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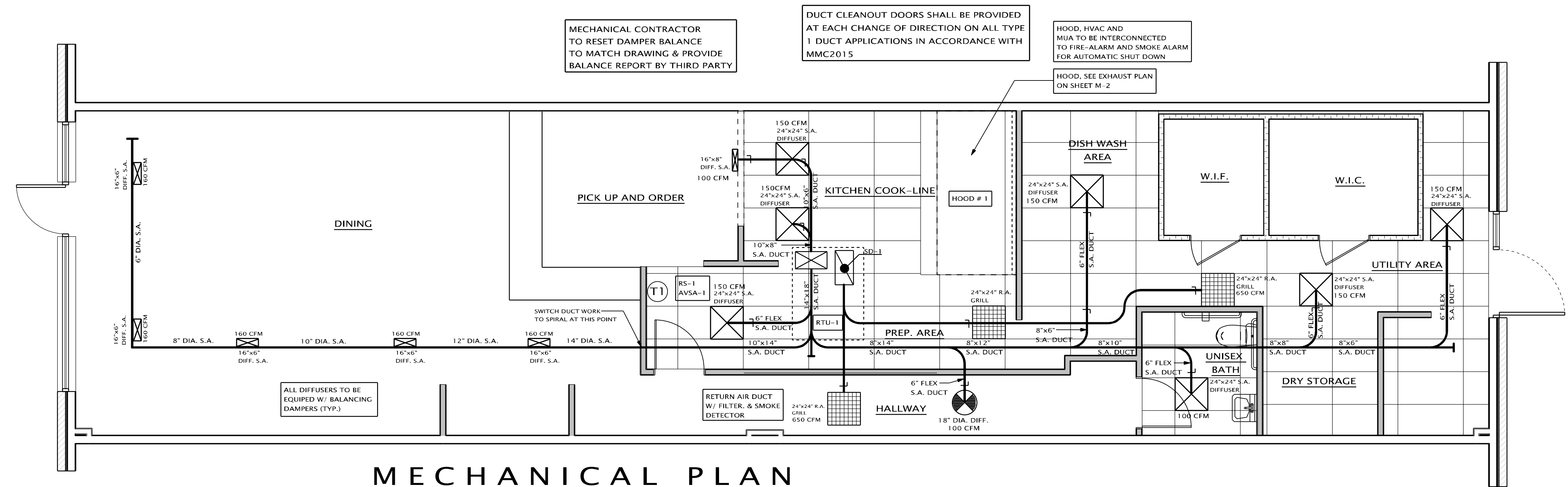
PROJECT

WING SNOB
3415 E. SAGINAW SUITE D
LANSING, MI 48912

BUILDER/CLIENT
WING SNOB

PRELIMINARY ○
CONSTRUCTION ●
PERMIT ●
SHEET TITLE:
MECHANICAL PLAN

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02-28-2022
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DRAWN BY: J.M.P.
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MECHANICAL PLAN
SCALE: 1/4" = 1'-0"

MECHANICAL NOTES

GENERAL REQUIREMENTS
READ AND BE BOUND BY THE ARCHITECTURAL SPECIFICATIONS.
THESE SPECIFICATIONS, ALL OTHER DOCUMENTS ATTACHED HERETO, AKK ADDENDA ISSUED AND THE ACCOMPANYING PLANS ARE INTENDED TO PROVIDE FOR THE COMPLETE FURNISHING AND INSTALLING OF THE ENTIRE MECHANICAL SYSTEM.
THE WORK SHALL BE DONE IN ACCORDANCE WITH BEST PRACTICE SO AS TO CONTRIBUTE TO EFFICIENCY OF OPERATION AND MINIMUM MAINTENANCE AND SHALL BE INSTALLED WITH PROPER ACCESSIBILITY. THE MATERIALS AND EQUIPMENT, INCLUDING ALL NECESSARY ACCESSORIES, SHALL BE PUT INTO PROPER ADJUSTMENTS SO THAT THE COMPONENT PARTS FUNCTION TOGETHER AS A WORKABLE SYSTEM. THE MECHANICAL AND OPERATIONS AS INDICATED EITHER ON THE DRAWINGS OR CONTAINED HEREIN OR AS MAY BE REASONABLY IMPLIED BY EITHER TO ACCOMPLISH COMPLETE MECHANICAL SYSTEMS. MECHANICAL CONTRACTOR SHALL FURNISH LABOR AND MATERIAL PERFORMANCE BOND.
GOVERNING AGENCIES:
THE CONTRACTOR SHALL BE HELD TO BE FULLY INFORMED OF ALL LAWS, ORDINANCES AND CODES, AND SHALL IN THE PERFORMANCE OF THE CONTRACT, COMPLY WITH ALL APPLICABLE FEDERAL STATE AND LOCAL AFORESAID CODES REGULATIONS. ANY DEVIATION FROM THE PLANS OR CODE REQUIREMENTS SHALL BE MADE BY THE CONTRACTOR WITHOUT EXTRA COST TO THE OWNER.
DAMAGE TO OTHER WORK:
REPAIR AND PAY FOR ALL DAMAGE DONE TO THE EXISTING AND NEW WORK BY MECHANICAL TRADES WORKMEN.
CUTTING AND PATCHING
ALL CUTTING AND PATCHING REQUIRED FOR INSTALLATION SHALL BE BY MECHANICAL TRADES AND INCLUDED IN EXPENSE TO AFOREMENTIONED EXAMINATION OF SITE:
CONTRACTOR SHALL EXAMINE EXISTING SITE AND BE THOROUGHLY AWARE OF EXISTING CONDITIONS TO BE WORKED UNDER AND WORK INVOLVED. ADVISE ENGINEER OF ANY CONTINGENCIES BEFORE SUBMITTING SIDS.
CLEANING:
PREMISES SHALL BE CLEANED UPON COMPLETION OF MECHANICAL WORK.
COOPERATION WITH OTHER TRADES:
COORDINATE WORK WITH OTHER TRADES TO AVOID INTERFERENCE AND PRESENT A NEAT APPEARANCE. INTERFERENCE WILL NOT BE CONSIDERED AS EXTRA WORK.
INTERFERENCE:
ALL MINOR DEVIATIONS REQUIRED DUE TO INTERFERENCE WITH THE WORK OF OTHERS SHALL BE MADE BY MECHANICAL CONTRACTOR AT NO ADDITIONAL COST. VERIFY LOCATIONS OF EXISTING PIPING, DUCTS AND BUILDING STRUCTURAL BEAMS IN THE PROJECT AREA FOR CONNECTIONS TO THE SAME AND TO AVOID POSSIBLE INTERFERENCE.
SHOP DRAWINGS:
SUBMIT FOUR (4) REPRODUCIBLE TRANSPARENCIES AND FOUR (4) COPIES OF ALL SHOP DRAWING ON ALL EQUIPMENT FOR APPROVAL.
DRAWING:
THE DESIGN DRAWING SHOW THE GENERAL ARRANGEMENT AND EXTENT OF THE WORK. THE DRAWING ARE DIAGRAMMATIC AND MAY NOT BE DRAWN TO SCALE IN CERTAIN AREAS FOR PURPOSES OF CLARITY AND LEGIBILITY. IT IS INTENDED THAT ALL APPARATUS BE LOCATED SYMMETRICAL WITH ARCHITECTURAL ELEMENTS AND BE INSTALLED TO AVOID OBSTRUCTIONS AND PRESERVE HEADROOM. THE CONTRACTOR SHALL REVIEW THE PLANS OF OTHER TRADES WITH HIS OWN WORK TO AVOID CONFLICTS AND INTERFERENCES. HE SHALL MAKE USE OF ALL SOURCES OF DATA, INCLUDING SHOP DRAWING AND DRAWINGS OF EQUIPMENT FURNISHED BY OTHERS.
ACCESS TO EQUIPMENT:
ALL CONTROL DEVICES, EQUIPMENT, DAMPERS, ETC. SHALL BE SO LOCATED SO AS TO PROVIDE FOR EACH ACCESS OF OPERATION, REPAIRS AND MAINTENANCE. IF CONCEALED, ACCESS PANELS OR EXTENDED OPERATORS SHALL BE PROVIDED.
SUPPORTS:
PROVIDE ALL SUPPORTS, FRAMING, ETC. FOR THE PROPER INSTALLATION OF PIPE, EQUIPMENT, ETC. FABRICATED FORM STRUCTURAL STELL SHAPES AND TO PREVENT SAGGING, VIBRATION AND STRAIN, AND TO PROVIDE FOR EXPANSION AND CONTRACTION.
SYSTEM BALANCING:
THE HEATING VENTILATING AND AIR CONDITIONING SHALL BE TESTED AND BALANCED TO DEMONSTRATE THAT SPECIFIED CAPACITIES OF THE VARIOUS PARTS OF ALL SYSTEMS AS INDICATED IN THE CONTRACT DOCUMENTS CAN BE MET AND ALL CONTROLS ARE FUNCTIONING PROPERLY.

AIR BALANCE SCHEDULE

UNIT	SUPPLY AIR	RETURN AIR	OUTSIDE AIR	RELIEF AIR	EXHAUST AIR	BUILDING PRESSURE
RTU-1	2000	1742	258	-212		+70
MUA-1					+1999	2009
EF-1 HOOD #1					-1999	+70
EF-2 RESTROOM					-70	0
TOTAL						0

NOTES
NOTE 1 : FURNISH FRESH AIR HOOD WITH ENTHALPY ECONOMIZER, BAROMETRIC RELIEF, STANDARD HEAT EXCHANGER, POWERED 110 VOLT CONVENIENCE OUTLET, FILTERS AND 14" ROOF CURB.
T-1: 7-DAY PROGRAMMABLE DIGITAL THERMOSTAT WITH REMOTE TEMPERATURE SENSOR
SD-1: SYSTEM SENSOR PRODUCTS MODEL DH10A/ECDC1 SMOKE DETECTOR WITH SMOKE TUBE MODEL SSK451 AUDIO SIGNAL MODEL PS24LOW VISUAL STROBE LIGHT MODEL PS12/245 LENS

NFPA #96 CLEARANCES FROM COMBUSTIBLES:

SURFACE COMBUSTIBLE	CLEARANCE
LIMITED-COMBUSTIBLE	3" INSULATED
NON-COMBUSTIBLE	3" UN-INSULATED
	0" REQUIRED

3" UN-INSULATED CLEARANCE PROVIDED STANDARD. IF 3" INSULATED CLEARANCE IS REQUIRED PER CHART, THE ARCHITECT/TOWNER SHALL NOTIFY VENT TECH INC. OF REQUIREMENT AND SHALL BE RESPONSIBLE THAT PROPER CLEARANCES ARE MAINTAINED PER CODES.
2015 INTERNATIONAL CODE (MI MECH 2015) FROM COMBUSTIBLES:
COMBUSTIBLE SURFACE REDUCTION TO 7" AS FOLLOWS - 24 GA. MINIMUM UNPAINTED SHEET METAL(0.024) SPACED 1" OFF THE COMBUSTIBLE ASSEMBLY.

LEGEND

EF	EXHAUST FAN	S.A.	SUPPLY AIR
RTU	ROOFTOP UNIT	R.A.	RETURN AIR
SF	SUPPLY FAN	AVSA	AUDIO VISUAL SMOKE ALARM
MUA	MAKE UP AIR UNIT	R.S.	REMOTE TEMP. SENSOR
---	6" FLEX	(T)	THERMOSTAT-NUMBER

- NOTES:**
- DIFFUSERS SHALL HAVE OPPOSED BLADE DAMPERS
 - DIFFUSERS SHALL FIT 24"x24" LAY-IN CLG. GRID.
 - DIFFUSERS SHALL BE LOUVER FACE, WHITE ENAMEL FIN.
 - EXCEPT FOR PERFORATED DIFF. IN KITCHEN AREA
 - R.A. GRILLS TO BE ALUM., EGG CRATE TYPE 1/2"x1/2" SPACING W/ WHITE FIN.
 - ALL DIFFUSERS SHALL BE CONNECTED W/ FLEXIBLE OR RND. DUCT W/ BALANCING DAMPER W/ TWIST LOCK FITTING & SPIN-IN TYPE AIR EXTRACTOR. THEY SHALL BE INSULATED PER CODE, MAX LENGTH 5'-0"

MECHANICAL NOTES

MECHANICAL CONTRACTOR TO FAMILIARIZE HIM OR HERSELF WITH EXISTING MECHANICAL SYSTEM. CONTRACTOR SHALL INSTALL DUCT WORKS AS SHOWN ON MECHANICAL PLAN. VERIFY ALL CHANGES WITH ARCHITECT.
DISCONNECT SWITCH:
ALL HVAC UNITS SHALL BE PROVIDED WITH A PROPERLY SIZED DISCONNECT SWITCH CAPABLE OF INTERRUPTING POWER TO THE ENTIRE UNIT.
TEMPERATURE CONTROLS:
THE CONTRACTOR SHALL FURNISH ALL NECESSARY CONDUIT AND WIRING, RELAYS, ETC. POWER FOR CONTROL SYSTEMS SHALL BE SINGLE PHASE, 60 CYCLE, 115 VOLT.
CONTROL WIRING:
THERMOSTAT AND INTERLOCK WIRING OF HEATING AND AIR CONDITIONING EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR. ALL POWER WIRING BY ELECTRICAL TRADES.

NOTES:

- MUA, RTU, & E.F. INTAKES SHALL BE LOCATED 10'-0" IN ANY DIRECTION FROM COMBUSTIBLE FLUE OUTLETS, PLUMBING VENT OUTLETS, GAS METERS, GAS REGULATORS, EXHAUST FANS, OR OTHER SOURCES OF HAZARDOUS OR NOXIOUS VAPORS OR ODORS.
- CONTRACTOR TO PROVIDE CURBS FOR RTU, MUA & EF AND CURB CUTS
 - PROVIDE BASE AND CAP FLASHING FOR ALL VENTS
 - A SMOKE TEST SHALL BE DONE FOR ALL COMMERCIAL HOODS AND SHALL BE WITNESSED BY THE MECHANICAL INSPECTOR.
 - PRIOR TO FINAL INSPECTION, PROVIDE AIR BALANCE REPORT FROM A CERTIFIED BALANCING CONTRACTOR.
 - ALL HOOD MUST BE FIRE SUPPRESSED
 - A LIGHT TEST WILL BE REQUIRED ON ALL GREESE DUCT WORK TO BE WITNESSED BY THE INSPECTOR.

NOTE:
ALL DUCTWORK SHALL BE SEALED AIR TIGHT WITH, e.g., DURODYNE HIGH PRESSURE DUCT. SEALANT AND CONCEALED DUCT WORK INSULATED WITH AN R-6 IREGLASS WITH VAPOR BARRIER.
ALL WORK & MATERIAL SHALL BE IN ACCORDANCE WITH THE LATEST ACCEPTABLE DESIGN & PRACTICES AND SHALL CONFORM WITH LOCAL GOVERNING CODES.

MECHANICAL EQUIPMENT SPECS

EXISTING	UNIT MODEL #	TONAGE	S.P.	CFM	BTU'S	H.P.	VOLT	PHASE	MCA	WEIGHT (LBS.)
RTU-1	EXISTING 5 TON UNIT	5 TON	0.1	2000	150,000	1.5	208	3	52.3	EXST.

VENTILATION AIR BALANCE SCHEDULE - CFM

UNIT	AREA	RP	PZ	RA	AZ	VBZ	EZ	VOZ	F/A	TOTAL	ACTUAL
RTU-2		F/A PER PERSON	# OF PEOPLE	F/A PER SQ.FT	SQUARE FOOTAGE	F/A REQUIRED	DISTRIBUTION EFFECTIVENESS	TOTAL F/A	PERCENTAGE	AIR REQUIRED	AIR DELIVERED
5 TON	KITCHEN, BATH, PREP PACK, UTILITY, DRY ST. WASHING AREA, DINING & HALLWAY	7.5	14	0.18	850	258	0.8	322.5	16 %	2000	2000
TOTAL			105	153		258		322.5	16 %		

258 CFM + 70 CFM (RESTROOM FAN) = 328 CFM.
SET FRESH AIR DAMPER TO 328 CFM FRESH AIR DAMPER 16 % OF TOTAL CFM FROM ROOF TOP UNIT

VBZ = TOTAL FRESH AIR REQUIRED
RP = FRESH AIR PER PERSON REQUIRED
PZ = NUMBER OF PEOPLE
AZ = SQUARE FOOTAGE
RA = FRESH AIR PER SQUARE FOOT
EZ = TOTAL FRESH AIR REQUIRED
VOZ = VBZ/EZ
F/A = SEE EQUATION TO LEFT
EZ = DISTRIBUTION EFFECTIVENESS