	1	2	3	4
L			DUCTWORK SY	MBOLS
			UP 🖂 DN	
				EXHAUST DUCT (UP & D
				ROUND AND SQUARE 4
				SQUARE 3-WAY CEILING
К				SQUARE 2-WAY CEILING
				SQUARE 1-WAY CEILING
				SUPPLY TOP GRILLE (W
				- EXHAUST OR RETURN (
				– EXHAUST OR RETURN I TYPE)
			└ ╱ _	- EXHAUST OR RETURN
J				INCLINED RISE, IN DIRE
				INCLINED DROP, IN DIR
				VANED ELBOW (PROVIE RECTANGULAR ELBOW SYMBOL IS MISSING)
				VANED ELBOW (SHORT
				STANDARD RADIUS ELB
Н			2 10x8 2	NEW DUCT (INSIDE DIMI DEPTH)
				DUCT WITH SOUND LINI
				MANUAL VOLUME DAMF
			T	THERMOSTAT
G				CARBON DIOXIDE DETE
			μ μ − τ − τ − τ − τ − τ − τ − τ − τ − τ −	
F				
Г				
E				

(UP & DOWN) (UP & DOWN)

T (UP & DOWN)

QUARE 4-WAY CEILING DIFFUSERS

Y CEILING DIFFUSERS

Y CEILING DIFFUSERS

Y CEILING DIFFUSERS

RILLE (WALL TYPE)

ETURN CEILING GRILLE

RETURN BOTTOM GRILLE (WALL

RETURN TOP GRILLE (WALL TYPE)

, IN DIRECTION OF AIR FLOW

P, IN DIRECTION OF AIR FLOW

(PROVIDE ALL SQUARE OR R ELBOWS WITH VANES EVEN IF

(SHORT RADIUS)

DIUS ELBOW

SIDE DIMENSIONS: WIDTH x

UND LINING

IE DAMPER

IDE DETECTOR

PIPING SYMBOLS PIPING _____ **—** DIRECTION OF FLOW REDUCER OR INCREASER _____U_____ TOP CONNECTION, 45° OR 90° BOTTOM CONNECTION, 45° OR 90° ________ _____;[‡],_____ SIDE CONNECTION ______ RISER DOWN (ELBOW) RISER UP (ELBOW) _____ RISER DOWN (IN PIPE) ____<u>O</u>____ RISER UP (IN PIPE) ______ RISE OR DROP IN PIPE ELBOW **t**,___ PIPE BREAK _____ CAP ON END OF PIPE UNION GATE VALVE OR GENERIC VALVE REFER TO SPECIFICATIONS ——⋈—— STRAINER ——I_I THREE-WAY MODULATING CONTROL VALVE THREE-WAY TWO POSITION CONTROL VALVE THERMOMETER _____T ____

SYMBOL	DESCRIPTION
MBH	1000 BRITISH THERMAL UNITS PER HOUR
ACU	AIR CONDITIONING UNIT
ACCU	AIR COOLED CONDITIONING UNIT
AHU	AIR HANDLING UNIT
В	BOILER
BTUH	BRITISH THERMAL UNITS PER HOUR
CUH	CABINET UNIT HEATER
CO2	CARBON DIOXIDE
CWR	CHILLED WATER RETURN
CWS	CHILLED WATER SUPPLY
СН	CHILLER
CFM	CUBIC FEET PER MINUTE
°F	DEGREES FAHRENHEIT
Ø	DIAMETER
DB	DRY BULB
EC	ELECTRICAL CONTRACTOR
EAT	ENTERING AIR TEMPERATURE
EWT	ENTERING WATER TEMPERATURE
EA	EXHAUST AIR
EF	EXHAUST FAN
ESP	EXTERNAL STATIC PRESSURE
FPB	FAN POWERED BOX
FPM	FEET PER MINUTE
GPM	GALLONS PER MINUTE
GC	GENERAL CONTRACTOR
GRV	GRAVITY ROOF VENTILATOR
HWR	
HWS HP	HEATING WATER SUPPLY HORSE POWER
KEC	KITCHEN EQUIPMENT CONTRACTOR
KMUA	KITCHEN EQUIPMENT CONTRACTOR
LAT	
LWT	LEAVING WATER TEMPERATURE
MUA	MAKE UP AIR UNIT
MOCP	MANUFACTURER'S OVER CURRENT PROTECTION
MAX	MAXIMUM
MC	MECHANICAL CONTRACTOR
OA	OUTSIDE AIR
PSI	POUNDS PER SQUARE INCH
PG	PROPYLENE GLYCOL
P	PUMP
RA	RETURN AIR
SWT	SPRING WOUND TIMER
SA	SUPPLY AIR
TSP	TOTAL STATIC PRESSURE
UH	UNIT HEATER
VAV	VARIABLE AIR VOLUME
WB	WET BULB

GENERAL NOTES

- 1. ALL CONTRACTORS FOR THIS PROJECT ARE RESPONSIBLE TO REVIEW THE SUMMARY OF WORK, SPECIF 011100 FOR REFERENCE TO OWNERSHIP OF WORK AND SPECIFIC JOB RESPONSIBILITIES.
- 2. DUCTWORK CONNECTIONS TO EQUIPMENT ARE PURSUANT TO EQUIPMENT MANUFACTURERS RECOMM
- 3. ALL DUCT DIMENSIONAL DATA REPRESENTS CLEAR INSIDE DIMENSIONS.
- 4. CONTRACTOR TO VERIFY FIELD CONDITIONS AND DIMENSIONS OF JOB BEFORE CONSTRUCTION. 5. ROUND DUCT FLEXIBLE CONNECTION TO DIFFUSERS SHALL BE NO LONGER THAN 5 FEET.
- 6. COORDINATE ALL WORK WITH OTHER TRADES TO AVOID ANY CONFLICTS.
- . CONTRACTOR SHALL MAKE NECESSARY TURNS AND OFFSETS TO AVOID ANY CONFLICTS WITH BUILDING
- 3. PROVIDE VOLUME DAMPERS IN EVERY BRANCH LINE BEFORE EACH DIFFUSER, GRILLE OR REGISTER.
- 9. COORDINATE DUCT, WALL AND ROOF PENETRATIONS WITH RELEVANT TRADES.
- 10. ALL DISHWASHER EXHAUST DUCTWORK TO BE 16 GAUGE, TYPE 304 STAINLESS STEEL.
- I. INSTALL ALL PIPING, DUCTWORK AND EQUIPMENT FOR BEST SERVICE ACCESS TO UNITS. DO NOT IMPED FILTER AREAS.
- SEE ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF ALL GRILLES, REGISTERS, A CENTER DIFFUSERS IN 2'x2' HALF OF CEILING TILE.
- 13. ALL DUCTWORK TO BE INSULATED ON THE EXTERIOR FROM AIR HANDLING UNIT TO DIFFUSER, GRILLE, I LOUVER UNLESS OTHERWISE NOTED.
- 14. ALL EXPOSED SUPPLY AIR DUCTWORK SHALL BE SPIRAL UNLESS NOTED OTHERWISE. ALL EXPOSED DUG PAINTED. COLOR TO BE SELECTED BY ARCHITECT.
- 15. ALL PENETRATIONS THROUGH FIRE RATED ASSEMBLIES SHALL BE SLEEVED AND FIRE STOPPED.
- 16. ALL PENETRATIONS THROUGH NON-FIRE RATED ASSEMBLIES SHALL BE SLEEVED, CAULKED OR OTHER AGAINST SOUND TRANSMISSION. ALL EXPOSED PENETRATIONS SHALL HAVE A FLANGED EDGE, CONCEA OPENING.
- 7. ALL PATCHING SHALL MATCH EXISTING, ADJACENT MATERIAL IN COLOR AND QUALITY. 18. PIPE AIR HANDLING UNITS CONDENSATE TO FLOOR DRAIN WITH CLEANOUTS AND P-TRAPS. CAP HEATING
- MAINTENANCE CLEANING. 19. MOUNT AIR HANDLING UNITS, BOILERS, AND PUMPS ON CONCRETE PADS.
- 20. THERMOSTATS TO BE HOUSED IN LOCKABLE COVER OF STURDY CONSTRUCTION TO PROTECT AGAINST DAMAGE. HOUSING TO BE PROVIDED FOR ALL THERMOSTATS.
- I. THE MECHANICAL CONTRACTOR WILL REVIEW THE SPECIFICATION SECTION 230900 TEMPERATURE CON SPECIFIC CONTRACTOR AND EQUIPMENT SUPPLIER RESPONSIBILITIES.
- 2. 1/4" SCALE DUCTWORK SHOP DRAWINGS SHOWING BEAMS, LIGHTS, ETC. SHALL BE SUBMITTED BEFORE. IS FABRICATED. CONTRACTOR SHALL VERIFY ALL BEAM LOCATIONS, ELEVATIONS, AND EXISTING EQUIP SUBMISSION OF THESE SHOP DRAWINGS. NO DUCTWORK FABRICATION SHALL START UNTIL APPROVAL DRAWINGS.
- 23. ALL VAV OR FPB SHALL HAVE 2-WAY CONTROL VALVES UNLESS OTHERWISE NOTED.
- 24. ALL BRANCH PIPING TO VAV AND FPB SHALL BE 3/4" UNLESS OTHERWISE NOTED. 25. ALL HEATING HYDRONIC EQUIPMENT IS DESIGNED FOR AN E.W.T. OF 180°F, A 30°F DELTA T, AND A 30% F
- GLYCOL SOLUTION. 26. ALL SUPPLY, EXHAUST, RETURN OR OUTSIDE AIR DUCTS PENETRATING FIRE RATED INTERIOR ASSEMBL
- RATING GREATER THAN ONE (1) HOUR SHALL HAVE FIRE DAMPERS WITH ACCESS DOORS.
- 27. ALL EXPOSED DUCTWORK AND PIPING SHALL BE PAINTED AFTER INSTALLATION. 28. ALL CONTRACTORS SHALL REVIEW ARCHITECTURAL PLANS SHOWING WALL TYPE AND CONSTRUCTION
- OPENINGS AND LINTEL REQUIREMENTS.
- 29. MECHANICAL CONTRACTOR SHALL "BLANK-OFF" ANY PORTIONS OF THE LOUVER AND SCREEN NOT REC

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M-101-C	FIRST FLOOR PLAN - HVAC - UNIT C				
M-102-A	SECOND FLOOR PLAN - HVAC - UNIT A				
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M-502	HVAC SCHEDULES				
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13	14	PROJECT NO 2203-1
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EQUIRED.		PROFESSIONAL SEAL: PROFESSIONAL SEAL:
		CONSULTANT: J.M.VEROSTIKO, J.M.VEROSTIKO, J.M.VEROSTIKO, Z.M. SALT SPRINGS ROAD
		MASSILLON CITY SCHOOL MASSILLON CITY SCHOOL IASSILLON WEST ELEMENTARY PK-3 250 29TH STREET NW, MASSILLON, OHIO 44646
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		A HVAC LEGENDS, SYMBOLS AND ABBREVIATIONS SCALE: 1/8" = 1'-0"
		SHEET NO

M-000

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