

## **SPECIFICATIONS**

1. Follow all local and state codes/ordinances and general conditions of contract. Pay all required fees and obtain all required permits. Submit these plans to building department for plan review. Implement all code review required

Equipment, insulation and controls shall be provided as required by the adopted energy code. 3. Visit site to verify existing conditions prior to ordering equipment, providing price quote and/or fabricating ductwork or piping. Change orders will not be considered for non-compliance. 4. Contractor shall purchase, receive, uncrate, assemble, insure, and install in conformance to manufacturer's recommendations all Mechanical equipment.

5. Mechanical drawings are schematic and not to be scaled. Refer to architectural, certified drawings, and site measurements for all dimensions prior to duct and piping fabrication. 6. As-built scale drawings shall be provided by contractor and submitted to division 15 Engineer at completion showing all piping, duct, and equipment changes.

7. Contractor shall check shop drawings for 100% compliance with contract documents. Submit four (4) copies to division 15 engineer for review prior to ordering. 8. Base bid on specified equipment as shown on plans and in specifications. Substitutions will be processed as change-orders after bidding with all electrical, building alterations, flue requirements and dollar amounts included. 9. Extra costs or change orders allowed only if approved in writing by engineer with dollar amount prior to ordering equipment or fabricating ductwork or piping. No extensions of completion time unless agreed upon by all parties. 10. Provide 2 operating manuals to owner and engineer for all systems and equipment including manufacturer's

maintenance manuals. Include lubrication, filter types and sizes, starting and stopping procedures. List

contractor's telephone numbers. 11. Supports and anchors shall be provided for Mechanical work. No chain, tape, or wire. 12. Sleeves shall be provided for all pipe and ducts thru walls, floors, and ceilings.

13. Conceal all work in finished areas. 14. Cut and patch to match adjacent areas. No structural member shall be cut or notched. 15. Electrical: confirm voltage, phase, and ampacity with electrical contractor prior to ordering equipment. All 24v controls including interlock wiring for Mechanical equipment by division 15 contractor. Provide magnetic starters for all 3-phase motors with protection on all three leads. Electrical equipment to automatically restart after power failure. All wire in conduit per NEC latest edition.

16. Vibration isolation shall be provided for all equipment. Provide UL listed flexible duct connections on all fans 17. Temperature control shall be by equipment manufacturer 24v low voltage. Provide all transformers, relays, thermostats, min 18 ga. low voltage wiring in conduit per NEC for a complete operating system. 18. Provide condensate pumps as required where gravity drain condensate is not possible. Provide condensate acid neutralization for all condensate drains to sanitary sewer.

19. Ductwork shall be galvanized sheet metal with 45 max reducing fitting, 20 max increasing fittings. All construction and installation shall be per SMACNA and code standards. 20. Grease duct shall be listed factory duct, or field fabricated to code. Field fabricated grease duct shall be welded 10 gauge steel and shall be fully wrapped with city approved 3" fire wrap. All grease duct shall have cleanouts at each change of direction and each building level penetrated by duct run. All horizontal grease ducts less than 75 feet developed length shall slope at 1/4" per linear foot back to hood, or to an approved grease reservoir/pollution control unit/ grease exhaust fan. Horizontal grease ducts in excess of 75 feet developed length shall slope at 1" per linear

21. All environmental air exhaust (not considered hazardous or noxious) shall discharge a minimum of 3' from property lines and operable openings, and a minimum of 10' from mechanical air intakes. Product conveying exhaust outlets shall discharge a minimum of 10' from property lines, operable openings, and above adjoining grade. Product conveying exhaust outlets shall discharge a minimum of 3' from exterior walls and roofs. 22. Duct insulation for all rectangular HVAC supply/return ducts shall be internally lined. Duct insulation for all round/ovular spiral HVAC supply/return ducts that are located in unconditioned spaces shall be internally lined. Liner shall be Schuller Permacote 1.5" thick ul-181 class-1 EPA registered anti-microbial fiberglass liner attached with stic-klips 12" oc each way and 100% coverage of flame proof adhesive. Duct exposed to weather to be insulated with liner at 3" thickness. Increase duct interior dimension to allow for liner. Elbows for rectangular duct shall be provided multi-blade turning vanes or 1.5 centerline radius. Round ducts shall be externally wrapped with 1.5" thick Halstead insul-tube ul-181 class-1 covered fiberglass strapped and taped in place. Exposed spiral duct is not to be insulated on exterior. Flexible ductwork shall be limited to 6ft or max allowed by local code.

Flexible ductwork shall be provided with UL listed and plenum rated Thermaflex FlexFlow elbow supports at

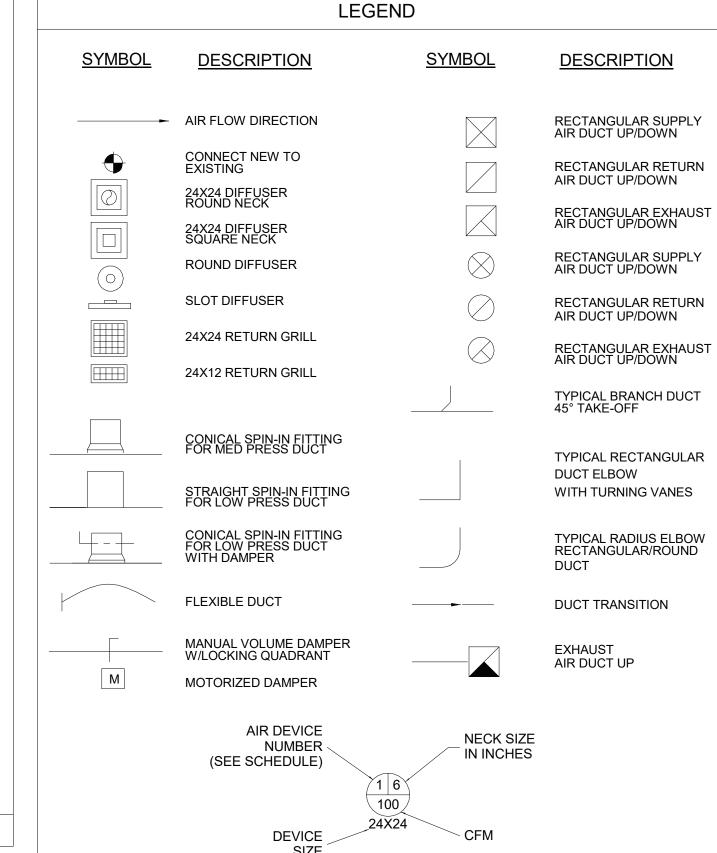
23. All return air plenum materials shall be plenum rated or shall be enclosed in a plenum rated enclosure. 24. Seal duct joints and seams with 3-m hard-cast or equivalent per code. Spiral duct joints shall be sealed using

approved connectors and 100%silicone sealant

25. Provide balancing dampers in accessible locations as required. Test and air balance all systems to attain quantities shown on plans. Air CFM flow rates shall be adjusted as required based on site altitude. Balance with dampers at conical spin-in fittings at main trunk with registers/diffusers wide open or provide dampers at registers/diffusers as required due to inaccessibility of manual balancing dampers. Motors to draw 95% max nameplate amps. Tabulate all motors, grilles, registers, and diffusers with full type-written test and balance report submitted to engineer for approval prior to final payment. Balance airflow within 5% of noted CFM 26. Fire dampers and fire smoke dampers where noted on plan or where required; Provide Greenheck or equal listed damper approved for application. No dampers shall be installed in hazardous, range, or grease exhaust ducts. Ducts 4" or less in diameter penetrating fire rated assemblies do not require fire dampers, provide approved fire caulking at penetrations. All fire/smoke dampers shall be 120v rated and wired by electrical contractor and shall be interlocked with fire protection controls. Provide remote test stations as required by code. 27. Gas piping shall be schedule 40 black iron with Viega MegaPress-connect fittings complying with ANSI

LC-4/CSA6.32-12 inside building and from meter to building where not buried. Verify gas line routing with architect and building department prior to installation. Costs involved in gas service shall be included in bid. Provide line size valve immediately prior to entering building. Provide equipment regulators to suit pressure supplied and gas equipment requirements. Gas piping on roof shall run on B-Line C-Port supports per code. Paint all exposed gas piping per code. Prior to each piece of equipment, provide gas valve, union, dirt leg, all accessible per code. 28. Requests for information (RFI's) from contractor shall include at least one proposed solution which complies with

29. Fire caulk fire rated wall/ceiling/floor penetrations with HILTI or equal listed fire caulk. 30. Guarantee all labor and new equipment per this contract for one year from the date of acceptance by owner.



## GAS FIRED ROOFTOP HVAC UNIT SCHEDULE

PLAN			95F AN		OLING DATA 0F DB RET,		RET	HEATING	G DATA		FAN D	ATA		ELECTRICA	AL DATA					
CODE RTU#	MANUFACTURER	MODEL #	NOMINAL ARI TONS	MBH TOTAL	MBH SENSIBLE	EER (SEER2)	IEER	MBH INPUT	AFUE %	CFM AT ALT	E.S.P.	OSA INTAKE MIN. SETTING CFM	VOLTS	PHASE	MCA	MOCP	WT. (LBS)	AREA SERVED	DIMENSIONS INC. CURB (LxWxH)	NOTES
RTU 1	TRANE	YHC092F4	7.5	89.0	62.4	12.6	14.5	200	80	3,000	1.1	REFER TO OSA CALCS	460	3	20.0	25	1400	SEE PLANS	89"x54"x65"	1, 2, 3, 5, 6, 8, 9, 10, 12, 15, 16, 17, 18, 19, 21, 22, 23, 24
RTU 2	TRANE	YHC036E4	3.0	37.1	25.1	(15.0)	-	120	80	1,200	0.94	REFER TO OSA CALCS	460	3	12.0	15	850	SEE PLANS	70"x45"x55"	1, 2, 3, 5, 6, 8, 9, 10, 12, 15, 16, 17, 22, 23, 24

1. EQUIPMENT SCHEDULE BASED ON TRANE. ACCEPTABLE ALTERNATES INCLUDE CARRIER, DAIKIN, LENNOX, TEMPMASTER, ARMSTRONG. AAON. OR YORK.

2. EXTERNAL STATIC PRESSURE DOES NOT INCLUDE LOSSES FOR UNIT CASING, FILTERS, OR COILS. 3. HIGH EFFICIENCY, MULTI-SPEED DIRECT DRIVE FAN MOTOR.

4. MERV-8 FILTERS. 5. MERV-13 FILTERS.

PLAN CODE

7. PROVIDE WITH DRY BULB ECONOMIZER. AIR SIDE ECONOMIZER SHALL MODULATE THE OUTDOOR AIR DAMPER UP TO OPEN AS THE FIRST STAGE OF COOLING WHEN OUTDOOR AIR TEMPERATURE IS BELOW 65F. PROVIDE BAROMETRIC RELIEF OR POWERED EXHAUST FOR RELIEF DURING ECONOMIZER MODE. SET MINIMUM POSITION FOR OSA CFM SHOWN. FAULT DETECTION AND DIAGNOSTICS REQUIRED.

8. PROVIDE WITH COMPARATIVE ENTHALPY ECONOMIZER. AIR SIDE ECONOMIZER SHALL MODULATE THE OUTDOOR AIR DAMPER UP TO 100% OPEN AS THE FIRST STAGE OF COOLING WHEN OUTDOOR AIR ENTHALPY IS LESS THAN RETURN AIR ENTHALPY, PROVIDE BAROMETRIC RELIEF ON POWERDE EXHAUST FOR RELIEF DURING ECONOMIZER MODE. SET MINIMUM POSITION FOR OSA CFM SHOWN. FAULT DETECTION AND DIAGNOSTICS REQUIRED.

9. BURNER SHALL BE DESIGNED TO FIRE NATURAL GAS, 6"-14" W.C. 10. STAINLESS STEEL HEAT EXCHANGER. 11. HIGH ALTITUDE KIT

12. COMPRESSOR: ANTI-SHORTCYCLE, HIGH/LOW PRESSURE SWITCHES, CRANKCASE HEATER. 13. HOT GAS BYPASS. HOT GAS BYPASS CAPACITY SHALL NOT EXCEED 50% RATED CAPACITY.

15. HAIL GUARD ON CONDENSER COILS

16. 18" HIGH FACTORY ROOF CURB. FLASH INTO ROOF. 17 LINIT CASING AND CURB SHALL BE COASTAL RATED OR COATED WITH A COASTAL RATED COATING OR PAINT 18. SPACE CO2 SENSORS INSTALLED BY MC. REFER TO PLANS FOR QUANTITY AND LOCATION. REFER TO DEMAND BASED VENTILATION CONTROL FOR DETAIL.

19. IONIZED SMOKE DETECTOR AND REMOTE SENSOR FURNISHED AND INSTALLED IN RETURN DUCT BY MC. INTERLOCK WITH FIRE ALARM SYSTEM. 20. PROVIDE WITH BACNET CONTROL BOARD WITH FAULT DETECTION OUTPUT. 21. POWERED CONVENIENCE OUTLET AND STEP DOWN TRANSFORMER BY MANUFACTURER. 22. FACTORY MOUNTED DISCONNECT.

23. VERIFY VOLTAGE, PHASE, MCA, AND MOCP WITH EC PRIOR TO ORDERING. 24. DESIGN LEAVING AIR TEMPERATURES: 55F DB COOLING, 95F DB HEATING.

							GAS FI	RED SP	ACE HE	EATER	SCHED	ULE		
		F	HEATING D	DATA		FAN DAT	ГА		ELECTRIC	CAL DATA				
MANUFACTURER	MODEL #	TYPE AT ALT	INPUT MBH @ SL	EFFICIENCY %	CFM AT ALT	E.S.P. "WC	OSA INTAKE MIN. SETTING CFM	VOLTS	PHASE	FLA	HP	WT. (LBS)	AREA SERVED	NOTES
CAMBRIDGE	S1850	DIRECT	1850	92	8,565	0.19	100%	460	3	11.1	7.5	2200	100 - HANGAR	1, 2, 3, 4, 5, 6, 7, 9, 11, 16, 17, 18, 19, 20, 21

EXTERNAL STATIC PRESSURE DOES NOT INCLUDE LOSSES FOR UNIT CASING, FILTERS, OR COILS HIGH ALTITUDE KIT. DIRECT DRIVE FAN MOTOR. 9. LOW GAS PRESSURE SWITCH, FREEZE PROTECTION

AIRFLOW PROVING CONTACT. 10. 24" HIGH FACTORY ROOF CURB. FLASH INTO ROOF 4. FILTER SECTION. MERV-8 FILTERS. 11. UNDER ROOF MOUNTING PACKAGE. 5. 7 DAY PROGRAMMABLE SPACE THERMOSTAT. SET FAN TO ON DURING OCCUPIED HOURS. GAS HEATING SECTION SHALL STAGE ON TO MAINTAIN SPACE HEATING SETPOINT. 12. THROUGH WALL MOUNTING PACKAGE

13. INDOOR VERTICAL MOUNTING PACKAGE 6. BURNER SHALL BE DESIGNED TO FIRE NATURAL GAS, 6"-14" W.C. 14. OUTDOOR VERTICAL MOUNTING PACKAGE.

15. 1-WAY FACTORY DIRECTIONAL ELBOW DISCHARGE 16. 3-WAY FACTORY DIRECTIONAL ELBOW DISCHARGE.

17. UNIT CASING AND CURB SHALL BE COASTAL RATED OR COATED WITH A COASTAL RATED COATING OR PAINT.

18. EXHAUST FAN CONTACT 19. FACTORY MOUNTED DISCONNECT.

20. VERIFY VOLTAGE, PHASE, AND HP WITH EC PRIOR TO ORDERING

21. DESIGN LEAVING AIR TEMPERATURE: 160F DB HEATING.

## **FAN SCHEDULE**

PLAN								FAN DAT	ГА			ELE	CTRICAL	DATA			
CODE F #	MANUFACTURER	MODEL	TYPE	AREA SERVED	CFM AT ALTITUDE	S.P.	RPM	SYSTEM TYPE	BLADE TYPE		ROOF (WALL) OPENING	VOLTS	PHASE	HP (WATTS)	WT (LBS)	FAN CONTROL	NOTES
EF 1&2	GREENHECK	AER-20-VG	SIDEWALL PROPELLER	SEE PLANS	4250	0.3	1436	EXHAUST	PROP	DIRECT	(22.5"X22.5")	115	1	1	150	E	1, 2, 5, 6, 7, 8, 11, 13, 15, 16 INTERLOCK TO OPERATE WITH GSH-1.
EF 3	GREENHECK	G-140-VG	ROOF CENTRIFUGAL	SEE PLANS	1500	0.3	1200	EXHAUST	BI	DIRECT	18.5"X18.5"	115	1	1/2	90	G	1, 2, 3, 5, 6, 7, 8, 14, 15, 16
KEF 1	GREENHECK	CUE-100HP-VG	ROOF CENTRIFUGAL	SEE PLANS	800	1.0	2411	EXHAUST	BI	DIRECT	15.5"X15.5"	115	1	1/2	100	Е	1, 2, 4, 6, 7, 8, 14, 15, 16, PROVIDE WITH 24"H VENTED CURB, GREASE CUP, INTERLOCK TO OPERATE WITH GH-1.

1. EQUIPMENT SCHEDULE BASED ON GREENHECK. ACCEPTABLE ALTERNATES INCLUDE COOK, CAPTIVEAIRE, NAILOR, OR 9. DUCT FROM FAN OUTLET TO EXTERIOR. SEE PLANS.

10. SMACNA OUTLET ROOF CAP. 2. EXTERNAL STATIC PRESSURE DOES NOT INCLUDE LOSSES FOR UNIT CASING, SCREENS, ROOF CAPS, OR DAMPERS.

3. 18" FACTORY ROOF CURB. FLASH INTO ROOF. 4. INTEGRAL GRAVITY BACKDRAFT DAMPER.

. STAINLESS STEEL HEAT EXCHANGER

6. ECM OR SPEED CONTROLLER. PROVIDE WITH VFD AS REQUIRED. 8. 1/4" GALVANIZED MESH BIRD SCREEN.

4. MERV-8 FILTERS

CODE

3. ELECTRONIC EXPANSION VALVE, FILTER DRIER.

5. 120V MOTORIZED BACKDRAFT DAMPER. FAIL OPEN.

11. WALL HOUSING FLUSH TO EXTERIOR WITH ACCESS GUARD SCREEN. 12. WEATHER HOOD.

16. VERIFY VOLTAGE, PHASE, AND MOTOR HP WITH EC PRIOR TO ORDERING.

13. FLUSH LOUVER. 14. UNIT CASING AND CURB SHALL BE COASTAL RATED OR COATED WITH A COASTAL RATED COATING OR PAINT.

C. 7-DAY TIME CLOCK SET ON DURING OCCUPIED HOURS. D. TO OPERATE CONTINUOUSLY. E. INTERLOCK TO OPERATE WITH EQUIPMENT NOTED. F. SEPARATE WALL TIMER FOR SUMMERTIME VENTILATION ONLY.

G. LINE VOLTAGE COOLING ONLY THERMOSTAT. SET TO 85F.

A. SEPARATE WALL SWITCH (NOT WITH LIGHTS).

B. SWITCH ON WITH ROOM LIGHTS.

							DUCT	LESS F	AN CC	IL UNI	T SCH	EDULE				
PLAN CODE				COOLING SEE CU SC	G DATA CHEDULE	HEATING DATA		F	AN DATA			ELEC	TRICAL			
	MANUFACTURER	MODEL	TYPE	NOMINAL ARI TONS	CU-#	MBH TOTAL	CFM @ ALT.	E.S.P. "W.C.	HP	MCA	WATTS	VOLTS	PHASE	OUTDOOR AIR CFM	AREA SERVED	Notes
DFC 1	SAMSUNG	RNS09ABC	WALL MOUNTED	0.75	CU-1	-	392	-	-	1	27	208/230	1	-	SEE PLANS	1, 2, 3, 6, 7, 8, 9, 10, 11, 12

EQUIPMENT SCHEDULE BASED ON SAMSUNG. ACCEPTABLE ALTERNATES INCLUDE CARRIER, MITSUBISHI, AND LENNOX. EXTERNAL STATIC PRESSURE DOES NOT INCLUDE LOSSES FOR UNIT CASING, FILTERS, OR COILS

3. HIGH EFFICIENCY, MULTI-SPEED DIRECT DRIVE FAN MOTOR.

MERV-13 FILTERS. 6. WIRELESS REMOTE THERMOSTAT 7. FACTORY LINE SET, VERIFY REQUIRED LENGTH PRIOR TO ORDERING. 8. GRAVITY DRAIN IF POSSIBLE, PROVIDE CONDENSATE PUMP AS REQUIRED 9. VERIFY SINGLE POINT CONNECTION TO OUTDOOR UNIT PROVIDES POWER TO INDOOR UNIT 10. FACTORY MOUNTED DISCONNECT.

11. VERIFY VOLTAGE, PHASE, MCA, AND MOCP WITH EC PRIOR TO ORDERING. 12. COOLING ONLY OPERATION

## AIR COOLED CONDENSING UNIT SCHEDULE

PLAN			9	5F AMBIE	COOLING NT, 80F DB		WB RET	HEATING DATA	COMP	PRESSOR/FAN D	АТА		ELECTRIC	AL DATA				
CODE #	MANUFACTURER	MODEL	NOMINAL ARI TONS	MBH TOTAL	MBH SENSIBLE		REFRIGERANT	MBH TOTAL	CONDENSER FAN CFM (@ 0.0" SP)	COMPRESSOR STAGES	SOUND RATING (DB)	VOLTS	PHASE	MCA	MOCP	WT. (LBS) INC. CURB	EQUIPMENT SERVED	NOTES
CU 1	SAMSUNG	RXS09ACC	0.75	9	9	(24.5)	R-410A	-	-	1	45	208/230	1	12	20	100	DFC-1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
		SAMSUNG. ACCEPTABLE ALT HIGH/LOW PRESSURE SWITC		, , , , , , , , , , , , , , , , , ,		LENNOX.		CONTROL TO -40F WITH OR WIND BAFFLE KIT.	WIND BAFFLES, 0F WITI	HOUT WIND BAFFLES.				RY MOUNTED VOLTAGE, PH		MOCP WITH EC PRI	OR TO ORDERING.	

4. SOUND ATTENUATING BLANKET OR EQUAL ON COMPRESSORS. 8. VERIFY SINGLE POINT CONNECTION TO OUTDOOR UNIT PROVIDES POWER TO INDOOR UNIT COASTAL RATED ELECTRIC UNIT HEATER SCHEDULE ELECTRICAL DATA CODE DIMENSIONS <u>/EUH</u> | MANUFACTURER WT. (LBS) | CFM @ S.L. | AREA SERVED

7. 18" QUICK SLING MOUNTING RAIL

SEE PLANS EQUIPMENT SCHEDULE BASED ON MODINE. ACCEPTABLE ALTERNATES INCLUDE REZNOR, INDEECO, AND TRANE. . EXPLOSION PROOF UNIT. 8. VERIFY VOLTAGE, PHASE, AND KW WITH EC PRIOR TO ORDERING THERMAL CUTOUT.

A. INTEGRAL THERMOSTAT B. LINE-VOLTAGE SINGLE STAGE THERMOSTAT C. LINE-VOLTAGE 2-STAGE THERMOSTAT D. LOW-VOLTAGE SINGLE STAGE THERMOSTAT E. SUMMER-WINTER SWITCH

1, 3, 4, 6, 7, 8

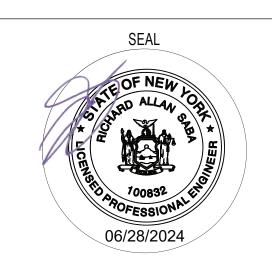
15" X 17.5" X 17.5" H

11. COOLING ONLY OPERATION

CEILING FAN SCHEDULE FAN DATA SIZE RPM FINISH | BLADE | DRIVE MANUFACTURER HP WT (LBS) CONTROL 127 W. FAIRBANKS AVENUE, SUITE 140 WINTER PARK, FL 32789 (PH): 407-739-9000



8201 SHAFFER PARKWAY SUITE A LITTLETON, COLORADO 80127 303.991.0991 THOMPSON-ENG.COM



PERMIT COMMENTS

Key Plan

| SIGNATURE STEWART (SWF) HANGAR

1188 1ST STREET, NEW WINDSOR, NY 12553



SIGNATURE FLIGHT SUPPORT 13485 VETERANS WAY, SUITE 600

ORLANDO, FLORIDA 32827 ISSUE DATE: 06/12/2024

COMM. NO.: 2023-177 DRAWN BY: JH

SCHEDULES

CHECKED BY: DL/RS MECHANICAL DETAILS AND

FAN 1-2		BA6-24	STRUCTURE MOUNTED	SEE PLANS	24 FT	- 61	ALUN	AIRFOIL	GEAR	460	3	2.0	250	В	1,	2, 3, 4, 5, 6,	ONE CONT	ROLLER TO OF	PERATE BOTH HANGAR FANS
1. E	QUIPMENT SCHEDULE BASED (	N BIG ASS FANS. ACCEPTABLE	E ALTERNATES INCLUDE GR	EENHECK, HUNTER	R, AND EPIC.	5. VERIFY VOLTAGE, F	PHASE, AND	MOTOR HP WITH EC	PRIOR TO ORDE	ERING.				A. STANDA	RD WALL CO	NTROLLER			
2. M	OUNT PER MANUFACTURER RE	COMMENDATIONS.				6. COORDINATE LOCA PROPER DOWNROD LEN	ATION AND M	OUNTING HEIGHT W	TH OWNER/ARC	CHITECT, STRUCTU	IRE, COLUMNS	, AND RACKIN	G. PROVIDE	B. SMARTS	ENSE WALL	CONTROLLER AND	O UPPER TEMPE	RATURE SENSOR	
3. M	OUNT FAN APPROXIMATELY IN AREST SPRINKLER DEFLECTOI	BETWEEN THE NEAREST FOUR	R SPRINKLER HEADS, MAIN	TAINING 3 FT VERTI	CAL CLEARANCE	FROFER DOWNROD LEI	NGTH.							C. SEPARA	TE WALL SWI	TCH			
		`. ' DOWN OPERATION OF FAN W	THE FIRE ALARM ACTIVATION	N										D. 24-HOUR	DIGITAL TIM	ER			
7. "	TEREGORI ARTREEAT TO GITO	DOWN OF EIGHTON OF TANKW	TITTINE ALARWI AOTIVATIO											E. THERMO	STAT				
						ENERG	Y RE	COVERY	VENTIL	ATOR U	NIT SCI	HEDUL	.E						
PLA	Й		SUMMER 95F AMBIENT, 70	(COOLING) D OF DB RET, 58	ATA BF WB RET	WINTER ( -10F AMBIENT, 70	HEATING F DB RE	G) DATA ET, 53F WB RE	Т	FAN DATA	ı		ELECTRIC	AL DATA					
COE ERV	MANUFACTUREF	MODEL #	NOMINAL SUPPL TEMPERATURE (DEG F)	RECOVE	NTHALPY RY RATIO %)	NOMINAL SUPPL TEMPERATURE (DEG F)		A ENTHALPY OVERY RATIO	SUPPLY CFM @ ALT	CFM	E.S.P. (" W.C.)	VOLTS	PHASE	MCA	MOCP	WT. (LBS)	AREA SERVED	DIMENSIONS INC. CURB (LxWxH)	NOTES
ER'	GREENHECK	ERV-10-20L-VG	74.4	8	5.8	54.0		79	600	600	0.75	208	1	21.9	25	300	SEE PLANS	46"x34"x28"	1, 2, 5, 6, 7, 8, 11, 12, 15 (2 KW), 19, 20
1. E	QUIPMENT SCHEDULE BASED (	N GREENHECK. ACCEPTABLE	ALTERNATES INCLUDE COC	K, RENEWAIRE, AA	ON, OR YORK.	8. 7-DAY TIME CLOCK	SET TO ON I	DURING OCCUPIED H	OURS.					15. ELECTRI	C PREHEAT I	FROST CONTROL.	SEE NOTES FOR	R HEATER SIZE.	
2. P	OLYMER ENERGY RECOVERY V	HEEL TYPE.				9. SUPPLY AND EXHA	UST AIRFLO	W MONITORING.						16. OUTDOO	R AIR DAMPI	ER.			
3. FI	BER ENERGY RECOVERY COR	TYPE.				10. DIRTY FILTER SENS	SOR.							17. RETURN	AIR DAMPER	₹.			
	OLYMER ENERGY RECOVERY (					11. 18" FACTORY ROOF											STEP DOWN TR	RANSFORMER BY MAN	UFACTURER.
'		DES NOT INCLUDE LOSSES FO	R UNIT CASING, FILTERS, O	R WHEEL/CORE.		12. UNIT CASING AND C			OR COATED WI	TH A COASTAL RA	TED COATING	OR PAINT.		19. FACTOR	Y MOUNTED	DISCONNECT.			
	GH EFFICIENCY, MULTI-SPEED	DIRECT DRIVE FAN MOTORS.				13. TIMED EXHAUST FR								20. VERIFY	/OLTAGE, PH	IASE, MCA, AND M	IOCP WITH EC P	RIOR TO ORDERING.	
7. M	ERV-8 FILTERS.					14. MODULATING WHE	EL FROST CO	ONTROL.											

APPLICABLE CODES

2020 BUILDING CODE OF NEW YORK STATE

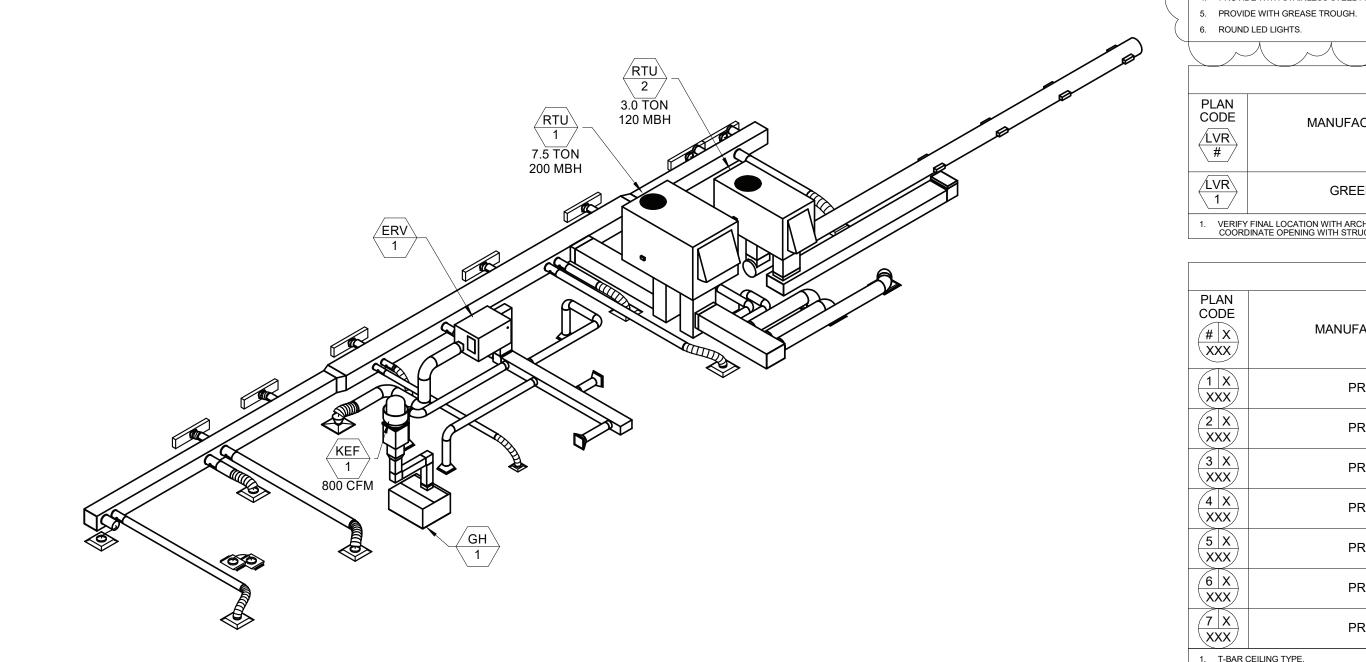
2020 ENERGY CONSERVATION CONSTRUCTION CODE OF NEW YORK STATE

2020 MECHANICAL CODE OF NEW YORK STATE

2020 PLUMBING CODE OF NEW YORK STATE

2020 FUEL GAS CODE OF NEW YORK STATE

2015 TENANT CONSTRUCTION REVIEW MANUAL



1 MECHANICAL ISOMETRIC

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								TYP	E I HO	OD SCH	EDULE										
>	PLAN						EXHAUS	T DATA		SUPPL	Y DATA	ELECTRIC	CAL DATA								
> }	CODE GH #	MANUFACTURER	MODEL	TYPE	DIMENSIONS	COOKING LOAD	EXHAUST RATE (CFM/FT)	SP (" W.C.)	TOTAL CFM	SP (" W.C.)	TOTAL CFM	VOLTS	PHASE	FIRE PROTECTION SYSTEM	WT (LBS)	NOTES					
$\geq$	GH 1	GREENHECK	GXEW-48-S	WALL CANOPY	48"L X 39"W X 24"H	HEAVY	200	0.58	800	-	-	115	1	ANSUL R-102	200	1, 2, 3, 4, 5	5, 6, 7, 9, 10,	11, 12, 13, <sup>2</sup>	14, 15		
	1. EQUIPM	MENT SCHEDULE BASED ON O	GREENHECK, ACCEPTABLE A	TERNATES INCLUDE CAR	PTIVEAIRE.	7. SUPF	PLY/MAKEUP AIR N	OT ENTERING T	HROUGH HOOD	. SEE PLANS.				12. INSTALL AUTON	MATIC FIRE SUPPRE	ESSION SYSTEM PE	ER UL 300 AND NEF	PA 96 INCLUDING	AUTOMATIC SI	HUT-OFF OF ALL	

1. EQUIPMENT SCHEDULE BASED ON GREENHECK. ACCEPTABLE ALTERNATES INCLUDE CAPTIVEAIRE.

7. SUPPLY/MAKEUP AIR NOT ENT

7. SUPPLY/MAKEUP AIR NOT ENT

7. SUPPLY/MAKEUP AIR NOT ENT

8. INTEGRAL SUPPLY PLENUM.

MOUNT SUCH THAT THE BOTTOM OF HOOD IS AT 80" A.F.F.
 TYPE 430 STAINLESS STEEL. ALL WELDS SHALL BE LIQUID TIGHT.
 PROVIDE WITH STAINLESS STEEL FILTERS.
 BEAR NSF SEAL OF APPROVAL.

CONSTRUCT IN ACCORDANCE WITH UL 710 AND NFPA 96.
 BEAR NSF SEAL OF APPROVAL.
 FURNISH COMPLETE WITH PRE-PIPED INTEGRAL FIRE PROTECTION SYSTEM INCLUDING UTILITY CABINET, TANK, PIPING, PULL STATION, AND ACTUATOR. ALL EXPOSED PIPING SHALL BE CHROME-PLATED.

12. INSTALL AUTOMATIC FIRE SUPPRESSION SYSTEM PER UL 300 AND NFPA 96 INCLUDING AUTOMATIC SHUT-OFF OF ALL POWER AND GAS TO ALL EQUIPMENT UNDER HOOD.

13. INSTALL PER MANUFACTURERS INSTRUCTIONS. MAINTAIN ALL REQUIRED CLEARANCES.

13. INSTALL PER MANUFACTURERS INSTRUCTIONS. MAINTAIN ALL REQUIRE
14. EC TO PROVIDE JUNCTION BOX AND WIRING TO HOOD.
15. VERIFY VOLTAGE AND PHASE WITH EC PRIOR TO ORDERING.

					EXTE	RIOR LOUVE	ER SCHEDUL	.E			
PLAN CODE LVR #	MANUFACTURER	MODEL#	TYPE	CONSTRUCTION	APPLICATION	CFM	SIZE (IN.)	PD (" W.C.)	FINISH	QUANTITY	NOTES
LVR 1	GREENHECK	ESD-435X	WEATHER	ALUMINUM	INTAKE	1,500	36"X36"H	0.015	SEE ARCH	1	1, 2, 3, 5, INTERLOCK TO OPEN DAMPER WITH EF-3
	NAL LOCATION WITH ARCHITECT. 2. PRESSURE ATE OPENING WITH STRUCTURAL. SCHEDULE VAL	EDROP NOT TO EXCEED UE	3. 120V MOTORIZE FAIL OPEN.	D BACKDRAFT DAMPER.	4. 1/4" GALVANIZE	D MESH BIRD SCREEN.	5. INSECT SCREEN.	6. SECURITY BARS	7. FILTER RACK. MI	ERV-8 FILTERS.	

				A	AIR DEVICE S	CHEDULE			
PLAN FODE XXXX	MANUFACTURER	MODEL # / SERIES	TYPE	CONSTRUCTION	NOMINAL CFM	SIZE (INCHES)	FINISH	NOTES	AIR DEVICE NUMBER (SEE SCHEDULE)  NECK SIZE IN INCHES
						* NO FILLER PANELS ALLOWED	0		100
(XX)	PRICE	SCD	CEILING DIFFUSER	STEEL	SEE PLANS	SEE PLANS	SEE ARCH	2	DEVICE 24X24 CFM SIZE
2 X XXX	PRICE	TBD3	SLOT SUPPLY DIFFUSER	STEEL	SEE PLANS	4 FT LONG	SEE ARCH	2, 7, 12, 14, 17	* CONTRACTOR SHALL PROVIDE MANUAL BALANCING DAMPERS AS REQUIRED TO BALANCE AIR DEVICES TO VALUES SHOWN ON PLANS
3 X XXX	PRICE	PDF	PERFORATED CEILING DIFFUSER	ALUMINUM	SEE PLANS	SEE PLANS	STANDARD	2, 6	
i x xxx	PRICE	81	RETURN GRILLE	ALUMINUM	SEE PLANS	SEE PLANS	STANDARD	2, 9, 19	
XXX	PRICE	81	EXHAUST REGISTER	ALUMINUM	SEE PLANS	SEE PLANS	STANDARD	2, 9, 19	
S X XXX	PRICE	ATG	DOOR/WALL TRANSFER GRILLE	ALUMINUM	SEE PLANS	SEE PLANS	STANDARD	2	
7 X XXX	PRICE	SDG	SPIRAL DUCT SUPPLY DIFFUSER	STEEL	SEE PLANS	SEE PLANS	STANDARD	4, 5	
T-BAR CEILING SURFACE MOUI SURFACE MOUI DUCT MOUNTEI	NT, GYPBOARD WALL/CEILING. NT, DOOR.	5. MULTI-BLADE DAMPER. 6. ADJUSTABLE BLADES DAMPER. 7. REMOTE BALANCING DAMPER. 8. PERFORATED 4-WAY.	9. CUBE CORE. 1/2" X · 10. FILTER GRILLE. 11. FIXED CORE. 12. ENGINEERED SUPPINECK SIZE ON PLAN	Y PLENUM. INLET TO MATCH	PROVIDE FULL S OPENING. 14. 1" SLOT.	ETURN PLENUM. OUTLET TO N PLANS. IF NO NECK SIZE IS LIS SIZE RECTANGULAR PLENUM	16. 1 SLOT. 17. 2 SLOT.	S. MOUNT FLUSH TO GYPBO	19. SQUARE TO ROUND ADAPTOR. MATCH RECTANGULAR AND NECK DIMENSIONS ON PLANS.  20. PRESSURE RELIEF COLLAR.  21. 24 VAC INPUT. PROVIDE TR115 115/24, 20 VA TRANSFORMER ON MASTER DIFFUSER ONLY.

HVAC SYSTEM:	RTU-1		7.5	Ton Cooling		Total SA =	-,		Set O	SA min set =	22.0%
	Room Name and	Az	Rp	Ra	Default Occ	Pz	If all Return Air is at Ceiling Level	Effectiveness Factor = 0.8	Total Room	Total OSA	
Room Type:	Room #	AREA (sqft)	OSA per person	OSA CFM per sqft	People per 1000sqft	# of People	Total min OSA CFM req'd	Total minimum OSA CFM req'd	Supply Air (SA) CFM	CFM Provided	Result:
Break Rooms (ASHRAE62.1 2016 T.6.2.2.1)	101 - Kitchenette (PARTIAL)	234	5.0	0.12	50	12	87	108	900	198	Complies
Occupiable Storage Rooms (ASHRAE62.1	102 - Stock Room/Pantry	300	5.0	0.06	2	1	21	26	475	105	Complies
Corridors	103 - Corridor	342	0.0	0.06	0.0	0.0	21	26	400	88	Complies
Corridors	104 - Corridor	134	0.0	0.06	0.0	0.0	8	10	50	11	Complies
Toilet Rooms (EXHAUST)	105 - Women	64					0	0	50	11	Complies
Toilet Rooms (EXHAUST)	106 - Men	63					0	0	100	22	Complies.
Toilet Rooms (EXHAUST)	109 - Unisex	81					0	0	100	22	Complies.
Office	111 - Flt. Ops. Office	120	5.0	0.06	5	1	10	13	125	28	Complies
Office	112 - Maint. Office	119	5.0	0.06	5	1	10	13	125	28	Complies
Conference	113 - Conf.	376	5.0	0.06	50	19	117	146	675	149	Complies
					1		Total min OSA reqd floor RA	Total min OSA CFM required	Total SA	Total OSA Provided	
	Total Floor Area =	1,833	sqft	1		Totals =	273	341	3,000	660	

		<u>OUT</u>	SIDE AIF	R CALCUL	ATIONS	S: <b>IMC (</b>	Code (table d	403.3)			
HVAC SYSTEM:	GSH-1		0.0	Ton Cooling		Total SA =	8,565	CFM	Set O	SA min set =	100.0%
	Doom Name and	Az	Rp	Ra	Default Occ	Pz	If all Return Air is at Ceiling Level	Effectiveness Factor = 0.8	Total	Total OSA	
Room Type:	Room Name and Room #	AREA (sqft)	OSA per person	OSA CFM per sqft	People per 1000sqft	# of People	Total min OSA CFM req'd	Total minimum OSA CFM req'd		CFM Provided	Result:
Warehouses	100 - Hangar	33,813	10.0	0.06	0.0	0.0	2,029	2,536	8,565	8,565	Complies
	1			1			Total min OSA reqd floor RA	Total min OSA CFM required	Total SA	Total OSA Provided	
	Total Floor Area =	33,813	sqft			Totals =	2,029	2,536	8,565	8,565	

		<u>OUT</u>	SIDE AIF	R CALCUL	ATIONS	S: <b>IMC</b> (	Code (table (	<u>403.3)</u>			
HVAC SYSTEM:	RTU-2		3.0	Ton Cooling		Total SA =	1,200	CFM	Set O	SA min set =	20.0%
	Boom Name and	Az	Rp	Ra	Default Occ	Pz	If all Return Air is at Ceiling Level	Effectiveness Factor = 0.8	Total Room	Total OSA	
Room Type:	Room Name and Room #	AREA (sqft)	OSA per person	OSA CFM per sqft	People per 1000sqft	# of People	Total min OSA CFM req'd	Total minimum OSA CFM req'd	Supply Air	CFM Provided	Result
Occupiable Storage Rooms (ASHRAE62.1	114 - Maintenance Parts & Shop	808	5.0	0.06	2	2	57	71	1,200	240	Complie
				1			Total min OSA reqd floor RA	Total min OSA CFM required	Total SA	Total OSA Provided	
	Total Floor Area =	808	sqft			Totals =	57	71	1,200	240	

l	OUTSIDE AIR CALCULATIONS: IMC Code (table 403.3)											
	HVAC SYSTEM:	IVAC SYSTEM: <u>ERV-1</u>		<b>0.0</b> Ton Cooling			Total SA =	= 600 сғм		Set OSA min set = 100.0%		
	Room Type:	Room Name and Room #	Az	Rp	Ra	Default Occ	Pz	If all Return Air is at Ceiling Level	Effectiveness Factor = 0.8	1	Total OSA CFM Res Provided	
			AREA (sqft)	OSA per person	OSA CFM per sqft	People per 1000sqft	# of People	Total min OSA CFM req'd	Total minimum OSA CFM req'd			Result:
	Break Rooms (ASHRAE62.1 2016 T.6.2.2.1)	101 - Kitchenette (PARTIAL)	334	5.0	0.12	50	17	124	154	600	600	Complies.
					1			Total min OSA reqd floor RA	Total min OSA CFM required	Total SA	Total OSA Provided	
		Total Floor Area =	334	sqft			Totals =	124	154	600	600	





SUITE A LITTLETON, COLORADO 80127 303.991.0991 THOMPSON-ENG.COM



 REVISIONS

 MARK
 DESCRIPTION
 DATE

 1
 PERMIT COMMENTS
 6/28/2024

Key Plan

SIGNATURE STEWART (SWF) HANGAR

1188 1ST STREET, NEW WINDSOR, NY 12553



SIGNATURE FLIGHT SUPPORT 13485 VETERANS WAY, SUITE 600 ORLANDO, FLORIDA 32827

ISSUE DATE: 06/12/2024 COMM. NO.: 2023-177

DRAWN BY: JH CHECKED BY: DL/RS

MECHANICAL DETAILS AND SCHEDULES

M002

6/28/2024 9:48:10 AM
Autodesk Docs://23715 - SWF Terminal and Hangar (Halle House)/2023-177-SFS SWF HANGAR-M&P-CENTRAL-R23.rvt

100% PERMIT SET

