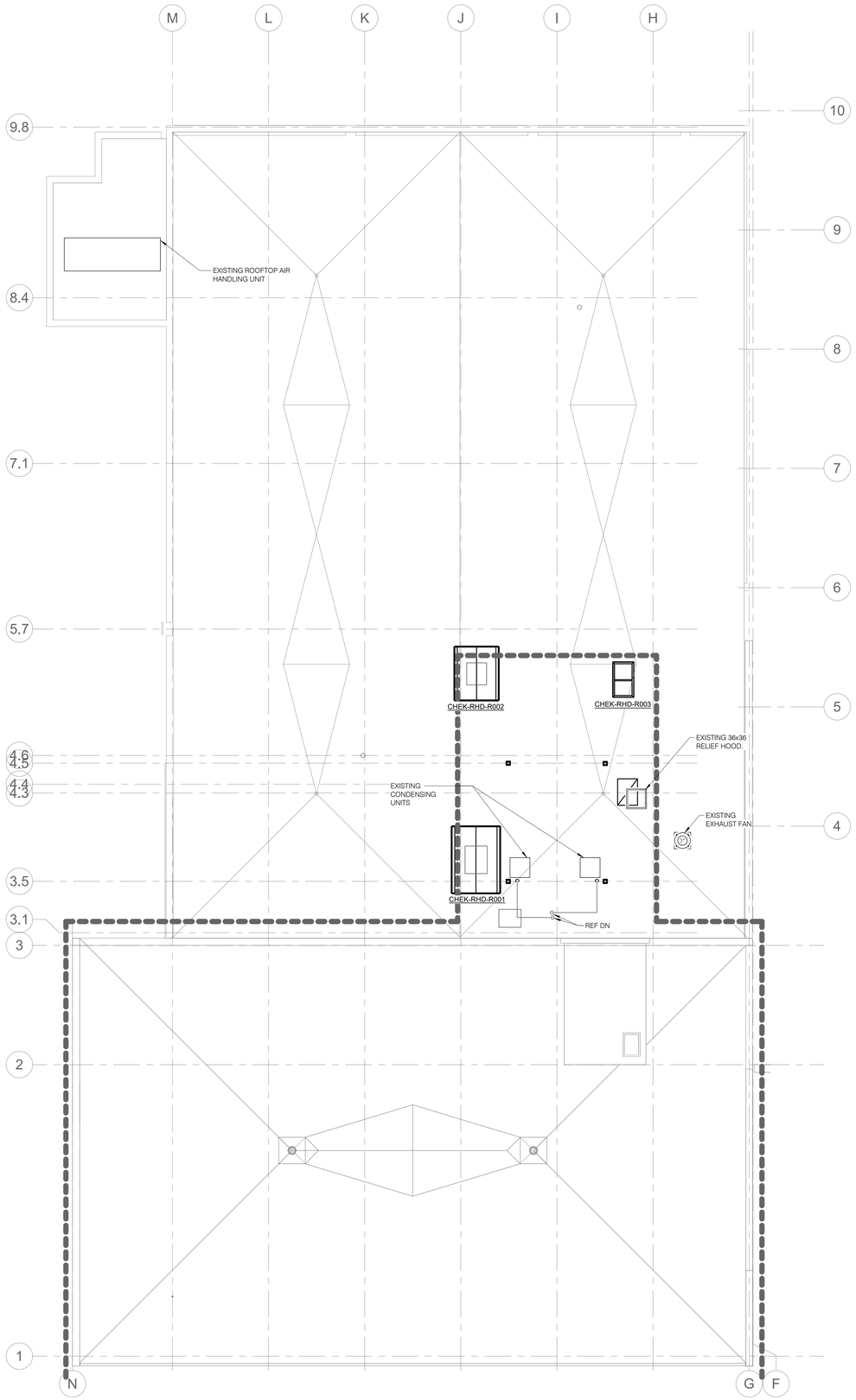

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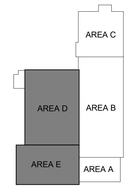
1 ROOF PLAN - VENTILATION

1/8" = 1'-0"



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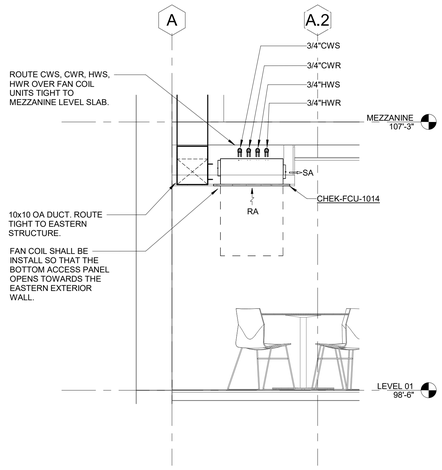

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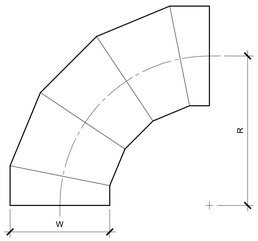
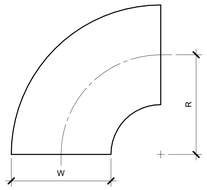
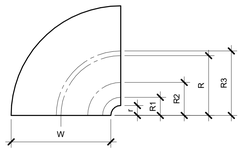


OVAL / ROUND
RADIUS ELBOW
SMOOTH OR 5 GORE (MINIMUM)
R/W = 1.5 (MINIMUM)

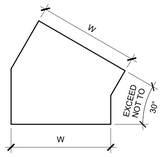


RECTANGULAR
RADIUS ELBOW
TYPE RE1
R/W = 1.0 (MINIMUM)
R/W < 1.0 SHALL BE TYPE RE3



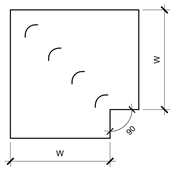
RECTANGULAR
RADIUS ELBOW WITH VANES
TYPE RE3

REFER TO SMACNA HVAC SYSTEMS DUCT DESIGN MANUAL, FOURTH EDITION, SECTION 5.14 "SPLITTER VANES" AND SMACNA HVAC DUCT CONSTRUCTION STANDARDS, THIRD EDITION, FIGURES 4-2 AND 4-9 AND CHARTS 4-1 AND 4-1M. ELBOW SHALL HAVE THREE SPLITTER VANES AND r/W = 0.10 (R/W = 0.60) UNLESS NOTED OTHERWISE.

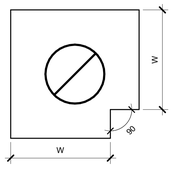


RECTANGULAR
MITERED ELBOW
TYPE RE6

USE ONLY AS PART OF OFFSETS AND TRANSITIONS PER FIGURE 4-7 TYPE 2 OR AS SHOWN ON DRAWINGS. OFFSETS ABOVE 30° SHALL BE TYPE RE1.

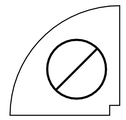


RECTANGULAR
MITERED ELBOW
WITH VANES
TYPE RE2



RECTANGULAR / OVAL / ROUND
MITERED ELBOW
WITHOUT VANES
TYPE RE4

NOT ALLOWED



RECTANGULAR
RADIUS ELBOW WITH
SQUARE THROAT

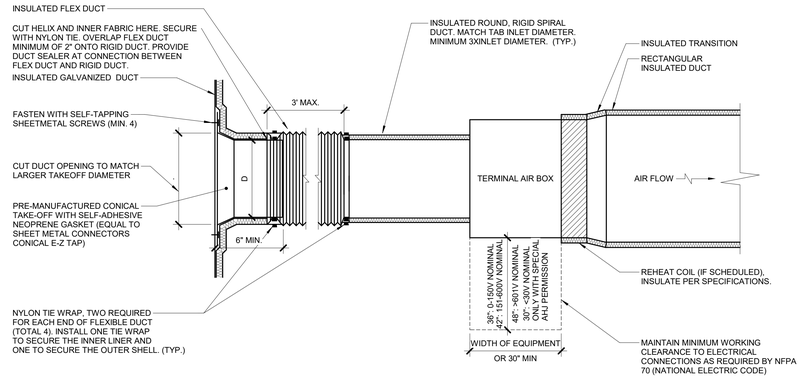
NOT ALLOWED

1 DUCT - ELBOW CONSTRUCTION

NO SCALE

NOTES:

1. BEAD, CROSSBREAK, AND REINFORCE FLAT SURFACES AS IN STRAIGHT DUCT.
2. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. DEFAULT ELBOW SHALL BE TYPE "RE1".
4. ELBOW TYPES SHALL BE INSTALLED AS SHOWN AND NOT BE SUBSTITUTED WITHOUT PERMISSION. EXCEPTION: RE1 OR RE3 MAY BE SUBSTITUTED FOR RE2.

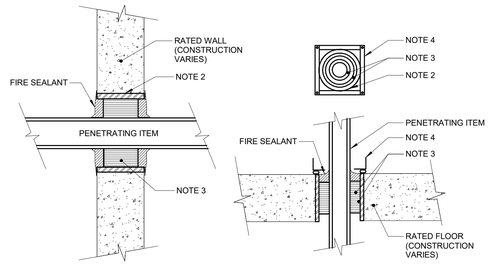


2 TERMINAL AIR BOX - SINGLE DUCT - WRAPPED

NO SCALE

NOTES:

1. THIS DETAIL APPLIES ONLY TO TAPS OFF WRAPPED DUCTS.
2. THIS DETAIL APPLIES TO TERMINAL AIR BOXES WITH ROUND INLETS AND RECTANGULAR OUTLETS.
3. DUCT LEADING TO TAB INLET MUST BE STRAIGHT FOR 3.0 DIAMETER UPSTREAM.
4. MAINTAIN VAPOR BARRIER FROM MAIN TO BRANCH DUCT.

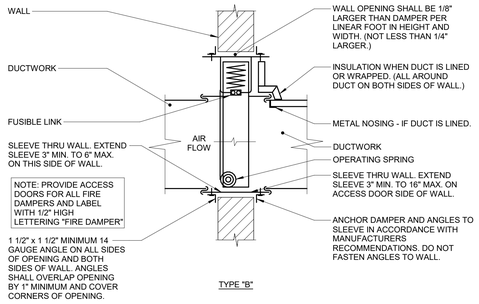


3 FLOOR/WALL PENETRATION - RATED FIRE BARRIER

NO SCALE

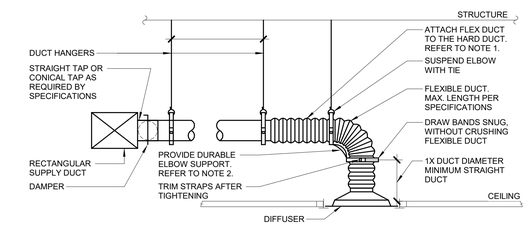
NOTES:

1. THIS GENERAL DETAIL APPLIES TO ALL ITEMS PENETRATING FIRE RATED WALLS OR FLOORS. THE INTENT IS TO MAINTAIN THE FIRE RATING AND TO ALLOW LONGITUDINAL MOVEMENT. REFER TO SPECIFICATION SECTION 07840 (07 84 00) (SECTION 21 05 03 - FIRE PROTECTION, SECTION 22 05 03 - PLUMBING , SECTION 23 05 03 - HVAC) FOR SELECTION OF THROUGH PENETRATION FIRE STOPPING.
2. SCHEDULE 5 PIPE SLEEVE EMBEDDED IN WALL OR FLOOR, OR SMOOTH CORE DRILL. EACH CONTRACTOR FURNISHES SLEEVE TO G.C., COORDINATES SLEEVE LOCATIONS AND DEBURS SLEEVE. G.C. BUILDS SLEEVE INTO WALL OR FLOOR ALLOWING NO GAP AROUND SLEEVE. IF SLEEVE IS NOT PROVIDED WHEN WALL OR FLOOR IS BUILT, CONTRACTOR SHALL INSTALL SLEEVE. SLEEVE SIZE SHALL ALLOW ANNULAR SPACE REQUIRED BY THE SELECTED FIRE STOP SYSTEM.
3. INSTALL BACKING MATERIAL, SUCH AS MINERAL WOOL SAFING, AS REQUIRED FOR FIRE STOP SYSTEM. INSTALL IN ACCORDANCE WITH FIRE STOP SYSTEM APPLICATION LISTING. SECURE TO WALL OR FLOOR TO ALLOW LONGITUDINAL MOVEMENT OF PENETRATING ITEM WITHOUT MOVEMENT OF FIRE BARRIER.
4. WATERTIGHT WELDED 1"x1" 20 GAUGE MINIMUM GALVANIZED SHEET METAL ANGLE FRAME, BY CONTRACTOR IN EQUIPMENT ROOMS FOR WATER STOP. PLACE A BEAD OF WATERPROOF SEALANT BETWEEN FLOOR AND BOTTOM OF ANGLE FRAME. SECURE TO FLOOR WITH MASONRY ANCHORS IN CORNERS AND ON 12" MAXIMUM CENTERS. MULTIPLE PENETRATING ITEMS MAY BE ENCLOSED IN ONE FRAME.



4 FIRE DAMPER - DYNAMIC WALL CURTAIN TYPE B

NO SCALE

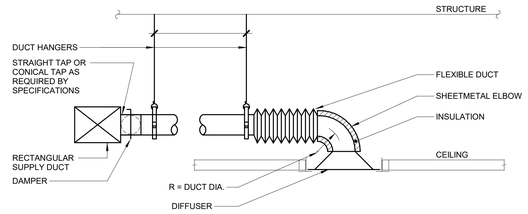


5 DIFFUSER CONNECTION DETAIL (W/ RADIUS FORMING ELBOW)

NO SCALE

NOTES:

1. TO ATTACH FLEX DUCT TO THE HARD DUCT, TAPE THE INNER LINER TO THE HARD DUCT THEN ATTACH WITH TWO NYLON TIE WRAPS; ONE FOR THE INNER LINER AND ONE FOR THE OUTER SHELL. FOLD THE OUTER SHELL INSIDE ITSELF SO IT HAS NEAT EDGES PRIOR TO TIE WRAPPING.
2. DURABLE ELBOW SUPPORT ACCEPTABLE MANUFACTURER AND MODEL: HART AND COOLEY - SMARTFLOW, THERMAFLEX - FLEXFLOW, TITUS - FLEXRIGHT, OR APPROVED EQUAL.

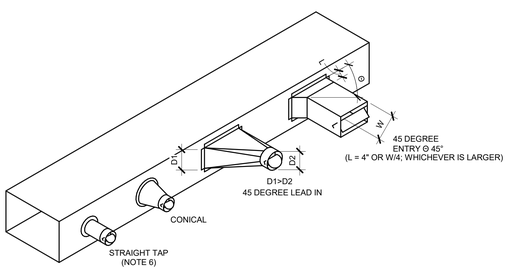


6 AIR TERMINAL - DIFFUSER FLEX LOW PROFILE ELBOW

NO SCALE

NOTES:

1. TO ATTACH FLEX DUCT TO THE HARD DUCT, TAPE THE INNER LINER TO THE HARD DUCT THEN ATTACH WITH TWO NYLON TIE WRAPS; ONE FOR THE INNER LINER AND ONE FOR THE OUTER SHELL. FOLD THE OUTER SHELL INSIDE ITSELF SO IT HAS NEAT EDGES PRIOR TO TIE WRAPPING.
2. "SMARTFLOW" ELBOW (WWW.HARTANDCOOLEY.COM) AND "FLEXRIGHT" (WWW.TITUS-HVAC.COM) ARE ACCEPTABLE PRODUCTS FOR DURABLE ELBOW SUPPORT.

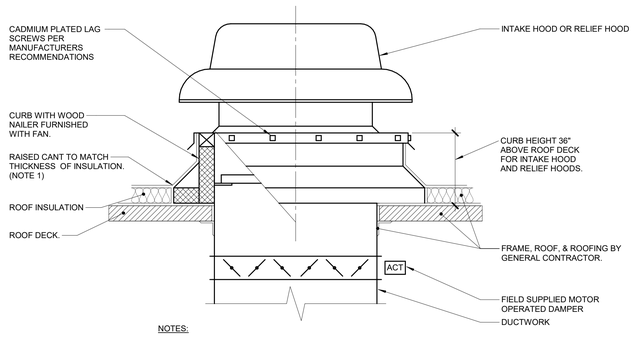


7 DUCT - BRANCH CONNECTIONS

NO SCALE

NOTES:

1. DO NOT USE CONNECTIONS WITH SCOOPS.
2. FIT ALL CONNECTIONS TO AVOID VISIBLE OPENINGS AND SEAL SUITABLY FOR THE PRESSURE CLASS.
3. ADDITIONAL MECHANICAL FASTENERS ARE REQUIRED FOR 4" W.G. AND OVER.
4. REFER TO SPECIFICATIONS FOR VOLUME DAMPER REQUIREMENTS.
5. OPENINGS SHALL BE CUT ACCURATELY (SHAPE AND SIZE).
6. STRAIGHT TAPS ONLY ALLOWED DOWNSTREAM OF TERMINAL AIR BOX OR LOW PRESSURE (<2"W.C. PRESSURE CLASS)



NOTES:

1. ALL ROOF FLASHING SHALL BE PER ROOFING MANUFACTURERS RECOMMENDATIONS.

8 ROOF FAN/HOOD CURB

NO SCALE

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CERTIFICATE OF AUTHORITY - E2017008530

Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS

#	Date / Description
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3	
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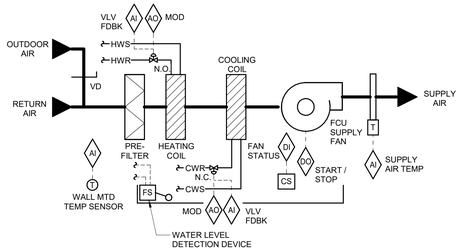
Sheet Title:

VENTILATION DETAILS

Sheet #:

V4.00



SEQUENCE OF OPERATION:
SUPPLY FAN OPERATION SHALL BE CONTROLLED BY THE FMCS THROUGH A CONTACTOR.

THE OUTSIDE AIR DAMPER SHALL BE POSITIONED CORRESPONDING TO SCHEDULED OUTSIDE AIR CFM.

WHENEVER THE ROOM AIR TEMPERATURE IS 2°F (ADJ.) ABOVE THE SETPOINT, THE FOLLOWING SHALL OCCUR:
- THE HEATING COIL CONTROL VALVE SHALL BE CLOSED.
- THE CHILLED WATER CONTROL VALVE SHALL MODULATE OPEN TO MAINTAIN SPACE TEMPERATURE SETPOINT.

WHENEVER THE ROOM AIR TEMPERATURE IS 3°F (ADJ.) BELOW THE SETPOINT, THE FOLLOWING SHALL OCCUR:
- THE CHILLED COIL CONTROL VALVE SHALL BE CLOSED.
- THE HEATING WATER CONTROL VALVE SHALL MODULATE OPEN TO MAINTAIN SPACE TEMPERATURE SETPOINT.

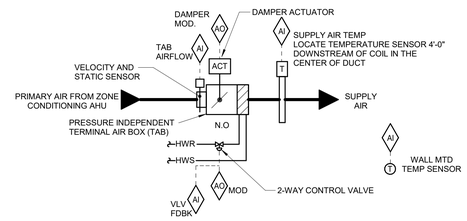
ALARMS, INTERLOCKS & SAFETIES:
WHEN THE FIRE ALARM CONTROL PANEL INDICATES AN ALARM CONDITION, FCU SHALL SHUTDOWN.

A WATER LEVEL DETECTION DEVICE SHALL CLOSE THE CHILLED WATER VALVE AND PREVENT SUPPLY FAN OPERATION UPON DETECTION OF HIGH WATER LEVEL AND SHALL INDICATE AN ALARM TO THE OPERATOR WORKSTATION.

FMCS SHALL INDICATE AN ALARM TO THE FMCS OPERATOR WORKSTATION IF THE FMCS COMMANDS ANY SUPPLY FAN TO OPERATE AND THE FAN CURRENT RELAY DETECTS INSUFFICIENT CURRENT FLOW.

WHENEVER FCU IS SHUTDOWN THE FOLLOWING SHALL OCCUR:
- HEATING AND CHILLED WATER CONTROL VALVE SHALL.
- SUPPLY FAN SHALL BE DE-ENERGIZED.

1 FAN COIL UNIT CONTROL
NO SCALE



SEQUENCE OF OPERATION:

- FMCS TAB CONTROLLER SHALL MODULATE THE TAB DAMPER AND TAB HW REHEAT COIL CONTROL VALVE TO MAINTAIN SPACE TEMPERATURE OF 72°F (ADJ.) WITH 5°F (ADJ.) DEAD BAND BASED ON A SIGNAL FROM A WALL MOUNTED TEMPERATURE SENSOR. SEE DRAWINGS FOR TEMPERATURE SENSOR REQUIREMENTS. SPACES WITH ADJUSTABLE THERMOSTATS WILL ALLOW A +/- 3° F (ADJ.) OFFSET FROM THE DDC SETPOINT.
- AT FULL COOLING, THE TAB SHALL BE OPEN TO MAXIMUM CFM POSITION. THE REHEAT COIL CONTROL VALVE SHALL BE CLOSED.
- UPON A FALL IN SPACE TEMPERATURE, THE TAB SHALL MODULATE CLOSED UNTIL SPACE SETPOINT IS MAINTAINED, OR UNTIL IT REACHES ITS MINIMUM SCHEDULED CFM POSITION PER THE TAB SCHEDULE. THE REHEAT COIL CONTROL VALVE SHALL BE CLOSED.
- UPON A FURTHER FALL IN SPACE TEMPERATURE, THE REHEAT COIL CONTROL VALVE SHALL MODULATE OPEN TO MAINTAIN SPACE SETPOINT UNTIL THE SUPPLY AIR TEMPERATURE IS 20°F ABOVE ROOM TEMPERATURE SETPOINT.
- UPON A FURTHER FALL IN SPACE TEMPERATURE, TAB SHALL OPEN TO MAINTAIN SETPOINT UNTIL TAB AIRFLOW REACHES ITS MAXIMUM HEATING SETTING. THE REHEAT CONTROL VALVE SHALL CONTINUE TO MODULATE OPEN TO MAINTAIN MAXIMUM DELTA T LISTED ABOVE.
- THE FMCS SHALL UTILIZE OUTPUT FROM ALL TERMINAL AIR BOX POSITIONS TO RESET THE SUPPLY DUCT DIFFERENTIAL STATIC PRESSURE.

ALARMS, INTERLOCKS & SAFETIES:

SEND AN ALARM TO THE FMCS OPERATOR INTERFACE IF THE SPACE TEMPERATURE IS MORE THAN 10°F (ADJ.) ABOVE OR BELOW SETPOINT.

2 TAB CONTROL W/ HOT WATER REHEAT - TAB-A
NO SCALE

CONTROL SYMBOLS LIST

SYMBOL:	DESCRIPTION:
	FAN
MTR	MOTOR
R	CONTACTOR
	PUMP
SP	STATIC SWITCH
T	LOW LIMIT TEMPERATURE SWITCH
T	AVERAGING TEMPERATURE SENSOR
T	PROBE TEMPERATURE SENSOR
H	HUMIDITY SENSOR
H	HUMIDIFIER
FM	DUCT FLOW METER
DSD	DUCT SMOKE DETECTOR
FS	AIR FLOW SWITCH
C	CARBON MONOXIDE SENSOR
C_2	CARBON DIOXIDE SENSOR
H	HUMIDISTAT SENSOR
O	OCCUPANCY SENSOR
P	PRESSURE SENSOR / MONITOR
S	SENSOR
T	THERMOSTAT
H / P	HUMIDISTAT/SENSOR (DUCT MOUNTED) / PRESSURE SENSOR (DUCT MOUNTED)
T	TEMPERATURE SENSOR (DUCT MOUNTED)
ACT	ACTUATOR
DS	DOOR SWITCH
DP	DIFFERENTIAL PRESSURE SWITCH
CS	CURRENT SWITCH
VS	VIBRATION SWITCH
FM	FLOW METER
AI	ANALOG INPUT
AO	ANALOG OUTPUT
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT
	HEATING/ COOLING COIL
	FILTER
	AIR BLENDER
	OPPOSED BLADE DAMPER
	PARALLEL BLADE DAMPER
	TERMINAL AIR BOX W/REHEAT
	TERMINAL AIR BOX W/REHEAT
	NORMALL CLOSED CONTACT
	NORMALLY OPEN CONTACT
	MANUAL MOTOR STARTER W/THERMAL OVERLOAD
CWR	CHILLED WATER RETURN
CWS	CHILLED WATER SUPPLY
HWR	HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
	CONTROL VALVE (THREE-WAY)
	CONTROL VALVE (TWO-WAY)
	CHECK VALVE
T	TEMPERATURE SENSOR WITH WELL
F	FLOW SWITCH
EA	EXHAUST/RELIEF AIR
MA	MIXED AIR
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
OA	OUTSIDE AIR
RA	RETURN AIR
SA	SUPPLY AIR

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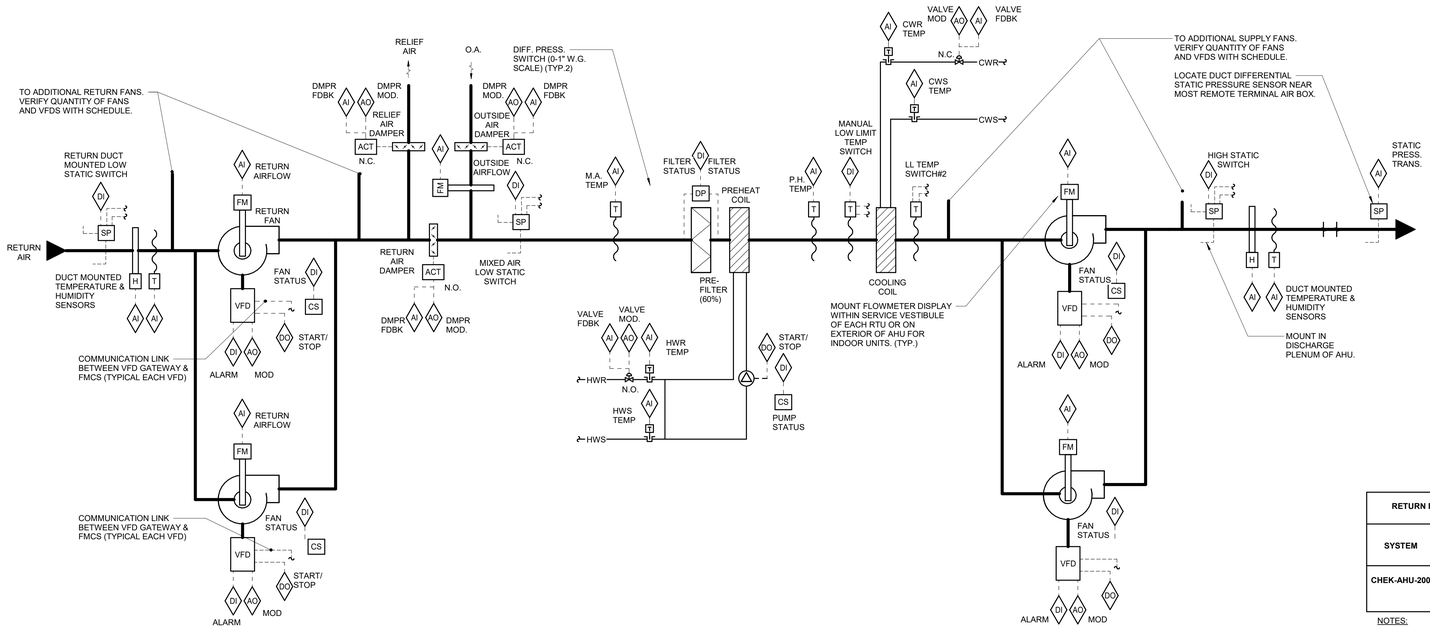
Sheet Title:

VENTILATION CONTROLS

Sheet #:

V5.00



AIR HANDLING UNIT - CHEK-AHU-2001
VAV CHILLED AND HEATING WATER

1 — 12" = 1'-0"

AHU REPORT GENERATION:
DDC FMCS SHALL MONITOR THE FOLLOWING POINTS ON 10 MINUTE (ADJ.) INTERVALS WITHIN A SINGLE TREND. THE TREND SHALL RUN FOR A 100-DAY (ADJ.) DURATION AT WHICH POINT THE NEWEST VALUES SHALL AUTOMATICALLY OVERWRITE THE OLDEST VALUES:

- DATE
- TIME
- GLOBAL OUTSIDE AIR TEMP [°F]
- GLOBAL OUTSIDE AIR DEWPOINT [°F]
- GLOBAL OUTSIDE AIR HUMIDITY [%RH]
- SUPPLY AIRFLOW [CFM]
- SUPPLY AIR TEMP (SAT) [°F]
- SUPPLY AIR TEMP SETPOINT [°F]
- SUPPLY AIR RELATIVE HUMIDITY [%]
- SUPPLY AIR DEWPOINT [°F]
- RETURN AIRFLOW [CFM]
- RETURN AIR TEMP (RAT) [°F]
- RETURN AIR RELATIVE HUMIDITY [%]
- OUTSIDE AIRFLOW [CFM]
- MIXED AIR TEMP [°F]
- PREHEAT COIL DISCHARGE AIR TEMP [°F]
- PRE-FILTER ALARM (30% FILTER) [STATUS]
- HEATING WATER VALVE POSITION [% OPEN]
- HEATING PUMP [ON/OFF]
- CHILLED WATER VALVE POSITION [% OPEN]
- SUPPLY DUCT STATIC PRESSURE SETPOINT [INCHES W.G.]
- SUPPLY DUCT STATIC PRESSURE [INCHES W.G.]
- SUPPLY FAN VFD OUTPUT [% FULL SPEED]
- RETURN FAN VFD OUTPUT [% FULL SPEED]
- OUTSIDE AIR DAMPER POSITION [% OPEN]
- RETURN AIR DAMPER POSITION [% OPEN]
- RELIEF AIR DAMPER POSITION [% OPEN]

THIS INFORMATION SHALL BE ACCESSIBLE TO VIEW IN GRAPHICAL FORM ON THE FMCS OPERATOR WORKSTATION.

TRENDING REQUIREMENTS:
DIGITAL POINTS: RECORD EVERY CHANGE OF ACTION WITH CORRESPONDING TIME STAMP FOR POINTS LISTED.
ANALOG POINTS: RECORD EVERY [15 MINUTES] WITH CORRESPONDING TIME STAMP FOR POINTS LISTED.
[INCLUDE MEETING TO ESTABLISH CUSTOM REPORTS TO OVERLAY [#]# POINTS DESCRIBED ABOVE AS DESIRED BY OWNER]
THIS INFORMATION SHALL BE STORED TO A MEMORY LOCATION ON THE FMCS OPERATOR WORKSTATION THAT IS MAINTAINED FOR A PERIOD OF ONE YEAR.

SEQUENCE OF OPERATION:

WHEN AHU/RTU IS INDEXED TO RUN, THE FOLLOWING SHALL OCCUR:
- SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS SHALL OPEN.
- AFTER A 30 SECOND DELAY (ADJ.) TO ALLOW FOR OPENING OF SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS. SUPPLY FAN SHALL BE ENABLED TO RUN.
- WHEN THE SUPPLY FAN HAS STARTED THE RETURN FAN AND INTERLOCKED EXHAUST FANS SHALL START AS SHOWN IN THE FAN INTERLOCK SCHEDULE.

SUPPLY FAN OPERATION:
FMCS SHALL MODULATE SIGNAL TO SUPPLY FAN VFD TO MAINTAIN DUCT STATIC PRESSURE AS MEASURED BY STATIC PRESSURE TRANSMITTER NEAR THE END OF THE CRITICAL DUCT BRANCH.

RETURN FAN OPERATION:
RETURN FAN SHALL BE INDEXED TO RUN WHENEVER THE SUPPLY FAN IS INDEXED TO RUN. FMCS SHALL MODULATE SIGNAL TO RETURN FAN VFD AS REQUIRED TO MAINTAIN THE AIRFLOW OFFSET AS INDICATED IN THE RETURN FAN AIRFLOW SCHEDULE.

STATIC PRESSURE RESET:
FMCS SHALL RESET SUPPLY DUCT STATIC PRESSURE SETPOINT BELOW THE MAXIMUM SETPOINT AS REQUIRED TO MAINTAIN AT LEAST ONE SUPPLY TAB DAMPER 90% (ADJ.) OPEN. FMCS SHALL MONITOR ALL SUPPLY TERMINAL AIR BOX POSITIONS TO RESET THE SUPPLY DUCT DIFFERENTIAL STATIC PRESSURE.

DISCHARGE AIR TEMPERATURE SET POINT:
DISCHARGE AIR SET POINT SHALL BE 55°F (ADJ.).

DISCHARGE AIR TEMPERATURE RESET:
RESET DISCHARGE AIR TEMPERATURE BASED ON THE ZONE WITH THE GREATEST CALL FOR COOLING. RESET THE TEMPERATURE AS FOLLOWS:
- WHEN WORST CASE TAB IS LESS THAN 90% (ADJ.) OPEN FOR TEN MINUTES (ADJ.) THEN THE DISCHARGE AIR TEMPERATURE SHALL INCREASE BY 1°F (ADJ.). THIS SHALL CONTINUE UNTIL AHU MAXIMUM DISCHARGE AIR TEMPERATURE OF 60°F (ADJ.) IS ACHIEVED.
- WHEN WORST CASE TAB IS MORE THAN 90% OPEN FOR TEN MINUTES (ADJ.) THEN THE DISCHARGE AIR TEMPERATURE SHALL DROP BY 1°F (ADJ.). THIS SHALL CONTINUE UNTIL AHU MINIMUM DISCHARGE AIR TEMPERATURE OF 55°F (ADJ.) IS ACHIEVED.
- THE MAXIMUM ALLOWABLE RETURN AIR HUMIDITY SETPOINT SHALL BE 60% (ADJ.). IF RETURN AIR HUMIDITY IS GREATER THAN SETPOINT, RESET DISCHARGE AIR TEMPERATURE TO 55°F UNTIL RETURN AIR HUMIDITY IS 5% LESS THAN MAXIMUM SETPOINT FOR 10 MINUTES (ADJ.).

STATIC PRESSURE AND DISCHARGE AIR TEMPERATURE RESET PRIORITY:
RESET THE DISCHARGE AIR TEMPERATURE PRIOR TO RESETTING THE DUCTWORK STATIC PRESSURE SETPOINT. ONCE THE MAXIMUM SUPPLY TEMPERATURE IS REACHED THEN THE SYSTEM SHALL ENABLE THE STATIC PRESSURE RESET.

VENTILATION AIR CONTROL:
WHENEVER THE AIR HANDLING UNIT IS IN OCCUPIED MODE, THE OUTSIDE AIR DAMPER SHALL BE FULLY OPEN. THE RETURN AIR AND RELIEF AIR DAMPER SHALL MODULATE IN OPPOSITION TO MAINTAIN THE MINIMUM OUTSIDE AIR FLOW RATE, OR TO SATISFY THE ECONOMIZER DISCHARGE AIR SEQUENCE.

COOLING COIL OPERATION:
WHEN IN MINIMUM OUTSIDE AIR MODE, FMCS SHALL MODULATE CHILLED WATER CONTROL VALVE AS REQUIRED TO MAINTAIN DISCHARGE AIR TEMPERATURE SET POINT.

WHEN IN ECONOMIZER MODE, FMCS SHALL NOT MODULATE COOLING CONTROL VALVE UNLESS RETURN AIR DAMPER IS 5% (ADJ.) OPEN AND RELIEF AIR DAMPER IS 95% (ADJ.) OPEN.

PREHEAT COIL OPERATION:
PREHEAT COIL CONTROLS SHALL BE ENABLED WHEN OUTSIDE AIR TEMP DROPS BELOW 50°F (ADJ.). PREHEAT COIL CONTROLS SHALL BE DISABLED WHEN OUTSIDE AIR TEMP RISES ABOVE 54°F (ADJ.).

WHEN OUTSIDE AIR TEMPERATURE RISES ABOVE 38°F (ADJ.) FOR 10 MINUTES (ADJ.) HEATING WATER COIL CIRCULATION PUMP SHALL OPERATE ONLY WHEN HEATING IS CALLED FOR (HEATING WATER VALVE IS COMMANDED TO OPEN). WHEN OUTSIDE AIR TEMP DROPS BELOW 38°F (ADJ.) HEATING WATER COIL CIRCULATION PUMP SHALL OPERATE CONTINUOUSLY. ONCE ENERGIZED, HEATING WATER COIL CIRCULATION PUMP SHALL REMAIN IN OPERATION FOR MINIMUM 5 MINUTES (ADJ.) TO PREVENT SHORT CYCLING.

FMCS SHALL MODULATE HEATING WATER CONTROL VALVE AS REQUIRED TO MAINTAIN DISCHARGE AIR TEMPERATURE SET POINT.

ECONOMIZER OPERATION:
WHEN THE OUTSIDE AIR DRY BULB TEMPERATURE IS LESS THAN THE RETURN AIR DRY BULB TEMPERATURE THE FMCS SHALL ENABLE ECONOMIZER CONTROLS. WHEN OUTSIDE AIR DRY BULB TEMPERATURE IS GREATER THAN THE RETURN AIR DRY BULB TEMPERATURE FOR 10 MINUTES THE FMCS SHALL DISABLE ECONOMIZER CONTROLS AND SHALL RETURN THE UNIT TO MINIMUM OUTSIDE AIR MODE. ONCE ECONOMIZER CONTROLS HAVE BEEN ENABLED OR DISABLED, THE UNIT SHALL CONTINUE TO OPERATE IN THAT MODE FOR A MINIMUM OF 10 MINUTES (ADJ.) BEFORE BEING ALLOWED TO SWITCH BACK (TO PREVENT SHORT CYCLING).

IN ECONOMIZER MODE THE FMCS SHALL MODULATE THE RETURN AND RELIEF DAMPERS AS REQUIRED TO MAINTAIN DISCHARGE AIR TEMPERATURE SETPOINT.

ALARMS, INTERLOCKS, AND SAFETIES:
WHEN FIRE ALARM CONTROL PANEL INDICATES AN ALARM CONDITION, AHU SHALL BE SHUTDOWN.

THE FOLLOWING CONDITIONS SHALL SHUTDOWN THE AHU AND SHALL INDICATE WHICH DEVICE IS IN AN ALARM CONDITION AT THE FMCS WORKSTATION:
- LOW STATIC PRESSURE SWITCH INDICATES RETURN DUCT PRESSURE LESS THAN THE SPECIFIED DUCT PRESSURE CLASS.
- LOW STATIC PRESSURE SWITCH INDICATES MIXED AIR PRESSURE LESS THAN THE SPECIFIED DUCT PRESSURE CLASS OF THE OUTSIDE AIR DUCTWORK.
- HIGH STATIC PRESSURE SWITCH INDICATES SUPPLY DUCT STATIC PRESSURE GREATER THAN THE SPECIFIED DUCT PRESSURE CLASS.
- SHOULD ANY ONE FOOT SECTION OF THE MANUAL RESET LOW LIMIT TEMPERATURE SWITCH SENSE AIR TEMP <35°F (ADJ.). IF MULTIPLE FREEZE STATS ARE REQUIRED, LOCATE ADJACENT TO EACH OTHER TO BE RESET BY A COMMON LATCHING RELAY.

THE FOLLOWING CONDITIONS SHALL INDICATE AN ALARM AT THE FMCS AND SHALL INDICATE WHICH DEVICE IS IN AN ALARM CONDITION, HOWEVER AHU SHALL CONTINUE TO OPERATE:
- HEATING COIL CIRCULATION PUMP IS COMMANDED TO RUN AND CURRENT RELAY INDICATES INSUFFICIENT CURRENT FLOW.
- AN ALARM IS INDICATED AT ANY SUPPLY FAN VFD OR RETURN FAN VFD.
- DIFFERENTIAL PRESSURE **SWITCH** ACROSS PRE-FILTER (30%) BANK EXCEEDS 0.6 INCHES W.G. (ADJ.)
- SEND AN ALARM TO THE FMCS OPERATOR INTERFACE IF THE DISCHARGE AIR TEMPERATURE IS MORE THAN 5°F (ADJ.) ABOVE OR BELOW SETPOINT.
- SHOULD ANY ONE FOOT SECTION OF THE AUTO RESET LOW LIMIT TEMPERATURE SWITCH #2 SENSE AIR TEMPERATURE <38°F (ADJ.) THE FOLLOWING SHALL OCCUR:
- THE RETURN AIR DAMPER SHALL FULLY OPEN.
- THE OUTSIDE AIR AND RELIEF DAMPERS SHALL FULLY CLOSE.
- THIS ACTION SHALL OCCUR INDEPENDENT OF THE FMCS AHU CONTROLLER. ONCE THE LOW LIMIT TEMPERATURE SWITCH #2 AIR TEMPERATURE RISES ABOVE SET POINT, OPERATION OF THE OUTSIDE AIR, RELIEF AIR, AND RETURN AIR DAMPERS SHALL BE RESTORED. HOWEVER, THE ALARM SHALL CONTINUE UNTIL ACKNOWLEDGED AND MANUALLY RESET BY THE FMCS OPERATOR.

IN THE EVENT SUPPLY FAN IS NOT RUNNING (AS INDICATED BY THE CURRENT SENSING RELAYS) RETURN AIR FAN SHALL BE DE-ENERGIZED.

WHENEVER AHU/RTU IS SHUTDOWN THE FOLLOWING SHALL OCCUR:
- THE OUTSIDE AIR DAMPER AND RELIEF AIR DAMPER SHALL FULLY CLOSE.
- RETURN AIR DAMPER SHALL FULLY OPEN.
- PREHEAT COIL HEATING WATER CIRCULATION PUMP AND HEATING WATER CONTROL VALVE SHALL REMAIN UNDER CONTROL OF ITS INPUT SENSOR.
- ALL SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS SHALL FULLY CLOSE.
- CHILLED WATER CONTROL VALVE SHALL FULLY CLOSE.
- SUPPLY FAN AND RETURN FAN VFDS SHALL BE DE-ENERGIZED.
- INTERLOCKED EXHAUST FANS SHALL BE DE-ENERGIZED.

UNOCCUPIED MODE:
PROVIDE TIME OF DAY SCHEDULE TO ALLOW AHU TO ENTER UNOCCUPIED MODE PER SCHEDULE. COORDINATE SCHEDULE WITH OWNER.

- THE SUPPLY AND RETURN FANS SHALL CONTINUE RUNNING. WHEN USING CONSTANT VOLUME OFFSET FOR RETURN AIR FAN CONTROL, THE OFFSET SHALL GO TO ZERO AND THE SUPPLY FAN SHALL BE LIMITED TO THE MAXIMUM RETURN FAN AIRFLOW.
- THE OUTSIDE AIR AND RELIEF AIR DAMPERS SHALL CLOSE AND THE RETURN AIR DAMPER SHALL OPEN. ECONOMIZER CYCLE SHALL TAKE PRECEDENCE OVER DAMPER POSITION.
- ALL SPACE TEMPERATURES SHALL BE ALLOWED TO VARY +/- 10°F (ADJ.) FROM OCCUPIED SETPOINT.

HEATING OPTIMUM START-UP:
- THIS CYCLE SHALL OVERRIDE THE UNOCCUPIED CYCLE. IF THE SYSTEM WAS OPERATING AS A RESULT OF THE UNOCCUPIED CYCLE, THE SYSTEM SHALL CONTINUE TO OPERATE. THE DDC SYSTEM SHALL DETERMINE THE MINIMUM RUNTIME TO WARM THE SPACES TO THEIR SETPOINT WHEN THE COMPUTED START TIME IS REACHED. THE AIR HANDLING UNIT DISCHARGE AIR TEMPERATURE SHALL BE MAINTAINED AT A SETPOINT OF 85°F (ADJ.). THE SYSTEM SHALL CONTINUE TO OPERATE IN THIS MODE UNTIL ALL TEMPERATURES EXCEED A SETPOINT OF 68°F (ADJ.). AT THAT TIME, THE DDC SYSTEM SHALL SWITCH TO OCCUPIED CONTROL.

COOLING OPTIMUM START-UP:
- THIS CYCLE SHALL OVERRIDE THE UNOCCUPIED CYCLE. IF THE SYSTEM WAS OPERATING AS A RESULT OF THE UNOCCUPIED CYCLE, THE SYSTEM SHALL CONTINUE TO OPERATE. THE DDC SYSTEM SHALL DETERMINE THE MINIMUM RUNTIME TO COOL THE SPACES TO THEIR SETPOINT WHEN THE COMPUTED START TIME IS REACHED. THE AIR HANDLING UNIT DISCHARGE AIR TEMPERATURE SHALL BE MAINTAINED AT A SETPOINT OF 55°F (ADJ.). THE SYSTEM SHALL CONTINUE TO OPERATE IN THIS MODE UNTIL ALL TEMPERATURES ARE LESS THAN A SETPOINT OF 75°F (ADJ.). AT THAT TIME, THE DDC SYSTEM SHALL SWITCH TO OCCUPIED CONTROL.

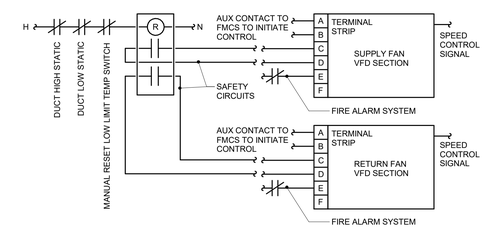
GRAPHICAL DISPLAY:
DISPLAY THE GLOBAL OUTSIDE AIR TEMPERATURE AND HUMIDITY ON AHU GRAPHIC PAGE.

RETURN FAN AIRFLOW SCHEDULE

SYSTEM	SUPPLY CFM	EXHAUST FANS	PRESSURIZATION CFM	REMARKS
CHEK-AHU-2001	15,105	EXISTING RESTROOM EXHAUST FAN (SEE FLOOR PANS FOR EXACT LOCATION)	250	NOTES 1,2,3

NOTES:

1. **RETURN FAN AIRFLOW SETPOINT SHALL BE THE SUPPLY FAN AIRFLOW (AS MEASURED BY THE AFMS) MINUS THE SUM OF THE EXHAUST FAN AIRFLOWS MINUS THE PRESSURIZATION CFM.**
2. **FMCS SHALL DETERMINE THE OPERATIONAL STATUS OF EACH EXHAUST FAN VIA THE CURRENT SENSING RELAY TO DETERMINE WHETHER THE CFM ASSOCIATED WITH THAT FAN SHOULD BE INCLUDED IN THE RETURN FAN AIRFLOW CALCULATION.**
3. **EXHAUST FAN AIRFLOWS SHALL NOT BE THE CFM INDICATED ON THE FAN SCHEDULE, BUT SHALL BE THE AIRFLOW INDICATED IN THE FINAL TAB REPORT.**



SUPPLY & RETURN FAN VFD CONTROL

CONNECT FIRE ALARM TO AHU START/STOP CIRCUIT SO FIRE ALARM CAN SHUT DOWN AND SO AHU CAN AUTOMATICALLY RESTART AFTER A FIRE ALARM TEST

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2	
3	
4	

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VENTILATION CONTROLS

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V5.01

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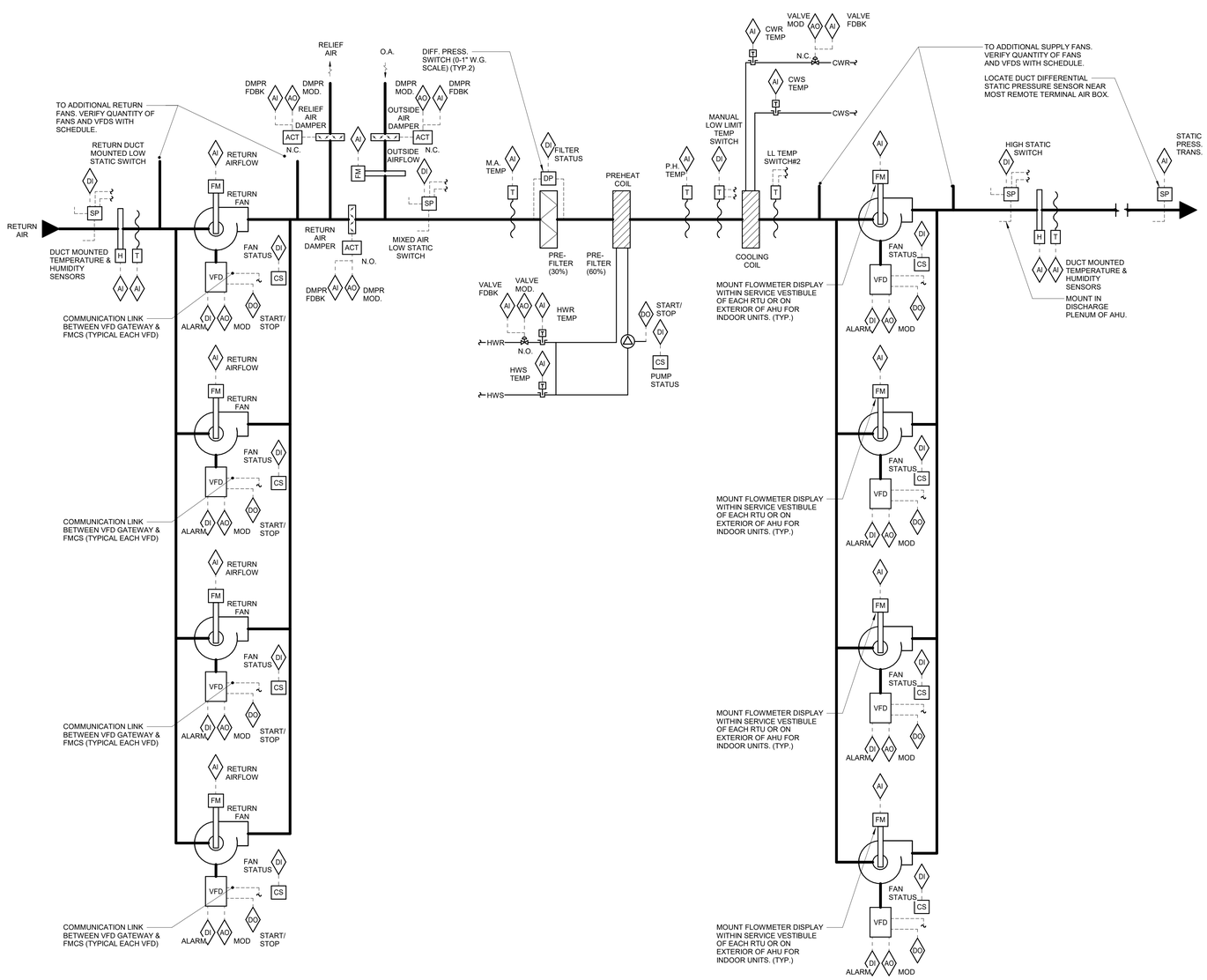
PROJECT #23008968.00



AHU REPORT GENERATION:
DDC FMCS SHALL MONITOR THE FOLLOWING POINTS ON 10 MINUTE (ADJ.) INTERVALS WITHIN A SINGLE TREND. THE TREND SHALL RUN FOR A 100-DAY (ADJ.) DURATION AT WHICH POINT THE NEWEST VALUES SHALL AUTOMATICALLY OVERWRITE THE OLDEST VALUES:

- DATE
- TIME
- GLOBAL OUTSIDE AIR TEMP [°F]
- GLOBAL OUTSIDE AIR DEWPOINT [°F]
- GLOBAL OUTSIDE AIR HUMIDITY [%RH]
- SUPPLY AIRFLOW [CFM]
- SUPPLY AIR TEMP (SAT) [°F]
- SUPPLY AIR TEMP SETPOINT [°F]
- SUPPLY AIR RELATIVE HUMIDITY [%]
- SUPPLY AIR DEWPOINT [°F]
- RETURN AIRFLOW [CFM]
- RETURN AIR TEMP (RAT) [°F]
- RETURN AIR RELATIVE HUMIDITY [%]
- OUTSIDE AIRFLOW [CFM]
- MIXED AIR TEMP [°F]
- PREHEAT COIL DISCHARGE AIR TEMP [°F]
- PRE-FILTER ALARM (30% FILTER) [STATUS]
- HEATING WATER VALVE POSITION [% OPEN]
- HEATING PUMP [ON/OFF]
- CHILLED WATER VALVE POSITION [% OPEN]
- SUPPLY DUCT STATIC PRESSURE SETPOINT [INCHES W.G.]
- SUPPLY DUCT STATIC PRESSURE [INCHES W.G.]
- SUPPLY FAN VFD OUTPUT [% FULL SPEED]
- RETURN FAN VFD OUTPUT [% FULL SPEED]
- OUTSIDE AIR DAMPER POSITION [% OPEN]
- RETURN AIR DAMPER POSITION [% OPEN]
- RELIEF AIR DAMPER POSITION [% OPEN]

THIS INFORMATION SHALL BE ACCESSIBLE TO VIEW IN GRAPHICAL FORM ON THE FMCS OPERATOR WORKSTATION.

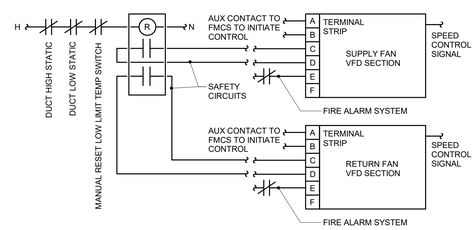
TRENDING REQUIREMENTS:
DIGITAL POINTS: RECORD EVERY CHANGE OF ACTION WITH CORRESPONDING TIME STAMP FOR ALARMS LISTED.
ANALOG POINTS: RECORD EVERY [15 MINUTES] WITH CORRESPONDING TIME STAMP FOR POINTS LISTED.
[INCLUDE MEETING TO ESTABLISH CUSTOM REPORTS TO OVERLAY [#]# POINTS DESCRIBED ABOVE AS DESIRED BY OWNER]
THIS INFORMATION SHALL BE STORED TO A MEMORY LOCATION ON THE FMCS OPERATOR WORKSTATION THAT IS MAINTAINED FOR A PERIOD OF ONE YEAR.

RETURN FAN AIRFLOW SCHEDULE

SYSTEM	SUPPLY CFM	EXHAUST FANS	PRESSURIZATION CFM	REMARKS
CHEK-AHU-2002	22,045	EXISTING RESTROOM EXHAUST FAN (SEE FLOOR PLANS FOR EXACT LOCATION)	0	NOTES 1,2,3

NOTES:

1. **RETURN FAN AIRFLOW SETPOINT SHALL BE THE SUPPLY FAN AIRFLOW (AS MEASURED BY THE AFMS) MINUS THE SUM OF THE EXHAUST FAN AIRFLOWS MINUS THE PRESSURIZATION CFM.**
2. **FMCS SHALL DETERMINE THE OPERATIONAL STATUS OF EACH EXHAUST FAN VIA THE CURRENT SENSING RELAY TO DETERMINE WHETHER THE CFM ASSOCIATED WITH THAT FAN SHOULD BE INCLUDED IN THE RETURN FAN AIRFLOW CALCULATION.**
3. **EXHAUST FAN AIRFLOWS SHALL NOT BE THE CFM INDICATED ON THE FAN SCHEDULE, BUT SHALL BE THE AIRFLOW INDICATED IN THE FINAL TAB REPORT.**



SUPPLY & RETURN FAN VFD CONTROL

CONNECT FIRE ALARM TO AHU START/STOP CIRCUIT SO FIRE ALARM CAN SHUT DOWN AND SO AHU CAN AUTOMATICALLY RESTART AFTER A FIRE ALARM TEST

SEQUENCE OF OPERATION:

WHEN AHU/RTU IS INDEXED TO RUN, THE FOLLOWING SHALL OCCUR:
- SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS SHALL OPEN.
- AFTER A 30 SECOND DELAY (ADJ.) TO ALLOW FOR OPENING OF SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS. SUPPLY FAN SHALL BE ENABLED TO RUN.
- WHEN THE SUPPLY FAN HAS STARTED THE RETURN FAN AND INTERLOCKED EXHAUST FANS SHALL START AS SHOWN IN THE FAN INTERLOCK SCHEDULE.

SUPPLY FAN OPERATION:
FMCS SHALL MODULATE SIGNAL TO SUPPLY FAN VFD TO MAINTAIN DUCT STATIC PRESSURE AS MEASURED BY STATIC PRESSURE TRANSMITTER NEAR THE END OF THE CRITICAL DUCT BRANCH.

RETURN FAN OPERATION:
RETURN FAN SHALL BE INDEXED TO RUN WHENEVER THE SUPPLY FAN IS INDEXED TO RUN. FMCS SHALL MODULATE SIGNAL TO RETURN FAN VFD AS REQUIRED TO MAINTAIN THE AIRFLOW OFFSET AS INDICATED IN THE RETURN FAN AIRFLOW SCHEDULE.

STATIC PRESSURE RESET:
FMCS SHALL RESET SUPPLY DUCT STATIC PRESSURE SETPOINT BELOW THE MAXIMUM SETPOINT AS REQUIRED TO MAINTAIN AT LEAST ONE SUPPLY TAB DAMPER 90% (ADJ.) OPEN. FMCS SHALL MONITOR ALL SUPPLY TERMINAL AIR BOX POSITIONS TO RESET THE SUPPLY DUCT DIFFERENTIAL STATIC PRESSURE.

DISCHARGE AIR TEMPERATURE SET POINT:
DISCHARGE AIR SET POINT SHALL BE 50°F (ADJ.).

DISCHARGE AIR TEMPERATURE RESET:
RESET DISCHARGE AIR TEMPERATURE BASED ON THE ZONE WITH THE GREATEST CALL FOR COOLING. RESET THE TEMPERATURE AS FOLLOWS:
- WHEN WORST CASE TAB IS LESS THAN 90% (ADJ.) OPEN FOR TEN MINUTES (ADJ.) THEN THE DISCHARGE AIR TEMPERATURE SHALL INCREASE BY 1ºF (ADJ.). THIS SHALL CONTINUE UNTIL AHU MAXIMUM DISCHARGE AIR TEMPERATURE OF 55ºF (ADJ.) IS ACHIEVED.
- WHEN WORST CASE TAB IS MORE THAN 90% OPEN FOR TEN MINUTES (ADJ.) THEN THE DISCHARGE AIR TEMPERATURE SHALL DROP BY 1ºF (ADJ.). THIS SHALL CONTINUE UNTIL AHU MINIMUM DISCHARGE AIR TEMPERATURE OF 50ºF (ADJ.) IS ACHIEVED.
- THE MAXIMUM ALLOWABLE RETURN AIR HUMIDITY SETPOINT SHALL BE 60% (ADJ.). IF RETURN AIR HUMIDITY IS GREATER THAN SETPOINT, RESET DISCHARGE AIR TEMPERATURE TO 50°F UNTIL RETURN AIR HUMIDITY IS 5% LESS THAN MAXIMUM SETPOINT FOR 10 MINUTES (ADJ.).

STATIC PRESSURE AND DISCHARGE AIR TEMPERATURE RESET PRIORITY:
RESET THE DISCHARGE AIR TEMPERATURE PRIOR TO RESETTING THE DUCTWORK STATIC PRESSURE SETPOINT. ONCE THE MAXIMUM SUPPLY TEMPERATURE IS REACHED THEN THE SYSTEM SHALL ENABLE THE STATIC PRESSURE RESET.

VENTILATION AIR CONTROL:
WHENEVER THE AIR HANDLING UNIT IS IN OCCUPIED MODE, THE OUTSIDE AIR DAMPER SHALL BE FULLY OPEN. THE RETURN AIR AND RELIEF AIR DAMPER SHALL MODULATE IN OPPOSITION TO MAINTAIN THE MINIMUM OUTSIDE AIR FLOW RATE, OR TO SATISFY THE ECONOMIZER DISCHARGE AIR SEQUENCE.

COOLING COIL OPERATION:
WHEN IN MINIMUM OUTSIDE AIR MODE, FMCS SHALL MODULATE CHILLED WATER CONTROL VALVE AS REQUIRED TO MAINTAIN DISCHARGE AIR TEMPERATURE SET POINT.

WHEN IN ECONOMIZER MODE, FMCS SHALL NOT MODULATE COOLING CONTROL VALVE UNLESS RETURN AIR DAMPER IS 5% (ADJ.) OPEN AND RELIEF AIR DAMPER IS 95% (ADJ.) OPEN.

PREHEAT COIL OPERATION:
PREHEAT COIL CONTROLS SHALL BE ENABLED WHEN OUTSIDE AIR TEMP DROPS BELOW 50°F (ADJ.). PREHEAT COIL CONTROLS SHALL BE DISABLED WHEN OUTSIDE AIR TEMP RISES ABOVE 54° F (ADJ.).

WHEN OUTSIDE AIR TEMPERATURE RISES ABOVE 38°F (ADJ.) FOR 10 MINUTES (ADJ.) HEATING WATER COIL CIRCULATION PUMP SHALL OPERATE ONLY WHEN HEATING IS CALLED FOR (HEATING WATER VALVE IS COMMANDED TO OPEN). WHEN OUTSIDE AIR TEMP DROPS BELOW 38°F (ADJ.) HEATING WATER COIL CIRCULATION PUMP SHALL OPERATE CONTINUOUSLY. ONCE ENERGIZED, HEATING WATER COIL CIRCULATION PUMP SHALL REMAIN IN OPERATION FOR MINIMUM 5 MINUTES (ADJ.) TO PREVENT SHORT CYCLING.

FMCS SHALL MODULATE HEATING WATER CONTROL VALVE AS REQUIRED TO MAINTAIN DISCHARGE AIR TEMPERATURE SET POINT.

ECONOMIZER OPERATION:
WHEN THE OUTSIDE AIR DRY BULB TEMPERATURE IS LESS THAN THE RETURN AIR DRY BULB TEMPERATURE THE FMCS SHALL ENABLE ECONOMIZER CONTROLS. WHEN OUTSIDE AIR DRY BULB TEMPERATURE IS GREATER THAN THE RETURN AIR DRY BULB TEMPERATURE FOR 10 MINUTES THE FMCS SHALL DISABLE ECONOMIZER CONTROLS AND SHALL RETURN THE UNIT TO MINIMUM OUTSIDE AIR MODE. ONCE ECONOMIZER CONTROLS HAVE BEEN ENABLED OR DISABLED, THE UNIT SHALL CONTINUE TO OPERATE IN THAT MODE FOR A MINIMUM OF 10 MINUTES (ADJ.) BEFORE BEING ALLOWED TO SWITCH BACK (TO PREVENT SHORT CYCLING).

IN ECONOMIZER MODE THE FMCS SHALL MODULATE THE RETURN AND RELIEF DAMPERS AS REQUIRED TO MAINTAIN DISCHARGE AIR TEMPERATURE SETPOINT.

ALARMS, INTERLOCKS, AND SAFETIES:
WHEN FIRE ALARM CONTROL PANEL INDICATES AN ALARM CONDITION, AHU SHALL BE SHUTDOWN.

THE FOLLOWING CONDITIONS SHALL SHUTDOWN THE AHU AND SHALL INDICATE WHICH DEVICE IS IN AN ALARM CONDITION AT THE FMCS WORKSTATION:
- LOW STATIC PRESSURE SWITCH INDICATES RETURN DUCT PRESSURE LESS THAN THE SPECIFIED DUCT PRESSURE CLASS.
- LOW STATIC PRESSURE SWITCH INDICATES MIXED AIR PRESSURE LESS THAN THE SPECIFIED DUCT PRESSURE CLASS OF THE OUTSIDE AIR DUCTWORK.
- HIGH STATIC PRESSURE SWITCH INDICATES SUPPLY DUCT STATIC PRESSURE GREATER THAN THE SPECIFIED DUCT PRESSURE CLASS.
- SHOULD ANY ONE FOOT SECTION OF THE MANUAL RESET LOW LIMIT TEMPERATURE SWITCH SENSE AIR TEMP <35°F (ADJ.). IF MULTIPLE FREEZE STATS ARE REQUIRED, LOCATE ADJACENT TO EACH OTHER TO BE RESET BY A COMMON LATCHING RELAY.

THE FOLLOWING CONDITIONS SHALL INDICATE AN ALARM AT THE FMCS AND SHALL INDICATE WHICH DEVICE IS IN AN ALARM CONDITION, HOWEVER AHU SHALL CONTINUE TO OPERATE:
- HEATING COIL CIRCULATION PUMP IS COMMANDED TO RUN AND CURRENT RELAY INDICATES INSUFFICIENT CURRENT FLOW.
- AN ALARM IS INDICATED AT ANY SUPPLY FAN VFD OR RETURN FAN VFD.
- DIFFERENTIAL PRESSURE **SWITCH** ACROSS PRE-FILTER (30%) BANK EXCEEDS 0.6 INCHES W.G. (ADJ.)
- SEND AN ALARM TO THE FMCS OPERATOR INTERFACE IF THE DISCHARGE AIR TEMPERATURE IS MORE THAN 5°F (ADJ.) ABOVE OR BELOW SETPOINT.
- SHOULD ANY ONE FOOT SECTION OF THE AUTO RESET LOW LIMIT TEMPERATURE SWITCH #2 SENSE AIR TEMPERATURE <38°F (ADJ.) THE FOLLOWING SHALL OCCUR:
- THE RETURN AIR DAMPER SHALL FULLY OPEN.
- THE OUTSIDE AIR AND RELIEF DAMPERS SHALL FULLY CLOSE. THIS ACTION SHALL OCCUR INDEPENDENT OF THE FMCS AHU CONTROLLER. ONCE THE LOW LIMIT TEMPERATURE SWITCH #2 AIR TEMPERATURE RISES ABOVE SET POINT, OPERATION OF THE OUTSIDE AIR, RELIEF AIR, AND RETURN AIR DAMPERS SHALL BE RESTORED. HOWEVER, THE ALARM SHALL CONTINUE UNTIL ACKNOWLEDGED AND MANUALLY RESET BY THE FMCS OPERATOR.

IN THE EVENT SUPPLY FAN IS NOT RUNNING (AS INDICATED BY THE CURRENT SENSING RELAYS) RETURN AIR FAN SHALL BE DE-ENERGIZED.

WHENEVER AHU/RTU IS SHUTDOWN THE FOLLOWING SHALL OCCUR:
- THE OUTSIDE AIR DAMPER AND RELIEF AIR DAMPER SHALL FULLY CLOSE.
- RETURN AIR DAMPER SHALL FULLY OPEN.
- PREHEAT COIL HEATING WATER CIRCULATION PUMP AND HEATING WATER CONTROL VALVE SHALL REMAIN UNDER CONTROL OF ITS INPUT SENSOR.
- ALL SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS SHALL FULLY CLOSE.
- CHILLED WATER CONTROL VALVE SHALL FULLY CLOSE.
- SUPPLY FAN AND RETURN FAN VFDS SHALL BE DE-ENERGIZED.
- INTERLOCKED EXHAUST FANS SHALL BE DE-ENERGIZED.

UNOCCUPIED MODE:
PROVIDE TIME OF DAY SCHEDULE TO ALLOW AHU TO ENTER UNOCCUPIED MODE PER SCHEDULE. COORDINATE SCHEDULE WITH OWNER.

- THE SUPPLY AND RETURN FANS SHALL CONTINUE RUNNING. WHEN USING CONSTANT VOLUME OFFSET FOR RETURN AIR FAN CONTROL, THE OFFSET SHALL GO TO ZERO AND THE SUPPLY FAN SHALL BE LIMITED TO THE MAXIMUM RETURN FAN AIRFLOW.
- THE OUTSIDE AIR AND RELIEF AIR DAMPERS SHALL CLOSE AND THE RETURN AIR DAMPER SHALL OPEN. ECONOMIZER CYCLE SHALL TAKE PRECEDENCE OVER DAMPER POSITION.
- ALL SPACE TEMPERATURES SHALL BE ALLOWED TO VARY +/- 10°F (ADJ.) FROM OCCUPIED SETPOINT.

HEATING OPTIMUM START-UP:
- THIS CYCLE SHALL OVERRIDE THE UNOCCUPIED CYCLE. IF THE SYSTEM WAS OPERATING AS A RESULT OF THE UNOCCUPIED CYCLE, THE SYSTEM SHALL CONTINUE TO OPERATE. THE DDC SYSTEM SHALL DETERMINE THE MINIMUM RUNTIME TO WARM THE SPACES TO THEIR SETPOINT WHEN THE COMPUTED START TIME IS REACHED. THE AIR HANDLING UNIT DISCHARGE AIR TEMPERATURE SHALL BE MAINTAINED AT A SETPOINT OF 85ºF (ADJ.). THE SYSTEM SHALL CONTINUE TO OPERATE IN THIS MODE UNTIL ALL TEMPERATURES EXCEED A SETPOINT OF 68ºF (ADJ.). AT THAT TIME, THE DDC SYSTEM SHALL SWITCH TO OCCUPIED CONTROL.

COOLING OPTIMUM START-UP:
- THIS CYCLE SHALL OVERRIDE THE UNOCCUPIED CYCLE. IF THE SYSTEM WAS OPERATING AS A RESULT OF THE UNOCCUPIED CYCLE, THE SYSTEM SHALL CONTINUE TO OPERATE. THE DDC SYSTEM SHALL DETERMINE THE MINIMUM RUNTIME TO COOL THE SPACES TO THEIR SETPOINT WHEN THE COMPUTED START TIME IS REACHED. THE AIR HANDLING UNIT DISCHARGE AIR TEMPERATURE SHALL BE MAINTAINED AT A SETPOINT OF 55ºF (ADJ.). THE SYSTEM SHALL CONTINUE TO OPERATE IN THIS MODE UNTIL ALL TEMPERATURES ARE LESS THAN A SETPOINT OF 75ºF (ADJ.). AT THAT TIME, THE DDC SYSTEM SHALL SWITCH TO OCCUPIED CONTROL.

GRAPHICAL DISPLAY:
DISPLAY THE GLOBAL OUTSIDE AIR TEMPERATURE AND HUMIDITY ON AHU GRAPHIC PAGE.

AIR HANDLING UNIT - CHEK-AHU-2002
VAV CHILLED AND HEATING WATER

1 NO SCALE

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Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS

#	Date / Description
1	
2	
3	
4	

Seal:

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Sheet Title:

VENTILATION CONTROLS

Sheet #:

V5.02

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0 1 2 3
REF. SCALE IN INCHES
PROJECT #23008968.00

FAN COIL UNIT SCHEDULE - HYDRONIC

NOTES:
1.SIZE UNITS OFF OF TOTAL MBH AND SENSIBLE MBH. GPM IS FOR REFERENCE ONLY AND IS BASED ON BASIS OF DESIGN SELECTIONS.
2.SIZE UNITS OFF OF HEATING MBH. GPM IS FOR REFERENCE ONLY AND IS BASED ON BASIS OF DESIGN SELECTIONS OR MINIMUM FLOW REQUIRED FOR BALANCING.

				EAT		COOLING COIL						HEATING COIL						ELECTRICAL								MAX. DIMENSIONS			WEIGHT				
																					DISCONNECT		CONTROLLER/ STARTER										
TAG NAME	AREA SERVED	CFM	EXT. S.P. IN W.C.	DB °F	WB °F	TOTAL MBH	SENSIBLE MBH	GPM (NOTE 1)	EWT °F	LWT °F	MAX W.P.D. FT. HD	MBH	EAT	LAT	EWT °F	GPM (NOTE 2)	MAX W.P.D. FT. HD	HP (NOTE E)	VOLTAGE	PHASES	BY (NOTE A)	TYPE (NOTE B)	TYPE (NOTE A)	SCCR	EMERGENCY POWER	LENGTH (IN.)	WIDTH (IN.)	HEIGHT (IN.)	DRY (LBS.)	OPERATING (LBS.)	MANUFACTURER	MODEL	NOTES
CHEK-FCU-1001	110A ADMIN	100	0.1	72.0	62.7	2.25	1.8	0.7	44	60	6.00	0.35	68.0	90	180	0.5	3.00	0.13	120	1	MFR	NF	ECM	5	No	33.000	30.000	11.000	68	78	TRANE	FCEB020	
CHEK-FCU-1002	110B ADMIN	100	0.1	72.0	62.7	2.25	1.8	0.7	44	60	6.00	0.35	68.0	90	180	0.5	3.00	0.13	120	1	MFR	NF	ECM	5	No	33.000	30.000	11.000	68	78	TRANE	FCEB020	
CHEK-FCU-1003	111 CS CONFERENCE	280	0.1	72.0	62.7	7.65	5.7	1.6	44	60	6.00	3.45	68.0	100	180	0.5	3.00	0.13	120	1	MFR	NF	ECM	5	No	38.000	30.000	11.000	78	88	TRANE	FCEB040	
CHEK-FCU-1004	111 CS CONFERENCE	280	0.1	72.0	62.7	7.65	5.7	1.6	44	60	6.00	3.45	68.0	100	180	0.5	3.00	0.13	120	1	MFR	NF	ECM	5	No	38.000	30.000	11.000	78	88	TRANE	FCEB040	
CHEK-FCU-1005	113 OFFICE	160	0.1	72.0	62.7	3.55	2.9	0.8	44	60	6.00	4.80	68.0	100	180	0.5	3.00	0.13	120	1	MFR	NF	ECM	5	No	33.000	30.000	11.000	68	78	TRANE	FCEB030	
CHEK-FCU-1006	115 OFFICE	160	0.1	72.0	62.7	3.5	2.85	0.8	44	60	6.00	4.70	68.0	100	180	0.5	3.00	0.13	120	1	MFR	NF	ECM	5	No	33.000	30.000	11.000	68	78	TRANE	FCEB030	
CHEK-FCU-1007	117 OFFICE	160	0.1	72.0	62.7	3.5	2.85	0.8	44	60	6.00	4.65	68.0	100	180	0.5	3.00	0.13	120	1	MFR	NF	ECM	5	No	33.000	30.000	11.000	68	78	TRANE	FCEB030	
CHEK-FCU-1008	119 OFFICE	160	0.1	72.0	62.7	3.5	2.85	0.8	44	60	6.00	4.65	68.0	100	180	0.5	3.00	0.13	120	1	MFR	NF	ECM	5	No	33.000	30.000	11.000	68	78	TRANE	FCEB030	
CHEK-FCU-1009	121 OFFICE	160	0.1	72.0	62.7	3.5	2.85	0.8	44	60	6.00	4.60	68.0	100	180	0.5	3.00	0.13	120	1	MFR	NF	ECM	5	No	33.000	30.000	11.000	68	78	TRANE	FCEB030	
CHEK-FCU-1010	123 OFFICE	160	0.1	72.0	62.7	3.5	2.85	0.8	44	60	6.00	4.65	68.0	100	180	0.5	3.00	0.13	120	1	MFR	NF	ECM	5	No	33.000	30.000	11.000	68	78	TRANE	FCEB030	
CHEK-FCU-1011	125 OFFICE	160	0.1	72.0	62.7	3.5	2.85	0.8	44	60	6.00	4.55	68.0	100	180	0.5	3.00	0.13	120	1	MFR	NF	ECM	5	No	33.000	30.000	11.000	68	78	TRANE	FCEB030	
CHEK-FCU-1012	127 OFFICE	160	0.1	72.0	62.7	3.55	2.9	0.8	44	60	6.00	4.75	68.0	100	180	0.5	3.00	0.13	120	1	MFR	NF	ECM	5	No	33.000	30.000	11.000	68	78	TRANE	FCEB030	
CHEK-FCU-1013	129 OFFICE	160	0.1	72.0	62.7	3.8	3.1	0.8	44	60	6.00	5.40	68.0	100	180	0.5	3.00	0.13	120	1	MFR	NF	ECM	5	No	33.000	30.000	11.000	68	78	TRANE	FCEB030	
CHEK-FCU-1014	130 CS FACULTY LOUNGE	570	0.1	72.0	62.7	14.7	10.8	2.3	44	60	6.00	8.25	68.0	100	180	0.5	3.00	0.22	120	1	MFR	NF	ECM	5	No	47.000	30.000	11.000	118	128	TRANE	FCEB060	
CHEK-FCU-1015	124 OFFICE	130	0.1	72.0	62.7	2.3	1.85	0.5	44	60	6.00	0.25	68.0	90	180	0.5	3.00	0.13	120	1	MFR	NF	ECM	5	No	33.000	30.000	11.000	68	78	TRANE	FCEB020	
CHEK-FCU-1016	CORRIDOR ROOMS	150	0.1	72.0	62.7	2.85	2.35	0.5	44	60	6.00	0.45	68.0	90	180	0.5	3.00	0.13	120	1	MFR	NF	ECM	5	No	33.000	30.000	11.000	68	78	TRANE	FCEB020	
CHEK-FCU-1017	122 OFFICE	130	0.1	72.0	62.7	2.35	1.85	0.5	44	60	6.00	0.25	68.0	90	180	0.5	3.00	0.13	120	1	MFR	NF	ECM	5	No	33.000	30.000	11.000	68	78	TRANE	FCEB020	
CHEK-FCU-1018	120 OFFICE	130	0.1	72.0	62.7	2.35	1.85	0.5	44	60	6.00	0.25	68.0	90	180	0.5	3.00	0.13	120	1	MFR	NF	ECM	5	No	33.000	30.000	11.000	68	78	TRANE	FCEB020	
CHEK-FCU-1019	CORRIDOR ROOMS	620	0.1	72.0	62.7	13.2	11.35	2.8	44	60	6.00	0.65	68.0	90	180	0.5	3.00	0.22	120	1	MFR	NF	ECM	5	No	56.000	30.000	11.000	129	139	TRANE	FCEB080	
CHEK-FCU-1020	118 OFFICE	130	0.1	72.0	62.4	2.3	1.85	0.5	44	60	6.00	0.25	68.0	90	180	0.5	3.00	0.13	120	1	MFR	NF	ECM	5	No	33.000	30.000	11.000	68	78	TRANE	FCEB020	
CHEK-FCU-1021	116 OFFICE	130	0.1	72.0	62.7	2.3	1.85	0.5	44	60	6.00	0.25	68.0	90	180	0.5	3.00	0.13	120	1	MFR	NF	ECM	5	No	33.000	30.000	11.000	68	78	TRANE	FCEB020	
CHEK-FCU-1022	114 OFFICE	130	0.1	72.0	62.7	2.35	1.9	0.5	44	60	6.00	0.25	68.0	90	180	0.5	3.00	0.13	120	1	MFR	NF	ECM	5	No	33.000	30.000	11.000	68	78	TRANE	FCEB020	
CHEK-FCU-1023	CORRIDOR ROOMS	605	0.1	72.0	62.7	13.05	11.25	3.2	44	60	6.00	0.60	68.0	90	180	0.5	3.00	0.22	120	1	MFR	NF	ECM	5	No	56.000	30.000	11.000	129	139	TRANE	FCEB080	
CHEK-FCU-1024	112 CS DEPT HEAD	250	0.1	72.0	62.7	6.2	4.85	1.3	44	60	6.00	0.35	68.0	90	180	0.5	3.00	0.13	120	1	MFR	NF	ECM	5	No	38.0	30.000	11.000	78	88	TRANE	FCEB040	
CHEK-FCU-1025	197 COMMONS	260	0.1	72.0	62.7	6.4	4.8	1.1	44	60	6.00	1.80	68.0	90	180	0.5	3.00	0.13	120	1	MFR	NF	ECM	5	No	51.0	10.000	30.000	78	88	TRANE	FCHB040	
CHEK-FCU-1026	197 COMMONS	260	0.1	72.0	62.7	6.4	4.8	1.1	44	60	6.00	1.80	68.0	90	180	0.5	3.00	0.13	120	1	MFR	NF	ECM	5	No	51.0	10.000	30.000	78	88	TRANE	FCHB040	
CHEK-FCU-1027	197 COMMONS	260	0.1	72.0	62.7	6.4	4.8	1.1	44	60	6.00	1.80	68.0	90	180	0.5	3.00	0.13	120	1	MFR	NF	ECM	5	No	51.0	10.000	30.000	78	88	TRANE	FCHB040	
CHEK-FCU-M001	89M MEZZANINE LOBBY	320	0.1	72.0	62.7	6.25	6.25	1.3	44	60	9.00	8.20	68.0	90	180	0.5	7.00	0.13	120	1	MFR	NF	ECM	5	No	47.188	25.000	10.000	123	139	TRANE	FCCB060	
CHEK-FCU-M002	20M MATH STUDY ROOM	430	0.1	72.0	62.7	10.3	8.55	2.0	44	60	9.00	4.15	68.0	100	180	0.5	7.00	0.22	120	1	MFR	NF	ECM	5	No	47.188	25.000	10.000	123	139	TRANE	FCCB060	
CHEK-FCU-M003	94M CORRIDOR	810	0.1	72.0	62.7	16.55	16.55	5.0	44	60	9.00	21.15	68.0	100	180	0.5	7.00	0.35	120	1	MFR	NF	ECM	5	No	74.688	25.000	10.000	182	200	TRANE	FCCB100	
CHEK-FCU-M004	3M PRINT COPY, 5M OFFICE	465	0.1	72.0	62.7	9.3	8.85	1.9	44	60	9.00	3.65	68.0	100	180	0.9	7.00	0.22	120	1	MFR	NF	ECM	5	No	47.188	25.000	10.000	123	139	TRANE	FCCB060	
CHEK-FCU-M005	1M MATH WAITING, 1MA ADMIN, 1MB ADMIN	475	0.1	72.0	62.7	10.95	10.05	3.0	44	60	9.00	9.45	68.0	100	180	0.9	7.00	0.22	120	1	MFR	NF	ECM	5	No	47.188	25.000	10.000	123	139	TRANE	FCCB060	
CHEK-FCU-M006	2M CONFERENCE	700	0.1	72.0	62.7	16.9	13.6	3.8	44	60	9.00	17.70	68.0	100	180	1.3	7.00	0.22	120	1	MFR	NF	ECM	5	No	74.688	25.000	10.000	182	200	TRANE	FCCB100	
CHEK-FCU-M007	4M MATH DEPT. HEAD	425	0.1	72.0	62.7	10.35	8.6	2.1	44	60	9.00	11.70	68.0	100	180	0.9	7.00	0.22	120	1	MFR	NF	ECM	5	No	47.188	25.000	10.000	123	139	TRANE	FCCB060	
CHEK-FCU-M008	6M OFFICE, 8M OFFICE, 15M PASSAGE	570	0.1	72.0	62.7	12.6	11.3	2.4	44	60	9.00	18.20	68.0	100	180	1.0	7.00	0.22	120	1	MFR	NF	ECM	5	No	47.188	25.000	10.000	123	139	TRANE	FCCB060	
CHEK-FCU-M009	7M OFFICE, 9M OFFICE, 15M PASSAGE	450	0.1	72.0	62.7	9.8	8.8	1.9	44	60	9.00	7.7	68.0	100	180	0.5	7.00	0.22	120	1	MFR	NF	ECM	5	No	47.188	25.000	10.000	123	139	TRANE	FCCB060	
CHEK-FCU-M010	1OM OFFICE, 12M OFFICE	420	0.1	72.0	62.7	9.75	8.35	1.9	44	60	9.00	14.50	68.0	100	180	0.9	7.00	0.22	120	1	MFR	NF	ECM	5	No	47.188	25.000	10.000	123	139	TRANE	FCCB060	
CHEK-FCU-M011	11M OFFICE, 13M OFFICE, 15M PASSAGE	470	0.1	72.0	62.7	9.8	8.8	1.8	44	60	9.00	7.7	68.0	100	180	0.5	7.00	0.13	120	1	MFR	NF	ECM	5	No	47.188	25.000	10.000	123	139	TRANE	FCCB060	
CHEK-FCU-M012	14M OFFICE, 16M DATA	360	0.1	72.0	62.7	8.2	7.25	1.7	44	60	9.00	15.05	68.0	100	180	0.7	7.00	0.22	120	1	MFR	NF	ECM	5	No	47.188	25.000	10.000	123	139	TRANE	FCCB060	
CHEK-FCU-M013	26M COPY, 94M CORRIDOR	735	0.1	72.0	62.7	14.45	14.45	4.2	44	60	9.00	12.85	68.0	100	180	1.3	7.00	0.22	120	1	MFR	NF	ECM	5	No	55.688	25.000	10.000	131	147	TRANE	FCCB080	
CHEK-FCU-M014	24M MATH GRAD STUDENTS	580	0.1	72.0	62.7	13.85	11.45	3.5	44	60	9.00	7.55	68.0	100	180	1.2	7.00	0.22	120	1	MFR	NF	ECM	5	No	55.688	25.000	10.000	131	147	TRANE	FCCB080	
CHEK-FCU-M015	22M MATH GRAD STUDENTS	560	0.1	72.0	62.7	13.3	11	3.2	44	60	9.00	5.25	68.0	100	180	1.2	7.00	0.22	120	1	MFR	NF	ECM	5	No	55.688	25.000	10.000	131	147	TRANE	FCCB080	
CHEK-FCU-M016	20M MATH STUDY ROOM, 28M MATH STORAGE	530	0.1	72.0	62.7	12.6	10.85	2.9	44	60	9.00	6.95	68.0	100	180	1.0	7.00	0.22	120	1	MFR	NF	ECM	5	No	55.688	25.000	10.000	131	147	TRANE	FCCB080	
CHEK-FCU-M017A	OFFICES	770	0.1	72.0	62.7	15.4	15.1	4.4	44	60	7.00	25.10	68.0	100	180	0.7	6.50	0.22	120	1	MFR	NF	ECM	5	No	74.688	25.000	10.000	182	200	TRANE	FCCB100	
CHEK-FCU-M018A	OFFICES	460	0.1	72.0	62.7	9.9	8.9	2.2	44	60	7.00	8.8	68.0	100	180	0.5	6.50	0.22	120	1	MFR	NF	ECM	5	No	47.188	25.000	10.000	123	139	TRANE	FCCB060	
CHEK-FCU-M019A	OFFICES	350	0.1	72.0	62.7	10	9.25	2.6	44	60	7.00	11.10	68.0	100	180	0.5	6.50	0.22	120	1	MFR	NF	ECM	5	No	47.188	25.000	10.000	123	139	TRANE	FCCB060	
CHEK-FCU-M020A	OFFICES	400	0.1	72.0	62.7	9.55	8.15	1.9	44	60	7.00	14.35	68.0	100	180	0.5	6.50	0.22	120	1	MFR	NF	ECM	5	No	47.188	25.000	10.000	123	139	TRANE	FCCB060	
CHEK-FCU-M021A	OFFICES	400	0.1	72.0	62.7	9.75	8.35	2.1	44	60	7.00	14.75	68.0	100	180	0.6	6.50	0.22	120	1	MFR	NF	ECM	5	No	47.188	25.000	10.000	123	139	TRANE	FCCB060	
CHEK-FCU-M022A	OFFICES	295	0.1	72.0	62.7	6.3	5.7	1.7	44	60	7.00	6.5	68.0	100	180	0.5	6.50	0.22	120	1	MFR	NF	ECM	5	No	47.188	25.000	10.000	123	139	TRANE	FCCB060	
CHEK-FCU-M023A	OFFICES	400	0.1	72.0	62.7	9.8	8.35	2.2	44	60	7.00	15.00	68.0	100	180	0.6	6.50	0.22	120	1	MFR	NF	ECM	5	No	47.188	25.000	10.000	123	139	TRANE	FCCB060	
CHEK-FCU-M024A	OFFICES	245	0.1	72.0	62.7	6.3	5.25	1.7	44	60	7.00	15.30	68.0	100	180	1.7	6.50	0.13	120	1	MFR	NF	ECM	5	No	47.188	25.000	10.000	96	109	TRANE	FCCB060	
CHEK-FCU-M025A	OFFICES	460	0.1	72.0	62.7	9.9	8.9	2.0	44	60	7.00	8.8	68.0	100	180	0.5	6.50	0.22	120	1	MFR	NF	ECM	5	No	47.188	25.000	10.000	96	109	TRANE	FCCB060	
CHEK-FCU-M026A	OFFICES	390	0.1	72.0	62.7	9.4	7.9	1.9	44	60	7.00	17.40	68.0	100	180	1.0	6.50	0.22	120	1	MFR	NF	ECM	5	No	47.188	25.000	10.000	123	139	TRANE	FCCB060	
CHEK-FCU-M027A	OFFICES	320	0.1	72.0	62.7	7.05	6.1	1.6	44	60	7.00	4.40	68.0	100	180	0.5	6.50	0.22	120	1	MFR	NF	ECM	5	No	47.188	25.000	10.000	96	109	TRANE	FCCB060	
CHEK-FCU-M028A	OFFICES	240	0.1	72.0	62.7	5.6	4.75	1.2	44	60	7.00	10.05	68.0	100	180	0.5	6.50	0.13	120	1	MFR	NF	ECM	5	No	47.188	25.000	10.000	96	109	TRANE	FCCB060	
CHEK-FCU-M029A	OFFICES	250	0.1	72.0	62.7	6.2	5.15	1.5	44	60	7.00	15.15	68.0	100	180	1.7	6.50	0.13	120	1	MFR	NF	ECM	5	No	47.188	25.000	10.000	96	109	TRANE	FCCB060	
CHEK-FCU-M030A	SCHWARTZ LIBRARY	540	0.1	72.0	62.7	15.35	12.75	4.0	44	60	7.00	12.60	68.0	100	180	0.5	6.50	0.22	120	1	MFR	NF	ECM	5	No	55.688	25.000	10.000	131	147	TRANE	FCCB080	
CHEK-FCU-M031A	SCHWARTZ LIBRARY	540	0.1	72.0	62.7	15.35	12.75	4.0	44	60	7.00	12.60	68.0	100	180	0.5	6.50	0.22	120	1	MFR	NF	ECM	5	No	55.688	25.000	10.000	131	147	TRANE	FCCB080	
CHEK-FCU-M032A	OFFICES	330	0.1	72.0	62.7	7.4	6.45	1.8	44	60	7.00	4.55	68.0	100	180	0.5	6.50	0.22	120	1	MFR	NF	ECM	5	No	47.188	25.000	10.000	96	109	TRANE	FCCB060	

SCHEDULE GENERAL NOTES:

A. DISCONNECT AND CONTROLLER STARTER FURNISHED AND INSTALLED BY:
MFR = MANUFACTURER
EC = ELECTRICAL CONTRACTOR.
MC = FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR.
MFR/EC = FURNISHED LOOSE BY MANUFACTURER INSTALLED BY ELECTRICAL CONTRACTOR.
TCC = TEMPERATURE CONTROL CONTRACTOR

B. DISCONNECT TYPE:
CB = CIRCUIT BREAKER
F = FUSED
NF = NON-FUSED
PLUG = PLUG AND CORD

C. CONTROLLER STARTER TYPE:
FV = FULL VOLTAGE
WYE = WYE-DELTA
SS = SOLID STATE (SOFT START)
MS = MANUAL STARTER
VFD = VARIABLE FREQUENCY DRIVE
VFD/B = VARIABLE FREQUENCY DRIVE WITH BYPASS
YD = WYE - DELTA
ECM = ELECTRONICALLY COMMUTATED MOTOR

D. FAN RPM SHALL NOT EXCEED 110% OF SCHEDULED VALUE, WITH THE SCHEDULED WHEEL TYPE. SUBSTITUTION OF BI OR BIA FANS FOR FC IS ACCEPTABLE IF EFFICIENCY IS NOT LOWER.

E. NO EQUIPMENT SHALL BE SELECTED ABOVE 90% OF MOTOR NAME PLATE RATING.

F. MUST BE WITHIN +/- 10% OF SCHEDULED RPM.

G. CURB TYPE:
MFR = STANDARD CURB BY MANUFACTURER
GC = BY GENERAL CONTRACTOR
SAC = SOUND ATTENUATOR CURB

TERMINAL AIR BOX SCHEDULE - SINGLE DUCT

1. NEITHER RADIATED NOR DISCHARGE SOUND LEVELS SHALL EXCEED NC 35 AT 1.5" INLET STATIC PRESSURE WHEN TESTED PER AHRI STANDARD 885-2008 USING 5/8" 20-LB DENSITY MINERAL FIBER CEILING TILE.
2. TOTAL AIR PRESSURE DROP OF TAB SHALL NOT EXCEED 0.50" WC.
3. REFER TO CONTROL DRAWINGS FOR DESCRIPTION OF CONTROL TYPE.
4. SENSOR TYPES: 1 - SENSOR ONLY, 2 - SENSOR WITH ADJUSTMENT, 3 - SENSOR WITH OVERRIDE, 4 - SENSOR WITH ADJUSTMENT AND OVERRIDE.

		CFM			HEATING COIL (NOTES 5, 6)										
TAG NAME	AREA SERVED	COOLING MAX.	HEATING MAX.	MIN.	EAT °F	LAT °F	EWT °F	MAX. GPM	MAXIMUM DISCHARGE NC	MIN. INLET SIZE (IN.) DIA.	CONTROL TYPE (NOTE 3)	SENSOR TYPE (NOTE 4)	MANUFACTURER	MODEL (NOTES 1, 2)	NOTES
CHEK-VRH-1001	164J OFFICE, 164K OFFICE, 164L OFFICE	480	480	145	55	95	180	1	25	6"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-1002	164 PASSAGE, 164A OFFICE, 164B OFFICE, 164C OFFICE	480	150	150	55	95	180	0.5	25	6"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-1003	164 PASSAGE, 164F OFFICE, 164G OFFICE, 164H OFFICE	540	510	145	55	95	180	1	25	8"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-1004	163H OFFICE, 163J OFFICE, 163K OFFICE	360	120	120	55	95	180	0.5	25	6"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-1005	163 PASSAGE, 163A OFFICE, 163B OFFICE, 163C OFFICE	480	150	150	55	95	180	0.5	25	6"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-1006	163 PASSAGE, 163F OFFICE, 163G OFFICE, 164D OFFICE, 164E OFFICE	540	195	195	55	95	180	0.5	25	8"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-1007	165 PASSAGE, 165D OFFICE, 165E OFFICE, 165F OFFICE	480	145	145	55	95	180	0.5	25	6"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-1008	165 PASSAGE, 165A OFFICE, 165B OFFICE, 165C OFFICE	480	145	145	55	95	180	0.5	25	6"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-1009	162 PASSAGE, 162G OFFICE, 162H OFFICE, 163D OFFICE, 163E OFFICE	540	255	255	55	95	180	0.5	25	8"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-1010	162B OFFICE, 162C OFFICE, 162D OFFICE, 162E WORK AREA	430	220	220	55	95	180	0.5	25	8"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-1011	161B KITCHENETTE, 162A OFFICE	300	145	145	55	95	180	0.5	25	6"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-1012	160 INFORMATION SERVICES, 160A OFFICE, 160B OFFICE, 160C OFFICE, 160D OFFICE	540	270	270	55	95	180	0.5	25	8"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-1013	160 INFORMATION SERVICES, 163T DATA	190	100	100	55	95	180	0.5	25	6"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-1014	161 OPEN OFFICE, 161A OFFICE	915	810	450	55	95	180	1.1	25	10"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-1015	161 OPEN OFFICE	3615	980	450	55	95	180	1.2	25	16"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-1016	198 CORRIDOR, VESTIBULE	645	600	165	55	95	180	0.8	25	8"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-2001	203 CS TUTORING LAB , 299 CORRIDOR	755	325	270	50	95	180	0.7	25	8"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-2002	207 LARGE TEACHING LAB	2160	675	580	50	95	180	1.5	25	14"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-2003	207 LARGE TEACHING LAB	2160	675	580	50	95	180	1.5	25	14"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-2004	295 CORRIDOR	460	400	230	50	95	180	0.7	25	6"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-2005	210 LARGE TEACHING LAB	4240	1400	1400	50	95	180	2.2	25	24"x16"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-2006	208 MEDIUM TEACHING LAB	2660	900	680	50	95	180	2	25	14"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-2007	211 RESEARCH LAB	2050	830	830	50	95	180	1.4	25	14"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-2008	209 MEDIUM TEACHING LAB	2895	1400	1400	50	95	180	2.6	25	14"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-2009	212 RESEARCH LAB	2160	1000	880	50	95	180	2.2	25	14"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-2010	213 RESEARCH LAB	2080	1020	655	50	95	180	2.3	25	14"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-2011	296 GRAD PAD	425	190	145	50	95	180	0.5	25	6"	TAB-A	1	TRANE	VCWF	NOTES 1, 2
CHEK-VRH-2012	199 LOBBY, 199A VESTIBULE	4230	1550	1400	55	95	180	1.8	25	24"x16"	TAB-A	1	TRANE	VCWF	NOTES 1, 2

AIR HANDLING SCHEDULE

NOTES:
1.PROVIDE SHAFT GROUNDING AS REQUIRED IN THE MOTOR SPECIFICATION 23 05 13.
2.THE LISTED CONDITIONS ARE THE PARK CAPACITY FOR THE FUTURE OPERATION.
3.REFER TO SPECIFICATION SECTION 26 29 23 FOR MORE INFORMATION ON VARIABLE REQUENCY DRIVES (VFD). VFD SHALL BE INSTALLED BY TEMPERATURE CONTROLS CONTRACTOR.

		SUPPLY FAN (NOTE 1)							RETURN FAN (NOTE 1)								ELECTRICAL									HEATING COIL - WATER								COOLING COIL													
																				DISCONNECT(S)		CONTROLLER STARTER(S)																									
TAG NAME	AREA SERVED	NO. OF FANS	CFM TOTAL	EXT. S.P.	TYPE	RPM (NOTE D)	BHP EACH (NOTE E)	MHP EACH (NOTE E)	NO. OF FANS	CFM TOTAL	EXT. S.P.	TYPE	RPM (NOTE D)	BHP EACH (NOTE E)	MHP EACH (NOTE E)	MINIMUM OUTSIDE AIR CFM	NO. OF POWER CONNECTIONS	VOLTAGE	PHASES	BY (NOTE A)	TYPE (NOTE B)	BY (NOTE A)	TYPE (NOTE C)	SCCR	NO. OF AUXILIARY CONNECTIONS	EAT °F	LAT °F	EWT °F	LWT °F	GPM	MBH	MAX. A.P.D. IN. W.C.	W.P.D. FEET HEAD	EAT DB °F	EAT WB °F	LAT DB °F	LAT WB °F	EWT °F	LWT °F	GPM	TOTAL MBH	MAX. A.P.D. IN. W.C.	W.P.D. FEET HEAD	CFM	MANUFACTURER	MODEL	NOTES
CHEK-AHU-2001	INFORMATION SERVICES, LOBBY	2	14915	1.75	DIRECT	1971	16.76	10	2	14915	1.0	DIRECT	2030	8.05	10	0	2	208	3	EC	F	TCC	VFD	5	0	45.00	90.00	180.00	130.00	29.12	727.89	0.155	0.360	82.00	68.60	55.00	54.86	45.00	61.00	80.8	648.00	0.958	5.740	14915	TRANE	CSAA030	NOTES 1, 2, 3
CHEK-AHU-2002	2ND LEVEL TEACHING LABS, RESEARCH LABS	4	21505	2.00	DIRECT	2050	22.35	7.5	4	21505	4.0	DIRECT	2158	18.78	5	0	2	208	3	EC	F	TCC	VFD	5	0	45.00	90.00	180.00	130.00	41.98	1049.50	0.106	0.410	82.00	68.60	50.00	49.90	45.00	60.00	161.4	1213.52	1.079	19.820	21505	TRANE	CSAA050	NOTES 1, 2, 3

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Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS

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Sheet Title:

VENTILATION SCHEDULES

Sheet #:

V6.00

AIR TERMINAL SCHEDULE

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

TAG NAME	FACE SIZE (IN.) (NOTE 2)	TYPE	BORDER (NOTE 1)	MATERIAL	FINISH	VOLUME DAMPER REQUIRED	MANUFACTURER	MODEL	NOTES
CD-1	24x24	SQUARE PLAQUE	LAY-IN	STEEL	WHITE	NO	TITUS	OMNI	FLUSH FACE PANEL
EG-1	24x24	PERFORATED FACE	LAY-IN	STEEL	WHITE	NO	TITUS	PAR	
EG-2	SEE DWG	35 DEGREE DEFLECTION	SURFACE MOUNT	[ALUMINUM] [STEEL]	WHITE	NO	TITUS	350	LONG BLADES
RG-1	24x24	PERFORATED FACE	LAY-IN	STEEL	WHITE	NO	TITUS	PAR	
RG-2	SEE DWG	35 DEGREE DEFLECTION	SURFACE MOUNT	STEEL	WHITE	NO	TITUS	350	LONG BLADES
SG-1	SEE DWG.	SINGLE DEFLECTION	SURFACE MOUNT	STEEL	WHITE	NO	TITUS	301	LONG BLADES

LINEAR DIFFUSER SCHEDULE

NOTES:
1.CONTRACTOR SHALL DETERMINE PROPER MARGIN STYLE TO MATCH CEILING CONSTRUCTION.
2.PROVIDE WITH CONCEALED FASTENERS.
3.DIFFUSERS WITH MULTIPLE SLOTS SHALL HAVE THE INNER MOST SLOT DIRECTED TOWARDS THE INTERIOR OF THE BUILDING, THE REMAINING SHALL BE DIRECTED TOWARDS THE EXTERIOR UNLESS NOTED OTHERWISE.

TAG NAME	MATERIAL	SLOT WIDTH	NO. OF SLOTS	WIDTH	LENGTH	PLENUM REQUIRED	PLENUM INSULATION TYPE	PLENUM INLET SIZE	PATTERN CONTROL REQUIRED	BALANCING DAMPER REQUIRED	FINISH	MANUFACTURER	MODEL	NOTES
LD-1	ALUMININUM	1"	2	2"	4'-0"	Yes	WRAPPED	SEE DWG.	Yes	No	WHITE	PRICE	SDS	NOTE 1, 2 , & 3
LD-2	ALUMININUM	1/2"	1	1/2"	3'-0"	Yes	WRAPPED	SEE DWG.	Yes	No	WHITE	PRICE	SDS	NOTE 1, 2 , & 3

MOTOR OPERATED DAMPER SCHEDULE

NOTES:
1. COORDINATE DAMPER ACTUATOR LOCATION AND MOUNTING REQUIREMENTS WITH TEMPERATURE CONTROL CONTRACTOR.

TAG NAME	AREA SERVED	SIZE		CFM		BLADE CONFIGURATION	BLADE ORIENTATION	INSULATED	ACTUATOR TYPE (NOTE 1)	ACTUATOR STYLE	POWER FAILURE POSITION	POSITIVE POSITION FEEDBACK REQUIRED	NOTES
		WIDTH	HEIGHT	MAX.	MIN.								
MOD-1	CHEK-RHD-R001 OA	48	72	0	0	PARALLEL	VERTICAL	Yes	ELECTRIC	PROPORTIONAL	NORMALLY CLOSED (NC)	Yes	NOTE 1
MOD-2	CHEK-RHD-R002 OA	40	36	0	0	PARALLEL	VERTICAL	Yes	ELECTRIC	PROPORTIONAL	NORMALLY CLOSED (NC)	Yes	NOTE 1
MOD-3	CHEK-RHD-R003 RELIEF	26	52	0	0	PARALLEL	VERTICAL	Yes	ELECTRIC	PROPORTIONAL	NORMALLY CLOSED (NC)	Yes	NOTE 1

HOOD SCHEDULE

NOTES:
1. MOTORIZED DAMPER SHALL BE FIELD PROVIDED AND INSTALLED.
2. ROOF HOOD SHALL BE PROVIDED WITH ALUMINUM BIRD SCREEN.
3. PROVIDE WITH COLOR FINISH TO BE SELECTED BY ARCHITECT.

TAG NAME	AREA SERVED	CFM	THROAT SIZE		FACE VELOCITY (FPM)	THROAT VELOCITY (FPM)	STATIC PRESSURE DROP	FREE AREA (FT ²)	CONFIGURATION	DAMPER TYPE	CURB TYPE	MAX. DIMENSIONS			WEIGHT	MANUFACTURER	MODEL	NOTES
			WIDTH	LENGTH								LENGTH (IN.)	WIDTH (IN.)	HEIGHT (IN.)				
CHEK-RHD-R001	CHEK-AHU-2002 INTAKE	21505	48	72	481	896	0.102	44.67	GRAVITY HOOD	MOTOR	MFR	111	99	30.86	700	COOK	GI	NOTES 1, 2, 3
CHEK-RHD-R002	CHEK-AHU-2001 INTAKE	14915	42	60	461	852	0.093	32.33	GRAVITY HOOD	MOTOR	MFR	99	82	27.79	552	COOK	GI	NOTES 1, 2, 3
CHEK-RHD-R003	CHEK-AHU-2001 RELIEF	14915	26	52	NA	1589	0.526	21.14	GRAVITY HOOD	MOTOR	MFR	63.75	37.75	32	246	COOK	TRE	NOTES 1, 2, 3

SCHEDULE GENERAL NOTES:

A. DISCONNECT AND CONTROLLER STARTER FURNISHED AND INSTALLED BY:
MFR = MANUFACTURER
EC = ELECTRICAL CONTRACTOR.
MC = FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR.
MFR/EC = FURNISHED LOOSE BY MANUFACTURER INSTALLED BY ELECTRICAL CONTRACTOR.
TCC = TEMPERATURE CONTROL CONTRACTOR

B. DISCONNECT TYPE:
CB = CIRCUIT BREAKER
F = FUSED
NF = NON-FUSED
PLUG = PLUG AND CORD

C. CONTROLLER STARTER TYPE:
FV = FULL VOLTAGE
WYE = WYE-DELTA
SS = SOLID STATE (SOFT START)
MS = MANUAL STARTER
VFD = VARIABLE FREQUENCY DRIVE
VFD/B = VARIABLE FREQUENCY DRIVE WITH BYPASS
YD = WYE - DELTA
ECM = ELECTRONICALLY COMMUTATED MOTOR

D. FAN RPM SHALL NOT EXCEED 110% OF SCHEDULED VALUE, WITH THE SCHEDULED WHEEL TYPE. SUBSTITUTION OF BI OR BIA FANS FOR FC IS ACCEPTABLE IF EFFICIENCY IS NOT LOWER.

E. NO EQUIPMENT SHALL BE SELECTED ABOVE 90% OF MOTOR NAME PLATE RATING.

F. MUST BE WITHIN +/- 10% OF SCHEDULED RPM.

G. CURB TYPE:
MFR = STANDARD CURB BY MANUFACTURER
GC = BY GENERAL CONTRACTOR
SAC = SOUND ATTENUATOR CURB

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Sheet Title:
VENTILATION SCHEDULES

Sheet #:
V6.01

VIEW KEY

NAME — LEVEL NAME
10'-0" — HEIGHT ABOVE PROJECT 0'-0"

1 — KEYNOTE: INDICATES NOTE USED TO DESCRIBE ADDITIONAL INFORMATION ABOUT WORK REQUIRED, SPECIFIC TO THE SHEET AND/OR DETAIL

INDICATES DIRECTION OF TRUE NORTH
PLAN OR DETAIL NUMBER
PLAN OR DETAIL NAME
VIEW NAME
1/8" = 1'-0"
PLAN OR DETAIL SCALE
NORTH

INDICATES SIMILAR DETAIL REFERENCED IN MULTIPLE LOCATIONS
DETAIL REFERRED TO BY SECTION CUT
SHEET DETAIL IS LOCATED ON
SIM
M101
T101

LINE TYPE AND TAG KEY:

NEW WORK BY THIS CONTRACTOR (WIDE LINE)
NEW
EXISTING TO BE REMOVED (SHORT DASHED PATTERN)
NEW UNDERFLOOR OR UNDERGROUND (LONG DASHED PATTERN)

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

HALFTONING DOES NOT MODIFY SCOPE.

'TAG'-E — TAGS WITH DASH 'E' INDICATES THE REFERENCED OBJECT IS EXISTING
TAG-1 — UNDERLINED TAG INDICATES OBJECT IS IN-SCOPE. IF NEW, ADDITIONAL INFORMATION IS AVAILABLE IN A SCHEDULE, MATERIAL LIST, OR SYMBOL LIST
INDICATES AN EXISTING SYSTEM'S POINT OF CONNECTION/REMOVAL

FIRE / SMOKE BARRIER DESIGNATIONS

THE LINE TYPES SHOWN ARE FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR MUST VERIFY RATINGS WITH THE LATEST SET OF ARCHITECTURAL PLANS AND FURNISH ALL MATERIALS REQUIRED TO COMPLY WITH THOSE RATINGS WHETHER SHOWN OR NOT.

ALL [FLOOR, FLOOR CEILING, AND ROOF CEILING] ASSEMBLIES MUST BE DESIGNATED AS 1, 2 HOUR FIRE, BARRIER(S), UNLESS NOTED OTHERWISE ON THE PLANS.

FIRE PARTITION	— ① — ① — ① — ① — ① —
1 HOUR FIRE BARRIER	— ◆ — ◆ — ◆ — ◆ — ◆ —
2 HOUR FIRE BARRIER OR WALL	— ◆◆ — ◆◆ — ◆◆ — ◆◆ —

CONTRACTOR ABBREVIATION KEY

NOT ALL SYMBOLE MAY APPLY.

ABBR:	DESCRIPTION:
E.C.	ELECTRICAL CONTRACTOR
G.C.	GENERAL CONTRACTOR
M.C.	MECHANICAL CONTRACTOR
P.C.	PLUMBING CONTRACTOR
T.C.	TECHNOLOGY CONTRACTOR
T.C.C.	TEMPERATURE CONTROL CONTRACTOR
V.C.	VENTILATION CONTRACTOR

PLUMBING SYMBOL LIST

NOT ALL SYMBOLS MAY APPLY.

SYMBOL:	DESCRIPTION:
AV	ACID VENT
AW	ACID WASTE
CW	COLD WATER - POTABLE
D	DRAIN
DT	DRAIN TILE
G	NATURAL GAS
GRV	GAS REGULATOR VENT
GSAN	SANITARY DRAINAGE (GREASE SANITARY DRAINAGE)
HW	HOT WATER - POTABLE
HWC	HOT WATER CIRCULATING - POTABLE
HW140	HOT WATER - POTABLE NUMBER INDICATES TEMP
HWC140	HOT WATER CIRC. - POTABLE NUMBER INDICATES TEMP
NCW	NON-POTABLE COLD WATER
NHW	NON-POTABLE HOT WATER
PD	PUMPED DISCHARGE
PW	PURE WATER
SAN	SANITARY DRAINAGE
SCW	SOFT COLD WATER
SHW	SOFT HOT WATER
ST(1,000)	STORM DRAINAGE (ROOF SQUARE FOOTAGE)
STS	STORM DRAINAGE (SECONDARY)
STW	SOFT TEMPERED WATER
TW	TEMPERED WATER
V	VENT
W	SERVICE WATER - POTABLE
	PIPE CONTINUATION
	PIPE CAP
	PIPE DOWN
	PIPE UP OR UP/DOWN
FD	PIPE SERVING FIXTURE ON FLOOR ABOVE (EXAMPLE: FD = FLOOR DRAIN)
	PITCH PIPE IN DIRECTION
	DIRECTION OF FLOW IN PIPE
	ROUTE TO DRAIN
RD-1 6"(1000)	ROOF DRAIN PROPERTIES SYMBOL SIZE (ROOF SQ. FT.)
	DIELECTRIC CONNECTION
	UNION/FLANGE
	SHUTOFF VALVE NORMALLY OPEN
	SHUTOFF VALVE NORMALLY CLOSED
GPM	BALANCING VALVE (NUMBER INDICATES GPM)
	CHECK VALVE
	BACKFLOW PREVENTER
	SOLENOID VALVE
	SAFETY/RELIEF VALVE
	SAFETY RELIEF VALVE W/ DRIP PAN ELBOW
	VACUUM BREAKER
P	PRESSURE GAUGE (FURNISHED WITH BALL VALVE)
P	PRESSURE SENSOR (FURNISHED WITH BALL VALVE)
T	TEMPERATURE SENSOR WITH WELL
T	THERMOMETER WITH WELL (DIAL TYPE)
	THERMOMETER WITH WELL (FILLED TYPE)
	REDUCER - REFERENCE SPECIFICATION FOR CONCENTRIC/ECCENTRIC AND FOT/FOB
	PRESSURE REDUCING VALVE (LIQUID/GAS)
	PUMP
M	METER
	ALIGNMENT GUIDE
	PIPE ANCHOR
EJ-# (#.#")	EXPANSION JOINT #.#" IS THE EXPANSION TRAVEL INCHES
	AIR ADMITTANCE VALVE

PLUMBING ABBREVIATION KEY

ABBR:	DESCRIPTION:
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
BFP	BACKFLOW PREVENTER
CI	CAST IRON
CO	CLEANOUT
DF	DRINKING FOUNTAIN
DI	DUCTILE IRON
DN	DOWN
E	EXISTING
EWC	ELECTRIC WATER COOLER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FM	FLOW METER
FS	FLOOR SINK
HB	HOSE BIBB
I.E.	INVERT ELEVATION (FOR REFERENCE ONLY)
LAV	LAVATORY
MB	MOP BASIN
MH	MANHOLE
MV	MIXING VALVE
NIC	NOT IN CONTRACT
RD	ROOF DRAIN
SCCR	SHORT CIRCUIT CURRENT RATING
SH	SHOWER
SK	SINK
SS	SERVICE SINK
TD	TRENCH DRAIN
TP	TRAP PRIMER
TYP	TYPICAL
UR	URINAL
VTR	VENT THROUGH ROOF
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WATER HEATER
WM	WATER METER
WS	WATER SOFTENER
UB	UTILITY BOX
UON	UNLESS OTHERWISE NOTED
YCO	YARD CLEANOUT

PLUMBING ROUGH-IN SCHEDULE

NOTES: (APPLIES TO ALL PLUMBING FIXTURES LISTED BELOW)
1) SIZES SHOWN ARE MINIMUMS. LARGER SIZES SHOWN ON THE DRAWING SHALL DICTATE THE ROUGH-IN SIZE. 2) SANITARY RISERS UP IN WALL TO FIXTURES SHALL BE A MINIMUM OF 2". 3) DOMESTIC WATER BRANCH PIPING OUTSIDE OF THE WALL/CHASE SHALL BE A MINIMUM OF 3/4" UNLESS NOTED OTHERWISE. ONLY THE FINAL RISE-DROP SHALL BE SMALLER. 4) FINAL SANITARY SIZE SHALL MATCH P-TRAP SIZE (REFER TO MATERIAL LIST).

TAG NAME	DESCRIPTION	TRAP	COLD WATER	HOT WATER	SANITARY	VENT
EWC-1	ELECTRIC WATER COOLER (ACCESSIBLE)		1/2"	-	1 1/2"	1 1/2"
EWC-2	ELECTRIC WATER COOLER (ACCESSIBLE)		1/2"	-	1 1/2"	1 1/2"
EWC-2	ELECTRIC WATER COOLER (ACCESSIBLE)		1/2"	-	1 1/2"	1 1/2"
LAV-1	LAVATORY (ACCESSIBLE)		1/2"	1/2"	1 1/2"	1 1/2"
MB-1	MOP BASIN		3/4"	3/4"	3"	1 1/2"
MB-1	MOP BASIN		3/4"	3/4"	3"	1 1/2"
SK-1	SINK (ACCESSIBLE)		1/2"	1/2"	1 1/2"	1 1/2"
SK-1	SINK (ACCESSIBLE)		1/2"	1/2"	1 1/2"	1 1/2"
UR-1	URINAL		3/4"	-	2"	1 1/2"
UR-2	URINAL		3/4"	-	2"	1 1/2"
WC-1	WATER CLOSET (ACCESSIBLE)		1 1/2"	-	4"	2"
WC-1	WATER CLOSET		1 1/2"	-	4"	2"
WC-2	WATER CLOSET		1 1/2"	-	4"	2"

PIPE INSULATION SCHEDULE (PLUMBING)

GENERAL NOTES:
1. REFER TO THE SPECIFICATIONS FOR TYPE DESCRIPTIONS AND JACKETING REQUIREMENTS. VALUES LISTED BELOW ARE BASED ON ASHRAE / IECC REQUIREMENTS.
2. TYPE A INSULATION IS NOT ALLOWED IN NON-AIR CONDITIONED SPACES, SUCH AS MECHANICAL ROOMS, EXTERIOR, ATTICS, ETC.
3. TYPE B INSULATION GREATER THAN 1" THICK SHALL BE INSTALLED USING MULTIPLE LAYERS OF 3/4" OR 1" WITH STAGGERED SEAMS.
4. PROVIDE RIGID INSERT AT HANGERS, EITHER PRE-MANUFACTURED COUPLINGS (REFER TO PIPE HANGER AND SUPPORTS SPECIFICATIONS) OR TYPE C INSULATION. SEE SPEC. FOR MORE DETAILS.

PIPE SYSTEM	INSULATION TYPE AND THICKNESS PER NOMINAL PIPE OR TUBE SIZE				INSULATION THICKNESS PER NOMINAL PIPE OR TUBE SIZE (DIRECT BURIED)				NOTES
	< 1"	1" TO < 1.5"	1.5" TO < 4"	4" TO < 8"	< 1"	1" TO < 1.5"	1.5" TO < 4"	4" TO < 8"	
CW - COLD WATER - POTABLE	A 0.5", B 0.5"	A 0.5", B 0.5"	A 1", B 1"	A 1", B 1"	-	-	-	-	
D - DRAIN - PLUMBING	A 0.5", B 0.5"	A 0.5", B 0.5"	A 1", B 1"	A 1", B 1"	-	-	-	-	APPLY INSULATION ONLY TO LOW TEMP DRAINS (55 DEG AND LOWER IE: COOLING COIL CONDENSATE, ICE MACHINE DRAINS, ETC.)
HW - HOT WATER - POTABLE	A 1", B 1"	A 1", B 1"	A 1.5"	A 1.5"	C 1"	C 1"	C 1"	C 1"	
HWC - HOT WATER CIRCULATING - POTABLE	A 1", B 1"	A 1", B 1"	A 1.5"	A 1.5"	C 1"	C 1"	C 1"	C 1"	
NCW - NON-POTABLE COLD WATER	A 0.5", B 0.5"	A 0.5", B 0.5"	A 1", B 1"	A 1", B 1"	-	-	-	-	
SAN - SANITARY DRAINAGE	A 0.5", B 0.5"	A 0.5", B 0.5"	A 1", B 1"	A 1", B 1"	-	-	-	-	APPLY INSULATION ONLY TO FLOOR DRAIN BODY, P-TRAP AND 10' DOWNSTREAM AT LOW TEMP DRAIN DISCHARGE (55 DEG AND LOWER IE: COOLING COIL CONDENSATE, ICE MACHINE DRAINS, ETC.)
V - VENT	A 0.5", B 0.5"	A 0.5", B 0.5"	A 1", B 1"	A 1", B 1"	-	-	-	-	APPLY INSULATION ONLY WITHIN 10' OF EXTERIOR PENETRATION
W - SERVICE WATER - POTABLE	A 0.5", B 0.5"	A 0.5", B 0.5"	A 1", B 1"	A 1", B 1"	-	-	-	-	

MECHANICAL RENOVATION NOTES:

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO VENTILATION, PIPING, AND PLUMBING.

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

MECHANICAL PHASING NOTES:

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, PLUMBING, VENTILATION AND PIPING.

1. REFER TO ARCHITECTURAL DRAWINGS FOR GENERAL DESCRIPTION OF PHASES. REFER TO GENERAL CONTRACTOR'S INSTRUCTIONS FOR MORE DETAILS AND PHASING SCHEDULES AND FOR CONCURRENT WORK. MECHANICAL, ELECTRICAL AND TECHNOLOGY DRAWINGS DEPICT THE INTENT OF THE FINAL DESIGN. THE MECHANICAL, ELECTRICAL, AND TECHNOLOGY DRAWINGS DO NOT DEPICT THE MEANS AND METHODS TO MEET THE REQUIREMENTS OF THE PHASING CRITERIA.
2. REVIEW PROJECT PHASING PLANS TO COORDINATE DEMOLITION WORK, OUTAGES, ETC. WITH AFFECTED ADJACENT AREAS.
3. PROVIDE TEMPORARY DUCTWORK, PIPING, SHUTOFF VALVES, ZONE VALVES, ZONE ALARMS, ETC. AS NEEDED TO MAINTAIN SERVICE TO ALL AREAS DURING ALL PHASES OF PROJECT.
4. INSTALL TEMPORARY DUCTWORK, PIPING, SHUTOFF VALVES, ETC. AS NECESSARY TO KEEP ALL OCCUPIED SPACES OPERATIONAL THROUGHOUT ALL PHASES OF THE PROJECT
5. PHASE DEMOLITION WORK TO MINIMIZE DOWNTIME.

PLUMBING GENERAL NOTES:

1. THE SYMBOLS AND THE MATERIAL LIST ARE FOR THE CONVENIENCE OF THE CONTRACTOR. CONTRACTOR SHALL VERIFY QUANTITIES AND FURNISH ALL MATERIALS REQUIRED FOR FULLY OPERATIONAL SYSTEMS, WHETHER SPECIFIED OR NOT.
2. CATALOG NUMBERS SHALL NOT BE CONSIDERED COMPLETE, BUT ARE GIVEN AS AN AID TO THE CONTRACTOR AND TO INDICATE THE QUALITY REQUIRED. CONTRACTOR IS RESPONSIBLE FOR A COMPLETE DESCRIPTION OF MATERIAL ON THESE DRAWINGS AND IN THE SPECIFICATIONS BEFORE ORDERING. THE DESCRIPTION OF THE MATERIAL TAKES PRECEDENCE OVER THE CATALOG NUMBER. THE FIRST MANUFACTURER LISTED IS THE BASIS OF DESIGN.
3. CONTRACTOR SHALL VERIFY THAT FIXTURES SUPPLIED ARE APPROVED PER ALL APPLICABLE STATE, LOCAL AND GOVERNING AUTHORITIES.
4. ALL FIXTURES SHALL CONFORM TO FEDERAL ACT S.3874
5. INVERT ELEVATIONS ARE FROM EXISTING DRAWINGS AND MAY NOT BE ACCURATE. VERIFY ALL ELEVATIONS BEFORE BEGINNING WORK.
6. VERIFY UNDERGROUND PIPE SIZES, INVERT ELEVATIONS, AND LOCATIONS PRIOR TO BEGINNING ANY WORK.
7. REFER TO THE PLUMBING ROUGH-IN SCHEDULE FOR THE SIZES OF BRANCH PIPES TO PLUMBING FIXTURES.
8. EXISTING CONDITIONS ON DEMOLITION PLANS ARE PROVIDED TO INDICATE THE GENERAL SCOPE OF ITEMS TO BE REMOVED. REFER TO SPECIFICATION SECTION 22 05 05 FOR ADDITIONAL DEMOLITION INFORMATION.
9. P.C. SHALL CUT AND PATCH EXISTING AS REQUIRED FOR NEW OR DEMOLITION WORK UNLESS NOTED OTHERWISE. REFER TO SPECIFICATION SECTION 22 05 05 FOR ADDITIONAL INFORMATION.

MECHANICAL GENERAL NOTES:

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO VENTILATION, PIPING, AND PLUMBING.

1. DRAWINGS SHOWING LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, ETC. ARE DIAGRAMMATIC AND MAY NOT ALWAYS REFLECT EXACT INSTALLATION CONDITIONS. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF DUCTWORK, PIPING, EQUIPMENT, ETC., AND MAY NOT INCLUDE ALL OFFSETS AND FITTINGS REQUIRED FOR COMPLETE INSTALLATION. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING CONSTRUCTION AND THE WORK OF OTHERS WILL PERMIT.
2. CATALOG AND MODEL NUMBERS SHALL NOT BE CONSIDERED COMPLETE, BUT ARE GIVEN AS AN AID TO THE CONTRACTOR AND TO INDICATE THE QUALITY REQUIRED. CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE DESCRIPTION OF MATERIAL SCHEDULED ON THESE DRAWINGS AND IN THE SPECIFICATIONS BEFORE ORDERING. THE DESCRIPTION OF THE MATERIAL AND SCHEDULED PERFORMANCE TAKES PRECEDENCE OVER THE MODEL NUMBER. THE FIRST MANUFACTURER SCHEDULED IS THE BASIS OF DESIGN.
3. DETERMINATION OF QUANTITIES OF MATERIAL AND EQUIPMENT REQUIRED SHALL BE MADE BY THE CONTRACTOR FROM THE DOCUMENTS. WHERE MATERIAL AND/OR QUANTITY DISCREPANCIES ARISE BETWEEN DRAWINGS, SCHEDULES AND/OR SPECIFICATIONS, THE HIGHER QUALITY/ GREATER NUMBER SHALL GOVERN.
4. DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS AND CLEARANCES FROM ARCHITECTURAL, STRUCTURAL, SUBMITTALS, AND OTHER APPROPRIATE DRAWINGS OR PHYSICALLY AT SITE. REVIEW ALL DRAWINGS, INCLUDING THOSE OF OTHER TRADES.
5. COORDINATE ALL WORK WITH ALL OTHER TRADES PRIOR TO INSTALLATION TO PROVIDE CLEARANCES REQUIRED FOR OPERATION, MAINTENANCE, CODE COMPLIANCE, AND TO VERIFY NON-INTERFERENCE WITH OTHER WORK. DO NOT FABRICATE PRIOR TO VERIFICATION OF NECESSARY CLEARANCES FOR ALL TRADES. BRING ANY INTERFERENCES OR CONFLICTS TO THE ATTENTION OF THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH FABRICATION OR EQUIPMENT ORDERS.
6. REVIEW SPACE REQUIREMENTS OF EQUIPMENT SPECIFIED OR SUBSTITUTED AND MAKE REASONABLE ACCOMMODATIONS IN LAYOUT AND POSITIONING TO PROVIDE PROPER ACCESS.
7. ANY CHANGES REQUIRED TO ELIMINATE CONFLICTS OR THAT RESULT FROM A FAILURE TO COORDINATE SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL COST OR EXPENSE TO OTHERS.
8. EACH CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ELECTRICAL CHANGES REQUIRED FOR EQUIPMENT PROPOSED THAT DIFFERS FROM THE BASIS OF DESIGN.
9. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, TECHNOLOGY AUDIO/VISUAL, AND OTHER MECHANICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED DEVICES, OTHER THAN SPRINKLERS.
10. EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO WALLS, FLOORS, CEILINGS, AND ROOFS. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND FINISH.
11. IN AREAS WITH DRYWALL CEILINGS COORDINATE LOCATIONS OF ACCESS PANELS WITH THE GC FOR ACCESS TO VALVES, DUCTWORK ACCESSORIES, DAMPERS, ETC. COORDINATE PANEL TYPE AND COLOR WITH ARCHITECT. NOTIFY THE GC OF THE REQUIRED ACCESS PANELS PRIOR TO BIDDING.
12. SEAL ALL FLOOR, WALL, AND ROOF PENETRATIONS AIRTIGHT WHERE CONDUITS, PIPING, AND DUCTS PENETRATE. PENETRATIONS THROUGH EXTERIOR WALLS AND ROOF SHALL BE SEALED AIRTIGHT WITH WATERPROOFING MATERIALS RECOMMENDED BY MANUFACTURER FOR OUTDOOR USE.
13. CAULK ALL PIPE AND DUCT PENETRATIONS OF FULL HEIGHT NON-FIRE RATED WALL, PARTITION, FLOOR, AND ROOF ASSEMBLIES. THIS IS ESSENTIAL TO PREVENT NOISE TRANSMISSION FROM ONE ROOM TO ANOTHER AND TO PROVIDE THE DESIRED NC LEVELS WITHIN ROOMS.
14. WHERE PIPES AND DUCTS ARE SHOWN TO PENETRATE FLOORS, PROVIDE SLEEVED OPENINGS WITH THE TOP EDGE RAISED ABOVE FLOOR SURFACE IN ACCORDANCE WITH ALL RELEVANT SPEC SECTIONS. SEAL SLEEVE PERIMETER TO BE WATERTIGHT.
15. EQUIPMENT SIZES AND SERVICE CLEARANCE REQUIREMENTS VARY AMONG DIFFERENT MANUFACTURERS. CONSULT APPROVED SHOP DRAWINGS FOR EQUIPMENT SIZES AND REQUIRED SERVICE CLEARANCES. COORDINATE WITH LAYOUT OF EQUIPMENT PADS, PIPING, DUCTWORK, ETC.
16. DO NOT BLOCK TUBE PULL OR EQUIPMENT SERVICE CLEARANCES.
17. MAINTAIN A MINIMUM WORKING CLEARANCE OF 3'-6" IN FRONT OF ALL ELECTRICAL EQUIPMENT REQUIRING MAINTENANCE, INSPECTION, AND TESTING INCLUDING BUT NOT LIMITED TO PANELS, DISTRIBUTION PANELS, SWITCHBOARDS, MOTOR CONTROL CENTERS, TRANSFORMERS, EQUIPMENT DISCONNECTS AND STARTERS.
18. MAINTAIN THE DEDICATED ELECTRICAL EQUIPMENT SPACE DEFINED BY THE WIDTH / DEPTH OF ELECTRICAL EQUIPMENT MEASURED FROM THE FLOOR TO A HEIGHT 6'-0" ABOVE THE EQUIPMENT OR THE STRUCTURAL CEILING, WHICHEVER IS LOWER. SYSTEMS FOREIGN TO THE ELECTRICAL DISTRIBUTION SYSTEM ARE NOT ALLOWED IN THE DEDICATED ELECTRICAL SPACE INCLUDING: DUCTWORK, PIPING, ETC.
19. PROVIDE CONCRETE EQUIPMENT PAD FOR ALL FLOOR MOUNTED EQUIPMENT. PAD SHALL EXTEND MINIMUM 6" BEYOND ALL SIDES OF EQUIPMENT EXCEPT WHERE PAD EXTENSION WOULD INTERFERE WITH WORKING SPACE AT EQUIPMENT CONTROL PANELS AND ELECTRICAL PANELS. ADDITIONALLY, CONCRETE EQUIPMENT PAD HEIGHTS SHALL BE A MINIMUM OF 3.5". PAD HEIGHT SHALL BE ADJUSTED AS NECESSARY TO ALLOW FOR ADEQUATE INSTALLATION REQUIREMENTS.
20. DO NOT EXCEED 25 LBS PER HANGER AND A MINIMUM SPACING OF 2'-0" ON CENTER WHEN ATTACHING TO METAL ROOF DECKING (LIMITATION NOT REQUIRED WITH CONCRETE ON METAL DECK). THIS 25 LBS. LOAD AND 2'-0" SPACING INCLUDE ADJACENT ELECTRICAL AND ARCHITECTURAL ITEMS HANGING FROM DECK. IF THE HANGER RESTRICTIONS CANNOT BE ACHIEVED, SUPPLEMENTAL FRAMING OFF STEEL FRAMING SHALL BE ADDED. ANCHORS EMBEDDED IN CONCRETE SHALL BE CRACKED CONCRETE APPROVED IN ACCORDANCE WITH SPECIFICATIONS.

PLUMBING SLOPE REQUIREMENTS:

BASED ON PLUMBING CODE: IPC-2012

INTERIOR:	
SANITARY WASTE:	≤2-1/2"ø=1/4" PER FOOT ≥3"ø = 1/8" PER FOOT
STORM (GRAVITY):	1/8" PER FOOT
CONDENSATE AND INDIRECT DRAINAGE:	1/8" PER FOOT
SANITARY VENT:	NO SPECIFIC PITCH, PITCH TO FIXTURES
DOMESTIC WATER:	NO SPECIFIC PITCH, PITCH TO FIXTURES

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BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS

#	Date / Description
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PLUMBING COVERSHEET

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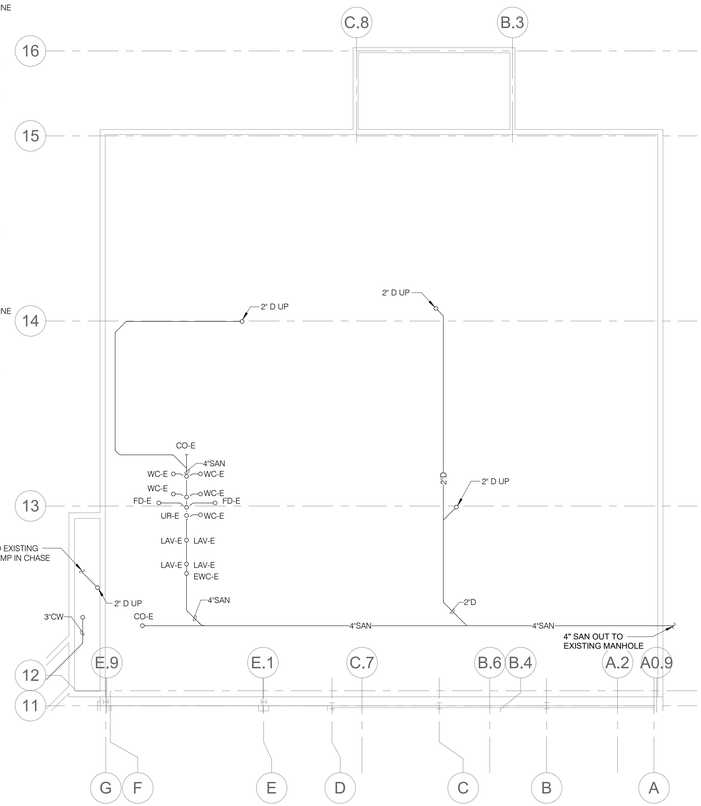
GENERAL SHEET NOTES:

1. REFER TO P0.00 FOR ADDITIONAL INFORMATION.
2. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO PERFORMING WORK.

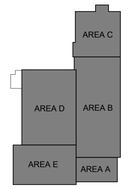
1 BASEMENT DEMOLITION PLAN - PLUMBING

1/8" = 1'-0"



2 BASEMENT DEMOLITION PLAN - PLUMBING - AREA C

1/8" = 1'-0"



KEY PLAN
NTS

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Sheet Title:
BASEMENT DEMOLITION PLAN - PLUMBING

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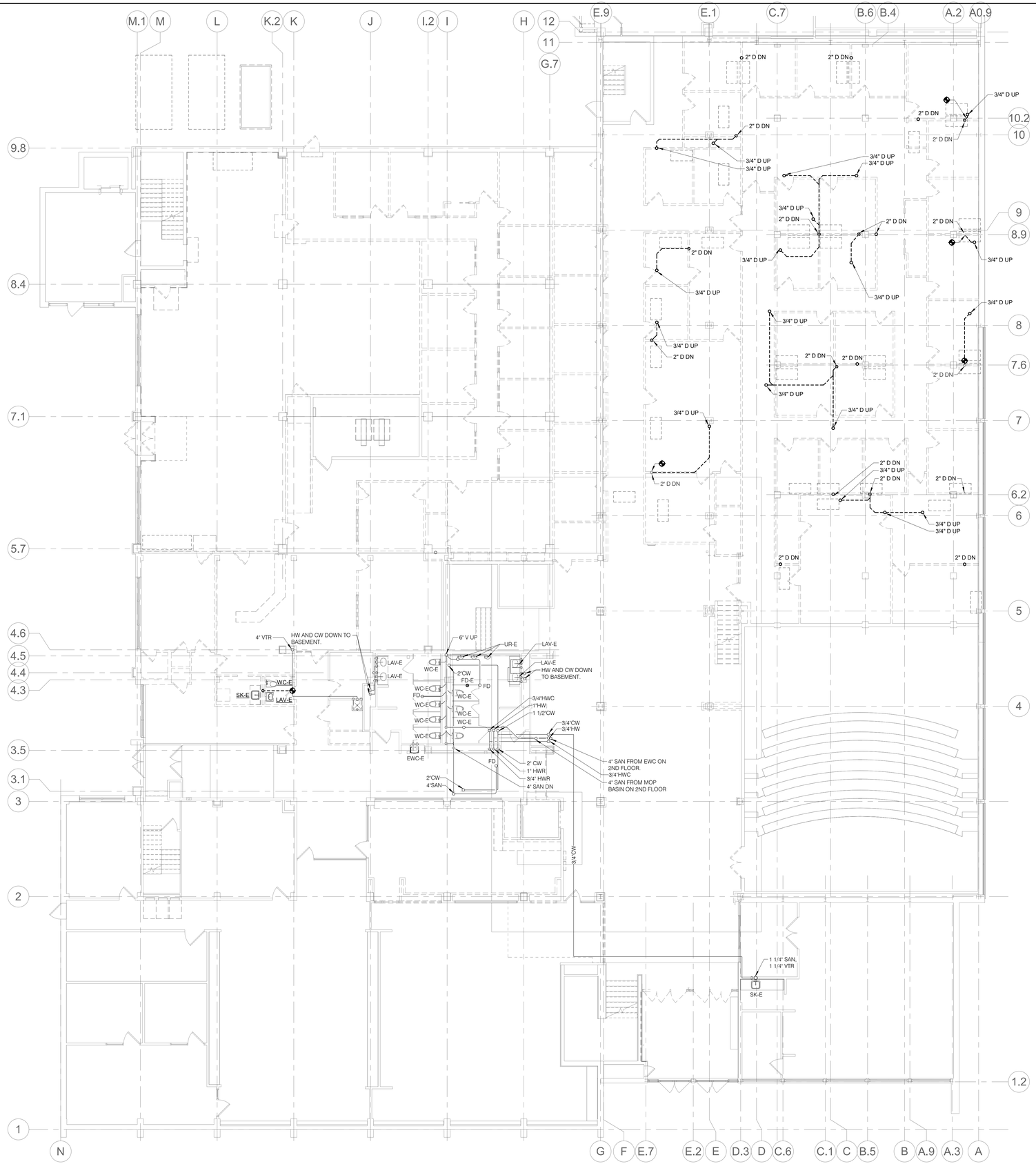
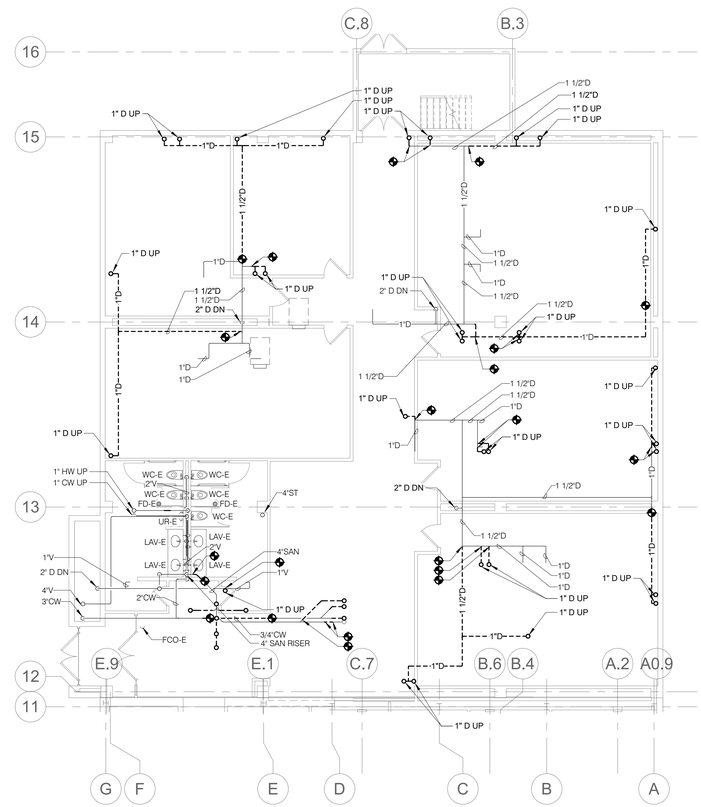
P1.10



NORTH

1 LEVEL 01 DEMOLITION PLAN - PLUMBING

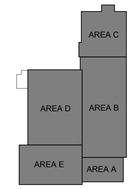
1/8" = 1'-0"



NORTH

2 LEVEL 01 DEMOLITION PLAN - PLUMBING - AREA C

1/8" = 1'-0"



KEY PLAN

NTS

GENERAL SHEET NOTES:

1. REFER TO P0.00 FOR ADDITIONAL INFORMATION.
2. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO PERFORMING WORK.

KEYNOTES: #

1. REMOVE 2" DRAIN PIPING DOWN INTO FLOOR SLAB. CAP DRAIN LINE AND PATCH EXISTING FLOOR SLAB.

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CERTIFICATE OF AUTHORITY - E2017008530

Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

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LEVEL 01 DEMOLITION PLAN - PLUMBING

Sheet #:

P1.11

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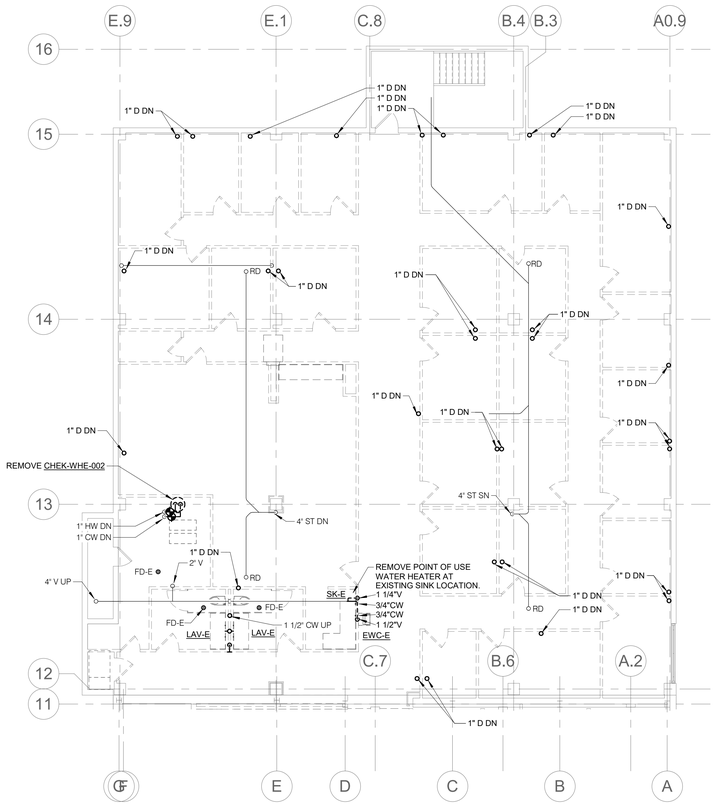
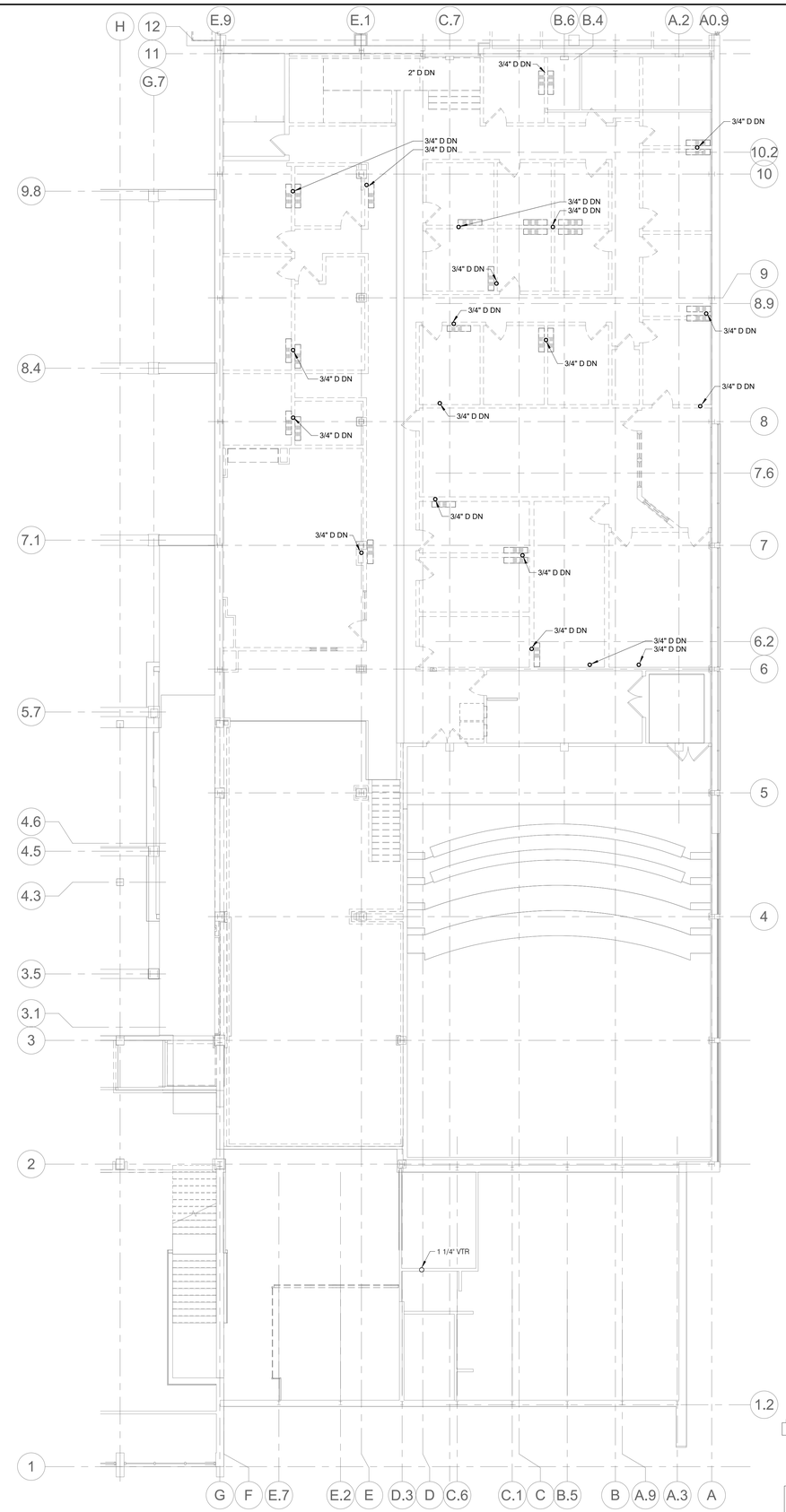


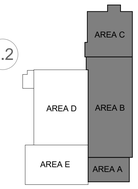
2 MEZZANINE DEMOLITION PLAN - PLUMBING - AREA C

1/8" = 1'-0"



3 MEZZANINE DEMOLITION PLAN - PLUMBING - AREAS A & B

1/8" = 1'-0"



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MEZZANINE DEMOLITION PLANS - PLUMBING

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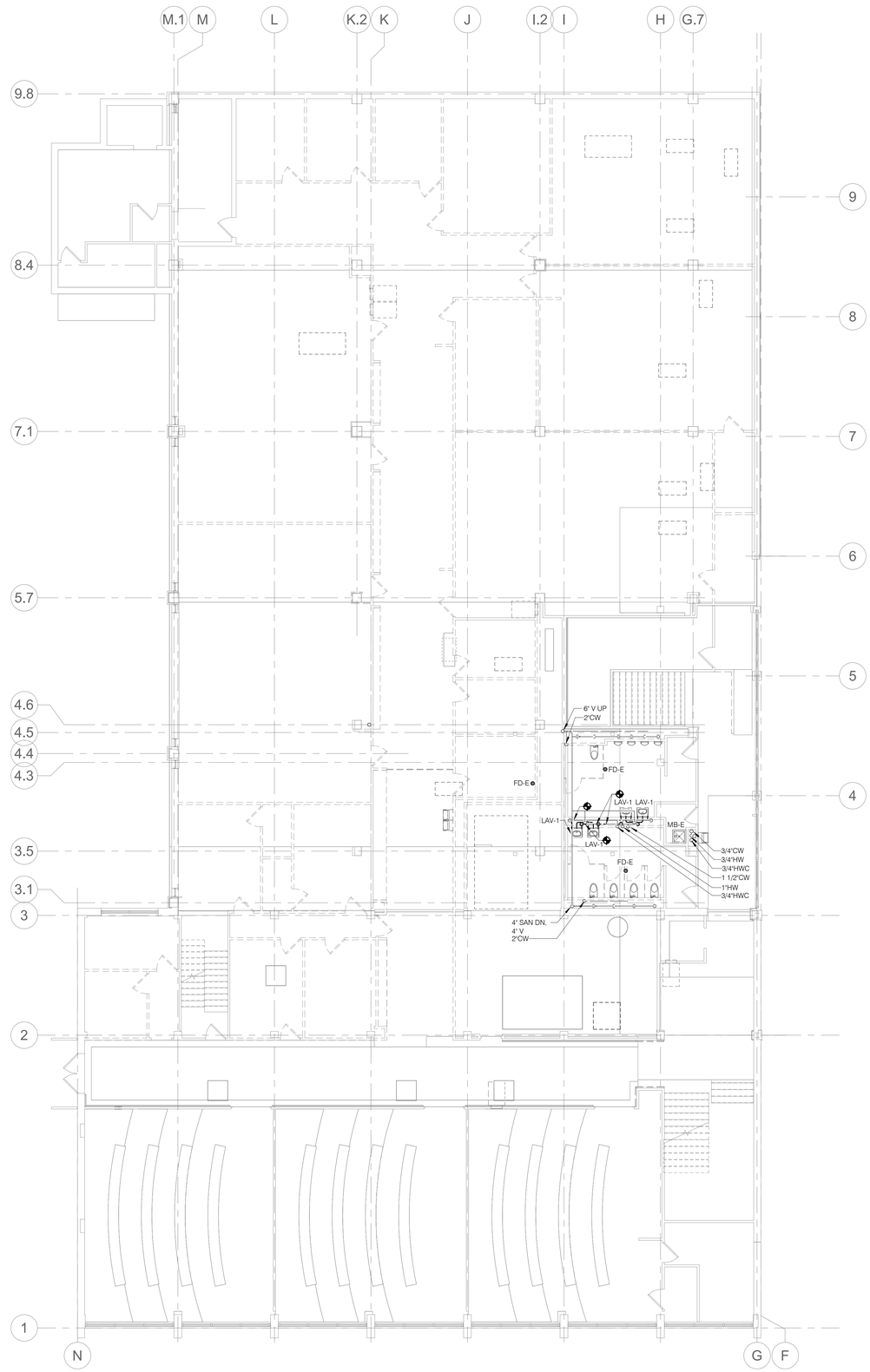
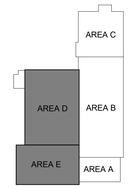


NORTH

1 **LEVEL 02 DEMOLITION PLAN - PLUMBING**
1/8" = 1'-0"



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MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

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LEVEL 02 DEMOLITION PLAN - PLUMBING

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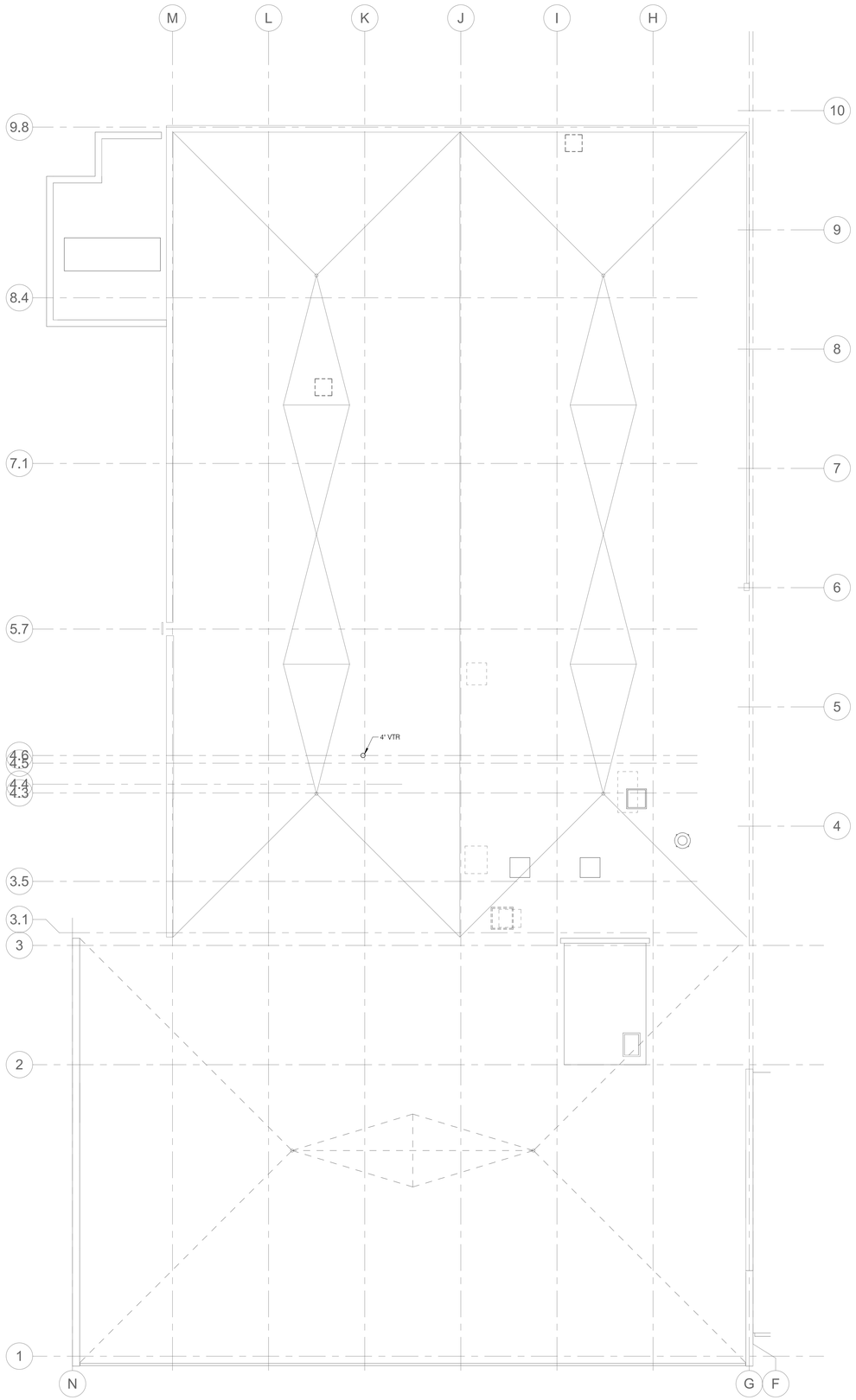
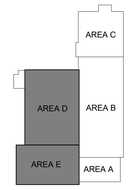


NORTH

3 **ROOF PLAN - PLUMBING - DEMOLITION**
1/8" = 1'-0"



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Project Title:
BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

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Drawn By: **Author**

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Sheet Title:
LEVEL 03 & ROOF DEMOLITION PLAN - PLUMBING

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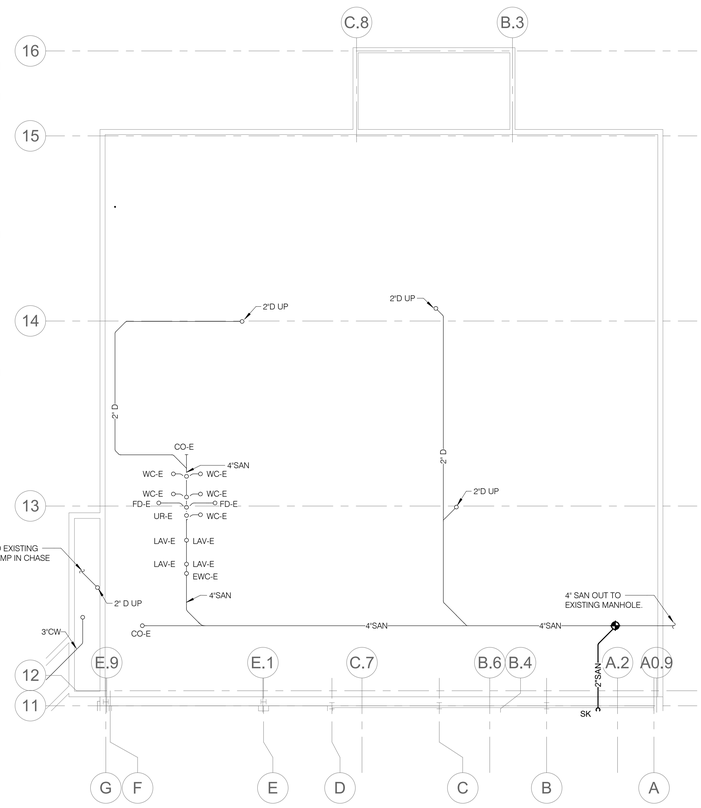
P1.14

NORTH

1 BASEMENT PLAN - PLUMBING - NEW CONSTRUCTION

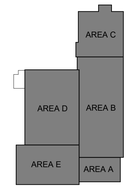
1/8" = 1'-0"



NORTH

2 BASEMENT PLAN - PLUMBING - NEW CONSTRUCTION - AREA C

1/8" = 1'-0"



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Sheet Title:

BASEMENT PLAN - PLUMBING

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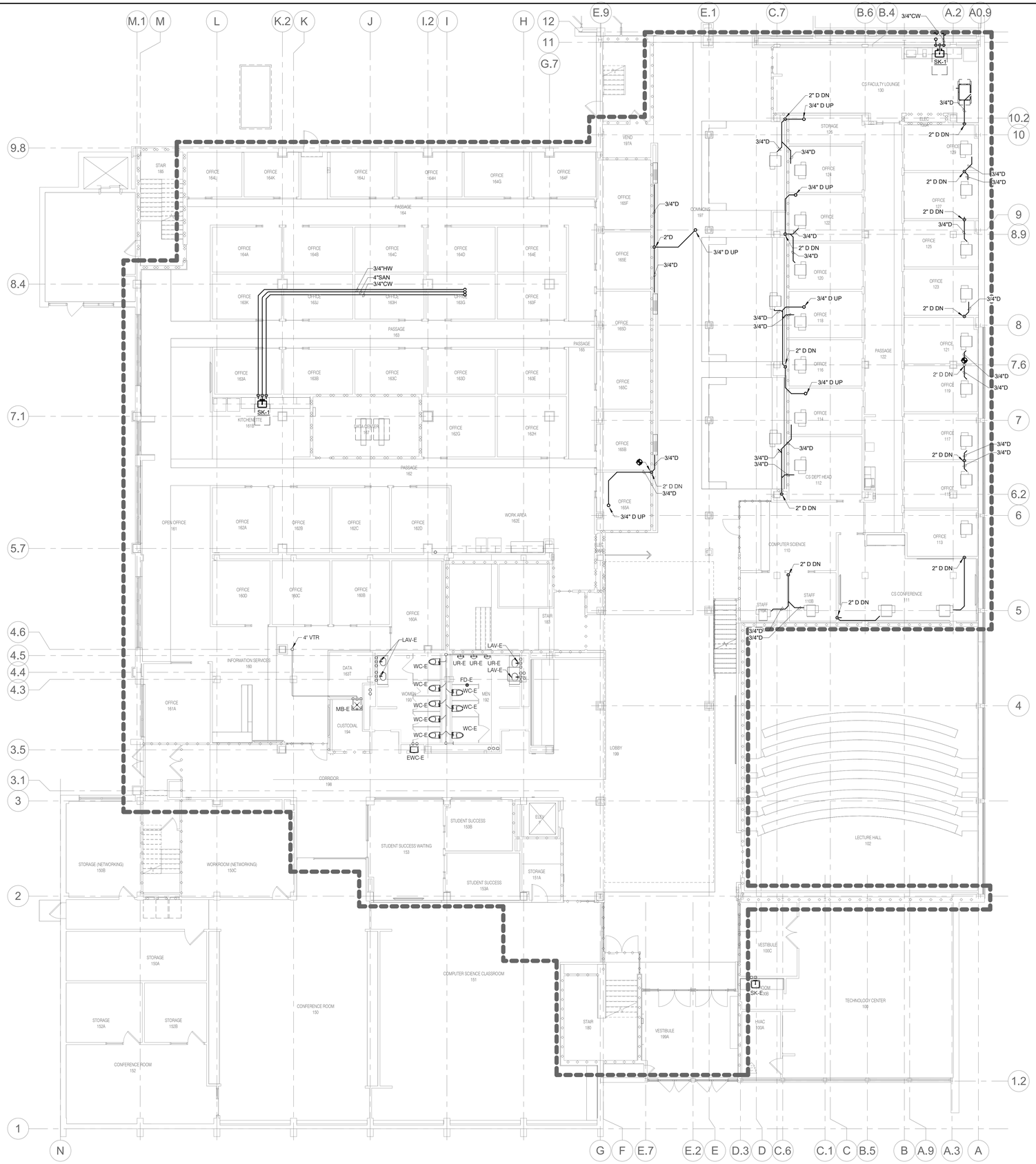
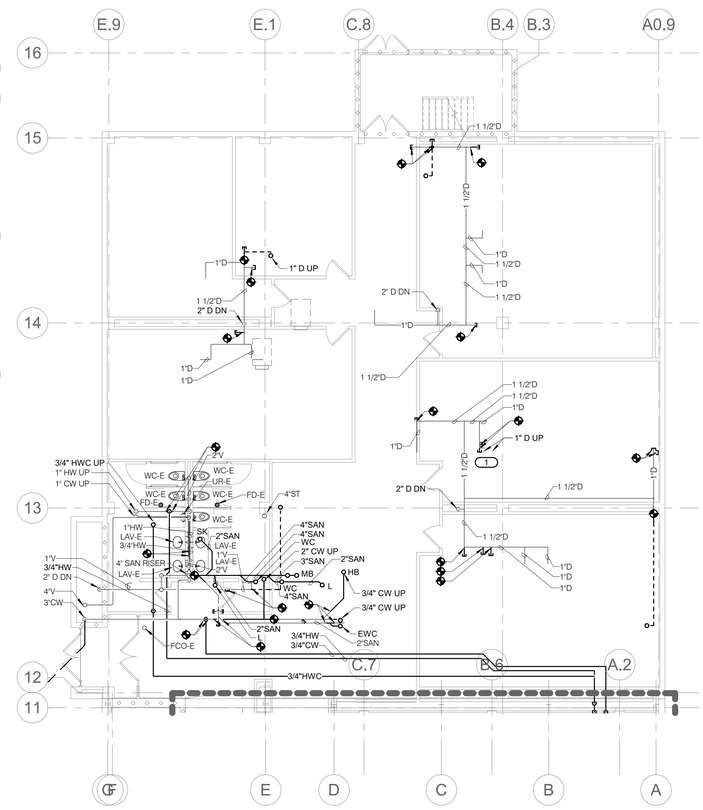


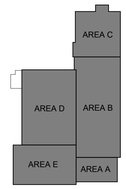
1 LEVEL 01 PLAN - PLUMBING

1/8" = 1'-0"



2 LEVEL 01 PLAN - PLUMBING - AREA C

1/8" = 1'-0"



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LEVEL 01 PLAN - PLUMBING

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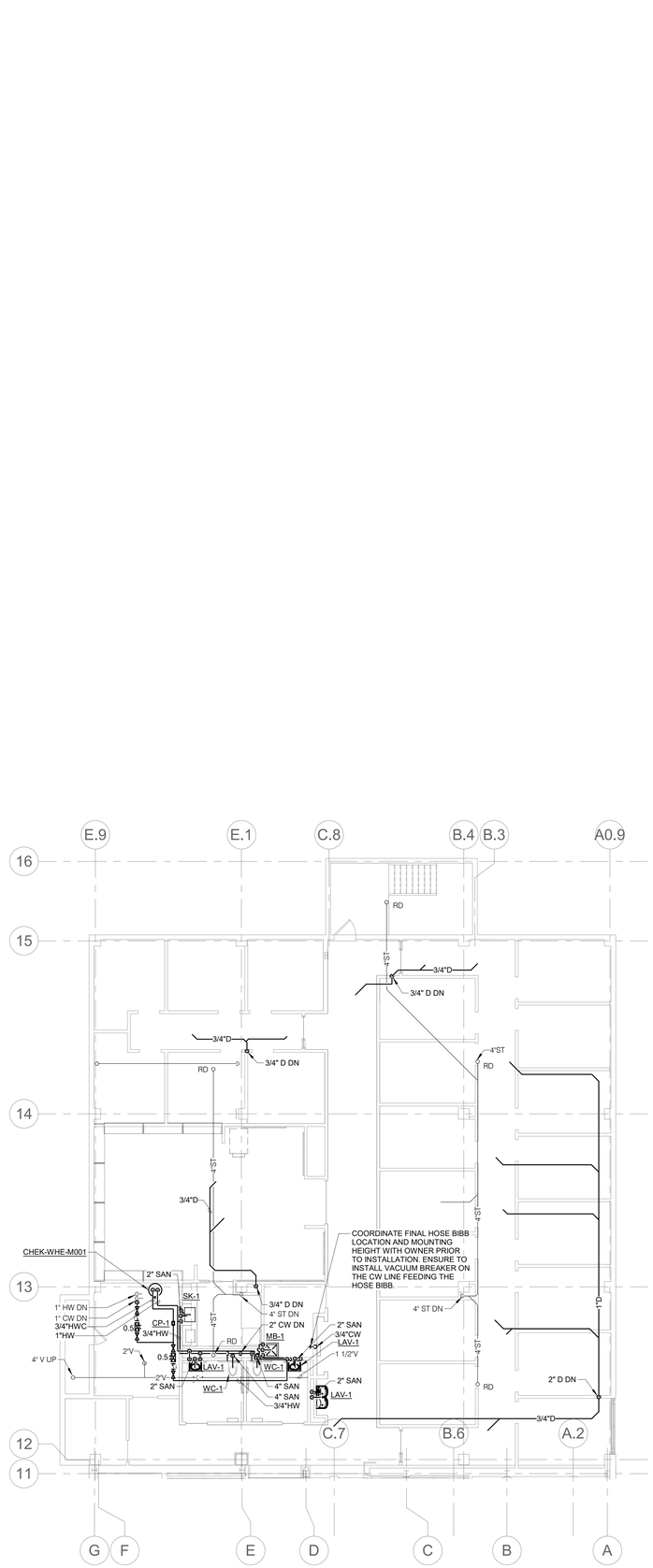
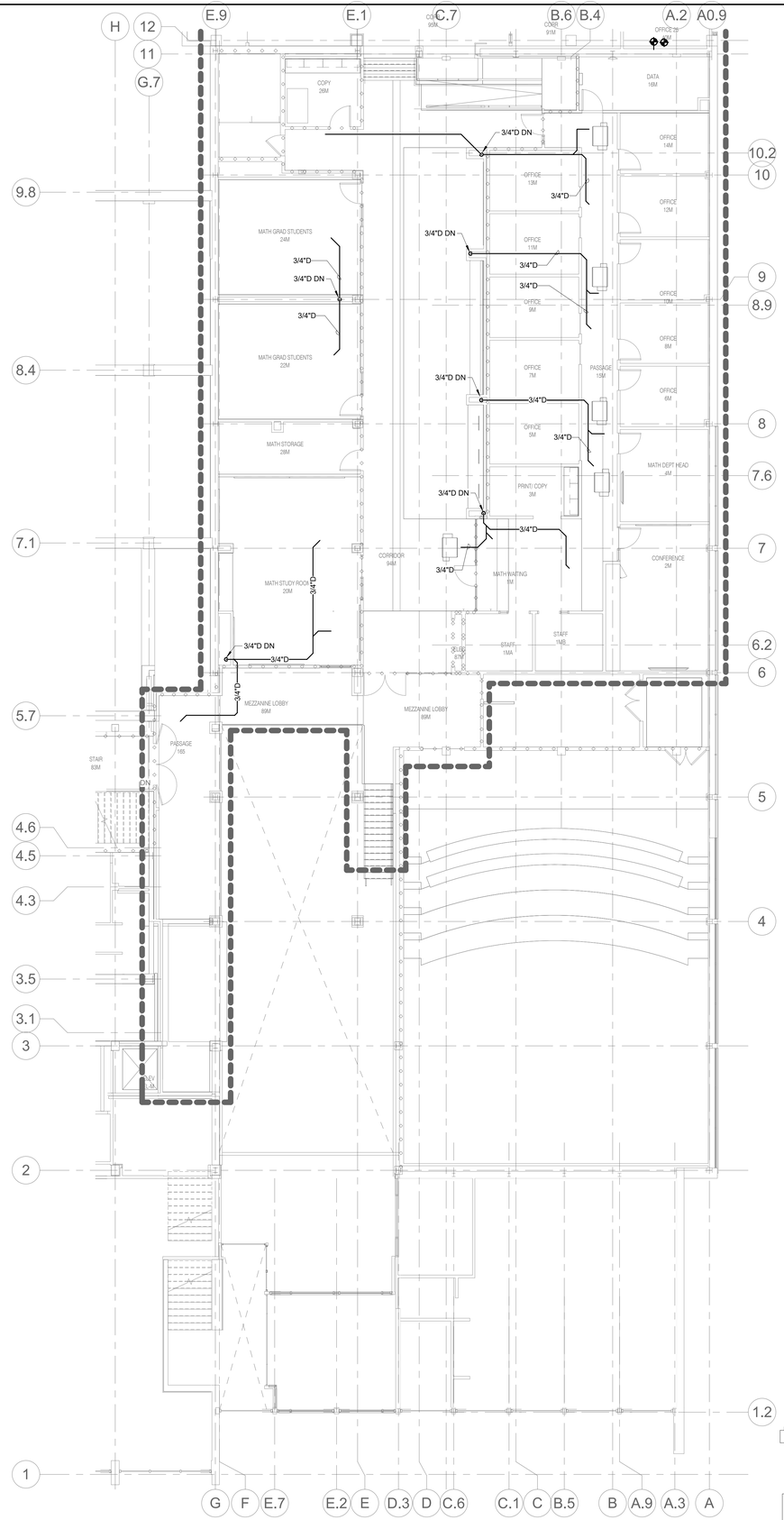


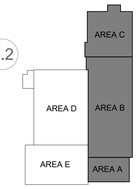
1 **MEZZANINE PLAN - PLUMBING - AREA C**

1/8" = 1'-0"



2 **MEZZANINE PLAN - PLUMBING - AREAS A & B**

1/8" = 1'-0"



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MEZZANINE LEVEL PLANS - PLUMBING

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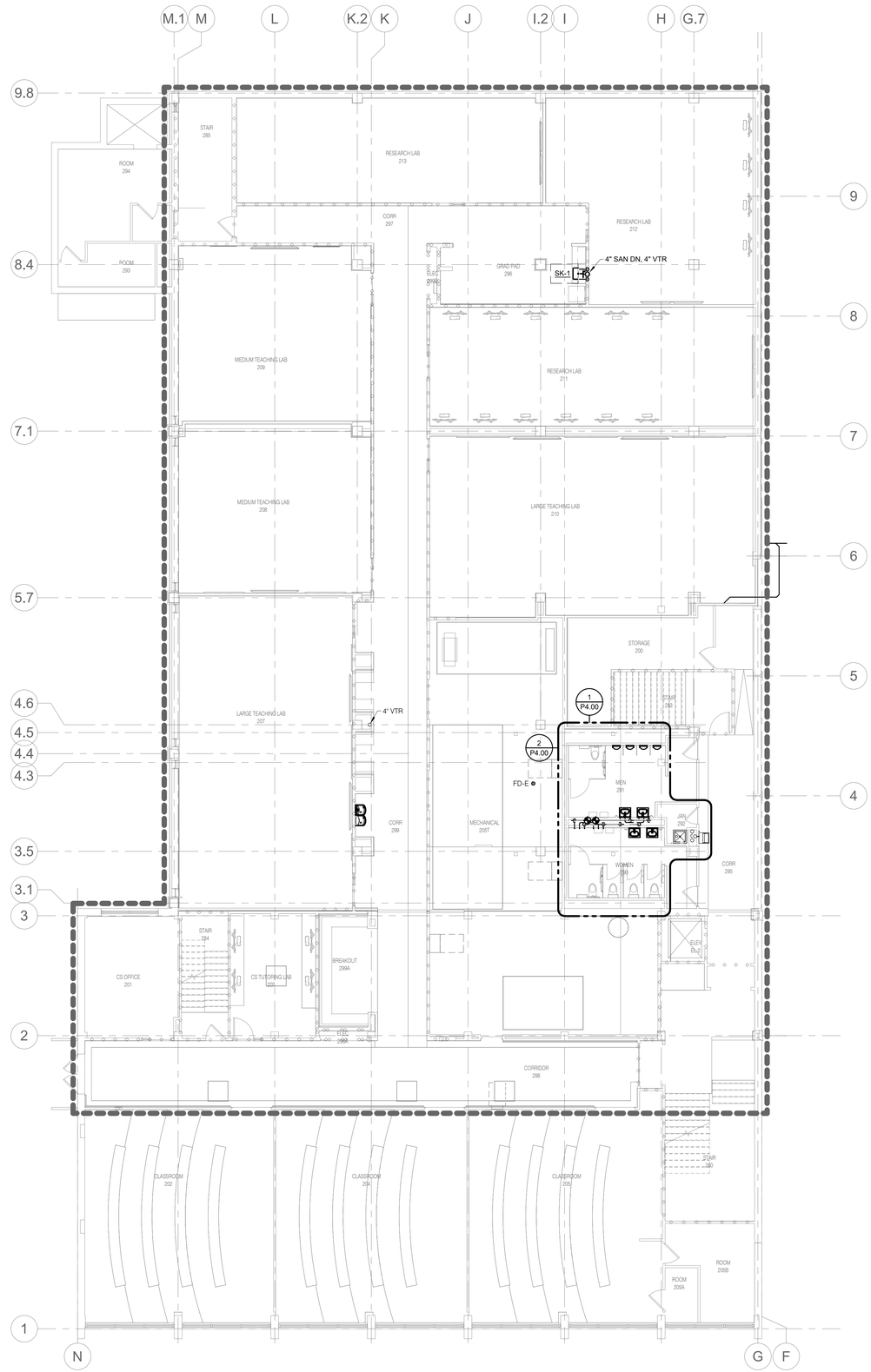
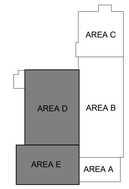


1 LEVEL 02 PLAN - PLUMBING

1/8" = 1'-0"

NORTH



KEY PLAN

NTS

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PROJECT #23008968.00

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CERTIFICATE OF AUTHORITY - E2017008530

Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

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Sheet Title:

LEVEL 02 PLAN - PLUMBING

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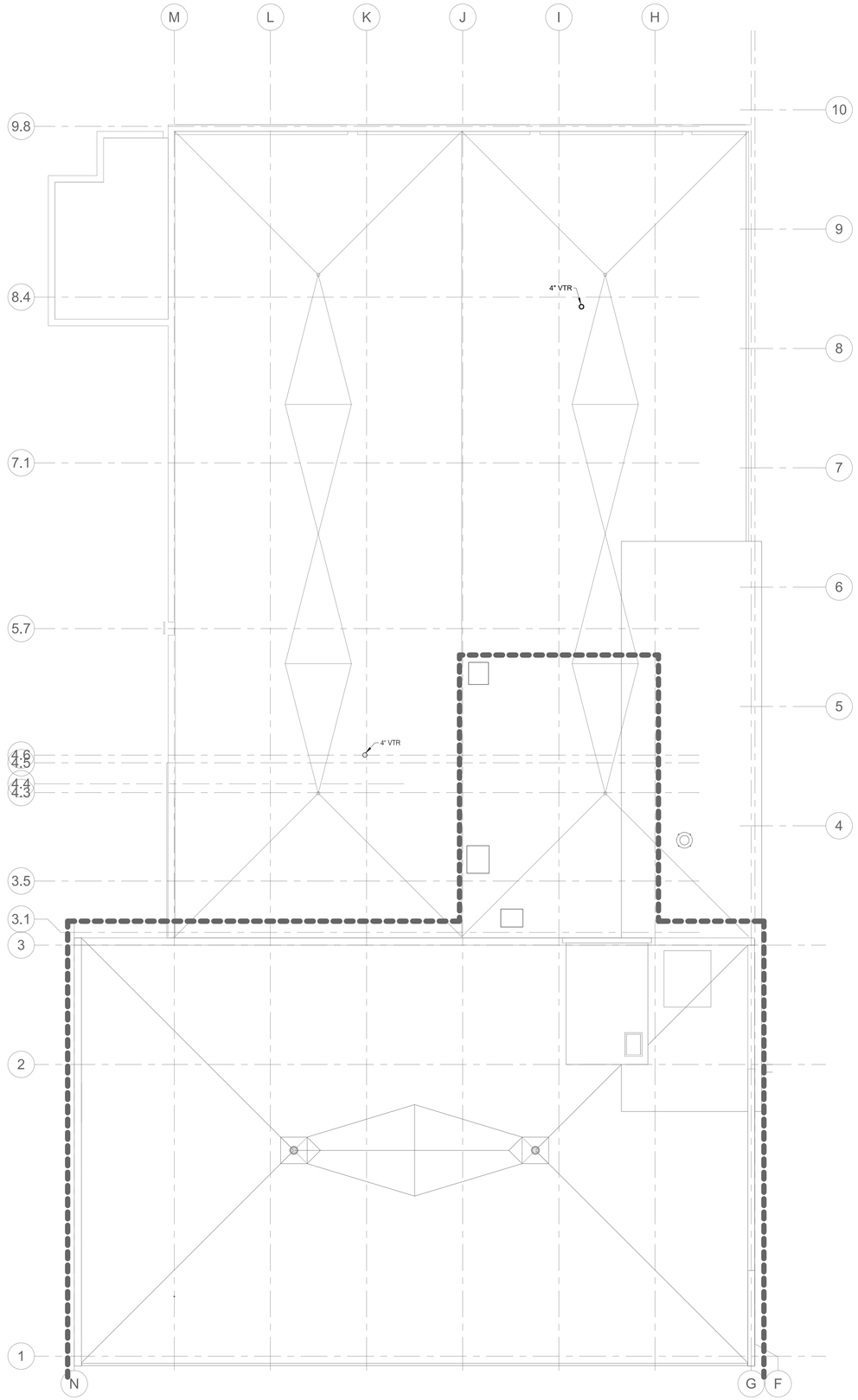
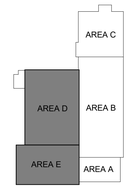
P2.13



NORTH

1 **ROOF PLAN - PLUMBING**
1/8" = 1'-0"



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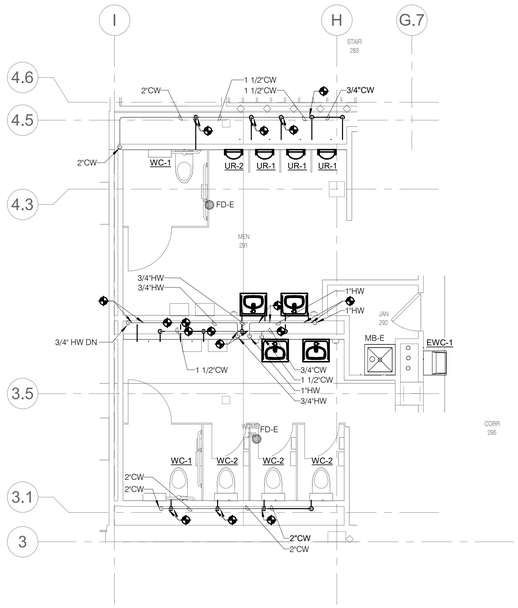
Sheet Title:

LEVEL 03 & ROOF PLAN - PLUMBING

Sheet #:

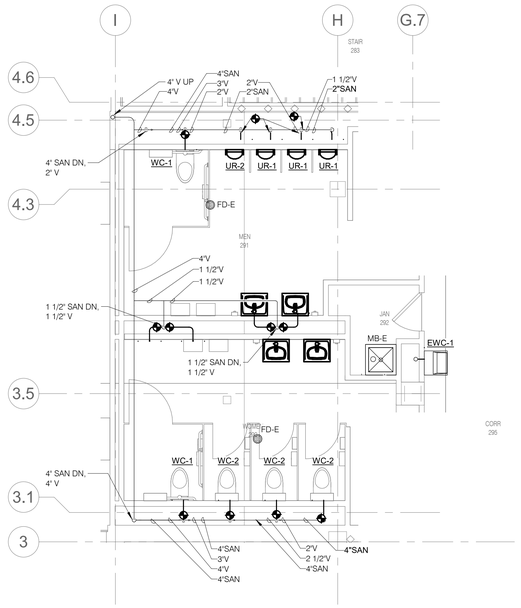
P2.14



NORTH

1 REST ROOM ENLARGED PLAN LEVEL 02 - DOMESTIC

1/4" = 1'-0"



NORTH

2 REST ROOM ENLARGED PLAN LEVEL 02 - SAN & VENT

1/4" = 1'-0"

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PLUMBING ENLARGED PLANS

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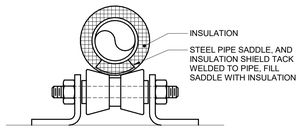
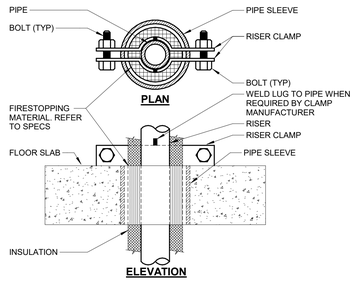
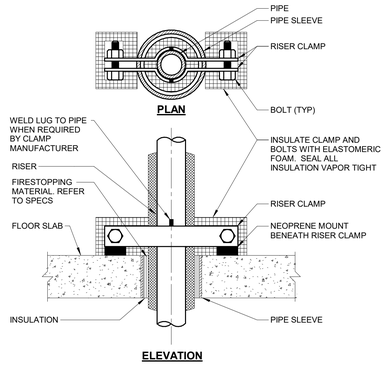


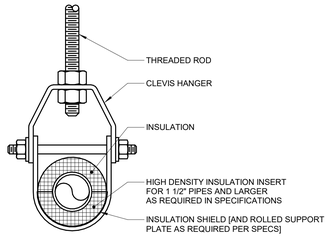
INSULATED HOT PIPE 4" AND LARGER



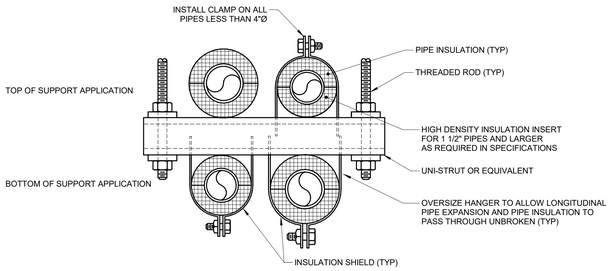
INSULATED HOT PIPE RISER SUPPORT



INSULATED COLD PIPE RISER SUPPORT



INSULATED COLD PIPE HANGER



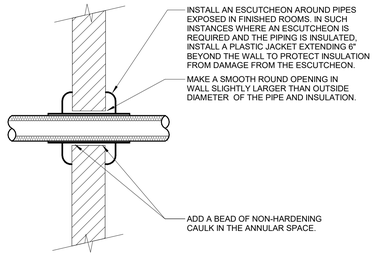
TRAPEZE HANGER

1 PIPE - HANGERS AND SUPPORTS

NO SCALE

NOTES:

1. REFER TO SPECIFICATION SECTIONS (SECTION 22 05 29-PLUMBING, SECTION 23 05 29-HVAC) & (SECTION 22 07 19-PLUMBING, SECTION 23 07 19-HVAC).

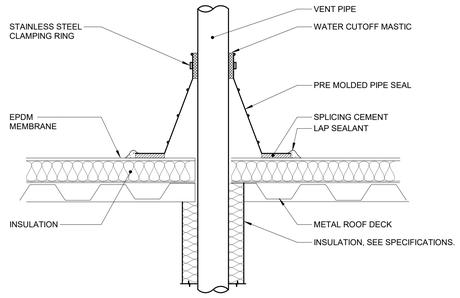


2 WALL PENETRATION - NON-FIRE RATED

NO SCALE

NOTES:

1. THIS DETAIL APPLIES TO ALL PIPES. THE INTENTION IS TO CONTINUE THE INSULATION AND VAPOR BARRIER THROUGH ALL PENETRATIONS. PERMIT THERMAL EXPANSION WITHOUT DAMAGING
2. INSULATION, AND TO SEAL AIRTIGHT AROUND INSULATED AND UNINSULATED PIPES FOR NOISE SEE SPECIFICATION SECTIONS (SECTION 22 05 03 - PLUMBING AND SECTION 22 05 29 - PLUMBING) FOR ADDITIONAL INFORMATION.

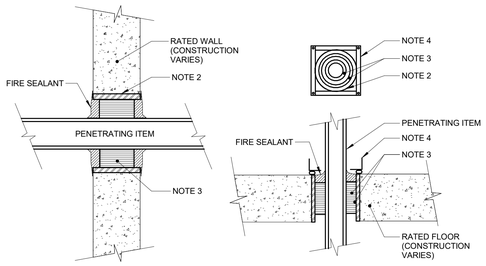


3 VENT PIPE FLASHING

NO SCALE

NOTES:

1. VENT PIPE SHALL BE A MINIMUM OF 4" DIAMETER UNLESS NOTED LARGER ON FLOOR PLANS. INCREASERS, IF REQUIRED TO TRANSITION TO THE LARGER VTR SIZE, MUST BE INSTALLED AT LEAST 12 INCHES BELOW THE THERMAL ENVELOPE OF THE BUILDING.

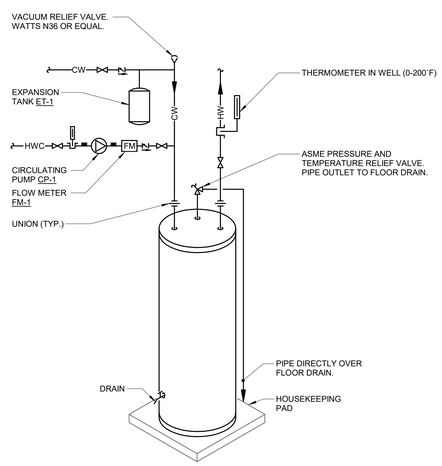


4 FLOOR/WALL PENETRATION - RATED FIRE BARRIER

NO SCALE

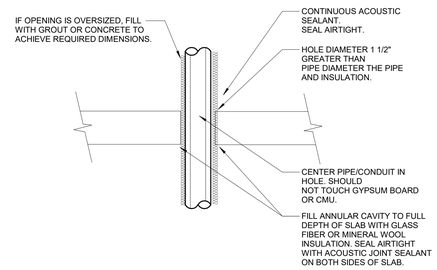
NOTES:

1. THIS GENERAL DETAIL APPLIES TO ALL ITEMS PENETRATING FIRE RATED WALLS OR FLOORS. THE INTENT IS TO MAINTAIN THE FIRE RATING AND TO ALLOW LONGITUDINAL MOVEMENT. REFER TO SPECIFICATION SECTION (07 84 00) (SECTION 22 05 03 - PLUMBING , SECTION 23 05 03 - HVAC) FOR SELECTION OF THROUGH PENETRATION FIRE STOPPING.
2. SCHEDULE 5 PIPE SLEEVE EMBEDDED IN WALL OR FLOOR, OR SMOOTH CORE DRILL. EACH CONTRACTOR FURNISHES SLEEVE TO G.C., COORDINATES SLEEVE LOCATIONS AND DEBURS SLEEVE. G.C. BUILDS SLEEVE INTO WALL OR FLOOR ALLOWING NO GAP AROUND SLEEVE. IF SLEEVE IS NOT PROVIDED WHEN WALL OR FLOOR IS BUILT, CONTRACTOR SHALL INSTALL SLEEVE. SLEEVE SIZE SHALL ALLOW ANNULAR SPACE REQUIRED BY THE SELECTED FIRE STOP SYSTEM.
3. INSTALL BACKING MATERIAL, SUCH AS MINERAL WOOL SAFING, AS REQUIRED FOR FIRE STOP SYSTEM. INSTALL IN ACCORDANCE WITH FIRE STOP SYSTEM APPLICATION LISTING. SECURE TO WALL OR FLOOR TO ALLOW LONGITUDINAL MOVEMENT OF PENETRATING ITEM WITHOUT MOVEMENT OF FIRE BARRIER.
4. WATERTIGHT WELDED 1"x1" 20 GAUGE MINIMUM GALVANIZED SHEET METAL ANGLE FRAME, BY CONTRACTOR IN EQUIPMENT ROOMS FOR WATER STOP. PLACE A BEAD OF WATERPROOF SEALANT BETWEEN FLOOR AND BOTTOM OF ANGLE FRAME. SECURE TO FLOOR WITH MASONRY ANCHORS IN CORNERS AND ON 12" MAXIMUM CENTERS. MULTIPLE PENETRATING ITEMS MAY BE ENCLOSED IN ONE FRAME.



5 WATER HEATER - ELECTRIC TANK - W/ HWC

NO SCALE



6 PIPE THROUGH SLAB PENETRATION

NO SCALE

NOTES:

1. THIS DETAIL APPLIES TO ALL PIPES. THE INTENTION IS TO CONTINUE THE INSULATION AND VAPOR BARRIER THROUGH ALL PENETRATIONS. PERMIT THERMAL EXPANSION WITHOUT DAMAGING INSULATION, AND TO SEAL AIRTIGHT AROUND INSULATED AND UNINSULATED PIPES FOR NOISE TRANSMISSION CONTROL.
2. FLOOR OPENINGS ARE SIMILAR SEE SPECIFICATION SECTION 22 05 29 - PLUMBING FOR DIFFERENCES BETWEEN FLOOR AND WALL PENETRATIONS.

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PLUMBING MATERIAL LIST

TAG	DESCRIPTION	ACCEPTABLE MANUFACTURERS
CP-1	CIRCULATING PUMP - VARIABLE SPEED CONTROLLER WITH SETTINGS TO ADJUST AND MAINTAIN A CONSTANT: SPEED, FIXED PRESSURE, OR PROPORTIONAL PRESSURE. LEAD FREE BRONZE OR STAINLESS STEEL CONSTRUCTION, PERMANENTLY LUBRICATED SEALED BEARINGS, MECHANICAL SEAL, OIL LUBRICATED, ECM MOTOR WITH INTEGRATED VARIABLE SPEED CONTROL, FLANGED CONNECTIONS, RATED FOR 125 PSIG AT 225°F, UL LISTED. 1 GPM @ 1 FEET OF HEAD. MOTOR SHALL BE 0.65 AMPS. ...	PUMP - GRUNDFOS (ALPHA SERIES), B&G (ECOCIRC SERIES), ARMSTRONG (COMPASS 20-20 SS SERIES)
ET-1	EXPANSION TANK - WELDED STEEL CONSTRUCTION, GUARANTEED AIRTIGHT AND LEAKPROOF, STAINLESS STEEL SYSTEM CONNECTION, HEAVY DUTY BUTYL DIAPHRAGM AND RIGID POLYPROPYLENE LINER MECHANICALLY BONDED TO TANK TO PROVIDE A 100% NON-CORROSIVE WATER RESERVOIR, DIAPHRAGM AND LINER SHALL BE APPROVED FOR USE IN POTABLE WATER SYSTEMS, ALL WETTED COMPONENTS OF FDA APPROVED MATERIALS. PROVIDE STANDARD SCHRADER AIR VALVE FOR FIELD CHARGING. TANK SHALL COMPLY WITH FEDERAL ACT S.3874. MINIMUM TANK VOLUME TO BE __ GALLONS MINIMUM ACCEPTING VOLUME TO BE __ GALLONS TANK SHALL HAVE A WORKING TEMPERATURE OF 200°F AND A WORKING PRESSURE OF 125 PSIG. FACTORY PRE-CHARGED FOR SHIPPING. FIELD CHARGE TANK TO 50 PSIG.	EXPANSION TANK - AMTROL (THERM-X-TROL ST-30VC-DD), B&G (PT), FLEXTRON (FTT), WATTS (PLT), WESSELS (T)
EWC-1	ELECTRIC WATER COOLER - WALL HUNG, 18 GAUGE STAINLESS STEEL CABINET AND NON-SPLASH BASIN WITH STAINLESS STEEL FINISH, STREAM PROJECTOR WITH PROTECTIVE HOOD, PUSH BAR OR LEVER OPERATING CONTROLS ON FRONT AND SIDES, BUILT-IN FLOW REGULATOR, PLASTIC P-TRAP ASSEMBLY, ADJUSTABLE THERMOSTAT, MOUNTING ACCESSORIES, TANK DRAIN AND ANGLE STOPS, HERMETIC COMPRESSOR TO OPERATE ON HFC-134a REFRIGERANT. COMPLIANT TO LATEST ANSI A117.1 AND ADA STANDARDS. UNIT SHALL COMPLY WITH FEDERAL ACT S.3874. BOTTLE FILLING STATION - UNIT MOUNTED, STAINLESS STEEL CONSTRUCTION AND FINISH, INTEGRAL DRAIN, SENSOR OPERATED WITH AUTOMATIC SHUTOFF, REPLACEABLE LEAD-CHLORINE-TASTE-ODOR WATER FILTER, BOTTLE COUNTER, FILTER REPLACEMENT INDICATOR. UNIT SHALL PROVIDE 8.0 GPH OF WATER FROM 80°F TO 50°F AT 90°F AMBIENT. WATER SYSTEM SHALL BE OF LEAD FREE CONSTRUCTION. TANK SHALL BE TESTED TO 125 PSIG. ORIFICE SHALL BE AT 36" (MAXIMUM) ABOVE FINISHED FLOOR. BOTTOM OF APRON SHALL BE AT 27" ABOVE FINISHED FLOOR IN COMPLIANCE WITH LATEST ADA STANDARDS. ELECTRICAL REQUIREMENTS - 1/5 HP MOTOR, 120V-1 PHASE, CORD AND PLUG, PLAIN RECEPTACLE MOUNTED...	ELECTRIC WATER COOLER -ELKAY (LZS8)
EWC-2	ELECTRIC WATER COOLER - WALL HUNG, BI-LEVEL UNITS, ADA COMPLIANT WITH MATCHING STAINLESS STEEL APRON INSTALLED UNDER UPPER UNIT 18 GAUGE STAINLESS STEEL CABINETS AND NON-SPLASH BASINS WITH STAINLESS STEEL FINISH, STREAM PROJECTORS WITH PROTECTIVE HOODS, PUSH BAR OR LEVER OPERATING CONTROLS ON FRONT AND BOTH SIDES, BUILT-IN FLOW REGULATOR, PLASTIC P-TRAP ASSEMBLY, ADJUSTABLE THERMOSTAT, MOUNTING ACCESSORIES, TANK DRAIN AND ANGLE STOPS, HERMETIC COMPRESSOR TO OPERATE ON HFC-134a REFRIGERANT. COMPLIANT TO LATEST ANSI A117.1 AND ADA STANDARDS. UNIT SHALL COMPLY WITH FEDERAL ACT S.3874. BOTTLE FILLING STATION - UNIT MOUNTED, STAINLESS STEEL CONSTRUCTION AND FINISH, INTEGRAL DRAIN, SENSOR OPERATED WITH AUTOMATIC SHUTOFF, REPLACEABLE LEAD-CHLORINE-TASTE-ODOR WATER FILTER, BOTTLE COUNTER, FILTER REPLACEMENT INDICATOR. UNIT SHALL PROVIDE 8.0 GPH OF WATER FROM 80°F TO 50°F AT 90°F AMBIENT. WATER SYSTEM SHALL BE OF LEAD FREE CONSTRUCTION. TANK SHALL BE TESTED TO 125 PSIG. ORIFICE SHALL BE AT 36" (MAXIMUM) ABOVE FINISHED FLOOR ON LOWER UNIT AND 40" ABOVE FINISHED FLOOR ON UPPER UNIT. BOTTOM OF APRON SHALL BE 27" ABOVE FLOOR ON LOWER UNIT IN COMPLIANCE WITH LATEST ADA STANDARDS. ELECTRICAL REQUIREMENTS - 1/5 HP MOTOR, 120V-1 PHASE, CORD AND PLUG, PLAIN RECEPTACLE MOUNTED WITHIN EWC LOWER ENCLOSURE, GFCI BREAKER.	ELECTRIC WATER COOLER -ELKAY (LZST)(EZSTL8)
FCO-1	FLOOR CLEANOUT - ADJUSTABLE, CAST IRON HOUSING, ANCHOR FLANGE, TAPERED THREAD PLUG, SECURED NICKEL BRONZE TOP. TOP STYLE SHALL MATCH FLOOR FINISH AS FOLLOWS: UNFINISHED FLOOR - ROUND SOLID SCORIATED TOP TILE OR TERRAZZO - ROUND RECESSED TOP CARPET - ROUND TOP WITH CARPET MARKER.	FLOOR CLEANOUT - ZURN (Z1400)
L-1	LAVATORY - ACCESSIBLE, WALL MOUNTED, WHITE VITREOUS CHINA, 20"x18", 4" HIGH CONTOURED BACKSPLASH, SINGLE FAUCET HOLE, DRILLED FOR CONCEALED ARM CARRIER. LAVATORY TRIM - SENSOR ACTIVATED MIXING FAUCET, BATTERY POWERED, BRASS CONSTRUCTION, CHROME-PLATED FINISH, CONVENTIONAL SPOUT WITH AERATOR, SINGLE HOLE, PERFORATED GRID STRAINER WITH 1-1/4" 17 GAUGE TAILPIECE, SOLID BRASS SOLENOID WITH BUILT-IN FILTER, WATERPROOF CONNECTORS AND CABLE, UL APPROVED TRANSFORMER. INSULATION KIT - PRE-MANUFACTURED FOR P-TRAP, STOP VALVES, AND SUPPLY LINES. INSULATION KIT - PRE-MANUFACTURED FOR P-TRAP, STOP VALVES AND SUPPLY LINES. ACCESSORIES - QUARTER-TURN 3/8" CHROME PLATED HEAVY BRASS ANGLE SUPPLY KEY STOPS, CHROME PLATED SOFT COPPER SUPPLY LINES, DRAIN AND OFFSET TAILPIECE, 1-1/4" 17 GAUGE CAST BRASS P-TRAP, SUPPORT CARRIER. MOUNT LAVATORY WITH SUPPORT CARRIER BOLTED SECURELY TO FLOOR. TOP OF RIM SHALL BE AT 34" ABOVE FLOOR IN COMPLIANCE WITH LATEST ADA STANDARD. PROVIDE 29" MINIMUM CLEARANCE FROM FLOOR TO BOTTOM OF APRON IN COMPLIANCE WITH LATEST ANSI A117.1 AND ADA STANDARDS. ARMAFLEX WITH TA...	LAVATORY TRIM - CHICAGO FAUCET (116.971.AB.1) INSULATION KIT - TRUEBRO (LAV-GUARD), BROCAR PRODUCTS (TRAP WRAP), MCGUIRE (PROWRAP), PLUMBEREX (PRO-EXTREME)
L-1	LAVATORY - ACCESSIBLE, WALL MOUNTED, WHITE VITREOUS CHINA, 20" X 18", SINGLE FAUCET HOLE, DRILLED FOR CONCEALED ARM CARRIER. LAVATORY TRIM - SENSOR ACTIVATED MIXING FAUCET, BATTERY POWERED, BRASS CONSTRUCTION, CHROME-PLATED FINISH, CONVENTIONAL SPOUT WITH AERATOR, SINGLE HOLE, PERFORATED GRID STRAINER WITH 1-1/4" 17 GAUGE TAILPIECE, SOLID BRASS SOLENOID WITH BUILT-IN FILTER, WATERPROOF CONNECTORS AND CABLE. INSULATION KIT - PRE-MANUFACTURED FOR P-TRAP, STOP VALVES AND SUPPLY LINES. ACCESSORIES - QUARTER-TURN 3/8" CHROME PLATED HEAVY BRASS ANGLE SUPPLY LOOSE KEY STOPS, CHROME PLATED SOFT COPPER SUPPLY LINES, DRAIN AND OFFSET TAILPIECE, 1-1/4" 17 GAUGE CAST BRASS P-TRAP, SUPPORT CARRIER. MOUNT LAVATORY WITH SUPPORT CARRIER BOLTED SECURELY TO FLOOR. TOP OF RIM SHALL BE AT 34" ABOVE FLOOR IN COMPLIANCE WITH LATEST ADA STANDARD. PROVIDE 29" MINIMUM CLEARANCE FROM FLOOR TO BOTTOM OF APRON IN COMPLIANCE WITH LATEST ANSI A117.1 AND ADA STANDARDS. ARMAFLEX WITH TA...	LAVATORY - AMERICAN STANDARD (9024001EC.020) LAVATORY TRIM - CHICAGO FAUCET (116.971.AB.1) INSULATION KIT - TRUEBRO (LAV-GUARD), BROCAR PRODUCTS (TRAP WRAP), MCGUIRE (PROWRAP), PLUMBEREX (PRO-EXTREME)
WHA-1	WATER HAMMER ARRESTOR – PISTON TYPE, PRE-CHARGED WITH 60 PSIG AIR, LEAD FREE, COPPER BODY, BRASS OR HIGH HEAT POLY-PROPYLENE PISTON WITH DUAL EPDM O-RING SEALS LUBRICATED WITH FDA APPROVED SILICONE LUBRICANT. PDI CERTIFIED, A.S.S.E. 1010 APPROVED FOR SEALED WALL INSTALLATION, RATED FOR 1-11 FIXTURE UNITS. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.	WATER HAMMER ARRESTOR - WATTS (LF15M2-DR), SIOUX CHIEF (650 SERIES), MIFAB (MWH), PPP (SC SERIES), ZURN WILKINS (1250XL), JR SMITH (5201-5250), WADE (WP5-100), JOSAM (75000-S)

PLUMBING MATERIAL LIST

TAG	DESCRIPTION	ACCEPTABLE MANUFACTURERS
SK-1	SINK - ACCESSIBLE, UNDERMOUNT WITH OVERFLOW, SINGLE COMPARTMENT, 18 GAUGE TYPE 304 STAINLESS STEEL, 21-1/2" (SIDE-TO-SIDE) x 18-1/2" (FRONT-TO-BACK) OVERALL SIZE, 19" x 16" x 5-3/8" DEEP BOWL, COMPLETELY UNDERCOATED, 3-1/2" DIAMETER DRAIN OUTLET LOCATION OFF-CENTERED REAR IN BOWL, REMOVABLE TYPE 304 STAINLESS STEEL BASKET STRAINER WITH NEOPRENE STOPPER. SINK TRIM - SINGLE HANDLE MIXING FAUCET, BRASS CONSTRUCTION, CHROME-PLATED FINISH, NOMINAL 10" HIGH-RISE SWING SPOUT, CERAMIC CARTRIDGE, NOMINAL 8" REACH, PULL DOWN SPRAY HOSE WITH AERATOR STREAM / SPRAY SELECTOR, LEVER HANDLE. ACCESSORIES - OFFSET 1-1/2" 17 GAUGE CHROME-PLATED BRASS TAILPIECE AND P-TRAP, QUARTER-TURN BALL VALVE TYPE 3/8" CHROME-PLATED BRASS ANGLE SUPPLIES WITH LOOSE KEY STOPS, CHROME-PLATED SOFT COPPER SUPPLY LINES. INSULATION KIT - PRE-MANUFACTURED FOR P-TRAP, STOP VALVES, AND SUPPLY LINES.	SINK - ELKAY (ELUHADLK4D18 ELUH/LK18B) SINK TRIM - CHICAGO FAUCET (434-ABCP) INSULATION KIT - MCGUIRE (PROWRAP), JUST (J-ADA), PLUMBEREX (PRO-EXTREME), TRUEBRO (LAV-GUARD2)
UR-1	URINAL - ACCESSIBLE, WALL MOUNTED, WHITE VITREOUS CHINA, FLUSH VALVE TYPE, WASHDOWN FLUSHING ACTION, 3/4" TOP SPUD, 2" OUTLET. FLUSH VALVE - EXPOSED, MANUAL OPERATION, 0.125 GALLONS PER FLUSH, 11-1/2" ROUGH-IN, CHROME-PLATED, 3/4" I.P.S. SCREWDRIVER STOP-CHECK VALVE WITH VANDAL RESISTANT CAP, HIGH BACK PRESSURE VACUUM BREAKER, NON-HOLD-OPEN HANDLE, ADJUSTABLE TAILPIECE, SPUD COUPLING AND FLANGE, WALL FLANGE WITH SET SCREW, CHLORAMINE RESISTANT MATERIALS, 3-YEAR WARRANTY. CONTRACTOR OPTION: COMBINATION URINAL/FLUSH VALVE PACKAGED SYSTEM BY AMERICAN STANDARD, KOHLER, SLOAN, OR ZURN ACCESSORIES - SUPPORT CARRIER WITH TOP BEARING PLATE. MOUNT WITH CARRIER BOLTED SECURELY TO FLOOR. TOP OF BOWL RIM SHALL BE AT 17" (MAXIMUM) ABOVE FLOOR IN COMPLIANCE WITH LATEST ADA STANDARDS. FLUSH HANDLE SHALL BE AT 44" (MAXIMUM) ABOVE FLOOR AND OPERATE WITH NO GREATER THAN 5 LB FORCE IN COMPLIANCE WITH LATEST ADA STANDARDS. VERIFY EQUIPMENT REQUIREMENTS AND ROUGH-IN LOCATIONS.	URINAL - SLOAN (SU-7009), AMERICAN STANDARD, KOHLER, GERBER, TOTO, ZURN FLUSH VALVE - ZURN (Z6003AV-ULF), SLOAN (186-0.125), AMERICAN STANDARD (6045.013), KOHLER (K-13520-CP), AMTC (MF-700-U18)
WC-1	WATER CLOSET - WALL HUNG, FLUSH VALVE TYPE, WHITE VITREOUS CHINA, SIPHON JET, HIGH EFFICIENCY RATED FOR 1.28 GPF, ELONGATED BOWL, 1-1/2" TOP SPUD. FLUSH VALVE - EXPOSED, MANUAL OPERATION, 1.28 GALLONS PER FLUSH, 11-1/2" ROUGH-IN, CHROME PLATED, 1" I.P.S. SCREWDRIVER STOP-CHECK VALVE WITH VANDAL RESISTANT CAP, HIGH BACK PRESSURE VACUUM BREAKER, SPUD COUPLING AND FLANGE, WALL FLANGE WITH SET SCREW, NON-HOLD-OPEN HANDLE, ADJUSTABLE TAILPIECE, ADA COMPLIANT, 3 YEAR WARRANTY. SEAT - WHITE, EXTRA HEAVY, OPEN FRONT, INJECTION MOLDED SOLID ANTI-MICROBIAL PLASTIC, SELF-SUSTAINING HINGE, STAINLESS STEEL OR PLATED STEEL POSTS AND NUTS. CONTRACTOR OPTION: COMBINATION WATER CLOSET/FLUSH VALVE PACKAGED SYSTEM BY AMERICAN STANDARD, KOHLER, SLOAN, OR ZURN ACCESSORIES - WATER CLOSET SUPPORT CARRIER RATED FOR 500 LBS. MOUNT WATER CLOSET WITH CARRIER BOLTED SECURELY TO FLOOR. TOP OF SEAT SHALL BE AT 16"-17" ABOVE FINISHED FLOOR (VERIFY EXACT MOUNTING HEIGHT WITH MANUFACTURER). VERIFY EQUIPMENT REQUIREMENTS AND ROUGH-IN LOCATIONS.	WATER CLOSET - SLOAN (ST-2050), AMERICAN STANDARD (2257.101), ZURN (Z5615), KOHLER (K-84325), TOTO (CT708E) FLUSH VALVE - ZURN (Z6000AV-HET), SLOAN (111-1.28), AMERICAN STANDARD (6047.121), KOHLER (K-13517-CP), TOTO (TMT1LN328#CP), AMTC (MF-700-T12) SEAT - BEMIS (3155SSCT), CHURCH (3155C), BENEKE (533PC), OLSONITE (95), SAME AS WATER CLOSET MANUFACTURER
WC-2	WATER CLOSET - ACCESSIBLE, WALL HUNG, FLUSH VALVE TYPE, WHITE VITREOUS CHINA, SIPHON JET, HIGH EFFICIENCY RATED FOR 1.28 GPF, ELONGATED BOWL, 1-1/2" TOP SPUD. FLUSH VALVE - EXPOSED, MANUAL OPERATION, 1.28 GALLONS PER FLUSH, 11-1/2" ROUGH-IN, CHROME PLATED, 1" I.P.S. SCREWDRIVER STOP-CHECK VALVE WITH VANDAL RESISTANT CAP, HIGH BACK PRESSURE VACUUM BREAKER, SPUD COUPLING AND FLANGE, WALL FLANGE WITH SET SCREW, NON-HOLD-OPEN HANDLE, ADJUSTABLE TAILPIECE, ADA COMPLIANT, 3 YEAR WARRANTY. SEAT - WHITE, EXTRA HEAVY, OPEN FRONT, INJECTION MOLDED SOLID ANTI-MICROBIAL PLASTIC, SELF-SUSTAINING HINGE, STAINLESS STEEL OR PLATED STEEL POSTS AND NUTS. CONTRACTOR OPTION: COMBINATION WATER CLOSET/FLUSH VALVE PACKAGED SYSTEM BY AMERICAN STANDARD, KOHLER, SLOAN, OR ZURN ACCESSORIES - WATER CLOSET SUPPORT CARRIER RATED FOR 500 LBS. MOUNT WATER CLOSET WITH CARRIER BOLTED SECURELY TO FLOOR. TOP OF SEAT SHALL BE AT 17"-19" ABOVE FINISHED FLOOR (VERIFY EXACT MOUNTING HEIGHT WITH MANUFACTURER). VERIFY EQUIPMENT REQUIREMENTS AND ROUGH-IN LOCATIONS.	WATER CLOSET - SLOAN (ST-2050), AMERICAN STANDARD (2257.101), ZURN (Z5615), KOHLER (K-84325), TOTO (CT708E) FLUSH VALVE - ZURN (Z6000AV-HET), SLOAN (111-1.28), AMERICAN STANDARD (6047.121), KOHLER (K-13517-CP), TOTO (TMT1LN328#CP), AMTC (MF-700-T12) SEAT - BEMIS (3155SSCT), CHURCH (3155C), BENEKE (533PC), OLSONITE (95), SAME AS WATER CLOSET MANUFACTURER
WCO-1	WALL CLEANOUT - TEE, CAST IRON ACCESS BODY, GAS AND WATERTIGHT THREADED PLUG, ROUND STAINLESS STEEL ACCESS COVER, EXTENDED MACHINE SCREW.	WALL CLEANOUT - ZURN (Z-1446), SMITH (4530), WADE (8560), JOSAM (58910), WATTS (CO-460), MIFAB (C1460-RD)
CHEK-WHE-M001	WATER HEATER - ELECTRIC, VERTICAL, METAL CABINET, BAKED ENAMEL FINISH, GLASS-LINED ASME STAMPED WELDED STEEL TANK, 150 PSI WORKING PRESSURE, FIBERGLASS OR FOAM INSULATION, BRASS WATER CONNECTIONS AND DRAIN VALVE, ASME APPROVED T&P RELIEF VALVE, MAGNESIUM ANODE ROD, INDIVIDUAL FLANGE-MOUNTED IMMERSION HEATING ELEMENTS SHEATHED WITH CORROSION-RESISTANT METAL ALLOY, EXTERNALLY ADJUSTABLE AUTOMATIC IMMERSION WATER THERMOSTAT, MANUAL RESET HIGH TEMPERATURE CUTOFF SWITCH, ENCLOSED CONTROLS, VENTILATED CONTROL CABINET, PILOT LIGHTS INDICATING MAIN POWER AND HEATING STEPS, CONTROL CIRCUIT TOGGLE SWITCH, SEQUENCING STEP CONTROLLER, CONTROL TRANSFORMER, POWER CIRCUIT FUSES, MAGNETIC CONTACTORS, CERAMIC TERMINAL BLOCK, FACTORY ASSEMBLED AND WIRED, 3-YEAR WARRANTY, UL LISTED, NEC COMPLIANT ELECTRICAL COMPONENTS, COMPLIANT TO NAECA, ASHRAE 90.1 AND ASHRAE 90A. 50 GALLON CAPACITY, 12.3 KW ELEMENT(S), 50 GPH RECOVERY RATE AT 100°F TEMPERATURE RISE. HEATING ELEMENTS RATED FOR LESS THAN 75 WATTS PER SQUARE INCH. ELECTRICAL REQUIREMENTS - 208V- SINGLE PHASE HEATING CIRCUIT, 120V CONTROL CIRCUIT. SET WATER TEMPERATURE AT 130°F.	A.O. SMITH (DRE), AMERICAN (ITCE31), BOCK (F SERIES), BRADFORD WHITE (M-II), RHEEM/RUUD (E SERIES), STATE (SSE), HTP (CGE SERIES HEAVY DUTY)

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Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS

#	Date / Description
1	
2	
3	
4	

Seal:

50% PROGRESS SET - NOT FOR CONSTRUCTION

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Sheet Title:

PLUMBING SCHEDULES

Sheet #:

P6.00

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REF. SCALE IN INCHES

PROJECT #23008968.00

VIEW KEY

NAME 10'-0" — LEVEL NAME, HEIGHT ABOVE PROJECT 0'-0"

1 — KEYNOTE: INDICATES NOTE USED TO DESCRIBE ADDITIONAL INFORMATION ABOUT WORK REQUIRED, SPECIFIC TO THE SHEET AND/OR DETAIL

NORTH — INDICATES DIRECTION OF TRUE NORTH

1 — PLAN OR DETAIL NUMBER; VIEW NAME; 1/8" = 1'-0"; PLAN OR DETAIL SCALE

SIM 1 M101 — INDICATES SIMILAR DETAIL REFERENCED IN MULTIPLE LOCATIONS; DETAIL REFERRED TO BY SECTION CUT; SHEET DETAIL IS LOCATED ON

SIM 1 4 2 3 T101

LINE TYPE AND TAG KEY:

NEW WORK BY THIS CONTRACTOR (WIDE LINE)
- NEW
- EXISTING TO BE REMOVED (SHORT DASHED PATTERN)
- NEW UNDERFLOOR OR UNDERGROUND (LONG DASHED PATTERN)

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

HALFTONING DOES NOT MODIFY SCOPE.

'TAG'-E — TAGS WITH DASH 'E' INDICATES THE REFERENCED OBJECT IS EXISTING

TAG-1 — UNDERLINED TAG INDICATES OBJECT IS IN-SCOPE. IF NEW, ADDITIONAL INFORMATION IS AVAILABLE IN A SCHEDULE, MATERIAL LIST, OR SYMBOL LIST

INDICATES AN EXISTING SYSTEM'S POINT OF CONNECTION/REMOVAL

FIRE / SMOKE BARRIER DESIGNATIONS

THE LINE TYPES SHOWN ARE FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR MUST VERIFY RATINGS WITH THE LATEST SET OF ARCHITECTURAL PLANS AND FURNISH ALL MATERIALS REQUIRED TO COMPLY WITH THOSE RATINGS WHETHER SHOWN OR NOT.

ALL [FLOOR, FLOOR CEILING, AND ROOF CEILING] ASSEMBLIES MUST BE DESIGNATED AS 1, 2 HOUR FIRE, BARRIER(S), UNLESS NOTED OTHERWISE ON THE PLANS.

FIRE PARTITION	— ① — ① — ① — ① — ① — ① —
1 HOUR FIRE BARRIER	— ◆ — ◆ — ◆ — ◆ — ◆ — ◆ —
2 HOUR FIRE BARRIER OR WALL	— ◆◆ — ◆◆ — ◆◆ — ◆◆ —

SUGGESTED MATRIX OF RESPONSIBILITY

ITEM:	SHOWN ON:	FURNISHED BY:	INSTALLED BY:	NOTES:
TECHNOLOGY ROUGH-IN, REFER TO TECHNOLOGY EQUIPMENT SCHEDULE AND SPECIFICATIONS FOR DEFINITION	T-SERIES	E.C.	E.C.	3. 4.
INFORMATION OUTLET FACEPLATES, JACKS, AND TERMINATIONS	T-SERIES	T.C.	T.C.	
CONDUIT SLEEVES (WHEN SHOWN ON DRAWINGS)	T-SERIES	E.C.	E.C.	
CONDUIT SLEEVES (NOT SHOWN BUT REQUIRED FOR PROPER INSTALLATION OF SYSTEM)	N/A	T.C.	T.C.	2. 4.
TELECOMMUNICATION SYSTEMS ROUGH-IN	T-SERIES	E.C.	E.C.	1.
TELECOMMUNICATION EQUIPMENT, CABLING, AND TERMINATIONS	T-SERIES	T.C.	T.C.	
CABLE TRAY (INCLUDING WIRE BASKET TRAY) REFER TO SPECIFICATION SECTION 27 05 28 FOR DEFINITION	T-SERIES	E.C.	E.C.	
LADDER RACK	T-SERIES	T.C.	T.C.	5.
GROUNDING LUGS ON TECHNOLOGY EQUIPMENT	T-SERIES	T.C.	E.C.	6.
BONDING SYSTEM FOR TECHNOLOGY SYSTEM, REFER TO SPECIFICATION SECTION 27 05 26 FOR DEFINITION	T-SERIES	E.C.	E.C.	7. 8.
CONNECTION OF TECHNOLOGY BONDING SYSTEM TO THE ELECTRICAL GROUND SYSTEM	T-SERIES	E.C.	E.C.	
LINE VOLTAGE POWER (+120V OR GREATER)	E-SERIES	E.C.	E.C.	
LINE VOLTAGE POWER (NOT SHOWN BUT REQUIRED FOR PROPER INSTALLATION OF SYSTEM)	N/A	T.C.	E.C.	2. 4.
LINE VOLTAGE POWER FOR DOOR HARDWARE POWER SUPPLIES	ARCH SPEC	E.C.	E.C.	
LOW VOLTAGE CABLING FOR TECHNOLOGY SYSTEMS	T-SERIES	T.C.	T.C.	
CABLE HANGERS AND SUPPORTS OR OTHER CABLE ROUTING METHODS (OTHER THAN CONDUIT AND CABLE TRAY)	T-SERIES	T.C.	T.C.	5.

SUGGESTED MATRIX OF RESPONSIBILITY NOTES

1. LOCATIONS OF TELECOMMUNICATIONS ROUGH-INS SHALL BE INDICATED BY THE INFORMATION OUTLET SYMBOLS ON THE DRAWINGS. REFER TO THE TECHNOLOGY SYMBOL LIST FOR ADDITIONAL INFORMATION.
2. BASED ON THE INHERENT DIFFERENCES IN PRODUCTS FROM VARIOUS MANUFACTURERS, ALL REQUIRED EQUIPMENT MAY NOT BE SHOWN ON THE DRAWINGS FOR ALL ACCEPTABLE MANUFACTURERS.
3. INCLUDES BACKBOXES AND CONDUIT REQUIRED FOR THE TECHNOLOGY SYSTEMS INSTALLATION. THE E.C. SHALL BASE THE BID ON THE BASIS OF DESIGN SHOWN ON THE CONTRACT DOCUMENTS.
4. ALL CHANGES TO THE SLEEVES, BACKBOXES, CONDUITS, AND POWER REQUIRED BECAUSE OF THE T.C.'S SELECTION OF AN ALTERNATE ACCEPTABLE MANUFACTURER OR FROM SYSTEM CONFIGURATIONS THAT ARE LEFT TO THE CHOICE OF THE CONTRACTOR SHALL BE INCLUDED IN THE T.C.'S BID. THIS BID SHALL INCLUDE INSTALLATION BY A LICENSED ELECTRICIAN.
5. UNLESS TRADE RULES DICTATE OTHERWISE.
6. FURNISHED AS PART OF THE EQUIPMENT WHEN POSSIBLE, OR FURNISHED TO THE E.C. FOR INSTALLATION IN THE FIELD.
7. INCLUDES ALL CONDUCTORS, GROUND BARS, AND TERMINATIONS FOR THE COMPLETE BONDING SYSTEM REQUIRED BY THE SPECIFICATIONS.
8. REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS OF PANELS AND SWITCHBOARDS SHOWN IN THE TECHNOLOGY BONDING RISER DIAGRAM AND TYPICAL TELECOM ROOM BONDING FLOW DIAGRAM.

CONDUIT INSTALLATION SCHEDULE

THE FOLLOWING SCHEDULE SHALL BE ADHERED TO UNLESS THEY CONSTITUTE A VIOLATION OF APPLICABLE CODES OR ARE NOTED OTHERWISE ON THE DRAWINGS. THE INSTALLATION OF RMC CONDUIT WILL BE PERMITTED IN PLACE OF ALL CONDUIT SPECIFIED IN THIS SCHEDULE. REFER TO CONDUIT AND BOXES SPECIFICATION 26 05 33 FOR ADDITIONAL INFORMATION.

INSTALLATION TYPE	RMC	EMT	PVC	PVC CONCRETE ENCASED	RTRC
FEEDERS: SWITCHBOARDS, DISTRIBUTION PANELS, PANELBOARDS, MOTOR CONTROL CENTERS, ETC.		X			
BRANCH CIRCUITS: LIGHTING, RECEPTACLES, CONTROLS, ETC.		X			
MECHANICAL EQUIPMENT FEEDERS: PUMPS, CHILLERS, AIR HANDLING UNITS, ETC.		X			
FLOOR MOUNTED EQUIPMENT FEEDERS: PUMPS, ETC. (INCLUDE NO MORE THAN 6 FEET OF LFMC TO PUMP)		X			
CONTROLS (LIGHTING, POWER, BUILDING AUTOMATION, ETC.)		X			
WET AND DAMP LOCATIONS: (CONDUIT, BOXES, FITTINGS, INSTALLED AND EQUIPPED TO PREVENT WATER ENTRY)	X				X
CORROSIVE LOCATIONS					X
ELEVATED CONCRETE SLABS (ABOVE GRADE)	X		X		
INTERIOR LOCATIONS WITH FINISHED CEILING AND WALLS: CONCEALED IN WALLS AND ABOVE FINISHED CEILINGS		X			
INTERIOR LOCATIONS WITHOUT FINISHED CEILINGS: CONCEALED IN WALL, EXPOSED ABOVE CEILINGS		X			
EXISTING INTERIOR LOCATIONS WITH FINISHED CEILINGS AND WALLS: CONCEALED IN WALLS AND ABOVE FINISHED CEILING UNLESS OTHERWISE NOTED		X			
UNDERGROUND / SLABS ON GRADE (IN OR UNDER SLABS ON GRADE)					
WITHIN 5' FROM THE PERIMETER OF THE BUILDING	X		X		
WITHIN 5' FROM THE PERIMETER OF THE BUILDING WHEN PASSING THROUGH THE PERIMETER OF THE BUILDING FOUNDATION:	X			X	X
UNDERGROUND SITE CONDUITS:					
WITHIN 5' FROM THE PERIMETER OF A BUILDING FOUNDATION	X			X	X
5' OR GREATER FROM THE PERIMETER OF A BUILDING FOUNDATION	X		X		X
HAZARDOUS (CLASSIFIED LOCATIONS AS DEFIED BY THE NATIONAL ELECTRICAL CODE: COMPLETE WITH SCREWED FITTINGS AND CONDUIT SEALS	X				
FIRE RATED ASSEMBLIES: FIRE RATED ASSEMBLIES LISTED WITH PHENOLIC RTRC RACEWAY					X
DEFINITIONS:					
CONCRETE ENCASEMENT: CONDUIT WITH A MINIMUM OF 3" THICKNESS BETWEEN THE SURFACE OF THE CONCRETE AND THE NEAREST CONDUIT. CONCRETE TO BE DOWELED INTO THE FOUNDATION.					

ELECTRICAL SYMBOL LIST

SYMBOL:	TAG:	SPEC SECTION:	DESCRIPTION:
GB	GB	26 05 26	GROUND BUS
CPC	CPC	26 09 16	CONTROL POWER CABINET
E	ECONN	26 05 33	ELECTRICAL CONNECTION
J	JB	26 05 33	JUNCTION BOX
	FB-# or PT-#	26 27 26	FLOOR BOX or POKE THROUGH
	PANEL '###'	EXISTING	PANELBOARD - RECESS MOUNT
	PANEL '###'	26 24 16	PANELBOARD - SURFACE MOUNT
	MX-#/MS-#	26 24 19 26 28 16	SURFACE OR RECESS MOUNTED MANUAL SWITCH / STARTER REFER TO DISC/STA SCHEDULE.
RAS	RAS	26 24 21	REMOTE ANNUNCIATOR STATION
	TR-#/DTR-#	26 22 00	TRANSFORMER. REFER TO TRANSFORMER SCHEDULE
	DS-#/FDS-#/DSS-#	26 28 16	DISCONNECT SWITCH FUSED DISCONNECT SWITCH INTERLOCKED RECEPTACLE DISCONNECT. REFER TO DISC/STA SCHEDULE
GANN	GANN-#	26 32 13	GENERATOR ANNUNCIATOR PANEL
PP	PP	ARCH	PUSH PAD

ELECTRICAL SYMBOL LIST

SYMBOL:	TAG:	SPEC SECTION:	DESCRIPTION:
	REC-DUP	26 27 26	DUPLEX RECEPTACLE, 125V
	REC-DUP-GFI	26 27 26	DUPLEX GFI RECEPTACLE, 125V
	REC-SIM-520R	26 27 26	SIMPLEX RECEPTACLE, 125V
	REC-SIM-L530R	26 27 26	RECEPTACLE, LOCKING TYPE, L5-30R, 125V
	REC-SIM-L1520R	26 27 26	RECEPTACLE, LOCKING L15-20R, 250V, 3PH
	REC-SIM-L1530R	26 27 26	RECEPTACLE, LOCKING L15-30R, 250V, 3PH
	REC-SIM-L2120R	26 27 26	RECEPTACLE, LOCKING L21-20R, 120/208V, 3PH
	REC-SIM-L2130R	26 27 26	RECEPTACLE, LOCKING L21-30R, 120/208V, 3PH
	REC-QUAD	26 27 26	QUAD RECEPTACLE, 125V
	REC-QUAD-GFI	26 27 26	QUAD GFI RECEPTACLE, 125V

ELECTRICAL SHEET INDEX

E0.00	ELECTRICAL COVERSHEET
E0.01	ELECTRICAL LIGHTING COVERSHEET
E0.02	ELECTRICAL SYSTEMS COVERSHEET
E1.10	BASEMENT DEMOLITION PLAN - LIGHTING
E1.11	LEVEL 01 DEMOLITION PLAN - LIGHTING
E1.12	MEZZANINE DEMOLITION PLANS - LIGHTING
E1.13	LEVEL 02 DEMOLITION PLAN - LIGHTING
E1.20	BASEMENT DEMOLITION PLAN - POWER
E1.21	LEVEL 01 DEMOLITION PLAN - POWER
E1.22	MEZZANINE DEMOLITION PLANS - POWER
E1.23	LEVEL 02 DEMOLITION PLAN - POWER
E1.24	LEVEL 03 & ROOF DEMOLITION PLAN - POWER
E1.30	BASEMENT DEMOLITION PLAN - SYSTEMS
E1.31	LEVEL 01 DEMOLITION PLAN - SYSTEMS
E1.32	MEZZANINE DEMOLITION PLANS - SYSTEMS
E1.33	LEVEL 02 DEMOLITION PLAN - SYSTEMS
E1.34	LEVEL 03 & ROOF DEMOLITION PLAN - SYSTEMS
E2.10	BASEMENT PLAN - LIGHTING
E2.11	LEVEL 01 PLAN - LIGHTING
E2.12	MEZZANINE LEVEL PLANS - LIGHTING
E2.13	LEVEL 02 PLAN - LIGHTING
E2.20	BASEMENT PLAN - POWER
E2.21	LEVEL 01 PLAN - POWER
E2.22	MEZZANINE LEVEL PLANS - POWER
E2.23	LEVEL 02 PLAN - POWER
E2.24	LEVEL 03 & ROOF PLAN - POWER
E2.30	BASEMENT PLAN - SYSTEMS
E2.31	LEVEL 01 PLAN - SYSTEMS
E2.32	MEZZANINE LEVEL PLANS - SYSTEMS
E2.33	LEVEL 02 PLAN - SYSTEMS
E2.34	LEVEL 03 & ROOF PLAN - SYSTEMS
E4.00	ELECTRICAL DETAILS
E5.00	ELECTRICAL DIAGRAMS
E5.01	ELECTRICAL DIAGRAMS
E5.02	ELECTRICAL DIAGRAMS
E5.03	ELECTRICAL DIAGRAMS
E6.01	ELECTRICAL PANEL SCHEDULES
E6.02	ELECTRICAL PANEL SCHEDULES
E6.03	ELECTRICAL PANEL SCHEDULES
E6.04	ELECTRICAL PANEL SCHEDULES
E6.05	ELECTRICAL PANEL SCHEDULES
E6.06	ELECTRICAL PANEL SCHEDULES
E6.07	ELECTRICAL PANEL SCHEDULES
GRAND TOTAL: 43	

ELECTRICAL EQUIPMENT TAGS

TAG:	DESCRIPTION:	RELATED SPECIFICATION
ATS-#	AUTOMATIC TRANSFER SWITCH, REFER TO TRANSFER SWITCH SCHEDULE	26 36 00
DP-#	DISTRIBUTION PANEL	26 24 16
DTR-#	TRANSFORMER - DISTRIBUTION TYPE REFER TO TRANSFORMER SCHEDULE	26 12 19 26 12 13 26 12 16 26 12 21
GCP-#	GENERATOR CONTROL PANEL	26 32 13
GEN-#	GENERATOR	26 32 13
MX-#	MANUAL SWITCH, REFER TO DISCONNECT AND STARTER SCHEDULE	26 24 19
PDU-#	POWER DISTRIBUTION UNIT	26 26 00
PS-#	PAD-MOUNT MEDIUM VOLTAGE SWITCH	
RA-ATS-#	REMOTE ANNUNCIATOR FOR ATS	26 36 00
SB-#	SWITCHBOARD	
SPD-#	SURGE PROTECTION DEVICE	26 43 00
UPS-#	UNINTERRUPTIBLE POWER SUPPLY	26 33 53
VFD-#	VARIABLE FREQUENCY DRIVE - REFER TO VFD SCHEDULE	26 29 23

EQUIPMENT ABBREVIATION KEY

ABBR:	DESCRIPTION:
AD	AUTOMATIC DOOR OPERATOR WITH SENSOR
COF	COFFEE
COPY	COPIER
DISP	GARBAGE DISPOSAL
DOOR	DOOR OPERATOR, ELECTRIC
DW	DISHWASHER
ELEV	ELEVATOR
ELVC	ELEVATOR CAB CONNECTION
ELVD	ELEVATOR AUDIO VISUAL DATA SYSTEM
EPT	ELECTRONIC PAPER TOWEL DISPENSER (NON-BATTERY)
EWC	ELECTRIC WATER COOLER
EWCC	ELECTRIC WATER COOLER CONDENSER
FURN	OWNER FURNITURE
HD	HAND DRYER
ICE	ICE MACHINE
MW	MICROWAVE
OVEN	OVEN, WALL
PFR	PLUMB FIXTURE RECEPT FOR LV VALVE POWER
PP	PUSH PAD AUTOMATIC DOOR OPERATOR (REFER TO ARCHITECTURAL PLANS FOR FINAL LOCATION)
REF	REFRIGERATOR
TCP	TEMPERATURE CONTROLS PANEL
TV	TELEVISION - MONITOR - DISPLAY
UCM	UNDERCOUNTER MICROWAVE
UCR	UNDERCOUNTER REFRIGERATOR
VEND	VENDING MACHINE

ELECTRICAL ABBREVIATION KEY

ABBR:	DESCRIPTION:
ABV	ABOVE
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
BC	BELOW COUNTER
C	CONDUIT (BRANCH CIRCUIT OR FEEDER CONTEXT)
CO	CONDUIT AND BOX ROUGH-IN ONLY (ROUGH-IN ONLY)
EG	EQUIPMENT GROUND
EGC	EQUIPMENT GROUNDING CONDUCTOR
EPO	EMERGENCY POWER OFF
HOA	HAND/OFF/AUTO
ITR	IT RACK MOUNTED RECEPTACLE
NC	NORMALLY CLOSED
NEMA #	NEMA RATING
NIC	NOT IN CONTRACTED SCOPE
NO	NORMALLY OPEN
SM	SURFACE MOUNTED
TYP	TYPICAL
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED

CONTRACTOR ABBREVIATION KEY

NOT ALL SYMBOLE MAY APPLY.

ABBR:	DESCRIPTION:
E.C.	ELECTRICAL CONTRACTOR
G.C.	GENERAL CONTRACTOR
M.C.	MECHANICAL CONTRACTOR
P.C.	PLUMBING CONTRACTOR
T.C.	TECHNOLOGY CONTRACTOR
T.C.C.	TEMPERATURE CONTROL CONTRACTOR
V.C.	VENTILATION CONTRACTOR

ELECTRICAL INSTALLATION NOTES:

1. THE COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE ADA STANDARDS FOR ACCESSIBLE DESIGN. REFER TO THE ADA GUIDELINES FOR ALL CONFIGURATION DETAILS ON THIS PAGE FOR ADDITIONAL INFORMATION.
2. CIRCUIT NUMBERS ARE SHOWN FOR CIRCUIT IDENTIFICATION. CIRCUITING SHALL AGREE WITH NUMBERING ON THE PANEL PROVIDED. COMMON NEUTRALS MAY NOT BE USED FOR BRANCH CIRCUITS. BALANCE THE LOAD ON PANEL AS EVENLY AS POSSIBLE BETWEEN EACH PHASE.
3. EMERGENCY, OPTIONAL STANDBY BRANCH WIRING FOR FEEDERS AND BRANCH CIRCUITS SHALL BE ROUTED IN SEPARATE RACEWAY, JUNCTION BOXES, PULL BOXES, AND CABINETS. WIRING FOR EACH BRANCH SHALL BE INDEPENDENT FROM OTHER BRANCHES, INCLUDING THE NORMAL BRANCH.
4. FLUSH MOUNT ALL LIGHTING CONTROL DEVICES AT +42" FROM FLOOR (CENTERLINE DIMENSION), EXCEPT WHERE OTHERWISE NOTED.
5. FLUSH MOUNT ALL DUPLEX RECEPTACLES AND TECHNOLOGY OUTLETS AT +18" FROM FLOOR (CENTERLINE DIMENSION), EXCEPT WHERE OTHERWISE NOTED. RECEPTACLES AND OUTLETS MAY BE SURFACE MOUNTED WHEN CONDUIT IS SPECIFIED EXPOSED. MOUNT EXTERIOR LOCATED RECEPTACLES WITH WHILE-IN-USE COVERS AT +20" FROM FINISHED GRADE (CENTER DIMENSIONS) TO MAINTAIN INSTALLATION ADA COMPLIANCE.
6. ALL MATERIALS USED TO SEAL PENETRATIONS OF FIRE RATED WALLS AND FLOORS SHALL BE TESTED AND CERTIFIED AS A SYSTEM PER ASTM E814 STANDARDS FOR FIRE TESTS OF THROUGH-PENETRATION FIRESTOPS. REFER TO DIVISION 7 FOR ADDITIONAL INFORMATION AND REQUIREMENTS SPECIFIC TO FIRESTOPPING.
7. CONNECTION FOR ELECTRIC WATER COOLERS (EWC) SHALL BE A JUNCTION BOX CONCEALED BEHIND WATER COOLER ACCESS PLATE OR BE A GFI RECEPTACLE LOCATED DIRECTLY BELOW AND CENTERED ON EWC. CONTRACTOR SHALL VERIFY TYPE OF EWC TO BE INSTALLED.
8. MOUNT ALL FIRE ALARM PULL STATIONS AT +42" FROM FLOOR (CENTERLINE DIMENSION) EXCEPT WHERE OTHERWISE NOTED.
9. INSTALL ALL WALL MOUNTED FIRE ALARM NOTIFICATION DEVICES AT 90" ABOVE FINISHED FLOOR OR 6" BELOW THE CEILING, WHICHEVER IS LOWER, EXCEPT WHERE OTHERWISE NOTED. HEIGHT SHALL BE MEASURED TO THE TOP OF THE DEVICE.
10. CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL CEILING MOUNTED DEVICES AND EQUIPMENT WITH LUMINAIRES, SPRINKLER, AND CEILING DIFFUSERS. CENTER ALL DEVICES IN CEILING TILE PATTERN. SMOKE DETECTORS,CARBON MONOXIDE DETECTORS, AND OCCUPANCY/VACANCY SENSORS SHALL BE LOCATED NO CLOSER THAN 3 FEET TO AN AIR SUPPLY DIFFUSER OR RETURN GRILLE. CARBON MONOXIDE DETECTORS SHALL BE LOCATED 10 PLUS FT FROM FIRE PLACES, COOKING, AND SIMILAR FUEL-BURNING APPLIANCES
11. CONTRACTOR SHALL VERIFY ALL FURNITURE, MODULAR FURNITURE, AND EQUIPMENT LOCATIONS WITH ARCHITECTURAL PLANS, ELEVATIONS, AND REVIEWED SHOP DRAWINGS. PRIOR TO MAKING THE ACTUAL ELECTRICAL INSTALLATION, THIS CONTRACTOR SHALL ADJUST RECEPTACLES, OUTLETS, OR CONNECTION LOCATIONS TO ACCOMMODATE FURNITURE AND/OR EQUIPMENT.
12. ELECTRICAL AND TECHNOLOGY EQUIPMENT SHALL BE MOUNTED TO AVOID IMPEDANCE OF, OPERATION OF, AND/OR ACCESS TO ELECTRICAL AND MECHANICAL EQUIPMENT. ALL MOUNTING OF ELECTRICAL AND TELECOMMUNICATIONS EQUIPMENT, ON EQUIPMENT SUPPLIED BY ANOTHER CONTRACTOR, SHALL BE APPROVED IN ADVANCE BY THE OTHER CONTRACTOR.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OPENINGS REQUIRED IN WALLS. ALL OPENINGS SHALL BE REPAIRED TO MATCH EXISTING BY A QUALIFIED CONTRACTOR AT THE EXPENSE OF THIS CONTRACTOR. ALL CONDUITS THROUGH WALLS SHALL BE GROUTED OR SEALED INTO OPENINGS.
14. EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO THE WALLS, FLOORS, CEILINGS, AND ROOFS. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND FINISH.
15. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, TECHNOLOGY AUDIO/VISUAL, AND OTHER ELECTRICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED DEVICES, OTHER THAN SPRINKLERS.
16. ELECTRICAL IDENTIFICATION. REFER TO SPECIFICATION SECTION 26 05 53 FOR COLOR/LABEL REQUIREMENTS FOR CONDUIT, BOX, CABLE/WIRE, AND EQUIPMENT.

RECEPTACLE SUBSCRIPT KEY:

DEVICE KEY:

DEVICE — # = MOUNTING (IF APPLICABLE); 1 = CIRCUIT NUMBER

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

ELECTRICAL MOUNTING SUBSCRIPT KEY:

A	MOUNT AT +6" TO CENTERLINE ABOVE COUNTER OR BACKSPLASH
C	MOUNT AT CEILING (DEVICE OR ROUGH-IN CONTEXT)
H	MOUNT ORIENTED HORIZONTALLY
O	WIRING DEVICE, OCCUPANCY CONTROLLED
S	SURFACE MOUNTED
WP	WEATHERPROOF

ELECTRICAL RENOVATION NOTES:

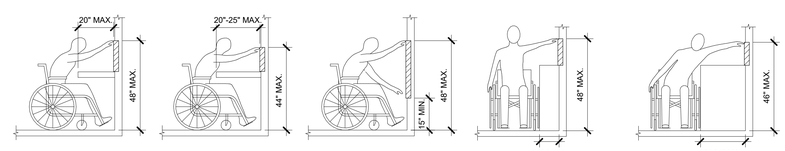
THESE NOTES APPLY TO ALL ELECTRICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, LIGHTING, POWER, FIRE ALARM, AND OTHER LOW VOLTAGE SYSTEMS.

1. EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DOCUMENTS. CONTRACTOR SHALL REVIEW EXISTING CONDITIONS AND REPORT CONFLICTS.
2. NOT ALL EXISTING EQUIPMENT, LUMINAIRES, AND CONDUIT ARE SHOWN. CONTRACTOR SHALL REVIEW EXISTING CONDITIONS AND REPORT CONFLICTS.
3. CONTRACTOR SHALL REVIEW EXISTING CONDITIONS PRIOR TO FABRICATION OF CABLE TRAY, BUSWAY, CONDUIT RACKS, AND OTHER SYSTEMS. RISES AND DROPS MAY BE NECESSARY BECAUSE OF EXISTING FIELD CONDITIONS.
4. ELECTRICAL CONTRACTOR SHALL REVIEW EXISTING CONDITIONS TO VERIFY ACCESSIBILITY TO THE AREAS OF THEIR WORK INCLUDING WALLS, FLOOR, CEILINGS, CEILING TILES/GRID, AND ROOF. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO PROVIDE CUTTING, REMOVAL, PATCHING, AND REINSTALLATION OF AFFECTED AREAS ASSOCIATED WITH THEIR WORK BY COORDINATING WITH THE GENERAL CONTRACTOR OR QUALIFIED CONTRACTOR. CONTRACTOR SHALL NOTIFY THE PRIME CONTRACTOR OF AFFECTED AREAS PRIOR TO BIDDING.
5. WHERE EXISTING ELECTRICAL SYSTEMS ARE LOCATED IN AREAS THAT CONFLICT WITH NEW EQUIPMENT, PIPING, OR DUCTWORK TO BE INSTALLED, EACH CONTRACTOR SHALL EITHER ARRANGE NEW EQUIPMENT, CONDUIT, OR DUCTWORK IN SUCH A FASHION THAT IT DOES NOT CONFLICT WITH EXISTING SYSTEMS, OR REWORK EXISTING ELECTRICAL SYSTEMS TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT, PIPING, OR DUCTWORK.

ELECTRICAL PHASING NOTES:

THESE NOTES APPLY TO ALL ELECTRICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, LIGHTING, POWER, FIRE ALARM, AND OTHER LOW VOLTAGE SYSTEMS.

1. REFER TO ARCHITECTURAL DRAWINGS FOR GENERAL DESCRIPTION OF PHASES.
2. REFER TO CONSTRUCTION MANAGER'S/GENERAL CONTRACTOR'S/ARCHITECT'S INSTRUCTIONS FOR MORE DETAILS AND PHASING SCHEDULES AND FOR CONCURRENT WORK. MECHANICAL, ELECTRICAL AND TECHNOLOGY DRAWINGS DEPICT THE INTENT OF THE FINAL DESIGN. THE MECHANICAL, ELECTRICAL, AND TECHNOLOGY DRAWINGS DO NOT DEPICT THE MEANS AND METHODS TO MEET THE REQUIREMENTS OF THE PHASING CRITERIA.
3. REVIEW PROJECT PHASING PLANS TO COORDINATE DEMOLITION WORK, OUTAGES, ETC. WITH AFFECTED ADJACENT AREAS.
4. PROVIDE TEMPORARY LIGHTING, POWER, FIRE ALARM, AND OTHER LOW VOLTAGE SYSTEMS, ETC. AS NEEDED TO MAINTAIN SERVICE TO ALL AREAS DURING ALL PHASES OF PROJECT.



INSTALL ABOVE COUNTER DEVICE AT 44" ABOVE FINISHED FLOOR.

INSTALL ABOVE COUNTER DEVICE AT 40" ABOVE FINISHED FLOOR.

INSTALL DEVICE AT 18" ABOVE FINISHED FLOOR.

ADA GUIDELINES - FRONT ACCESS

INSTALL DEVICE AT 44" ABOVE FINISHED FLOOR.

INSTALL DEVICE AT 42" ABOVE FINISHED FLOOR.

ADA GUIDELINES - SIDE ACCESS

ADA STANDARDS FOR ACCESSIBLE DESIGN

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Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS

#	Date / Description
1	
2	
3	
4	

Seal:

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Sheet Title:

ELECTRICAL COVERSHEET

Sheet #:

E0.00

ELECTRICAL SYMBOL LIST

SYMBOL:	SPEC TAG:	SPEC SECTION:	DESCRIPTION:

$
##
	SW-1P
	SW-2P
	SW-3W
	SW-4W
	SW-D
	SW-D3
	SW-DML
	
	SW-DO
	
	SW-O
		26 09 33	SWITCH
			SUBSCRIPTS:
			BLANK = SINGLE POLE
			2 = TWO POLE
			3 = THREE WAY
			4 = FOUR WAY
			D = DIMMER - STAND ALONE
			D3=DIMMER - THREE WAY WITH S3 TYPE
			DML=DIMMER - MULTI-LOCATION FADE CONTROL [NTS: RESIDENTIAL USE - DIFFERS FROM #B PUSH BUTTON DIMMER]
			DO=DIMMER - OCCUPANCY/VACANCY SENSORS - DUAL TECHNOLOGY ULTRASONIC/ACOUSTIC AND PIR
			O = DUAL TECHNOLOGY OCCUPANCY SENSOR WITH WALL SWITCH

LS ##	SW-LS	26 09 33	DAYLIGHT LEVEL SENSOR - CEILING MOUNTED SUBSCRIPTS: BLANK = DIMMING CONTROL # = SPECIAL FUNCTION S = SWITCHED CONTROL W =WIRELESS WITH BATTERY
OC ##	SW-OC-D SW-OC-A SW-OC-P SW-OC-P2 SW-OC-U SW-OC-HA SW-OC-HB SW-OC-W	26 09 33	OCCUPANCY SENSOR - CEILING MOUNTED SUBSCRIPTS: BLANK = DUAL TECHNOLOGY A = ULTRASONIC - TWO SIDED CORRIDOR COVERAGE P = PASSIVE INFRARED - 360° COVERAGE P2=PASSIVE INFRARED - 100° COVERAGE U = ULTRASONIC - 360° COVERAGE HA=HIGHBAY - ISLE COVERAGE HB=HIGH BAY W = WIRELESS WITH BATTERY
OC ##	SW-OC-D SW-OC-A SW-OC-P SW-OC-P2 SW-OC-U SW-OC-HA SW-OC-HB SW-OC-W	26 09 33	OCCUPANCY SENSOR - WALL MOUNTED SUBSCRIPTS: BLANK = DUAL TECHNOLOGY A = ULTRASONIC - TWO SIDED CORRIDOR COVERAGE P = PASSIVE INFRARED - 360° COVERAGE P2=PASSIVE INFRARED - 100° COVERAGE U = ULTRASONIC - 360° COVERAGE HA=HIGHBAY - ISLE COVERAGE HB=HIGH BAY W = WIRELESS WITH BATTERY
#B ##	SW-#B	26 09 33	LIGHTING CONTROL STATION - DEFAULT DIMMED CONTROL - # DEFINES MINIMUM QUANTITY OF CONTROL SCENES, PLUS OFF, REFER TO LIGHTING SEQUENCE OF OPERATIONS WHEN NOT DEFINED. SUBSCRIPTS: BLANK = DIMMING CONTROL S = SWITCHED CONTROL W = WIRELESS WITH BATTERY # = UNIQUE ID WHEN APPLICABLE
ALCR	ALCR20	26 09 33	AUTOMATIC LOAD CONTROL RELAY - 20A - WITH FIRE ALARM CONTACT

ELECTRICAL SYMBOL LIST

SYMBOL:	TAG:	SPEC SECTION:	DESCRIPTION:
	REFER TO LUMINAIRE SCHEDULE		LINEAR LUMINAIRES
			TROFFER
			WALL SCONCE LUMINAIRE
			DOWNLIGHT LUMINAIRE
			AIMABLE OR WALL WASH LUMINAIRE
			INDUSTRIAL LUMINAIRE
			WALL BRACKET LUMINAIRE
			POLE MOUNTED LUMINAIRE
			SINGLE FACE EXIT SIGN
			DOUBLE FACE EXIT SIGN
			WALL/CEILING EMERGENCY EXIT SIGN
			EMERGENCY UNIT

LIGHTING SYSTEM DESCRIPTION KEY:

THE DESIGN DOCUMENTS DESCRIBE THE OPERATIONAL PERFORMANCE REQUIREMENTS OF THE LIGHTING CONTROL SYSTEM. THE PROJECT MAY REQUIRE ONE OR MORE LIGHTING CONTROL STRATEGIES FOR THE PROJECT. REFER TO THE ELECTRICAL SYMBOL KEY, SPECIFICATION SECTION 26 09 33 LIGHTING CONTROL SYSTEMS, AND THE DRAWINGS TO DETERMINE THE DESIGN APPLICATION FOR EACH SPACE. THE POTENTIAL STRATEGICS ARE AS FOLLOWS:

1. STANDALONE LIGHTING CONTROL DEVICES: INDEPENDENT (STANDALONE) DEVICES TRADITIONALLY OPERATING AT LINE OR LOW VOLTAGE, FIELD CONFIGURABLE WITH OTHER STANDALONE DEVICES TO PROVIDE AN OVERALL LIGHTING CONTROL SYSTEM.

2. ROOM BASED LIGHTING CONTROLS: INTEGRATED SYSTEM COMPRISED OF SWITCH STATIONS, SENSORS, ROOM CONTROLLERS, CONTROL PANELS, AND ACCESSORIES, OPERATING AT LINE AND/OR LOW VOLTAGE, CONFIGURED AS AN INTEGRATED OVERALL 'INTELLIGENT' LIGHTING CONTROL SYSTEM. LIGHTING CONTROL ZONES AND POWER CIRCUITS COMMONLY ALIGN.

3. NETWORK BASED LIGHTING CONTROLS: INTEGRATED SYSTEM COMPRISED OF SWITCH STATIONS, SENSORS, ROOM CONTROLS, CONTROL PANELS, DIMMER RACKS, AND ACCESSORIES, OPERATING AT LINE AND/OR LOW VOLTAGE, CONFIGURED AS AN INTEGRATED OVERALL 'INTELLIGENT' LIGHTING CONTROL SYSTEM FOR ADVANCED ARCHITECTURALLY BASED LIGHTING CONTROL SYSTEMS. LIGHTING CONTROL ZONES COMMONLY ASSOCIATED WITH ONE OR MORE BRANCH POWER CIRCUITS WITHIN THE SAME CONTROL ZONE.

LIGHTING CONTROL SYSTEM DESIGNATION: THE FOLLOWING KEY MAY BE USED AS AN EXAMPLE TO DETERMINE THE DESIGNATED LIGHTING CONTROL SYSTEM FOR EACH SPACE. REFER TO ELECTRICAL COVERSHEET FOR ELECTRICAL SYMBOLS LIST AND DEVICE SPECIFICATION TAG. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

1. STANDALONE LIGHTING CONTROL DEVICES: CONTROL STATION COMMONLY DEFINED BY AN ALPHA CHARACTER WITH SUBSCRIPTS.
   A. EXAMPLE SYMBOL "S", SPECIFICATION TAG "SW-1P", DESCRIPTION "SWITCH-SINGLE POLE SWITCH".
   B. EXAMPLE CONTROL DESIGNATION: a, b, c (WHEN REQUIRED TO CLARIFY DESIGN INTENT).
   C. SINGLE POLE LIGHT SWITCH "SA" CONTROLS LUMINAIRES WITH THE SUBSCRIPT "a" WITHIN THE SAME SPACE.
   D. REFER TO THE LIGHT CONTROL SEQUENCE OF OPERATION TAG (L#-##) FOR A COMPLETE DESCRIPTION OF THE LIGHTING CONTROL REQUIREMENTS.

2. ROOM BASED LIGHTING CONTROLS: CONTROL STATION COMMONLY DEFINED BY A RECTANGLE SYMBOL.
   A. EXAMPLE CONTROL STATION: SYMBOL "#B", TAGGED "SW-#B", DESCRIPTION "LIGHTING CONTROL STATION".
   B. EXAMPLE PANEL/RACK/CABINET: TAGGED "LCPR#", DESCRIPTION "ROOM BASED LIGHTING CONTROL PANEL/RACK/CABINET.
   C. EXAMPLE CONTROL DESIGNATIONS: a, b, c
   D. LIGHTING CONTROL STATION "#B" a,b CONTROLS LUMINAIRES WITH THE SUBSCRIPT "a" AND "b" WITHIN THE SAME SPACE
   E. REFER TO THE LIGHT CONTROL SEQUENCE OF OPERATION TAG (L#-##) FOR A COMPLETE DESCRIPTION OF THE LIGHTING CONTROL AND PRE-PROGRAMMED SCENE SELECTION REQUIREMENTS.

3. NETWORK BASED LIGHTING CONTROLS: CONTROL STATION COMMONLY DEFINED BY A RECTANGLE SYMBOL.
   A. EXAMPLE SYMBOL "#B", TAGGED "SW-#B", DESCRIPTION "LIGHTING CONTROL STATION".
   B. EXAMPLE PANEL/RACK/CABINET: TAGGED "LCPN", DESCRIPTION "NETWORK BASED LIGHTING CONTROL PANEL/RACK/CABINET.
   C. EXAMPLE CONTROL DESIGNATIONS: z1, z2, z3
   D. LIGHTING CONTROL STATION "#B" z1 CONTROLS LUMINAIRES WITH THE SUBSCRIPT "z1". LUMINAIRES WITH A z1 DESIGNATION MAY OR MAY NOT BE SERVED BY THE SAME BRANCH LIGHTING CIRCUIT.
   E. REFER TO THE LIGHT CONTROL SEQUENCE OF OPERATION TAG (L#-##) FOR A COMPLETE DESCRIPTION OF THE LIGHTING CONTROL AND PRE-PROGRAMMED SCENE SELECTION REQUIREMENTS.

BOTH LUMINAIRES ARE CONTROLLED BY THE SAME CONTROL STATION, SAME LIGHTING CONTROL ZONE Z1, BUT POWERED BY DIFFERENT BRANCH LIGHTING CIRCUITS.

LIGHTING CONTROL NOTES:

LIGHTING CONTROL NOTES:

{L#-##} INDICATES THE LIGHTING SEQUENCE OF OPERATION FOR THE SPACE. REFER TO THE LIGHTING SEQUENCE OF OPERATION MATRIX ON SHEET E6.00.

{#B} LIGHTING CONTROL STATION. THE "#" INDICATES THE MINIMUM QUANTITY OF INDIVIDUAL BUTTONS WHEN DEFINED. LIGHTING CONTROL STATION SHALL BE CAPABLE OF **[RAISE/LOWER AND]** ON/OFF CONTROL FOR MULTIPLE SCENES AS INDICATED ON DRAWINGS AND DESCRIBED IN THE LIGHTING SEQUENCE OF OPERATION MATRIX. REFER TO DRAWINGS AND LUMINAIRE SUBSCRIPTS TO DETERMINE IF A ROOM BASED CONTROLLER (a,b,c SUBSCRIPTS) OR NETWORK CONTROL SYSTEM (z1, z2, z3) IS REQUIRED.

{ z##} INDICATES THE LIGHTING ZONES FOR THE SPACE. PROVIDE SEPARATE CONTROL OF EACH CONTROLLED ZONE. LUMINAIRES ASSOCIATED WITH THE SAME ZONE SHALL OPERATE TOGETHER WITHIN THE SAME PROGRAMMED SCENE.

LIGHTING CONTROL SUBSCRIPTS:
1. LOWER CASE ALPHA SUBSCRIPTS "a, b, c" INDICATE LINE VOLTAGE OR ROOM BASED LIGHTING CONTROL SYSTEMS. REFER TO DRAWINGS TO DETERMINE IF LINE VOLTAGE CONTROL (S, S3, S4, ETC) OR {#B} ROOM BASED CONTROLLER SYSTEM (#B) IS REQUIRED.
2. LOWER CASE ALPHA NUMERIC SUBSCRIPTS "z1, z2, z3" INDICATE NETWORK BASED LIGHTING CONTROL SYSTEM.

EMERGENCY LIGHTING OVERRIDE CONTROL (UL924 AND UL1008): LIGHTING CONTROL EQUIPMENT COUPLED WITH REMOTE EMERGENCY POWER SOURCES (EXTERNAL TO THE LUMINAIRE) REQUIRE ALCR (UL924) OR BCELTS (UL1008) DEVICES FOR EMERGENCY (LIFE SAFETY) COMPLIANCE. AN EMERGENCY LIGHTING CONTROL BYPASS IS REQUIRED FOR EVERY INDIVIDUAL LIGHTING CONTROL ZONE-CIRCUIT BUT NOT SHOWN ON THE PLANS. REFER TO THIS SPECIFICATION FOR ALCR AND BCELTS DESCRIPTIONS. REFER TO THE SEQUENCE OF OPERATION LIGHTING CONTROL DESCRIPTIONS ON THE PLANS FOR ADDITIONAL REQUIREMENTS.

REFER TO SHEET E6.00. FOR LUMINAIRE SCHEDULE

LUMINAIRE CIRCUIT AND CONTROL KEY

LUMINAIRE

F1 = FIXTURE TAG
1 = CIRCUIT NUMBER
a = SWITCH DESIGNATION
z1=ZONE DESIGNATION
NL INDICATES LUMINAIRE IS UNSWITCHED FOR NIGHT LIGHT.
SE INDICATES LUMINAIRE IS SWITCHED/CONTROLLED DURING NORMAL OPERATION AND OPERATES FROM EMERGENCY CIRCUIT UPON LOSS OF POWER.

*IF LABEL IS ORIENTED HORIZONTALLY A SLASH WILL SEPARATE THIS INFORMATION. EX: F1 / 1 / a / NL

LUMINAIRE SHADING KEY

NORMAL BRANCH LUMINAIRE

EMERGENCY BRANCH LUMINAIRE

SHADED LUMINAIRE OR DEVICE INDICATES LUMINAIRE OR DEVICE IS CONNECTED TO AN EMERGENCY CIRCUIT.

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Drawn By: **Author**

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Sheet Title:

ELECTRICAL LIGHTING COVERSHEET

Sheet #:

E0.01

ELECTRICAL SYMBOL LIST

SYMBOL:	TAG:	SPEC SECTION:	DESCRIPTION:
COMMON AND SEQUENCE OF OPERATION SUBSCRIPTS			SUBSCRIPTS: TYPE / PROGRAMMING E = ELEVATOR RECALL D = HVAC CONTROL DH = DOOR HOLD RELEASE FD = FIRE DOOR RELEASE SW = STAIRWELL # = 15, 30, 75, 110, 177 CANDELA RATING CD = CANDELA RATING SELECTED BY NICET DESIGNER
	FACP-#	28 31 00	FIRE ALARM CONTROL PANEL
	FAA-#	28 31 00	FIRE ALARM ANNUNCIATOR
	VCC-#	28 31 00	DIGITIZED VOICE COMMAND CENTER
	GAP-#	28 31 00	GRAPHICAL ANNUNCIATOR PANEL, FIRE ALARM
	NAC-#	28 31 00	NOTIFICATION APPLIANCE CIRCUIT PANEL
	AMP-#	28 31 00	AMPLIFIER RACK, FIRE ALARM
	ECCU-#	28 31 00	EMERGENCY COMMUNICATION CONTROL UNIT
	LOC-#	28 31 00	LOCAL OPERATING CONSOLE
	FATC-#	28 31 00	FIRE ALARM TERMINAL CABINET
S# S#	FA-120	28 31 00	FIRE ALARM SMOKE DETECTOR, CEILING OR WALL MOUNT BLANK - PHOTOELECTRIC
S	FA-122	28 31 00	FIRE ALARM DUCT SMOKE DETECTOR # = EQUIP OR SYSTEM
H# H#	FA-140	28 31 00	FIRE ALARM HEAT DETECTOR BLANK = COMBINATION RATE OF RISE / FIXED TEMP
F	FA-130	28 31 00	FIRE ALARM MANUAL PULL STATION
FT	FA-131	28 31 00	FIRE ALARM MANUAL PULL STATION W/ COVER
	FA-200	28 31 00	FIRE ALARM VISUAL ALARM DEVICE, CEILING OR WALL MOUNT # = CANDELA RATING. CD = CANDELA RATING SELECTED BY NICET DESIGNER
S# S#	FA-220	28 31 00	AUDIO (SPEAKER) ALARM DEVICE, CEILING OR WALL MOUNTED
	FA-221	28 31 00	COMBINATION AUDIO (VOICE) AND VISUAL ALARM DEVICE, CEILING OR WALL MOUNTED # = CANDELA RATING CD = CANDELA RATING SELECTED BY NICET DESIGNER
RI	FA-241	28 31 00	FIRE ALARM REMOTE INDICATOR
RT	FA-242	28 31 00	FIRE ALARM REMOTE INDICATOR W/ TEST SWITCH
MM	FA-160	28 31 00	FIRE ALARM ADDRESSABLE MONITOR MODULE BLANK = REFER TO PLANS
CM	FA-161	28 31 00	FIRE ALARM ADDRESSABLE CONTROL MODULE BLANK = REFER TO PLANS LC = LIGHTING CONTROL OVERRIDE DH = DOOR HOLD OPEN PD = HOLD OPEN OVERRIDE
	FA-271	28 31 00	FIRE ALARM DOOR HOLD DEVICE (BY OTHERS, WIRED BY E.C.) DH - ELECTROMAGNETIC DOOR HOLD DEVICE PD - HOLD OPEN OVERRIDE CONNECTION
DH	FA-270	28 31 00	FIRE ALARM DOOR HOLD DEVICE (BY E.C.)
FSD	FA-250	28 31 00	FIRE ALARM SMOKE OR FIRE/SMOKE DAMPER CONTROL WITH DETECTOR, AND ADDRESSABLE MODULE, AND REMOTE INDICATOR (WITH TEST SWITCH WHEN APPLICABLE) # = INDICATES EQUIP OR SYSTEM

SYSTEM INPUTS \ SEQUENCE OF OPERATION		PANEL/ANNUNCIATOR ALARM INDICATION	PANEL/ANNUNCIATOR SUPERVISORY INDICATION	PANEL/ANNUNCIATOR TROUBLE INDICATION	AUDIBLE ALARMS SEQUENCE	VISUAL ALARMS SEQUENCE	## SMOKE DAMPER CONTROL SEQUENCE	## AHU & MECHANICAL FAN SHUTDOWN SEQUENCE	## ELEVATOR RECALL SEQUENCE	## ELEVATOR SHUT DOWN SEQUENCE	## FIREFIGHTER'S CAB VISUAL ALARM SEQUENCE	## DOOR HOLDER SEQUENCE	## LIGHTING CONTROL OVERRIDE SEQUENCE	## ACCESS CONTROL OVERRIDE SEQUENCE
FIRE ALARM PANEL, TRANSPONDER, NAC PANEL LOW BATTERY			X											
FIRE ALARM PANEL, TRANSPONDER, NAC PANEL BATTERY OR CHARGER FAILURE				X										
FIRE ALARM PANEL, TRANSPONDER, NAC PANEL ABNORMAL SWITCH OR CONTROL POSITION.			X											
FIRE ALARM PANEL, TRANSPONDER, NAC PANEL GROUND FAULT, OPEN CIRCUIT, SHORT CIRCUIT				X										
FIRE ALARM PANEL, TRANSPONDER, NAC PANEL AC POWER LOSS OR IRREGULARITY				X										
NOTIFICATION APPLIANCE CIRCUIT OR SLC LOOP GROUND FAULT, OPEN CIRCUIT, SHORT CIRCUIT				X										
INITIATING DEVICE FAILURE OR COMMUNICATION ERROR				X										
FIRE ALARM PANEL MANUAL FIRE DRILL			X		X	X							X	X
MANUAL PULL STATION	FT F	X			X	X						X	X	X
SMOKE DETECTOR	S#/_ S#/_	X			X	X							X	X
HEAT DETECTOR	H#/_ H#/_	X			X	X							X	X
SMOKE DETECTOR FOR HVAC CONTROL	S#/_ S#/_ S	X			X	X		X					X	X
SMOKE DETECTOR FOR SMOKE DAMPER CONTROL	FSD		X		X	X	X	X				X	X	X
SMOKE DETECTORS IN ELEVATOR MACHINE ROOM & HOISTWAY	SE SE	X			X	X	X	X	X		X	X	X	X
SMOKE DETECTORS IN ELEVATOR LOBBY	SE SE	X			X	X	X	X	X		X	X	X	
SMOKE DETECTOR AT DOOR	CMDH DH	X			X	X	X	X				X	X	X
SMOKE DETECTOR IN STAIRWELL OR STAIR VESTIBULE	SSW SSW	X			X	X	X	X				X	X	X

NOTES:

1. ALL SYSTEM EVENTS SHALL BE LOGGED AND DISPLAYED ON THE ANNUNCIATOR INTERFACE, IF APPLICABLE. SEE SPECIFICATIONS FOR MORE INFORMATION AND DESCRIPTIONS OF SEQUENCES OF OPERATION.

1 FIRE ALARM OPERATION MATRIX

NO SCALE

FIRE ALARM PRE-RECORDED MESSAGE SCHEDULE

MESSAGE SHALL BE AS SHOWN IN THE FOLLOWING TABLE. THESE MESSAGES ARE NOT INTENDED TO SPECIFY THE EXACT WORDING REQUIRED, BUT TO SPECIFY THE MINIMUM INFORMATION CONVEYED BY THE MESSAGE. REFER TO SPECIFICATION SECTION 28 31 00 FOR ADDITIONAL INFORMATION.

ALARM TYPE	NAC AREA	PRECEDING TONE	MESSAGE
FIRE ALARM	SINGLE CHANNEL-ALL AREAS	THREE CHIMES	MAY I HAVE YOUR ATTENTION PLEASE? A FIRE EMERGENCY HAS BEEN REPORTED IN THE BUILDING. PROCEED CALMLY TO THE NEAREST EXIT AND LEAVE THE BUILDING IMMEDIATELY. DO NOT USE THE ELEVATORS. USE STAIRWELLS WHERE NECESSARY. OCCUPANTS THAT ARE UNABLE TO USE STAIRWAYS SHALL REPORT TO DESIGNATED AREAS OF RESCUE ASSISTANCE.
TEST	ALL AREAS	ONE CHIME	"MAY I HAVE YOUR ATTENTION PLEASE? MAY I HAVE YOUR ATTENTION PLEASE? THIS IS A TEST OF THE BUILDING EMERGENCY ALARM SYSTEM. THIS IS ONLY A TEST."
ALL CLEAR	ALL AREAS	ONE CHIME	"MAY I HAVE YOUR ATTENTION PLEASE? MAY I HAVE YOUR ATTENTION PLEASE? THE REPORTED EMERGENCY HAS BEEN INVESTIGATED AND NORMAL CONDITIONS HAVE BEEN RESTORED. YOU MAY RETURN TO ALL AREAS OF THE BUILDING."
SEVERE WEATHER	ALL AREAS	WAIL	"MAY I HAVE YOUR ATTENTION PLEASE? MAY I HAVE YOUR ATTENTION PLEASE? A SEVERE WEATHER WARNING HAS BEEN RECEIVED. PLEASE WALK TO THE NEAREST DESIGNATED SAFE AREA. STAY AWAY FROM WINDOWS AND GLASS. DO NOT USE THE ELEVATORS."
CUSTOM MESSAGE	ALL AREAS	WAIL	**[CUSTOM MESSAGE]**

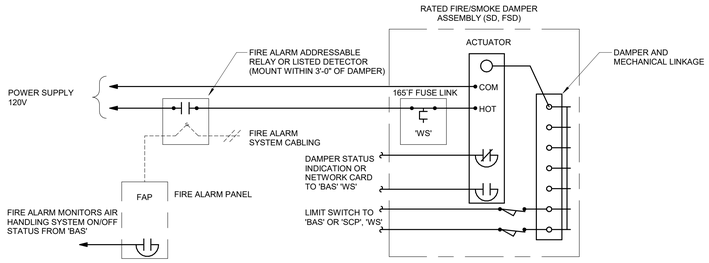


DIAGRAM ABBREVIATION KEY

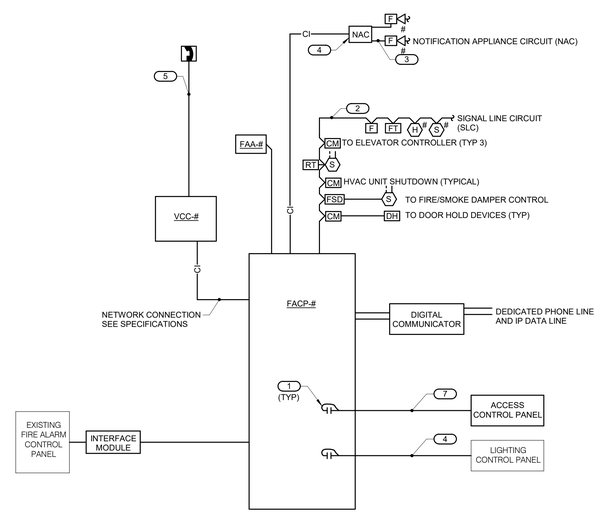
'BAS' - BUILDING AUTOMATION SYSTEM
'CFSD' - ENG. CONTROLLED FIRE/SMOKE DAMPER
'FD' - FIRE DAMPER
'FSD' - FIRE/SMOKE DAMPER
'SCP' - SMOKE CONTROL PANEL
'SD' - SMOKE DAMPER
'WS' - WHEN SCHEDULED

FIRE/SMOKE DAMPER CONTAINMENT CONTROL DIAGRAM:

1. THE REPRESENTATION IS DIAGRAMMATIC, MAY NOT REPRESENT EVERY SYSTEM COMPONENT, CABLE, OR WIRE TERMINATION REQUIRED BASED ON PROJECT SPECIFIC EQUIPMENT. CONTRACTOR TO PROVIDE ALL PROJECT SPECIFIC COMPONENTS FOR A COMPLETE AND OPERATIONAL SYSTEM.
2. COORDINATE INSTALLATION BETWEEN MECHANICAL, ELECTRICAL FIRE ALARM, TEMPERATURE CONTROL.
3. FIRE ALARM SYSTEM TO 'OPEN/CLOSE' ASSOCIATED DAMPERS WHEN AIR HANDLING SYSTEM STATUS IS 'ON/OFF'.

2 FIRE/SMOKE DAMPER - CONTAINMENT CONTROL DIAGRAM

NO SCALE



NOTES:

1. THE RISER DIAGRAM IS INTENDED TO CONVEY THE TYPES OF FIRE ALARM CONNECTIONS AND SPECIFICALLY DOES NOT INDICATE QUANTITIES, NUMBER OF CIRCUITS REQUIRED OR DISTANCES.
2. THE COMPLETE FIRE ALARM SYSTEM SHALL MEET ALL APPLICABLE CODES AND MANUFACTURER'S RECOMMENDATIONS.
3. CONTRACTOR SHALL COORDINATE ALL WIRE SIZES, TYPES AND REQUIREMENTS WITH THE VENDOR PRIOR TO BID. REFER TO SPECIFICATIONS TO DETERMINE CIRCUIT STYLES AND IF CONDUIT IS REQUIRED OR PLENUM RATED CABLE IS ACCEPTABLE.
4. ALL +120VAC WIRING REQUIRED FOR OPERATION OF THE SYSTEM AS DESCRIBED IN THE CONSTRUCTION DOCUMENTS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.
5. ALL NECESSARY RELAYS MAY NOT BE SHOWN ON THIS PLAN, BUT WHERE REQUIRED FOR PROPER OPERATION OF THE SYSTEM THEY SHALL BE PROVIDED BY THE CONTRACTOR.

KEYNOTES: (#)

1. REPRESENTATIVE OF PROGRAMMABLE I/O POINTS IN THE PANEL OR A GENERAL SYSTEM TROUBLE/ALARM CONTACT CONNECTED TO THE SYSTEM NOTED. REFER TO SPECIFICATIONS FOR MORE INFORMATION.
2. REFER TO SPECIFICATION FOR REQUIREMENTS OF EACH INITIATION LOOP AND WIRING STYLE. REFER TO FLOOR PLANS FOR DEVICES AND THEIR LOCATIONS.
3. REFER TO SPECIFICATION FOR REQUIREMENTS OF EACH NOTIFICATION APPLIANCE CIRCUIT AND WIRING STYLE. REFER TO FLOOR PLANS FOR DEVICES AND THEIR LOCATIONS.
4. REPRESENTS THE EXTENSION OF PROGRAMMABLE RELAYS TO LIGHTING CONTROL PANEL FOR FIRE ALARM OVERRIDE OF LIGHTING CONTROL PANELS, AND BRANCH CIRCUIT CONTROL RELAYS, AND BRANCH CIRCUIT TRANSFER SWITCHES. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
5. FIREMAN'S PHONE SYSTEM SHALL BE A SINGLE CHANNEL IN ACCORDANCE WITH NFPA CODE REQUIREMENTS. VENDOR TO DETERMINE NUMBER OF CIRCUITS REQUIRED.
6. REPRESENTS THE EXTENSION OF PROGRAMMABLE RELAYS TO THE ACCESS CONTROL SYSTEM. REFER TO SPECIFICATION SECTION 28 13 00 FOR QUANTITY OF POINTS REQUIRED.

3 FIRE ALARM RISER

NO SCALE

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Sheet Title:

ELECTRICAL SYSTEMS COVERSHEET

Sheet #:

E0.02

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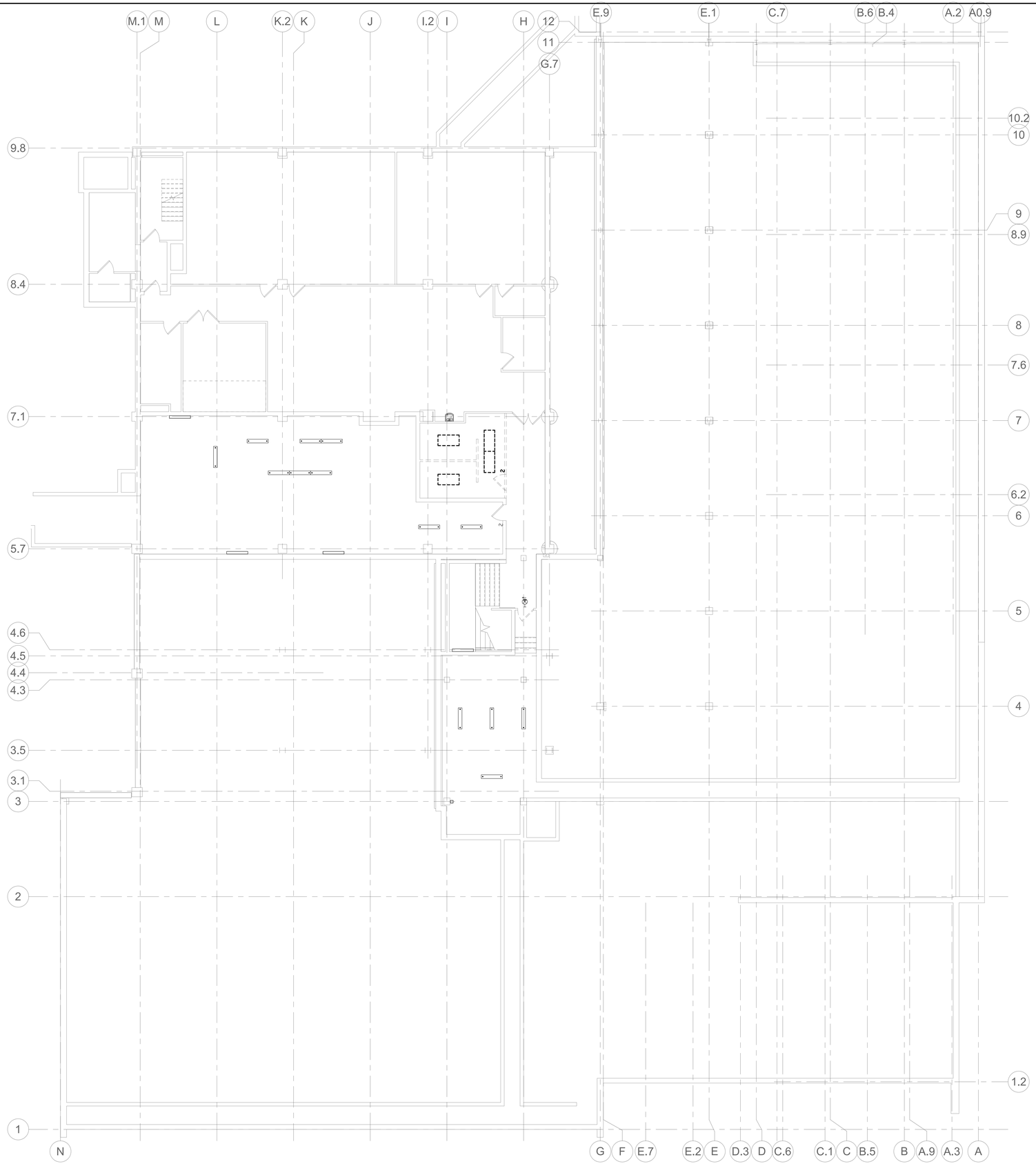

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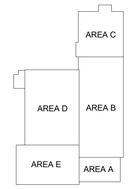
1 **BASEMENT DEMOLITION PLAN - LIGHTING**

1/8" = 1'-0"

SHEET NOTES:

1. EXISTING CONDITIONS BASED ON LIMITED FIELD INVESTIGATION AND EXISTING DRAWINGS. NOT ALL EXISTING DEVICES MAY BE SHOWN. CONTRACTOR SHALL FIELD VERIFY PRIOR TO PERFORMING NEW WORK.



KEY PLAN

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Sheet Title:

BASEMENT DEMOLITION PLAN - LIGHTING

Sheet #:

E1.10

NORTH

1 **LEVEL 01 DEMOLITION PLAN - LIGHTING**

1/8" = 1'-0"

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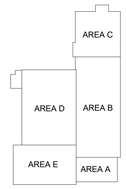

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LEVEL 01 DEMOLITION PLAN - LIGHTING

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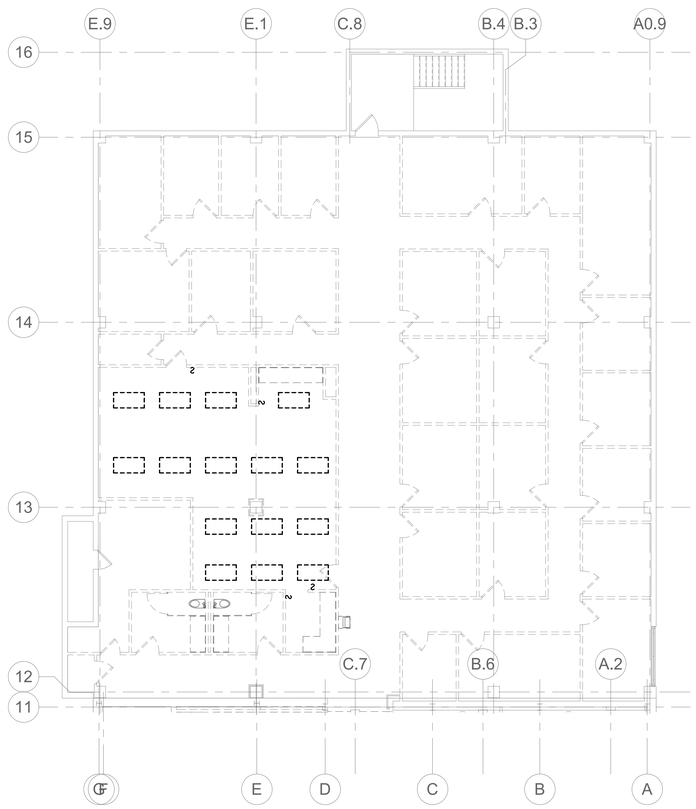
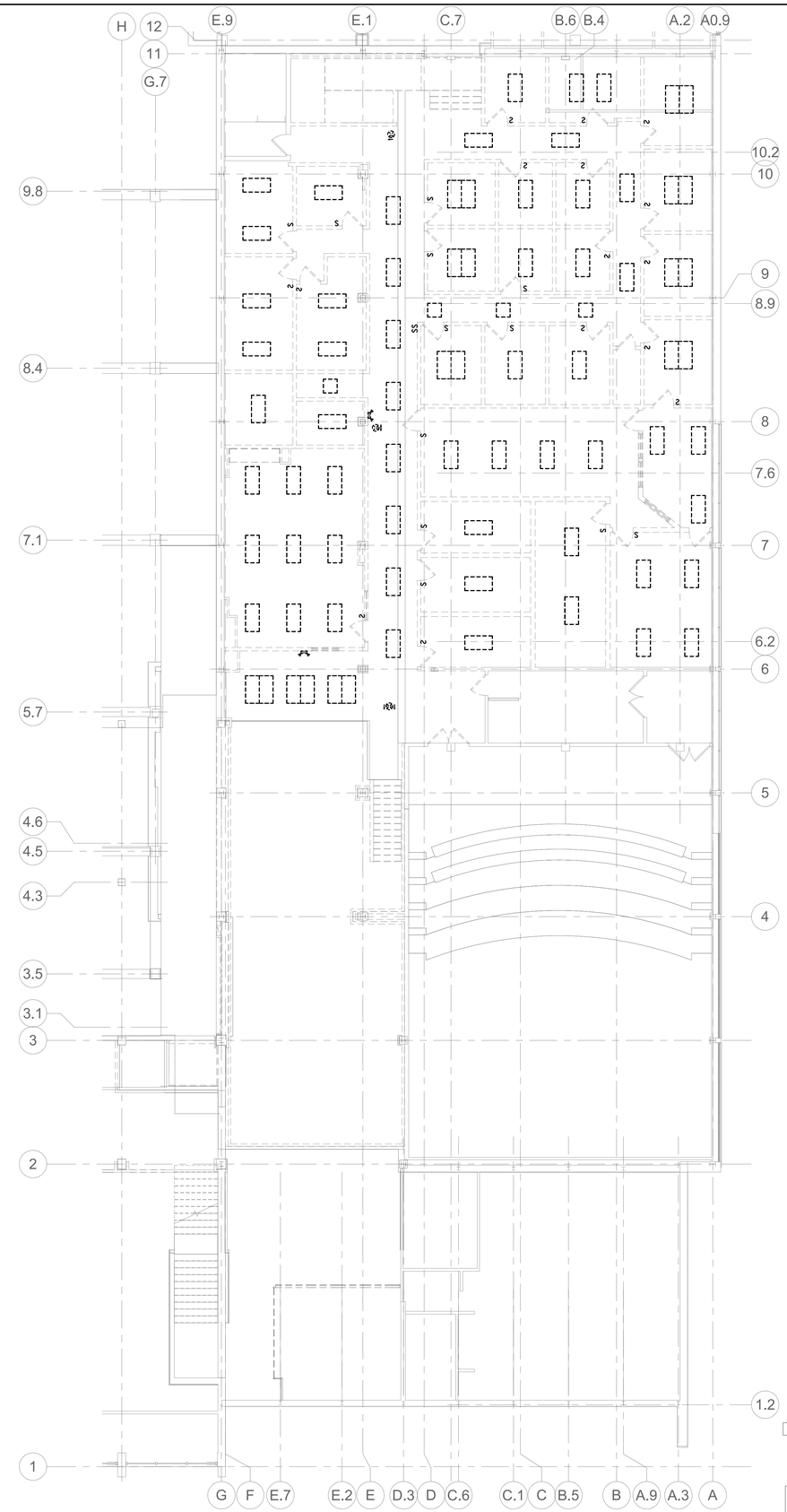


NORTH

1 MEZZANINE DEMOLITION PLAN - LIGHTING - AREA C

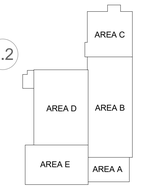
1/8" = 1'-0"



NORTH

2 MEZZANINE DEMOLITION PLAN - LIGHTING - AREAS A & B

1/8" = 1'-0"



KEY PLAN

NTS

SHEET NOTES:

1. EXISTING CONDITIONS BASED ON LIMITED FIELD INVESTIGATION AND EXISTING DRAWINGS. NOT ALL EXISTING DEVICES MAY BE SHOWN. CONTRACTOR SHALL FIELD VERIFY PRIOR TO PERFORMING NEW WORK.

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CERTIFICATE OF AUTHORITY - E2017008530

Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS

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Sheet Title:

MEZZANINE DEMOLITION PLANS - LIGHTING

Sheet #:

E1.12

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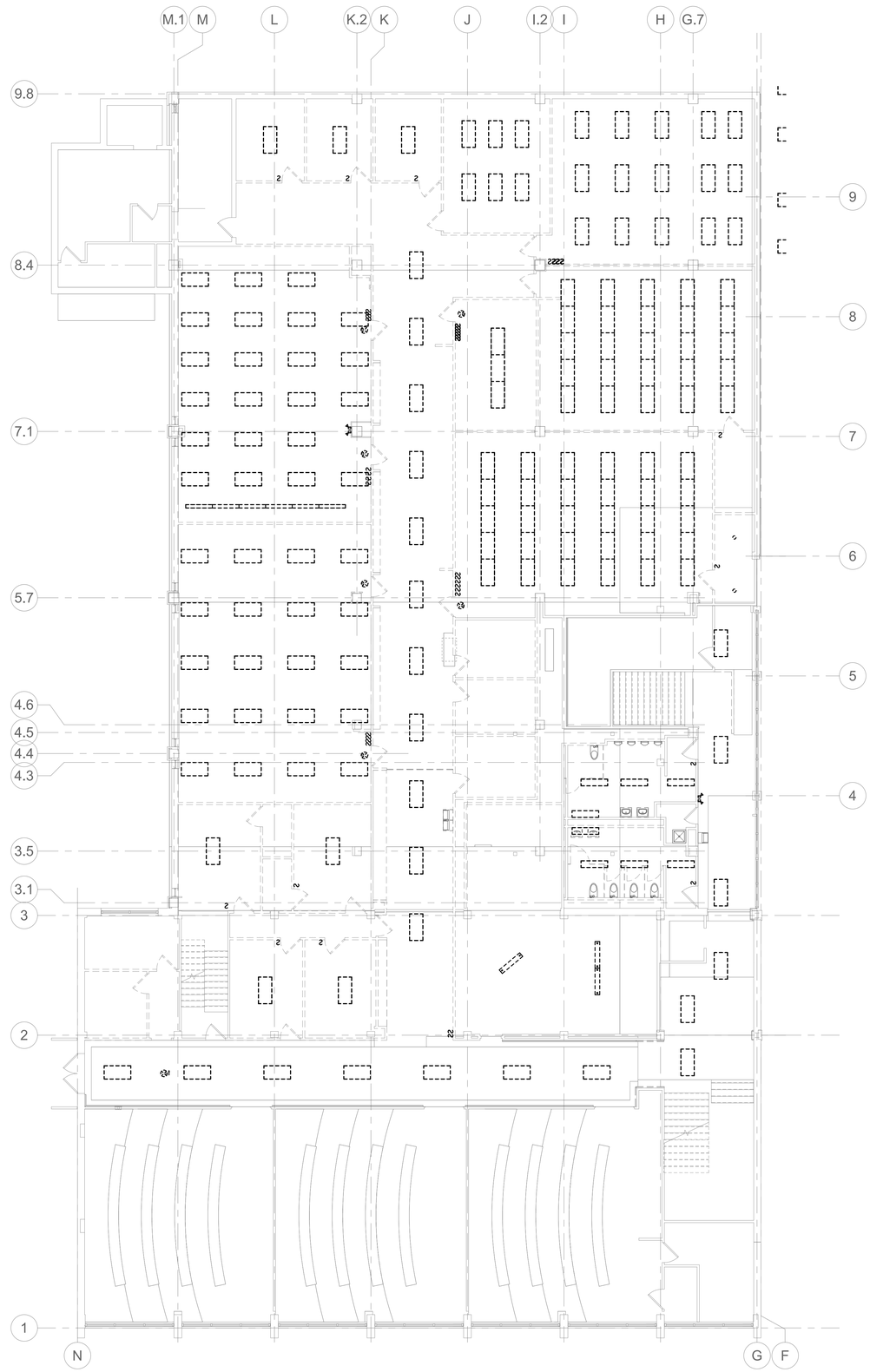
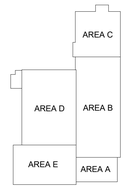


NORTH

1 **LEVEL 02 DEMOLITION PLAN - LIGHTING**
1/8" = 1'-0"



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Project Title:

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MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

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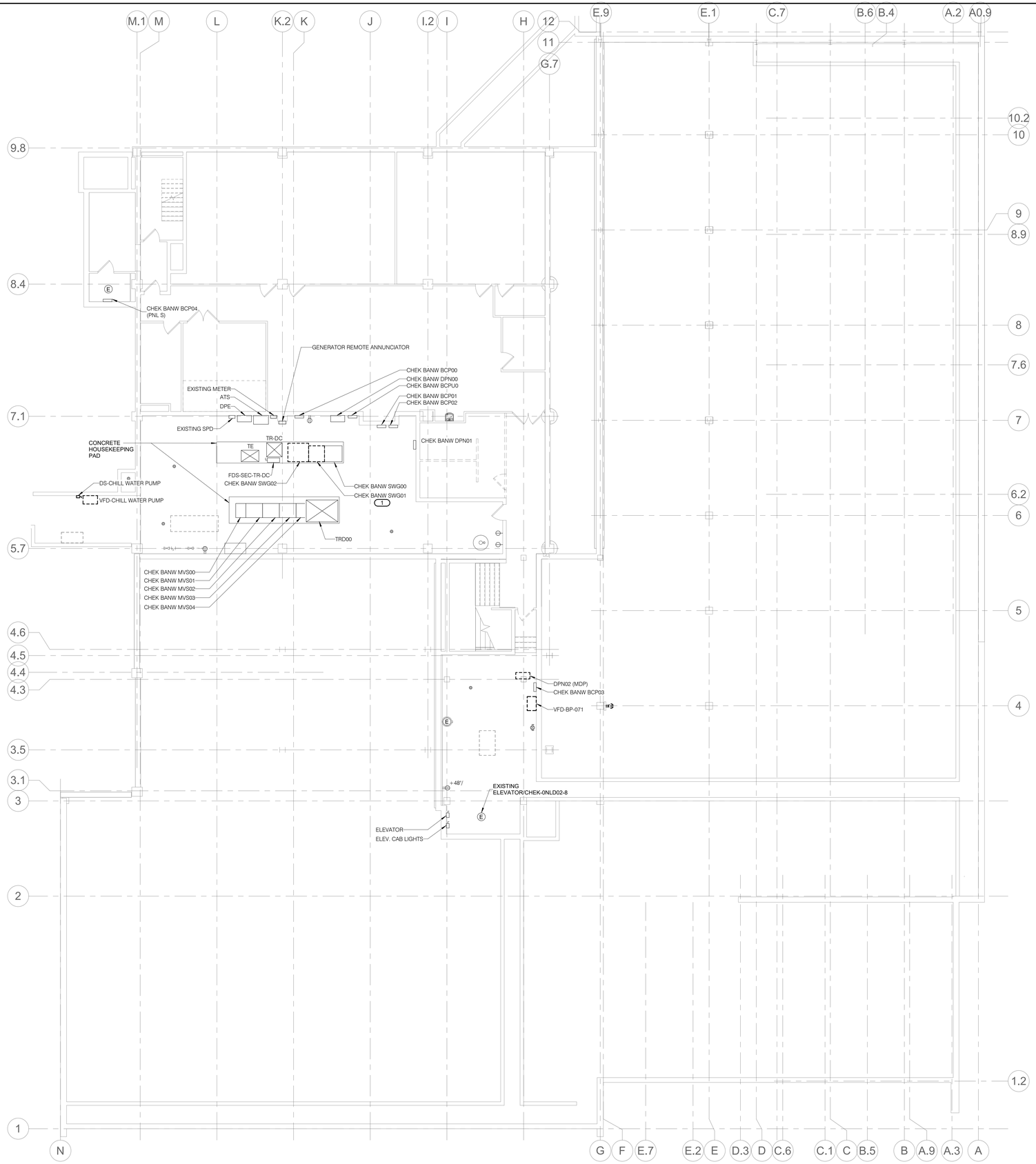
LEVEL 02 DEMOLITION PLAN - LIGHTING

Sheet #:

E1.13



NORTH

1 BASEMENT DEMOLITION PLAN - POWER

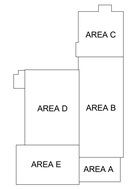
1/8" = 1'-0"

SHEET NOTES:

1. EXISTING CONDITIONS BASED ON LIMITED FIELD INVESTIGATION AND EXISTING DRAWINGS. NOT ALL EXISTING DEVICES MAY BE SHOWN. CONTRACTOR SHALL FIELD VERIFY PRIOR TO PERFORMING NEW WORK.

KEYNOTES:

1. EXISTING SWITCHBOARD DISTRIBUTION SECTION AND PULL SECTION TO BE DEMOLISHED. EXISTING TO REMAIN CIRCUITS SHALL BE PROTECTED FOR CONNECTION TO NEW DISTRIBUTION SECTION.



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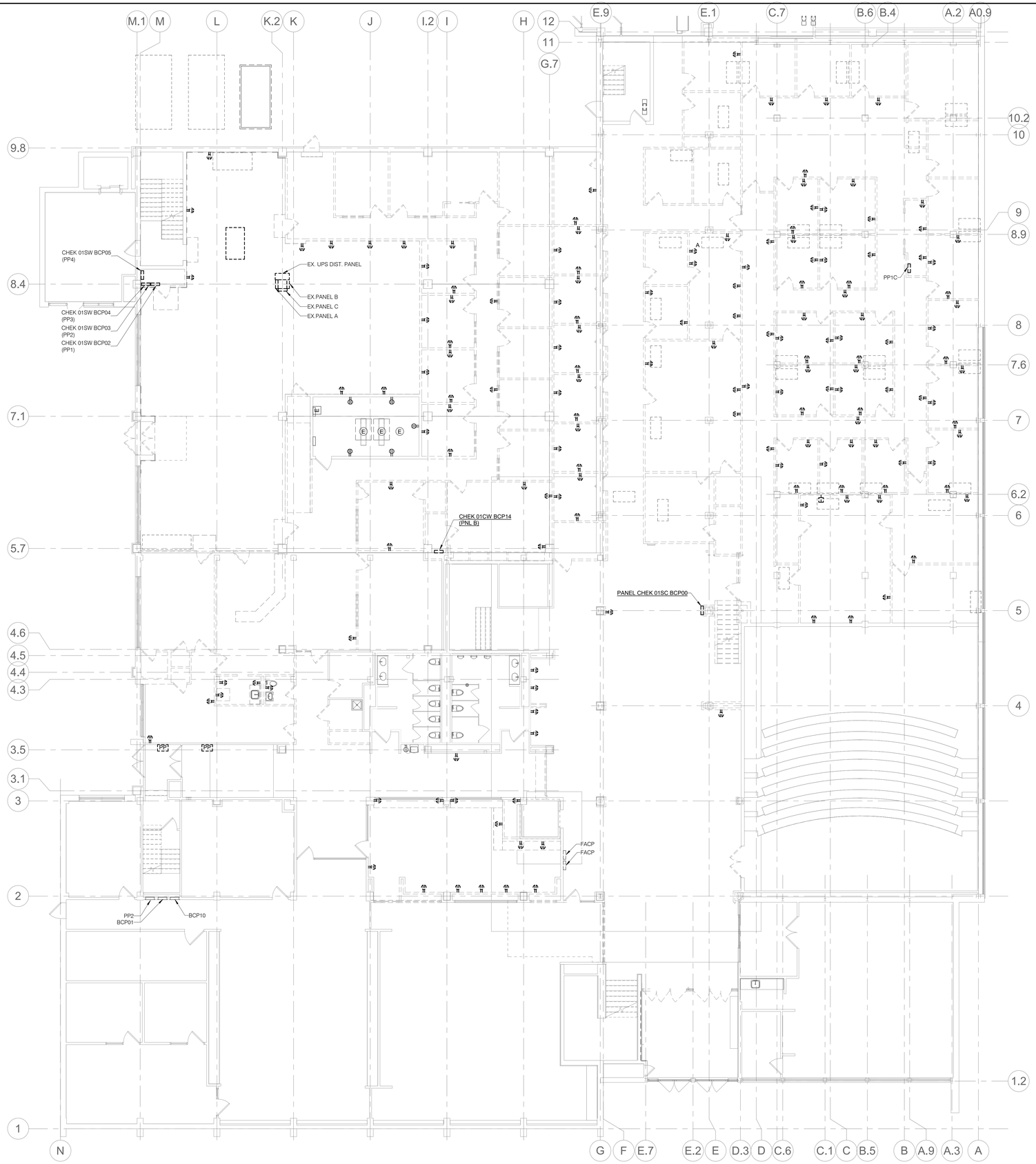
BASEMENT DEMOLITION PLAN - POWER

Sheet #:

E1.20



1 LEVEL 01 DEMOLITION PLAN - POWER

1/8" = 1'-0"

NORTH

SHEET NOTES:

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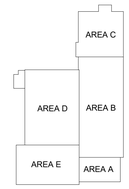

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Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

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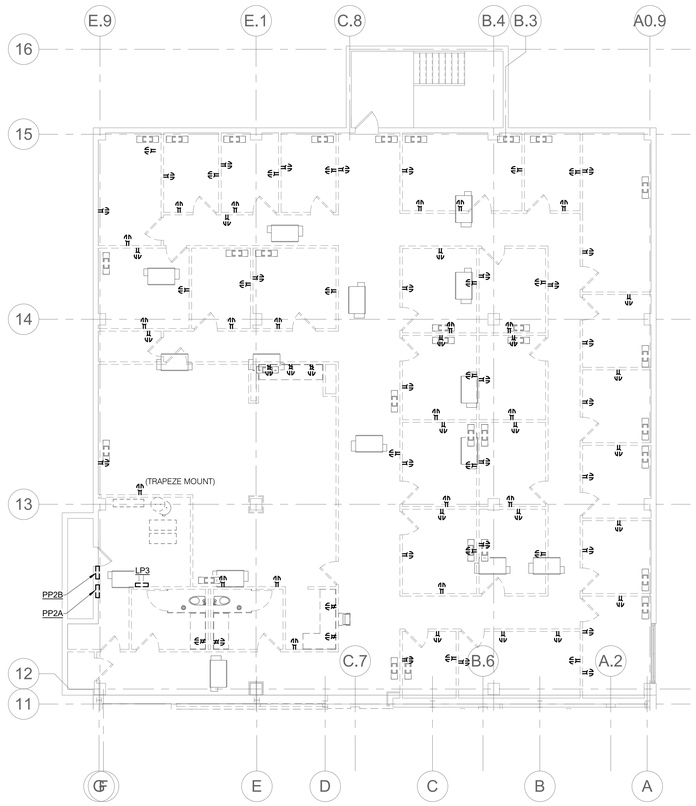
Sheet Title:

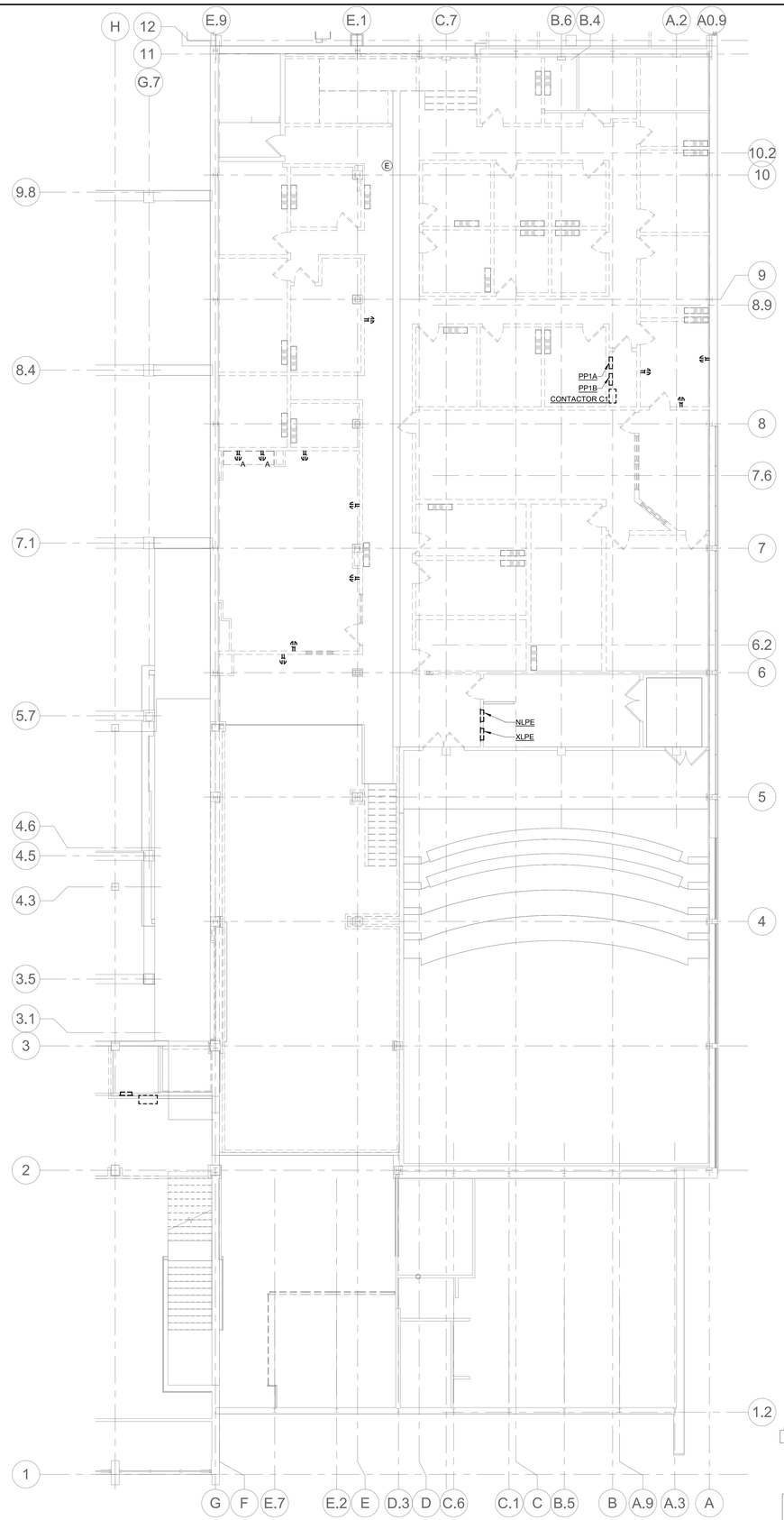
LEVEL 01 DEMOLITION PLAN - POWER

Sheet #:

E1.21



1 **MEZZANINE DEMOLITION PLAN - POWER - AREA C**
1/8" = 1'-0"



2 **MEZZANINE DEMOLITION PLAN - POWER - AREAS A & B**
1/8" = 1'-0"

KEY PLAN
NTS

SHEET NOTES:

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Project Title:
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MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

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MEZZANINE DEMOLITION PLANS - POWER

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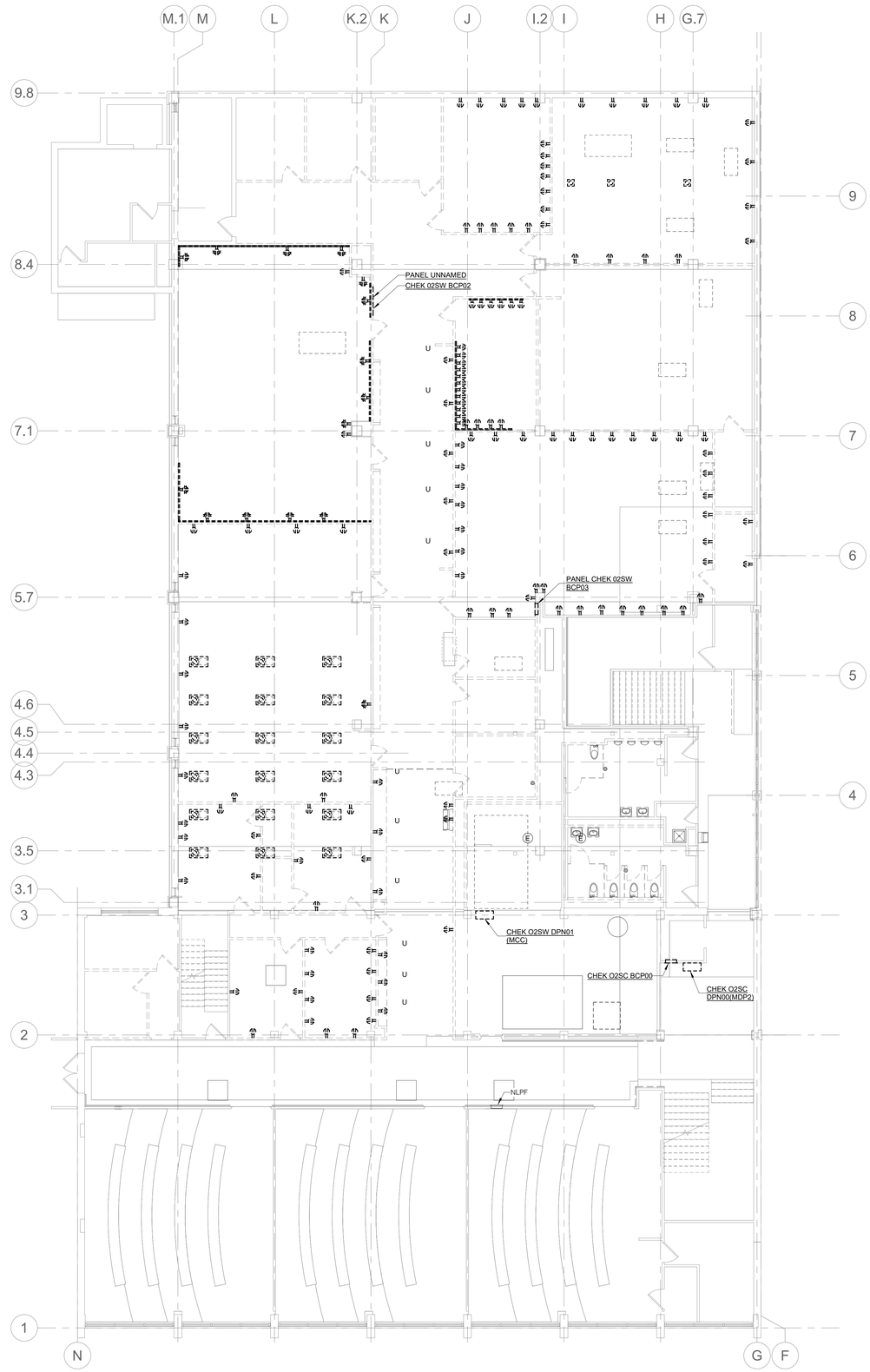
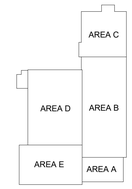


NORTH

1 LEVEL 02 DEMOLITION PLAN - POWER

1/8" = 1'-0"



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LEVEL 02 DEMOLITION PLAN - POWER

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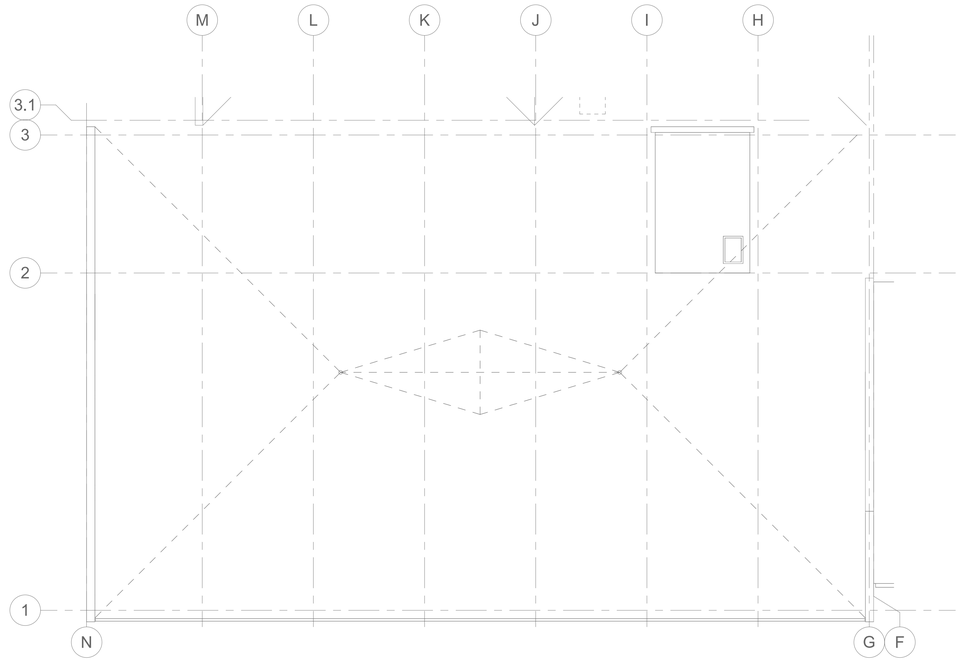
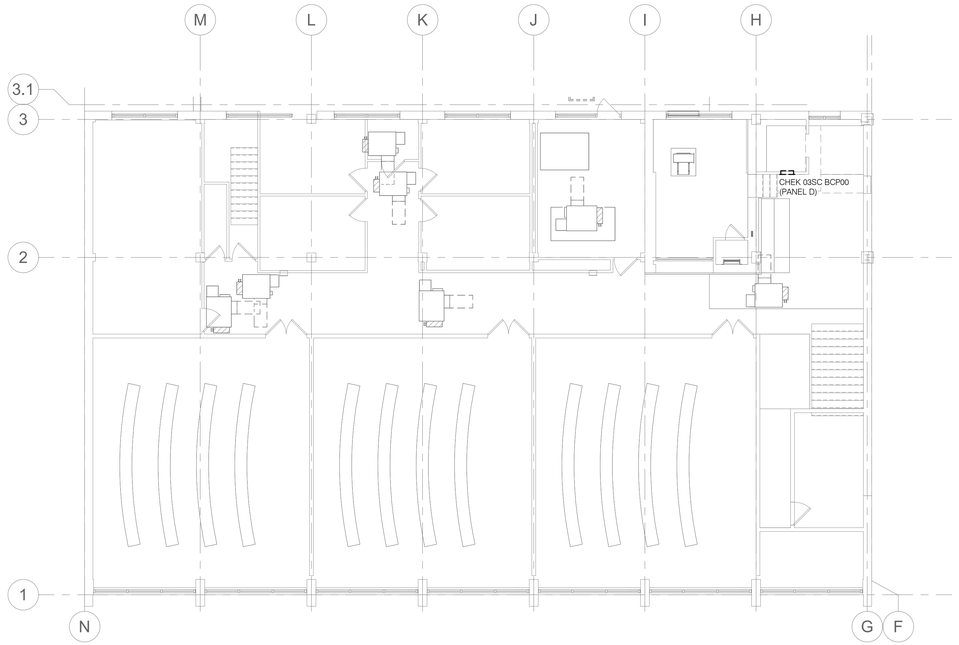


NORTH

1 ROOF DEMOLITION PLAN - POWER

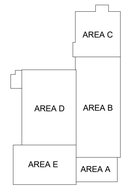
1/8" = 1'-0"



NORTH

2 LEVEL 03 DEMOLITION PLAN - POWER

1/8" = 1'-0"



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LEVEL 03 & ROOF DEMOLITION PLAN - POWER

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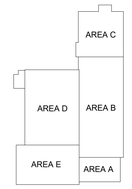
NORTH

1 **BASEMENT DEMOLITION PLAN - SYSTEMS**
1/8" = 1'-0"

SHEET NOTES:

1. ALL EXISTING FIRE ALARM DEVICES IN AREAS NOT IN SCOPE SHALL BE REMOVED AND REPLACED AS INDICATED ON THE NEW WORK SYSTEMS PLANS.
2. EXISTING CONDITIONS BASED ON LIMITED FIELD INVESTIGATION AND EXISTING DRAWINGS. NOT ALL EXISTING DEVICES MAY BE SHOWN. CONTRACTOR SHALL FIELD VERIFY PRIOR TO PERFORMING NEW WORK.



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TEL 314.645.1132
CERTIFICATE OF AUTHORITY - E2017008530

Project Title:
BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS

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Sheet Title:
BASEMENT DEMOLITION PLAN - SYSTEMS

Sheet #:
E1.30

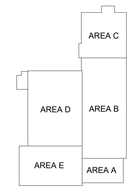
NORTH

1 **LEVEL 01 DEMOLITION PLAN - SYSTEMS**

1/8" = 1'-0"

SHEET NOTES:

1. ALL EXISTING FIRE ALARM DEVICES IN AREAS NOT IN SCOPE SHALL BE REMOVED AND REPLACED AS INDICATED ON THE NEW WORK SYSTEMS PLANS.
2. EXISTING CONDITIONS BASED ON LIMITED FIELD INVESTIGATION AND EXISTING DRAWINGS. NOT ALL EXISTING DEVICES MAY BE SHOWN. CONTRACTOR SHALL FIELD VERIFY PRIOR TO PERFORMING NEW WORK.



KEY PLAN

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MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

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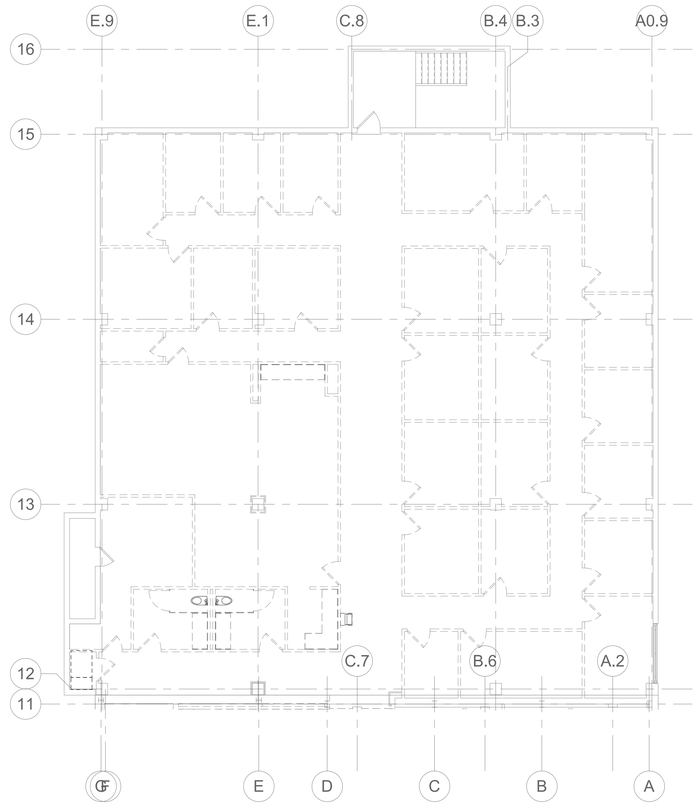
Sheet Title:

LEVEL 01 DEMOLITION PLAN - SYSTEMS

Sheet #:

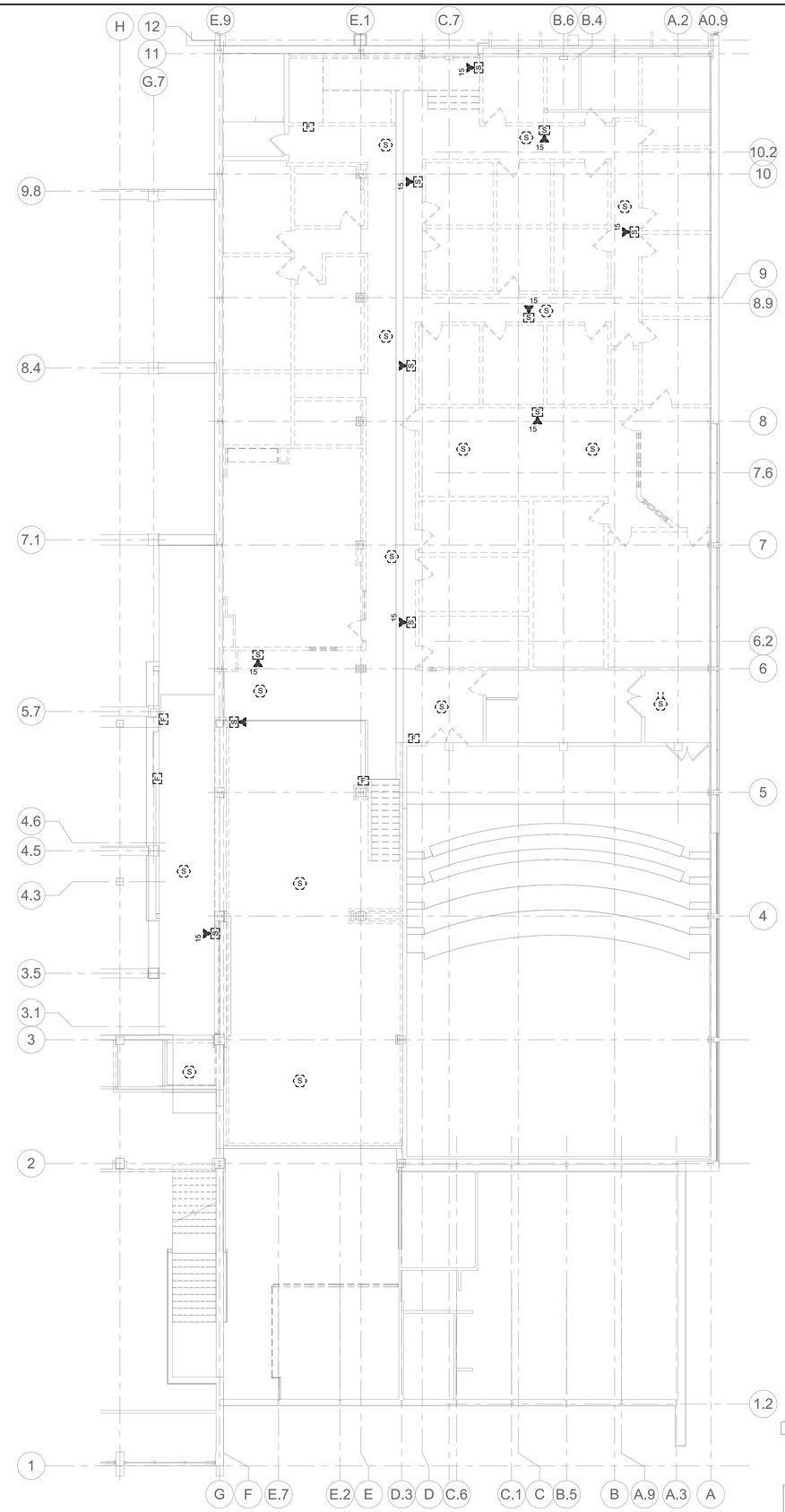
E1.31



NORTH

1 MEZZANINE DEMOLITION PLAN - SYSTEMS - AREA C

1/8" = 1'-0"



NORTH

2 MEZZANINE DEMOLITION PLAN - SYSTEMS - AREAS A & B

1/8" = 1'-0"

SHEET NOTES:

1. ALL EXISTING FIRE ALARM DEVICES IN AREAS NOT IN SCOPE SHALL BE REMOVED AND REPLACED AS INDICATED ON THE NEW WORK SYSTEMS PLANS.
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MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

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Sheet Title:

MEZZANINE DEMOLITION PLANS - SYSTEMS

Sheet #:

E1.32

SHEET NOTES:

1. ALL EXISTING FIRE ALARM DEVICES IN AREAS NOT IN SCOPE SHALL BE REMOVED AND REPLACED AS INDICATED ON THE NEW WORK SYSTEMS PLANS.
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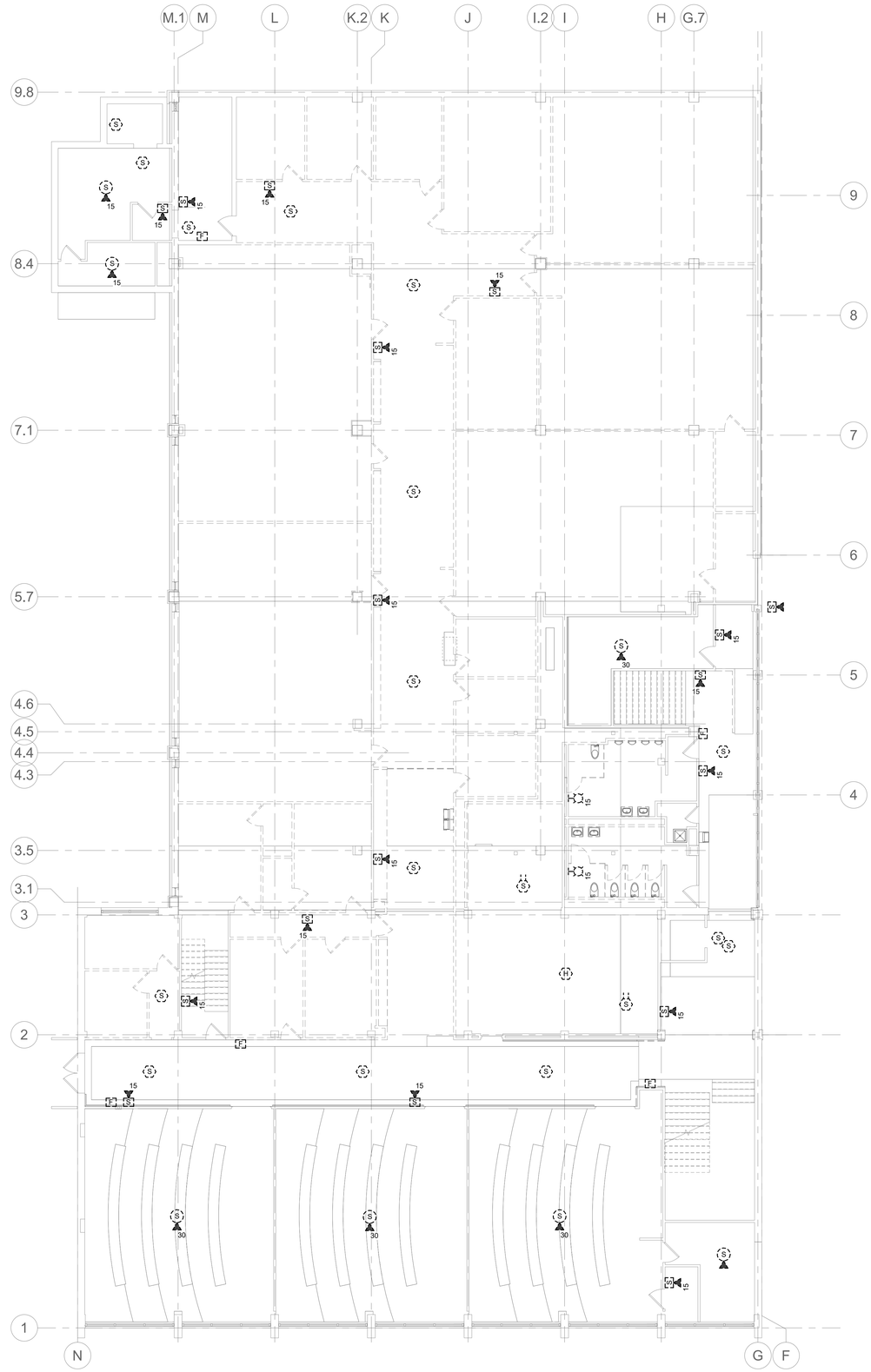
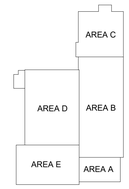


NORTH

1 **LEVEL 02 DEMOLITION PLAN - SYSTEMS**
1/8" = 1'-0"



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Project Title:

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MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

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Sheet Title:

LEVEL 02 DEMOLITION PLAN - SYSTEMS

Sheet #:

E1.33

SHEET NOTES:

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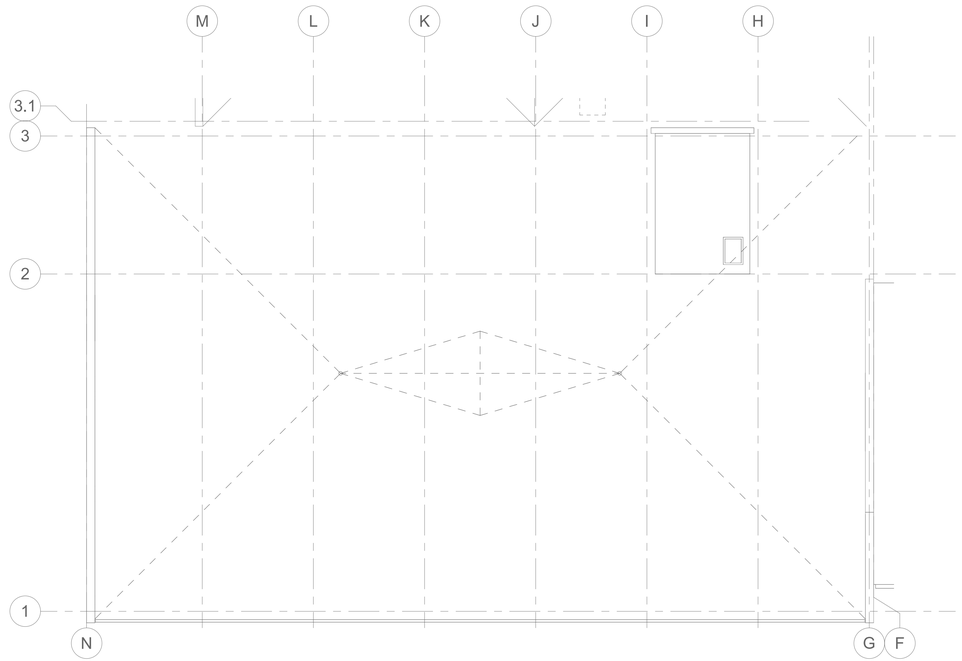
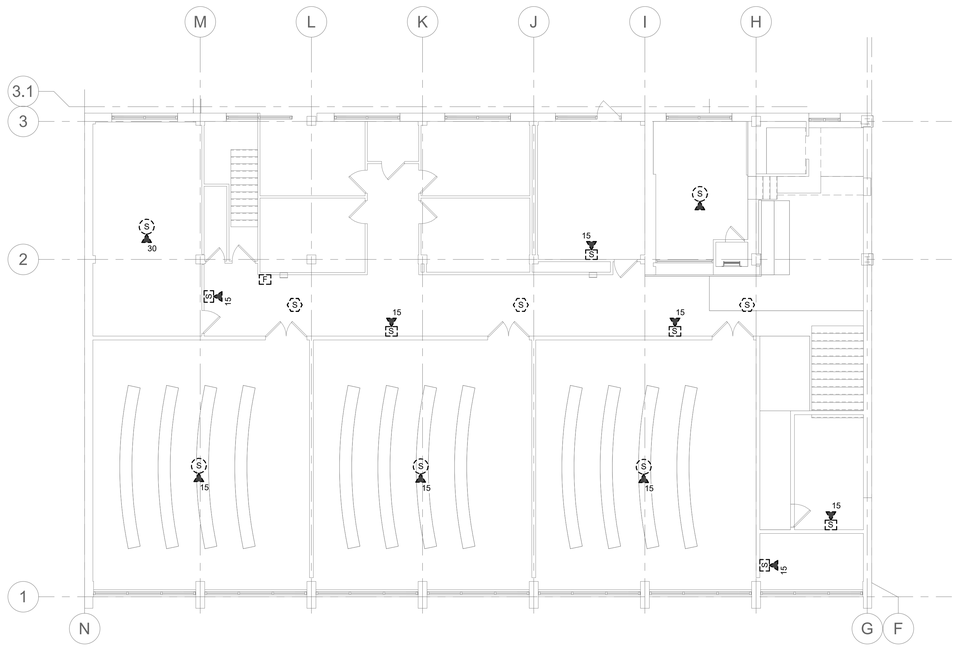


NORTH

1 ROOF DEMOLITION PLAN - SYSTEMS

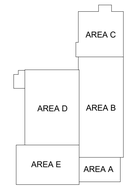
1/8" = 1'-0"



NORTH

2 LEVEL 03 DEMOLITION PLAN - SYSTEMS

1/8" = 1'-0"



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Project Title:

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MSU Project #: 231023-069

Other Project #: **23025.000**

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Sheet Title:

LEVEL 03 & ROOF DEMOLITION PLAN - SYSTEMS

Sheet #:

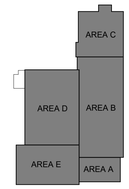
E1.34

NORTH

1 **BASEMENT PLAN - LIGHTING**
1/8" = 1'-0"

KEYNOTES:

1. UNLESS OTHERWISE NOTED, ALL EMERGENCY LIGHTING SHALL BE SERVED FROM PANEL 'CHEK-0ELD01'.



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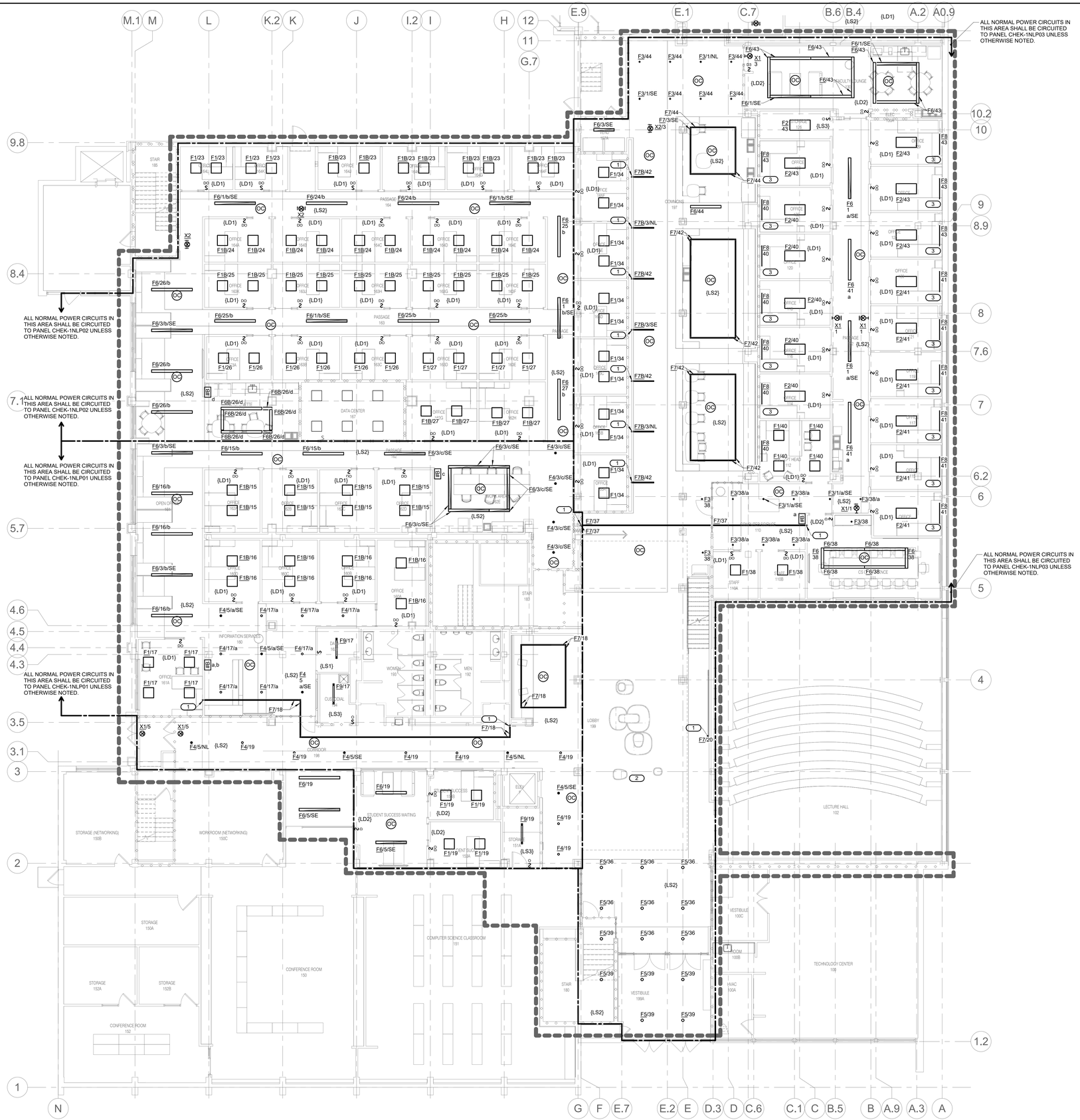
BASEMENT PLAN - LIGHTING

Sheet #:

E2.10


ALL NORMAL POWER CIRCUITS IN THIS AREA SHALL BE CIRCUITED TO PANEL CHEK-1NLP03 UNLESS OTHERWISE NOTED.
ALL NORMAL POWER CIRCUITS IN THIS AREA SHALL BE CIRCUITED TO PANEL CHEK-1NLP02 UNLESS OTHERWISE NOTED.
ALL NORMAL POWER CIRCUITS IN THIS AREA SHALL BE CIRCUITED TO PANEL CHEK-1NLP01 UNLESS OTHERWISE NOTED.
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ALL NORMAL POWER CIRCUITS IN THIS AREA SHALL BE CIRCUITED TO PANEL CHEK-1NLP03 UNLESS OTHERWISE NOTED.
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TECHNOLOGY CENTER 109
COMPUTER SCIENCE CLASSROOM 151
CONFERENCE ROOM 150
STORAGE (NETWORKING) 150B
WORKROOM (NETWORKING) 150C
STORAGE 155A
STORAGE 153A
STORAGE 153B
CONFERENCE ROOM 152
LOBBY 199
VESTIBULE 199A
VESTIBULE 100C
HVAC 100A
STAIR 180
STAIR 185
STUDENT SUCCESS WAITING
CORRIDOR 198
INFORMATION SERVICES 160
WOMEN 193
MEN 192
DATA CENTER 167
FACULTY LOUNGE 130
STAFF 114A
CONFERENCE 114
COMMONS 197
PASSAGE 164
PASSAGE 163
PASSAGE 162
PASSAGE 116
OFFICE 163A
OFFICE 163B
OFFICE 163C
OFFICE 163D
OFFICE 163E
OFFICE 163F
OFFICE 163G
OFFICE 163H
OFFICE 163J
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OFFICE 159D
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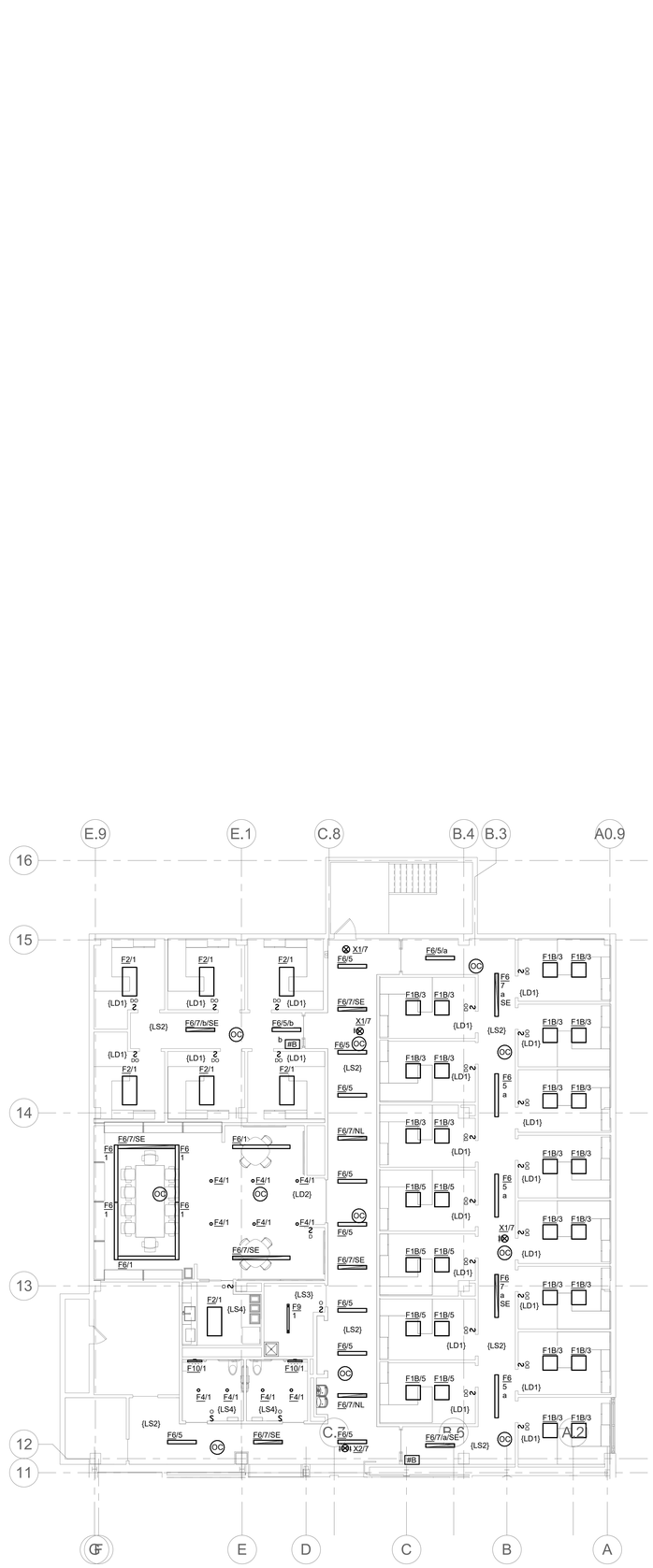
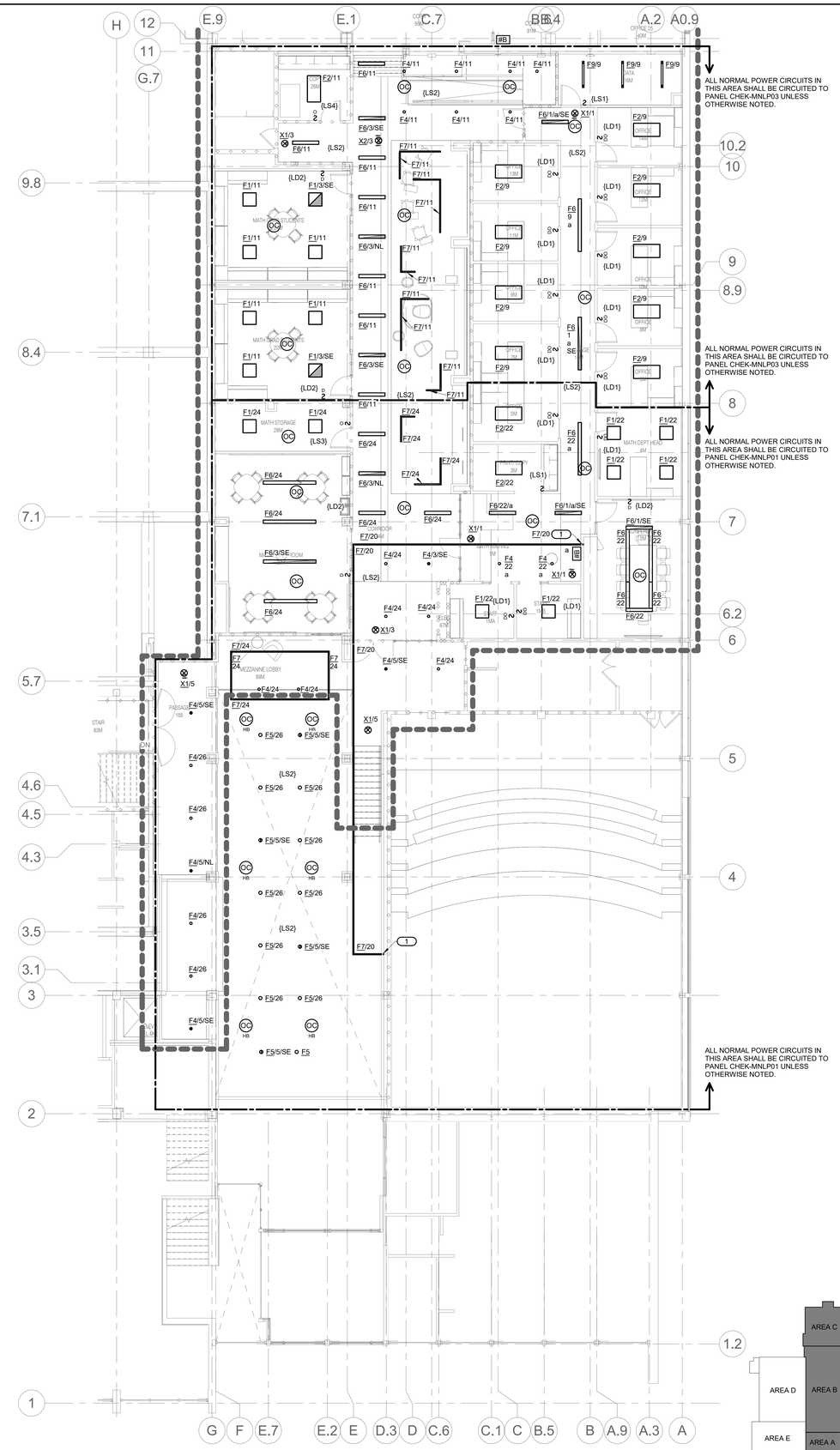


NORTH

1 MEZZANINE PLAN - LIGHTING - AREA C

1/8" = 1'-0"



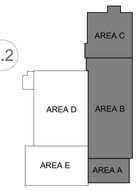
NORTH

2 MEZZANINE PLAN - LIGHTING - AREAS A & B

1/8" = 1'-0"

SHEET NOTES:

1. UNLESS OTHERWISE NOTED, ALL EMERGENCY LIGHTING SHALL BE SERVED FROM PANEL 'CHEK-MELP01'.



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TEL 314.545.1132
CERTIFICATE OF AUTHORITY - E2017008530

Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS

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Sheet Title:

MEZZANINE LEVEL PLANS - LIGHTING

Sheet #:

E2.12

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PROJECT #23008968.00

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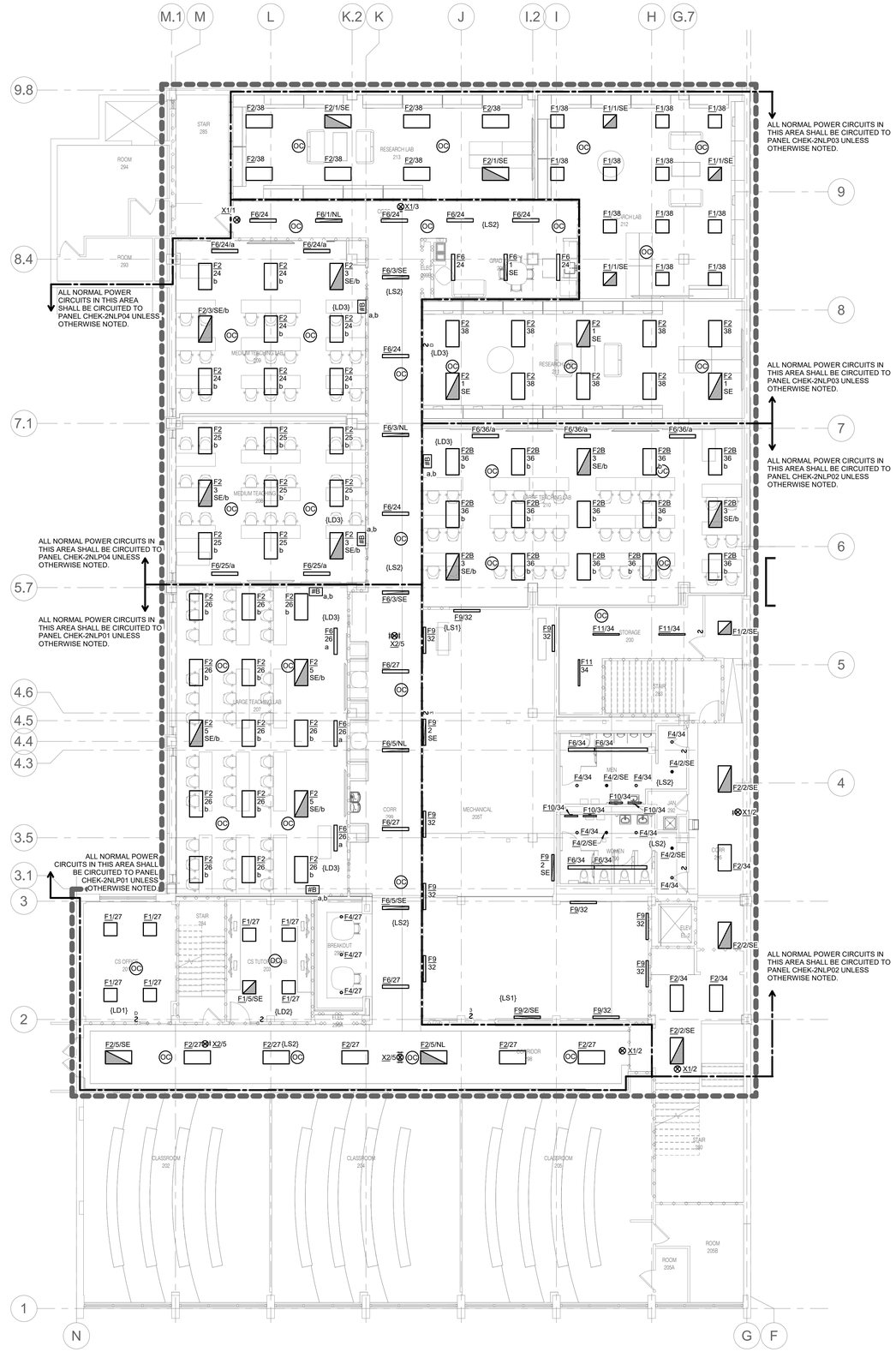
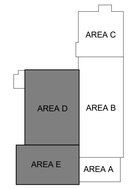


1 LEVEL 02 PLAN - LIGHTING

1/8" = 1'-0"



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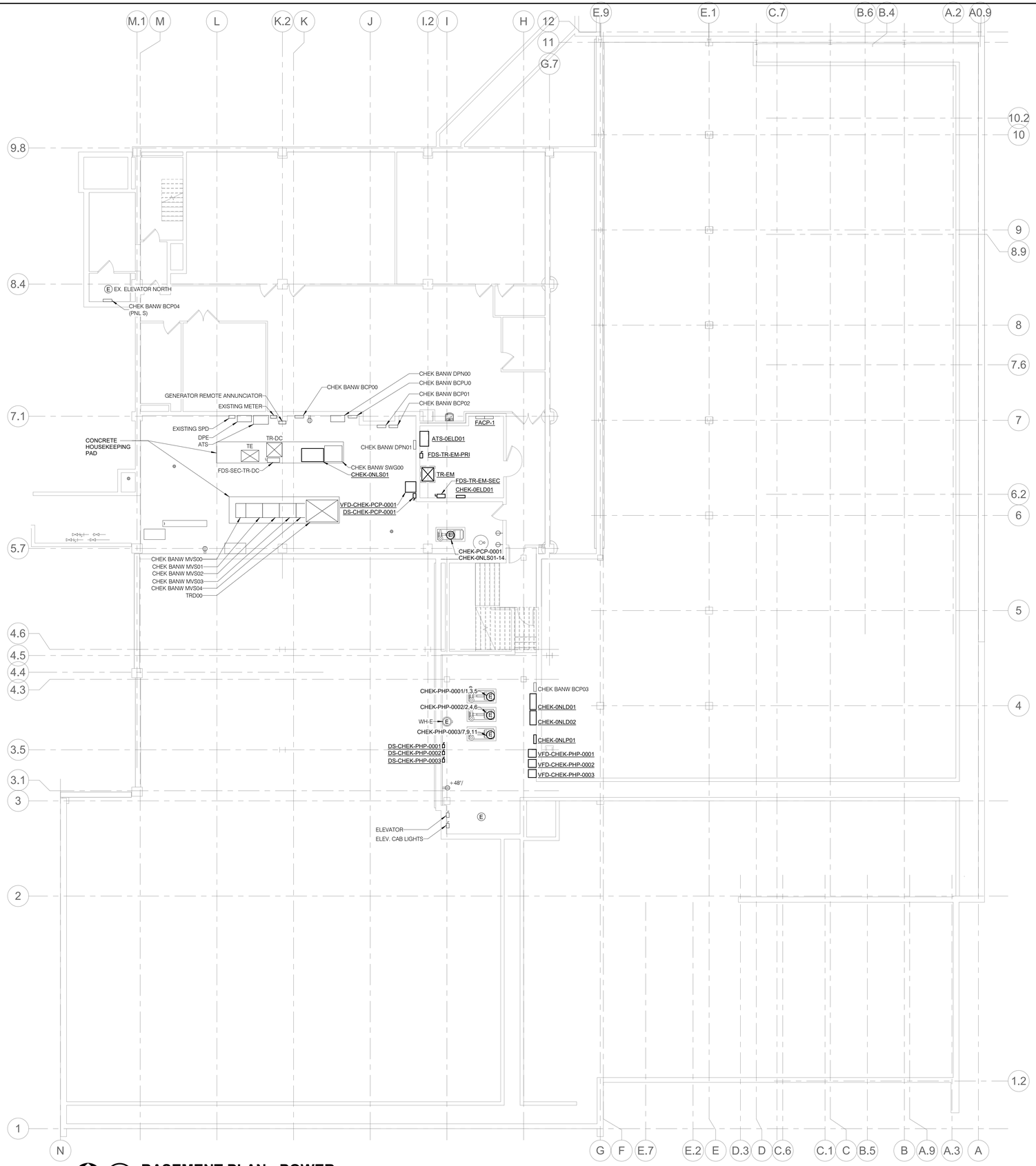
LEVEL 02 PLAN - LIGHTING

Sheet #:

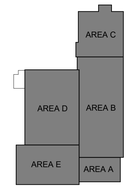
E2.13



NORTH

1 BASEMENT PLAN - POWER

1/8" = 1'-0"



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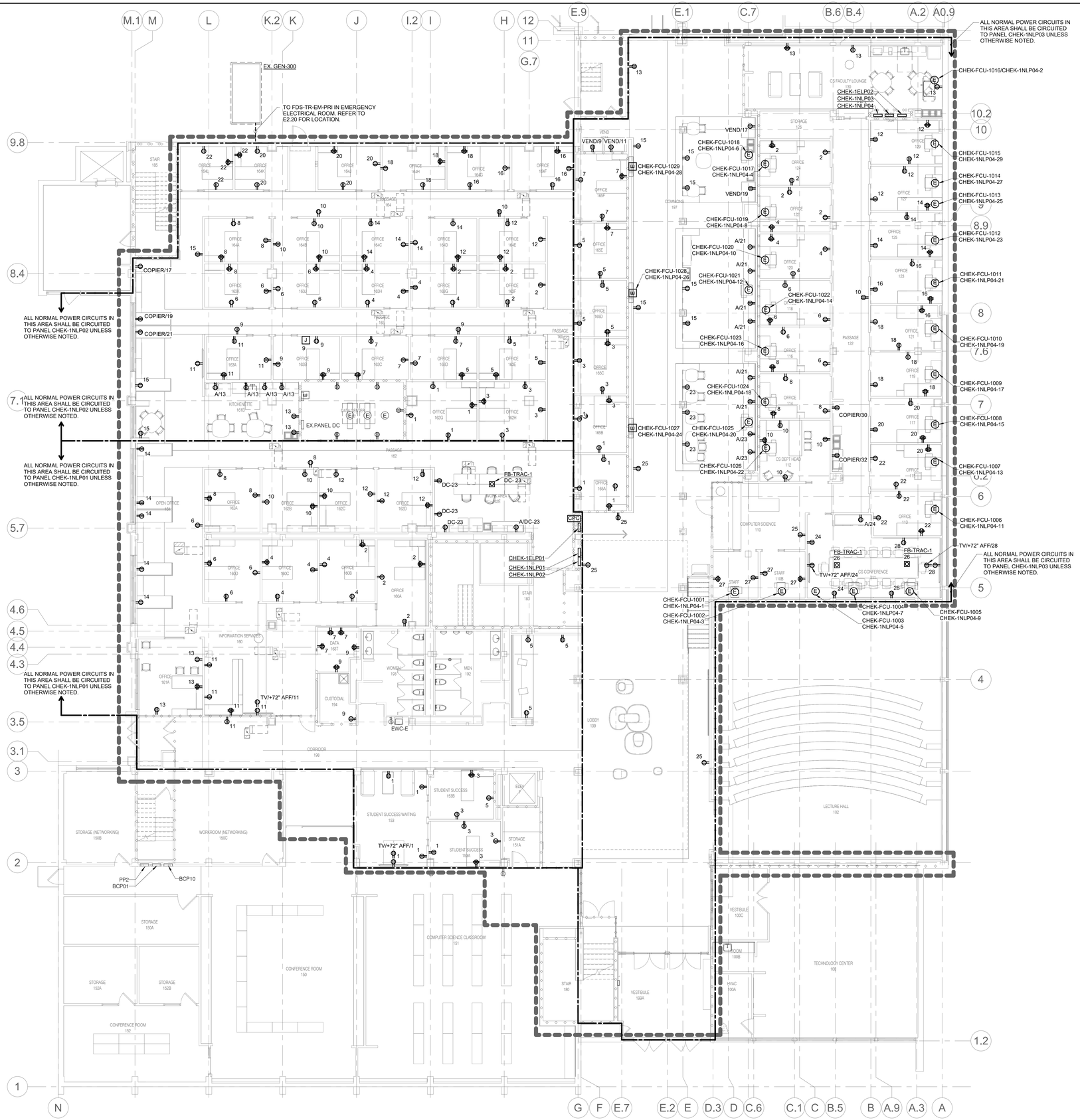
Sheet Title:

BASEMENT PLAN - POWER

Sheet #:

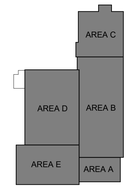
E2.20



1 LEVEL 01 PLAN - POWER

1/8" = 1'-0"

NORTH



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MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

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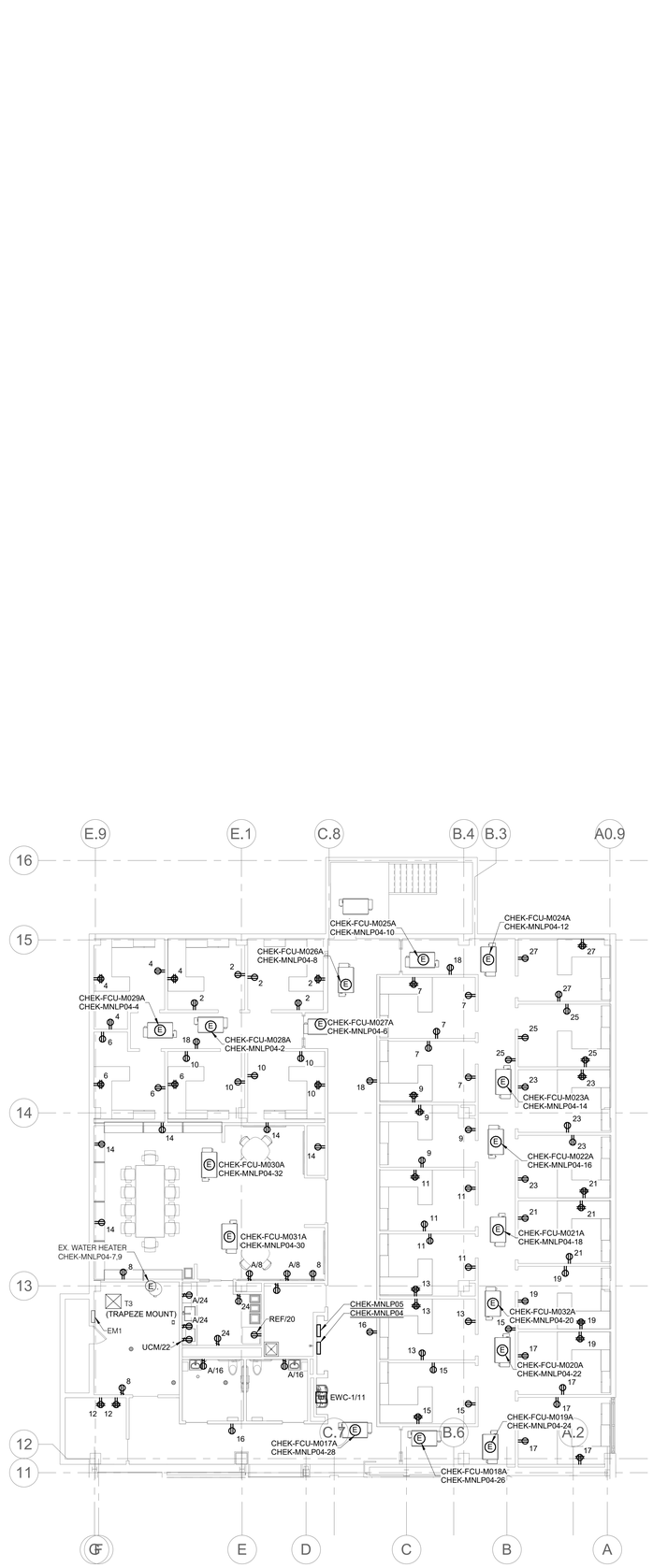
LEVEL 01 PLAN - POWER

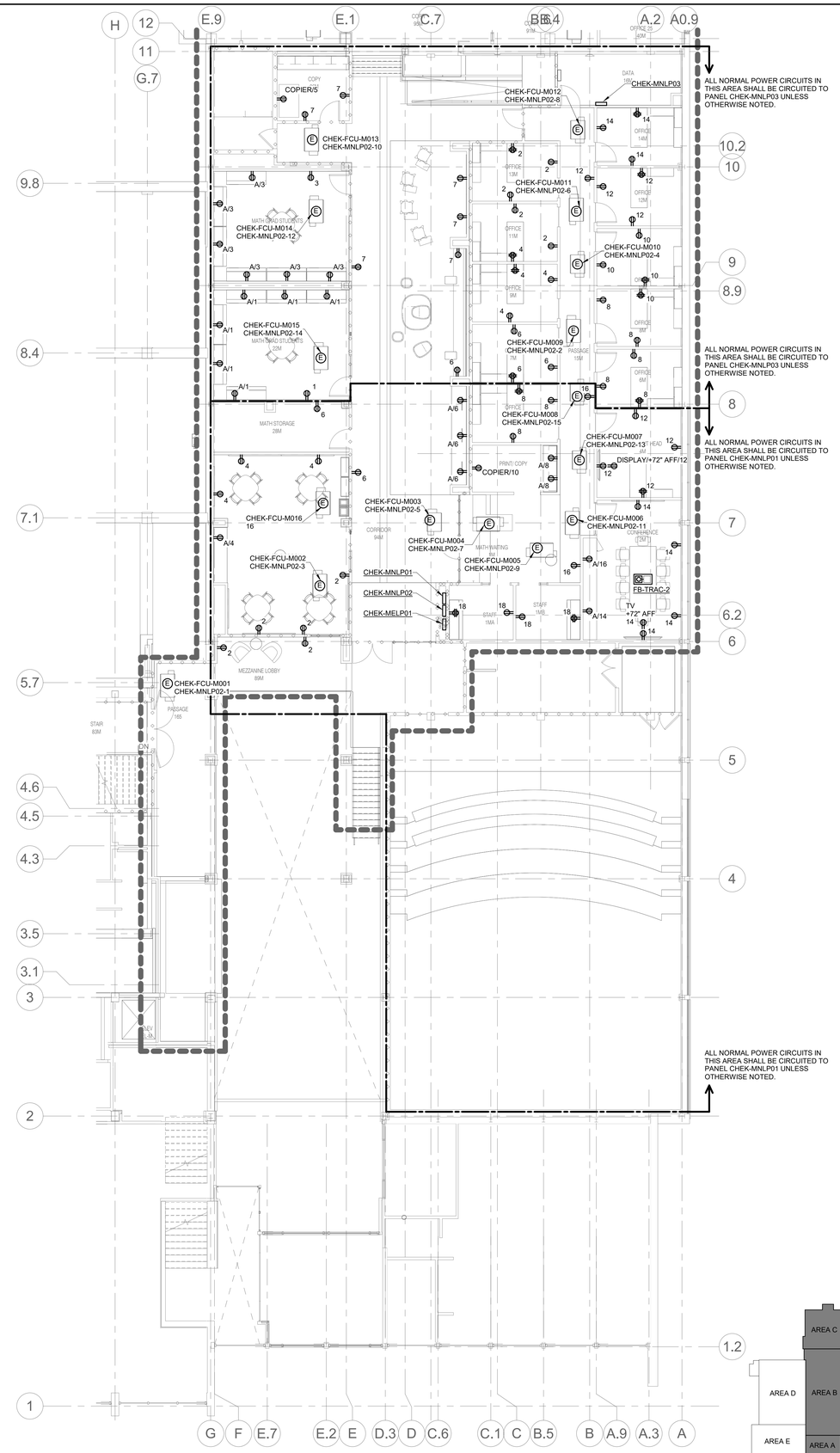
Sheet #:

E2.21



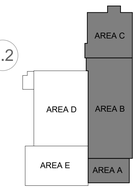
1 **MEZZANINE PLAN - POWER - AREA C**

1/8" = 1'-0"



2 **MEZZANINE PLAN - POWER - AREAS A & B**

1/8" = 1'-0"



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MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

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Sheet Title:

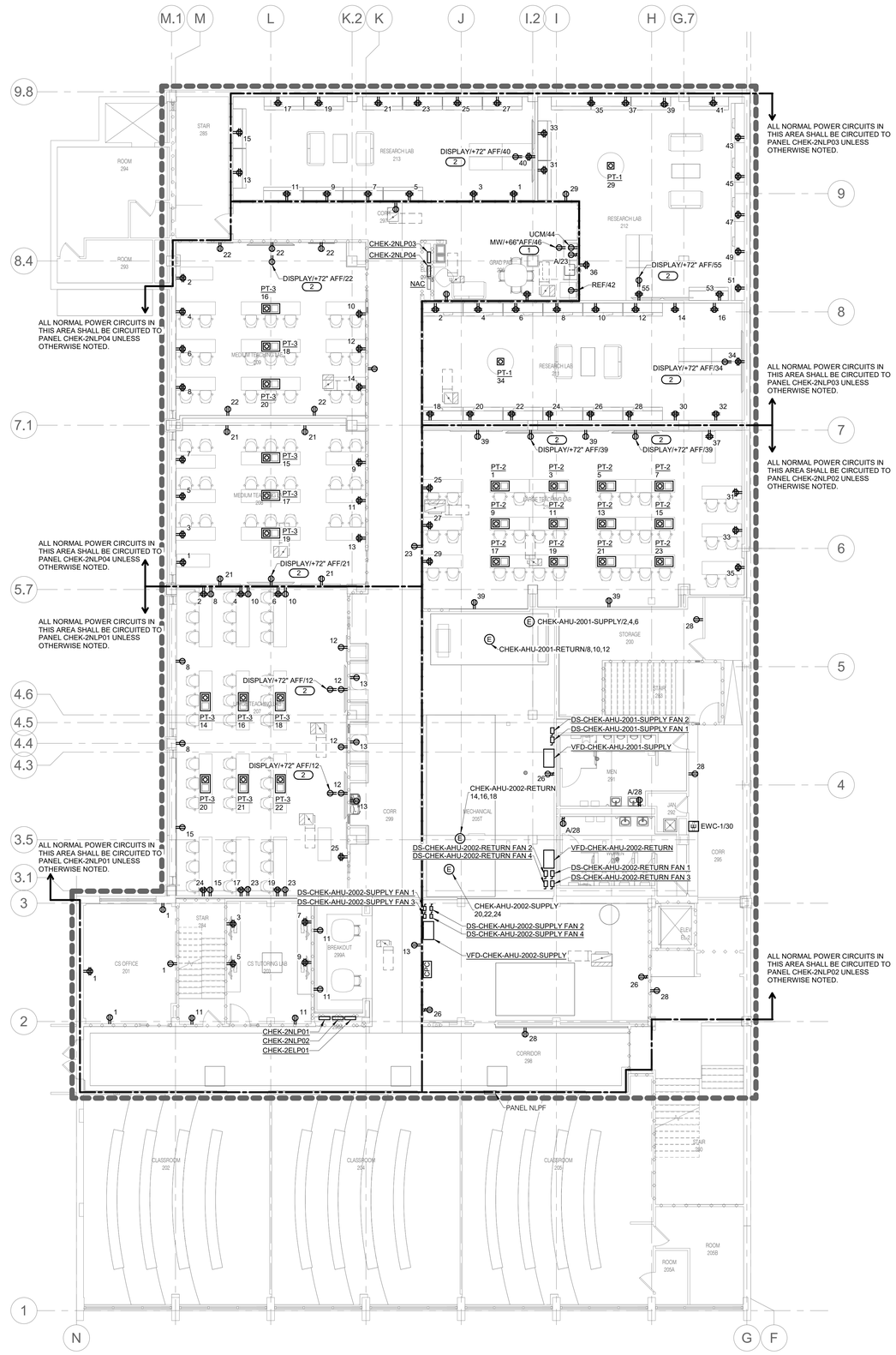
MEZZANINE LEVEL PLANS - POWER

Sheet #:

E2.22

KEYNOTES:

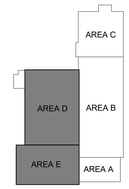
1. COORDINATE FINAL MOUNTING HEIGHT WITH CASEWORK INSTALLATION AND EQUIPMENT LOCATION PRIOR TO ROUGH IN.
2. MOUNTING HEIGHT FOR REFERENCE ONLY. COORDINATE DISPLAY MOUNTING WITH G.C. AND OWNER PRIOR TO ROUGH-IN.
3. .



1 LEVEL 02 PLAN - POWER

1/8" = 1'-0"

NORTH



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LEVEL 02 PLAN - POWER

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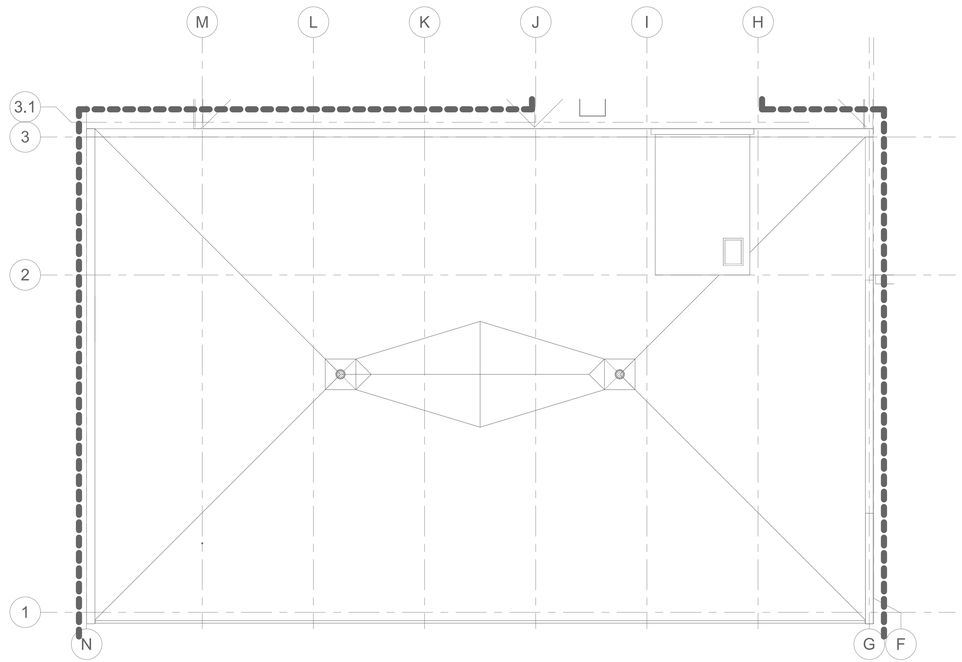
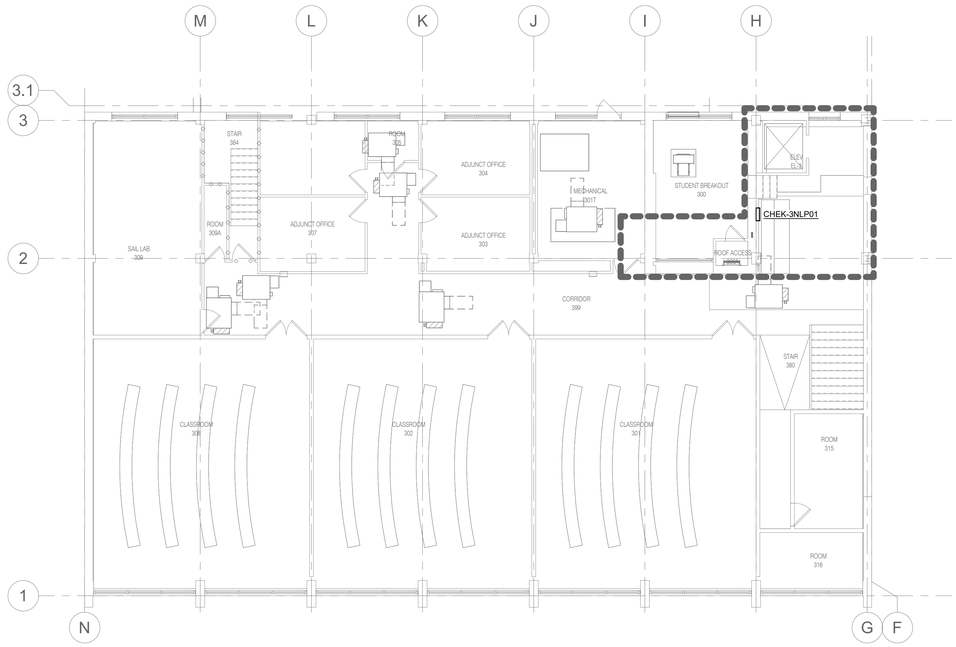


NORTH

1 ROOF PLAN - POWER

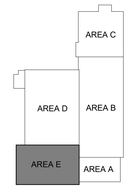
1/8" = 1'-0"



NORTH

2 LEVEL 03 PLAN - POWER

1/8" = 1'-0"



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Sheet Title:

LEVEL 03 & ROOF PLAN - POWER

Sheet #:

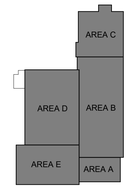
E2.24

1 **BASEMENT PLAN - SYSTEMS**
1/8" = 1'-0"

NORTH

SHEET NOTES:

1. ALL EXISTING FIRE ALARM DEVICES IN AREAS NOT IN SCOPE SHALL BE REPLACED AS INDICATED.



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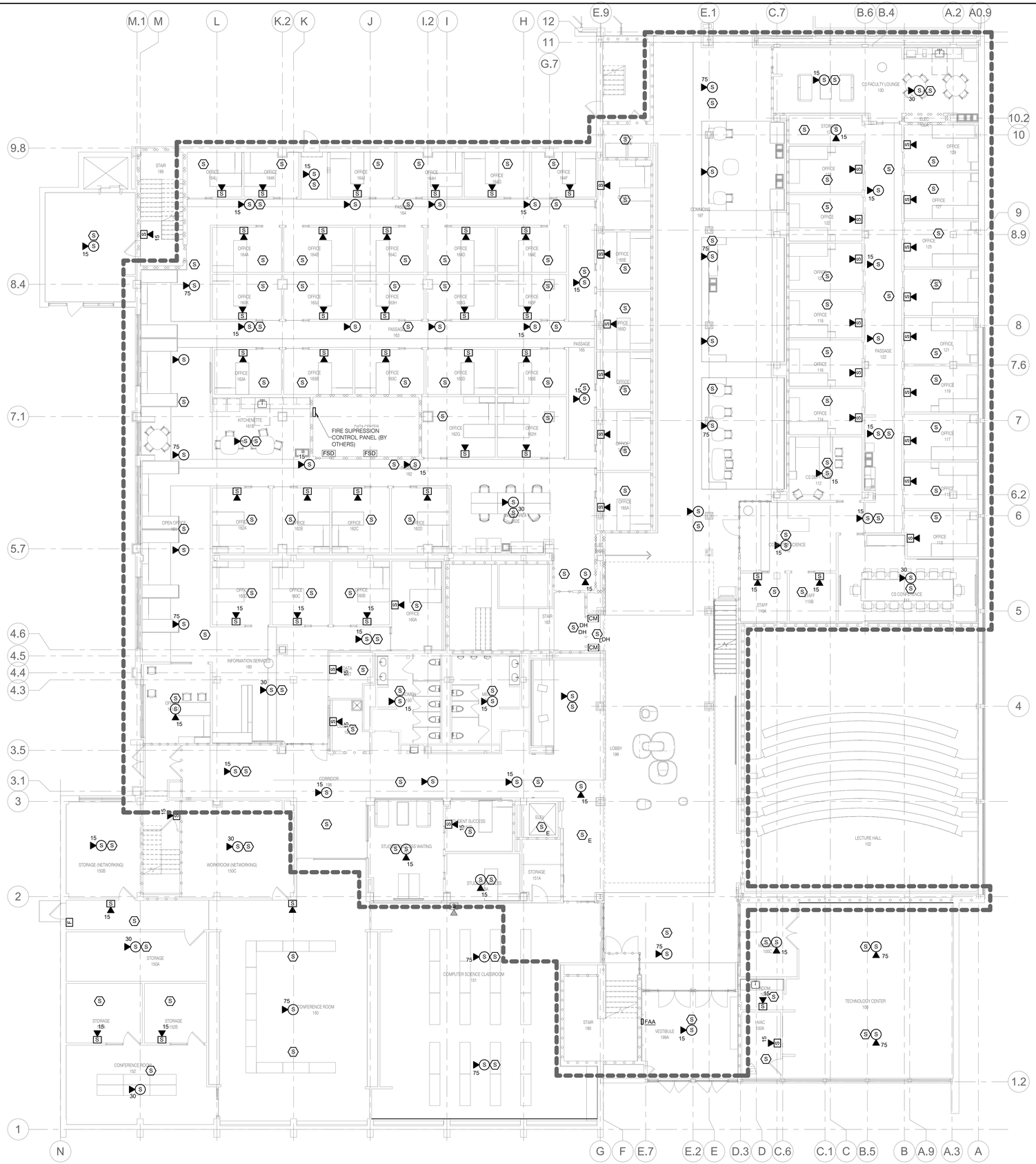
Sheet Title:

BASEMENT PLAN - SYSTEMS

Sheet #:

E2.30



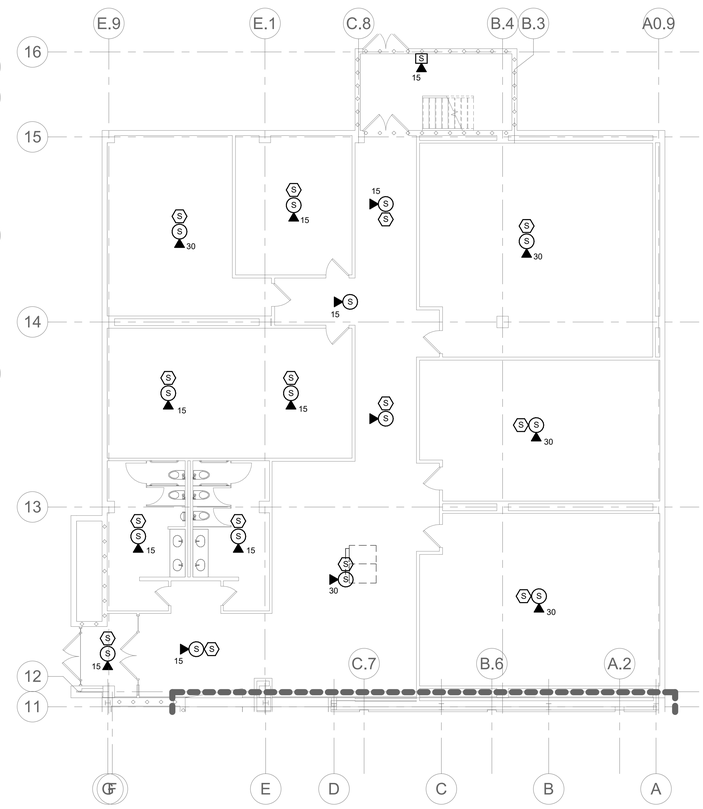
NORTH

1 LEVEL 01 PLAN - SYSTEMS

1/8" = 1'-0"

SHEET NOTES:

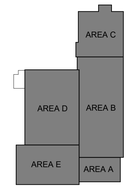
1. ALL EXISTING FIRE ALARM DEVICES IN AREAS NOT IN SCOPE SHALL BE REPLACED AS INDICATED.



NORTH

2 LEVEL 01 PLAN - SYSTEMS - AREA C

1/8" = 1'-0"



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PROJECT #23008968.00

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TEL 314.645.1132
CERTIFICATE OF AUTHORITY - E2017008530

Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS

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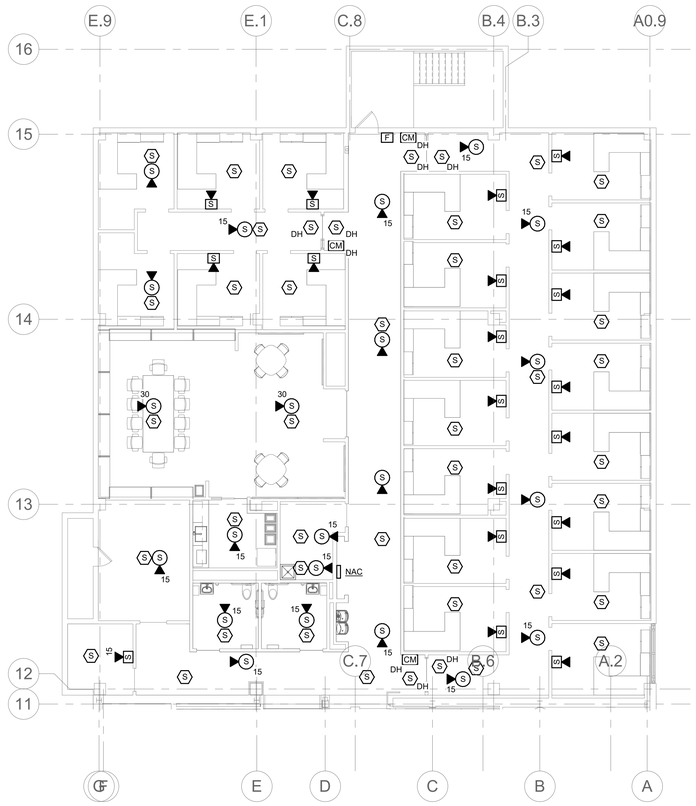
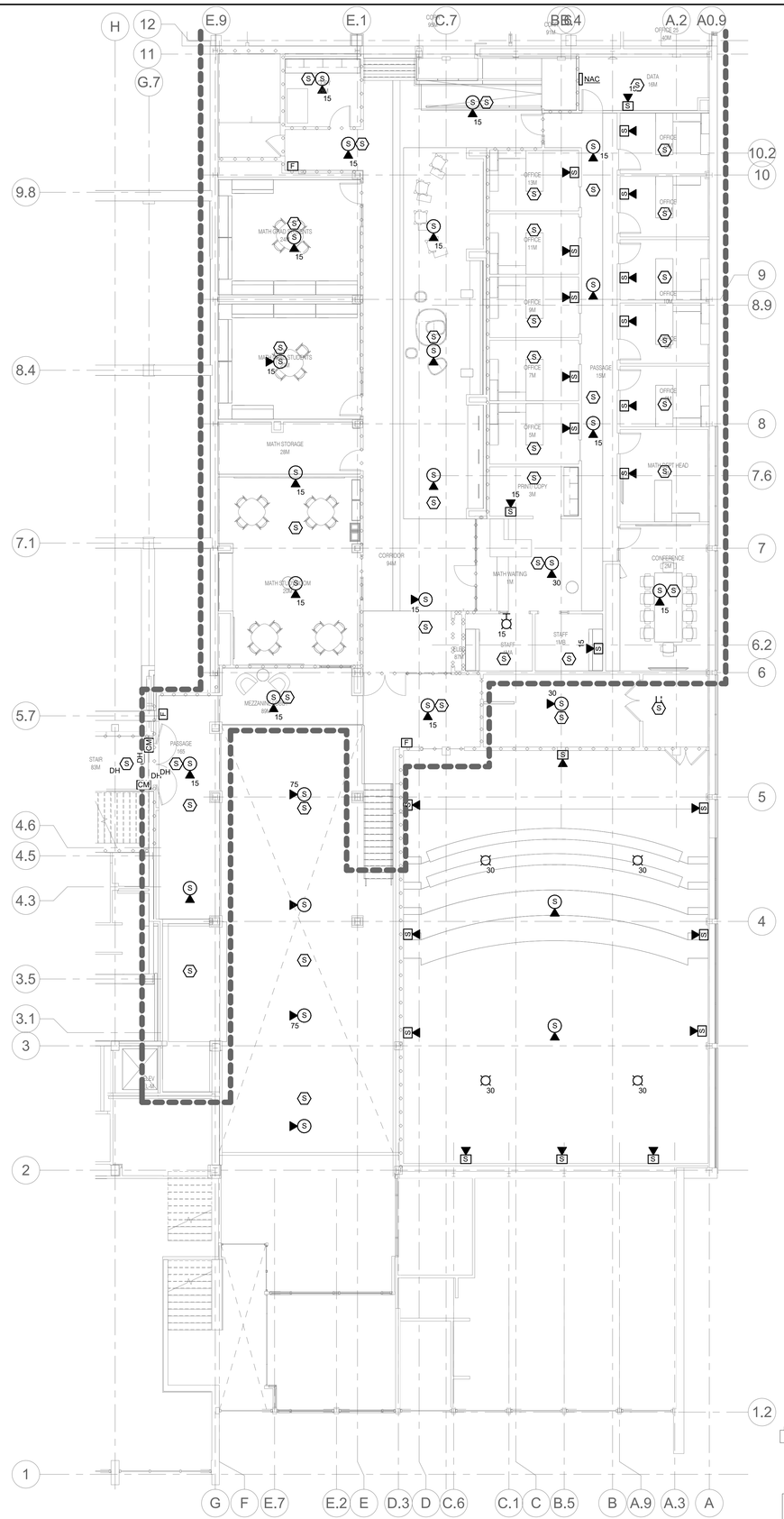
LEVEL 01 PLAN - SYSTEMS

Sheet #:

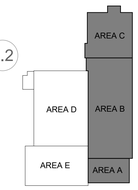
E2.31



1 MEZZANINE PLAN - SYSTEMS - AREA C
1/8" = 1'-0"



2 MEZZANINE PLAN - SYSTEMS - AREAS A & B
1/8" = 1'-0"



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SHEET NOTES:

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Project Title:
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MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

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MEZZANINE LEVEL PLANS - SYSTEMS

Sheet #:
E2.32

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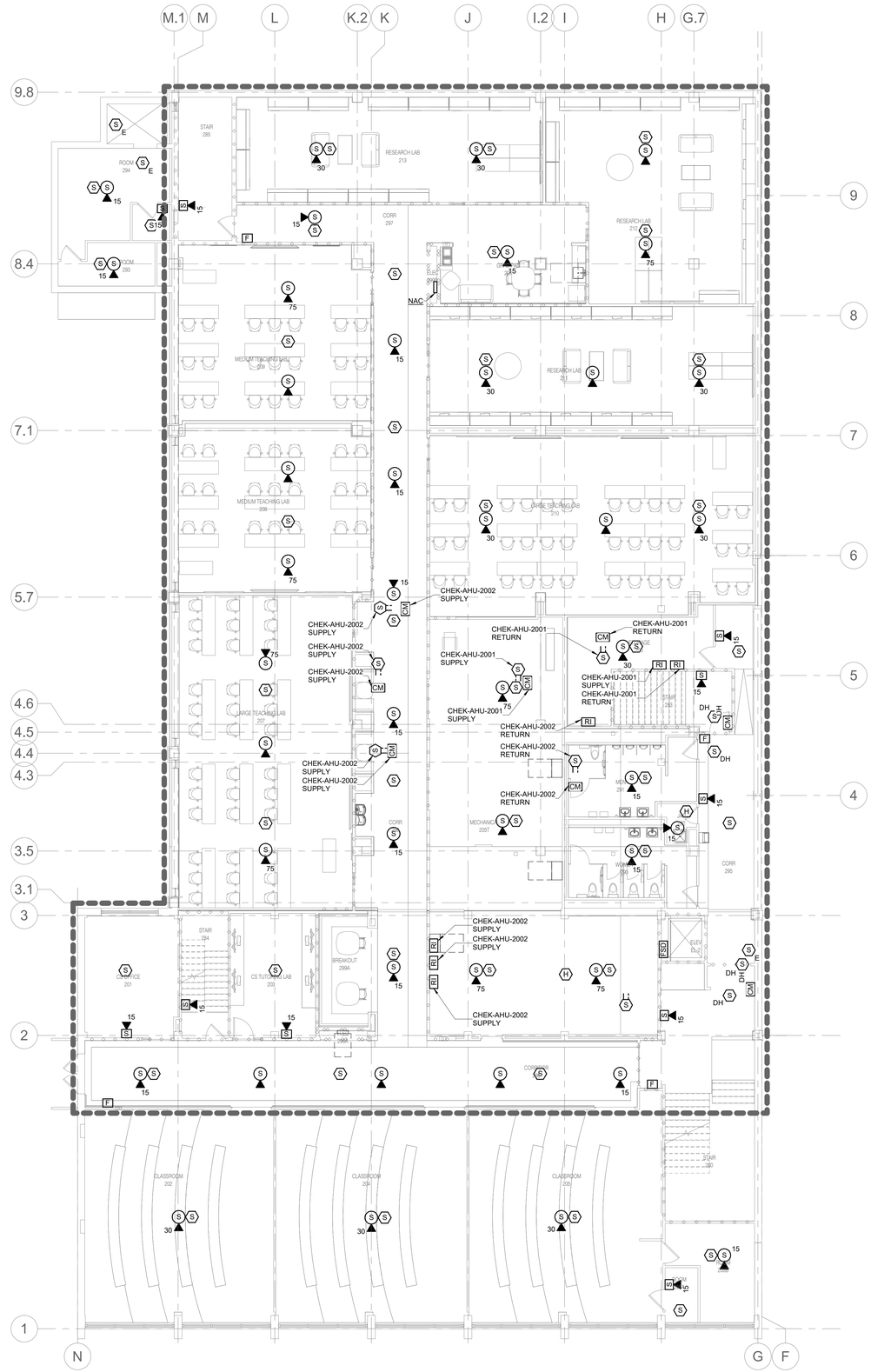
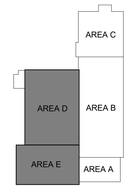


1 LEVEL 02 PLAN - SYSTEMS

1/8" = 1'-0"

NORTH



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LEVEL 02 PLAN - SYSTEMS

Sheet #:

E2.33

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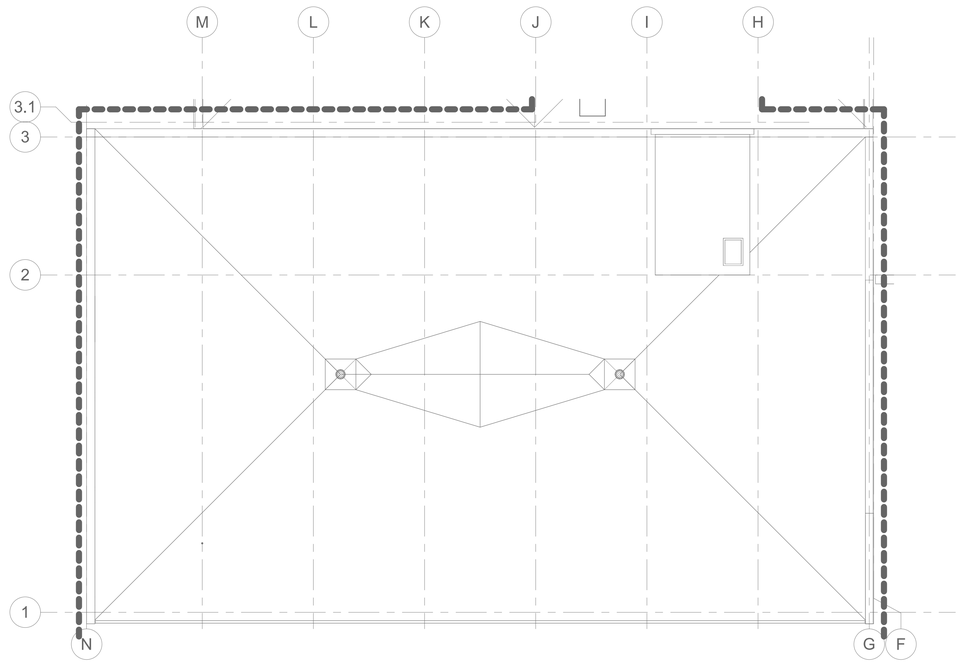
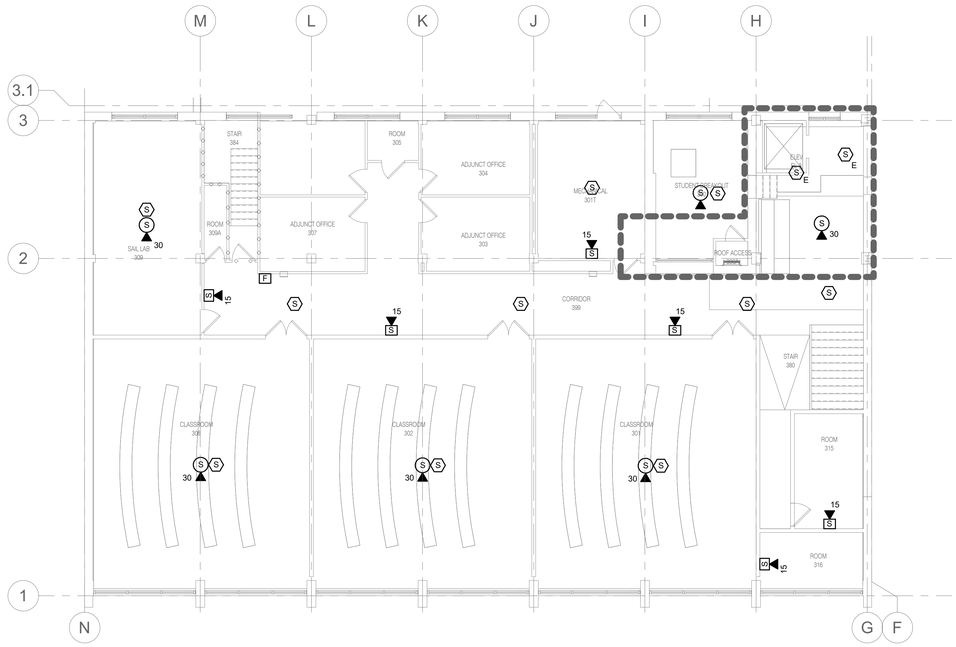
1. ALL EXISTING FIRE ALARM DEVICES IN AREAS NOT IN SCOPE SHALL BE REPLACED AS INDICATED.



NORTH

1 ROOF PLAN - SYSTEMS

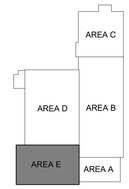
1/8" = 1'-0"



NORTH

2 LEVEL 03 PLAN - SYSTEMS

1/8" = 1'-0"



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Sheet Title:

LEVEL 03 & ROOF PLAN - SYSTEMS

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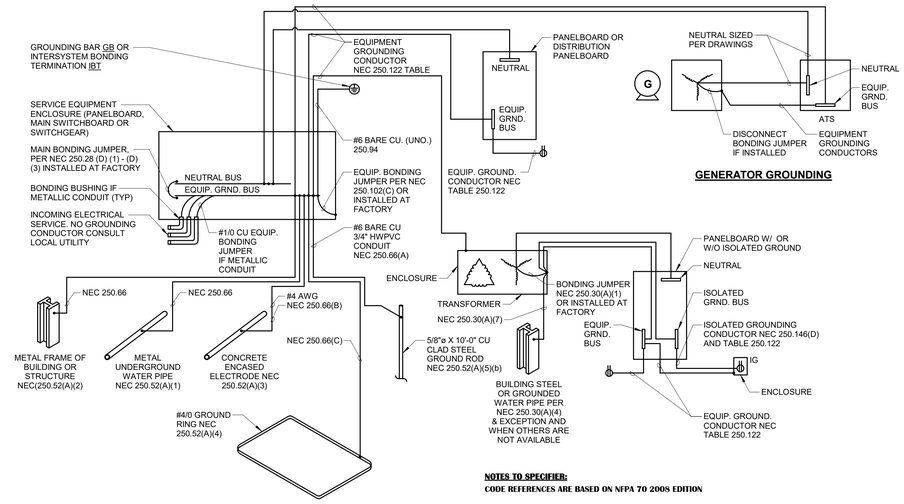
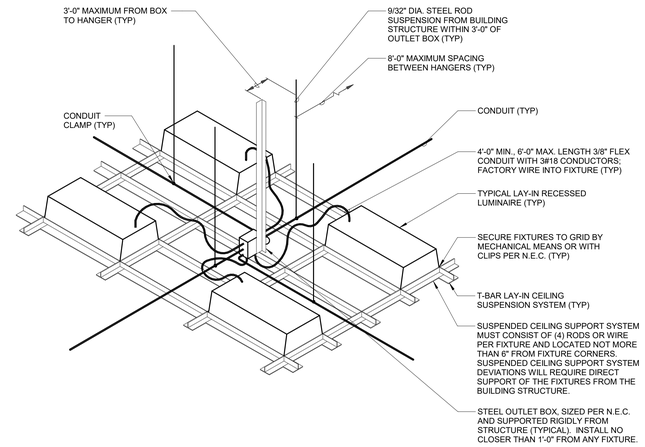
E2.34



NOTES TO SPECIFIER:
CODE REFERENCES ARE BASED ON NFPA 70 2008 EDITION

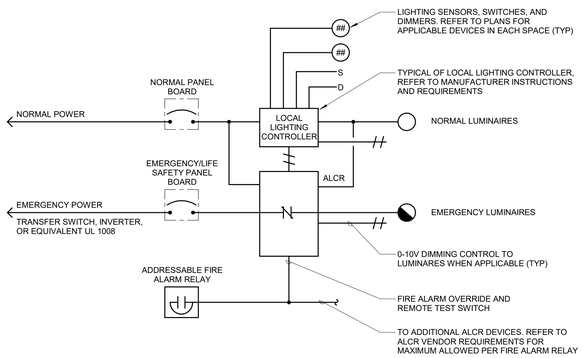
1 ELECTRICAL SYSTEM GROUNDING DETAIL
NO SCALE



NOTES:

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

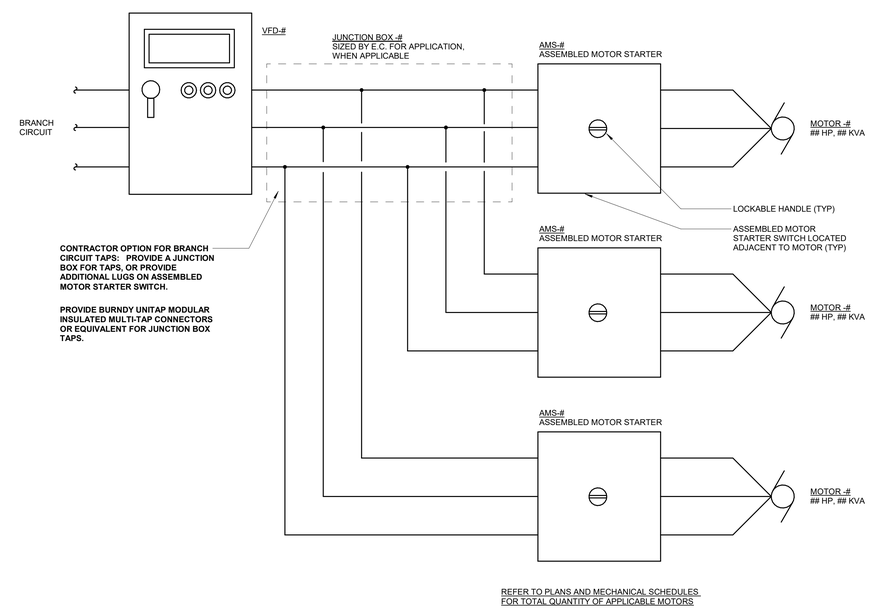
2 RECESSED LUMINAIRE DETAIL (GRID CLIPS)
12" = 1'-0"



NOTES:

1. THE ALCR RELAY DIAGRAM IS INTENDED TO CONVEY INTENDED OPERATION AND SPECIFICALLY DOES NOT INDICATE QUANTITIES, ALL DEVICES, WIRING, AND CONNECTIONS REQUIRED. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS AND REQUIREMENTS.
2. MOUNT LOCAL LIGHTING CONTROLLERS ABOVE FINISHED CEILING NEAR ROOM ENTRANCE. IN A CORRIDOR, MOUNT NEAR ONE END OF CORRIDOR AND ADJACENT TO FIRST SENSOR OR CONTROL DEVICE.
3. MOUNT ALCR ADJACENT TO LIGHTING CONTROLLER **[ABOVE ACCESSIBLE FINISHED CEILING] [FLUSH IN FINISHED CEILING FOR VISUAL INSPECTION OF FAULT INDICATOR WHEN ALLOWED BY MANUFACTURER]**.
4. FIRE ALARM ADDRESSABLE RELAY SHALL OVERRIDE LOCAL LIGHTING CONTROLS UPON FIRE ALARM OR TEST.

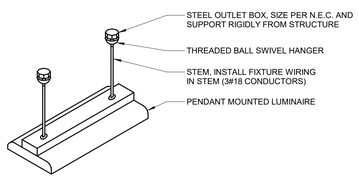
3 AUTOMATIC LOAD CONTROL RELAY DIAGRAM (ALCR)
12" = 1'-0"



NOTES:

1. THE DIAGRAM IS INTENDED TO CONVEY THE OVERALL CONFIGURATION OF THE VFD, MULTIPLE MOTORS, AND SPECIFICALLY DOES NOT INDICATE VFD TAG, AMS TAG, MOTOR SIZES, QUANTITIES, BRANCH CIRCUIT WIRING, ETC. REFER TO PLANS FOR ADDITIONAL INFORMATION.
2. BRANCH CIRCUIT WIRING ON THE LOAD SIDE OF THE VFD AND ASSEMBLED MOTOR STARTERS SHALL MATCH THE BRANCH CIRCUIT WIRING ON THE LINE SIDE OF THE VFD UNLESS OTHERWISE NOTED.
3. THE AUXILARY CONTACTS OF THE ASSEMBLED MOTOR START SWITCHES SHALL BE WIRED TO THE VFD INPUT/OUTPUT CONTROL AND DISABLE THE VFDS WHEN ANY OF THE ASSOSIATED ASSEMBLED MOTOR STARTER SWITCHES IS IN THE 'OPEN' POSITION.
4. MINIMUM CHARACTERISTICS OF ASSEMBLED MOTOR STARTER SHALL INCLUDE: RATED FOR MOTOR APPLICATION, ON-OFF-TRIP LOCKABLE HANDLE, TWO AUXILARY CONTACTS (NORMALLY OPEN, NORMALLY CLOSED), AND ADJUSTABLE ELECTRONIC THERMAL OVERLOADS WITH PHASE LOSS PROTECTION, UNDERVOLTAGE, GROUND FAULT, SIZED PER MOTOR APPLICATION. ENCLSOURE RATING TO MATCH ENVIRONMENT (MINIMUM NEMA 1 OR IP20).
5. PROVIDE THE FOLLOWING ADDITIONAL ASSEMBLED MOTOR STARTER FEATURES: **[SHUNT TRIP] [REMOTE ALARM] [ELECTRONIC METER]**

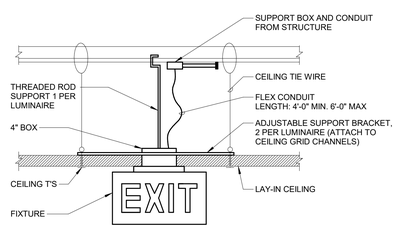
6 VFD WITH MULTIPLE MOTOR(S) DIAGRAM
12" = 1'-0"



NOTES:

1. SELECT STEM LENGTH TO PROVIDE MOUNTING HEIGHT AS REQUIRED ON DRAWINGS.
2. PROVIDE TWO STEMS ON SINGLE LUMINAIRE AND ONE STEM PER LUMINAIRE WHEN JOINED IN CONTINUOUS ROW.
3. LUMINAIRE TO BE MOUNTED LEVEL.

4 PENDANT MOUNTING DETAIL
12" = 1'-0"



5 EXIT SIGN MOUNTING DETAIL
12" = 1'-0"

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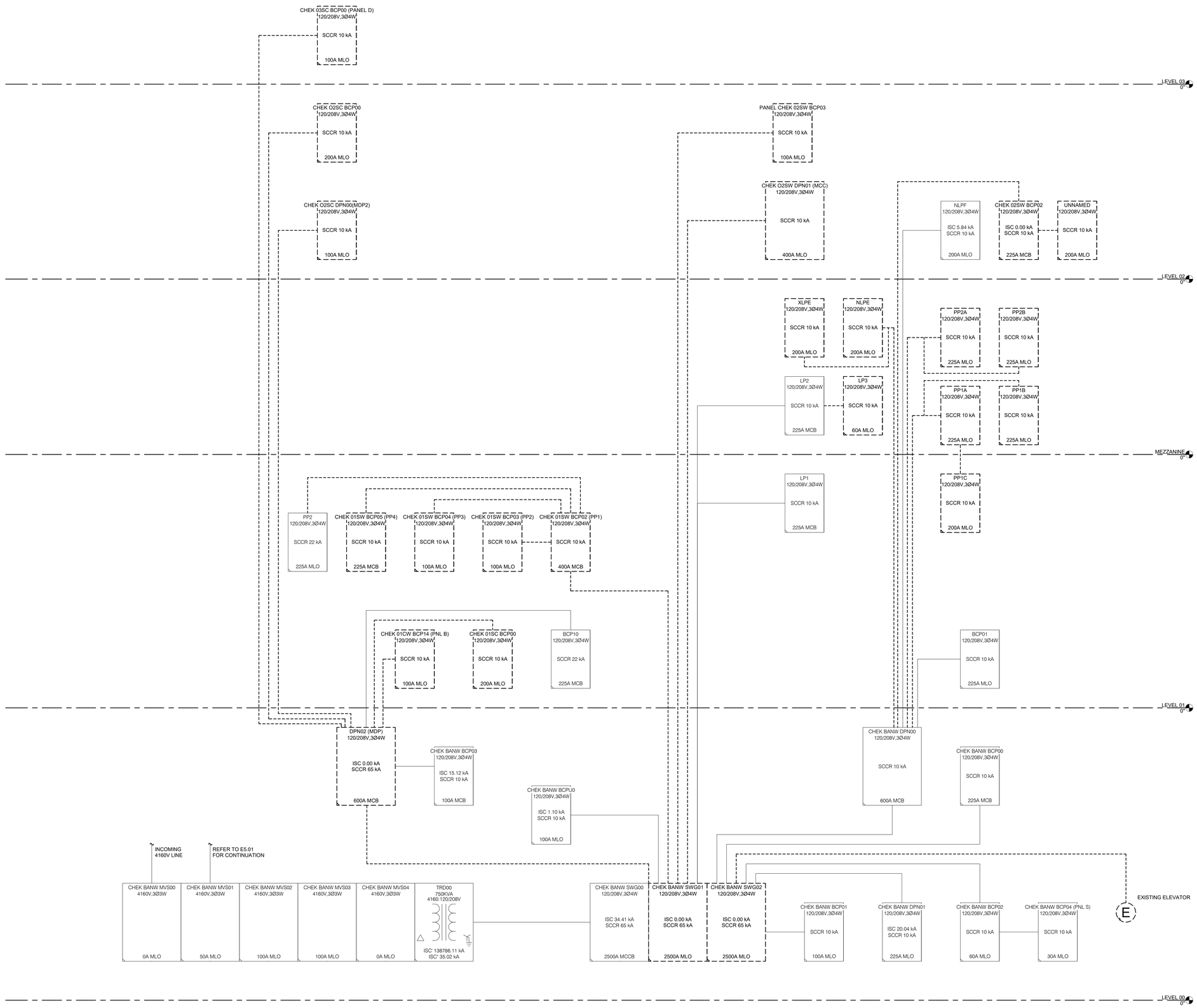

1 NORMAL POWER RISER DIAGRAM - DEMO

NO SCALE

SHEET NOTES:

1. .
2. .
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KEYNOTES:

1. .
2. .
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ELECTRICAL DIAGRAMS

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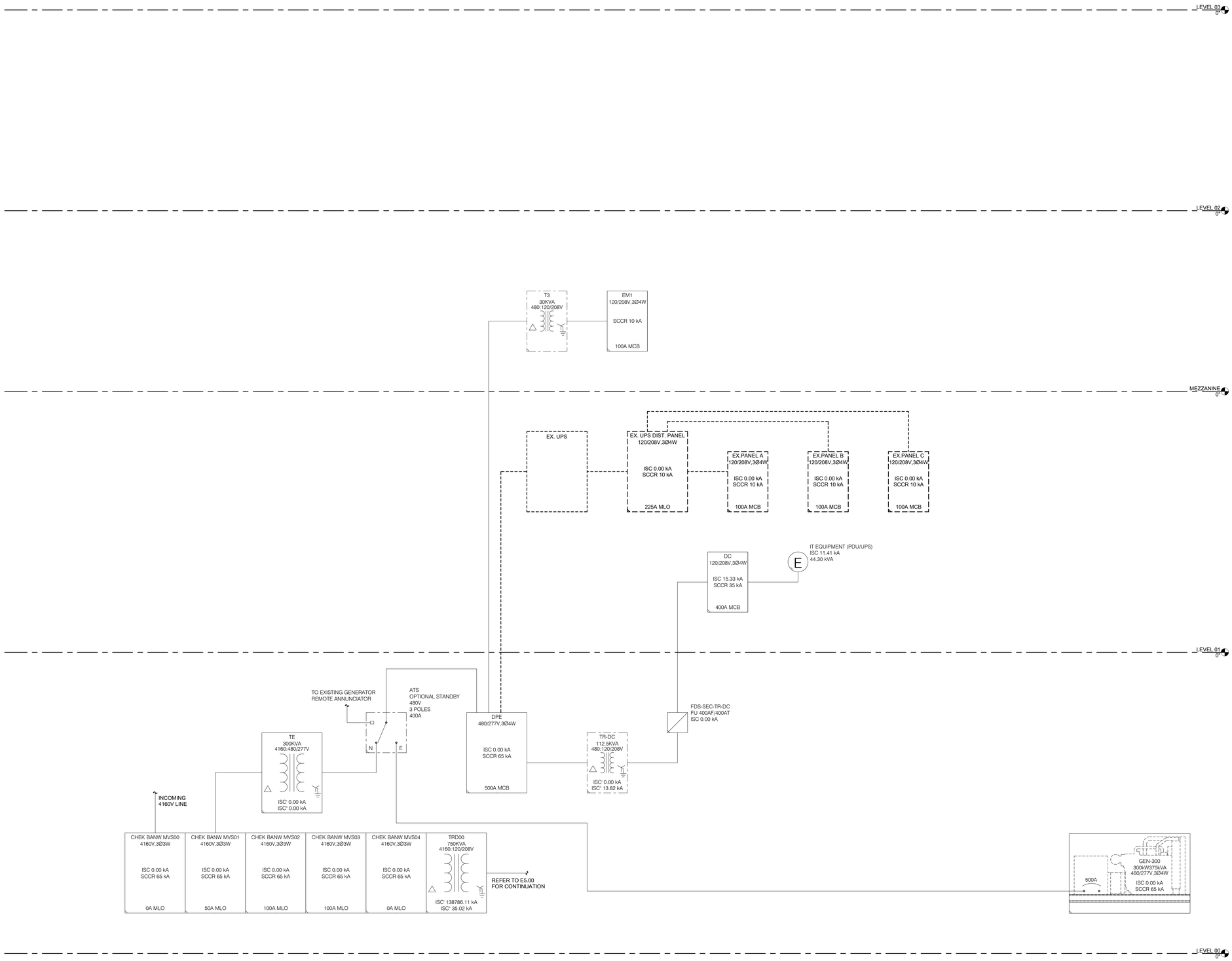

1 **GENERATOR POWER RISER DIAGRAM - DEMO**
NO SCALE

SHEET NOTES:

1. .
2. .
3. .

KEYNOTES:

1. .
2. .
3. .

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CERTIFICATE OF AUTHORITY - E2017008530

Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS

#	Date / Description
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2	
3	
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Sheet Title:

ELECTRICAL DIAGRAMS

Sheet #:

E5.01

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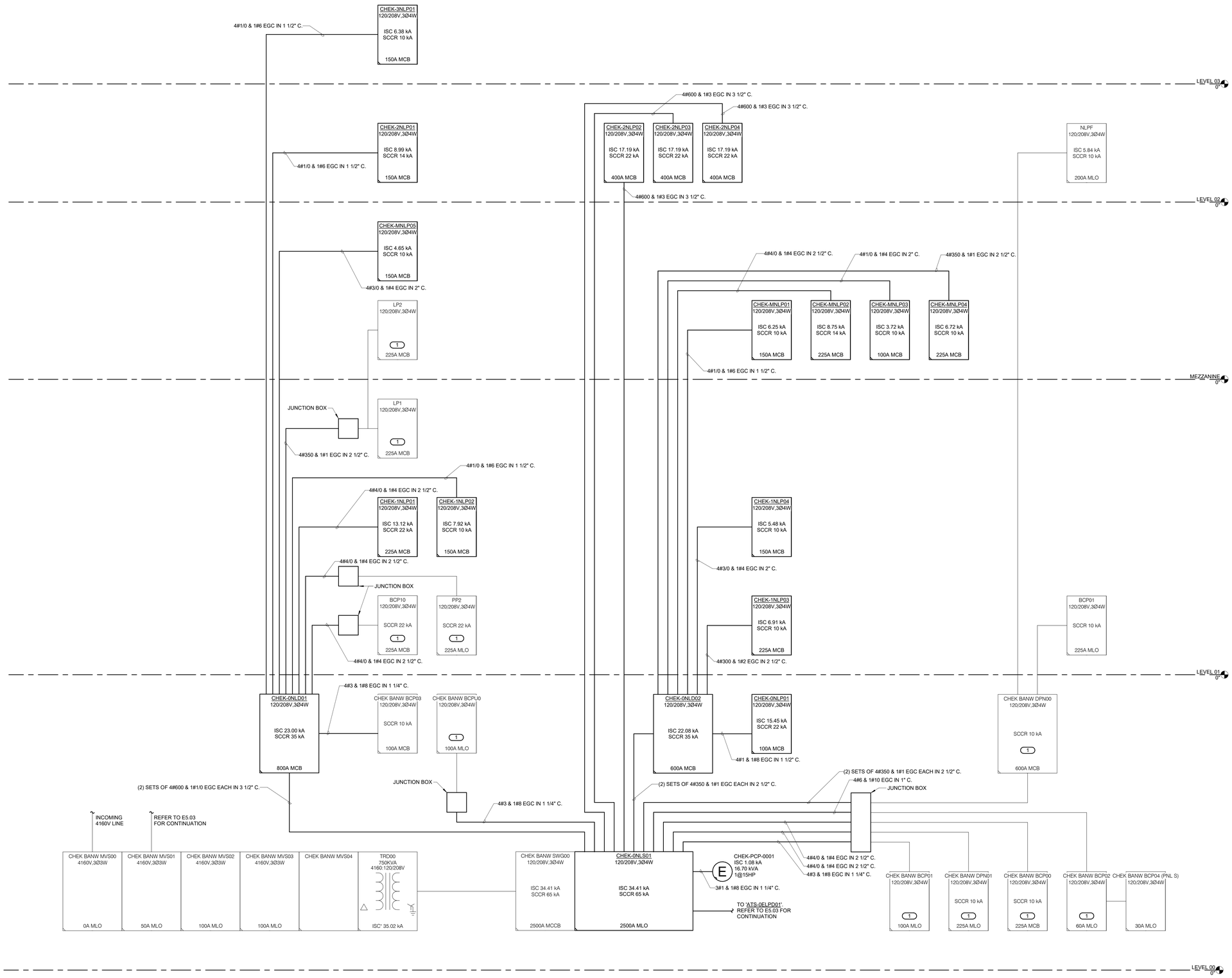

1 NORMAL POWER RISER DIAGRAM - NEW

NO SCALE

NEW PANELBOARD NAMING KEY:

CHEK-3 E LP 02

BUILDING:
CHEK= CHEEK HALL

TYPE:
0 = BASEMENT
1 = FIRST FLOOR
M = MEZZANINE
2 = SECOND FLOOR
3 = THIRD FLOOR

SOURCE:
N = NORMAL
E = EMERGENCY

TYPE:
LS = 208/120V SWITCHBOARD
LP = 208/120V BRANCH PANEL
LD = 208/120V DIST. PANEL
HP = 480/277V BRANCH PANEL
HD = 480/277V DIST. PANEL

SEQUENCE IDENTIFIER:

KEYNOTES:

1. EXISTING PANEL TO BE RE-CIRCUITED AS INDICATED. CONDUIT AND WIRE SIZES SHOWN ARE FOR BIDDING PURPOSES ONLY. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDUIT AND WIRE SIZES PRIOR TO PERFORMING NEW WORK. REFER TO E5.00 AND FLOOR PLANS FOR ADDITIONAL INFORMATION.

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Drawn By: **Author**

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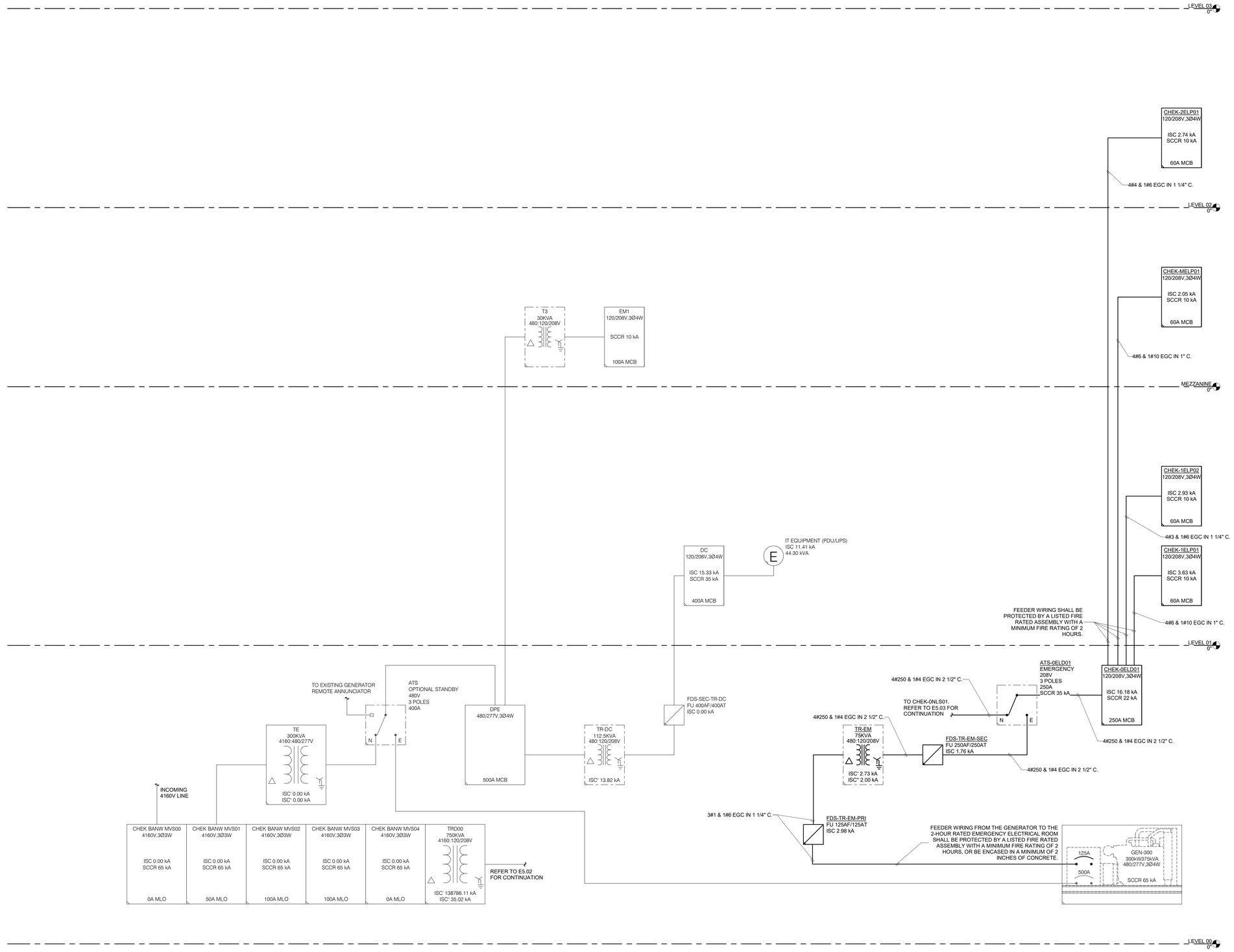

1 GENERATOR POWER RISER DIAGRAM - NEW

NO SCALE

NEW PANELBOARD NAMING KEY:

CHEK-3 E LP 02

BUILDING:
CHEK= CHEEK HALL

TYPE:
0 = BASEMENT
1 = FIRST FLOOR
M = MEZZANINE
2 = SECOND FLOOR
3 = THIRD FLOOR

SOURCE:
N = NORMAL
E = EMERGENCY

TYPE:
LP = 208/120V BRANCH PANEL
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Sheet Title:

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E5.03

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LIGHTING SEQUENCE OF OPERATION

NOTES:
1. (L##) DENOTES THE LIGHTING SEQUENCE OF OPERATIONS FOR THIS SPACE.
2. LOWERCASE LETTERS (E.G. 'a') DENOTES LIGHTING CONTROL ZONE. PROVIDE SEPARATE CONTROL OF EACH CONTROLLED ZONE. LUMINAIRES ASSOCIATED WITH THE SAME ZONE SHALL OPERATE TOGETHER WITHIN THE SAME PROGRAMMED SCENE.
3. VERIFY AND COORDINATE ALL TIME CLOCK SETTINGS WITH OWNER PRIOR TO FINAL PROGRAMMING.
4. VERIFY AND COORDINATE ALL PUSH BUTTON WALL DEVICES AND QUANTITIES OF INDIVIDUAL BUTTONS WITH SCENES AND ZONES PER LOCATION.
5. VERIFY AND COORDINATE ALL PUSH BUTTON QUANTITIES AND SCENE NAMES WITH OWNER PRIOR TO SUBMITTING ENGRAVING TEMPLATE TO MANUFACTURER.
6. ALL EMERGENCY AND SWITCHED EMERGENCY LIGHTS SHALL TURN ON TO 100% OUTPUT UPON LOSS OF NORMAL POWER.

PLAN ID	LIGHTING SWITCHED
{LD1}	SEQUENCE: Lighting control provides vacancy control, manual dimming and manual switching. ON: Lights turn on manually using a wall control. ADJUST: Lights are raised/lowered using a wall control. OFF: Lights turn off automatically after the space has been vacant for 15 minutes. Lights turn off manually using a wall control.
{LD2}	SEQUENCE: Lighting control provides occupancy control, manual dimming, and manual switching. ON: Lights turn on automatically via occupancy sensor. Lights turn on manually using a wall control. ADJUST: Lights are raised/lowered using a wall control. OFF: Lights turn off automatically after the space has been vacant for 15 minutes. Lights turn off manually using a wall control.
{LD3}	SEQUENCE: Lighting control provides occupancy control, zone control, manual dimming, and manual switching. ON: Lights turn on automatically via occupancy sensor. Lights turn on manually using a wall control. ADJUST: Lights are controlled in zones. Lights are raised/lowered using a wall control. OFF: Lights turn off automatically after the space has been vacant for 15 minutes. Lights turn off manually using a wall control.
{LS1}	Sequence: Lighting control provides manual switching. ON: Lights turn on manually using a wall control. OFF: Lights turn off manually using a wall control.
{LS2}	SEQUENCE: Lighting control provides occupancy control, time clock control, and manual switching. ON: Lights turn on via time clock. During after hours, lights turn on via occupancy sensor. Lights turn on manually using a wall controller where indicated by switch leg designation. OFF: Lights turn off via time clock. During after hours, lights turn off automatically after the space has been vacant for 15 minutes. Lights designated as night lights dim to 20% output after the space has been vacant for 15 minutes. Manual override will stay active until the next normal operating hour cycle begins.
{LS3}	SEQUENCE: Lighting control provides vacancy control and manual switching. ON: Lights turn on manually using a wall control. OFF: Lights turn off automatically via after the space has been vacant for 15 minutes. Lights turn off manually using a wall control.
{LS4}	SEQUENCE: Lighting control provides occupancy control and manual switching. ON: Lights turn on automatically via occupancy sensor. Lights turn on manually using a wall control. OFF: Lights turn off automatically via after the space has been vacant for 15 minutes. Lights turn off manually using a wall control.

LED LUMINAIRE SCHEDULE

(DESC) DOOR:	DISTRIBUTION:	BEAMWIDTH:	(L/L) LENS/LOUVER:	K19 - KSH19 .156" ACRYLIC
FA - FLAT ALUMINUM	II - ANSI/IES TYPE 2 DISTRIBUTION	NSP - VERY NARROW SPOT	A - .125" ACRYLIC	M - MATTE DIFFUSE CLEAR
FS - FLAT STEEL	III - ANSI/IES TYPE 3 DISTRIBUTION	SP - SPOT	B - BAFFLE/LOUVER	N - NONE
RA - REGRESSED ALUMINUM	IV - ANSI/IES TYPE 4 DISTRIBUTION	MD - MEDIUM	C - CLEAR ALZAK	P - POLYCARBONATE
RS - REGRESSED STEEL	V - ANSI/IES TYPE 5 DISTRIBUTION	WD - WIDE	F - FROSTED ACRYLIC	R - HIGH IMPACT DR ACRYLIC
FINISH:		VWD - VERY WIDE	G - TEMPERED GLASS	SS - SEMI-SPECULAR CLEAR
PAF - PAINT AFTER FABRICATION		WW - WALL WASH	K - KSH12 .125" ACRYLIC	O - OTHER (SEE DESCRIPTION)
CFSA - COLOR-FINISH SELECTION BY ARCHITECT				[DESIGN SPECIFIC BLANKS]

(MTG) MOUNTING:			(WATT) PER: FIX - FIXTURE, FT - FOOT, LAMP	
CL - CEILING SURFACE	RE - RECESSED	WL - WALL	(TYPE) LED	
CV - COVE	SP - SUSPENDED		LED - LIGHT EMITTING DIODE	TLED - TUBULAR LED LAMP
O - OTHER (SEE DESCRIPTION)	SU - SURFACE		OLED - ORGANIC LED	RLED - RETROFIT LED
P - PERIMETER	UC - UNDER CABINET		DLED - DYNAMIC TUNABLE LED	

(TYPE) DRIVER:				
0-10V - 0-10V DIMMING	EM - EMERGENCY BATTERY	LINE - LINE VOLTAGE DIMMING	REM - REMOTE	O - OTHER (SEE DESCRIPTION)

CATALOG NUMBER SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MANUFACTURER AND CATALOG NUMBER ONLY. THE COMPLETE DESCRIPTION AND THE SPECIFICATION SHALL BE COORDINATED WITH THE CATALOG NUMBER TO DETERMINE THE EXACT MATERIAL AND ACCESSORIES TO BE ORDERED. THE FIRST MANUFACTURER LISTED IS THE BASIS OF DESIGN.

VERIFY AND COORDINATE ALL CEILING TYPES WITH LUMINAIRE MOUNTING AND TRIM REQUIREMENTS PRIOR TO THE RELEASE OF THE LUMINAIRE ORDER.
CONFIRM ALL COLORS AND FINISHES OF ALL LUMINAIRE COMPONENTS WITH ARCHITECT AND INTERIOR DESIGNER PRIOR TO THE RELEASE OF THE LUMINAIRE ORDER.
UNLESS INDICATED ON LIGHTING PLANS OR BELOW, REFER TO ARCHITECTURAL AND INTERIOR DESIGN ELEVATIONS, SECTIONS AND DETAILS FOR ALL SUSPENDED AND WALL MOUNTED LUMINAIRE MOUNTING HEIGHTS.

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

ITEM	DESCRIPTION	MTG	DIMENSIONS L	W	H	DIA.	WATT ANSI WATTS	PER	LED TYPE	DELIVERED LUMENS (MIN)	DRIVER VOLTS	TYPE	MANUFACTURER AND MODEL
F1	2' x 2' BACK LIT RECESSED FLAT PANEL. MAXIMUM 2 1/4" HEIGHT. ALUMINUM FRAME.	RE	2'-0"	2'-0"	2 1/4"		28 W	FIX	LED	3500	120 V	0-10V	METALUX CGTX DAYBRITE FLUXPANEL LED SBP OR APPROVED EQUAL
F1B	2' x 2' BACK LIT RECESSED FLAT PANEL. MAXIMUM 2 1/4" HEIGHT. ALUMINUM FRAME.	RE	2'-0"	2'-0"	2 1/4"		40 W	FIX	LED	5000	120 V	0-10V	METALUX CGTX DAYBRITE FLUXPANEL LED SBP OR APPROVED EQUAL
F2	2' x 4' BACK LIT RECESSED FLAT PANEL. MAXIMUM 2 1/4" HEIGHT. ALUMINUM FRAME.	RE	2'-0"	4'-0"	2 1/4"		40 W	FIX	LED	4400	120 V	0-10V	METALUX CGTX DAYBRITE FLUXPANEL LED SBP OR APPROVED EQUAL
F2B	SAME AS F2 WITH LOWER LUMEN PACKAGE.	RE	2'-0"	4'-0"	2 1/4"		30 W	FIX	LED	3400	120 V	0-10V	METALUX CGTX DAYBRITE FLUXPANEL LED SBP OR APPROVED EQUAL
F3	SHALLOW RECESSED ROUND DOWNLIGHT. 3" APERATURE. 50 DEGREE BEAM. WHITE TRIM FINISH. MAXIMUM 3 1/2" HEIGHT. SERVICEABLE FROM BELOW CEILING.	RE			3 77/256"	3"	9 W	FIX	LED	935	120 V	0-10V	USAI BEVELED MINI BASIC PANCAKE OR APPROVED EQUAL
F4	RECESSED ROUND 4" DOWNLIGHT. FLUSH LENS, 65 DEGREE DISTRIBUTION. 1/2" FLANGE. WHITE TEXTURE POWDER COAT TRIM. MAXIMUM 5 1/2" HEIGHT.	RE			5 1/4"	4 1/2"	17 W	FIX	LED	1400	120 V	0-10V	H.E. WILLIAMS 4PR HALO COMMERCIAL HC4 LIGHTOLIER CALCULITE C4RDL OR APPROVED EQUAL
F5	RECESSED ROUND 6" DOWNLIGHT. FLUSH LENS, 65 DEGREE DISTRIBUTION. 1/2" FLANGE. WHITE TEXTURE POWDER COAT TRIM. MAXIMUM 5 1/2" HEIGHT.	RE			5 1/4"	6"	44 W	FIX	LED	4300	120 V	0-10V	H.E. WILLIAMS 6PR HALO COMMERCIAL HC6 LIGHTOLIER CALCULITE C6RDL OR APPROVED EQUAL
F6	SHALLOW RECESSED LINEAR. MAXIMUM 3" HEIGHT. FIELD SELECTABLE CCT AND LUMEN OUTPUT, MEDIUM LUMEN SETTING. PRIOR TO FINAL INSTALLATION, CONTRACTOR SHALL VERIFY LUMEN AND CCT SETTINGS ALIGN WITH THIS SCHEDULE. SEE PLANS FOR LENGTH.	RE	<varies>	6"	2 3/8"		7 W	FT	LED	800	120 V	0-10V	METALUX RBG OR APPROVED EQUAL
F6B	SHALLOW RECESSED LINEAR. MAXIMUM 3" HEIGHT. FIELD SELECTABLE CCT AND LUMEN OUTPUT, LOW LUMEN SETTING. PRIOR TO FINAL INSTALLATION, CONTRACTOR SHALL VERIFY LUMEN AND CCT SETTINGS ALIGN WITH THIS SCHEDULE. SEE PLANS FOR LENGTH.	RE	<varies>	6"	2 3/8"		5 W	FT	LED	550	120 V	0-10V	METALUX RBG OR APPROVED EQUAL
F7	SHALLOW 2" RECESSED LINEAR WITH 90 DEGREE CONNECTORS AND SECTIONS IN WALL AS NECESSARY. MAXIMUM 3 5/8" HEIGHT. REFER TO ARCHITECTURAL ELEVATIONS. TRIMLESS MUD-IN MOUNTING.	RE	<varies>	2"	3 5/8"		3 W	FT	LED	290	120 V	0-10V	NEO-RAY DEFINE 2 RECESSED/PERIMETER CORONET REVEAL DIRECT OR APPROVED EQUAL
F7B	SAME AS F7 WITH HIGHER LUMEN PACKAGE.	RE	4'-0"	2"	3 5/8"		5 W	FT	LED	485	120 V	0-10V	NEO-RAY DEFINE 2 RECESSED/PERIMETER CORONET REVEAL DIRECT OR APPROVED EQUAL
F8	LOW PROFILE SURFACE MOUNT LINEAR WITH ROUND FROSTED ACRYLIC LENS. SURFACE CLIP MOUNTING WITH REMOTE 0-10V DRIVER.		4'-0"	1 1/2"	5/8"		12 W	FIX	LED		120 V		HE WILLIAMS SL OR APPROVED EQUAL
F9	4' SUSPENDED LOW PROFILE ENCLOSED AND GASKETED INDUSTRIAL WITH MOLDED IN PLACE GASKET, FIBERGLASS HOUSING, STAINLESS STEEL LATCHES. WIDE DISTRIBUTION, CLEAR IMPACT RESISTANT ACRYLIC LENS. IP66 RATED.	SP	4'-0"	6 3/4"	4 1/4"		35 W	FIX	LED	4200	120 V	0-10V	HE WILLIAMS 97 METALUX VT2 LED LITHONIA FEM OR APPROVED EQUAL
F10	CYLINDRICAL VANITY LIGHT, ALUMINUM EXTRUSION, ACRYLIC DIFFUSER. INSTALL HORIZONTALLY. END CAP 2.	WL	2'-0"	3"	3 1/4"		16 W	FIX	LED	1800	120 V	0-10V	BROWNLEE FLOW-RD LITHONIA FMVCCLS HUBBELL LITECONTROL 67-W-D OR APPROVED EQUAL
F11	LENSED STRIP LIGHT, DIE-FORMED COLD-ROLLED STEEL HOUSING. ROUND SEMI-FROST LENS.	SP	4'-0"	2 3/4"	2 3/4"		20 W	FIX	LED	3000	120 V	0-10V	HE WILLIAMS 76R OR APPROVED EQUAL
X1	SINGLE FACE EXIT SIGN, EDGE LIT WITH RED LETTERS. EMERGENCY INTEGRAL NI-CAD BATTERY WITH SELF TEST AND DIAGNOSTICS. ARROWS AND MOUNTING AS INDICATED ON PLANS. BRUSHED ALUMINUM FINISH.	CL	1'-1 3/4"	4"	11"		1 W	FIX	LED	LED	120 V	EM	HE WILLIAMS EXIT/EL SURE LITES EUX OR APPROVED EQUAL
X2	DOUBLE FACE EXIT SIGN, EDGE LIT WITH RED LETTERS. EMERGENCY INTEGRAL NI-CAD BATTERY WITH SELF TEST AND DIAGNOSTICS. ARROWS AND MOUNTING AS INDICATED ON PLANS. BRUSHED ALUMINUM FINISH.	CL	1'-1 3/4"	4"	11"		1 W	FIX	LED	LED	120 V	EM	HE WILLIAMS EXIT/EL SURE LITES EUX OR APPROVED EQUAL

EX. GEN-300

ENCLOSURE :
ALTERNATOR kW: 300
ALTERNATOR kVA: 375

SOLID NEUTRAL
GROUND BUS

VOLTS: 480/277 Wye
PHASE: 3
WIRE: 4
SCCR: 65 kA
ISC UNKNOWN 0.00 kA

NOTES:

CKT	LOAD DESCRIPTION	Load	POLES	FRAME	TRIP	TYPE	ACC.	WIRE AND RACEWAY	CIRCUIT KEY
1	EX. ATS	0 kVA	3	500 A	500 A			(2) SETS OF 3#250 & 1#2 EGC EACH IN 2" C.	
2	TR-EM	4.98 kVA	3	125 A	125 A			3#1 & 1#6 EGC IN 1 1/4" C.	

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Lighting	4.28 kVA	100.00%	4.28 kVA		
				TOTAL CONNECTED LOAD:	4.28 kVA
				TOTAL ESTIMATED DEMAND LOAD:	4.28 kVA
				TOTAL CONNECTED AMPS:	5.15 A
				TOTAL ESTIMATED DEMAND AMPS:	5.1 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

TRANSFER SWITCH SCHEDULE

SWITCH TYPE:	ACCESSORIES & OPTIONS
AUTO - AUTOMATIC	EE - ENGINE EXERCISER
B/I - AUTOMATIC WITH BYPASS ISOLATION	IM - IN-PHASE MONITOR
MAN - MANUAL OPERATION	SH - STRIP HEATER WITH THERMOSTAT
PGLB - PORTABLE GENERATOR & LOAD BANK CABINET	RM - REMOTE ANNUNCIATOR
STAT - STATIC SOLID STATE	RC - REMOTE CONTROL CIRCUITS
SWITCH CONFIGURATION (CONFIG):	EL - ELEVATOR EMERGENCY TO NORMAL PRESIGNAL
CT - CLOSED TRANSITION	SP - SERIAL COMMUNICATIONS PORT
DT - DELAYED TRANSITION - CENTER OFF	PM - POWER MONITORING METER
30 - 30 CYCLE WITHSTAND RATING	RTC - REMOTE TRANSFER CONTROL FROM FIRE COMMAND CENTER
SE - SERVICE ENTRANCE LISTED	RMC - REMOTE ANNUNCIATION AT FIRE COMMAND CENTER
SN - SWITCHED NEUTRAL	TI - TRANSFER INHIBIT
ON - OVERLAPPING SWITCHED NEUTRAL	LS - LOAD SHED (PROVIDE DELAYED TRANSISTION - CENTER OFF CONFIGURATION)
DN - SOLID NEUTRAL	

ITEM	SWITCH TYPE AND CONFIG	VOLTAGE	POLES	AMPS	SCCR	ENCLOSURE	REQUIRED ACCESSORIES & OPTIONS	PRIORITY GROUP	BRANCH	COMMENTS
ATS-0ELD01	B/I,DN	208 V	3	250 A	35 kA	NEMA 1	EE, RM	1	EMERGENCY	

DISCONNECT AND STARTER SCHEDULE

NOTE: ALL DISCONNECTS (EXCEPT MANUAL STARTERS) SHALL BE HEAVY DUTY TYPE.

DISCONNECT TYPE:	ACCESSORIES & OPTIONS	
FU - FUSED	SA - STANDARD ACCESSORIES (INCLUDES * ITEMS)	HL - HANDLE PADLOCK HASP
NF - NON-FUSED	*CT - CONTROL TRANSFORMER, FUSED 120V	TO - MELTING THERMAL OVERLOADS (1 PHASE)
CB - CIRCUIT BREAKER	*HA - HAND-OFF-AUTO IN DOOR	GP - GREEN (OFF) PILOT LIGHT IN DOOR
	*RP - RED (RUN) PILOT LIGHT IN DOOR	FA - 4-CONVERTIBLE AUXILIARY CONTACTS
	*TA - TWO CONVERTIBLE AUXILIARY CONTACTS	EI - ELECTRICAL INTERLOCK (2)-N.O. & (2)-N.C.

ITEM	DISCONNECT TYPE & RATING TYPE	RATING	TRIP RATING	VOLTAGE	POLES	STARTER NEMA SIZE	STARTER TYPE	ENCLOSURE	REQUIRED ACCESSORIES & OPTIONS	COMMENTS
FDS-TR-EM-PRI	FU	125 A	125 A	480 V	3			NEMA 1		
FDS-TR-EM-SEC	FU	250 A	250 A	208 V	3			NEMA 1		
DS-CHEK-PHP-0001	NF	30 A		208 V	3			NEMA 1		
DS-CHEK-PHP-0002	NF	30 A		208 V	3			NEMA 1		
DS-CHEK-PHP-0003	NF	30 A		208 V	3			NEMA 1		
DS-CHEK-AHU-2002-RETURN FAN 1	NF	30 A	30 A	208 V	3			NEMA 1		
DS-CHEK-AHU-2002-RETURN FAN 3	NF	30 A	30 A	208 V	3			NEMA 1		
DS-CHEK-AHU-2002-RETURN FAN 2	NF	30 A	30 A	208 V	3			NEMA 1		
DS-CHEK-AHU-2002-RETURN FAN 4	NF	30 A	30 A	208 V	3			NEMA 1		
DS-CHEK-AHU-2002-SUPPLY FAN 3	NF	50 A	50 A	208 V	3			NEMA 1		
DS-CHEK-AHU-2002-SUPPLY FAN 1	NF	50 A	50 A	208 V	3			NEMA 1		
DS-CHEK-AHU-2002-SUPPLY FAN 4	NF	50 A	50 A	208 V	3			NEMA 1		
DS-CHEK-AHU-2002-SUPPLY FAN 2	NF	50 A	50 A	208 V	3			NEMA 1		
DS-CHEK-AHU-2001-SUPPLY FAN 1	NF	70 A	70 A	208 V	3			NEMA 1		
DS-CHEK-AHU-2001-SUPPLY FAN 2	NF	70 A	70 A	208 V	3			NEMA 1		
DS-CHEK-PCP-0001	NF	100 A	100 A	208 V	3			NEMA 1		

TRANSFORMER SCHEDULE

TYPE:		ACCESSORIES & OPTIONS
K1 - DOE 2016 DRY TYPE	AUT - AUTOTRANSFORMER	AL - ALUMINUM WINDINGS
K4 - K4 RATED DRY TYPE	BB - BUCK BOOST	CU - COPPER WINDINGS
K13 - K13 RATED DRY TYPE	LIQ - LIQUID FILLED	RS - EPOXY RESIN ENCAPSULATED
HM - HARMONIC MITIGATING		FL - FILTERED
PE - NEMA PREMIUM EFFICIENCY		NL - 200% RATED NEUTRAL

ITEM	KVA RATING	TYPE	ENCLOSURE	MAX. TEMP. RISE C.	PRIMARY VOLTS	PRIMARY PH	SECONDARY VOLTS	SECONDARY PH	REQUIRED ACCESSORIES & OPTIONS	COMMENTS
TR-EM	75 kVA	K-1	NEMA 1	150	480	3	120/208	3	CU	

EMERGENCY POWER SUPPLY SYSTEM - SEQUENCE OF OPERATION

EMERGENCY POWER SUPPLY START: [GENERATOR START UPON LOSS OF UTILITY POWER]

LOAD TRANSFER STEPS:

PRIORITY GROUP	BRANCH	SEQUENCE OF OPERATION
1	EMERGENCY	GENERATOR START DELAY: 1 SECOND | 1-6 SECONDS ADJUSTABLE RANGE TRANSFER TO EMERGENCY DELAY: 1 SECOND | 0 - 60 MINUTES, 59 SECONDS ADJUSTABLE RANGE TRANSFER TO NORMAL DELAY: 300 SECONDS | 0 - 60 MINUTES, 59 SECONDS ADJUSTABLE RANGE LOAD SHED: NO
2	OPTIONAL STANDBY	GENERATOR START DELAY: 1 SECOND | 1-6 SECONDS ADJUSTABLE RANGE TRANSFER TO EMERGENCY DELAY: 60 SECONDS | 0 - 60 MINUTES, 59 SECONDS ADJUSTABLE RANGE TRANSFER TO NORMAL DELAY: 900 SECONDS | 0 - 60 MINUTES, 59 SECONDS ADJUSTABLE RANGE LOAD SHED: NO

VARIABLE FREQUENCY DRIVE SCHEDULE

STARTER TYPE:	ACCESSORIES & OPTIONS (REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION):	
PWM - PULSE WIDTH MODULATED	SC - SHIELDED VFD CABLE	RSS - REMOTE START-STOP, DRIVE RUN, FAULT TRIP
(6,12,18 PULSE PWM REQUIRED)	LPF - LEADING POWER FACTOR MANAGEMENT	**SA - STANDARD ACCESSORIES FOR ALL DRIVES**
AFE - ACTIVE FRONT END / ULTRA	DB - DYNAMIC BRAKING	(INCLUDES * ITEMS)
LOW HARMONIC (REQUIRED)	PHF - PASSIVE HARMONIC FILTER	* MANUAL SPEED ADJUSTMENT
LINE DISCONNECT:	AHF - ACTIVE HARMONIC FILTER	* ELECTRONIC THERMAL OVERLOADS
DS - DISCONNECT SWITCH	CA - TWO CONVERTIBLE AUXILIARY CONTACTS	* CONTROL TRANSFORMER, FUSED, 120V
FDS - FUSED DISCONNECT SWITCH	TO - MELTING THERMAL OVERLOADS	* HAND-OFF-AUTO DOOR SWITCH
CB - CIRCUIT BREAKER	MMO - MULTIPLE MOTOR OVERLOADS	* SKIP FREQUENCY CAPABILITY
	FCH - FORCED COOLING / HEATING	* HARMONIC DISTORTION PERFORMANCE CRITERIA
		REFER TO SPECIFICATIONS

ITEM	LINE DISC.	DRIVE BYPASS	SCCR	CIRCUIT VOLTAGE	POLES	DRIVE HP RATING	DRIVE TYPE	TORQUE TYPE	ENCLOSURE	REQUIRED ACCESSORIES & OPTIONS	COMMENTS
VFD-CHEK-PHP-0001	DS	3 CONTACT	100 kA	208 V	3	5	PWM	VARIABLE	NEMA 1	SA	PROVIDED BY TEMPERATURE CONTROLS CONTRACTOR.
VFD-CHEK-PHP-0002	DS	3 CONTACT	100 kA	208 V	3	5	PWM	VARIABLE	NEMA 1	SA	PROVIDED BY TEMPERATURE CONTROLS CONTRACTOR.
VFD-CHEK-PHP-0003	DS	3 CONTACT	100 kA	208 V	3	5	PWM	VARIABLE	NEMA 1	SA	PROVIDED BY TEMPERATURE CONTROLS CONTRACTOR.
VFD-CHEK-PCP-0001	DS	3 CONTACT	100 kA	208 V	3	15	PWM	VARIABLE	NEMA 1	SA	PROVIDED BY TEMPERATURE CONTROLS CONTRACTOR.
VFD-CHEK-AHU-2002-RETURN	DS	3 CONTACT	100 kA	208 V	3	20	PWM	VARIABLE	NEMA 1	SA	PROVIDED BY TEMPERATURE CONTROLS CONTRACTOR.
VFD-CHEK-AHU-2001-SUPPLY	DS	3 CONTACT	100 kA	208 V	3	25	PWM	VARIABLE	NEMA 1	SA	PROVIDED BY TEMPERATURE CONTROLS CONTRACTOR.
VFD-CHEK-AHU-2002-SUPPLY	DS	3 CONTACT	100 kA	208 V	3	30	PWM	VARIABLE	NEMA 1	SA	PROVIDED BY TEMPERATURE CONTROLS CONTRACTOR.

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BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS

#	Date / Description
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Sheet Title:
ELECTRICAL SCHEDULES

Sheet #:
E6.00

SWITCHBOARD CHEK-0NLS01

ENCLOSURE: NEMA 1
FED FROM: 0 A/0P @
LOCATION: MECHANICAL 08

SOLID NEUTRAL
GROUND BUS

MAIN: 2,500 A MLO
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 65 kA
ISC: 34.41 kA

NOTES: MAXIMUM DIMENSIONS: 50"W x 30"D x 90"H

CKT	LOAD DESCRIPTION	Load	POLES	FRAME	TRIP	TYPE	ACC.	WIRE AND RACEWAY	CIRCUIT KEY
1	EX. CHEK BANW BCP01	26.24 kVA	3	100 A	100 A			4#3 & 1#8 EGC IN 1 1/4" C.	*N
2	EX. CHEK BANW BCP02	7.92 kVA	3	60 A	60 A			4#6 & 1#10 EGC IN 1" C.	*N
3	CHEK-0NLD02	159.72 kVA	3	600 A	600 A	LSI		(2) SETS OF 4#350 & 1#1 EGC EACH IN 2 1/2" C.	
4	CHEK-0NLD01	232.07 kVA	3	800 A	800 A	LSI		(2) SETS OF 4#600 & 1#1/0 EGC EACH IN 3 1/2" C.	
5	CHEK-2NLP02	109.38 kVA	3	400 A	400 A	LSI		4#600 & 1#3 EGC IN 3 1/2" C.	
6	CHEK-2NLP03	64.78 kVA	3	400 A	400 A	LSI		4#600 & 1#3 EGC IN 3 1/2" C.	
7									
8	CHEK BANW DPN01	12.6 kVA	3	250 A	225 A	LSI		4#4/0 & 1#4 EGC IN 2 1/2" C.	*N
9	CHEK BANW BCP00	64.11 kVA	3	250 A	225 A	LSI		4#4/0 & 1#4 EGC IN 2 1/2" C.	*N
10	ATS-0ELD01	4.98 kVA	3	250 A	250 A			4#250 & 1#4 EGC IN 2 1/2" C.	
11	125A SPACE	--	3	--	--	--	--	--	--
12	EX. CHEK BANW BCPU0	3 kVA	3	100 A	100 A			4#3 & 1#8 EGC IN 1 1/4" C.	*N
13	EX. XLPD DATA CENTER 01SW BCP08	18 kVA	3	100 A	100 A	--	--	--	--
14	CHEK-PCP-0001	16.7 kVA	3	100 A	100 A			3#1 & 1#8 EGC IN 1 1/4" C.	
15	CHEK-2NLP04	32.64 kVA	3	400 A	400 A	LSI		4#600 & 1#3 EGC IN 3 1/2" C.	
16	600A SPACE	--	3	--	--	--	--	--	--
17	EX.CHEK BANW DPN00	48.48 kVA	3	600 A	600 A	LSI		(2) SETS OF 4#350 & 1#1 EGC EACH IN 2 1/2" C.	*N

LOAD SUMMARY (INCLUDES ALL TUBS IN THIS PANEL)

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
HVAC	156.62 kVA	100.00%	156.62 kVA		
Lighting	62.892 kVA	100.00%	62.892 kVA	**TOTAL CONNECTED LOAD:**	799.92 kVA
Power	91.682 kVA	100.00%	91.682 kVA	**TOTAL ESTIMATED DEMAND LOAD:**	653.709 kVA
Receptacles	204.2 kVA	52.45%	107.1 kVA	**TOTAL CONNECTED AMPS:**	2220.37 A
Spare	158.73 kVA	80.00%	126.984 kVA	**TOTAL ESTIMATED DEMAND AMPS:**	1,814.5 A
Receptacles - Labs	125.8 kVA	86.19%	108.43 kVA		

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES: *N = NEW BREAKER FOR EXISTING LOAD. CONTRACTOR SHALL EXTEND EXISTING CIRCUIT TO NEW PANEL.

DISTRIBUTION PANEL CHEK-0NLD01

ENCLOSURE: NEMA PB 1
FED FROM: 800 A/3P LSI @ CHEK-0NLS01
LOCATION: MECH 015

SOLID NEUTRAL
GROUND BUS

MAIN: 800 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 35 kA
ISC: 23.00 kA

NOTES:

CKT	LOAD DESCRIPTION	Load	POLES	FRAME	TRIP	TYPE	ACC.	WIRE AND RACEWAY	CIRCUIT KEY
1	CHEK BANW BCP03	9.4 kVA	3	100 A	100 A			4#3 & 1#8 EGC IN 1 1/4" C.	
2	PP2	10.92 kVA	3	250 A	225 A	LSI		4#4/0 & 1#4 EGC IN 2 1/2" C.	
3	BCP10	55.82 kVA	3	250 A	225 A	LSI		4#4/0 & 1#4 EGC IN 2 1/2" C.	
4	CHEK-1NLP01	19.62 kVA	3	250 A	225 A	LSI		4#4/0 & 1#4 EGC IN 2 1/2" C.	
5	CHEK-1NLP02	25.08 kVA	3	150 A	150 A	LSI		4#1/0 & 1#6 EGC IN 1 1/2" C.	
6	CHEK-2NLP01	30.82 kVA	3	150 A	150 A	LSI		4#1/0 & 1#6 EGC IN 1 1/2" C.	
7	CHEK-3NLP01	29.78 kVA	3	150 A	150 A	LSI		4#1/0 & 1#6 EGC IN 1 1/2" C.	
8	CHEK-MNLP05	23.82 kVA	3	150 A	150 A	LSI		4#3/0 & 1#4 EGC IN 2" C.	*M
9	EX. PANEL LP1 & LP2	26.82 kVA	3	250 A	225 A	LSI		4#350 & 1#1 EGC IN 2 1/2" C.	*N
10									

LOAD SUMMARY (INCLUDES ALL TUBS IN THIS PANEL)

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
HVAC	19.3 kVA	100.00%	19.3 kVA		
Lighting	22.272 kVA	100.00%	22.272 kVA	**TOTAL CONNECTED LOAD:**	232.07 kVA
Power	9.54 kVA	100.00%	9.54 kVA	**TOTAL ESTIMATED DEMAND LOAD:**	167.112 kVA
Receptacles	119.96 kVA	54.17%	64.98 kVA	**TOTAL CONNECTED AMPS:**	644.17 A
Spare	46.6 kVA	80.00%	37.28 kVA	**TOTAL ESTIMATED DEMAND AMPS:**	463.9 A
Receptacles - Labs	14.4 kVA	95.42%	13.74 kVA		

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES: *M = PANEL INCLUDED IN MEZZANINE ALTERNATE ONLY. *N = NEW BREAKER FOR EXISTING LOAD. CONTRACTOR SHALL EXTEND EXISTING CIRCUIT TO NEW PANEL.

DISTRIBUTION PANEL CHEK-0NLD02

ENCLOSURE: NEMA PB 1
FED FROM: 600 A/3P LSI @ CHEK-0NLS01
LOCATION: MECH 015

SOLID NEUTRAL
GROUND BUS

MAIN: 600 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 35 kA
ISC: 22.08 kA

NOTES:

CKT	LOAD DESCRIPTION	Load	POLES	FRAME	TRIP	TYPE	ACC.	WIRE AND RACEWAY	CIRCUIT KEY
1	CHEK-0NLP01	18.22 kVA	3	100 A	100 A			4#1 & 1#8 EGC IN 1 1/2" C.	
2	CHEK-1NLP03	36.92 kVA	3	250 A	225 A	LSI		4#300 & 1#2 EGC IN 2 1/2" C.	
3	CHEK-1NLP04	17.98 kVA	3	150 A	150 A	LSI		4#3/0 & 1#4 EGC IN 2" C.	
4	CHEK-MNLP01	25.8 kVA	3	150 A	150 A	LSI		4#1/0 & 1#6 EGC IN 1 1/2" C.	
5	CHEK-MNLP02	9.66 kVA	3	250 A	225 A	LSI		4#4/0 & 1#4 EGC IN 2 1/2" C.	
6	CHEK-MNLP03	13.01 kVA	3	100 A	100 A			4#1/0 & 1#4 EGC IN 2" C.	
7	CHEK-MNLP04	16.13 kVA	3	250 A	225 A	LSI		4#350 & 1#1 EGC IN 2 1/2" C.	
8	EXISTING ELEVATOR	22 kVA	3	125 A	125 A	LSI		3#1 & 1#6 EGC IN 1 1/4" C.	
9									
10									

LOAD SUMMARY (INCLUDES ALL TUBS IN THIS PANEL)

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
HVAC	48.86 kVA	100.00%	48.86 kVA		
Lighting	7.591 kVA	100.00%	7.591 kVA	**TOTAL CONNECTED LOAD:**	159.72 kVA
Power	35.132 kVA	100.00%	35.132 kVA	**TOTAL ESTIMATED DEMAND LOAD:**	135.004 kVA
Receptacles	53.64 kVA	59.32%	31.82 kVA	**TOTAL CONNECTED AMPS:**	443.35 A
Spare	14.5 kVA	80.00%	11.6 kVA	**TOTAL ESTIMATED DEMAND AMPS:**	374.7 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

PANEL CHEK-0NLP01

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 100 A/3P @ CHEK-0NLD02
LOCATION: MECH 015

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 100 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 22 kA
ISC: 15.45 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	P	OCPD AMPS	LOAD DESCRIPTION	CKT NO.	KEY
	1	CHEK-PHP-0001	30 A	3	10	10	10	0.49	2.01	2.03					0.45	10	10	10	3	30 A	CHEK-PHP-0002	2	
--	3	--	--	--	--	--	--	--			2.01	2.03			--	--	--	--	--	--	--	4	--
--	5	--	--	--	--	--	--	--					2.01	2.03	--	--	--	--	--	--	--	6	--
	7	CHEK-PHP-0003	30 A	3	10	10	10	0.39	2.03													8	
--	9	--	--	--	--	--	--	--			2.03											10	
--	11	--	--	--	--	--	--	--					2.03									12	
	13																					14	
	15																					16	
	17																					18	
	19																					20	
	21																					22	
	23																					24	
								Total Load:	6.07 kVA		6.07 kVA		6.07 kVA										
								Total Amps:	50.60		50.60		50.60										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
HVAC	18.216 kVA	100.00%	18.216 kVA		
				TOTAL CONNECTED LOAD:	18.22 kVA
				TOTAL ESTIMATED DEMAND LOAD:	18.216 kVA
				TOTAL CONNECTED AMPS:	50.56 A
				TOTAL ESTIMATED DEMAND AMPS:	50.6 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

EX. DISTRIBUTION PANEL CHEK BANW DPN00

ENCLOSURE: NEMA PB 1
FED FROM: 600 A/3P LSI @ CHEK-0NLS01
LOCATION: MECHANICAL 08

SOLID NEUTRAL
GROUND BUS

MAIN: 600 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 10 kA
ISC: 29.13 kA

NOTES: PANEL ALSO REFERRED TO AS 'MDP-N'. SQUARE D I-LINE PANELBOARD, CATALOG NUMBER 26648-3.

CKT	LOAD DESCRIPTION	Load	POLES	FRAME	TRIP	TYPE	ACC.	WIRE AND RACEWAY	CIRCUIT KEY
1	EX. PANEL NLPF 2ND FLOOR RM 204	22.98 kVA	3	250 A	200 A			4#3/0 & 1#6 EGC IN 2" C.	
2									
3	EX. PANEL N-1 BY COMPUTER LAB - BCP01	25.5 kVA	3	250 A	200 A			4#3/0 & 1#6 EGC IN 2" C.	
4									
5									
6									

LOAD SUMMARY (INCLUDES ALL TUBS IN THIS PANEL)

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Lighting	11.7 kVA	100.00%	11.7 kVA		
Power	7.2 kVA	100.00%	7.2 kVA	**TOTAL CONNECTED LOAD:**	48.48 kVA
Receptacles	4.08 kVA	100.00%	4.08 kVA	**TOTAL ESTIMATED DEMAND LOAD:**	43.38 kVA
Spare	25.5 kVA	80.00%	20.4 kVA	**TOTAL CONNECTED AMPS:**	134.57 A
				TOTAL ESTIMATED DEMAND AMPS:	120.4 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

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MSU Project #: 231023-069

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Issue Date: **1/10/2025**

Drawn By: **Author**

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Sheet Title:

ELECTRICAL PANEL SCHEDULES

Sheet #:

E6.01

PANEL CHEK-1NLP01

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 225 A/3P LSI @ CHEK-0NLD01
LOCATION:

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 225 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 22 kA
ISC: 13.12 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	OCPD AMPS	P	LOAD DESCRIPTION	CKT NO.	KEY
	1	RCPTS RM 153, 153A	20 A	1	10	10	10	1.99	1.2	1.08					1.42	12	12	12	1	20 A	RCPTS RM 160A, 160B	2	
	3	RCPTS RM 153A, 153B	20 A	1	12	12	12	2.66			1.26	1.08			1.95	12	12	12	1	20 A	RCPTS RM 160B, 160C	4	
	5	RCPTS RM 153B, CORR 198, ELEV	20 A	1	12	12	12	1.47					0.9	0.9	2	12	12	12	1	20 A	RCPTS RM 160D, 161	6	
	7	RCPTS RM DATA 163T	20 A	1	12	12	12	1.84	1.08	0.9					2.11	12	12	12	1	20 A	RCPTS RM 162, 162A	8	
	9	RCPTS RM DATA 163T, 194	20 A	1	12	12	12	1.65			0.9	1.08			1.9	12	12	12	1	20 A	RCPTS RM 162B, 162C	10	
	11	RCPTS RM 160	20 A	1	10	10	10	2.35					1.38	1.08	1.53	12	12	12	1	20 A	RCPTS RM 162C, 162D	12	
	13	RCPTS RM 161A	20 A	1	12	12	12	1.91	0.72	0.9					2.54	12	12	12	1	20 A	RCPTS RM 161	14	
	15	LTG RM 162, 162A - 162D	20 A	1	12	12	12	1.08			0.48	0.54			1.37	12	12	12	1	20 A	LTG RM 160A - 160D, 161	16	
	17	LTG RM 160, 161A, 163T, 194	20 A	1	12	12	12	0.62					0.33	0.4	0.51	12	12	12	1	20 A	LTG RM 160, 198 (LINEAR)	18	
	19	LTG RM 153, 153A, 153B, 198	20 A	1	12	12	12	1.5	0.4													20	
	21	CONTROL XFMR 166A	30 A	1	10	10	10	1.04			3											22	
	23																					24	
	25																					26	
	27																					28	
	29																					30	
	31																					32	
	33																					34	
	35																					36	
	37																					38	
	39																					40	
	41																					42	
								Total Load:	6.28 kVA		8.34 kVA		4.99 kVA										
								Total Amps:	54.03		71.18		41.59										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Lighting	2.158 kVA	100.00%	2.158 kVA		
Power	3 kVA	100.00%	3 kVA	**TOTAL CONNECTED LOAD:**	19.62 kVA
Receptacles	14.46 kVA	84.58%	12.23 kVA	**TOTAL ESTIMATED DEMAND LOAD:**	17.388 kVA
				TOTAL CONNECTED AMPS:	54.45 A
				TOTAL ESTIMATED DEMAND AMPS:	48.3 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

PANEL CHEK-1NLP02

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 150 A/3P LSI @ CHEK-0NLD01
LOCATION:

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 150 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 10 kA
ISC: 7.92 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	OCPD AMPS	P	LOAD DESCRIPTION	CKT NO.	KEY
	1	RCPTS RM 162G	20 A	1	12	12	12	1.59	0.9	1.08					2.25	12	12	12	1	20 A	RCPTS RM 163F, 163G	2	
	3	RCPTS RM 162H	20 A	1	12	12	12	1.29			0.9	1.08			2.64	12	12	12	1	20 A	RCPTS RM 163G, 163H	4	
	5	RCPTS RM 163D, 162E	20 A	1	12	12	12	1.86					1.08	1.08	1.99	10	10	10	1	20 A	RCPTS RM 163J, 163K	6	
	7	RCPTS RM 163C, 162D	20 A	1	12	12	12	2.55	1.08	1.08					2.36	10	10	10	1	20 A	RCPTS RM 163K, 164A	8	
	9	RCPTS RM 163, 163B	20 A	1	10	10	10	1.87			1.08	1.08			2.03	10	10	10	1	20 A	RCPTS RM 164, 164B	10	
	11	RCPTS RM 161, 163A	20 A	1	12	12	12	2.73					0.9	1.08	2.5	12	12	12	1	20 A	RCPTS RM 164C, 164D	12	
	13	RCPTS RM 161B	20 A	1	12	12	12	2.72	1.08	1.08					1.88	10	10	10	1	20 A	RCPTS RM 164D, 164E	14	
	15	RCPTS RM 161	20 A	1	12	12	12	1.83			0.54	1.08			2.68	12	12	12	1	20 A	RCPTS RM 164F, 164G	16	
	17	COPIER RM 161	20 A	1	10	10	10	2.5					1	1.08	2.01	10	10	10	1	20 A	RCPTS RM 164G, 164H	18	
	19	COPIER RM 161	20 A	1	10	10	10	2.33	1	1.08					2.37	10	10	10	1	20 A	RCPTS RM 164J, 164K	20	
	21	COPIER RM 161	20 A	1	10	10	10	2.29			1	1.08			2.59	10	10	10	1	20 A	RCPTS RM 164K, 164L	22	
	23	LTG RM 164F - 164L	20 A	1	12	12	12	1.52					0.48	0.57	2.42	12	12	12	1	20 A	LTG RM 164, 164A - 164E	24	
	25	LTG RM 163, 163F - 163K	20 A	1	12	12	12	2.61	0.69	0.53					1.94	12	12	12	1	20 A	LTG RM 161, 161B, 163A - 163C	26	
	27	LTG RM 162G, 162H, 163D, 163E, 165	20 A	1	12	12	12	0.69				0.36										28	
	29																					30	
	31																					32	
	33																					34	
	35																					36	
	37																					38	
	39																					40	
	41																					42	
								Total Load:	9.60 kVA		8.20 kVA		7.27 kVA										
								Total Amps:	81.22		69.57		60.57										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Lighting	2.636 kVA	100.00%	2.636 kVA		
Power	0 kVA	0.00%	0 kVA	**TOTAL CONNECTED LOAD:**	25.08 kVA
Receptacles	22.44 kVA	72.28%	16.22 kVA	**TOTAL ESTIMATED DEMAND LOAD:**	18.856 kVA
				TOTAL CONNECTED AMPS:	69.60 A
				TOTAL ESTIMATED DEMAND AMPS:	52.3 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

PANEL CHEK-1NLP03

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 225 A/3P LSI @ CHEK-0NLD02
LOCATION: ELEC 130A

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 225 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 10 kA
ISC: 6.91 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	OCPD AMPS	P	LOAD DESCRIPTION	CKT NO.	KEY
	1	RCPTS RM 165A, 165B	20 A	1	10	10	10	2.35	1.08	1.08					1.22	12	12	12	1	20 A	RCPTS RM 122, 124	2	
	3	RCPTS RM 165B, 165C	20 A	1	10	10	10	1.9			1.08	1.08			1.63	12	12	12	1	20 A	RCPTS RM 120, 122	4	
	5	RCPTS RM 165D, 165E	20 A	1	12	12	12	2.93					1.08	1.08	2.06	12	12	12	1	20 A	RCPTS RM 118, 116	6	
	7	RCPTS RM 165E, 165F	20 A	1	12	12	12	2.18	1.08	1.08					2.39	12	12	12	1	20 A	RCPTS RM 116, 114	8	
	9	VEND RM 197A	20 A	1	12	12	12	1.66			0.8	1.08			2.37	12	12	12	1	20 A	RCPTS RM 112, PASS. 122	10	
	11	VEND RM 197A	20 A	1	12	12	12	1.59					0.8	1.08	0.67	12	12	12	1	20 A	RCPTS RM 127, 129	12	
	13	RCPTS RM 130, 197	20 A	1	12	12	12	1.23	0.9	1.08					0.96	12	12	12	1	20 A	RCPTS RM 125, 127	14	
	15	RCPTS RM 197	20 A	1	12	12	12	2.43			1.08	1.08			1.28	12	12	12	1	20 A	RCPTS RM 123, 121	16	
	17	VEND RM 197	20 A	1	12	12	12	1.22					1.08	1.08	1.79	12	12	12	1	20 A	RCPTS RM 121, 119	18	
	19	VEND RM 197	20 A	1	12	12	12	1.56	1.08	1.08					2.02	12	12	12	1	20 A	RCPTS RM 117, 115	20	
	21	RCPTS RM 197	20 A	1	12	12	12	1.92			1.08	1.08			2.53	12	12	12	1	20 A	RCPTS RM 115, 113	22	
	23	RCPTS RM 197	20 A	1	10	10	10	1.93					0.9	0.84	2.35	12	12	12	1	20 A	RCPTS RM 111	24	
	25	RCPTS RM 110, 197, 199	20 A	1	10	10	10	2.5	0.9	0.36					0.9	12	12	12	1	20 A	FB RM 111	26	
	27	RCPTS RM 110A, 110B	20 A	1	10	10	10	1.98			1.08	0.84			2.22	12	12	12	1	20 A	RCPTS RM 111	28	
*E	29	EX. CKT RM 100	20 A	1	10	10	10	2.01					0.72	1	2.16	12	12	12	1	20 A	COPIER PASSAGE 122	30	
*E	31	EX. CKT RM 100	20 A	1	10	10	10	2.06	0.72	1					2.39	12	12	12	1	20 A	COPIER PASSAGE 122	32	
*E	33	EX. CKT RM 100	20 A	1	10	10	10	2.11			0.72	0.37			1.02	12	12	12	1	20 A	LTG RM 165A - 165F	34	
*E	35	EX. CKT RM 100	20 A	1	10	10	10	2.17					0.72	0.39	2.2	12	12	12	1	20 A	LTG RM 199	36	
	37	LTG RM 110, 197 (LINEAR)	20 A	1	12	12	12	0.59	0.17	0.46					1.6	12	12	12	1	20 A	LTG RM 110, 110A, 110B, 111	38	
	39	LTG RM 180, 199A	20 A	1	12	12	12	1.77			0.29	0.43			0.68	12	12	12	1	20 A	LTG RM 112, 114, 116, 118, 120, 122	40	
	41	LTG RM 115, 117, 119, 121 - 123	20 A	1	12	12	12	1					0.47	0.54	2.27	12	12	12	1	20 A	LTG COMMONS 197	42	
	43	LTG RM 124 - 130	20 A	1	12	12	12	1.87	0.77	0.2					0.53	12	12	12	1	20 A	LTG COMMONS 197	44	
	45																					46	
	47																					48	
	49																					50	
	51																					52	
	53																					54	
	55																					56	
	57																					58	
	59																					60	
								Total Load:	13.04 kVA		12.09 kVA		11.78 kVA										
								Total Amps:	109.09		101.17		98.20										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Lighting	4.1 kVA	100.00%	4.1 kVA		
Receptacles	32.82 kVA	65.23%	21.41 kVA	**TOTAL CONNECTED LOAD:**	36.92 kVA
				TOTAL ESTIMATED DEMAND LOAD:	25.51 kVA
				TOTAL CONNECTED AMPS:	102.48 A
				TOTAL ESTIMATED DEMAND AMPS:	70.8 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES: *E = EXISTING CIRCUIT FROM DEMOLISHED PANEL. REFEED CIRCUIT WITH NEW CONDUIT AND WIRE AS INDICATED.

PANEL CHEK-1NLP04

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 150 A/3P LSI @ CHEK-0NLD02
LOCATION: ELEC 130A

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 150 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 10 kA
ISC: 5.48 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	OCPD AMPS	P	LOAD DESCRIPTION	CKT NO.	KEY
	1	CHEK-FCU-1001	15 A	1	12	12	12	1.76	0.53	0.67					0.49	12	12	12	1	15 A	CHEK-FCU-1016	2	
	3	CHEK-FCU-1002	15 A	1	12	12	12	1.64			0.53	0.53			0.57	12	12	12	1	15 A	CHEK-FCU-1017	4	
	5	CHEK-FCU-1003	15 A	1	12	12	12	2.04					0.7	0.53	0.57	12	12	12	1	15 A	CHEK-FCU-1018	6	
	7	CHEK-FCU-1004	15 A	1	12	12	12	1.91	0.7	0.53					0.69	12	12	12	1	15 A	CHEK-FCU-1019	8	
	9	CHEK-FCU-1005	15 A	1	12	12	12	1.93			0.7	0.53			0.81	12	12	12	1	15 A	CHEK-FCU-1020	10	
	11	CHEK-FCU-1006	15 A	1	12	12	12	1.74					0.7	0.7	1.22	12	12	12	1	15 A	CHEK-FCU-1021	12	
	13	CHEK-FCU-1007	15 A	1	12	12	12	1.57	0.7	0.53					0.94	12	12	12	1	15 A	CHEK-FCU-1022	14	
	15	CHEK-FCU-1008	15 A	1	12	12	12	1.44			0.7	0.53			1.05	12	12	12	1	15 A	CHEK-FCU-1023	16	
	17	CHEK-FCU-1009	15 A	1	12	12	12	1.27					0.7	0.53	1.18	12	12	12	1	15 A	CHEK-FCU-1024	18	
	19	CHEK-FCU-1010	15 A	1	12	12	12	1.11	0.7	0.7					1.68	12	12	12	1	15 A	CHEK-FCU-1025	20	
	21	CHEK-FCU-1011	15 A	1	12	12	12	0.95			0.7	0.53			1.3	12	12	12	1	15 A	CHEK-FCU-1026	22	
	23	CHEK-FCU-1012	15 A	1	12	12	12	0.8					0.7	0.53	1.69	12	12	12	1	15 A	CHEK-FCU-1027	24	
	25	CHEK-FCU-1013	15 A	1	12	12	12	0.67	0.7	0.53					1.34	12	12	12	1	15 A	CHEK-FCU-1028	26	
	27	CHEK-FCU-1014	15 A	1	12	12	12	0.6			0.7	0.53			0.99	12	12	12	1	15 A	CHEK-FCU-1029	28	
	29	CHEK-FCU-1015	15 A	1	12	12	12	0.48					0.7									30	
	31																					32	
	33																					34	
	35																					36	
	37																					38	
	39																					40	
	41																					42	
								Total Load:	6.27 kVA		5.96 kVA		5.76 kVA										
								Total Amps:	52.47		49.88		48.02										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
HVAC	17.984 kVA	100.00%	17.984 kVA		
				TOTAL CONNECTED LOAD:	17.98 kVA
				TOTAL ESTIMATED DEMAND LOAD:	17.984 kVA
				TOTAL CONNECTED AMPS:	49.92 A
				TOTAL ESTIMATED DEMAND AMPS:	49.9 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

EX.PANEL DC

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 400 A/3P @ TR-DC
LOCATION: DATA CENTER 167

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 400 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 35 kA
ISC: 15.33 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	OCPD AMPS	P	LOAD DESCRIPTION	CKT NO.	KEY
*L	1	EX. CRAC-1	15 A	2	12	12	12	0.24	0.83	14.77					0.27	4	3/0	3/0	3	175 A	EX. PACKAGED PDU/UPS	2	*L
--	3	--	--	--	--	--	--	--			0.83	14.77			--	--	--	--	--	--	--	4	--
*L	5	EX. CRAC-2	15 A	2	12	12	12	0.29					0.83	14.77	--	--	--	--	--	--	--	6	--
--	7	--	--	--	--	--	--	--	0.83	4.81					0.96	8	3	3	3	80 A	EX. CU-2	8	*L
*L	9	EX. CU-1	80 A	3	3	3	8	0.89			4.81	4.81			--	--	--	--	--	--	--	10	--
--	11	--	--	--	--	--	--	--					4.81	4.81	--	--	--	--	--	--	--	12	--
--	13	--	--	--	--	--	--	--	4.81	0.18					0.16	12	12	12	1	20 A	EX. RCPT RM 167	14	
*R	15	EX. FIRE SUPRESSION CONTROL...	20 A	1	12	12	12	0.25			0.5	0.18			0.18	12	12	12	1	20 A	EX. RCPT RM 167	16	
	17	EX. RCPT RM 167	20 A	1	12	12	12	0.12					0.18	0.18	0.18	12	12	12	1	20 A	EX. RCPT RM 167	18	
	19	EX. RCPT RM 167	20 A	1	12	12	12	0.15	0.18	0.18					0.55	12	12	12	1	20 A	EX. RCPT ROOF	20	
	21	EX. LTG RM 167	20 A	1	12	12	12	0.1			0.19	0.1			0.06	12	12	12	1	20 A	EX. FSD RM 167	22	
	23	RCPTS RM 162E	20 A	1	12	12	12	1.7					1.08	0		--	--	--	1	20 A	SPARE	24	--
--	25	SPARE	20 A	1	--	--	--		0	0						--	--	--	1	20 A	SPARE	26	--
--	27	SPARE	20 A	1	--	--	--				0	0				--	--	--	1	20 A	SPARE	28	--
--	29	SPARE	20 A	1	--	--	--						0	0		--	--	--	1	20 A	SPARE	30	--
								Total Load:	26.59 kVA		26.19 kVA		26.66 kVA										
								Total Amps:	222.11		218.21		222.68										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Lighting	0.187 kVA	100.00%	0.187 kVA		
Other	0.1 kVA	100.00%	0.1 kVA	**TOTAL CONNECTED LOAD:**	79.43 kVA
Power	76.988 kVA	100.00%	76.988 kVA	**TOTAL ESTIMATED DEMAND LOAD:**	79.435 kVA
Receptacles	2.16 kVA	100.00%	2.16 kVA	**TOTAL CONNECTED AMPS:**	220.49 A
				TOTAL ESTIMATED DEMAND AMPS:	220.5 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES: *L = LOCKABLE IN OPEN POSITION. *R = RED HANDLE, LOCKABLE IN ON POSITION

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REF. SCALE IN INCHES

PROJECT #23008968.00

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Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS

#	Date / Description
1	
2	
3	
4	

Seal:

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Sheet Title:

ELECTRICAL PANEL SCHEDULES

Sheet #:

E6.02

PANEL CHEK-MNLP01

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 150 A/3P LSI @ CHEK-0NLD02
LOCATION: ELEC 87M

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 150 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 10 kA
ISC: 6.25 kA

NOTES: RE-FEED EXISTING TO REMAIN CIRCUITS FROM PANEL 'NLPE'.

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	OCPD P	AMPS	LOAD DESCRIPTION	CKT NO.	KEY
--	1	EX. LTG RM 102	20 A	1	--	--	--		0.72	0.9					0.86	12	12	12	1	20 A	RCPTS RM 20M, 89M	2	
--	3	EX. LTG RM 102	20 A	1	--	--	--				0.72	0.72			1.09	12	12	12	1	20 A	RCPTS RM 20M	4	
--	5	EX. LTG RM 102	20 A	1	--	--	--						0.72	0.9	1.09	12	12	12	1	20 A	RCPTS RM 28M, 94M	6	
--	7	EX. LTG RM 102	20 A	1	--	--	--		0.72	1.08					1.49	12	12	12	1	20 A	RCPTS RM 3M, 5M	8	
--	9	EX. LTG RM 102	20 A	1	--	--	--				0.72	1.08			1.12	12	12	12	1	20 A	COPIER RM 3M	10	
--	11	EX. LTG RM 102	20 A	1	--	--	--						0.72	1.08	1.94	12	12	12	1	20 A	RCPTS RM 4M	12	
--	13	EX. LTG RM 102	20 A	1	--	--	--		0.72	1.2					1.52	12	12	12	1	20 A	RCPTS RM 2M	14	
--	15	EX. LTG RM 102	20 A	1	--	--	--				0.72	0.54			0.56	12	12	12	1	20 A	RCPTS RM 1M, 2M, 15M	16	
--	17	EX. LTG RM 102	20 A	1	--	--	--						0.72	1.08	0.39	12	12	12	1	20 A	RCPTS RM 1MA, 1MB	18	
--	19	EX. STEP LTG RM 102	20 A	1	--	--	--		0.72	0.39					1.44	12	12	12	1	20 A	LTG RM 1M, 89M, 199 (LINEAR)	20	
--	21	EX. RCPTS RM 102	20 A	1	--	--	--				0.9	0.62			1.34	12	12	12	1	20 A	LTG RM 1M - 9M	22	
--	23	EX. RCPTS RM 102	20 A	1	--	--	--						0.9	0.65	1.53	12	12	12	1	20 A	LTG RM 20M, 28M, 89M, 94M	24	
--	25	EX. RCPTS RM 102	20 A	1	--	--	--		0.9	0.52					1.26	12	12	12	1	20 A	LTG RM 199	26	
--	27	EX. RCPTS RM 102	20 A	1	--	--	--				0.9	0.54			0.67	12	12	12	1	20 A	FB-TRAC-2, RM 2M	28	
--	29	EX. 220V RCPT RM 102	20 A	2	--	--	--						0.5									30	
--	31	--	--	--	--	--	--	--	0.5													32	
--	33	EX. FB RM 102	20 A	1	--	--	--				0.54											34	
--	35	EX. FB RM 102A	20 A	1	--	--	--						0.54									36	
--	37	EX. LTG RM 102A	20 A	1	--	--	--		0.72													38	
--	39	EX. RCPTS RM 102A	20 A	1	--	--	--				0.9											40	
--	41																					42	
								Total Load:	9.09 kVA		8.90 kVA		7.81 kVA										
								Total Amps:	77.12		75.61		65.06										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Lighting	2.177 kVA	100.00%	2.177 kVA		
Receptacles	9.12 kVA	100.00%	9.12 kVA	**TOTAL CONNECTED LOAD:**	25.80 kVA
Spare	14.5 kVA	80.00%	11.6 kVA	**TOTAL ESTIMATED DEMAND LOAD:**	22.897 kVA
				TOTAL CONNECTED AMPS:	71.61 A
				TOTAL ESTIMATED DEMAND AMPS:	63.6 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

PANEL CHEK-MNLP02

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 225 A/3P LSI @ CHEK-0NLD02
LOCATION: ELEC 87M

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 225 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 14 kA
ISC: 8.75 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	OCPD P	AMPS	LOAD DESCRIPTION	CKT NO.	KEY
	1	CHEK-FCU-M001	15 A	1	12	12	12	0.98	0.51	0.53					1.15	12	12	12	1	15 A	CHEK-FCU-M009	2	
	3	CHEK-FCU-M002	15 A	1	12	12	12	0.42			0.67	0.67			1.26	12	12	12	1	15 A	CHEK-FCU-M010	4	
	5	CHEK-FCU-M003	15 A	1	12	12	12	0.9					0.88	0.53	1.1	12	12	12	1	15 A	CHEK-FCU-M011	6	
	7	CHEK-FCU-M004	15 A	1	12	12	12	0.59	0.53	0.67					1.61	12	12	12	1	15 A	CHEK-FCU-M012	8	
	9	CHEK-FCU-M005	15 A	1	12	12	12	0.44			0.7	0.53			1.25	12	12	12	1	15 A	CHEK-FCU-M013	10	
	11	CHEK-FCU-M006	15 A	1	12	12	12	0.46					0.53	0.53	1.1	12	12	12	1	15 A	CHEK-FCU-M014	12	
	13	CHEK-FCU-M007	15 A	1	12	12	12	0.76	0.67	0.53					0.79	12	12	12	1	15 A	CHEK-FCU-M015	14	
	15	CHEK-FCU-M008	15 A	1	12	12	12	0.92			0.67	0.53			0.49	12	12	12	1	15 A	CHEK-FCU-M016	16	
	17																					18	
	19																					20	
	21																					22	
	23																					24	
	25																					26	
	27																					28	
	29																					30	
--	31	SPACE	--	1	--	--	--		--	--						--	--	--	1	--	SPACE	32	--
--	33	SPACE	--	1	--	--	--				--	--				--	--	--	1	--	SPACE	34	--
--	35	SPACE	--	1	--	--	--						--	--		--	--	--	1	--	SPACE	36	--
--	37	SPACE	--	1	--	--	--		--	--						--	--	--	1	--	SPACE	38	--
--	39	SPACE	--	1	--	--	--				--	--				--	--	--	1	--	SPACE	40	--
--	41	SPACE	--	1	--	--	--						--	--		--	--	--	1	--	SPACE	42	--
								Total Load:	3.43 kVA		3.76 kVA		2.46 kVA										
								Total Amps:	29.86		32.59		20.53										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
HVAC	9.66 kVA	100.00%	9.66 kVA		
				TOTAL CONNECTED LOAD:	9.66 kVA
				TOTAL ESTIMATED DEMAND LOAD:	9.66 kVA
				TOTAL CONNECTED AMPS:	26.81 A
				TOTAL ESTIMATED DEMAND AMPS:	26.8 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

PANEL CHEK-MNLP03

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 100 A/3P @ CHEK-0NLD02
LOCATION: DATA 16M

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 100 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 10 kA
ISC: 3.72 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	OCPD P	AMPS	LOAD DESCRIPTION	CKT NO.	KEY
	1	RCPTS RM 22M	20 A	1	12	12	12	2.98	1.26	1.08					0.88	12	12	12	1	20 A	RCPTS RM 11M, 13M	2	
	3	RCPTS RM 24M	20 A	1	12	12	12	2.63			1.26	1.08			1.21	12	12	12	1	20 A	RCPTS RM 9M, 11M	4	
	5	COPIER RM 26M	20 A	1	12	12	12	1.83					1.08	0.9	1.43	12	12	12	1	20 A	RCPTS RM 7M, 94M	6	
	7	RCPTS RM 26M, CORR. 94M	20 A	1	12	12	12	2.16	1.26	1.08					1.36	12	12	12	1	20 A	RCPTS RM 6M, 8M	8	
	9	LTG RM 6M - 14M, 16M	20 A	1	12	12	12	0.8			0.58	1.08			0.99	12	12	12	1	20 A	RCPTS RM 8M, 10M	10	
	11	LTG RM 22M, 24M, 26M, 94M	20 A	1	12	12	12	2.84					0.74	0.9	0.53	12	12	12	1	20 A	RCPTS RM 12M, PASS. 15M	12	
	13										0.72				0.28	12	12	12	1	20 A	RCPTS RM 14M	14	
	15																					16	
	17																					18	
	19																					20	
	21																					22	
	23																					24	
	25																					26	
	27																					28	
	29																					30	
	31																					32	
	33																					34	
	35																					36	
	37																					38	
	39																					40	
	41																					42	
								Total Load:	5.40 kVA		4.00 kVA		3.62 kVA										
								Total Amps:	45.49		33.82		30.13										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Lighting	1.314 kVA	100.00%	1.314 kVA		
Receptacles	11.7 kVA	92.74%	10.85 kVA	**TOTAL CONNECTED LOAD:**	13.01 kVA
				TOTAL ESTIMATED DEMAND LOAD:	12.164 kVA
				TOTAL CONNECTED AMPS:	36.12 A
				TOTAL ESTIMATED DEMAND AMPS:	33.8 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

PANEL CHEK-MNLP04

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 225 A/3P LSI @ CHEK-0NLD02
LOCATION:

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 225 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 10 kA
ISC: 6.72 kA

NOTES: EXISTING LOADS ARE ESTIMATED, CONDUCTOR SIZES SHALL BE FIELD VERIFIED PRIOR TO MODIFYING EXISTING CIRCUITS.

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	OCPD P	AMPS	LOAD DESCRIPTION	CKT NO.	KEY
*E	1	EX. MAHU-1	20 A	3	12	12	12	0.7	1	0.53					1.09	12	12	12	1	15 A	CHEK-FCU-M029A, AREA-C	2	
--	3	--	--	--	--	--	--	--			1	0.53			1.15	12	12	12	1	15 A	CHEK-FCU-M028A, AREA-C	4	
--	5	--	--	--	--	--	--	--					1	0.7	1.21	12	12	12	1	15 A	CHEK-FCU-M027A, AREA-C	6	
*E	7	EX. WATER HEATER	30 A	2	10	--	10	1.27	1.25	0.7					1.35	12	12	12	1	15 A	CHEK-FCU-M026A, AREA-C	8	
--	9	--	--	--	--	--	--	--			1.25	0.7			1.56	12	12	12	1	15 A	CHEK-FCU-M025A, AREA-C	10	
	11	EWC-1, MEZZANINE AREA-C	20 A	1									0	0.53	1.34	12	12	12	1	15 A	CHEK-FCU-M024A, AREA-C	12	
	13									0.7					1.5	12	12	12	1	15 A	CHEK-FCU-M023A, AREA-C	14	
	15											0.7			1.33	12	12	12	1	15 A	CHEK-FCU-M022A, AREA-C	16	
	17													0.7	1.12	12	12	12	1	15 A	CHEK-FCU-M021A, AREA-C	18	
	19									0.7					0.93	12	12	12	1	15 A	CHEK-FCU-M032A, AREA-C	20	
	21											0.7			0.85	12	12	12	1	15 A	CHEK-FCU-M020A, AREA-C	22	
	23													0.7	1.06	12	12	12	1	15 A	CHEK-FCU-M019A, AREA-C	24	
	25									0.7					0.86	12	12	12	1	15 A	CHEK-FCU-M018A, AREA-C	26	
	27											0.7			0.68	12	12	12	1	15 A	CHEK-FCU-M017A, AREA-C	28	
	29													0.7	0.87	12	12	12	1	15 A	CHEK-FCU-M031A, AREA-C	30	
	31									0.7					1.1	12	12	12	1	15 A	CHEK-FCU-M030A, AREA-C	32	
	33																					34	
	35																					36	
	37																					38	
	39																					40	
	41																					42	
	43																					44	
	45																					46	
	47																					48	
	49																					50	
	51																					52	
	53																					54	
	55																					56	
	57																					58	
	59																					60	
								Total Load:	6.26 kVA		5.56 kVA		4.31 kVA										
								Total Amps:	53.75		47.95		35.93										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
HVAC	3 kVA	100.00%	3 kVA		
Power	13.132 kVA	100.00%	13.132 kVA	**TOTAL CONNECTED LOAD:**	16.13 kVA
				TOTAL ESTIMATED DEMAND LOAD:	16.132 kVA
				TOTAL CONNECTED AMPS:	44.78 A
				TOTAL ESTIMATED DEMAND AMPS:	44.8 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES: *E = EXISTING LOAD FROM DEMOLISHED PANELBOARD. CONTRACTOR SHALL EXTEND CIRUIT AS REQUIRED TO THIS PANEL.

PANEL CHEK-MNLP05

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 150 A/3P LSI @ CHEK-0NLD01
LOCATION:

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 150 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 10 kA
ISC: 4.65 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	OCPD P	AMPS	LOAD DESCRIPTION	CKT NO.	KEY
	1	LIGHTING, MEZZANINE AREA-C	20 A	1	12	12	12	2.89	0.95	1.08					1.8	12	12	12	1	20 A	RCPTS RM 62M, 64M	2	
	3	LIGHTING, MEZZANINE AREA-C	20 A	1	12	12	12	1.84			0.98	1.08			2.25	12	12	12	1	20 A	RCPTS RM 64M, 66M	4	
	5	LIGHTING, AREA C	20 A	1	12	12	12	1.78					0.84	1.08	1.81	12	12	12	1	20 A	RCPTS RM 63M, 65M	6	
	7	RCPTS RM 51M, 53M	20 A	1	12	12	12	2.13	1.08	0.9					0.39	12	12	12	1	20 A	RCPTS RM 72M, 93M	8	
	9	RCPTS RM 49M, 51M	20 A	1	12	12	12	1.42			1.08	1.08			1.44	12	12	12	1	20 A	RCPTS RM 61M, 63M	10	
	11	RCPTS RM 45M, 47M	20 A	1	12	12	12	1.38					1.08	0.72	0.78	12	12	12	1	20 A	RCPTS RM 74M	12	
	13	RCPTS RM 43M, 45M	20 A	1	12	12	12	0.76	1.08	0.9					1.28	12	12	12	1	20 A	RCPTS RM 72M	14	
	15	RCPTS RM 41M, 97M	20 A	1	12	12	12	0.94			0.9	0.9			0.93	12	12	12	1	20 A	RCPTS RM 88M, 92M, 94M, 95M	16	
	17	RCPTS RM 40M, 42M	20 A	1	12	12	12	1.47					1.08	0.54	1.08	12	12	12	1	20 A	RCPTS RM 96M, 98M, 99M	18	
	19	RCPTS RM 42M, 44M	20 A	1	12	12	12	1.46	1.08	0.72					0.44	12	12	12	1	20 A	RCPT REFRIG, RM 73M	20	
	21	RCPTS RM 46M, 48M	20 A	1	12	12	12	1.63			1.08	0.18			0.16	12	12	12	1	20 A	RCPT U.C. MICRO. RM 73M	22	
	23	RCPTS RM 48M, 50M	20 A	1	12	12	12	2.07					1.08	0.72	0.35	12	12	12	1	20 A	RCPTS RM 73M	24	
	25	RCPTS RM 52M, 97M	20 A	1	12	12	12	1.91	0.9													26	
	27	RCPTS RM 54M	20 A	1	12	12	12	1.8			0.72											28	
	29																					30	
	31																					32	
	33																					34	
	35																					36	
	37																					38	
	39																					40	
	41																					42	
								Total Load:	8.69 kVA		8.00 kVA		7.14 kVA										
								Total Amps:	73.50		67.75		59.48										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Lighting	2.763 kVA	100.00%	2.763 kVA		
Receptacles	21.06 kVA	73.74%	15.53 kVA	**TOTAL CONNECTED LOAD:**	23.82 kVA
				TOTAL ESTIMATED DEMAND LOAD:	18.293 kVA
				TOTAL CONNECTED AMPS:	66.13 A
				TOTAL ESTIMATED DEMAND AMPS:	50.8 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

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REF. SCALE IN INCHES
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Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS

#	Date / Description
1	
2	
3	
4	

Seal:

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Sheet Title:

ELECTRICAL PANEL SCHEDULES

Sheet #:

E6.03

PANEL CHEK-2NLP01

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 150 A/3P LSI @ CHEK-0NLD01
LOCATION: ELEC 298A

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 150 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 14 kA
ISC: 8.99 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	P	OCPD AMPS	LOAD DESCRIPTION	CKT NO.	KEY
	1	RCPTS RM CS OFFICE 201	20 A	1	12	12	12	1.31	0.9	1.6					2.46	10	10	10	1	20 A	RCPTS RM 207	2	
	3	RCPT RM 203	20 A	1	12	12	12	1.15			1	1.6			2.32	10	10	10	1	20 A	RCPTS RM 207	4	
	5	RCPT RM 203	20 A	1	12	12	12	1					1	1.6	2.18	10	10	10	1	20 A	RCPTS RM 207	6	
	7	RCPT RM 203	20 A	1	12	12	12	0.83	1	1.16					2.59	12	12	12	1	20 A	RCPTS RM 207	8	
	9	RCPT RM 203	20 A	1	12	12	12	0.67			1	1.6			1.86	10	10	10	1	20 A	RCPTS RM 207	10	
	11	RCPTS RM 203, 284, 299A	20 A	1	12	12	12	0.48					0.72	1.32	1.94	12	12	12	1	20 A	RCPTS RM 207	12	
	13	RCPTS RM 299, 299A	20 A	1	12	12	12	1.08	0.72	1					2.14	12	12	12	1	20 A	PT RM 207	14	
	15	RCPTS RM 207	20 A	1	12	12	12	1			0.98	1			1.99	12	12	12	1	20 A	PT RM 207	16	
	17	RCPTS RM 207	20 A	1	12	12	12	1.94					1.6	1	1.8...	12	12	12	1	20 A	PT RM 207	18	
	19	RCPTS RM 207	20 A	1	12	12	12	1.71	1.6	1					1.82	12	12	12	1	20 A	PT RM 207	20	
	21	PT RM 207	20 A	1	12	12	12	1.67			1	1			1.53	12	12	12	1	20 A	PT RM 207	22	
	23	RCPTS RM 207	20 A	1	12	12	12	1.17					1.6	1.6	2.17	12	12	12	1	20 A	RCPTS RM 207	24	
	25	RCPTS RM 207	20 A	1	12	12	12	1.12	1	0.63					1.55	12	12	12	1	20 A	LTG RM 207	26	
	27	LTG RM 201, 203, 298, 299, 299A	20 A	1	12	12	12	2.39			0.59											28	
	29																					30	
	31																					32	
	33																					34	
	35																					36	
	37																					38	
	39																					40	
	41																					42	

	A	B	C
Total Load:	10.61 kVA	9.77 kVA	10.44 kVA
Total Amps:	89.24	81.42	87.86

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Lighting	1.215 kVA	100.00%	1.215 kVA		
Receptacles	15.2 kVA	82.89%	12.6 kVA	TOTAL CONNECTED LOAD:	30.82 kVA
Receptacles - Labs	14.4 kVA	95.42%	13.74 kVA	TOTAL ESTIMATED DEMAND LOAD:	27.555 kVA
				TOTAL CONNECTED AMPS:	85.53 A
				TOTAL ESTIMATED DEMAND AMPS:	76.5 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

PANEL CHEK-2NLP02

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 400 A/3P LSI @ CHEK-0NLS01
LOCATION: ELEC 298A

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 400 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 22 kA
ISC: 17.19 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	P	OCPD AMPS	LOAD DESCRIPTION	CKT NO.	KEY
	1	PT RM 210	20 A	1	8	8	8	2	1.6	5.57					0.99	8	--	3	3	80 A	CHEK-AHU-2001 SUPPLY	2	
	3	PT RM 210	20 A	1	8	8	8	2.15			1.6	5.57			--	--	--	--	--	--	--	4	--
	5	PT RM 210	20 A	1	8	8	8	2.27					1.6	5.57	--	--	--	--	--	--	--	6	--
	7	PT RM 210	20 A	1	8	8	8	2.41	1.6	3.54					0.7	10	4	4	3	60 A	CHEK-AHU-2001 RETURN	8	
	9	PT RM 210	20 A	1	10	10	10	2.9			1.6	3.54			--	--	--	--	--	--	--	10	--
	11	PT RM 210	20 A	1	8	8	8	2.05					1.6	3.54	--	--	--	--	--	--	--	12	--
	13	PT RM 210	20 A	1	8	8	8	2.17	1.6	6.2					0.42	8	1	1	3	100 A	CHEK-AHU-2002 RETURN	14	
	15	PT RM 210	20 A	1	8	8	8	2.32			1.6	6.2			--	--	--	--	--	--	--	16	--
	17	PT RM 210	20 A	1	10	10	10	2.76					1.6	6.2	--	--	--	--	--	--	--	18	--
	19	PT RM 210	20 A	1	10	10	10	2.97	1.6	8.61					0.51	6	1	1	3	125 A	CHEK-AHU-2002 SUPPLY	20	
	21	PT RM 210	20 A	1	8	8	8	2.08			1.6	8.61			--	--	--	--	--	--	--	22	--
	23	PT RM 210	20 A	1	8	8	8	2.22					1.6	8.61	--	--	--	--	--	--	--	24	--
	25	RCPT RM 210	20 A	1	10	10	10	2.7	1.6	0.54					0.82	12	12	12	1	20 A	RCPTS RM 205T	26	
	27	RCPT RM 210	20 A	1	10	10	10	2.56			1.6	1.08			2.62	12	12	12	1	20 A	RCPTS RM 205T, 280, 298	28	
	29	RCPT RM 210	20 A	1	10	10	10	2.43					1.6	0.67	1.64	12	12	12	1	20 A	EWC-1 RM 295	30	
	31	RCPT RM 210	20 A	1	8	8	8	2.56	1.6	0.39					1.05	12	12	12	1	20 A	LTG RM 205T	32	
	33	RCPT RM 210	20 A	1	8	8	8	2.47			1.6	0.57			2.17	12	12	12	1	20 A	LTG RM 200, 290, 291, 295	34	
	35	RCPT RM 210	20 A	1	8	8	8	2.38					1.6	0.49	2.08	12	12	12	1	20 A	LTG RM 210	36	
	37	RCPT RM 210	20 A	1	10	10	10	2.5	1													38	
	39	RCPTS RM 210	20 A	1	10	10	10	2.2			1.08											40	
	41	CONTROL XFMR 205T	30 A	1	10	10	10	1.58					3									42	
	43																					44	
	45																					46	
	47																					48	
	49																					50	
	51																					52	
	53																					54	
	55																					56	
	57																					58	
	59																					60	

	A	B	C
Total Load:	35.45 kVA	36.25 kVA	37.68 kVA
Total Amps:	295.41	303.12	315.05

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
HVAC	71.76 kVA	100.00%	71.76 kVA		
Lighting	1.453 kVA	100.00%	1.453 kVA	TOTAL CONNECTED LOAD:	109.38 kVA
Power	3.67 kVA	100.00%	3.67 kVA	TOTAL ESTIMATED DEMAND LOAD:	106.563 kVA
Receptacles	3.7 kVA	100.00%	3.7 kVA	TOTAL CONNECTED AMPS:	303.62 A
Receptacles - Labs	28.8 kVA	90.21%	25.98 kVA	TOTAL ESTIMATED DEMAND AMPS:	295.8 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

PANEL CHEK-2NLP03

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 400 A/3P LSI @ CHEK-0NLS01
LOCATION: ELEC 299B

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 400 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 22 kA
ISC: 17.19 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	P	OCPD AMPS	LOAD DESCRIPTION	CKT NO.	KEY
	1	RCPT RM 213	20 A	1	12	12	12	1.35	1.4	1.4					0.85	12	12	12	1	20 A	RCPT RM 211	2	
	3	RCPT RM 213	20 A	1	12	12	12	1.13			1.4	1.4			1.08	12	12	12	1	20 A	RCPT RM 211	4	
	5	RCPT RM 213	20 A	1	12	12	12	1.01					1.4	1.4	1.29	12	12	12	1	20 A	RCPT RM 211	6	
	7	RCPT RM 213	20 A	1	12	12	12	1.24	1.4	1.4					1.51	12	12	12	1	20 A	RCPT RM 211	8	
	9	RCPT RM 213	20 A	1	12	12	12	1.46			1.4	1.4			1.72	12	12	12	1	20 A	RCPT RM 211	10	
	11	RCPT RM 213	20 A	1	12	12	12	1.68					1.4	1.4	1.94	12	12	12	1	20 A	RCPT RM 211	12	
	13	RCPT RM 213	20 A	1	12	12	12	2.13	1.4	1.4					2.15	12	12	12	1	20 A	RCPT RM 211	14	
	15	RCPT RM 213	20 A	1	12	12	12	2.34			1.4	1.4			2.36	12	12	12	1	20 A	RCPT RM 211	16	
	17	RCPT RM 213	20 A	1	12	12	12	2.29					1.4	1.4	1.47	12	12	12	1	20 A	RCPT RM 211	18	
	19	RCPT RM 213	20 A	1	12	12	12	2.07	1.4	1.4					1.68	12	12	12	1	20 A	RCPT RM 211	20	
	21	RCPT RM 213	20 A	1	12	12	12	1.75			1.4	1.4			1.9	12	12	12	1	20 A	RCPT RM 211	22	
	23	RCPT RM 213	20 A	1	12	12	12	1.54					1.4	1.4	2.11	12	12	12	1	20 A	RCPT RM 211	24	
	25	RCPT RM 213	20 A	1	12	12	12	1.61	1.4	1.4					2.33	12	12	12	1	20 A	RCPT RM 211	26	
	27	RCPT RM 213	20 A	1	12	12	12	1.83			1.4	1.4			2.54	12	12	12	1	20 A	RCPT RM 211	28	
	29	RCPTS, PT RM 212, 213	20 A	1	12	12	12	0.55					0.54	1.4	2.79	12	12	12	1	20 A	RCPT RM 211	30	
	31	RCPT RM 212	20 A	1	12	12	12	1.63	1.4	1.4					1.82	10	10	10	1	20 A	RCPT RM 211	32	
	33	RCPT RM 212	20 A	1	12	12	12	1.83			1.4	1.02			1.95	12	12	12	1	20 A	RCPTS, PT RM 211	34	
	35	RCPT RM 212	20 A	1	12	12	12	2.32					1.4	1.4	1.43	12	12	12	1	20 A	RCPT RM 212	36	
	37	RCPT RM 212	20 A	1	12	12	12	2.51	1.4	0.92					2.76	12	12	12	1	20 A	LTG RM 211, 212, 213	38	
	39	RCPT RM 212	20 A	1	12	12	12	2.71			1.4	0.66			0.8	12	12	12	1	20 A	TV, RCPT RM 213	40	
	41	RCPT RM 212	20 A	1	12	12	12	2.98					1.4	0.54	0.6	12	12	12	1	20 A	RCPT REFFRIG RM 296	42	*G
	43	RCPT RM 212	20 A	1	12	12	12	2.93	1.4	0.18									1	20 A	RCPT U.C. MICRO RM 296	44	
	45	RCPT RM 212	20 A	1	12	12	12	2.72			1.4	0.18							1	20 A	RCPT MICRO RM 296	46	
	47	RCPT RM 212	20 A	1	12	12	12	2.52					1.4									48	
	49	RCPT RM 212	20 A	1	12	12	12	2.32	1.4													50	
	51	RCPT RM 212	20 A	1	12	12	12	2.45			1.4											52	
	53	RCPT RM 212	20 A	1	12	12	12	2.38					1.4									54	
	55	RCPT, AV MON. RM 212	20 A	1	12	12	12	0.56	0.54													56	
--	57	SPARE	20 A	1	--	--	--				0	0				--	--	--	1	20 A	SPARE	58	--
--	59	SPARE	20 A	1	--	--	--						0	0		--	--	--	1	20 A	SPARE	60	--

	A	B	C
Total Load:	22.64 kVA	21.46 kVA	20.68 kVA
Total Amps:	189.67	179.83	172.33

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Lighting	0.92 kVA	100.00%	0.92 kVA		
Receptacles	3.66 kVA	100.00%	3.66 kVA	TOTAL CONNECTED LOAD:	64.78 kVA
Receptacles - Labs	60.2 kVA	87.49%	52.67 kVA	TOTAL ESTIMATED DEMAND LOAD:	57.25 kVA
				TOTAL CONNECTED AMPS:	179.81 A
				TOTAL ESTIMATED DEMAND AMPS:	158.9 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES: *G = GROUND FAULT CIRCUIT INTERRUPTER

PANEL CHEK-2NLP04

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 400 A/3P LSI @ CHEK-0NLS01
LOCATION: ELEC 299B

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 400 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 22 kA
ISC: 17.19 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	P	OCPD AMPS	LOAD DESCRIPTION	CKT NO.	KEY
	1	RCPT RM 208	20 A	1	10	10	10	2.45	1.6	1.6					2.28	12	12	12	1	20 A	RCPT RM 209	2	
	3	RCPT RM 208	20 A	1	10	10	10	2.34			1.6	1.6			2.49	12	12	12	1	20 A	RCPT RM 209	4	
	5	RCPT RM 208	20 A	1	10	10	10	2.2					1.6	1.6	2.72	12	12	12	1	20 A	RCPT RM 209	6	
	7	RCPT RM 208	20 A	1	10	10	10	2.06	1.6	1.6					2.96	12	12	12	1	20 A	RCPT RM 209	8	
	9	RCPT RM 208	20 A	1	12	12	12	2.25			1.6	1.6			1.33	12	12	12	1	20 A	RCPT RM 209	10	
	11	RCPT RM 208	20 A	1	12	12	12	2.48					1.6	1.6	1.54	12	12	12	1	20 A	RCPT RM 209	12	
	13	RCPT RM 208	20 A	1	12	12	12	2.71	1.6	1.6					1.78	12	12	12	1	20 A	RCPT RM 209	14	
	15	PT RM 208	20 A	1	12	12	12	1.8			1	1			1.22	12	12	12	1	20 A	PT RM 209	16	
	17	PT RM 208	20 A	1	12	12	12	1.94					1	1	1.37	12	12	12	1	20 A	PT RM 209	18	
	19	PT RM 208	20 A	1	12	12	12	2.09	1	1					1.51	12	12	12	1	20 A	PT RM 209	20	
	21	RCPTS, TV RM 208	20 A	1	12	12	12	1.68			0.9	1.08			1.08	12	12	12	1	20 A	RCPTS, TV RM 209	22	
	23	RCPTS RM 296, 297, 299	20 A	1	12	12	12	1.87					1.26	0.62	1.96	12	12	12	1	20 A	LTG RM 296, 297	24	
	25	LTG RM 208, 209	20 A	1	12	12	12	0.82	0.37													26	
	27																					28	
	29																					30	
	31																					32	
	33																					34	
	35																					36	
	37																					38	
	39																					40	
	41																					42	
	43																					44	
	45																					46	
	47																					48	
--	49	SPACE	--	1	--	--	--		--	--						--	--	--	1	--	SPACE	50	--
--	51	SPACE	--	1	--	--	--				--	--				--	--	--	1	--	SPACE	52	--
--	53	SPACE	--	1	--	--	--						--	--		--	--	--	1	--	SPACE	54	--
--	55	SPACE	--	1	--	--	--		--	--						--	--	--	1	--	SPACE	56	--
--	57	SPACE	--	1	--	--	--				--	--				--	--	--	1	--	SPACE	58	--
--	59	SPACE	--	1	--	--	--						--	--		--	--	--	1	--	SPACE	60	--

	A	B	C
Total Load:	11.97 kVA	10.38 kVA	10.28 kVA
Total Amps:	99.90	86.63	85.69

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Lighting	0.996 kVA	100.00%	0.996 kVA		
Receptacles	9.24 kVA	100.00%	9.24 kVA	TOTAL CONNECTED LOAD:	32.64 kVA
Receptacles - Labs	22.4 kVA	91.70%	20.54 kVA	TOTAL ESTIMATED DEMAND LOAD:	30.776 kVA
				TOTAL CONNECTED AMPS:	90.59 A
				TOTAL ESTIMATED DEMAND AMPS:	85.4 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

PANEL CHEK-3NLP01

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 150 A/3P LSI @ CHEK-0NLD01
LOCATION: CORRIDOR 399

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 150 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 10 kA
ISC: 6.38 kA

NOTES: RE-FEED ALL LOADS FROM DEMOLISHED PANEL 'CHEK 03SC BCP00'. EXISTING LOAD VALUES ARE ESTIMATES.

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	P	OCPD AMPS	LOAD DESCRIPTION	CKT NO.	KEY
--	1	EX. RCPT RM 301	20 A	1	--	--	--		0.72	0.72						--	--	--	1	20 A	EX. LTG HALL	2	--
--	3	EX. LTG RM 301	20 A	1	--	--	--				0.72	0.72				--	--	--	1	20 A	EX RCPT LECT. HALL 2, 3	4	--
--	5	EX. LTG RM 301	20 A	1	--	--	--						0.72	0.72		--	--	--	1	20 A	EX. RCPT RM 301, 302, 308, 316	6	--
--	7	EX. RCPT RM 301	20 A	1	--	--	--		0.72	0.5						--	--	--	1	20 A	EX. UNKNOWN LOAD	8	--
--	9	EX. LTG RM 302	20 A	1	--	--	--				0.72	0.72				--	--	--	1	20 A	EX. LTG RM 301	10	--
--	11	EX. LTG RM 302	20 A	1	--	--	--						0.72	0		--	--	--	1	20 A	SPARE	12	--
--	13	EX. RCPT RM 306, 307	20 A	1	--	--	--		0.72	0.5						--	--	--	1	20 A	UNKNOWN LOAD	14	--
--	15	EX. LTG RM 303 - 307	20 A	1	--	--	--				0.72	0.72				--	--	--	1	20 A	EX. LTG RM 301, 302, STORAGE	16	--
--	17	EX. RCPT OUTSIDE WALL	20 A	1	--	--	--						0.36	0.5		--	--	--	1	20 A	UNKNOWN LOAD	18	--
--	19	EX. LTG RM 309	20 A	1	--	--	--		0.72	0.5						--	--	--	1	20 A	EX. STUDENT LOUNGE	20	--
--	21	EX. LTG RM 308	20 A	1	--	--	--				0.72	1				--	--	--	2	30 A	EX. FVAV-5	22	--
--	23	EX. LTG RM 308	20 A	1	--	--	--						0.72	1	--	--	--	--	--	--	--	24	--
--	25	EX. RCPT RM 308	20 A	1	--	--	--		0.72	1						--	--	--	2	30 A	EX. FVAV-6	26	--
--	27	EX. LTG RM 308	20 A	1	--	--	--				0.72	1			--	--	--	--	--	--	--	28	--
--	29	EX. RCPT RM 303, 304	20 A	1	--	--	--						0.72	1		--	--	--	2	30 A	EX. FVAV-7	30	--
--	31	UNKNOWN LOAD	20 A	1	--	--	--		0.5	1					--	--	--	--	--	--	--	32	--
--	33	EX. RCPT RM 309	20 A	1	--	--	--				0.72	1				--	--	--	1	20 A	EX. FVAV-1, FVAV-2	34	--
--	35	EX. RCPT RM 309	20 A	1	--	--	--						0.72	1		--	--	--	1	20 A	EX. FVAV-3	36	--
--	37	EX. RCPT HALL	20 A	1	--	--	--		0.36	1						--	--	--	1	20 A	EX. FVAV-4	38	--
--	39	EX RCPT RM 309	20 A	1	--	--	--				0.72	0.5				--	--	--	1	20 A	UNKNOWN LOAD	40	--
--	41	EX. RCPT RM 309	20 A	1	--	--	--						0.72	0.5		--	--	--	1	20 A	UNKNOWN LOAD	42	--
--	43	SPARE	20 A	1	--	--	--		0	0						--	--	--	1	20 A	SPARE	44	--
--	45	SPARE	20 A	1	--	--	--				0	0				--	--	--	1	20 A	SPARE	46	--
--	47	SPARE	20 A	1	--	--	--						0	0		--	--	--	1	20 A	SPARE	48	--
--	49	SPARE	20 A	1	--	--	--		0	0						--	--	--	1	20 A	SPARE	50	--
--	51	SPARE	20 A	1	--	--	--				0	0				--	--	--	1	20 A	SPARE	52	--
--	53	SPARE	20 A	1	--	--	--						0	0		--	--	--	1	20 A	SPARE	54	--
--	55	SPACE	--	1	--	--	--		--	--						--	--	--	1	--	SPACE	56	--
--	57	SPACE	--	1	--	--	--				--	--				--	--	--	1	--	SPACE	58	--
--	59	SPACE	--	1	--	--	--						--	--		--	--	--	1	--	SPACE	60	--

	A	B	C
Total Load:	9.68 kVA	10.70 kVA	9.40 kVA
Total Amps:	81.03	89.53	78.33

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Spare	29.78 kVA	80.00%	23.824 kVA		
				TOTAL CONNECTED LOAD:	29.78 kVA
				TOTAL ESTIMATED DEMAND LOAD:	23.824 kVA
				TOTAL CONNECTED AMPS:	82.66 A
				TOTAL ESTIMATED DEMAND AMPS:	66.1 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

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TEL 314 545 1132
CERTIFICATE OF AUTHORITY - E2017008530

Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS

#	Date / Description
1	
2	
3	
4	

Seal:

50% PROGRESS SET - NOT FOR CONSTRUCTION

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Sheet Title:

ELECTRICAL PANEL SCHEDULES

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0 1 2 3
REF. SCALE IN INCHES
PROJECT #23008968.00

Sheet #:

E6.04

PANEL CHEK-0ELD01

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 250 A/3P @ ATS-0ELD01
LOCATION: ELECTRICAL 07

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 250 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 22 kA
ISC: 16.18 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	OCPD P	AMPS	LOAD DESCRIPTION	CKT NO.	KEY
	1	CHEK-1ELP01	60 A	3	6	6	10	1.13	0.25	0.29					1.86	6	3	3	3	60 A	CHEK-1ELP02	2	
--	3	--	--	--	--	--	--	--			0.64	0.13			--	--	--	--	--	--	--	4	--
--	5	--	--	--	--	--	--	--					0.24	0	--	--	--	--	--	--	--	6	--
	7	CHEK-MELP01	60 A	3	6	6	10	1.89	0.6	0.74					1.86	6	4	4	3	60 A	CHEK-2ELP01	8	
--	9	--	--	--	--	--	--	--			0.27	0.87			--	--	--	--	--	--	--	10	--
--	11	--	--	--	--	--	--	--					0.27	0.32	--	--	--	--	--	--	--	12	--
*R	13	FACP-1	20 A	1	12	12	12		0.2	0.16									1	20 A	Lighting	14	
	15																					16	
	17																					18	
	19																					20	
	21																					22	
	23																					24	
	25																					26	
	27																					28	
	29																					30	
							Total Load:		2.23 kVA		1.91 kVA		0.84 kVA										
							Total Amps:		20.00		17.29		6.96										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Lighting	4.28 kVA	100.00%	4.28 kVA	**TOTAL CONNECTED LOAD:**	4.28 kVA
				TOTAL ESTIMATED DEMAND LOAD:	4.28 kVA
				TOTAL CONNECTED AMPS:	11.88 A
				TOTAL ESTIMATED DEMAND AMPS:	11.9 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES: *R = RED HANDLE, LOCKABLE IN ON POSITION

PANEL CHEK-1ELP01

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 60 A/3P @ CHEK-0ELD01
LOCATION: ELEC 166A

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 60 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 10 kA
ISC: 3.63 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	OCPD P	AMPS	LOAD DESCRIPTION	CKT NO.	KEY
	1	EM LTG RM 163, 164, 165	20 A	1	12	12	12	0.73	0.25													2	
	3	EM. LTG RM 161, 162, 162E	20 A	1	12	12	12	2.16			0.64											4	
	5	EM LTG RM 153, 160, 198	20 A	1	12	12	12	0.98					0.24	0	--	--	--	--	1	20 A	SPARE	6	--
--	7	SPARE	20 A	1	--	--	--		0	0					--	--	--	--	1	20 A	SPARE	8	--
--	9	SPARE	20 A	1	--	--	--				0	0			--	--	--	--	1	20 A	SPARE	10	--
--	11	SPARE	20 A	1	--	--	--						0	0	--	--	--	--	1	20 A	SPARE	12	--
--	13	SPARE	20 A	1	--	--	--		0	0					--	--	--	--	1	20 A	SPARE	14	--
--	15	SPARE	20 A	1	--	--	--				0	0			--	--	--	--	1	20 A	SPARE	16	--
--	17	SPACE	--	1	--	--	--						--	--	--	--	--	--	1	--	SPACE	18	--
--	19	SPACE	--	1	--	--	--		--	--					--	--	--	--	1	--	SPACE	20	--
--	21	SPACE	--	1	--	--	--				--	--			--	--	--	--	1	--	SPACE	22	--
--	23	SPACE	--	1	--	--	--						--	--	--	--	--	--	1	--	SPACE	24	--
--	25	SPACE	--	1	--	--	--		--	--					--	--	--	--	1	--	SPACE	26	--
--	27	SPACE	--	1	--	--	--				--	--			--	--	--	--	1	--	SPACE	28	--
--	29	SPACE	--	1	--	--	--						--	--	--	--	--	--	1	--	SPACE	30	--
							Total Load:		0.25 kVA		0.64 kVA		0.24 kVA										
							Total Amps:		2.08		5.30		2.03										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Lighting	1.128 kVA	100.00%	1.128 kVA	**TOTAL CONNECTED LOAD:**	1.13 kVA
				TOTAL ESTIMATED DEMAND LOAD:	1.128 kVA
				TOTAL CONNECTED AMPS:	3.13 A
				TOTAL ESTIMATED DEMAND AMPS:	3.1 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

PANEL CHEK-1ELP02

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 60 A/3P @ CHEK-0ELD01
LOCATION: ELEC 130A

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 60 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 10 kA
ISC: 2.93 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	OCPD P	AMPS	LOAD DESCRIPTION	CKT NO.	KEY
	1	EM LTG RM 110, 122, 139, 197	20 A	1	12	12	12	0.45	0.29	0						--	--	--	1	20 A	SPARE	2	--
	3	EM LTG RM 197, 197A	20 A	1	12	12	12	0.3			0.13	0				--	--	--	1	20 A	SPARE	4	--
	5													0		--	--	--	1	20 A	SPARE	6	--
	7									0						--	--	--	1	20 A	SPARE	8	--
	9											0				--	--	--	1	20 A	SPARE	10	--
	11													0		--	--	--	1	20 A	SPARE	12	--
	13									0						--	--	--	1	20 A	SPARE	14	--
	15											0				--	--	--	1	20 A	SPARE	16	--
--	17	SPACE	--	1	--	--	--						--	--		--	--	--	1	--	SPACE	18	--
--	19	SPACE	--	1	--	--	--		--	--						--	--	--	1	--	SPACE	20	--
--	21	SPACE	--	1	--	--	--				--	--				--	--	--	1	--	SPACE	22	--
--	23	SPACE	--	1	--	--	--						--	--		--	--	--	1	--	SPACE	24	--
--	25	SPACE	--	1	--	--	--		--	--						--	--	--	1	--	SPACE	26	--
--	27	SPACE	--	1	--	--	--				--	--				--	--	--	1	--	SPACE	28	--
--	29	SPACE	--	1	--	--	--						--	--		--	--	--	1	--	SPACE	30	--
							Total Load:		0.29 kVA		0.13 kVA		0.00 kVA										
							Total Amps:		2.60		1.26		0.00										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Lighting	0.423 kVA	100.00%	0.423 kVA	**TOTAL CONNECTED LOAD:**	0.42 kVA
				TOTAL ESTIMATED DEMAND LOAD:	0.423 kVA
				TOTAL CONNECTED AMPS:	1.18 A
				TOTAL ESTIMATED DEMAND AMPS:	1.2 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

PANEL CHEK-MELP01

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 60 A/3P @ CHEK-0ELD01
LOCATION: ELEC 87M

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 60 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 10 kA
ISC: 2.05 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	OCPD P	AMPS	LOAD DESCRIPTION	CKT NO.	KEY
	1	EM LTG RM 1M, 2M, 15M	20 A	1	12	12	12	0.33	0.16													2	
	3	EM LTG RM 20M, 22M, 24M, 94M	20 A	1	12	12	12	0.39			0.27											4	
	5	EM LTG RM 89M, 199	20 A	1	12	12	12	0.71					0.27									6	
	7	EM. LIGHTING AREA-C	20 A	1	12	12	12	1.76	0.44													8	
	9																					10	
	11																					12	
	13																					14	
	15																					16	
	17																					18	
	19																					20	
	21																					22	
	23																					24	
	25																					26	
	27																					28	
	29																					30	
							Total Load:		0.60 kVA		0.27 kVA		0.27 kVA										
							Total Amps:		4.99		2.26		2.28										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Lighting	1.143 kVA	100.00%	1.143 kVA	**TOTAL CONNECTED LOAD:**	1.14 kVA
				TOTAL ESTIMATED DEMAND LOAD:	1.143 kVA
				TOTAL CONNECTED AMPS:	3.17 A
				TOTAL ESTIMATED DEMAND AMPS:	3.2 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

PANEL CHEK-2ELP01

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 60 A/3P @ CHEK-0ELD01
LOCATION: ELEC 298A

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 60 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 10 kA
ISC: 2.74 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	OCPD P	AMPS	LOAD DESCRIPTION	CKT NO.	KEY
	1	EM. LTG RM 211 - 213, 296, 297	20 A	1	12	12	12	2.1	0.38	0.36					1.28	12	12	12	1	20 A	EM. LTG RM 205T,280,290,291,295	2	
	3	EM. LTG RM 208 - 210, 299	20 A	1	12	12	12	1.71			0.37	0.5				8	8	8	1	20 A	NAC - ELEC 299B	4	
	5	EM. LTG RM 203, 207, 298, 299	20 A	1	12	12	12	1.06					0.32	0		--	--	--	1	20 A	SPARE	6	--
--	7	SPARE	20 A	1	--	--	--		0	0						--	--	--	1	20 A	SPARE	8	--
--	9	SPARE	20 A	1	--	--	--				0	0				--	--	--	1	20 A	SPARE	10	--
--	11	SPARE	20 A	1	--	--	--						0	0		--	--	--	1	20 A	SPARE	12	--
--	13	SPARE	20 A	1	--	--	--		0	0						--	--	--	1	20 A	SPARE	14	--
--	15	SPARE	20 A	1	--	--	--				0	0				--	--	--	1	20 A	SPARE	16	--
--	17	SPACE	--	1	--	--	--						--	--		--	--	--	1	--	SPACE	18	--
--	19	SPACE	--	1	--	--	--		--	--						--	--	--	1	--	SPACE	20	--
--	21	SPACE	--	1	--	--	--				--	--				--	--	--	1	--	SPACE	22	--
--	23	SPACE	--	1	--	--	--						--	--		--	--	--	1	--	SPACE	24	--
--	25	SPACE	--	1	--	--	--		--	--						--	--	--	1	--	SPACE	26	--
--	27	SPACE	--	1	--	--	--				--	--				--	--	--	1	--	SPACE	28	--
--	29	SPACE	--	1	--	--	--						--	--		--	--	--	1	--	SPACE	30	--
							Total Load:		0.74 kVA		0.87 kVA		0.32 kVA										
							Total Amps:		6.70		7.81		2.66										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Lighting	1.43 kVA	100.00%	1.43 kVA	**TOTAL CONNECTED LOAD:**	1.43 kVA
				TOTAL ESTIMATED DEMAND LOAD:	1.43 kVA
				TOTAL CONNECTED AMPS:	3.97 A
				TOTAL ESTIMATED DEMAND AMPS:	4 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

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Project Title:
BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069
Other Project #: **23025.000**
Issue Date: **1/10/2025**
Drawn By: **Author**

SHEET REVISIONS

#	Date / Description
1	
2	
3	
4	

Seal:

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Sheet Title:
ELECTRICAL PANEL SCHEDULES

Sheet #:
E6.05

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0 1 2 3
REF. SCALE IN INCHES
PROJECT #23008968.00

EXISTING PANEL CHEK BANW DPN01

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 225 A/3P LSI @ CHEK-0NLS01
LOCATION: MECHANICAL 08

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 225 A MLO
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 10 kA
ISC: 20.04 kA

NOTES: PANEL ALSO REFERRED TO AS 'PP-B1'.

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	OCPD P	WIRE SIZE H	WIRE SIZE N	WIRE SIZE G	VD %	A	A	B	B	C	C	VD %	WIRE SIZE G	WIRE SIZE N	WIRE SIZE H	OCPD P	OCPD AMPS	LOAD DESCRIPTION	CKT NO.	KEY
--	1	EX. MULTI ZONE	30 A	3	--	--	--		1.5	0						--	--	--	1	20 A	SPARE	2	--
--	3	--	--	--	--	--	--	--			1.5	0				--	--	--	1	20 A	SPARE	4	--
--	5	--	--	--	--	--	--	--					1.5	0.72		--	--	--	1	20 A	EX. UNKNOWN LOAD	6	--
--	7	EX. COMPRESSOR	30 A	3	--	--	--		1.5	0						--	--	--	1	20 A	SPARE	8	--
--	9	--	--	--	--	--	--	--			1.5	0				--	--	--	1	20 A	SPARE	10	--
--	11	--	--	--	--	--	--	--					1.5	0		--	--	--	1	20 A	SPARE	12	--
--	13	SPARE	30 A	3	--	--	--		0	0						--	--	--	1	20 A	SPARE	14	--
--	15	--	--	--	--	--	--	--			0	0				--	--	--	1	20 A	SPARE	16	--
--	17	--	--	--	--	--	--	--					0	0.72		--	--	--	1	20 A	EX. UNKNOWN LOAD	18	--
--	19	SPARE	20 A	1	--	--	--		0	0						--	--	--	1	20 A	SPARE	20	--
--	21	SPARE	20 A	1	--	--	--				0	0				--	--	--	1	20 A	EX. UNKNOWN LOAD	22	--
--	23	SPARE	20 A	1	--	--	--						0	0.72		--	--	--	1	20 A	SPARE	24	--
--	25	SPARE	20 A	1	--	--	--		0	0						--	--	--	1	20 A	SPARE	26	--
--	27	SPARE	20 A	1	--	--	--				0	0				--	--	--	1	20 A	SPARE	28	--
--	29	SPARE	20 A	1	--	--	--						0	0		--	--	--	1	20 A	SPARE	30	--
--	31	SPARE	20 A	1	--	--	--		0	0						--	--	--	1	20 A	SPARE	32	--
--	33	SPARE	20 A	1	--	--	--				0	0.72				--	--	--	1	20 A	EX. UNKNOWN LOAD	34	--
--	35	SPARE	20 A	1	--	--	--						0	0		--	--	--	1	20 A	SPARE	36	--
--	37	SPARE	20 A	1	--	--	--		0	0						--	--	--	1	20 A	SPARE	38	--
--	39	SPARE	20 A	1	--	--	--				0	0				--	--	--	1	20 A	SPARE	40	--
--	41	SPARE	20 A	1	--	--	--						0	0.72		--	--	--	1	20 A	EX. UNKNOWN LOAD	42	--
								Total Load:	3.00 kVA		3.72 kVA		5.88 kVA										
								Total Amps:	25.00		31.92		49.92										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Spare	12.6 kVA	80.00%	10.08 kVA		
				TOTAL CONNECTED LOAD:	12.60 kVA
				TOTAL ESTIMATED DEMAND LOAD:	10.08 kVA
				TOTAL CONNECTED AMPS:	34.97 A
				TOTAL ESTIMATED DEMAND AMPS:	28 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

EX. PANEL CHEK BANW BCP00

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 225 A/3P LSI @ CHEK-0NLS01
LOCATION: MECHANICAL 08

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 225 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 10 kA
ISC: 25.66 kA

NOTES: PANEL ALSO REFERRED TO AS 'PANEL C'.

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	OCPD P	WIRE SIZE H	WIRE SIZE N	WIRE SIZE G	VD %	A	A	B	B	C	C	VD %	WIRE SIZE G	WIRE SIZE N	WIRE SIZE H	OCPD P	OCPD AMPS	LOAD DESCRIPTION	CKT NO.	KEY
--	1	EX. PANEL 150 B	100 A	3	--	--	--		4.5	7.17					0.66	8	--	1	3	100 A	EX. ELEVATOR NORTH	2	
--	3	--	--	--	--	--	--	--			4.5	7.17			--	--	--	--	--	--	--	4	--
--	5	--	--	--	--	--	--	--					4.5	7.17	--	--	--	--	--	--	--	6	--
--	7	EX. COMP OUTLETS 2 & 3 RM	20 A	1	--	--	--		0.54	3.73						--	--	--	3	60 A	EX. RTU-1	8	--
--	9	EX. COMP OUTLETS 2 & 3 RM	20 A	1	--	--	--				0.54	3.73			--	--	--	--	--	--	--	10	--
--	11	EX. COMP OUTLETS 2 & 3 RM	20 A	1	--	--	--						0.54	3.73	--	--	--	--	--	--	--	12	--
--	13	EX. COMP OUTLETS 2 & 3 RM	20 A	1	--	--	--		0.54	1.2						--	--	--	1	20 A	EX. 1 & 3 COPY MACHINE	14	--
--	15	EX. COMP OUTLETS 2 & 3 RM	20 A	1	--	--	--				0.54	0.18				--	--	--	1	20 A	EX. RCPT RM 167	16	--
--	17	EX. COMP OUTLETS 2 & 3 RM	20 A	1	--	--	--						0.54	0.54		--	--	--	1	20 A	EX. RCPT RM 167	18	--
--	19	EX. SPARES UNDER	20 A	2	--	--	--		0	0.54						--	--	--	1	20 A	EX. RCPT RM 167	20	--
--	21	--	--	--	--	--	--	--			0	0.18			0.21	12	12	12	1	20 A	EX. RCPT RM 167	22	
--	23	EX. SPARES RM 166	20 A	1	--	--	--						0	0.18	0.25	12	12	12	1	20 A	EX. RCPT RM 167	24	
--	25	EX. LTGS COMPUTER OP. RM	20 A	1	--	--	--		0.72	0.18					0.15	12	12	12	1	20 A	EX. RCPT RM 167	26	
--	27	EX. LTGS 167 HALL	20 A	1	--	--	--				0.72	0.18			0.23	12	12	12	1	20 A	EX. RCPT RM 167	28	
--	29	EX. LTGS 167 HALL	20 A	1	--	--	--						0.72	0.18	0.24	12	12	12	1	20 A	EX. RCPT RM 167	30	
--	31	EX. LTGS COMPUTER RM	20 A	1	--	--	--		0.72	0.18					0.19	12	12	12	1	20 A	EX. RCPT RM 167	32	
--	33	EXISTING LOAD	20 A	1	--	--	--				0.72	--				--	--	--	1	--	SPACE	34	--
--	35	EXISTING LOAD	20 A	1	--	--	--						0.72	--		--	--	--	1	--	SPACE	36	--
--	37	EX. RECEPTS 167A OFFICE	20 A	1	--	--	--		0.72	--						--	--	--	1	--	SPACE	38	--
--	39	SPACE	--	1	--	--	--				--	3.05				--	--	--	2	40 A	EX. WELDER	40	--
--	41	SPACE	--	1	--	--	--						--	3.05	--	--	--	--	--	--	--	42	--
								Total Load:	20.74 kVA		21.51 kVA		21.87 kVA										
								Total Amps:	172.81		180.21		183.21										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Power	21.5 kVA	100.00%	21.5 kVA		
Receptacles	1.08 kVA	100.00%	1.08 kVA	TOTAL CONNECTED LOAD:	64.11 kVA
Spare	41.53 kVA	80.00%	33.224 kVA	TOTAL ESTIMATED DEMAND LOAD:	55.804 kVA
				TOTAL CONNECTED AMPS:	177.95 A
				TOTAL ESTIMATED DEMAND AMPS:	154.9 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

EX. PANEL CHEK BANW BCP01

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 100 A/3P @ CHEK-0NLS01
LOCATION: MECHANICAL 08

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 100 A MLO
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 10 kA
ISC: 13.69 kA

NOTES: PANEL ALSO REFERRED TO AS 'LP B1'.

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	OCPD P	WIRE SIZE H	WIRE SIZE N	WIRE SIZE G	VD %	A	A	B	B	C	C	VD %	WIRE SIZE G	WIRE SIZE N	WIRE SIZE H	OCPD P	OCPD AMPS	LOAD DESCRIPTION	CKT NO.	KEY
	1	EX. CLASSROOM LIGHTS	15 A	1	--	--	--		0.72	0.5						--	--	--	2	15 A	EX. 220 VOLT RECEPT	2	
	3	EX. CLASSROOM LIGHTS	15 A	1	--	--	--				0.72	0.5			--	--	--	--	--	--	--	4	--
	5	EX. CLASSROOM LIGHTS	15 A	1	--	--	--						0.72	0.36		--	--	--	1	15 A	EX. MAIN STAIR LIGHT	6	
	7	EX. CLASSROOM LIGHTS	15 A	1	--	--	--		0.72	0.36						--	--	--	1	15 A	EX. TUNNEL LIGHT	8	
	9	EX. CLASSROOM LIGHTS	15 A	1	--	--	--				0.72	0.18				--	--	--	1	15 A	EX. RM 5 CEILING RECEPT	10	
	11	EX. CLASSROOM LIGHTS	15 A	1	--	--	--						0.72	0.18		--	--	--	1	15 A	EXISTING LOAD	12	
	13	EX. CLASSROOM LIGHTS	15 A	1	--	--	--		0.72	0.18						--	--	--	1	15 A	EXISTING LOAD	14	
	15	EX. CLASSROOM LIGHTS	15 A	1	--	--	--				0.72	0.18				--	--	--	1	15 A	EX. RM 5 CEILING RECEPTS	16	
	17	EX. CLASSROOM LIGHTS	15 A	1	--	--	--						0.72	0.18		--	--	--	1	15 A	EX. FAN	18	
	19	EX. CLASSROOM LIGHTS	15 A	1	--	--	--		0.72	0.18						--	--	--	1	15 A	EX. RM 5 CEILING RECEPTS	20	
	21	EX. CLASSROOM LIGHTS	15 A	1	--	--	--				0.72	0.18				--	--	--	1	15 A	EX. RM 5 CEILING RECEPTS	22	
	23	EX. CLASSROOM LIGHTS	15 A	1	--	--	--						0.72	0.18		--	--	--	1	15 A	EXISTING LOAD	24	
	25	EX. CLASSROOM LIGHTS	15 A	1	--	--	--		0.72	0.18						--	--	--	1	15 A	EXISTING LOAD	26	
	27	EX. CLASSROOM LIGHTS	15 A	1	--	--	--				0.72	0.18				--	--	--	1	15 A	EXISTING LOAD	28	
	29	EX. CLASSROOM LIGHTS	15 A	1	--	--	--						0.72	0.18		--	--	--	1	15 A	EXISTING LOAD	30	
	31	EX. RECEPT RM 08	15 A	1	--	--	--		0.72	0.18						--	--	--	1	15 A	EXISTING LOAD	32	
	33	EX. RECEPT RM 06	15 A	1	--	--	--				0.72	0.18				--	--	--	1	15 A	EXISTING LOAD	34	
	35	EX. RECEPT WEST 04	15 A	1	--	--	--						0.72	1.25		--	--	--	2	15 A	EXISTING LOAD	36	
	37	EX. RECEPT NORTH 04	15 A	1	--	--	--		0.72	1.25					--	--	--	--	--	--	--	38	--
	39	EX. SUMP RECEPT 04	15 A	1	--	--	--				0.5	2.5			2.55	10	--	6	2	50 A	EX. CHILLER CONTROL PANEL	40	
	41	EX. SUMP RECEPT	15 A	1	--	--	--						0.5	2.5	--	--	--	--	--	--	--	42	--
								Total Load:	7.87 kVA		8.72 kVA		9.65 kVA										
								Total Amps:	65.58		73.76		81.51										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Lighting	11.52 kVA	100.00%	11.52 kVA		
Power	8.94 kVA	100.00%	8.94 kVA	TOTAL CONNECTED LOAD:	26.24 kVA
Receptacles	5.78 kVA	100.00%	5.78 kVA	TOTAL ESTIMATED DEMAND LOAD:	26.24 kVA
				TOTAL CONNECTED AMPS:	72.83 A
				TOTAL ESTIMATED DEMAND AMPS:	72.8 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

EX. PANEL CHEK BANW BCP02

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 60 A/3P @ CHEK-0NLS01
LOCATION: MECHANICAL 08

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 60 A MLO
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 10 kA
ISC: 6.02 kA

NOTES: PANEL ALSO REFERRED TO AS 'EP BB'. .

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	OCPD P	WIRE SIZE H	WIRE SIZE N	WIRE SIZE G	VD %	A	A	B	B	C	C	VD %	WIRE SIZE G	WIRE SIZE N	WIRE SIZE H	OCPD P	OCPD AMPS	LOAD DESCRIPTION	CKT NO.	KEY
	1	EX. LIGHTING	15 A	1	--	--	--		0.72	0.72						--	--	--	1	15 A	EX. SUMP PUMP	2	
	3	EX. LIGHTING	15 A	1	--	--	--				0.72	0.18				--	--	--	1	15 A	EX. TEMP RECEPT	4	
	5	EX. SUMP PUMP RCPTS	15 A	1	--	--	--						0.72	0.9		--	--	--	3	30 A	EX. PANEL L5	6	
	7	EX. SUMP EXTERIAL	15 A	1	--	--	--		0.72	0.9					--	--	--	--	--	--	--	8	--
	9	EX. BELLS	15 A	1	--	--	--				0.72	0.9			--	--	--	--	--	--	--	10	--
	11	EXISTING LIGHTING	15 A	1	--	--	--						0.72	--		--	--	--	1	--	SPACE	12	--
								Total Load:	3.06 kVA		2.52 kVA		2.34 kVA										
								Total Amps:	25.73		21.23		19.50										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Lighting	2.16 kVA	100.00%	2.16 kVA		
Power	2.7 kVA	100.00%	2.7 kVA	TOTAL CONNECTED LOAD:	7.92 kVA
Receptacles	3.06 kVA	100.00%	3.06 kVA	TOTAL ESTIMATED DEMAND LOAD:	7.92 kVA
				TOTAL CONNECTED AMPS:	21.98 A
				TOTAL ESTIMATED DEMAND AMPS:	22 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

EX. PANEL CHEK BANW BCP03

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 100 A/3P @ CHEK-0NLD01
LOCATION: MECH 015

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 100 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 10 kA
ISC: 15.12 kA

NOTES: PANEL ALSO REFERRED TO AS 'PP B2'.

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	OCPD P	WIRE SIZE H	WIRE SIZE N	WIRE SIZE G	VD %	A	A	B	B	C	C	VD %	WIRE SIZE G	WIRE SIZE N	WIRE SIZE H	OCPD P	OCPD AMPS	LOAD DESCRIPTION	CKT NO.	KEY
--	1	SPARE	20 A	1	--	--	--		0	0.18						--	--	--	1	20 A	EX. ELEVATOR RECEPT	2	--
--	3	SPARE	20 A	1	--	--	--				0	1.75				--	--	--	2	25 A	EX. WH-E	4	--
--	5	SPARE	20 A	1	--	--	--						0	1.75	--	--	--	--	--	--	--	6	--
--	7	EX. LIGHTING	20 A	1	--	--	--		0.72	0.5						--	--	--	1	20 A	EXISTING LOAD	8	--
--	9	SPARE	20 A	1	--	--	--				0	0				--	--	--	1	20 A	SPARE	10	--
--	11	EX. ELEV	20 A	1	--	--	--						0.5	0.5		--	--	--	1	20 A	EXISTING LOAD	12	--
--	13	EX. PUMP	20 A	1	--	--	--		0.5	0						--	--	--	3	50 A	SPARE	14	--
--	15	SPARE	20 A	1	--	--	--				0	0			--	--	--	--	--	--	--	16	--
--	17	SPARE	20 A	1	--	--	--						0	0	--	--	--	--	--	--	--	18	--
--	19	SPARE	20 A	1	--	--	--		0	1						--	--	--	3	20 A	EX. RE-CIR PUMP	20	--
--	21	SPARE	20 A	1	--	--	--				0	1			--	--	--	--	--	--	--	22	--
--	23	SPARE	20 A	1	--	--	--						0	1	--	--	--	--	--	--	--	24	--
								Total Load:	2.90 kVA		2.75 kVA		3.75 kVA										
								Total Amps:	24.36		22.92		31.44										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
HVAC	3.5 kVA	100.00%	3.5 kVA		
Spare	5.9 kVA	80.00%	4.72 kVA	TOTAL CONNECTED LOAD:	9.40 kVA
				TOTAL ESTIMATED DEMAND LOAD:	8.22 kVA
				TOTAL CONNECTED AMPS:	26.09 A
				TOTAL ESTIMATED DEMAND AMPS:	22.8 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

PANEL CHEK BANW BCP04 (PNL S)

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 30 A/3P @ CHEK BANW BCP02
LOCATION: STOR 010

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 30 A MLO
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 10 kA
ISC: 0.99 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	OCPD P	WIRE SIZE H	WIRE SIZE N	WIRE SIZE G	VD %	A	A	B	B	C	C	VD %	WIRE SIZE G	WIRE SIZE N	WIRE SIZE H	OCPD P	OCPD AMPS	LOAD DESCRIPTION	CKT NO.	KEY
	1	Receptacles	15 A	3	10	--	10	2.28	0.9													2	
--	3	--	--	--	--	--	--	--			0.9											4	
--	5	--	--	--	--	--	--	--					0.9									6	
	7																					8	
	9																					10	
	11																					12	
	13																					14	
	15																					16	
	17																					18	
	19																					20	
	21																					22	
	23																					24	
	25																					26	
	27																					28	
	29																					30	
	31																					32	
	33																					34	
	35																					36	
	37																					38	
	39																					40	
	41																					42	
								Total Load:	0.90 kVA		0.90 kVA		0.90 kVA										
								Total Amps:	7.50		7.50		7.50										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Power	2.7 kVA	100.00%	2.7 kVA		
				TOTAL CONNECTED LOAD:	2.70 kVA
				TOTAL ESTIMATED DEMAND LOAD:	2.7 kVA
				TOTAL CONNECTED AMPS:	7.49 A
				TOTAL ESTIMATED DEMAND AMPS:	7.5 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

EX. PANEL CHEK BANW BCPU0

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 100 A/3P @ CHEK-0NLS01
LOCATION: MECHANICAL 08

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 100 A MLO
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 10 kA
ISC: 1.10 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	OCPD P	WIRE SIZE H	WIRE SIZE N	WIRE SIZE G	VD %	A	A	B	B	C	C	VD %	WIRE SIZE G	WIRE SIZE N	WIRE SIZE H	OCPD P	OCPD AMPS	LOAD DESCRIPTION	CKT NO.	KEY
--	1	SPARE	30 A	2	--	--	--		0	0.5						--	--	--	3	15 A	EX. VF-9	2	
--	3	--	--	--	--	--	--	--			0	0.5			--	--	--	--	--	--	--	4	--
--	5	SPARE	20 A	1	--	--	--						0	0.5	--	--	--	--	--	--	--	6	--
--	7	SPARE	30 A	3	--	--	--		0	0.5						--	--	--	3	15 A	EX. CHEK P1 PUMP	8	
--	9	--	--	--	--	--	--	--			0	0.5			--	--	--	--	--	--	--	10	--
--	11	--	--	--	--	--	--	--					0	0.5	--	--	--	--	--	--	--	12	--
--	13	SPACE	--	1	--	--	--		--	--						--	--	--	1	--	SPACE	14	--
--	15	SPACE	--	1	--	--	--				--	--				--	--	--	1	--	SPACE	16	--
--	17	SPACE	--	1	--	--	--						--	--		--	--	--	1	--	SPACE	18	--
								Total Load:	1.00 kVA		1.00 kVA		1.00 kVA										
								Total Amps:	8.33		8.33		8.33										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Power	3 kVA	100.00%	3 kVA		
				TOTAL CONNECTED LOAD:	3.00 kVA
				TOTAL ESTIMATED DEMAND LOAD:	3 kVA
				TOTAL CONNECTED AMPS:	8.33 A
				TOTAL ESTIMATED DEMAND AMPS:	8.3 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

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CERTIFICATE OF AUTHORITY - E2017008530

Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS

#	Date / Description
1	
2	
3	
4	

Seal:

50% PROGRESS SET - NOT FOR CONSTRUCTION

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REF. SCALE IN INCHES
PROJECT #23008968.00

Sheet Title:

ELECTRICAL PANEL SCHEDULES

Sheet #:

E6.06

EX. PANEL BCP01

MOUNTING: RECESSED
ENCLOSURE: NEMA 1
FED FROM: 200 A/3P @ CHEK BANW DPN00
LOCATION: CONFERENCE ROOM 150

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 225 A MLO
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 10 kA
ISC: 7.38 kA

NOTES: PANEL ALSO REFERRED TO AS 'N-1'.

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	OCPD P	AMPS	LOAD DESCRIPTION	CKT NO.	KEY
--	1	EXISTING LOAD	20 A	1	--	--	--		0.5	0.5						--	--	--	1	20 A	EXISTING LOAD	2	--
--	3	EXISTING LOAD	20 A	1	--	--	--				0.5	0.75				--	--	--	3	20 A	EXISTING LOAD	4	--
--	5	EXISTING LOAD	20 A	1	--	--	--						0.5	0.75	--	--	--	--	--	--	--	6	--
--	7	EXISTING LOAD	20 A	1	--	--	--		0.5	0.75					--	--	--	--	--	--	--	8	--
--	9	EXISTING LOAD	20 A	1	--	--	--				0.5	0.75				--	--	--	3	20 A	EXISTING LOAD	10	--
--	11	EXISTING LOAD	20 A	1	--	--	--						0.5	0.75	--	--	--	--	--	--	--	12	--
--	13	EXISTING LOAD	20 A	1	--	--	--		0.5	0.75					--	--	--	--	--	--	--	14	--
--	15	EXISTING LOAD	20 A	1	--	--	--				0.5	0.5				--	--	--	1	20 A	EXISTING LOAD	16	--
--	17	EXISTING LOAD	20 A	1	--	--	--						0.5	0.5		--	--	--	1	20 A	EXISTING LOAD	18	--
--	19	EXISTING LOAD	20 A	1	--	--	--		0.75	0.75						--	--	--	1	20 A	EXISTING LOAD	20	--
--	21	EXISTING LOAD	20 A	1	--	--	--				0.75	0.75				--	--	--	1	20 A	EXISTING LOAD	22	--
--	23	EXISTING LOAD	20 A	1	--	--	--						0.75	0.75		--	--	--	1	20 A	EXISTING LOAD	24	--
--	25	EXISTING LOAD	20 A	1	--	--	--		0.5	0.5						--	--	--	1	20 A	EXISTING LOAD	26	--
--	27	EXISTING LOAD	20 A	1	--	--	--				0.5	0.5				--	--	--	1	20 A	EXISTING LOAD	28	--
--	29	EXISTING LOAD	20 A	1	--	--	--						0.5	0.5		--	--	--	1	20 A	EXISTING LOAD	30	--
--	31	EXISTING LOAD	20 A	1	--	--	--		1	0.5						--	--	--	1	20 A	EXISTING LOAD	32	--
--	33	EXISTING LOAD	20 A	1	--	--	--				1	0.5				--	--	--	1	20 A	EXISTING LOAD	34	--
--	35	EXISTING LOAD	20 A	1	--	--	--						1	0.5		--	--	--	1	20 A	EXISTING LOAD	36	--
--	37	EXISTING LOAD	20 A	1	--	--	--		0.5	0.5						--	--	--	1	20 A	EXISTING LOAD	38	--
--	39	EXISTING LOAD	20 A	1	--	--	--				0.5	0.5				--	--	--	1	20 A	EXISTING LOAD	40	--
--	41	EXISTING LOAD	20 A	1	--	--	--						0.5	0.5		--	--	--	1	20 A	EXISTING LOAD	42	--
	43																					44	
	45																					46	
	47																					48	
	49																					50	
	51																					52	
	53																					54	
	55																					56	
	57																					58	
	59																					60	
								Total Load:	8.50 kVA		8.50 kVA		8.50 kVA										
								Total Amps:	70.83		70.83		70.83										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Spare	25.5 kVA	80.00%	20.4 kVA		
				TOTAL CONNECTED LOAD:	25.50 kVA
				TOTAL ESTIMATED DEMAND LOAD:	20.4 kVA
				TOTAL CONNECTED AMPS:	70.78 A
				TOTAL ESTIMATED DEMAND AMPS:	56.6 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

PANEL LP1

MOUNTING: RECESSED
ENCLOSURE: NEMA 1
FED FROM: 225 A/3P LSI @ CHEK-0NLD01
LOCATION:

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 225 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 10 kA
ISC: 5.29 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	OCPD P	AMPS	LOAD DESCRIPTION	CKT NO.	KEY
	1	EX. RECPTS	15 A	1	--	--	--		0.72	0.72					2.55	10	10	10	1	15 A	EX. RECPTS	2	
	3	EX. RECPTS	15 A	1	--	--	--				0.72	0.72			2.58	10	10	10	1	15 A	EX. RECPTS	4	
	5	EX. RECPTS	15 A	1	--	--	--						0.72	0.72	2.61	10	10	10	1	15 A	EX. RECPTS	6	
	7	EX. RECPTS	15 A	1	--	--	--		0.72	0.72					2.64	10	10	10	1	15 A	EX. RECPTS	8	
	9	EX. RECPTS	15 A	1	--	--	--				0.72	0.72			2.66	10	10	10	1	15 A	EX. RECPTS	10	
	11	EX. RECPTS	15 A	1	--	--	--						0.72	0.72	2.69	10	10	10	1	15 A	EX. RECPTS	12	
	13	EX. RECPTS	15 A	1	--	--	--		0.72	0.72					2.72	10	10	10	1	15 A	EX. RECPTS	14	
	15	EX. RECPTS	15 A	1	--	--	--				0.72	0.72			2.75	10	10	10	1	15 A	EX. RECPTS	16	
	17	EX. LIGHTING	15 A	1	--	--	--						0.9	0.9	2.29	8	8	8	1	15 A	EX. LIGHTING	18	
	19	EX. LIGHTING	15 A	1	--	--	--		0.9	0.9					2.31	8	8	8	1	15 A	EX. LIGHTING	20	
	21	EX. LIGHTING	15 A	1	--	--	--				0.9	0.9			2.34	8	8	8	1	15 A	EX. LIGHTING	22	
	23	EX. LIGHTING	15 A	1	--	--	--						0.9	0.9	2.37	8	8	8	1	15 A	EX. LIGHTING	24	
	25	EX. LIGHTING	15 A	1	--	--	--		0.9	0.9					2.39	8	8	8	1	15 A	EX. LIGHTING	26	
	27	EX. LIGHTING	15 A	1	--	--	--				0.9	0.9			2.42	8	8	8	1	15 A	EX. LIGHTING	28	
	29	EX. LIGHTING	15 A	1	--	--	--						0.9	0.9	2.45	8	8	8	1	15 A	EX. LIGHTING	30	
	31	EX. PHOTOCELL	15 A	1	--	--	--		0.9	0.9					2.47	8	8	8	1	15 A	EX. HVAC	32	
	33	EX. HVAC	15 A	1	--	--	--				0.9	0				--	--	--	1	20 A	SPARE	34	--
--	35	SPARE	20 A	1	--	--	--						0	0		--	--	--	1	20 A	SPARE	36	--
--	37	SPARE	20 A	1	--	--	--		0	0						--	--	--	1	20 A	SPARE	38	--
--	39	SPARE	20 A	1	--	--	--				0	0				--	--	--	1	20 A	SPARE	40	--
--	41	SPARE	20 A	1	--	--	--						0	0		--	--	--	1	20 A	SPARE	42	--
								Total Load:	9.72 kVA		8.82 kVA		8.28 kVA										
								Total Amps:	81.69		74.19		69.00										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
HVAC	1.8 kVA	100.00%	1.8 kVA		
Lighting	13.5 kVA	100.00%	13.5 kVA	TOTAL CONNECTED LOAD:	26.82 kVA
Receptacles	11.52 kVA	93.40%	10.76 kVA	TOTAL ESTIMATED DEMAND LOAD:	26.06 kVA
				TOTAL CONNECTED AMPS:	74.44 A
				TOTAL ESTIMATED DEMAND AMPS:	72.3 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

EX. PANEL BCP10

MOUNTING: RECESSED
ENCLOSURE: NEMA 1
FED FROM: 225 A/3P LSI @ CHEK-0NLD01
LOCATION: CONFERENCE ROOM 150

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 225 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 22 kA
ISC: 8.31 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	OCPD P	AMPS	LOAD DESCRIPTION	CKT NO.	KEY
	1	EX. REC: BYOD	15 A	1	--	--	--		0.72	0						--	--	--	1	20 A	SPARE	2	--
	3	EX. REC: BYOD	15 A	1	--	--	--				0.72	0.72				--	--	--	1	15 A	EX. ELEVATOR SHAFT	4	
	5	EX. REC: BYOD	15 A	1	--	--	--						0.72	0.72		--	--	--	1	15 A	EX. FLRBOX: COMP SCIENCES	6	
	7	EX. REC: HELP DESK	15 A	1	--	--	--		0.72	0.72						--	--	--	1	15 A	EX. FLRBOX: COMP SCIENCES	8	
	9	EX. REC: HELP DESK	15 A	1	--	--	--				0.72	0.72				--	--	--	1	15 A	EX. FLRBOX: FIELD SERVICES	10	
	11	EX. REC: HELP DESK	15 A	1	--	--	--						0.72	0.72		--	--	--	1	15 A	EX. FLRBOX: FIELD SERVICES	12	
	13	EX. REC: CLIENT SYSTEMS	15 A	1	--	--	--		0.72	0.72						--	--	--	1	15 A	EX. REC: OFFICES & F.S	14	
	15	EX. REC: CLIENT SYSTEMS	15 A	1	--	--	--				0.72	0.72				--	--	--	1	15 A	EX. MOTORIZED SHADES	16	
	17	EX. REC: IMAGE REPAIR 152B	15 A	1	--	--	--						0.72	0.72		--	--	--	1	15 A	EX. MOTORIZED SHADES	18	
	19	EX. REC: IMAGE REPAIR	15 A	1	--	--	--		0.72	0.72						--	--	--	1	15 A	EX. MOTORIZED SHADES	20	
	21	EX. REC: IMAGE REPAIR 152A	15 A	1	--	--	--				0.72	0.72				--	--	--	1	15 A	EX. CHEK/VRHO26-35	22	
	23	EX. REC: IMAGE REPAIR 152A	15 A	1	--	--	--						0.72	0.72		--	--	--	1	15 A	EX. ACCESS CONTROL	24	
	25	EX. REC: COMPUTER LAB FIELD	15 A	1	--	--	--		0.72	0.72						--	--	--	1	15 A	EX. PROTECTION SCREEN	26	
	27	EX. FLRBOX: COMPUTER LAB	15 A	1	--	--	--				0.72	0.72				--	--	--	1	15 A	EX. REC: OFFICES	28	
	29	EX. FLRBOX: COMPUTER LAB	15 A	1	--	--	--						0.72	0		--	--	--	1	20 A	SPARE	30	--
	31	EX. FLRBOX: COMPUTER LAB	15 A	1	--	--	--		0.72	0.5						--	--	--	1	15 A	EXISTING LOAD	32	
	33	EX. FLRBOX: COMPUTER LAB	15 A	1	--	--	--				0.72	0.5				--	--	--	1	15 A	EXISTING LOAD	34	
	35	EX. FLRBOX: COMPUTER LAB	15 A	1	--	--	--						0.72	0		--	--	--	1	20 A	SPARE	36	--
	37	EX. FLRBOX: COMPUTER LAB	15 A	1	--	--	--		0.72	0.18						--	--	--	3	15 A	EX. SURGE PROTECTOR	38	
	39	EX. FLRBOX: COMPUTER LAB	15 A	1	--	--	--				0.72	0.18			--	--	--	--	--	--	--	40	--
	41	EX. FLRBOX: COMPUTER LAB	15 A	1	--	--	--						0.72	0.18	--	--	--	--	--	--	--	42	--
	43	EX. FLRBOX: COMPUTER LAB	15 A	1	--	--	--		0.72	0.5						--	--	--	1	15 A	EXISTING LOAD	44	
	45	EX. FLRBOX: COMPUTER LAB	15 A	1	--	--	--				0.72	0.5				--	--	--	1	15 A	EXISTING LOAD	46	
	47	EX. REC: COMPUTER LAB	15 A	1	--	--	--						0.72	0.5		--	--	--	1	15 A	EXISTING LOAD	48	
	49	EX. REC: COMPUTER LAB	15 A	1	--	--	--		0.72	0.5						--	--	--	1	15 A	EXISTING LOAD	50	
	51	EX. REC/PROJECTOR: COMP...	15 A	1	--	--	--				0.72	0.5				--	--	--	1	15 A	EXISTING LOAD	52	
	53	EX. COPIER: COMP SCIENCE	15 A	1	--	--	--						0.72	0.5		--	--	--	1	15 A	EXISTING LOAD	54	
	55	EX. COPIER: COMP SCIENCE	15 A	1	--	--	--		0.72	0.5						--	--	--	1	15 A	EXISTING LOAD	56	
	57	EX. FLRBOX: COMPUTER LAB	15 A	1	--	--	--				0.72	0.5				--	--	--	1	15 A	EXISTING LOAD	58	
	59	EX. FLRBOX: COMPUTER LAB	15 A	1	--	--	--						0.72	0.5		--	--	--	1	15 A	EXISTING LOAD	60	
	61	EX. FLRBOX: COMPUTER LAB	15 A	1	--	--	--		0.72	0						--	--	--	1	20 A	SPARE	62	--
	63	EX. FLRBOX: COMPUTER LAB	15 A	1	--	--	--				0.72	0.5				--	--	--	1	15 A	EXISTING LOAD	64	
	65	EX. FLRBOX: COMPUTER LAB	15 A	1	--	--	--						0.72	4.67	0.22	10	--	4	3	60 A	EX. RTU	66	
	67	EX. FLRBOX: COMPUTER LAB	15 A	1	--	--	--		0.72	4.67					--	--	--	--	--	--	--	68	--
	69	EX. FLRBOX: COMPUTER LAB	15 A	1	--	--	--				0.72	4.67			--	--	--	--	--	--	--	70	--
	71	EX. FLRBOX: COMPUTER LAB	15 A	1	--	--	--						0.72	--		--	--	--	1	--	SPACE	72	--
								Total Load:	18.37 kVA		19.59 kVA		17.87 kVA										
								Total Amps:	153.70		163.86		148.89										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
HVAC	14 kVA	100.00%	14 kVA		
Power	6.54 kVA	100.00%	6.54 kVA	TOTAL CONNECTED LOAD:	55.82 kVA
Receptacles	35.28 kVA	64.17%	22.64 kVA	TOTAL ESTIMATED DEMAND LOAD:	43.18 kVA
				TOTAL CONNECTED AMPS:	154.94 A
				TOTAL ESTIMATED DEMAND AMPS:	119.9 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

PANEL LP2

MOUNTING: RECESSED
ENCLOSURE: NEMA 1
FED FROM: 0 A/0P @
LOCATION:

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 225 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 10 kA
ISC UNKNOWN 0.00 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	OCPD P	AMPS	LOAD DESCRIPTION	CKT NO.	KEY
--	1	EX. SUB-FEED LP-3	60 A	3	--	--	--		4	0						--	--	--	1	20 A	RCPT TELEPHONE	2	--
--	3	--	--	--	--	--	--	--			4	0.72				--	--	--	1	15 A	EX. RCPTS 65M	4	
--	5	--	--	--	--	--	--	--					4	0.72		--	--	--	1	15 A	EX. RCPTS 61, & 62M	6	
	7	EX. RCPTS WATER HEATER	15 A	1	--	--	--		0.72	0.72						--	--	--	1	15 A	EX. RCPTS 73M & 75M	8	
	9	EX. RCPTS 73M & 75M	15 A	1	--	--	--				0.72	0.72				--	--	--	1	15 A	EX. RCPTS 72M	10	
	11	EX. RCPTS 72M	15 A	1	--	--	--						0.72	0.72		--	--	--	1	15 A	EX. RCPTS 72M	12	
	13	EX. RCPTS RM KITCHEN	15 A	1	--	--	--		0.72	0.72						--	--	--	1	15 A	EX. WATER COOLER	14	
	15	EX. RECPTS RM 43, 44M	15 A	1	--	--	--				0.72	0.72				--	--	--	1	15 A	EX. RCPTS RM 44, 46M	16	
	17	EX. RECPTS RM 68, 69, 70 & 71M	15 A	1	--	--	--						0.72	0.72		--	--	--	1	15 A	EX. RECPTS RM 68M	18	
	19	EX. RECPTS RM 57 & 58M	15 A	1	--	--	--		0.72	0.72						--	--	--	1	15 A	EX. RECPTS RM 45 & 71M	20	
	21	EX. RECPTS RM 45, 50M	15 A	1	--	--	--				0.72	0.72				--	--	--	1	15 A	EX. RECPTS RM 52 & 50M	22	
	23	EX. RCPTS RM 52 & 56M	15 A	1	--	--	--						0.72	0.72		--	--	--	1	15 A	EX. RCPTS RM 51 & 53M	24	
	25	EX. RCPTS RM 49M	15 A	1	--	--	--		0.72	0.72						--	--	--	1	15 A	EX. RCPTS RM 54, 55M	26	
	27	EX. RCPTS RM 46, 47 & 48M	15 A	1	--	--	--				0.72	0.9				--	--	--	1	15 A	EX. LIGHTS RM 68,69,70 & 71M	28	
	29	EX. LIGHTS 56, 52, 50 & 45M	15 A	1	--	--	--						0.9	0.9		--	--	--	1	15 A	EX. LIGHTS RM 54, 55, 57 & 58M	30	
	31	EX. LIGHTS RM 53, 51, 48, & 49M	15 A	1	--	--	--		0.9	0.9						--	--	--	1	15 A	EX. LIGHTS RM 43, 44, 46 & 47M	32	
	33	EX. LIGHTS 60,61,62	15 A	1	--	--	--				0.9	0.9				--	--	--	1	15 A	EX. LIGHTS TELEPHONE RM 63,64,66	34	
	35	EX. LIGHTS 75 & 72M74 & 76M	15 A	1	--	--	--						0.9	0.9		--	--	--	1	15 A	EX. LIGHTS 75 & 72M	36	
								Total Load:	11.56 kVA		12.46 kVA		12.64 kVA										
								Total Amps:	96.33		104.99		106.49										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Lighting	8.1 kVA	100.00%	8.1 kVA		
Receptacles	16.56 kVA	80.19%	13.28 kVA	TOTAL CONNECTED LOAD:	36.66 kVA
Spare	12 kVA	80.00%	9.6 kVA	TOTAL ESTIMATED DEMAND LOAD:	30.98 kVA
				TOTAL CONNECTED AMPS:	101.76 A
				TOTAL ESTIMATED DEMAND AMPS:	86 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

EX. PANEL PP2

MOUNTING: RECESSED
ENCLOSURE: NEMA 1
FED FROM: 225 A/3P LSI @ CHEK-0NLD01
LOCATION: CONFERENCE ROOM 150

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 225 A MLO
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 22 kA
ISC: 8.52 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	OCPD P	AMPS	LOAD DESCRIPTION	CKT NO.	KEY
--	1	EX. LTG: BYOD, HELP DEST	20 A	1	--	--	--		0.72	0.72						--	--	--	1	20 A	EX. FLOOR BOXES 2ND FLOOR	2	--
--	3	EX. LTG: CORR 150, CLIENT SYS	20 A	1	--	--	--				0.72	1				--	--	--	1	20 A	EX. COPY MACHINE	4	--
--	5	EX. LTG: IMAGE, FIELD, 152A/B	20 A	1	--	--	--						0.72	0.72		--	--	--	1	20 A	EX. SOUTH ENTRY WAY LTGS	6	--
--	7	EX. LTG: COMPUTER LAB	20 A	1	--	--	--		0.72	0						--	--	--	1	20 A	SPARE	8	--
--	9	EX. LTG: COMPUTER LAB	20 A	1	--	--	--				0.72	0				--	--	--	1	20 A	SPARE	10	--
--	11	EX. COVE LTG: COMP SCIENCES	20 A	1	--	--	--						0.72	0		--	--	--	1	20 A	SPARE	12	--
--	13	EX. LTG: COMP SCIENCES	20 A	1	--	--	--		0.72	1						--	--	--	1	20 A	EX. HEATER	14	--
--	15	EX. LTG: COMP SCIENCES	20 A	1	--	--	--				0.72	1				--	--	--	1	20 A	EX. HEATER	16	--
--	17	EX. COVE LTG: COMP SCIENCES	20 A	1	--	--	--						0.72	--		--	--	--	1	--	SPACE	18	--
--	19	SPACE	--	1	--	--	--		--	--						--	--	--	1	--	SPACE	20	--
--	21	SPACE	--	1	--	--	--				--	--				--	--	--	1	--	SPACE	22	--
--	23	SPACE	--	1	--	--	--						--	--		--	--	--	1	--	SPACE	24	--
--	25	SPACE	--	1	--	--	--		--	--						--	--	--	1	--	SPACE	26	--
--	27	SPACE	--	1	--	--	--				--	--				--	--	--	1	--	SPACE	28	--
--	29	SPACE	--	1	--	--	--						--	--		--	--	--	1	--	SPACE	30	--
								Total Load:	3.88 kVA		4.16 kVA		2.88 kVA										
								Total Amps:	33.62		35.95		24.00										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Spare	10.92 kVA	80.00%	8.736 kVA		
				TOTAL CONNECTED LOAD:	10.92 kVA
				TOTAL ESTIMATED DEMAND LOAD:	8.736 kVA
				TOTAL CONNECTED AMPS:	30.31 A
				TOTAL ESTIMATED DEMAND AMPS:	24.2 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

PANEL NLPF

MOUNTING: RECESSED
ENCLOSURE: NEMA 1
FED FROM: 200 A/3P @ CHEK BANW DPN00
LOCATION: CORRIDOR 298

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 200 A MLO
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 10 kA
ISC: 5.84 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	OCPD P	AMPS	LOAD DESCRIPTION	CKT NO.	KEY
	1	EX. LTG RM 204	15 A	1	--	--	--		0.9	0						--	--	--	1	20 A	SPARE	2	--
	3	EX. RCPT RM 204, 206B	15 A	1	--	--	--				0.72	0.9				--	--	--	1	15 A	EX. UNKNOWN LOAD	4	
	5	EX. LTG RM 204	15 A	1	--	--	--						0.9	0		--	--	--	1	20 A	SPARE	6	--
	7	EX. LTG RM 204	15 A	1	--	--	--		0.9	0						--	--	--	1	20 A	SPARE	8	--
	9	EX. UNKNOWN LOAD	15 A	1	--	--	--				0.9	0				--	--	--	1	20 A	SPARE	10	--
	11	EX. UNKNOWN LOAD	15 A	1	--	--	--						0.9	0		--	--	--	1	20 A	SPARE	12	--
	13	EX. LTG RM 202	15 A	1	--	--	--		0.9	0						--	--	--	1	20 A	SPARE	14	--
	15	EX. LTG RM 202	15 A	1	--	--	--				0.9	0				--	--	--	1	20 A	SPARE	16	--
	17	EX. LTG RM 202	15 A	1	--	--	--						0.9	0		--	--	--	1	20 A	SPARE	18	--
	19	EX. RCPT RM 202	15 A	1	--	--	--		0.72	0						--	--	--	1	20 A	SPARE	20	--
	21	EX. LTG RM 205	15 A	1	--	--	--				0.9	0				--	--	--	1	20 A	SPARE	22	--
	23	EX. UNKNOWN LOAD	15 A	1	--	--	--						0.9	0		--	--	--	1	20 A	SPARE	24	--
	25	EX. LTG RM 205	15 A	1	--	--	--		0.9	0						--	--	--	1	20 A	SPARE	26	--
	27	EX. LTG RM 205	15 A	1	--	--	--				0.9	0				--	--	--	1	20 A	SPARE	28	--
	29	EX. LTG RM 205	15 A	1	--	--	--						0.9	0.9		--	--	--	1	15 A	EX. LTG RM 203B, 203B, KITCH	30	
	31	EX. RCPT RM 205, COPIER 203A	15 A	1	--	--	--		1.2	0.72						--	--	--	1	15 A	EX. RCPT KITCH	32	
	33	EX. UNKNOWN LOAD	15 A	1	--	--	--				0.9	0.72				--	--	--	1	15 A	EX. RCPT KITCH	34	
--	35	SPARE	20 A	1	--	--	--						0	0		--	--	--	1	20 A	SPARE	36	--
	37	EX. LTG WALKWAY	15 A	1	--	--	--		0.9	0						--	--	--	1	20 A	SPARE	38	--
	39	EX. VAV	15 A	2	--	--	--				0.9	0.9				--	--	--	1	15 A	EX. UNKNOWN LOAD	40	
--	41	--	--	--	--	--	--	--					0.9	0.9		--	--	--	1	15 A	EX. UNKNOWN LOAD	42	
								Total Load:	7.14 kVA		8.64 kVA		7.20 kVA										
								Total Amps:	59.50		72.08		60.08										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
Lighting	11.7 kVA	100.00%	11.7 kVA		
Power	7.2 kVA	100.00%	7.2 kVA	TOTAL CONNECTED LOAD:	22.98 kVA
Receptacles	4.08 kVA	100.00%	4.08 kVA	TOTAL ESTIMATED DEMAND LOAD:	22.98 kVA
				TOTAL CONNECTED AMPS:	63.79 A
				TOTAL ESTIMATED DEMAND AMPS:	63.8 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

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CERTIFICATE OF AUTHORITY - E2017008530

Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS	
#	Date / Description
1	
2	
3	
4	

Seal:

50% PROGRESS SET - NOT FOR CONSTRUCTION

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Sheet Title:

ELECTRICAL PANEL SCHEDULES

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Missouri Certificate of Authority #2023010035

0 1 2 3
REF. SCALE IN INCHES
PROJECT #23008968.00

Sheet #:

E6.07

COMMUNICATION GENERAL NOTES:

1. THE GENERAL AND SUPPLEMENTARY CONDITIONS AND OTHER REQUIREMENTS OF DIVISION 1. THE ELECTRICAL, AUDIO VISUAL, AND SECURITY PLANS AND SPECIFICATIONS, MAY APPLY TO THE WORK SPECIFIED.
2. COMMUNICATION CABLING INTEGRATOR HEREAFTER REFERRED TO, AS "CONTRACTOR" MUST PROVIDE TELECOM PASSIVE EQUIPMENT, CABLING, PATHWAYS AND ASSOCIATED MATERIALS, COMPONENTS, TOOLS, AND LABOR TO COMPLETE TELECOMMUNICATIONS STRUCTURED CABLING SYSTEM AND PATHWAYS.
3. CONTRACTOR MUST CAREFULLY EXAMINE THE SITE TO DETERMINE THE EXTENT OF WORK AND CONDITION UNDER WHICH IT WILL BE DONE. REVIEW AND VERIFY CONTRACT OCUMENTS IN RELATION TO FIELD CONDITIONS TO VERIFY ACCURACY. THE OWNER, OR THEIR DESIGNATED REPRESENTATIVE, SHOULD BE CONSULTED AS NEEDED FOR CLARIFICATION OR DIRECTION REGARDING ANY PROJECT RELATED QUESTIONS. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE OWNER, OR THEIR DESIGNATED REPRESENTATIVE, PRIOR TO PROCEEDING WITH THE WORK OR RELATED WORK IN QUESTION.
4. DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS MUST BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE GOVERNMENT, OR DESIGNATED REPRESENTATIVE, FOR CLARIFICATION.
5. REFER TO TECHNOLOGY CONTRACT DOCUMENTS, T DRAWINGS AND DIVISION 27 SPECIFICATIONS WHEN BIDDING AND INSTALLING THIS PROJECT.
6. CONTRACTOR MUST READ IN THEIR ENTIRETY ALL SECTIONS OF THE COMMUNICATIONS CABLING SYSTEM DOCUMENTS AND APPLY THEM AS APPROPRIATE FOR WORK IN THIS SECTION.
7. CONTRACTOR MUST TAKE NECESSARY MEANS TO PROTECT COMMUNICATION SYSTEM COMPONENTS FROM MECHANICAL DAMAGE BEFORE, DURING AND AFTER CONSTRUCTION.
8. FOR EXTERIOR CAMERAS PROVIDE JUNCTION BOXES AND CONDUITS SIZED FOR THE AMOUNT OF CABLE TO CAMERA. REFER TO SHEET TY601 FOR ADDITIONAL INFORMATION. PROVIDE JUNCTION BOXES TO PREVENT CUMULATIVE BENDS OF 180-DEGREES BETWEEN PULL POINTS.

GENERAL PATHWAY REQUIREMENTS:

1. INSTALL CONDUIT RUNS IN THE MOST DIRECT ROUTE POSSIBLE WITH NO MORE THAN TWO 90 DEGREE BENDS BETWEEN PULL POINTS OR PULL BOXES.
2. DO NOT USE 90 DEGREE "LB" TYPE CONDUIT FITTING FOR TELECOMMUNICATIONS CABLING INSTALLATIONS.
3. CONTINUOUS CONDUIT MUST NOT BE GREATER THAN 100 LINEAR FEET IN LENGTH WITHOUT AN ADEQUATELY SIZED PULL BOX.
4. BOND CONDUITS TO GROUND ON ONE OR BOTH ENDS IN ACCORDANCE WITH NATIONAL AND LOCAL REQUIREMENTS.
5. INSTALL CONDUITS TO WITHSTAND THE ENVIRONMENT IN WHICH THEY WILL BE EXPOSED AND IN ACCORDANCE WITH ANSI/NFPA-70; AND THE NATIONAL ELECTRICAL CODE.
6. DO NOT EXCEED 250 FEET OF CONDUIT RUNS FOR TELECOMMUNICATIONS HORIZONTAL CABLE.
7. DO NOT INSTALL CONDUITS OVER OR ADJACENT TO BOILERS, INCINERATORS, HOT WATER OR STEAM LINES.
8. MINIMUM BEND RADIUS FOR 2-INCHES OR LESS IN DIAMETER CONDUIT MUST BE SIX TIMES THE INTERNAL DIAMETER.
9. MINIMUM BEND RADIUS FOR 2-INCHES OR GREATER IN DIAMETER CONDUIT MUST BE TEN TIMES THE INTERNAL DIAMETER.
10. CONDUIT THAT REQUIRES A REVERSE BEND (BETWEEN 100 AND 180 DEGREES) A PULL BOX MUST BE INSTALLED AT EACH BEND WITHIN 10 FEET OF BEND.
11. DERATE CONDUIT RUN BY 15 PERCENT CAPACITY, IF CONDUIT REQUIRES A THIRD 90 DEGREE BEND BETWEEN PULL POINTS OR PULL BOX.
12. REAM AND FIT CONDUIT ENDS WITH THREADED INSULATING BUSHING TO ELIMINATE SHARP EDGES THAT CAN DAMAGE CABLES DURING INSTALLATION.
13. EXTEND CONDUITS THAT PROTRUDE THROUGH WALLS AND FLOORS BEYOND THE SURFACE PENETRATION TO WITHIN 6-INCHES OF THE CABLE TRAY OR CABLE RUNWAY SYSTEM.
14. EQUIP TELECOMMUNICATION OUTLET STUB-UPS WITH A PULL STRING WITH A MINIMUM TEST RATING OF 210 LBS.
15. EQUIP INTERIOR CONDUITS GREATER THAN 1 1/2-INCHES WITH 1/2-INCH POLYESTER MULE TAPE WITH 1250 LBS OF TENSILE STRENGTH AND SEQUENTIAL FOOTAGE MARKING.
16. EQUIP EXTERIOR CONDUITS WITH 3/4-INCH POLYESTER MULE TAPE WITH 2500 LBS OF TENSILE STRENGTH AND SEQUENTIAL FOOTAGE MARKING.
17. INSTALL PULL BOXES IN ACCESSIBLE LOCATIONS. DIRECT ACCESS IS REQUIRED TO PULL BOXES. PROVIDE LABELED, HINGED ACCESS PANEL DOOR. PULL BOXES MUST BE LISTED FOR THE PURPOSE.
18. THE MINIMUM LENGTH OF A PULL BOX MUST BE 12 TIMES THE DIAMETER OF THE LARGEST CONDUIT. DO NOT SUBSTITUTE A 90 DEGREE BEND WITH A PULL BOX.

TECHNOLOGY ROUGH-IN SCHEDULE

ITEM	DESCRIPTION
△ #V	VOICE - ANALOG
△ #D	DATA
△ #CCTV	CAMERA
△ #AP	WIRELESS ACCESS POINT
△ #CR	CARD READER (ELECTRONIC ACCESS CONTROL)
△ #EA	EMERGENCY ASSISTANCE (RESCUE ASSISTANCE)
△ E	EMPTY CONDUIT AND BOX WITH BLANK COVERPLATE
△ #D*P	DATA AND VOIP PHONE

= QUANTITY OF CABLES TO BE PULLED TO OUTLET
* = QUANTITY OF VOIP PHONES SERVED BY OUTLET

VIEW KEY

NAME — LEVEL NAME
10'-0" — HEIGHT ABOVE PROJECT 0'-0"

1 — KEYNOTE: INDICATES NOTE USED TO DESCRIBE ADDITIONAL INFORMATION ABOUT WORK REQUIRED, SPECIFIC TO THE SHEET AND/OR DETAIL

INDICATES DIRECTION OF TRUE NORTH
PLAN OR DETAIL NUMBER
PLAN OR DETAIL NAME
VIEW NAME
1/8" = 1'-0"
PLAN OR DETAIL SCALE

INDICATES SIMILAR DETAIL REFERENCED IN MULTIPLE LOCATIONS
DETAIL REFERRED TO BY SECTION CUT
SHEET DETAIL IS LOCATED ON — T101

LINE TYPE AND TAG KEY:

NEW WORK BY THIS CONTRACTOR (WIDE LINE)
NEW
EXISTING TO BE REMOVED (SHORT DASHED PATTERN)
NEW UNDERFLOOR OR UNDERGROUND (LONG DASHED PATTERN)

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

HALFTONING DOES NOT MODIFY SCOPE.

'TAG'-E — TAGS WITH DASH 'E' INDICATES THE REFERENCED OBJECT IS EXISTING

TAG-1 — UNDERLINED TAG INDICATES OBJECT IS IN-SCOPE. IF NEW, ADDITIONAL INFORMATION IS AVAILABE IN A SCHEDULE, MATERIAL LIST, OR SYMBOL LIST

INDICATES AN EXISTING SYSTEM'S POINT OF CONNECTION/REMOVAL

FIRE / SMOKE BARRIER DESIGNATIONS

THE LINE TYPES SHOWN ARE FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR MUST VERIFY RATINGS WITH THE LATEST SET OF ARCHITECTURAL PLANS AND FURNISH ALL MATERIALS REQUIRED TO COMPLY WITH THOSE RATINGS WHETHER SHOWN OR NOT.

ALL [FLOOR, FLOOR CEILING, AND ROOF CEILING] ASSEMBLIES MUST BE DESIGNATED AS 1, 2 HOUR FIRE, BARRIER(S), UNLESS NOTED OTHERWISE ON THE PLANS.

FIRE PARTITION	— ① — ① — ① — ① — ① —
1 HOUR FIRE BARRIER	— ◆ — ◆ — ◆ — ◆ — ◆ —
2 HOUR FIRE BARRIER OR WALL	— ◆◆ — ◆◆ — ◆◆ — ◆◆ —

TECHNOLOGY ABBREVIATION KEY

ABBR:	DESCRIPTION:
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
BFC	BELOW FINISHED CEILING
C	CONDUIT
DE	DELAYED EGRESS
DPDT	DOUBLE POLE DOUBLE THROW
FOV	FIELD OF VIEW
J-BOX	JUNCTION BOX
POE	POWER OVER ETHERNET
PTZ	PAN TILT ZOOM
SIM	SIMILAR
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
+#	MOUNTING HEIGHT ABOVE FINISHED FLOOR
PBB	PRIMARY BONDING BUSBAR
RBB	RACK BONDING BUSBAR
RBC	RACK BONDING CONDUCTOR
SBB	SECONDARY BONDING BUSBAR
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TBC	TELECOMMUNICATIONS BONDING CONDUCTOR
TIA	TELECOMMUNICATIONS INDUSTRY ASSOCIATION
EF-#	ENTRANCE FACILITY
MC-#	MAIN CROSS-CONNECT
TR-#	TELECOMMUNICATIONS ROOM

TELECOM ROOM REFERENCES

TELECOM ROOM	DETAIL / SHEET REFERENCE	FLOOR PLAN REFERENCE	ARCH ROOM NUMBER
EXISTING TR-08T	4/T3.02	1/T1.10	08T
EXISTING TR-15T	2/T3.02	3/T1.12	15T
EXISTING TR-73T	3/T3.02	1/T1.12	73T
EXISTING TR-108T	1/T3.02	1/T1.11	108T
EXISTING TR-163T	4/T3.00	1/T1.11	163T
EXISTING TR-205T	4/T3.01	1/T1.13	205T
TR-16M	5/T3.00	3/T2.12	16M
TR-163T	1/T3.00	1/T2.11	163T
TR-167	3/T2.00	2/T2.00	167
TR-205T	1/T3.01	1/T2.13	205T
TR-301T	5/T3.01	2/T2.14	301T

TECHNOLOGY SYMBOL LIST

SYMBOL:	EQUIPMENT LIST ABBREV.:	DESCRIPTION:	NOTE:
AV# EXO	N/A	ELECTRICAL FLOOR BOX WITH AV - EXISTING	4. , 5.
C#	N/A	INFORMATION OUTLET (CEILING) EXISTING	1.
C#	N/A	INFORMATION OUTLET (FLOOR) EXISTING	1.
C#	N/A	INFORMATION OUTLET (WALL) EXISTING	1.
###	AV-###-W	AV WALLPLATE/BACKBOX (WALL)	5.
WIDTH X HEIGHT		CABLE TRAY, CHANNEL TRAY, BASKET TRAY	
WIDTH X HEIGHT		LADDER RACK	
DIAMETER		CONDUIT	
		CONDUIT DOWN	
		CONDUIT UP OR UP/DOWN	
		CONDUIT SLEEVE	
		CONTINUATION	

GENERAL NOTES:

1. ALL SYMBOLS AND ABBREVIATIONS LISTED MAY NOT BE APPLICABLE TO THIS PROJECT. REFER TO THE TECHNOLOGY EQUIPMENT SCHEDULE FOR MORE COMPLETE DESCRIPTION AND ITEMS.
2. ALL SYMBOLS AND ABBREVIATIONS REFER TO TECHNOLOGY SHEETS ONLY AS DEFINED ON THE SHEET INDEX. REFER TO THE GENERAL TECHNOLOGY NOTES FOR ADDITIONAL INFORMATION.
3. ALL SYMBOLS LISTED ABOVE ARE FOR REFERENCE ONLY. REFER TO PLANS AND LINE TYPE KEY FOR NEW, EXISTING TO REMAIN AND TO BE REMOVED ITEMS FOR ADDITIONAL INFORMATION.
4. REFER TO RISERS ON SHEET(S): T5.00, T5.01.

TECHNOLOGY SYMBOL NOTES:

1. "C#" INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION. REFER TO INFORMATION OUTLET SCHEDULE ON T6.00 FOR ADDITIONAL INFORMATION. REFER TO LINE TYPE KEY FOR NEW, EXISTING TO REMAIN, OR REMOVED LINE TYPE.
2. REFER TO CONTROLLED SECURITY SCHEME (CSS) TYPE SCHEDULE [ENHANCED SECURITY SCHEME (ESS)] ON T6.00 FOR ADDITIONAL INFORMATION.
3. "CM-#" ON FLOOR PLANS INDICATES CAMERA TYPE AND IS ASSOCIATED WITH THE CORRESPONDING "VS-CM-#" EQUIPMENT SCHEDULE ABBREVIATION. ["##-##" SUBSCRIPT INDICATES FLOOR NUMBER-CAMERA NUMBER. REFER TO INDIVIDUAL CAMERA REQUIREMENT SCHEDULE FOR ADDITIONAL INFORMATION.]
4. INFORMATION OUTLET INSTALLED IN E.C. PROVIDED FLOOR BOX. "C#" INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION. REFER TO INFORMATION OUTLET SCHEDULE ON T6.00 FOR ADDITIONAL INFORMATION. REFER TO THE ELECTRICAL FLOOR PLANS AND ELECTRICAL EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.
5. AV INSTALLED IN E.C. PROVIDED FLOOR BOX. "AV#" INDICATES AV TYPE CONFIGURATION. REFER TO TECHNOLOGY EQUIPMENT SCHEDULE ON T6.00 FOR ADDITIONAL INFORMATION. REFER TO THE ELECTRICAL FLOOR PLANS FOR ADDITIONAL INFORMATION ON FLOOR BOX.

SUGGESTED MATRIX OF RESPONSIBILITY

ITEM:	SHOWN ON:	FURNISHED BY:	INSTALLED BY:	NOTES:
TECHNOLOGY ROUGH-IN, REFER TO TECHNOLOGY EQUIPMENT SCHEDULE AND SPECIFICATIONS FOR DEFINITION	T-SERIES	E.C.	E.C.	3. 4.
INFORMATION OUTLET FACEPLATES, JACKS, AND TERMINATIONS	T-SERIES	T.C.	T.C.	
CONDUIT SLEEVES (WHEN SHOWN ON DRAWINGS)	T-SERIES	E.C.	E.C.	
CONDUIT SLEEVES (NOT SHOWN BUT REQUIRED FOR PROPER INSTALLATION OF SYSTEM)	N/A	T.C.	T.C.	2. 4.
TELECOMMUNICATION SYSTEMS ROUGH-IN	T-SERIES	E.C.	E.C.	1.
TELECOMMUNICATION EQUIPMENT, CABLING, AND TERMINATIONS	T-SERIES	T.C.	T.C.	
CABLE TRAY (INCLUDING WIRE BASKET TRAY) REFER TO SPECIFICATION SECTION 27 05 28 FOR DEFINITION	T-SERIES	E.C.	E.C.	
LADDER RACK	T-SERIES	T.C.	T.C.	5.
GROUNDING LUGS ON TECHNOLOGY EQUIPMENT	T-SERIES	T.C.	E.C.	6.
BONDING SYSTEM FOR TECHNOLOGY SYSTEM, REFER TO SPECIFICATION SECTION 27 05 26 FOR DEFINITION	T-SERIES	E.C.	E.C.	7. 8.
CONNECTION OF TECHNOLOGY BONDING SYSTEM TO THE ELECTRICAL GROUND SYSTEM	T-SERIES	E.C.	E.C.	
LINE VOLTAGE POWER (+120V OR GREATER)	E-SERIES	E.C.	E.C.	
LINE VOLTAGE POWER (NOT SHOWN BUT REQUIRED FOR PROPER INSTALLATION OF SYSTEM)	N/A	T.C.	E.C.	2. 4.
LINE VOLTAGE POWER FOR DOOR HARDWARE POWER SUPPLIES	ARCH SPEC	E.C.	E.C.	
LOW VOLTAGE CABLING FOR TECHNOLOGY SYSTEMS	T-SERIES	T.C.	T.C.	
CABLE HANGERS AND SUPPORTS OR OTHER CABLE ROUTING METHODS (OTHER THAN CONDUIT AND CABLE TRAY)	T-SERIES	T.C.	T.C.	5.

SUGGESTED MATRIX OF RESPONSIBILITY NOTES

1. LOCATIONS OF TELECOMMUNICATIONS ROUGH-INS SHALL BE INDICATED BY THE INFORMATION OUTLET SYMBOLS ON THE DRAWINGS. REFER TO THE TECHNOLOGY SYMBOL LIST FOR ADDITIONAL INFORMATION.
2. BASED ON THE INHERENT DIFFERENCES IN PRODUCTS FROM VARIOUS MANUFACTURERS, ALL REQUIRED EQUIPMENT MAY NOT BE SHOWN ON THE DRAWINGS FOR ALL ACCEPTABLE MANUFACTURERS.
3. INCLUDES BACKBOXES AND CONDUIT REQUIRED FOR THE TECHNOLOGY SYSTEMS INSTALLATION. THE E.C. SHALL BASE THE BID ON THE BASIS OF DESIGN SHOWN ON THE CONTRACT DOCUMENTS.
4. ALL CHANGES TO THE SLEEVES, BACKBOXES, CONDUITS, AND POWER REQUIRED BECAUSE OF THE T.C.'S SELECTION OF AN ALTERNATE ACCEPTABLE MANUFACTURER OR FROM SYSTEM CONFIGURATIONS THAT ARE LEFT TO THE CHOICE OF THE CONTRACTOR SHALL BE INCLUDED IN THE T.C.'S BID. THIS BID SHALL INCLUDE INSTALLATION BY A LICENSED ELECTRICIAN.
5. UNLESS TRADE RULES DICTATE OTHERWISE.
6. FURNISHED AS PART OF THE EQUIPMENT WHEN POSSIBLE, OR FURNISHED TO THE E.C. FOR INSTALLATION IN THE FIELD.
7. INCLUDES ALL CONDUCTORS, GROUND BARS, AND TERMINATIONS FOR THE COMPLETE BONDING SYSTEM REQUIRED BY THE SPECIFICATIONS.
8. REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS OF PANELS AND SWITCHBOARDS SHOWN IN THE TECHNOLOGY BONDING RISER DIAGRAM AND TYPICAL TELECOM ROOM BONDING FLOW DIAGRAM.

TECHNOLOGY EQUIPMENT SEISMIC REQUIREMENTS

OCCUPANCY CATEGORY II — Seismic Design Category C

LISTING OF EQUIPMENT AND SYSTEM COMPONENTS	ANCHORAGE TO FLOORS, ROOFS, ETC.		SWAY BRACING		LOCATION OF PROFESSIONALLY SEALED ANCHORAGE & SWAY BRACING DETAILS			COMMENTS
					ON CONST. DOCUMENTS	SUBSEQUENT SUBMITTAL		
	NOT PROVIDED	PROVIDED	NOT PROVIDED	PROVIDED	DRAWING # OR SPEC. SECTION	SHOP DRAWINGS	SEPARATE PERMIT & PLANS	
HAZARDOUS EQUIPMENT & SYSTEM COMPONENTS List items such as emergency generators, panel boards, single hanger and trapeze supported system components, bus-ducts, primary cable systems, motors control centers and devices, switch-gears, transformers, unit substations, cable tray, conduit, lighting fixtures, etc.								N/A
OTHER EQUIPMENT & SYSTEM COMPONENTS NEEDED FOR CONTINUED OPERATION OF SEISMIC USE GROUP III FACILITIES OR WHOSE FAILURE COULD IMPAIR THEIR CONTINUED OPERATION: * See Chapter 4, Table 4.1								N/A
OTHER GENERAL EQUIPMENT & SYSTEMS COMPONENTS								
TELECOMMUNICATIONS RACKS		X	X			X		
SECURITY SYSTEM PANELS AND POWER SUPPLIES		X	X			X		

Notes:
1. It the basic intent of this Code Block to delcare whether or not anchorage and sway bracing is being provided on the project. If so, declare whether or not the details are shown on the plans or will be shown on a subsequent submission. If seismic retraint of a component is not required by code this should be stated in comments. If seismic restraint, which is not required by code, is being provided due to owner/designer requirements this should also be stated in the comments.
2. Shop drawings need to be submitted to the County a minimum of two weeks prior to the planned installation to allow for plan review and districtution to the inspector. Additional time may be needed if such submissions are deficient.

TECHNOLOGY GENERAL NOTES:

1. ##-####-# INDICATES TECHNOLOGY EQUIPMENT SCHEDULE ITEM LABELED AS "EQUIPMENT LIST ABBREVIATION"
2. REFER TO TECHNOLOGY EQUIPMENT SCHEDULE AND SPECIFICATIONS FOR FULL DESCRIPTIONS AND MANUFACTURERS OF ALL DEVICES.

TECHNOLOGY MOUNTING SUBSCRIPT KEY:
A — MOUNT AT +6" TO CENTERLINE ABOVE COUNTER OR BACKSPLASH
H — MOUNT ORIENTED HORIZONTALLY
L — MOUNT IN CASEWORK
M — MOUNT IN MODULAR FURNITURE
S — MOUNT IN SURFACE RACEWAY

A SLASH IS USED BETWEEN TWO SUBSCRIPTS, E.G., A/H.

TECHNOLOGY INSTALLATION NOTES:

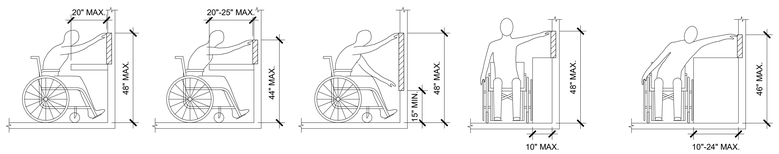
1. THE COMPLETE INSTALLATION MUST BE IN ACCORDANCE WITH THE ADA STANDARDS FOR ACCESSIBLE DESIGN. REFER TO THE ADA GUIDELINES FOR ALL CONFIGURATION DETAILS ON THIS PAGE FOR ADDITIONAL INFORMATION.
2. CONCEAL ALL CONDUIT IN WALLS, PARTITIONS, ABOVE CEILING, IN FLOOR SLAB, ETC. UNLESS OTHERWISE INDICATED ON THE PLANS OR IN THE SPECIFICATIONS. CONDUIT IN MECHANICAL ROOMS AND STORAGE ROOMS WITHOUT CEILINGS MAY BE EXPOSED ON BUILDING STRUCTURE.
3. BOXES LOCATED ON OPPOSITE SIDES OF NON-RATED WALLS MUST BE OFFSET A MINIMUM OF 6" HORIZONTALLY. BOXES ON OPPOSITE SIDES OF FIRE RATED WALLS MUST BE OFFSET A MINIMUM OF 24" HORIZONTALLY. "THRU-THE-WALL" BOXES MUST NOT BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF THE ARCHITECT/ENGINEER.
4. VERIFY ALL FURNITURE, MODULAR FURNITURE, AND EQUIPMENT LOCATIONS WITH ARCHITECTURAL PLANS, ELEVATIONS, AND REVIEWED SHOP DRAWINGS. PRIOR TO MAKING THE ACTUAL TELECOMMUNICATIONS INSTALLATION, ADJUST OUTLETS OR CONNECTION LOCATIONS TO ACCOMMODATE FURNITURE AND/OR EQUIPMENT.
5. TELECOMMUNICATIONS EQUIPMENT MUST BE MOUNTED TO ALLOW ACCESS TO ELECTRICAL AND MECHANICAL EQUIPMENT. ALL MOUNTING OF TELECOMMUNICATION DEVICES ON EQUIPMENT SUPPLIED BY ANOTHER CONTRACTOR MUST BE APPROVED IN ADVANCE BY THE OTHER CONTRACTOR.
6. CONTRACTOR MUST BE RESPONSIBLE FOR ALL OPENINGS REQUIRED IN WALLS. ALL OPENINGS MUST BE REPAIRED TO MATCH EXISTING BY A QUALIFIED CONTRACTOR AT THE EXPENSE OF THIS CONTRACTOR. ALL CONDUITS THROUGH WALLS MUST BE GROUTED OR SEALED INTO OPENINGS.
7. ALL MATERIALS USED TO SEAL PENETRATIONS OF FIRE RATED WALLS AND FLOORS MUST BE TESTED AND CERTIFIED AS A SYSTEM PER ASTM E814 STANDARDS FOR FIRE TESTS OF THROUGH-PENETRATION FIRESTOPS. REFER TO DIVISION 7 FOR ADDITIONAL INFORMATION AND REQUIREMENTS SPECIFIC TO FIRESTOPPING.
8. EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO THE WALLS, FLOORS, CEILINGS, AND ROOFS. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND FINISH.
9. FLUSH MOUNT ALL TELECOMMUNICATION OUTLETS AT +18" FROM FLOOR (CENTERLINE DIMENSION), EXCEPT WHERE OTHERWISE NOTED. OUTLETS MAY BE SURFACE MOUNTED WHEN CONDUIT IS SPECIFIED EXPOSED.
10. MOUNT BACKBOXES FLUSH WITH WALL. ALL BACKBOX HEIGHTS ARE TO CENTERLINE DIMENSION, UNLESS OTHERWISE NOTED.
11. PROVIDE RACEWAY AND BOXES LISTED FOR THE INSTALLED ENVIRONMENT. SEAL RACEWAY AND BOX FROM WATER AND MOISTURE AT TRANSITION BETWEEN DIFFERENT ENVIRONMENTAL CONDITIONS SUCH AS INTERIOR/EXTERIOR, TEMPERATURE CHANGES, ETC.

TECHNOLOGY DEMOLITION NOTES

1. THE DRAWINGS INDICATE EXISTING ITEMS TO BE REMOVED. THE DRAWINGS ARE INTENDED TO INDICATE THE SCOPE OF WORK REQUIRED AND DO NOT INDICATE EVERY BOX, CONDUIT, OR WIRE THAT MUST BE REMOVED. THE CONTRACTOR MUST VISIT THE SITE PRIOR TO SUBMITTING BIDS TO ASSESS EXISTING CONDITIONS.
2. ITEMS (i.e. SPEAKERS, SWITCHES, ETC.) REMOVED AND NOT RELOCATED REMAIN THE PROPERTY OF THE OWNER. THE CONTRACTOR MUST BE RESPONSIBLE FOR THE DISPOSAL OF MATERIAL THE OWNER DOES NOT WANT TO REUSE OR RETAIN. (i.e., FOR MAINTENANCE PURPOSES).
3. EXISTING TO REMAIN DEVICES WITHIN OR ADJACENT TO THE PATH OF CONSTRUCTION MUST BE PROTECTED IN PLACE. DEVICES THAT MUST BE REMOVED MUST BE TESTED PRIOR TO REMOVAL, PROTECTED FROM DAMAGE, AND RE-INSTALLED IN ITS ORIGINAL LOCATION DURING THE NEW CONSTRUCTION PHASE OF THE PROJECT.
4. OBTAIN APPROVAL FROM THE OWNER BEFORE TURNING OFF THE POWER TO EQUIPMENT, SYSTEMS, PANELS, ETC. COORDINATE ALL OUTAGES WITH OWNER. CONDUIT CONCEALED IN WALL CONSTRUCTION MAY BE ABANDONED IN PLACE IF NOT AFFECTED BY OTHER CONSTRUCTION.
5. ALL CONDUIT MUST BE REMOVED WHERE WALLS ARE BEING REMOVED. WHERE CONDUIT IS IN THE CONCRETE SLAB, CUT OFF FLUSH, PULL OUT WIRE, AND PLUG. WHERE CONDUIT IS RUN EXPOSED, ALL ASSOCIATED CLAMPS, SUPPORTS, HANGERS, ETC., MUST ALSO BE REMOVED.
6. COORDINATE ALL WORK WITH OTHER CONTRACTORS AT THE JOB SITE BEFORE REMOVING EXISTING EQUIPMENT AND INSTALLING NEW ITEMS.
7. EXISTING CONDUIT IN GOOD CONDITION, MAY BE REUSED IN PLACE. RELOCATING EXISTING CONDUIT MUST NOT BE ALLOWED. BONDING CONDUCTORS MUST BE INSTALLED IN ALL REUSED CONDUIT TO ASSURE PROPER GROUND PATH.
8. EQUIPMENT REMOVAL IN CERTAIN LOCATIONS MAY REQUIRE THE INSTALLATION OF A JUNCTION BOX TO RECONNECT CIRCUITS THAT REMAIN IN OPERATION. EXTEND CONDUIT AND WIRING AS REQUIRED TO MAINTAIN POWER TO REMAINING EQUIPMENT.
9. DEVICES TO BE REMOVED MUST HAVE ALL CONNECTED WIRING REMOVED TO THE SOURCE.
10. DEVICES NOT TO BE REMOVED MUST BE PROTECTED FROM THE ENVIRONMENT, AND ALL ASSOCIATED CABLE/RACEWAYS ARE TO REMAIN AND BE PROTECTED. T.C. MUST BE RESPONSIBLE FOR REPAIR OF ANY INTERRUPTIONS TO PROTECTED DEVICES.
11. REFER TO SPECIFICATIONS SECTION 27 05 00 FOR ADDITIONAL INFORMATION.

TECHNOLOGY SHEET INDEX

T0.00	TECHNOLOGY COVERSHEET
T1.10	BASEMENT DEMOLITION PLAN - TECHNOLOGY
T1.11	LEVEL 01 DEMOLITION PLAN - TECHNOLOGY
T1.12	MEZZANINE DEMOLITION PLANS - TECHNOLOGY
T1.13	LEVEL 02 DEMOLITION PLAN - TECHNOLOGY
T1.14	LEVEL 03 & ROOF DEMOLITION PLAN - TECHNOLOGY
T2.00	BASEMENT & FIRST FLOOR PLANS - TECHNOLOGY
T2.11	LEVEL 01 PLAN - TECHNOLOGY
T2.12	MEZZANINE LEVEL PLANS - TECHNOLOGY
T2.13	LEVEL 02 PLAN - TECHNOLOGY
T2.14	LEVEL 03 & ROOF PLAN - TECHNOLOGY
T3.00	TECHNOLOGY ROOM ENLARGEMENTS
T3.01	TECHNOLOGY ROOM ENLARGEMENTS
T3.02	TECHNOLOGY ROOM ENLARGEMENTS
T4.00	TECHNOLOGY DETAILS
T4.01	TECHNOLOGY DETAILS
T5.00	TECHNOLOGY DIAGRAMS
T6.00	TECHNOLOGY SCHEDULES
GRAND TOTAL: 18	



INSTALL ABOVE COUNTER DEVICE AT 44" ABOVE FINISHED FLOOR.
INSTALL ABOVE COUNTER DEVICE AT 40" ABOVE FINISHED FLOOR.
INSTALL DEVICE AT 18" ABOVE FINISHED FLOOR.
INSTALL DEVICE AT 44" ABOVE FINISHED FLOOR.
INSTALL DEVICE AT 42" ABOVE FINISHED FLOOR.

ADA GUIDELINES - FRONT ACCESS
ADA GUIDELINES - SIDE ACCESS

ADA STANDARDS FOR ACCESSIBLE DESIGN

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Project Title:
BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

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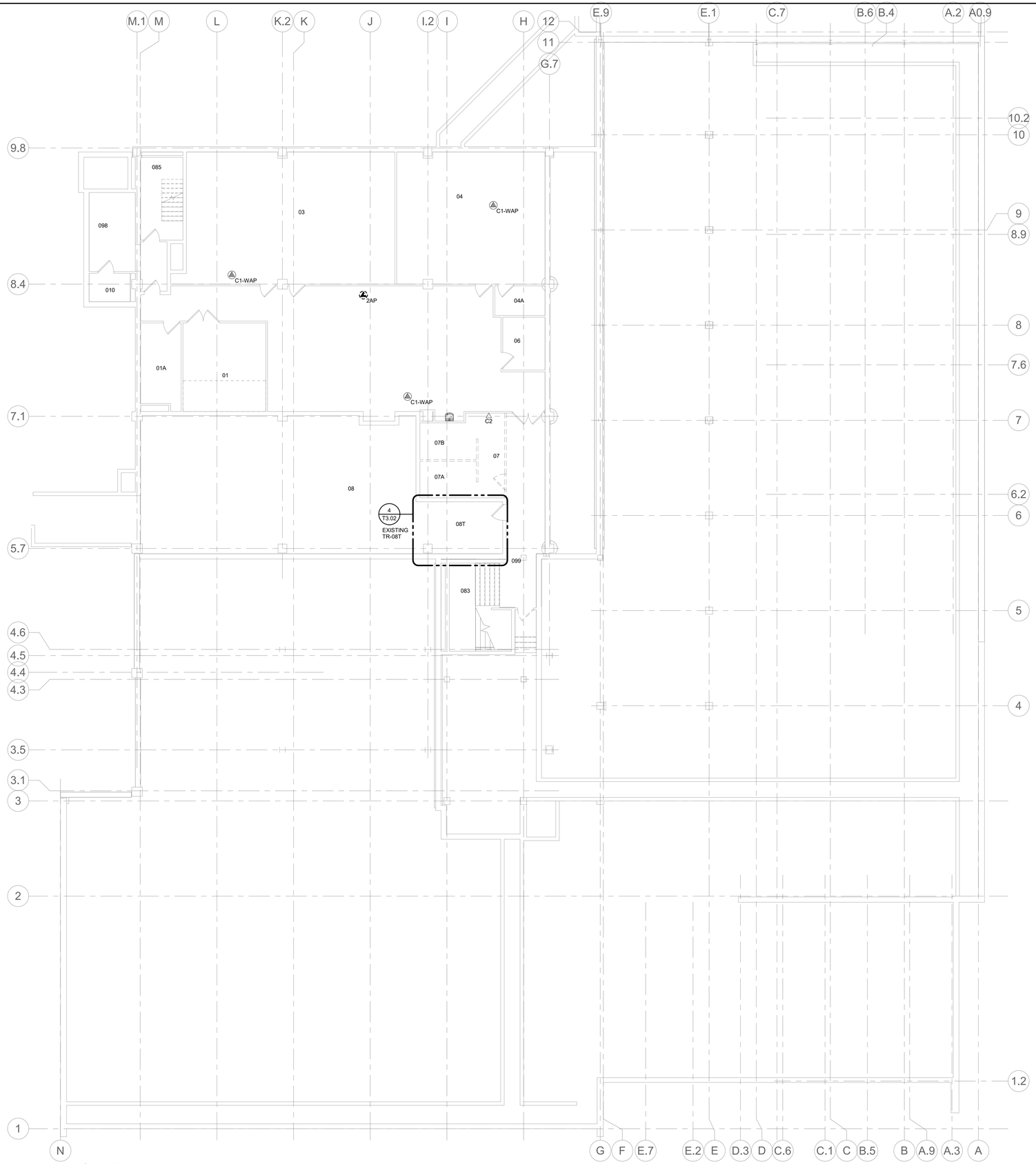
Sheet Title:
TECHNOLOGY COVERSHEET

Sheet #:
T0.00

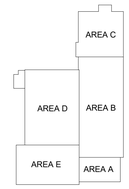


NORTH

1 **BASEMENT DEMOLITION PLAN - TECHNOLOGY**
1/8" = 1'-0"

GENERAL NOTES:

1. REFER TO SHEET T0.00 FOR SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES.



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Project Title:

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MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

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Sheet Title:

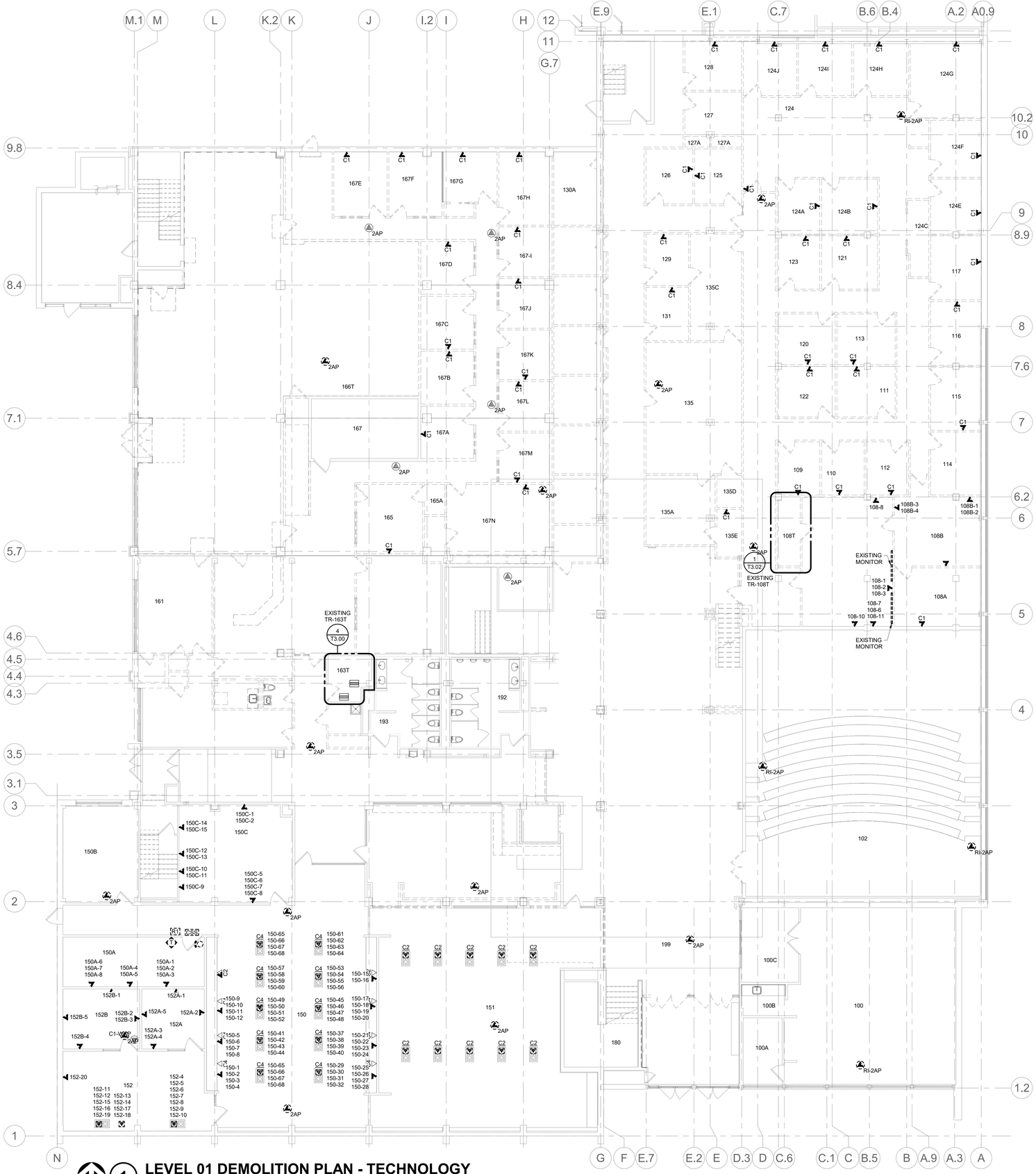
BASEMENT DEMOLITION PLAN - TECHNOLOGY

Sheet #:

T1.10

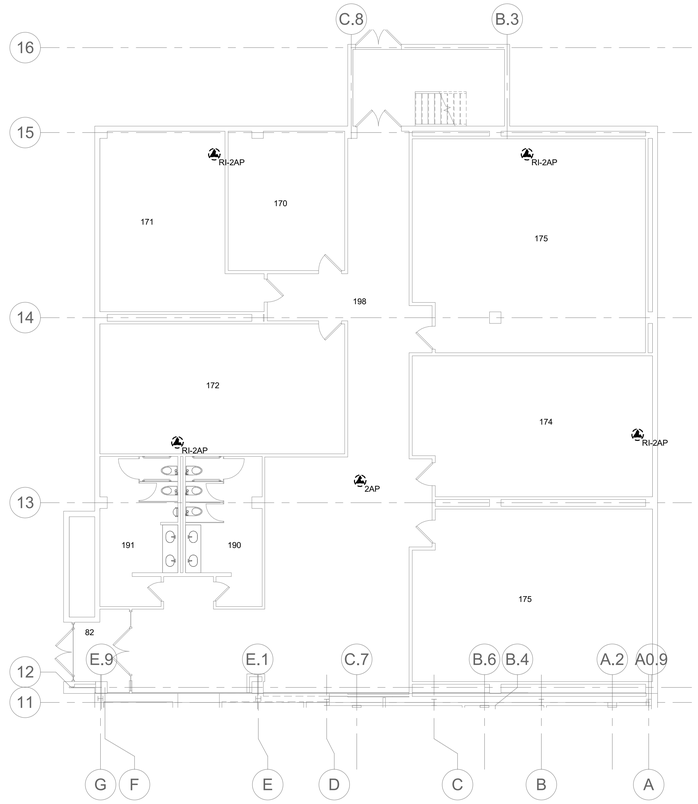
DEMOLOLITION NOTES:

1. CONTRACTOR TO IDENTIFY AND DOCUMENT ALL THE VOICE, DATA AND WIRELESS ACCESS POINT OUTLETS BEING SERVED BY THE VARIOUS TRS ON THE 1ST FLOOR, MEZZANINE LEVEL AND 2ND FLOOR.
2. COORDINATE WITH MISSOURI STATE UNIVERSITY IT DEPARTMENT PRIOR TO REMOVING THE HORIZONTAL COPPER CABLING THAT IS BEING FED FROM THE VARIOUS TRS ON THE 1ST FLOOR, MEZZANINE LEVEL AND 2ND FLOOR.
3. CUT AND BACK PULL EXISTING COPPER BACKBONE CABLES AND ALL ASSOCIATED HARDWARE FROM VARIOUS TRS ON THE 1ST FLOOR, MEZZANINE LEVEL AND 2ND FLOOR, BACK TO IT'S POINT OF ORIGIN LOCATED IN BASEMENT LEVEL 008T.
4. CUT AND BACK PULL EXISTING FIBER OPTIC BACKBONE CABLES AND ALL ASSOCIATED HARDWARE FROM VARIOUS TRS ON THE 1ST FLOOR, MEZZANINE LEVEL AND 2ND FLOOR, BACK TO IT'S POINT OF ORIGIN LOCATED IN BASEMENT LEVEL 008T.
5. PLACE A PULL STRING THROUGH THE EXISTING CONDUIT AND BACK BOXES AND TIE IT OFF FOR FUTURE USE.
6. PLACE A SINGLE GANG BLANK OUTLET FACEPLATE OVER THE OUTLET. COLOR TO MATCH ELECTRICAL.



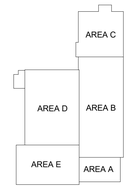
1 LEVEL 01 DEMOLITION PLAN - TECHNOLOGY

1/8" = 1'-0"



2 LEVEL 01 DEMOLITION PLAN - TECHNOLOGY - AREA C

1/8" = 1'-0"



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CERTIFICATE OF AUTHORITY - E2017008530

Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

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LEVEL 01 DEMOLITION PLAN - TECHNOLOGY

Sheet #:

T1.11

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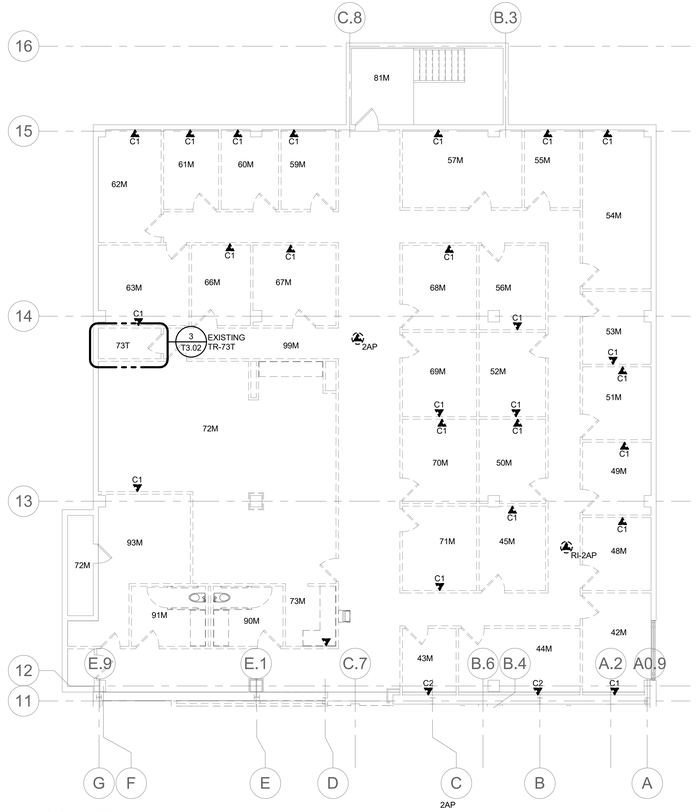
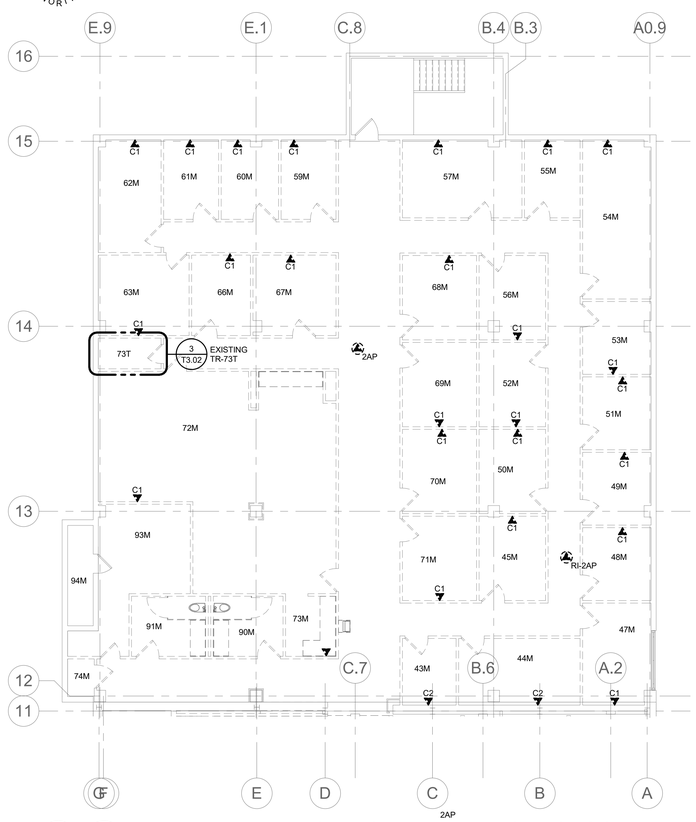


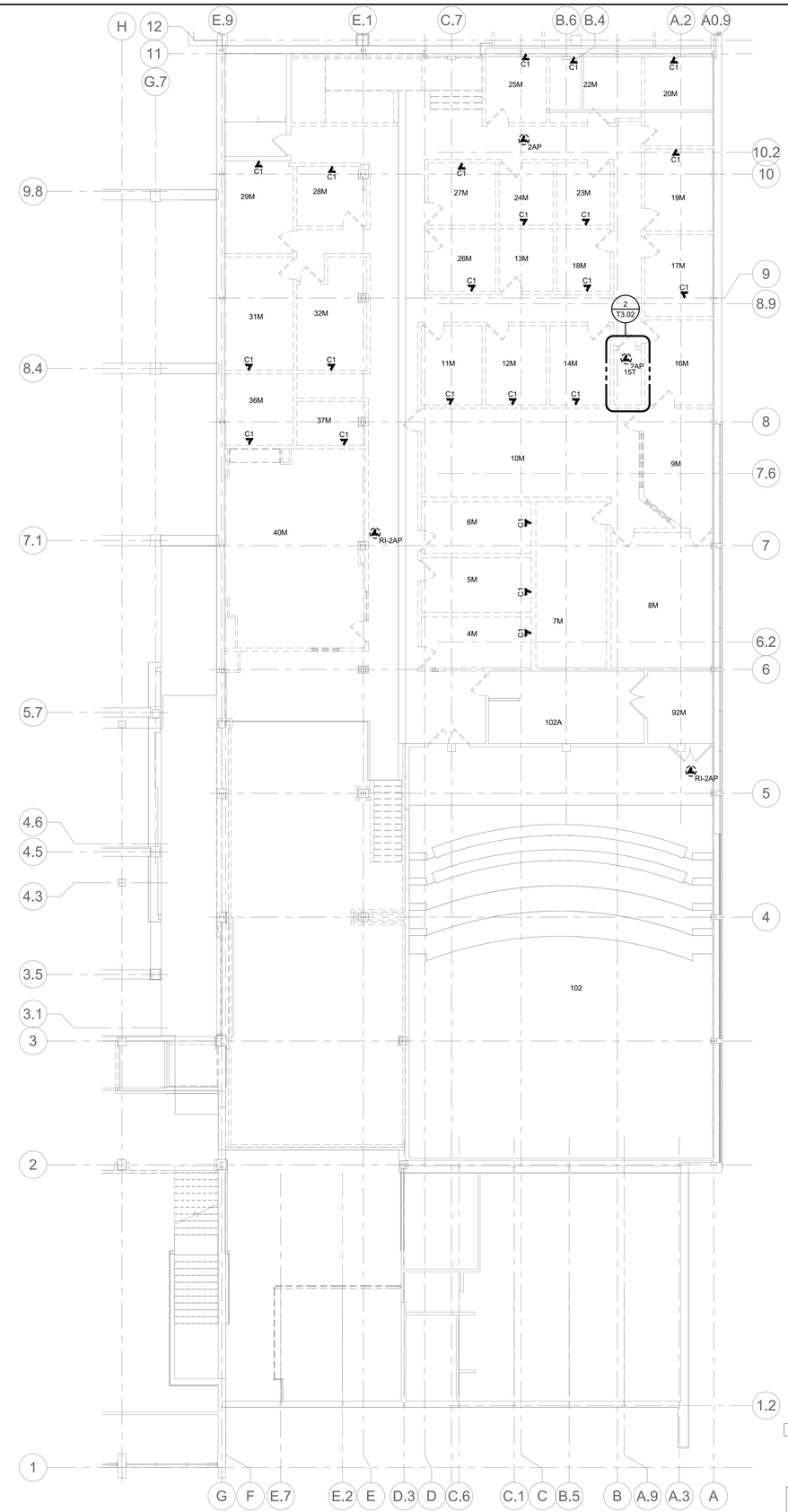
1 MEZZANINE DEMOLITION PLAN - TECHNOLOGY - AREA C

1/8" = 1'-0"



2 MEZZANINE DEMOLITION PLAN - TECHNOLOGY - ALTERNATE

1/8" = 1'-0"

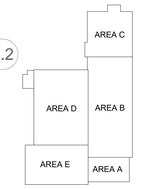


3 MEZZANINE DEMOLITION PLAN - TECHNOLOGY - AREAS A & B

1/8" = 1'-0"

DEMOLOLITION NOTES:

1. CONTRACTOR TO IDENTIFY AND DOCUMENT ALL THE VOICE, DATA AND WIRELESS ACCESS POINT OUTLETS BEING SERVED BY THE VARIOUS TRS ON THE 1ST FLOOR, MEZZANINE LEVEL AND 2ND FLOOR.
2. COORDINATE WITH MISSOURI STATE UNIVERSITY IT DEPARTMENT PRIOR TO REMOVING THE HORIZONTAL COPPER CABLING THAT IS BEING FED FROM THE VARIOUS TRS ON THE 1ST FLOOR, MEZZANINE LEVEL AND 2ND FLOOR.
3. CUT AND BACK PULL EXISTING COPPER BACKBONE CABLES AND ALL ASSOCIATED HARDWARE FROM VARIOUS TRS ON THE 1ST FLOOR, MEZZANINE LEVEL AND 2ND FLOOR, BACK TO IT'S POINT OF ORIGIN LOCATED IN BASEMENT LEVEL 008T.
4. CUT AND BACK PULL EXISTING FIBER OPTIC BACKBONE CABLES AND ALL ASSOCIATED HARDWARE FROM VARIOUS TRS ON THE 1ST FLOOR, MEZZANINE LEVEL AND 2ND FLOOR, BACK TO IT'S POINT OF ORIGIN LOCATED IN BASEMENT LEVEL 008T.
5. PLACE A PULL STRING THROUGH THE EXISTING CONDUIT AND BACK BOXES AND TIE IT OFF FOR FUTURE USE.
6. PLACE A SINGLE GANG BLANK OUTLET FACEPLATE OVER THE OUTLET. COLOR TO MATCH ELECTRICAL.



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Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

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Sheet Title:

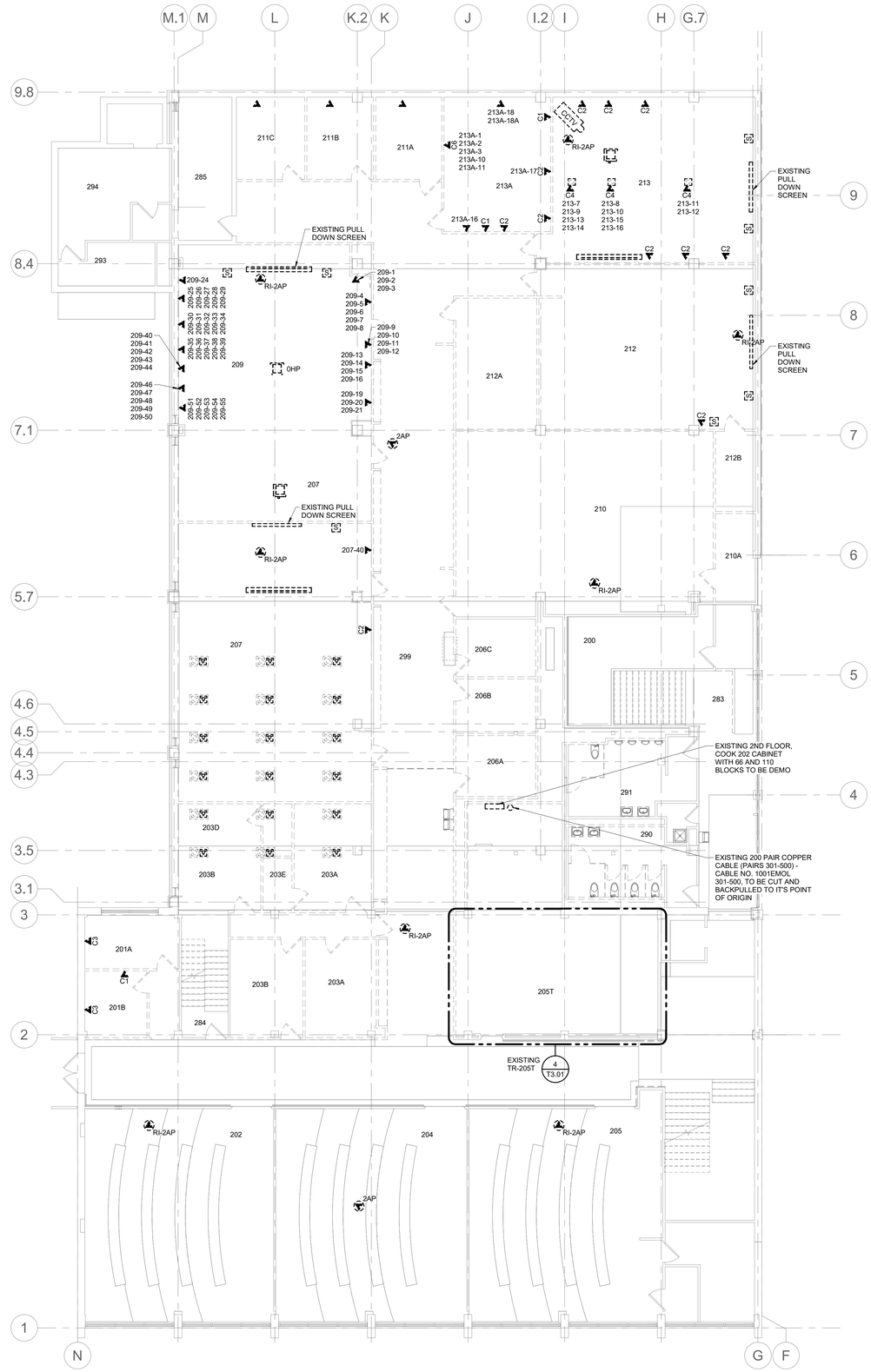
MEZZANINE DEMOLITION PLANS - TECHNOLOGY

Sheet #:

T1.12

DEMOLOLITION NOTES:

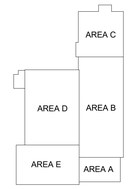
1. CONTRACTOR TO IDENTIFY AND DOCUMENT ALL THE VOICE, DATA AND WIRELESS ACCESS POINT OUTLETS BEING SERVED BY THE VARIOUS TRS ON THE 1ST FLOOR, MEZZANINE LEVEL AND 2ND FLOOR.
2. COORDINATE WITH MISSOURI STATE UNIVERSITY IT DEPARTMENT PRIOR TO REMOVING THE HORIZONTAL COPPER CABLING THAT IS BEING FED FROM THE VARIOUS TRS ON THE 1ST FLOOR, MEZZANINE LEVEL, SECOND FLOOR AND THIRD FLOOR.
3. CUT AND BACK PULL EXISTING COPPER BACKBONE CABLES AND ALL ASSOCIATED HARDWARE FROM VARIOUS TRS ON THE 1ST FLOOR, MEZZANINE LEVEL, SECOND FLOOR AND THIRD FLOOR BACK TO IT'S POINT OF ORIGIN LOCATED IN BASEMENT LEVEL 008T.
4. PRIOR TO THE DEMOLITION OF 205T, A TEMPORARY TR MUST BE SET UP IN TELECOMMUNICATIONS ROOM (TR) 301T. THIS TR WILL BE COMPLETE WITH SWING OUT RACK, CAT 5E COPPER BACKBONE CABLES. THIS TR WILL PROVIDE THE 3RD FLOOR OFFICES, 2ND FLOOR CLASSROOMS 202, 203 AND 204 WITH NETWORK CONNECTIVITY.
5. PLACE A PULL STRING THROUGH THE EXISTING CONDUIT AND BACK BOXES AND TIE IT OFF FOR FUTURE USE.
6. PLACE A SINGLE GANG BLANK OUTLET FACEPLATE OVER THE OUTLET. COLOR TO MATCH ELECTRICAL.



NORTH

1 LEVEL 02 DEMOLITION PLAN - TECHNOLOGY

1/8" = 1'-0"



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Sheet Title:
LEVEL 02 DEMOLITION PLAN - TECHNOLOGY

Sheet #:
T1.13

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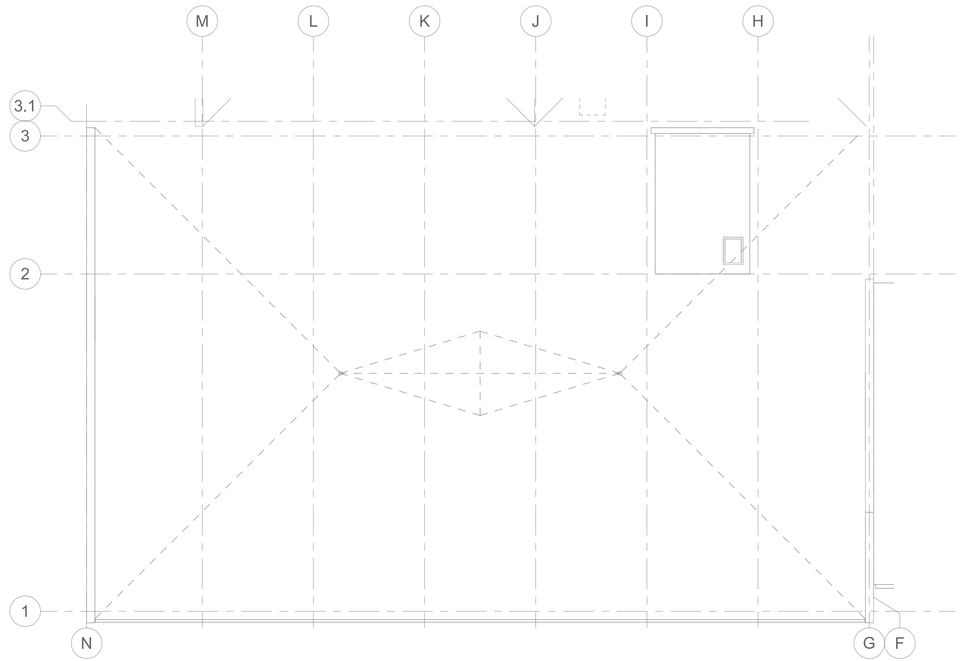
DEMOLITION NOTES:

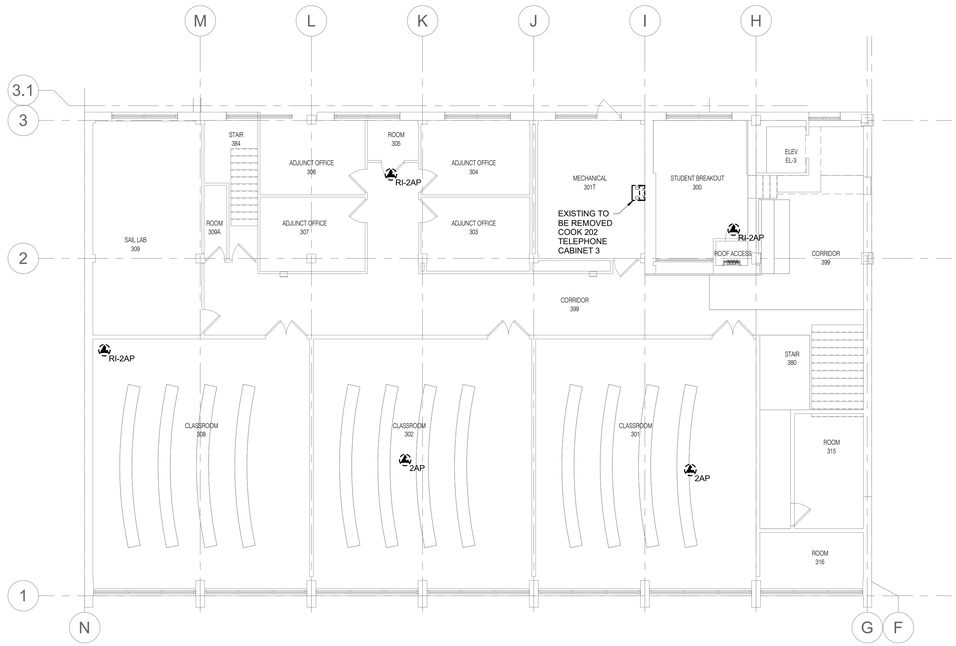
1. IDENTIFY AND DOCUMENT ALL THE VOICE OUTLETS BEING SERVED BY THE COOK 202 CABINET LOCATED IN ROOM 301T TO THE OUTLETS BEING SERVED ON 2ND AND 3RD FLOOR.
2. COORDINATE WITH MISSOURI STATE UNIVERSITY IT DEPARTMENT PRIOR TO REMOVING THE HORIZONTAL COPPER CABLING THAT IS BEING FED FROM THE COOK 202 CABINET LOCATED IN ROOM 301T.
3. CUT AND BACK PULL EXISTING 100 PAIR COPPER BACKBONE CABLE (PAIRS 301-400) AND ALL ASSOCIATED HARDWARE FROM COOK 202 CABINET LOCATED IN ROOM 301T BACK TO IT'S POINT OF ORIGIN LOCATED IN BASEMENT LEVEL 008T.
4. PLACE A PULL STRING THROUGH THE EXISTING CONDUIT AND BACK BOXES AND TIE IT OFF FOR FUTURE USE.
5. PLACE A SINGLE GANG BLANK OUTLET FACEPLATE OVER THE OUTLET. COLOR TO MATCH ELECTRICAL.
6. REMOVE EXISTING COOK 202 CABINET AND GIVE IT BACK TO THE OWNER.
7. CONTRACTOR MUST IDENTIFY AND DOCUMENT ALL OF THE EXISTING DATA OUTLETS THAT ARE BEING FED FROM MECHANICAL ROOM 205T THAT PASSES THROUGH ROOM 301T. THESE DATA CABLES ARE EXISTING TO REMAIN. UNTIL THE MECHANICAL ROOM 205T PHASE OF THE PROJECT. AT THAT TIME, THE CABLES WILL BE CUT IN ROOM 205T, BACK-PULLED TO ROOM 301T AND COILED UP AND BE TERMINATED ONTO A PATCH PANEL THAT WILL BE INSTALLED IN A TEMPORARY WALL MOUNT RACK.



NORTH

1 ROOF DEMOLITION PLAN - TECHNOLOGY

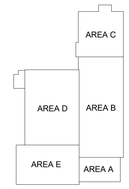
1/8" = 1'-0"



NORTH

2 LEVEL 03 DEMOLITION PLAN - TECHNOLOGY

1/8" = 1'-0"



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Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS

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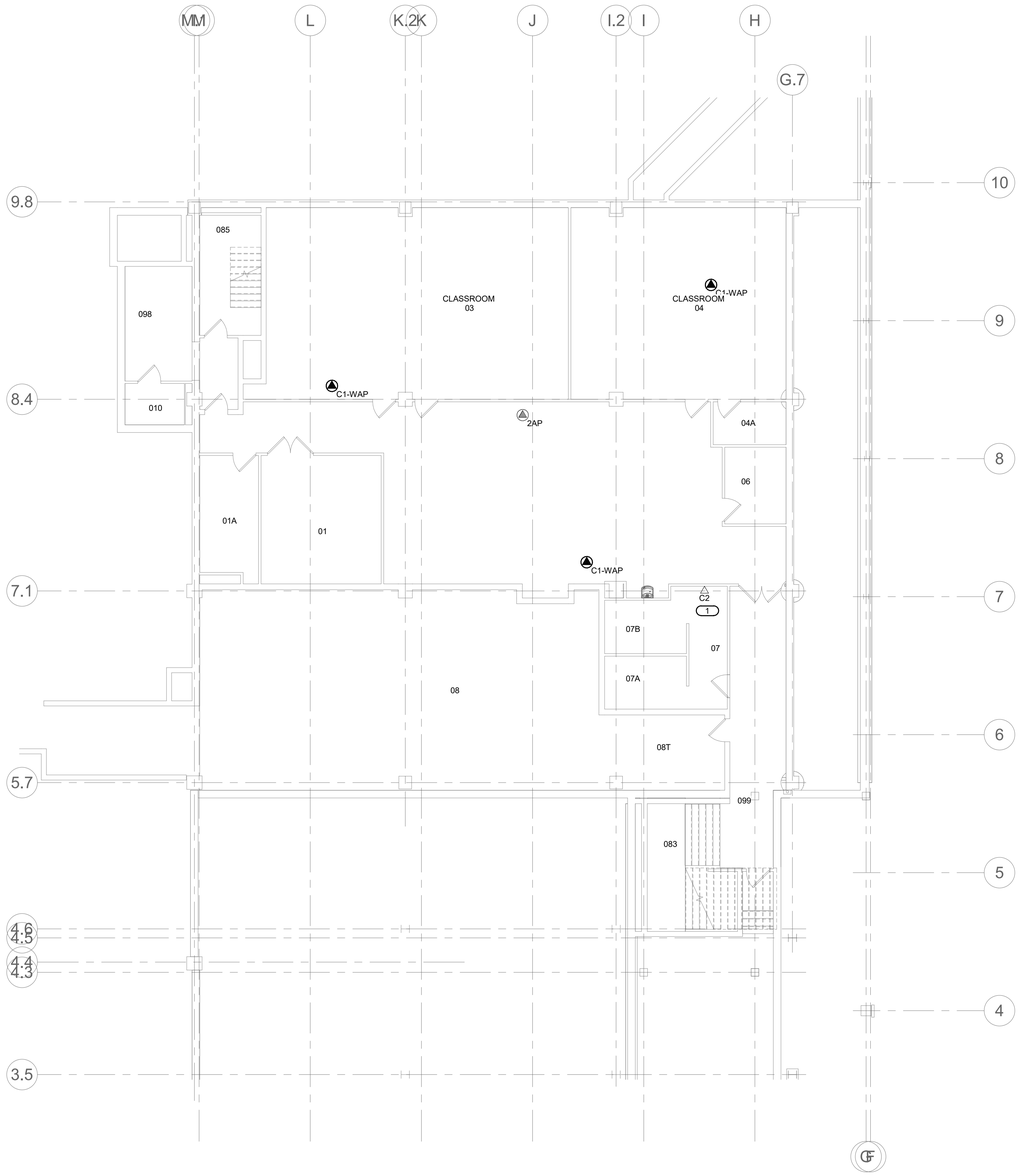
Sheet Title:

LEVEL 03 & ROOF DEMOLITION PLAN - TECHNOLOGY

Sheet #:

T1.14



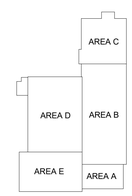
NORTH

1 BASEMENT PLAN - TECHNOLOGY

1/8" = 1'-0"

KEYNOTES: #

1. ELECTRICAL CONTRACTOR TO PROVIDE A 1 1/4-INCH CONDUIT FROM THE FACP BACK TO TR-163T. THE OWNER WILL BE RESPONSIBLE BE FOR PROVIDING CAT 6A CABLING FROM TR-163T TO FACP. TERMINATING CAT 6A RJ-45 Jacks ON BOTH ENDS AND INSTALLING THE JACKS INTO A 2-PORT SURFACE MOUNT OUTLET BOX INSIDE THE FACP.



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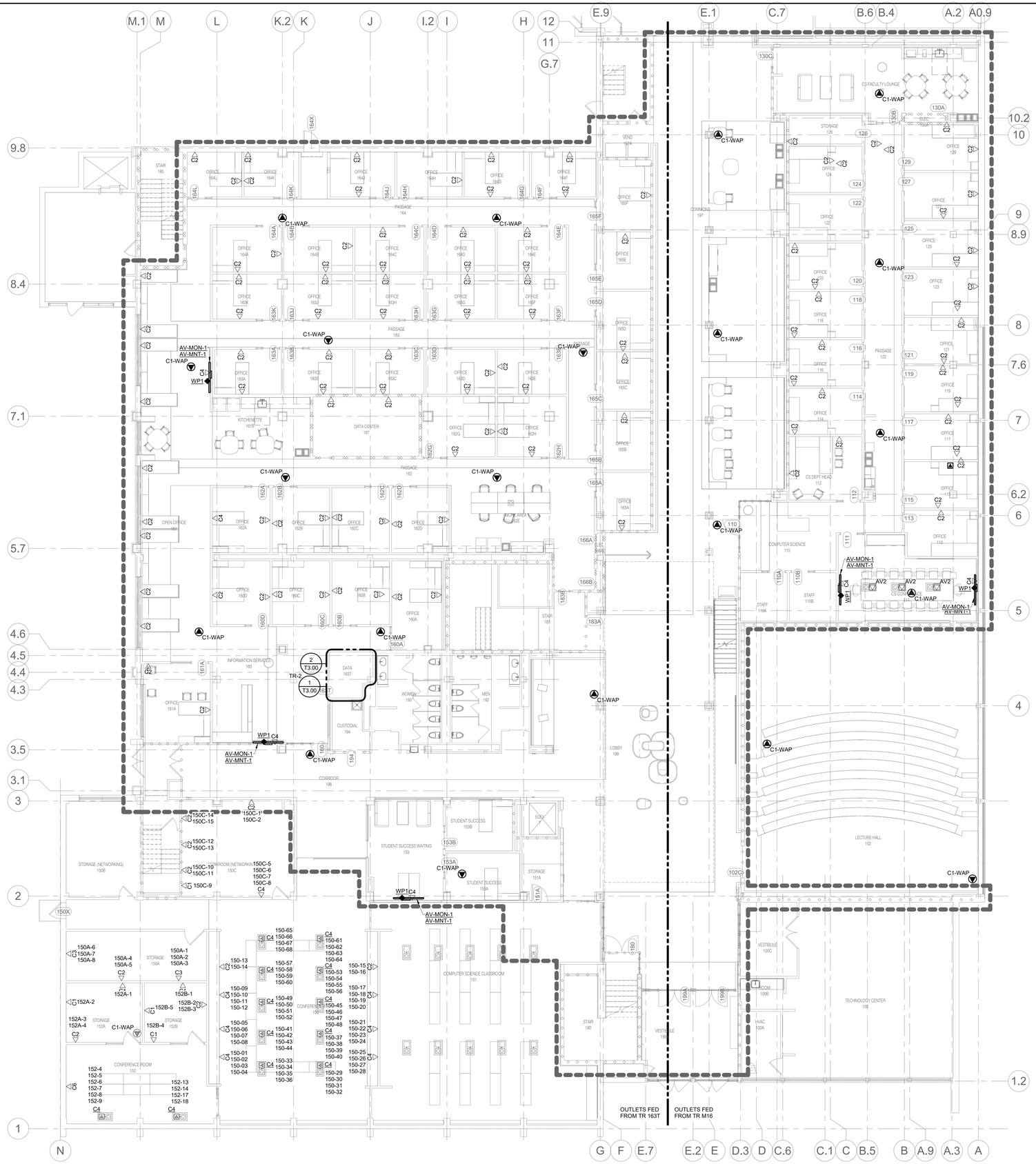
Sheet Title:

BASEMENT & FIRST FLOOR PLANS - TECHNOLOGY

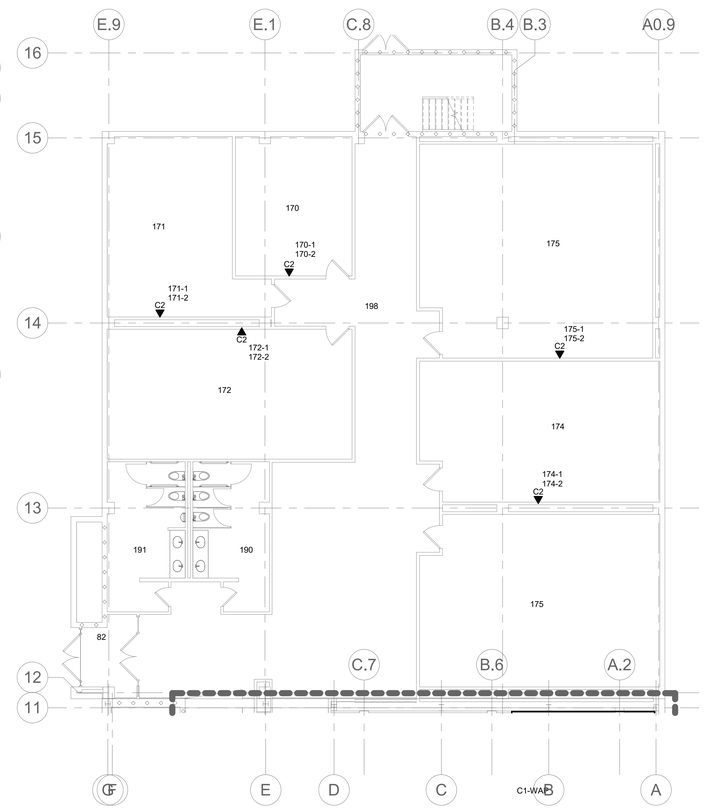
Sheet #:

T2.00



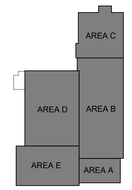
1 LEVEL 01 PLAN - TECHNOLOGY

1/8" = 1'-0"



2 LEVEL 01 PLAN - TECHNOLOGY - AREA C

1/8" = 1'-0"



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2. REFER TO SHEET T4.00 SERIES FOR TECHNOLOGY DETAILS.
3. REFER TO SHEETS T5.00 FOR TECHNOLOGY RISER DIAGRAMS.
4. REFER TO SHEET T6.00 FOR TECHNOLOGY SCHEDULES.

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LEVEL 01 PLAN - TECHNOLOGY

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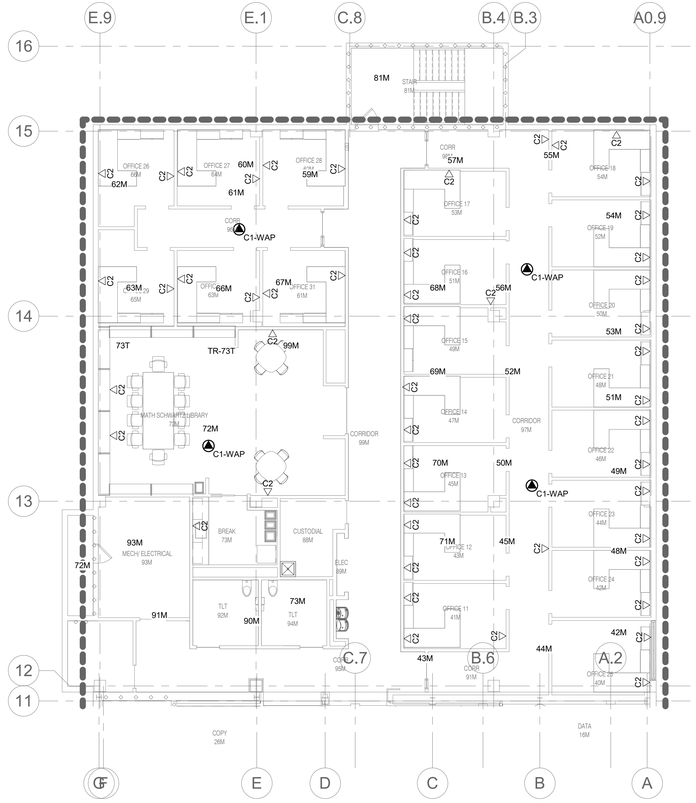
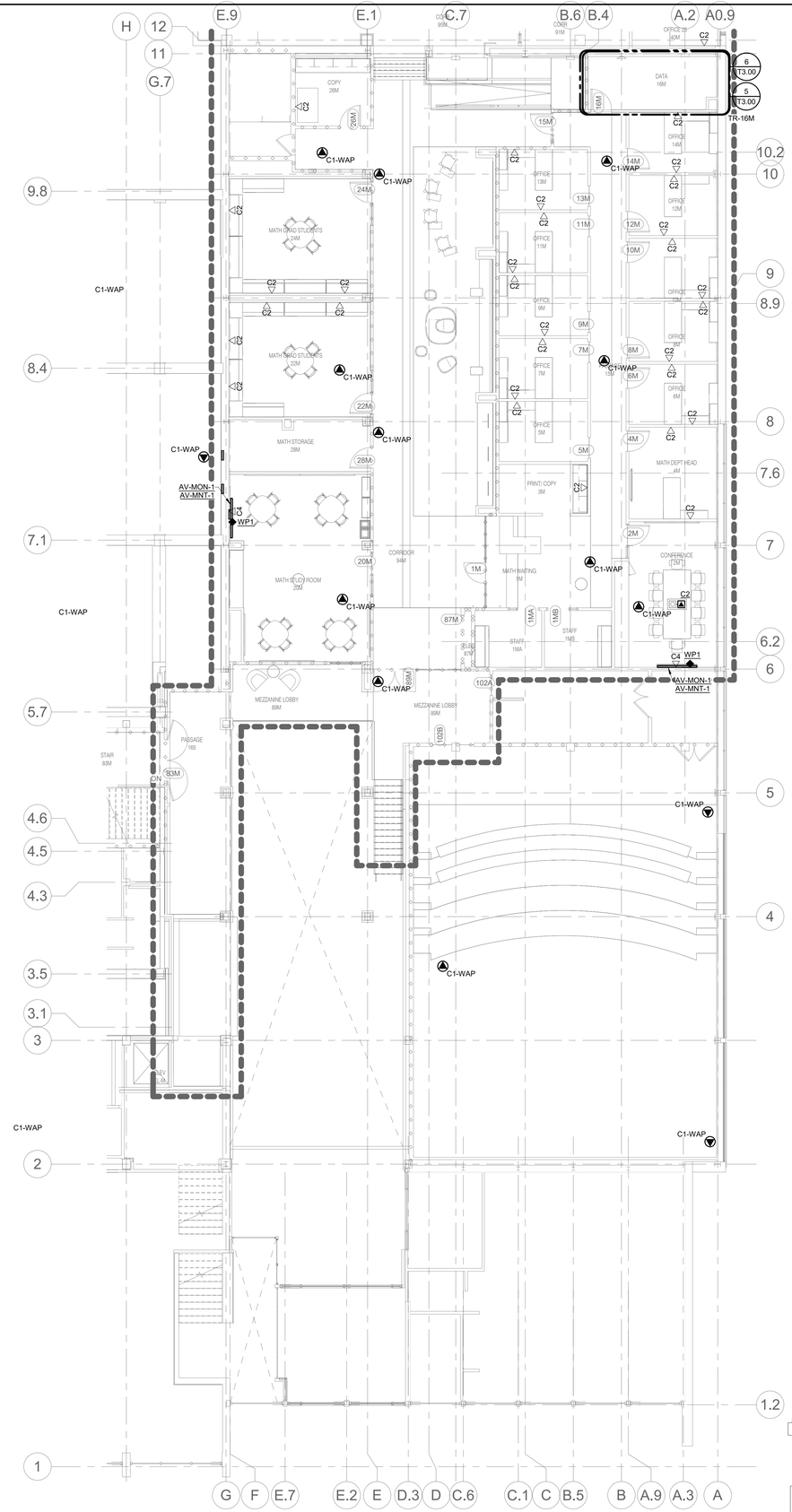


NORTH

1 MEZZANINE PLAN - TECHNOLOGY - AREA C

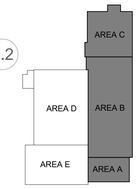
1/8" = 1'-0"



NORTH

3 MEZZANINE PLAN - TECHNOLOGY - AREAS A & B

1/8" = 1'-0"



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MEZZANINE LEVEL PLANS - TECHNOLOGY

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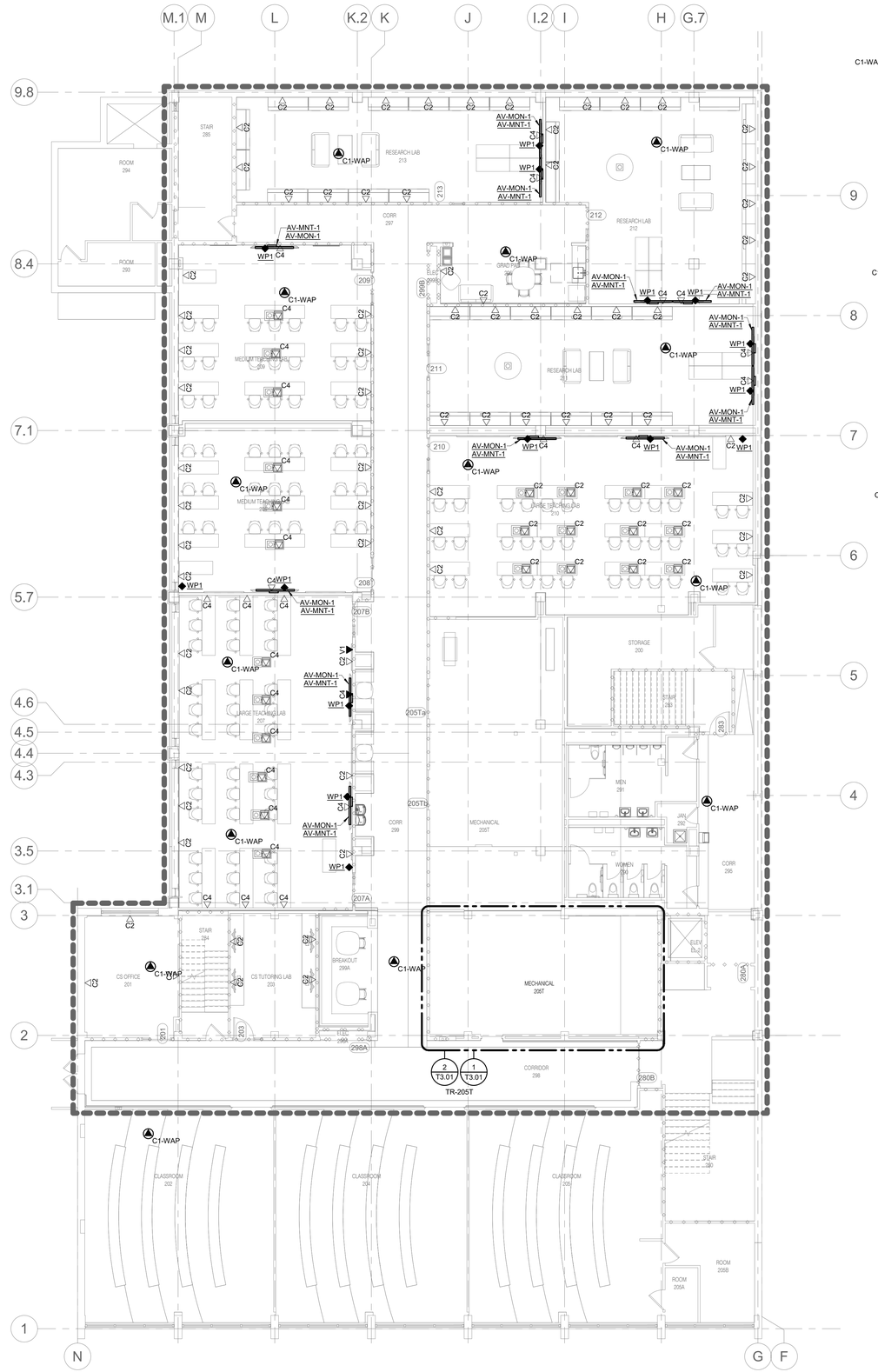
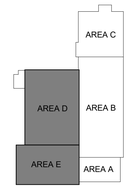


1 LEVEL 02 PLAN - TECHNOLOGY

1/8" = 1'-0"



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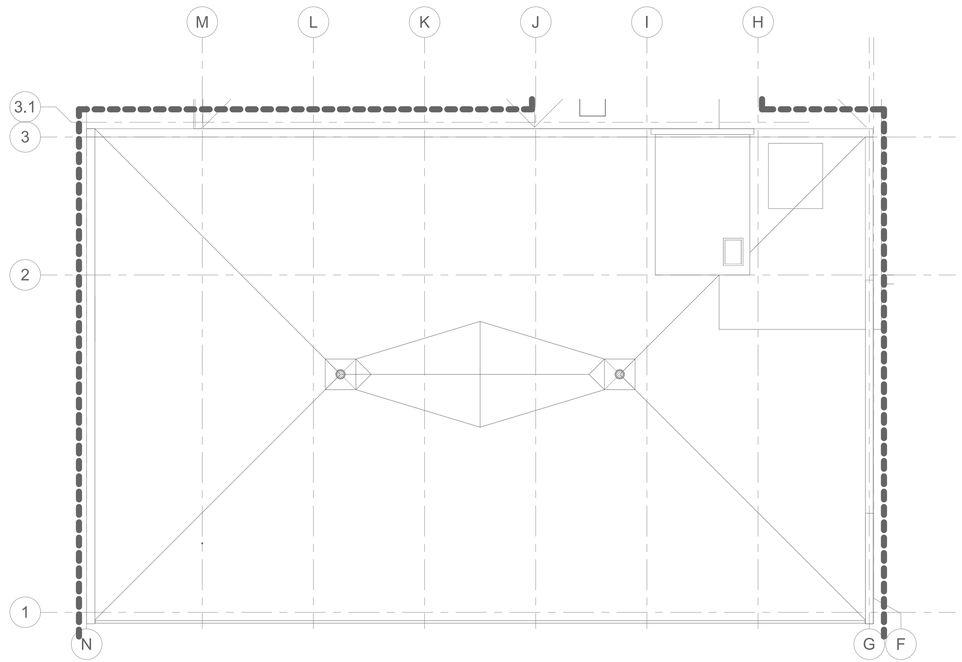
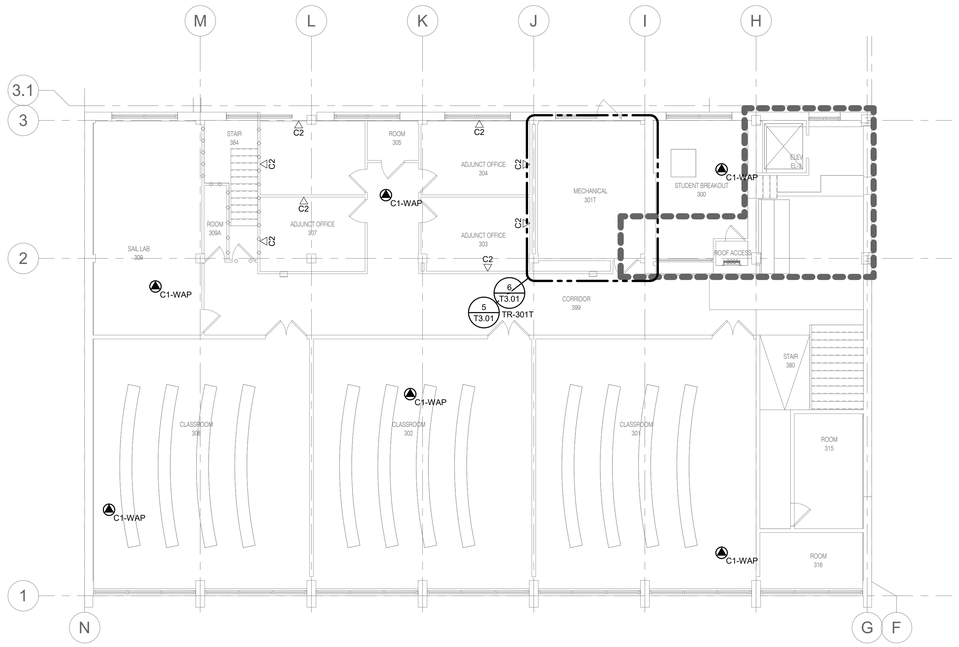


1 ROOF PLAN - TECHNOLOGY

1/8" = 1'-0"

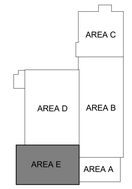


2 LEVEL 03 PLAN - TECHNOLOGY

1/8" = 1'-0"

KEYNOTES: #

1. MULTIPLE 4'-0" W X 8'-0" H BY 3/4" THICK FIRE-RETARDANT TREATED PLYWOOD BACKBOARD ON ENTIRE THREE WALLS MOUNTED AT 6-INCHES AFF. REFERENCE DIVISION 06 SPECIFICATION.
2. PROVIDE A SECONDARY BONDING BUSBAR (SBB). MOUNT 6'-6" AFF TO THE TOP OF THE SBB. REFER TO DETAIL A3/T-504.
3. PROVIDE A STANDARD SWING GATE WALL RACK, USEABLE DIMENSIONS - 26U HEIGHT, 19" EIA WIDTH,17" DP, OVERALL DIMENSIONS - 53.6"H X 21.7" W X 18.2" DP, BLACK, CHATSWORTH CAT NO. 11807-718.



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LEVEL 03 & ROOF PLAN - TECHNOLOGY

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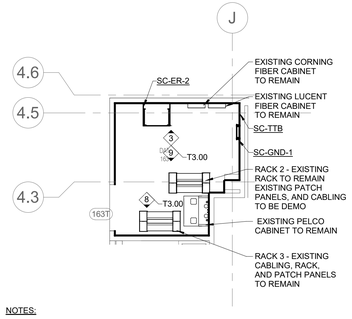
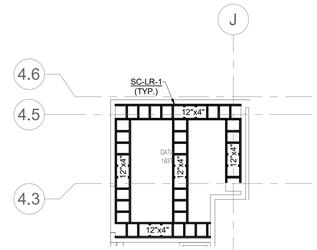


NOTES:

1. PROVIDE 2-POST RACK, UNIVERSAL, 84-INCH HIGH x 19-INCH WIDE x 45RU, BLACK, MARKED AND NUMBERED RACK UNITS, 1500 LB LOAD CAPACITY. SEE SHEET T-201 FOR ADDITIONAL INFORMATION.
2. MULTIPLE 4'-0" W X 8'-0" H BY 3/4" THICK AC GRADE, VOID FREE FIRE-RETARDANT TREATED PLYWOOD BACKBOARD ON ON ALL FOUR WALLS MOUNTED AT 6-INCHES AFF. REFERENCE DIVISION 06 SPECIFICATION.
3. PROVIDE A PRIMARY BONDING BUSBAR (PBB). MOUNT AT 6'-6" AFF TO THE TOP OF THE PBB. REFER TO DETAIL 4/T5.01.
4. PROVIDE A SECONDARY BONDING BUSBAR (SBB). MOUNT 6'-6" AFF TO THE TOP OF THE SBB. REFER TO DETAIL 2/T5.02.

1 ENLARGED TELECOM ROOM TR-163T - 1ST FLOOR

1/4" = 1'-0"

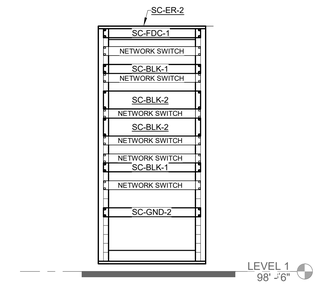


NOTES:

1. 18-INCH WIDE LADDER RACK MOUNTED AT 8'-0" AFF TO BOTTOM OF LADDER RACK.

2 PATHWAY TELECOM ROOM TR-163T - 1ST FLOOR

1/4" = 1'-0"

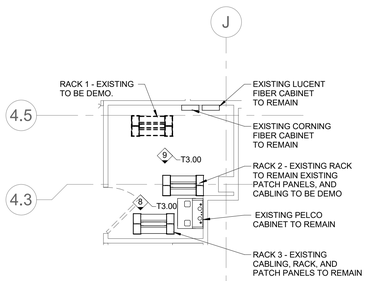


KEYNOTES: #

1. PROVIDE 2RU, APC SMART-UPS, 3000 VA RM 120V WITH UPS NETWORK MANAGEMENT CARD WITH ENVIRONMENT MONITORING AND APC DRY CONTACT I/O ACCESSORY.

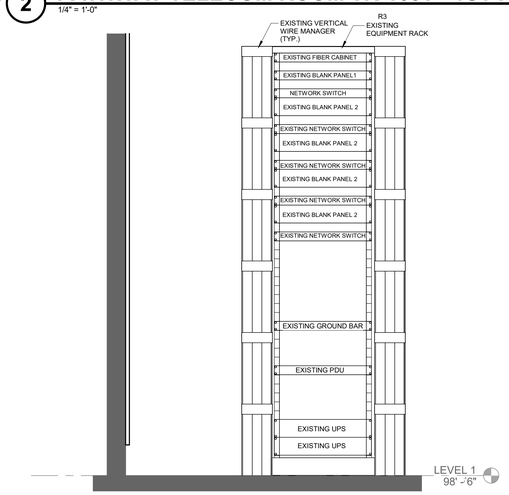
3 ELEVATION TELECOM ROOM TR-163T - 1ST FLOOR

1" = 1'-0"



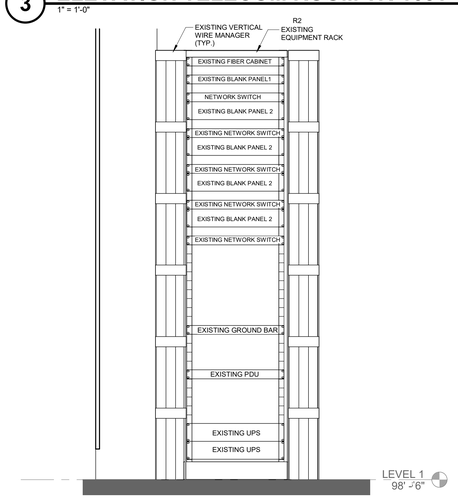
4 EXISTING ENLARGED TELECOM ROOM TR-163T - 1ST FLOOR

1/4" = 1'-0"



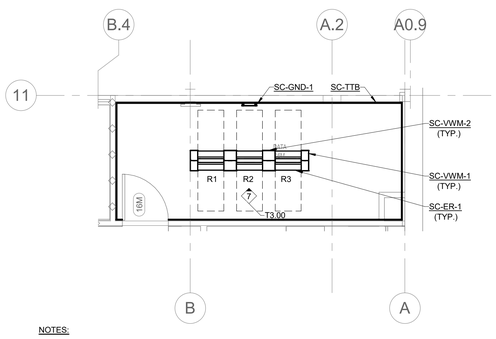
8 EXISTING RACK R3 ELEVATION TR-163T - 1ST FLOOR

1" = 1'-0"



9 EXISTING RACK R2 ELEVATION TR-163T - 1ST FLOOR

1" = 1'-0"

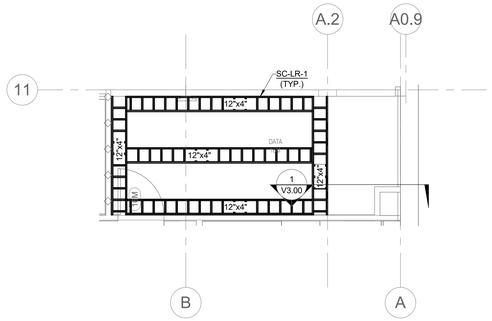


NOTES:

1. PROVIDE 2-POST RACK, UNIVERSAL, 84-INCH HIGH x 19-INCH WIDE x 45RU, BLACK, MARKED AND NUMBERED RACK UNITS, 1500 LB LOAD CAPACITY. SEE SHEET T-201 FOR ADDITIONAL INFORMATION.
2. MULTIPLE 4'-0" W X 8'-0" H BY 3/4" THICK AC GRADE, VOID FREE FIRE-RETARDANT TREATED PLYWOOD BACKBOARD ON ON ALL FOUR WALLS MOUNTED AT 6-INCHES AFF. REFERENCE DIVISION 06 SPECIFICATION.
3. PROVIDE A PRIMARY BONDING BUSBAR (PBB). MOUNT AT 6'-6" AFF TO THE TOP OF THE PBB. REFER TO DETAIL 4/T5.01.
4. PROVIDE A SECONDARY BONDING BUSBAR (SBB). MOUNT 6'-6" AFF TO THE TOP OF THE SBB. REFER TO DETAIL 2/T5.02.

5 ENLARGED TELECOM ROOM TR-16M - MEZZANINE LEVEL

1/4" = 1'-0"

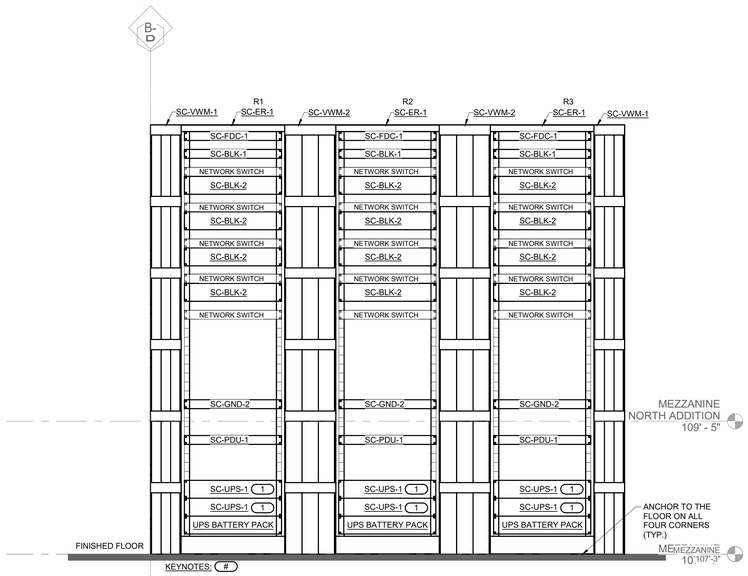


NOTES:

1. 18-INCH WIDE LADDER RACK MOUNTED AT 8'-0" AFF TO BOTTOM OF LADDER RACK.

6 PATHWAY TELECOM ROOM TR-16M - MEZZANINE LEVEL

1/4" = 1'-0"



KEYNOTES: #

1. PROVIDE 2RU, APC SMART-UPS, 3000 VA RM 120V WITH UPS NETWORK MANAGEMENT CARD WITH ENVIRONMENT MONITORING AND APC DRY CONTACT I/O ACCESSORY.

7 ELEVATION TELECOM ROOM TR-16M - MEZZANINE LEVEL

1" = 1'-0"

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Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS

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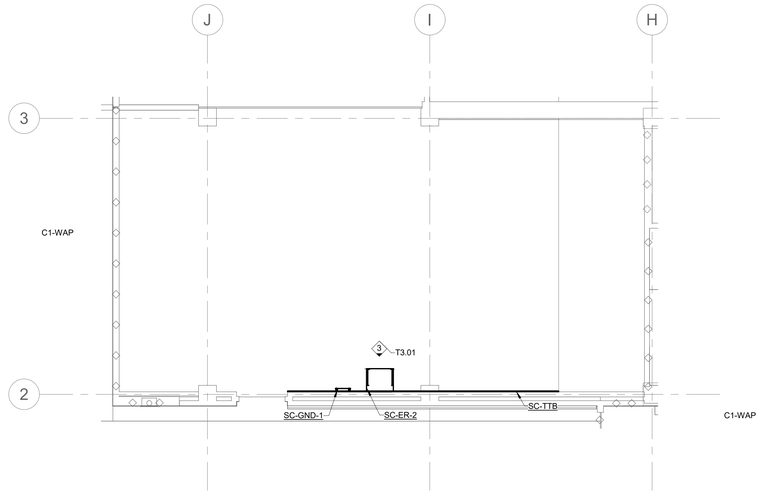
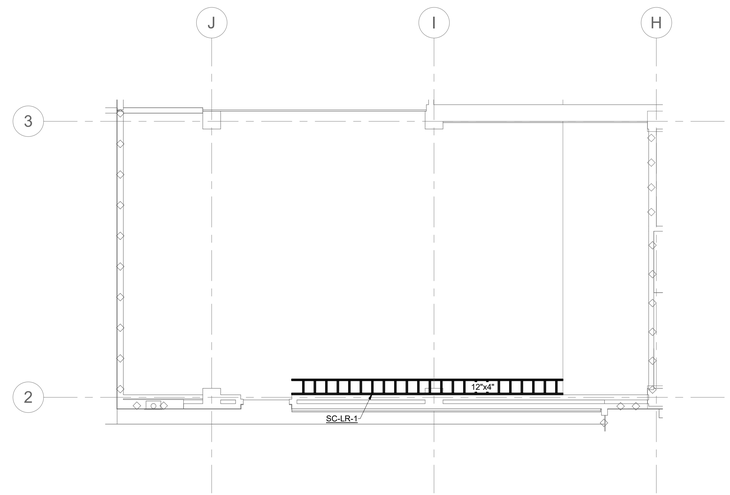
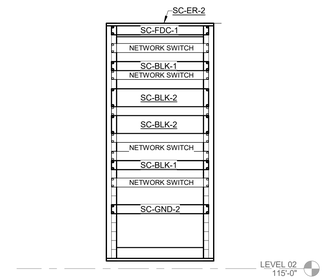


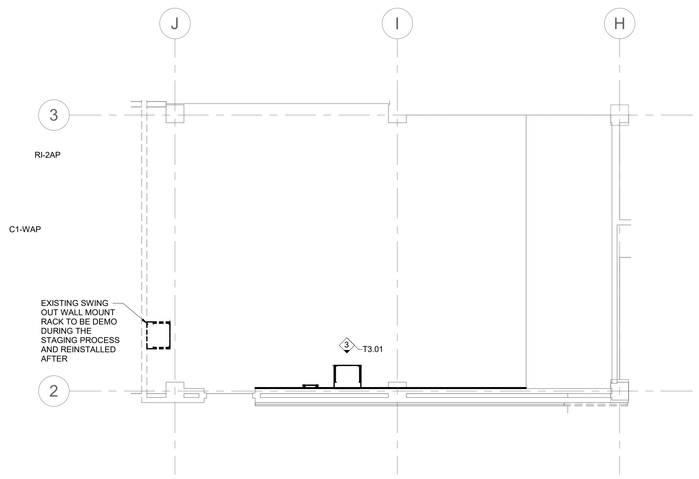
1 ENLARGED TELECOM ROOM TR-205T - 2ND FLOOR
1/4" = 1'-0"



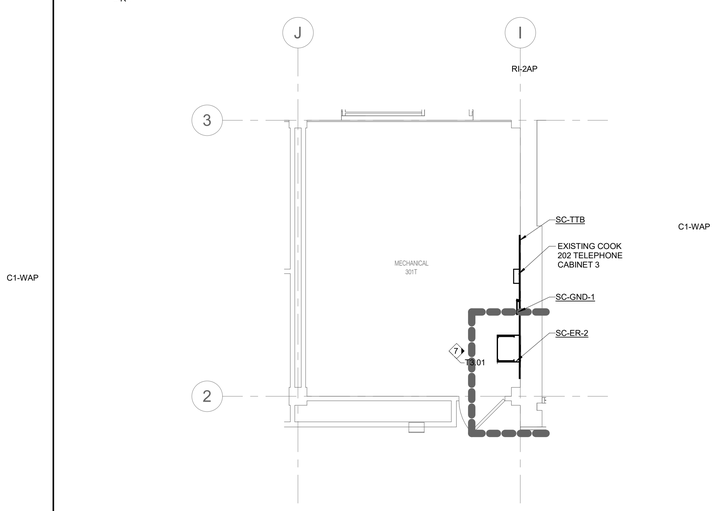
2 PATHWAY TELECOM ROOM TR-205T - 2ND FLOOR
1/4" = 1'-0"



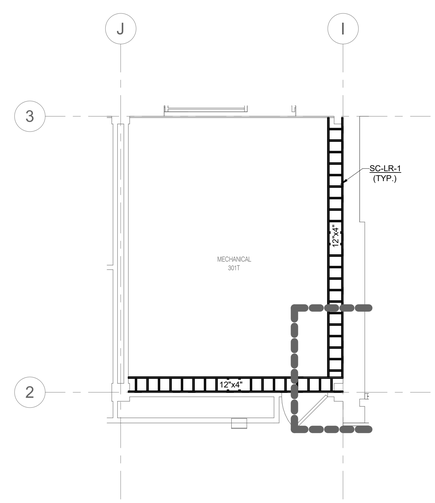
3 ELEVATION TELECOM ROOM TR-205T - 2ND FLOOR
1" = 1'-0"



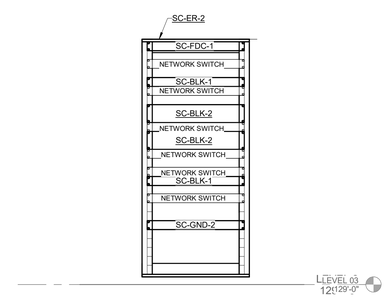
4 ENLARGED EXISTING TELECOM ROOM TR-205T - 2ND FLOOR
1/4" = 1'-0"



5 ENLARGED TELECOM ROOM TR-301T - 3RD FLOOR
1/4" = 1'-0"



6 PATHWAY TELECOM ROOM TR-301T - 3RD FLOOR
1/4" = 1'-0"



7 ELEVATION TELECOM ROOM TR-301T - 3RD FLOOR
1" = 1'-0"

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MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

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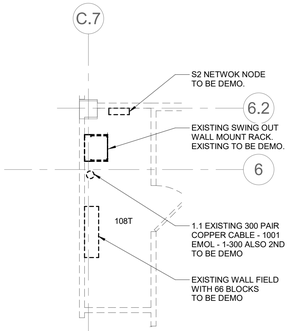
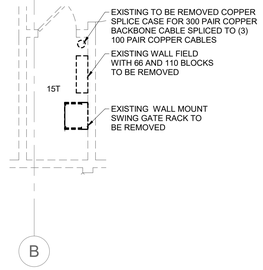


1 ENLARGED EXISTING TELECOM ROOM TR-108T - 1ST FLOOR

1/4" = 1'-0"

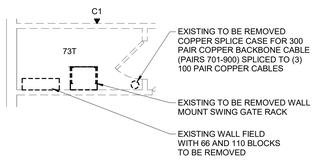
C1-WAP



2 ENLARGED EXISTING TELECOM ROOM TR-15T - MEZZANINE LEVEL

1/4" = 1'-0"

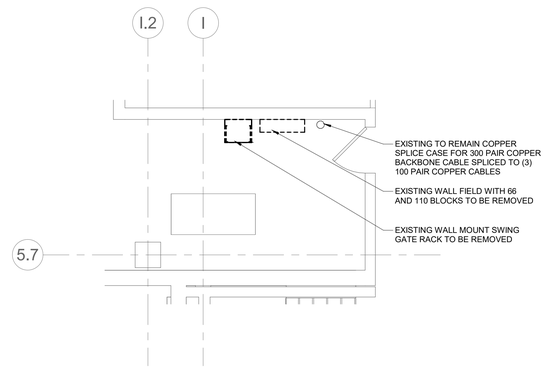
C1-WAP



3 ENLARGED EXISTING TELECOM ROOM TR-73T - MEZZANINE LEVEL

1/4" = 1'-0"

RI-2AP



4 ENLARGED EXISTING TELECOM ROOM TR-08T - BASEMENT

1/4" = 1'-0"

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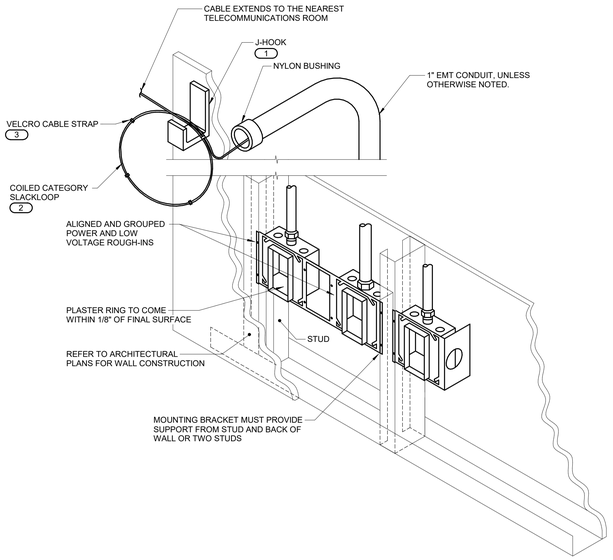


NOTES:

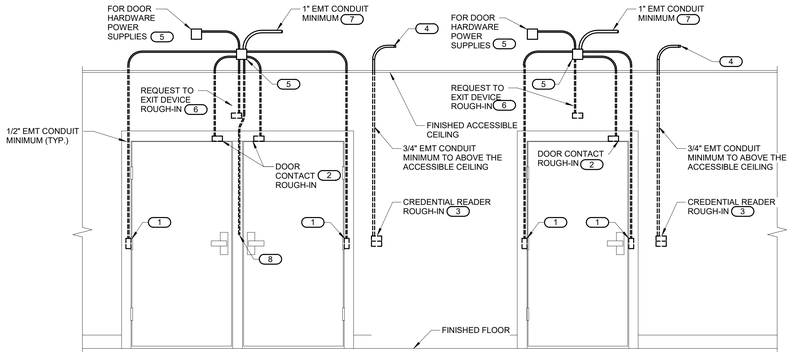
1. THE INTENT OF THE DETAIL IS TO ALIGN AND GROUP DEVICE ROUGH-INS FOR POWER AND LOW VOLTAGE TECHNOLOGY SYSTEMS. SOLIDLY MOUNTED AND THE SURFACE OF THE TRIM IS EITHER FLUSH WITH THE WALL SURFACE OR WITHIN 1/8" OF THE WALL SURFACE. JUNCTION BOXES LARGER THAN 4" SQUARE MUST BE MOUNTED IN A MANNER THAT IS SIMILAR TO THE SYSTEM NOTED ABOVE OR ACHIEVES THE SAME RESULTS.
2. PLASTER RINGS DEPTH MUST BE 1/8" DEEPER THAN THE GYP BOARD APPLIED TO THE WALL. PLASTER RING MUST BE 3/4" FOR USE WITH 5/8" GYP BOARD.
3. METAL STUD-TO-STUD MOUNTING BRACKETS FOR MULTIPLE BOXES BETWEEN STUD. ERICO CADDY RBS## SERIES, EATON B-LINE BB SERIES, OR EQUAL.
4. MOUNTING SUPPORT BRACKETS SIZES FOR SINGLE BOXES IN A STUD CAVITY MATCH THE STUD DEPTH. ERICO CADDY H## SERIES, EATON B-LINE BB## SERIES, OR EQUAL.
5. WHERE RECEPTACLE AND TECHNOLOGY DEVICES ARE SHOWN SERVING A COMMON COMPUTER OR EQUIPMENT, OR SHOWN IN SIMILAR LOCATIONS ON THE DRAWINGS THE DEVICES INSTALLED IN THE SAME STUD CAVITY WITH MOUNTING BRACKETS OR ALIGNED ON OPPOSITE SIDES OF A COMMON STUD WITH SEPARATE SUPPORT.
6. TERMINATE CONDUIT STUB ORIENTED HORIZONTALLY AT THE HEIGHT OF THE ASSOCIATED CABLE TRAY OR J-HOOK ROUTE. CONDUIT RUN NOT CONTAIN MORE THAN 180 DEGREES OF BEND BETWEEN ACCESSIBLE JUNCTION BOXES OR BETWEEN JUNCTION BOX AND END OF CONDUIT.
7. WHERE CONDUIT STUB IS LOCATED IN A ROOM WITH AN ACCESSIBLE CEILING AND IS NOT REQUIRED TO RUN TO CABLE ROUTE LOCATED OUTSIDE THE ROOM, STUB MUST TERMINATE ABOVE THE ACCESSIBLE CEILING WITH A 90-DEGREE BEND AT THE TOP ORIENTED IN TO THE ROOM AT THE HEIGHT OF THE ASSOCIATED CABLE TRAY OR J-HOOK ROUTE IN THE ROOM.
8. ALL STUBS MUST BE FITTED WITH A NYLON BUSHING ON EACH END OF THE CONDUIT.
9. INSTALLING CONTRACTOR FURNISH AND INSTALL FIRESTOP MATERIALS FOR TECHNOLOGY ROUGH-INS PER PROJECT REQUIREMENTS. REFER TO SPECIFICATIONS FOR FIRESTOP REQUIREMENTS.

KEYNOTES: (#)

1. MOUNT A DEDICATED J-HOOK TO THE NEAREST CEILING SUBSTRUCTURE, COLUMN, JOIST, OR WALL ABOVE THE CEILING AS SHOWN ON THE DRAWINGS. PROVIDE THE PROPER SUPPORT WHEN HANGING FROM THE CEILING SUBSTRUCTURE OR COLUMN WALL OR JOIST. REFER TO SPECIFICATION SECTION 27 05 28 FOR ADDITIONAL REQUIREMENTS.
2. REFER TO SECTION 27 15 00 FOR SLACKLOOP LENGTH. MAINTAIN THE MANUFACTURERS BEND RADIUS FOR SLACKLOOP SIZE.
3. PROVIDE AND INSTALL A VELCRO CABLE STRAP ON THE SLACKLOOP APPROXIMATELY EVERY 6" ALONG THE SLACKLOOP. FOR SLACKLOOPS GREATER THAN 3' A MINIMUM OF (4) STRAPS WILL BE INSTALLED.

1 TECHNOLOGY ROUGH-IN TO J-HOOK DETAIL

NO SCALE



DOOR FRAME ROUGH-IN DIAGRAM
(ALL DOUBLE DOORS WITH OR WITHOUT MULLION)

DOOR FRAME ROUGH-IN DIAGRAM
(ALL SINGLE DOORS)

NOTES:

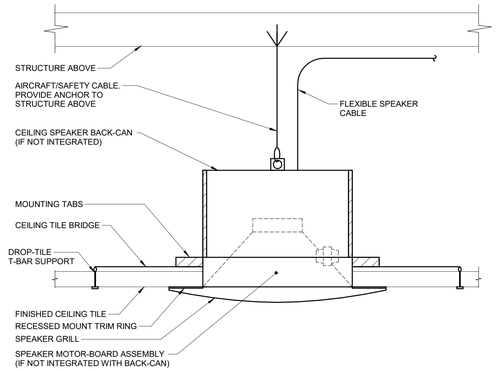
1. CONFIGURATIONS SHOWN IN THE DETAIL ABOVE ARE DIAGRAMMATIC, INTENDED TO DESCRIBE THE CONTROLLED SECURITY SCHEME ROUGH-IN REQUIREMENTS OF THE DOORS. DETAILS ABOVE MAY NOT ACCURATELY REPRESENT DOOR SIZE, DOOR SWING, DOOR HARDWARE, OR DOOR FUNCTIONALITY. REFER TO ARCHITECTURAL DOOR HARDWARE SCHEDULE, DOOR HARDWARE GROUPS AND DOOR HARDWARE SPECIFICATIONS FOR COMPLETE INFORMATION. MIRROR THE DETAIL AS REQUIRED.
2. ROUGH IN SHOWN IN THE DETAIL ABOVE REPRESENTS THE MINIMUM REQUIREMENTS FOR ALL CONTROLLED SECURITY SYSTEM DEVICES AND CABLING UNLESS OTHERWISE NOTED. COORDINATE EXACT REQUIREMENTS WITH SELECTED DOOR MATERIALS, DOOR HARDWARE, AND CONTROLLED SECURITY DEVICES AND CABLING PRIOR TO INSTALLATION.
3. ALL CABLING IN WALLS AND WHERE EXPOSED ON VERTICAL SURFACES MUST BE INSTALLED IN EMT CONDUIT OR SURFACE MOUNT RACEWAY. CABLING ROUTED HORIZONTALLY ABOVE THE ACCESSIBLE CEILING MAY BE INSTALLED FREE-AIR CABLING PROPERLY RATED FOR THE CEILING ENVIRONMENT.
4. THE ELECTRICAL OR SECURITY CONTRACTOR MUST NOT MODIFY ANY FIRE RATED DOOR AND/OR DOOR FRAME. REFER TO THE ARCHITECTURAL DOOR SCHEDULE, DOOR HARDWARE SCHEDULE, AND DOOR HARDWARE SPECIFICATION FOR ADDITIONAL INFORMATION. MODIFICATION TO ANY FIRE RATED DOOR AND/OR FRAME WILL REQUIRE A RE-CERTIFICATION OF THE DOOR AND FRAME WITH THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ).
5. INSTALLING CONTRACTOR MUST FURNISH AND INSTALL FIRESTOP MATERIALS FOR ALL CONTROLLED SECURITY SCHEME ROUGH-INS PER PROJECT REQUIREMENTS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
6. REFER TO THE CONTROLLED SECURITY SCHEME WIRING DIAGRAM FOR CABLING REQUIREMENTS AND THE CONTROLLED SECURITY SCHEME SCHEDULE ON T6.00 FOR ADDITIONAL INFORMATION.
7. INSTALLATION MUST INCLUDE ALL POWER REQUIRED FOR SYSTEM OPERATION INCLUDING +120VAC. REFER TO THE SUGGESTED MATRIX OF SCOPE RESPONSIBILITY FOR ADDITIONAL INFORMATION.

KEYNOTES: (#)

1. PROVIDE JUNCTION BOXES IN THE DOOR FRAME WHERE SHOWN ON THIS DETAIL. ROUGH-IN MUST BE PROVIDED WHETHER THE CURRENT SECURITY SCHEME UTILIZES THEM OR NOT. ALL CONDUITS MUST BE EMT CONDUIT UNLESS OTHERWISE NOTED. FLEXIBLE CONDUIT OF ANY TYPE WILL NOT BE ACCEPTED. COORDINATE INSTALLATION WITH ON-SITE DOOR FRAME INSTALLATION CONTRACTOR.
2. ALL DOOR POSITION SWITCHES ARE REQUIRED TO BE RECESSED UNLESS OTHERWISE NOTED. ELECTRIC HINGE MONITORS ARE NOT AN ACCEPTABLE REPLACEMENT FOR THE RECESSED DOOR POSITION SWITCH.
3. 4" SQUARE BACKBOX WITH SINGLE GANG PLASTER RING. PROVIDE 2 1/2" DEEP MASONRY BOX WHERE APPLICABLE. REFER TO FLOOR PLAN(S) FOR ACTUAL CREDENTIAL READER TYPE AND ROUGH-IN LOCATIONS.
4. CONDUIT MUST ROUTE FROM THE CREDENTIAL READER TO THE SECURE SIDE OF THE DOOR. CONDUIT MUST ROUTE TO THE NEAREST ACCESSIBLE CEILING. PROVIDE A NYLON BUSHING ON CONDUIT END.
5. MOUNT A MINIMUM 4-11/16" SQUARE 2-1/8" DEEP JUNCTION BOX WITH BLANK COVER PLATE ON THE SECURE SIDE OF THE DOOR ABOVE ACCESSIBLE CEILING. INSTALLING CONTRACTOR MUST SIZE THE JUNCTION BOXES PER SYSTEM INSTALLATION REQUIREMENTS AND APPLICABLE CODES. MAINTAIN ACCESS TO THE JUNCTION BOX.
6. PROVIDE A HORIZONTALLY MOUNTED SINGLE GANG BACKBOX FOR THE REQUEST TO EXIT SENSOR. REFER TO THE CONTROLLED SECURITY SCHEME SCHEDULE ON T-500 FOR DOORS THAT REQUIRE THIS ROUGH-IN.
7. CONDUIT MUST ROUTE TO THE NEAREST ACCESSIBLE CEILING. PROVIDE A NYLON BUSHING ON CONDUIT END.

2 CONTROLLED SECURITY SCHEME DOOR ROUGH-IN DETAIL

NO SCALE

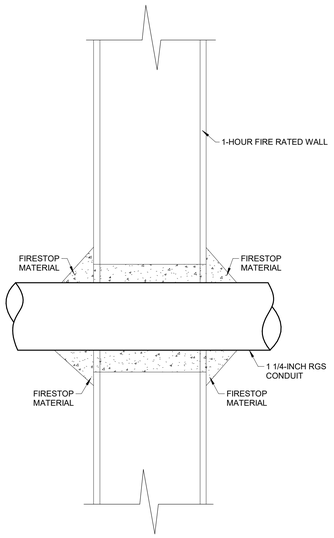


NOTES:

1. WHERE SUPPORTS ATTACH TO METAL ROOF DECKING, EXCLUDING CONCRETE ON METAL DECKING, DO NOT EXCEED 25 LBS. PER HANGAR AND A MINIMUM SPACING OF 2'-0" ON CENTER. THIS 25 LB. LOAD AND 2'-0" SPACING INCLUDE ELECTRICAL AND MECHANICAL ITEMS HANGING FROM DECK. IF THE HANGER RESTRICTIONS CANNOT BE ACHIEVED, THE ADDITION OF SUPPLEMENTAL FRAMING OFF STEEL FRAMING WILL BE REQUIRED.

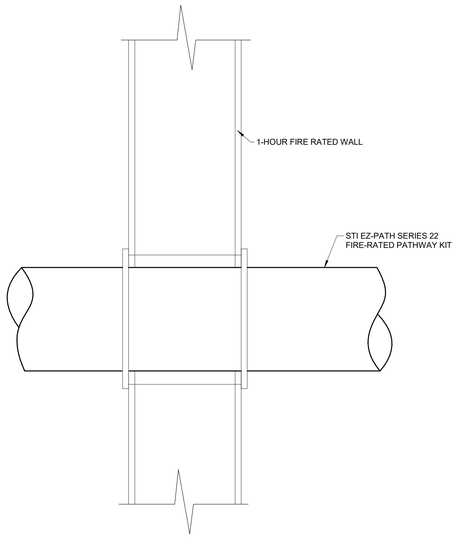
3 CEILING SPEAKER MOUNTING DETAIL

NO SCALE



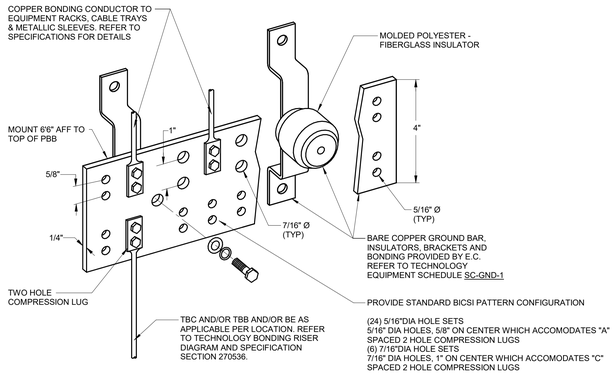
4 HORIZONTAL CONDUIT PENETRATION

NO SCALE



5 HORIZONTAL CONDUIT PENETRATION

NO SCALE



NOTES:

1. REFER TO TECHNOLOGY EQUIPMENT SCHEDULE SC-GND-1 FOR MINIMUM DIMENSION REQUIREMENTS.
2. REFER TO 3/T5.00 FOR TYPICAL TELECOM ROOM BONDING FLOW DIAGRAM.

6 BONDING BUS BAR DETAIL

NO SCALE

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CERTIFICATE OF AUTHORITY - E2017008530

Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS	
#	Date / Description
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3	
4	

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Sheet Title:

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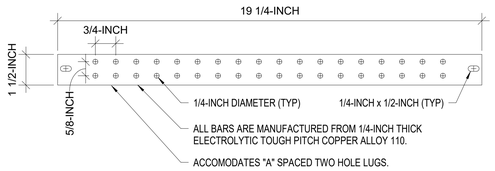
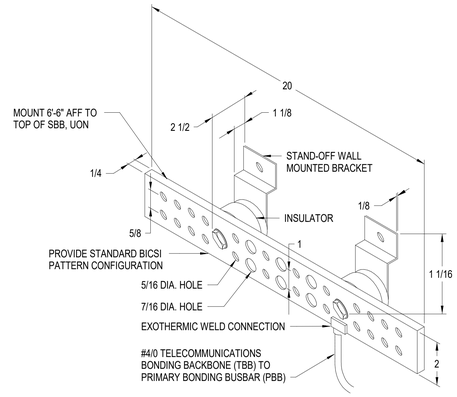
Sheet #:

T4.00



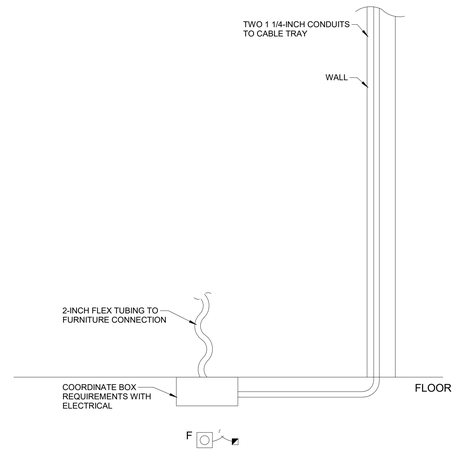
1 RACK BONDING BUSBAR (RBB) DETAIL
NO SCALE



NOTES:

1. (12) 5/16"DIA HOLE SETS 5/16" DIA HOLES, 5/8" ON CENTER WHICH ACCOMODATES "A" SPACED 2 HOLE COMPRESSION LUGS
2. (3) 7/16"DIA HOLE SETS 7/16" DIA HOLES, 1" ON CENTER WHICH ACCOMODATES "C" SPACED 2 HOLE COMPRESSION LUGS

2 SECONDARY BONDING BUSBAR (SBB) DETAIL
NO SCALE



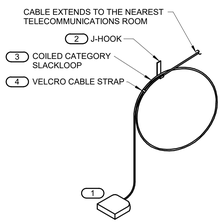
GENERAL SHEET NOTES:

1. PBB'S MUST MEET ANSI / TIA-607-D 6.2.1 AND TIA-607-D 7.2.1.
2. SBB'S MUST MEET ANSI / TIA-607-D 6.2.2 AND TIA-607-D 7.3.1.
3. RBB'S MUST MEET ANSI / TIA-607-D 6.2.3 AND TIA-607-D 7.4.1.
4. UNLESS NOTED OTHERWISE, SIZE TBB / BBC CONDUCTORS TO ANSI / TIA-607-D TABLE 1 THESE CONDUCTORS MUST BE THE SAME SIZE WHEN CONNECTED.
5. BONDING CONNECTIONS ARE EITHER LISTED EXOTHERMIC WELDS, LISTED IRREVERSIBLE COMPRESSION CONNECTORS, OR LISTED MECHANICAL CONNECTORS. CONNECTORS, LUGS, AND COMPONENTS MUST BE LISTED FOR THE PURPOSE.

KEYNOTES: (#)

A. IF PANELBOARD IS LOCATED IN SAME SPACE, BOND PBB TO ACEG BUS. MAINTAIN 12-INCHES SEPARATION.
B. THIS CONDUCTOR MUST BE CONTINUOUS AND AS SHORT AS POSSIBLE IN A STRAIGHT-LINE PATH.
C. CONNECTIONS TO THE PBB / SBB MUST UTILIZE EXOTHERMIC WELDING OR LISTED TWO-HOLE COMPRESSION LUGS.
D. PBB OR SBB MUST MEET REQUIREMENTS OF ANSI / TIA-607-D 6.2.1.
E. BUILDING STEEL (STRUCTURAL METAL) VERIFIED ELECTRONICALLY CONTINUOUS VIA TWO-POINT TEST OR EQUIPMENT.
F. LISTED BONDING CONNECTOR. LISTED EXOTHERMIC, COMPRESSION, OR MECHANICAL CONNECTION.
G. SIZE THIS BONDING CONDUCTOR TO TIA 607-D TABLE 1. THIS CONDUCTOR MUST BE NO SMALLER THAN ANY OTHER CONDUCTOR IN THE TELECOM BONDING BACKBONE SYSTEM. USE #2/0 AWG, UNLESS OTHERWISE NOTED.
H. MINIMUM GROUND ELECTRODE IS 3/4-INCH DIAMETER BY 8'-0" LONG BURIED 24-INCHES FOR A SUM OF 10'-0" DRIVEN DEPTH. ROD / ELECTRODE SHOULD HAVE A 1/2-INCH COPPER PLATING THICKNESS OR MWE.
I. TEBC MUST BE SIZED TO LARGEST-SIZE GROUNDING CONDUCTOR. USE #2/0 AWG, UNLESS OTHERWISE NOTED.
J. USE IRREVERSIBLE COMPRESSION CONNECTORS TO BOND TEBC TO RBC'S OR OTHER GROUNDING CONDUCTORS.
K. USE #6 AWG AS A MINIMUM RBC SIZE, UNLESS OTHERWISE NOTED.
L. WHEN USING RBBS, USE LISTED RBBS SIZED TO ANSI / TIA-607-D 6.2.3.
M. BOND EQUIPMENT TO TEBC VIA IRREVERSIBLE COMPRESSION CONNECTORS AND #6 AWG.
N. BOND GROUND CABLE TO GROUND ELECTRODE.
O. STAND-OFF BRACKET TO MAINTAIN SEPARATION (MINIMUM 2-INCHES)FROM OTHER CABLE SPACE BRACKETS NO GREATER THAN 36-INCHES CENTER TO CENTER.

3 MODULAR SYSTEMS FURNITURE FLOOR BOX DETAIL
NO SCALE



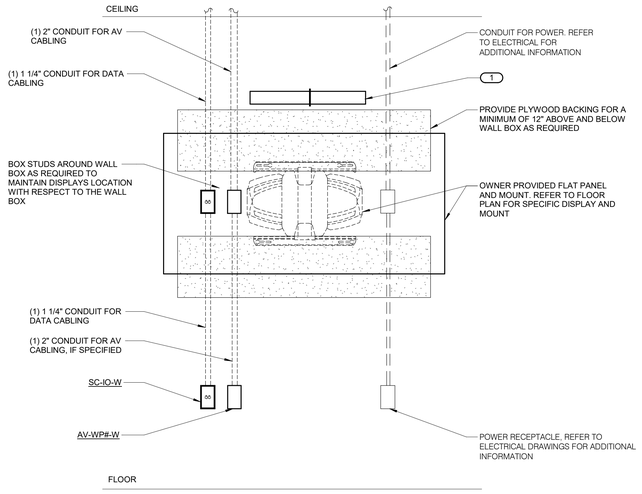
NOTES:

1. THIS DIAGRAM MAY NOT REPRESENT THE QUANTITY OF CABLES TO EACH INFORMATION OUTLET JUNCTION BOX. REFER TO THE DRAWINGS AND THE INFORMATION OUTLET SCHEDULE FOR ADDITIONAL INFORMATION.
2. ALL DEVICES ARE INSTALLED ABOVE THE CEILING UNLESS OTHERWISE NOTED.

KEYNOTES: (#)

1. 1 OR 2-PORT PLENUM RATED SURFACE MOUNTED BOX, SUPPORT FROM J-HOOK. TERMINATE CABLE ON FIELD TERMINABLE MODULAR RJ-45 PLUG. REFER TO THE INFORMATION OUTLET SCHEDULE AND TECHNOLOGY EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.
2. MOUNT A DEDICATED J-HOOK TO THE NEAREST CEILING SUBSTRUCTURE, COLUMN, JOIST, OR WALL ABOVE THE CEILING AS SHOWN ON THE DRAWINGS. PROVIDE THE PROPER SUPPORT WHEN HANGING FROM THE CEILING SUBSTRUCTURE OR COLUMN WALL OR JOIST. REFER TO SPECIFICATION SECTION 27 05 28 FOR ADDITIONAL REQUIREMENTS.
3. REFER TO SECTION 27 15 00 FOR SLACKLOOP LENGTH. MAINTAIN THE MANUFACTURER'S BEND RADIUS FOR SLACKLOOP SIZE.
4. PROVIDE AND INSTALL A VELCRO CABLE STRAP ON THE SLACKLOOP APPROXIMATELY EVERY 6" ALONG THE SLACKLOOP. FOR SLACKLOOPS GREATER THAN 3' A MINIMUM OF (4) STRAPS WILL BE INSTALLED.

4 ABOVE CEILING INFORMATION OUTLET MOUNTING DETAIL
NO SCALE



NOTES:

1. CONFIGURATIONS SHOWN IN THE DETAIL ABOVE ARE DIAGRAMMATIC, INTENDED TO DESCRIBE THE ROUGH-IN REQUIREMENTS OF A TYPICAL FLAT PANEL DISPLAY. DETAILS ABOVE MAY NOT ACCURATELY REPRESENT DISPLAY SIZE, MOUNTING HEIGHT, OR PHYSICAL RELATIONSHIP. REFER TO ARCHITECTURAL ELEVATIONS FOR COMPLETE INFORMATION AND MIRROR THE DETAIL AS REQUIRED.
2. ROUGH-IN SHOWN IN THE DETAIL ABOVE REPRESENTS THE MINIMUM REQUIREMENTS FOR THE DISPLAY UNLESS OTHERWISE NOTED. COORDINATE EXACT REQUIREMENTS OF THE SELECTED DEVICES AND CABLING PRIOR TO INSTALLATION.
3. ALL CABLING IN WALLS SHALL BE INSTALLED IN EMT CONDUIT. CABLING ROUTED HORIZONTALLY ABOVE THE ACCESSIBLE CEILING MAY BE INSTALLED FREE-AIR WITH CABLING PROPERLY RATED FOR THE CEILING ENVIRONMENT.
4. INSTALLATION SHALL INCLUDE ALL POWER REQUIRED FOR SYSTEM OPERATION INCLUDING + 120VAC. REFER TO THE SUGGESTED MATRIX OF SCOPE RESPONSIBILITY FOR ADDITIONAL INFORMATION.

KEYNOTES: (#)

1. LOGITECH RALLY BAR ALL-IN-ONE VIDEO BAR FOR MIDSIZE ROOMS - VIDEO CONFERENCE, TAA COMPLIANT - OFOI.

5 ARTICULATING MOUNT ROUGH-IN DETAIL
NO SCALE

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CERTIFICATE OF AUTHORITY - E2017008530

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BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

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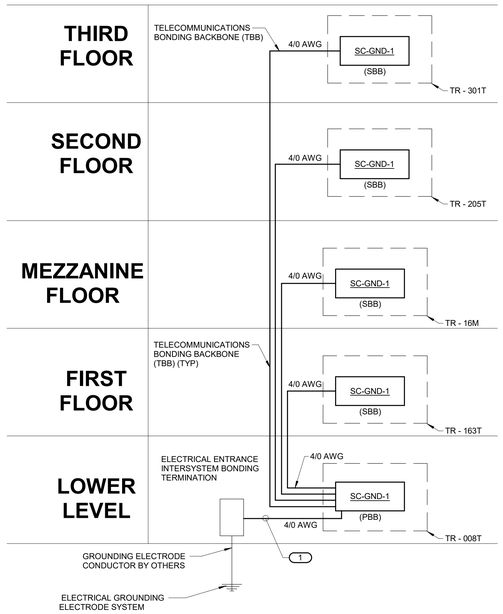

NOTES:

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2. TELECOM BONDING BACKBONE MUST BE PROVIDED PER BONDING CONDUCTOR SIZING SCHEDULE.
3. ALL CONDUCTORS IN THE TECHNOLOGY BONDING SYSTEM MUST BE [PLENUM RATED] COPPER (GREEN OR MARKED WITH A DISTINCTIVE GREEN COLOR). REFER TO BONDING CONDUCTOR SIZING SCHEDULE FOR SIZING CRITERIA FOR CONDUCTORS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
4. ALL BONDING CONDUCTORS AND BONDING JUMPERS MUST BE CONNECTED BY COMPRESSION LUGS, EXOTHERMIC WELDING, OR IRREVERSIBLE COMPRESSION CONNECTORS. SOLDER IS NOT AN ACCEPTABLE MEANS OF CONNECTION. SHEET METAL SCREWS MUST NOT BE USED TO CONNECT COMMUNICATIONS BONDING CONDUCTORS TO EQUIPMENT. WHERE NECESSARY, REMOVE PAINT AND/OR USE PAINT-PIERCING WASHERS TO PROVIDE PROPER ELECTRICAL BOND AT ALL CONNECTIONS.
5. SC-GND-1 IS THE PRIMARY BONDING BUSBAR (PBB) WHICH CONNECTS TO THE (TBC) AND CONNECTS ALL SECONDARY BONDING BUSBAR (SBB) VIA THE (TBB).
6. REFER TO FOR TYPICAL TELECOM ROOM BONDING FLOW DIAGRAM.
7. REFER TO TELECOM ROOM REFERENCES SCHEDULE FOR TELECOMMUNICATIONS ROOM NUMBER AND LOCATION INFORMATION.

KEYNOTES: (#)

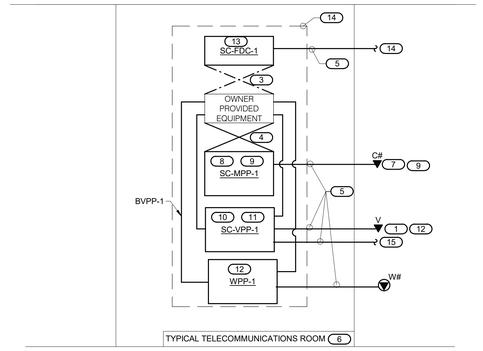
1. TELECOMMUNICATIONS BONDING CONDUCTOR (TBC). TBC MUST BE THE SAME SIZE AS THE TBB OR LARGER. REFER TO BONDING CONDUCTOR SIZING SCHEDULE FOR SIZING REQUIREMENTS.

1 TECHNOLOGY BONDING RISER DIAGRAM

NO SCALE

BONDING CONDUCTOR SIZING SCHEDULE

CONDUCTOR LENGTH IN FEET	MINIMUM ACCEPTABLE SIZE - AWG
LESS THAN 13'	6
14' - 20'	4
21' - 26'	3
27' - 33'	2
34' - 41'	1
42' - 52'	1/0
53' - 66'	2/0
67' - 84'	3/0
85' 105'	4/0
106' - 125'	250 kcmil
126' - 150'	300 kcmil
151' - 175'	350 kcmil
176' - 250'	500 kcmil
251' - 300'	600 kcmil
GREATER THAN 301'	750 kcmil



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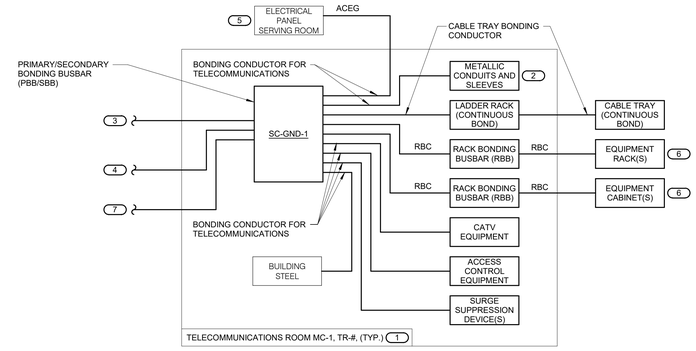
KEYNOTES: (#)

1. C# INDICATES VOICE/DATA FACEPLATE CONFIGURATION. REFER TO THE INFORMATION OUTLET SCHEDULE ON T600 FOR ADDITIONAL INFORMATION. REFER TO SPECIFICATIONS SECTION 27 15 00 FOR ADDITIONAL INFORMATION.
2. EXISTING RACK OR CABINET AS DEFINED ON THE TELECOM ROOM LAYOUT. REFER TO THE TELECOM ROOM REFERENCES MATRIX ON THE COVERPAGE FOR LOCATION.
3. EXISTING FIBER OPTIC PATCH CORDS.
4. RJ-45 TO RJ45 CATEGORY 6 AND 6A UTP PATCH CORDS, REFER TO SPECIFIATION 27 15 00.
5. 4-PAIR, CATEGORY 6 AND 6A, UNSHIELDED TWISTED PAIR CABLE, REFER TO SPECIFICATIONS.
6. REFER TO COVERPAGE AND FLOOR PLANS FOR TELECOMMUNICATIONS ROOM LOCATIONS.
7. "W" INDICATES KEYSTONE WALL PHONE PLATE, WITH MOUNT STUDS, CAT 6, 1-PORT, STAINLESS STEEL. REFER TO SPECIFICATION 27 15 00.
8. PROVIDE A SYSTIMAX 2U, 48-PORT, BLANK, MODULAR PATCH PANEL, BLACK, WITH FACEPLATES, WITHOUT LABELS, 3.5-INCHES HIGH BY 19-INCHES WIDE, AND A PANDUIT EXTENDED STRAIN RELIEF BAR, BLACK, 21.0 INCHES LONG X 0.75"H X 9.0"W. REFER TO SPECIFICATION 27 15 00 FOR ADDITIONAL INFORMATION.
9. PROVIDE A SYSTIMAX CAT 6 JACK, UNIVERSAL 568A/B, YELLOW ON BOTH ENDS OF THE CABLE AND TERMINATE THE JACK ONTO THE CABLE PER TIA 568B WIRING METHOD. REFER TO SPECIFICATION 27 15 00 FOR ADDITIONAL INFORMATION.
10. PROVIDE A SYSTIMAX 1U, 24-PORT, BLANK, MODULAR PATCH PANEL, BLACK, WITH FACEPLATES, WITHOUT LABELS, 1.75-INCHES HIGH BY 19-INCHES WIDE, AND A SYSTIMAX EXTENDED STRAIN RELIEF BAR, BLACK, 21.0 INCHES LONG X 0.75"H X 9.0"W. REFER TO SPECIFICATION 27 15 00 FOR ADDITIONAL INFORMATION.
11. PROVIDE A SYSTIMAX CAT 6 JACK, UNIVERSAL 568A/B, WHITE, ON BOTH ENDS OF THE CABLE AND TERMINATE THE JACK ONTO THE CABLE PER TIA 568B WIRING METHOD. REFER TO SPECIFICATION 27 15 00 FOR ADDITIONAL INFORMATION.
12. PROVIDE A SYSTIMAX CAT 6 JACK, UNIVERSAL 568A/B, GREEN, ON BOTH ENDS OF THE CABLE AND TERMINATE THE JACK ONTO THE CABLE PER TIA 568B WIRING METHOD. REFER TO SPECIFICATION 27 15 00 FOR ADDITIONAL INFORMATION.
13. PROVIDE 2U, FIBER SPLICE ENCLOSURE WITH 12 FIBERS, (6 PORT DUPLEX), LC ADAPTER PANELS, SMF, AQUA ADAPTERS CERAMIC ALIGNMENT SLEEVES, LOOSE TUBE BREAKOUT KIT, 60 HEAT SHRINK TUBES, 12 FIBER PIGTAILS, 2M, LC-IPC, 50 MICRON OM4.
14. PROVIDE A 12-STRAND, INTERLOCKING ARMOR, LASER OPTIMIZED MULTIMODE FIBER (OM4), 10GB UP TO 550M, OFPR,DIELECTRIC STRENGTH MEMBERS, TIGHT BUFFERED, AQUA IN COLOR, INTRA BUILDING BACKBONE CABLING, FROM BASEMENT LEVEL 008, MAIN FIBER DISTRIBUTION PANEL TO EACH TR-008T, TR-163T, TR-16M, TR-205T AND TR-301T.
15. PROVIDE A 25-PAIR CAT 5E FROM BASEMENT LEVEL 008T - TO EACH TR-008T, TR-163T, TR-16M, TR-205T AND TR-301T.

2 TYPICAL CONNECTIVITY RISER DIAGRAM

NO SCALE



NOTES:

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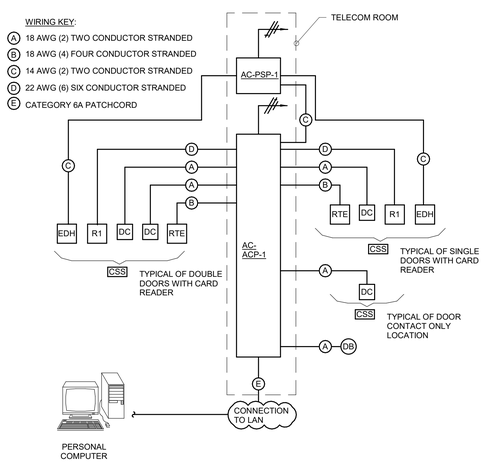
2. ALL CONDUCTORS IN THE TECHNOLOGY BONDING SYSTEM MUST BE [PLENUM RATED] COPPER (GREEN OR MARKED WITH A DISTINCTIVE GREEN COLOR). REFER TO BONDING CONDUCTOR SIZING SCHEDULE FOR SIZING CRITERIA FOR CONDUCTORS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
3. ALL BONDING CONDUCTORS AND BONDING JUMPERS MUST BE CONNECTED BY COMPRESSION LUGS, EXOTHERMIC WELDING, OR IRREVERSIBLE COMPRESSION CONNECTORS. SOLDER IS NOT AN ACCEPTABLE MEANS OF CONNECTION. SHEET METAL SCREWS MUST NOT BE USED TO CONNECT COMMUNICATIONS BONDING CONDUCTORS TO EQUIPMENT. WHERE NECESSARY, REMOVE PAINT AND/OR USE PAINT-PIERCING WASHERS TO PROVIDE PROPER ELECTRICAL BOND AT ALL CONNECTIONS.

KEYNOTES: (#)

1. REFER TO TELECOM ROOM REFERENCES SCHEDULE FOR TELECOMMUNICATIONS ROOM NUMBER AND LOCATION INFORMATION.
2. INCLUDES HORIZONTAL AND VERTICAL CONDUIT SLEEVES FOR TECHNOLOGY CABLING.
3. TELECOMMUNICATIONS BONDING BACKBONE (TBB). REFER TO TELECOMMUNICATIONS BONDING RISER DIAGRAM.
4. TELECOMMUNICATIONS BONDING CONDUCTOR (TBC), TO ELECTRICAL ENTRANCE INTERSYSTEM BONDING TERMINATION. REFER TO TELECOMMUNICATIONS BONDING RISER DIAGRAM FOR CONTINUATION AND ADDITIONAL INFORMATION AND REQUIREMENTS. [THIS CONNECTION OCCURS IN MC-1 ONLY.]
5. REFER TO THE ELECTRICAL DRAWINGS FOR LOCATION.
6. PROVIDE SC-GND-2 RACK MOUNT TELECOMMUNICATIONS BONDING BUSBAR AT EACH EQUIPMENT.
7. BACKBONE BONDING CONDUCTOR (BBC) REFER TO TELECOMMUNICATIONS BONDING RISER DIAGRAM FOR CONTINUATION AND ADDITIONAL INFORMATION AND REQUIREMENTS ON TELECOMMUNICATIONS ROOMS THAT REQUIRE CONNECTIONS.

3 TYPICAL TELECOM ROOM BONDING FLOW DIAGRAM

NO SCALE



NOTES:

1. THIS RISER IS DIAGRAMMATIC AND NOT INTENDED TO SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIALS SHOWN. THIS RISER IS SHOWN FOR CLARIFICATION OF CONNECTION LOCATIONS AND CABLE TYPE.
2. ALL CABLING MUST BE PLENUM RATED.
3. REFER TO 2/T4.00 FOR CONTROLLED SECURITY SCHEME DOOR ROUGH-IN DETAIL.
4. REFER TO T6.00 FOR TECHNOLOGY EQUIPMENT SCHEDULE.

4 CONTROLLED SECURITY SCHEME WIRING DIAGRAM

NO SCALE

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CERTIFICATE OF AUTHORITY - E2017008530

Project Title:

BUILDING RENOVATION, CHEEK HALL

MSU Project #: 231023-069

Other Project #: **23025.000**

Issue Date: **1/10/2025**

Drawn By: **Author**

SHEET REVISIONS

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Sheet Title:

TECHNOLOGY DIAGRAMS

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PROJECT #23008968.00

TECHNOLOGY EQUIPMENT SCHEDULE

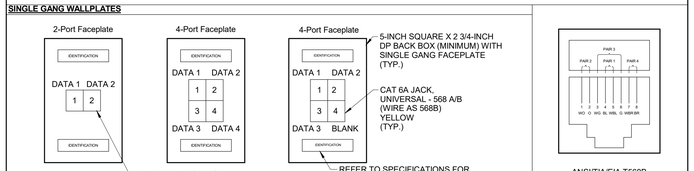
THE EQUIPMENT LIST ABBREVIATIONS AND THE TECHNOLOGY EQUIPMENT SCHEDULE ARE FOR THE CONVENIENCE OF THE CONTRACTOR. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF QUANTITIES AND SHALL FURNISH ALL MATERIAL REQUIRED, WHETHER SPECIFIED OR NOT, TO PRODUCE A SATISFACTORY WORKING SYSTEM.

CATALOG NUMBERS ARE NOT TO BE CONSIDERED COMPLETE BUT ARE GIVEN ONLY TO AID THE CONTRACTOR IN THE SEARCH FOR MATERIAL. NO MATERIAL SHALL BE ORDERED BY MANUFACTURER AND CATALOG NUMBER ONLY. EACH CONTRACTOR SHALL FIRST READ THE COMPLETE DESCRIPTION OF THE MATERIAL ON THESE DRAWINGS AND SPECIFICATIONS. THE FIRST MANUFACTURER LISTED IS THE BASIS OF DESIGN. "STANDARD COLOR" INDICATES FACTORY FINISH AVAILABLE AT NO ADDITIONAL CHARGE.

EQUIPMENT LIST ABBREVIATION	EQUIPMENT LIST DESCRIPTION	MANUFACTURER AND MODEL
AV-MNT-1	DISPLAY MOUNT, LOW PROFILE TILT MOUNT, PROVIDES +15/-5 TILT, 101LG WEIGHT CAPACITY, 800 X 400MM VESA PATTERN, BLACK, POWDER COAT, 822X405MM MOUNTING PATTERN, OVERALL DIMENSIONS 8.15X2.95X36.3".	
AV-MON-1	96" LED MONITOR CONTAINS 16:9 ASPECT RATIO, 1,000,000:1 CONTRAST RATIO, 3840 X 2160 NATIVE RESOLUTION,HDMI & VGA CONNECTIVITY, EXTERNAL CONTROL. BUILT IN LOW PROFILE 10W + 10W / 2.0 ch SPEAKERS. BUILT IN NFC SENSOR, REAL-TIME CLOCK / ROUND-THE-CLOCK SCHEDULING, AMBIENT LIGHT SENSOR AND CARBON FOOTPRINT METER.	OWNER FURNISHED, OWNER INSTALLED (OFOI)
AV-WP1-W	WALL PLATE, PROVIDES A SINGLE-GANG WALL MOUNT INPUT OR OUTPUT FOR HDMI DIGITAL VIDEO AND AUDIO. HIGH-IMPACT, FLAME RETARDANT, THERMOPLASTIC, UL LISTED MATERIAL. PROVIDE A 5-INCH SQUARE X 2 3/4 INCHES DEEP SQUARE BOX WITH EXTENSION RING AND 1-GANG MUDRING. INSTALL (1) 1-1/4" CONDUIT TO THE ACCESSIBLE CEILING.	OFOI
SC-BLK-1	PROVIDE A SYSTIMAX 1U, 48-PORT, BLANK, MINI-COM MODULAR PATCH PANEL, WHITE, WITH FACEPLATES, WITHOUT LABELS, 1.75-INCHES HIGH BY 19-INCHES WIDE, AND A PANDUIT MULTI-DEPTH STRAIN RELIEF BAR, BLACK, 19.03 INCHES LONG X 0.75"H X 7.5"DP PANDUIT CAT NO. SRB19MDBL. REFER TO SPECIFICATION 27 15 00 FOR ADDITIONAL INFORMATION.	OFOI
SC-BLK-2	PROVIDE A SYSTIMAX 2U, 48-PORT, BLANK, MODULAR PATCH PANEL, BLACK, WITH FACEPLATES, WITHOUT LABELS, 3.5-INCHES HIGH BY 19-INCHES WIDE, AND A PANDUIT MULTI-DEPTH STRAIN RELIEF BAR, BLACK, 19.03 INCHES LONG X 0.75"H X 7.5"DP PANDUIT CAT NO. SRB19MDBL. REFER TO SPECIFICATION 27 15 00 FOR ADDITIONAL INFORMATION.	OFOI
SC-ER-1	PROVIDE 2-POST RACK, UNIVERSAL, 84-INCH HIGH x 19-INCH WIDE x 45RU, BLACK, MARKED AND NUMBERED RACK UNITS, 1500 LB LOAD CAPACITY. SEE SHEET T-201 FOR ADDITIONAL INFORMATION.	OFOI
SC-ER-2	WALL MOUNTED RACK, 46 1/2" H X 21" W X 18" D, 12-24 THREADED RAILS, EXTRA LARGE CABLE OPENINGS AT TOP AND BOTTOM. BLACK TEXTURED POWDER COAT FINISH. (26) RU MOUNTING SPACE AVAILABLE.	OFOI
SC-FDC-1	FIBER DISTRIBUTION CABINET, SUITABLE FOR ALL PRE TERMINATED, FIELD TERMINATED OR FIELD SPLICE APPLICATIONS, (4) CASSETTES PER RU. PROVIDE ALL ADAPTER PANELS TO SUPPORT LC-MM (OM4) AND SM FIBER. REQUIRES (1) 1.75" MOUNTING SPACES.	OFOI
SC-GND-1	WALL MOUNTED PRIMARY BONDING BUSBAR. 4" H X 20" L X 1/4" TH COPPER, ELECTRICALLY ISOLATED BY INSULATORS INTEGRAL TO MOUNTING BRACKETS. PROVIDE UNIT CONFIGURED MOUNT 6'-6" AFF TO THE TOP OF THE PBB.. ANSI/EIA/TIA-607 AND BICSI COMPLIANT. (24) 5/16"DIA HOLE SETS 5/16" DIA HOLES, 5/8" ON CENTER WHICH ACCOMODATES "A" SPACED 2 HOLE COMPRESSION LUGS (6) 7/16"DIA HOLE SETS 7/16" DIA HOLES, 1" ON CENTER WHICH ACCOMODATES "C" SPACED 2 HOLE COMPRESSION LUGS	HARGER 4" TMGB GROUND BAR KIT BI14420TMGBKT
SC-GND-2	PROVIDE SECONDARY BONDING BUSBAR (SBB) MOUNTED AT 6'-6" AFF TO THE TOP OF THE SBB.	HARGER 2" TMGB GROUND BAR KIT BI144127TMGBKT
SC-GND-3	PROVIDE 1 RU HORIZONTAL RACK BONDING BUSBAR (RBB). REFER TO SHEET 1/T4.01 FOR DETAIL.	HARGER CAT NO: RGBH114151925A
SC-IO-C	INFORMATION OUTLET, CEILING MOUNT, 2, 4-PORT COVERPLATE AS INDICATED ON DRAWINGS AND INFORMATION OUTLET SCHEDULE. REFER TO INFORMATION OUTLET SCHEDULE ON T6.00 FOR PIN CONFIGURATION INFORMATION. " # " INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION AS INDICATED ON THE DRAWINGS. REFER TO INFORMATIONOUTLET SCHEDULE ON T6.00 FOR ADDITIONAL INFORMATION. INSTALL INFORMATION OUTLET IN A 5" SQUARE x 2-3/4" Deep SQUARE BACKBOX WITH A SINGLE GANG PLASTER RING. MOUNT TO CLOSEST STRUCTUREELEMENTS (EX. COLUMN). INSTALL A DELXE CORD GRIP FOR STRAIN RELIEF ON UTP CABLE. PROVIDE 20' COIL OF UTP CABLE AT WIRELESS OUTLET LOCATION. INSTALL A 1-1/4" EMT CONDUIT 6" BEYOND BOX AND TERMINATE WITH NYLONG BUSHING TONEAREST CABLE TRAY TO ABOVE ACCESSIBLE CEILING TO THE EF/HC/IC/MC/TR AS INDICATED ON THE DRAWINGS OR UNLESS OTHERWISE NOTED. PROVIDE REMOVABLE BLANK INSERTS FOR UNUSED PORTS. REFER TO SPECIFICATION SECTION FOR ADDITIONAL INFORMATION.	
SC-IO-F	INFORMATION OUTLET, MOUNTED ON E.C. PROVIDED CONNECTRAC, 2, 4-PORT COVERPLATE AS INDICATED ON DRAWINGS. "#" INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION AS INDICATED ON THE PLANS. REFER TO INFORMATION OUTLET SCHEDULE FOR PIN CONFIGURATION. INSTALL INFORMATION OUTLET IN E.C. PROVIDED CONNECTRAC. INSTALL A 1 1/4" EMT CONDUIT TO AREA SERVING TELECOM ROOM. PROVIDE REMOVABLE BLANK INSERTS FOR UNUSED PORTS. REFER TO ELECTRICAL SPECIFICATIONS AND DRAWINGS FOR MORE DETAILED INFORMATION	CONNECTRAC SEE ELECTRICAL DRAWINGS AND SPECIFICATIONS
SC-IO-W	INFORMATION OUTLET, WALL MOUNT, 2,4, 6-PORT FACEPLATE AS INDICATED ON DRAWINGS, "#" INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION AS INDICATED ON THE PLANS. REFER TO INFORMATION OUTLET SCHEDULE FOR PIN CONFIGURATION. INSTALL INFORMATION OUTLET IN A 5" SQUARE X 2 3/4" DEEP BACKBOX WITH A SINGLE GANG PLASTER RING. INSTALL A 1 1/4" EMT CONDUIT TO NEAREST ACCESSIBLE CEILING. PROVIDE REMOVABLE BLANK INSERTS FOR UNUSED PORTS (COMMSCOPE/SYSTIMAX M20AP).	CONNECTRAC SEE ELECTRICAL DRAWINGS AND SPECIFICATIONS
SC-LR-1	LADDER RACK, 12" W TUBULAR STEEL CONSTRUCTION, RUST RESISTANT BLACK ENAMEL FINISH. U.L. LISTED. PROVIDE COMPLETE WITH ALL NECESSARY ADAPTERS, SUPPORT HARDWARE, AND FITTINGS, TO INCLUDE RADIUS DROPS. REMOVE SHARP BURRS FROM LADDER RACK AND REPAINT ALL AREAS THAT HAVE BEEN FIELD MODIFIED, CUT, OR EXPOSED.	OFOI
SC-MPP-1	MODULAR PATCH PANEL, CATEGORY 6A, 48-MODULAR RJ-45 TERMINATIONS, MOUNTS DIRECTLY TO EIA/TIA STANDARD 19" RELAY RACK, PORT IDENTIFICATION NUMBERS, PROVIDED WITH COLOR CODING AND LABEL HOLDER KITS, U.L. LISTED. REQUIRES (1) 1.75" MOUNTING SPACES.	OFOI
SC-PDU-1	PROVIDE SINGLE PHASE HORIZONTAL MOUNTED PDU, 120V, 20A, L5-20P, (8) 5-15/20R RECEPTACLES, TRIPP LITE CAT. NO. PDUMN20.	TRIP LITE CAT NO. PDUMN20
SC-TTB	PROVIDE ¾-INCH TH BY 4-FOOT WIDE BY 8-FOOT HIGH FIRE RETARDANT PLYWOOD BACKBOARD, AC GRADE, VOID FREE. PAINT 6-SIDES WITH LIGHT COLORE FIRE RETAEDANT PAINT. DO NOT PAINT OVER FIRE RATED STAMP. MOUNT VERTICALLY WITH THE TOP OF THE PLYWOOD AT 8'-6".	OFOI
SC-UPS-1	PROVIDE 2RU, APC SMART-UPS, 3000 VA RM 120V WITH UPS NETWORK MANAGEMENT CARD WITH ENVIRONMENT MONITORING AND APC DRY CONTACT I/O ACCESSORY.	APC BASIC PDU AP9564
SC-VWM-1	PROVIDE 6-INCH WIDE VERTICAL WIRE MANAGER – MANAGE CABLE FRONT AND REAR OF RACK, 84-INCHES HIGH X 6-INCHES WIDE X 16.4-INCHES DEEP, WITH FRONT AND REAR 4-INCH WIDE DUAL HINGED METAL DOORS.	OFOI
SC-VWM-2	PROVIDE 10-INCH WIDE VERTICAL WIRE MANAGER – MANAGE CABLE FRONT AND REAR OF RACK, 84-INCHES HIGH X 10-INCHES WIDE X 16.4-INCHES DEEP, WITH FRONT AND REAR 4-INCH WIDE DUAL HINGED METAL DOORS.	OFOI

INFORMATION OUTLET SCHEDULE

SINGLE GANG WALLPLATES



NOTES:
1. PROVIDE REMOVABLE BLANK INSERT(S) FOR ALL UNUSED PORTS.
2. REFER TO SPECIFICAITONS SECTION 27 05 53 FOR ADDITIONAL INFORMATION ON LABELING REQUIREMENTS.
3. ROUGH-INS AND CABLE PATHWAYS MUST BE PROVIDED BY THE ELECTRICAL CONTRACTOR.
4. MSU NETWORKING AND TELECOMMUNICATIONS, IS TO PROVIDE, INSTALL, TERMINATE AND TEST COMMUNICATIONS CABLING.

SCHEDULE NOTES:
1. LOCATION OF FUTURE OR OWNER PROVIDED WIRELESS ACCESS POINT. PROVIDE A 20' SLACK COIL AT THE NEAREST CABLE SUPPORT FOR POSSIBLE RELOCATION AFTER WIRELESS SURVEY.

LEGEND

DATA	CAT 6 RJ-45
VOICE	CAT 6 RJ-45

CONFIGURATION	FACEPLATE PORTS	FACEPLATE PORT IDENTIFICATION: POSITION 1 JACK TYPE	POSITION 2 JACK TYPE	POSITION 3 JACK TYPE	POSITION 4 JACK TYPE	POSITION 5 JACK TYPE	POSITION 6 JACK TYPE	NOTES
AV2	1	DATA						
C1	1	DATA						
C1-WAP	1	DATA						
C2	2	DATA	DATA					
C3	3	DATA	DATA	DATA				
C4	4	DATA	DATA	DATA	DATA			
C6	6	DATA	DATA	DATA	DATA	DATA	DATA	
V1	1	VOICE						

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