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REVISIONS	
MARK	DATE

SHEET NAME
HVAC SCHEDULES & NOTES
PROJECT NO. 2018-16
DATE SEPTEMBER 28, 2018
SHEET NO.

M1.0

FAN SCHEDULE

MARK FAN	AIR FLOW (CFM)	STATIC PRESSURE (in of H2O)	DRIVE TYPE	FAN TYPE	FAN SERVICE	INTERLOCK WITH	MAXIMUM RPM	MAXIMUM SONES	MOTOR		ELECTRICAL DATA			NOTES
									WATTS	HORSE POWER	VOLTS	Hz	PHASE	
EF-1	70	0.25	DIRECT	CEILING	RESTROOMS	LIGHTS	1,200	3.0	89	N/A	120	60	1	1, 2, 3
EF-2	70	0.25	DIRECT	CEILING	RESTROOMS	LIGHTS	1,200	3.0	89	N/A	120	60	1	1, 2, 3

NOTES	
1	COORDINATE ALL ELECTRICAL REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR.
2	PROVIDE FAN WITH SOLID STATE SPEED CONTROLLER. CONTROLLER SHALL BE LOCATED ABOVE THE CEILING ADJACENT TO THE FAN.
3	EXTEND RIGID SNAP LOCK EXHAUST DUCT TO EXISTING DISCHARGE WALL CAP OR SOFFIT GRILLE.

AIR DEVICE SCHEDULE

MARK	CD CFM	BASIS OF DESIGN: TITUS TDC-AA										NOTES
		0-95	96-175	175-240	241-280	281-380	381-470	471-650	471-535	536-740	741-925	
CFM	0-95	96-175	175-240	241-280	281-380	381-470	471-650	471-535	536-740	741-925		1 2 3
GRILLE FACE SIZE	6x6	9x9	9x9	12x12	12x12	12x12	15x15	18x18	18x18	18x18		4 5
DUCT CONNECTION	6Ø	7Ø	8Ø	9Ø	10Ø	12Ø	14Ø	12Ø	14Ø	16Ø		

MARK	RG CFM	BASIS OF DESIGN: TITUS 350FL										NOTES
		0-110	111-220	221-350	351-525	526-730	731-970	971-1240	1241-1500	1501-1850	1851-2250	
CFM	0-110	111-220	221-350	351-525	526-730	731-970	971-1240	1241-1500	1501-1850	1851-2250		1 2 4
GRILLE FACE SIZE	6x6	8x8	10x10	12x12	14x14	16x16	18x18	20x20	22x22	24x24		5
DUCT CONNECTION	6x6	8x8	10x10	12x12	14x14	16x16	18x18	20x20	22x22	24x24		

MARK	SW CFM	BASIS OF DESIGN: TITUS 300FS										NOTES
		0-150	151-220	221-300	301-340	341-400	401-440	441-520	521-600			
CFM	0-150	151-220	221-300	301-340	341-400	401-440	441-520	521-600				2 4 5
GRILLE FACE SIZE	8x6	10x6	12x6	14x6	12x8	18x6	22x6	12x12				
DUCT CONNECTION	8x6	10x6	12x6	14x6	12x8	18x6	22x6	12x12				

- PROVIDE AIR DEVICE WITH THE FOLLOWING OPTIONS:**
- REFER TO ARCHITECTURAL PLANS FOR CEILING TYPES. PROVIDE AIR DEVICE WITH 24"x24" LAY-IN PANEL FOR GRILLES IN LAY-IN CEILING.
 - PROVIDE AIR DEVICE WITH INTEGRAL BALANCING DAMPER.
 - PROVIDE AS 4-WAY THROW UNLESS INDICATED OTHERWISE.
 - AIR DEVICE SHALL BE PAINTED OFF WHITE.
 - TRANSITION DUCT FROM SIZE INDICATED TO AIR DEVICE CONNECTION SIZE.

2012 IMC OUTDOOR AIR VENTILATION REQUIREMENT CALCULATIONS

APPLICATION	OCCUPANCY (PERSONS AND/OR AREA)	X	CFM/PERSON REQUIREMENT	X	CFM/SF REQUIREMENT	=	TOTAL OUTSIDE AIR REQUIRED
OFFICE	20 PEOPLE 2,138 SF	X	5.0	X	0.06	=	228

SPLIT SYSTEM HEAT PUMP UNIT SCHEDULE

MARK AHU/HPU	AIR DATA				COOLING CAPACITY				ELECTRIC REHEAT		FILTER		ELECTRICAL DATA								NOTES							
	TOTAL (CFM)	OUTSIDE (CFM)	EXTERNAL STATIC PRESSURE (in of H2O)	MOTOR (HP)	EDB (F)	EWB (F)	AMBIENT (F)	SENSIBLE BTUH	TOTAL BTUH	CONTROL STAGES	STRIP HEAT (KW)	TYPE	MIN MERV	COMPRESSOR (RLA)	OUTDOOR FAN (FLA)	MINIMUM HSPF/COP	MINIMUM SEER	OUTDOOR UNIT				INDOOR UNIT			OUTDOOR UNIT		INDOOR UNIT	
																		VOLTS	Hz	PHASE		VOLTS	Hz	PHASE	MCA (AMPS)	MOCP (AMPS)	MCA (AMPS)	MOCP (AMPS)
1	2,000	200	0.5	3.4	80	67	95	45,470	54,430	1	15.0	1"	8	24.4	1.52	8.2/3.7	14.0	208	60	1	208	60	1	32	50	47.7	50	1, 2, 3, 4

NOTES	
1	COORDINATE ALL ELECTRICAL REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR.
2	PROVIDE AIR HANDLING UNIT WITH 1" THICK INSULATION AND FACTORY MOUNTED SINGLE POINT POWER DISCONNECT TO SERVE BOTH THE FAN MOTOR AND STRIP HEAT.
3	PROVIDE AND INSTALL AIR HANDLING UNIT WITH RETURN DUCT MOUNTED SMOKE DETECTOR.

BASIS OF DESIGN: CARRIER 25VHCE/FV4C SERIES. PROVIDE WITH WIFI ENABLED THERMOSTAT.

HVAC GENERAL NOTES:

- INSTALL ALL WORK IN COMPLIANCE WITH THE LOCAL AUTHORITY HAVING JURISDICTION, THE 2012 INTERNATIONAL MECHANICAL CODE, AND THE 2015 INTERNATIONAL ENERGY CONSERVATION CODE.
- COORDINATE ALL ELECTRICAL REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR PRIOR TO BEGINNING ANY WORK.
- INSTALL OUTDOOR UNITS ON 4" THICK CONCRETE PADS EXTENDING 6" IN ALL DIRECTIONS BEYOND FOOTPRINT OF UNIT. PLASTIC OR FIBERGLASS EQUIPMENT PADS SHALL NOT BE USED. SECURE UNITS TO CONCRETE PAD WITH A MINIMUM OF TWO "REDHEAD" TYPE ANCHORS.
- DUCT CONSTRUCTION SHALL BE PER THE LATEST REQUIREMENTS OF NFPA 90A AND 90B, SMACNA AND ASHRAE AND SHALL MEET OR EXCEED THEIR REQUIREMENTS FOR SUPPORT AND REINFORCEMENT.
- REFRIGERANT SUCTION LINES SHALL BE INSULATED WITH FLEXIBLE ELASTOMERIC INSULATION WITH A MINIMUM THICKNESS OF 0.5". ALL INSULATION INSTALLED AT BUILDING EXTERIOR SHALL BE PAINTED WITH TWO COATS OF WHITE UV PROTECTIVE PAINT.
- BRANCH SUPPLY AND RETURN DUCT RUNOUTS SHALL BE GALVANIZED SNAP-LOCK WITH ALL JOINTS AND SEAMS SEALED WITH MASTIC. TRAVERSE JOINTS SHALL BE CONNECTED WITH SHEET METAL SCREWS MINIMUM 6" ON CENTER. GALVANIZED DUCT SHALL BE INSULATED WITH 2" THICK, R-8 WRAP INSULATION. INSULATION TO BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
- R-8 FLEXIBLE DUCT TO SUPPLY GRILLES SHALL NOT EXCEED 8'-0". ROUTE EXTERNALLY INSULATED RIGID SNAP LOCK DUCT TO WITHIN 8'-0" OF GRILLE.
- EQUIPMENT PROVIDED AND INSTALLED ON THIS PROJECT SHALL MEET OR EXCEED THE MINIMUM EFFICIENCY REQUIREMENTS INDICATED IN THE SCHEDULE.
- DUCT CONSTRUCTION SHALL BE PER 200 GALVANIZED SHEET METAL DUCT SEALING SHALL BE CLASS "A", ALL JOINTS, SEAMS, AND PENETRATIONS SHALL BE BRUSHED WITH 2 COATS OF WATER BASED MASTIC. THE DUCT SEAL SHALL MEET OR EXCEED PRESSURE CLASS 2".
- ALL SHEET METAL DUCT SHALL BE EXTERNALLY INSULATED WITH 2" THICK, MINIMUM R-8.0 DUCT WRAP WITH AN FSK JACKET. JOINTS AND SEAMS SHALL OVERLAP 2" AND SHALL BE STAPLED 6" ON CENTER. ALL INSULATION JACKET JOINTS AND SEAMS SHALL BE SEALED WITH PRESSURE SENSITIVE TAPE. INSULATION APPLIED TO DUCT DIMENSIONS GREATER THAN 24" SHALL BE SECURED ON THE BOTTOM OF THE DUCT WITH MECHANICAL FASTENERS AT 18" ON CENTER.
- THE MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR AND OTHER TRADES ALL REQUIRED OPENINGS IN WALLS, FOUNDATIONS, FLOORS, AND ROOFS. CONTRACTOR SHALL INSTALL LOUVERS PER MANUFACTURERS RECOMMENDATIONS AND DETAILS INDICATED ON THE ARCHITECTURAL PLANS.
- ALL OUTSIDE AIR INLETS SHALL BE LOCATED A MINIMUM OF 10 FEET FROM ANY EXHAUST AIR OUTLET OR PLUMBING VENT STACK. COORDINATE WITH THE PLUMBING DRAWINGS AND WITH THE PLUMBING AND GENERAL CONTRACTORS IN THE FIELD.
- THE MECHANICAL CONTRACTOR SHALL VERIFY ALL MECHANICAL EQUIPMENT LOCATIONS AND BE RESPONSIBLE FOR ALL RELATED CLEARANCES IN THE FIELD. PROVIDE CLEARANCE IN FRONT OF ALL ELECTRICAL PANELS PER NATIONAL ELECTRIC CODE REQUIREMENTS. DUCT SHALL NOT ROUTE OVER ELECTRICAL PANELS.
- DUCT SHALL BE FIELD MEASURED PRIOR TO INSTALLATION TO ENSURE PROPER FIT WITHIN STRUCTURAL MEMBERS. DUCT SHALL BE OFFSET, OR TRANSITIONED AS NECESSARY TO ACCOMMODATE STRUCTURAL MEMBERS. DUCT SHALL NOT BE PURCHASED PREFABRICATED FROM THESE DRAWINGS. ANY DUCT PURCHASED PREFABRICATED FROM A DUCT VENDOR SHALL BE DONE FROM CONTRACTOR PROVIDED, FIELD MEASURED SHOP DRAWINGS THAT HAVE BEEN SUBMITTED TO THE ENGINEER FOR PRIOR APPROVAL. NO EXCEPTIONS.
- OFFSET AND TRANSITION DUCT AS NECESSARY TO AVOID STRUCTURAL MEMBERS OR EQUIPMENT CONNECTION SIZES. PROVIDE FLEXIBLE DUCT CONNECTORS ON ALL DUCT CONNECTION TO MOTORIZED EQUIPMENT.
- PROVIDE EACH HVAC SYSTEM WITH A 7 DAY PROGRAMMABLE THERMOSTAT WITH BATTERY BACKUP AND UNOCCUPIED HOURS SET BACK CAPABILITIES. THERMOSTAT SHALL BE WIFI ENABLED.
- PROVIDE ALL AIR SYSTEMS OVER 2,000 CFM WITH A RETURN AIR DUCT SMOKE DETECTOR WITH A REMOTE ANNUNCIATOR AND RESET SWITCH. COORDINATE FINAL LOCATION OF COMBINATION ANNUNCIATOR/RESET WITH OWNER
- ALL EXTERIOR LOUVERS SHALL BE PAINTED WITH A BAKED ENAMEL FINISH, COLOR TO BE SELECTED BY THE ARCHITECT.
- EXTERIOR WALL LOUVERS SHALL BE EQUAL IN ALL RESPECTS TO RUSKIN EME3625D. COLOR TO BE SELECTED BY THE ARCHITECT.

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