

ABBREVIATIONS

A/C	ABOVE CEILING	ID	INSIDE DIMENSION
AD	ACCESS DOOR	IN	INCHES
ADJ	ADJUSTABLE		
AFI	ABOVE FINISHED FLOOR		
AUTO	AUTOMATIC	KW	KILOWATTS
AC	AIR CONDITIONING		
AHU	AIR HANDLING UNIT		
		LAT	LEAVING AIR TEMPERATURE
BAL	BALANCING	LB	POUNDS
BDD	BACKDRAFT DAMPER	LG	LINEAR GRILLE
B/F	BELOW FLOOR	LRO	LINEAR RETURN GRILLE
B/G	BELOW GRADE	LWR	LOOP WATER RETURN
B'FLY	BUTTERFLY	LWS	LOOP WATER SUPPLY
BHP	BRAKE HORSEPOWER		
BCO	BASE CLEANOUT	MIN	MINIMUM
		MAX	MAXIMUM
CFM	CUBIC FEET PER MINUTE	MD	MANUAL DAMPER
CBOR	CURVED BLADE CEILING REGISTER	MOD	MOTOR OPERATED DAMPER
CD	CEILING DIFFUSER	MFR	MANUFACTURER
CU	CONDENSING UNIT		
CW	COLD WATER (DOMESTIC)	NC	NORMALLY CLOSED
CHWS	CHILLED WATER SUPPLY	NG	NATURAL GAS
CHWR	CHILLED WATER RETURN	NF	NON-FREEZE
CNS	CONDENSER WATER SUPPLY	NFIH	NON-FREEZE WALL HYDRANT
CNR	CONDENSER WATER RETURN	NO	NORMALLY OPEN
CON	CONCENTRIC	NOM	NOMINAL
CLEANOUT	CLEANOUT		
COND	CONDENSATE	OA	OUTSIDE AIR
		OD	OUTSIDE DIMENSION
db	DRY BULB	OBD	OPPOSED BLADE DAMPER
DN	DOWN		
DR	DRAIN	PIU	POWERED INDUCTION UNIT
ds	DITTO	PSI	POUNDS PER SQUARE INCH
dB	DECIBELS		
DWG	DRAWING		
		RA	RETURN AIR
EA	EACH	RAD	RADIUS
EAT	ENTERING AIR TEMPERATURE	RAG	RETURN AIR GRILLE
ECC	ECCENTRIC	RED	REDUCER
EF	EXHAUST FAN	RL	REFRIGERANT LIQUID
EOD	EMERGENCY OVERFLOW DRAIN	RS	REFRIGERANT SUCTION
ER	EXHAUST REGISTER	RTU	ROOFTOP UNIT
ESP	EXTERNAL STATIC PRESSURE	RAR	RETURN AIR REGISTER
EWT	ENTERING WATER TEMPERATURE		
EXH	EXHAUST	SP	STATIC PRESSURE
EFF	EFFICIENCY	SPS	STATIC PRESSURE SENSOR
		SA	SUPPLY AIR
F	FAHRENHEIT	SAN	SANITARY
FCO	FLOOR CLEANOUT	SD	SMOKE DAMPER
FCU	FAN COIL UNIT	SEN	SENSIBLE
FSD	FIRE SMOKE DAMPER	SQ	SQUARE
FD	FIRE DAMPER OR FLOOR DRAIN	SR	SUPPLY REGISTER
FL DR	FLOOR DRAIN (only)	ST	STORM
FLR	FLOOR	SS	SPLIT SYSTEM
FOB	FLAT ON BOTTOM		
FOR	FUEL OIL RETURN	TEMP	TEMPERATURE
FOS	FUEL OIL SUPPLY	TC	TRANSFER GRILLE
FOT	FLAT ON TOP	TYP	TYPICAL
FFM	FEET PER MINUTE		
FPS	FEET PER SECOND	UON	UNLESS OTHERWISE NOTED
FT	FEET		
		V	VENT
G	GATE	VA	VALVE
GA	GAUGE	VIR	VENT THRU ROOF
GPM	GALLONS PER MINUTE	VAV	VARIABLE AIR VOLUME
GL	GLOBE		
GCO	GRADE CLEANOUT	wb	WET BULB
		WC	WATER COLUMN
HD	HUB DRAIN	WHA	WATER HAMMER ARRESTOR
HP	HORSEPOWER	WT	WEIGHT
HTG	HEATING	W	WASTE
HW	HOT WATER (DOMESTIC)		
HWR	HOT WATER RETURN		
HWRR	HOT WATER REVERSE RETURN		
HWS	HOT WATER SUPPLY		
HZ	HERTZ		

GENERAL NOTES

- THESE DRAWINGS ARE SCHEMATIC IN NATURE AND ARE NOT INTENDED TO SHOW ALL POSSIBLE CONDITIONS. IT IS INTENDED THAT A COMPLETE MECHANICAL SYSTEM BE PROVIDED WITH ALL NECESSARY EQUIPMENT, ACCESSORIES, OPTIONS AND CONTROLS, COMPLETELY COORDINATED WITH ALL DISCIPLINES. ALL ITEMS AND LABOR REQUIRED FOR A COMPLETE MECHANICAL SYSTEM IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS AND THE OWNER CONTRACT DOCUMENTS SHALL BE FURNISHED WITHOUT INCURRING ADDITIONS TO THE CONTRACT.
- REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT PARTITION LAYOUTS, REFLECTED CEILING PLANS, DIMENSIONS, ETC.
- THERMOSTATS SHALL BE LOCATED IN EACH ZONE AS SHOWN. THE EXACT LOCATION ON THE WALL INDICATED SHALL BE AS DIRECTED BY THE ARCHITECT.
- PROVIDE ALL CONDENSATE DRAINS WITH 2" TRAP.
- REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED AIR DISTRIBUTION DEVICES. IF ANY ITEMS ARE NOT SHOWN ON THE REFLECTED CEILING PLANS, PREPARE A DRAWING OF THE PROPOSED LOCATION AND PRESENT IT TO THE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION.
- ALL ROUND AND FLEXIBLE DUCTWORK EXTENDING TO DIFFUSERS SHALL BE SIZED FULL SIZE OF DISTRIBUTION DEVICE INLET, AND TAPS TO THE EXISTING LOW-PRESSURE DUCTWORK SHALL BE MADE WITH SPIN-IN FITTINGS HAVING INTEGRAL SCOOPS AND VOLUME DAMPERS. ALL RECTANGULAR DUCTWORK TAPS SHALL BE MADE WITH SPLITTERS OR EXTRACTORS. ALL DUCTWORK SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH SMACNA DUCT STANDARDS.
- FLEXIBLE DUCTS SHALL BE INSTALLED FREE OF SAGS AND KINKS; SUPPORTED AT NOT MORE THAN 48" O.C.
- ALL CONTROL WIRING AND TUBING INSTALLED ABOVE THE CEILING SHALL BE LOCATED AS HIGH ABOVE THE CEILING AS POSSIBLE AND SHALL FOLLOW THE DESIGNATED GENERAL ROUTING OF THE DUCTWORK. DO NOT HANG WIRING OR TUBING FROM DUCTWORK; RATHER, SUSPEND FROM THE STRUCTURE.
- ALL DUCTWORK FOR THE OFFICE SHALL BE RUN ABOVE THE OFFICE CAP.
- PROVIDE START-UP BY A CERTIFIED TECHICIAN FOR THE PROVIDED ROOF TOP UNITS.
- ONE (1) SET OF NEW FILTERS SHALL BE INSTALLED IN EACH UNIT PRIOR TO TURN-OVER/GRAND OPENING.
- DUCT DETECTORS SHALL BE INSTALLED BY HVAC CONTRACTORS AND FURNISHED BY THE FIRE ALARM CONTRACTOR.

LEGEND	
	CEILING DIFFUSER
	CEILING RETURN AIR GRILLE or EXHAUST GRILLE
	SIDE-WALL or DUCT MOUNTED REGISTER
	SLOT DIFFUSER
	MANUAL VOLUME DAMPER
	FIRE DAMPER, FIRE SMOKE DAMPER
	THERMOSTAT
	DEW POINT SENSOR
	CO MONITOR
	CO2 MONITOR
	MOTOR OPERATED DAMPER
	EXISTING WORK
	NEW WORK
	WORK TO BE REMOVED
	SMOKE DETECTOR

FAN SCHEDULE

I.D. TAG	CAPACITY (CFM)	S.P. (IN. WG)	MOTOR H.P.	DRIVE	VOLTS/ PHASE	MAXIMUM FAN RPM	MAXIMUM NOISE	TYPE OF FAN	BASIS OF DESIGN	REMARKS
EF-1	880	0.6	1/4	BELT	115/1	1,574	10.8 SONES	CENTRIFUGAL ROOF	GREENHECK GB-091-4	②③④
EF-2	200	0.6	1/4	DIRECT	115/1	1,466	7.4 SONES	CENTRIFUGAL ROOF	GREENHECK G-097-VG	②③④
EF-3	500	0.6	1/6	DIRECT	115/1	1,675	8.4 SONES	CENTRIFUGAL ROOF	GREENHECK G-090-VG	①②③
EF-4	2,000	0.5	1/2	BELT	115/1	1,285	11.9 SONES	CENTRIFUGAL ROOF	GREENHECK GB-141-5	②③
EF-5&6	2,000	0.5	1/2	BELT	115/1	1,285	11.9 SONES	CENTRIFUGAL ROOF	GREENHECK GB-141-5	①②③
EF-A	97	0.3	F	DIRECT	115/1	950	2.0 SONES	CEILING EXHAUST	GREENHECK SP-B110	③⑤
CF-2	137,395	--	1.0	DIRECT	460/3	77	---	CEILING MOUNTED	PATTERSON HIGH-5 12" HVLS FAN	⑨⑩⑪⑭
CF-1	225,000	--	2.0	DIRECT	460/3	13-90	---	CEILING MOUNTED	RITE-HITE HVLS 4-BLADE 16' DIA.	⑨⑩⑪⑭
SVF-A,B,C	150	0.7	F	DIRECT	115/1	2,750	---	INLINE EXHAUST	FANTECH FR-150	⑥⑦⑧
VF-A	3,700	----	1/8	DIRECT	115/1	1,300	22.0 SONES	WALL MOUNTED CIRCULATOR	BY HIGH SPEED DOOR VENDOR	⑦⑧⑨
CF-A	21,000	--	F	DIRECT	115/1	300	---	CEILING MOUNTED	DAYTON SNP20	⑧⑨⑩

- CONTRACTOR SHALL PROVIDE FAN WITH A WALL MOUNTED THERMOSTAT COORDINATE INSTALATION WITH ELECTRICAL CONTRACTOR.
- PROVIDE FAN WITH A STARTER, MATCHED MOTOR AND BACKDRAFT DAMPER.
- PROVIDE FAN WITH A ROOF CURB WITH BURGLER BARS AND A BIRDSCREEN.
- CONTRACTOR SHALL PROVIDE WITH A TIMECLOCK. COORDINATE INSTALATION WITH ELECTRICAL CONTRACTOR.
- INTERLOCK FAN WITH LIGHTS.
- PROVIDE ADAPTOR PLATE AT FAN CONNECTION.
- FAN TO RUN CONTINUOUSLY.
- PROVIDE 120V SOLID STATE SPEED CONTROLLER. INTERLOCK WITH FACTORY SWITCH. PROVIDE WITH ALL REQUIRED ACCESSORIES.
- COORDINATE FINAL COLOR AND MOUNTING LOCATION WITH ARCHITECT AND OWNERS REP. PROVIDE WITH ALL REQUIRED ACCESSORIES.
- PROVIDE FAN WITH WALL MOUNTED SWITCH. CONTROLS INSTALLED BY ELECTRICIAN. COODINATE FINAL LOCATION WITH ARCHITECT AND OWNERS REP.
- PROVIDE FAN WITH MANUFACTURER PROVIDED CONTROL PANEL, VARIABLE-FREQUENCY DRIVE & DISCONNECT.
- PROVIDE FAN WITH MOUNTING ARMS AND ALL NECESSARY ACCESSORIES FOR PROPER MOUNTING TO VENTILATE DOOR. COORDINATE FINAL MOUNTING HEIGHT AND LOCATION WITH ARCHITECT AND OWNERS REP.
- FAN TO BE PROVIDED BY HIGH SPEED DOOR VENDOR.
- TIE TO FIRE ALARM. FAN MUST SHUTDOWN WITH ACTIVATION OF FIRE ALARM.
- PROVIDE RTU WITH ROOF SCREEN ATTACHED TO CURBS. SCREENS SHALL BE LOCATED ON THE SIDE INDICATED ON THE FLOOR PLANS. PROVIDE DOORS ON THE SCREEN AT ALL ACCESS POINTS FOR RTUS. BASIS OF DESIGN IS MGM PRODUCTS., CONTACT BRUCE FOSTER, 800 341 3536 Bruce@mngmproducts.com

PACKAGED ROOF TOP UNIT SCHEDULE

I.D. TAG	MINIMUM TOTAL CAP. (MBH)	MINIMUM SENSIBLE CAP. (MBH)	AMBIENT TEMP (°F)	COIL EAT		AIRFLOW (CFM)	EXT. S.P. (IN. W.C.) ①	DESIGN H.P.	MAX OUTSIDE AIR (CFM)	MIN OUTSIDE AIR (CFM)	HEATING ③			VOLTS/ PHASE	BASIS OF DESIGN	EER	APPROX. UNIT WEIGHT (LBS)	REMARKS
				°F db	°F wb						TYPE	I-CAPACITY (MBH) ④	O-CAPACITY (MBH) ④					
RTU-1	36.14	24.81	95.0	75.7	64.5	1,130	0.9	3/4	100	100	GAS	120	96	460/3	TRANE YHC036	15 SEER	770	②⑤⑥⑧⑨⑫⑬⑭
RTU-2	208.95	158.78	95.0	76.5	65.2	7,000	0.5	5.0	1,165 ⑪	465 ⑪	GAS	350	280	460/3	TRANE YHD210	11.8	2,750	②⑤⑥⑦⑧⑨⑫⑬⑭
RTU-3	208.95	158.78	95.0	76.5	65.2	7,000	0.5	5.0	1,165 ⑪	465 ⑪	GAS	350	280	460/3	TRANE YHD210	11.8	2,750	②⑤⑥⑦⑧⑨⑫⑬⑭
RTU-4	208.95	158.78	95.0	76.5	65.2	7,000	0.5	5.0	1,165 ⑪	465 ⑪	GAS	350	280	460/3	TRANE YHD210	11.8	2,750	②⑤⑥⑦⑧⑨⑫⑬⑭
RTU-5	208.95	158.78	95.0	76.5	65.2	7,000	0.5	5.0	1,165 ⑪	465 ⑪	GAS	350	280	460/3	TRANE YHD210	11.8	2,750	②⑤⑥⑦⑧⑨⑫⑬⑭

- THIS IS THE STATIC PRESSURE EXTERNAL TO THE UNIT. IT DOES NOT INCLUDE COIL, CASING, FILTER OR HEATER LOSSES.
- PROVIDE TWO STAGE HEATING.
- INPUT CAPACITY IN MBH FOR GAS. HEATING OUTPUT CAPACITY IN MBH.
- THE VALUE ON THE LEFT IS THE REQUIRED INPUT HEATING CAPACITY. THE VALUE ON THE RIGHT IS THE AVAILABLE HEATING OUTPUT CAPACITY PRODUCED BY THE BASIS OF DESIGN ACCORDING TO INPUT CAPACITIES SCHEDULED.
- PROVIDE UNIT COMPLETE FACTORY DISCONNECT W/ LOCKOUT PROTECTION CAPABILITY.
- SUPPLY FAN SHALL BE CAPABLE OF SUPPLYING AIRFLOW AT CFM & E.S.P. (IN. W.C.) AS INDICATED ON SCHEDULED ABOVE.
- ADDRESSABLE SMOKE DETECTOR IN UNIT SUPPLY AND RETURN, PROVIDED BY FIRE ALARM CONTRACTOR. INSTALLATION SHALL BE IN ACCORDANCE WITH NFPA 72E. COORD. W/ DIVISION 16.
- POWERED WEATHERPROOF GFI DEDICATED CONVENIENCE OUTLET TO BE PROVIDED, COORDINATE WITH ELECTRICAL.
- PROVIDE UNIT WITH A DIFFERENTIAL ENTHALPHY ECONOMIZER AND POWERED EXHAUST. PROVIDE WITH ECONOMIZER FAULT DETECTION DEVICE.
- PROVIDE UNIT WITH A DIFFERENTIAL ENTHALPHY ECONOMIZER AND BAROMETRIC RELIEF DAMPERS. PROVIDE WITH ECONOMIZER FAULT DETECTION DEVICE.
- THESE ARE THE MINIMUM AND MAXIMUM REQUIRED OUTSIDE AIR VALUES, REFER TO THE DEMAND CONTROL VENTILATION NOTES FOR CONTROLS.
- PROVIDE WITH HINGED ACCESS PANELS.
- PROVIDE WITH SLOPED CURB, 1/4" PER FOOT, COORDINATE WITH ARCH AND STRUCT PLANS.
- PROVIDE WITH BURGLAR BARS IN SUPPLY AND RETURN, ENSURE INSTALLATION DOES NOT IMPACT ECONOMIZER OPERATION.

AIR CURTAIN SCHEDULE

I.D. TAG	MAX CFM	MIN CFM	NUMBER OF MOTORS	MOTOR H.P. (EACH)	VOLTS/ PHASE	HEATING SECTION		BASIS OF DESIGN	REMARKS
						TYPE	CAPACITY		
AC-1	6,766	4,551	2	3/4	480/3	NONE	20 KW	POWERED AIRE ETD-2-84E	①②③④⑤⑥⑦⑧⑨
AC-2	6,766	4,551	2	3/4	480/3	NONE	20 KW	POWERED AIRE ETD-2-84E	①②③④⑤⑥⑦⑧⑨

- PROVIDE WITH UNIT MOUNTED DISCONNECT SWITCH.
- COORDINATE FINAL MOUNTING HEIGHT WITH ARCHITECT, OWNER REP, AND MANUFACTURERS RECOMMENDATION.
- PROVIDE REQUIRED CONTROLS NECESSARY TO CONNECT TO BUILDING EMS.
- PROVIDE WITH NECESSARY CONTROLS FOR OPERATION WITH BI-PARTING OR OVERHEAD DOORS.
- PROVIDE WITH MAGNETIC DOOR SWITCHES BY MANUFACTURERS.
- PROVIDE WITH 1/2" RE-CLEANABLE FILTER BY MANUFACTURER.
- PROVIDE WITH UNIT MOUNTED HIGH/LOW SWITCH.
- PROVIDE WITH REMOTE MOUNTED HIGH/OFF/LOW SWITCH.
- INTERLOCK WITH EMS.

SPLIT SYSTEM SCHEDULE

SPLIT SYSTEM SCHEDULE																				
			FAN COIL UNIT DATA										CONDENSING UNIT DATA							
I.D. TAG	MINIMUM TOTAL CAP. (BTUH)	MINIMUM SENSIBLE CAP. (BTUH)	AIRFLOW (CFM)	OUTSIDE AIR (CFM)	EXT. S.P. (IN. W.C.) ①	MAX H.P.	COIL EAT		VOLTS/ PHASE	DRIVE ②	MAX FAN RPM	TYPE OF UNIT	HEATING SECTION		AMBIENT TEMP. (°F)	VOLTS/ PHASE	STAGES	MIN. SEER	BASIS OF DESIGN	REMARKS
							°F db	°F wb					TYPE	CAPACITY ③						
AHU-1/CU-1	18,000	---	425	--	--	--	80	67	208/1	D	1075	WALL CASSETTE	NONE	---	95	208/1	VFD	15.3	MITSUBISHI PKA-A18HA4/PUY-A18NHA4-BS	④⑤⑥
AHU-2/CU-2	24,000	---	775	--	--	--	80	67	208/1	D	1075	WALL CASSETTE	NONE	---	95	208/1	VFD	17.0	MITSUBISHI PKA-A24KA4/PUY-A24NHA4-BS	④⑤⑥

- THIS IS THE SP EXTERNAL TO THE ENTIRE FAN COIL UNIT ASSEMBLY (WET COIL, CASING, CLEAN FILTERS, AND FURNACE LOSSES ARE NOT INCLUDED IN THIS EXT. SP.)
- B = BELT DRIVE, D = DIRECT
- HP STANDS FOR HEAT PUMP AND CAPACITY IS GIVEN IN MBH, ELEC STANDS FOR ELECTRIC HEAT AND VALUES ARE GIVEN IN KW.
- PROVIDE WITH REMOTE WALL MOUNTED FULLY PROGRAMMABLE THERMOSTAT LOCATED AS SHOWN ON PLANS.
- PROVIDE WITH CONDENSATE PUMP, PER MANUFACTURERS RECOMMENDATIONS.
- PROVIDE WITH LOW AMBIENT CONTROLS.

GAS FIRED UNIT HEATER SCHEDULE

I.D. TAG	DESCRIPTION	BTUH INPUT	BTUH OUTPUT	MIN CFM	FAN HP	VOLTS/ PHASE	BASIS OF DESIGN	REMARKS	WEIGHT (LBS)
UH-1	UNIT HEATER	250,000	207,500	3,202	1/4	120/1	REZNOR MODEL UDAS	①②	220 LBS
UH-2	UNIT HEATER	250,000	207,500	3,202	1/4	120/1	REZNOR MODEL UDAS	①②	220 LBS

- UNIT SHALL HAVE ELECTRONIC IGNITION.
- UNIT SHALL HAVE TOTALLY ENCLOSED COMBUSTION CHAMBER.

ELECTRIC HEATER SCHEDULE

I.D. TAG	DESCRIPTION	CAPACITY KW	MIN CFM	FAN HP	S.P. (IN. WG)	VOLTS/ PHASE	BASIS OF DESIGN	REMARKS
EUH-A	UNIT HEATER	5.0	400	F	--	460/3	REDDI 51	①
BBH-1	BASE BOARD	0.6	--	--	--	277/1	REDDI G2906-036C	①②

- PROVIDE HEATER WITH UNIT MOUNTED THERMOSTAT AND INTEGRAL DISCONNECT.
- PROVIDE 3'-0" SECTION OF BASEBOARD HEATER.



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DANBURY ROAD (LOT 48) BLOCK 0002)

REVISIONS

#	DATE	TYPE
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ABBREVIATIONS,
NOTES AND
SCHEDULES-
MECHANICAL

DATE: 9/10/2020

JOB NO. 19230

M7.1
SHEET NO.