ABBREVIATIONS

&	AND
<	ANGLE
@	AT
[	CHANNEL
AB	ANCHOR BOLT
ABV	ABOVE
A/C	AIR CONDITION/ CONDITIONING
ACC	ACCESS
ACOUS	ACOUSTIC, ACOUSTICAL
ACP	ACOUSTICAL CEILING PANEL
ACT	ACOUSTICAL CEILING TILE
AD	AREA DRAIN
ADD	ADDENDUM
ADDL	ADDITIONAL
ADJ	ADJACENT, ADJUSTABLE
AFF	ABOVE FINISH FLOOR
AGGR	AGGREGATE
AHJ	AUTHORITY HAVING JURISDICTION
AHR	ANCHOR
ALT	ALTERNATE
ALUM	ALUMINUM
AMOD	ANODIZED
ACP	ACCESS PANEL
APPROX	APPROXIMATE
ARCH	ARCHITECT/ ARCHITECTURAL
ASB	ASBESTOS
ASPH	ASPHALT
AUTO	AUTOMATIC
AVE	AVERAGE
BD	BOARD
BEV	BEVEL, BEVELED
BITUM	BITUMINOUS/ BITUMASTIC
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
BOT	BOTTOM
BR	BRICK
BRG	BEARING
BRG PL	BEARING PLATE
BRKT	BRACKET
BRZ	BRONZE
BSMT	BASEMENT
BTWN	BETWEEN
BUR	BUILT UP ROOF(ING)
BW	BOTH WAYS
C	CURB
CAB	CABINET
CB	CATCH BASIN
CEM	CEMENT
CFLG	COUNTER FLASHING
CHFR	CHAMFER
CG	CORNER GUARD
CH	CAST IRON
CIPC	CAST IN PLACE CONCRETE
CIR	CIRCLE
CJ	CONSTRUCTION/CONTROL JOINT
CL	CENTERLINE
CLG	CEILING
CLKG	CAULKING
CLO	CLOSET
CLR	CLEAR/ CLEARANCE
CM	CENTIMETER
CMU	CONCRETE MASONRY UNIT
CNTCR	CONTRACTOR
CNTR	COUNTER
CO	CASED OPENING
COL	COLUMN
COMB	COMBINATION
CONC	CONCRETE
COND	CONDITION
CONN	CONNECT/ CONNECTION
CONSTR	CONSTRUCTION
CONT	CONTINUE/ CONTINUOUS
CORR	CORRIDOR
CPRS	COMPRESSIBLE
CPT	CARPET/ CARPETED
CRS	CENTER ROLLED STEEL
CSK	COUNTERSINK/COUNTERSUNK
CSMT	CASEMENT
CT	CERAMIC TILE
C TO C	CENTER TO CENTER
CTR	CENTER
CU	CUBIC
CU FT	CUBIC FEET
CUH	CABINET UNIT HEATER
CUV	CABINET UNIT VENTILATOR
CU YD	CUBIC YARD
D	DEEP
DBL	DOUBLE
DEMO	DEMOLISH/ DEMOLITION
DEP	DEPRESS/ DEPRESSED
DEPT	DEPARTMENT
DET	DETAIL
DF	DRINKING FOUNTAIN
DH	DOUBLE HUNG
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DISP	DISPENSER
DIV	DIVISION/ DIVIDE
D	DEAD LOAD
DMPF	DAMPPROOFING
DMPR	DAMPER
DN	DOWN
DR	DOOR
DS	DOWNSPOUT
DWG	DRAWING/ DRAWINGS
DWR	DRAWER
E	EAST
EA	EACH
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRIC/ ELECTRICAL
ELEV	ELEVATOR
EMBED	EMBEDMENT
EMER	EMERGENCY
ENCL	ENCLOSURE
ENL	ENLARGED
EPB	ELECTRIC PANEL BOARD
EPDM	ETHYLENE PROPYLENE DIENE MONOMER
EQ	EQUAL
EQUIP	EQUIPMENT
ESTG	ESTIMATE
EW	EACH WAY
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EXIST	EXISTING
EXP	EXPAND/ EXPANSION/ EXPOSED
EXH	EXHAUST
EXT	EXTERIOR
FA	FRESH AIR
FB	FLAT BAR
F BRK	FIRE BRICK
FD	FLOOR DRAIN
FDTN	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FINISH FLOOR
FF EL	FINISH FLOOR ELEVATION
FGL	FIBERGLASS
FH	FLAT HEAD
FHC	FIRE HOSE CABINET
FIN	FINISH/ FINISHED
FIN FLR	FINISHED FLOOR
FLASH	FLASHING
FLEX	FLEXIBLE
FLR	FLOOR/ FLOORING
FLUOR	FLUORESCENT
FM	FRAME/ DOOR FIRE PROTECTION
FR	FRAME/ FRAMING
FRP	FIBERGLASS REINFORCED PLASTIC
FT	FEET/ FOOT
FTG	FOOTING
FURG	FURRING
FURN	FURNACE/ FURNISH
FBO	FURNISH BY OTHERS
G	GROUND
GA	GAGE/ GAUGE
GALV	GALVANIZED
GB	GRAB BAR
GC	GENERAL CONTRACTOR
GKT	GASKET/ GASKETED
GL	GLASS
GL BLK	GLASS BLOCK
GLZ CMU	GLAZED CONCRETE MASONRY UNIT
GR	GRADE/ GRADING
GR FL	GROUND FLOOR
GT	GROUT
GWH	GAS FIRED WATER HEATER
GWT	GLAZED WALL TILES
GYP	GYPSUM
GYP BD	GYPSUM BOARD
H	HIGH
HB	HOSE BIBB
HC	HOLLOW CORE
HDNR	HARDENER
HDR	HEADER
HDWD	HARDWOOD
HDW	HARDWARE
HP	HIGH POINT
HT	HEIGHT
HM	HOLLOW METAL
HMD	HOLLOW METAL DOOR
HORIZ	HORIZONTAL
HTG	HEATING
HVAC	HEATING/ VENTILATING/ AIR CONDITIONING
ID	INSIDE DIAMETER
IF	INSIDE FACE
IN	INCH
INCIN	INCINERATOR
INCL	INCLUDE/ INCLUDED/ INCLUDING
INSUL	INSULATION/ INSULATING
INT	INTERIOR
INV	INVERT
JAN	JANITOR
JAN CLO	JANITOR CLOSET
JS	JANITOR'S SINK
J-BOX	JUNCTION BOX
KO	KNOCK DOWN
KOP	KNOCK OUT PANEL
LAB	LABORATORY
LAD	LADDER
LAM	LAMINATE/ LAMINATED
LAV	LAVATORY
LH	LEFT HAND
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LMST	LIMESTONE
LPT	LOW POINT
LT	LIGHT
LT WT	LIGHT WEIGHT
LVR	LOUVER
LWC	LIGHT WEIGHT CONCRETE
M	METER
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT
MBR	MEMBER
MC	MEDICINE CABINET
MECH	MECHANICAL
MED	MEDIUM
MEMB	MEMBRANE
MEZZ	MEZZANINE
MFR	MANUFACTURER
MH	MAN HOLE
MIN	MINIMUM
MIRR	MIRROR
MISC	MISCELLANEOUS
MLWK	MILLWORK
MM	MILLIMETER
MO	MASONRY OPENING
MOD	MODULE/ MODULAR
MR	MOISTURE RESISTANT
MRF	MARBLE FLOOR
MSB	MOP SERVICE BASIN
MT	MOUNT
MTD	MOUNTED
MTL	METAL
MULL	MULLION
N	NORTH
NAT	NATURAL
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NRC	NOISE REDUCTION COEFFICIENT
NTS	NOT TO SCALE
OA	OVERALL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OFF	OFFICE
OH	OVER HEAD
OPNG	OPENING
OPP	OPPOSITE
OPH	OPPOSITE HAND
PAR	PARALLEL
PB	PANIC BAR
PBD	PARTICLEBOARD
PC	PIECE
PCC	PRECAST CONCRETE
PCF	POUNDS PER CUBIC FOOT
PERF	PERFORATE
PERIM	PERIMETER
PERF	PERFORATE/ PERFORATED
PERM	PERMANENT
PL	PLATE
PLAM	PLASTIC LAMINATE
PLAS	PLASTER
PLBG	PLUMBING
PLF	POUNDS PER LINEAL FOOT
PL GL	PLATE GLASS
PLYWD	PLYWOOD
PNL	PANEL
PR	PAIR
PREFAB	PREFABRICATED
PREFIN	PREFINISHED
PREFMD	PREFORMED
PRKG	PARKING
PS CONC	PRESTRESSED CONCRETE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PAINT
PT CONC	POST-TENSIONED CONCRETE
PTD	PAPER-TOWEL DISPENSER
PTN	PARTITION
PTRC	PAPER-TOWEL RECEPTACLE
PVC	POLYVINYL CHLORIDE
PVG	PAVING/ PAVEMENT
QT	QUARRY TILE
R	RISER, RADIUS
RA	RETURN AIR
RB	RUBBER/ RESILIENT BASE
RBR	RUBBER
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
REF	REFRIGERATOR, REFRIGERATOR
REFL	REFLECT
REG	REGISTER
REINF	REINFORCE, REINFORCING
REM	REMOVABLE, REMOVE
REQD	REQUIRED
RESIL	RESILIENT
REV	REVISION/ REVISED
RFG	ROOFING
RH	RIGHT HAND/ ROOF HATCH
RHR	RIGHT HAND REVERSE
RLG	RAILING
RM	ROOM
RO	ROUGH OPENING
ROW	RIGHT OF WAY
RTF	RUBBER TILE FLOORING
RWD	REDWOOD
RVS	REVERSE
S	SOUTH
SC	SOLID CORE
SCD	SEAT COVER DISPENSER
SCHED	SCHEDULE
SCRN	SCREEN
SCT	STRUCTURAL CLAY TILE
SD	SOAP DISPENSER/ SMOKE DETECTOR
SECT	SECTION
SF	SQUARE FOOT
SHR	SHOWER
SHT	SHEET
SHTHG	SHEATHING
SHV	SHELVING
SIM	SIMILAR
SK	SKETCH
SKLT	SKYLIGHT
SLNT	SEALANT
SLV	SLEEVE
SND	SANITARY NAPKIN DISPENSER
SND INS	SOUND INSULATION
SNDU	SANITARY NAPKIN DISPOSAL UNIT
SPCL	SPECIAL
SPEC	SPECIFICATION
SQ	SQUARE
SQ IN	SQUARE INCH
SS	SERVICE SINK
SST	STAINLESS STEEL
STA	STATION
STC	SOUND TRANSMISSION CLASS
STD	STANDARD
STRUCT	STRUCTURAL/ STRUCTURE
SUSP	SUSPEND/ SUSPENDED
SV	SHEET VINYL
SVMM	SHEET METAL
SYNTH	SYNTHETIC
SYS	SYSTEM
T	TREAD
T&G	TONGUE AND GROOVE
TB	TOWEL BAR
TC	TERRA COTTA
TEL	TELEPHONE
TER	TERRAZZO/ TELEPHONE EQUIPMENT ROOM
THK	THICKNESS
THRES	THRESHOLD
TK BD	TACK BOARD
TOB	TOP OF BEAM
TOC	TOP OF CURB
TO FDN	TOP OF FOUNDATION
TOL	TOLERANCE
TOM	TOP OF MASONRY
TOS	TOP OF SLAB/ STEEL
TOW	TOP OF WALL
TPD	TOILET PAPER DISPENSER
TV	TELEVISION
TYP	TYPICAL
UC	UNDERCUT
UNFIN	UNFINISHED
UNO	UNLESS NOTED OTHERWISE
UR	URINAL
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VEST	VESTIBULE
VNR	VENEER
VR	VAPOR RETARDER
VWC	VINYL WALL COVERING
VWF	VINYL WALL FABRIC
W	WIDE/ WIDTH/ WEST
W/	WITH
WB	WOOD BASE
WC	WATER CLOSET
WD	WOOD
WDW	WINDOW
WGL	WIRED GLASS
WH	WALL HUNG
WI	WROUGHT IRON
WM	WIRE MESH/ WATER METER
WO	WASTE OIL
WP	WATERPROOFING/ WEATHERPROOF
WR	WATER REPELLENT
WSCT	WAINSCOT
WT	WEIGHT
W/W	WALL TO WALL
WWF	WELDED WIRE FABRIC
WWM	WELDED WIRE MESH
YD	YARD, YARD DRAIN

MATERIAL DESIGNATION

- EXISTING
- ACOUSTICAL PANEL
- BATT OR LOOSE INSULATION
- BRICK
- CLAY BACKFILL
- CONCRETE
- CONCRETE MASONRY UNIT
- CUT STONE
- GLASS-MAT
- GLAZING
- GYPSUM BOARD, PLASTER, GROUT, SAND
- PLASTER, EXTERIOR INSULATION FINISH SYSTEM
- PLYWOOD
- RIGID INSULATION
- ROUGH LUMBER
- STEEL
- STONE OR GRAVEL FILL
- TOPSOIL
- WOOD

SYMBOLS & CALLOUTS

- DETAIL CALLOUT — 1 / A6.1 — DRAWING NUMBER; SHEET WHERE DRAWING APPEARS
- DETAIL OR SECTION CALLOUT — 1 / A8.1 — DRAWING NUMBER; SHEET WHERE DRAWING APPEARS
- CENTER LINE
- COLUMN LINE — A
- CONTOUR, NEW — 95
- CONTOUR, ABANDONED OR EXISTING TO REMAIN — 90
- DATUM LINE
- DOOR TAG — 102A
- ELEVATION CALLOUT — 1 / A4.1 — DRAWING NUMBER; SHEET WHERE DRAWING APPEARS
- ELEVATION CALLOUT, MULTIPLE — 1, 2 / A8.1 — DRAWING NUMBERS; SHEET WHERE DRAWING APPEARS
- GLAZING PANEL TAG — G1
- STOREFRONT, CURTAINWALL, OR WINDOW TAG — SF1, CW1
- MATCH LINE
- REVISION — 1
- ROOM TAG — ROOM NAME 101
- TOILET ACCESSORY OR PLUMBING FIXTURE — A
- WALL TYPE — M8-1

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31 JAN 2025

VOLUME 2

ROACHDALE ELEMENTARY SCHOOL HVAC IMPROVEMENTS

NORTH PUTNAM COMMUNITY SCHOOLS

305 SOUTH INDIANA STREET
ROACHDALE, IN 46172

NORTH PUTNAM COMMUNITY SCHOOLS

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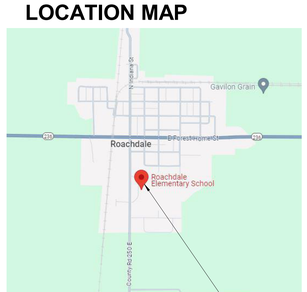
LOCATION MAP



CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY SUPERVISION AND TO THE BEST OF MY KNOWLEDGE COMPLY WITH ALL APPLICABLE CODES, INCLUDING PUBLIC LAW 101-336 'AMERICANS WITH DISABILITIES ACT OF 2010' AND MEET ALL OF THE REQUIREMENTS SET FORTH IN THE FEDERAL REGISTER PART III DEPARTMENT OF JUSTICE, ADA ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES AND THE ILLINOIS ACCESSIBILITY CODE.

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01.31.2025

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NORTH PUTNAM COMMUNITY SCHOOLS
305 SOUTH INDIANA STREET
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TITLE SHEET

G1.1

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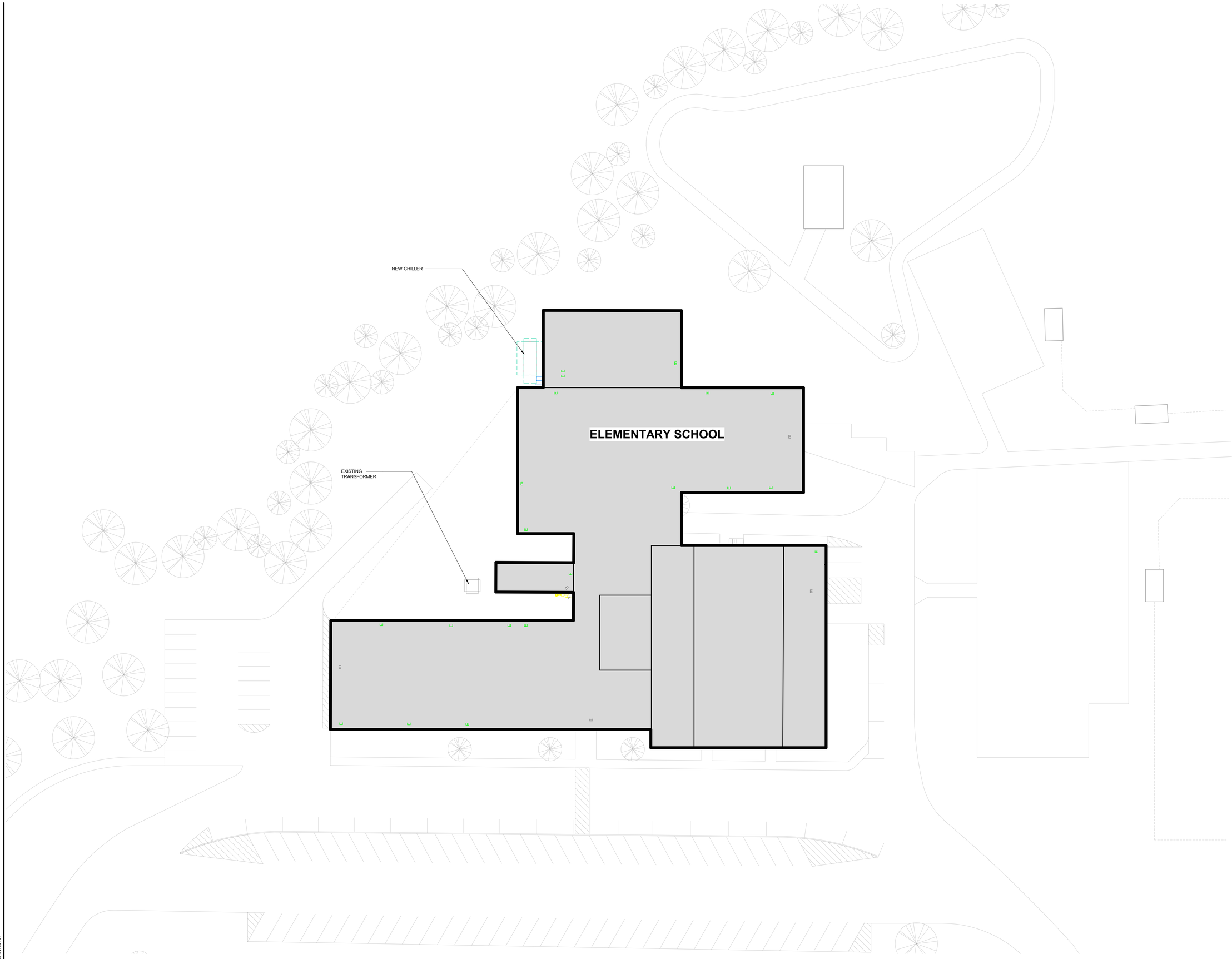

25\ PLAN SITE PLAN
SCALE: 1" = 20'-0"

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GRAPHIC NORTH

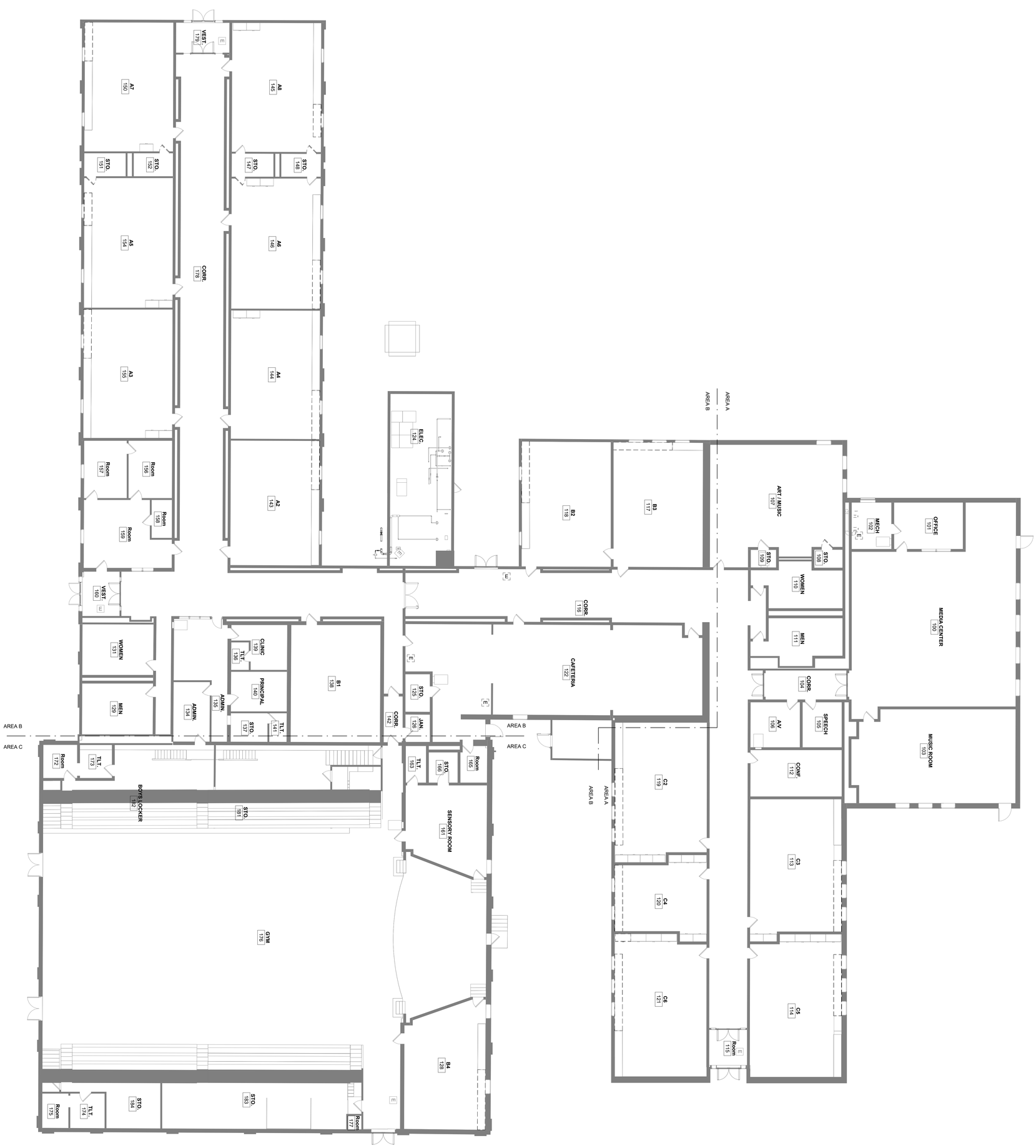
SITE PLAN

AS0.1

25 \ PLAN

GROUND FLOOR - OVERALL DEMOLITION PLAN

SCALE: 1" = 10'-0"



DEMOLITION PLAN KEYNOTES	
#	NOTE
D1	REMOVE PORTION OF SHELVING AND COUNTERTOP. HAND OVER SHELVING AND COUNTER TO OWNER.
D2	REMOVE DOOR AND FRAME. SALVAGE FOR REINSTALLATION.
D3	REMOVE WALL AS INDICATED FOR NEW DOOR INSTALLATION. .REMOVE ALL ASSOCIATED MECHANICAL, PLUMBING AND ELECTRICAL ITEMS.

25\ ENL PLAN GROUND FLOOR - DEMOLITION PLAN - AREA A

SCALE: 1/8" = 1'-0"

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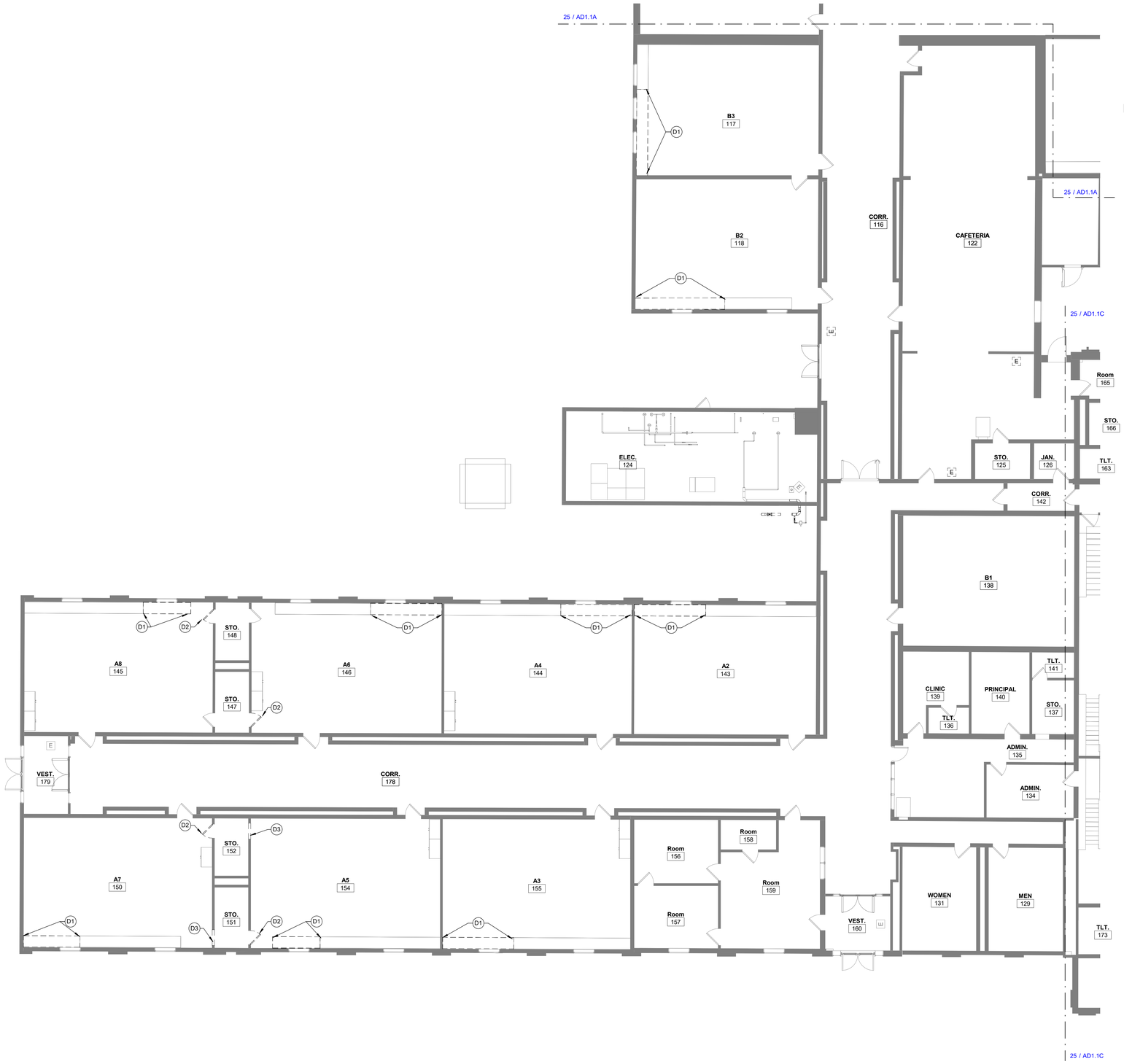
GRAPHIC NORTH

GROUND FLOOR - DEMOLITION PLAN - AREA A

AD1.1A

DEMOLITION PLAN KEYNOTES	
#	NOTE
D1	REMOVE PORTION OF SHELVING AND COUNTERTOP. HAND OVER SHELVING AND COUNTER TO OWNER.
D2	REMOVE DOOR AND FRAME. SALVAGE FOR REINSTALLATION.
D3	REMOVE WALL AS INDICATED FOR NEW DOOR INSTALLATION. .REMOVE ALL ASSOCIATED MECHANICAL, PLUMBING AND ELECTRICAL ITEMS.



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25\ ENL PLAN GROUND FLOOR - DEMOLITION PLAN - AREA B

SCALE: 1/8" = 1'-0"

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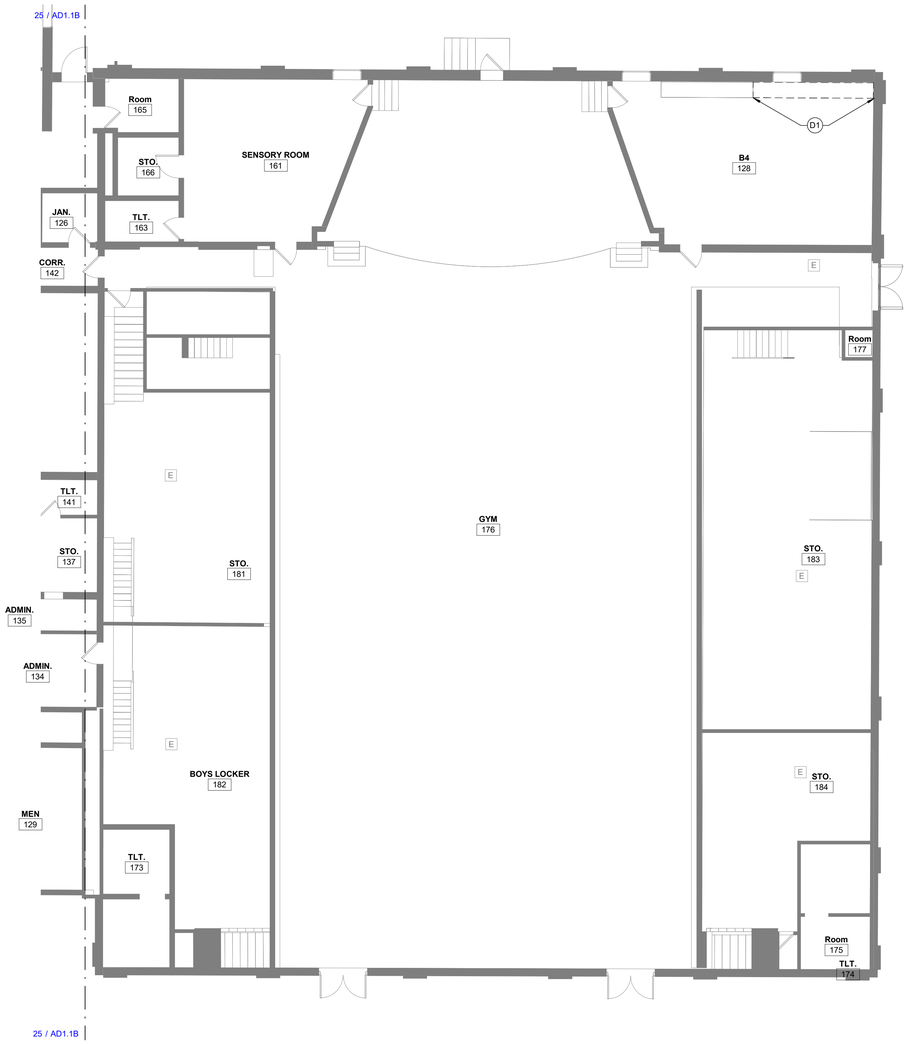
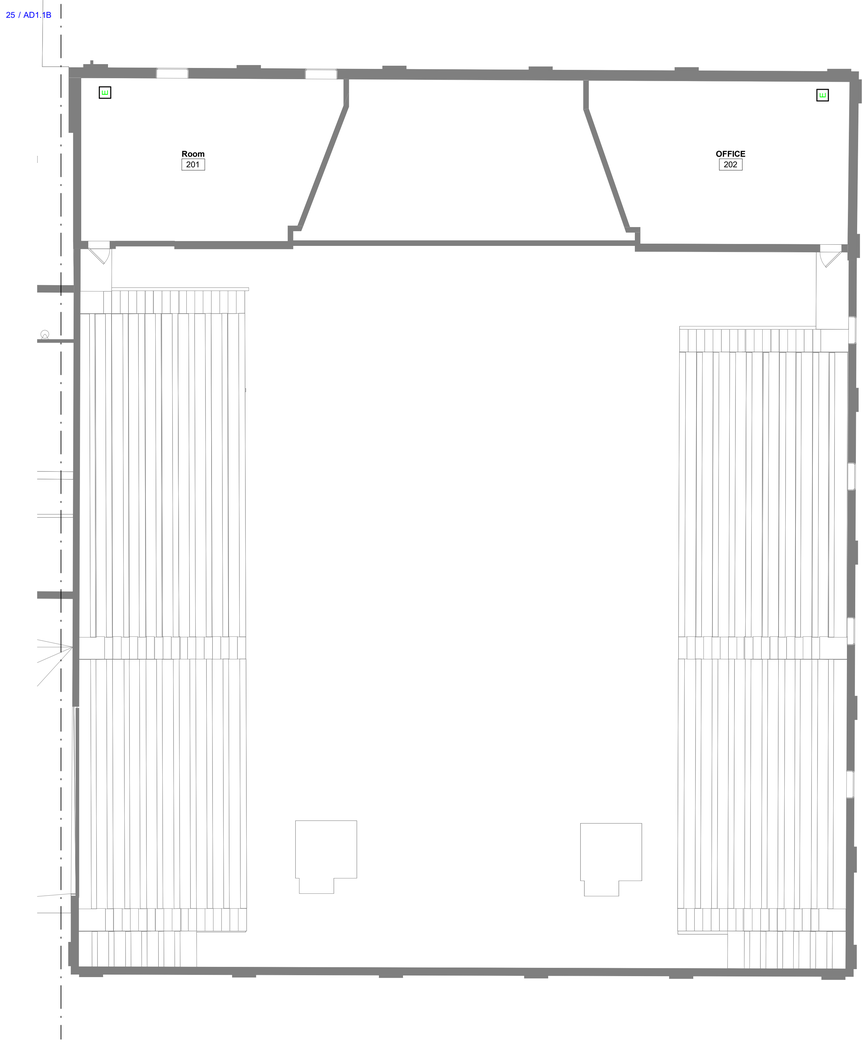
GRAPHIC NORTH

GROUND FLOOR - DEMOLITION PLAN - AREA B

AD1.1B

DEMOLITION PLAN KEYNOTES	
#	NOTE
D1	REMOVE PORTION OF SHELVING AND COUNTERTOP. HAND OVER SHELVING AND COUNTER TO OWNER.
D2	REMOVE DOOR AND FRAME. SALVAGE FOR REINSTALLATION.
D3	REMOVE WALL AS INDICATED FOR NEW DOOR INSTALLATION. .REMOVE ALL ASSOCIATED MECHANICAL, PLUMBING AND ELECTRICAL ITEMS.





25\ ENL PLAN GROUND FLOOR - DEMOLITION PLAN - AREA C
SCALE: 1/8" = 1'-0"

15\ ENL PLAN UPPER FLOOR PLAN - DEMOLITION PLAN - AREA C
SCALE: 1/8" = 1'-0"

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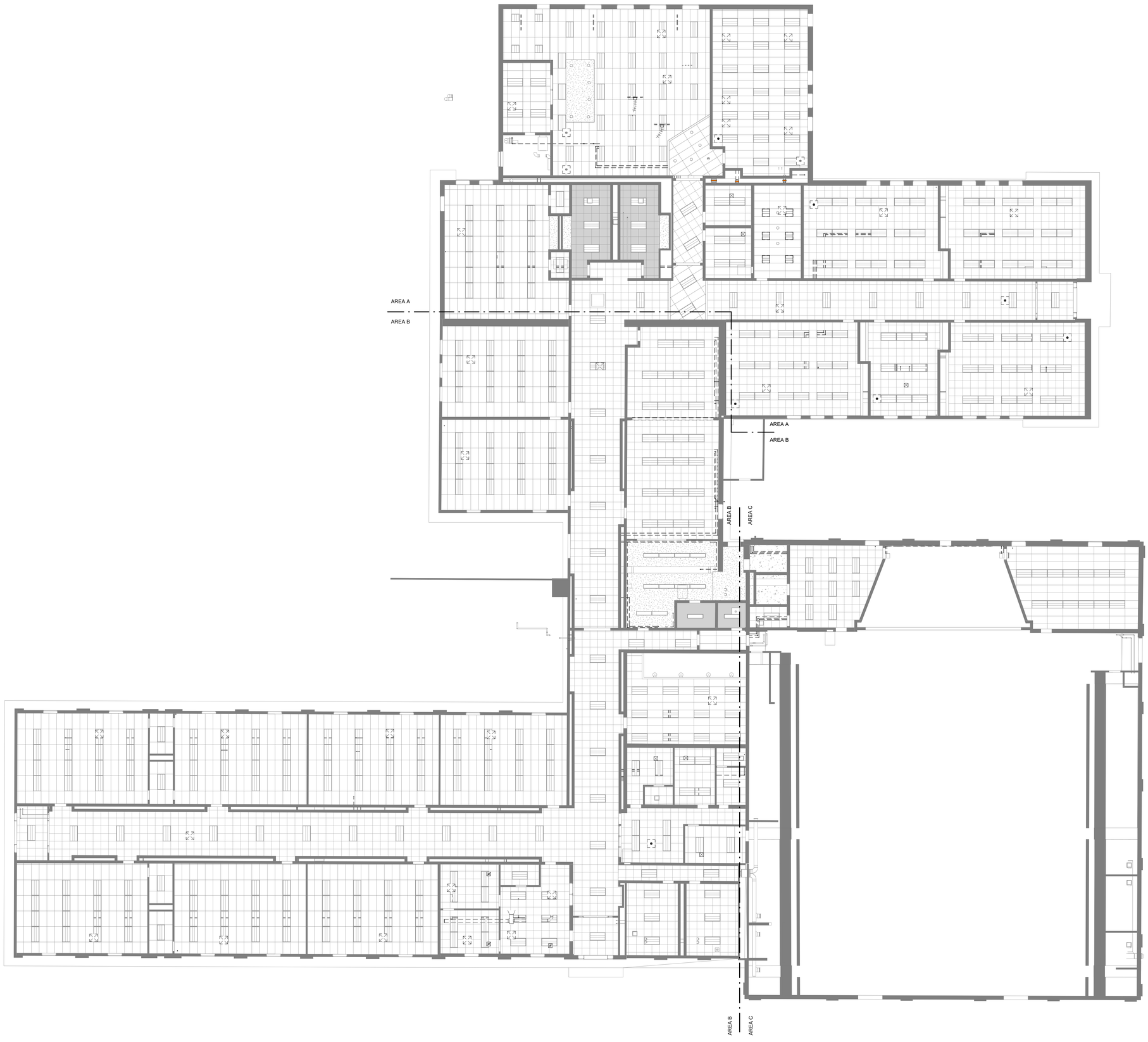
GROUND FLOOR - DEMOLITION PLANS - AREA C

AD1.1C



25\ PLAN GROUND FLOOR - OVERALL DEMOLITION REFLECTED CEILING PLAN
SCALE: 1" = 10'-0"

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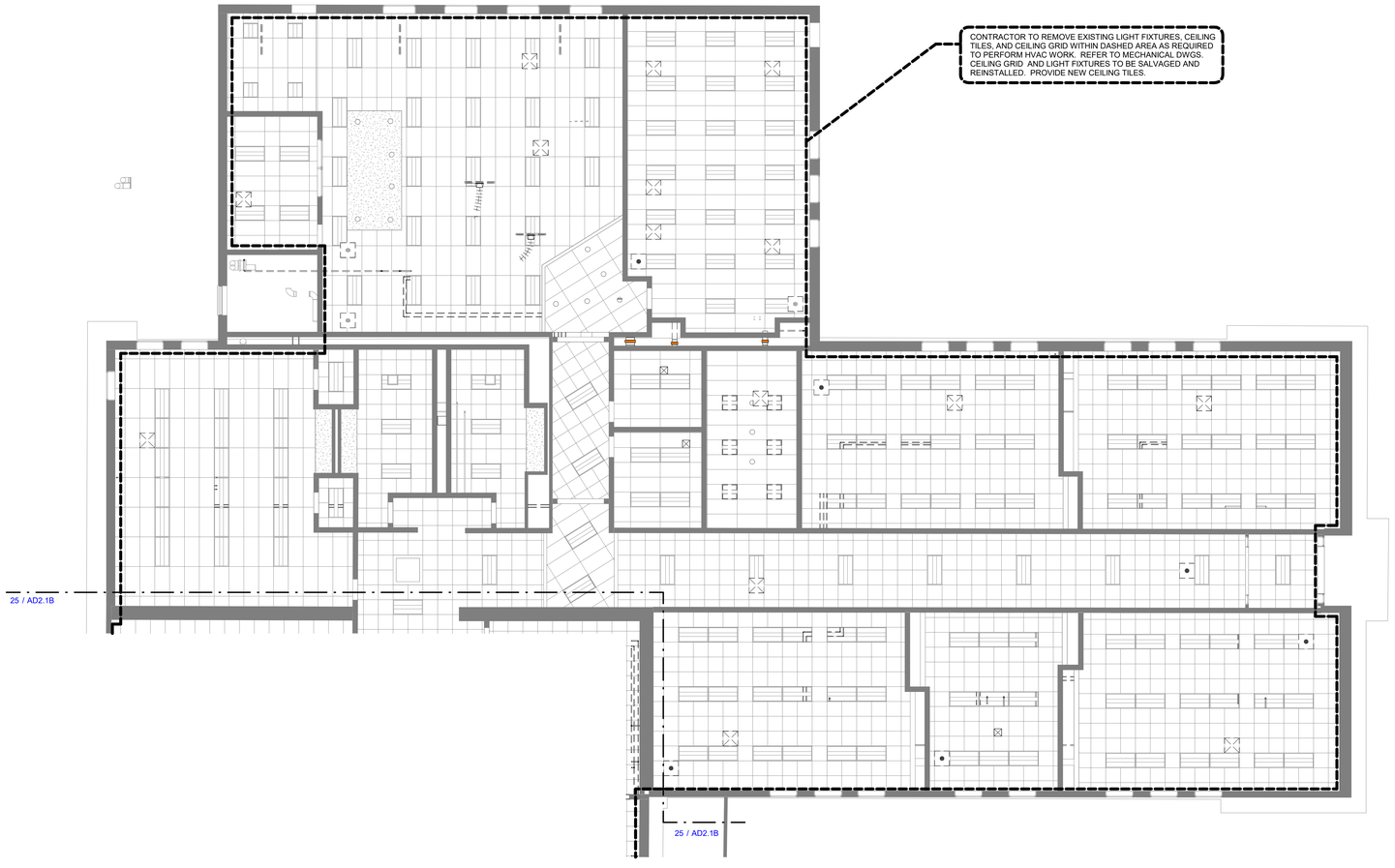
DWR	Author
CHK	Checker

GRAPHIC NORTH

GROUND FLOOR - OVERALL DEMOLITION RCP

AD2.1

DEMOLITION PLAN KEYNOTES	
#	NOTE
D1	REMOVE PORTION OF SHELVING AND COUNTERTOP. HAND OVER SHELVING AND COUNTER TO OWNER.
D2	REMOVE DOOR AND FRAME. SALVAGE FOR REINSTALLATION.
D3	REMOVE WALL AS INDICATED FOR NEW DOOR INSTALLATION. .REMOVE ALL ASSOCIATED MECHANICAL, PLUMBING AND ELECTRICAL ITEMS.



25\ ENL PLAN GROUND FLOOR - DEMOLITION REFLECTIVE CEILING PLAN - AREA A
SCALE: 1/8" = 1'-0"

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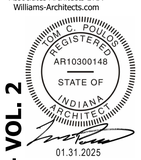

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ROACHDALE ELEMENTARY SCHOOL HVAC IMPROVEMENTS - VOL. 2
NORTH PUTNAM COMMUNITY SCHOOLS
305 SOUTH INDIANA STREET
ROACHDALE, IN 46172

WILLIAMS ARCHITECTS

REVISIONS

NO.	DATE	DESCRIPTION

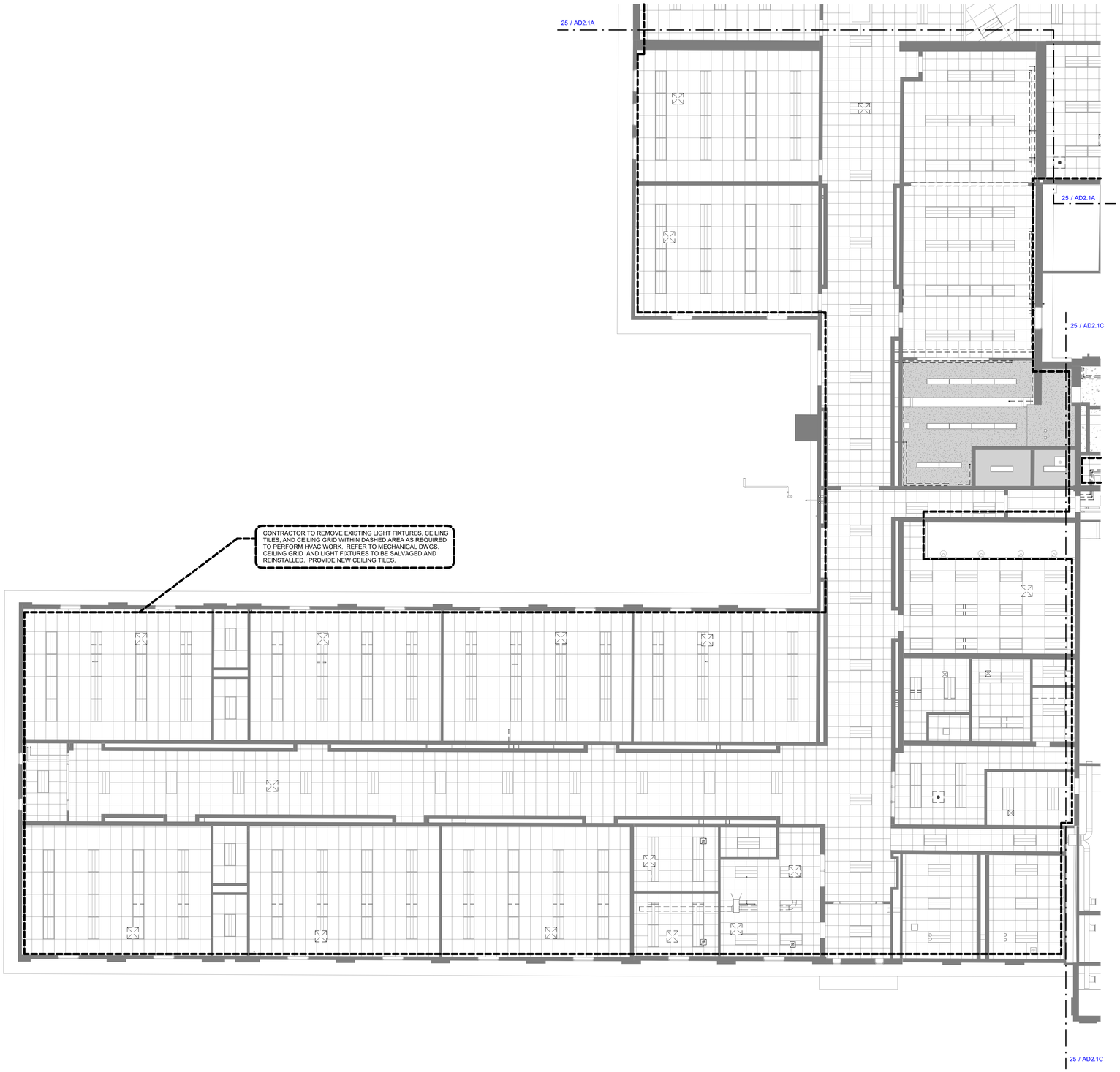
WA No.	2024-006
Date	31 JAN 2025
Issue	100% CON CD
DWR	Author
CHK	Checker

GRAPHIC NORTH

GROUND FLOOR - DEMOLITION RCP - AREA A

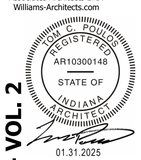
AD2.1A

DEMOLITION PLAN KEYNOTES	
#	NOTE
D1	REMOVE PORTION OF SHELVING AND COUNTERTOP. HAND OVER SHELVING AND COUNTER TO OWNER.
D2	REMOVE DOOR AND FRAME. SALVAGE FOR REINSTALLATION.
D3	REMOVE WALL AS INDICATED FOR NEW DOOR INSTALLATION. .REMOVE ALL ASSOCIATED MECHANICAL, PLUMBING AND ELECTRICAL ITEMS.



25\ ENL PLAN GROUND FLOOR - DEMOLITION REFLECTED CEILING PLAN - AREA B
SCALE: 1/8" = 1'-0"

2/3/2025 10:03:59 AM



01.31.2025

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NORTH PUTNAM COMMUNITY SCHOOLS
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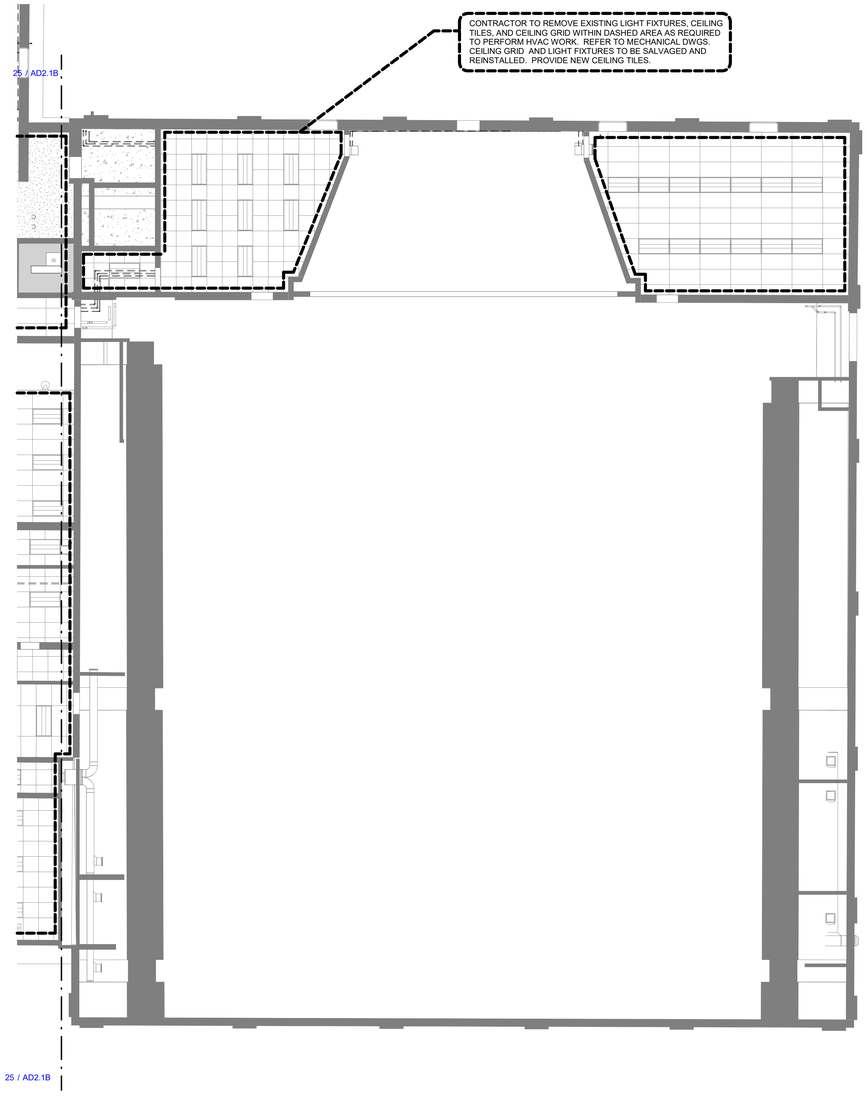
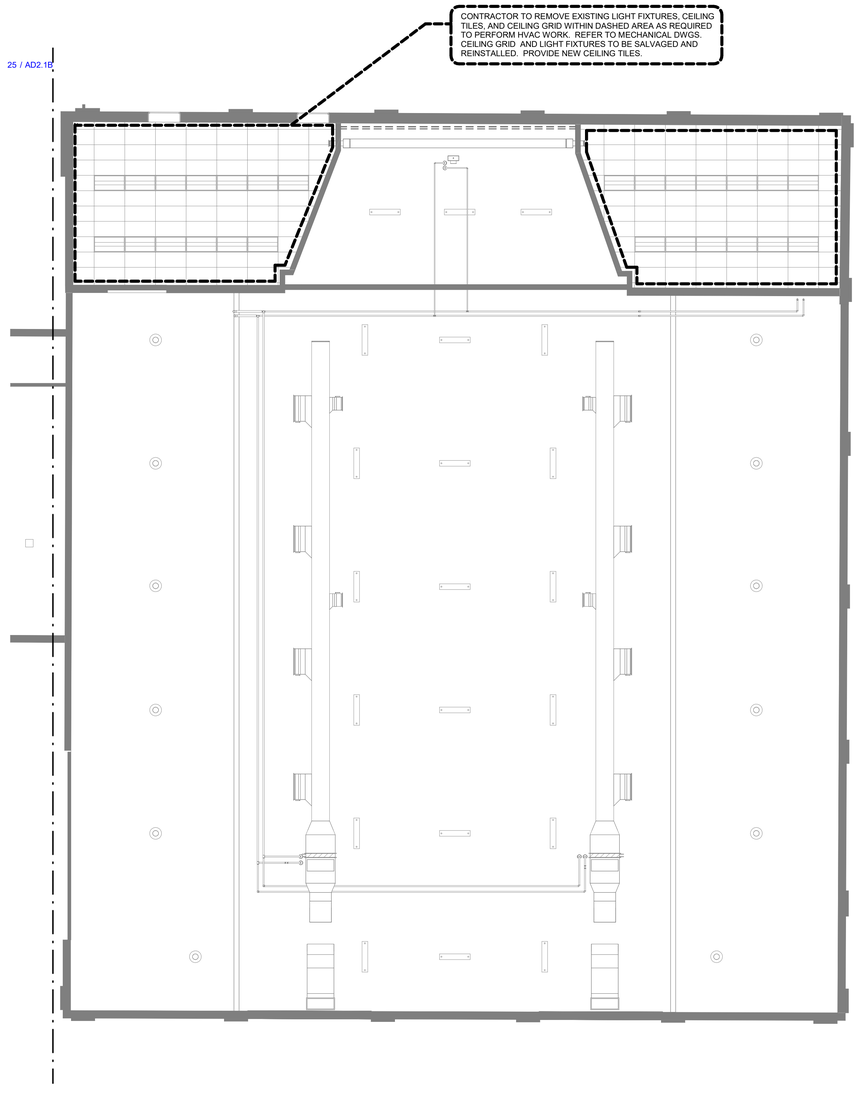
GRAPHIC NORTH

GROUND FLOOR - DEMOLITION RCP - AREA B

AD2.1B

DEMOLITION PLAN KEYNOTES	
#	NOTE
D1	REMOVE PORTION OF SHELVING AND COUNTERTOP. HAND OVER SHELVING AND COUNTER TO OWNER.
D2	REMOVE DOOR AND FRAME. SALVAGE FOR REINSTALLATION.
D3	REMOVE WALL AS INDICATED FOR NEW DOOR INSTALLATION. .REMOVE ALL ASSOCIATED MECHANICAL, PLUMBING AND ELECTRICAL ITEMS.





25\ ENL PLAN GROUND FLOOR - DEMOLITION REFLECTED CEILING PLAN - AREA C
SCALE: 1/8" = 1'-0"

15\ ENL PLAN UPPER FLOOR - DEMOLITION REFLECTED CEILING PLAN - AREA C
SCALE: 1/8" = 1'-0"

2/3/2025 10:04:00 AM

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01.31.2025

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NORTH PUTNAM COMMUNITY SCHOOLS
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ROACHDALE, IN 46172

WILLIAMS ARCHITECTS

REVISIONS

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GRAPHIC NORTH

GROUND FLOOR - DEMOLITION RCP - AREA C

AD2.1C

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Date 31 JAN 2025
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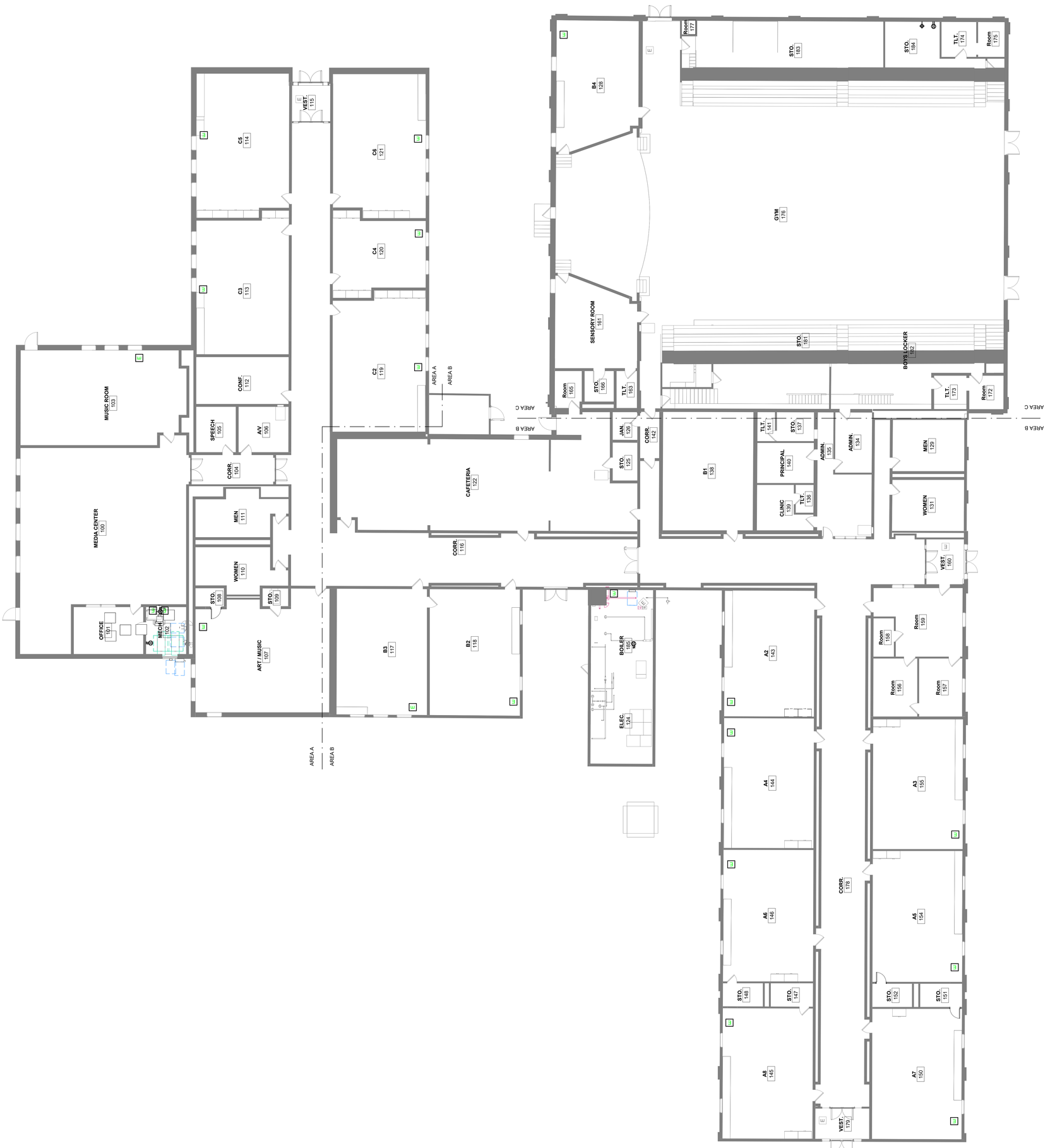
GRAPHIC NORTH

GROUND FLOOR - OVERALL PLAN

A1.1



25 PLAN GROUND FLOOR - OVERALL PLAN
SCALE: 1" = 10'-0"

2/3/2025 10:01:34 AM

TOM C. POULOS
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ROACHDALE ELEMENTARY SCHOOL HVAC IMPROVEMENTS - VOL. 2
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CHK	Checker

GRAPHIC NORTH

GROUND FLOOR PLAN - AREA A

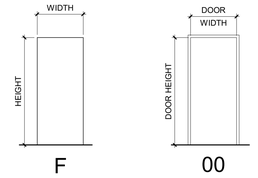
A1.1A

25 ENL PLAN GROUND FLOOR PLAN - AREA A
SCALE: 1/8" = 1'-0"

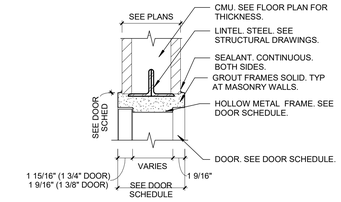
2/3/2025 10:01:35 AM

DOOR SCHEDULE

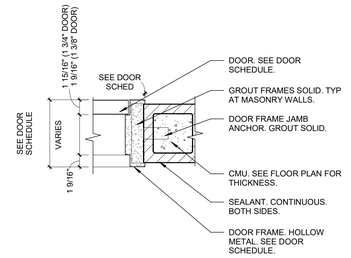
DOOR NUMBER	DOOR							FRAME				DETAILS			FIRE LABEL	HARDWARE	REMARKS	DOOR NUMBER
	LEAF QTY	SIZE			TYPE	MATERIAL	GLAZING	TYPE	MATERIAL	FRAME DEPTH	GLAZING	HEAD	JAMB	SILL				
		WIDTH	HEIGHT	THICKNESS														
108A	1	2'-6"	7'-2"	1 3/4"	F	HM	-	00	HM	4 7/8"	-	3/A1.1B	4/A1.1B	5/A1.1B	-			108A
151A	1	2'-6"	7'-2"	1 3/4"	F	HM	-	00	HM	4 7/8"	-	3/A1.1B	4/A1.1B	5/A1.1B	-			151A
152A	1	2'-6"	7'-2"	1 3/4"	F	HM	-	00	HM	4 7/8"	-	3/A1.1B	4/A1.1B	5/A1.1B	-			152A



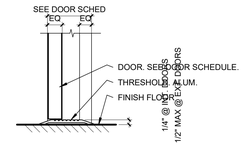
PLAN KEYNOTES	
#	NOTE
1	INFILL MASONRY WALL.



3 \ DETAIL H.M. DOOR HEAD AT C.M.U WALL
SCALE: 1 1/2" = 1'-0"



4 \ DETAIL H.M. DOOR JAMB AT C.M.U. WALL
SCALE: 1 1/2" = 1'-0"



5 \ DETAIL THRESHOLD H.M. OR WOOD
SCALE: 1 1/2" = 1'-0"

25 \ ENL PLAN GROUND FLOOR PLAN - AREA B
SCALE: 1/8" = 1'-0"

2/3/2025 10:01:36 AM

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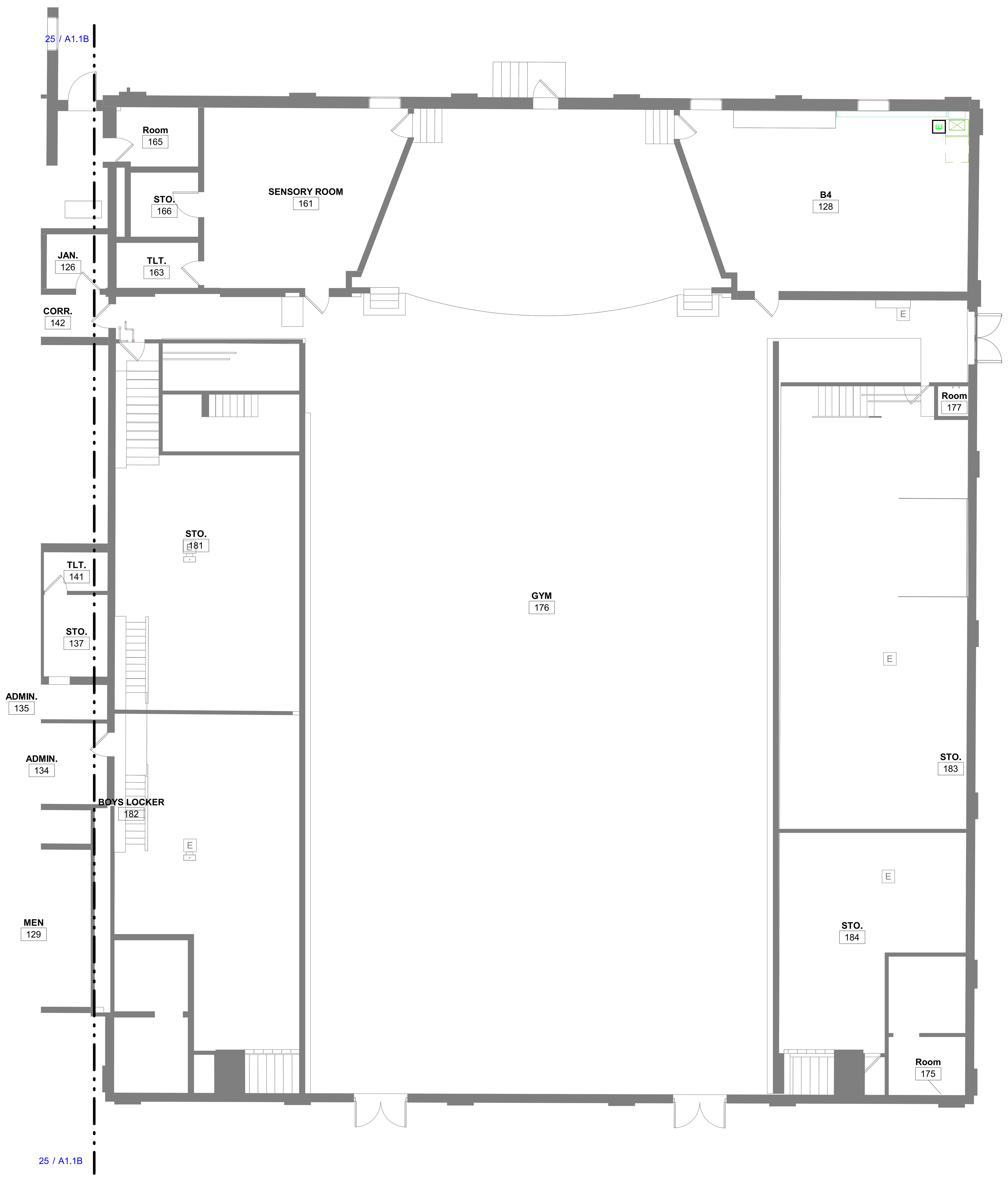
DWR	Author
CHK	Checker

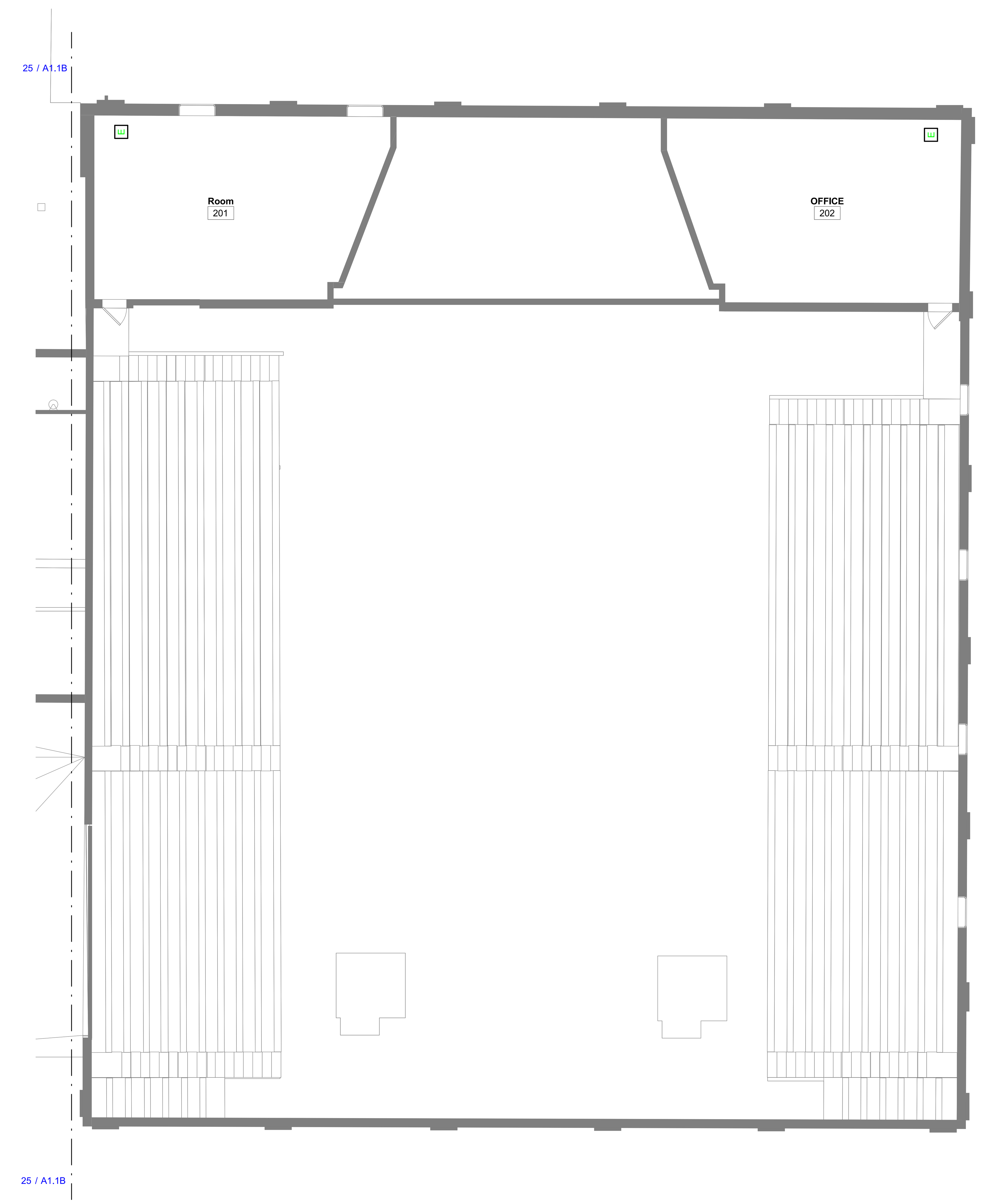
GRAPHIC NORTH

GROUND FLOOR PLAN - AREA B

A1.1B



25 ENL PLAN GROUND FLOOR PLAN - AREA C
SCALE: 1/8" = 1'-0"



15 ENL PLAN UPPER FLOOR PLAN - AREA C
SCALE: 1/8" = 1'-0"

2/3/2025 10:01:37 AM

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DWR	Author
CHK	Checker

GRAPHIC NORTH

GROUND FLOOR PLANS - AREA C

A1.1C

REGISTERED PROFESSIONAL
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ARCHITECT
01.31.2025

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NO.	DATE	DESCRIPTION

WA No. 2024-006
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Issue 100% CDN CD
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GRAPHIC NORTH

GROUND FLOOR - OVERALL RCP

A2.1

25 PLAN GROUND FLOOR - OVERALL REFLECTED CEILING PLAN
SCALE: 1" = 10'-0"

2/3/2025 10:01:41 AM

CEILING SCHEDULE	
TYPE MARK	DESCRIPTION
ACP-E2	PANELS: 24"x24" ACOUSTICAL, TYPE A. COLOR: 1 GRID: SALVAGED AND REINSTALLED
ACP-E3	PANELS: 24"x24" ACOUSTICAL, TYPE B. COLOR: 1 GRID: SALVAGED AND REINSTALLED
ACP-E4	PANELS: 24"x48" ACOUSTICAL, TYPE C. COLOR: 1 GRID: SALVAGED AND REINSTALLED

25\ ENL PLAN GROUND FLOOR - REFLECTED CEILING PLAN - AREA A

SCALE: 1/8" = 1'-0"

2/3/2025 10:01:46 AM

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GRAPHIC NORTH

GROUND FLOOR - RCP - AREA A

A2.1A

CEILING SCHEDULE	
TYPE MARK	DESCRIPTION
ACP-E2	PANELS: 24"x24" ACOUSTICAL, TYPE A. COLOR: 1 GRID: SALVAGED AND REINSTALLED
ACP-E3	PANELS: 24"x24" ACOUSTICAL, TYPE B. COLOR: 1 GRID: SALVAGED AND REINSTALLED
ACP-E4	PANELS: 24"x48" ACOUSTICAL, TYPE C. COLOR: 1 GRID: SALVAGED AND REINSTALLED

NORTH CAROLINA REGISTERED AR10300148 STATE OF INDIANA ARCHITECT

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WILLIAMS ARCHITECTS

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GRAPHIC NORTH

GROUND FLOOR - RCP - AREA B

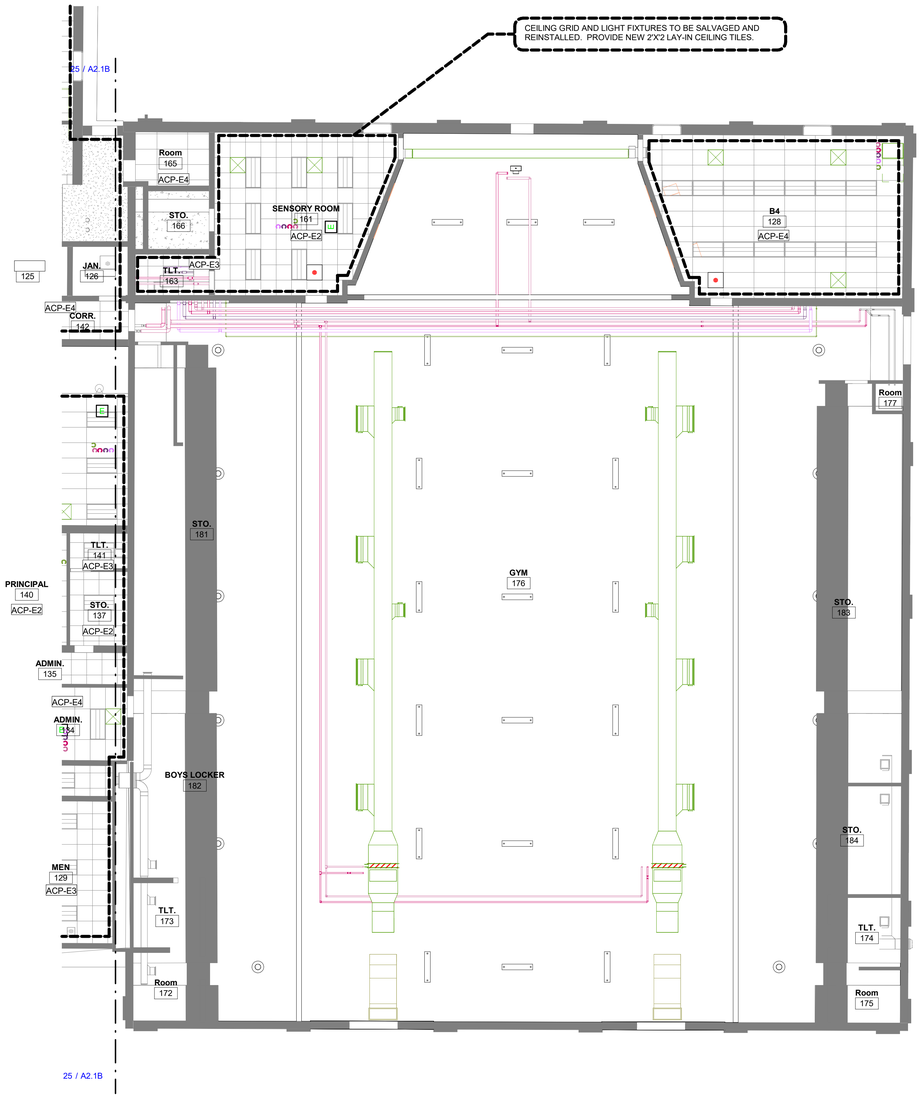
A2.1B

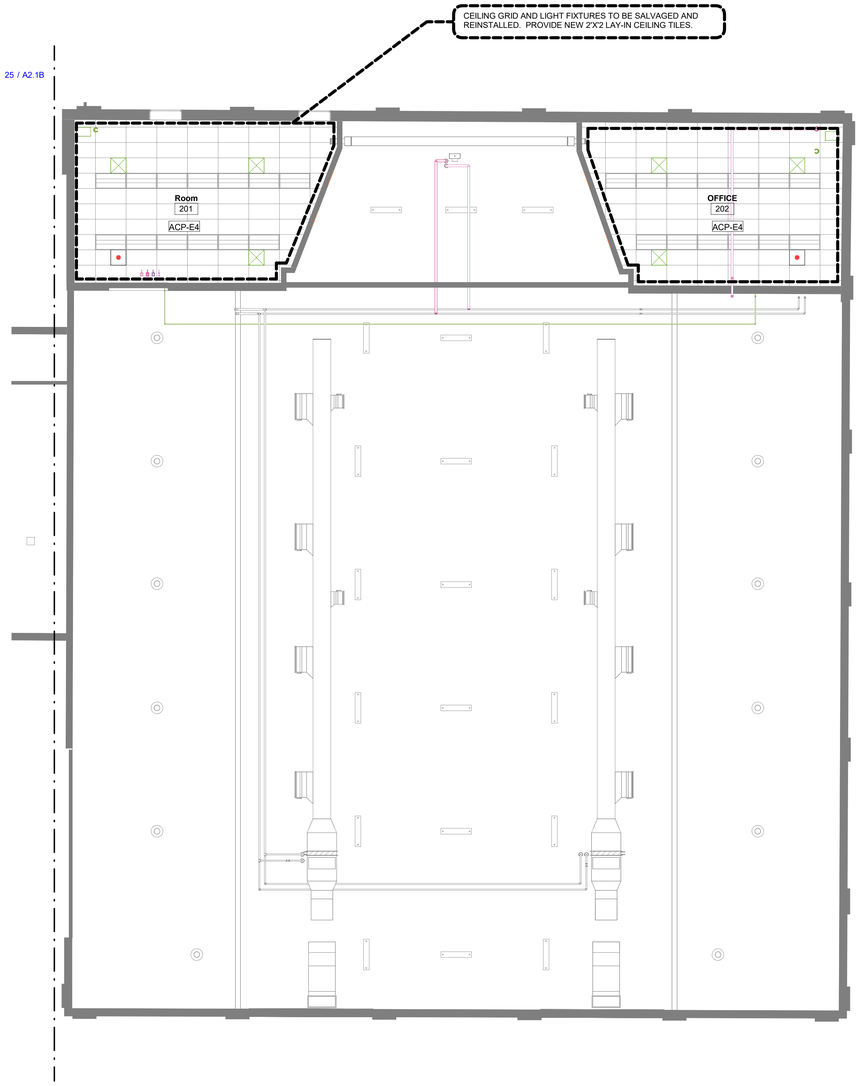
2/3/2025 10:01:48 AM

25\ ENL PLAN GROUND FLOOR - REFLECTED CEILING PLAN - AREA B

SCALE: 1/8" = 1'-0"

CEILING SCHEDULE	
TYPE MARK	DESCRIPTION
ACP-E2	PANELS: 24"x24" ACOUSTICAL, TYPE A. COLOR: 1 GRID: SALVAGED AND REINSTALLED
ACP-E3	PANELS: 24"x24" ACOUSTICAL, TYPE B. COLOR: 1 GRID: SALVAGED AND REINSTALLED
ACP-E4	PANELS: 24"x48" ACOUSTICAL, TYPE C. COLOR: 1 GRID: SALVAGED AND REINSTALLED





25\ ENL PLAN GROUND FLOOR - ENLARGED REFLECTED CEILING PLAN - AREA C
SCALE: 1/8" = 1'-0"

15\ ENL PLAN UPPER FLOOR - ENLARGED REFLECTED CEILING PLAN - AREA C
SCALE: 1/8" = 1'-0"

2/3/2025 10:01:49 AM

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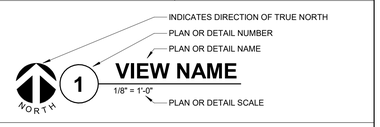
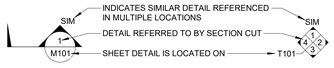
GRAPHIC NORTH

GROUND FLOOR - RCP - AREA C

A2.1C





VIEW KEY

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

APPLICABLE CODES

CONTRACTOR SHALL COMPLY WITH APPLICABLE CODES AND LOCAL AMENDMENTS INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:

BUILDING CODE:	IBC 2014 EDITION	WITH AMENDMENTS
FIRE CODE:	IFC 2012 EDITION	WITH AMENDMENTS
PLUMBING CODE:	IPC 2012 EDITION	WITH AMENDMENTS
MECHANICAL CODE:	IMC 2014 EDITION	WITH AMENDMENTS
ELECTRICAL CODE:	IEC 2009 EDITION (NFPA 70-2008)	WITH AMENDMENTS

CONTRACTOR ABBREVIATION KEY

ABBR:	DESCRIPTION:
A.C.	ASBESTOS ABATEMENT CONTRACTOR
C.C.	CIVIL CONTRACTOR
C.M.	CONSTRUCTION MANAGER
E.C.	ELECTRICAL CONTRACTOR
F.P.C.	FIRE PROTECTION CONTRACTOR
G.C.	GENERAL CONTRACTOR
H.C.	HEATING CONTRACTOR
M.C.	MECHANICAL CONTRACTOR
P.C.	PLUMBING CONTRACTOR
T.C.C.	TEMPERATURE CONTROLS CONTRACTOR
V.C.	VENTILATION CONTRACTOR

HVAC SHEET INDEX

M0.0	HVAC COVERSHEET
M1.1	GROUND FLOOR HVAC DEMOLITION PLAN - OVERALL
M1.1A	GROUND FLOOR HVAC DEMOLITION PLAN - AREA A
M1.1B	GROUND FLOOR HVAC DEMOLITION PLAN - AREA B
M1.1C	GROUND FLOOR HVAC DEMOLITION PLAN - AREA C
M1.2C	UPPER FLOOR HVAC DEMOLITION PLAN - AREA C
M1.3	ROOF HVAC DEMOLITION PLAN - OVERALL
M2.1	GROUND FLOOR VENTILATION PLAN - OVERALL
M2.1A	GROUND FLOOR VENTILATION PLAN - AREA A
M2.1B	GROUND FLOOR VENTILATION PLAN - AREA B
M2.1C	GROUND FLOOR VENTILATION PLAN - AREA C
M2.2C	UPPER FLOOR VENTILATION PLAN - AREA C
M3.0C	BASEMENT PIPING PLAN - AREA C
M3.1	GROUND FLOOR PIPING PLAN - OVERALL
M3.1A	GROUND FLOOR PIPING PLAN - AREA A
M3.1B	GROUND FLOOR PIPING PLAN - AREA B
M3.1C	GROUND FLOOR PIPING PLAN - AREA C
M3.2C	UPPER FLOOR PIPING PLAN - AREA C
M4.3	ROOF MECHANICAL PLAN - OVERALL
M5.0	HVAC ENLARGED PLANS
M5.1	HVAC ENLARGED PLANS
M5.2	HVAC ENLARGED PLANS
M5.3	HVAC ENLARGED PLANS
M5.4	HVAC ENLARGED PLANS
M6.0	HVAC DETAILS
M6.1	HVAC DETAILS
M6.2	HVAC DETAILS
M6.3	HVAC DETAILS
M7.0	HVAC DIAGRAMS
M7.1	HVAC DIAGRAMS
M7.2	HVAC DIAGRAMS
M7.3	HVAC DIAGRAMS
M7.4	HVAC DIAGRAMS
M8.0	HVAC SCHEDULES
M8.1	HVAC SCHEDULES
GRAND TOTAL: 35	

DUCT ABBREVIATION KEY

ABBR.	DESCRIPTION
EA	EXHAUST AIR
OA	OUTSIDE AIR
RA	RETURN/RELIEF AIR
RE	RELIEF AIR
SA	SUPPLY AIR
TD	RETURN TRANSFER AIR

HVAC SYMBOL LIST

NOT ALL SYMBOLS MAY APPLY.

SYMBOL:	DESCRIPTION:
BD	BOILER BLOW DOWN
BF	BOILER FEED WATER
CR	CONDENSER WATER RETURN
CS	CONDENSER WATER SUPPLY
CW	COLD WATER POTABLE
CWR	CHILLED WATER RETURN
CWS	CHILLED WATER SUPPLY
DPP	DRAIN
G	NATURAL GAS
GV	GAS REGULATOR VENT
GWR	GLYCOL WATER RETURN
GWS	GLYCOL WATER SUPPLY
HG	REFRIGERANT HOT GAS
HPC	HIGH PRESSURE CONDENSATE (>125 TO 250 PSIG)
HW	HOT WATER POTABLE
HWR	HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
LIQ	REFRIGERANT LIQUID
LPC	LOW PRESSURE CONDENSATE (0 TO 15 PSIG)
MPC	MEDIUM PRESSURE CONDENSATE (>15 TO 125 PSIG)
MPS	MEDIUM PRESSURE STEAM (>15 TO 125 PSIG)
PC	PUMPED CONDENSATE
PD	PUMPED DISCHARGE
REF	REFRIGERANT
SUC	REFRIGERANT SUCTION
SV	SAFETY RELIEF VENT
	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 (LIQUID/GAS)
	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)
Ⓟ	PRESSURE GAUGE (FURNISHED WITH BALL VALVE)
SP	STATIC SWITCH
FM	FLOW METER
F	FLOW SWITCH
FS	FLOW SENSOR
	ALIGNMENT GUIDE
	PIPE ANCHOR

HVAC 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 $\frac{\text{SYMBOL}}{\text{NECK SIZE/CFM}}$
###	TERMINAL AIR BOX (REFER TO SCHEDULE)
###	TERMINAL AIR BOX w/REHEAT COIL (REFER TO SCHEDULE)
	FAN POWERED TERMINAL AIR BOX w/REHEAT COIL (REFER TO SCHEDULE)
H	HUMIDIFIER
	OPPOSED BLADE DAMPER (REFER TO SCHEDULE)
	PARALLEL BLADE DAMPER (REFER TO SCHEDULE)
	DIFFERENTIAL PRESSURE SENSOR
Ⓗ	HUMIDISTAT SENSOR
H	HUMIDISTAT / SENSOR (DUCT MOUNTED)
Ⓒ	CARBON MONOXIDE SENSOR
C2	CARBON DIOXIDE SENSOR
Ⓒ2	CARBON DIOXIDE SENSOR
Ⓞ	OCCUPANCY SENSOR
Ⓟ	PRESSURE SENSOR/MONITOR
P	PRESSURE SENSOR (DUCT MOUNTED)
Ⓣ	THERMOSTAT/SENSOR
T	TEMPERATURE SENSOR (DUCT MOUNTED)
S1	TEMPATURE SENSOR: SENSOR ONLY
S2	TEMPATURE SENSOR: SENSOR WITH ADJUSTMENT
S3	TEMPATURE SENSOR: SENSOR WITH OVERIDE
S4	TEMPATURE SENSOR: SENSOR WITH ADJUSTMENT AND OVERRIDE
Ⓣ	THERMOSTAT/SENSOR WITH HEAVY DUTY ENCLOSURE
T	TEMPERATURE SENSOR WITH WELL
Ⓣ	THERMOMETER WITH WELL (DIAL TYPE)
	THERMOMETER WITH WELL (FILLED TYPE)
XX-Y	AIRFLOW MEASUREMENT SYMBOL XX - AHU SYMBOL Y - SEQUENTIAL NUMBER

HVAC ABBREVIATION KEY

ABBR:	DESCRIPTION:
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
C	COMMON
CO	CLEANOUT
CFSD	CONTROL/FIRE/SMOKE DAMPER
DN	DOWN
DPG (0-2")	DIFFERENTIAL PRESSURE GAUGE (RANGE)
DPS	DIFFERENTIAL PRESSURE SWITCH
EP	ELECTRICAL TO PNEUMATIC VALVE
FD	FIRE DAMPER
FOB	FLAT ON BOTTOM
FOT	FLAT ON TOP
FSD	FIRE/SMOKE DAMPER
FMCS	FACILITY MANAGEMENT AND CONTROL SYSTEM
HRB	HEAT RECOVERY BOX (REFRGERANT)
MV	MIXING VALVE
N.C.	NORMALLY CLOSED
NIC	NOT IN CONTRACT
N.O.	NORMALLY OPEN
PS	PRESSURE SWITCH
RE	RELIEF EXHAUST
SCCR	SHORT CIRCUIT CURRENT RATING
SD	SMOKE DAMPER
TAB	TERMINAL AIR BOX
TD	TRANSFER DUCT
TYP	TYPICAL
UC-1	DOOR UNDERCUT BY OTHERS (1" TYPICAL)
UON	UNLESS OTHERWISE NOTED
VRF	VARIABLE REFRIGERANT FLOW UNIT

MECHANICAL RENOVATION NOTES:

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

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

1. REFER TO ARCHITECTURAL] DRAWINGS FOR GENERAL DESCRIPTION OF PHASES. REFER TO CONSTRUCTION MANAGER'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. PROVIDE DUCT TRAVERSE READINGS AT LOCATIONS DESIGNATED ON THE DRAWINGS BY THE "AIRFLOW MEASUREMENT SYMBOL". THOSE MEASUREMENTS SHALL BE INCLUDED IN THE PRE DEMOLITION REPORT AND SHALL BE DESIGNATED WITH THE IDENTIFIER AS MARKED ON THE DRAWINGS. READINGS SHALL BE DESIGNATED WITH THE ROOM NAME AND NUMBER AS MARKED ON THE DRAWINGS. IF FLOOR PLANS DO NOT HAVE UNIQUE ROOM NAMES AND NUMBERS, TAB CONTRACTOR SHALL INCLUDE FLOOR PLAN WITH UNIQUE NUMBER DESIGNATIONS ASSIGNED TO READINGS THAT MATCH THOSE USED IN THE FINAL PRE-DEMOLITION REPORT. DRAWINGS THAT ARE HAND-MARKED WITH RED INK ARE ACCEPTABLE, PROVIDED THEY ARE LEGIBLE.
3. IN THE EVENT A DUCT TRAVERSE LOCATION AS MARKED ON THIS PLAN IS INACCESSIBLE FOR MEASUREMENT, THE TAB CONTRACTOR SHALL PERFORM THE TRAVERSE AT AN ALTERNATE LOCATION OR SHALL TAKE MULTIPLE DUCT TRAVERSES AND/OR READINGS AS REQUIRED TO DETERMINE THE AIRFLOW READING WHERE THE DUCT TRAVERSE SYMBOL IS SHOWN. IN THE EVENT TRAVERSES ARE TAKEN AT ALTERNATE LOCATION(S), TAB CONTRACTOR SHALL INCLUDE A DRAWING THAT SHOWS THE LOCATIONS WHERE THE ACTUAL MEASUREMENTS WERE TAKEN.
4. TAKE A DUCT STATIC PRESSURE READING AT EACH LOCATION WHERE A DUCT TRAVERSE READING IS TAKEN AND INCLUDE IN THE FINAL PRE-DEMOLITION TAB REPORT.
5. 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.
6. TAB CONTRACTOR SHALL PROVIDE DUCT TRAVERSE READINGS AT LOCATIONS DESIGNATED ON THE DRAWINGS BY THE "AIRFLOW MEASUREMENT SYMBOL". THOSE MEASUREMENTS SHALL BE INCLUDED IN THE POST-CONSTRUCTION REPORT AND SHALL BE DESIGNATED WITH THE IDENTIFIER AS MARKED ON THE CONSTRUCTION DRAWINGS. 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 TRAVERSES, 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.
7. 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.

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. IF DUCT TRAVERSE LOCATION AS MARKED ON THE DRAWINGS IS INACCESSIBLE FOR MEASUREMENT, THE TAB CONTRACTOR SHALL PERFORM THE TRAVERSE AT AN ALTERNATE LOCATION OR SHALL TAKE MULTIPLE DUCT TRAVERSES AND/OR GRILLE READINGS AS REQUIRED TO DETERMINE THE FLOW RATE. IN THE EVENT TRAVERSES ARE TAKEN AT AN ALTERNATE LOCATION(S), TAB CONTRACTOR SHALL INCLUDE A DRAWING THAT SHOWS THE LOCATIONS WHERE THE ACTUAL MEASUREMENTS WERE TAKEN.
4. A DUCT STATIC PRESSURE READING SHALL BE TAKEN AT EACH LOCATION WHERE A DUCT TRAVERSE READING IS TAKEN AND SHALL BE INCLUDED IN THE FINAL POST-CONSTRUCTION TAB REPORT.
5. TAB CONTRACTOR SHALL COMPILE AND SUBMIT COPIES OF THE FINAL POST-CONSTRUCTION TAB REPORT AS REQUIRED BY SECTION 23 05 93.
6. THE FINAL POST CONSTRUCTION REPORT SHALL INCLUDE ALL ITEMS REQUIRED IN THE SPECIFICATIONS.

PIPING GENERAL NOTES:

1. THE SIZE OF BRANCH PIPING TO TERMINAL HEATING DEVICES AND COILS SHALL BE 3/4" UNLESS NOTED OTHERWISE.
2. PIPE DRAIN LINES FROM EQUIPMENT TO NEAREST FLOOR DRAIN.
3. INSTALL ALL REFRIGERANT LIQUID AND SUCTION PIPING SIZED PER EQUIPMENT MANUFACTURER RECOMMENDATIONS.

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 GENERAL NOTES:

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

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.
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.

IMEG
8900 KEYSTONE CROSSING
SUITE 210
INDIANAPOLIS, IN 46240
P: 317.848.5045 F: 317.844.2201
www.imegcorp.com

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PE60910310
01.31.25

ROACHDALE ELEMENTARY SCHOOL HVAC IMPROVEMENTS - VOL. 2
NORTH PUTNAM COMMUNITY SCHOOLS
305 SOUTH INDIANA STREET
ROACHDALE, IN 46172

WILLIAMS
ARCHITECTS

REVISIONS

NO.	DATE	DESCRIPTION

WA No.	2024-006
Date	31 JAN 2025
Issue	100% CON CD
DWR	NAK
CHK	NHA

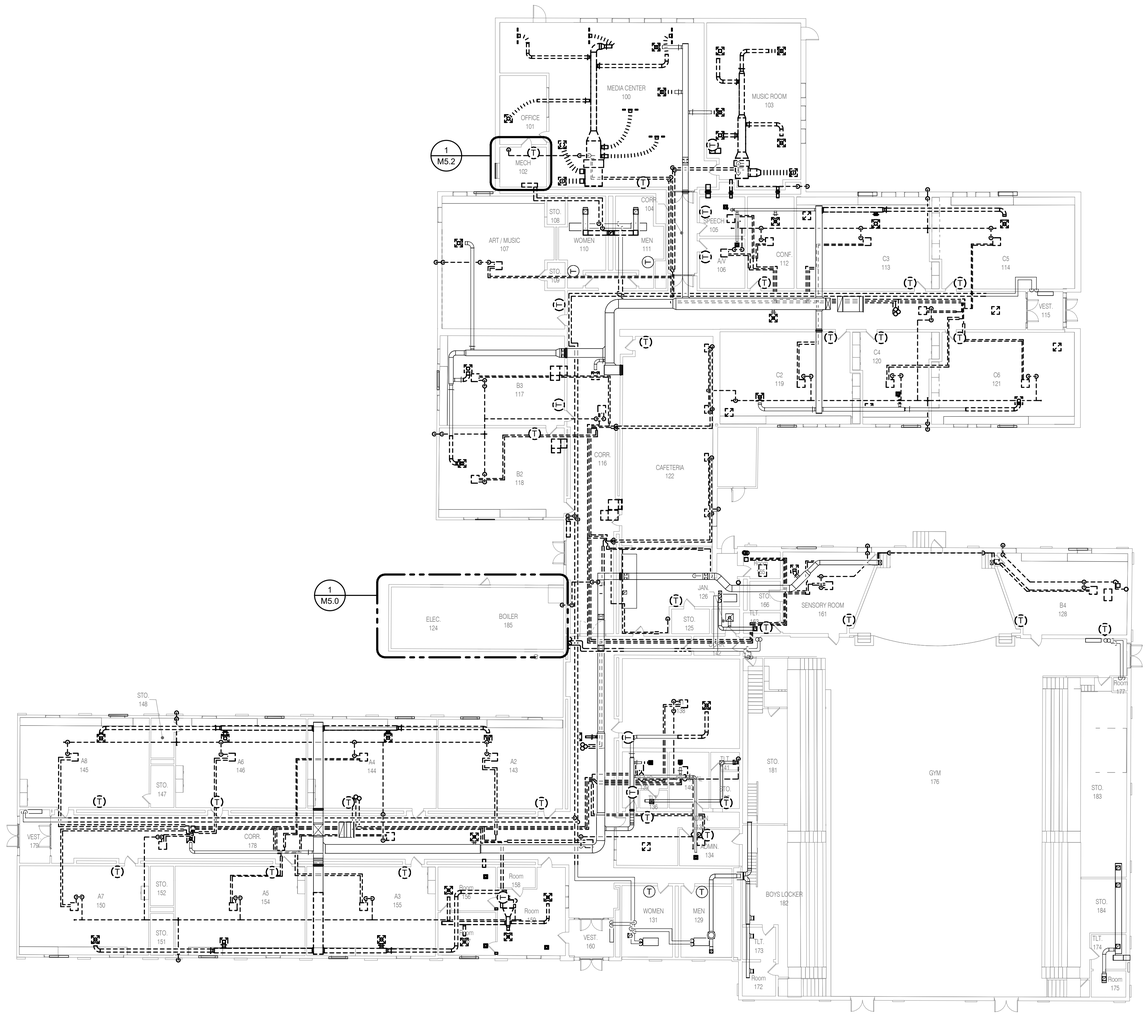
HVAC COVERSHEET

M0.0

1/29/2025 4:41:54 PM

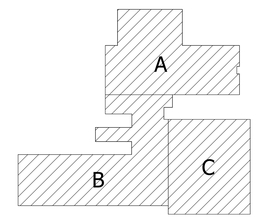
GENERAL NOTES:

A. REFER TO SHEET M0.0 FOR MECHANICAL SYMBOLS, ABBREVIATIONS, AND INSTALLATION NOTES.
B. THIS OVERALL PLAN IS FOR REFERENCE ONLY. REFER TO INDIVIDUAL AREA PLANS FOR DETAILED SCOPE.
C. ANY MODIFICATIONS OR DEMOLITION TO SHELVING AND COUNTERTOPS SHALL BE DONE THROUGH THE MECHANICAL CONTRACTOR.



1 GROUND FLOOR HVAC DEMOLITION PLAN - OVERALL

1/16" = 1'-0"



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SUITE 210
INDIANAPOLIS, IN 46240
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PROJECT #24001305.00

STATE OF INDIANA No. PE60910310 REGISTERED PROFESSIONAL ENGINEER
01.31.25
Nichole N.A. Armstrong

ROACHDALE ELEMENTARY SCHOOL HVAC IMPROVEMENTS - VOL. 2
NORTH PUTNAM COMMUNITY SCHOOLS
305 SOUTH INDIANA STREET
ROACHDALE, IN 46172

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Date 31 JAN 2025
Issue 100% CON CD
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CHK NHA

GROUND FLOOR HVAC DEMOLITION PLAN - OVERALL

M1.1

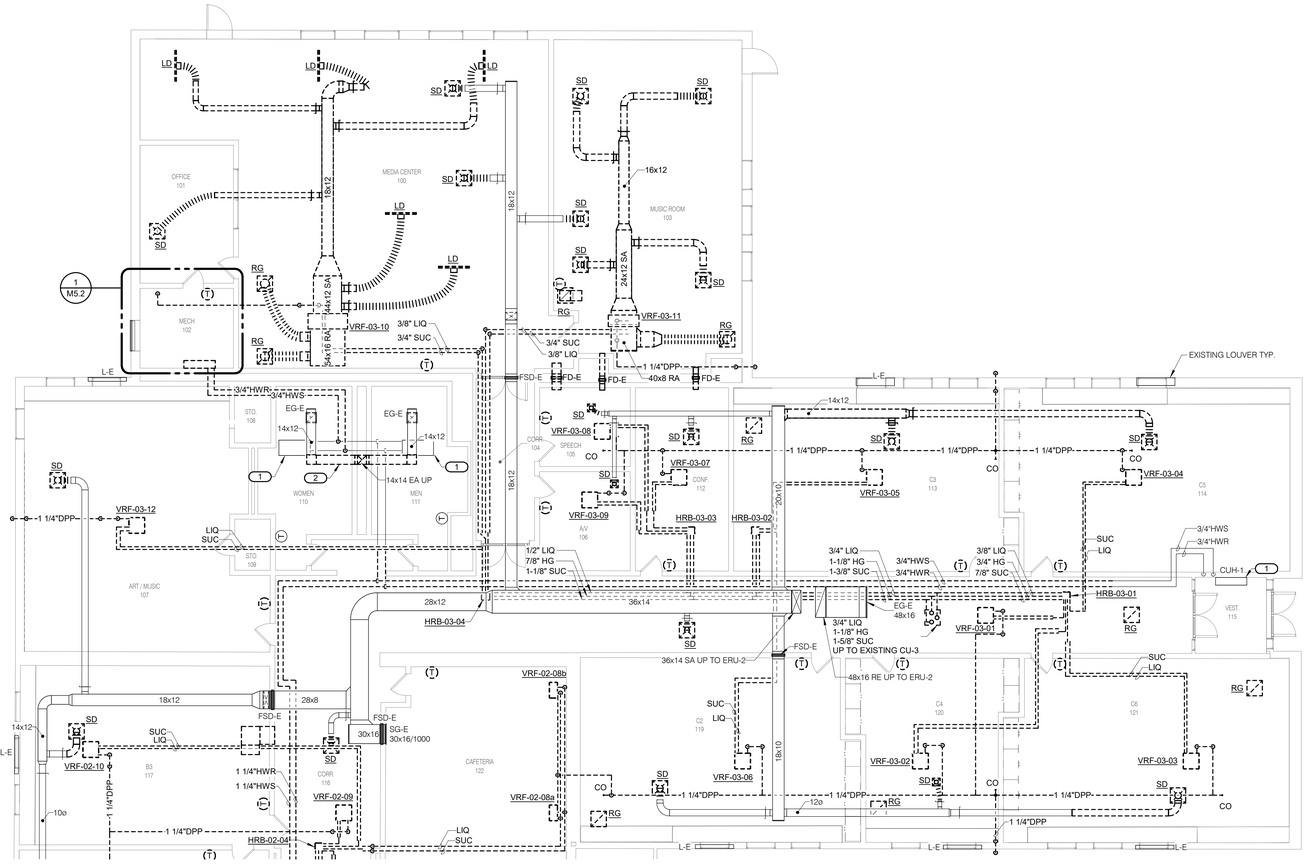
1/29/2025 4:42:00 PM

GENERAL NOTES:

A. REFER TO SHEET M0.0 FOR MECHANICAL SYMBOLS, ABBREVIATIONS, AND INSTALLATION NOTES.
B. ANY MODIFICATIONS OR DEMOLITION TO SHELVING AND COUNTERTOPS SHALL BE DONE THROUGH THE MECHANICAL CONTRACTOR.

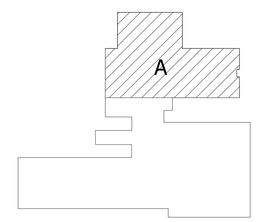
KEYNOTES: (#)

1. CABINET UNIT HEATERS TO REMAIN. TCC SHALL CONNECT UNIT HEATERS TO THE NEW BUILDING MANAGEMENT SYSTEM.
2. REMOVE EXHAUST DUCTWORK AND ASSOCIATED EXHAUST FAN EF-1-E.



1 GROUND FLOOR HVAC DEMOLITION PLAN - AREA A

1/8" = 1'-0"



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GROUND FLOOR HVAC DEMOLITION PLAN - AREA A

M1.1A

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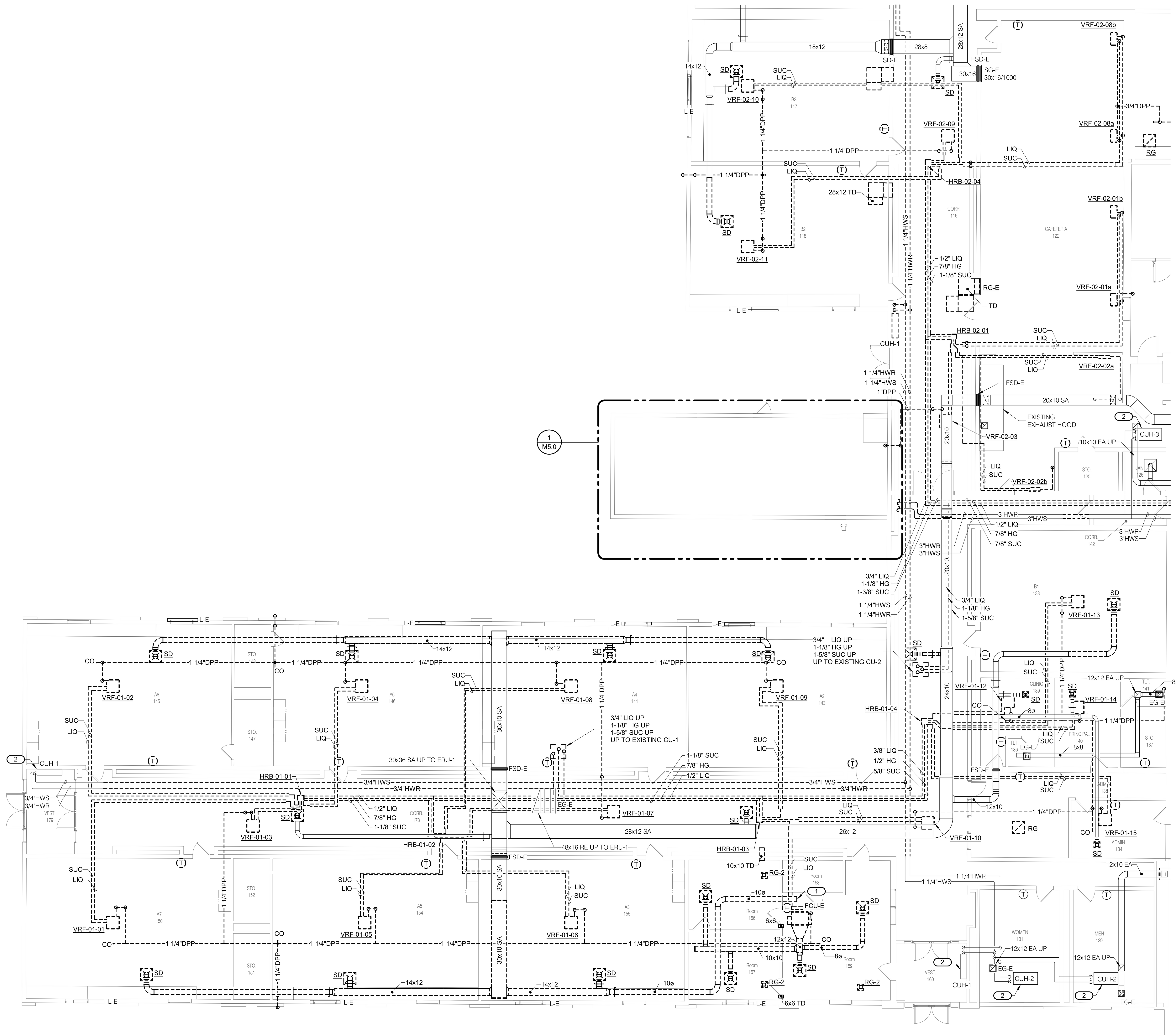
GENERAL NOTES:

A. REFER TO SHEET M0.0 FOR MECHANICAL SYMBOLS, ABBREVIATIONS, AND INSTALLATION NOTES.
B. ANY MODIFICATIONS OR DEMOLITION TO SHELVING AND COUNTERTOPS SHALL BE DONE THROUGH THE MECHANICAL CONTRACTOR.

KEYNOTES:

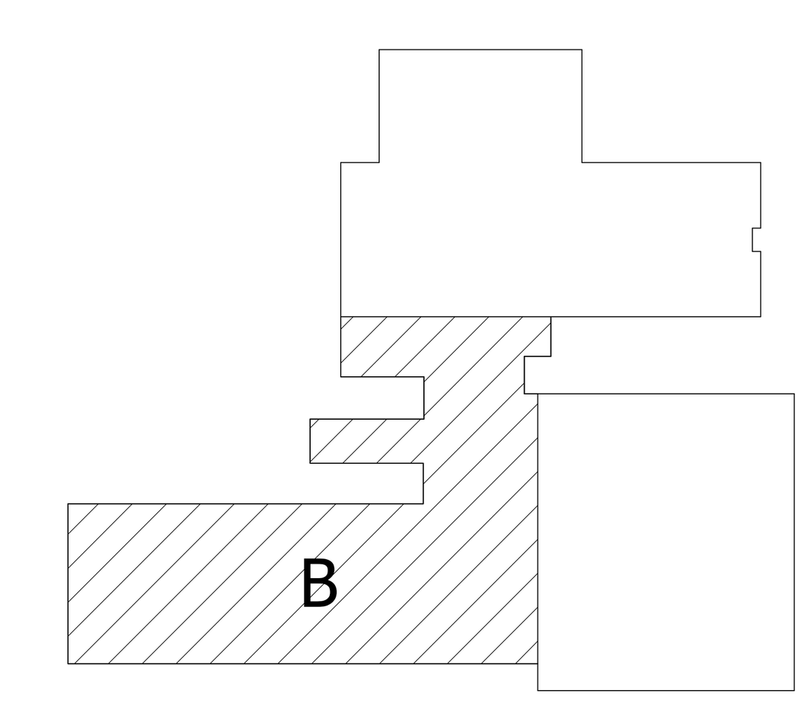
(#)

1. PRIOR TO DEMOLITION BALANCE CONTRACTOR SHALL TEST AND RECORD PRE CONSTRUCTION AIRFLOW AT THE LOCATION NOTED.
2. CABINET UNIT HEATERS TO REMAIN. TCC SHALL CONNECT UNIT HEATERS TO THE NEW BUILDING MANAGEMENT SYSTEM.



GROUND FLOOR HVAC DEMOLITION PLAN - AREA B

1/8" = 1'-0"



NORTH

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SUITE 210
INDIANAPOLIS, IN 46240
P: 317.848.5045 F: 317.844.2201
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PE60910310 STATE OF INDIANA 01.31.25

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Date	31 JAN 2025
Issue	100% CON CD
DWR	NAK
CHK	NHA

GROUND FLOOR HVAC DEMOLITION PLAN - AREA B

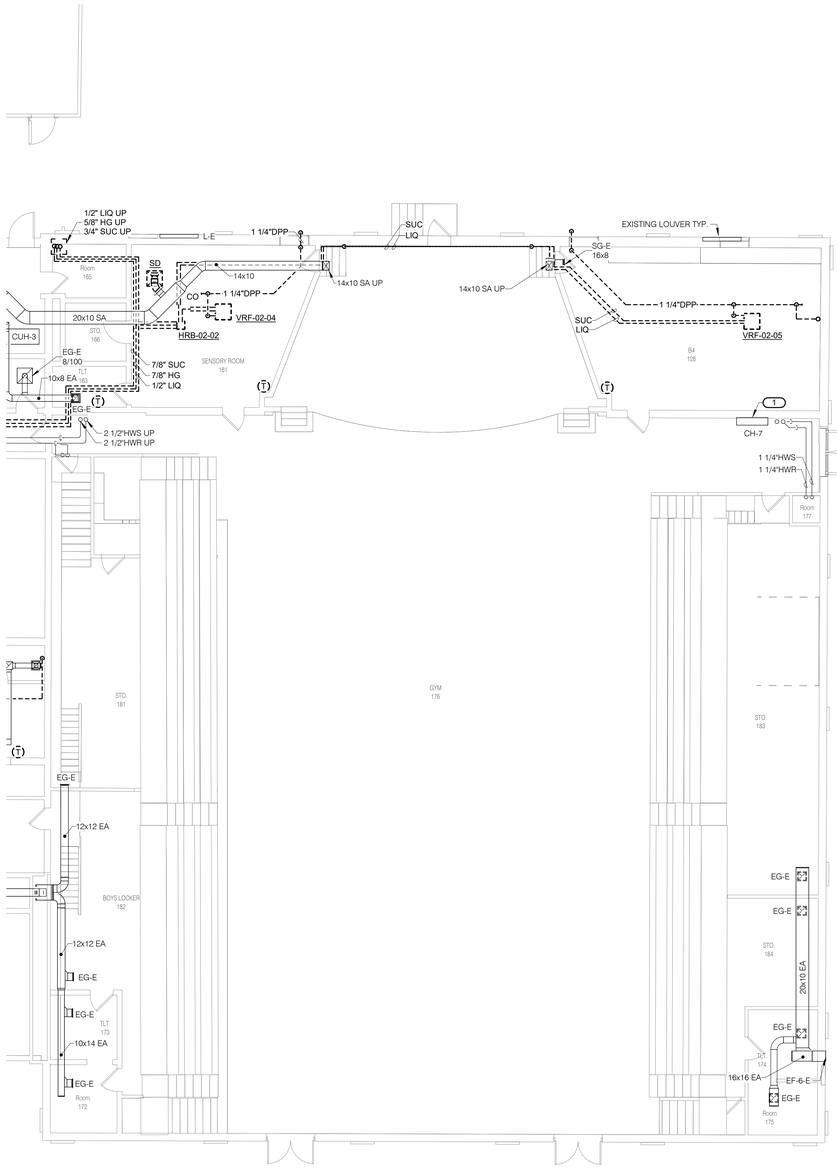
M1.1B

GENERAL NOTES:

A. REFER TO SHEET M0.0 FOR MECHANICAL SYMBOLS, ABBREVIATIONS, AND INSTALLATION NOTES.
B. ANY MODIFICATIONS OR DEMOLITION TO SHELVING AND COUNTERTOPS SHALL BE DONE THROUGH THE MECHANICAL CONTRACTOR.

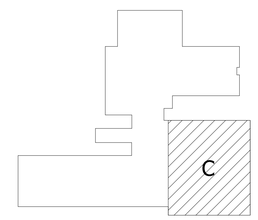
KEYNOTES: (#)

1. CABINET UNIT HEATERS TO REMAIN. TCC SHALL CONNECT UNIT HEATERS TO THE NEW BUILDING MANAGEMENT SYSTEM.



GROUND FLOOR HVAC DEMOLITION PLAN - AREA C

1/8" = 1'-0"



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PROJECT #24001305.00

INDIANA REGISTERED ARCHITECTURAL No. PE60910310 STATE OF
01.31.25
Nicholas N.A. Armstrong

ROACHDALE ELEMENTARY SCHOOL HVAC IMPROVEMENTS - VOL. 2
NORTH PUTNAM COMMUNITY SCHOOLS
305 SOUTH INDIANA STREET
ROACHDALE, IN 46172

WILLIAMS ARCHITECTS

REVISIONS

NO.	DATE	DISCRIPTION

WA No. 2024-006
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Issue 100% CON CD
DWR NAK
CHK NHA

GROUND FLOOR HVAC DEMOLITION PLAN - AREA C

M1.1C

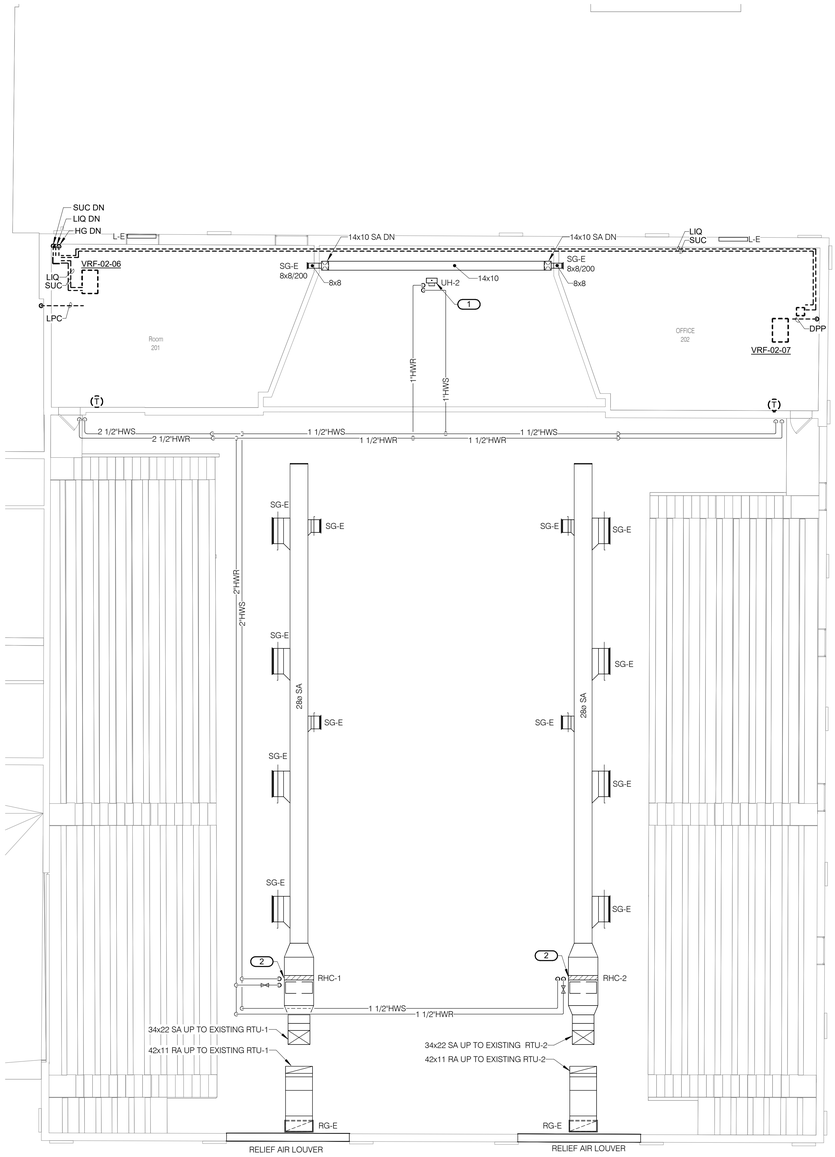
1/29/2025 1:42:09 PM

GENERAL NOTES:

A. REFER TO SHEET M0.0 FOR MECHANICAL SYMBOLS, ABBREVIATIONS, AND INSTALLATION NOTES.
B. ANY MODIFICATIONS OR DEMOLITION TO SHELVING AND COUNTERTOPS SHALL BE DONE THROUGH THE MECHANICAL CONTRACTOR.

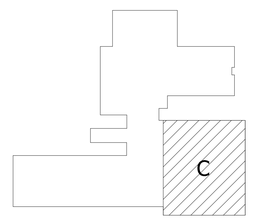
KEYNOTES: (#)

1. UNIT HEATER TO REMAIN. TCC SHALL CONNECT UNIT HEATER TO THE NEW BUILDING MANAGEMENT SYSTEM.
2. EXISTING GYMNASIUM HOT WATER REHEAT COIL TO REMAIN. TCC SHALL CONNECT REHEAT COIL TO THE NEW BUILDING MANAGEMENT SYSTEM.



1 UPPER FLOOR HVAC DEMOLITION PLAN - AREA C

1/8" = 1'-0"



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STATE OF INDIANA
No. PE60910310
PROFESSIONAL ENGINEER
01.31.25

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NORTH PUTNAM COMMUNITY SCHOOLS
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WILLIAMS ARCHITECTS

REVISIONS

NO.	DATE	DESCRIPTION

WA No. 2024-006
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UPPER FLOOR
HVAC DEMOLITION
PLAN - AREA C

M1.2C

1/29/2025 4:42:11 PM

GENERAL NOTES:

A. REFER TO SHEET M0.0 FOR MECHANICAL SYMBOLS, ABBREVIATIONS, AND INSTALLATION NOTES.
B. ANY MODIFICATIONS OR DEMOLITION TO SHELVING AND COUNTERTOPS SHALL BE DONE THROUGH THE MECHANICAL CONTRACTOR.

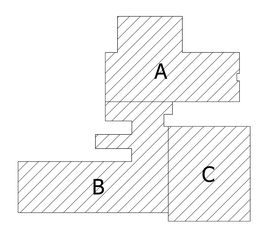
KEYNOTES: (#)

1. PIPING CURB TO REMAIN AND INSTALL INSULATED CURB CAP.
2. VRF CONDENSING UNIT SHALL BE REMOVED. ROOF CURB RAILS SHALL REMAIN.
3. REMOVE EXHAUST FAN AND INSTALL INSULATED CURB CAP.

1 ROOF HVAC DEMOLITION PLAN - OVERALL

1/16" = 1'-0"

NORTH



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ROACHDALE ELEMENTARY SCHOOL HVAC IMPROVEMENTS - VOL. 2
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WILLIAMS ARCHITECTS

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Date	31 JAN 2025
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CHK	NHA

ROOF HVAC DEMOLITION PLAN - OVERALL

M1.3

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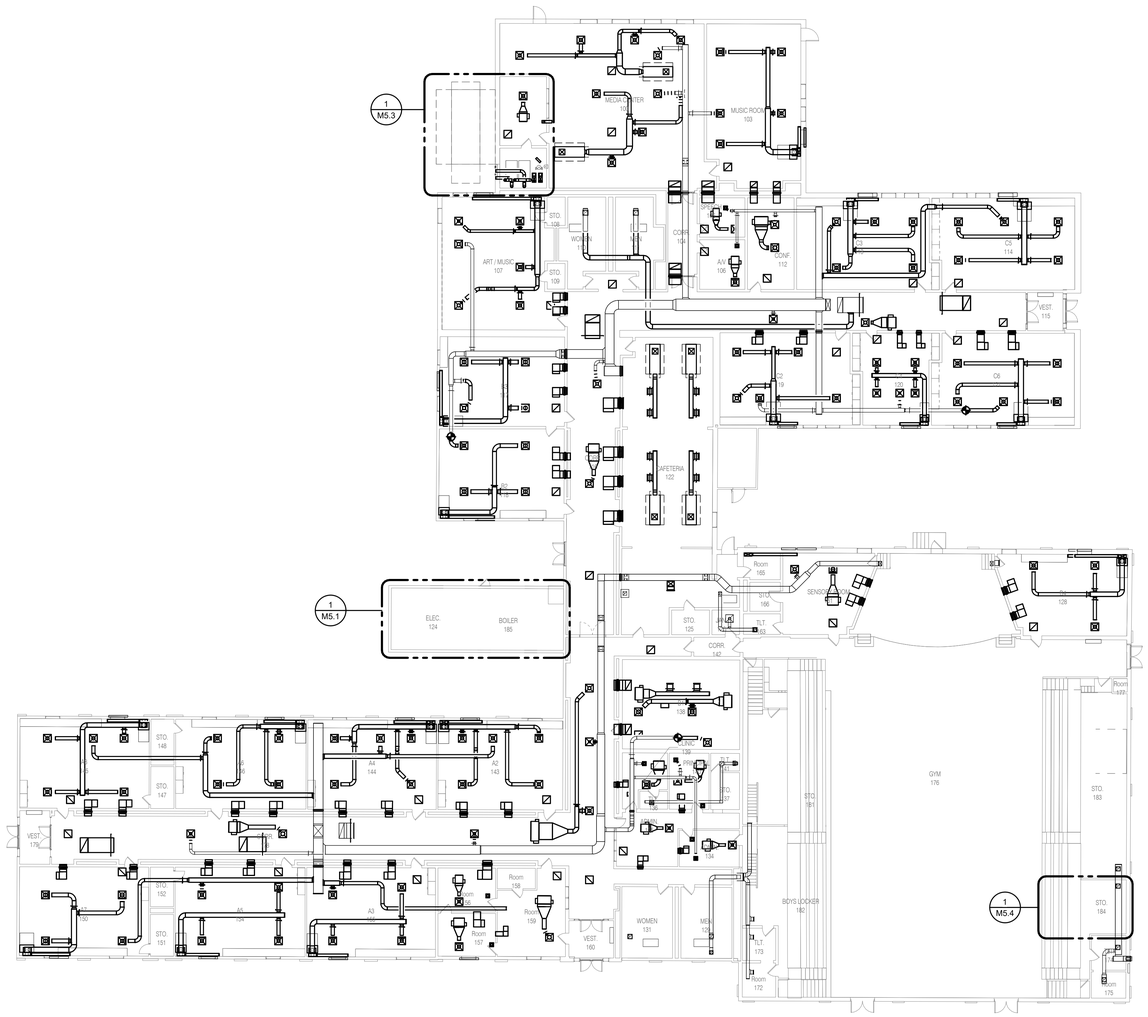
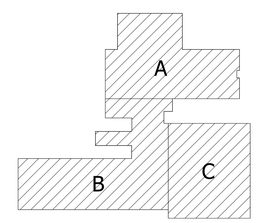
GENERAL NOTES:

A. REFER TO SHEET M0.0 FOR MECHANICAL SYMBOLS, ABBREVIATIONS, AND INSTALLATION NOTES.
B. SUPPORT EXPOSED DUCTWORK FROM AIRCRAFT CABLE DIRECTLY ABOVE CENTERLINE OF DUCT RUN. COORDINATE WITH PIPING AND CONDUIT ABOVE.
C. IN ALL AREAS WITHOUT CEILINGS, SUPPLY DUCTWORK TO BE DOUBLE WALL DUCT WITH 1" INSULATION AND PERFORATED INNER LINER. ARCHITECTURALLY EXPOSED DUCTWORK, REFER TO SPECIFICATION 23 31 00 FOR ADDITIONAL REQUIREMENTS.
D. REFER TO DETAIL 2/M6.3 FOR HANGER CONNECTION TO HOLLOWCORE SLAB.
E. THIS OVERALL PLAN IS FOR REFERENCE ONLY. REFER TO INDIVIDUAL AREA PLANS FOR DETAILED SCOPE.
F. ANY MODIFICATIONS OR DEMOLITION TO SHELVING AND COUNTERTOPS SHALL BE DONE THROUGH THE MECHANICAL CONTRACTOR.



1 GROUND FLOOR VENTILATION PLAN - OVERALL

1/16" = 1'-0"



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WILLIAMS ARCHITECTS

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GROUND FLOOR VENTILATION PLAN - OVERALL

M2.1

1/29/2025 4:42:16 PM

GENERAL NOTES:

A. REFER TO SHEET M0.0 FOR MECHANICAL SYMBOLS, ABBREVIATIONS, AND INSTALLATION NOTES.
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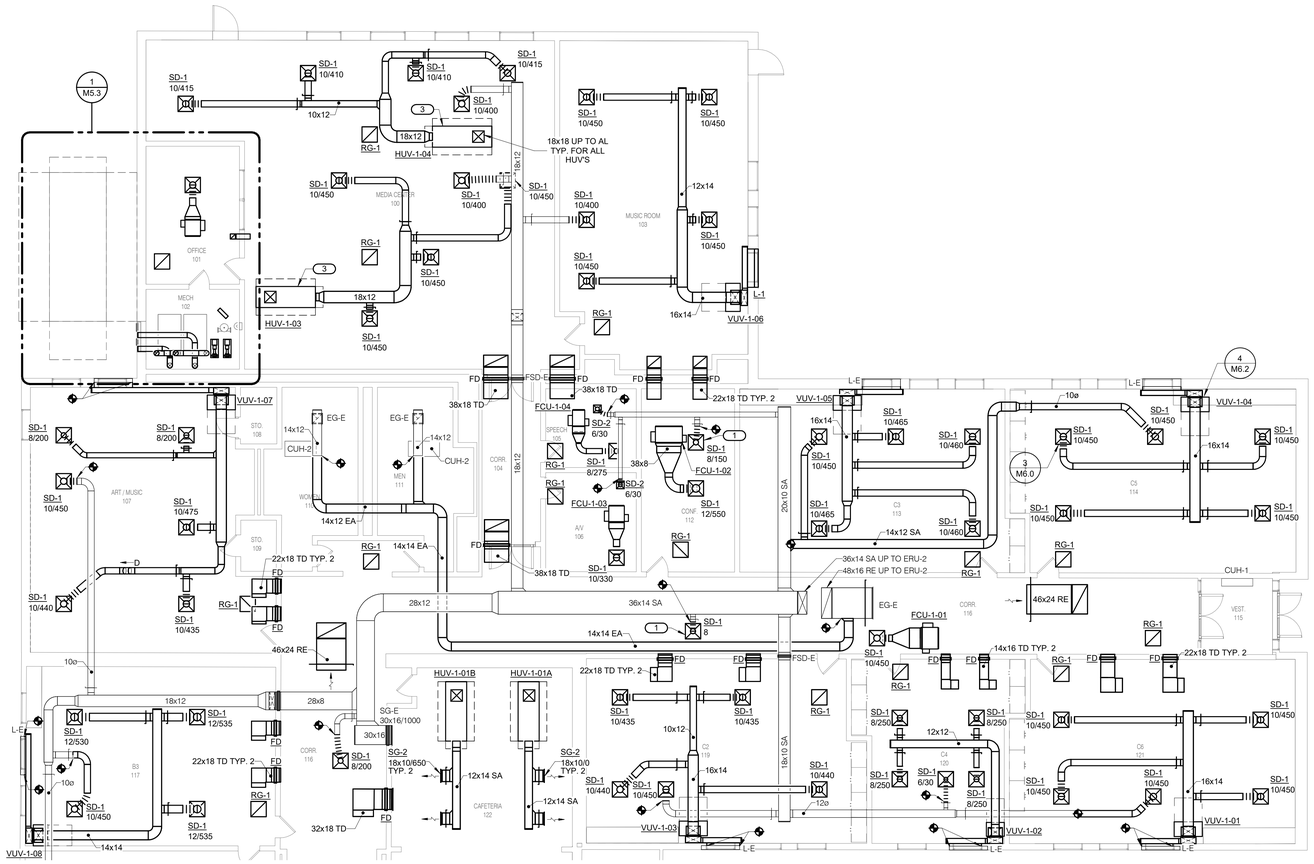
D. REFER TO DETAIL 2/M6.3 FOR HANGER CONNECTION TO HOLLOWCORE SLAB.
E. GENERAL CONTRACTOR SHALL REMOVE CORRIDOR BLOCK WALL ABOVE CEILING AT ALL NEW TRANSFER AIR DUCT LOCATIONS, ETC.
F. ANY MODIFICATIONS OR DEMOLITION TO SHELVING AND COUNTERTOPS SHALL BE DONE THROUGH THE MECHANICAL CONTRACTOR.

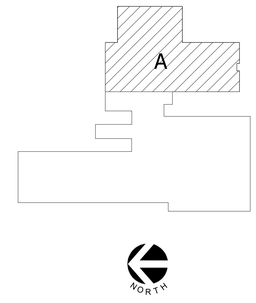
KEYNOTES: (#)

1. CONTRACTOR SHALL BALANCE LOCATION NOTED USING PRE-CONSTRUCTION AIRFLOW.
2. GENERAL CONTRACTOR SHALL PAINT EXPOSED PIPING AND DUCTWORK.
3. TCC SHALL PROVIDE MOTORIZED DAMPER IN BOTH OA DUCT TO ROOF INTAKE HOOD AND IN RETURN AIR DUCT.



1 GROUND FLOOR VENTILATION PLAN - AREA A

1/8" = 1'-0"



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GROUND FLOOR VENTILATION PLAN - AREA A

M2.1A

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GENERAL NOTES:

A. REFER TO SHEET M0.0 FOR MECHANICAL SYMBOLS, ABBREVIATIONS, AND INSTALLATION NOTES.
B. SUPPORT EXPOSED DUCTWORK FROM AIRCRAFT CABLE DIRECTLY ABOVE CENTERLINE OF DUCT RUN. COORDINATE WITH PIPING AND CONDUIT ABOVE.
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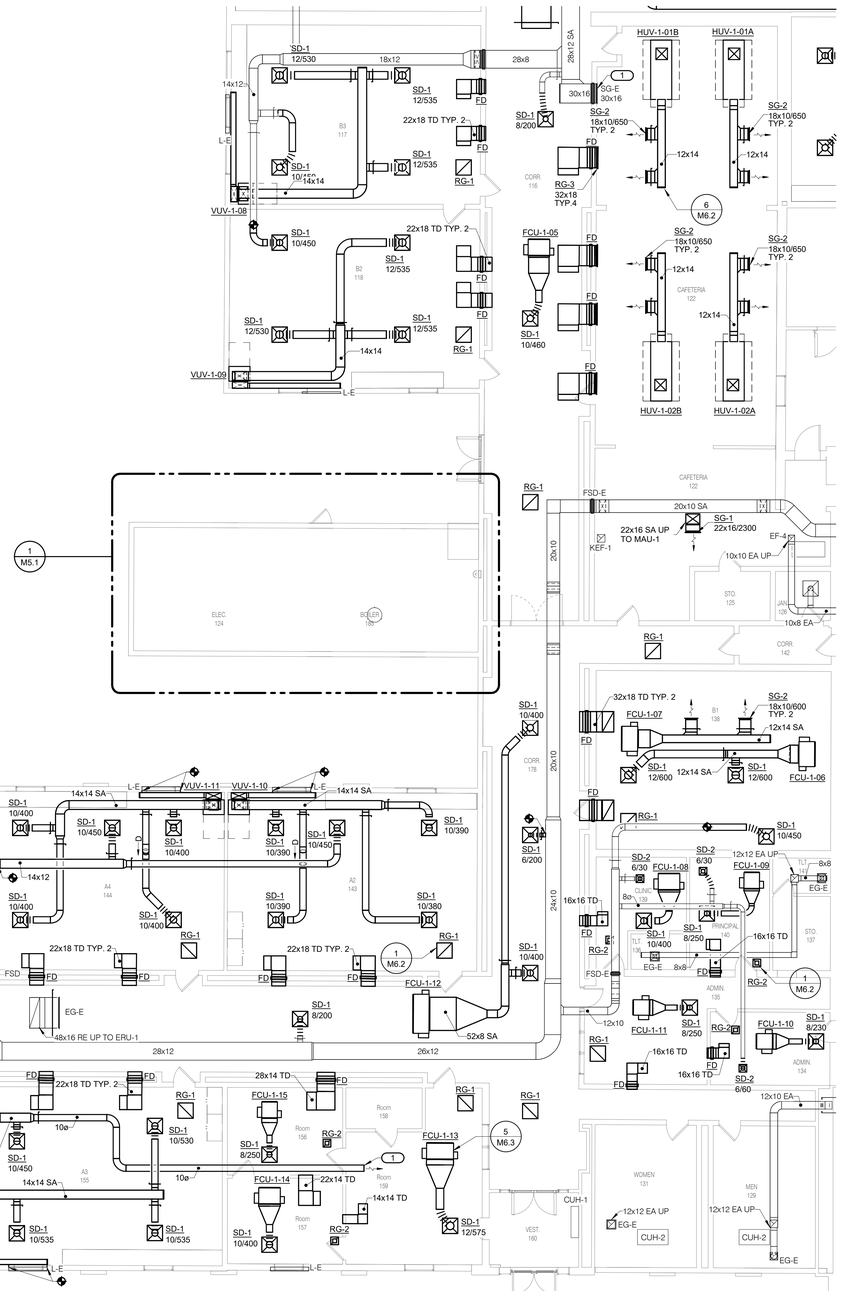
F. ANY MODIFICATIONS OR DEMOLITION TO SHELVING AND COUNTERTOPS SHALL BE DONE THROUGH THE MECHANICAL CONTRACTOR.

KEYNOTES: (#)

1. CONTRACTOR SHALL BALANCE LOCATION NOTED USING PRE-CONSTRUCTION AIRFLOW.



1 GROUND FLOOR VENTILATION PLAN - AREA B

1/8" = 1'-0"

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GROUND FLOOR VENTILATION PLAN - AREA B

M2.1B

1/29/2025 4:42:22 PM

GENERAL NOTES:

A. REFER TO SHEET M0.0 FOR MECHANICAL SYMBOLS, ABBREVIATIONS, AND INSTALLATION NOTES.
B. SUPPORT EXPOSED DUCTWORK FROM AIRCRAFT CABLE DIRECTLY ABOVE CENTERLINE OF DUCT RUN. COORDINATE WITH PIPING AND CONDUIT ABOVE.
C. IN ALL AREAS WITHOUT CEILINGS, SUPPLY DUCTWORK TO BE DOUBLE WALL DUCT WITH 1" INSULATION AND PERFORATED INNER LINER. ARCHITECTURALLY EXPOSED DUCTWORK, REFER TO SPECIFICATION 23 31 00 FOR ADDITIONAL REQUIREMENTS.
D. REFER TO DETAIL 2/M6.3 FOR HANGER CONNECTION TO HOLLOWCORE SLAB.
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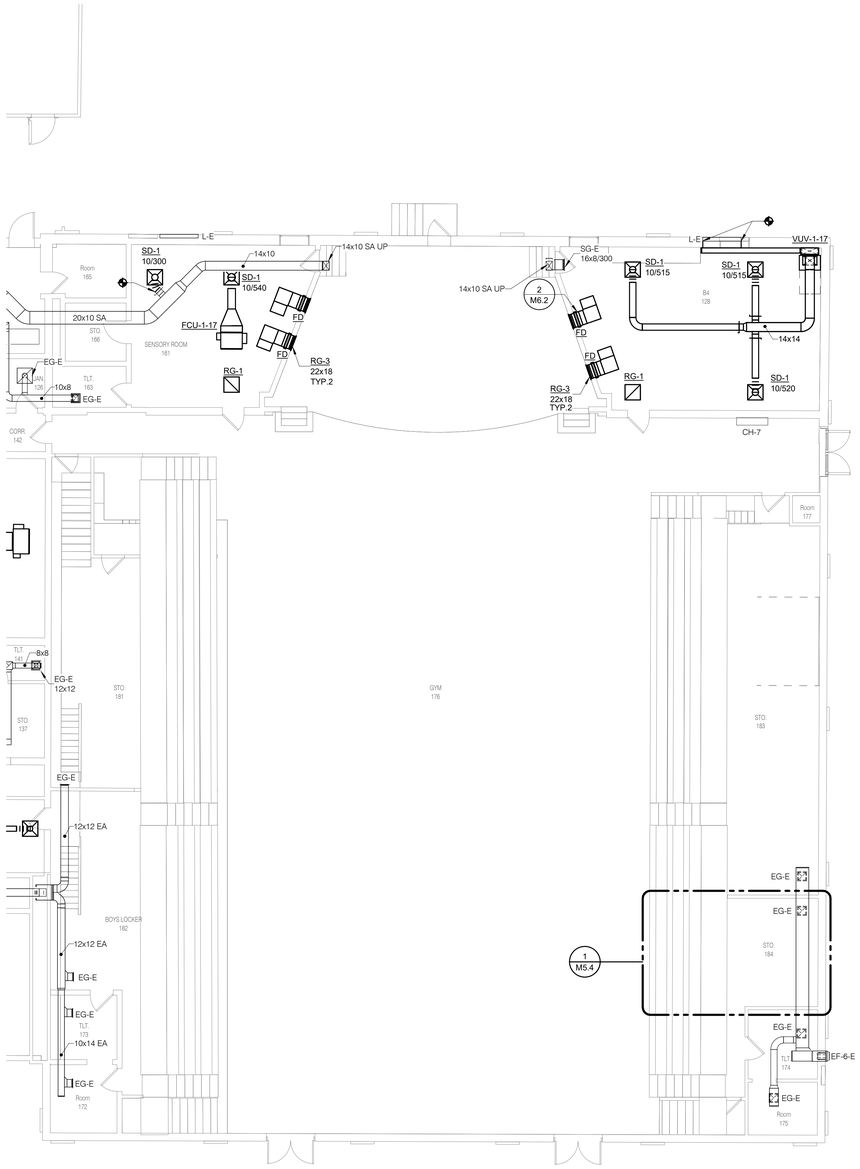
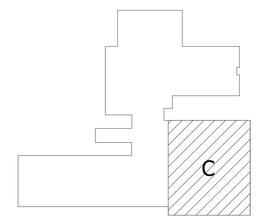


1 GROUND FLOOR VENTILATION PLAN - AREA C

1/8" = 1'-0"



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WILLIAMS ARCHITECTS

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GROUND FLOOR VENTILATION PLAN - AREA C

M2.1C

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GENERAL NOTES:

A. REFER TO SHEET M0.0 FOR MECHANICAL SYMBOLS, ABBREVIATIONS, AND INSTALLATION NOTES.
B. SUPPORT EXPOSED DUCTWORK FROM AIRCRAFT CABLE DIRECTLY ABOVE CENTERLINE OF DUCT RUN. COORDINATE WITH PIPING AND CONDUIT ABOVE.
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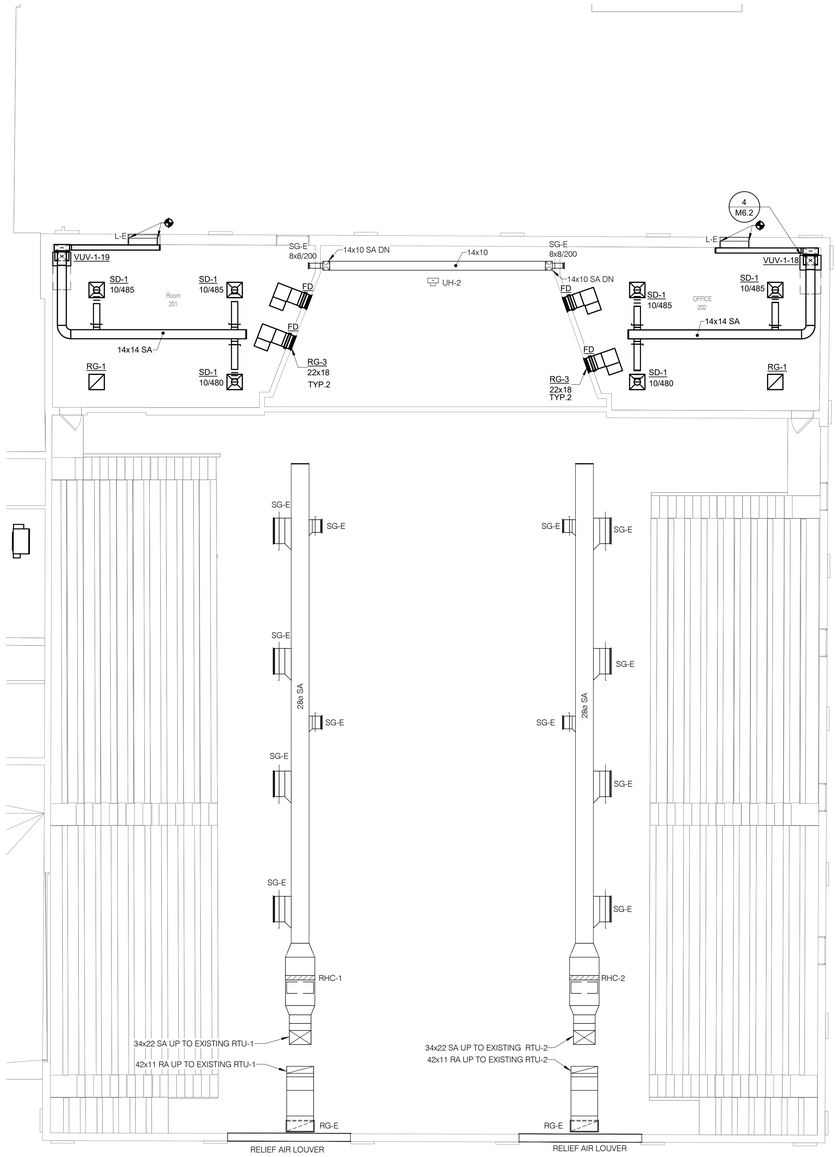
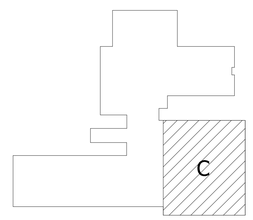


1 UPPER FLOOR VENTILATION PLAN - AREA C

1/8" = 1'-0"



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UPPER FLOOR VENTILATION PLAN - AREA C

M2.2C

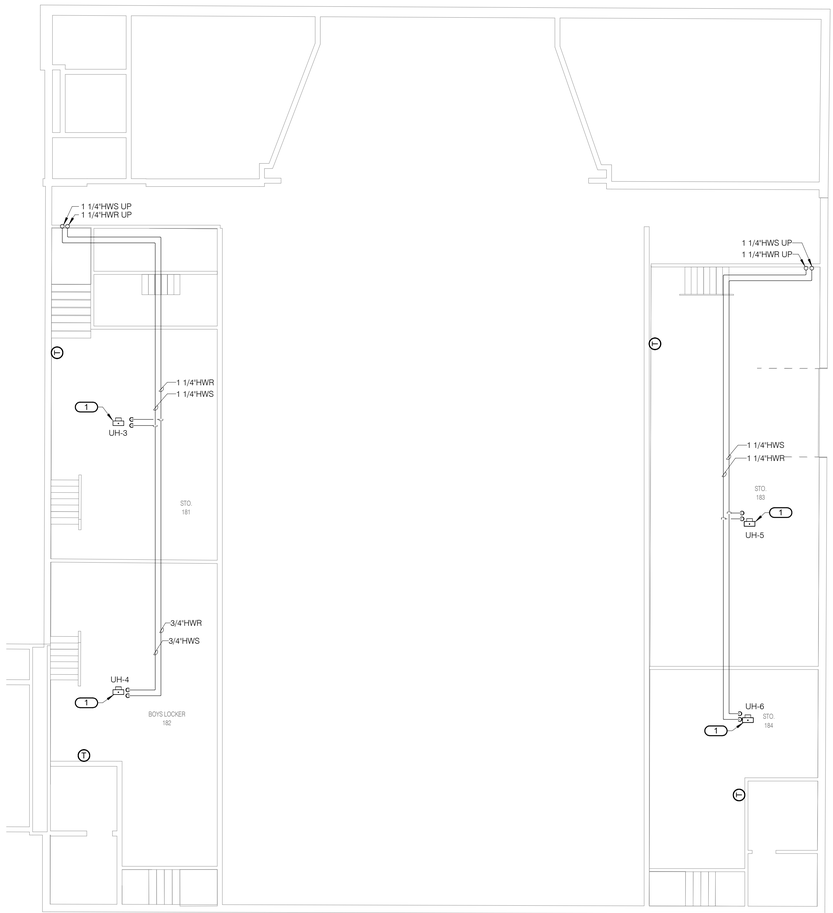
1/29/2025 1:42:24 PM

GENERAL NOTES:

A. REFER TO SHEET M0.0 FOR MECHANICAL SYMBOLS, ABBREVIATIONS, AND INSTALLATION NOTES.

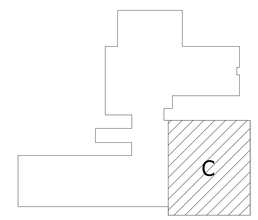
KEYNOTES: (#)

1. UNIT HEATERS TO REMAIN. TCC SHALL CONNECT UNIT HEATERS TO THE NEW BUILDING MANAGEMENT SYSTEM.



1 BASEMENT PIPING PLAN - AREA C

1/8" = 1'-0"



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BASEMENT PIPING PLAN - AREA C

M3.0C

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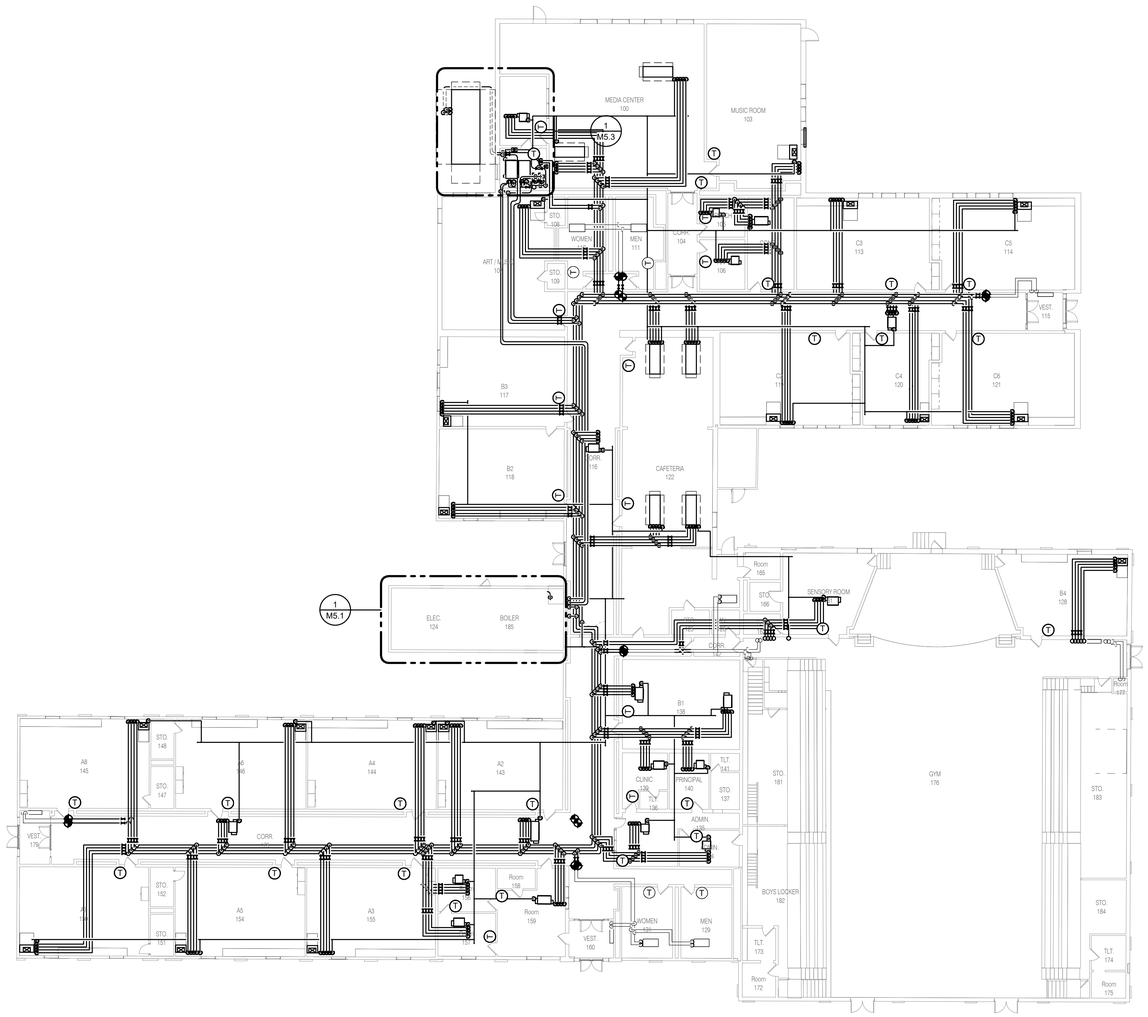
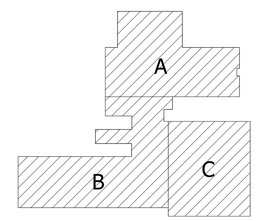
GENERAL NOTES:

A. REFER TO SHEET M0.0 FOR MECHANICAL SYMBOLS, ABBREVIATIONS, AND INSTALLATION NOTES.
B. REFER TO DETAIL 2/M6.3 FOR HANGER CONNECTIONS TO HOLLOWCORE SLAB.
C. REFER TO DETAIL 3/M6.1 FOR PIPE HANGERS AND SUPPORTS.
D. THIS OVERALL PLAN IS FOR REFERENCE ONLY. REFER TO INDIVIDUAL AREA PLANS FOR DETAILED SCOPE.
F. ANY MODIFICATIONS OR DEMOLITION TO SHELVING AND COUNTERTOPS SHALL BE DONE THROUGH THE MECHANCIAL CONTRACTOR.



1 GROUND FLOOR PIPING PLAN - OVERALL

1/16" = 1'-0"



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STATE OF INDIANA
No. PE60910310
PROFESSIONAL ENGINEER
01.31.25

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GROUND FLOOR PIPING PLAN - OVERALL

M3.1

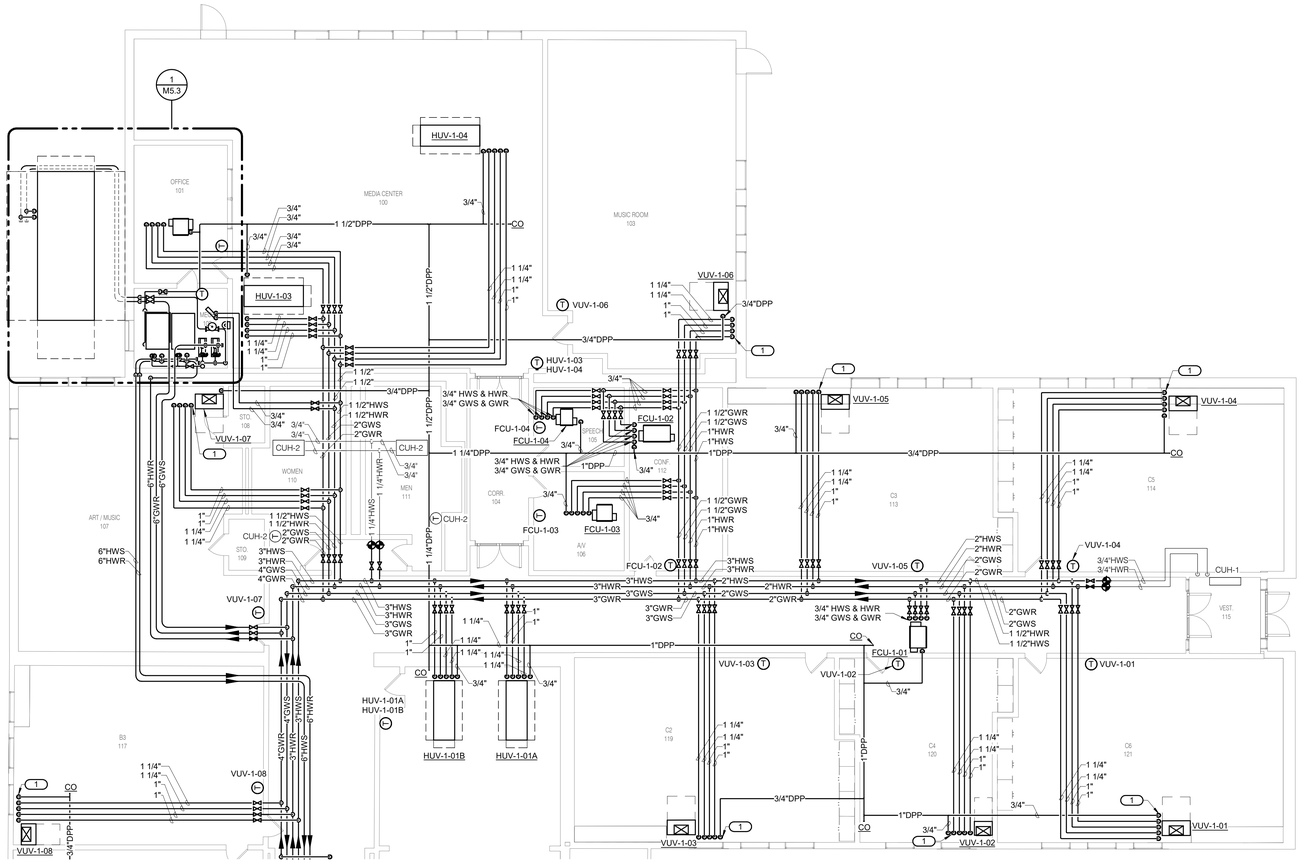
1/29/2025 4:42:33 PM

GENERAL NOTES:

A. REFER TO SHEET M0.0 FOR MECHANICAL SYMBOLS, ABBREVIATIONS, AND INSTALLATION NOTES.
B. REFER TO DETAIL 2/M6.3 FOR HANGER CONNECTIONS TO HOLLOWCORE SLAB.
C. REFER TO DETAIL 3/M6.1 FOR PIPE HANGERS AND SUPPORTS.
D. ANY MODIFICATIONS OR DEMOLITION TO SHELVING AND COUNTERTOPS SHALL BE DONE THROUGH THE MECHANICAL CONTRACTOR.

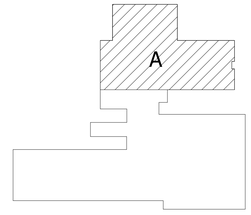
KEYNOTES: (#)

1. ALL PIPING DROPS TO UNIT SHALL BE THROUGH VUV TOP SHROUD.



1 GROUND FLOOR PIPING PLAN - AREA A

1/8" = 1'-0"



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ROACHDALE ELEMENTARY SCHOOL HVAC IMPROVEMENTS - VOL. 2
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305 SOUTH INDIANA STREET
ROACHDALE, IN 46172

WILLIAMS ARCHITECTS

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Date 31 JAN 2025
Issue 100% CON CD
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GROUND FLOOR PIPING PLAN - AREA A

M3.1A

1/29/2025 4:42:38 PM

GENERAL NOTES:

A. REFER TO SHEET M0.0 FOR MECHANICAL SYMBOLS, ABBREVIATIONS, AND INSTALLATION NOTES.
B. REFER TO DETAIL 2/M6.3 FOR HANGER CONNECTIONS TO HOLLOWCORE SLAB.
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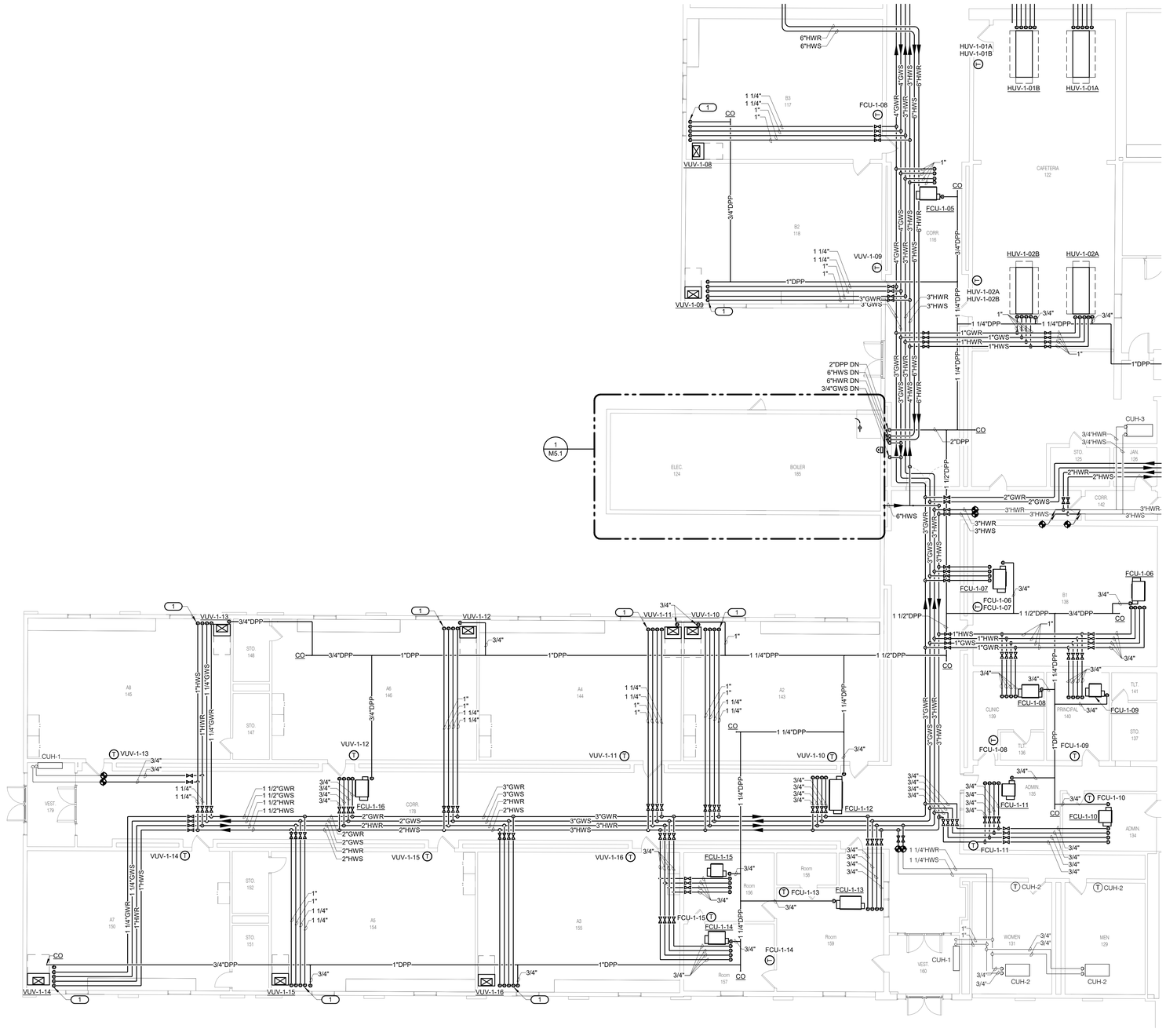
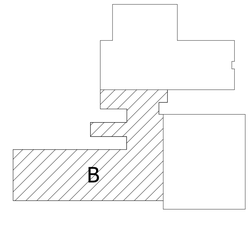
KEYNOTES: (#)

1. ALL PIPING DROPS TO UNIT SHALL BE THROUGH VUV TOP SHROUD.





NORTH

1 GROUND FLOOR PIPING PLAN - AREA B

1/8" = 1'-0"

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PROJECT #240013305.00

STATE OF INDIANA No. PE60910310 REGISTERED PROFESSIONAL ENGINEER
01.31.25

ROACHDALE ELEMENTARY SCHOOL HVAC IMPROVEMENTS - VOL. 2
NORTH PUTNAM COMMUNITY SCHOOLS
305 SOUTH INDIANA STREET
ROACHDALE, IN 46172

WILLIAMS ARCHITECTS

REVISIONS

NO.	DATE	DESCRIPTION

WA No. 2024-006
Date 31 JAN 2025
Issue 100% CON CD
DWR NAK
CHK NHA

GROUND FLOOR PIPING PLAN - AREA B

M3.1B

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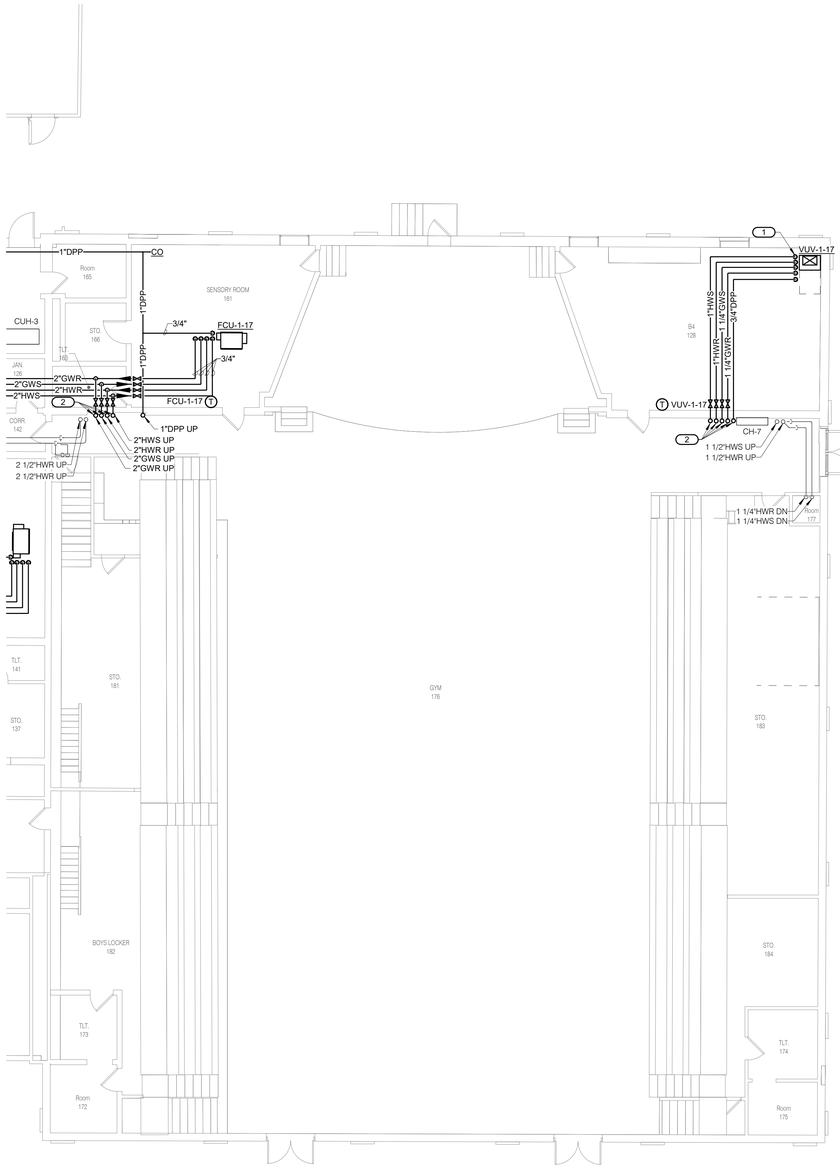
GENERAL NOTES:

A. REFER TO SHEET M0.0 FOR MECHANICAL SYMBOLS, ABBREVIATIONS, AND INSTALLATION NOTES.
B. REFER TO DETAIL 2/M6.3 FOR HANGER CONNECTIONS TO HOLLOWCORE SLAB.
C. REFER TO DETAIL 3/M6.1 FOR PIPE HANGERS AND SUPPORTS.
D. ANY MODIFICATIONS OR DEMOLITION TO SHELVING AND COUNTERTOPS SHALL BE DONE THROUGH THE MECHANICAL CONTRACTOR.

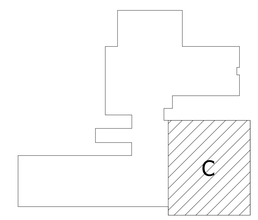
KEYNOTES: (#)

1. ALL PIPING DROPS TO UNIT SHALL BE THROUGH VUV TOP SHROUD.
2. EXPOSED PIPING SHALL BE PAINTED IN THE FIELD TO MATCH OTHER EXISTING EXPOSED PIPING.



1 GROUND FLOOR PIPING PLAN - AREA C

1/8" = 1'-0"



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01.31.25
Nichole N.A. Armstrong

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CHK NHA

GROUND FLOOR PIPING PLAN - AREA C

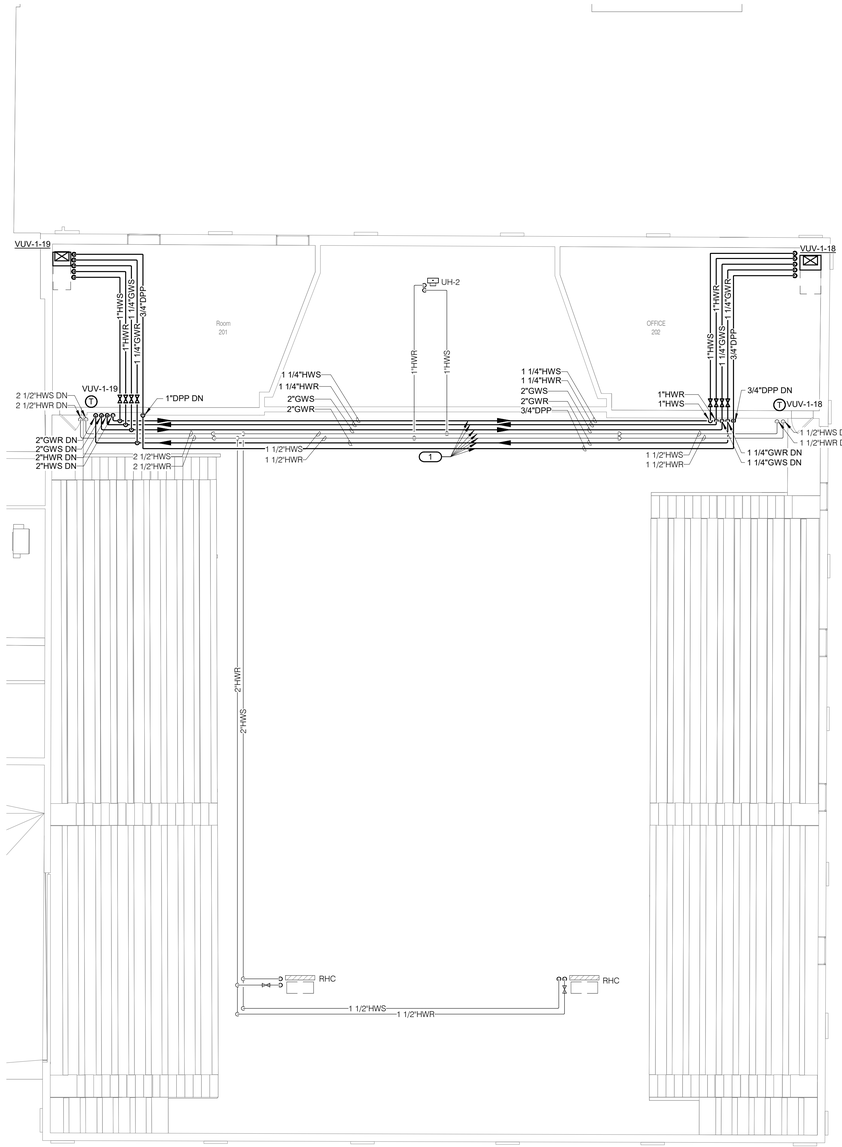
M3.1C

GENERAL NOTES:

A. REFER TO SHEET M0.0 FOR MECHANICAL SYMBOLS, ABBREVIATIONS, AND INSTALLATION NOTES.
B. REFER TO DETAIL 2/M6.3 FOR HANGER CONNECTIONS TO HOLLOWCORE SLAB.
C. REFER TO DETAIL 3/M6.1 FOR PIPE HANGERS AND SUPPORTS.
D. ANY MODIFICATIONS OR DEMOLITION TO SHELVING AND COUNTERTOPS SHALL BE DONE THROUGH THE MECHANICAL CONTRACTOR.

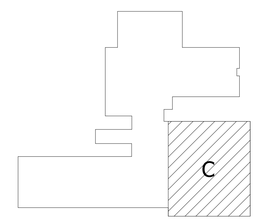
KEYNOTES: (#)

1. GENERAL CONTRACTOR SHALL FIELD PAINT EXPOSED PIPING WHITE.



1 UPPER FLOOR PIPING PLAN - AREA C

1/8" = 1'-0"



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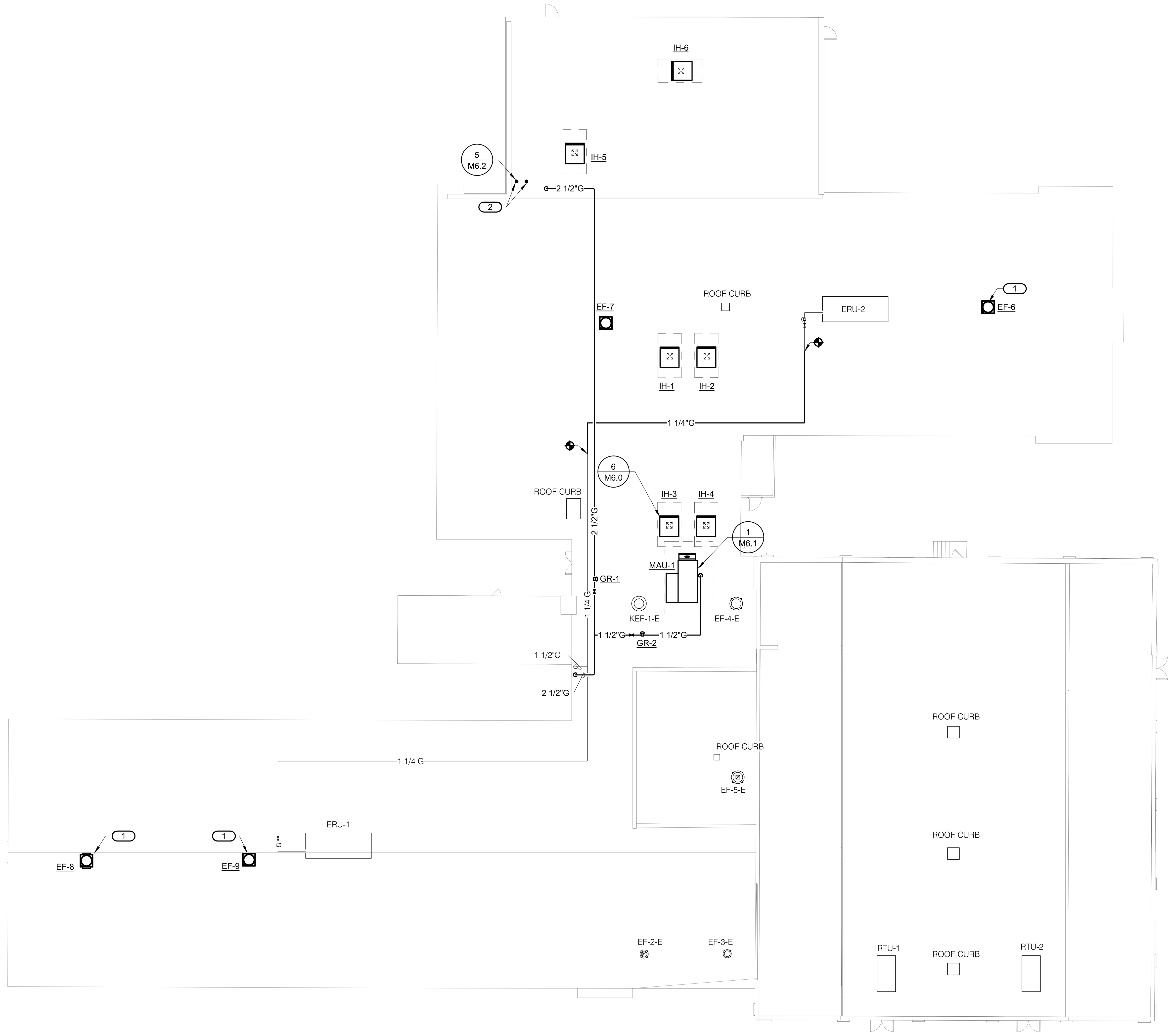
UPPER FLOOR PIPING PLAN - AREA C

M3.2C

1/29/2025 4:42:45 PM



1 ROOF VENTILATION PLAN - OVERALL

1/16" = 1'-0"

NORTH

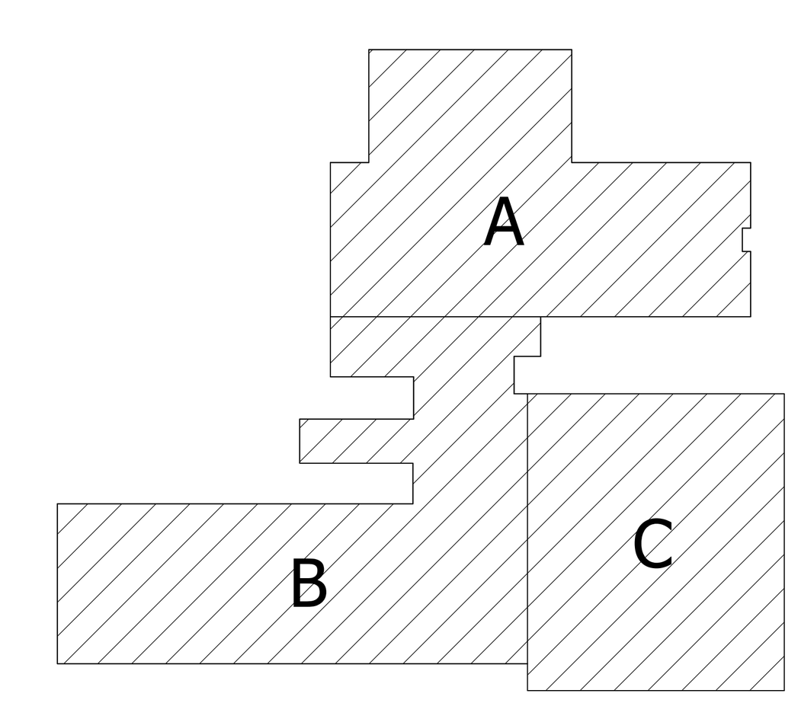
GENERAL NOTES:

A. REFER TO SHEET M0.0 FOR MECHANICAL SYMBOLS, ABBREVIATIONS, AND INSTALLATION NOTES.

KEYNOTES: (#)

1. INSTALL NEW EXHAUST FAN WHERE THE EXISTING ROOF CURB WAS DEMOLISHED. NEW ROOF CURB BY FAN MANUFACTURER.
2. REFER TO THE BOILER MANUFACTURER'S INSTALLATION GUIDE FOR RECOMENDED FLUE TERMINATION CAP.

01.31.25



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WILLIAMS
ARCHITECTS

REVISIONS

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WA No.	2024-006
Date	31 JAN 2025
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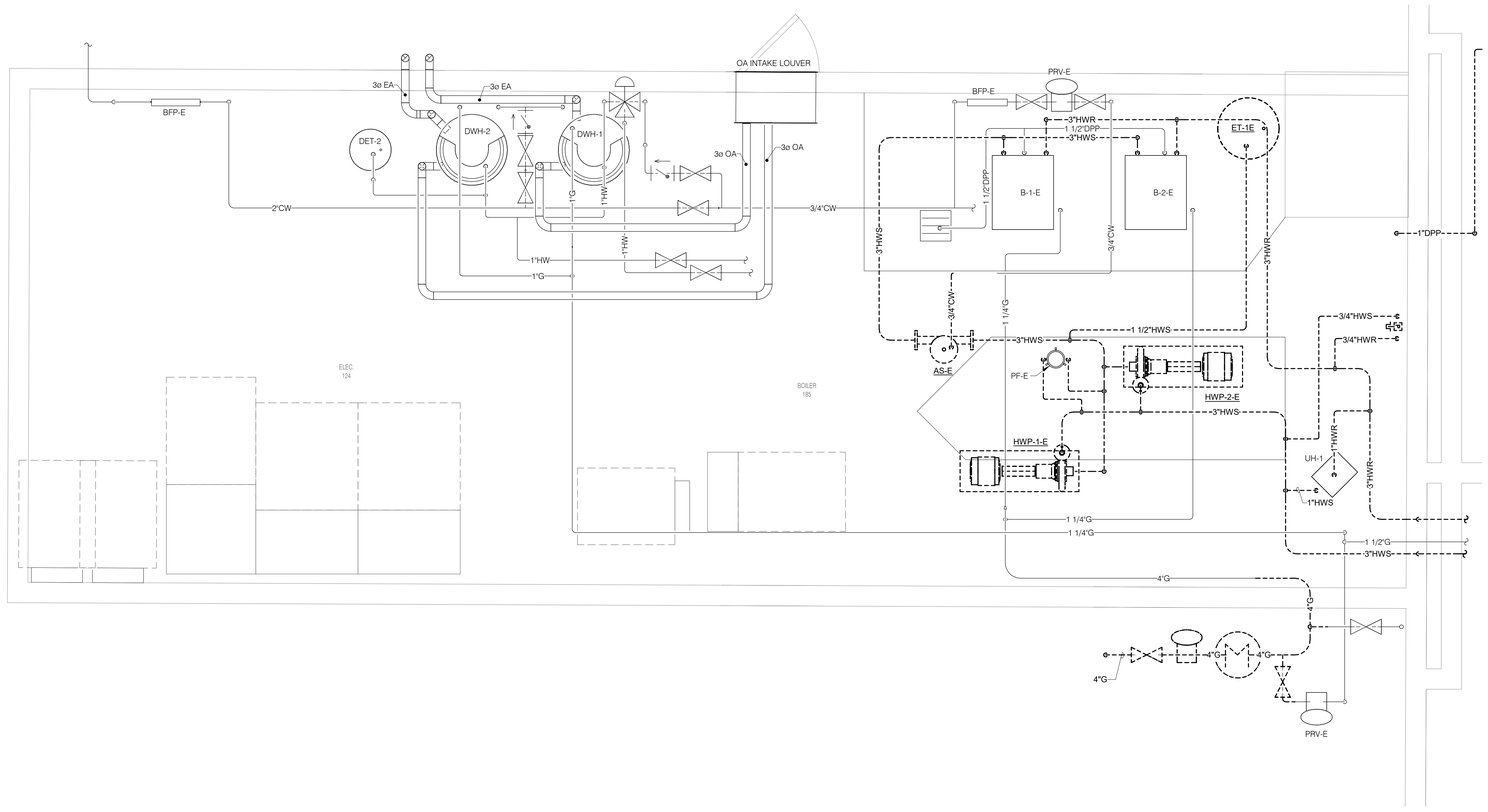
ROOF MECHANICAL PLAN - OVERALL

M4.3

GENERAL NOTES:

A. REFER TO SHEET M0.0 FOR MECHANICAL SYMBOLS, ABBREVIATIONS, AND INSTALLATION NOTES.



1 BOILER 185 & ELEC 124 ROOM DEMOLITION PLAN

1/2" = 1'-0"

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REGISTERED PROFESSIONAL ENGINEER
01.31.25
Nicholas W. Armstrong

ROACHDALE ELEMENTARY SCHOOL HVAC IMPROVEMENTS - VOL. 2
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WILLIAMS ARCHITECTS

REVISIONS

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WA No. 2024-006
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HVAC ENLARGED PLANS

M5.0

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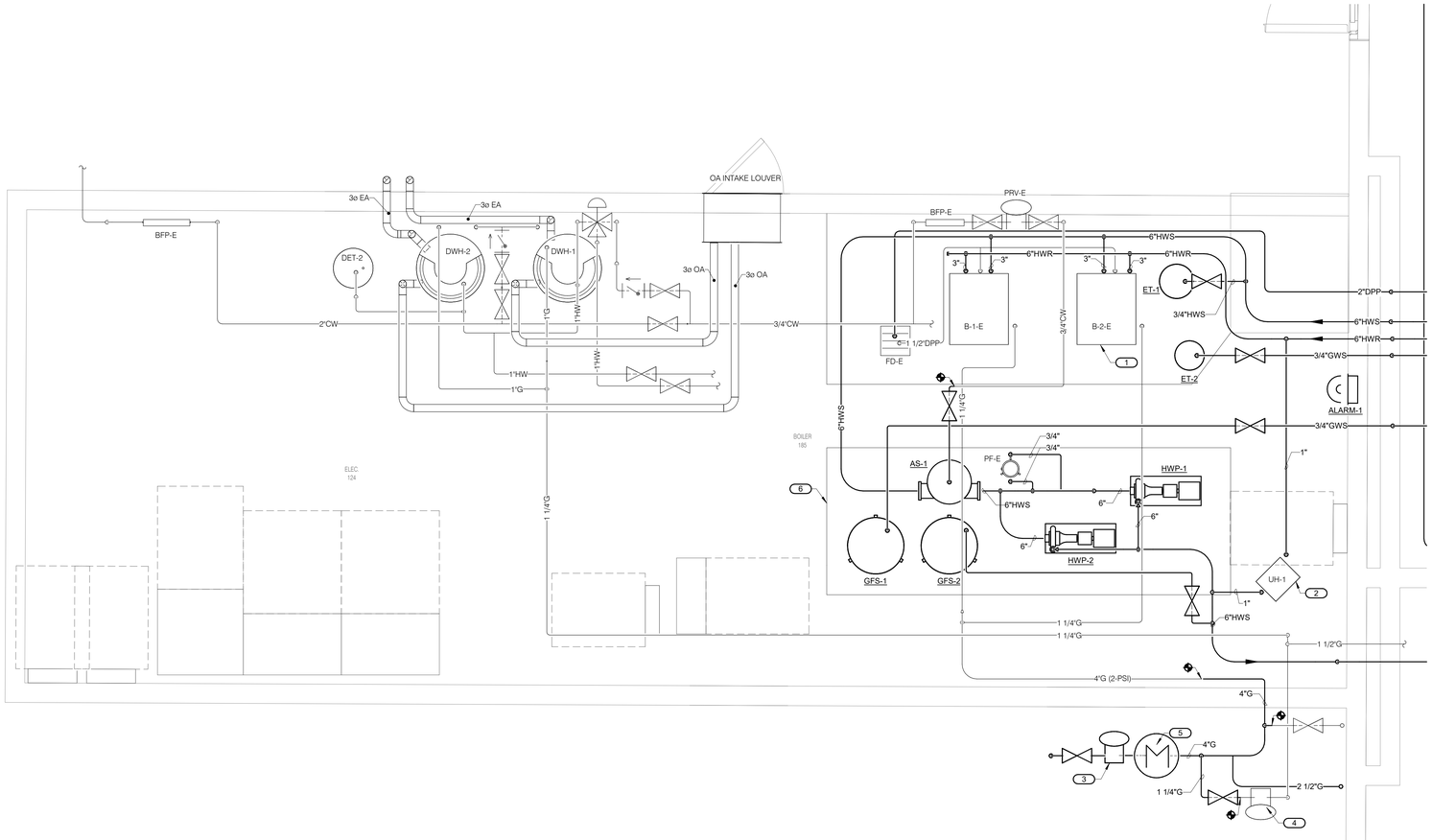
GENERAL NOTES:

A. REFER TO SHEET M0.0 FOR MECHANICAL SYMBOLS, ABBREVIATIONS, AND INSTALLATION NOTES.

KEYNOTES: (#)

1. INTEGRATE EXISTING HOT WATER SYSTEM TO THE NEW BMS. INCLUDES BOILERS, PUMPS, VFDS, ETC.
2. EXISTING UNIT HEATER. CONNECT TO THE NEW BMS.
3. NEW GAS PRESSURE REDUCING/ REGULATING VALVE SHALL BE PROVIDED BY GAS COMPANY. SHALL BE RATED FOR 2 PSI AND 7500 CFH.
4. EXISTING PRESSURE REDUCING/REGULATING VALVE IS RATED AT 8" W.C.
5. NEW GAS METER SHALL BE PROVIDED BY GAS COMPANY.
6. SHALL EXTEND CONCRETE EQUIPMENT PAD AS SHOWN.



1 BOILER 185 & ELEC 124 ROOM PLAN

1/2" = 1'-0"

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PROFESSIONAL ENGINEER
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ROACHDALE ELEMENTARY SCHOOL HVAC IMPROVEMENTS - VOL. 2
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WILLIAMS ARCHITECTS

REVISIONS

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WA No. 2024-006
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HVAC ENLARGED PLANS

M5.1

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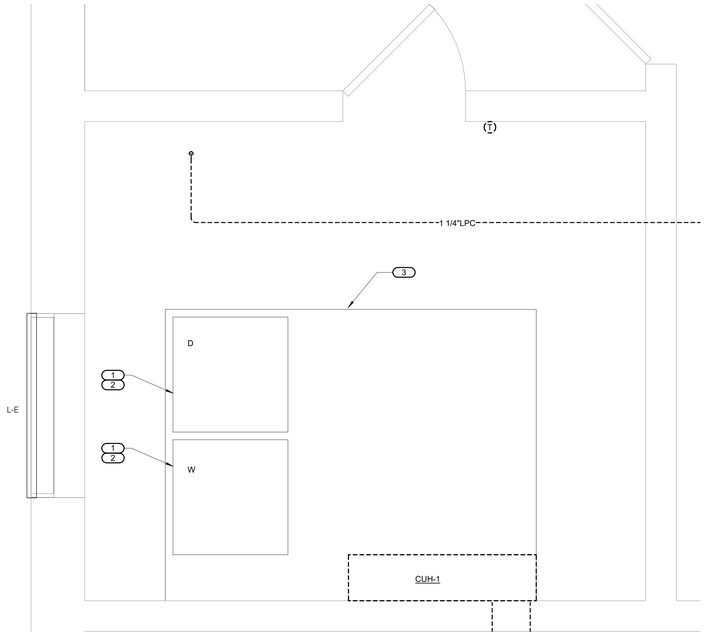
GENERAL NOTES:

A. REFER TO SHEET M0.0 FOR MECHANICAL SYMBOLS, ABBREVIATIONS, AND INSTALLATION NOTES.

KEYNOTES: (#)

1. GENERAL CONTRACTOR SHALL DISCONNECT COLD WATER PIPING, HOT WATER PIPING, AND DRYER EXHAST.
2. REFER TO SHEET M5.4 FOR NEW LOCATION OF WASHER AND DRYER
3. REFER TO SHEET M5.3 FOR MODIFICATIONS TO THE SLAB



NORTH 1 **GROUND FLOOR MECHANICAL 102 ROOM DEMOLITION PLAN**
3/4" = 1'-0"

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HVAC ENLARGED PLANS

M5.2

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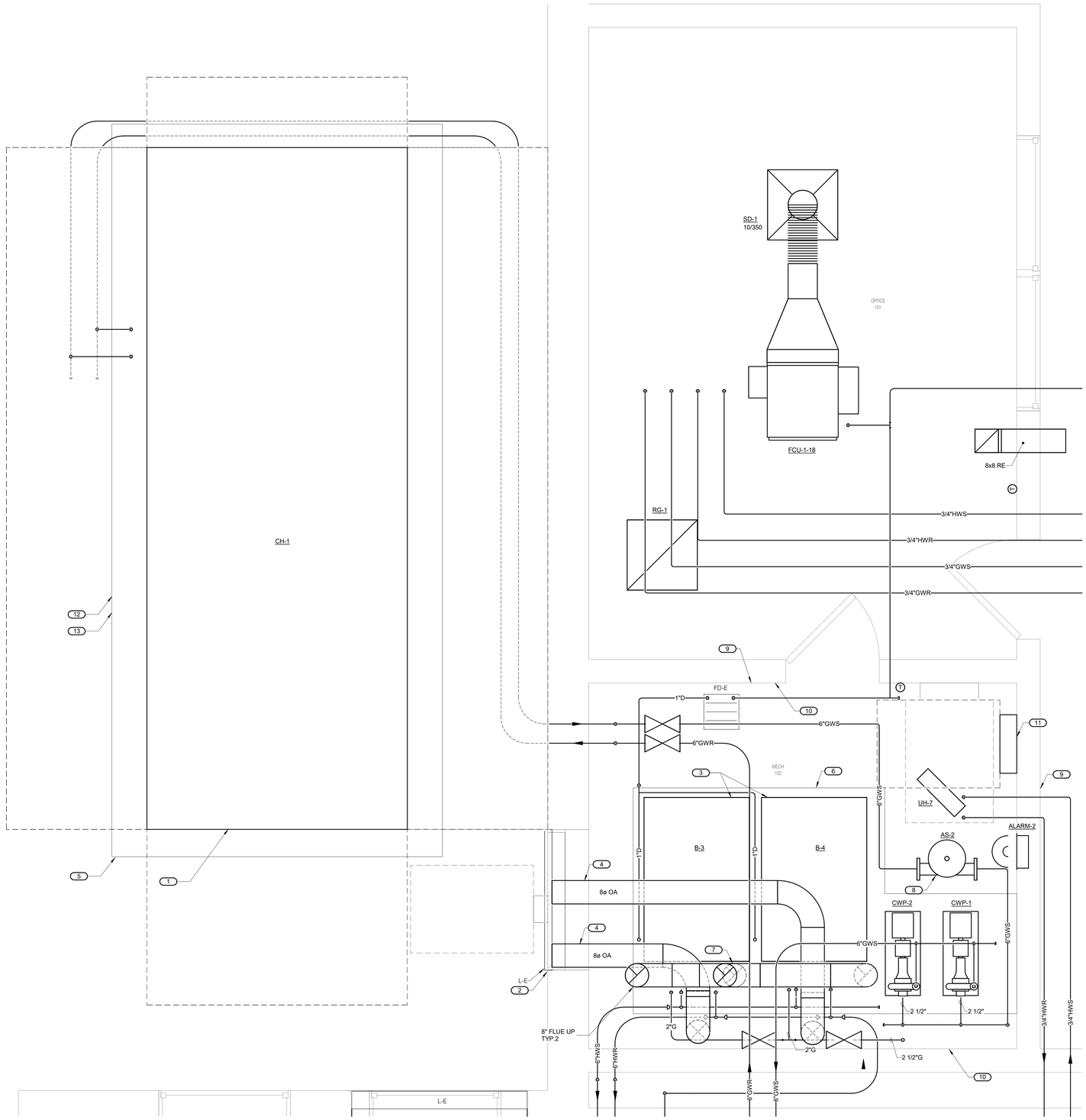
GENERAL NOTES:

A. REFER TO SHEET M0.0 FOR MECHANICAL SYMBOLS, ABBREVIATIONS, AND INSTALLATION NOTES.

KEYNOTES: (#)

1. CONTRACTOR SHALL PLACE THE END OF THE CHILLER WITH DOORS HERE.
2. LOUVER SHALL BE REMOVED WHEN INSTALLING B-3 AND B-4. AFTER INSTALLATION OF BOILERS RE-BLANK OFF AND RE-INSTALL LOUVER.
3. B-3 AND B-4 SHALL BE DELIVERED ON ITS SIDE TO ENABLE THEM TO GO THROUGH LOUVER ENTRANCE.
4. COMBUSTION AIR DUCTS FOR B-3 AND B-4 SHALL ENTER THE BUILDING ABOVE THE EXISTING AIR LOUVER.
5. GENERAL CONTRACTOR SHALL ENLARGE EXISTING PADS AS SHOWN TO ACCOMMODATE NEW CHILLER.
6. GENERAL CONTRACTOR SHALL MODIFY EXISTING PAD AS SHOWN TO ACCOMMODATE NEW BOILERS.
7. EACH 8" FLUE IS SEPERATE FROM ONE ANOTHER.
8. PLUMB UP A 3/4" COLD WATER LINE TO THE TOP OF THE AIR SEPERATOR. USE NEAREST COLD WATER SUPPLY.
9. GENERAL CONTRACTOR SHALL PATCH ANY TRANSFER AIR WAYS OR HOLES IN WALLS.
10. GENERAL CONTRACTOR SHALL MAKE THE MECHANICAL SPACE TO BE FIRE RATED FOR A 2 HOUR ENVELOPE.
11. BUILDING MANAGEMENT SYSTEM PANEL BY TCC.
12. REFER TO CIVIL DRAWINGS FOR PAD DETAIL.
13. REFER TO SPEC SECTION 031000 FOR CONCRETE FORMWORK.



1 GROUND FLOOR MECHANICAL 102 ROOM PLAN

3/4" = 1'-0"

NORTH

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01.31.25
Nicholas N.A. Armstrong

ROACHDALE ELEMENTARY SCHOOL HVAC IMPROVEMENTS - VOL. 2
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WILLIAMS ARCHITECTS

REVISIONS

NO.	DATE	DISCRIPTION

WA No. 2024-006
Date 31 JAN 2025
Issue 100% CON CD
NAK
CHK NHA

HVAC ENLARGED PLANS

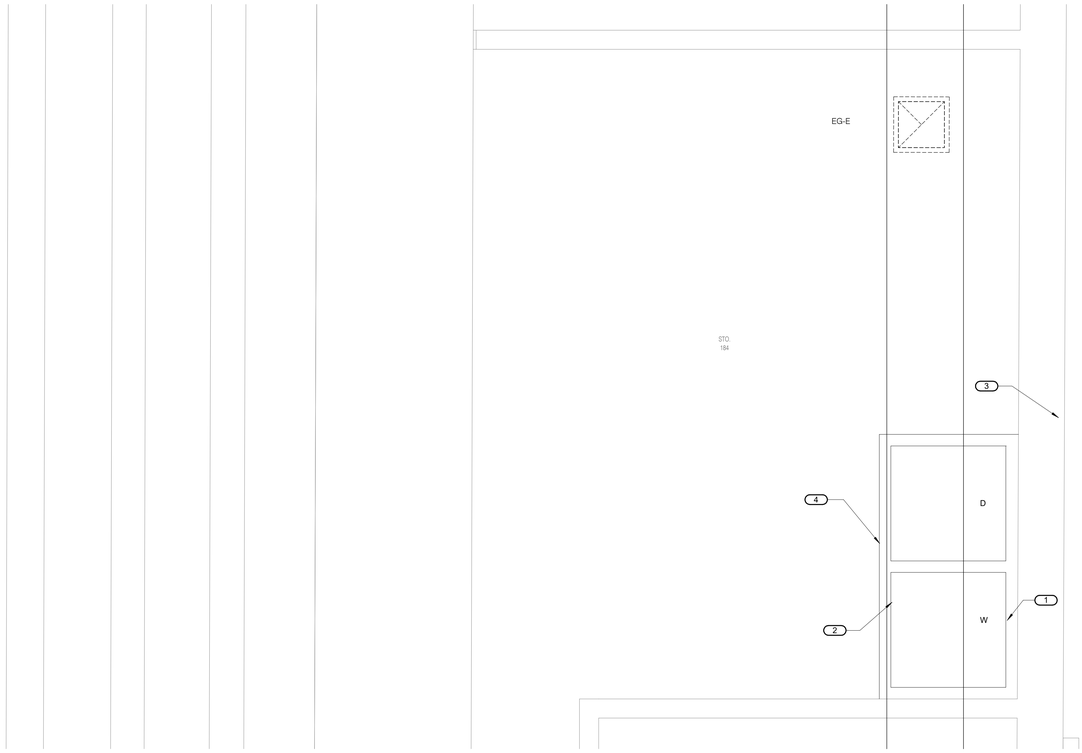
M5.3

GENERAL NOTES:

A. REFER TO SHEET M0.0 FOR MECHANICAL SYMBOLS, ABBREVIATIONS, AND INSTALLATION NOTES.

KEYNOTES: (#)

1. GENERAL CONTRACTOR SHALL PLUMB 3/4" COLD WATER AND 3/4" HOT WATER LINES TO WASHER FROM NEAREST WATER SUPPLY.
2. GENERAL CONTRACTOR SHALL INSTALL FLOOR SINK TO PROVIDE DRAINAGE FOR THE NEW WASHER LOCATION.
3. GENERAL CONTRACTOR SHALL INSTALL DRYER EXHAUST ON THIS EXTERIOR WALL.
4. GENERAL CONTRACTOR SHALL CONSTRUCT AN EQUIPMENT PAD FOR WASHER AND DRYER.



NORTH 1 **GROUND FLOOR 184 STORAGE PLAN**
3/4" = 1'-0"

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WILLIAMS ARCHITECTS

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HVAC ENLARGED PLANS

M5.4

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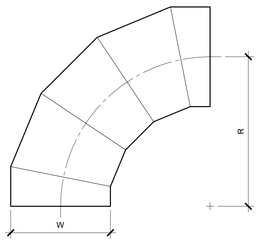
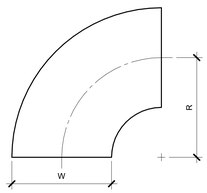
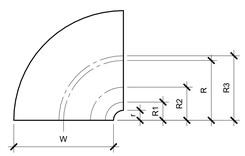


OVAL / ROUND
RADIUS ELBOW
SMOOTH OR 5 GORE (MINIMUM)
R/W = 1.5 (MINIMUM)

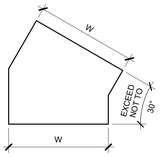


RECTANGULAR
RADIUS ELBOW
TYPE RE1
R/W = 1.0 (MINIMUM)
R/W < 1.0 SHALL BE TYPE RE3



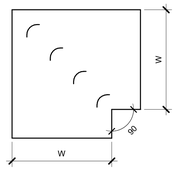
RECTANGULAR
RADIUS ELBOW WITH VANES
TYPE RE3

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.

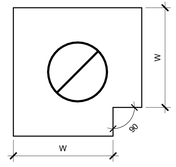


RECTANGULAR
MITERED ELBOW
TYPE RE6

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.

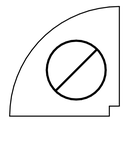


RECTANGULAR
MITERED ELBOW
WITH VANES
TYPE RE2



RECTANGULAR / OVAL / ROUND
MITERED ELBOW
WITHOUT VANES
TYPE RE4

NOT ALLOWED



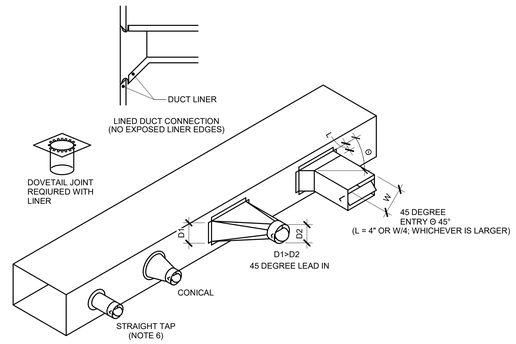
RECTANGULAR
RADIUS ELBOW WITH
SQUARE THROAT

NOT ALLOWED

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.

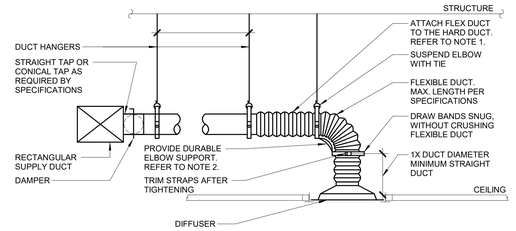
1 DUCT - ELBOW CONSTRUCTION
NO SCALE



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)

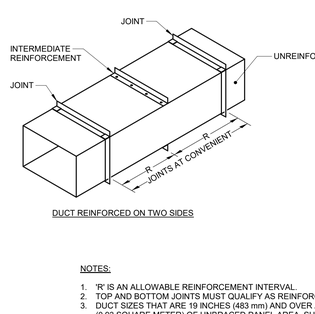
2 DUCT - BRANCH CONNECTIONS
NO SCALE



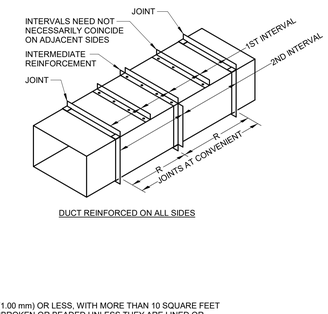
NOTES:

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.

3 DIFFUSER CONNECTION DETAIL
NO SCALE



DUCT REINFORCED ON TWO SIDES

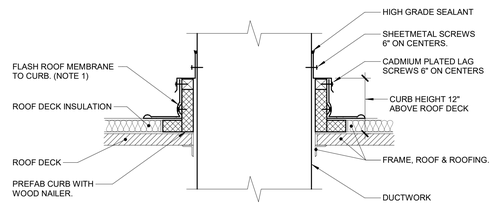


DUCT REINFORCED ON ALL SIDES

NOTES:

1. 'R' IS AN ALLOWABLE REINFORCEMENT INTERVAL.
2. TOP AND BOTTOM JOINTS MUST QUALIFY AS REINFORCEMENT
3. DUCT SIZES THAT ARE 19 INCHES (483 mm) AND OVER ARE 20 GAGE (1.00 mm) OR LESS, WITH MORE THAN 10 SQUARE FEET (0.93 SQUARE METER) OF UNBRACED PANEL AREA, SHALL BE CROSSBROKEN OR BEADED UNLESS THEY ARE LINED OR EXTERNALLY INSULATED. DUCTS THAT ARE OF HEAVIER GAGE, SMALLER DIMENSIONS, AND SMALLER PANEL AREA AND THOSE THAT ARE LINED OR EXTERNALLY INSULATED ARE NOT REQUIRED TO HAVE CROSSBREAKING OR BEADING.
4. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

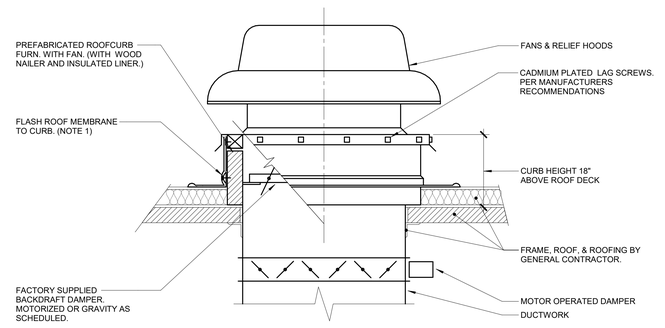
4 DUCT - TRANSVERSE REINFORCEMENT
NO SCALE



NOTES:

1. ALL ROOF FLASHING SHALL BE PER ROOF MANUFACTURER'S RECOMMENDATIONS.

5 ROOF PENETRATION - STEEL DUCT RECTANGULAR
NO SCALE



NOTES:

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

6 ROOF FAN/HOOD CURB
NO SCALE

1/29/2025 4:42:54 PM

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STATE OF INDIANA
No. PE60910310
PROFESSIONAL ENGINEER
01.31.25
Nicholas N.A. Armstrong

ROACHDALE ELEMENTARY SCHOOL HVAC IMPROVEMENTS - VOL. 2
NORTH PUTNAM COMMUNITY SCHOOLS
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ROACHDALE, IN 46172

WILLIAMS ARCHITECTS

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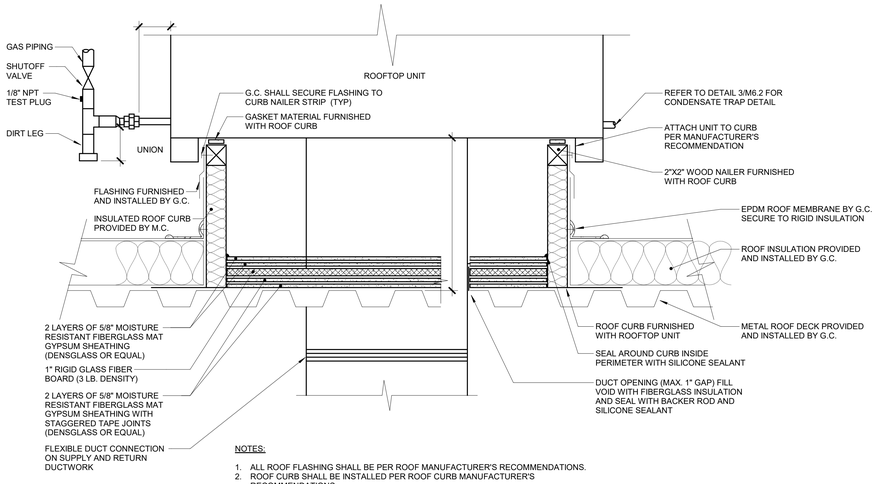
HVAC DETAILS

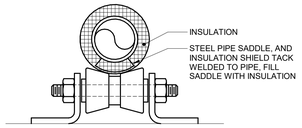
M6.0



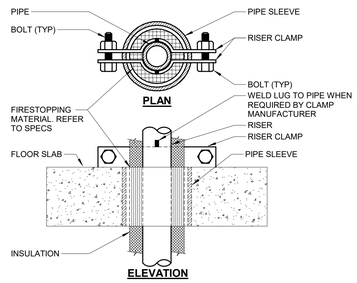
NOTES:

1. ALL ROOF FLASHING SHALL BE PER ROOF MANUFACTURER'S RECOMMENDATIONS.
2. ROOF CURB SHALL BE INSTALLED PER ROOF CURB MANUFACTURER'S RECOMMENDATIONS.
3. PROVIDE EXTENDED CURB AS REQUIRED TO MAINTAIN 12" CLEARANCE ABOVE INSULATION.
4. PROVIDE PHOTOGRAPHIC EVIDENCE OF SHEATHING AND FIBERGLASS INSIDE CURB TO ENGINEER PRIOR TO INSTALLATION OF RTU.

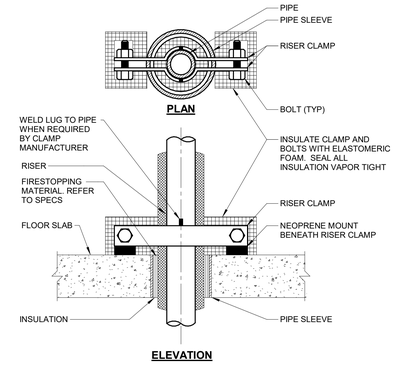
1 MAKE UP AIR UNIT CURB
NO SCALE



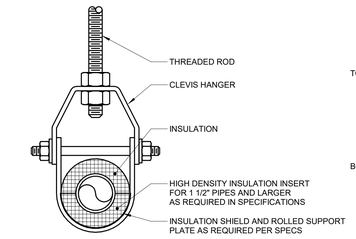
INSULATED HOT PIPE 4" AND LARGER



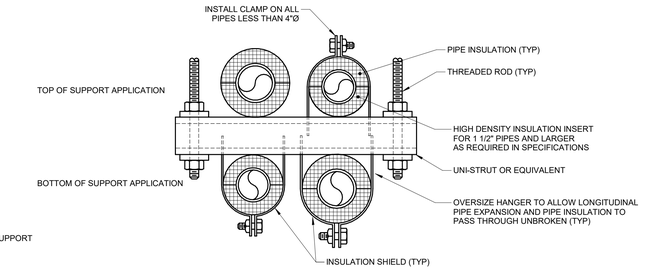
INSULATED HOT PIPE RISER SUPPORT



INSULATED COLD PIPE RISER SUPPORT



INSULATED COLD PIPE HANGER

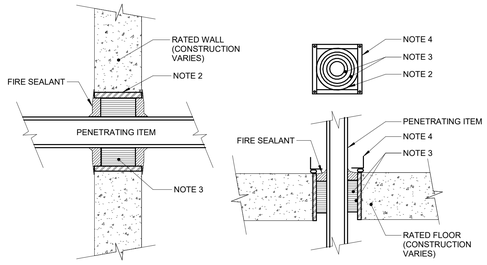


TRAPEZE HANGER

NOTES:

1. REFER TO SPECIFICATIONS FOR MORE INFORMATION.

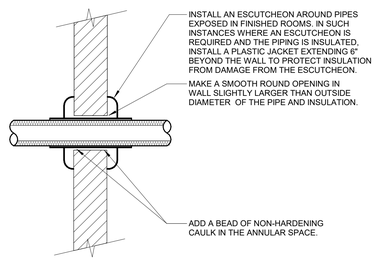
2 PIPE - HANGERS AND SUPPORTS
NO SCALE



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 21 05 29 - FIRE PROTECTION 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.

3 FLOOR/WALL PENETRATION - RATED FIRE BARRIER
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. SEE SPECIFICATION SECTIONS 23 05 29 - HVAC FOR ADDITIONAL INFORMATION.
3. FLOOR OPENINGS ARE SIMILAR, SEE SPECIFICATION SECTION 23 05 29 - HVAC FOR DIFFERENCES BETWEEN FLOOR AND WALL PENETRATIONS.

4 WALL PENETRATION - NON-FIRE RATED
NO SCALE

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SUITE 210
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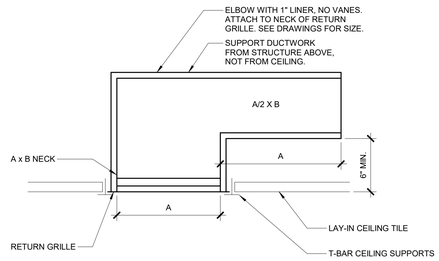
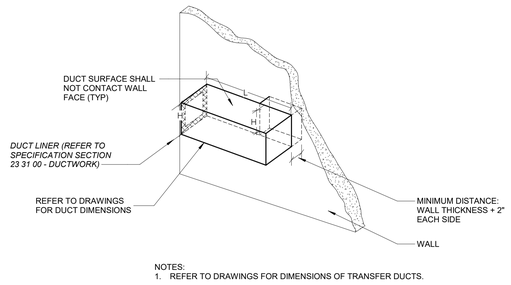
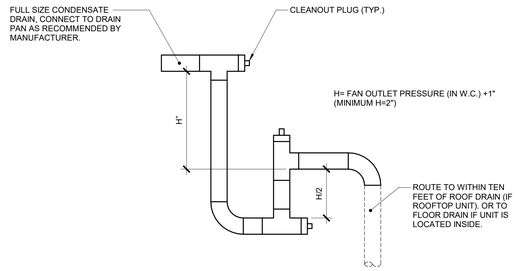


1 AIR TERMINAL - CEILING RETURN SOUND BOOT
NO SCALE

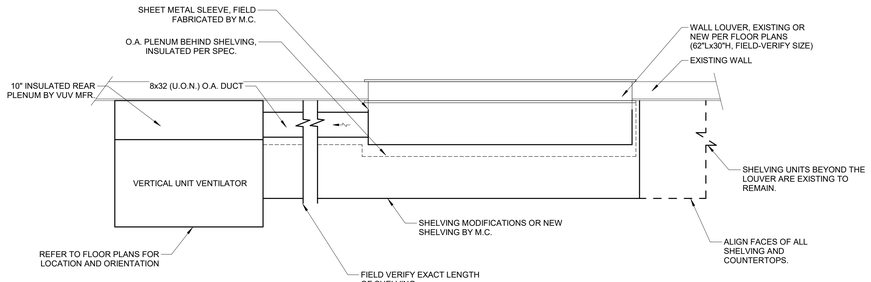


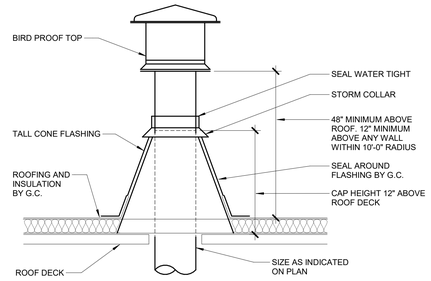
NOTES:
1. REFER TO DRAWINGS FOR DIMENSIONS OF TRANSFER DUCTS.

2 TRANSFER DUCT DETAIL (HORIZONTAL ELBOWS)
NO SCALE

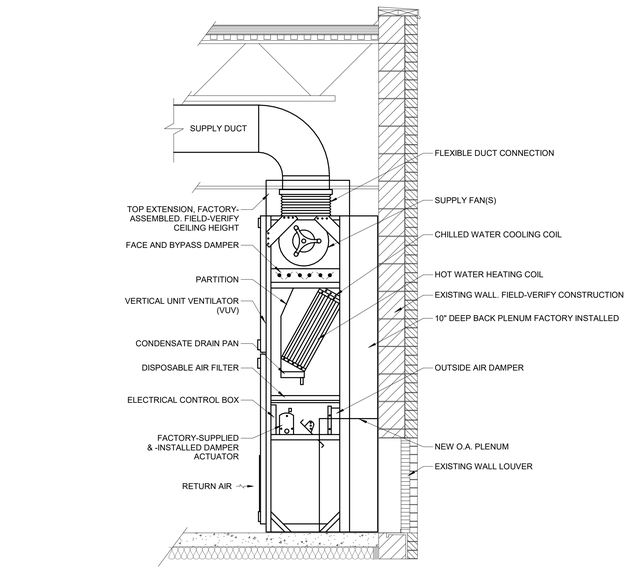


3 CONDENSATE TRAP - DRAW THROUGH COIL
NO SCALE

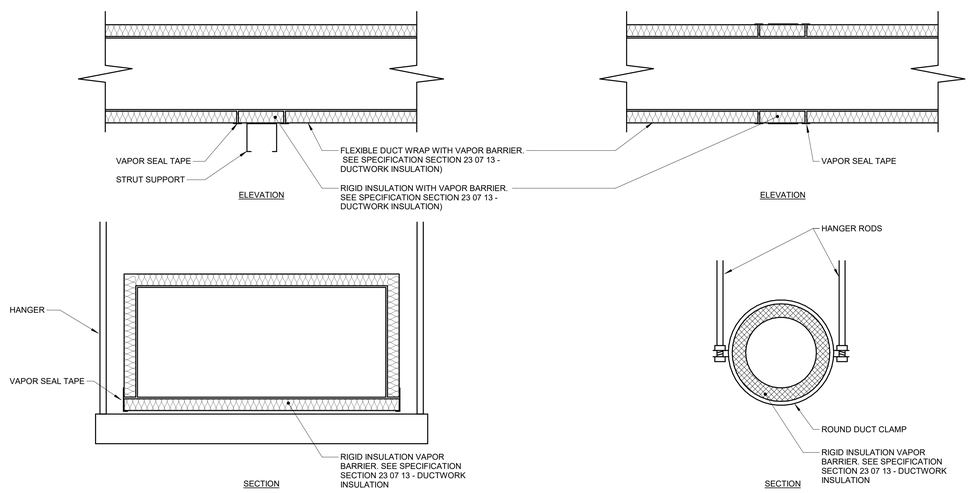




5 FLUE - THROUGH ROOF
NO SCALE



4 VERTICAL UNIT VENTILATOR DETAIL (OA LOUVER)
NO SCALE



NOTES:

1. DETAIL FOR USE WHERE DUCTS REQUIRE TRAPEZE OR DOUBLE ROD HANGERS (36" DIA. OR EQUIVALENT)

6 DUCT - HANGERS WRAPPED
NO SCALE

REF. SCALE IN INCHES 0 1 2 3

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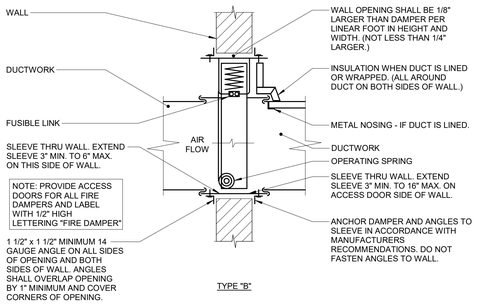
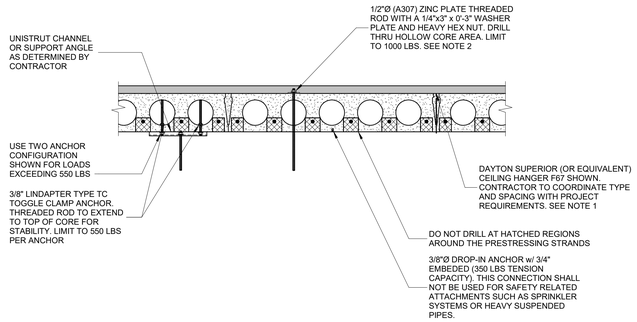


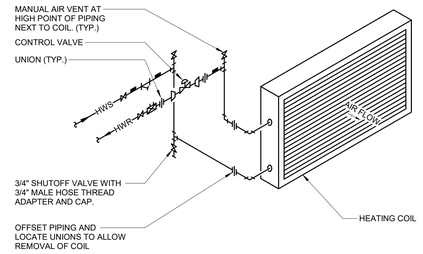
1 FIRE DAMPER - DYNAMIC WALL CURTAIN TYPE B
NO SCALE



NOTES:

1. THESE HANGERS REQUIRE A MIN 2" SITE-CAST CONCRETE TOPPING SLAB TO BE IN PLACE AND CURED BEFORE APPLICATION OF LOAD.
2. LOADS IN EXCESS OF 1000 LB WILL REQUIRE THE ENGINEER TO SIZE A PLATE THAT IS WIDE ENOUGH TO SPAN BETWEEN THE SOLID ELEMENTS OF THE HOLLOWCORE SLAB.

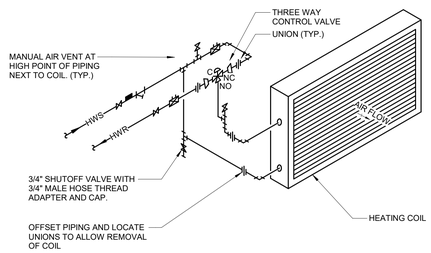
2 HANGER CONNECTIONS TO HOLLOWCORE SLAB
NO SCALE



NOTES:

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

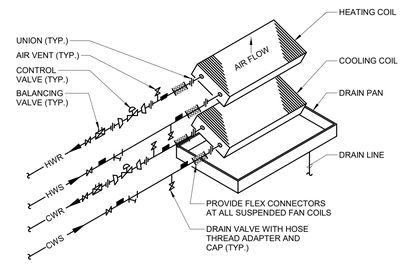
3 COIL - HOT WATER PIPING DIAGRAM W/2-WAY VALVE
NO SCALE



NOTES:

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

4 COIL - HOT WATER PIPING DIAGRAM W/3-WAY VALVE
NO SCALE



5 FAN COIL UNIT - 4-PIPE PIPING DIAGRAM
NO SCALE

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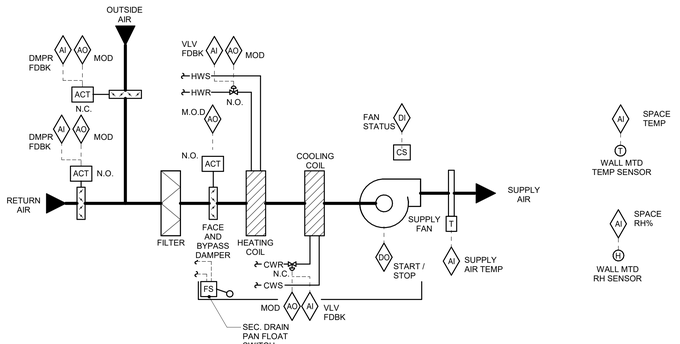


SUPPLY FAN CONTROL:
- UNIT VENTILATOR OPERATION SHALL BE SCHEDULED AT THE FMCS OPERATOR WORKSTATION.
- WHEN THE UNIT VENTILATOR IS INDEXED TO RUN THE FOLLOWING SHALL OCCUR:
- THE SUPPLY FAN SHALL BE ENABLED TO RUN.
- THE SUPPLY FAN SHALL RUN CONTINUOUSLY DURING OCCUPIED TIMES.

SPACE TEMPERATURE CONTROL:
- IN COOLING MODE, WHENEVER THE OUTSIDE AIR TEMPERATURE IS BELOW 70°F (ADJ.) AND THE ROOM AIR TEMPERATURE IS 2°F (ADJ.) ABOVE THE SETPOINT, THE COOLING COIL CONTROL VALVE SHALL MODULATE OPEN TO MAINTAIN SPACE TEMPERATURE SETPOINT AND THE BYPASS DAMPER SHALL BE OPEN TO THE COIL.
- IN COOLING MODE, WHENEVER THE OUTSIDE AIR TEMPERATURE IS ABOVE 70°F (ADJ.) AND THE ROOM AIR TEMPERATURE IS 2°F (ADJ.) ABOVE THE SETPOINT, THE COOLING COIL CONTROL VALVE SHALL BE FULLY OPEN AND THE BYPASS DAMPER SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE SETPOINT.
- WHEN IN ECONOMIZER MODE, FMCS SHALL NOT MODULATE CONTROL VALVE OR BYPASS DAMPER UNLESS O.A. DAMPER IS 100% (ADJ.) OPEN.
- IN HEATING MODE, WHENEVER THE OUTSIDE AIR TEMPERATURE IS ABOVE 40F (ADJ.) AND THE ROOM AIR TEMPERATURE IS 3°F (ADJ.) BELOW THE SETPOINT, THE HEATING WATER CONTROL VALVE SHALL MODULATE OPEN TO MAINTAIN SPACE TEMPERATURE SETPOINT AND THE BYPASS DAMPER SHALL BE OPEN TO THE COIL.
- IN HEATING MODE, WHENEVER THE OUTSIDE AIR TEMPERATURE IS BELOW 40°F (ADJ.) AND THE ROOM AIR TEMPERATURE IS 3°F (ADJ.) BELOW THE SETPOINT, THE HEATING WATER CONTROL VALVE SHALL BE FULLY OPEN AND THE BYPASS DAMPER SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE SETPOINT.

DEHUMIDIFICATION CONTROL:
- HUMIDITY SENSOR WITHIN SPACE SHALL OVERRIDE HEATING COIL CONTROL VALVE INCREMENTALLY OPEN AT (5%) STEPS COMPARED TO NORMAL SPACE TEMPERATURE CONTROL IF THE SPACE HUMIDITY SENSOR EXCEEDS 60% RH (ADJ.)
- IF SPACE HUMIDITY SENSOR IS BELOW 55% RH (ADJ.), DEHUMIDIFICATION SEQUENCE SHALL BE DISABLED.

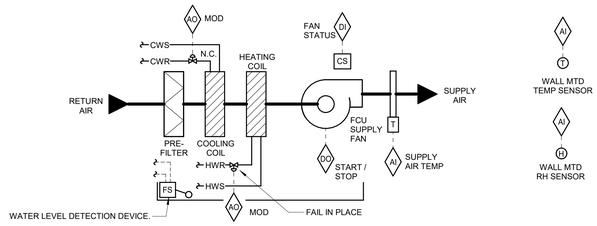
ECONOMIZER CONTROL:
- WHEN THE O.A. TEMPERATURE IS LESS THAN THE ROOM AIR TEMPERATURE THE FMCS SHALL ENABLE ECONOMIZER CONTROLS FOR COOLING.
- WHEN O.A. TEMPERATURE IS GREATER THAN THE ROOM AIR TEMPERATURE THE FMCS SHALL DISABLE ECONOMIZER CONTROLS AND SHALL RETURN THE UNIT TO MINIMUM O.A. MODE.
- ONCE ECONOMIZER CONTROLS HAVE BEEN ENABLED OR DISABLED FROM OPERATION, 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 OUTSIDE AIR DAMPERS AS REQUIRED TO MAINTAIN ROOM AIR TEMPERATURE SETPOINT.

NIGHT SETBACK CONTROL:
- NIGHT SETBACK SHALL BE INITIATED VIA THE FMCS BASED ON THE OWNER REQUESTED TIME SCHEDULE:
- AT THE START OF OCCUPIED MODE, THE FMCS SHALL ESTABLISH THE ROOM TEMPERATURE SETPOINT IN ACCORDANCE WITH THE SEQUENCE OF OPERATION.
- AT THE START OF UNOCCUPIED MODE, THE FMCS SHALL ESTABLISH THE ROOM TEMPERATURE SETPOINTS OF:
  COOLING SETPOINT = 80°F (ADJ.)
  HEATING SETPOINT = 60°F (ADJ.)
- DURING NIGHT SETBACK THE UNIT VENTILATOR CAN BE PLACED INTO OCCUPIED MODE VIA THE OVERRIDE SWITCH ON THE ROOM TEMPERATURE SENSOR. WHEN THE OVERRIDE SWITCH IS ENABLED IT SHALL CONTROL THE UNIT IN OCCUPIED MODE SETTING FOR A PERIOD OF 2 HOURS (ADJ.) AT WHICH TIME THE UNIT SHALL REVERT BACK TO NIGHT SETBACK MODE.

ALARMS, INTERLOCKS & SAFETIES:
- A FLOAT SWITCH MOUNTED IN THE DRAIN PAN BELOW EACH UNIT VENT SHALL CLOSE THE CHILLED WATER VALVE AND PREVENT SUPPLY FAN OPERATION UPON DETECTION OF WATER AND SHALL INDICATE AN ALARM TO THE OPERATOR WORKSTATION.
- FMCS SHALL INDICATE AN ALARM TO THE FMCS OPERATOR WORKSTATION IF THE FMCS COMMANDS THE SUPPLY FAN TO OPERATE AND THE FAN CURRENT RELAY DETECTS INSUFFICIENT CURRENT FLOW.

UNIT SHUTDOWN:
- WHENEVER THE UNIT VENTILATOR IS SHUTDOWN THE FOLLOWING SHALL OCCUR:
- THE OUTSIDE AIR DAMPER SHALL CLOSE.
- THE RETURN AIR DAMPER SHALL OPEN.
- THE FACE AND BYPASS DAMPER SHALL CLOSE TO THE COIL.
- THE HEATING WATER CONTROL VALVE SHALL CLOSE.
- THE CHILLED WATER CONTROL VALVE SHALL CLOSE.
- THE SUPPLY FAN SHALL STOP.

1 VERTICAL UNIT VENTILATOR CONTROL
NO SCALE



SEQUENCE OF OPERATION:
SUPPLY FAN OPERATION SHALL BE CONTROLLED BY THE FMCS THROUGH A CONTACTOR. THE UNIT SHALL MAINTAIN A ROOM AIR TEMPERATURE SETPOINT.

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.

HUMIDITY SENSOR WITHIN SPACE SHALL OVERRIDE HEATING COIL CONTROL VALVE INCREMENTALLY OPEN AT (5%) STEPS COMPARED TO NORMAL SPACE TEMPERATURE CONTROL IF THE SPACE HUMIDITY SENSOR EXCEEDS 60% RH (ADJ.). IF SPACE HUMIDITY SENSOR IS BELOW 55% RH (ADJ.) DEHUMIDIFICATION SEQUENCE SHALL BE DISABLED.

IF ROOM AIR TEMPERATURE IS MAINTAINED AND BOTH THE HEATING AND COOLING COIL VALVES ARE CLOSED, THE SUPPLY FAN SHALL BE DE-ENERGIZED. IF EITHER OF THE COIL CONTROL VALVES OPEN, THE SUPPLY FAN SHALL BE ENERGIZED.

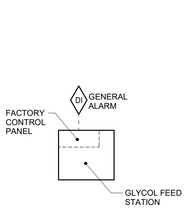
ALARMS, INTERLOCKS & SAFETIES:
WHEN THE FIRE ALARM CONTROL PANEL INDICATES AN ALARM CONDITION, FCU SHALL SHUTDOWN.

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 CLOSE.
- SUPPLY FAN SHALL BE DE-ENERGIZED.

2 FAN COIL UNIT CONTROL WITH DEHUMIDIFICATION
NO SCALE



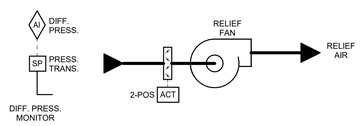
SEQUENCE OF OPERATION:

THE GLYCOL FEED SYSTEM CONTROLLER SHALL OPERATE THE SYSTEM TO MAINTAIN THE SPECIFIED PRESSURE IN THE WATER SYSTEM.

ALARMS, INTERLOCKS, AND SAFETIES:

AN ALARM SHALL BE GENERATED AT THE FMCS OPERATOR INTERFACE IF THE GLYCOL CONTROLLER INDICATES AN ALARM.

4 GLYCOL FEED STATION CONTROL DIAGRAM
NO SCALE



BUILDING RELIEF FAN CONTROL OPERATION:
THE FMCS SHALL MODULATE THE FAN SPEED TO MAINTAIN +0.02" W.G. (ADJ.) BUILDING STATIC PRESSURE.

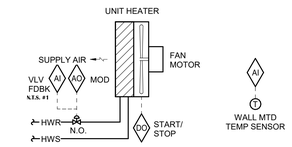
THE FMCS SHALL DISPLAY THE CURRENT STATIC PRESSURE OF THE BUILDING.

WHEN FAN IS ENERGIZED, 2-POSITION DAMPER SHALL FULLY OPEN. WHEN FAN IS DE-ENERGIZED, 2-POSITION DAMPER SHALL FULLY CLOSE.

FANS SHALL BE ENABLED WHEN UNIT VENTILATORS ECONOMIZER IS ENABLED. ALL 4 RELIEF FANS SHALL OPERATE IN UNISON.

ALARMS, INTERLOCKS AND SAFETIES:
AN ALARM SHALL BE GENERATED AT THE FMCS OPERATOR WORKSTATION IN THE EVENT THE FMCS COMMANDS THE EXHAUST FAN TO OPERATE AND THE CURRENT SENSING RELAY DETECTS INSUFFICIENT CURRENT DRAW.

3 BUILDING RELIEF FAN CONTROL
NO SCALE



SEQUENCE OF OPERATION:

WHEN THE OUTDOOR AIR TEMPERATURE IS ABOVE 40°F (ADJ.), TEMPERATURE SENSOR SHALL MODULATE THE CONTROL VALVE AND CYCLE THE UNIT FAN TOGETHER TO MAINTAIN A SPACE TEMPERATURE OF 70°F (ADJ.).

IN LOCATIONS WITH MULTIPLE UNIT HEATERS, STAGE THE UNIT HEATERS ON/OFF BY SETTING INDIVIDUAL TEMPERATURE SENSORS 2°F APART.

ALARMS, INTERLOCKS & SAFETIES:

SEND AN ALARM TO THE FMCS OPERATOR INTERFACE IF SPACE TEMPERATURE FALLS 10°F (ADJ.) BELOW SETPOINT.

5 UNIT HEATER CONTROL - HYDRONIC
NO SCALE

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305 SOUTH INDIANA STREET
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INDIANAPOLIS, IN 46240
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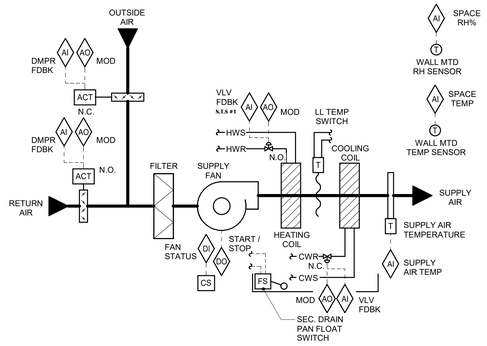

SUPPLY FAN CONTROL:
- UNIT VENTILATOR OPERATION SHALL BE SCHEDULED AT THE FMCS OPERATOR WORKSTATION.
- WHEN THE UNIT VENTILATOR IS INDEXED TO RUN, THE SUPPLY FAN SHALL BE ENABLED TO RUN.
- THE SUPPLY FAN SHALL RUN CONTINUOUSLY DURING OCCUPIED TIMES.

SPACE TEMPERATURE CONTROL:
- IN COOLING MODE WHENEVER THE ROOM AIR TEMPERATURE IS 2°F (ADJ.) ABOVE THE SETPOINT, THE COOLING COIL CONTROL VALVE SHALL MODULATE OPEN TO MAINTAIN SPACE TEMPERATURE SETPOINT.
- IN COOLING MODE, WHENEVER THE OUTSIDE AIR TEMPERATURE IS ABOVE 70°F (ADJ.) AND THE ROOM AIR TEMPERATURE IS 2°F (ADJ.) ABOVE THE SETPOINT, THE COOLING COIL CONTROL VALVE SHALL BE FULLY OPEN AND THE BYPASS DAMPER SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE SETPOINT.
- WHEN IN ECONOMIZER MODE, FMCS SHALL NOT MODULATE CONTROL VALVE UNLESS O.A. DAMPER IS 100% (ADJ.) OPEN.
- IN HEATING MODE, WHENEVER THE ROOM AIR TEMPERATURE IS 3°F (ADJ.) BELOW THE SETPOINT, THE HEATING WATER CONTROL VALVE SHALL MODULATE OPEN TO MAINTAIN SPACE TEMPERATURE SETPOINT.
- IN HEATING MODE, WHENEVER THE OUTSIDE AIR TEMPERATURE IS BELOW 40°F (ADJ.) AND THE ROOM AIR TEMPERATURE IS 3°F (ADJ.) BELOW THE SETPOINT, THE HEATING WATER CONTROL VALVE SHALL BE FULLY OPEN AND THE BYPASS DAMPER SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE SETPOINT.

DEHUMIDIFICATION CONTROL:
- HUMIDITY SENSOR WITHIN SPACE SHALL OVERRIDE HEATING COIL CONTROL VALVE INCREMENTALLY OPEN AT (5%) STEPS COMPARED TO NORMAL SPACE TEMPERATURE CONTROL IF THE SPACE HUMIDITY SENSOR EXCEEDS 60% RH (ADJ.).
- IF SPACE HUMIDITY SENSOR IS BELOW 55% RH (ADJ.), DEHUMIDIFICATION SEQUENCE SHALL BE DISABLED.

ECONOMIZER CONTROL:
- WHEN THE O.A. TEMPERATURE IS LESS THAN THE ROOM AIR TEMPERATURE THE FMCS SHALL ENABLE ECONOMIZER CONTROLS FOR COOLING.
- WHEN O.A. TEMPERATURE IS GREATER THAN THE ROOM AIR TEMPERATURE THE FMCS SHALL DISABLE ECONOMIZER CONTROLS AND SHALL RETURN THE UNIT TO MINIMUM O.A. MODE. ONCE ECONOMIZER CONTROLS HAVE BEEN ENABLED OR DISABLED FROM OPERATION, 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 OUTSIDE AIR DAMPERS AS REQUIRED TO MAINTAIN ROOM AIR TEMPERATURE SETPOINT.

NIGHT SETBACK CONTROL:
- NIGHT SETBACK SHALL BE INITIATED VIA THE FMCS BASED ON THE FOLLOWING TIME SCHEDULE:
- NIGHT SETBACK SHALL NOT OCCUR WHEN A SPACE IS DESIGNATED AS UNOCCUPIED VIA A LIGHTING OCCUPANCY SENSOR.
- AT THE START OF OCCUPIED MODE, THE FMCS SHALL ESTABLISH THE ROOM TEMPERATURE SETPOINT IN ACCORDANCE WITH THE SEQUENCE OF OPERATION.
- AT THE START OF UNOCCUPIED MODE, THE FMCS SHALL ESTABLISH THE ROOM TEMPERATURE SETPOINTS OF:
  COOLING SETPOINT = 80°F (ADJ.)
  HEATING SETPOINT = 60°F (ADJ.)
- DURING NIGHT SETBACK THE UNIT VENTILATOR CAN BE PLACED INTO OCCUPIED MODE VIA THE OVERRIDE SWITCH ON THE ROOM TEMPERATURE SENSOR. WHEN THE OVERRIDE SWITCH IS ENABLED IT SHALL CONTROL THE UNIT IN OCCUPIED MODE SETTING FOR A PERIOD OF 2 HOURS (ADJ.) AT WHICH TIME THE UNIT SHALL REVERT BACK TO NIGHT SETBACK MODE.

ALARMS, INTERLOCKS & SAFETIES:
- SHOULD ANY ONE FOOT SECTION OF THE MANUAL RESET LOW LIMIT TEMPERATURE SWITCH SENSE AIR TEMP < 36°F THE CHILLED WATER VALVE SHALL FULLY OPEN AND THE FMCS SHALL START THE LEAD CHILLED WATER PUMP IN THE EVENT NONE OF THE CHILLED WATER PUMPS ARE IN OPERATION (IN ADDITION TO UNIT VENT SHUTDOWN). AN ALARM SHALL BE GENERATED AT THE FMCS OPERATOR WORKSTATION.
- A FLOAT SWITCH MOUNTED IN THE DRAIN PAN BELOW EACH UNIT VENT SHALL CLOSE THE CHILLED WATER VALVE AND PREVENT SUPPLY FAN OPERATION UPON DETECTION OF WATER AND SHALL INDICATE AN ALARM TO THE OPERATOR WORKSTATION.
- FMCS SHALL INDICATE AN ALARM TO THE FMCS OPERATOR WORKSTATION IF THE FMCS COMMANDS THE SUPPLY FAN TO OPERATE AND THE FAN CURRENT RELAY DETECTS INSUFFICIENT CURRENT FLOW.

UNIT SHUTDOWN:
- WHENEVER THE UNIT VENTILATOR IS SHUTDOWN THE FOLLOWING SHALL OCCUR:
- THE OUTSIDE AIR DAMPER SHALL CLOSE.
- THE RETURN AIR DAMPER SHALL OPEN.
- THE HEATING WATER CONTROL VALVE SHALL CLOSE. IF THE LOW LIMIT SWITCH IS ACTIVATED THE HEATING COIL CONTROL VALVE SHALL FULLY OPEN.
- THE CHILLED WATER CONTROL VALVE SHALL CLOSE.
- THE SUPPLY FAN SHALL STOP.

1 UNIT VENTILATOR (HORIZONTAL) CONTROL - UV-X
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No. PE60910310
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01.31.25
Nicholas N.A. Armstrong

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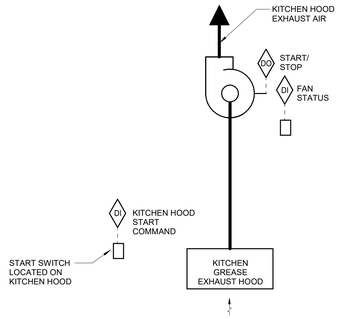

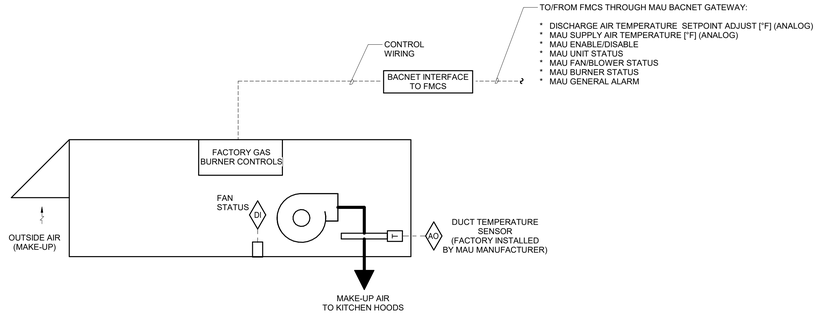

KITCHEN HOOD EXHAUST FAN OPERATION:
KITCHEN HOOD EXHAUST FANS SHALL START FROM:
- SWITCH ON KITCHEN HOOD TURNED TO ON POSITION.

FMCS SHALL ENABLE THE INTERLOCKED MAU WHEN THE FAN IS ENABLED.

SEQUENCE OF OPERATION:
REFER TO SPECIFICATION SECTION FOR THE MAKEUP AIR UNIT FOR A DESCRIPTION OF THE MAU AND CONTROLS PROVIDED BY THE MANUFACTURER. THE UNIT SHALL OPERATE BY PACKAGE CONTROLS TO MAINTAIN THE DISCHARGE AIR TEMPERATURE (DAT) OF 60°F (ADJ.) DAT SETPOINT SHALL BE SET BY THE FMCS OPERATOR WORK STATION. THE MAU FACTORY CONTROLLER SHALL PROVIDE A BURNER MODULATION SIGNAL (0-10V DC) BASED ON THE DIFFERENCE BETWEEN MEASURED DAT AND SETPOINT. THE MAU PACKAGE CONTROLS SHALL OPEN THE ASSOCIATED UNIT DAMPERS AND ENABLE HEATING BASED ON OUTSIDE AIR TEMPERATURE (E.G. T < 60°F).

ALARMS, INTERLOCKS AND SAFETIES:
AN ALARM SHALL BE GENERATED AT THE FMCS OPERATOR WORKSTATION IN THE EVENT OF THE FOLLOWING:
- THE FMCS COMMANDS THE EXHAUST FAN TO OPERATE AND THE CURRENT SENSING RELAY DETECTS INSUFFICIENT CURRENT DRAW.
- AN ALARM SHALL BE SENT TO THE FMCS WHEN THE MAU IS COMMANDED TO RUN AND THE CURRENT STATUS SWITCH INDICATES INSUFFICIENT CURRENT.
- WHEN THE FIRE ALARM CONTROL PANEL INDICATES AN ALARM CONDITION THE EXHAUST FAN SHALL BE SHUT DOWN.
- THE MAU SHALL PROVIDE A GENERAL ALARM TO THE FMCS OPERATOR WORK STATION.

SHUTDOWN:
- WHEN THE EF IS SHUTDOWN THE INTERLOCKED MAU SHALL BE SHUTDOWN.
- MAU PACKAGE CONTROLS SHALL CLOSE THE UNIT DAMPERS AND CLOSE THE HEATING GAS VALVES.

MODE OF OPERATION DURING FIRE:

- NFPA 96 MUST BE FOLLOWED FOR OPERATING THE MAKE-UP AIR, GREASE HOOD EXHAUST FANS, MAIN GAS SOLENOID VALVE, AND POWER SUPPLY TO THE ELECTRICAL EQUIPMENT UNDER THE GREASE HOOD.
- WHEN THE KITCHEN FIRE SUPPRESSION SYSTEM (ANSUL SYSTEM) DETECTS A FIRE, IT WILL SEND A SIGNAL (THROUGH THE HARD WIRES) TO STOP THE GAS SOLENOID VALVE, TURN OFF THE MAKE-UP AIR SUPPLY TO THE GREASE HOODS, CUT THE POWER TO THE EQUIPMENT UNDERNEATH THE HOODS, AND RUN THE GREASE HOOD EXHAUST FANS AT MAXIMUM SPEED.

1 GAS-FIRED KITCHEN MAKEUP AIR UNIT
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Nicholas H.A. Armstrong

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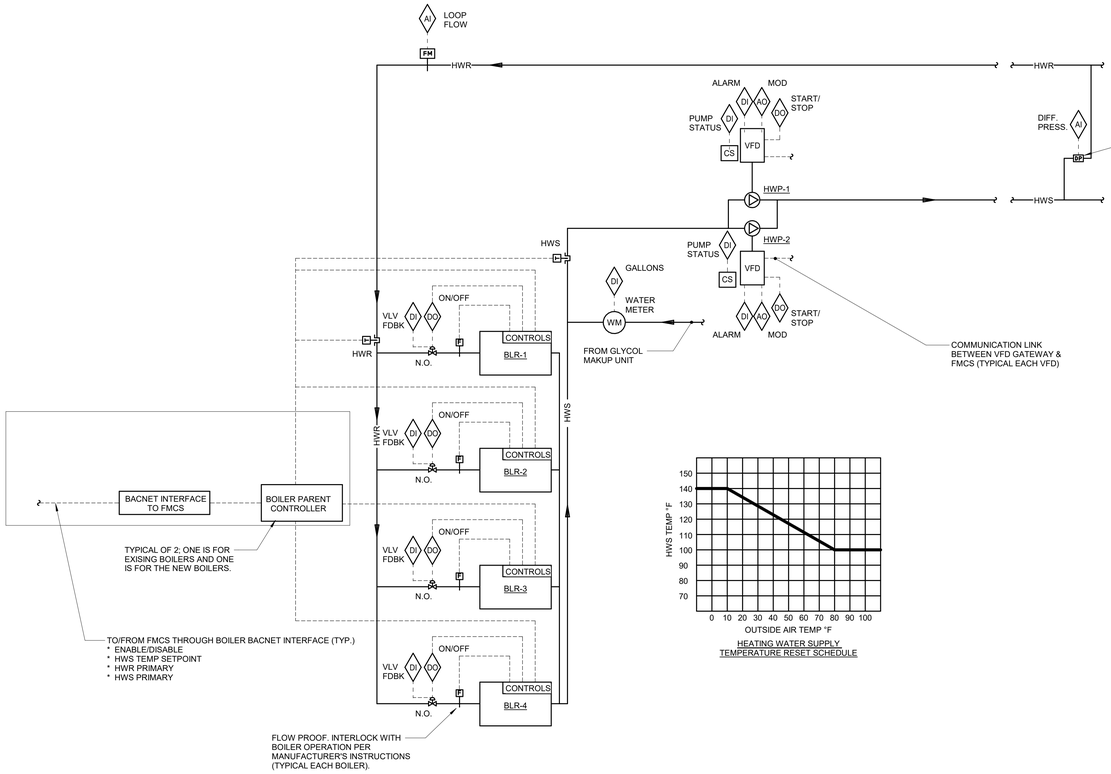

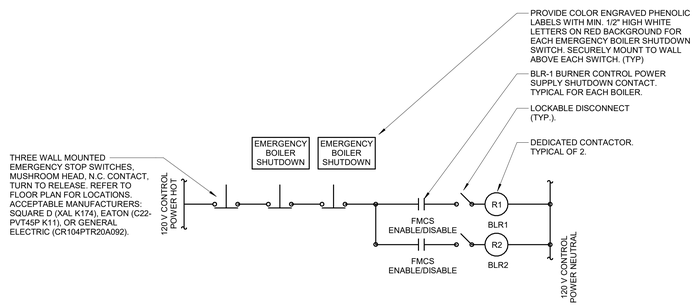

ALARMS, INTERLOCKS, AND SAFETIES:
TCC SHALL PROVIDE EMERGENCY BOILER SHUTDOWN SWITCH AT EACH BOILER ROOM EXIT MEETING CSD-1 REQUIREMENTS. ACTIVATION OF ANY SWITCH SHALL INTERRUPT POWER TO ALL BOILER CONTROLS VIA BOILER SAFETY SHUTDOWN CONTACTS. NATURAL GAS AND CARBON MONOXIDE SENSOR/LOCAL ALARM TO BE PROVIDED FOR EACH OF TWO BOILER ROOMS.

TYPICAL FOR EACH OF TWO BOILER ROOMS, EACH CONTAIN TWO BOILERS.

EMERGENCY BOILER SHUTDOWN

SEQUENCE OF OPERATION:
HEATING WATER BOILERS SHALL HAVE UNIT MOUNTED CONTROLS AND A BOILER MANAGEMENT CONTROL PANEL PROVIDED BY THE BOILER MANUFACTURER. TCC SHALL INTERFACE WITH BOILER MANUFACTURER CONTROLS AS DESCRIBED IN THIS SEQUENCE OF OPERATION. BOILER MANUFACTURER SHALL PROVIDE A GATEWAY INTERFACE CARD THAT IS COMPATIBLE WITH THE COMMUNICATION PROTOCOL OF THE FMCS NETWORK. SEQUENCES OF OPERATION FOR BOTH BOILER CONTROL SYSTEM AND FMCS SHALL BE AS FOLLOWS:

BOILER CONTROL PANEL SEQUENCE OF OPERATION:
WHEN THE FMCS ENABLES THE BOILER PARENT CONTROLLER TO RUN, THE BOILER PARENT CONTROLLER SHALL ENABLE THE LEAD BOILER, OPEN THE ASSOCIATED TWO-POSITION ISOLATION VALVE, AND ENERGIZE THE LEAD PUMP.

THE ON BOARD BOILER SEQUENCING CONTROLLER SHALL STAGE AND MODULATE THE BOILER PLANT TO MAINTAIN THE HIGHEST PLANT EFFICIENCY THAT WILL PROVIDE THE REQUIRED SUPPLY WATER TEMPERATURE. THE ON BOARD BOILER SEQUENCING CONTROLLER SHALL OPEN AND CLOSE BOILER ISOLATION VALVES IN SUCH A WAY AS TO PROVIDE PRE AND POST FLOW. THE ON BOARD BOILER SEQUENCING CONTROLLER SHALL VERIFY PROOF OF WATER FLOW BEFORE FIRING BOILERS.. THE BOILER SEQUENCING CONTROLLER CAN STAGE ON MULTIPLE BOILERS AT PART LOAD TO INCREASE THE EFFICIENCY OF THE PLANT. BOILER SEQUENCING CONTROLLER PANEL SHALL START/STOP BOILERS ON A FIRST ON/FIRST OFF BASIS TO EQUALIZE RUN TIME BETWEEN BOILERS. TWO-POSITION ISOLATION VALVE OPERATION SHALL BE CONTROLLED BY THE BOILER CONTROL PANEL OF THE RESPECTIVE BOILER THEY SERVE.

THE FOLLOWING BOILER SEQUENCING CONTROLLER POINTS (TO INCLUDE BUT NOT LIMITED TO) SHALL BE CONTROLLED BY THE FMCS AND DISPLAYED ON THE OPERATOR WORKSTATION GRAPHICAL SCREEN:
- BOILER SYSTEM STATUS: ENABLE/DISABLE
- BOILER OUTLET WATER TEMPERATURE SETPOINT: [°F]

THE FOLLOWING BOILER SEQUENCING CONTROLLER POINTS (TO INCLUDE BUT NOT LIMITED TO) SHALL BE MONITORED BY THE FMCS AND DISPLAYED ON THE OPERATOR WORKSTATION GRAPHICAL SCREEN:
- BOILER STATUS: DISABLED/STANDBY/MANUAL OPERATION/REMOTE OPERATION/AUTO/FAULT
- FIRING RATE INPUT: [0 - 100%]
- FIRING RATE OUTPUT: [0 - 100%]
- ACTIVE SETPOINT: [°F]
- SYSTEM HWR TEMP: [°F]
- SYSTEM HWS TEMP: [°F]
- FAULT MESSAGE DISPLAY CODE: [NUMERICAL]
- RUN CYCLES: [NUMERICAL]
- RUN HOURS: [NUMERICAL]

ALARMS, INTERLOCKS & SAFETIES:
BOILER CONTROLS SHALL BE PROGRAMMED TO MAINTAIN CONSTANT SETPOINT (LAST KNOWN VALUE) IN THE EVENT THE FMCS NETWORK COMMUNICATION SIGNAL IS LOST.

FMCS SEQUENCE OF OPERATION:
FMCS SHALL OPERATE HEATING WATER SYSTEM 24 HOURS/DAY, 365 DAYS/YEAR.

ONLY ONE HEATING WATER PUMP SHALL RUN AT TIME. THE SECOND HEATING WATER PUMP IS FULLY REDUNDANT. FMCS SHALL AUTOMATICALLY ROTATE THE LEAD HEATING WATER PUMP ONCE/WEEK (10:00 AM EACH TUESDAY, ADJ.) TO EQUALIZE RUN TIME BETWEEN PUMPS. PROVIDE GRAPHICAL BUTTON ON OPERATOR WORKSTATION GRAPHICAL SCREEN TO ALLOW FMCS OPERATOR TO SWITCH LEAD PUMP TO NEXT ROTATION IN THE EVENT THE CURRENT LEAD PUMP REQUIRES MAINTENANCE.

FMCS SHALL MODULATE SIGNAL TO LEAD PUMP VFD AS REQUIRED TO MAINTAIN HEATING WATER DIFFERENTIAL PRESSURE (DP) SETPOINT. FMCS SHALL RESET HEATING WATER DIFFERENTIAL PRESSURE (DP) SETPOINT AS REQUIRED TO MAINTAIN AT LEAST ONE HEATING WATER VALVE 95% (ADJ.) OPEN. FMCS SHALL UTILIZE COMMAND TO ALL HEATING WATER VALVE POSITIONS TO RESET THE HEATING WATER DIFFERENTIAL PRESSURE. IN NO EVENT SHALL THE FMCS DECREASE THE HEATING WATER (DP) SETPOINT BELOW 4 PSI (ADJ.) OR ABOVE 10 PSI (ADJ.).

ALL CONTROLLED AND MONITORED POINTS LISTED IN THE BOILER CONTROL PANEL SEQUENCE ABOVE SHALL BE DISPLAYED ON THE OPERATOR WORKSTATION GRAPHICAL SCREEN.

ALARMS, INTERLOCKS & SAFETIES:
TCC SHALL COORDINATE ALL SAFETY AND INTERLOCK REQUIREMENTS WITH BOILER MANUFACTURER. TCC SHALL COORDINATE AND PROVIDE THE INSTALLATION AND WIRING OF BOILER WATER DIFFERENTIAL PRESSURE/FLOW SWITCHES AND OTHER COMPONENTS PROVIDED WITH THE BOILER AS REQUIRED FOR PROPER OPERATION. TCC SHALL PROVIDE AND TERMINATE ALL SAFETY AND INTERLOCK WIRING WITH BOILER CONTROL PANELS AS REQUIRED.

FMCS SHALL AUTOMATICALLY ENABLE THE LAG HEATING WATER PUMP TO RUN IN THE EVENT THE LEAD HEATING WATER PUMP FAILS TO OPERATE.

AN ALARM SHALL BE INDICATED TO THE FMCS OPERATOR WORKSTATION IN THE EVENT ANY OF THE FOLLOWING OCCUR:
- HWR TEMPERATURE DROPS BELOW 50°F (ADJ.) FOR 5 MINUTES (ADJ.) (AUTO RESET).
- HWS TEMPERATURE RISES MORE THAN 10°F (ADJ.) ABOVE SETPOINT (AUTO RESET).
- HWS TEMPERATURE DROPS MORE THAN 10°F (ADJ.) BELOW SETPOINT (AUTO RESET).
- AN ALARM IS INDICATED AT ANY BOILER ALARM PANEL.
- AN ALARM IS INDICATED AT ANY PUMP VFD
- SHOULD THE FMCS COMMAND THE LEAD HEATING WATER 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.
- 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.

1 HEATING PLANT - HEATING CONTROL - CONDENSING BOILER VARIABLE/PRIMARY
NO SCALE

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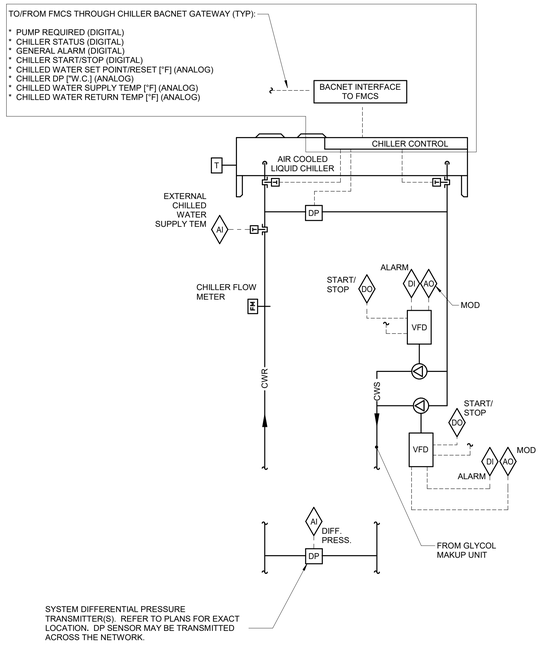

KEYNOTES:

1. SYSTEM DIFFERENTIAL PRESSURE TRANSMITTER(S). REFER TO PLANS FOR EXACT LOCATION. DP SENSOR MAY BE TRANSMITTED ACROSS THE NETWORK.

1 CHILLED WATER PLANT - SINGLE AIR COOLED CHILLER - VARIABLE PRIMARY

NO SCALE

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 100-DAY (ADJ.) DURATION AT WHICH POINT THE NEWEST VALUES SHALL OVERWRITE THE OLDEST VALUES:

- DATE
- TIME
- GLOBAL OUTSIDE AIR TEMPERATURE [°F]
- GLOBAL OUTSIDE AIR DEWPOINT [°F]
- AVERAGE CHILLED WATER SUPPLY TEMPERATURE [°F]
- AVERAGE CHILLED WATER RETURN TEMPERATURE [°F]
- TOTAL CHILLED WATER FLOWRATE [GPM]
- TOTAL CHILLED WATER SYSTEM LOAD [TONS]
- CURRENT DRAW FROM CHILLER [AMPS]

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

SEQUENCE OF OPERATION
THE CHILLER MANUFACTURER SHALL PROVIDE A FACTORY MOUNTED CHILLER CONTROL PANEL. ALL AVAILABLE DATA PROVIDED/MONITORED BY THE CHILLER CONTROL PANEL SHALL BE AVAILABLE TO AND MONITORED BY THE FMCS SYSTEM.

CHILLER OPERATION SHALL BE CONTROLLED BY THE CHILLER CONTROL PANEL AND SHALL BE ENABLED WHEN THE OUTSIDE AIR TEMPERATURE RISES ABOVE 50°F (ADJ.) FOR 15 MINUTES (ADJ.). WHEN OUTSIDE AIR TEMPERATURE DROPS BELOW 48°F (ADJ.) FOR 15 MINUTES (ADJ.) CHILLER OPERATION SHALL BE DISABLED. CHILLER SHALL NOT OPERATE UNTIL A CHILLED WATER VALVE IN THE SYSTEM HAS A CALL FOR COOLING AND BEGINS TO OPEN. ONCE VALVE STARTS TO OPEN THE FMCS SHALL ENERGIZE THE LEAD PUMP.

CHILLER STARTING:
WHEN THE FMCS INDEXES A CHILLER TO RUN THE FOLLOWING SHALL OCCUR:
- THE FMCS SHALL TURN ON THE CHILLED WATER PUMP.
- UPON PROOF OF FLOW IN THE EVAPORATOR BARREL THE CHILLER CONTROL PANEL SHALL INDEX CHILLER TO START.
- CHILLER SHALL START AFTER ALL INTERNAL SAFETIES ARE SATISFIED AND SHALL MAINTAIN CHILLED WATER SUPPLY TEMPERATURE OF 42°F (ADJ.) VIA INTERNAL CONTROLS.

CHILLER STOPPING:
WHEN THE FMCS INDEXES THE CHILLER TO STOP THE FOLLOWING SHALL OCCUR:
- THE CHILLER CONTROL PANEL SHALL INDEX CHILLER TO STOP.
- THE CHILLER CONTROL PANEL SHALL SEND A SIGNAL TO THE FMCS TO SHUTDOWN THE CHILLED WATER PUMP.

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.).

THE FMCS SHALL ALTERNATE THE LEAD PUMP BASED ON RUN TIME: SWITCH EVERY 400 HOURS (ADJ.). INCLUDE GRAPHIC TOGGLE ON OPERATOR WORKSTATION GRAPHICAL SCREEN TO ALLOW OPERATOR TO MANUALLY SELECT WHICH PUMP IS LEAD AND WHICH IS LAG.

CHILLER SAFETIES:
TCC SHALL COORDINATE ALL SAFETY AND INTERLOCK REQUIREMENTS WITH CHILLER MANUFACTURER. TCC SHALL PROVIDE THE INSTALLATION AND WIRING OF CHILLED WATER FLOW SWITCHES, AND OTHER COMPONENTS PROVIDED WITH CHILLER AS REQUIRED FOR PROPER OPERATION.

WATER LOOP LOAD CALCULATION & DISPLAY:
CALCULATE AND DISPLAY THE CHILLED WATER LOOP TONNAGE ON THE FMCS COMPUTER CHILLER PLANT GRAPHICAL SCREEN USING THE ENTERING AND LEAVING CHILLED WATER TEMPERATURES AND THE FLOW RATE AS DETERMINED BY THE FLOW METER.

ALARMS, INTERLOCKS AND SAFETIES:
AN ALARM SHALL BE INDICATED AT THE FMCS WHEN THE FOLLOWING OCCUR:
- AN ALARM IS INDICATED AT THE CHILLER CONTROL PANEL
- 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.).

IMEG
6960 KEYSTONE CROSSING
SUITE 215
INDIANAPOLIS, IN 46240
P: 317.848.5045 F: 317.844.2201
www.imegcorp.com

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REF. SCALE IN INCHES
PROJECT #240013O5.00

1/29/2025 4:42:59 PM

STATE OF INDIANA
No. PE60910310
REGISTERED PROFESSIONAL ENGINEER
01.31.25
Nicholas W. Armstrong

ROACHDALE ELEMENTARY SCHOOL HVAC IMPROVEMENTS - VOL. 2
NORTH PUTNAM COMMUNITY SCHOOLS
305 SOUTH INDIANA STREET
ROACHDALE, IN 46172

WILLIAMS ARCHITECTS

REVISIONS

NO.	DATE	DESCRIPTION

WA No. 2024-005
Date 31 JAN 2025
Issue 100% CON CD
NAK
CHK NHA

HVAC DIAGRAMS

M7.4

FAN COIL UNIT SCHEDULE

NOTES:
1. REFER TO CONTROL DRAWINGS FOR DESCRIPTION OF CONTROL TYPE.
2. REFER TO FLOOR PLAN FOR SENSOR TYPE.
3. HOT WATER COIL SHALL BE IN REHEAT POSITION.

TAG NAME	AREA SERVED	CONFIGURATION	CFM	EXT. S.P. IN W.C.	COOLING COILS EAT DB °F	EAT WB °F	LAT DB °F	LAT WB °F	MBH TOTAL	MBH SENSIBLE	GPM	EWT °F	LWT °F	W.P.D. FT. HD	# OF ROWS	HEATING COIL EAT DB °F	LAT DB °F	SENSIBLE MBH	GPM	EWT °F	LWT °F	WPD FT. HD	# OF ROWS
FCU-1-01	CORRIDOR 116	HORIZONTAL CONCEALED	450	0.2	74.0	62.0	54.3	52.5	12.2	9.8	1.9	44	57	15.12	4	70	86.5	8.3	0.5	140	110	0.39	1
FCU-1-02	CONF. 112	HORIZONTAL CONCEALED	550	0.2	74.0	62.0	55.3	53.6	13.4	11.3	2.1	44	57	3.41	4	70	87.4	10.7	0.7	140	110	0.66	1
FCU-1-03	A/V 106	HORIZONTAL CONCEALED	330	0.2	74.0	62.0	54.4	52.7	8.8	7.2	1.4	44	57	7.61	4	70	90.2	7.4	0.7	140	120	0.50	1
FCU-1-04	SPEECH 105	HORIZONTAL CONCEALED	275	0.2	74.0	62.0	55.7	53.8	6.5	5.6	1.0	44	57	4.41	4	70	88.1	5.5	0.5	140	120	0.27	1
FCU-1-05	CORRIDOR 116	HORIZONTAL CONCEALED	460	0.2	74.0	62.0	54.8	53.8	10.8	9.7	1.7	44	57	1.38	6	70	89.3	10.3	1.0	140	120	0.93	1
FCU-1-06	B1 138	HORIZONTAL CONCEALED	1200	0.2	74.0	62.0	58.7	55.9	20.7	20.1	3.5	44	57	1.17	4	70	90	28.3	2.6	140	120	6.15	1
FCU-1-07	B1 138	HORIZONTAL CONCEALED	1200	0.2	74.0	62.0	58.7	55.9	20.7	20.1	3.5	44	57	1.17	4	70	90	28.3	2.6	140	120	6.15	1
FCU-1-08	CLINIC 139	HORIZONTAL CONCEALED	400	0.2	74.0	62.0	55.4	54.0	9.1	8.1	1.4	44	57	1.36	4	70	95.7	11.4	1.1	140	120	0.59	1
FCU-1-09	PRINCIPAL 140	HORIZONTAL CONCEALED	250	0.2	74.0	62.0	59.5	56.2	4.2	4	0.7	44	57	3.50	2	70	95.5	7.1	0.7	140	120	1.24	1
FCU-1-10	ADMIN 134	HORIZONTAL CONCEALED	230	0.2	74.0	62.0	59.3	56.1	4	3.7	0.6	44	57	3.07	2	70	96.5	6.8	0.7	140	120	1.12	1
FCU-1-11	ADMIN 135	HORIZONTAL CONCEALED	250	0.2	74.0	62.0	53.2	52.4	6.8	5.7	1.1	44	57	2.45	4	70	96.6	7.4	0.7	140	120	0.23	1
FCU-1-12	CORRIDOR 178	HORIZONTAL CONCEALED	800	0.2	74.0	62.0	59.2	56	14	13	2.2	44	57	1.45	3	70	94.3	21.5	2.1	140	120	3.50	1
FCU-1-13	ROOM 159	HORIZONTAL CONCEALED	575	0.2	74.0	62.0	58.8	55.8	10.4	9.5	1.6	44	57	1.59	3	70	95.7	16.3	1.6	140	120	13.90	1
FCU-1-14	ROOM 157	HORIZONTAL CONCEALED	400	0.5	74.0	62.0	57.5	54.8	8.3	7.2	1.3	44	57	3.15	3	70	95.7	11.4	1.1	140	120	0.59	1
FCU-1-15	ROOM 156	HORIZONTAL CONCEALED	250	0.2	74.0	62.0	57.5	55.1	5.1	4.6	0.8	44	57	2.26	3	70	93.1	6.4	0.6	140	120	0.31	1
FCU-1-16	CORRIDOR 178	HORIZONTAL CONCEALED	550	0.2	74.0	62.0	55.1	53.5	13.3	11.4	2.1	44	57	13.50	4	70	91.4	13.3	1.3	140	120	7.12	1
FCU-1-17	SENSORY ROOM 168	HORIZONTAL CONCEALED	540	0.2	74.0	62.0	54.9	53.2	13.5	11.4	2.2	44	57	5.00	4	70	91.3	13.1	1.3	140	120	2.26	1
FCU-1-18	OFFICE 101	HORIZONTAL CONCEALED	350	0.2	74.0	62.0	58.7	55.5	6.7	5.9	1.0	44	57	3.95	3	70	89.7	7.6	0.8	140	120	0.53	1

TAG NAME	HP (NOTE E)	ELECTRICAL RPM	FLA	MCA	VOLTAGE	PHASES	DISCONNECT BY (NOTE A)	DISCONNECT TYPE (NOTE B)	CONTROLLER/ STARTER TYPE (NOTE A)	SCCR	WEIGHT LBS	MANUFACTURER	MODEL	NOTES
FCU-1-01	1/4	1290	1.2	1.5	208	1	MFR	NF	MFR	5000	115	TITUS	THBP - A 06	1 , 2, 3
FCU-1-02	1/4	1206	1.2	1.5	208	1	MFR	NF	MFR	5000	115	TITUS	THBP - A 08	1 , 2, 3
FCU-1-03	1/4	1171	0.8	1.0	208	1	MFR	NF	MFR	5000	75	TITUS	THBP - A 04	1 , 2, 3
FCU-1-04	1/4	1306	0.7	0.88	208	1	MFR	NF	MFR	5000	55	TITUS	THBP - A 03	1 , 2, 3
FCU-1-05	1/3	953	3	3.75	208	1	MFR	NF	MFR	5000	115	TITUS	THBP - A 06	1 , 2, 3
FCU-1-06	1/2	1085	4.8	6.0	208	1	MFR	NF	MFR	5000	190	TITUS	THHP- A 12	1 , 2, 3
FCU-1-07	1/2	1085	4.8	6.0	208	1	MFR	NF	MFR	5000	190	TITUS	THHP- A 12	1 , 2, 3
FCU-1-08	1/4	1227	1.2	1.5	208	1	MFR	NF	MFR	5000	115	TITUS	THBP - A 06	1 , 2, 3
FCU-1-09	1/4	1100	0.7	0.88	208	1	MFR	NF	MFR	5000	47	TITUS	THBP - A 03	1 , 2, 3
FCU-1-10	1/4	1133	0.7	0.88	208	1	MFR	NF	MFR	5000	47	TITUS	THBP - A 03	1 , 2, 3
FCU-1-11	1/4	1029	0.8	1.0	208	1	MFR	NF	MFR	5000	75	TITUS	THBP - A 04	1 , 2, 3
FCU-1-12	1/4	1272	2	2.25	208	1	MFR	NF	MFR	5000	135	TITUS	THBP- A 10	1 , 2, 3
FCU-1-13	1/4	1225	1.2	1.5	208	1	MFR	NF	MFR	5000	115	TITUS	THBP - A 08	1 , 2, 3
FCU-1-14	1/4	1550	1.2	1.5	208	1	MFR	NF	MFR	5000	115	TITUS	THBP - A 06	1 , 2, 3
FCU-1-15	1/4	1143	0.7	0.88	208	1	MFR	NF	MFR	5000	55	TITUS	THBP - A 03	1 , 2, 3
FCU-1-16	1/3	1036	3	3.75	208	1	MFR	NF	MFR	5000	115	TITUS	THBP - A 06	1 , 2, 3
FCU-1-17	1/3	881	3	3.75	208	1	MFR	NF	MFR	5000	115	TITUS	THBP - A 08	1 , 2, 3
FCU-1-18	1/4	1156	0.8	1.0	208	1	MFR	NF	MFR	5000	75	TITUS	THBP - A 04	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

HOOD & LOUVERED PENTHOUSE SCHEDULE

TAG NAME	SERVICE	CFM	THROAT SIZE WIDTH	THROAT SIZE LENGTH	THROAT VELOCITY (FPM)	STATIC PRESSURE DROP (IN W.C.)	FREE AREA (FT ²)	CONFIGURATION	MAX. HEIGHT (TOP OF CURB TO TOP OF EQUIP.) INCHES	MAX. DIMENSIONS (INCHES) LENGTH	WIDTH	HEIGHT	FINISH TYPE (NOTE 1)	MANUFACTURER	MODEL
IH-1	HUV-1-01B OA INTAKE	1300	1'-6"	1'-6"	578	0.20	3	LOUVERED PENTHOUSE	40	32	32	28	TYPE 1	GREENHECK	ESD-635PD
IH-2	HUV-1-01A OA INTAKE	1300	1'-6"	1'-6"	578	0.20	3	LOUVERED PENTHOUSE	40	32	32	28	TYPE 1	GREENHECK	ESD-635PD
IH-3	HUV-1-02B OA INTAKE	1300	1'-6"	1'-6"	578	0.20	3	LOUVERED PENTHOUSE	40	32	32	28	TYPE 1	GREENHECK	ESD-635PD
IH-4	HUV-1-02A OA INTAKE	1300	1'-6"	1'-6"	578	0.20	3	LOUVERED PENTHOUSE	40	32	32	28	TYPE 1	GREENHECK	ESD-635PD
IH-5	HUV-1-03 OA INTAKE	1650	1'-8"	1'-8"	648	0.20	4	LOUVERED PENTHOUSE	40	20	34	28	TYPE 1	GREENHECK	ESD-635PD
IH-6	HUV-1-04 OA INTAKE	1800	1'-8"	1'-8"	648	0.20	4	LOUVERED PENTHOUSE	40	20	34	28	TYPE 1	GREENHECK	ESD-635PD

GLYCOL FEED SYSTEM

NOTES:
1.SEE 23 21 00 FOR ADDITIONAL SYSTEM REQUIREMENTS.

TAG NAME	AREA SERVED	TANK VOLUME	SYSTEM FILL PRESSURE	PUMP HEAD PSI	GPM	ELECTRICAL VOLTAGE	PHASES	DISCONNECT BY (NOTE A)	CONTROLLER/ STARTER BY (NOTE A)	MANUFACTURER	MODEL	NOTES
GFS-1	GLYCOL WATER SYSTEM	55.0	60	35	5.0	120	1	MFR	MFR	BELL & GOSSETT	GMU560S	1
GFS-2	HEATING WATER SYSTEM	55.0	60	35	5.0	120	1	MFR	MFR	BELL & GOSSETT	GMU560S	1

PIPE INSULATION SCHEDULE (HVAC)

GENERAL NOTES:
1. REFER TO THE SPECIFICATIONS FOR TYPE DESCRIPTIONS AND JACKETING 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, D, OR E INSULATION. SEE SPEC. FOR MORE DETAILS.
5. APPLY INSULATION ONLY TO LOW TEMP DRAINS (55 DEG AND LOWER IE: COOLING COIL CONDENSATE, ETC.)

SYMBOL	PIPE SYSTEM	INSULATION TYPE	INSULATION THICKNESS PER NOMINAL PIPE OR TUBE SIZE < 1"	1" TO < 1.5"	1.5" TO < 4"	4" TO < 8"	≥ 8"	NOTES
D	DRAIN	A (GlsFbr), B (Elasto)	1/2"	1/2"	1"	1"	1"	1, 2, 3, 4, 5
DPP	DRAIN - PIPING	A (GlsFbr), B (Elasto)	1/2"	1/2"	1"	1"	1"	1, 2, 3, 4, 5
GWR	GLYCOL WATER RETURN	A (GlsFbr)	1/2"	1/2"	1"	1"	1"	1, 2, 4
GWS	GLYCOL WATER SUPPLY	A (GlsFbr)	1/2"	1"	1"	1"	1 1/2"	1, 2, 4
HWR	HEATING WATER RETURN	A (GlsFbr)	1"	1"	1"	1 1/2"	1 1/2"	1, 2, 4
HWS	HEATING WATER SUPPLY	A (GlsFbr)	1"	1"	1"	1 1/2"	1 1/2"	1, 2, 4

LOUVER SCHEDULE

NOTES:
1.FINISH TYPES: TYPE 1 - MILL FINISH, TYPE 2 - 204-R1 SATIN ANODIZED, TYPE 3 - BAKED ENAMEL FINISH ON PRETREATED PRIME PAINT. STANDARD COLOR - SELECTION BY ARCHITECT. TYPE 4 - BAKED EPOXY FINISH ON PRIME COATED METAL. STANDARD COLOR - SELECTION BY ARCHITECT. TYPE 5 - DURANODIC BRONZE - LIGHT, MEDIUM, DARK. TYPE 6 - PVDF (KYNAR 500, HYLAR 5000, OR DURANAR). STANDARD COLOR - SELECTION BY ARCHITECT.

TAG NAME	AREA SERVED	CFM	SIZE (INCHES) WIDTH	SIZE (INCHES) HEIGHT	FREE AREA VELOCITY	S.P. IN. W.C.	FINISH (NOTE 1)	MANUFACTURER	MODEL	NOTES
L-1	COMPUTER LAB 103	2000	30	26	3	0.09	TYPE 3	GREENHECK	ESD - 635	1

MISCELLANEOUS SCHEDULE

NOTES:
1. PRE CHARGED TO 12 PSI (FIELD ADJUSTABLE).

TAG NAME	SERVICE	DESCRIPTION	MANUFACTURER	MODEL	NOTES
ALARM-1	BOILER 185 ROOM & ELEC. 124 ROOM	CARBON MONOXIDE AND NATURAL GAS DETECTION ALARM PANEL			
ALARM-2	MECH 102	CARBON MONOXIDE AND NATURAL GAS DETECTION ALARM PANEL			
AS-1	HEATING WATER SYSTEM	ASME AIR SEPARATOR	B & G	R-5F	
AS-2	GLYCOL WATER SYSTEM	ASME AIR SEPARATOR	B & G	R-4F	
ET-1	HEATING WATER SYSTEM	ASME EXPANSION TANK	WATTS	ET- RA 50	1
ET-2	GLYCOL WATER SYSTEM	ASME EXPANSION TANK	WATTS	ET-RA 35	1
GR-1	B-3 & B-4	GAS PRESSURE REGULATOR - CAST IRON BODY, EXTERNAL PRESSURE RELIEF, THREADED CONNECTIONS, ADJUSTABLE PRESSURE SETTING, TIGHT SHUTOFF. 2 PSI INLET PRESSURE, 1 PSI OUTLET PRESSURE, 4000 CFH CAPACITY AS SHOWN ON DRAWING, MINIMUM CONTROLLABLE FLOW OF 400 CFH. CONTRACTOR SHALL SIZE AND ROUTE REGULATOR RELIEF VENTING PER MANUFACTURER'S INSTALLATION INSTRUCTIONS WITH A MAXIMUM EQUIVALENT LENGTH OF 60 FEET.	FISHER	133L SERIES	
GR-2	MAU-1	GAS PRESSURE REGULATOR - CAST IRON BODY, EXTERNAL PRESSURE RELIEF, THREADED CONNECTIONS, ADJUSTABLE PRESSURE SETTING, TIGHT SHUTOFF. 2 PSI INLET PRESSURE, 11" W.C. OUTLET PRESSURE, 210 CFH CAPACITY AS SHOWN ON DRAWING, MINIMUM CONTROLLABLE FLOW OF 20 CFH. CONTRACTOR SHALL SIZE AND ROUTE REGULATOR RELIEF VENTING PER MANUFACTURER'S INSTALLATION INSTRUCTIONS WITH A MAXIMUM EQUIVALENT LENGTH OF 60 FEET.	FISHER	133L SERIES	

BUILDING RELIEF FAN SCHEDULE

NOTES:
1.PROVIDE SHAFT GROUNDING AS REQUIRED IN THE MOTOR SPECIFICATION 23 05 13.
2.MOTORIZED DAMPER BY TCC INLINE FAN INLET DUCTWORK BELOW ROOF.
3.ECM BY FAN MANUFACTURER.

TAG NAME	SERVICE	CFM	S.P. IN. W.C.	WHEEL DIA. INCHES	FAN RPM (NOTE F)	DRIVE TYPE	CURB TYPE (NOTE G)	ELECTRICAL (NOTE 1) BHP (NOTE E)	MHP (NOTE E)	VOLTAGE	PHASES	DISCONNECT BY (NOTE A)	DISCONNECT TYPE (NOTE B)	CONTROLLER/ STARTER BY (NOTE A)	CONTROLLER/ STARTER TYPE (NOTE C)	MANUFACTURER	MODEL	NOTES
EF-6	EAST SIDE RELIEF AIR	10980	0.25	30.5	712	DIRECT DRIVE	MFR	2.3	5	208	3	MFR	NF	MFR	ECM	GREENHECK	CUE-300-VG	1, 2, 3
EF-7	EAST SIDE RELIEF AIR	10980	0.25	30.5	712	DIRECT DRIVE	MFR	2.3	5	208	3	MFR	NF	MFR	ECM	GREENHECK	CUE-300-VG	1, 2, 3
EF-8	WEST SIDE RELIEF AIR	10980	0.25	30.5	712	DIRECT DRIVE	MFR	2.3	5	208	3	MFR	NF	MFR	ECM	GREENHECK	CUE-300-VG	1, 2, 3
EF-9	WEST SIDE RELIEF AIR	10980	0.25	30.5	712	DIRECT DRIVE	MFR	2.3	5	208	3	MFR	NF	MFR	ECM	GREENHECK	CUE-300-VG	1, 2, 3

NICHOLAS H.A. ARMSTRONG
REGISTERED
No. PE60910310
STATE OF INDIANA
PROFESSIONAL ENGINEER
01.31.25

ROACHDALE ELEMENTARY SCHOOL HVAC IMPROVEMENTS - VOL. 2
NORTH PUTNAM COMMUNITY SCHOOLS
305 SOUTH INDIANA STREET
ROACHDALE, IN 46172

WILLIAMS
ARCHITECTS

REVISIONS

NO.	DATE	DESCRIPTION

WA No. 2024-006
Date 31 JAN 2025
Issue 100% CON CD
NAK
CHK NHA

IMEG
8900 KEYSTONE CROSSING
SUITE 210
INDIANAPOLIS, IN 46240
P: 317.848.5045 F: 317.844.2201
www.imegcorp.com

0 1 2 3
REF. SCALE IN INCHES
PROJECT #24001305.00

HVAC SCHEDULES

M8.0

1/30/2025 11:11:04 AM

AIR COOLED CHILLER SCHEDULE

NOTES:
1.SEE SPECIFICATION SECTION 23 64 30 FOR ADDITIONAL REQUIREMENTS.
2.FLUID IS 30% PROPYLENE GLYCOL.

				CAPACITY/PERFORMANCE					EVAPORATOR PERFORMANCE					MAXIMUM ALLOWABLE SOUND POWER IN DB RE 10^{-12} WATTS OCTAVE BAND CENTER FREQUENCY										ELECTRICAL									WEIGHT (LB.)					
					MIN. EER AT % LOAD (BASED ON AIR AND WATER CONDITIONS AS LISTED.)																					DISCONNECT		CONTROLLER/ STARTER									
TAG NAME	REFRIGERANT	AMBIENT TEMP °F	MIN. OPERATING AMBIENT TEMP. °F	DESIGN TONS	100	75	50	25	NPLV	EWT °F	LWT °F	DESIGN GPM	PRESSURE DROP FT. W.G.	FOULING FACTOR	63	125	250	500	1000	2000	4000	NUMBER OF COMPRESSORS	COMPRESSOR TYPE	VOLTAGE	PHASES	FLA	MCA	MOCP AMPS	BY (NOTE A)	TYPE (NOTE B)	BY (NOTE A)	TYPE (NOTE C)	SCCR	DRY	OPERATING	MANUFACTURER	MODEL	NOTES
CH-1	R-454B	95	-20	118	10.23	12.24	13.35	15.22	13.08	57	43	223	8.37	0.0001	35	45	52	60	63	62	61	6	SCROLL	208 V	3	446 A	463 A	500 A	EC	CB	MFR	SS	10000	8032	8147	DUNHAM-BUSH	ACDS135ANBS	1, 2

UNIT VENTILATOR SCHEDULE

1. REFER TO CONTROL DRAWINGS FOR DESCRIPTION OF CONTROL TYPE.
2. REFER TO FLOOR PLAN FOR SENSOR TYPE.
3. CONDENSATE PUMP TO BE PROVIDED AND INSTALLED BY MANUFACTURER.
CONDENSATE PUMP MANUFACTURER/MODEL: LIBERTY PUMPS/LCU220S.

					COOLING COIL										HEATING COIL									ELECTRICAL											
					EAT		LAT					MBH		WPD FT. HEAD								WPD FT. HEAD								DISCONNECT		CONTROLLER/ STARTER					
TAG NAME	AREA SERVED	CFM	EXT S.P. IN WC	CONFIGURATION	DB °F	WB °F	DB °F	WB °F	EWT °F	LWT °F	GPM	TOTAL	SENSIBLE		# ROWS	EAT DB °F	LAT DB °F	EWT °F	LWT °F	GPM	TOTAL MBH		# ROWS	HP	RPM	MCA	MOCP	VOLTAGE	PHASES	BY (NOTE A)	TYPE (NOTE B)	BY (NOTE A)	TYPE (NOTE C)	SCCR	MANUFACTURER	MODEL	NOTES
HUV-1-01A	CAFETERIA 122	1,300	0.5	HORIZONTAL	74	62	56	55	44	51	10	30.9	25.7	7.3	4	45	85	140	120	6	57.2	16.8	2	0.75	1400	11	15	208 V	1	MFR	NF	MFR		5000	TEMPSEC	HCD 1600D	1 , 2 , 3
HUV-1-01B	CAFETERIA 122	1,300	0.5	HORIZONTAL	74	62	56	55	44	51	10	30.9	25.7	7.3	4	45	85	140	120	6	57.2	16.8	2	0.75	1400	11	15	208 V	1	MFR	NF	MFR		5000	TEMPSEC	HCD 1600D	1 , 2 , 3
HUV-1-02A	CAFETERIA 122	1,300	0.5	HORIZONTAL	74	62	56	55	44	51	10	30.9	25.7	7.3	4	45	85	140	120	6	57.2	16.8	2	0.75	1400	11	15	208 V	1	MFR	NF	MFR		5000	TEMPSEC	HCD 1600D	1 , 2 , 3
HUV-1-02B	CAFETERIA 122	1,300	0.5	HORIZONTAL	74	62	56	55	44	51	10	30.9	25.7	7.3	4	45	85	140	120	6	57.2	16.8	2	0.75	1400	11	15	208 V	1	MFR	NF	MFR		5000	TEMPSEC	HCD 1600D	1 , 2 , 3
HUV-1-03	MEDIA CENTER 100	1,650	0.5	HORIZONTAL CONCEALED	74	62	55	54	44	55	8.5	44.3	35.2	11.6	4	45	89	140	125	11	78.6	10.4	2	0.75	1400	12	15	208 V	1	MFR	NF	MFR		5000	TEMPSEC	HCD 2000D	1 , 2 , 3
HUV-1-04	MEDIA CENTER 100	1,800	0.5	HORIZONTAL CONCEALED	74	62	55	54	44	55	8.5	46	27.1	11.7	4	45	87	140	124	11	81.7	10.4	2	0.75	1400	12	15	208 V	1	MFR	NF	MFR		5000	TEMPSEC	HCD 2000D	1 , 2 , 3
VUV-1-01	C6 121	1,800	0.5	VERTICAL	74	62	56	56	44	60	9	70.4	46.9	12.7	5	45	105	140	126	7	117.7	5.5	2	0.5	1400	12	15	208 V	1	MFR	NF	MFR		5000	TEMSPEC	VUD-2000D	1 , 2 , 3
VUV-1-02	C4 120	1,000	0.5	VERTICAL	74	62	55	55	44	53	6	25.1	20.6	4.2	5	45	91	140	121	5.5	50.7	3.2	2	0.5	1400	7	15	208 V	1	MFR	NF	MFR		5000	TEMSPEC	VUD-1200D	1 , 2 , 3
VUV-1-03	C2 119	1,750	0.5	VERTICAL	74	62	55	54	44	55	8.5	45.4	36.5	11.7	5	45	96	140	120	7	96.9	12.5	2	0.5	1400	12	15	208 V	1	MFR	NF	MFR		5000	TEMSPEC	VUD-2000D	1 , 2 , 3
VUV-1-04	C5 114	1,800	0.5	VERTICAL	74	62	56	56	44	60	9	70.4	46.9	12.7	5	45	105	140	126	7	117.7	5.5	2	0.5	1400	12	15	208 V	1	MFR	NF	MFR		5000	TEMSPEC	VUD-2000D	1 , 2 , 3
VUV-1-05	C3 113	1,850	0.5	VERTICAL	74	62	55	54	44	55	8.5	46	37.1	11.7	5	45	94	140	119	10	99.6	12.5	2	0.5	1400	12	15	208 V	1	MFR	NF	MFR		5000	TEMSPEC	VUD-2000D	1 , 2 , 3
VUV-1-06	COMPUTER LAB 103	1,800	0.5	VERTICAL	74	62	55	54	44	55	8.5	46	27.1	11.7	5	45	95	140	119	10	98.3	12.5	2	0.5	1400	12	15	208 V	1	MFR	NF	MFR		5000	TEMSPEC	VUD-2000D	1 , 2 , 3
VUV-1-07	ART/MUSIC 107	1,750	0.5	VERTICAL	74	62	55	54	44	55	8.5	45.4	36.5	11.7	5	45	96	140	120	7	96.9	12.5	2	0.5	1400	12	15	208 V	1	MFR	NF	MFR		5000	TEMSPEC	VUD-2000D	1 , 2 , 3
VUV-1-08	B3 117	1,600	0.5	VERTICAL	74	62	55	55	44	55	8	40.1	33	8.9	5	45	94	140	120	9	85.6	9.2	2	0.5	1400	11	15	208 V	1	MFR	NF	MFR		5000	TEMSPEC	VUD-1600D	1 , 2 , 3
VUV-1-09	B2 118	1,600	0.5	VERTICAL	74	62	55	55	44	55	8	39.5	32.3	8.9	5	45	94	140	120	9	85.6	9.2	2	0.5	1400	11	15	208 V	1	MFR	NF	MFR		5000	TEMSPEC	VUD-1600D	1 , 2 , 3
VUV-1-10	A2 143	1,550	0.5	VERTICAL	74	62	55	54	44	54	8	40.1	33	8.9	5	45	95	140	120	6.5	84.3	9.2	2	0.5	1400	11	15	208 V	1	MFR	NF	MFR		5000	TEMSPEC	VUD-1600D	1 , 2 , 3
VUV-1-11	A4 144	1,600	0.5	VERTICAL	74	62	55	55	44	55	8	40.1	33	8.9	5	45	94	140	120	9	85.6	9.2	2	0.5	1400	11	15	208 V	1	MFR	NF	MFR		5000	TEMSPEC	VUD-1600D	1 , 2 , 3
VUV-1-12	A6 146	1,600	0.5	VERTICAL	74	62	55	55	44	55	8	44.3	35.2	8.9	5	45	94	140	120	9	85.6	9.2	2	0.5	1400	11	15	208 V	1	MFR	NF	MFR		5000	TEMSPEC	VUD-1600D	1 , 2 , 3
VUV-1-13	A8 145	1,600	0.5	VERTICAL	74	62	55	55	44	55	8	40.1	33	8.9	5	45	94	140	120	9	85.6	9.2	2	0.5	1400	11	15	208 V	1	MFR	NF	MFR		5000	TEMSPEC	VUD-1600D	1 , 2 , 3
VUV-1-14	A7 150	1,650	0.5	VERTICAL	74	62	55	54	44	55	8.5	40.1	33	11.6	5	45	97	140	120	10	94.2	12.5	2	0.5	1400	12	15	208 V	1	MFR	NF	MFR		5000	TEMSPEC	VUD-2000D	1 , 2 , 3
VUV-1-15	A5 154	1,600	0.5	VERTICAL	74	62	55	55	44	55	8	44.3	35.2	8.9	5	45	94	140	120	9	85.6	9.2	2	0.5	1400	11	15	208 V	1	MFR	NF	MFR		5000	TEMSPEC	VUD-1600D	1 , 2 , 3
VUV-1-16	A3 155	1,600	0.5	VERTICAL	74	62	55	55	44	55	8	40.1	33	8.9	5	45	94	140	120	9	85.6	9.2	2	0.5	1400	11	15	208 V	1	MFR	NF	MFR		5000	TEMSPEC	VUD-1600D	1 , 2 , 3
VUV-1-17	B4 128	1,550	0.5	VERTICAL	74	62	55	54	44	54	8	40.1	33	8.9	5	45	95	140	120	6.5	84.3	9.2	2	0.5	1400	11	15	208 V	1	MFR	NF	MFR		5000	TEMSPEC	VUD-1600D	1 , 2 , 3
VUV-1-18	OFFICE 202	1,450	0.5	VERTICAL	74	62	55	54	44	54	8	39.5	32.3	8.9	5	45	96	140	120	8.5	80.7	8.3	2	0.5	1400	11	15	208 V	1	MFR	NF	MFR		5000	TEMSPEC	VUD-1600D	1 , 2 , 3
VUV-1-19	ROOM 201	1,450	0.5	VERTICAL	74	62	55	54	44	54	8	38.4	31	8.9	5	45	96	140	120	8.5	80.7	8.3	2	0.5	1400	11	15	208 V	1	MFR	NF	MFR		5000	TEMSPEC	VUD-1600D	1 , 2 , 3

UNIT HEATER SCHEDULE - HOT WATER

NOTES:
1.REFER TO FLOOR PLAN FOR SENSOR TYPE.

										ELECTRICAL											
														DISCONNECT		CONTROLLER/ STARTER					
TAG NAME	AREA SERVED	CONFIGURATION	CFM	BTUH	GPM	EWT °F	LWT °F	W.P.D. FT. HEAD	RPM	VOLTAGE	MOTOR HP	PHASES	BY (NOTE A)	TYPE (NOTE B)	BY (NOTE A)	SCCR	WEIGHT (LB.)	MANUFACTURER	MODEL	NOTES
UH-7	MECH 102	HORIZONTAL	245	8030	0.8	140	120	0.8	1550	120	16 W	1	MFR	NF	MFR	5000	22	AIRTHERM	AHSD	1

BOILER SCHEDULE - HOT WATER

1.MANUFACTURE RATED GAS INLET PRESSURE OF BOILER IS SET BETWEEN 0.5 – 1 PSI.
2.FLUID IS 30% PROPELYNE GLYCOL.

									ELECTRICAL								
												DISCONNECT		CONTROLLER/ STARTER				
TAG NAME	FUEL	TURNDOWN RATIO	INPUT MBH	OUTPUT MBH	EWT °F	LWT °F	OPERATING PRESSURE PSI	BHP	HP	VOLTAGE	PHASES	BY (NOTE A)	TYPE (NOTE B)	BY (NOTE A)	SCCR	MANUFACTURER	MODEL	NOTES
B-1-E	Natural Gas	5:1	600	556	120	140	100	16.6	1.26	120	1	MC	CB	MFR	5000	HYDROTHERM	KN-6	EXISTING TO REMAIN
B-2-E	Natural Gas	5:1	600	556	120	140	100	16.6	1.26	120	1	MC	CB	MFR	5000	HYDROTHERM	KN-6	EXISTING TO REMAIN
B-3	Natural Gas	10:1	2000	1760	120	140	100	56	4.03	120	1	MC	CB	MFR	5000	CLEAVERBROOKS	CLEARFIRE-CE	1, 2
B-4	Natural Gas	10:1	2000	1760	120	140	100	56	4.03	120	1	MC	CB	MFR	5000	CLEAVERBROOKS	CLEARFIRE-CE	1, 2

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.)	TYPE	BORDER	MATERIAL	FINISH	MANUFACTURER	MODEL	NOTES
RG-1	24x24	EGGCRATE	LAY-IN	STEEL	WHITE	TITUS	50F	1 , 2
RG-2	12x12	EGGCRATE	LAY-IN	STEEL	WHITE	TITUS	50F	1 , 2
RG-3	SEE DWG.	45 DEGREE DEFLECTION	SURFACE MOUNT	STEEL	WHITE	TITUS	23RL	1 , 2
SD-1	24x24	PLAQUE FACE	LAY-IN	STEEL	WHITE	TITUS	OMNI	1 , 2
SD-2	12x12	PLAQUE FACE	LAY-IN	STEEL	WHITE	TITUS	OMNI	1 , 2
SG-1	SEE DWG.	SINGLE DEFLECTION	EXTERNAL MOUNT	STAINLESS STEEL	#04 MILL	TITUS	300RL-SS	1 , 2
SG-2	SEE DWG.	DOUBLE DEFLECTION	EXTERNAL MOUNT	ALUMINUM	WHITE	TITUS	300FL	1 , 2

PUMP SCHEDULE

NOTES:
1.PROVIDE SHAFT GROUNDING AS REQUIRED IN THE MOTOR SPECIFICATION 23 05 13.
2.VFD IS INTEGRAL TO PUMP.
3.FLUID IS 30% PROPYLENE GLYCOL.

							ELECTRICAL										
											DISCONNECT		CONTROLLER/ STARTER				
TAG NAME	SERVING	GPM	PUMP FT. HEAD AT DESIGN	MIN. PUMP EFFICIENCY %	INLET SIZE	IMPELLER SIZE	HP (NOTE E)	MOTOR RPM	VOLTAGE	PHASES	BY (NOTE A)	TYPE (NOTE B)	BY (NOTE A)	TYPE (NOTE C)	MANUFACTURER	SERIES	MODEL	NOTES
CWP-1	CHILLED WATER SYSTEM	210.0	75	69	3"	8.5	5.5	2000	208	3	MFR	NF	MFR	VFD	BELL & GOSSETT	e-1510X	2BD	1, 2, 3
CWP-2	CHILLED WATER SYSTEM	210.0	75	69	3"	8.5	5.5	2000	208	3	MFR	NF	MFR	VFD	BELL & GOSSETT	e-1510X	2BD	1, 2, 3
HWP-1	HEATING WATER SYSTEM	320.0	135	73	3"	6.5	20	4000	208	3	MFR	NF	MFR	VFD	BELL & GOSSETT	e-1510X	2BD	1, 2, 3
HWP-2	HEATING WATER SYSTEM	320.0	135	73	3"	6.5	20	4000	208	3	MFR	NF	MFR	VFD	BELL & GOSSETT	e-1510X	2BD	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

MAKE-UP AIR UNIT SCHEDULE

NOTES:
1.VFD BY FAN MANUFACTURER IS MOUNTED INTERIOR OF CABINET.

								EAT		LAT		ELECTRICAL															
																			DISCONNECT		CONTROLLER/ STARTER						
TAG NAME	AREA SERVED	CFM	FAN RPM (NOTE D)	EXT. S.P. IN. W.C.	MIN. MBH OUTPUT	TURNDOWN RATIO	DB °F	WB °F	DB °F	WB °F	BHP (NOTE E)	MHP (NOTE E)	MCA	MOCP	FLA	VOLTAGE	PHASES	BY (NOTE A)	TYPE (NOTE B)	BY (NOTE A)	TYPE (NOTE C)	SCCR	FUEL TYPE	FUEL PRESSURE PSI	WEIGHT (LB.)	MANUFACTURER	MODEL
MAU-1	CAFETERIA 122	2300	1713	1.5	170	11:1	-3.0	-4.0	65.4	42.2	1.3	2	11	15	9	208	3	MFR	NF	MFR	VFD	10000	NATURAL GAS	10	1350	AAON INC.	RNA-10

IMEG
www.imegcorp.com
8900 KEYSTONE CROSSING SUITE 210
INDIANAPOLIS, IN 46240
P: 317.848.5045 F: 317.844.2201

0 1 2 3
REF. SCALE IN INCHES
PROJECT #24001305.00

INDIANA REGISTERED PROFESSIONAL ENGINEER
No. PE60910310
STATE OF
01.31.25
Nicholas H. Armstrong

ROACHDALE ELEMENTARY SCHOOL HVAC IMPROVEMENTS - VOL. 2
NORTH PUTNAM COMMUNITY SCHOOLS
305 SOUTH INDIANA STREET
ROACHDALE, IN 46172

WILLIAMS ARCHITECTS

REVISIONS
NO. | DATE | DESCRIPTION

WA No. 2024-006
Date 31 JAN 2025
Issue 100% CON CD
NAK
CHK NHA

HVAC SCHEDULES

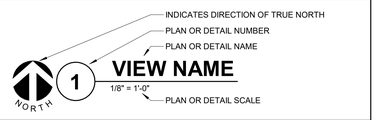
M8.1

1/29/2025 1:43:05 PM

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



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

APPLICABLE CODES

CONTRACTOR SHALL COMPLY WITH APPLICABLE CODES AND LOCAL AMENDMENTS INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:

BUILDING CODE:	IBC 2014 EDITION	WITH AMENDMENTS
FIRE CODE:	IFC 2012 EDITION	WITH AMENDMENTS
PLUMBING CODE:	IPC 2012 EDITION	WITH AMENDMENTS
MECHANICAL CODE:	IMC 2014 EDITION	WITH AMENDMENTS
ELECTRICAL CODE:	IEC 2009 EDITION (NFPA 70-2008)	WITH AMENDMENTS

CONTRACTOR ABBREVIATION KEY

ABBR:	DESCRIPTION:
A.C.	ASBESTOS ABATEMENT CONTRACTOR
C.C.	CIVIL CONTRACTOR
C.M.	CONSTRUCTION MANAGER
E.C.	ELECTRICAL CONTRACTOR
F.P.C.	FIRE PROTECTION CONTRACTOR
G.C.	GENERAL CONTRACTOR
H.C.	HEATING CONTRACTOR
M.C.	MECHANICAL CONTRACTOR
P.C.	PLUMBING CONTRACTOR
T.C.C.	TEMPERATURE CONTROLS CONTRACTOR
V.C.	VENTILATION CONTRACTOR

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	IMC	EMT	PVC	RTRC	PVC COATED RMC	HDPE
FEEDERS: SWITCHBOARDS, DISTRIBUTION PANELS, PANELBOARDS, MOTOR CONTROL CENTERS, ETC.		X	X				
BRANCH CIRCUITS: LIGHTING, RECEPTACLES, CONTROLS, ETC.		X	X				
MECHANICAL EQUIPMENT FEEDERS: PUMPS, CHILLERS, AIR HANDLING UNITS, ETC.		X	X				
FLOOR MOUNTED EQUIPMENT FEEDERS: PUMPS, ETC. (INCLUDE NO MORE THAN 6 FEET OF LFMC TO PUMP)		X	X				
CONTROLS (LIGHTING, POWER, BUILDING AUTOMATION, ETC.)		X	X				
WET AND DAMP LOCATIONS: (CONDUIT, BOXES, FITTINGS, INSTALLED AND EQUIPPED TO PREVENT WATER ENTRY)	X				X		
CORROSIVE LOCATIONS					X	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	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		
UNDERGROUND SITE CONDUITS:							
WITHIN 5' FROM THE PERIMETER OF A BUILDING FOUNDATION	X				X		
5' OR GREATER FROM THE PERIMETER OF A BUILDING FOUNDATION	X			X	X		
UNDER ROADS, DRIVES, AND VEHICLE TRAVELED WAYS. WHEN HDPE DIRECTIONAL BORING IS ALLOWED: PROVIDE PRESSURIZED GROUT				X		X	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:
E / E	ECONN	26 05 33	ELECTRICAL CONNECTION
J / J	JB	26 05 33	JUNCTION BOX
	PANEL '###'	26 24 16	PANELBOARD - RECESS MOUNT
	PANEL '###'	26 24 16	PANELBOARD - SURFACE MOUNT
	FCS-#	26 28 16	FUSED COMBINATION STARTER REFER TO DISC/STA STARTER
	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
	REC-DUP	26 27 26	DUPLEX RECEPTACLE, 125V
	REC-DUP-GFI	26 27 26	DUPLEX GFI RECEPTACLE, 125V
G	REC-DUP-GFI-R	26 27 26	GROUND FAULT DEVICE
W	REC-DUP-WP	26 27 26	DUPLEX GFI WEATHERPROOF RECEPTACLE 125V
U	REC-USB	26 27 26	DUPLEX RECEPTACLE, USB CHARGING
	REC-TAMP	26 27 26	DUPLEX RECEPTACLE, TAMPER RESISTANT, 125V
	REC-TAMP-GFI	26 27 26	GFI DUPLEX RECEPTACLE, TAMPER RESISTANT, 125V
	REC-TAMP-QUAD	26 27 26	QUAD RECEPTACLE, TAMPER RESISTANT, 125V
	REC-QUAD	26 27 26	QUAD RECEPTACLE, 125V
	REC-QUAD-GFI	26 27 26	QUAD GFI RECEPTACLE, 125V
U	REC-QUAD-USB	26 27 26	QUAD RECEPTACLE, USB 125V
W	REC-QUAD-WP	26 27 26	QUAD GFI WEATHERPROOF RECEPTACLE, 125V
	REC-SIM-1430R	26 27 26	RECEPTACLE, 14-30R, 125/250V

ELECTRICAL ABBREVIATION KEY

ABBR:	DESCRIPTION:
ABV	ABOVE
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ASR	ARCHITECTURAL SURFACE RACEWAY
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
GFR	GROUND FAULT REMOTE
HOA	HAND/OFF/AUTO
NC	NORMALLY CLOSED
NEMA #	NEMA RATING
NIC	NOT IN CONTRACTED SCOPE
NO	NORMALLY OPEN
ROOF	EQUIPMENT LOCATED ON ROOF ABOVE
SM	SURFACE MOUNTED
TYP	TYPICAL
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED

ELECTRICAL INSTALLATION NOTES:

1. 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.
2. FLUSH MOUNT ALL LIGHTING CONTROL DEVICES AT +46" FROM FLOOR (CENTERLINE DIMENSION), EXCEPT WHERE OTHERWISE NOTED.
3. 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.
4. 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.
5. 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
6. ELECTRICAL EQUIPMENT SHALL BE MOUNTED TO AVOID IMPEDANCE OF, OPERATION OF, AND/OR ACCESS TO ELECTRICAL AND MECHANICAL EQUIPMENT. ALL MOUNTING OF ELECTRICAL EQUIPMENT, ON EQUIPMENT SUPPLIED BY ANOTHER CONTRACTOR, SHALL BE APPROVED IN ADVANCE BY THE OTHER CONTRACTOR.
7. 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.
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. 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.
10. ELECTRICAL IDENTIFICATION. REFER TO SPECIFICATION SECTION 26 05 53 FOR COLOR/LABEL REQUIREMENTS FOR CONDUIT, BOX, CABLE/WIRE, AND EQUIPMENT.

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.
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.

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
I	MOUNT IN CASEWORK
M	MOUNT IN MODULAR FURNITURE
O	WIRING DEVICE, OCCUPANCY CONTROLLED
R	MOUNT IN SURFACE RACEWAY
S	SURFACE MOUNTED
W	WEATHERPROOF WIRING DEVICE, NEMA 3R WHILE-IN-USE COVER, WR LISTED
WG	WIRE GUARD
WP	WEATHERPROOF

ELECTRICAL SHEET INDEX

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ANDERSON R. WILLIS — REGISTERED — No. PE11800750 — STATE OF INDIANA — PROFESSIONAL ENGINEER
01.31.25

ROACHDALE ELEMENTARY SCHOOL HVAC IMPROVEMENTS - VOL. 2
NORTH PUTNAM COMMUNITY SCHOOLS
305 SOUTH INDIANA STREET
ROACHDALE, IN 46172

WILLIAMS ARCHITECTS

REVISIONS

NO.	DATE	DESCRIPTION

WA No. 2024-006
Date 31 JAN 2025
Issue 100% CON CD
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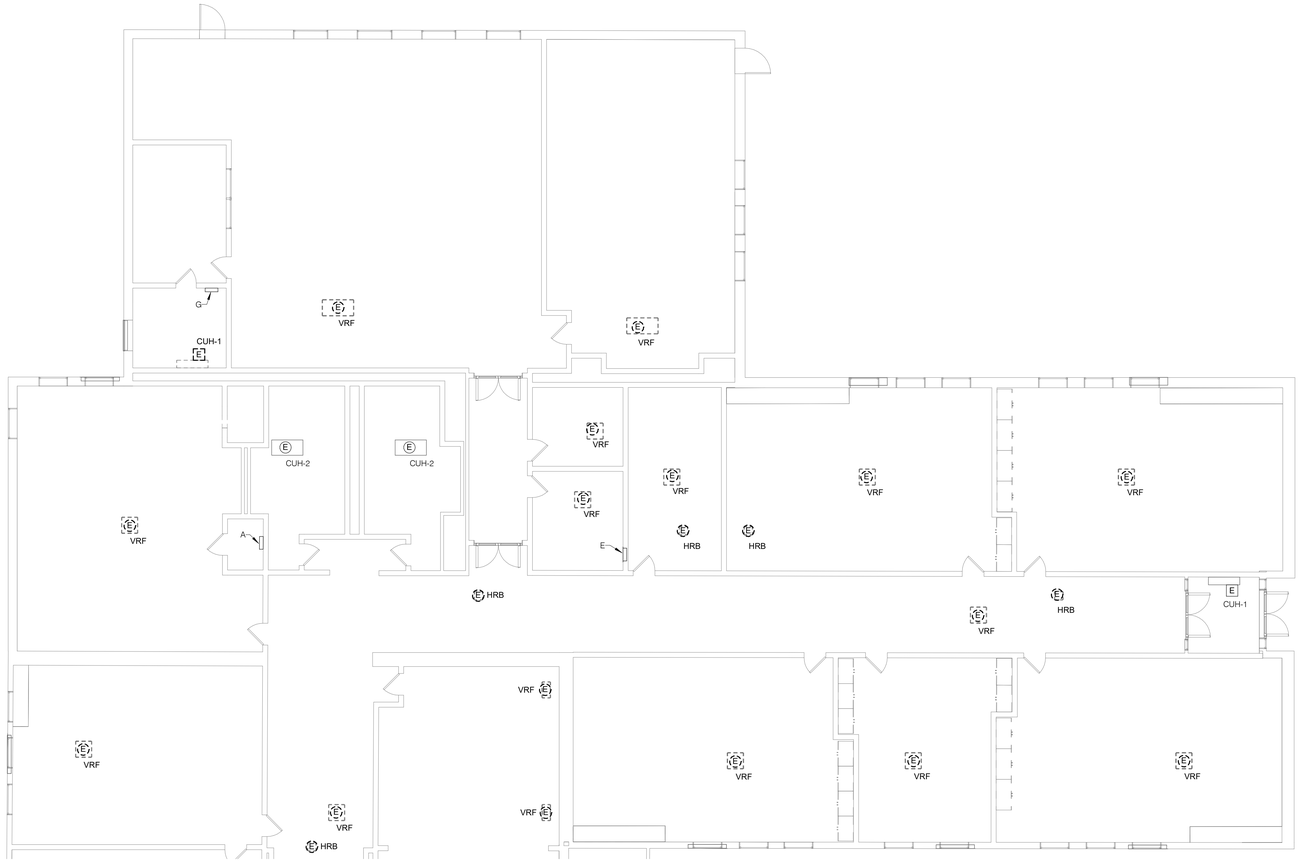
CHK ARW

ELECTRICAL COVERSHEET

E0.0

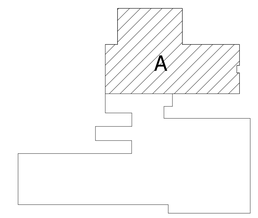
GENERAL NOTES:

A. REFER TO SHEET E0.0 FOR ELECTRICAL SYMBOLS, ABBREVIATIONS AND INSTALLATION NOTES.
B. REMOVE ALL LIGHT FIXTURES WHERE REQUIRED FOR DEMOLITION OF MECHANICAL SYSTEMS ABOVE CEILINGS. RETAIN LIGHT FIXTURES FOR REINSTALLATION. COORDINATE WITH MECHANICAL CONTRACTOR AND REFLECTED CEILING PLANS.



1 GROUND FLOOR ELECTRICAL DEMOLITION PLAN - AREA A

1/8" = 1'-0"



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REGISTERED
No. PE11800750
STATE OF INDIANA
PROFESSIONAL ENGINEER
01.31.25

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GROUND FLOOR ELECTRICAL DEMOLITION PLAN - AREA A

E1.1A

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GENERAL NOTES:

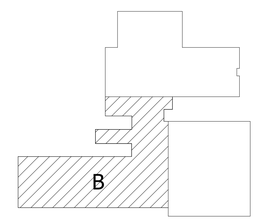
A. REFER TO SHEET E0.0 FOR ELECTRICAL SYMBOLS, ABBREVIATIONS AND INSTALLATION NOTES.
B. REMOVE ALL LIGHT FIXTURES WHERE REQUIRED FOR DEMOLITION OF MECHANICAL SYSTEMS ABOVE CEILINGS. RETAIN LIGHT FIXTURES FOR REINSTALLATION. COORDINATE WITH MECHANICAL CONTRACTOR AND REFLECTED CEILING PLANS.

KEYNOTES: (#)

1. DISCONNECT POWER TO PUMP. CIRCUIT TO REMAIN FOR CONNECTION TO NEW PUMP. REFER TO SHEET E3.1B.

GROUND FLOOR ELECTRICAL DEMOLITION PLAN - AREA B

1/8" = 1'-0"



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GROUND FLOOR ELECTRICAL DEMOLITION PLAN - AREA B

E1.1B

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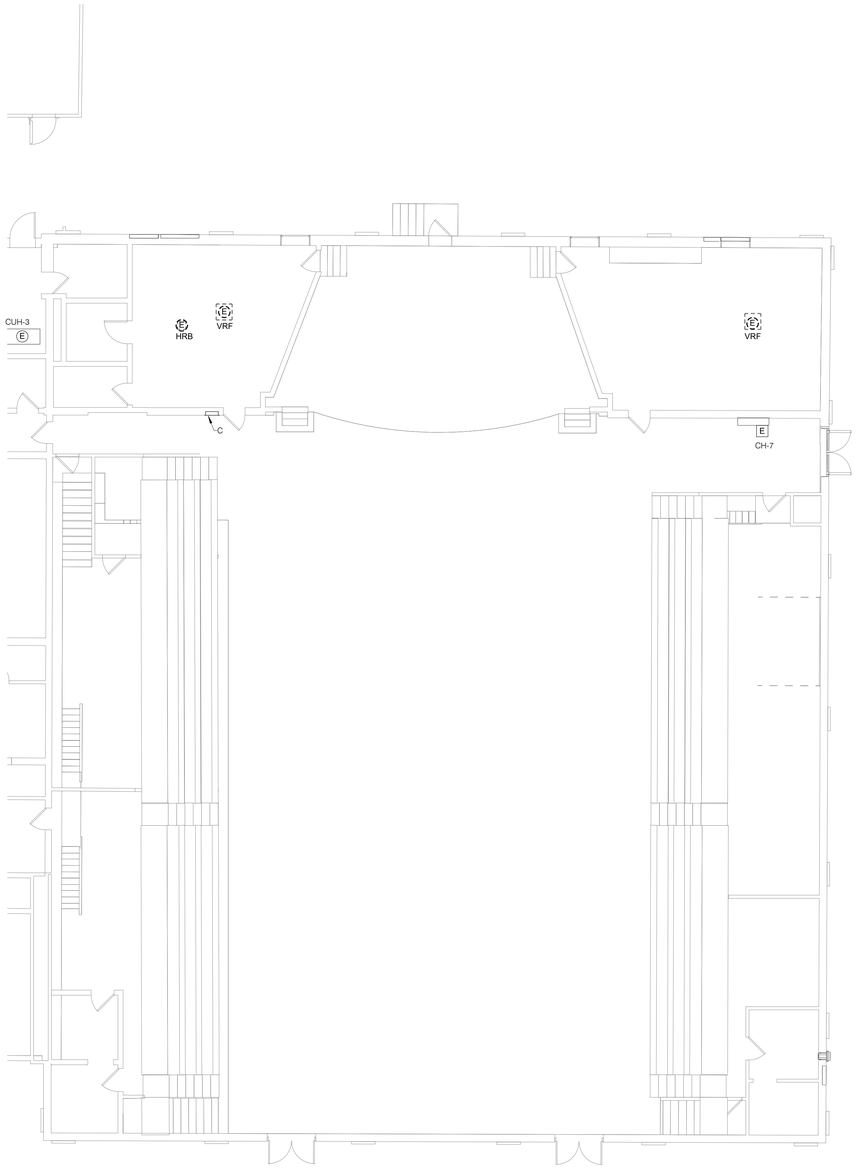
GENERAL NOTES:

A. REFER TO SHEET E0.0 FOR ELECTRICAL SYMBOLS, ABBREVIATIONS AND INSTALLATION NOTES.
B. REMOVE ALL LIGHT FIXTURES WHERE REQUIRED FOR DEMOLITION OF MECHANICAL SYSTEMS ABOVE CEILINGS. RETAIN LIGHT FIXTURES FOR REINSTALLATION. COORDINATE WITH MECHANICAL CONTRACTOR AND REFLECTED CEILING PLANS.



1 GROUND FLOOR ELECTRICAL DEMOLITION PLAN - AREA C

1/8" = 1'-0"

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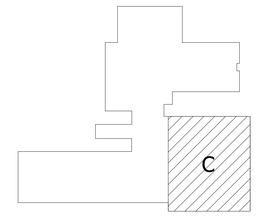

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REGISTERED
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STATE OF INDIANA
PROFESSIONAL ENGINEER
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GROUND FLOOR ELECTRICAL DEMOLITION PLAN - AREA C

E1.1C

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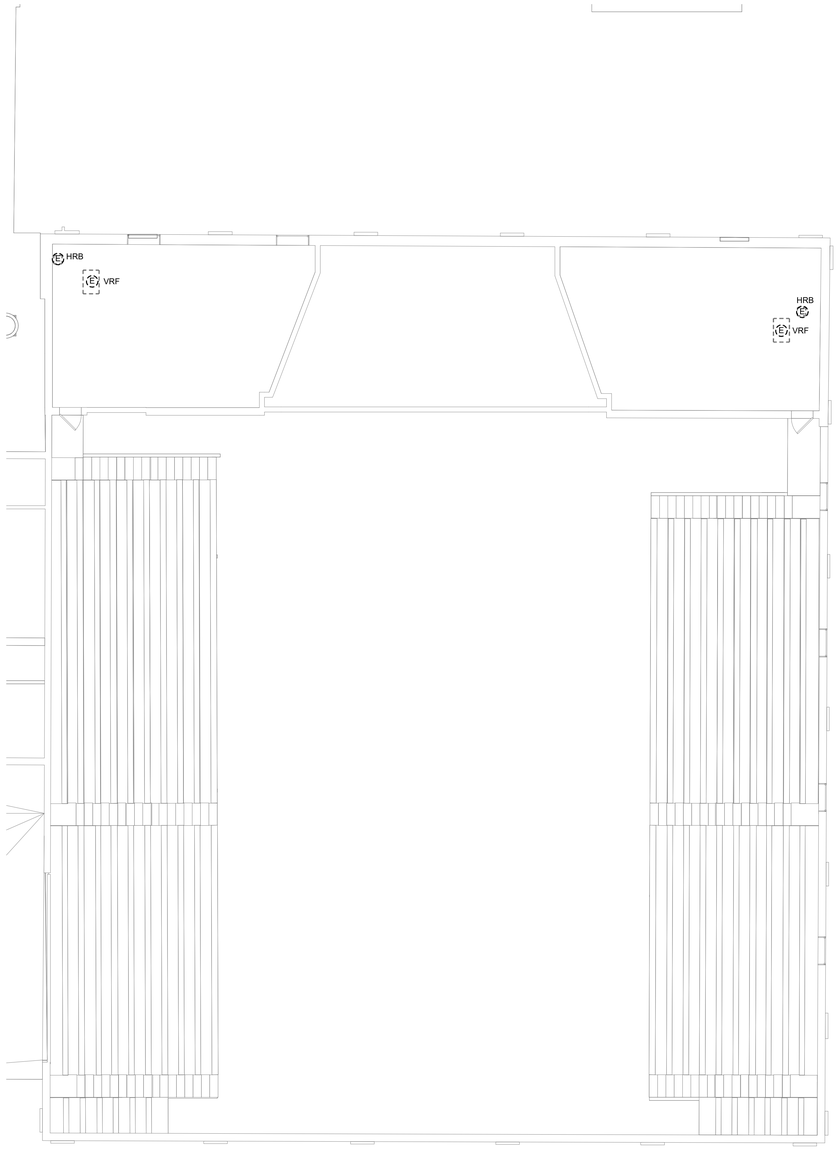
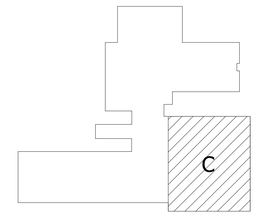
GENERAL NOTES:

A. REFER TO SHEET E0.0 FOR ELECTRICAL SYMBOLS, ABBREVIATIONS AND INSTALLATION NOTES.
B. REMOVE ALL LIGHT FIXTURES WHERE REQUIRED FOR DEMOLITION OF MECHANICAL SYSTEMS ABOVE CEILINGS. RETAIN LIGHT FIXTURES FOR REINSTALLATION. COORDINATE WITH MECHANICAL CONTRACTOR AND REFLECTED CEILING PLANS.



1 UPPER FLOOR ELECTRICAL DEMOLITION PLAN - AREA C

1/8" = 1'-0"



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STATE OF INDIANA
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UPPER FLOOR ELECTRICAL DEMOLITION PLAN - AREA C

E1.2C

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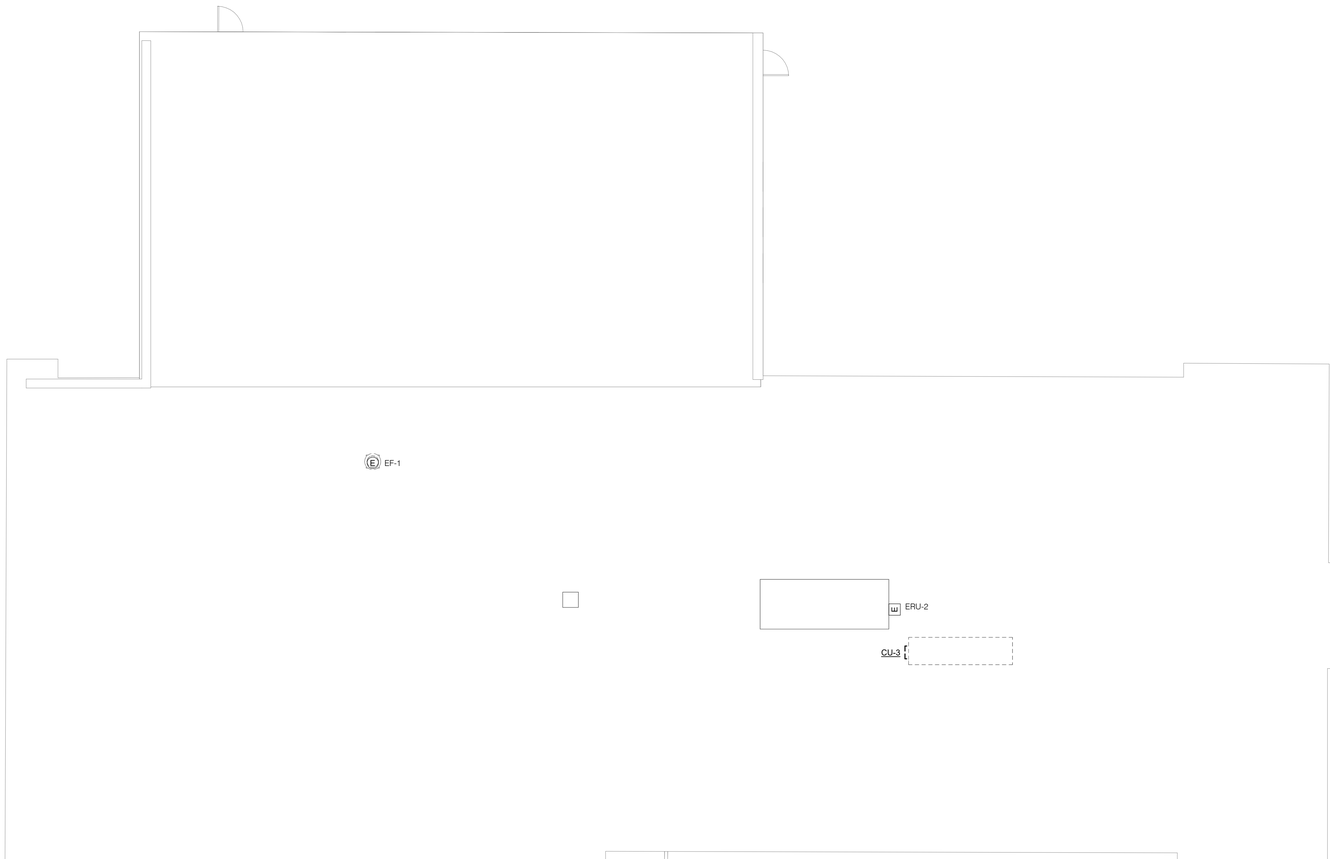
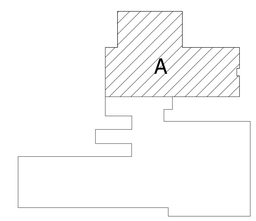
GENERAL NOTES:

A. REFER TO SHEET E0.0 FOR ELECTRICAL SYMBOLS, ABBREVIATIONS AND INSTALLATION NOTES.



1 ROOF ELECTRICAL DEMOLITION PLAN - AREA A

1/8" = 1'-0"



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ROOF ELECTRICAL DEMOLITION PLAN - AREA A

E1.3A

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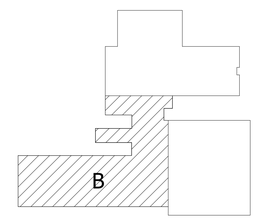
GENERAL NOTES:

A. REFER TO SHEET E0.0 FOR ELECTRICAL SYMBOLS, ABBREVIATIONS AND INSTALLATION NOTES.

1 ROOF ELECTRICAL DEMOLITION PLAN - AREA B

1/8" = 1'-0"



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ROOF ELECTRICAL DEMOLITION PLAN - AREA B

E1.3B

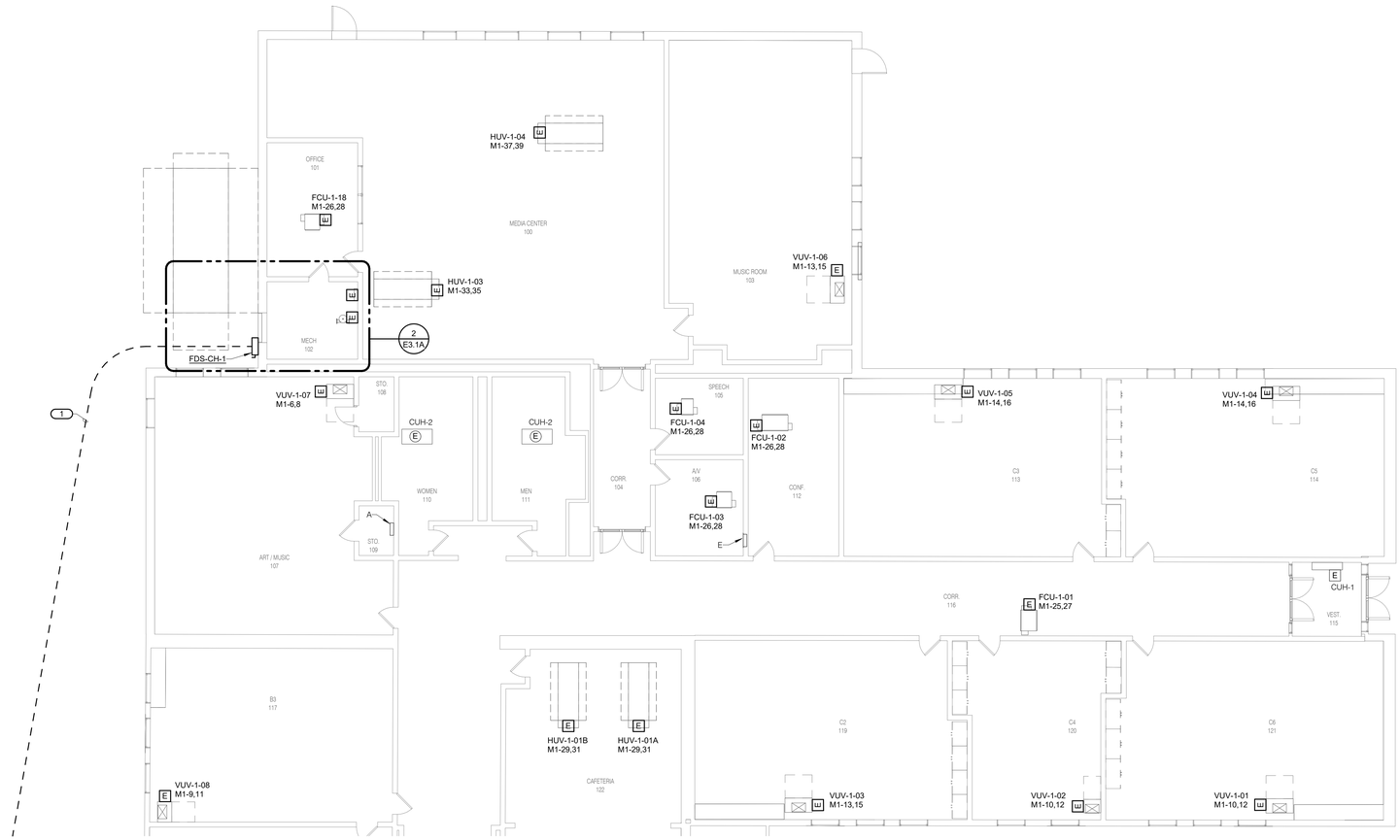
1/29/2025 4:41:20 PM

GENERAL NOTES:

A. REFER TO SHEET E0.0 FOR ELECTRICAL SYMBOLS, ABBREVIATIONS AND INSTALLATION NOTES.
B. REINSTALL ALL LIGHT FIXTURES WHERE TEMPORARILY REMOVED FOR DEMOLITION OF MECHANICAL SYSTEMS. PLACE IN SAME LOCATION AS EXISTING CONDITIONS. COORDINATE WITH MECHANICAL CONTRACTOR AND REFLECTED CEILING PLANS.

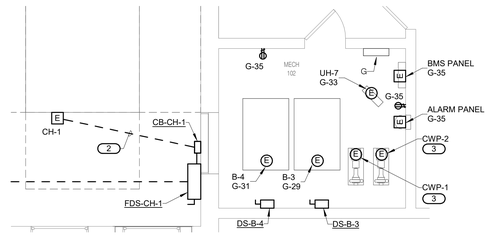
KEYNOTES: (#)

1. (3) PARALLEL SETS OF 4#500KCM, 1#2/0 GND, 3-1/2" CONDUIT EACH. ROUTE BETWEEN EXISTING UTILITY TRANSFORMER AND PANEL 'DP-H1'.
2. (3) PARALLEL SETS OF 4#500KCM, 1#2/0 GND, 3-1/2" CONDUIT EACH.
3. CONNECT TO EXISTING SWITCHBOARD 'SB-MDP' WITH 4#3, 1#8 GND, 1-1/4" CONDUIT.



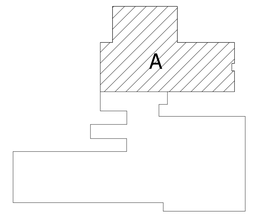
GROUND FLOOR POWER PLAN - AREA A

1/8" = 1'-0"



GROUND FLOOR ENLARGED POWER PLAN - AREA A - MECHANICAL ROOM

1/4" = 1'-0"



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REGISTERED
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STATE OF INDIANA
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GROUND FLOOR POWER PLAN - AREA A

E3.1A

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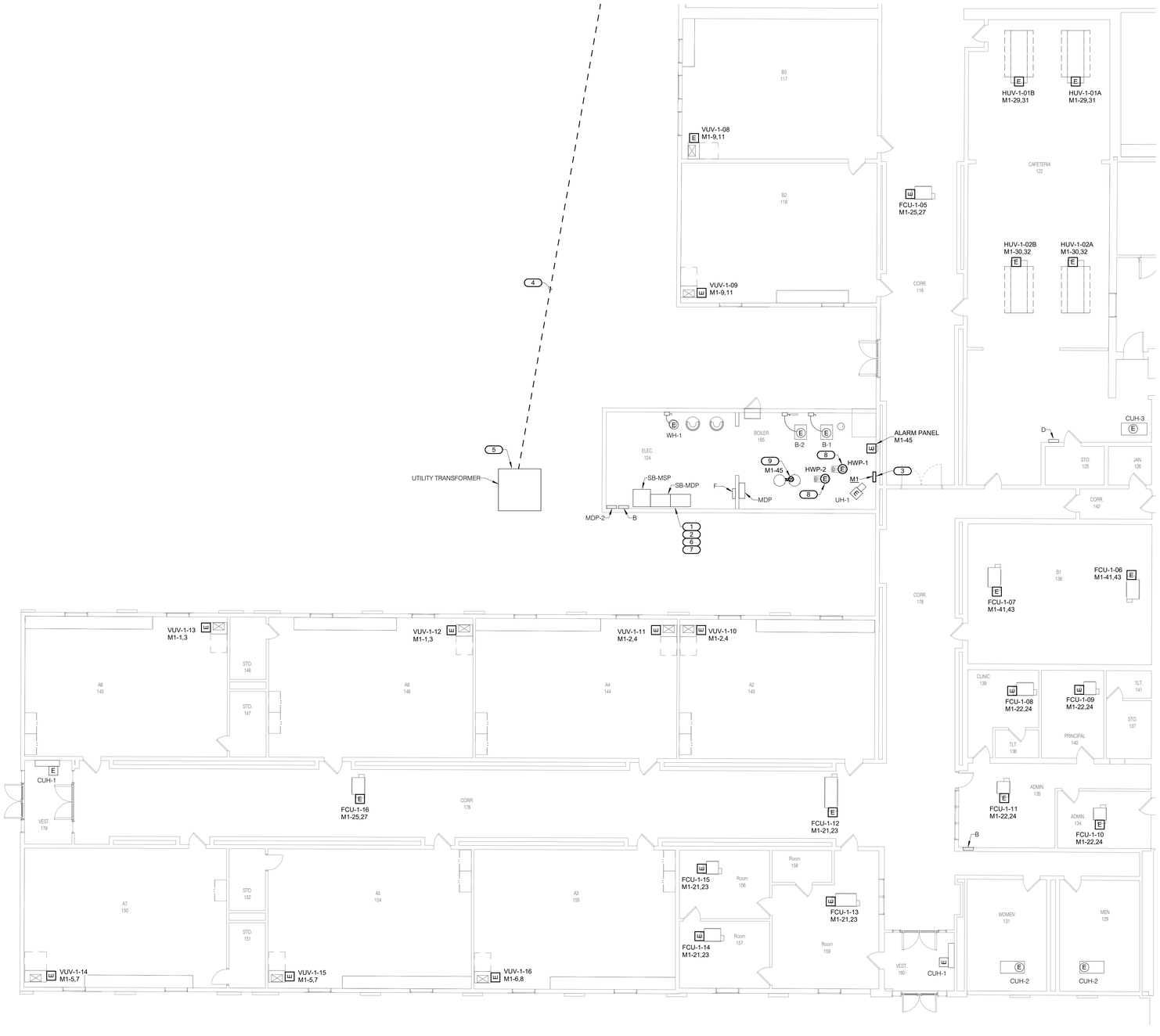
GENERAL NOTES:

A. REFER TO SHEET E0.0 FOR ELECTRICAL SYMBOLS, ABBREVIATIONS AND INSTALLATION NOTES.
B. REINSTALL ALL LIGHT FIXTURES WHERE TEMPORARILY REMOVED FOR DEMOLITION OF MECHANICAL SYSTEMS. PLACE IN SAME LOCATION AS EXISTING CONDITIONS. COORDINATE WITH MECHANICAL CONTRACTOR AND REFLECTED CEILING PLANS.

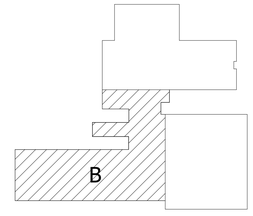
KEYNOTES: (#)

1. PROVIDE (1) 80A-3P BREAKER IN EXISTING SPACE OF 'SB-MDP' FOR CONNECTION TO MAU-1 ON ROOF. REFER TO SHEET E4.3B.
2. CONNECT (1) EXISTING 200A-3P BREAKER IN SB-MDP TO PANEL 'M1' (FROM DEMOLISHED CU UNIT). CHANGE LABEL ON (2) EXISTING 200A-3P BREAKERS TO "SPARE" (FROM DEMOLISHED CU UNITS).
3. CONNECT PANEL TO EXISTING 200A-3P BREAKER IN 'SB-MDP' WITH 4#3/0, 1#6 GND, 2-1/2" CONDUIT.
4. (3) PARALLEL SETS OF 4#500KCM, 1#2/0 GND, 3-1/2" CONDUIT EACH. CONNECT TO FD-CH-1. REFER TO SHEET E3.1A.
5. COORDINATE UTILITY TRANSFORMER WORK WITH DUKE ENERGY FOR CONNECTION OF SECONDARY FEEDERS.
6. PROVIDE (1) 100A-3P BREAKER IN EXISTING SPACE OF 'SB-MDP' FOR CONNECTION TO CWP-2. REFER TO SHEET E3.1A.
7. PROVIDE (1) 100A-3P BREAKER IN EXISTING SPACE OF 'SB-MDP' FOR CONNECTION TO CWP-1. REFER TO SHEET E3.1A.
8. CONNECT PUMP TO EXISTING CIRCUIT FROM DEMOLISHED PUMP. REFER TO SHEET E1.1B.
9. MOUNT RECEPTACLE NEAR GLYCOL UNIT. COORDINATE WITH MECHANICAL CONTRACTOR.



1 GROUND FLOOR POWER PLAN - AREA B

1/8" = 1'-0"



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REGISTERED
No. PE11800750
STATE OF INDIANA
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GROUND FLOOR POWER PLAN - AREA B

E3.1B

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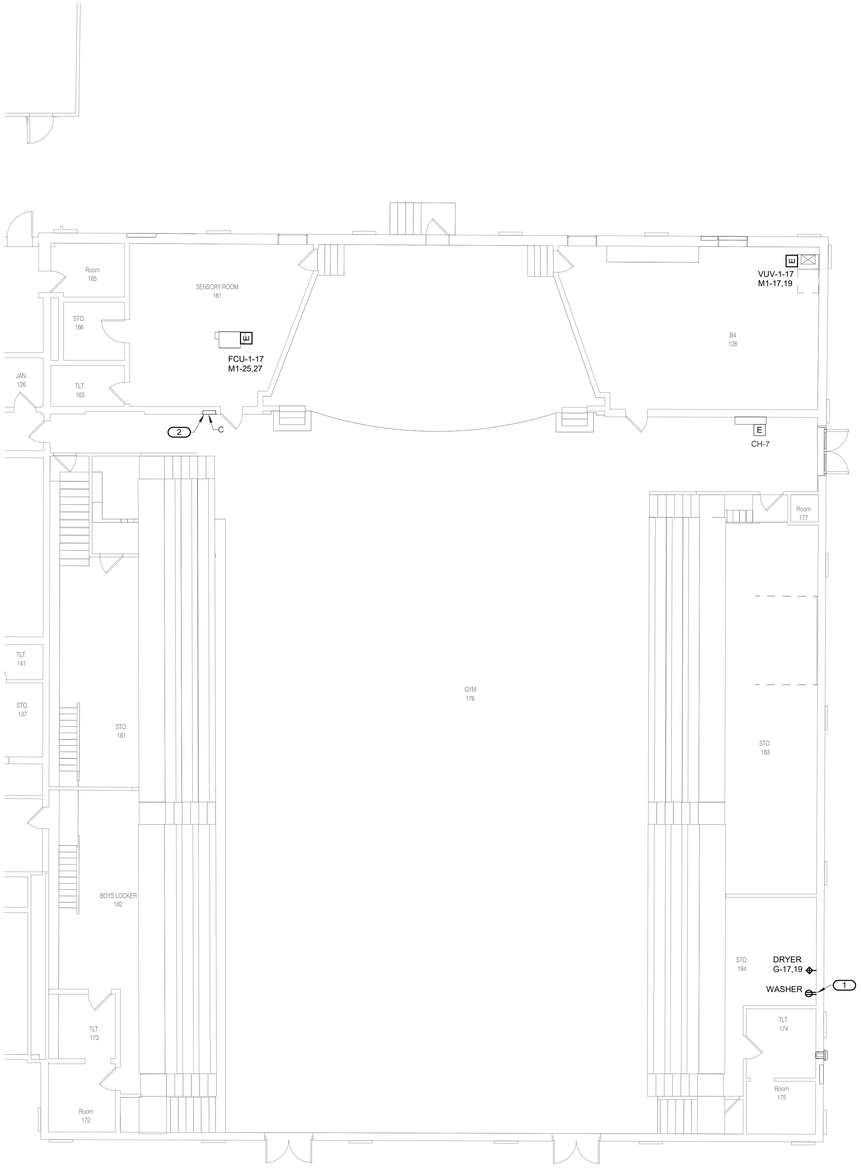
GENERAL NOTES:

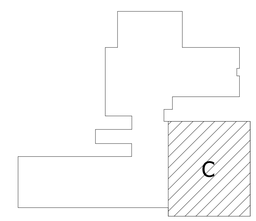
A. REFER TO SHEET E0.0 FOR ELECTRICAL SYMBOLS, ABBREVIATIONS AND INSTALLATION NOTES.
B. REINSTALL ALL LIGHT FIXTURES WHERE TEMPORARILY REMOVED FOR DEMOLITION OF MECHANICAL SYSTEMS. PLACE IN SAME LOCATION AS EXISTING CONDITIONS. COORDINATE WITH MECHANICAL CONTRACTOR AND REFLECTED CEILING PLANS.

KEYNOTES: (#)

1. CONNECT TO EXISTING PANEL 'C'.
2. PROVIDE (1) 20A-1P BREAKER FOR WASHER.



1 GROUND FLOOR POWER PLAN - AREA C
1/8" = 1'-0"



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CHK ARW

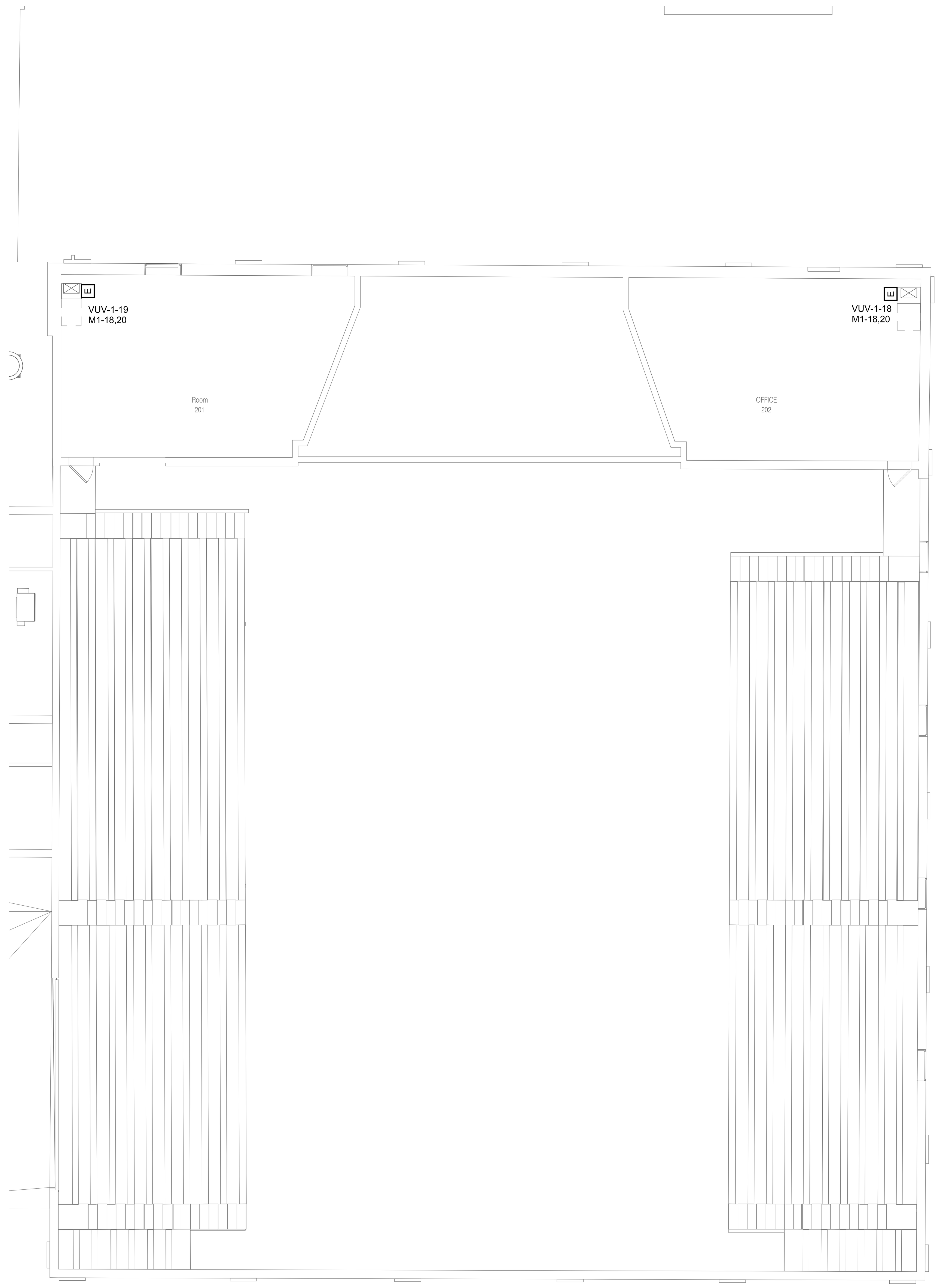
GROUND FLOOR POWER PLAN - AREA C

E3.1C

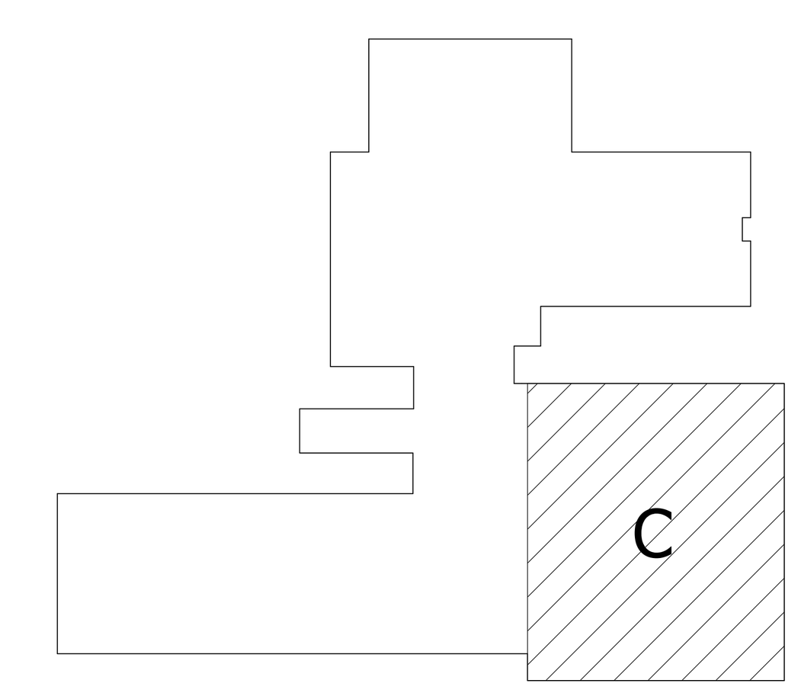
1/29/2025 4:41:23 PM

GENERAL NOTES:

A. REFER TO SHEET E0.0 FOR ELECTRICAL SYMBOLS, ABBREVIATIONS AND INSTALLATION NOTES.
B. REINSTALL ALL LIGHT FIXTURES WHERE TEMPORARILY REMOVED FOR DEMOLITION OF MECHANICAL SYSTEMS. PLACE IN SAME LOCATION AS EXISTING CONDITIONS. COORDINATE WITH MECHANICAL CONTRACTOR AND REFLECTED CEILING PLANS.



1 UPPER FLOOR POWER PLAN - AREA C
1/8" = 1'-0"



ANDERSON R. WILLIS REGISTERED No. PE11800750 STATE OF INDIANA PROFESSIONAL ENGINEER 01.31.25

ROADCHALE ELEMENTARY SCHOOL HVAC IMPROVEMENTS - VOL. 2
NORTH PUTNAM COMMUNITY SCHOOLS
305 SOUTH INDIANA STREET
ROACHDALE, IN 46172

WILLIAMS ARCHITECTS

REVISIONS

NO.	DATE	DESCRIPTION

WA No.	2024-006
Date	31 JAN 2025
Issue	100% CON CD
DWR	JHN
CHK	ARW

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REF. SCALE IN INCHES 0 1 2 3
PROJECT #24001305.00

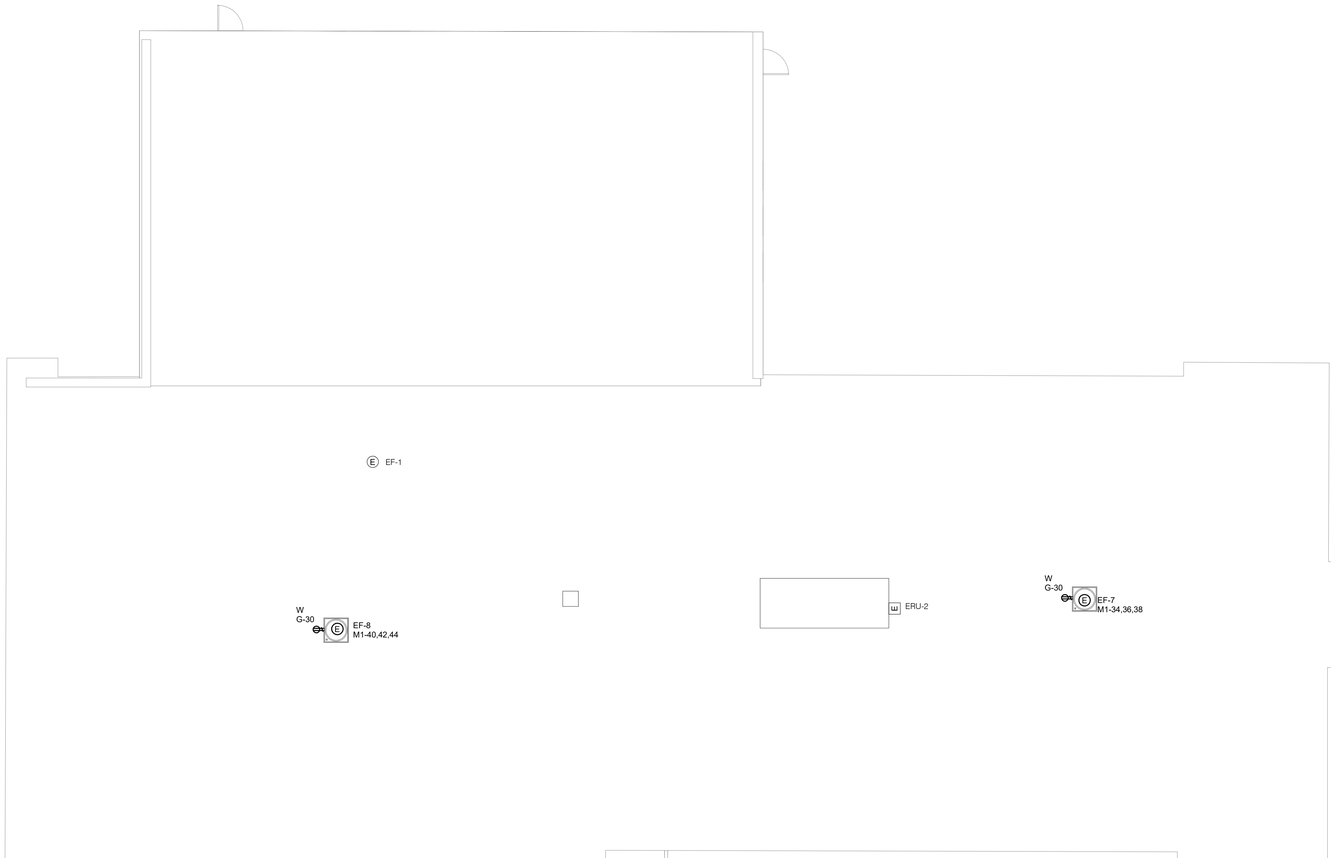
UPPER FLOOR POWER PLAN - AREA C

E3.2C

1/29/2025 4:41:24 PM

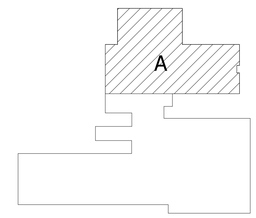
GENERAL NOTES:

A. REFER TO SHEET E0.0 FOR ELECTRICAL SYMBOLS, ABBREVIATIONS AND INSTALLATION NOTES.



1 ROOF POWER PLAN - AREA A

1/8" = 1'-0"



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ROOF POWER PLAN - AREA A

E4.3A

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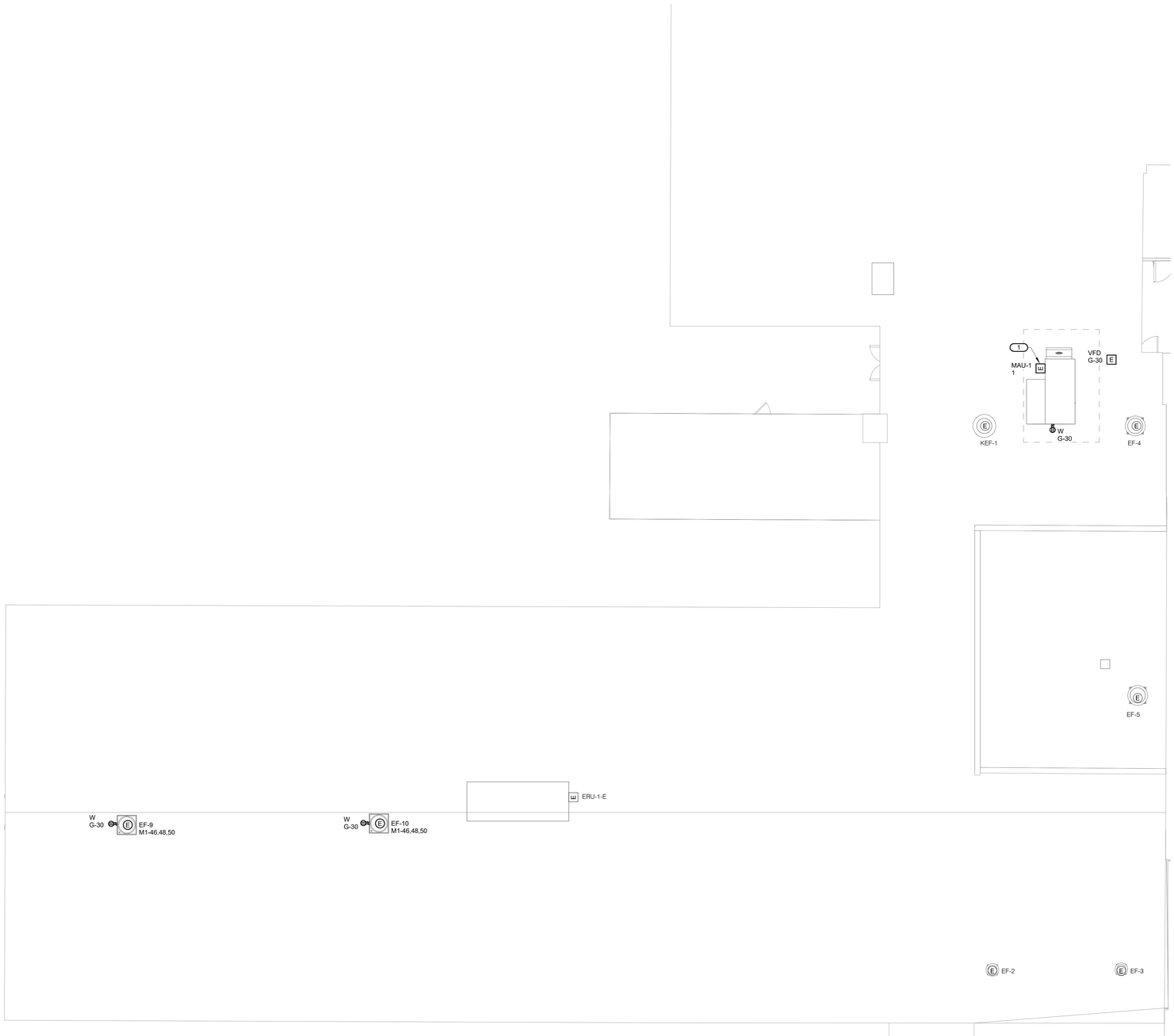
GENERAL NOTES:

A. REFER TO SHEET E0.0 FOR ELECTRICAL SYMBOLS, ABBREVIATIONS AND INSTALLATION NOTES.

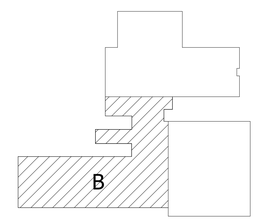
KEYNOTES: (#)

1. CONNECT TO EXISTING SWITCHBOARD SB-MDP WITH 4#4,1#6 GND, 1-1/4" CONDUIT.



2 ROOF POWER PLAN - AREA B

1/8" = 1'-0"



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ROOF POWER PLAN - AREA B

E4.3B

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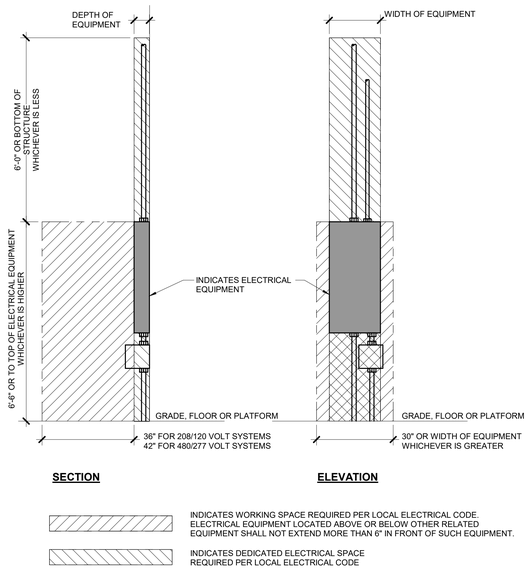
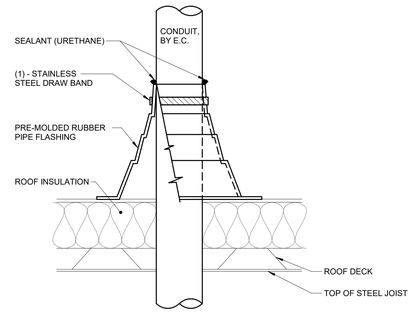


1 PANELBOARD EQUIPMENT CLEARANCES

NO SCALE



NOTES:

1. CONDUIT SHALL BE SUPPORTED WITHIN 24 INCHES ABOVE AND BELOW ROOF.
2. VERIFY FINAL REQUIREMENTS WITH GENERAL CONTRACTOR (G.C.) AND ROOFING INSTALLER PRIOR TO INSTALLATION.

2 CONDUIT ROOF PENETRATION

NO SCALE

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WILLIAMS ARCHITECTS

REVISIONS

NO.	DATE	DESCRIPTION

WA No. 2024-006
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JHN
CHK ARW

ELECTRICAL DETAILS

E6.0

PANEL G

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 0 A/0P @
LOCATION: MECH 102

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 225 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 35 kA
ISC UNKNOWN 0.00 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS P	WIRE SIZE H	WIRE SIZE N	WIRE SIZE G	A	B	C	WIRE SIZE G	WIRE SIZE N	WIRE SIZE H	OCPD P AMPS	LOAD DESCRIPTION	CKT NO.	KEY
--	G-1	Lights - Mech Room	20 A	1	--	--	0	0			--	--	1	20 A	Existing Load ?	G-2	--
--	G-3	Lights - Story Area	20 A	1	--	--			0	0	--	--	1	20 A	Existing Load ?	G-4	--
--	G-5	Lights - Offices, Library Desk	20 A	1	--	--			0	0	--	--	1	20 A	Lights - Computer Room	G-6	--
--	G-7	Lights - Library	20 A	1	--	--	0	0			--	--	1	20 A	Lights - Computer Room	G-8	--
--	G-9	Lights - Library	20 A	1	--	--			0	0	--	--	1	20 A	Existing Load ?	G-10	--
--	G-11	Existing Load ?	20 A	1	--	--			0	0	--	--	1	20 A	Receptacles - Offices	G-12	--
--	G-13	Existing Load ?	20 A	1	--	--	0	0			--	--	1	20 A	Receptacles - Library	G-14	--
--	G-15	Existing Load ?	20 A	1	--	--			0	0	--	--	1	20 A	Receptacles - Computer Room	G-16	--
N	G-17	Dryer	30 A	2	10	10			2.8	0	--	--	1	20 A	Clocks - West Wall	G-18	--
--	G-19	--	--	--	--	--	2.8	0			--	--	1	20 A	Existing Load ?	G-20	--
--	G-21	SPACE	--	1	--	--			--	0	--	--	1	20 A	Existing Load ?	G-22	--
--	G-23	SPACE	--	1	--	--			--	0	--	--	1	20 A	Temperature Control Panel	G-24	--
--	G-25	VRF	20 A	1	--	--	0	0			--	--	1	20 A	Existing Load ?	G-26	--
--	G-27	VRF	20 A	1	--	--			0	0	--	--	1	20 A	CH-8,9	G-28	--
N	G-29	Boiler B3 - Mech 102	20 A	1	12	12				1.91	1.26	12	12	1	20 A	Roof Receptacles	G-30	N
N	G-31	Boiler B4 - Mech 102	20 A	1	12	12	1.91	--				--	--	1	--	SPACE	G-32	--
N	G-33	UH-7 - Mech 102	20 A	1	12	12			0.18	--		--	--	1	--	SPACE	G-34	--
N	G-35	Receptacles - Mech 102	20 A	1	12	12				0.56	--	--	--	1	--	SPACE	G-36	--
--	G-37	SPACE	--	1	--	--	--	--				--	--	1	--	SPACE	G-38	--
--	G-39	SPACE	--	1	--	--			--	--		--	--	1	--	SPACE	G-40	--
--	G-41	SPACE	--	1	--	--				--	--	--	--	1	--	SPACE	G-42	--
				Total Load:			4.71 kVA		0.18 kVA		6.53 kVA						
				Total Amps:			45.06		1.50		60.22						

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND
Power	4.56 kVA	100.00%	4.56 kVA
Receptacles	6.86 kVA	100.00%	6.86 kVA

TOTALS*	
TOTAL CONNECTED LOAD:	11.42 kVA
TOTAL ESTIMATED DEMAND LOAD:	11.42 kVA
TOTAL CONNECTED AMPS:	31.70 A
TOTAL ESTIMATED DEMAND AMPS:	31.7 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: N = NEW BREAKER IN EXISTING SPACE

PANEL M1

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 0 A/0P @
LOCATION:

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 200 A MLO
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 35kA
ISC UNKNOWN 0.00 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS P	WIRE SIZE H	WIRE SIZE N	WIRE SIZE G	A	B	C	WIRE SIZE G	WIRE SIZE N	WIRE SIZE H	OCPD P AMPS	LOAD DESCRIPTION	CKT NO.	KEY
	M1-1	VUV-1-12 - Class A6, VUV-1-13 - Class A8	20 A	2	12	12	1.12	1.12					12	12	2	20 A	VUV-1-10 - Class A2, VUV-1-11 - Class A4	M1-2	
--	M1-3	--	--	--	--	--		1.12	1.12				--	--	--	--	--	M1-4	--
	M1-5	VUV-1-14 - Class A7, VUV-1-15 - Class A5	20 A	2	12	12				1.12	1.12	12	12	12	2	20 A	VUV-1-16 - Class A3, VUV-1-07 Art/Music	M1-6	
--	M1-7	--	--	--	--	--	1.12	1.12					--	--	--	--	--	M1-8	--
	M1-9	VUV-9 - Class B3, VUV-1-09 - Class B2	20 A	2	12	12		1.12	1.12				12	12	2	20 A	VUV-1-01 - Class C6, VUV-1-02 - Class C4	M1-10	
--	M1-11	--	--	--	--	--				1.12	1.12	--	--	--	--	--	--	M1-12	--
	M1-13	VUV-1-03 - Class C2, VUV-1-06 - Computer...	20 A	2	12	12	1.12	1.12					12	12	2	20 A	VUV1-0-4 - Class C5, VUV-1-05 - Class C3	M1-14	
--	M1-15	--	--	--	--	--		1.12	1.12				--	--	--	--	--	M1-16	--
	M1-17	VUV-1-17 - Class B4	20 A	2	12	12				0.56	1.12	12	12	12	2	20 A	VUV-1-18 - Office 201; VUV-1-19 Room 202	M1-18	
--	M1-19	--	--	--	--	--	0.56	1.12					--	--	--	--	--	M1-20	--
	M1-21	FCU-1-12,13,14,15 - Front Offices	20 A	2	12	12		1.34	1.34				12	12	2	20 A	FCU-1-08, 09, 10, 11 - Admin Offices	M1-22	
--	M1-23	--	--	--	--	--				1.34	1.34	--	--	--	--	--	--	M1-24	--
	M1-25	FCU-1-01,05,16 - Corr; FCU-1-17 - Sensory	20 A	2	12	12	1.58	1.34					12	12	2	20 A	FCU-1-02,03,04 - Speech, FCU-1-18 - Medi...	M1-26	
--	M1-27	--	--	--	--	--		1.58	1.34				--	--	--	--	--	M1-28	--
	M1-29	HUV-1-01A & HUV-1-01B - Cafeteria	20 A	2	12	12				1.58	1.58	12	12	12	2	20 A	HUV-1-02A & HUV-1-02B - Cafeteria	M1-30	
--	M1-31	--	--	--	--	--	1.58	1.58					--	--	--	--	--	M1-32	--
	M1-33	HUV-1-03 - Media Center	20 A	2	12	12			0.79	2.03		10	10	10	3	30 A	Exhaust Fan EF-7 - Roof	M1-34	
--	M1-35	--	--	--	--	--				0.79	2.03	--	--	--	--	--	--	M1-36	--
	M1-37	HUV-1-04 - Media Center	20 A	2	12	12	0.79	2.03				--	--	--	--	--	--	M1-38	--
--	M1-39	--	--	--	--	--		0.79	2.03			10	10	10	3	30 A	Exhaust Fan EF-8 - Roof	M1-40	
	M1-41	FCU-1-06, 07 - Office B1	20 A	2	12	12				1.13	2.03	--	--	--	--	--	--	M1-42	--
--	M1-43	--	--	--	--	--	1.13	2.03				--	--	--	--	--	--	M1-44	--
	M1-45	Glycol System Receptacle - Mech Room	20 A	1	12	12			0.28	1.8		12	12	12	3	20 A	Exhaust Fans EF-9 & EF-10 - Roof	M1-46	
--	M1-47	SPARE	20 A	1	--	--					0	1.8	--	--	--	--	--	M1-48	--
--	M1-49	SPARE	20 A	1	--	--	0	1.8					--	--	--	--	--	M1-50	--
--	M1-51	SPARE	20 A	1	--	--			0	0			--	--	--	1	20 A	SPARE	M1-52	--
--	M1-53	SPARE	20 A	1	--	--					0	0	--	--	--	1	20 A	SPARE	M1-54	--
--	M1-55	SPARE	20 A	1	--	--	0	0					--	--	--	1	20 A	SPARE	M1-56	--
--	M1-57	SPARE	20 A	1	--	--			0	0			--	--	--	1	20 A	SPARE	M1-58	--
--	M1-59	SPARE	20 A	1	--	--					0	0	--	--	--	1	20 A	SPARE	M1-60	--
				Total Load:			22.27 kVA		20.05 kVA			19.79 kVA							
				Total Amps:			185.89		167.39			164.89							

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND
Power	61.92 kVA	100.00%	61.92 kVA
Receptacles	0.18 kVA	100.00%	0.18 kVA

TOTALS*	
TOTAL CONNECTED LOAD:	62.10 kVA
TOTAL ESTIMATED DEMAND LOAD:	62.1 kVA
TOTAL CONNECTED AMPS:	172.37 A
TOTAL ESTIMATED DEMAND AMPS:	172.4 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:

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)	PF - PHASE LOSS PROTECTION (5 HP OR GREATER, 3 PHASE...
NF - NON-FUSED	*CT - CONTROL TRANSFORMER, FUSED 120V	TO - MELTING THERMAL OVERLOADS (1 PHASE)
CB - CIRCUIT BREAKER	*EO - ELECTRONIC OVERLOAD (3 PHASE MOTORS)	TS - 2 SPEED SELECTOR SWITCH IN DOOR
	*HA - HAND-OFF-AUTO IN DOOR	GP - GREEN (OFF) PILOT LIGHT IN DOOR
STARTER TYPE:	*RP - RED (RUN) PILOT LIGHT IN DOOR	FA - 4-CONVERTIBLE AUXILIARY CONTACTS
FV - FULL VOLTAGE	*TA - TWO CONVERTIBLE AUXILIARY CONTACTS	EI - ELECTRICAL INTERLOCK (2)-N.O. & (2)-N.C.
YD - WYE - DELTA	S/N - INSULATED NEUTRAL ASSEMBLY	SS - START-STOP PUSHBUTTON IN DOOR
RE - REVERSING		HL - HANDLE PADLOCK HASP
TW - 2 SPEED, 2 WINDING		
SW - 2 SPEED, 1 WINDING		
RV - REDUCED VOLTAGE AUTOXFMR		
SS - SOLID STATE		
MS - MANUAL STARTER		
MX - MANUAL SWITCH		
FS - FUSED SWITCH		
AMS-ASSEMBLED MOTOR STARTER		

ITEM	DISCONNECT TYPE & RATING: TYPE	RATING	TRIP RATING	VOLTAGE	POLES	STARTER: NEMA SIZE	STARTER: TYPE	ENCLOSURE	REQUIRED ACCESSORIES & OPTIONS	COMMENTS
CB-CH-1	CB	800 A	800 A	480 V	3			NEMA 3R SURFACE MOUNT		
FDS-CH-1	FU	800 A	800 A	480 V	3			NEMA 3R		SERVICE ENTRANCE RATED
DS-B-3	NF	30 A		208 V	3			NEMA 1		
DS-B-4	NF	30 A		208 V	3			NEMA 1		

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ELECTRICAL PANEL SCHEDULES

E9.0

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