MECHANICAL LEGEND (not all may apply)

GENERAL ABBREVIATIONS

AAD	AUTOMATIC AIR DAMPER	DET	DETAIL	HX	HEAT EXCHANGER	REQ'D	REQUIRED
AAV	AUTOMATIC AIR VENT	DIA	DIAMETER	IA	INSTRUMENT AIR	REV	REVISE(D)
AB	AIR BLENDER	DN	DOWN	IE	INVERT ELEVATION	RG	RETURN GRILLE
AC*	AIR CONDITIONING UNIT	DPR	DAMPER	IN	INCH	RH	RELATIVE HUMIDITY/ROOF
ACC	AIR COOLED CONDENSER	DPT	DEW POINT TEMPERATURE	INV	INVERT	RV	RELIEF VENT
ACCU	AIR COOLED CONDENSING UNIT	DR	DRAIN	KEC	KITCHEN EQUIPMENT CONTRACTOR	RM	ROOM
AD	ACCESS DOOR	DTS	DUAL TEMPERATURE SUPPLY	KH	KITCHEN HOOD	RPM	REVOLUTIONS PER MINUTE
ADD'L	ADDITIONAL	DTR	DUAL TEMPERATURE RETURN	KV	KITCHEN VENT	RR	RETURN REGISTER
ADJ	ADJUSTABLE	DWG	DRAWING	LAT	LEAVING AIR TEMPERATURE	SA	SUPPLY AIR
AF	AFTER FILTER	EA	EACH / EXHAUST AIR	LB	POUND	SCHED	SCHEDULE
AFF	ABOVE FINISHED FLOOR	EAH	EXHAUST AIR HOOD	LD	LINEAR DIFFUSER	SCHWP	SECONDARY CHILLED WATER PUMP
ALT	ALTERNATE	EAL	EXHAUST AIR LOUVER	LWT	LEAVING WATER TEMPERATURE	SD	SUCTION DIFFUSER
ALUM	ALUMINUM	EAT	ENTERING AIR TEMPERATURE	MAT'L	MATERIAL	SECT	SECTION
AP	ACCESS PANEL	EC	ELECTRICAL CONTRACTOR	MAV	MANUAL AIR VENT	SG	SUPPLY GRILLE
APPROX	APPROXIMATE	EF	EXHAUST FAN	MAX	MAXIMUM	SHWP	SECONDARY HOT WATER PUMP
ARCH	ARCHITECT(URAL)	EG	EXHAUST GRILLE	MBH	BTU'S PER HOUR, THOUSAND	SHT	SHEET
AUTO	AUTOMATIC	EL	ELEVATION	MC	MECHANICAL CONTRACTOR	SL	SOUND LINING
AVG	AVERAGE	ELEC	ELECTRIC/ELECTRICAL	MCW	MECHANICAL CITY WATER	SM	SURFACE MOUNT
BAS	BUILDING AUTOMATION SYSTEM	EQ	EQUAL	MECH	MECHANICAL	SPEC	SPECIFICATIONS
BBD	BALANCED BACKDRAFT DAMPER	EQUIP	EQUIPMENT	MFG/MFGR	MANUFACTURER	SPT	STATIC PRESSURE TRANSMITTER
BE	BOTTOM ELEVATION	EQUIV	EQUIVALENT	MIN	MINIMUM	SQ	SQUARE
BF	BUTTERFLY	ER	EXHAUST REGISTER	MISC	MISCELLANEOUS	SQ FT/SF	SQUARE FOOT (FEET)
BFP	BACKFLOW PREVENTER	ESP	EXTERNAL STATIC PRESSURE	MSW	MECHANICAL SOFT WATER	SQ IN	SQUARE INCHES
BLDG	BUILDING	ET	EXPANSION TANK	NA	NOT APPLICABLE	SR	SUPPLY REGISTER
BLR	BOILER	EUH	ELECTRIC UNIT HEATER	NC	NORMALLY CLOSED/NOISE CRITERIA	SS	STAINLESS STEEL
BOD	BOTTOM OF DUCT	EWH	ELECTRIC WATER HEATER	NG	NATURAL GAS	STD	STANDARD
BOP	BOTTOM OF PIPE	EWT	ENTERING WATER TEMPERATURE	NIC	NOT IN CONTRACT	STL	STEEL
BOT	BOTTOM	EXCL	EXCLUDING	NO	NORMALLY OPEN	STRUCT	STRUCTURAL
BP	BOOSTER PUMP	EXIST	EXISTING	NOM	NOMINAL	TCC	TEMPERATURE CONTROL CONTRACTOR
BTU	BRITISH THERMAL UNIT	EXP	EXPANSION	NTS	NOT TO SCALE	TCV	TEMPERATURE CONTROL VALVE
BTUH	BTU'S PER HOUR	°F	DEGREE FAHRENHEIT	OA	OUTSIDE AIR	TE	TOP ELEVATION
BV	BALL VALVE	FD	FLAT DRAIN	OAH	OUTSIDE AIR HOOD	TI	TEMPERATURE INDICATOR
CA	COMPRESSED AIR	FF	FINISHED FLOOR	OAL	OUTSIDE AIR LOUVER	TMV	THERMOSTATIC MIXING VALVE
CAF	COMBUSTION AIR FAN	FH	FIRE HYDRANT	OC	ON CENTER	TSP	TOTAL STATIC PRESSURE
CCW	COUNTER CLOCKWISE	FL	FLOOR	OC	OCCUPANCY SENSOR	TSTAT	THERMOSTAT
CD	CEILING DIFFUSER	FOB	FLAT ON BOTTOM	OPG	OPENING	TXV	THERMAL EXPANSION VALVE
CFM	CUBIC FEET PER MINUTE	FOR	FUEL OIL RETURN	OS&Y	OUTSIDE SCREW AND YOKE	TYP	TYPICAL
CHV	CHECK VALVE	FOS	FUEL OIL SUPPLY	OZ	OUNCE	TW	TEMPERED WATER
CH	CHILLER	FOT	FLAT ON TOP	PC	PLUMBING CONTRACTOR	UG	UNDERGROUND
CHWP	CHILLED WATER PUMP	FPC	FIRE PROTECTION CONTRACTOR	PCHWP	PRIMARY CHILLED WATER PUMP	UH	UNIT HEATER
CHWR	CHILLED WATER RETURN	FPM	FEET PER MINUTE	PERIM	PERIMETER	UON	UNLESS OTHERWISE NOTED
CHWS	CHILLED WATER SUPPLY	FPVAV	FAN POWERED VAV	PF	PRE FILTER	UNO	UNLESS NOTED OTHERWISE
CI	CAST IRON	FS	FLOOR SINK	PH	PHASE	VAC	VACUUM
COL	COLUMN	GA	GAUGE	PHWP	PRIMARY HOT WATER PUMP	VA	VALVE
CONN	CONNECTION	GALV	GALVANIZED	PI	PRESSURE INDICATOR	VAV	VARIABLE AIR VOLUME
CT	COOLING TOWER	GC	GENERAL CONTRACTOR	PLBG	PLUMBING	VD	VOLUME DAMPER
CU	CONDENSING UNIT	GPH	GALLONS PER HOUR	PRESS	PRESSURE	VERT	VERTICAL
CUH	CABINET UNIT HEATER	GPM	GALLONS PER MINUTE	PRV	PRESSURE REDUCING VALVE	VFD	VARIABLE FREQUENCY DRIVE
CU FT	CUBIC FEET	HEX	HEAT EXCHANGER	PS	PRESSURE SWITCH	VOL	VOLUME
CU IN	CUBIC INCH	HORIZ	HORIZONTAL	PSD	PLENUM SLOT DIFFUSER	W	WITH
CW	CLOCKWISE	HR	HOUR	PSI	POUND PER SQUARE INCH	WO	WITHOUT
CWP	CONDENSING WATER PUMP	HT	HEAT TRACE	PSIA	POUND PER SQUARE INCH ABSOLUTE	WB	WET BULB TEMPERATURE
CWS	CONDENSING WATER SUPPLY	HVAC	HEATING, VENTILATING AND AIR CONDITIONING	PSIG	POUND PER SQUARE INCH GAUGE	WG	WATER GAUGE
CWR	CONDENSING WATER RETURN	HWP	HOT WATER PUMP	PVC	POLYVINYL CHLORIDE	WP	WEATHER PROOF
DB	DRY BULB TEMPERATURE	HWR	HOT WATER RETURN	RCP	RECIRCULATION PUMP	XP	EXPLOSION PROOF
DDC	DIRECT DIGITAL CONTROL	HWS	HOT WATER SUPPLY	REF	REFERENCE		

MECHANICAL SYMBOLS

BALANCING VALVE
A=AUTOMATIC
M=MANUAL CALIBRATED

CIRCUIT SENSOR (VENTURI)

GATE VALUE

BUTTERFLY VALVE

GLOBE VALVE

BALL VALVE

CHECK VALVE

GAS COCK

TEMPERATURE REGULATING VALVE

PRESSUR RELIEF VALVE

RELEIF VALVE

STRAINER

3-WAY VALVE

VALVE AND END CAP

UNION

FLANGED CONNECTION

REDUCER

ELBOW UP

PIPE TEE DOWN

ELBOW DOWN

EQUIP. # T — THERMOSTAT OR TEMPERATURE SENSOR

EQUIP. # H — HUMIDITY TRANSMITTER

EQUIP. # CO — CARBON MONOXIDE SENSOR

EQUIP. # CO2 — CARBON DIOXIDE SENSOR

P — PRESSURE TEMPERATURE TEST STATION (PTTS)

THERMOMETER

M — MANUAL AIR VENT (A=AUTOMATIC)

WATER FLOW TRANSMITTER

SUPPLY DIFFUSER

RETURN DIFFUSER

EXHAUST DIFFUSER

PLENUM SLOT DIFFUSER

DUCT TAP LEFT

DUCT TAP RIGHT

AIR FLOW DIRECTION

OPPOSED BLADE DAMPER

PARALLEL BLADE DAMPER

F — FIRE DAMPER (HORIZONTAL OR VERTICAL)

S — SMOKE DAMPER (HORIZONTAL OR VERTICAL)

C — COMBINATION SMOKE FIRE DAMPER

BBD — BALANCED BACKDRAFT DAMPER

AAD — AUTOMATIC AIR DAMPER

MANUAL DAMPER

TT — TEMPERATURE TRANSMITTER

FM / PM — INSERTION TYPE FLOW METER
STRAP-ON TYPE FLOW METER

FLEXIBLE CONNECTION

FLEXIBLE CONNECTION

POINT OF CONNECTION / EXTENT OF REMOVAL

S — DUCT SMOKE DETECTOR

STATIC PRESSURE TRANSMITTER

SQUARE ELBOW WITH TURNING VAINS

S-12X8 — SUPPLY AIR (RECTANGULAR DUCT)
R=RETURN, E=EXHAUST, OA=OUTSIDE AIR

S-12 — SUPPLY AIR (ROUND DUCT)
R=RETURN, E=EXHAUST, OA=OUTSIDE AIR

S-12X8a — SUPPLY AIR (OVAL DUCT)
R=RETURN, E=EXHAUST, OA=OUTSIDE AIR

CHWS — CHILLED WATER SUPPLY

CHWR — CHILLED WATER RETURN

CWS — CONDENSING WATER SUPPLY

CWR — CONDENSING WATER RETURN

HWS — HOT WATER SUPPLY

HWR — HOT WATER RETURN

DTS — DUAL TEMPERATURE SUPPLY

DTR — DUAL TEMPERATURE RETURN

DR — DRAIN

RHG — REFRIGERANT HOT GAS

RL — REFRIGERANT LIQUID

RS — REFRIGERANT SUCTION

NEW DUCT OR PIPING

EXISTING DUCT OR PIPING

EXISTING DUCT OR PIPING TO BE REMOVED

24X24" CEILING DIFFUSER
S=SUPPLY, R=RETURN, E=EXHAUST, OA=OUTSIDE AIR
NECK SIZE - 6" 8", 10", 12", 14", 15"
S10LX / 150FD — L=LAY-IN ACOUSTICAL CEILING, D=DRYWALL CEILING, X=12X12 DIFFUSER, FD=INTEGRAL FIRE DAMPER, CFM

GRILLE
S=SUPPLY, R=RETURN, E=EXHAUST, OA=OUTSIDE AIR
G=GRILLE
RSD000 / 24X24E — CFM, E=EGGCRATE, HEIGHT, WIDTH

UP — DUCT RISE IN DIRECTION OF AIR FLOW

DN — DUCT DROP IN DIRECTION OF AIR FLOW

RECTANGULAR DUCT TO ROUND DUCT TRANSITION

DUCT TURN DOWN

DUCT TURN UP

INTERNALLY LINED DUCTWORK
(DIMENSIONS INDICATED ARE
INSIDE CLEAR DIMENSIONS)

MANUFACTURED DOUBLE WALL DUCTWORK
(DIMENSIONS INDICATED ARE INSIDE
SHEET METAL DIMENSIONS)

CONTROL SYMBOL LEGEND

AI	ANALOG INPUT SIGNAL	TT	TEMPERATURE TRANSMITTER
AO	ANALOG OUTPUT SIGNAL	T	ROOM TEMPERATURE SENSOR
DI	DIGITAL INPUT SIGNAL	H	RELATIVE HUMIDITY SENSOR
DO	DIGITAL OUTPUT SIGNAL	S CO2	CARBON DIOXIDE SENSOR
ES	END SWITCH	DPS	DIFFERENTIAL PRESSURE SWITCH
DPT	DIFFERENTIAL PRESSURE TRANSMITTER	HT	HUMIDITY TRANSMITTER
SPT	STATIC PRESSURE TRANSMITTER	SD	DUCT MOUNTED SMOKE DETECTOR
LTS	LOW TEMPERATURE SWITCH	CTS	CURRENT TRANSFORMER SWITCH
AFT	AIR FLOW TRANSMITTER		
ES	END SWITCH		
NO	NORMALLY OPEN		
NC	NORMALLY CLOSED		

1

2

GENERAL NOTES (NEW):

A. UNLESS OTHERWISE NOTED, ALL DUCTWORK AND PIPING SHOWN DARK IS NEW.

B. ALL WORK SHALL BE INSTALLED PER THE 2017 OHIO BUILDING CODE, 2017 OHIO MECHANICAL CODE AND ALL LOCAL APPLICABLE CODES.

C. VERIFY CONDITIONS IN THE FIELD PRIOR TO BID AND CONSTRUCTION.

D. WHERE CONFLICTS EXIST AMONG DRAWINGS, SPECIFICATIONS AND EQUIPMENT SCHEDULES, THE MORE STRINGENT SHALL APPLY.

E. REFER TO DRAWINGS **M5.1** AND **M5.2** FOR MECHANICAL DETAILS, DIAGRAMS AND SCHEDULES.

F. CONTRACTOR SHALL CAREFULLY COORDINATE DUCTWORK AND PIPING PATHWAY / LOCATIONS WITH OTHER TRADES AND EXISTING CONDITIONS. ALL DUCTWORK AND PIPING SHALL BE INSTALLED AS TIGHT TO THE STRUCTURE AS POSSIBLE. CONNECTIONS TO THE SUPPLY AIR DEVICES MAY BE MADE WITH FLEXIBLE DUCTWORK. REFER TO THE DETAIL ON DRAWING M03 FOR FLEXIBLE DUCT CONNECTIONS. ALL CONDITIONS SHALL BE FIELD VERIFIED BEFORE ORDERING EQUIPMENT OR FABRICATED MATERIAL.

G. CONTRACTOR SHALL PROVIDE ALL ROOF OR WALL NON-COMBUSTIBLE FRAMING AS REQUIRED TO INSTALL EQUIPMENT, DUCTWORK, AND PIPING. COORDINATE NEW WORK WITH OTHER TRADES PRIOR TO BEGINNING CONSTRUCTION. NO WORK IS TO BE INSTALLED OR FABRICATED UNTIL AFTER THE PROJECT COORDINATION HAS BEEN APPROVED BY THE OWNER'S REPRESENTATIVE.

H. INSTALL A MANUAL BALANCE DAMPER IN ALL BRANCH DUCTS, INCLUDING ALL SUPPLY, RETURN, AND EXHAUST GRILLES.

I. INSTALL A SHUT-OFF VALVE IN ALL PIPING BRANCHES.

J. ALL SQUARE THROATED ELBOWS SHALL HAVE AIRFOIL TURNING VANES AND SHALL ONLY BE USED WHEN RADIUS ELBOWS WILL NOT FIT.

K. ALL ROUND BRANCH DUCT CONNECTIONS SHALL BE MADE WITH BELLMOUTH FITTINGS OR ANGLED TEES. STRAIGHT SPIN-IN TAP COLLARS SHALL NOT BE ACCEPTABLE.

L. ALL DAMPERS, VALVES, AND CONTROL COMPONENTS THAT ARE LOCATED ABOVE CEILINGS SHALL BE INSTALLED WHERE COMPLETELY ACCESSIBLE. CONTRACTOR SHALL PROVIDE ACCESS PANELS AS REQUIRED.

M. ALL NEW VARIABLE AIR VOLUME TERMINAL UNITS ARE TO BE INSTALLED WHERE COMPONENTS ARE COMPLETELY ACCESSIBLE. CONTRACTOR SHALL COORDINATE TO PROVIDE THE VAV UNIT WITH A CONTROL ENCLOSURE AND PIPE CONNECTIONS ON THE MOST ACCESSIBLE SIDE OF THE UNIT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE CORRECT LEFT OR RIGHT HAND CONFIGURATION. REFER TO THE APPLICABLE DETAIL ON DRAWING **M200** FOR ADDITIONAL REQUIREMENTS.

N. DUCTWORK CONNECTION TO DIFFUSER / VAV TO BE THE SAME SIZE AS THE NECK SIZE UNLESS OTHERWISE NOTED.

O. UNLESS OTHERWISE NOTED, ALL DUCTWORK SHALL BE FABRICATED FROM GALVANIZED STEEL METAL, INSTALLED IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS FOR GAUGE, REINFORCEMENT, AND SUPPORT; 2" W.G. PRESSURE CLASS FOR ALL DUCTWORK, UNLESS NOTED OTHERWISE. ALL JOINTS AND SEAMS SHALL BE SEALED AND FASTENED AND MADE AIRTIGHT IN ACCORDANCE OF CHAPTER 13 OF THE OBC.

P. CONTRACTOR SHALL TAKE OVERALL CFM MEASUREMENTS ON ALL EXISTING DUCTWORK TO REMAIN PRIOR TO COMMENCING ANY WORK. INFORMATION GATHERED SHALL BE UTILIZED FOR REBALANCING SYSTEM. CONTRACTOR SHALL REBALANCE ALL SYSTEMS AT THE CONCLUSION OF THE PROJECT.

Q. UL LISTED FIRESTOPPING SHALL BE USED AT ANY PENETRATION THROUGH A FIRE RATED ASSEMBLY. REFER TO ARCHITECTURAL CONSTRUCTION DOCUMENTS FOR LOCATIONS OR RATED ASSEMBLIES. CONTRACTOR SHALL USE UL LISTED FIRESTOP SYSTEM METHODS FOR "THROUGH-PENETRATION ASSEMBLIES." TYPICAL OF ALL FIRE RATED WALLS.

R. DUCTWORK AND PIPING SHALL BE SUPPORTED INDEPENDENT OF CEILING, CONDUIT, OTHER DUCTWORK, OTHER PIPING,ETC.

S. IN AREAS WHERE CEILINGS ARE NOT BEING REPLACED, AND CONTRACTOR HAS WORK ABOVE CEILINGS, CONTRACTOR SHALL PATCH AND REPAIR CEILINGS TO MATCH EXISTING.

T. CONTRACTOR SHALL COORDINATE ALL REQUIRED WALL PENETRATIONS FOR DUCT OR PIPING WITH GENERAL CONTRACTOR PRIOR TO CONSTRUCTION OF NEW WALLS. ALL DUCT PENETRATIONS SHALL BE IN COMPLIANCE WITH THE PROJECT SPECIFICATIONS. CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING REQUIRED FOR DUCT PENETRATIONS THROUGH WALLS.

U. CONTRACTOR SHALL COORDINATE ALL REQUIRED ROOF OPENINGS FOR DUCTWORK WITH THE GENERAL CONTRACTOR.

V. CONTRACTOR SHALL PROVIDE ALL ADDITIONAL STEEL FRAMING AS REQUIRED TO INSTALL ROOF MOUNTED EQUIPMENT CURBS.

W. CONTRACTOR SHALL INSTALL ALL EQUIPMENT, DUCTWORK, PIPING, VALVES, INSULATION, SUPPORTS ETC. AS INDICATED OR AS REQUIRED TO ALLOW OPERATION AND USE OF ALL AREAS AND ALL SYSTEMS REQUIRED FOR OCCUPIED USE DURING CONSTRUCTION.

X. CONTRACTOR TO VERIFY EXISTING DUCTWORK / PIPING SUPPLY AND RETURN SYSTEM, SIZE, AND TYPE PRIOR TO MAKING CONNECTIONS.

MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING
INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published. All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be copied or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, Motz Engineering reserves the right to remove itself from any responsibility or liable for any defects and/or deficiencies that may arise as a consequence of downloading of this information. Motz Engineering assumes no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
	11/19/2021	DD SET
	01/18/2022	STRUCT. & UND.GRND.
	03/11/2022	UND.GRND. REVISION
	03/15/2022	FOR PERMIT
BP6	04/08/2022	100% CD
	05/03/2022	FOR PERMIT
7	07/22/2022	MUSIC EXPANSION CD SET
20	11/16/2022	RESPONSE TO RFI #93

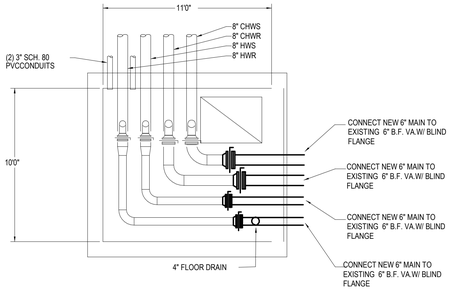
DRAWN BY: **Author** CHECKED BY: **DW**

PROJECT NO. **2021.01.015**

DRAWING TITLE:
MECHANICAL GENERAL INFORMATION

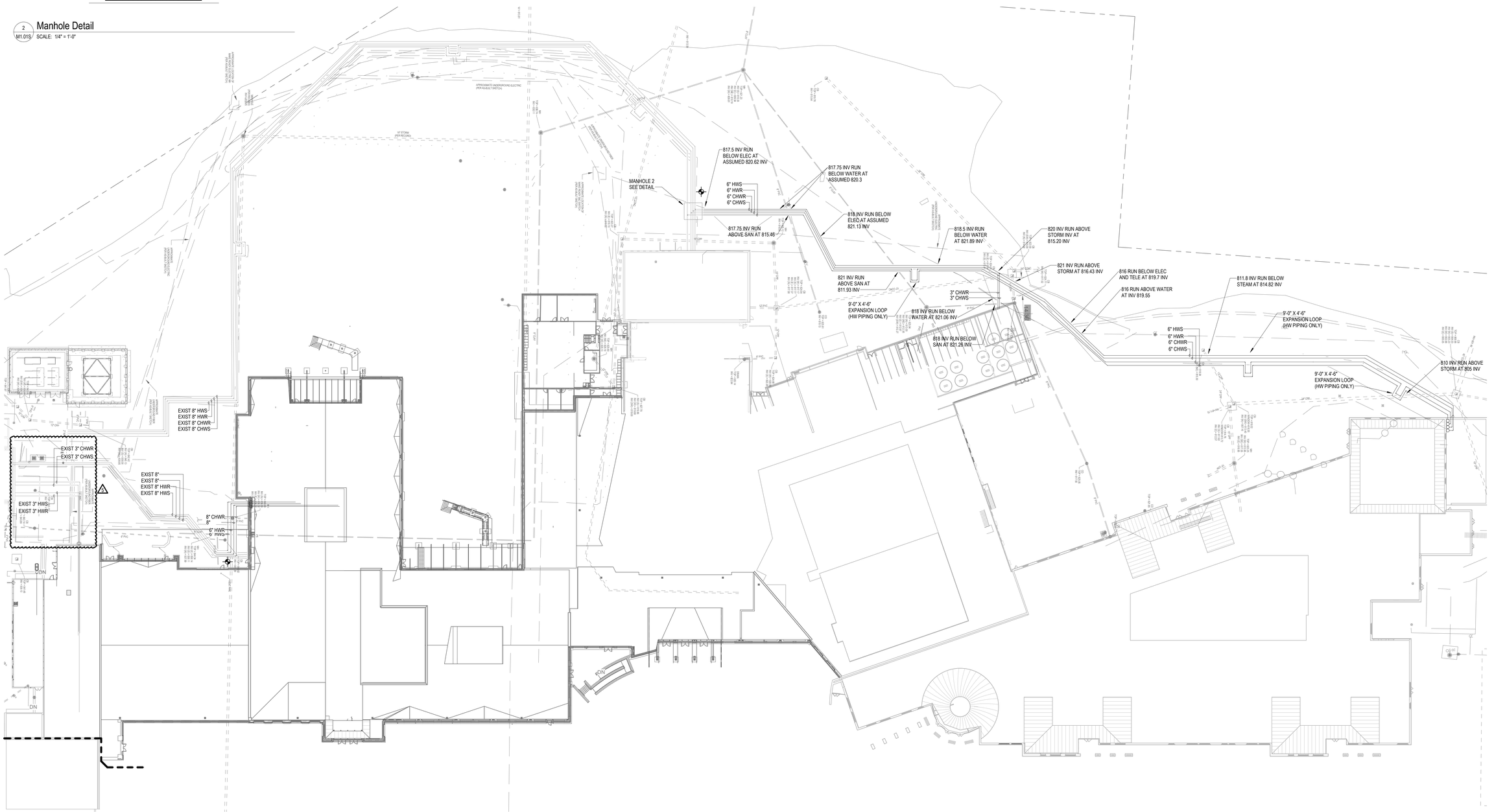
M0.00

11/16/2022 2:28:58 PM BIM 360://2107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt



PLAN AT MANHOLE 2

2 M1.01S Manhole Detail
SCALE: 1/4" = 1'-0"



1 M1.01S MECHANICAL SITE PLAN
SCALE: 1/32" = 1'-0"

DRAWING NOTES:

A. REFER TO SHEET M000 FOR GENERAL NOTES, LEGENDS, AND ABBREVIATIONS.

(X) GENERAL NOTES:

1. ALL MECHANICAL PIPING TO BE RUN AT 5' 0" BELOW GROUND UNLESS OTHERWISE NOTATED ON PLAN.

MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING
INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published. All Rights Reserved. This Document is the product and exclusive property of Motz Consulting Engineers, Inc. doing business as Motz Engineering and is not to be copied or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of the use of this information in electronic formats. Motz Engineering assumes no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
	01/18/2022	STRUCT. & UND.GRND.
	03/11/2022	UND.GRND. REVISION
	03/15/2022	FOR PERMIT
BP8	04/08/2022	100% CD
	05/03/2022	FOR PERMIT
5	06/01/2022	ADD#3 TO 100% CD

DRAWN BY: **Author** CHECKED BY **Checker**

PROJECT NO. **2021.01.015**

DRAWING TITLE:
MECHANICAL SITE PLAN

M1.01S

6/1/2022 4:15:12 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt

SCHEDULE OF AIR HANDLING UNITS

DESIGNATION	FURNISHED BY	AREA SERVED	UNIT OPERATING WEIGHT LBS	FAN DATA																ELECTRICAL SUPPLY VOLT/FREQ/PH	MINIMUM OA AIR DESIGN, CFM	COIL DATA																		FILTER DATA	BASIS OF DESIGN MFGR. / MODEL NO.	REMARKS
				FAN FUNCTION	FAN TYPE	WHEEL SIZE	FAN CLASS	NO. OF FANS / MOTORS	TOTAL AIR FLOW CFM	INDIVID. FAN AIR FLOW CFM	TSP, IN. WG	ESP, IN. WG	FAN RPM	NOMINAL MOTOR RPM	DESIGN VFD SETTING HZ	IND. MOTOR SIZE, HP	INDIVID. FAN BHP	TOTAL FAN BHP	FAN WALL MCA AMPS	FAN WALL MOCP AMPS			COIL TYPE	NO. OF COILS	TOTAL COIL AIR FLOW, CFM	EAT		LAT		TOTAL COIL CAPACITY MBH	SENSIBLE COIL CAPACITY MBH	WATER COIL DATA													
																									DB, DEG F	WB, DEG F	DB, DEG F	WB, DEG F			FLUID MEDIA	APD, IN. WG	NO. OF ROWS	FINS PER INCH	CONN. SIZE	FACE VEL, FPM	FACE AREA, SF	FLOW GPM	WPD FT. WG	EWT, DEG F	LWT, DEG F			
AHU-M1	OWNER	FIRST AND SECOND FLOOR WEST WING AND COMMONS	51306	SUPPLY	FAN ARRAY	182	II	8	50,000	6,250	7.00	2.20	3,151	3,600	60.0	15.0	11.77	94.16	144.4	150.0	460 / 60 / 3	25,000	HW	3	50,000	55.0	-----	91.4	-----	1,954	1,954	30% PG	0.09	1	9	3	413	121.1	174	9.3	180	156.4	SEE FILTER SCHEDULE	MILLER PICKING	ENERGY RECOVERY WHEEL
				RETURN	FAN ARRAY	222	II	8	50,000	6,250	3.00	0.58	1,632	1,200	60.0	5.0	4.9	39.20	59.4	60.0			CHW	3	50,000	80.0	67.0	53.0	52.9	2,073	1,409	30% PG	0.77	8	10	3	413	121.1	488	14.6	45	53.9			
AHU-M2	OWNER	FIRST AND SECOND FLOOR NORTH WING AND CONNECTOR	37445	SUPPLY	FAN ARRAY	182	II	6	35,000	5,833	7.00	2.39	3,061	3,600	60.0	15.0	10.87	65.22	109.4	125.0	460 / 60 / 3	17,500	HW	3	35,000	55.0	-----	91.4	-----	1,367	1,367	30% PG	0.09	1	9	3	406	86.1	135	4.4	180	158.8	SEE FILTER SCHEDULE	MILLER PICKING	ENERGY RECOVERY WHEEL
				RETURN	FAN ARRAY	200	II	6	35,000	5,833	2.98	0.18	1,911	1,800	60.0	5.0	4.8	28.80	41.9	45.0			CHW	3	35,000	80.0	67.0	51.5	51.4	1507.0	995	30% PG	0.94	8	12	3	406	86.1	357	16.4	45	54.3			
AHU-M3	OWNER	GYMNASIUM AND KITCHEN	37833	SUPPLY	FAN ARRAY	182	II	6	30,000	5,000	7.00	2.45	2,905	3,600	60.0	15.0	9.26	55.56	109.4	125.0	460 / 60 / 3	15,000	HW	3	30,000	55.0	-----	91.0	-----	1,161	1,161	30% PG	0.09	1	9	3	416	72.2	125	3.3	180	160.5	SEE FILTER SCHEDULE	MILLER PICKING	ENERGY RECOVERY WHEEL
				RETURN	FAN ARRAY	165	II	6	30,000	5,000	3.00	0.22	2,620	1,800	60.0	5.0	4.7	28.20	41.9	45.0			CHW	3	30,000	80.0	67.0	50.6	50.6	1413.0	922	30% PG	0.93	12	9	3	416	72.2	331	13.6	45	54			
AHU-M4	OWNER	DISTRICT OFFICE AND MIDDLE SCHOOL OFFICE	17865	SUPPLY	FAN ARRAY	150	II	2	10,000	5,000	7.00	2.01	3,725	3,600	60.0	10.0	9.27	18.54	26.1	35.0	460 / 60 / 3	4000	HW	2	10,000	55.0	-----	85.1	-----	323	323	30% PG	0.09	1	8	1 1/2	418	23.9	34	1.3	180	160.1	SEE FILTER SCHEDULE	MILLER PICKING	ENERGY RECOVERY WHEEL DX COOLING COIL
				RETURN	FAN ARRAY	150	II	2	10000	5000	3	0.29	3441	3600	60.0	7.5	5.2	10.4	13.1	17.5			CHW	2	10,000	85.0	67.0	59.0	57.9	281.0	220	30% PG	0.52	4	12	2	418	23.9	62	9.6	45	54.5			
																							DX	2	10,000	80.0	67.0	54.7	53.8	392.0	264	R-410a	0.57	4	11	2 1/8	418	23.9	-----	3.8	-----	-----			

VARIABLE AIR VOLUME TERMINAL UNIT SCHEDULE (PART 1)

DESIGNATION	AREA SERVED ROOM NUMBER(S)	AREA SERVED ROOM NAME(S)	INLET SIZE (IN)	CAPACITY		HOT WATER REHEAT COIL								MIN. AIR PRESSURE DROP (IN. WG.)	BASIS OF DESIGN		REMARKS
				MAX CFM	MIN CFM	EAT	LAT	CAPACITY (BTU/HR)	HEATING FLUID	NO. OF ROWS	FLOW (GPM)	WPD (FT. WG.)	PIPE SIZE (INCHES)		MANUFACTURER	MODEL	
VAV-1-1-1	151	SOCIAL STUDIES	12	960	910	55	90	34.4	GLYCOL	2	1.87	1.16	3/4	0.24	PRICE	SDV	
VAV-1-1-2	152	SOCIAL STUDIES	12	960	915	55	90	36.5	GLYCOL	2	2.03	1.35	3/4	0.27	PRICE	SDV	
VAV-1-1-3	153	ENGLISH	12	920	920	55	90	34.9	GLYCOL	2	1.90	1.20	3/4	0.27	PRICE	SDV	
VAV-1-1-4	154	ENGLISH	12	920	900	55	90	34.9	GLYCOL	2	1.90	1.20	3/4	0.23	PRICE	SDV	
VAV-1-1-5	155	INTERVENTION	9	680	300	55	90	25.9	GLYCOL	2	1.61	0.72	3/4	0.23	PRICE	SDV	
VAV-1-1-6	146B, 145	6TH GRADE CORRIDOR NORTH, 6TH GRADE LOCKERS	7	480	240	55	90	18.3	GLYCOL	2	1.37	0.42	3/4	0.24	PRICE	SDV	
VAV-1-1-7	146A, 145	6TH GRADE CORRIDOR SOUTH, 6TH GRADE LOCKERS	7	400	255	55	90	15.3	GLYCOL	2	0.94	0.22	3/4	0.17	PRICE	SDV	
VAV-1-1-8	146	6TH GRADE COMMONS	10	860	545	55	90	32.6	GLYCOL	2	2.31	1.37	3/4	0.34	PRICE	SDV	
VAV-1-1-9	146	6TH GRADE COMMONS	10	860	545	55	90	32.6	GLYCOL	2	2.31	1.37	3/4	0.34	PRICE	SDV	
VAV-1-1-10	139, 140, 141, 142, 143, 144	RR, JAN, RR, MENS RR, WOMENS RR, RR,	6	280	280	55	90	10.7	GLYCOL	2	0.68	0.10	3/4	0.13	PRICE	SDV	
VAV-1-1-11	133, 133A,136	FACULTY, STORAGE, STORAGE	7	440	260	55	90	16.8	GLYCOL	2	1.20	0.34	3/4	0.20	PRICE	SDV	
VAV-1-1-12	150	MATH	12	960	910	55	90	36.3	GLYCOL	2	1.25	0.50	3/4	0.24	PRICE	SDV	
VAV-1-1-13	149	SCIENCE	12	1160	1070	55	90	44.0	GLYCOL	2	2.70	2.23	3/4	0.34	PRICE	SDV	
VAV-1-1-14	148	SCIENCE	12	1160	1070	55	90	44.0	GLYCOL	2	2.70	2.23	3/4	0.34	PRICE	SDV	
VAV-1-1-15	147	MATH	12	920	890	55	90	34.9	GLYCOL	2	1.90	1.20	3/4	0.23	PRICE	SDV	
VAV-1-1-16	132	INNOVATION COACH	6	320	450	55	90	12.2	GLYCOL	2	0.88	0.15	3/4	0.28	PRICE	SDV	
VAV-1-1-17	131	ART	12	1200	1180	55	90	45.5	GLYCOL	2	2.85	2.46	3/4	0.36	PRICE	SDV	
VAV-1-1-18	130	ART	14	1400	1345	55	90	53.1	GLYCOL	2	2.89	1.14	3/4	0.25	PRICE	SDV	
VAV-1-1-18A	130A, 130B	ART STORAGE, KILN ROOM	5	160	155	55	90	6.1	GLYCOL	1	0.29	0.03	3/4	0.05	PRICE	SDV	
VAV-1-1-19	125	PROJECT LAB	12	1160	1030	55	90	44.0	GLYCOL	2	2.70	2.23	3/4	0.34	PRICE	SDV	
VAV-1-1-20	104	ENGINEERING	12	1200	1050	55	90	45.5	GLYCOL	2	2.85	2.46	3/4	0.36	PRICE	SDV	
VAV-1-1-21	103, 103A, 103B, 103C, 103D	MEDIA COMMONS, VIDEO, AUDIO, STORAGE	16	2250	1700	55	90	85.3	GLYCOL	2	3.42	2.03	3/4	0.20	PRICE	SDV	
VAV-1-1-22	101	CENTRAL COORIDOR	9	660	365	55	90	25.1	GLYCOL	2	1.53	0.66	3/4	0.22	PRICE	SDV	
VAV-1-1-23	101	CENTRAL COORIDOR	9	660	365	55	90	25.1	GLYCOL	2	1.53	0.66	3/4	0.22	PRICE	SDV	
VAV-1-1-24	157, 157A, 157B	LEARNING LAB, STORAGE	12	920	460	55	90	25.1	GLYCOL	2	1.20	0.55	3/4	0.23	PRICE	SDV	
VAV-1-1-25	107	HEALTH	12	960	890	55	90	34.9	GLYCOL	2	1.90	1.20	3/4	0.24	PRICE	SDV	
VAV-1-1-26	106	HEALTH	12	1080	890	55	90	41.0	GLYCOL	2	2.42	1.84	3/4	0.30	PRICE	SDV	
VAV-1-1-27	127, 127A	FAB SHOP	9	640	325	55	90	24.3	GLYCOL	2	1.46	0.61	3/4	0.21	PRICE	SDV	
VAV-1-1-28	126	THINK TANK	7	480	460	55	90	18.3	GLYCOL	2	1.37	0.42	3/4	0.30	PRICE	SDV	
VAV-1-2-1	227	SOCIAL STUDIES	12	1160	915	55	90	44.0	GLYCOL	2	2.70	2.23	3/4	0.34	PRICE	SDV	
VAV-1-2-2	228	SOCIAL STUDIES	12	920	915	55	90	34.9	GLYCOL	2	1.90	1.20	3/4	0.23	PRICE	SDV	
VAV-1-2-3	229	ENGLISH	12	920	920	55	90	34.9	GLYCOL	2	1.90	1.20	3/4	0.27	PRICE	SDV	
VAV-1-2-4	231	ENGLISH	12	920	895	55	90	34.9	GLYCOL	2	1.90	1.20	3/4	0.23	PRICE	SDV	
VAV-1-2-5	232	INTERVENTION	10	800	290	55	90	30.4	GLYCOL	2	2.07	1.13	3/4	0.30	PRICE	SDV	
VAV-1-2-6	222B, 221	8TH GRADE CORRIDOR NORTH, 8TH GRADE LOCKERS	12	1180	275	55	90	44.7	GLYCOL	2	2.78	2.34	3/4	0.35	PRICE	SDV	
VAV-1-2-7	222A, 221	8TH GRADE CORRIDOR SOUTH, 8TH GRADE LOCKERS	12	1100	230	55	90	41.8	GLYCOL	2	2.50	1.94	3/4	0.31	PRICE	SDV	
VAV-1-2-8	222	8TH GRADE COMMONS	12	1290	315	55	90	48.9	GLYCOL	2	3.20	3.02	3/4	0.40	PRICE	SDV	
VAV-1-2-9	222	8TH GRADE COMMONS	12	1290	315	55	90	48.9	GLYCOL	2	3.20	3.02	3/4	0.40	PRICE	SDV	
VAV-1-2-10	215, 216, 217, 218,219	RR, MENS RR, WOMENS RR, RR, RR	5	200	200	55	90	7.7	GLYCOL	1	1.99	2.29	3/4	0.03	PRICE	SDV	
VAV-1-2-11	208, 212	FACULTY RESOURCE, STORAGE	7	440	225	55	90	16.8	GLYCOL	2	1.20	0.34	3/4	0.20	PRICE	SDV	
VAV-1-2-12	207	BREAK OUT	7	360	130	55	90	13.7	GLYCOL	2	0.77	0.16	3/4	0.21	PRICE	SDV	
VAV-1-2-13	226	MATH	12	1280	910	55	90	48.6	GLYCOL	2	3.17	2.96	3/4	0.40	PRICE	SDV	
VAV-1-2-14	225	SCIENCE	14	1520	1070	55	90	57.7	GLYCOL	2	3.27	1.41	3/4	0.29	PRICE	SDV	
VAV-1-2-15	224	SCIENCE	14	1480	1070	55	90	56.2	GLYCOL	2	3.14	1.32	3/4	0.28	PRICE	SDV	
VAV-1-2-16	223	MATH	12	920	895	55	90	34.9	GLYCOL	2	1.90	1.20	3/4	0.23	PRICE	SDV	
VAV-1-2-17	211,210	LATIN, GROUP ROOM	12	1080	975	55	90	41.0	GLYCOL	2	2.42	1.84	3/4	0.30	PRICE	SDV	
VAV-1-2-18	209	LATIN	12	1080	850	55	90	41.0	GLYCOL	2	2.42	1.84	3/4	0.30	PRICE	SDV	
VAV-1-2-19	206	SPANISH	12	1040	885	55	90	39.5	GLYCOL	2	2.29	1.67	3/4	0.28	PRICE	SDV	
VAV-1-2-20	205, 204	SPANISH, GROUP ROOM	14	1360	1170	55	90	51.6	GLYCOL	2	2.77	1.06	3/4	0.24	PRICE	SDV	
VAV-1-2-21	203, 202	SPANISH, GROUP ROOM	12	1200	1170	55	90	45.5	GLYCOL	2	2.85	2.46	3/4	0.36	PRICE	SDV	
VAV-1-2-22	200	CENTRAL CORRIRDOR	12	920	400	55	90	34.9	GLYCOL	2	2.59	1.68	3/4	0.38	PRICE	SDV	
VAV-1-2-23	200	CENTRAL CORRIRDOR	10	840	400	55	90	31.9	GLYCOL	2	2.24	1.30	3/4	0.33	PRICE	SDV	
VAV-1-2-24	200A	TREEHOUSE	10	840	420	55	90	31.9	GLYCOL	2	2.24	1.30	3/4	0.44	PRICE	SDV	
VAV-1-2-25	102	COMMONS	12	1000	690	55	90	38.0	GLYCOL	2	2.16	1.51	3/4	0.26	PRICE	SDV	
				50190	37205												
				50000													
VAV-2-1-1	185	NORTH CORRIDOR	7	400	345	55	90	15.3	GLYCOL	2	0.94	0.22	3/4	0.17	PRICE	SDV	
VAV-2-1-2	186	SPEECH	7	480	475	55	90	18.3	GLYCOL	2	1.37	0.42	3/4	0.24	PRICE	SDV	
VAV-2-1-3	187, 187A	TESOL, TESTING	8	520	490	55	90	19.8	GLYCOL	2	1.55	0.53	3/4	0.27	PRICE	SDV	
VAV-2-1-4	188,188A,189	RESOURCE, RR, LIFE SKILLS	12	1080	660	55	90	41.0	GLYCOL	2	2.42	1.84	3/4	0.30	PRICE	SDV	
VAV-2-1-5	190, 190A, 190B	OT/PT, REST, SENSORY	7	400	165	55	90	15.3	GLYCOL	2	0.94	0.22	3/4	0.17	PRICE	SDV	
VAV-2-1-6	001	THEATER LOBBY	0	3000	550	55	90	113.6	GLYCOL	2	4.98	3.96	1	0.33	PRICE	SDV	
VAV-2-1-7	020, 021	BRAVES LINE	8	560	120	55	90	21.3	GLYCOL	2	1.75	0.66	3/4	0.31	PRICE	SDV	
VAV-2-1-8	058, 059, 60	AD RECEPTION, CONFERENCE, OFFICE	10	720	370	55	90	27.4	GLYCOL	2	2.72	1.41	3/4	0.47	PRICE	SDV	
VAV-2-1-9	058	AD OFFICE	5	200	35	55	90	7.7	GLYCOL	1	1.99	2.29	3/4	0.03	PRICE	SDV	
VAV-2-1-10	050	ATHLETICS LOBBY	16	1600	580	55	90	60.7	GLYCOL	2	3.01	1.31	3/4	0.22	PRICE	SDV	
VAV-2-1-11	034	OFFICE	4	120	45	55	90	4.6	GLYCOL	2	0.20	0.02	3/4	0.03	PRICE	SDV	
VAV-2-1-12	035	CONCESSION HALLWAY	7	400	145	55	90	15.2	GLYCOL	3	0.53	0.10	3/4	0.26	PRICE	SDV	
VAV-2-1-13	003, 004, 185	NORTH CORRIDOR	7	400	150	55	90	6.2	GLYCOL	2	0.25	0.03	3/4	0.13	PRICE	SDV	
VAV-2-1-14	014, 018	CHORAL	16	1800	1500	55	90	68.3	GLYCOL	2	3.56	1.76	3/4	0.27	PRICE	SDV	
VAV-2-1-15	009A	LIBRARY/STORAGE	5	200	100	55	90	7.6	GLYCOL	2	0.40	0.03	3/4	0.07	PRICE	SDV	
⚠3																	
				11880	9730												

VARIABLE AIR VOLUME TERMINAL UNIT SCHEDULE (PART 2)

DESIGNATION	AREA SERVED ROOM NUMBER(S)	AREA SERVED ROOM NAME(S)	INLET SIZE (IN)	CAPACITY		HOT WATER REHEAT COIL								MIN. AIR PRESSURE DROP (IN. WG.)	BASIS OF DESIGN		REMARKS
				MAX CFM	COOLING MIN CFM	EAT	LAT	CAPACITY (BTU/HR)	HEATING FLUID	NO. OF ROWS	FLOW (GPM)	WPD (FT. WG.)	PIPE SIZE (INCHES)		MANUFACTURER	MODEL	
⚠1																	
VAV-2-2-1	236, 237, 238, 239, 240, 241	RR, MENS RR, WOMENS RR, RR, RR, JAN	5	200	0	55	90	7.6	GLYCOL	2	0.40	0.03	3/4	0.07	PRICE	SDV	
VAV-2-2-2	201	FRENCH	12	1000	870	55	90	38.0	GLYCOL	2	2.16	1.51	3/4	0.26	PRICE	SDV	
VAV-2-2-3	254	ENGLISH	12	1200	895	55	90	45.5	GLYCOL	2	2.85	2.46	3/4	0.36	PRICE	SDV	
VAV-2-2-4	253	ENGLISH	12	1320	895	55	90	50.1	GLYCOL	2	3.33	3.24	3/4	0.42	PRICE	SDV	
VAV-2-2-5	252	INTERVENTION	10	880	810	55	90	33.4	GLYCOL	2	2.40	1.47	3/4	0.35	PRICE	SDV	
VAV-2-2-6	251	MATH	12	1320	900	55	90	50.1	GLYCOL	2	3.33	3.24	3/4	0.42	PRICE	SDV	
VAV-2-2-7	250	SCIENCE	12	1040	1020	55	90	39.5	GLYCOL	2	2.29	1.67	3/4	0.28	PRICE	SDV	
VAV-2-2-8	249	SCIENCE	12	1040	1020	55	90	39.5	GLYCOL	2	2.29	1.67	3/4	0.28	PRICE	SDV	
VAV-2-2-9	248	MATH, STORAGE	12	1160	905	55	90	44.0	GLYCOL	2	2.70	2.23	3/4	0.34	PRICE	SDV	
VAV-2-2-10	245	SOCIAL STUDIES	12	1040	895	55	90	39.5	GLYCOL	2	2.29	1.67	3/4	0.28	PRICE	SDV	
VAV-2-2-11	246	SOCIAL STUDIES	12	1000	895	55	90	38.0	GLYCOL	2	2.16	1.51	3/4	0.26	PRICE	SDV	
VAV-2-2-12	235	DISCOVERY	10	880	690	55	90	33.4	GLYCOL	2	2.40	1.47	3/4	0.35	PRICE	SDV	
VAV-2-2-13	242-1, 243A	7TH GRADE CORRIDOR A, LOCKERS	8	560	310	55	90	21.3	GLYCOL	2	1.75	0.66	3/4	0.31	PRICE	SDV	
VAV-2-2-14	242-2, 243B	7TH GRADE CORRIDOR B, LOCKERS	8	560	260	55	90	21.3	GLYCOL	2	1.75	0.66	3/4	0.31	PRICE	SDV	
VAV-2-2-15	244	7TH GRADE COMMONS	9	680	510	55	90	25.9	GLYCOL	3	0.96	0.16	3/4	0.34	PRICE	SDV	
VAV-2-2-16	244	7TH GRADE COMMONS	9	680	510	55	90	25.9	GLYCOL	3	0.96	0.16	3/4	0.34	PRICE	SDV	
VAV-2-2-17	244A, 244.B	GROUP ROOM, GROUP ROOM	5	240	130	55	90	9.2	GLYCOL	1	1.73	1.79	3/4	0.06	PRICE	SDV	
				26680	17245												
				35000													
VAV-3-1-1	EX 100	EX GYM	24X16	8340	4305	55	90	315.9	GLYCOL	3	13.95	12.35	1 1/4	2.79	PRICE	SDV	
VAV-3-1-2	EX 100	EX GYM	24X16	8340	4305	55	90	315.9	GLYCOL	3	13.95	12.35	1 1/4	2.79	PRICE	SDV	
VAV-3-1-3	EX103, EX104	WOMENS RR, WOMENS LOCKER	7	440	440	55	90	16.8	GLYCOL	2	1.20	0.34	3/4	0.20	PRICE	SDV	
VAV-3-1-4	EX106, EX107	MENS RR, MENS LOCKER	7	480	480	55	90	18.3	GLYCOL	2	1.37	0.42	3/4	0.24	PRICE	SDV	
VAV-3-1-5	119,120	OFFICE, OFFICE, OFFICE	6	280	85	55	90	10.7	GLYCOL	2	0.68	0.10	3/4	0.13	PRICE	SDV	
VAV-3-1-6	117,EX111	WORKROOM, CUSTODIAL STORAGE	10	720	200	55	90	27.4	GLYCOL	2	1.75	0.84	3/4	0.25	PRICE	SDV	
VAV-3-1-7	112	KITCHEN, STORAGE	10	800	0	55	90	30.4	GLYCOL	2	2.07	1.13	3/4	0.30	PRICE	SDV	
VAV-3-1-8	114	KITCHEN OFFICE	4	120	30	55	90	4.7	GLYCOL	1	0.69	0.35	3/4	0.01	PRICE	SDV	
VAV-3-1-9	EX120	CORRIDOR	4	120	85	55	90	4.7	GLYCOL	1	0.69	0.35	3/4	0.01	PRICE	SDV	
VAV-3-1-10B	123	ELECTRICAL	8	560	365	55	90	21.3	GLYCOL	2	1.75	0.66	3/4	0.31	PRICE	SDV	
VAV-3-1-10	124	FACILITY WORKSHOP	7	440	85	55	90	16.8	GLYCOL	2	1.20	0.34	3/4	0.20	PRICE	SDV	
VAV-3-1-11	111	SERVERY	7	480	0	55	90	18.3	GLYCOL	2	1.37	0.42	3/4	0.24	PRICE	SDV	
VAV-3-1-12	113	WARE WASHING	5	160	0	55	90	6.2	GLYCOL	1	1.19	0.92	3/4	0.02	PRICE	SDV	
VAV-3-1-13	109	DINING COMMONS	24X16	3780	3110	55	90	143.3	GLYCOL	2	6.84	6.97	1	0.48	PRICE	SDV	
VAV-3-1-14	109, 109A	DINING COMMONS, DINING CORRIDOR	24X16	4180	3295	55	90	158.4	GLYCOL	2	7.89	8.80	1 1/4	0.57	PRICE	SDV	
VAV-3-1-15	105	CORRIDOR	7	400	184	55	90	15.3	GLYCOL	2	0.94	0.22	3/4	0.17	PRICE	SDV	
				29640	16969												
				30000													
VAV-4-1-1	180, 181, 182, 183	RR, MENS RR, WOMENS RR, RR	5	160	160	55	90	6.2	GLYCOL	1	1.19	0.92	3/4	0.02	PRICE	SDV	
VAV-4-1-2	161	CONF	7	400	315	55	90	15.3	GLYCOL	2	0.94	0.22	3/4	0.17	PRICE	SDV	
VAV-4-1-3	162, 162A, 162B, 162C	NURSE, ISO, ISO, RR	5	160	95	55	90	6.2	GLYCOL	1	1.19	0.92	3/4	0.02	PRICE	SDV	
VAV-4-1-4	160	RECEPTION	5	240	140	55	90	9.2	GLYCOL	1	3.32	5.66	3/4	0.05	PRICE	SDV	
VAV-4-1-5	160A	RECEPTION	4	120	100	55	90	4.7	GLYCOL	1	0.69	0.35	3/4	0.01	PRICE	SDV	
VAV-4-1-6	171	CONFERENCE	6	320	130	55	90	12.2	GLYCOL	2	0.88	0.15	3/4	0.16	PRICE	SDV	
VAV-4-1-7	172	OFFICE	6	280	90	55	90	10.7	GLYCOL	2	0.68	0.10	3/4	0.13	PRICE	SDV	
VAV-4-1-8	173	OFFICE	6	280	90	55	90	10.7	GLYCOL	2	0.68	0.10	3/4	0.13	PRICE	SDV	
VAV-4-1-9	163, 168, 169	ADMIN CORRIDOR, STORAGE, BREAK/COPY WORK	8	580	280	55	90	22.1	GLYCOL	2	1.87	0.72	3/4	0.32	PRICE	SDV	
VAV-4-1-10	170	BRAVE ROOM	6	280	130	55	90	10.7	GLYCOL	2	0.68	0.10	3/4	0.13	PRICE	SDV	
VAV-4-1-11	176	COUNSELORS OFFICE	4	120	50	55	90	4.7	GLYCOL	1	0.69	0.35	3/4	0.01	PRICE	SDV	
VAV-4-1-12	177	COUNSELORS OFFICE	4	120	50	55	90	4.7	GLYCOL	1	0.69	0.35	3/4	0.01	PRICE	SDV	
VAV-4-1-13	178	COUNSELORS OFFICE	5	160	55	55	90	6.2	GLYCOL	1	1.19	0.92	3/4	0.02	PRICE	SDV	
VAV-4-1-14	179	COUNSELORS OFFICE	5	160	55	55	90	6.2	GLYCOL	1	1.19	0.92	3/4	0.02	PRICE	SDV	
VAV-4-1-15	DO-17, DO-18, DO-19,DO-20, DO-21, DO-22, DO-24	CORRIDOR, CORRIDOR, RR,RR,RR,STORAGE, STORAGE	5	200	40	55	90	7.7	GLYCOL	1	1.99	2.29	3/4	0.03	PRICE	SDV	
VAV-4-1-16	DO-23	BREAK ROOM	5	240	100	55	90

FAN POWERED VAV BOX SCHEDULE

DESIGNATION	AREA SERVED	INLET SIZE	MIN. INLET STATIC PRESSURE (IN. WG.)	MAX. COOL CFM	MIN. COOL CFM	HEATING CFM	CAPACITY BTU/HR	FLOW GPM	CAPACITY TYPE	NO. OF ROWS	WPD (IN WG)	EAT (Deg. F)	LAT (Deg. F)	FLUID TYPE	EWT (Deg. F)	LWT (Deg. F)	FAN INFORMATION		TCV TYPE	SOUND DATA (WITH 1.0 IN WC PD)		ELECTRICAL DATA			BASIS OF DESIGN		ACCESSORIES
																	AIR FLOW (CFM)	ESP IN. WC.		DISCHAGE NC	RADIATED NC	VOLTS / PH / HZ	HP	FLA	MANUFACTURER	MODEL NO.	
FPVAV-1-1	GYM CORRIDOR	10	0.06	320	65	320	6600	0.4	STANDARD	2	0.1	69	88.0	WATER	180	147.0	320	0.25	2 WAY	< 20	< 20	120 / 1 / 60					
FPVAV-1-2	ENTRY VESTIBULE	16	0.05	2000	650	2000	46600	2.6	STANDARD	1	1.3	69	90.5	WATER	180	144.2	2000	0.25	2 WAY	< 20	20	120 / 1 / 60					
FPVAV-4-1	THEATER ENTRY VESTIBULE	16	0.06	2000	650	2000	46600	2.6	STANDARD	2	1.3	69	90.5	WATER	180	144.2	2000	0.25	2 WAY	< 20	20	120 / 1 / 60					

EXHAUST FAN SCHEDULE

DESIGNATION	SERVES	FAN TYPE	AIR FLOW CFM	ESP IN. WG.	WEIGHT LBS W/ACCS	DRIVE TYPE	RPM	BHP	SONES	ELECTRICAL DATA		MOTOR EFFICIENCY TYPE	VARIABLE SPEED DRIVE	INTEGRAL DISCONNECT	DDC OUTPUT CONTACT	CONTROL METHOD	BASIS OF DESIGN		NOTES
										VOLTS/PH/HZ	MOTOR HP						MANUFACTURER	MODEL NO.	
EF-1	KITCHEN HOOD	CENTRIFUGAL UPBLAST	6410	1.125	327	DIRECT	1140	1.5	20.0	460/3/60	5	NEMA Premium	YES	YES	YES	WALL SWITCH	GREENHECK	CUE-240-VG	1
EF-2	WARE WASHING HOOD	CENTRIFUGAL UPBLAST	1000	0.5	52	DIRECT	1684	.23	11.5	277/1/60	1/4		YES			WALL SWITCH	GREENHECK	CUE-099-VG	1
EF-3	LOCKER ROOMS	CENTRIFUGAL UPBLAST	1260	0.5	60	DIRECT	1321	.21	11.3	277/1/60	1/4		YES			BAS	GREENHECK	CUE-120-VG	1,2
EF-4	ART CLASSROOMS, 6TH GRADE WING, 8TH GRADE WING	CENTRIFUGAL UPBLAST	7625	1.25	261	DIRECT	1085	3.27	26	460/3/60	5		YES			BAS	GREENHECK	CUE-240-VG	1,2
EF-5	7TH GRADE WING, LIFE SKILLS, DISTRICT OFFICE, MS OFFICE	INLINE	3800	0.75	171	DIRECT	1381	.81	16.7	208/1/60	2		YES			BAS	GREENHECK	SQ-16-07-0700-VG	
EF-6	KILN ROOM	CENTRIFUGAL UPBLAST	200	0.5	56	DIRECT	1191	.04	4.4	277/1/60	1/4		YES			BAS	GREENHECK	CUE-100HP-VG	1,2
EF-7	AUDITORIUM RR	CENTRIFUGAL UPBLAST	350	0.5	45	DIRECT	1370	.07	6.8	115/1/60	1/6		YES			WALL SWITCH	GREENHECK	CUE-095-VG	1,2
EF-8	KITCHEN RR EXHAUST	CENTRIFUGAL UPBLAST	350	0.5	45	DIRECT	1370	.07	6.8	115/1/60	1/6		YES			WALL SWITCH	GREENHECK	CUE-095-VG	1,2

NOTES:
1. FURNISH ROOFCURB WITH FAN
2. FURNISH BACKDRAFT DAMPER

AIR COOLED CONDENSING UNIT SCHEDULE

SYMBOL	SERVES	CAPACITY (TONS)	WEIGHT (LBS)	REFRIGERANT	SST (°F)	EAT (°F)	ELECTRICAL DATA				BASIS OF DESIGN		REMARKS
							QUANTITY FANS/COMPR	MCA	MOCP	V/PH/HZ	MANUFACTURER	MODEL	
MC-4	AHU-4	30	1936	R410a	40	107.88	3/2	63	80	460/3/60	Trane	RAUC20	

MAKE-UP AIR UNIT SCHEDULE

DESIGNATION	OPERATING WEIGHT (LBS)	SUPPLY FAN DATA					OUTSIDE AIRFLOW (CFM)	REFRIGERANT	COOLING CAPACITY					FUEL	HEATING CAPACITY			ELECTRICAL DATA			BASIS OF DESIGN		NOTES
		SUPPLY (CFM)	ESP (IN. WG)	DRIVE TYPE	SPEED RPM	MOTOR HP			EAT Deg F (db)	LAT Deg F (db)	FLOW RATE GPM	TOTAL MBH	SENSIBLE MBH		EAT Deg F (db)	LAT Deg F (db)	CAPACITY MBH	VOLTS/PH/HZ	MCA	MOCP	MFGR.	MODEL NO.	
MAU-1	1393	5128	0.63	DIRECT	1963	3	5123	CHILLED WATER	93	71.0	44.0	200.0	124	HOT WATER	0	78.9	438	460/ 3 / 60	6.2	15	GREENHECK	MSX-P116-H22-MF	2,3,4,5,6,7

NOTES: PROVIDE THE FOLLOWING ACCESSORIES
1. 25:1 TURNDOWN BURNER
2. INLET MOTORIZED DAMPER,
3. MERV8 FILTER
4. VERTICAL DISCHARGE
5. REMOTE WALL MOUNT CONTROL PANEL
6. DISCHARGE AIR TEMPERATURE CONTROL
7. UNIT MOUNTED DISCONNECT

HYDRONIC UNIT HEATER SCHEDULE

DESIGNATION	SERVES	UNIT TYPE	AIR FLOW		EAT (Deg. F)	EWT (Deg. F)	LAT (Deg. F)	LWT (Deg. F)	CAPACITY DATA		WPD	ELECTRICAL DATA			BASIS OF DESIGN		ACCESSORIES
			CFM	RPM					BTU / HR	GPM	FT.	VOLTS / PH / HZ	FLA	HP	MFGR.	MODEL NO.	
UH-1	D.O. VESTIBULE	VERTICAL	200	1050	60	200	146.6	185.0	18,800	2.5	.36	115 / 1 / 60	.8	1/15	STERLING	CBS-RC-15	

MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msearch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING
INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published. All Rights Reserved. This Document is the product and exclusive property of Motz Consulting Engineers, Inc. doing business as Motz Engineering and may not be copied or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of the transfer of this information to other formats and assumes no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING.

NO.	DATE	ISSUED / REVISION
BP8	04/08/2022	100% CD
2	04/22/2022	ADD. #1 TO 100% CD

DRAWN BY: **Author** CHECKED BY: **DW**

PROJECT NO. **2021.01.015**

DRAWING TITLE:
MECHANICAL SCHEDULES

M3.02

4/22/2022 4:44:27 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt

VENTILATION SCHEDULE (PART 1)

Project: IHMS
Job No:

Designer: MLM
Engineer: MLM

Unit #	room name	Az area	occupancy classification	Pz population	TBL 6-1 Rp peo oa	TBL 6-1 Ra area oa	Vbz oa cfm	TBL 6-2 Ez air dist eff	Voz oa req'd	design cfm	%oa req'd	system %oa	actual oa cfm	Exhaust CFM/sf	Exhaust Required CFM	Actual Exhaust
AHU-M1	ENTRY VESTIBULE 100	619	Corridors	0	0	0.06	37	0.8	47	2,000	2%	50%	1000	0	0	
AHU-M1	CENTRAL CORRIDOR 101	4,866	Corridors	0	0	0.06	292	0.8	365	1,320	28%	50%	660	0	0	
AHU-M1	COMMONS 102	1,958	Mall Common Areas	21	7.5	0.06	275	0.8	344	1,000	34%	50%	500	0	0	
AHU-M1	MEDIA COMMONS 103	1,362	Classrooms (9+)	34	10	0.12	503	0.8	630	1,550	41%	50%	775	0	0	
AHU-M1	RECEPTION STORE 103A	165	Office Spaces	1	5	0.06	15	0.8	19	80	24%	50%	40	0	0	
AHU-M1	VIDEO 103C	107	Classrooms (9+)	4	10	0.12	53	0.8	67	160	42%	50%	80	0	0	
AHU-M1	VIDEO 103D	107	Classrooms (9+)	4	10	0.12	53	0.8	67	160	42%	50%	80	0	0	
AHU-M1	VIDEO 103E	112	Classrooms (9+)	4	10	0.12	53	0.8	67	260	26%	50%	130	0	0	
AHU-M1	ENGINEERING 104	1,410	Classrooms (9+)	25	10	0.12	419	0.8	524	1,200	44%	50%	600	0	0	
AHU-M1	HEALTH 106	873	Classrooms (9+)	25	10	0.12	355	0.8	444	1,080	41%	50%	540	0	0	
AHU-M1	HEALTH 107	871	Classrooms (9+)	25	10	0.12	355	0.8	444	960	46%	50%	480	0	0	
AHU-M1	PROJECT LAB 125	1,339	Classrooms (9+)	25	10	0.12	411	0.8	514	1,040	49%	50%	520	0	0	
AHU-M1	THINK TANK 126	521	Conference/meeting	12	10	0.12	183	0.8	229	480	48%	50%	240	0	0	
AHU-M1	FAB SHOP 127	576	Wood/Metal Shops	12	10	0.18	224	0.8	280	640	44%	50%	320	0.5	288	300
AHU-M1	STORAGE 127A	213	Storage	0	0	0.12	26	0.8	32	80	40%	50%	40	0	0	
AHU-M1	ART 130	1,593	Art Classroom	25	10	0.18	537	0.8	672	1,400	48%	50%	700	0.7	1115	1150
AHU-M1	ART STORAGE 130A	362	Storage	0	0	0.12	43	0.8	55	120	46%	50%	60	0	0	
AHU-M1	KILN ROOM 130B	135	Storage	0	0	0.12	16	0.8	21	280	8%	50%	140	0	0	
AHU-M1	ART 131	1,227	Art Classroom	25	10	0.18	471	0.8	589	1,200	49%	50%	600	0.7	859	900
AHU-M1	INNOVATION COACH 132	488	Conference/meeting	12	5	0.06	89	0.8	112	320	35%	50%	160	0	0	
AHU-M1	FACULTY 133	450	Multipurpose Assembly	6	5	0.06	57	0.8	72	280	26%	50%	140	0	0	
AHU-M1	TEACHER WORK ROOM 133A	192	Copy, printing rooms	0	0	0.12	23	0.8	29	80	36%	50%	40	0.5	96	100
AHU-M1	ELECTRICAL 134	133	Storage	0	0	0	0	0.8	0	0	0%	50%	0	0	0	75
AHU-M1	I.T. 135	110	Storage	0	0	0	0	0.8	0	0	0%	50%	0	0	0	75
AHU-M1	STORAGE 136	189	Storage	0	0	0.12	23	0.8	29	80	36%	50%	40	0	0	
AHU-M1	R.R. 139	65	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	0	0%	50%	0	0	0	
AHU-M1	JAN. 140	61	Janitor Closet	0	0	0	0	0.8	0	0	0%	50%	0	1	61	65
AHU-M1	R.R. 141	54	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	0	0%	50%	0	0	50	50
AHU-M1	MEN'S R.R. 142	218	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	140	0%	50%	70	0	150	150
AHU-M1	WOMEN'S R.R. 143	215	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	140	0%	50%	70	0	150	150
AHU-M1	R.R. 144	59	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	0	0%	50%	0	0	50	50
AHU-M1	6TH GRADE LOCKERS-1 146-1	425	Corridors	0	0	0.06	26	0.8	32	80	40%	50%	40	0	0	
AHU-M1	6TH GRADE COMMONS-1 146-1	1,824	Mall Common Areas	40	7.5	0.06	409	0.8	512	1,725	30%	50%	863	0	0	
AHU-M1	6TH GRADE CORRIDOR - SOUTH 146A	1,261	Corridors	0	0	0.06	76	0.8	95	360	26%	50%	180	0	0	
AHU-M1	6TH GRADE CORRIDOR - NORTH 146B	1,590	Corridors	0	0	0.06	95	0.8	120	440	27%	50%	220	0	0	
AHU-M1	MATH 147	879	Classrooms (9+)	25	10	0.12	355	0.8	445	920	48%	50%	460	0	0	
AHU-M1	SCIENCE 148	983	Science Laboratories	25	10	0.18	427	0.8	534	1,160	46%	50%	580	1	983	1000
AHU-M1	SCIENCE 149	980	Science Laboratories	25	10	0.18	426	0.8	534	1,160	46%	50%	580	1	980	1000
AHU-M1	MATH 150	940	Classrooms (9+)	25	10	0.12	363	0.8	454	960	47%	50%	480	0	0	
AHU-M1	SOCIAL STUDIES 151	940	Classrooms (9+)	25	10	0.12	363	0.8	454	960	47%	50%	480	0	0	
AHU-M1	SOCIAL STUDIES 152	961	Classrooms (9+)	25	10	0.12	365	0.8	457	960	48%	50%	480	0	0	
AHU-M1	ENGLISH 153	966	Classrooms (9+)	25	10	0.12	366	0.8	458	920	50%	50%	460	0	0	
AHU-M1	ENGLISH 154	893	Classrooms (9+)	25	10	0.12	357	0.8	447	920	49%	50%	460	0	0	
AHU-M1	INTERVENTION 155	580	Office Spaces	17	5	0.06	120	0.8	150	680	22%	50%	340	0	0	
AHU-M1	EXIT CORRIDOR 156	275	Corridors	0	0	0.06	17	0.8	21	80	26%	50%	40	0	0	
AHU-M1	LEARNING LAB 157	964	Office Spaces	25	5	0.06	182	0.8	228	920	25%	50%	460	0	0	
AHU-M1	CENTRAL CORRIDOR 200	5,280	Corridors	0	0	0.06	317	0.8	396	1,680	24%	50%	840	0	0	
AHU-M1	TREE HOUSE-1 200A-1	896	Classrooms (9+)	6	10	0.12	168	0.8	210	840	25%	50%	420	0	0	
AHU-M1	GROUP ROOM 202	269	Classrooms (9+)	8	10	0.12	112	0.8	141	320	44%	50%	160	0	0	
AHU-M1	SPANISH 203	858	Classrooms (9+)	25	10	0.12	353	0.8	442	920	48%	50%	460	0	0	
AHU-M1	SPANISH 204	857	Classrooms (9+)	25	10	0.12	353	0.8	441	1,040	42%	50%	520	0	0	
AHU-M1	GROUP ROOM 205	287	Classrooms (9+)	8	10	0.12	114	0.8	143	320	45%	50%	160	0	0	
AHU-M1	SPANISH 206	851	Classrooms (9+)	25	10	0.12	352	0.8	441	1,040	42%	50%	520	0	0	
AHU-M1	BREAK OUT 207	180	Classrooms (9+)	3	10	0.12	52	0.8	65	180	36%	50%	90	0	0	
AHU-M1	FACULTY RESOURCE 208	548	Office Spaces	8	5	0.06	73	0.8	92	280	33%	50%	140	0	0	
AHU-M1	TEACHER WORK ROOM 208A	162	Copy, printing rooms	1	5	0.06	15	0.8	19	120	16%	50%	60	0.5	81	100
AHU-M1	LATIN 209	746	Classrooms (9+)	25	10	0.12	339	0.8	425	1,080	39%	50%	540	0	0	
AHU-M1	GROUP ROOM 210	302	Conference Rooms (Office)	8	5	0.06	58	0.8	73	240	30%	50%	120	0	0	
AHU-M1	LATIN 211	675	Classrooms (9+)	25	10	0.12	331	0.8	414	840	49%	50%	420	0	0	
AHU-M1	STORAGE 212	125	Storage	0	0	0.12	15	0.8	19	40	48%	50%	20	0	0	
AHU-M1	ELECTRICAL 213	127	Storage	0	0	0	0	0.8	0	0	0%	50%	0	0	0	75
AHU-M1	I.T. 214	127	Storage	0	0	0	0	0.8	0	0	0%	50%	0	0	0	75
AHU-M1	R.R. 215	54	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	0	0%	50%	0	0	50	50
AHU-M1	MEN'S R.R. 216	217	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	0	0%	50%	0	0	50	50
AHU-M1	WOMEN'S R.R. 217	218	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	100	0%	50%	50	0	150	150
AHU-M1	R.R. 218	61	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	0	0%	50%	0	0	50	50
AHU-M1	R.R 219	65	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	0	0%	50%	0	0	50	50
AHU-M1	JAN. 220	63	Janitor Closet	0	0	0	0	0.8	0	0	0%	50%	0	1	63	65
AHU-M1	8TH GRADE LOCKERS 221	424	Corridors	0	0	0.06	25	0.8	32	120	27%	50%	60	0	0	
AHU-M1	8TH GRADE COMMONS-1 222-1	1,812	Mall Common Areas	19	7.5	0.06	251	0.8	315	2,580	12%	50%	1290	0	0	
AHU-M1	8TH GRADE CORRIDOR - SOUTH 222A	1,304	Corridors	0	0	0.06	78	0.8	98	1,120	9%	50%	560	0	0	
AHU-M1	8TH GRADE CORRIDOR - NORTH 222B	1,597	Corridors	0	0	0.06	96	0.8	120	1,040	12%	50%	520	0	0	
AHU-M1	MATH 223	893	Classrooms (9+)	25	10	0.12	357	0.8	447	920	49%	50%	460	0	0	
AHU-M1	SCIENCE 224	983	Science Laboratories	25	10	0.18	427	0.8	534	1,080	49%	50%	540	1	983	1000
AHU-M1	SCIENCE 225	981	Science Laboratories	25	10	0.18	427	0.8	534	1,080	49%	50%	540	1	981	1000
AHU-M1	MATH 226	940	Classrooms (9+)	25	10	0.12	363	0.8	454	1,280	35%	50%	640	0	0	
AHU-M1	SOCIAL STUDIES 227	951	Classrooms (9+)	25	10	0.12	364	0.8	456	1,240	37%	50%	620	0	0	
AHU-M1	SOCIAL STUDIES 228	961	Classrooms (9+)	25	10	0.12	365	0.8	457	920	50%	50%	460	0	0	
AHU-M1	ENGLISH 229	967	Classrooms (9+)	25	10	0.12	366	0.8	458	920	50%	50%	460	0	0	
AHU-M1	ENGLISH 231	893	Classrooms (9+)	25	10	0.12	357	0.8	447	920	49%	50%	460	0	0	
AHU-M1	INTERVENTION 232	580	Office Spaces	16	5	0.06	115	0.8	144	800	18%	50%	400	0	0	
AHU-M1	EXIT CORRIDOR 233	280	Corridors	0	0	0.06	17	0.8	22	80	28%	50%	40	0	0	
AHU-M1	BREAK OUT 234	180	Classrooms (ages 9 plus)	1	5	0.06	16	0.8	20	180	11%	50%	90	0	0	
							0		18452	51,715			25858			
AHU-M2	THEATER ENTRY VEST. 0	514	Corridors	0	0	0.06	31	0.8	39	2,000	2%	50%	1000	0	0	
AHU-M2	THEATER LOBBY 1	4,623	Corridors	0	0	0.06	277	0.8	347	3,000	12%	50%	1500	0	0	
AHU-M2	R.R. 3	57	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	0	0%	50%	0	0	50	50
AHU-M2	R.R. 4	70	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	0	0%	50%	0	0	50	50
AHU-M2	BLACKBOX THEATER 5	1,514	Music/Theatre/Dance	45	10	0.06	541	0.8	677	1,800	38%	50%	900	0	0	
AHU-M2	STORAGE/LIBRARY 6	514	Storage	0	0	0.12	62	0.8	78	200	39%	50%	100	0	0	
AHU-M2	STORAGE 18	189	Storage	0	0	0.12	23	0.8	29	80	36%	50%	40	0	0	
AHU-M2	BRAVES LINE 20	544	Office Spaces	3	5	0.06	48	0.8	60	560	11%	50%	280	0	0	
AHU-M2	MENS R.R. 31	215	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	0	0%	50%	0	0	0	
AHU-M2	OFFICE 34	203	Office Spaces	1	5	0.06	17	0.8	22	120	18%	50%	60	0	0	
AHU-M2	CONCESSIONS 35	193	Cafeteria, Fast Food	3	7.5	0.18	57	0.8	72	400	18%	50%	200	0	0	
AHU-M2	ATHLETICS LOBBY 50	3,046	Lobbies/prefunction	10	5	0.06	233	0.8	291	1,600	18%	50%	800	0	0	
AHU-M2	CONCESSIONS 51	319	Cafeteria/fast food dining	1	5	0.06	24	0.8	31	400	8%	50%	200	0	0	
AHU-M2	R.R. 52	51	Bathrooms/Toilet (Private)	0	5	0.06	3	0.8	4	0	0%	50%	0	0	50	50
AHU-M2	R.R. 53	46	Bathrooms/Toilet (Private)	0	5	0.06	3	0.8	4	0	0%	50%	0	0	50	50
AHU-M2	OFFICE 56	148	Office Space	1	5	0.06	14	0.8	18	120	15%	50%	60	0	0	
AHU-M2	CONFERENCE 056	308	Conference/meeting	5	5	0.06	43	0.8	55	200	28%	50%	100	0	0	
AHU-M2	A.D. RECEPTION 2 058	217	Reception Areas	5	5	0.06	38	0.8	48	200	24%	50%	100	0	0	
AHU-M2	OFFICE 59	125	Office Spaces	1	5	0.06	12	0.8	16	120	13%	50%	60	0	0	
AHU-M2	CONFERENCE ROOM 60	258	Conference Rooms (Office)	16	5	0.06	95	0.8	120	400	30%	50%	200	0	0	
AHU-M2	A.D. OFFICE 61	125	Office Spaces	1	5	0.06	12	0.8	16	120	13%	50%	60	0	0	
AHU-M2	R.R. 180	53	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	0	0%	50%	0	0	50	50
AHU-M2	MEN'S R.R. 181	202	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	80	0%	50%	40	0	150	150
AHU-M2	WOMEN'S R.R. 182	207	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	80	0%	50%	40	0	150	150
AHU-M2	R.R. 183	53	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	0	0%	50%	0	0	50	50
AHU-M2	NORTH CORRIDOR 185	2,278	Corridors	0	0	0.06	137	0.8	171	400	43%	50%	200	0	0	
AHU-M2	SPEECH 186	492	Classrooms (9+)	13	10	0.12	189	0.8	237	480	49%	50%	240	0	0	
AHU-M2	TESOL 187	535	Classrooms (9+)	9	10	0.12	154	0.8	193	400	48%	50%	200	0	0	
AHU-M2	TESTING 187A	96	Classrooms (9+)	3	10	0.12	42	0.8	52	120	43%	50%	60	0	0	
AHU-M2	RESOURCE 188	881	Office Spaces	13	5	0.06	118	0.8	148	640	23%	50%	320	0	0	
AHU-M2	R.R. 188A	88	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	40	0%	50%	20	0	0	50

(Rp * Pz) + (Ra * Az) / Vbz = Ez

Vbz = Breathing zone outdoor air flow
Rp = Outdoor air flow rate per person (table 6-1)
Pz = Zone population - maximum occupancy (table 6-1)
Ra = Outdoor air flow rate per unit area (table 6-1)
Az = Zone floor area

Voz = Zone outdoor air flow
Vbz = Breathing zone outdoor air flow (calculated)
Ez = Zone air distribution effectiveness (table 6-2)
Ez = 0.80 (based on ceiling supply, ceiling return)

VENTILATION SCHEDULE (PART 2)

Project: Live Oaks
Job No: 2020.01.062

Designer: MLM
Engineer: MLM

Unit #	room name	Az area	occupancy classification	Pz population	TBL 6-1 Rp peo oa	TBL 6-1 Ra area oa	Vbz oa cfm	TBL 6-2 Ez air dist eff	Voz oa req'd	design cfm	%oa req'd	system %oa	actual oa cfm	Exhaust CFM/sf	Exhaust Required CFM	Actual Exhaust
AHU-M2	LIFE SKILLS 189	295	Classrooms (9+)	11	10	0.12	145	0.8	182	440	41%	50%	220	0	0	
AHU-M2	OT / PT 190	481	Office Spaces	2	5	0.06	39	0.8	49	240	20%	50%	120	0	0	
AHU-M2	REST 190A	79	Office Spaces	1	7.5	0.06	12	0.8	16	0	0%	50%	0	0	0	
AHU-M2	SENSORY 190B	130	Office Spaces	1	5	0.06	13	0.8	16	160	10%	50%	80	0	0	
AHU-M2	FRENCH 201	802	Classrooms (9+)	25	10	0.12	346	0.8	433	1,000	43%	50%	500	0	0	
AHU-M2	DISCOVERY 235	880	Classrooms (9+)	17	10	0.12	276	0.8	345	880	39%	50%	440	0	0	
AHU-M2	R.R. 236	63	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	0	0%	50%	0	0	50	50
AHU-M2	MEN'S R.R. 237	234	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	120	0%	50%	60	0	150	150
AHU-M2	WOMEN'S R.R. 238	261	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	120	0%	50%	60	0	150	150
AHU-M2	R.R. 239	59	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	0	0%	50%	0	0	50	50
AHU-M2	R.R. 240	97	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	0	0%	50%	0	0	50	50
AHU-M2	JAN. 241	96	Janitor Closet	0	0	0	0	0.8	0	0	0%	50%	0	1	96	100
AHU-M2	7TH GRADE CORRIDOR-1 242-1	1,849	Corridors	0	0	0.06	111	0.8	139	500	28%	50%	250	0	0	
AHU-M2	7TH GRADE CORRIDOR-2 242-2	1,508	Corridors	0	0	0.06	91	0.8	114	500	23%	50%	250	0	0	
AHU-M2	7TH GRADE LOCKERS 243	388	Corridors	0	0	0.06	23	0.8	30	120	25%	50%	60	0	0	
AHU-M2	7TH GRADE COMMONS-1 244-1	1,798	Mall Common Areas	40	7.5	0.06	408	0.8	510	1,360	38%	50%	680	0	0	
AHU-M2	GROUP ROOM 244A	193	Conference Rooms (Office)	3	5	0.06	27	0.8	34	120	28%	50%	60	0	0	
AHU-M2	GROUP ROOM 244B	140	Conference Rooms (Office)	3	5	0.06	23	0.8	30	120	25%	50%	60	0	0	
AHU-M2	SOCIAL STUDIES 245	889	Classrooms (9+)	25	10	0.12	357	0.8	446	1,040	43%	50%	520	0	0	
AHU-M2	SOCIAL STUDIES 246	898	Classrooms (9+)	25	10	0.12	358	0.8	448	1,000	45%	50%	500	0	0	
AHU-M2	MATH 248	933	Classrooms (9+)	25	10	0.12	362	0.8	453	1,120	40%	50%	560	0	0	
AHU-M2	STORAGE 248A	114	Storage	2	5	0.06	14	0.8	18	40	45%	50%	20	0	0	
AHU-M2	SCIENCE 249	874	Science Laboratories	25	10	0.18	407	0.8	510	1,040	49%	50%	520	1	874	900
AHU-M2	SCIENCE 250	873	Science Laboratories	25	10	0.18	407	0.8	509	1,040	49%	50%	520	1	873	900
AHU-M2	MATH 251	906	Classrooms (9+)	25	10	0.12	359	0.8	449	1,320	34%	50%	660	0	0	
AHU-M2	INTERVENTION 252	635	Classrooms (9+)	25	10	0.12	326	0.8	408	880	46%	50%	440	0	0	
AHU-M2	ENGLISH 253	896	Classrooms (9+)	25	10	0.12	358	0.8	447	1,320	34%	50%	660	0	0	
AHU-M2	ENGLISH 254	896	Classrooms (9+)	25	10	0.12	358	0.8	447	1,200	37%	50%	600	0	0	
							0		8,761	29,240			14,620			
AHU-M3	SOUTH CORRIDOR 105	1,222	Corridors	0	0	0.06	73	0.8	92	400	23%	50%	200	0	0	
AHU-M3	GYM CORRIDOR 108	448	Corridors	0	0	0.06	27	0.8	34	320	11%	50%	160	0	0	
AHU-M3	DINING COMMONS 109	3,971	Cafeteria, Fast Food	236	7.5	0.18	2485	0.8	3107	7,560	41%	50%	3780	0	0	
AHU-M3	DINING CORRIDOR 109A	1,225	Corridors	0	0	0.06	74	0.8	92	400	23%	50%	200	0	0	
AHU-M3	SERVERY 111	962	Cafeteria/fast food dining	0	0	0	0	0.8	0	480	0%	50%	240	0	0	
AHU-M3	KITCHEN 112	1,390	Kitchens (Cooking)	0	0	0	0	0.8	0	800	0%	50%	400	0.7	973	6310
AHU-M3	STORAGE 112A	61	Storage	0	0	0.12	7	0.8	10	40	25%	50%	20	1	61	70
AHU-M3	DRY STORAGE 112B	159	Storage	0	0	0.12	19	0.8	24	80	30%	50%	40	0	0	
AHU-M3	WARE WASHING 113	201	Kitchens (Cooking)	0	0	0	0	0.8	0	160	0%	50%	80	0.7	141	1000
AHU-M3	KITCHEN OFFICE 114	100	Storage	0	0	0.12	12	0.8	16	120	13%	50%	60	0	0	
AHU-M3	R.R. 115	42	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	0	0%	50%	0	0	50	50
AHU-M3	R.R. 116	60	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	0	0%	50%	0	0	50	50
AHU-M3	FACILITY BREAK ROOM 117	536	Office Space	3	5	0.06	71	0.8	89	600	15%	50%	300	0	0	
AHU-M3	FACILITY WASH ROOM 117A	79	Janitor Closet	0	0	0.12	9	0.8	12	0	0%	50%	0	1	79	90
AHU-M3	IT 118	60	Storage	0	0	0	0	0.8	0	0	0%	50%	0	0	0	60
AHU-M3	OFFICE 119	120	Office Spaces	1	5	0.06	12	0.8	16	120	13%	50%	60	0	0	
AHU-M3	OFFICE 120	204	Office Spaces	1	5	0.06	17	0.8	22	160	14%	50%	80	0	0	
AHU-M2	ELECTRICAL 123	278	Storage	0	0	0	0	0.8	0	560	0%	50%	280	0	0	
AHU-M3	FACILITY WORKSHOP 124	279	Storage	0	0	0.12	33	0.8	42	300	14%	50%	150	0	0	
AHU-M3	PART STORAGE 124A	231	Storage rooms	1	5	0.06	19	0.8	24	100	24%	50%	50	0	0	
AHU-M3	EXIST. GYM EX100	11,474	Gym, Stadium, Arena (Play Area)	0	0	0.3	3442	0.8	4303	16,680	26%	50%	8340	0	0	
AHU-M3	VESTIBULE EX100A	81	Corridors	0	0	0.06	5	0.8	7	50	14%	50%	25	0	0	
AHU-M3	GYM STORAGE EX101	553	Storage	0	0	0.12	66	0.8	83	185	45%	50%	93	0	0	
AHU-M3	CORRIDOR EX102	192	Corridors	0	0	0.06	12	0.8	15	100	15%	50%	50	0	0	
AHU-M3	WOMEN'S R.R. EX103	209	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	200	0%	50%	100	0	90	175
AHU-M3	WOMEN'S LOCKER EX104	328	Sports Locker Rooms	2	0	0	0	0.8	0	325	0%	50%	163	0	300	450
AHU-M3	ATHLETIC EX105	130	Sports Locker Rooms	1	0	0	0	0.8	0	100	0%	50%	50	0	0	
AHU-M3	MEN'S R.R. EX106	206	Bathrooms/Toilet (Private)	0	0	0	0	0.8	0	200

MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING
INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published - All Rights Reserved. This Document is the product and exclusive property of Motz Consulting Engineers, Inc. doing business as Motz Engineering not to be copied or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of the transfer of electronic formats. Motz Engineering also reserves no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
7	07/22/2022	MUSIC EXPANSION CD SET
24	02/03/2023	BULLETIN 7

ALL SCHEDULES AND SCOPE OF WORK ON THIS PAGE REMOVED. 23

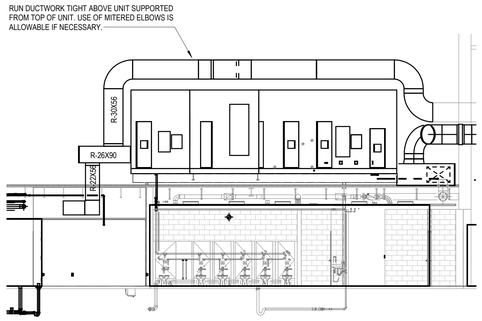
DRAWN BY: **Author** CHECKED BY **Checker**

PROJECT NO. **2021.01.015**

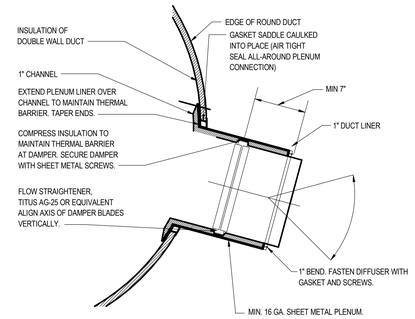
DRAWING TITLE:
MECHANICAL
SCHEDULES

M3.04

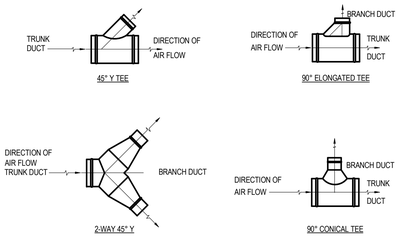
2/3/2023 3:21:02 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt



1 M5.01 AHU-M3 SECTION VIEW
SCALE: 1/8" = 1'-0"

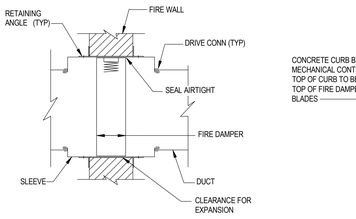


ENLARGED DIFFUSER SECTION
SCALE:N.T.S.
11 M5.0



NOTE:
1. PROVIDE BALANCING DAMPER AT ALL BRANCH TAKE-OFFS

ROUND DUCT BRANCH TAKE-OFF DETAILS
SCALE:N.T.S.
10 M5.0



RETAINING ANGLES:
INSTALL ON FOUR SIDES OF THE SLEEVE AND ON EACH SIDE ON THE WALL. ANGLES ARE TO FASTENED TO THE SLEEVE ONLY. DO NOT FASTEN ANGLES TO THE WALL. INSTALL 1/4" BOLTS, 1/2" LONG WELDS OR #10 SM SCREWS, MINIMUM 2 FASTENERS PER SIDE. BEGINNING AT 2" FROM EACH CORNER OF THE SLEEVE. ANGLES SHALL LAP MASONRY A MINIMUM OF 1" AROUND THE ENTIRE OPENING. RECOMMENDED MINIMUM SIZES AND FASTENERS ARE AS FOLLOWS:

DIMENSIONS	ANGLES	1/2" WELDS	1/4" BOLTS	#10 SM SCREWS
0" THRU 48"	1-1/2" x 1-1/2" x 10 GA	8" ON CENTER	8" ON CENTER	6" ON CENTER
49" THRU 72"	2" x 2" x 10 GA	6" ON CENTER	6" ON CENTER	N/A
OVER 72"	2" x 2" x 1/8"	8" ON CENTER	6" ON CENTER	N/A

CLEARANCE FOR EXPANSION:
REQUIRED BETWEEN THE SLEEVE AND THE MASONRY OPENING ON THE TOP AND ON EACH VERTICAL SIDE. MINIMUM CLEARANCE IS 1/8" PER LINEAR FOOT, BOTH DIMENSIONS, WITH FRACTIONAL DIMENSIONS TAKEN AS THE NEXT LARGEST FOOT.

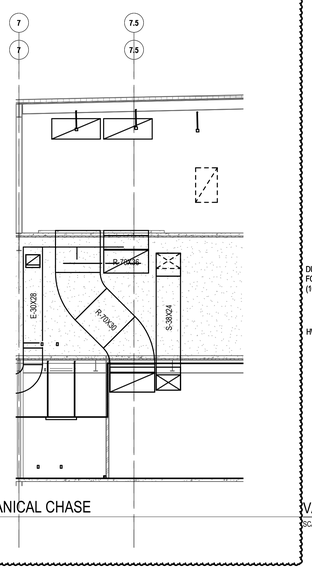
SLEEVES
SHALL BE 10 GAUGE STEEL AND A MAXIMUM OF 6' FROM WALL ON EACH SIDE.

DRIVE CONNECTIONS:
SHALL BE MADE WITH A BREAKAWAY CONNECTION SUCH AS AN "S" SLIP OR OTHER SLIP TYPE CONNECTION ON THE TOP AND THE BOTTOM AND A DRIVE SLIP ON EACH SIDE OF THE SLEEVE.

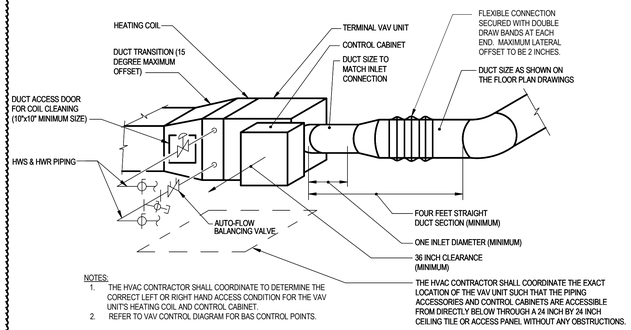
SEALANTS AND TAPE:
SHALL BE APPLIED TO THE JOINT AS REQUIRED FOR AIR TIGHTNESS. SEALANTS USED SHALL BE NONHARDENING AND HAVE A FLAME SPREAD RATING OF NOT OVER 25 AND A SMOKE DEVELOPED RATING OF NOT OVER 50.

DUCT ACCESS DOORS:
INSTALL AT EACH FIRE DAMPER. ACCESS DOORS SHALL BE LOCATED SO THAT THE FIRE DAMPER CATCH MAY BE RELEASED WITH THE FIRE DAMPER IN A CLOSED POSITION AND THE FUSIBLE LINK REPLACED. EACH DOOR SHALL BE STENCILED WITH RED PAINT "FIRE DAMPER ACCESS". DUCT ACCESS DOORS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS. DOOR SHALL BE HINGED WITH CAM FASTENER AND NEOPRENE BASKET. MINIMUM SIZE SHALL BE 6"x6".
FIRE DAMPER FRAMES:
BOLT OR WELD TO THE FIRE DAMPER SLEEVE. FASTENING TO THE SLEEVE SHALL BE IN ACCORDANCE WITH FIRE DAMPER MANUFACTURER'S INSTRUCTIONS. MINIMUM FASTENINGS SHALL BE 1/4" BOLTS OR 1/2" LONG WELDS WITH MAXIMUM SPACING OF 8" ON CENTER AND A MINIMUM OF 2 FASTENERS PER SIDE BEGINNING 2" FROM THE CORNER OF THE FIRE DAMPER SLEEVE.

FIRE DAMPER DETAILS
SCALE:N.T.S.
9 M5.0

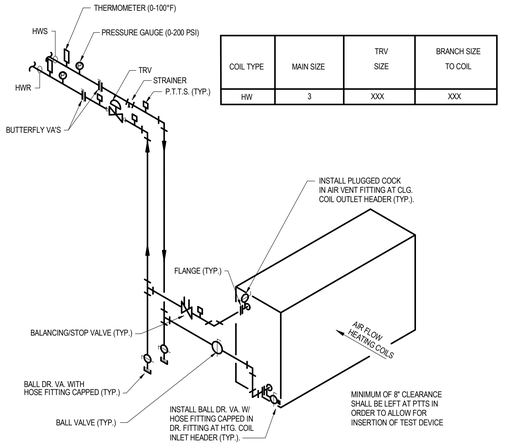


2 M5.01 AHU-M2 MECHANICAL CHASE
SCALE: 1/8" = 1'-0"



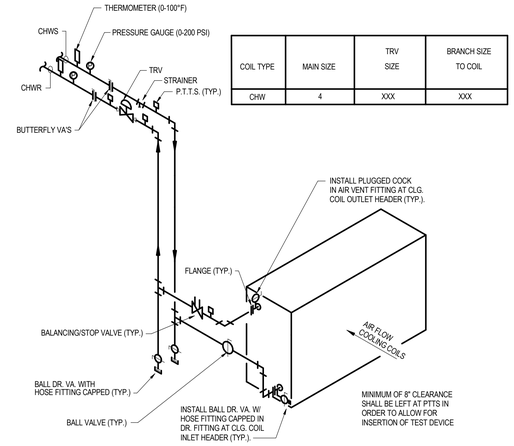
NOTES:
1. THE HVAC CONTRACTOR SHALL COORDINATE TO DETERMINE THE CORRECT LEFT OR RIGHT HAND ACCESS CONDITION FOR THE VAV UNIT'S HEATING COIL AND CONTROL CABINET.
2. REFER TO VAV CONTROL DIAGRAM FOR BAS CONTROL POINTS.

VAV UNIT INSTALLATION DETAIL
SCALE:N.T.S.
8 M5.0



COIL TYPE	MAIN SIZE	TRV SIZE	BRANCH SIZE TO COIL
HW	3	XXX	XXX

HEATING COIL PIPING DIAGRAM
SCALE:N.T.S.
7 M5.0

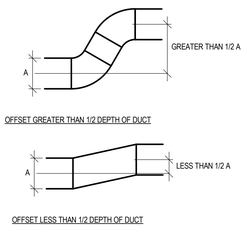


COIL TYPE	MAIN SIZE	TRV SIZE	BRANCH SIZE TO COIL
CHW	4	XXX	XXX

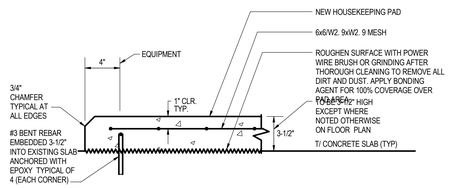
COOLING COIL PIPING DIAGRAM
SCALE:N.T.S.
6 M5.0



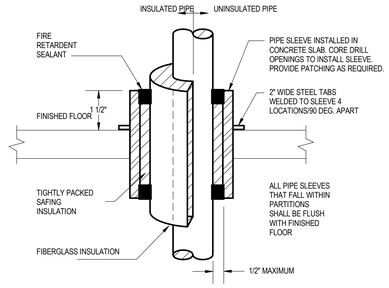
SUPPLY GRILL DETAIL
SCALE:N.T.S.
5 M5.0



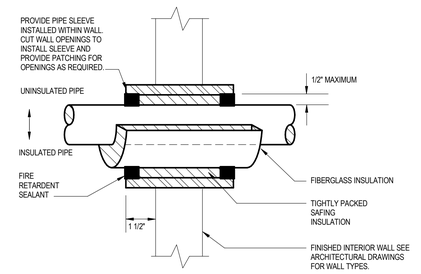
DUCT OFFSET DETAIL
SCALE:N.T.S.
4 M5.0



CONCRETE PAD DETAIL
SCALE:N.T.S.
3 M5.0



FLOOR PIPING PENETRATION DETAIL
SCALE:N.T.S.
2 M5.0



WALL PENETRATION DETAIL
SCALE:N.T.S.
1 M5.01

MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING
INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published - All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be used in whole or in part for any purpose other the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, Motz Engineering shall not be liable for changes made to this electronic data or liable for any defects and/or deficiencies that may arise as a consequence of downloading of this information. Motz Engineering assumes no responsibility with respect to the accuracy or integrity of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
	11/19/2021	DD SET
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
	05/03/2022	FOR PERMIT
14	7	BULLETIN 7
18	11/07/2022	ENGINEERING CHANGES

DRAWN BY: Author CHECKED BY: DW

PROJECT NO. 2021.01.015

DRAWING TITLE:
MECHANICAL DETAILS

M5.01

11/8/2022 1:09:32 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt

1 / M5.02 CEILING DIFFUSER CONNECTION DETAILS

SCALE: 12" = 1'-0"

MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING

INDIAN HILL SCHOOL DISTRICT

6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published - All Rights Reserved. This Document is the product and exclusive property of Motz Consulting Engineers, Inc. doing business as Motz Engineering not to be copied or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of the transmission or receipt of this data. Motz Engineering assumes no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
20	11/16/2022	RESPONSE TO RFI #93

DRAWN BY: **Author** CHECKED BY **Checker**

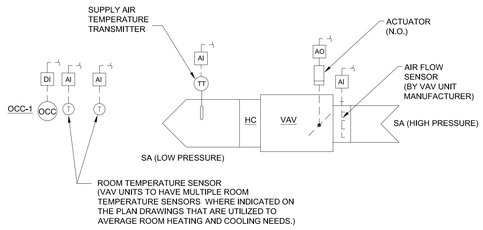
PROJECT NO. **2021.01.015**

DRAWING TITLE:

MECHANICAL DETAILS

M5.02

11/16/2022 2:28:58 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt

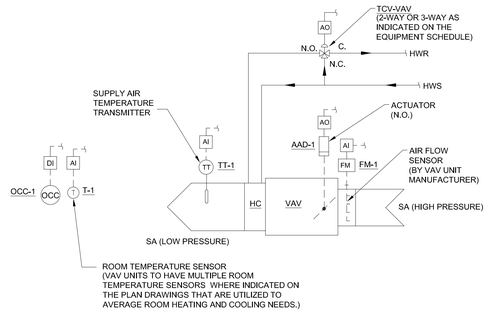


MECHANICAL CONTRACTOR TO PROVIDE TERMINAL UNIT WITH SCR TYPE HEATER.

CONTROL DIAGRAM - VAV UNITS WITH ELECTRIC HEAT

4 M700

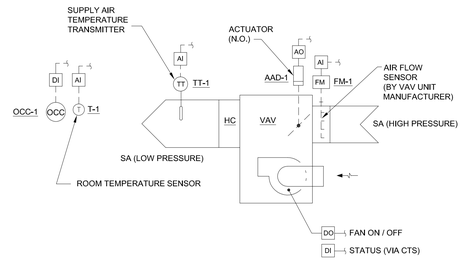
SCALE: N.T.S.



CONTROL DIAGRAM - VAV UNITS HOT WATER HEAT

3 M700

SCALE: N.T.S.

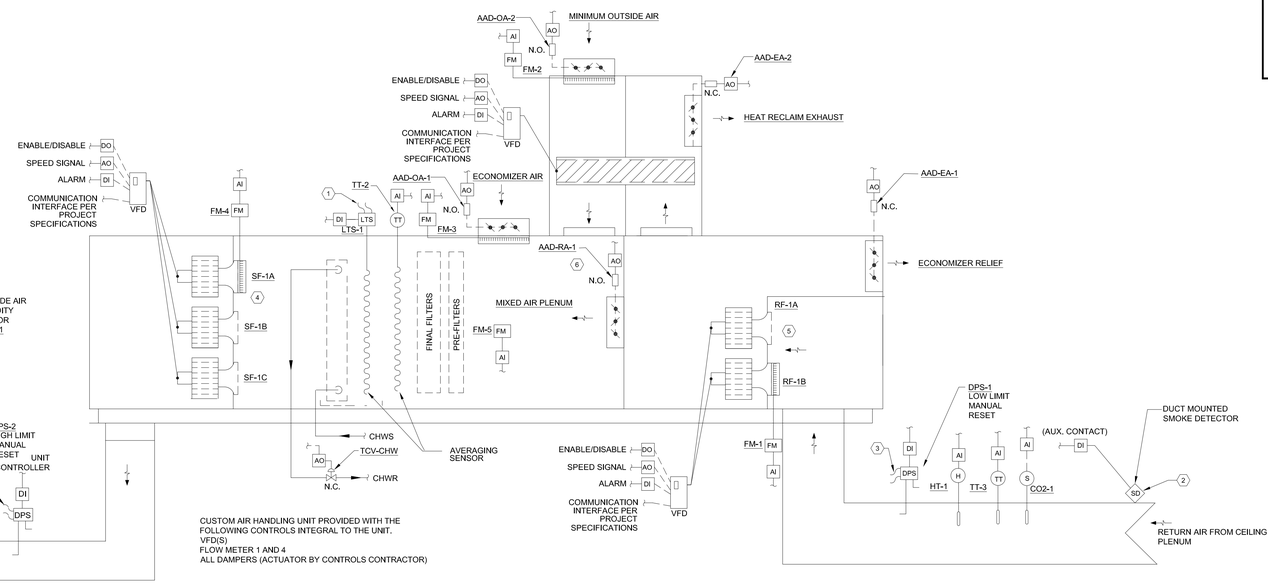


MECHANICAL CONTRACTOR TO PROVIDE TERMINAL UNIT WITH SCR TYPE HEATER.

CONTROL DIAGRAM - FPVAV UNITS WITH ELECTRIC HEAT

2 M700

SCALE: N.T.S.



CONTROL DIAGRAM - AIR HANDLING UNIT WITH HEAT RECLAIM

1 M700

SCALE: N.T.S.

GENERAL NOTES

A. CONTROLS CONTRACTOR IS RESPONSIBLE TO INSTALL ALL CONTROLS SHIPPED LOOSE WITH UNITS.

B. CONTROLS CONTRACTOR IS RESPONSIBLE FOR FIELD WIRING TO CONTACTS ON OCCUPANCY SENSOR FURNISHED BY LIGHTING CONTRACTOR. FOR SENSOR TYPE REFER TO ELECTRICAL DETAIL SHEETS PER SCHOOL.

C. CONTROLS CONTRACTOR SHALL PROVIDE ALL TEMPERATURE CONTROL VALVES UNLESS NOTED OTHER WISE.

DRAWING NOTES

1. THE FREEZE-STAT IS TO BE HARD WIRED TO DE-ACTIVATE THE SUPPLY AIR FAN UPON DETECTION OF THE LOW TEMPERATURE LIMIT. THE FREEZE-STAT IS TO BE MANUALLY RESET AND INITALY SET AT 35 DEGREES FAHRENHEIT. (THIS SAFETY IS TO BE WIRED SUCH THAT IT CAN NOT BE BYPASSED BY THE HAND POSITION OF THE HOA SWITCH.)
2. RETURN AIR SMOKE DETECTOR IS TO BE HARD WIRED TO DE-ACTIVATE THE SYSTEM SUPPLY AND RETURN AIR FANS UPON DETECTION OF SMOKE. THE SMOKE DETECTOR AUXILLIARY CONTACT IS TO BE MONITORED BY THE BUILDING AUTOMATION SYSTEM. THE SMOKE DETECTOR IS TO BE FURNISHED BY THE PROJECT ELECTRICAL CONTRACTOR AND ALL ASSOCIATED FIRE ALARM WIRING IS TO BE PROVIDED BY THE PROJECT ELECTRICAL CONTRACTOR. (THIS SAFETY IS TO BE WIRED SUCH THAT IT CAN NOT BE BYPASSED BY THE HAND POSITION OF THE HOA SWITCH.)
3. DIFFERENTIAL PRESSURE SWITCH IS TO BE HARD WIRED TO DE-ACTIVATE THE SYSTEM FANS UPON DETECTION OF THE HIGH (OR LOW) LIMIT SET POINT. (THIS SAFETY IS TO BE WIRED SUCH THAT IT CAN NOT BE BYPASSED BY THE HAND POSITION OF THE HOA SWITCH.)
4. REFER TO SCHEDULES FOR NUMBER AND SIZE OF SUPPLY FANS.
5. REFER TO SCHEDULES FOR NUMBER AND SIZE OF RETURN FANS.
6. REFER TO VENDOR SUBMITTAL DRAWINGS FOR NUMBER AND SIZE OF RETURN AIR DAMPERS.

CONTROL SYMBOL LEGEND

AI	ANALOG INPUT SIGNAL
AO	ANALOG OUTPUT SIGNAL
DI	DIGITAL INPUT SIGNAL
DO	DIGITAL OUTPUT SIGNAL
ES	END SWITCH
M	MOTOR
DPS	DIFFERENTIAL PRESSURE SWITCH
DPT	DIFFERENTIAL PRESSURE TRANSMITTER
SPT	STATIC PRESSURE TRANSMITTER
LTS	LOW TEMPERATURE SWITCH
AFT	AIR FLOW TRANSMITTER
VFD	VARIABLE FREQUENCY DRIVE
AAD-XX	ACTUATED DAMPER
FT	FLOW TRANSFER
FM	FLOW METER
FS	FLOW SWITCH
HT	HUMIDITY TRANSMITTER
ES	END SWITCH
N.O.	NORMALLY OPEN
N.C.	NORMALLY CLOSED
OCC	ROOM OCCUPANCY SENSOR
X	REFRIGERATION MONITER
CT	CONTACT
TT	TEMPERATURE TRANSMITTER
T	ROOM TEMPERATURE SENSOR
H	RELATIVE HUMIDITY SENSOR
PI	PRESSURE INDICATOR
	TEMPERATURE
S CO2	CARBON DIOXIDE SENSOR
SD	DUCT MOUNTED SMOKE DETECTOR

MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msastudio.com | 855.241.5666

PRELIMINARY NOT FOR CONSTRUCTION

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

INDIAN HILL SCHOOLS

INDIAN HILL EVSD
6100 DRAKE RD
CINCINNATI, OH 45243

Not Published. All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be copied or used for other than the specific purpose for which it was prepared without the express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of downloading of this information. Motz Engineering assumes no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2022 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION

DRAWN BY: **Author** CHECKED BY **Checker**

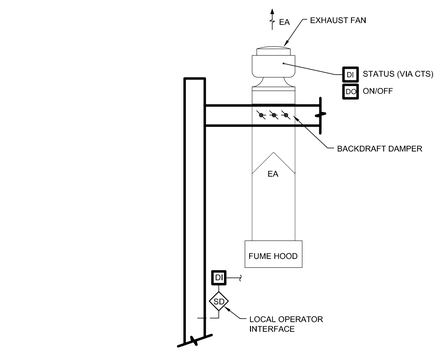
PROJECT NO. **2021.01.015**

DRAWING TITLE:

CONTROL DIAGRAMS

M700

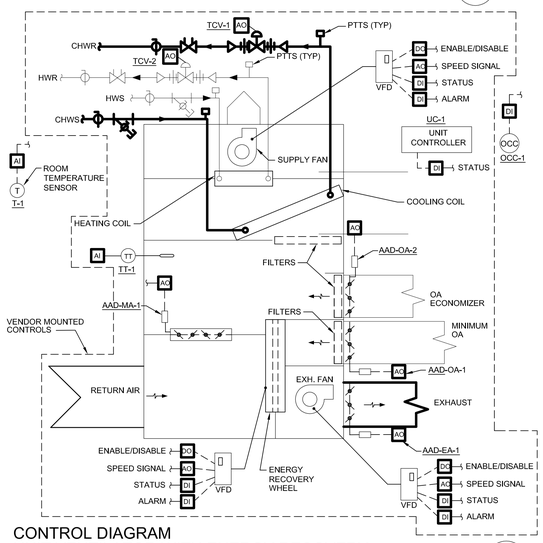
4/8/2022 10:09:45 AM BIM 360://21107.00 IHS - Elementary School/IHS Elementary Central MEP (V20).rvt



CONTROL DIAGRAM
FUME HOOD

SCALE: N.T.S.

16 M701



CONTROL DIAGRAM
UNIT VENTILATOR WITH ENERGY RECOVERY

SCALE: N.T.S.

12 M701

EXHAUST FAN IS TO OPERATE WHEN BUILDING IS IN OCCUPIED MODE VIA DDC

OCCUPANCY SENSOR TO BE PROVIDED BY LIGHTING CONTRACTOR WITH POINT FOR CONTROLS CONTRACTOR INTERFACE. FOR OCCUPANCY TYPE REFER TO ELECTRICAL DRAWINGS PER SCHOOL.

CONTROL DIAGRAM
LARGE TOILET ROOM EXHAUST FAN

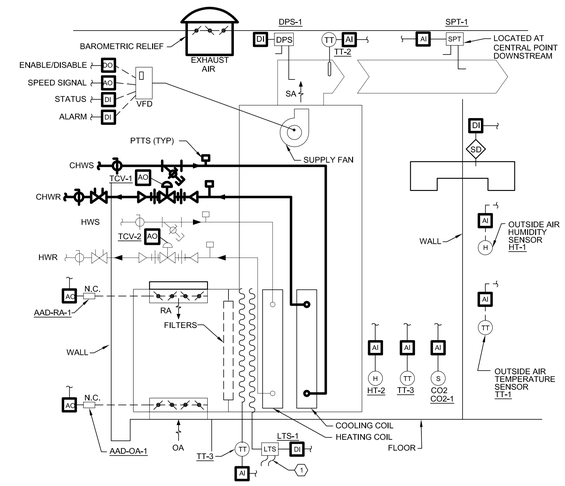
SCALE: N.T.S.

15 M701

CONTROL DIAGRAM
EXHAUST FANS SERVING SINGLE USER TOILET ROOM

SCALE: N.T.S.

14 M701



AIR HANDLING UNIT PROVIDED BY MECHANICAL CONTRACTOR WITH VFD AND DAMPERS (ACTUATORS BY CONTROLS CONTRACTOR)

CONTROL DIAGRAM
VERTICAL AIR HANDLING UNIT

SCALE: N.T.S.

13 M701

NOTES:

1. PROVIDE 8" OF CLEARANCE AT PTTS FOR INSERTION OF TEST DEVICES.
2. SHUT-OFF VALVES, STRAINERS, BALANCING VALVES AND UNIONS OR FLANGES SHALL BE FULL PIPE SIZE. PIPING TO COIL CONNECTIONS SHALL NOT BE SMALLER THAN COIL CONNECTION SIZE.
3. SEE FLOOR PLAN DRAWINGS FOR SIZES OF BRANCH PIPING TO HEATING COILS.
4. THE COIL ISOLATION SHUT-OFF VALVES ARE TO BE SEPERATE VALVES THAT ARE INDEPENDENTLY INSTALLED AND NOT INCLUDED IN COMBINATION VALVE PACKAGES.

NOTES:

1. PROVIDE 8" OF CLEARANCE AT PTTS FOR INSERTION OF TEST DEVICES.
2. SHUT-OFF VALVES, STRAINERS, BALANCING VALVES AND UNIONS OR FLANGES SHALL BE FULL PIPE SIZE. PIPING TO COIL CONNECTIONS SHALL NOT BE SMALLER THAN COIL CONNECTION SIZE.
3. SEE FLOOR PLAN DRAWINGS FOR SIZES OF BRANCH PIPING TO HEATING COILS.
4. THE COIL ISOLATION SHUT-OFF VALVES ARE TO BE SEPERATE VALVES THAT ARE INDEPENDENTLY INSTALLED AND NOT INCLUDED IN COMBINATION VALVE PACKAGES.

CONTROL DIAGRAM
HOT WATER UNIT HEATER

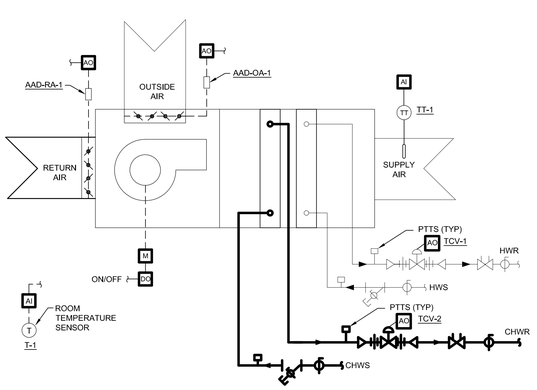
SCALE: N.T.S.

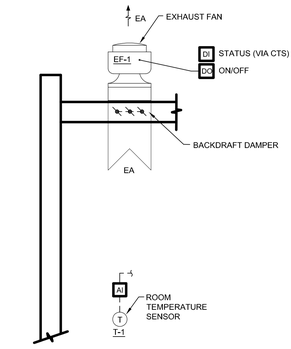
10 M701

PIPING DIAGRAM
DIFFERENTIAL PRESSURE TRANSMITTER

SCALE: N.T.S.

9 M701

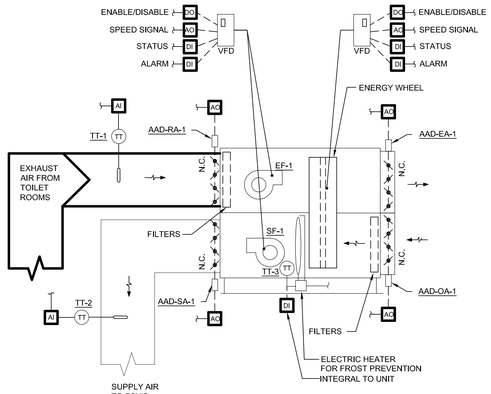




CONTROL DIAGRAM
MECHANICAL & ELECTRICAL ROOM VENTILATION

SCALE: N.T.S.

8 M701



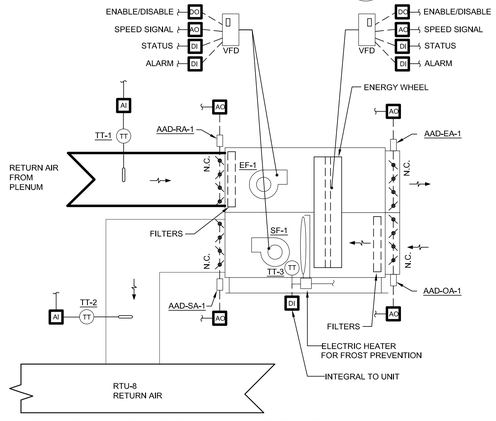
ENERGY RECOVER UNIT PROVIDED BY MECHANICAL CONTRACTOR WITH THE FOLLOWING CONTROLS:
FACTORY INSTALLED MICROPROCESSOR PROGRAMMABLE CONTROLLER (DDC), VFD(S), SPACE AIR TEMPERATURE SENSOR (FIELD INSTALLED) RETURN AIR TEMPERATURE SENSOR, DUCT STATIC PRESSURE SENSOR, OUTSIDE AIR TEMPERATURE SENSOR, BUILDING STATIC PRESSURE SENSOR, OUTSIDE AIR HUMIDITY SENSOR, AND PROOF OF FLOW

CONTROL DIAGRAM
ENERGY RECOVERY UNIT

SCALE: N.T.S.

7 M701

NOT USED



ENERGY RECOVER UNIT PROVIDED BY MECHANICAL CONTRACTOR WITH THE FOLLOWING CONTROLS:
FACTORY INSTALLED MICROPROCESSOR PROGRAMMABLE CONTROLLER (DDC), VFD(S), SPACE AIR TEMPERATURE SENSOR (FIELD INSTALLED) RETURN AIR TEMPERATURE SENSOR, DUCT STATIC PRESSURE SENSOR, OUTSIDE AIR TEMPERATURE SENSOR, BUILDING STATIC PRESSURE SENSOR, OUTSIDE AIR HUMIDITY SENSOR, AND PROOF OF FLOW

CONTROL DIAGRAM
ENERGY RECOVERY UNIT

SCALE: N.T.S.

6 M701

NOT USED

FAN COIL UNIT TO BE PROVIDED BY MECHANICAL CONTRACTOR WITH DDC TERMINAL CONTROLLER AND MODULATING CONTROL VALVES

CONTROL DIAGRAM
FAN COIL UNIT

SCALE: N.T.S.

5 M701

MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

PRELIMINARY
NOT FOR CONSTRUCTION

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

INDIAN HILL SCHOOLS
INDIAN HILL EVSD
6100 DRAKE RD
CINCINNATI, OH 45243

Not Published All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be copied or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, Motz Engineering reserves the right to remove itself from all liability that is or may be liable for any defects and/or deficiencies that may arise as a consequence of downloading of this information. Motz Engineering assumes no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2022 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION

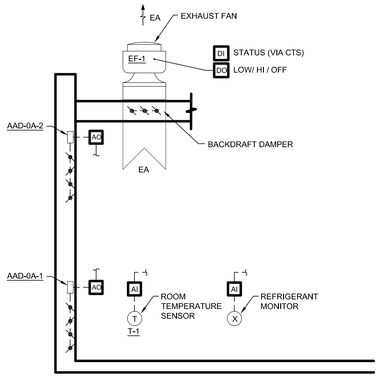
DRAWN BY: Author CHECKED BY Checker

PROJECT NO. 2021.01.015

DRAWING TITLE:

CONTROL DIAGRAMS

M701

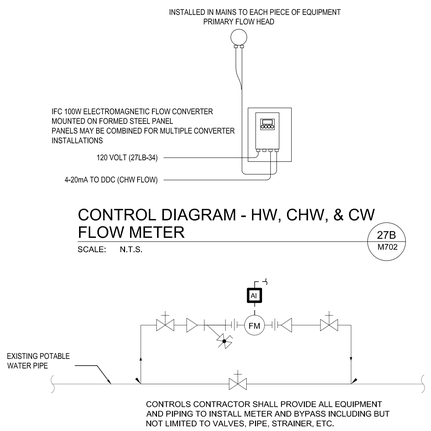


NOT USED

CONTROL DIAGRAM - REFERIGERANT MONITOR EXHAUST FAN

SCALE: N.T.S.

28 M702



NOT USED

CONTROL DIAGRAM - HW, CHW, & CW FLOW METER

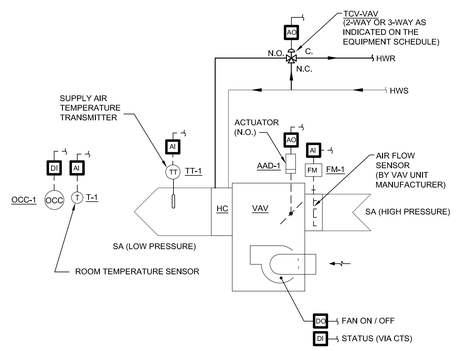
SCALE: N.T.S.

27B M702

CONTROL DIAGRAM - DOMESTIC WATER METER INSTALLATION

SCALE: N.T.S.

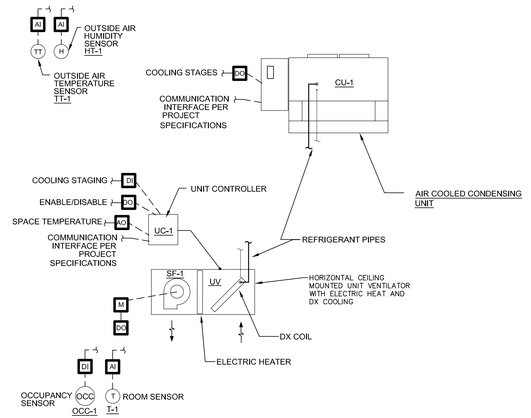
27A M702



CONTROL DIAGRAM - FPVAV UNITS WITH HOT WATER HEAT

SCALE: N.T.S.

26 M702



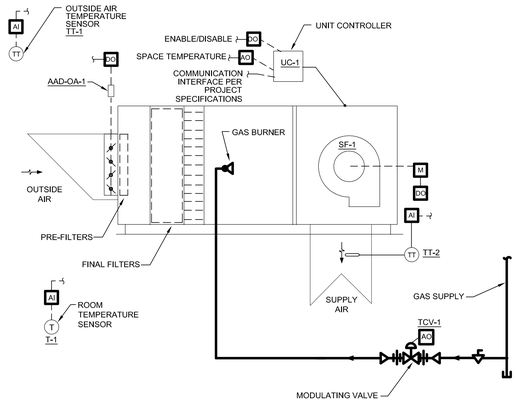
UNIT TO BE PROVIDED WITH MICROPROCESSOR CONTROLLER CONTROLS CONTRACTOR TO CONNECT UNIT TO OCCUPANCY SENSOR (LIGHTING CONTRACTOR PROVIDED) INSTALL AND FIELD WIRE OUTSIDE AIR AND HUMIDITY SENSORS.

CONTROL DIAGRAM-UNIT VENTILATOR DX COOLING/ELECTRIC HEAT

SCALE: N.T.S.

25 M702

NOT USED

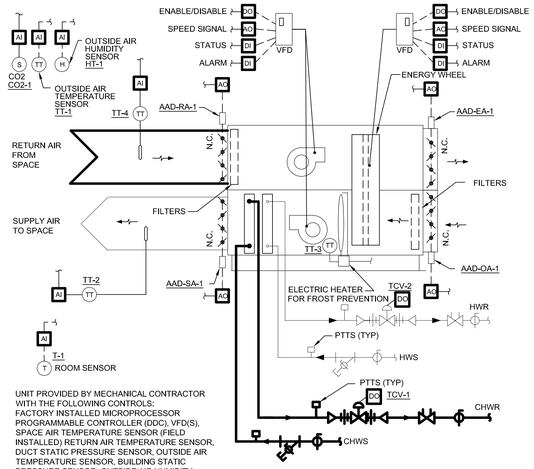


UNIT TO BE PROVIDED WITH MICROPROCESSOR CONTROLLER CONTROLS CONTRACTOR TO INSTALL AND FIELD WIRE OUTSIDE AIR, THERMOSTAT. FURNISH AND INSTALL TEMPERATURE CONTROL VALVE.

CONTROL DIAGRAM DIRECT FIRED GAS MAKE-UP AIR UNIT

SCALE: N.T.S.

24 M702



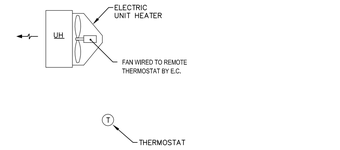
UNIT PROVIDED BY MECHANICAL CONTRACTOR WITH THE FOLLOWING CONTROLS: FACTORY INSTALLED MICROPROCESSOR PROGRAMMABLE CONTROLLER (DDC), VFD(S), SPACE AIR TEMPERATURE SENSOR (FIELD INSTALLED) RETURN AIR TEMPERATURE SENSOR, DUCT STATIC PRESSURE SENSOR, OUTSIDE AIR TEMPERATURE SENSOR, BUILDING STATIC PRESSURE SENSOR, OUTSIDE AIR HUMIDITY SENSOR, AND PROOF OF FLOW

CONTROL DIAGRAM ENERGY RECOVERY WITH HW & CHW COILS

SCALE: N.T.S.

23 M702

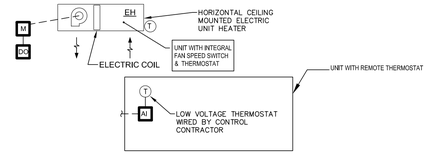
NOT USED



CONTROL DIAGRAM ELECTRIC UNIT HEATER

SCALE: N.T.S.

22 M702



NOT USED

CONTROL DIAGRAM ELECTRIC CEILING HEATER

SCALE: N.T.S.

21 M702

CONTROL DIAGRAM FIRE ALARM INTERLOCK

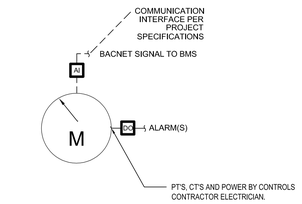
SCALE: N.T.S.

20 M702

CONTROL DIAGRAM EXTERIOR LIGHTING CONTROL

SCALE: N.T.S.

19 M702



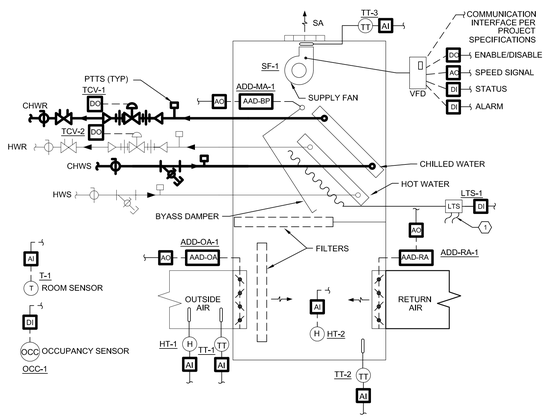
CONTROLS CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING POWER MONITOR UNIT(S) COORDINATE LOCATION WITH ELECTRICIAN AND ENGINEERING PRIOR TO INSTALL

CONTROL DIAGRAM BUILDING POWER MONITOR

SCALE: N.T.S.

18 M702

NOT USED



UNIT VENTILATOR SHALL BE PROVIDE BY MECHANICAL CONTRACTOR WITH ALL CONTROLS INDICATED EXCEPT FOR THE ROOM THERMOSTAT, OCCUPANCY SENSOR (BY LIGHTING CONTRACTOR) AND TWO-POSITION WATER CONTROL VALVES.

CONTROL DIAGRAM HORIZONTAL UNIT VENTILATOR (SUMMIT)

SCALE: N.T.S.

17 M702

NOT USED

MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

PRELIMINARY
NOT FOR CONSTRUCTION

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

INDIAN HILL SCHOOLS
INDIAN HILL EVSD
6100 DRAKE RD
CINCINNATI, OH 45243

Not Published - All Rights Reserved. This Document is the product and exclusive property of Motz Engineering and may not be duplicated, published, or used in part or in full for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of the transfer of electronic media. Motz Engineering reserves no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2022 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION

DRAWN BY: **Author** CHECKED BY **Checker**

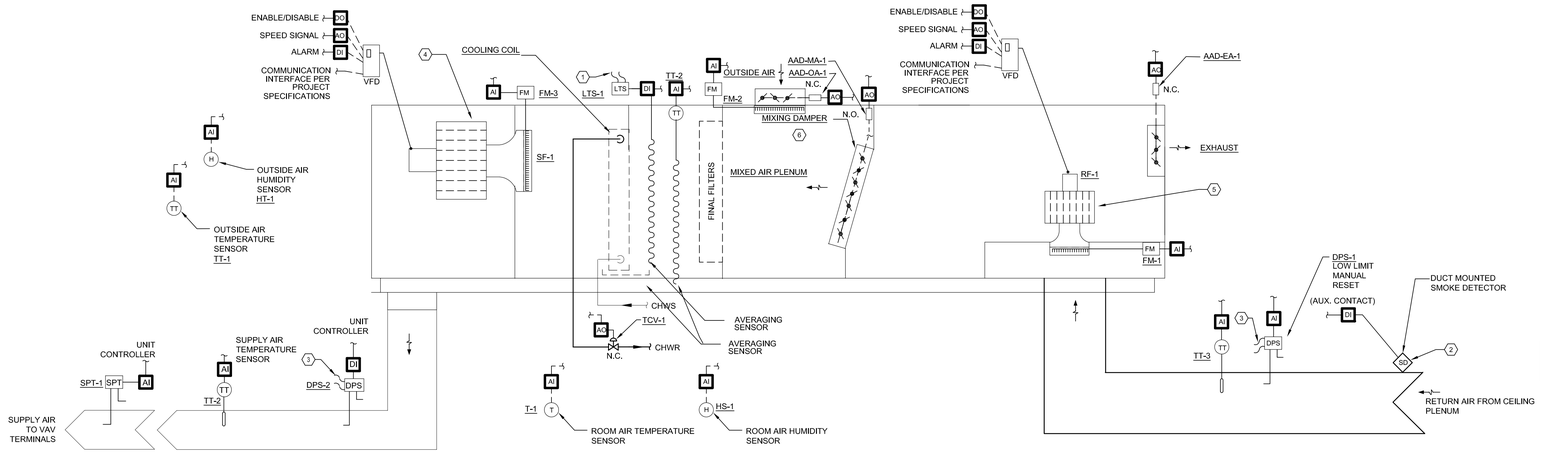
PROJECT NO. **2021.01.015**

DRAWING TITLE:

CONTROL DIAGRAMS

M702

4/8/2022 10:09:45 AM BIM 360://21107.00 IHS - Elementary School/IHS Elementary Central MEP (V20).rvt



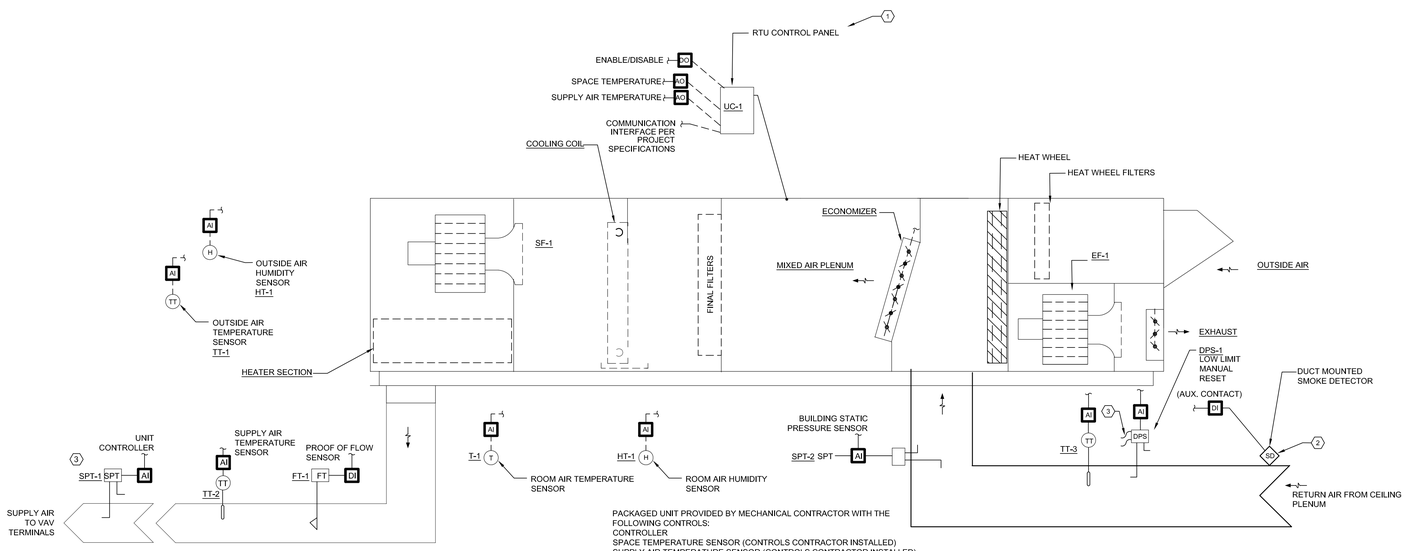
CUSTOM AIR HANDLING UNIT PROVIDED WITH THE FOLLOWING CONTROLS INTEGRAL TO THE UNIT.
VFD(S)
FLOW METER 1 AND 3
ALL DAMPERS (ACTUATOR BY CONTROLS CONTRACTOR)

CONTROL DIAGRAM CHILLED WATER AIR HANDLER WITH EXHAUST

SCALE: N.T.S.

30
M703

NOT USED



PACKAGED UNIT PROVIDED BY MECHANICAL CONTRACTOR WITH THE FOLLOWING CONTROLS:
CONTROLLER
SPACE TEMPERATURE SENSOR (CONTROLS CONTRACTOR INSTALLED)
SUPPLY AIR TEMPERATURE SENSOR (CONTROLS CONTRACTOR INSTALLED)
RETURN AIR TEMPERATURE SENSOR
DUCT STATIC PRESSURE SENSOR
OUTDOOR AIR TEMPERATURE SENSOR
BUILDING STATIC PRESSURE SENSOR
OUTSIDE AIR HUMIDITY SENSOR
PROOF OF FLOW SENSOR
DIRTY FILTER SENSOR

CONTROL DIAGRAM PACKAGED ROOFTOP UNIT WITH HEAT RECLAIM

SCALE: N.T.S.

29
M703

NOT USED

DRAWING NOTES

1. THE FREEZE-STAT IS TO BE HARD WIRED TO DE-ACTIVATE THE SUPPLY AIR FAN UPON DETECTION OF THE LOW TEMPERATURE LIMIT. THE FREEZE-STAT IS TO BE MANUALLY RESET AND INITIALY SET AT 35 DEGREES FAHRENHEIT. (THIS SAFETY IS TO BE WIRED SUCH THAT IT CAN NOT BE BYPASSED BY THE HAND POSITION OF THE HOA SWITCH.)
2. RETURN AIR SMOKE DETECTOR IS TO BE HARD WIRED TO DE-ACTIVATE THE SYSTEM SUPPLY AND RETURN AIR FANS UPON DETECTION OF SMOKE. THE SMOKE DETECTOR AUXILLIARY CONTACT IS TO BE MONITORED BY THE BUILDING AUTOMATION SYSTEM. THE SMOKE DETECTOR IS TO BE FURNISHED BY THE PROJECT ELECTRICAL CONTRACTOR AND ALL ASSOCIATED FIRE ALARM WIRING IS TO BE PROVIDED BY THE PROJECT ELECTRICAL CONTRACTOR. (THIS SAFETY IS TO BE WIRED SUCH THAT IT CAN NOT BE BYPASSED BY THE HAND POSITION OF THE HOA SWITCH.)
3. DIFFERENTIAL PRESSURE SWITCH WILL DE-ACTIVATE THE SYSTEM FANS UPON DETECTION OF THE HIGH (OR LOW) LIMIT SET POINT.
4. REFER TO SCHEDULES FOR NUMBER AND SIZE OF SUPPLY FANS.
5. REFER TO SCHEDULES FOR NUMBER AND SIZE OF RETURN FANS.
6. REFER TO VENDOR SUBMITTAL DRAWINGS FOR NUMBER AND SIZE OF RETURN AIR DAMPERS

DRAWING NOTES

1. THE ROOFTOP UNIT CONTROLLER MANAGES THE HEAT RECLAIM WHEEL, THE ECONOMIZER DAMPERS, THE SPEED OF THE SUPPLY AND EXHAUST FANS AND THE COOLING COIL BASED ON AMBIENT AIR CONDITIONS, ROOM SPACE CONDITIONS AND SUPPLY AIR TEMPERATURE. CONTROLLER COMMUNICATES VIA BACNET TO THE BMS WITH UNIT STATUS AND ALARMS.
2. RETURN AIR SMOKE DETECTOR IS TO BE HARD WIRED TO DE-ACTIVATE THE SYSTEM SUPPLY AND RETURN AIR FANS UPON DETECTION OF SMOKE. THE SMOKE DETECTOR AUXILLIARY CONTACT IS TO BE MONITORED BY THE BUILDING AUTOMATION SYSTEM. THE SMOKE DETECTOR IS TO BE FURNISHED BY THE PROJECT ELECTRICAL CONTRACTOR AND ALL ASSOCIATED FIRE ALARM WIRING IS TO BE PROVIDED BY THE PROJECT ELECTRICAL CONTRACTOR. (THIS SAFETY IS TO BE WIRED SUCH THAT IT CAN NOT BE BYPASSED BY THE HAND POSITION OF THE HOA SWITCH.)
3. DIFFERENTIAL PRESSURE SWITCH WILL DE-ACTIVATE THE SYSTEM FANS UPON DETECTION OF THE HIGH (OR LOW) LIMIT SET POINT.

MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

PRELIMINARY
NOT FOR CONSTRUCTION

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

INDIAN HILL SCHOOLS

INDIAN HILL EVSD
6100 DRAKE RD
CINCINNATI, OH 45243

Not Published - All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be reproduced, used, or disclosed to others except as specifically permitted or prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of downloading of this information. Motz Engineering assumes no responsibility with respect to the transferred information unless so stated otherwise attached.
COPYRIGHT © 2022 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION

DRAWN BY: Author CHECKED BY: Checker

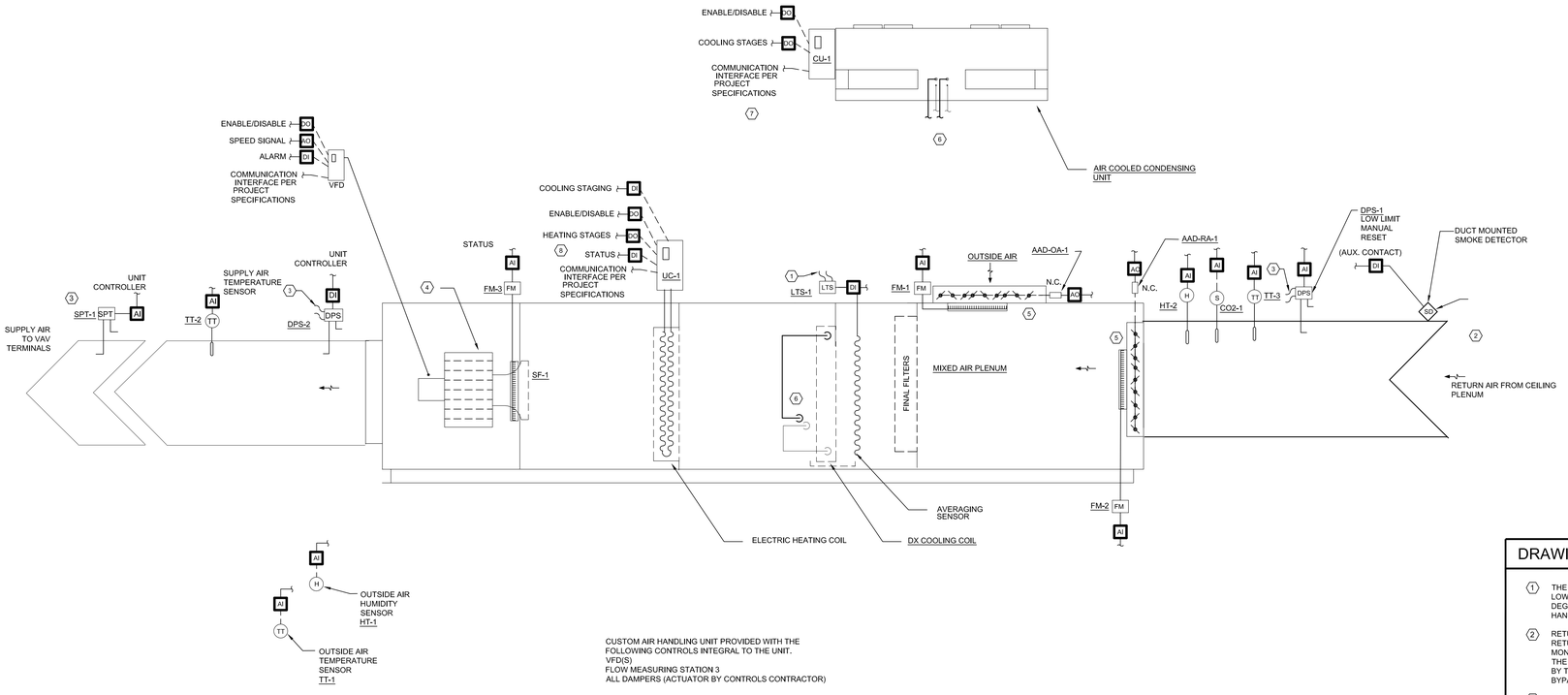
PROJECT NO. 2021.01.015

DRAWING TITLE:

CONTROL DIAGRAMS

M703

4/8/2022 10:09:45 AM BIM 360://21107.00 IHS - Elementary School/IHS Elementary Central MEP (V20).rvt



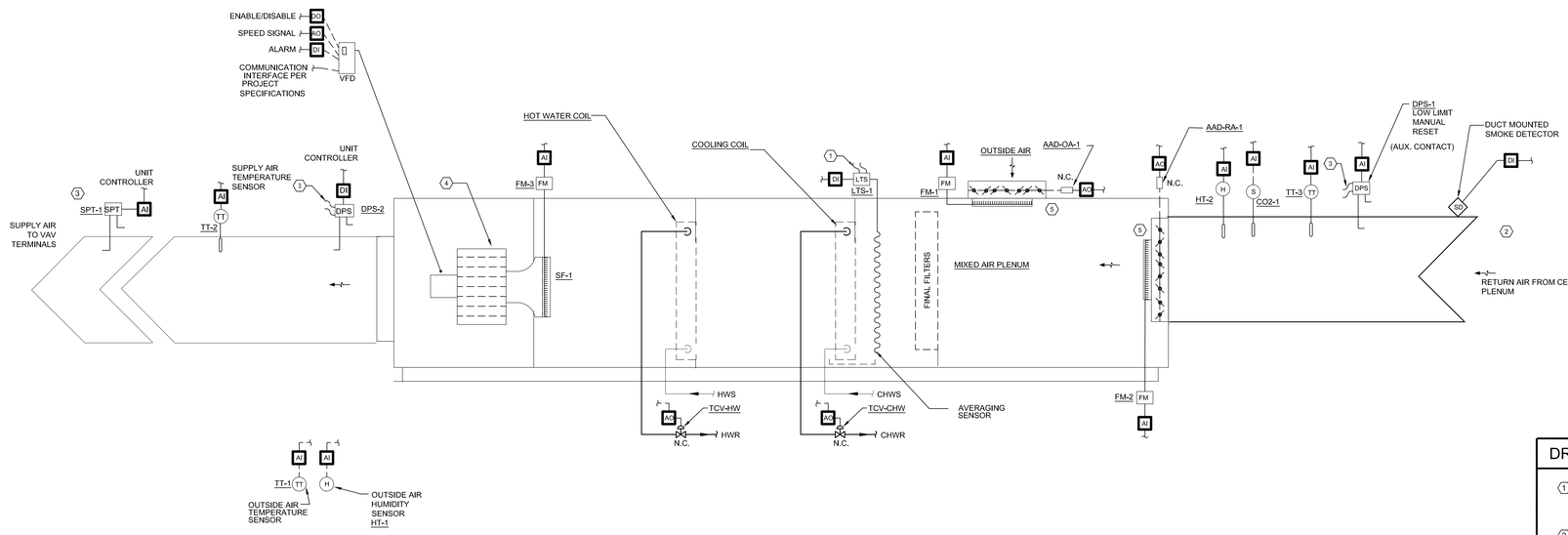
CUSTOM AIR HANDLING UNIT PROVIDED WITH THE FOLLOWING CONTROLS INTEGRAL TO THE UNIT.
VFD(S)
FLOW MEASURING STATION 3
ALL DAMPERS (ACTUATOR BY CONTROLS CONTRACTOR)

CONTROL DIAGRAM DX COOLING ELECTRIC HEATING AHU

SCALE: N.T.S.

32 M704

NOT USED



CUSTOM AIR HANDLING UNIT PROVIDED WITH THE FOLLOWING CONTROLS INTEGRAL TO THE UNIT.
VFD(S)
FLOW MEASURING STATION 3
ALL DAMPERS (ACTUATOR BY CONTROLS CONTRACTOR)

CONTROL DIAGRAM HW & CHW AIR HANDLING UNIT

SCALE: N.T.S.

31 M704

DRAWING NOTES

1. THE FREEZE-STAT IS TO BE HARD WIRED TO DE-ACTIVATE THE SUPPLY AIR FAN UPON DETECTION OF THE LOW TEMPERATURE LIMIT. THE FREEZE-STAT IS TO BE MANUALLY RESET AND INITIALY SET AT 35 DEGREES FAHRENHEIT. (THIS SAFETY IS TO BE WIRED SUCH THAT IT CAN NOT BE BYPASSED BY THE HAND POSITION OF THE HOA SWITCH.)
2. RETURN AIR SMOKE DETECTOR IS TO BE HARD WIRED TO DE-ACTIVATE THE SYSTEM SUPPLY AND RETURN AIR FANS UPON DETECTION OF SMOKE. THE SMOKE DETECTOR AUXILLIARY CONTACT IS TO BE MONITORED BY THE BUILDING AUTOMATION SYSTEM. THE SMOKE DETECTOR IS TO BE FURNISHED BY THE PROJECT ELECTRICAL CONTRACTOR AND ALL ASSOCIATED FIRE ALARM WIRING IS TO BE PROVIDED BY THE PROJECT ELECTRICAL CONTRACTOR. (THIS SAFETY IS TO BE WIRED SUCH THAT IT CAN NOT BE BYPASSED BY THE HAND POSITION OF THE HOA SWITCH.)
3. DIFFERENTIAL PRESSURE SWITCH WILL DE-ACTIVATE THE SYSTEM FANS UPON DETECTION OF THE HIGH (OR LOW) LIMIT SET POINT.
4. REFER TO SCHEDULES FOR NUMBER AND SIZE OF SUPPLY FANS.
5. REFER TO VENDOR SUBMITTAL DRAWINGS FOR NUMBER AND SIZE OF RETURN AND SUPPLY AIR DAMPERS
6. SUCTION AND LIQUID LINES TO REMOTE AIR COOLED CONDENSER
7. AIR COOLED CONDENSER STAGED TO MAINTAIN LEAVING AIR TEMPERATURE AS SENSED BY TT-S-1
8. ELECTRIC HEATER STAGED TO MAINTAIN LEAVING AIR TEMPERATURE AS SENSED BY TT-S-1

DRAWING NOTES

1. THE FREEZE-STAT IS TO BE HARD WIRED TO DE-ACTIVATE THE SUPPLY AIR FAN UPON DETECTION OF THE LOW TEMPERATURE LIMIT. THE FREEZE-STAT IS TO BE MANUALLY RESET AND INITIALY SET AT 35 DEGREES FAHRENHEIT. (THIS SAFETY IS TO BE WIRED SUCH THAT IT CAN NOT BE BYPASSED BY THE HAND POSITION OF THE HOA SWITCH.)
2. RETURN AIR SMOKE DETECTOR IS TO BE HARD WIRED TO DE-ACTIVATE THE SYSTEM SUPPLY AND RETURN AIR FANS UPON DETECTION OF SMOKE. THE SMOKE DETECTOR AUXILLIARY CONTACT IS TO BE MONITORED BY THE BUILDING AUTOMATION SYSTEM. THE SMOKE DETECTOR IS TO BE FURNISHED BY THE PROJECT ELECTRICAL CONTRACTOR AND ALL ASSOCIATED FIRE ALARM WIRING IS TO BE PROVIDED BY THE PROJECT ELECTRICAL CONTRACTOR. (THIS SAFETY IS TO BE WIRED SUCH THAT IT CAN NOT BE BYPASSED BY THE HAND POSITION OF THE HOA SWITCH.)
3. DIFFERENTIAL PRESSURE SWITCH WILL DE-ACTIVATE THE SYSTEM FANS UPON DETECTION OF THE HIGH (OR LOW) LIMIT SET POINT.
4. REFER TO SCHEDULES FOR NUMBER AND SIZE OF SUPPLY FANS.
5. REFER TO VENDOR SUBMITTAL DRAWINGS FOR NUMBER AND SIZE OF RETURN AND SUPPLY AIR DAMPERS

MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

PRELIMINARY NOT FOR CONSTRUCTION

INDIAN HILL SCHOOLS

INDIAN HILL EVSD
6100 DRAKE RD
CINCINNATI, OH 45243

Not Published - All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be reproduced, altered or distributed to others without the express prior written consent of Motz Consulting Engineers, Inc doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of downloading of this information. Motz Engineering assumes no responsibility with regard to the compatibility of this information attached.
COPYRIGHT © 2022 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION

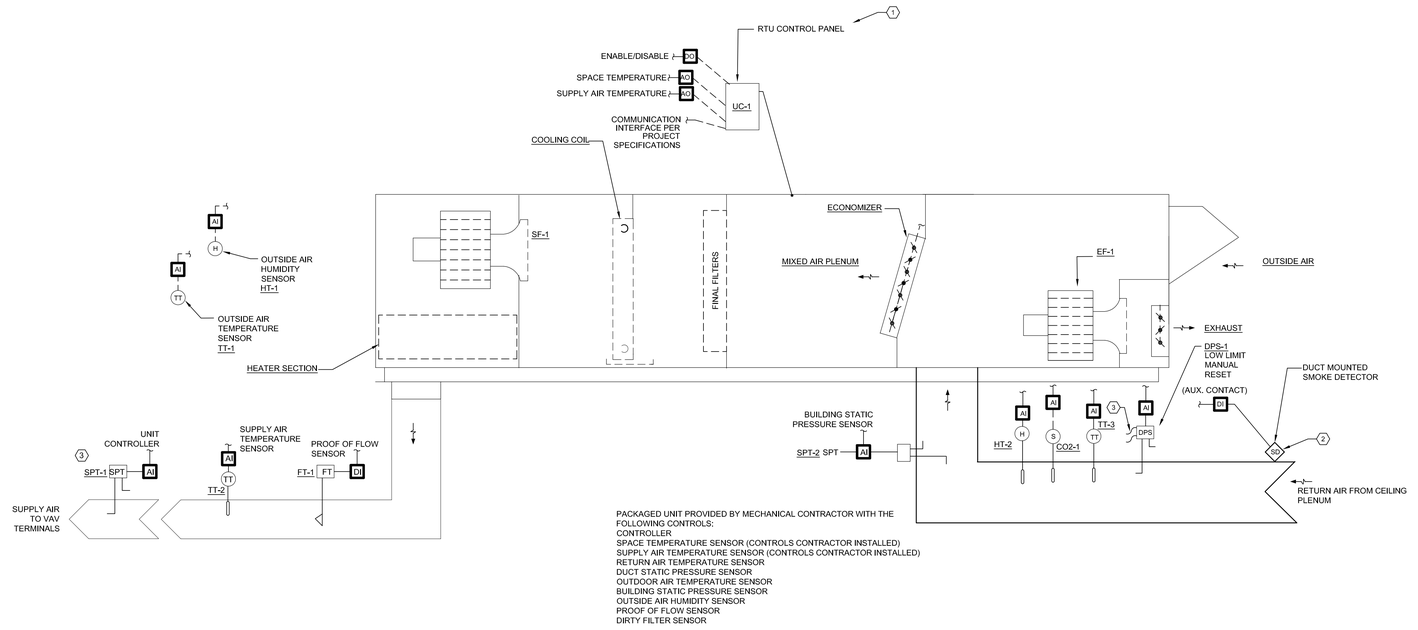
DRAWN BY: **Author** CHECKED BY **Checker**

PROJECT NO. **2021.01.015**

DRAWING TITLE:

CONTROL DIAGRAMS

M704



PACKAGED UNIT PROVIDED BY MECHANICAL CONTRACTOR WITH THE FOLLOWING CONTROLS:
CONTROLLER
SPACE TEMPERATURE SENSOR (CONTROLS CONTRACTOR INSTALLED)
SUPPLY AIR TEMPERATURE SENSOR (CONTROLS CONTRACTOR INSTALLED)
RETURN AIR TEMPERATURE SENSOR
DUCT STATIC PRESSURE SENSOR
OUTDOOR AIR TEMPERATURE SENSOR
BUILDING STATIC PRESSURE SENSOR
OUTSIDE AIR HUMIDITY SENSOR
PROOF OF FLOW SENSOR
DIRTY FILTER SENSOR

CONTROL DIAGRAM PACKAGED RTU DX COOLING, HEAT & EXHAUST FAN

33 / M705

SCALE: N.T.S.

NOT USED

DRAWING NOTES

1. THE ROOFTOP UNIT CONTROLLER MANAGES THE HEAT RECLAIM WHEEL, THE ECONOMIZER DAMPERS, THE SPEED OF THE SUPPLY AND EXHAUST FANS AND THE COOLING COIL BASED ON AMBIENT AIR CONDITIONS, ROOM SPACE CONDITIONS AND SUPPLY AIR TEMPERATURE. CONTROLLER COMMUNICATES VIA BACNET TO THE BMS WITH UNIT STATUS AND ALARMS.
2. RETURN AIR SMOKE DETECTOR IS TO BE HARD WIRED TO DE-ACTIVATE THE SYSTEM SUPPLY AND RETURN AIR FANS UPON DETECTION OF SMOKE. THE SMOKE DETECTOR AUXILLIARY CONTACT IS TO BE MONITORED BY THE BUILDING AUTOMATION SYSTEM. THE SMOKE DETECTOR IS TO BE FURNISHED BY THE PROJECT ELECTRICAL CONTRACTOR AND ALL ASSOCIATED FIRE ALARM WIRING IS TO BE PROVIDED BY THE PROJECT ELECTRICAL CONTRACTOR. (THIS SAFETY IS TO BE WIRED SUCH THAT IT CAN NOT BE BYPASSED BY THE HAND POSITION OF THE HOA SWITCH.)
3. DIFFERENTIAL PRESSURE SWITCH WILL DE-ACTIVATE THE SYSTEM FANS UPON DETECTION OF THE HIGH (OR LOW) LIMIT SET POINT.

MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

PRELIMINARY
NOT FOR CONSTRUCTION

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

INDIAN HILL SCHOOLS

INDIAN HILL EVSD
6100 DRAKE RD
CINCINNATI, OH 45243

Not Published. All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be reproduced, used, or disclosed to others without the written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of downloading of this information. Motz Engineering assumes no responsibility with respect to modifications made to the information attached.
COPYRIGHT © 2022 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION

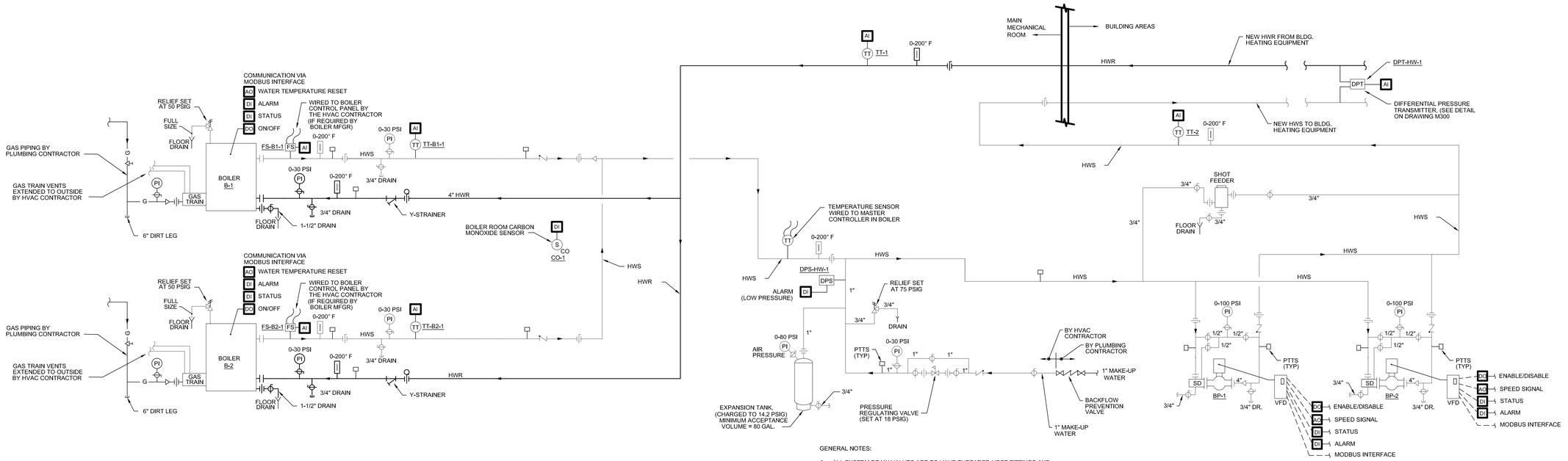
DRAWN BY: Author CHECKED BY Checker

PROJECT NO. 2021.01.015

DRAWING TITLE:
CONTROL DIAGRAMS

M705

4/8/2022 10:09:45 AM BIM 360://21107.00 IHS - Elementary School/IHS Elementary Central MEP (V20).rvt



GENERAL NOTES:

A. ALL SYSTEM DRAIN VALVES ARE TO HAVE THREADED HOSE FITTINGS AND CAPS WITH CHAIN ATTACHMENT TO VALVE BODY.

B. ALL DRAINS THAT ARE INDICATED TO BE ROUTED TO FLOOR DRAINS ARE TO BE PROVIDED BY THE HVAC CONTRACTOR.

CENTRAL HEATING HOT WATER CONTROL DIAGRAM

SCALE: N.T.S.

35
M706

MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

PRELIMINARY
NOT FOR CONSTRUCTION

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

INDIAN HILL SCHOOLS

INDIAN HILL EVSD
6100 DRAKE RD
CINCINNATI, OH 45243

Not Published. All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be copied or used for other than the specific purpose for which it was prepared without the written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible for any changes to the information stored in this format after the transmission or downloading of this information. Motz Engineering assumes no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2022 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION

DRAWN BY: Author CHECKED BY Checker

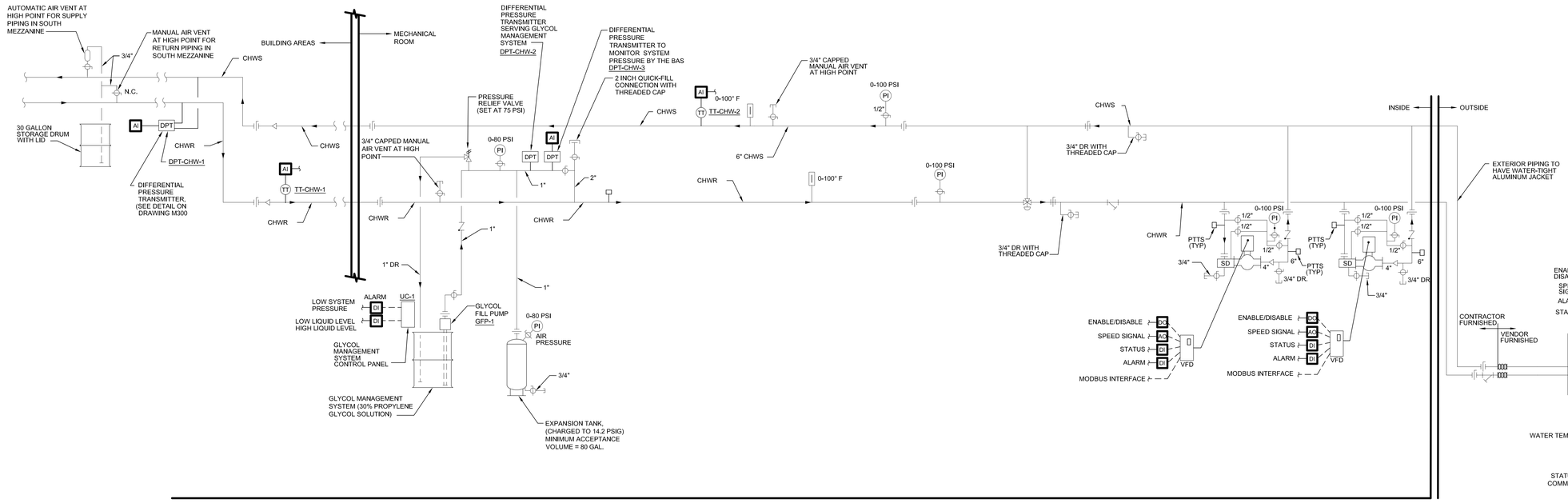
PROJECT NO. 2021.01.015

DRAWING TITLE:

CONTROL DIAGRAMS

M706

4/8/2022 10:09:45 AM BIM 360://21107.00 IHS - Elementary School/IHS Elementary Central MEP (V20).rvt



GENERAL NOTES

1. ALL SYSTEM DRAIN VALVES ARE TO HAVE THREADED HOSE FITTINGS AND CAPS WITH CHAIN ATTACHMENT TO VALVE BODY.

AIR COOLED CENTRAL CHILLED WATER SYSTEM CONTROL DIAGRAM

36
M707

SCALE: N.T.S.

MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

PRELIMINARY
NOT FOR CONSTRUCTION

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

INDIAN HILL SCHOOLS

INDIAN HILL EVSD
6100 DRAKE RD
CINCINNATI, OH 45243

Not Published. All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be copied or used for other than the specific purpose for which it was prepared without the express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of downloading of this information. Motz Engineering assumes no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2022 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION

DRAWN BY: **Author** CHECKED BY **Checker**

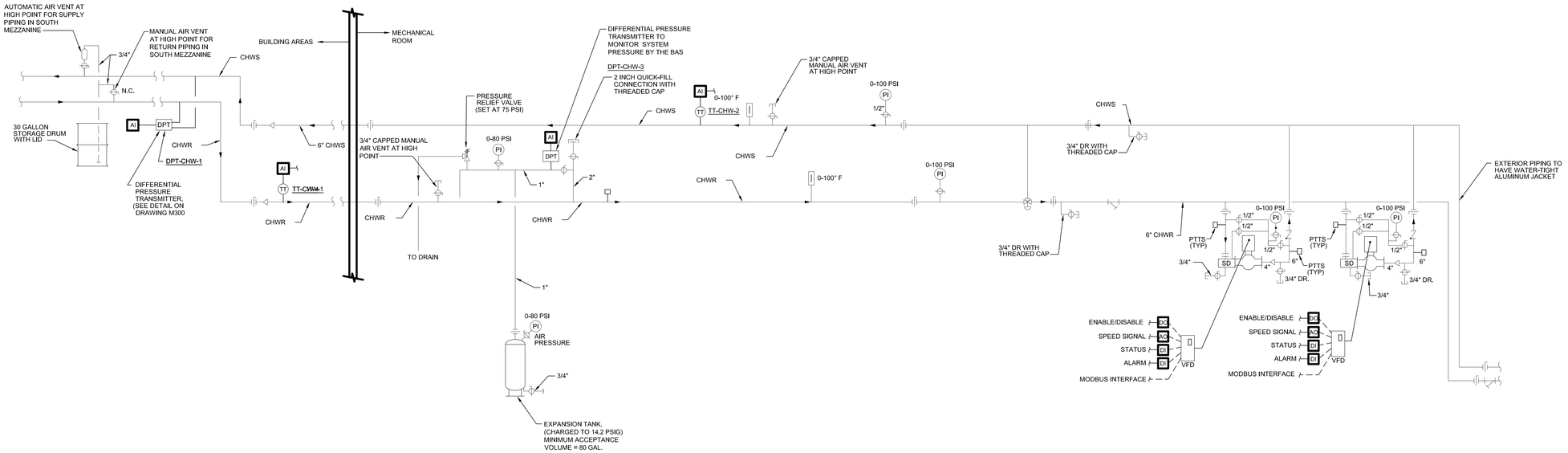
PROJECT NO. **2021.01.015**

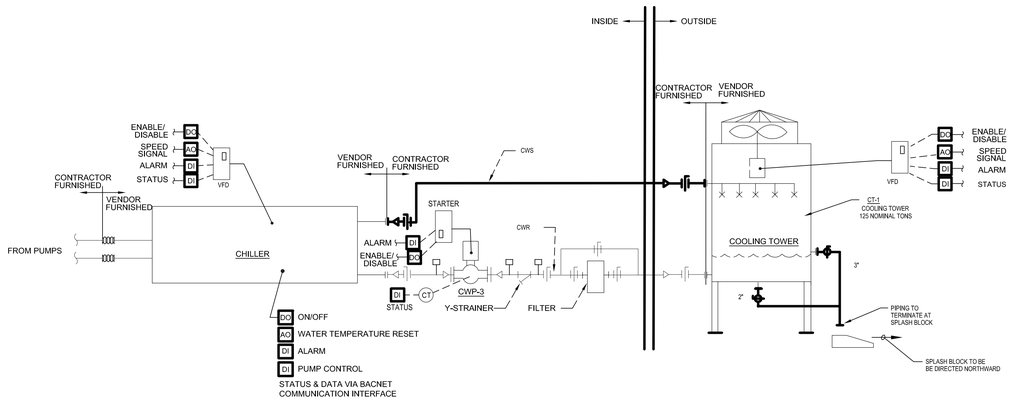
DRAWING TITLE:

CONTROL DIAGRAMS

M707

4/8/2022 10:09:45 AM BIM 360://21107.00 IHS - Elementary School/IHS Elementary Central MEP (V20).rvt





GENERAL NOTES

1. ALL SYSTEM DRAIN VALVES ARE TO HAVE THREADED HOSE FITTINGS AND CAPS WITH CHAIN ATTACHMENT TO VALVE BODY.

WATER COOLED CENTRAL CHILLED WATER SYSTEM CONTROL DIAGRAM

SCALE: N.T.S.

37
M708

MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

PRELIMINARY
NOT FOR CONSTRUCTION

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

INDIAN HILL SCHOOLS
INDIAN HILL EVSD
6100 DRAKE RD
CINCINNATI, OH 45243

Not Published. All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be copied or used for other than the specific purpose for which it was prepared without the express written permission of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of downloading of this information. Motz Engineering assumes no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2022 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION

DRAWN BY: **Author** CHECKED BY **Checker**

PROJECT NO. **2021.01.015**

DRAWING TITLE:

CONTROL DIAGRAMS

M708

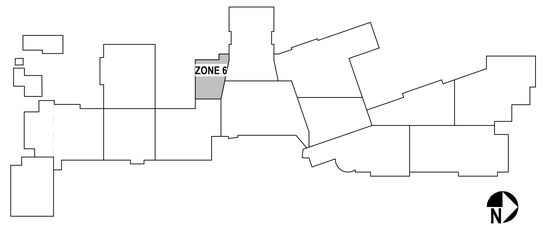
4/8/2022 10:09:45 AM BIM 360://21107.00 IHS - Elementary School/IHS Elementary Central MEP (V20).rvt

GENERAL NOTES:

1. NO GENERAL NOTES ON THIS PLAN

ALL SCOPE IN THIS AREA REMOVED, THIS SHEET WILL NOT APPREAR IN NEW ISSUANCES

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING

INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published - All Rights Reserved. This Document is the product and exclusive property of Motz Engineering and is not to be published, distributed, copied, reproduced or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of the transmission in electronic format. Motz Engineering assumes no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
	11/19/2021	DD SET
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
	05/03/2022	FOR PERMIT
7	07/22/2022	MUSIC EXPANSION CD SET
24	02/03/2023	BULLETIN 7

DRAWN BY: **Author** CHECKED BY: **DW**

PROJECT NO. **2021.01.015**

DRAWING TITLE:
ZONE 6 - LWR. LVL. MECHANICAL PIPING CONSTRUCTION PLAN

MP2.01

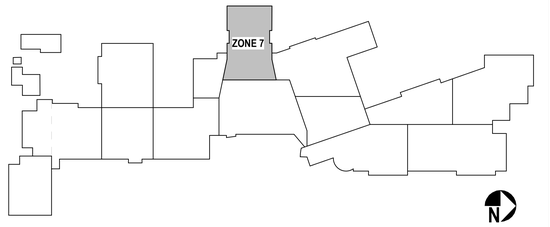
2/3/2023 3:21:03 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt

GENERAL NOTES:

1. NO GENERAL NOTES ON THIS PLAN

ALL SCOPE IN THIS AREA REMOVED, THIS SHEET WILL NOT APPREAR IN NEW ISSUANCES

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING
INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published - All Rights Reserved. This Document is the product and exclusive property of Motz Engineering and is not to be published, distributed, copied, reproduced or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of the transmission in electronic formats. Motz Engineering assumes no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
7	07/22/2022	MUSIC EXPANSION CD SET
24	02/03/2023	BULLETIN 7

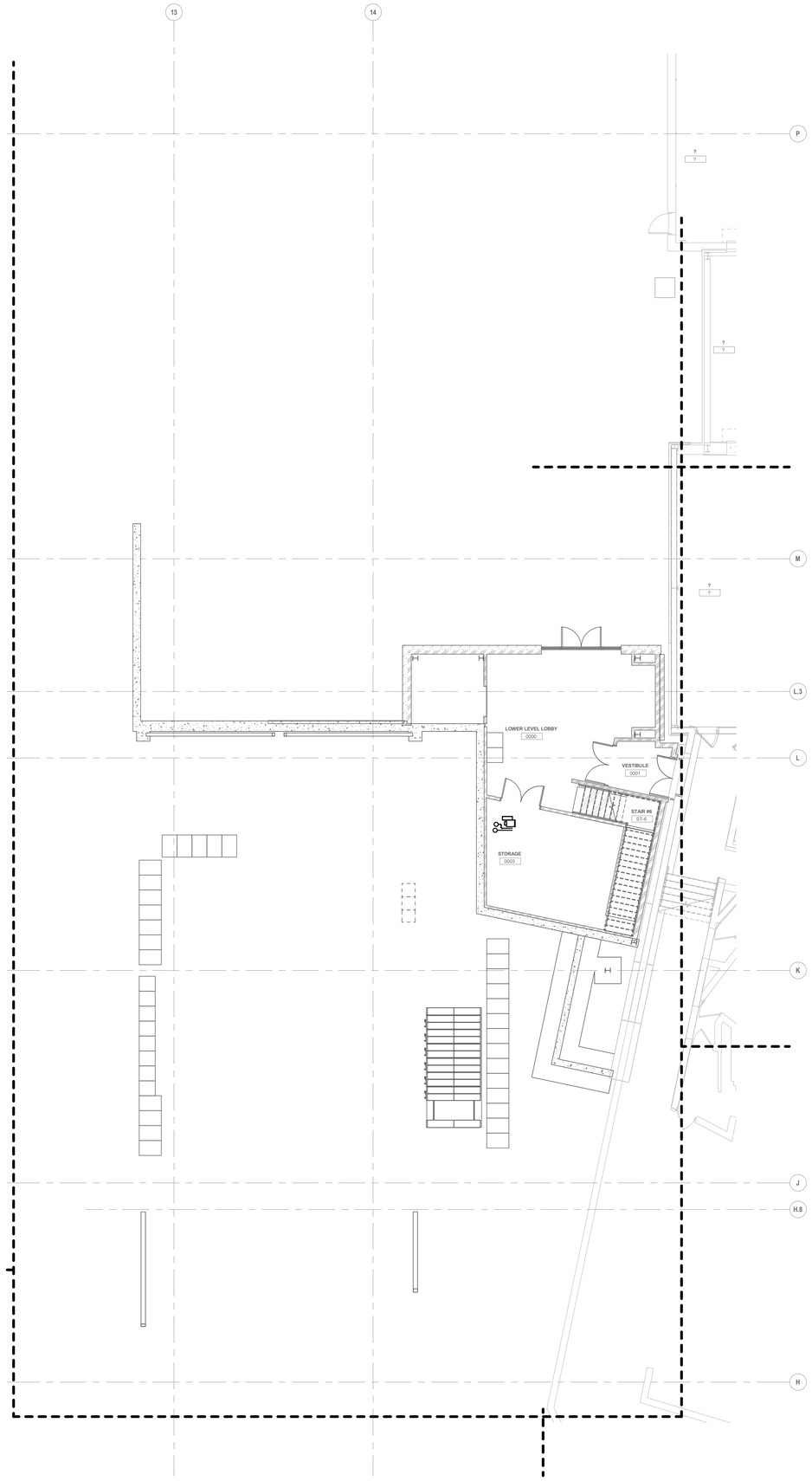
DRAWN BY: **Author** CHECKED BY **Checker**

PROJECT NO. **2021.01.015**

DRAWING TITLE:
ZONE 7 - LWR. LVL. MECHANICAL PIPING CONSTRUCTION PLAN

MP2.02

2/3/2023 3:21:03 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt

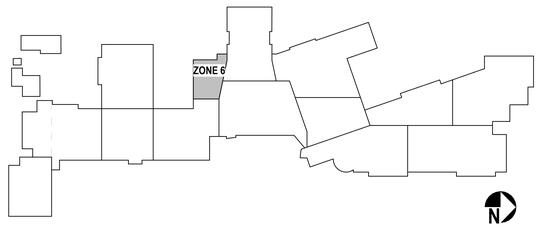


1 MP2.10 ZONE 6 - LOWER LEVEL
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. NO GENERAL NOTES ON THIS PLAN

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING

INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published. All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be copied or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of the use, modification or conversion to other formats or media of responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING.

NO.	DATE	ISSUED / REVISION
	11/19/2021	DD SET
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD

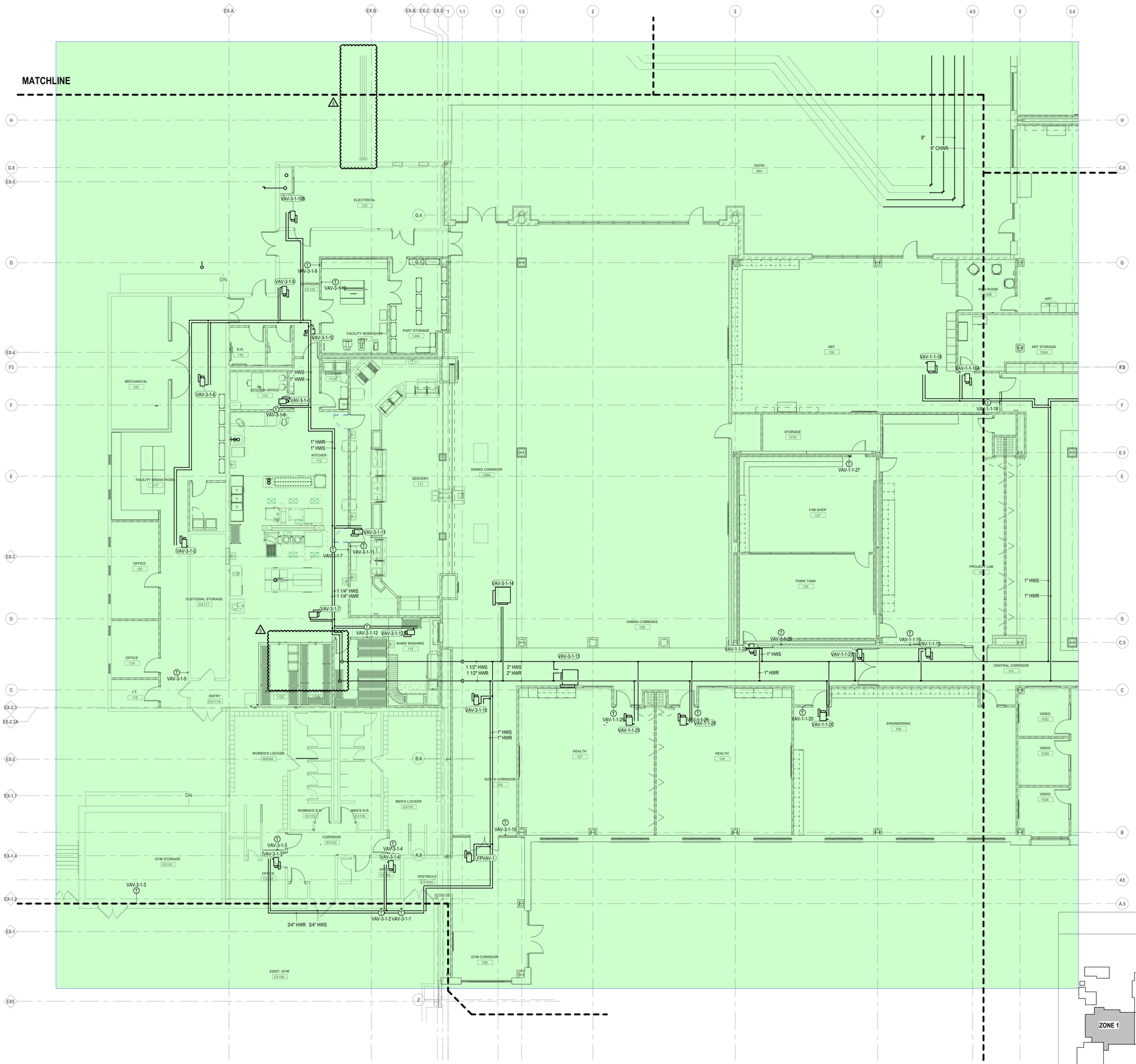
DRAWN BY: Author CHECKED BY: DW

PROJECT NO. 2021.01.015

DRAWING TITLE:
ZONE 6 - LWR. LVL. MECHANICAL PIPING CONSTRUCTION PLAN

MP2.10

4/22/2022 4:44:31 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt

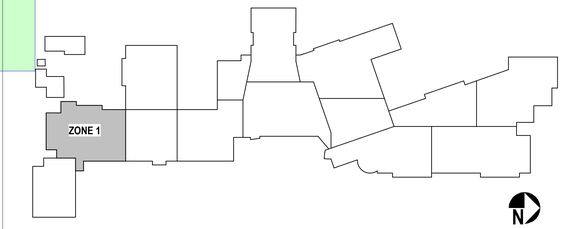


1 ZONE 1 - MAIN LEVEL NEW FLOOR PLAN
MP2.11 SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. NO GENERAL NOTES ON THIS PLAN

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msearch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING
INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published - All Rights Reserved. This Document is the product and exclusive property of Motz Consulting Engineers, Inc. (dba Motz Engineering) and may not be copied or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of the transmission or receipt of this data. Motz Engineering reserves no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING.

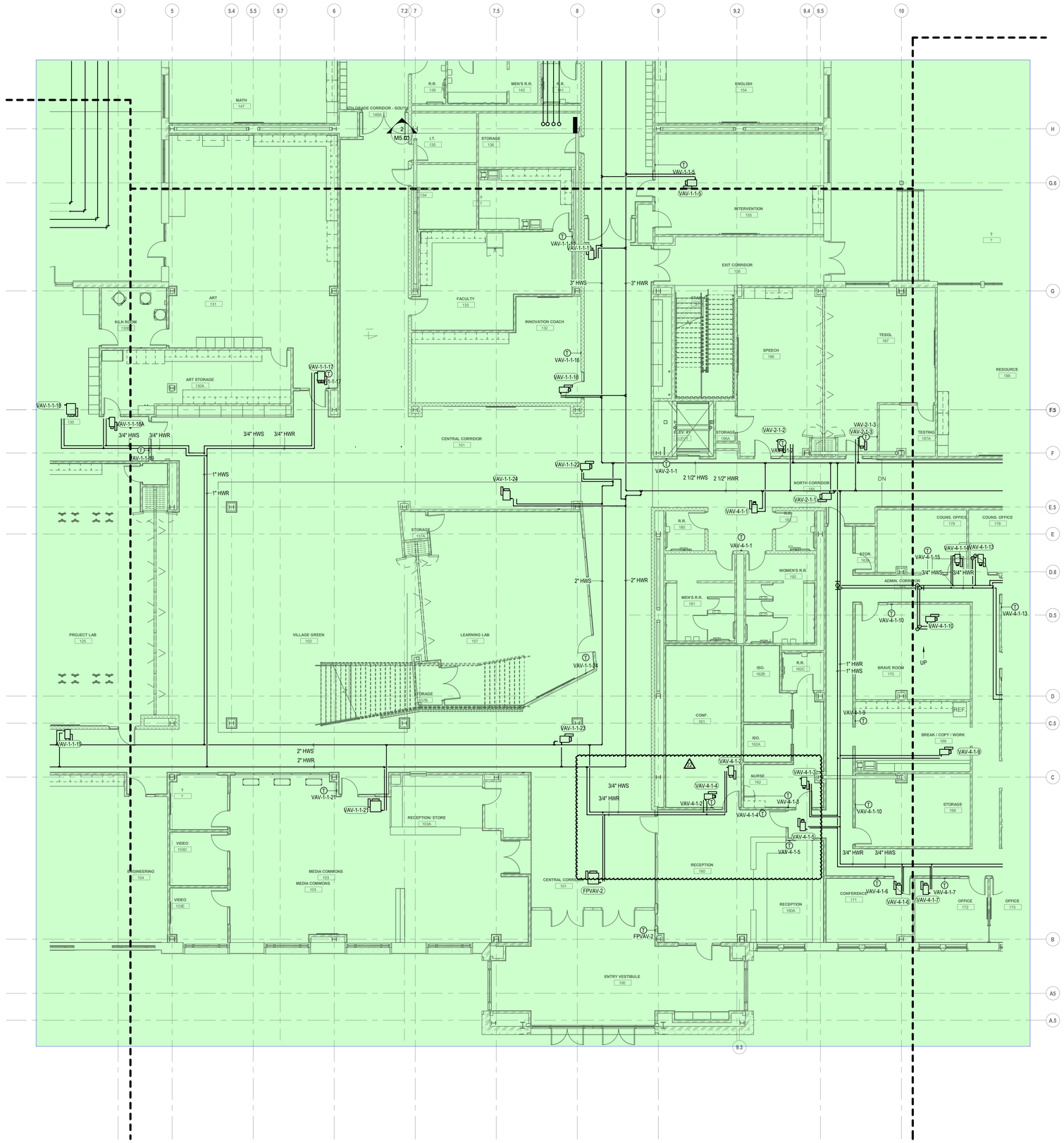
NO.	DATE	ISSUED / REVISION
	11/19/2021	DD SET
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
2	04/22/2022	ADD. #1 TO 100% CD
	05/03/2022	FOR PERMIT
5	06/01/2022	ADD#3 TO 100% CD

DRAWN BY: Author CHECKED BY: DW

PROJECT NO. 2021.01.015

DRAWING TITLE:
ZONE 1 - MAIN LVL. MECHANICAL PIPING CONSTRUCTION PLAN

MP2.11



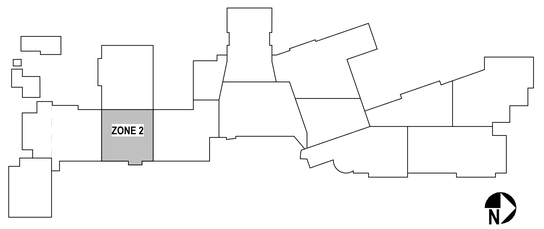
1 MP2.12 ZONE 2 - MAIN LEVEL NEW FLOOR PLAN

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

GENERAL NOTES:

1. NO GENERAL NOTES ON THIS PLAN

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING
INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published. All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be copied or used for other than the specific purpose for which it was prepared without the express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of downloading of this information. Motz Engineering assumes no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
	11/19/2021	DD SET
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
2	04/22/2022	ADD. #1 TO 100% CD
	05/03/2022	FOR PERMIT
22	1/20/2023	RESPONSE TO RFI-115

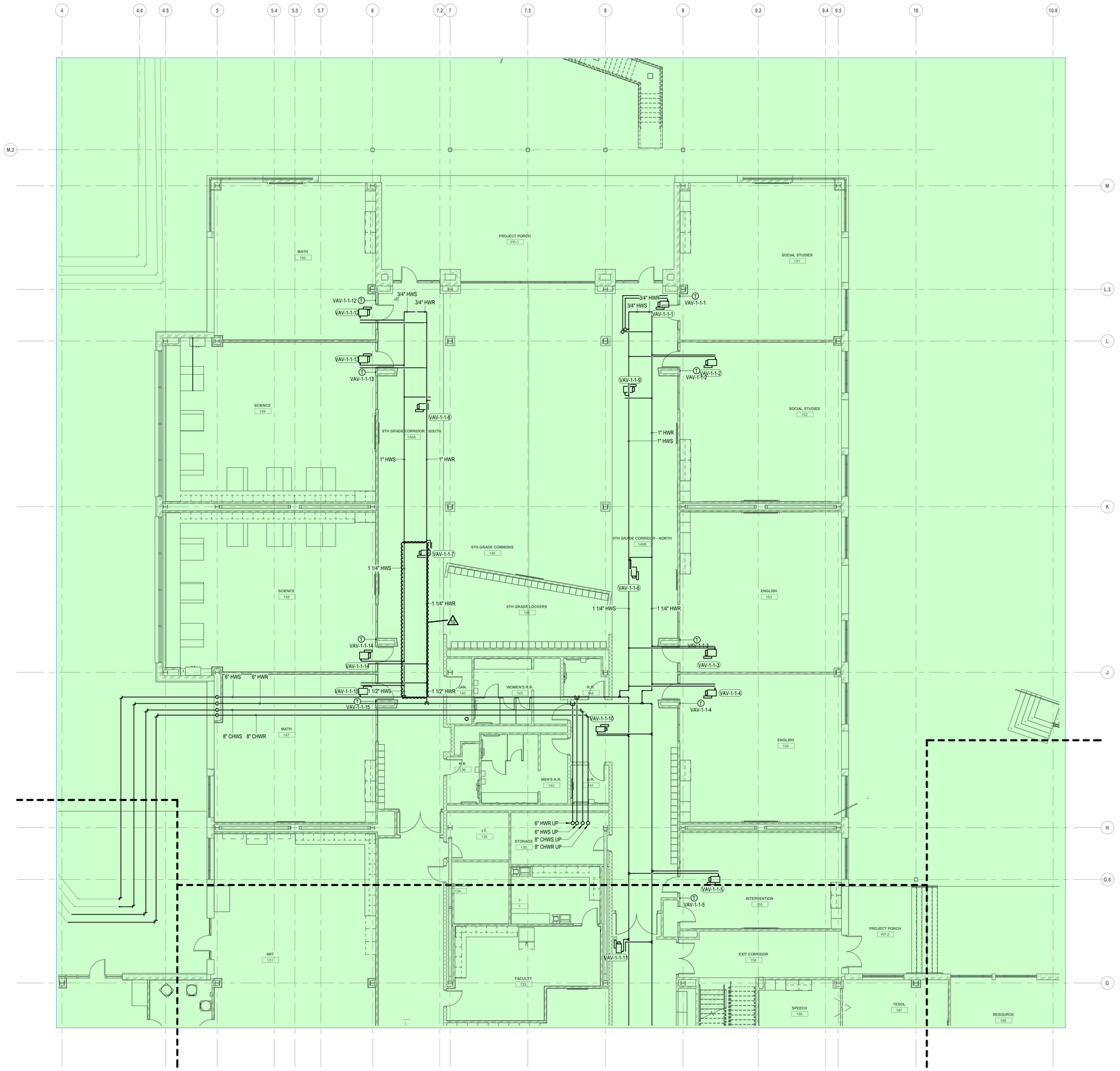
DRAWN BY: **Author** CHECKED BY: **DW**

PROJECT NO. **2021.01.015**

DRAWING TITLE:
ZONE 2 - MAIN LVL. MECHANICAL PIPING CONSTRUCTION PLAN

MP2.12

1/20/2023 1:24:00 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt



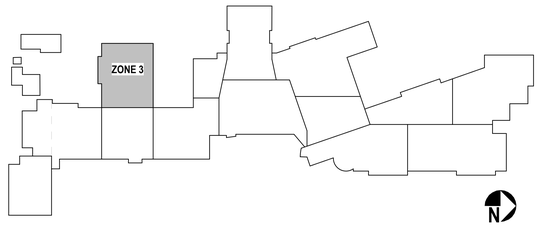
1 MP2.13 ZONE 3 - MAIN LEVEL NEW FLOOR PLAN

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

GENERAL NOTES:

1. NO GENERAL NOTES ON THIS PLAN

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING

INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published - All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be copied or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Reuses the information stored in electronic formats can be modified by other parties, intentionally or otherwise. Motz Engineering shall not be held responsible or liable for any defects and/or misinformation that may arise as a consequence of such use or alteration. Motz Engineering assumes no responsibility with regard to the electronic information or media information attached.
(COPYRIGHT © 2021 MOTZ ENGINEERING)

NO.	DATE	ISSUED / REVISION
	11/19/2021	DD SET
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
2	04/22/2022	ADD. #1 TO 100% CD
	05/03/2022	FOR PERMIT
5	06/01/2022	ADD#3 TO 100% CD
10	09/09/2022	BULLETIN 5

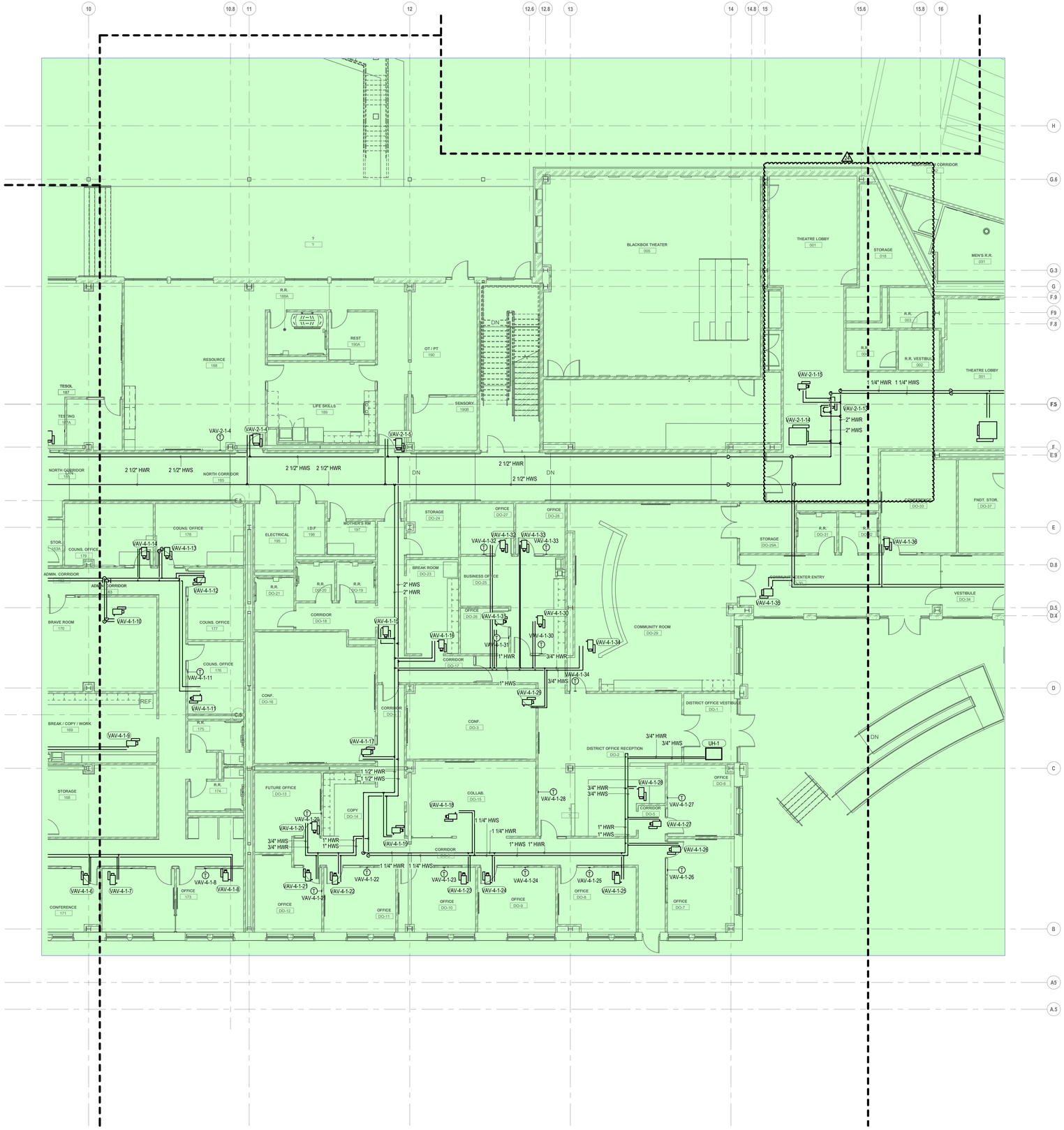
DRAWN BY: **Author** CHECKED BY: **DW**

PROJECT NO. **2021.01.015**

DRAWING TITLE:
ZONE 3 - MAIN LVL. MECHANICAL PIPING CONSTRUCTION PLAN

MP2.13

9/9/2022 4:06:57 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt



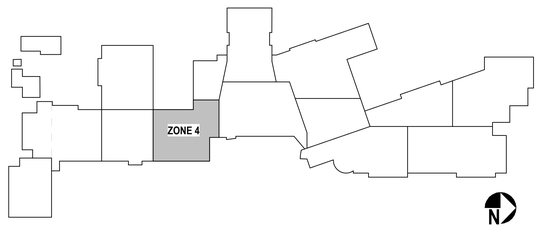
1 MP2.14 ZONE 4 - MAIN LEVEL NEW FLOOR PLAN

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

GENERAL NOTES:

1. NO GENERAL NOTES ON THIS PLAN

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING

INDIAN HILL SCHOOL DISTRICT

6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published. All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be used in whole or in part for any purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, Motz Engineering shall not be liable for damages arising directly or indirectly or liable for any defects and/or deficiencies that may arise as a consequence of downloading of this information. Motz Engineering assumes no responsibility with regard to the accuracy or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
	11/19/2021	DD SET
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
	05/03/2022	FOR PERMIT
7	07/22/2022	MUSIC EXPANSION CD SET
10	09/09/2022	BULLETIN 5
24	02/03/2023	BULLETIN 7

DRAWN BY: Author CHECKED BY: DW

PROJECT NO. 2021.01.015

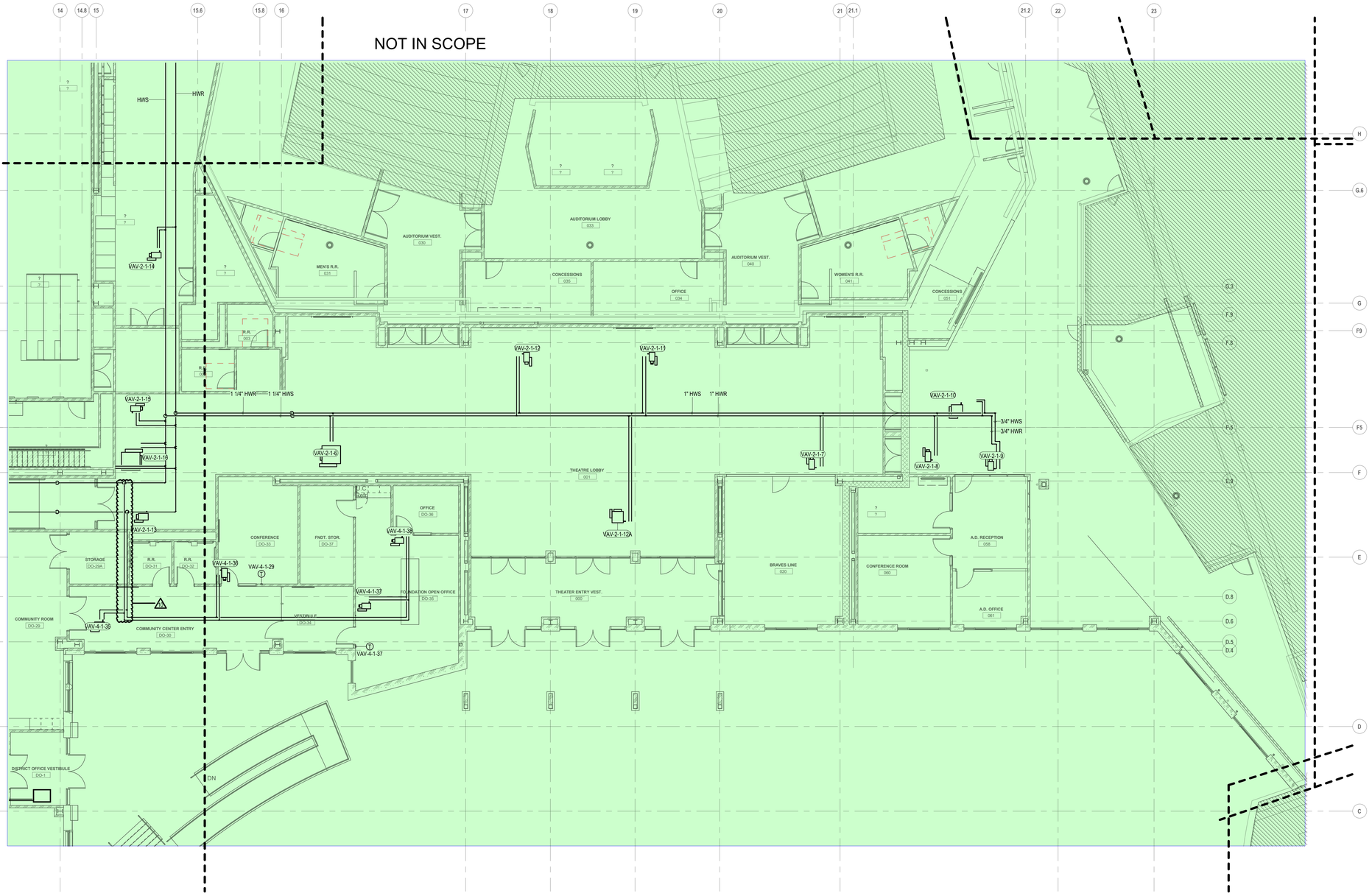
DRAWING TITLE:

ZONE 4 - MAIN LVL. MECHANICAL PIPING CONSTRUCTION PLAN

MP2.14

2/3/2023 3:21:05 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt

NOT IN SCOPE



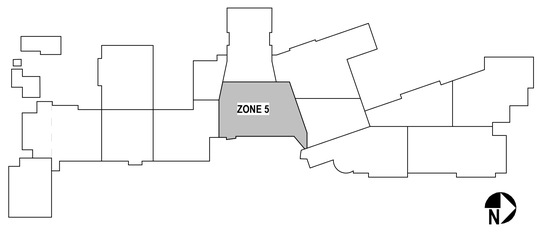
1 MP2.15 ZONE 5 - MAIN LEVEL NEW FLOOR PLAN

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

GENERAL NOTES:

1. NO GENERAL NOTES ON THIS PLAN

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING

INDIAN HILL SCHOOL DISTRICT

6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published. All Rights Reserved. This Document is the product and exclusive property of Motz Consulting Engineers, Inc. and shall not be published, reproduced, re-copied or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of such modifications made to the data. Motz Engineering assumes no responsibility with regard to the interpretation or re-use of the information stored.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
	11/19/2021	DD SET
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
2	04/22/2022	ADD. #1 TO 100% CD
	05/03/2022	FOR PERMIT
10	09/09/2022	BULLETIN 5

DRAWN BY: **Author** CHECKED BY: **DW**

PROJECT NO. **2021.01.015**

DRAWING TITLE:

ZONE 5 - MAIN & CONNECTOR LEVEL MECHANICAL PIPING CONSTR. PLAN

MP2.15

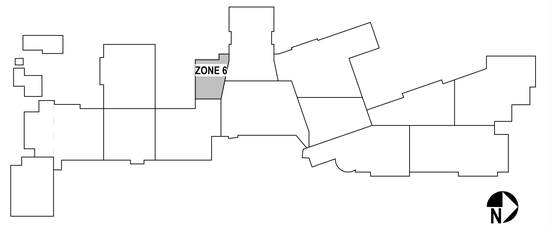
9/9/2022 4:07:07 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt

GENERAL NOTES:

1. NO GENERAL NOTES ON THIS PLAN

ALL SCOPE IN THIS AREA REMOVED, THIS SHEET WILL NOT APPREAR IN NEW ISSUANCES

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING
INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published - All Rights Reserved. This Document is the product and exclusive property of Motz Consulting Engineers, Inc. doing business as Motz Engineering and may not be copied or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of the transmission or receipt of this data. Motz Engineering assumes no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
	05/03/2022	FOR PERMIT
7	07/22/2022	MUSIC EXPANSION CD SET
24	02/03/2023	BULLETIN 7

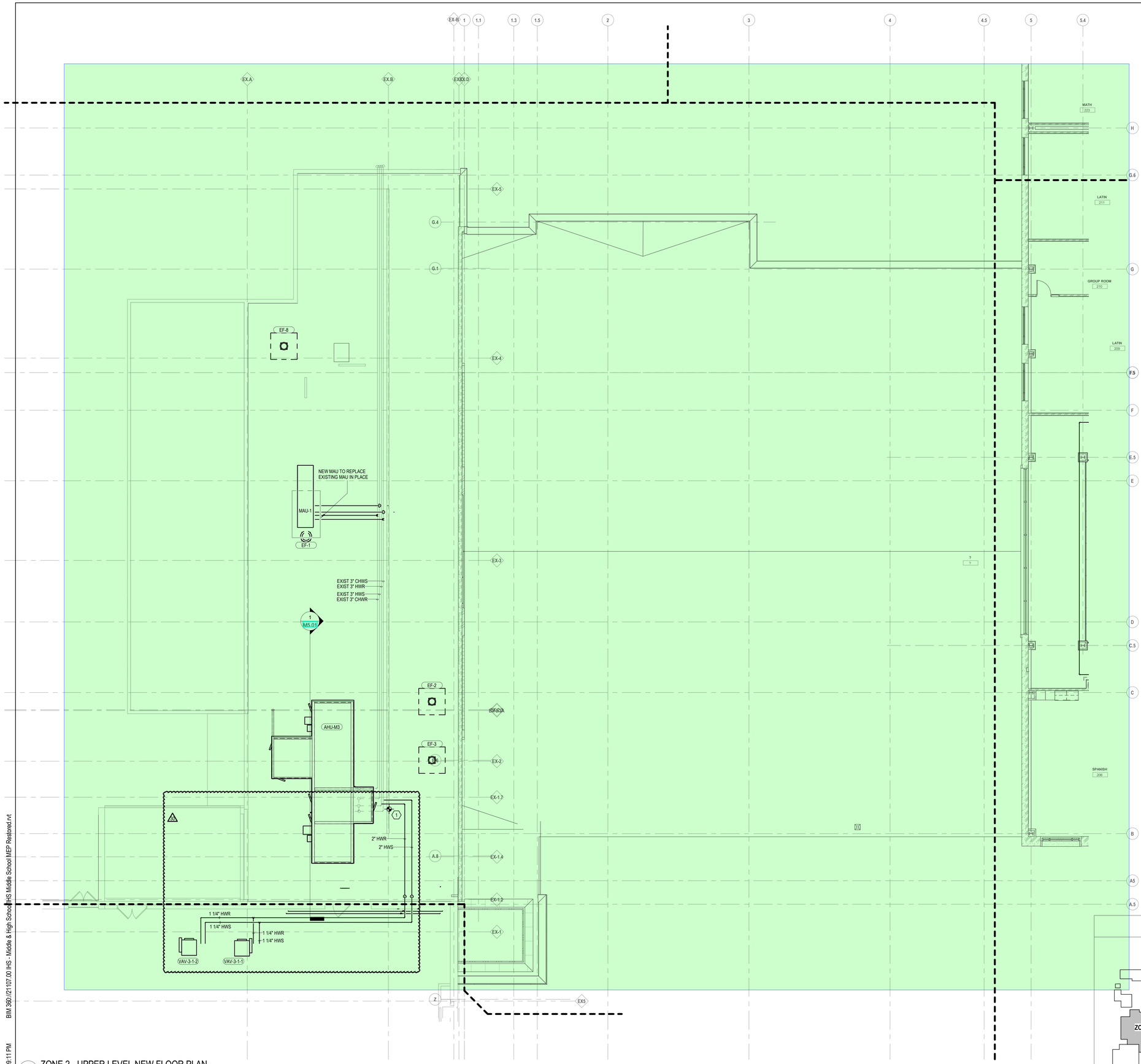
DRAWN BY: **Author** CHECKED BY: **DW**

PROJECT NO. **2021.01.015**

DRAWING TITLE:
ZONE 6 - MAIN LVL. MECHANICAL PIPING CONSTRUCTION PLAN

MP2.16

2/3/2023 3:21:06 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt



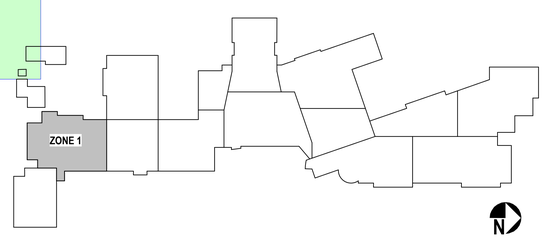
1 MP2.21 ZONE 2 - UPPER LEVEL NEW FLOOR PLAN

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

X GENERAL NOTES:

1. CONNECT NEW 2" HWS AND HWR TO EXISTING 3" LINES ON ROOF. RUN PIPES UP SIDE OF BUILDING UNTIL HEIGHT OF APPROXIMATELY 28' AFF.

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING

INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published. All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be copied or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Receive the information stored in electronic formats can be modified by other parties, intentionally or otherwise. Motz Engineering shall not be held responsible for changes made to the original content after it is transferred, and assumes all downloading of this information. Motz Engineering assumes no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
	11/19/2021	DD SET
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
	05/03/2022	FOR PERMIT
5	06/01/2022	ADD#3 TO 100% CD
30	4/3/2023	RESPONSE TO RFI 160

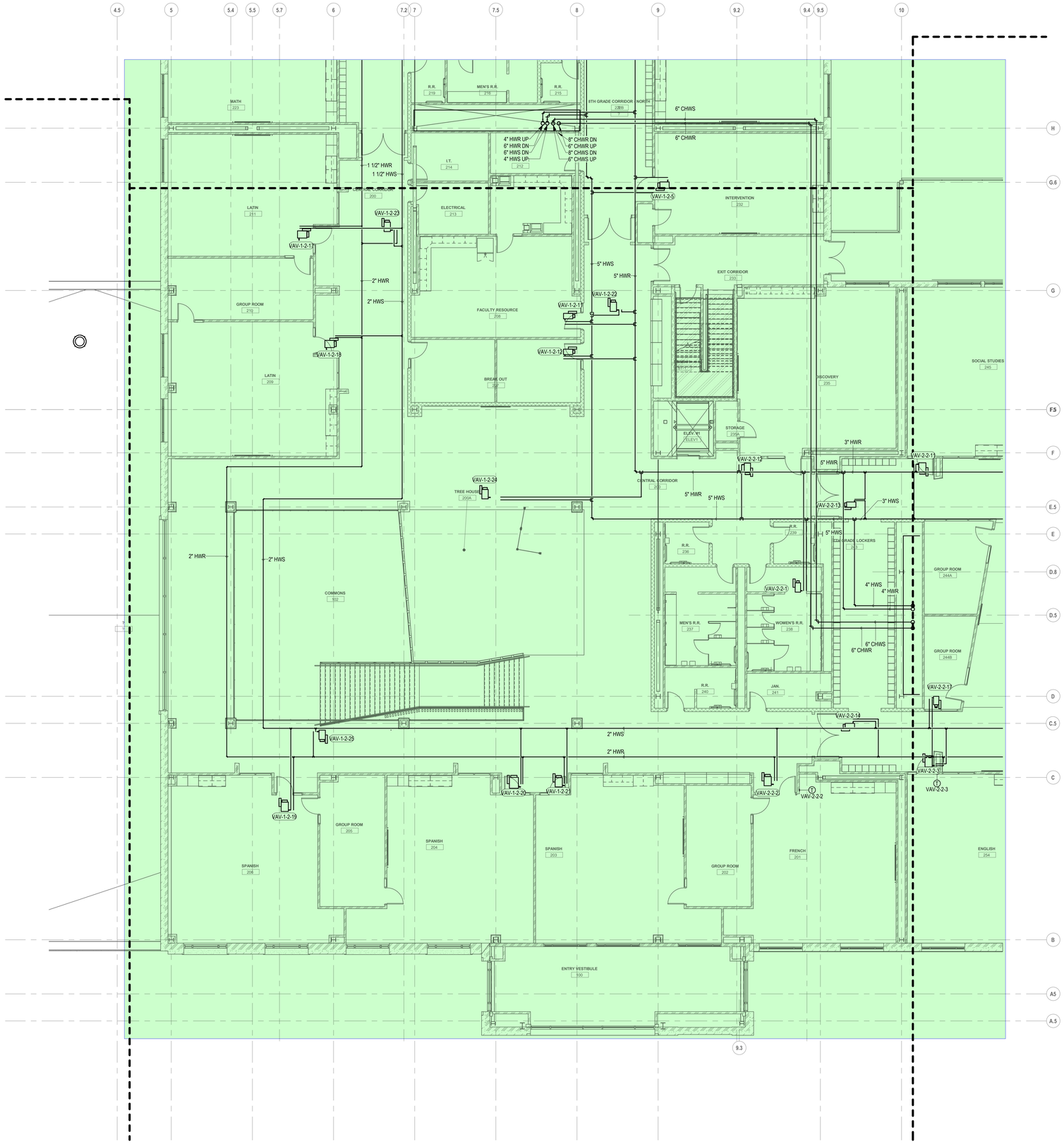
DRAWN BY: **Author** CHECKED BY: **DW**

PROJECT NO. **2021.01.015**

DRAWING TITLE:
ZONE 1 - ROOF LVL. MECHANICAL PIPING CONSTRUCTION PLAN

MP2.21

4/3/2023 3:09:11 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt



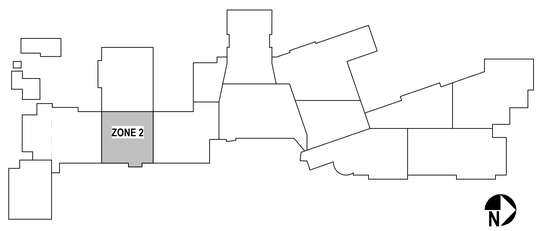
1 MP2.22 ZONE 2 - UPPER LEVEL NEW FLOOR PLAN

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

GENERAL NOTES:

1. NO GENERAL NOTES ON THIS PLAN

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING

INDIAN HILL SCHOOL DISTRICT

6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published. All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be copied or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of such modification. Motz Engineering shall not be held responsible/liability with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING.

NO.	DATE	ISSUED / REVISION
	11/19/2021	DD SET
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
2	04/22/2022	ADD. #1 TO 100% CD
	05/03/2022	FOR PERMIT
5	06/01/2022	ADD#3 TO 100% CD
10	09/09/2022	BULLETIN 5

DRAWN BY: Author CHECKED BY: DW

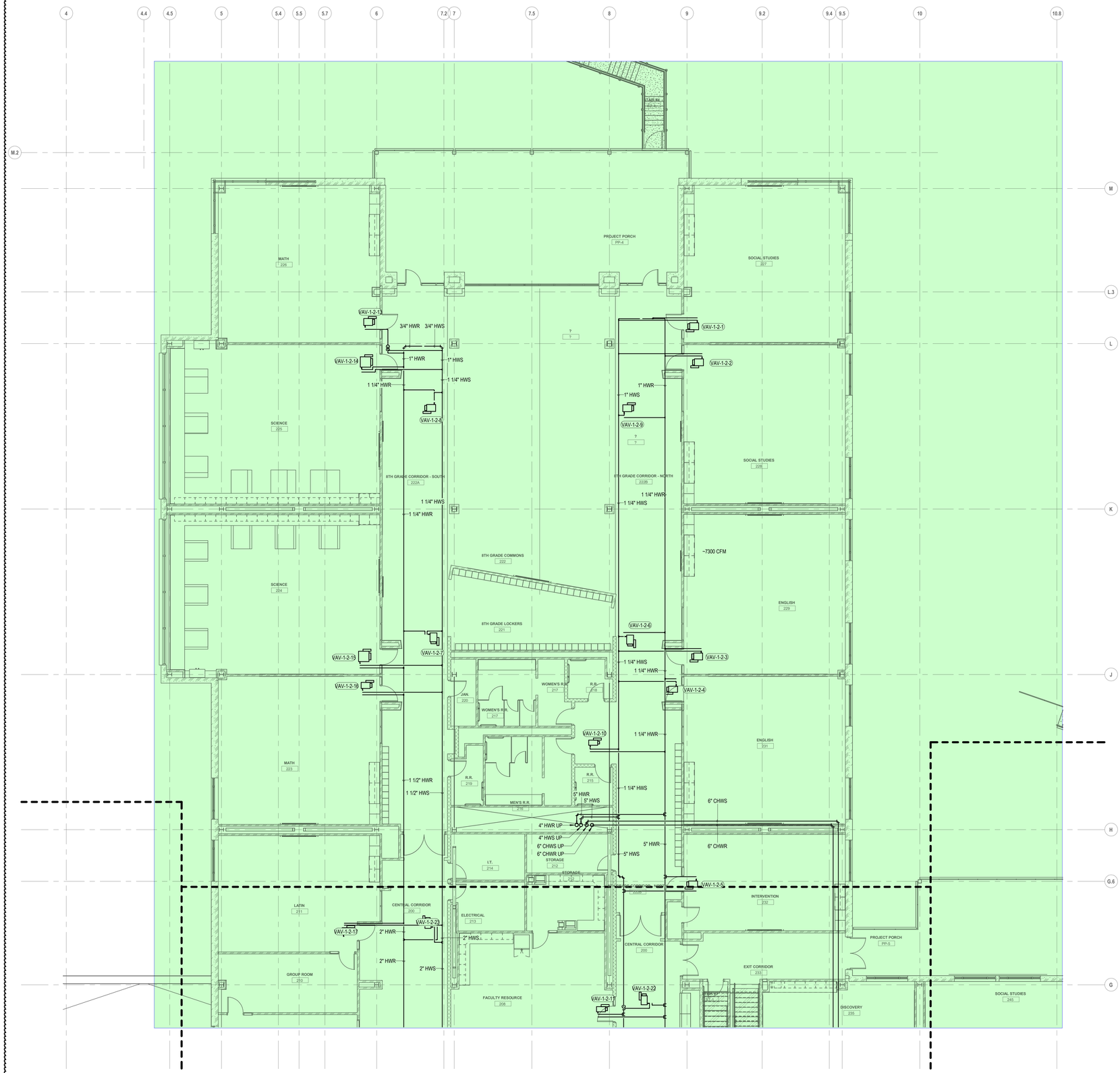
PROJECT NO. 2021.01.015

DRAWING TITLE:

ZONE 2 - UPPER LVL. MECHANICAL PIPING CONSTRUCTION PLAN

MP2.22

9/9/2022 4:07:14 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt



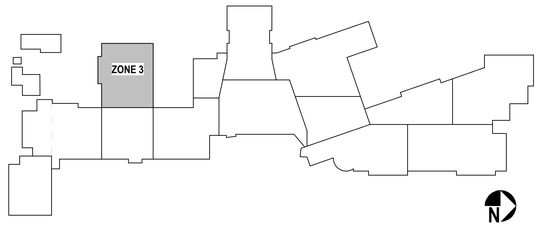
1 MP2.23 ZONE 3 - UPPER LEVEL NEW FLOOR PLAN
SCALE: 1/8" = 1'-0"

X GENERAL NOTES:

1. NO GENERAL NOTES ON THIS PLAN

Key Notes (MP2.23)
SCALE: 1/8" = 1'-0"

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msearch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING
INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published. All Rights Reserved. This Document is the product and exclusive property of Motz Consulting Engineers, Inc. and shall not be published, reproduced, copied or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of such modifications to the information. The recipient assumes sole responsibility with regard to the transmission or re-use of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
	11/19/2021	DD SET
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
2	04/22/2022	ADD. #1 TO 100% CD
	05/03/2022	FOR PERMIT
10	09/09/2022	BULLETIN 5

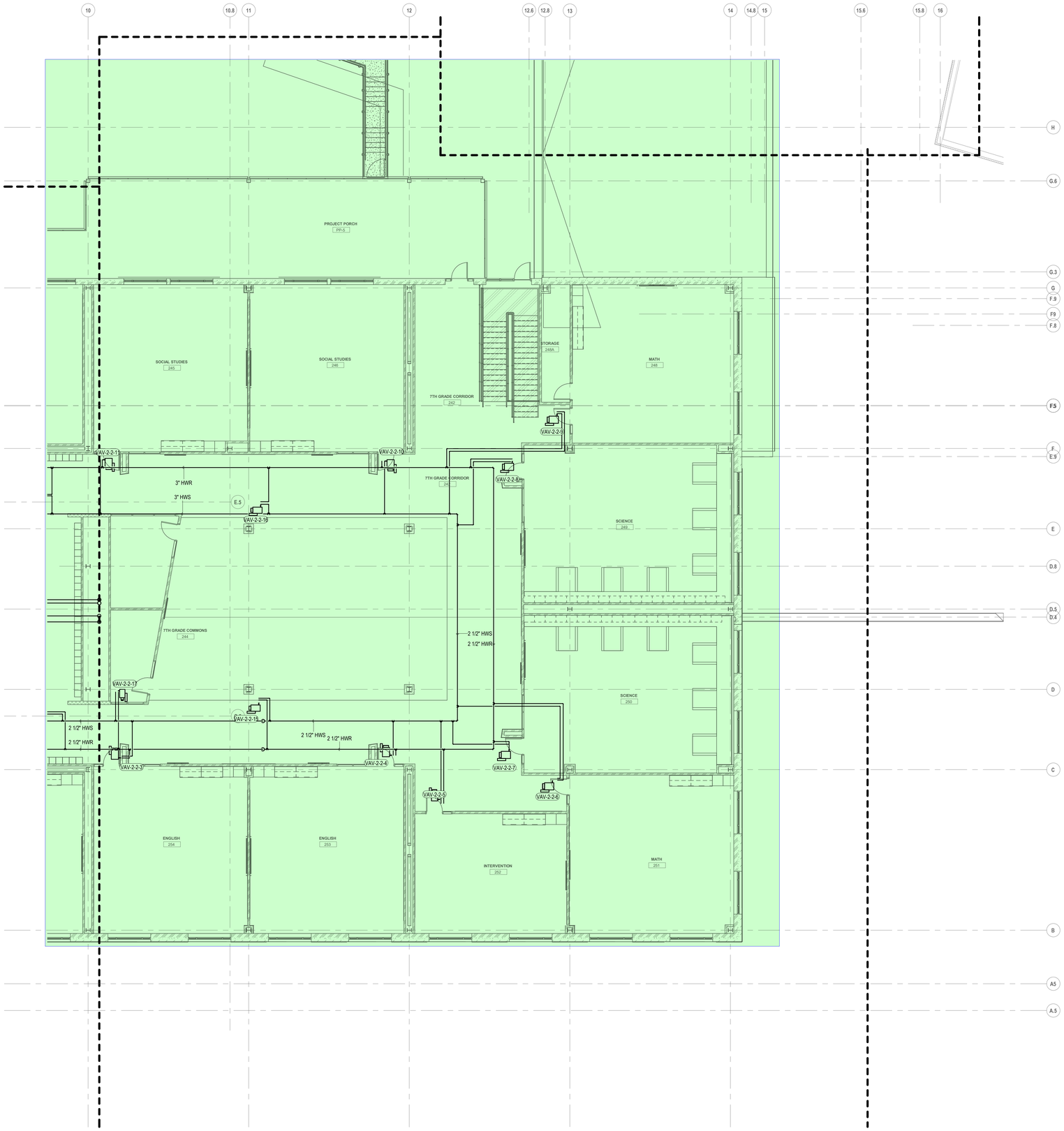
DRAWN BY: Author CHECKED BY: DW

PROJECT NO. 2021.01.015

DRAWING TITLE:
ZONE 3 - UPPER LVL. MECHANICAL PIPING CONSTRUCTION PLAN

MP2.23

9/9/2022 4:07:23 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt



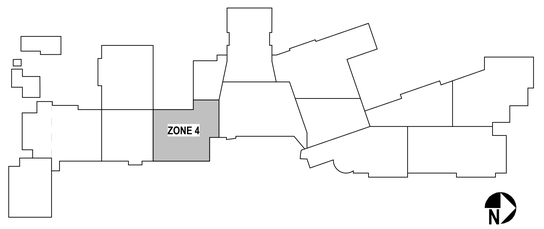
1 MP2.24 ZONE 4 - UPPER LEVEL NEW FLOOR PLAN

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

GENERAL NOTES:

1. NO GENERAL NOTES ON THIS PLAN

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING

INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published. All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be copied or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, Motz Engineering shall not be liable for any changes that were made to plans or data for any defects and/or deficiencies that may arise as a consequence of downloading of this information. Motz Engineering assumes no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
	11/19/2021	DD SET
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
2	04/22/2022	ADD. #1 TO 100% CD
	05/03/2022	FOR PERMIT
10	09/09/2022	BULLETIN 5

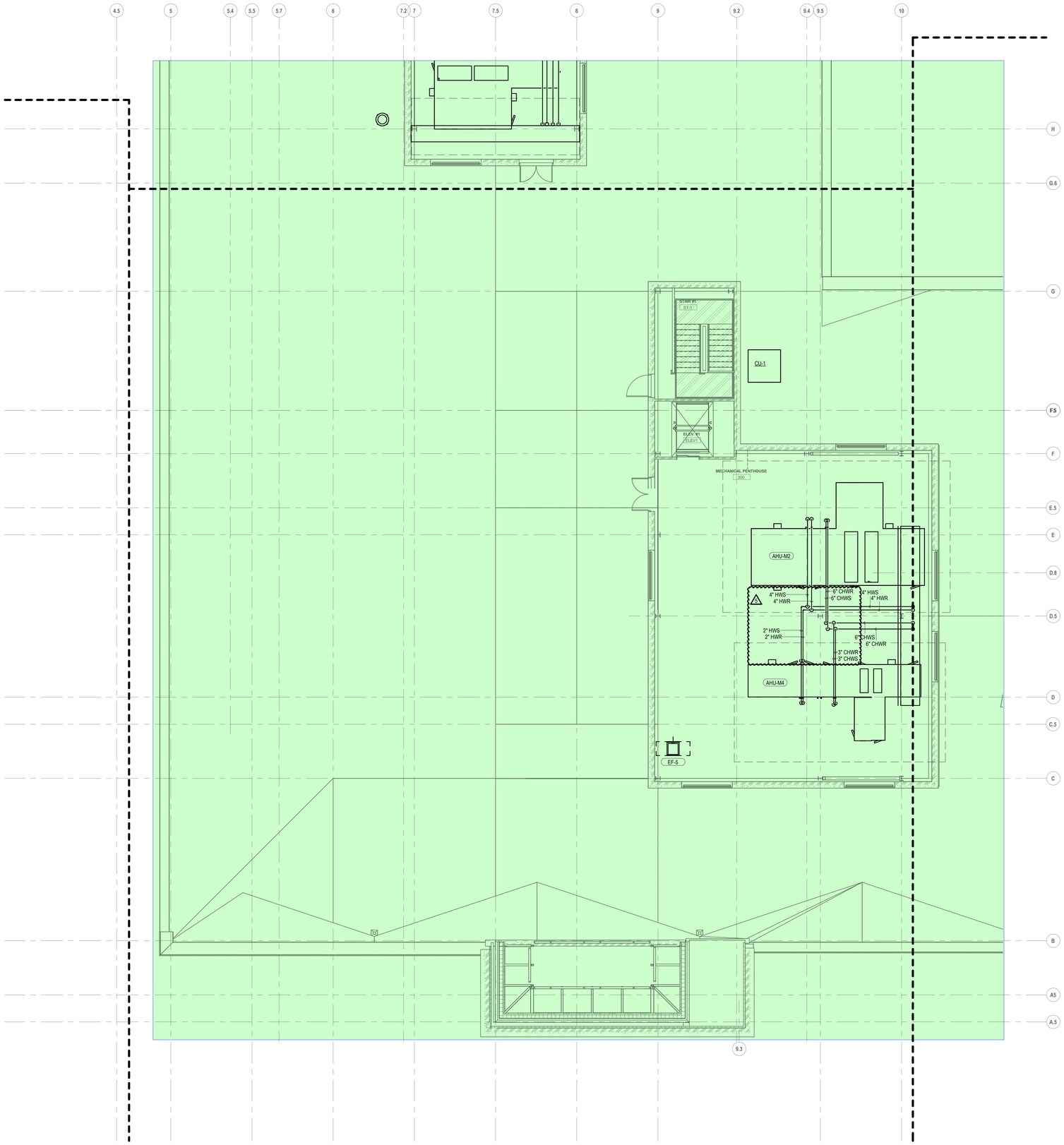
DRAWN BY: Author CHECKED BY: DW

PROJECT NO. 2021.01.015

DRAWING TITLE:
ZONE 4 - UPPER LVL. MECHANICAL PIPING CONSTRUCTION PLAN

MP2.24

9/9/2022 4:07:31 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt



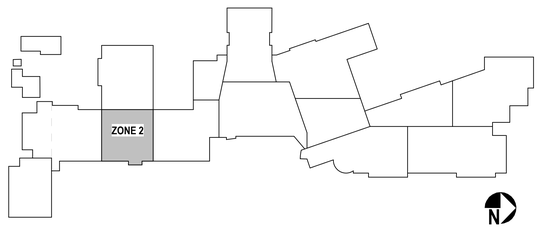
1 MP2.32 ZONE 2 - PENTHOUSE LEVEL NEW FLOOR PLAN

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

GENERAL NOTES:

1. NO GENERAL NOTES ON THIS PLAN

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING

INDIAN HILL SCHOOL DISTRICT

6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published. All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be copied or used for other than the specific purpose for which it was prepared without the expressed permission of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of downloading of this information. Motz Engineering assumes no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
	11/19/2021	DD SET
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
	05/03/2022	FOR PERMIT
5	06/01/2022	ADD#3 TO 100% CD

DRAWN BY: **Author** CHECKED BY: **DW**

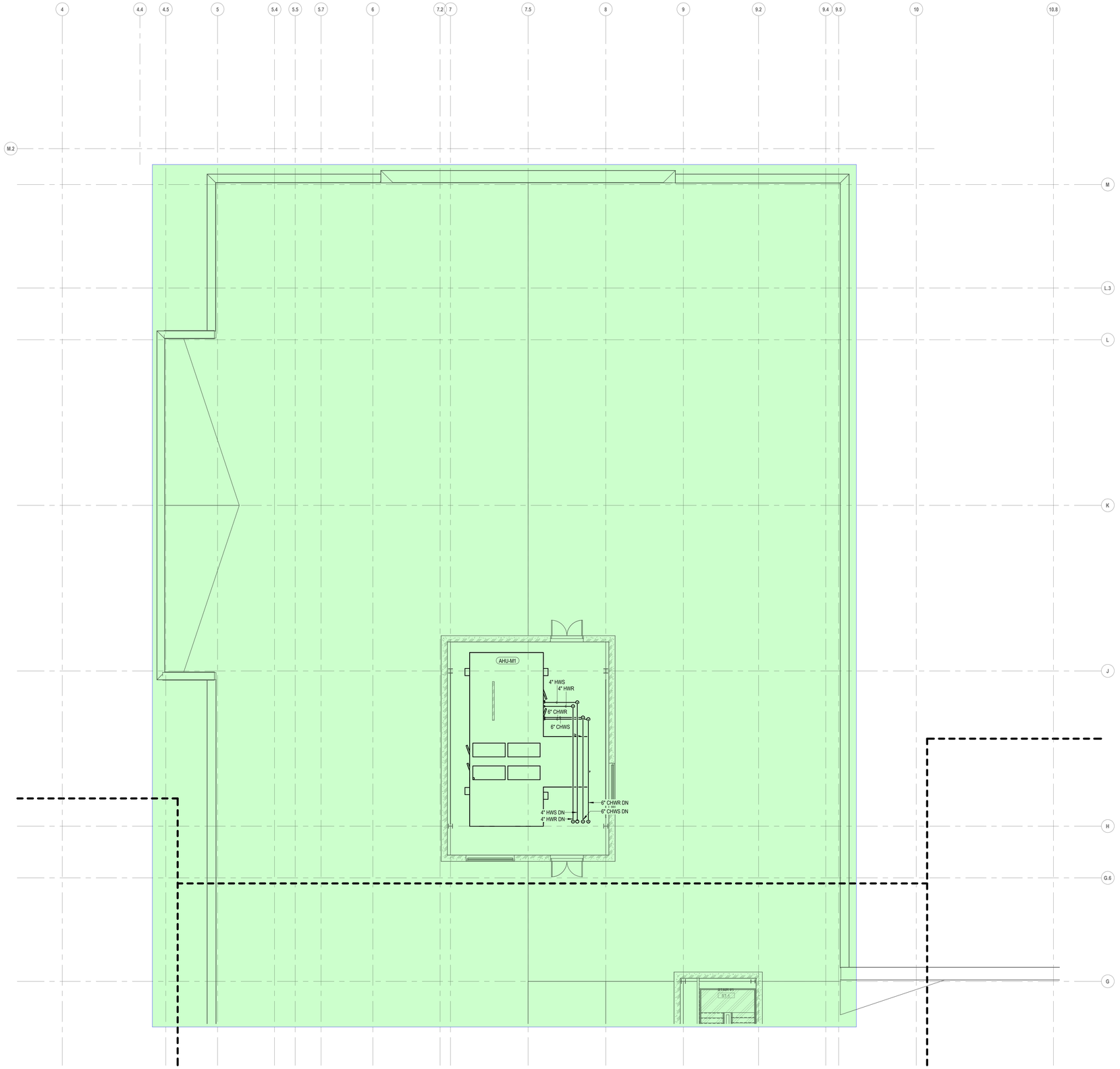
PROJECT NO. **2021.01.015**

DRAWING TITLE:

ZONE 2 - PENTHOUSE LEVEL MECHANICAL PIPING CONSTR. PLAN

MP2.32

6/1/2022 4:15:37 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt



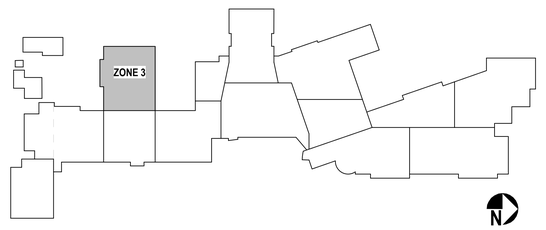
1 MP2.33 ZONE 3 - PENTHOUSE LEVEL NEW FLOOR PLAN

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

X GENERAL NOTES:

1. NO GENERAL NOTES ON THIS PLAN

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING

INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published. All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be copied or used for other than the specific purpose for which it was prepared without the expressed written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of downloading of the information. Motz Engineering assumes no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
	11/19/2021	DD SET
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
	05/03/2022	FOR PERMIT

DRAWN BY: Author CHECKED BY: DW

PROJECT NO. 2021.01.015

DRAWING TITLE:
ZONE 3 - PENTHOUSE LEVEL MECHANICAL PIPING CONSTR. PLAN

MP2.33

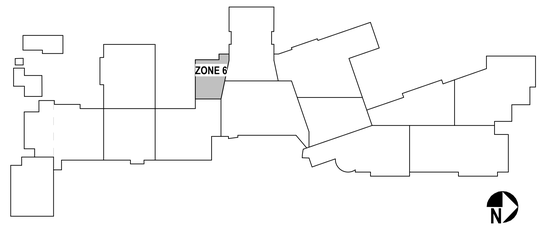
6/1/2022 4:15:40 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt

GENERAL NOTES:

1. NO GENERAL NOTES ON THIS PLAN

ALL SCOPE IN THIS AREA REMOVED, THIS SHEET WILL NOT APPREAR IN NEW ISSUANCES

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING

INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published - All Rights Reserved. This Document is the product and exclusive property of Motz Consulting Engineers, Inc. doing business as Motz Engineering and may not be copied or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of the transmission or receipt of this data. Motz Engineering assumes no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
	05/03/2022	FOR PERMIT
7	07/22/2022	MUSIC EXPANSION CD SET
24	02/03/2023	BULLETIN 7

DRAWN BY: **Author** CHECKED BY: **DW**

PROJECT NO. **2021.01.015**

DRAWING TITLE:
ZONE 6 - LWR. LVL. MECHANICAL SHEET METAL CONSTR. PLAN

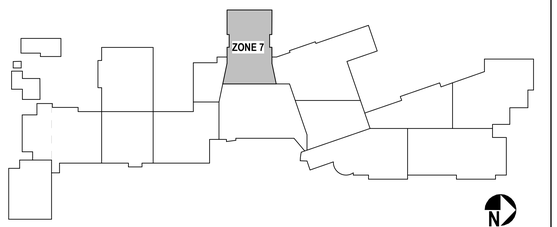
MS2.01

2/3/2023 3:21:06 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt

KEYED NOTES:

ALL SCOPE IN THIS AREA REMOVED, THIS SHEET WILL NOT APPREAR IN NEW ISSUANCES

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING
INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published - All Rights Reserved. This Document is the product and exclusive property of Motz Engineering and is not to be published, distributed, copied, reproduced or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of the transmission in electronic formats. Motz Engineering assumes no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
7	07/22/2022	MUSIC EXPANSION CD SET
24	02/03/2023	BULLETIN 7

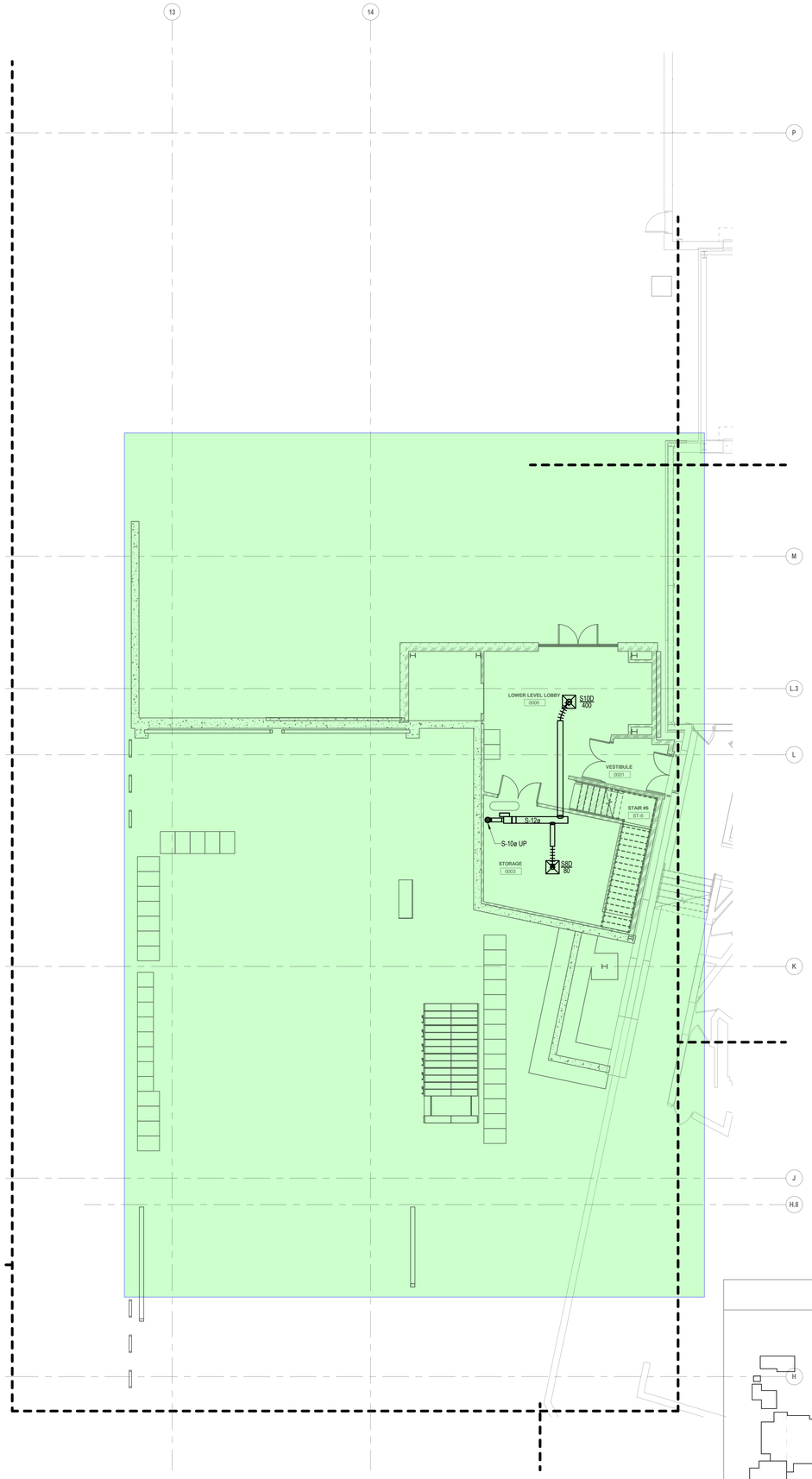
DRAWN BY: **Author** CHECKED BY **Checker**

PROJECT NO. **2021.01.015**

DRAWING TITLE:
ZONE 7 - LWR. LVL. MECHANICAL SHEET METAL CONSTR. PLAN

MS2.02

2/3/2023 3:21:06 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt



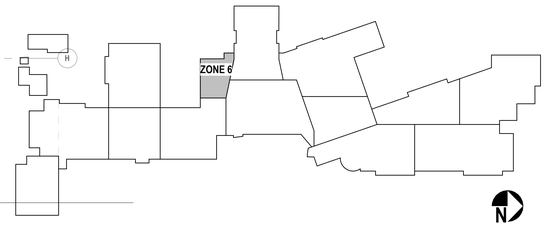
1 MS2.10 ZONE 6 - LOWER LEVEL MECHANICAL SHEET METAL CONSTRUCTION PLAN

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

GENERAL NOTES:

1. NO GENERAL NOTES ON THIS PLAN

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING

INDIAN HILL SCHOOL DISTRICT

6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published. All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be used in whole or in part for any purpose other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, neither Motz Engineering nor its officers, employees or agents shall be responsible or liable for any defects and/or deficiencies that may arise as a consequence of downloading of this information. Motz Engineering assumes no responsibility with regard to the accuracy of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD

DRAWN BY: Author CHECKED BY: DW

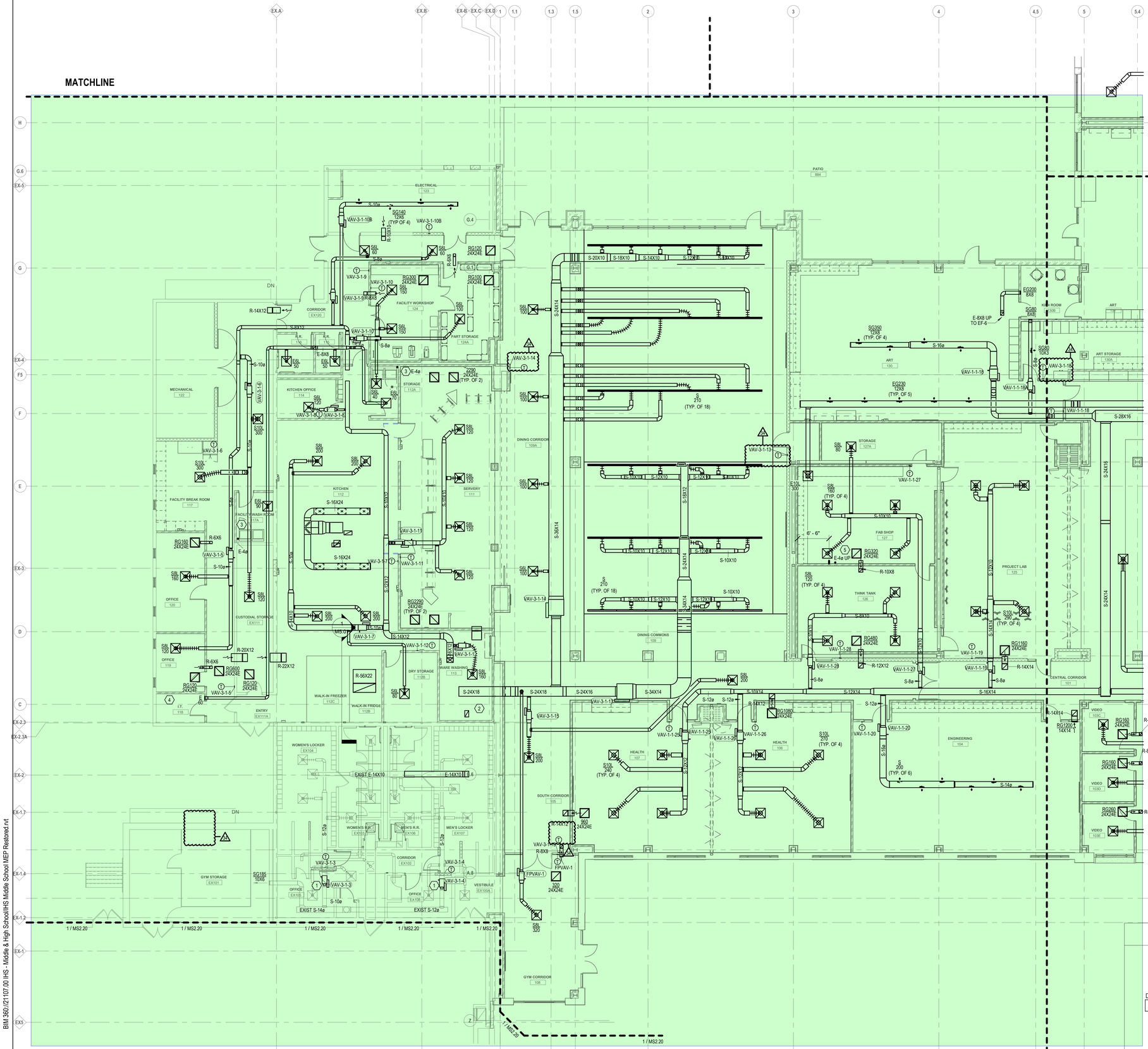
PROJECT NO. 2021.01.015

DRAWING TITLE:
ZONE 6 - LWR. LVL. MECHANICAL SHEET METAL CONSTR. PLAN

MS2.10

4/22/2022 4:44:55 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt

MATCHLINE

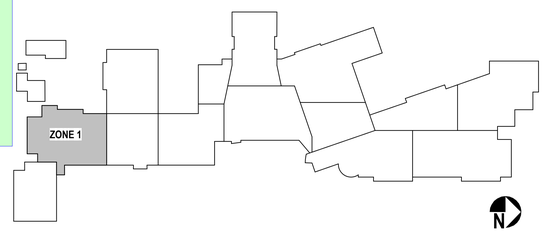


1 MS2.11 ZONE 1 - MAIN LEVEL NEW FLOOR PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. NEW TERMINAL UNIT TO REPLACE EXSISTING TERMINAL UNIT. MAINTAIN AS MUCH EXISTING DUCTWORK AND PIPING CONNECTING TO THE VAV.
2. 20" X 10" EXHAUST DUCT UP TO EXHAUST FAN CONNECT TO DISHWASHER HOOD. PROVIDE ALL NECESSARY FITTINGS.
3. 4" DRYER VENT TO ROOF. TERMINATE IN DRYER VENT BACKDRAFT OUTLET IN SQUARE DUCT.
4. PROVIDE TEMPERATURE SENSOR IN ROOM.
5. ROUTE LASER CUTTER EXHAUST THROUGH CEILING AND UP THROUGH ROOF. CAP EXAHUST WITH GOOSENECK AND COVER WITH BIRD SCREEN. VERIFY EXACT LOCATION WITH ARCHITECT BEFORE INSTALLATION OF PENETRATION AS DUCT IS TO BE ROUTED VERTICALLY DIRECTLY FROM UNIT TO PENETRATION TO ENSURE PROPER FAN OPERATION.

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING
INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published. All Rights Reserved. This Document is the product and exclusive property of Motz Engineering and is not to be published, reproduced, copied or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of the use, misuse or modification of the data. The recipient accepts responsibility with regard to the transmission or re-use of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
2	04/22/2022	ADD. #1 TO 100% CD
	05/03/2022	FOR PERMIT
5	06/01/2022	ADD#3 TO 100% CD
6	7/28/2022	Bulletin 4
13	10/10/2022	BULLETIN 6
20	11/17/2022	RESPONSE TO RFI-94
23	02/15/2023	RESPONSE TO RFI 121
24	02/03/2023	BULLETIN 7
27	03/10/2023	BULLETIN 8
28	Date 38	Next Bulletin - mech
33	05/17/2023	LASER CUTTER COORDINATION
34	05/22/2023	T-STAT UPDATES

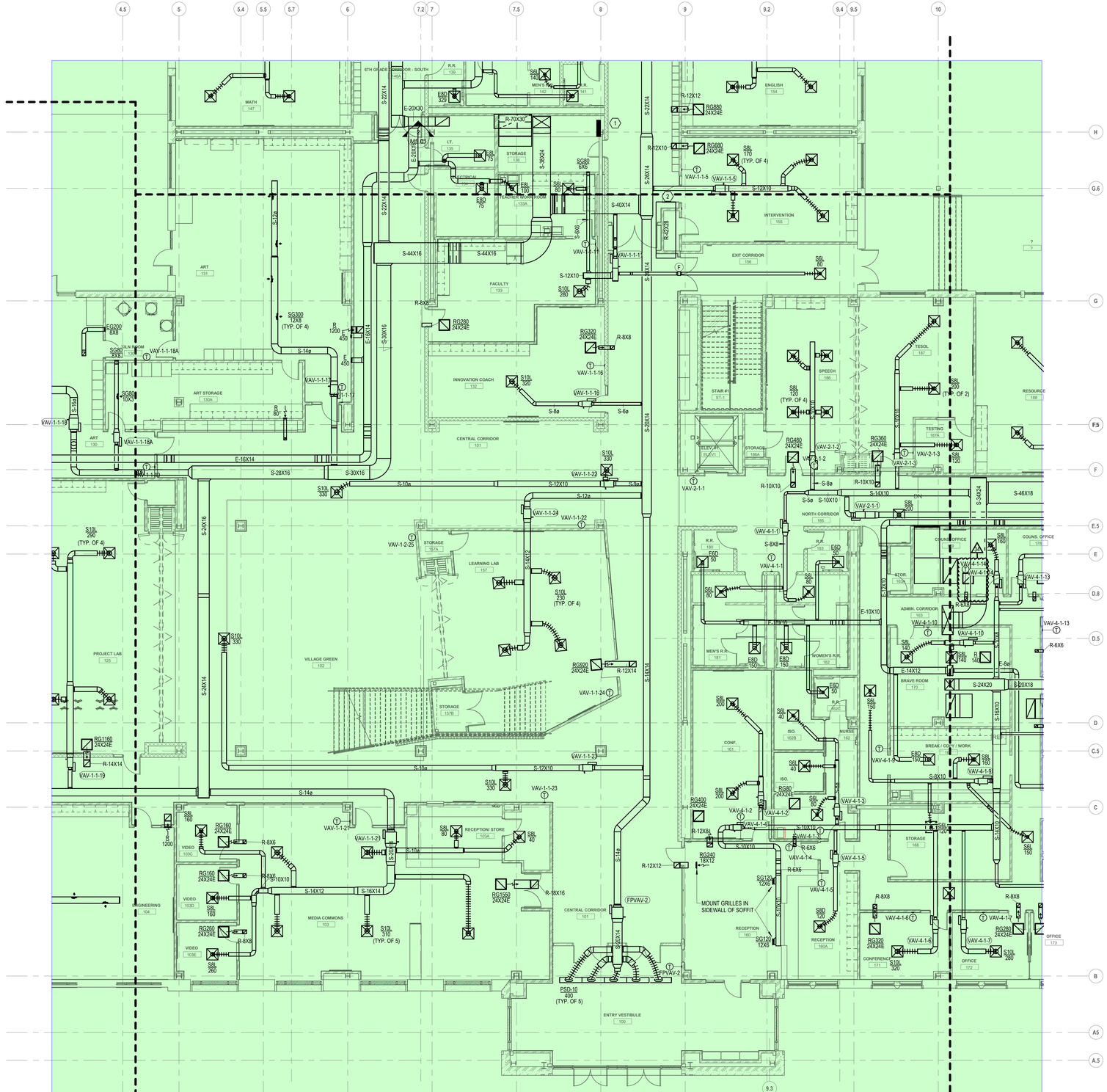
DRAWN BY: Author CHECKED BY: DW

PROJECT NO. 2021.01.015

DRAWING TITLE:
ZONE 1 - MAIN LVL. MECHANICAL SHEET METAL CONSTR. PLAN

MS2.11

BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt
5/22/2023 4:05:44 PM

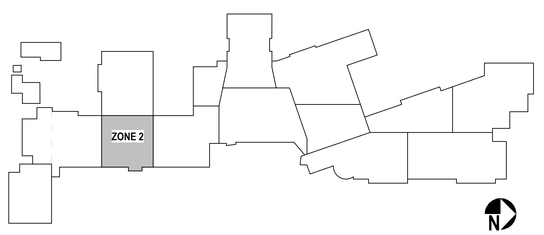


1 ZONE 2 - MAIN LEVEL NEW FLOOR PLAN
MS2.12 SCALE: 1/8" = 1'-0"

KEYED NOTES:

1. WALL SEAPARATING STORAGE 136 AND CORRIDOR 146E TO NOT BE TO DECK TO ALLOW FOR PLENUM TO EXTEND INTO STORAGE 136.
2. TRANSFER DUCT TO BE SOUND LINED AND HAVE TOP MOUNTED GRILLES THE FULL SIZE OF THE TRANSFER DUCT IN LIEU OF A BOOT.

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING
INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published. All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be copied or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible for accidental alterations of this information after the original issue/release of downloading of this information. Motz Engineering assumes no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
	05/03/2022	FOR PERMIT
3	05/17/2022	ADD. #2 TO 100% CD
5	06/01/2022	ADD#3 TO 100% CD
6	7/28/2022	Bulletin 4
13	10/10/2022	BULLETIN 6
17	11/07/2022	ENGINEERING CHANGES
21	1/20/2023	RESPONSE TO RFI-115
23	02/15/2023	RESPONSE TO RFI 121
34	05/22/2023	T-STAT UPDATES

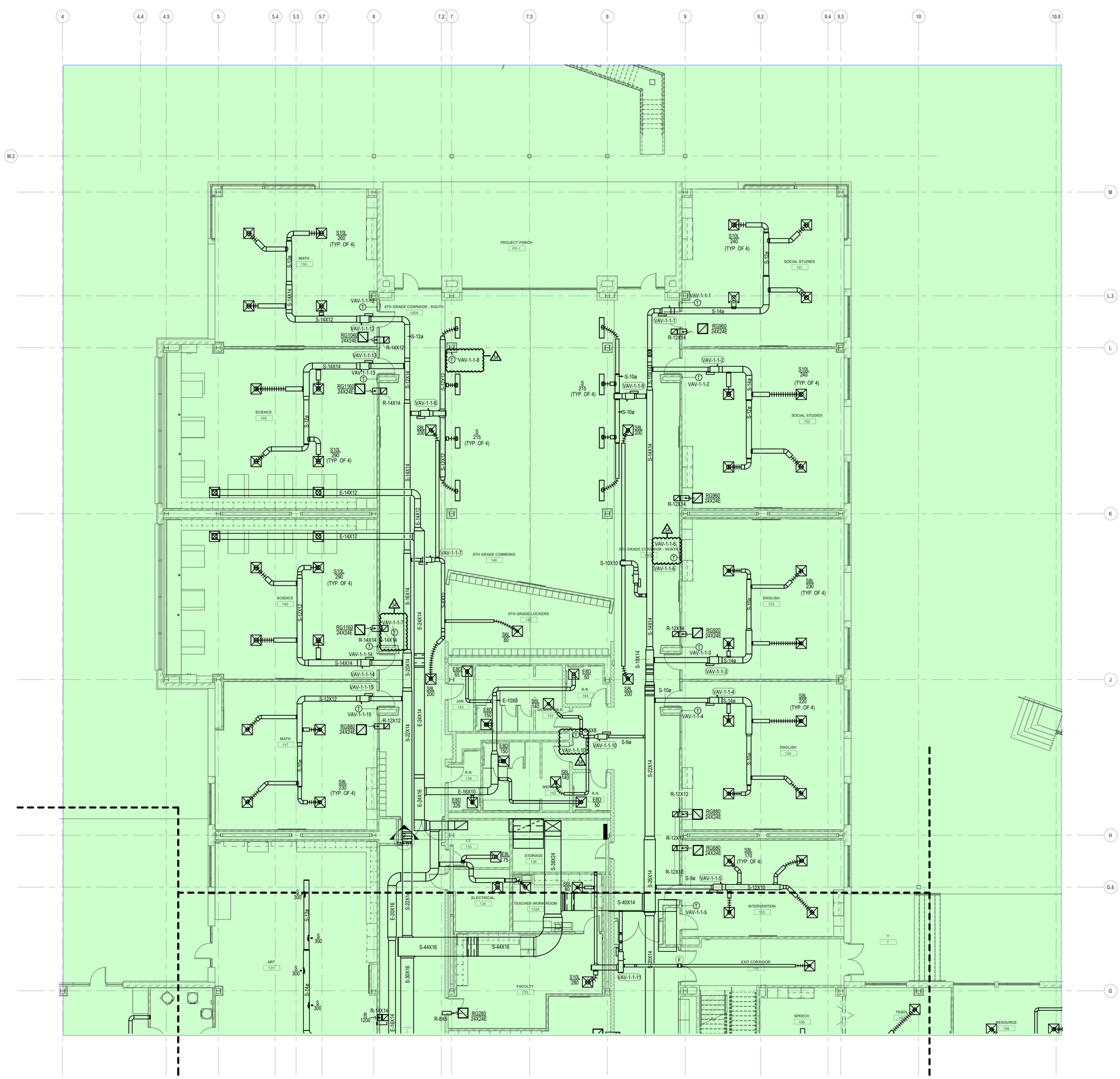
DRAWN BY: **Author** CHECKED BY: **DW**

PROJECT NO. **2021.01.015**

DRAWING TITLE:
ZONE 2 - MAIN LVL. MECHANICAL SHEET METAL CONSTR. PLAN

MS2.12

5/22/2023 4:05:47 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt

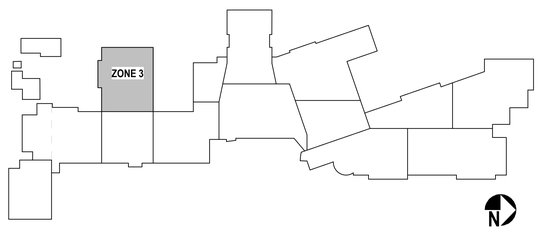


1 MS2.13 ZONE 3 - MAIN LEVEL NEW FLOOR PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. NO GENERAL NOTES ON THIS PLAN

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING

INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published. All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be reproduced, used, or disclosed to others for any purpose without the prior written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of downloading of this information. Motz Engineering assumes no responsibility with respect to any modifications made to the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
	05/03/2022	FOR PERMIT
5	06/01/2022	ADD#3 TO 100% CD
13	10/10/2022	BULLETIN 6
20	11/17/2022	RESPONSE TO RFI-94
23	02/15/2023	RESPONSE TO RFI 121
34	05/22/2023	T-STAT UPDATES

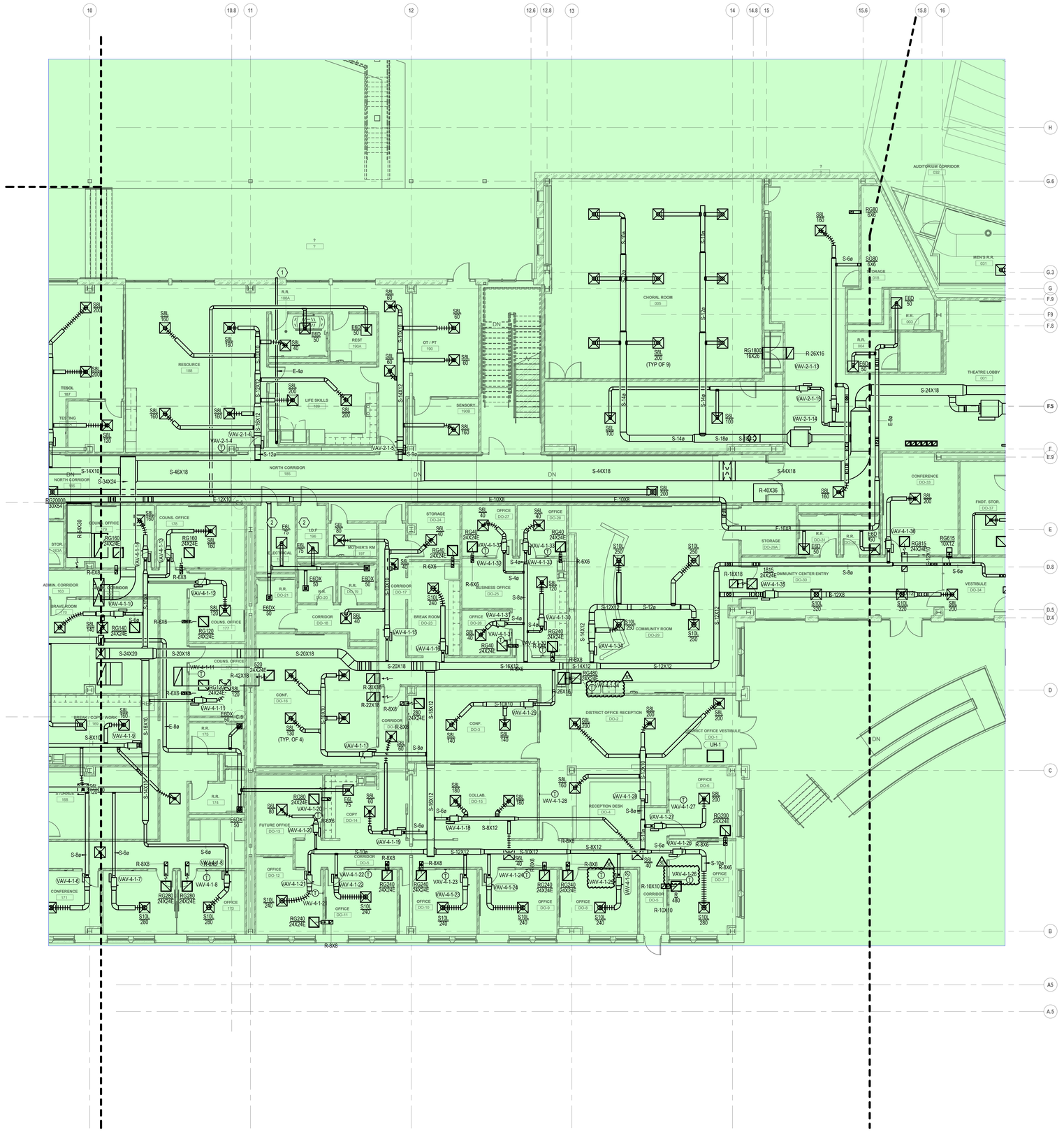
DRAWN BY: Author CHECKED BY: DW

PROJECT NO. 2021.01.015

DRAWING TITLE:
ZONE 3 - MAIN LVL. MECHANICAL SHEET METAL CONSTR. PLAN

MS2.13

5/22/2023 4:05:49 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt

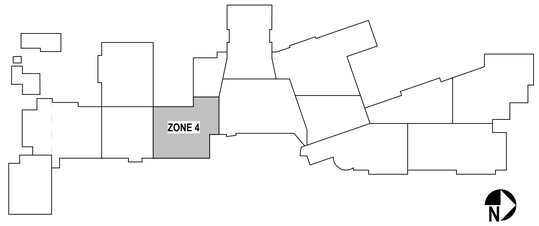


1 MS2.14 ZONE 4 - MAIN LEVEL NEW FLOOR PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. 4" DRYER EXHAUST TERMINATE WITH DRYER VENT AND CAP WITH BIRD SCREEN

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msearch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING

INDIAN HILL SCHOOL DISTRICT

6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published. All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be used in whole or in part for any purpose other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, Motz Engineering reserves the right to remove all or portions of its seal and is not liable for any defects and/or deficiencies that may arise as a consequence of downloading of this information. Motz Engineering assumes no responsibility with respect to the transmittal or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
	05/03/2022	FOR PERMIT
7	07/22/2022	MUSIC EXPANSION CD SET
17	11/07/2022	ENGINEERING CHANGES
20	11/17/2022	RESPONSE TO RFI-94
23	02/15/2023	RESPONSE TO RFI 121
24	02/03/2023	BULLETIN 7
27	03/10/2023	BULLETIN 8
30	04/12/2023	RFI 145

DRAWN BY: Author CHECKED BY: DW

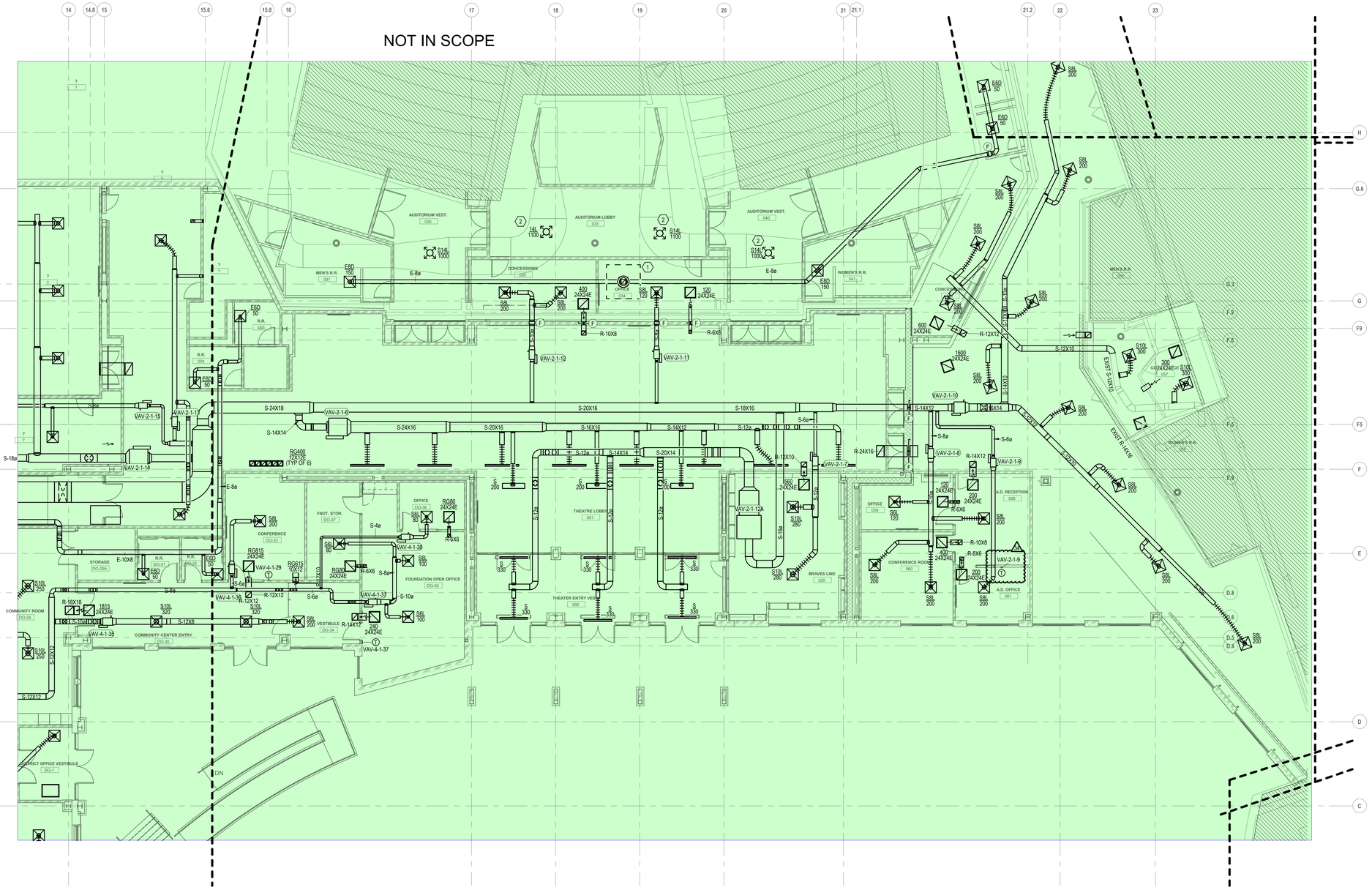
PROJECT NO. 2021.01.015

DRAWING TITLE:
ZONE 4 - MAIN LVL. MECHANICAL SHEET METAL CONSTR. PLAN

MS2.14

4/12/2023 2:17:51 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt

NOT IN SCOPE



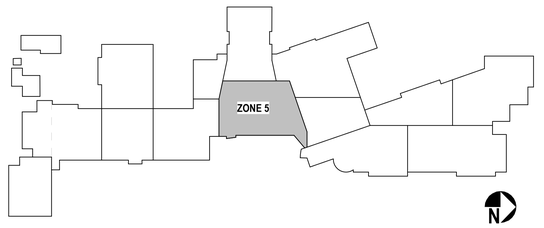
1 MS2.15 ZONE 5 - MAIN LEVEL NEW FLOOR PLAN

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

KEYED NOTES:

1. 10"X10" EXHAUST DUCT TO BE ROUTED UP TO EF-7 LOCATED ON ROOF.
2. EXISTING DIFFUSERS TO BE RELOCATED AND REBLANCED AS SHOWN. IF EXISTING DIFFUSERS ARE UNABLE TO BE REBALANCED TO SHOWN CFMS DEMOLISH EXISTING DIFFUSERS, PATCH, AND LOCATE NEW DIFFUSERS AS SHOWN. DIFFUSERS TO BE MOUNTED ON BOTTOM OF EXPOSED DUCT.

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING
INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published. All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be copied or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of the transfer of this information to other parties. Motz Engineering accepts responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING.

NO.	DATE	ISSUED / REVISION
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
	05/03/2022	FOR PERMIT
3	05/17/2022	ADD. #2 TO 100% CD
5	06/01/2022	ADD#3 TO 100% CD
20	11/17/2022	RESPONSE TO RFI-94
23	02/15/2023	RESPONSE TO RFI 121
27	03/10/2023	BULLETIN 8
31	4/18/2023	RFI 170
34	05/22/2023	T-STAT UPDATES

DRAWN BY: Author CHECKED BY: DW

PROJECT NO. 2021.01.015

DRAWING TITLE:
ZONE 5 - MAIN LVL. MECHANICAL SHEET METAL CONSTR. PLAN

MS2.15

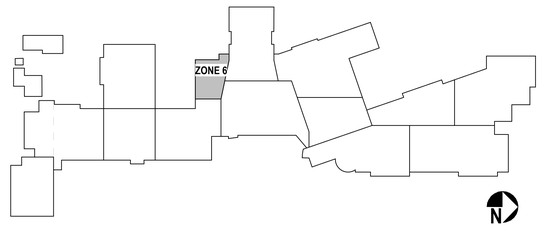
5/22/2023 4:05:54 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt

KEYED NOTES:

ALL SCOPE IN THIS AREA REMOVED, THIS SHEET WILL NOT APPREAR IN NEW ISSUANCES

1

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING

INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published - All Rights Reserved. This Document is the product and exclusive property of Motz Consulting Engineers, Inc. doing business as Motz Engineering not to be copied or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of the transmission in electronic format. Motz Engineering assumes no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
	05/03/2022	FOR PERMIT
7	07/22/2022	MUSIC EXPANSION CD SET
24	02/03/2023	BULLETIN 7

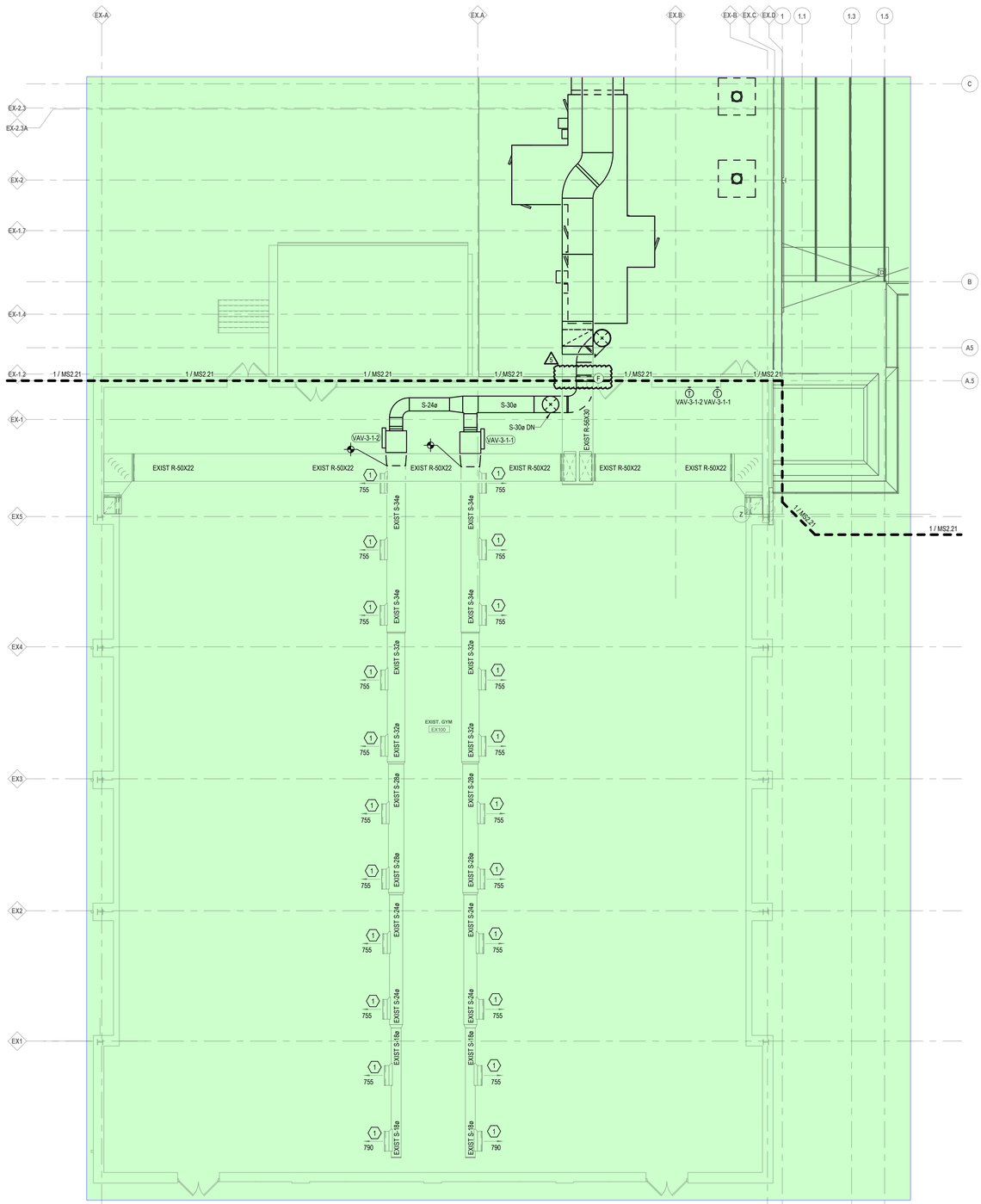
DRAWN BY: **Author** CHECKED BY: **DW**

PROJECT NO. **2021.01.015**

DRAWING TITLE:
ZONE 6 - MAIN LVL MECHANICAL SHEET METAL CONSTR. PLAN

MS2.16

2/3/2023 3:21:08 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt



1 / MS2.20 ZONE 1 - MAIN LEVEL NEW FLOOR PLAN

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

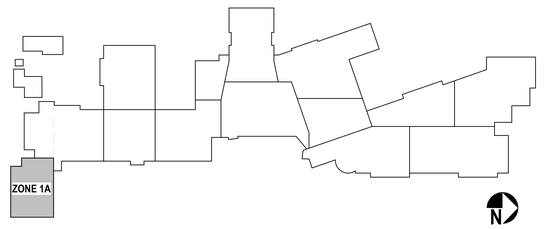
DRAWING NOTES:

A. REFER TO SHEET M000 FOR GENERAL NOTES, LEGENDS, AND ABBREVIATIONS.

KEYNOTES:

1. REBALANCE EXISTING GRILLE TO CFM INDICATED.

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING
INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published. All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be copied or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of such modification. Motz Engineering shall not be responsible or liable responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
2	04/22/2022	ADD. #1 TO 100% CD
	05/03/2022	FOR PERMIT
5	06/01/2022	ADD#3 TO 100% CD

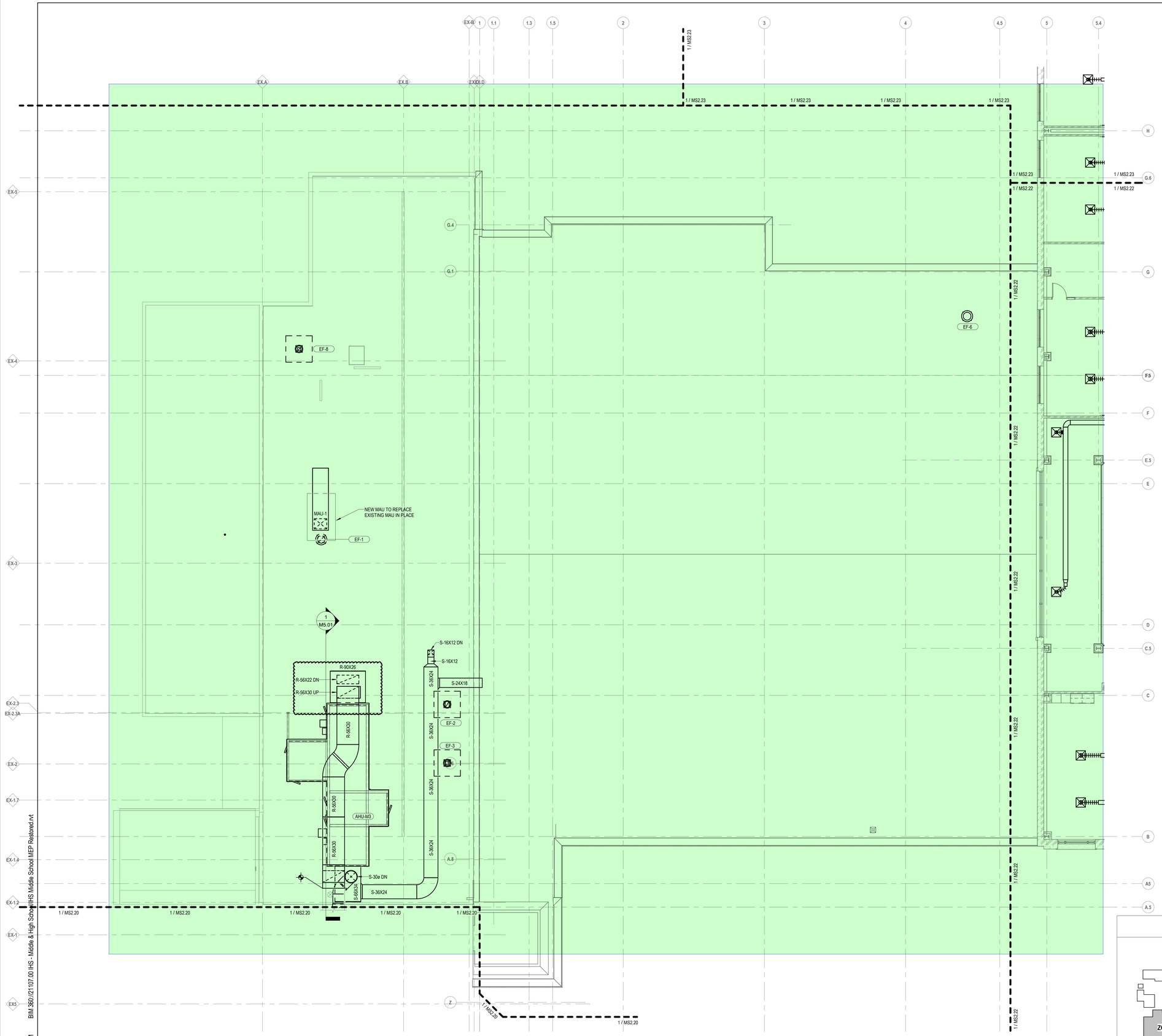
DRAWN BY: TDS CHECKED BY: DW

PROJECT NO. 2021.01.015

DRAWING TITLE:
ZONE 1A - UPR. LVL. MECHANICAL SHEET METAL CONSTR. PLAN

MS2.20

6/1/2022 4:15:51 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt

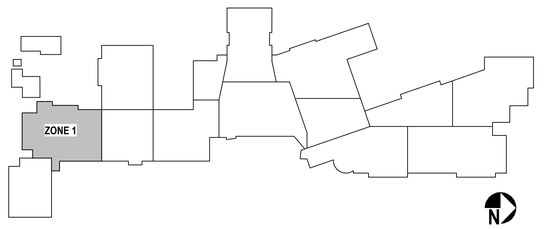


1 MS2.21 ZONE 1 - ROOF PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. NO GENERAL NOTES ON THIS PLAN

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING
INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published - All Rights Reserved - This Document is the product and exclusive property of Motz Consulting Engineers, Inc. doing business as Motz Engineering and may not be copied or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of such modifications. Motz Engineering shall not assume any responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
2	04/22/2022	ADD. #1 TO 100% CD
	05/03/2022	FOR PERMIT
14	?	BULLETIN 7

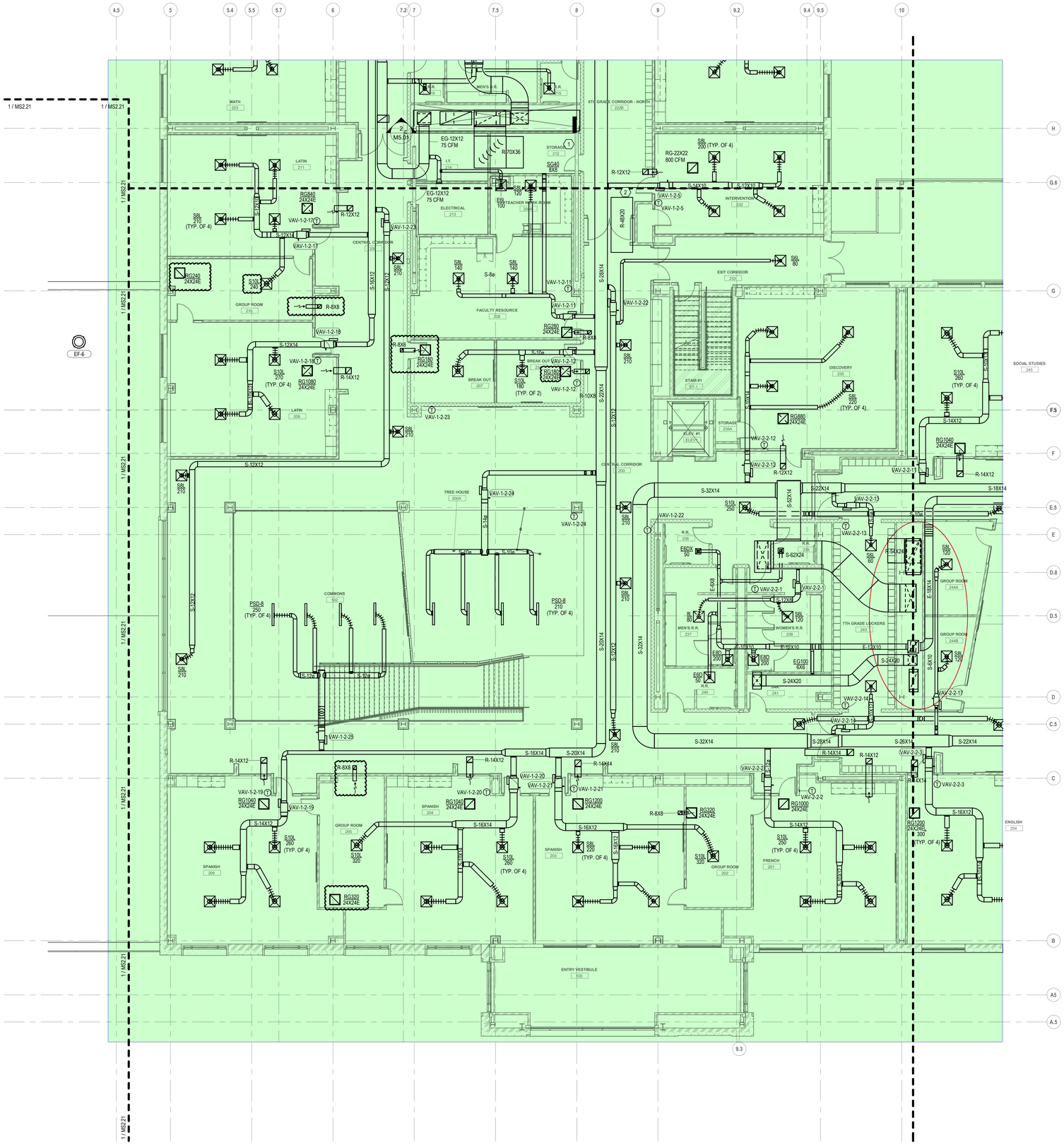
DRAWN BY: **Author** CHECKED BY: **DW**

PROJECT NO. **2021.01.015**

DRAWING TITLE:
ZONE 1 - ROOF LVL. MECHANICAL SHEET METAL CONSTR. PLAN

MS2.21

10/25/2022 10:35:08 AM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt



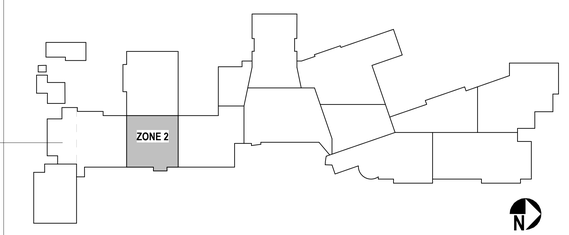
1 / MS2.22 ZONE 2 - UPPER LEVEL NEW FLOOR PLAN

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

KEYED NOTES:

1. WALL SEPARATING STORAGE 212 AND CORRIDOR 222B TO NOT BE TO DECK TO ALLOW FOR PLENUM TO EXTEND INTO STORAGE AREA.

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING

INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published. All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be copied or used for other than the specific purpose for which it was prepared without the expressed written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible for any changes to the information stored in this format after its transmittal or downloading of this information. Motz Engineering assumes no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
	05/03/2022	FOR PERMIT
17	11/07/2022	ENGINEERING CHANGES
23	02/15/2023	RESPONSE TO RFI 121
34	05/22/2023	T-STAT UPDATES
35	05/25/2023	RFI186

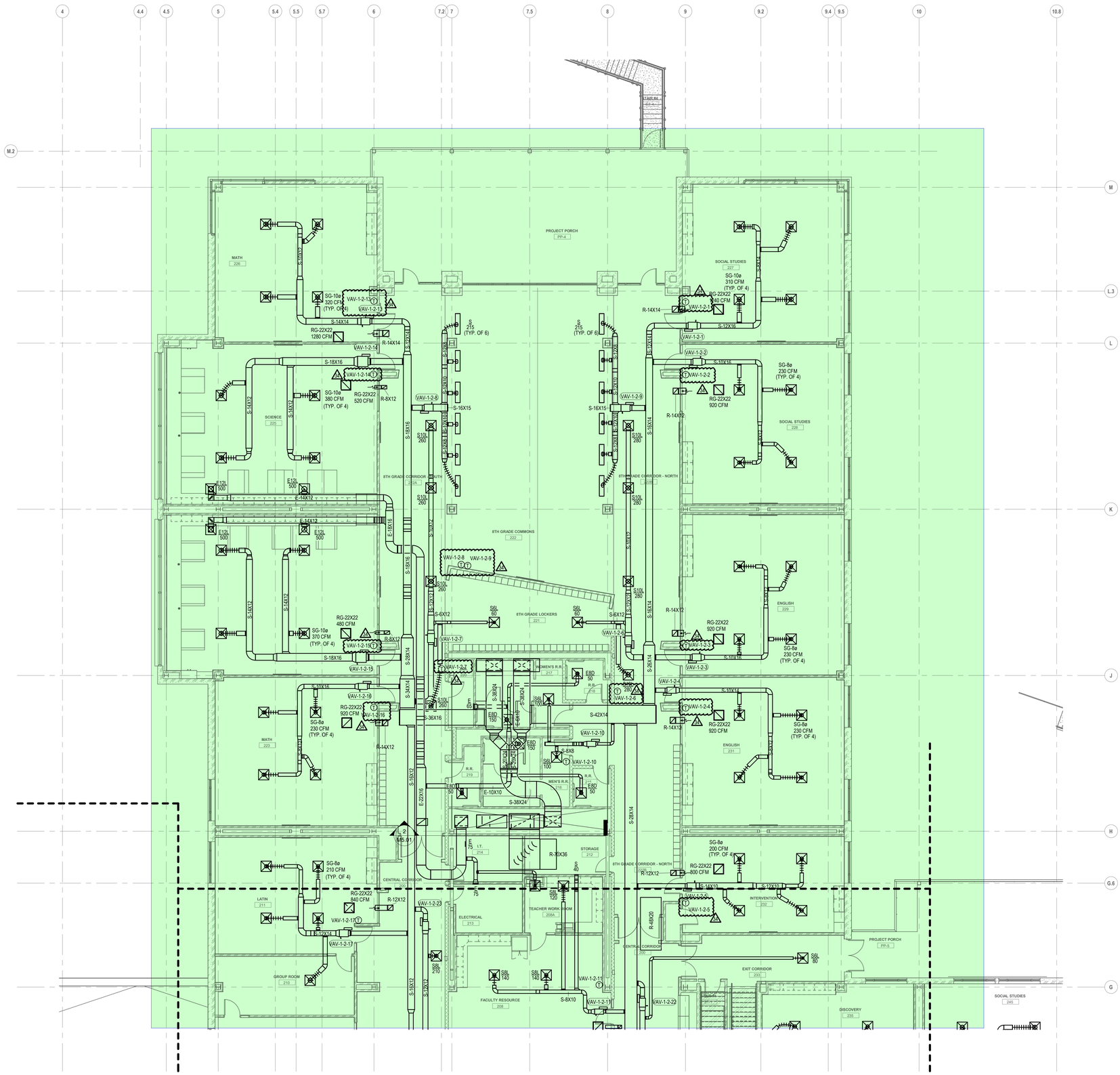
DRAWN BY: **Author** CHECKED BY: **DW**

PROJECT NO. **2021.01.015**

DRAWING TITLE:
ZONE 2 - UPPER LVL. MECHANICAL SHEET METAL CONSTR. PLAN

MS2.22

5/25/2023 9:22:20 AM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt



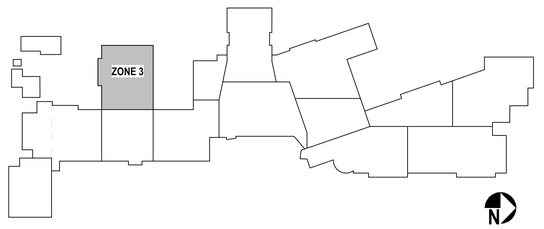
1 / MS2.23 ZONE 3 - UPPER LEVEL NEW FLOOR PLAN

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

GENERAL NOTES:

1. NO GENERAL NOTES ON THIS PLAN

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING

INDIAN HILL SCHOOL DISTRICT

6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published - All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be used in whole or in part for any purpose other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, Motz Engineering shall not be liable for any changes to the data contained in or liable for any defects and/or deficiencies that may arise as a consequence of downloading of this information. Motz Engineering assumes no responsibility with respect to the transmission or reproduction of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
	05/03/2022	FOR PERMIT
13	10/10/2022	BULLETIN 6
20	11/17/2022	RESPONSE TO RFI-94
23	02/15/2023	RESPONSE TO RFI 121
34	05/22/2023	T-STAT UPDATES

DRAWN BY: Author CHECKED BY: DW

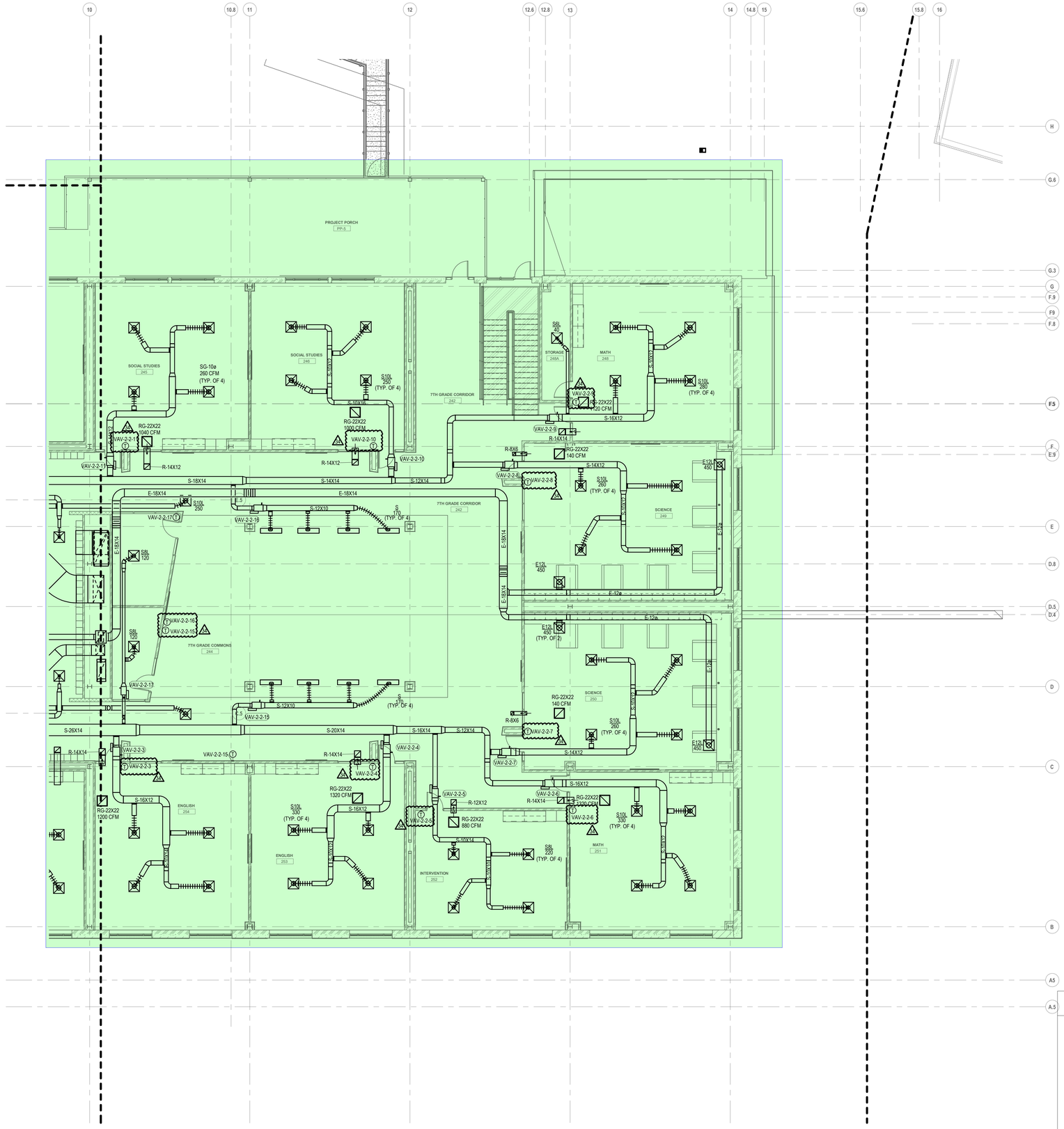
PROJECT NO. 2021.01.015

DRAWING TITLE:

ZONE 3 - UPPER LVL. MECHANICAL SHEET METAL CONSTR. PLAN

MS2.23

5/22/2023 4:06:13 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt

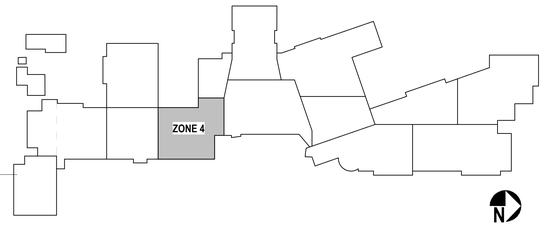


1 MS2.24 ZONE 4 - UPPER LEVEL NEW FLOOR PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. NO GENERAL NOTES ON THIS PLAN

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING

INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published - All Rights Reserved - This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be reproduced, used, or disclosed to others for any purpose without the prior written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of downloading of this information. Motz Engineering assumes no responsibility with respect to the transferred information unless so stated otherwise attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
	05/03/2022	FOR PERMIT
20	11/17/2022	RESPONSE TO RFI-94
23	02/15/2023	RESPONSE TO RFI 121
32	05/12/2023	RFI 178
34	05/22/2023	T-STAT UPDATES

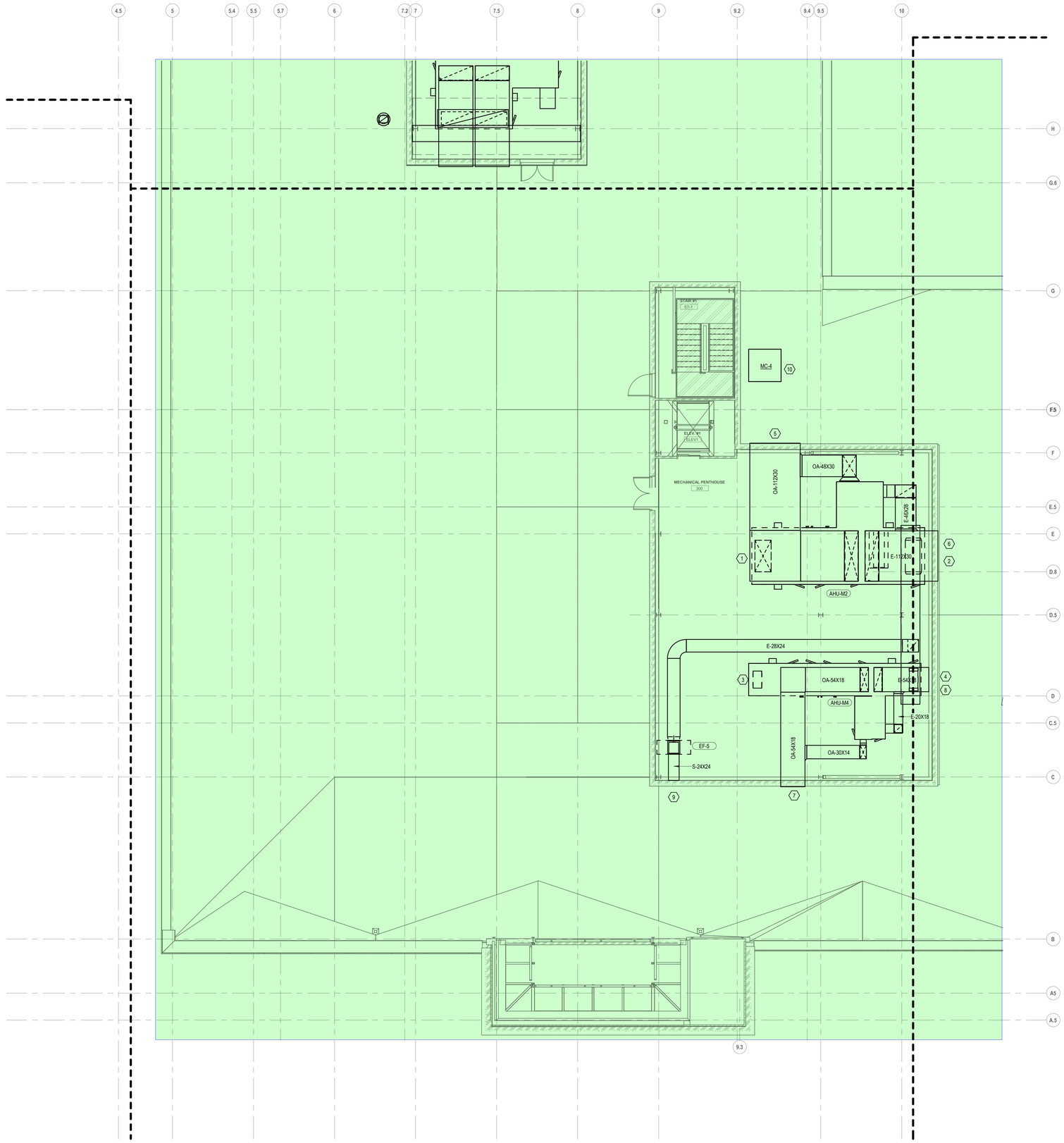
DRAWN BY: Author CHECKED BY: DW

PROJECT NO. 2021.01.015

DRAWING TITLE:
ZONE 4 - UPPER LVL. MECHANICAL SHEET METAL CONSTR. PLAN

MS2.24

5/22/2023 4:06:20 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt

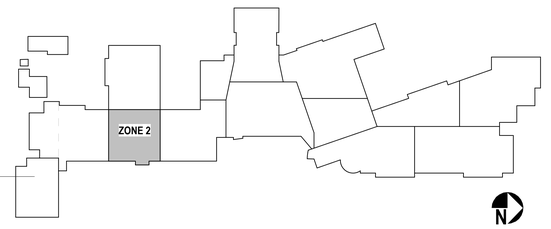


1 MS2.32 ZONE 2 - PENTHOUSE LEVEL NEW FLOOR PLAN
SCALE: 1/8" = 1'-0"

KEYED NOTES:

1. AHU-M2 SUPPLY TO BE 70x36 DOWN TRANSITIONING TO 62X24 AFTER PENTRATING THE FLOOR.PENETRATIONS TO HAVE FIRE/SMOKE DAMPERS AT FLOOR PENETRATION.
2. AHU-M2 RETURN TO BE 70X36 DOWN TRANSITIONING TO 80X32 AFTER PENETRATING THE FLOOR INTO THE CHASE SPACE.PENETRATIONS TO HAVE FIRE/SMOKE DAMPERS AT FLOOR PENETRATION.
3. AHU-M4 SUPPLY TO BE 38X20 DOWN TRANSITIONING TO 24X20 AFTER PENETRATING THE FLOOR.PENETRATIONS TO HAVE FIRE/SMOKE DAMPERS AT FLOOR PENETRATION.
4. AHU-M4 RETURN TO BE 38X20 DOWN TRANSITIONING TO 50X20 AFTER PENETRATING THE FLOOR INTO THE CHASE SPACE.PENETRATIONS TO HAVE FIRE/SMOKE DAMPERS AT FLOOR PENETRATION.
5. AHU-M2 OUTDOOR AIR DUCT TO TERMINATE IN LOVER TWICE THE FULL SIZE OF THE DUCTWORK TERMINATING TO THE EXTERIOR WALL. LOUVER TO BE 112"X60".
6. AHU-M2 EXAHUST DUCT TO TERMINATE IN LOUVER TWICE THE FULL SIZE OF DUCTWORK TERMINATING TO EXTERIOR WALL. LOUVER TO BE 112"X60".
7. AHU-M4 OUTDOOR AIR DUCT TO TERMINATE IN LOUVER TWICE THE FULL SIZE OF THE DUCTWORK TERMINATING TO THE EXTERIOR WALL. LOUVER TO BE 54"X36".
8. AHU-M4 EXAHUST DUCT TO TERMINATE IN LOUVER TWICE THE FULL SIZE OF DUCTWORK TERMINATING TO EXTERIOR WALL. LOUVER TO BE 54"X36".
9. EF-5 EXHAUST DUCTWORK TO TERMINATE IN LOUVER THE FULL SIZE OF THE DUCTWORK TERMINATING TO EXTERIOR WALL. LOUVER TO BE 24"X24".
10. ACCU SHALL BE MOUNTED ON ROOF CURB, PROVIDED AND INSTALLED BY MECHANICAL CONTRACTOR.

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING
INDIAN HILL SCHOOL DISTRICT
6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published - All Rights Reserved - This Document is the product and exclusive property of Motz Consulting Engineers, Inc. doing business as Motz Engineering and not be copied or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, intentionally or otherwise, Motz Engineering shall not be held responsible or liable for any defects and/or deficiencies that may arise as a consequence of the transmission or receipt of this information. Motz Engineering assumes no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
	05/03/2022	FOR PERMIT

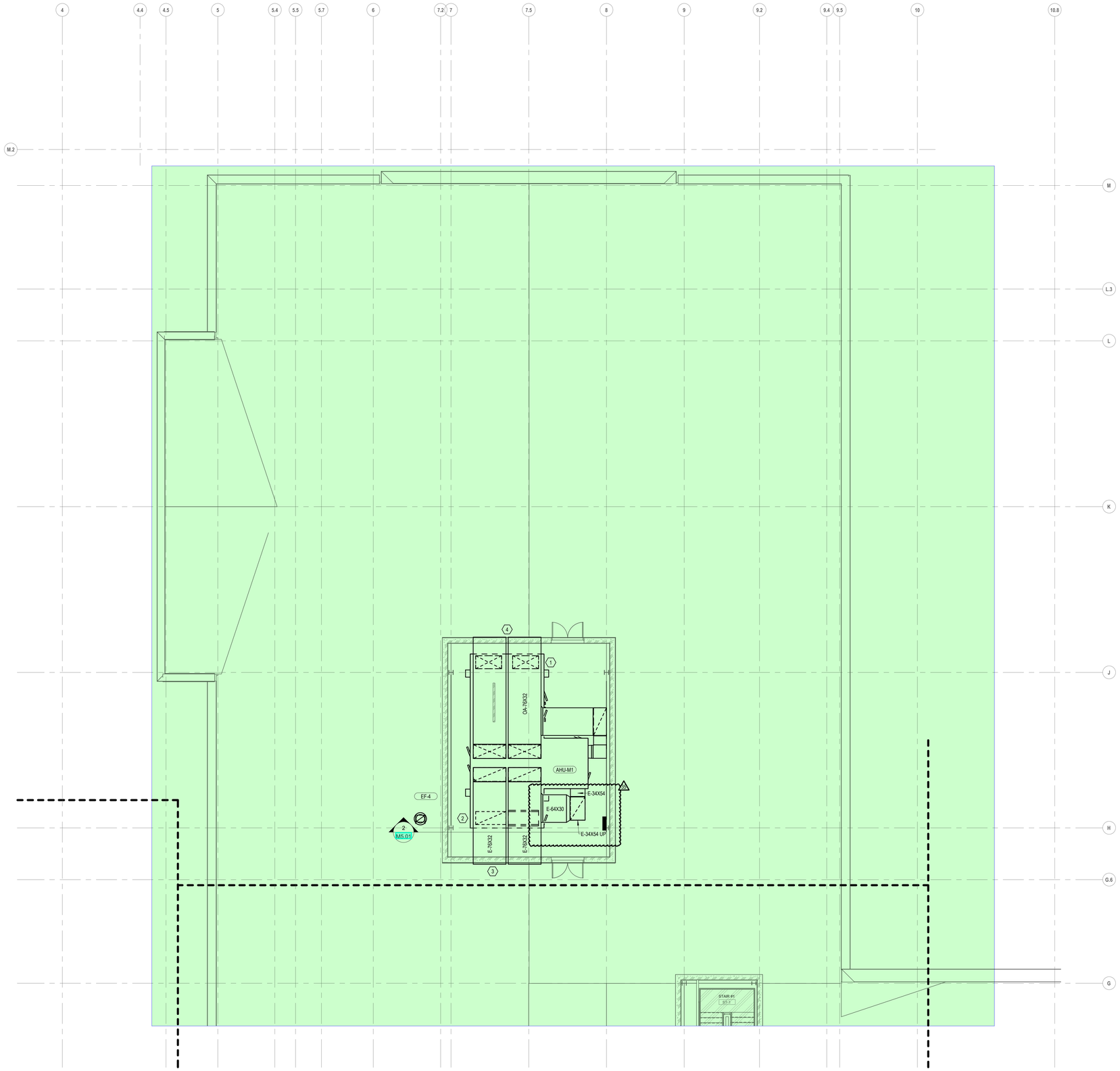
DRAWN BY: **Author** CHECKED BY: **DW**

PROJECT NO. **2021.01.015**

DRAWING TITLE:
ZONE 2 - PENTHOUSE MECH. SHEET METAL CONSTR. PLAN

MS2.32

9/9/2022 4:07:37 PM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt



1 MS2.33 ZONE 3 - PENTHOUSE LEVEL NEW FLOOR PLAN

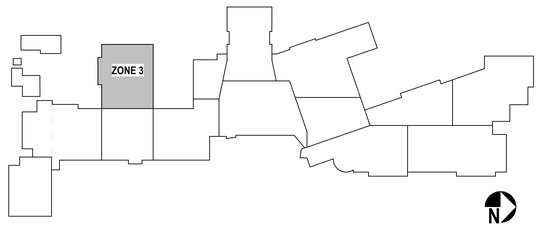
SCALE: 1/8" = 1'-0"

RFI 55

KEYED NOTES:

1. AHU-M1 SUPPLY DUCT TO PENETRATE THROUGH FLOOR WITH (2) 60"X30" DUCTS THROUGH SLAB INTO ABOVE CEILING SPACE. PENETRATIONS TO HAVE FIRE/SMOKE DAMPERS AT FLOOR PENETRATION.
2. AHU-M1 RETURN DUCT TO PENETRATE THROUGH FLOOR WITH (2) 70"X30" DUCTS THROUGH SLAB INTO ABOVE CEILING SPACE. PENETRATIONS TO HAVE FIRE/SMOKE DAMPERS AT FLOOR PENETRATION.
3. AHU-M1 EXHAUST AIR DUCT TO TERMINATE IN LOUVER TWICE THE FULL SIZE OF THE DUCTWORK TERMINATING TO THE EXTERIOR WALL. ADJACENT DUCTS MAY UTLIZE A SINGLE LOUVER FOR USE OF BOTH DUCTS. RESULTING LOUVER TO BE 157"X64".
4. AHU-M1 OUTDOOR AIR DUCT TO TERMINATE IN LOUVER TWICE THE FULL SIZE OF THE DUCTWORK TERMINATING TO THE EXTERIOR WALL. ADJACENT DUCTS MAY UTLIZE A SINGLE LOUVER FOR USE OF BOTH DUCTS. RESULTING LOUVER TO BE 157"X64".

MS & HS - NEW KEY PLAN N.T.S



MSA DESIGN
CINCINNATI | COLUMBUS | ORLANDO
msarch.com | 855.241.5666

MOTZ ENGINEERING
447 MORGAN STREET
CINCINNATI, OH 45206
T: 513.621.5400
F: 513.621.5407

MIDDLE SCHOOL BUILDING

INDIAN HILL SCHOOL DISTRICT

6845 DRAKE ROAD, CINCINNATI, OHIO 45243

Not Published All Rights Reserved. This Document is the product and exclusive property of the Engineer. This document and the information it contains may not be copied or used for other than the specific purpose for which it was prepared without express written consent of Motz Consulting Engineers, Inc. doing business as Motz Engineering.

Because the information stored in electronic formats can be modified by other parties, Motz Engineering reserves the right to remove all liability from all documents or data for any defects and/or deficiencies that may arise as a consequence of downloading of this information. Motz Engineering assumes no responsibility with regard to the transmission or receipt of the information attached.
COPYRIGHT © 2021 MOTZ ENGINEERING

NO.	DATE	ISSUED / REVISION
BP7	03/11/2022	75% CD
BP8	04/08/2022	100% CD
	05/03/2022	FOR PERMIT
5	06/01/2022	ADD#3 TO 100% CD
10	09/09/2022	BULLETIN 5
13	10/10/2022	BULLETIN 6
35	07/12/2023	RFI 193

DRAWN BY: Author CHECKED BY: DW

PROJECT NO. 2021.01.015

DRAWING TITLE:

ZONE 3 - PENTHOUSE MECH. SHEET METAL CONSTR. PLAN

MS2.33

7/14/2023 9:50:22 AM BIM 360://21107.00 IHS - Middle & High School/IHS Middle School MEP Restored.rvt