ROOF TOP UNIT SCHEDULE

TAG	MFR. & MODEL	FAN DATA: CFM	DESIGN O.A. CFM (A)	ASHRAE DESIGN OA CFM	O.A. MIN CFM (B)	SIZE / TYPE	RPM	HP	EXT. SP (IN W.G.)	TOTAL SP (IN W.G.)	ELEC.
RTU-B	DAIKIN "SKYLINE"	22,000	8,000	6200	2750	33 / AIRFOIL	1160	40	3.0	5.45	460/3

TAG	COOLING COIL DATA: ROWS / FPF	EAT db/wb	LAT db/wb	MBH SENS.	MBH TOTAL	EWT(°F)	WATER ΔT	GPM	COIL FACE VEL.(FPM)	APD (IN W.G.)	WPD (FT)	VALVE TRIM SIZE	CONTROL VALVE dp (PSI)
RTU-B	10 / 132	82.2 / 67.3	50.4 / 50.2	764.3	1119.4	45	14.2	157.7	515	1.39	12.0	4"	3.0

TAG	HEATING COIL DATA: ROWS / FPF	EAT(°F)	LAT(°F)	MBH	EWT(°F)	WATER ΔT	GPM	COIL FACE VEL.(FPM)	APD (IN W.G.)	WPD (FT)	VALVE TRIM SIZE	CONTROL VALVE dp (PSI)	DIRTY FILTER ALLOWANCE	BI-POLAR ION GENERATOR (C): MFR/MODEL	VOLTAGE	POWER	REMARKS	TAG
RTU-B	2 / 132	49.1	76.0	648.3	160	31.2	41.5	533	0.12	8.2	2"	3.0	1.0	GPS-IMOD	24/115/208V	15 W	①②③④⑤⑥⑦⑧⑨	RTU-B

NOTES:
- EXT. STATIC PRESS. INCLUDES ALL LOSSES EXTERNAL TO THE CABINET. TOTAL STATIC PRESS. INCLUDES E.S.P., INTERNAL LOSSES, AND DIRTY FILTER.
- FILTER HOUSING SHALL HAVE 4" FILTER CAPABILITY (SEE SPECIFICATIONS FOR SIZE/TYPE OF FILTERS REQUIRED.)
- COIL FACE VELOCITY SHALL NOT EXCEED 525 FPM.
- SEE DETAILS ON THIS SHEET FOR COMPONENTS AND UNIT CONFIGURATION.

(A) OPERATING OA CFM BASED ON BUILDING PRESSURIZATION. (UNIT DESIGN CFM IS HIGHER THAN ASHRAE DESIGN CFM TO PROVIDE MAKEUP FOR LAB EXHAUST FANS)

(B) MINIMUM CFM BASED ON DEMAND CONTROLLED VENTILATION SEQUENCE. SEE SPECIFICATIONS.

(C) BI-POLAR IONIZATION. (FIELD INSTALL, PROVIDED BY HVAC CONTRACT.)
SYSTEMS SHALL BE DESIGNED TO ALLOW FOR THE REDUCTION IN VENTILATION RATE TO 5 CFM/PERSON IN ACCORDANCE WITH THE ASHRAE 62 "IAQ" PROCEDURE. IONIZATION SYSTEMS SHALL ALLOW THE VAV TERMINAL MINIMUMS TO BE SET AT 5 CFM/PERSON MINIMUM PRIMARY AIR.

REMARKS:
① VARIABLE FREQUENCY DRIVE
② SMOKE DETECTOR. (PROVIDED BY ELECTRICAL CONTRACT.)
③ PROVIDE HINGED ACCESS DOORS ON BOTH SIDES OF UNIT
④ ULTRA-LOW LEAKAGE ECONOMIZER DAMPERS (OUTDOOR AIR AND RETURN)
⑤ EXTERNAL PIPING ENCLOSURE W/ ROOF CURB
⑥ SPRING ISOLATED, WIND RATED ROOF CURB (PROVIDE NECESSARY SLOPE TO MOUNT UNIT LEVEL. SEE ARCH. ROOF PLAN.)
⑦ NON-POWERED GFI RECEPTICAL (POWER BY ELEC.)
⑧ SOUND ATTENUATOR "SEE SOUND POWER LEVEL SCHEDULE" FOR AIR HANDLING UNIT SOUND DATA.
⑨ AIRFLOW MONITORING STATION AT OUTDOOR AIR INLET (EBTRON GTx116-P+, PROVIDED BY CONTROLS.)

AIR HANDLING EQUIPMENT NOT TO EXCEED SOUND POWER LEVELS

TAG	SERVICE	OCTAVE BAND SOUND POWER RATINGS (DB RE: 10^{-12} WATTS): 63	125	250	500	1000	2000	4000	8000
RTU-B	SUPPLY	91	87	95	94	95	96	89	79
	RETURN	81	77	82	73	73	68	51	51

VAV TERMINAL SCHEDULE

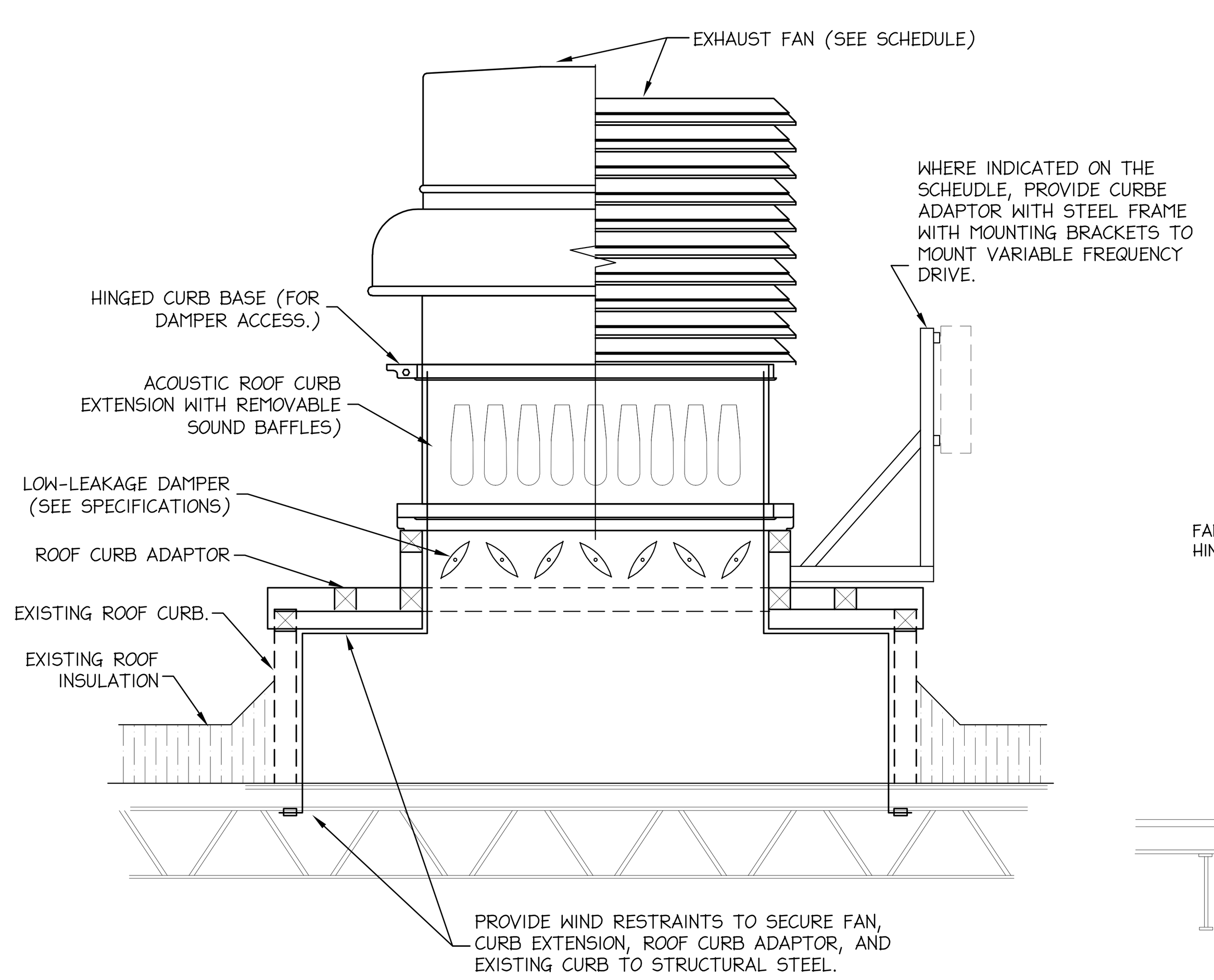
Tag	Room	Model	Mfr	Size	Inlet Dia	Max Primary (CFM)	Min Primary (CFM)	Min Occupied Setting (CFM) (A)	Inlet SP (in. w.g.)	Downstream SP (in. w.g.)	Min Oper PD (in. w.g.)	Max Dis NC (B)	Max Rad NC (B)	Fan Flow (CFM)	Motor HP
T-B01	B1 Lab	FDV5	Price	5014	14	2700	670	305	1.50	0.45	0.01	31	35	1800	1
T-B01S	B1S Storage	FDV5	Price	2008	8	600	20	20	1.50	0.45	0.04	28	24	480	1/3
T-B02	B02 Classroom	FDV5	Price	3012	12	1200	390	80	1.50	0.45	0.01	24	28	910	1/2
T-B03	B03 Classroom	FDV5	Price	3012	12	1000	390	80	1.50	0.45	0.01	21	25	610	1/2
T-B04	B04 Classroom	FDV5	Price	3012	12	1000	390	80	1.50	0.45	0.01	21	25	610	1/2
T-B05	B5 Lab	FDV5	Price	6016	16	2800	670	300	1.50	0.45	0.01	26	30	1800	1
T-B06	B06 Classroom	FDV5	Price	3012	12	1000	390	80	1.50	0.45	0.01	21	25	610	1/2
T-B07	B07 Classroom	FDV5	Price	3012	12	1000	390	80	1.50	0.45	0.01	21	25	610	1/2
T-B08	B08 Classroom	FDV5	Price	3012	12	1000	390	80	1.50	0.45	0.01	21	25	610	1/2
T-B09	B9 / A39 Office	FDV5	Price	2006	6	350	60	60	1.50	0.45	0.10	28	--	300	1/3
T-B10	B10 Lab	FDV5	Price	6014	14	2100	600	250	1.50	0.45	0.50	--	22	1800	1
T-B11	B11 Classroom	FDV5	Price	4012	12	1400	300	80	1.50	0.45	0.01	30	28	1000	1/2
T-B12	B12 Classroom	FDV5	Price	4012	12	1400	300	80	1.50	0.45	0.01	30	28	1000	1/2
T-B13	B Corridor	FDV5	Price	2008	8	550	60	0	1.50	0.45	0.03	26	22	490	1/3
T-B14	B-C Corridor	FDV5	Price	4012	12	1400	170	0	1.50	0.45	0.01	30	28	1120	1/2
T-B15	NOT USED	---	---	---	---	---	---	---	---	---	---	---	---	---	---
T-B16	B16, B22, B24 Office	FDV5	Price	2006	6	300	40	40	1.50	0.45	0.08	25	--	300	1/3
T-B17	B17 Art	FDV5	Price	5012	12	1500	545	204	1.50	0.45	0.01	25	25	955	1
T-B17S	B17S Storage	FDV5	Price	2006	6	400	25	25	1.50	0.45	0.13	29	20	320	1/3
T-B18	NOT USED	---	---	---	---	---	---	---	---	---	---	---	---	---	---
T-B19	NOT USED	---	---	---	---	---	---	---	---	---	---	---	---	---	---
T-B20	B21, 23, 30, 32 Office	FDV5	Price	2006	6	450	60	60	1.50	0.45	0.10	23	21	300	1/3
T-B21	B20,31,29 Office	FDV5	Price	2006	6	300	40	40	1.50	0.45	0.08	25	--	300	1/3
T-B22	B25-B28 Offices	FDV5	Price	3012	12	1000	90	90	1.50	0.45	0.01	21	25	800	1/2

Tag	WC Capacity (MBH)	EAT (°F)	LAT (°F)	Supply Air Temp (°F)	Return Air Temp (°F)	Fluid Flow (GPM)	FPD (ft. w.g.)	Fluid Type	Rows	Max Coil APD (in. w.g.)	EWT (°F)	LWT (°F)	MOP	MCA	V/Ø/Hz	Branch Pipe and Trim Size	Control Valve Pressure Drop	Remarks	Tag
T-B01	59.0	72.0	89.1	54.0	72.0	2.7	0.9	WTR	2R	0.3	160.0	115.3	15.0	7.4	277-ECM	3/4"	2 psi	(1)	T-B01
T-B01S	10.2	72.0	90.0	54.0	72.0	0.7	0.6	WTR	1R	0.0	160.0	128.2	15.0	2.6	277-ECM	3/4"	2 psi		T-B01S
T-B02	33.0	72.0	90.0	54.0	72.0	1.8	0.8	WTR	2R	0.3	160.0	122.9	15.0	5.0	277-ECM	3/4"	2 psi	(1)	T-B02
T-B03	27.2	72.0	90.0	54.0	72.0	1.6	0.7	WTR	2R	0.1	160.0	126.3	15.0	5.0	277-ECM	3/4"	2 psi		T-B03
T-B04	27.2	72.0	90.0	54.0	72.0	1.6	0.7	WTR	2R	0.1	160.0	126.3	15.0	5.0	277-ECM	3/4"	2 psi		T-B04
T-B05	55.9	72.0	89.5	54.0	72.0	2.4	0.7	WTR	2R	0.3	160.0	113.2	15.0	6.8	277-ECM	3/4"	2 psi		T-B05
T-B06	27.2	72.0	90.0	54.0	72.0	1.6	0.7	WTR	2R	0.1	160.0	126.3	15.0	5.0	277-ECM	3/4"	2 psi		T-B06
T-B07	27.2	72.0	90.0	54.0	72.0	1.6	0.7	WTR	2R	0.1	160.0	126.3	15.0	5.0	277-ECM	3/4"	2 psi		T-B07
T-B08	27.2	72.0	90.0	54.0	72.0	1.6	0.7	WTR	2R	0.1	160.0	126.3	15.0	5.0	277-ECM	3/4"	2 psi		T-B08
T-B09	8.3	72.0	90.0	54.0	72.0	0.6	0.5	WTR	1R	0.0	160.0	130.9	15.0	2.6	277-ECM	3/4"	2 psi		T-B09
T-B10	58.5	67.5	90.0	54.0	72.0	2.2	0.6	WTR	2RD	0.5	160.0	104.5	15.0	6.8	277-ECM	3/4"	2 psi		T-B10
T-B11	37.0	72.0	94.1	54.0	72.0	1.8	1.1	WTR	2R	0.2	160.0	118.7	15.0	4.4	277-ECM	3/4"	2 psi		T-B11
T-B12	37.0	72.0	94.1	54.0	72.0	1.8	1.1	WTR	2R	0.2	160.0	118.7	15.0	4.4	277-ECM	3/4"	2 psi		T-B12
T-B13	12.0	72.0	90.0	54.0	72.0	0.9	1.0	WTR	1R	0.0	160.0	132.7	15.0	2.6	277-ECM	3/4"	2 psi		T-B13
T-B14	31.0	72.0	91.8	54.0	72.0	1.2	0.5	WTR	2R	0.2	160.0	108.8	15.0	4.4	277-ECM	3/4"	2 psi		T-B14
T-B15	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		T-B15
T-B16	7.5	72.0	90.0	54.0	72.0	0.5	0.3	WTR	1R	0.0	160.0	127.7	15.0	2.6	277-ECM	3/4"	2 psi		T-B16
T-B17	49.5	72.0	95.9	54.0	72.0	3.2	1.1	WTR	2R	0.1	160.0	128.1	15.0	7.4	277-ECM	3/4"	2 psi		T-B17
T-B17S	7.2	72.0	90.0	54.0	72.0	0.4	0.3	WTR	1R	0.0	160.0	125.8	15.0	2.6	277-ECM	3/4"	2 psi		T-B17S
T-B18	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		T-B18
T-B19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		T-B19
T-B20	8.3	72.0	90.0	54.0	72.0	0.6	0.5	WTR	1R	0.0	160.0	130.9	15.0	2.6	277-ECM	3/4"	2 psi		T-B20
T-B21	7.5	72.0	90.0	54.0	72.0	0.5	0.3	WTR	1R	0.0	160.0	127.7	15.0	2.6	277-ECM	3/4"	2 psi		T-B21
T-B22	23.9	72.0	94.9	54.0	72.0	1.0	0.3	WTR	2R	0.2	160.0	111.9	15.0	5.0	277-ECM	3/4"	2 psi		T-B22

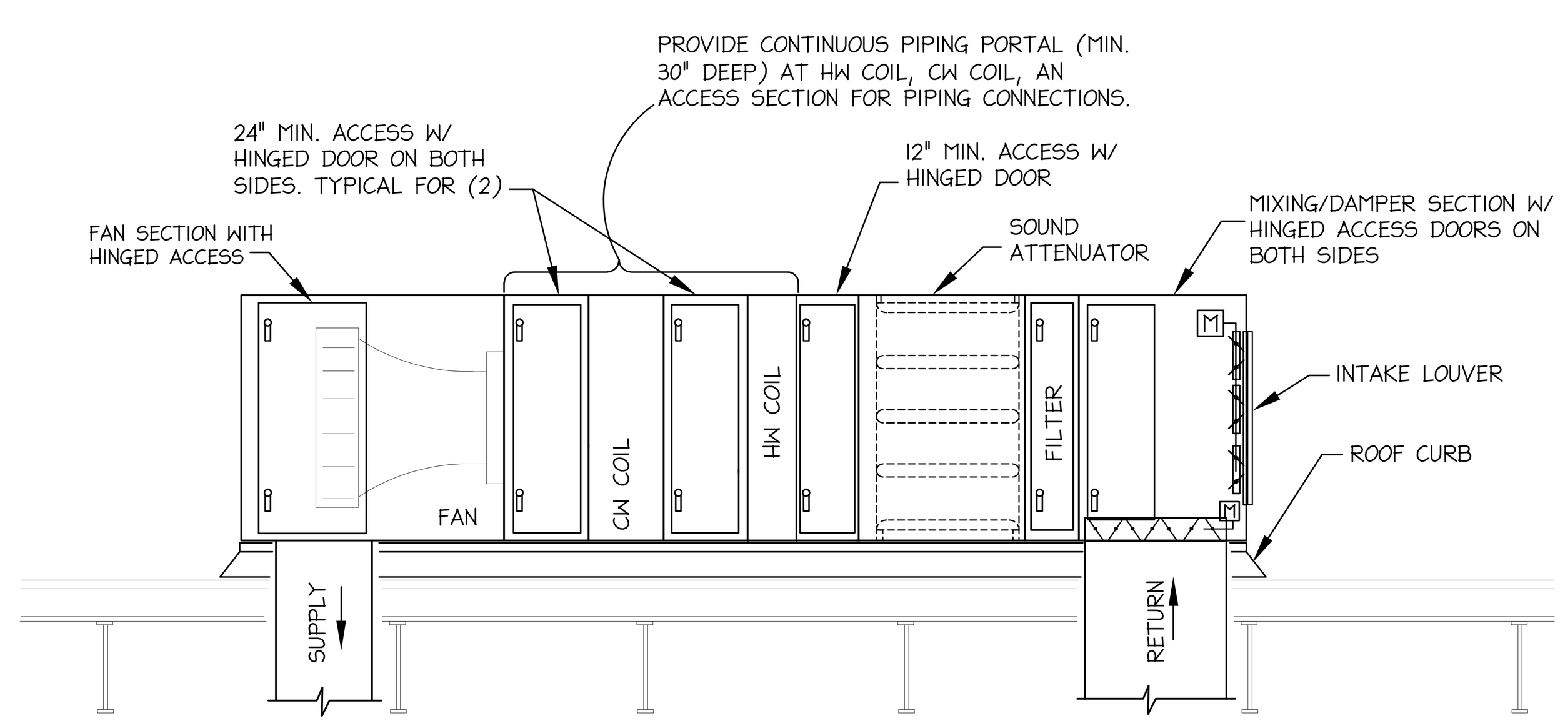
NOTES:
- ALL HOT WATER COILS SHALL BE LOCATED ON THE TERMINAL INLET.
- ROOM NC LEVEL SHOWN ARE BASED ON AHRI STANDARD 885-2008. (DASHED LINES INDICATE SOUND POWER LEVELS BELOW SIGNIFICANCE PWER AHRI-880)
- SOUND DATA SHALL BE OBTAINED FROM TESTS CONDUCTED IN ACCORDANCE WITH ARI STANDARD 880.
- HW COIL POSITION: PARALLEL BOX - BOX INLET
- ALL UNITS SHALL HAVE 1", 3 LB/CU.FT. DENSITY LINER
- ALL VAV TERMINALS SHALL HAVE FACTORY MOUNTED SIEMENS CONTROLLERS. (CONTROLLERS SHALL BE FURNISHED BY SIEMENS.)
- SEE VAV TERMINAL DETAIL FOR UNIT CONFIGURATION AND PIPING DETAILS.

(A) MINIMUM PRIMARY AIR SETTING BASED ON DEMAND CONTROLLED VENTILATION SEQUENCE. (SEE SPECIFICATIONS,) "MINIMUM OCCUPIED SETTING" IS THE MINIMUM PRIMARY CFM SETTING DURING OCCUPIED MODE WHEN ROOM CARBON DIOXIDE SENSOR IS BELOW SETPOINT.
(B) VAV TERMINALS MAY BE "OVERSIZED" BASED ON THEIR NOMINAL DESIGN CAPACITY TO ACHIEVE THE SCHEDULED SOUND DATA

REMARKS: ① 3-WAY VALVE SHALL BE INSTALLED IN LIEU OF 2-WAY VALVE. SEE VAV TERMINAL DETAIL.



EXHAUST FAN ROOF CURB ADAPTOR DETAIL
NO SCALE



ROOFTOP UNIT: RTU-B
NO SCALE

EXHAUST FAN SCHEDULE

TAG	LOCATION	SERVICE	CFM	SP IN WG	HP OR WATTS	DRIVE	ELEC. PH.	FAN RPM	SONES / dBA	MOUNTING	MFR & MODEL	REMARKS
EF-B01												NOT USED
EF-B02	CHEMISTRY LAB B5	HOOD EXHAUST	720	1.3	1 HP	DIRECT	460/3	2852	/ 70	ROOF	GREENHECK VEKTOR H-10	①②③④⑥⑨
EF-B03	CHEMISTRY LAB B5	HOOD EXHAUST	720	1.3	1 HP	DIRECT	460/3	2852	/ 70	ROOF	GREENHECK VEKTOR H-10	①②③④⑥⑨
EF-B04	CHEMISTRY LAB B5	HOOD EXHAUST	720	1.3	1 HP	DIRECT	460/3	2852	/ 70	ROOF	GREENHECK VEKTOR H-10	①②③④⑥⑨
EF-B05	CHEMISTRY LAB B5	HOOD EXHAUST	720	1.3	1 HP	DIRECT	460/3	2852	/ 70	ROOF	GREENHECK VEKTOR H-10	①②③④⑥⑨
EF-B06	CHEMISTRY LAB B5	HOOD EXHAUST	720	1.3	1 HP	DIRECT	460/3	2852	/ 70	ROOF	GREENHECK VEKTOR H-10	①②③④⑥⑨
EF-B07	CHEMISTRY LAB B5	ROOM EXHAUST	1700	0.5	3/4 HP	DIRECT	277/1	1165	9.9 /	ROOF	GREENHECK G-143-VG	①②③④⑤⑧⑪
EF-B08	CHEMISTRY LAB B10	ROOM EXHAUST	1400	0.5	1/2 HP	DIRECT	277/1	1054	8.1 /	ROOF	GREENHECK G-143-VG	①②③⑤⑧⑪⑫
EF-B09	CHEMISTRY LAB B10	HOOD EXHAUST	720	1.3	1 HP	DIRECT	460/3	2852	/ 70	ROOF	GREENHECK VEKTOR H-10	①②③④⑥⑨
EF-B10	B-WING	BUILDING RELIEF	13,000	0.5	5 HP	BELT	460/3	405	14.4 /	ROOF	GREENHECK GB-420-VGD	①②③⑤⑦⑩⑫⑭⑮⑰
EF-B11	STORAGE B105	GENERAL EXHAUST	450	0.375	1/6	DIRECT	115/1	1406	6.4 /	ROOF	GREENHECK SQ-95-VG	①②⑬

REMARKS / ACCESSORIES:
① DISCONNECT SWITCH
② BACKDRAFT DAMPER
③ BIRDSCREEN
④ ROOF CURB (WIND RATED) TO MATCH ROOF SLOPE (SEE ARCH DRAWINGS.)
⑤ MOTOR STARTER
⑥ VARIABLE FREQUENCY DRIVE
⑦ INTEGRAL VARIABLE FREQUENCY DRIVE
⑧ TIMED WALL SWITCH BY CONTROLS
⑨ ACID RESISTANT COATING
⑩ 18" HIGH ACOUSTIC ROOF CURB EXTENSION W/ REMOVABLE SOUND BAFFLES.
⑪ EC MOTOR
⑫ ROOF CURB ADAPTOR. FIELD COORDINATE DIMENSION OF EXISTING ROOF CURB. PROVIDE WIND RESTRAINTS STRAPS/CABLES TO SECURE NEW FAN (AND ROOF CURB EXTENSION TO STRUCTURAL STEEL.)
⑬ VIBRATION ISOLATORS
⑭ LOW LEAKAGE DAMPERS. (SEE SPECIFICATIONS FOR DAMPER LEAKAGE RATES.)
⑮ HINGED FAN BASE
⑯ PROVIDE ROOF CURB ADAPTOR WITH MOUNTING FRAME & BRACKET TO MOUNT VARIABLE FREQUENCY DRIVE.
⑰ AIRFLOW MONITORING STATION. (EBTRON GTX116-P+.) PROVIDED BY CONTROLS

mcmillan pazdan smith ARCHITECTURE

CROW & BULMAN ENGINEERING, INC.

SEALS

SPARTANBURG COMMUNITY COLLEGE
POWERS BUILDING B WING
MECHANICAL PACKAGE
OSE # H59-6148-JM-B
SPARTANBURG, SC

SHEET ISSUE:

NO.	DATE	DESCRIPTION	BY
A	02.23.2021	ISSUED FOR PRICING	STB

PRINCIPAL IN CHARGE: STB
PROJECT ENGINEER: STB
DRAWN BY: AP

SHEET TITLE:
HVAC SCHEUDLES

SHEET NO. HVAC-1
CBE PROJ. NO. 2002