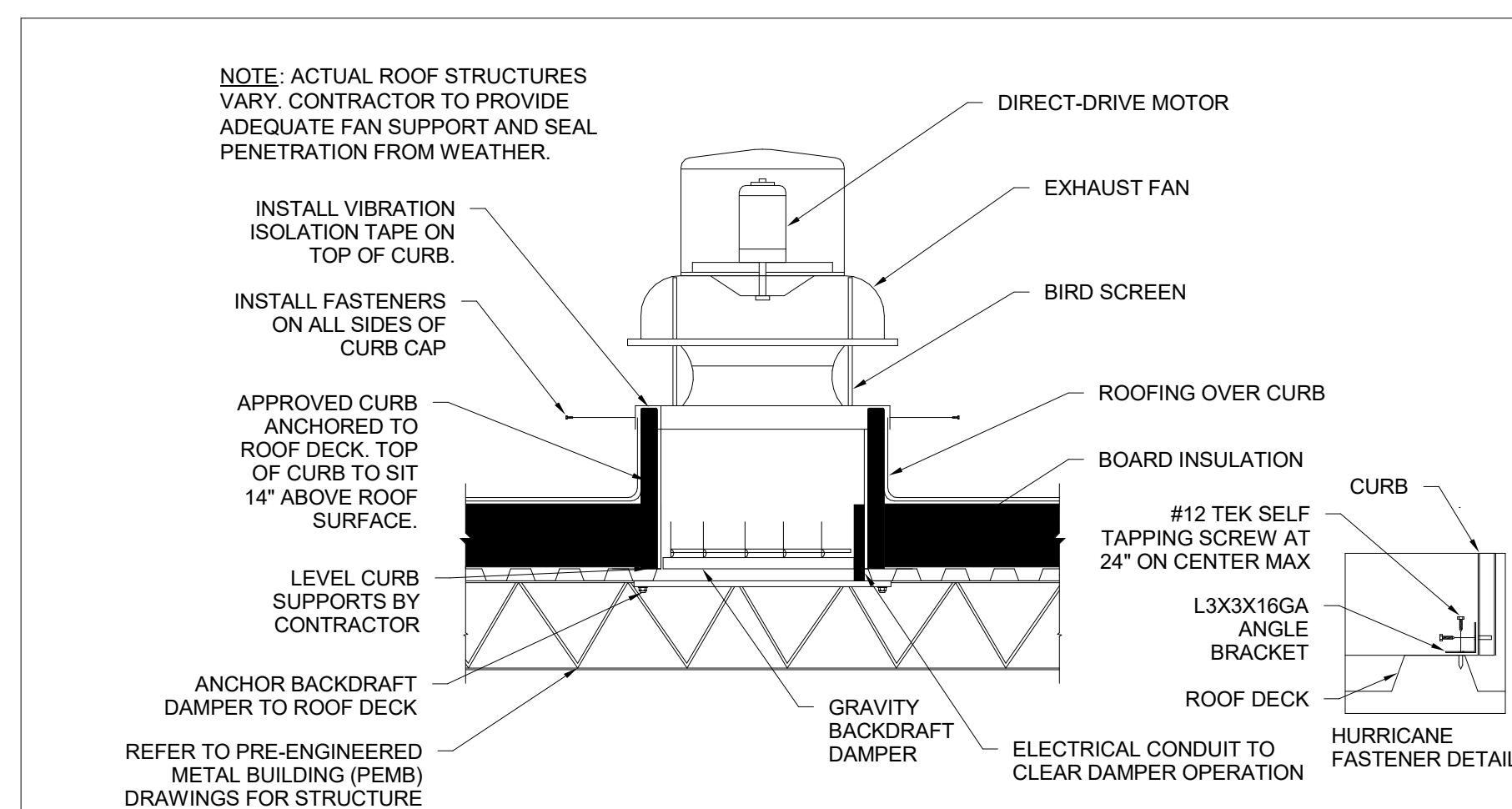
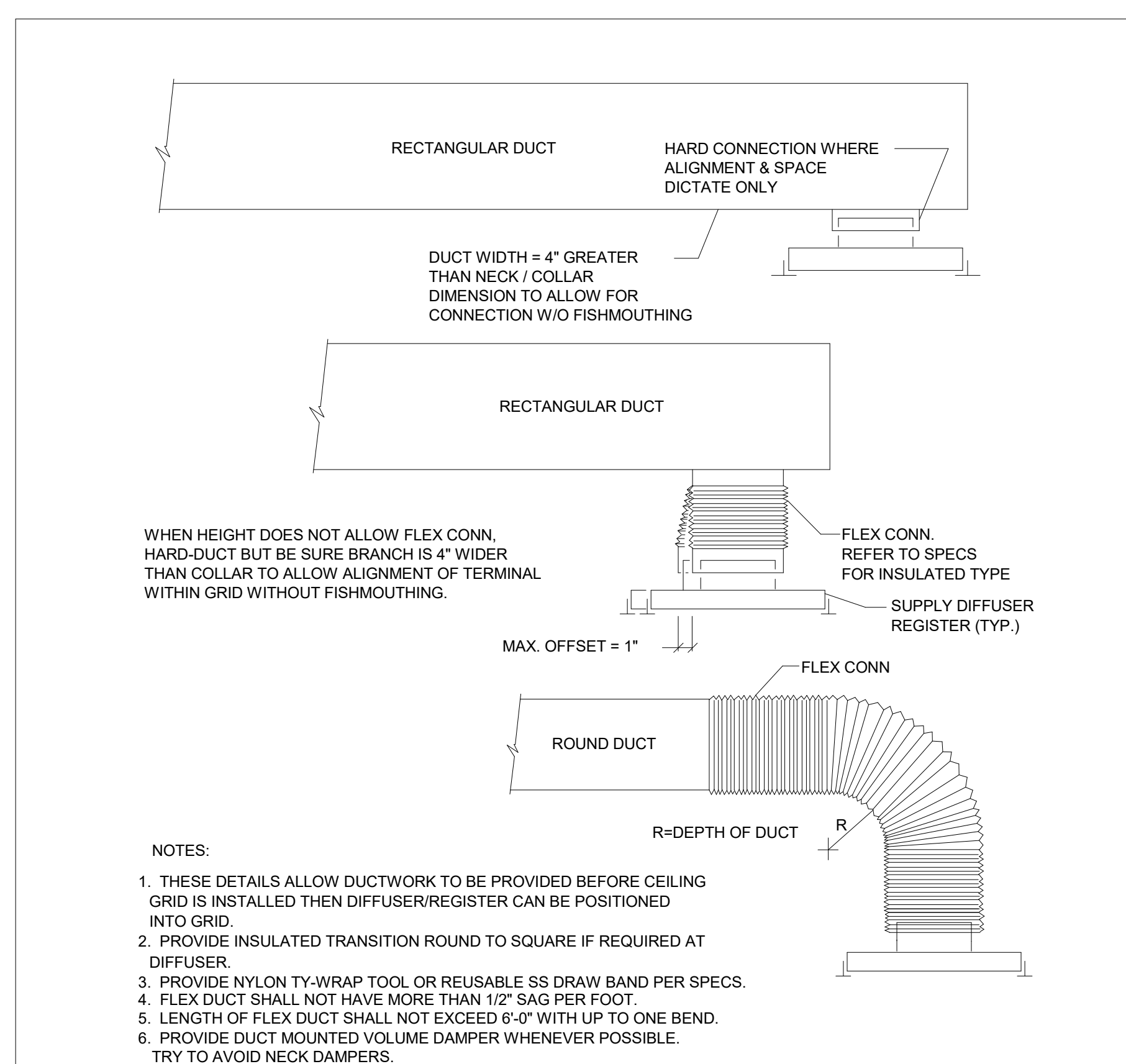


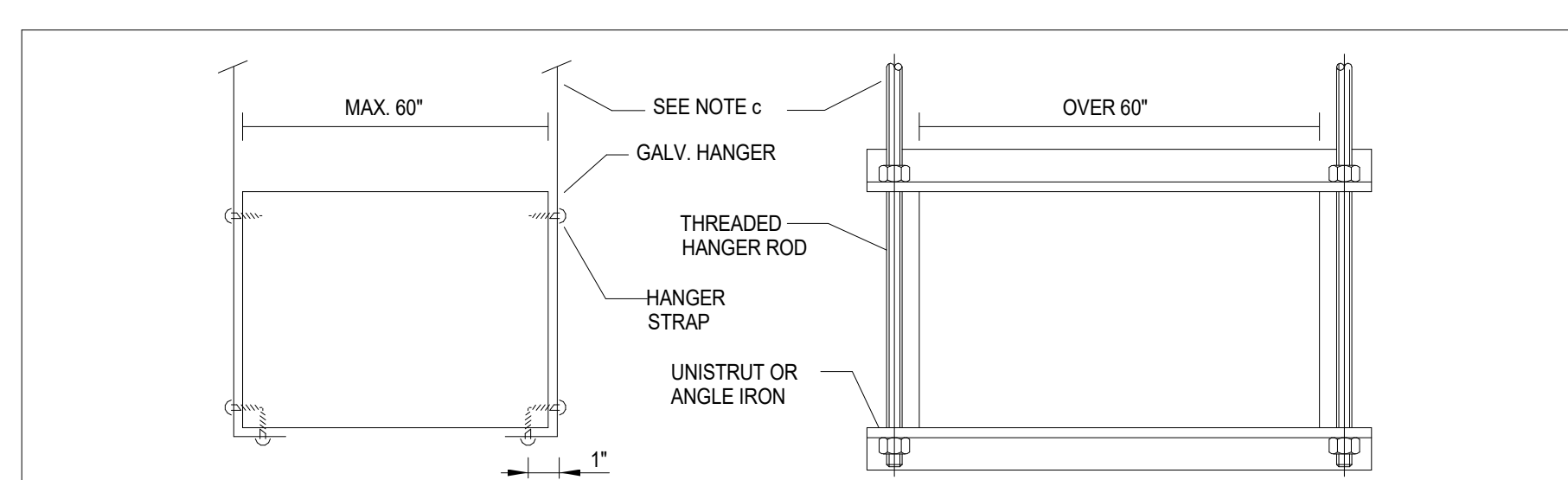
① ROOF TOP UNIT DETAIL



② EXHAUST FAN DETAIL (DIRECT)



③ DIFFUSER CONNECTION DETAIL



④ DUCT HANGER SUPPORT DETAIL

SPECIFICATIONS

1. Follow all local, 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 changes into installation.
2. All electrical, 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 with manufacturer's recommendations all Mechanical equipment.
5. Mechanical drawings are schematic and not to be scaled. Refer for architectural, certified drawings, and site measurements for all dimensions prior to duct and piping fabrication.
6. As required, provide a minimum of 10% of the equipment to be provided by the contractor 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 the architect for review and approval of the order.
8. Base bid on specified equipment shown on plans and in specifications. Substitutions will be processed as change-orders after bidding with all electrical, building alterations, fire requirements and dollar amounts included. Extra charges will be assessed if any substitutions are made without the approval of the architect.
9. Provide 2 operating manuals to owner and engineer for all systems and equipment including manufacturer's literature, maintenance, 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. All work shall be finished and in place.
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 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. Temperature control wiring for Mechanical equipment for all equipment. Provide UL listed flexible duct connections on all fans.
17. Temperature control wiring shall be by equipment manufacturer. Provide 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 neutralizer and trap 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. All ductwork shall be insulated with 1 1/2" thick rigid, factory 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 shall be supported by hangers. All grease ducts shall be installed back to hood, or on an approved grease reservoir/collection unit/ grease exhaust fan. Horizontal grease ducts in excess of 75 feet developed length shall slope at 1" per linear foot.
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. All exhaust ducts shall be insulated with 1 1/2" thick rigid, factory 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 shall be supported by hangers. All grease ducts shall be installed back to hood, or on an approved grease reservoir/collection unit/ grease exhaust fan. Horizontal grease ducts in excess of 75 feet developed length shall slope at 1" per linear foot.
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[illegible]

GAS FIRED ROOFTOP HVAC UNIT SCHEDULE																					
PLAN CODE RTU #	MANUFACTURER	MODEL #	COOLING DATA 95F AMBIENT, 80F DB REW, 62F WB RET						HEATING DATA			ESP DATA		ELECTRICAL DATA				WT. (LBS) INC CURB	AREA SERVED	DIMENSIONS INC CURB (LxWxH)	NOTES
			NOMINAL AIR TONS	TOTAL	MBH SENSIBLE	MBH EER (SEER)	EER IEER	MBH INPUT	A/FUE %	CFM AT ALT.	FAN P -WC	OSA INTAKE MIN. SETTING CFM	VOLTS	PHASE	MCA	MOPP					
RTU_1	TRANE	YHC092F4	7.5	89.0	62.4	12.6	14.5	200	80	3,000	1.1	REFER TO OSA CALC'S	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, 25	
RTU_2	TRANE	YHC038E4	3.0	37.1	25.1	(15.0)	-	120	80	1,200	0.94	REFER TO OSA CALC'S	460	3	12.0	15	850	SEE PLANS	70"x45"x55"	1, 2, 3, 5, 6, 8, 9, 10, 12, 15, 16, 17, 18, 22, 23, 24, 25	
<div>1. EQUIPMENT SCHEDULE BASED ON TRANE. ACCEPTABLE ALTERNATES INCLUDE CARRIER, DAKIN, LENOX, TEMPERMASTER, AMERICA, AND/OR YORK.</div> <div>2. EXTERNAL STATIC PRESSURE SHOULD NOT EXCEED FOR UNIT CASING, FILTERS, OR COILS.</div> <div>3. HIGH EFFICIENCY, MULTISPEED DIRECT DRIVE FAN MOTOR.</div> <div>4. MERV-5 FILTERS.</div> <div>5. MERV-14 FILTERS NOT.</div> <div>6. 7 DAY PROGRAMMABLE, THERMOSTAT WITH AUTO CHANGE OVER, SET FAN TO ON DURING OPERATING HOURS, 5 DEGREE HEATING SEQUENCE SHALL BE USED TO MAINTAIN SPACE COOLING SETPOINT; GAS HEATING SEQUENCE SHALL BE USED TO MAINTAIN SPACE HEATING SETPOINT.</div> <div>7. PROVIDE WITH TWO (2) GAS ECONOMIZER, AIR SIDE ECONOMIZER SHALL MODULATE THE OUTDOOR AIR DAMPER UP TO 100% FLOW FROM STAGE OF COOLING WHEN OUTDOOR TEMPERATURE IS BELOW INDOOR TEMPERATURE, PROVIDE DRAINAGE FOR RELIEF DETECTION AND DIAGNOSTICS REQUIRED.</div> <div>8. PROVIDE WITH COMPARTMENTAL ENTHALPY ECONOMIZER, AIR SIDE ECONOMIZER SHALL MODULATE THE OUTDOOR AIR DAMPER UP TO 100% FLOW FROM STAGE OF COOLING WHEN OUTDOOR TEMPERATURE IS BELOW INDOOR TEMPERATURE, PROVIDE DRAINAGE FOR RELIEF DETECTION AND DIAGNOSTICS REQUIRED.</div> <div>9. BURNER SHALL BE DESIGNED TO FIRE NATURAL GAS, 6" N/A W.C.</div> <div>10. STAINLESS STEEL HEAT EXCHANGER.</div> <div>11. HIGH ALTITUDE KIT.</div> <div>12. COMPRESSOR, ANTI-SHORTCYCLE, HIGH/LOW PRESSURE SWITCHES, CRANKCASE HEATER.</div> <div>13. HOT GAS BYPASS, HOT GAS BYPASS CAPACITY SHALL NOT EXCEED 55% RATED CAPACITY.</div> <div>14. HOT GAS RESET.</div> <div>15. HALI GUARD ON CONDENSER COILS.</div> <div>16. 18" HIGH FACTORY ROOF CURB, FLASH INTO ROOF.</div> <div>17. UNIT CASING AND CURB SHALL BE COASTAL GRADE OR COATED WITH A CORROSIVE RESISTANT COATING OR PAINT.</div> <div>18. SPACE COIL SENSIBLE HEAT LOSS BY MC. REFER TO PLANS FOR QUANTITY AND LOCATION; RETURN TO DESIGNER BEFORE VENTILATION CONTROL DETAIL.</div> <div>19. KNOXED SMOKE DETECTOR AND REMOTE SENSOR TO BE INSTALLED IN RETURN DUCT BY MC. INTERLOCK WITH FIRE ALARM SYSTEM.</div> <div>20. PROVIDE WITH BAGNET CONTROL BOARD WITH FAULT DETECTION OUTPUT.</div> <div>21. POWERED CONVEYANCE OUTPUT AND STEP DOWN TRANSDUCER BY MANUFACTURER.</div> <div>22. FACTORY MOUNTED DISCONNECT.</div> <div>23. VERIFY VOLTAGE, PHASE, MCA, AND FREQUENCY WITH EC PRIOR TO ORDERING.</div> <div>24. DESIGN LEAVING AIR TEMPERATURES: 55F DB COOLING, 58F DB HEATING.</div>																					

GAS FIRED SPACE HEATER SCHEDULE															
PLAN CODE	MANUFACTURER	MODEL #	HEATING DATA			FAN DATA			ELECTRICAL DATA				WT. (LBS)	AREA SERVED	NOTES
			TYPE AT ALT	INPUT MBH @ SL	EFFICIENCY %	CFM AT ALT	E.S.P. *WC	OSA INTAKE MIN. CFM	VOLTS	PHASE	FLA	HP			
GSH- #															
GSH- 1	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
<div> <div> 1. EXTERNAL STATIC PRESSURE DOES NOT INCLUDE LOSSES FOR UNIT CASING, FILTERS, OR COILS. 2. DIRECT DRIVE FAN MOTOR. 3. FILTER SECTION. MERRA CONTACT. 4. PROGRAMMABLE SPACE THERMOSTAT. SET FAN TO ON DURING OCCUPIED HOURS. GAS HEATING SELECTION SWITCH SHALL STAY ON TO MAINTAIN SPACE HEATING SETPOINT. 5. BURNER SHALL BE DESIGNED TO FIRE NATURAL GAS, 8" 1/4" W.C. 6. STAINLESS STEEL HEAT EXCHANGER. </div> <div> 8. HIGH ALTITUDE KIT. 9. LOW GAS PRESSURE SWITCH, FREEZE PROTECTION. 10. 2" HIGH FACTORY ROOF CURB, FLASH INTO ROOF. 11. UNDER ROOF MOUNTING PACKAGE. 12. TYPHOON WALL MOUNTING PACKAGE. 13. OUTDOOR VERTICAL MOUNTING PACKAGE. 14. INDOOR VERTICAL MOUNTING PACKAGE. </div> <div> 15. 1" HANG FACTORY DIRECTIONAL BLOW DISCHARGE. 16. 3/4" HANG FACTORY DIRECTIONAL BLOW 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. </div> </div>															

FAN SCHEDULE																	
PLAN CODE	MANUFACTURER	MODEL	TYPE	AREA SERVED	FAN DATA						ELECTRICAL DATA			WT (LBS)	FAN CONTROL	NOTES	
					CFM AT ALTITUDE	S.P. *WC	RPM	SYSTEM TYPE	BLADE TYPE	DRIVE	ROOF (WALL) OPENING	VOLTS	PHASE				HP (WATTS)
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-100H-PVG	ROOF CENTRIFUGAL	SEE PLANS	800	1.0	2411	EXHAUST	BI	DIRECT	15.5"x15.5"	115	1	1/2	100	E	1, 2, 4, 6, 7, 8, 14, 15, 16, PROVIDE WITH 24" VENTED CURB, GREASE CLIP, INTERLOCK TO OPERATE WITH GSH-1.
1. EQUIPMENT SCHEDULE BASED ON GREENHECK. ACCEPTABLE ALTERNATES INCLUDE: COOK, CAPTIVEARE, NALOR, OR 2. EXTERNAL STATIC PRESSURE DOES NOT INCLUDE LOSSES FOR UNIT CASING, SCREENS, ROOF CAPS, OR DAMPPERS. 3. 18" FACTORY ROOF CURB, FLASH INTO ROOF. 4. INTERNAL GRAVITY BACKDRAFT DAMPER. 5. 120V MOTORIZED BACKDRAFT DAMPER, FAL OPEN. 6. ECM OR SPEED CONTROLLER, PROVIDE WITH VFD AS REQUIRED. 7. FACTORY VIBRATION ISOLATORS. 8. 1/2 GAL/VOLTS MEASURED SCREEN. 9. DUCT FROM FAN OUTLET TO EXTERIOR. SEE PLANS. 10. 5/8"ODN OUTLET ROOF CAP. 11. WALL HOUSING FLUSH TO EXTERIOR WITH ACCESS GUARD SCREEN. 12. WEATHER HOOD. 13. FLUSH LOUVER. 14. UNIT CASING AND CURB SHALL BE COASTAL RATED OR COATED WITH A COASTAL RATED COATING OR PAINT. 15. DISCONNECT SWITCH. 16. VERIFY VOLTAGE, PHASE, AND MOTOR HP WITH EC PRO TO ORDERING. A. SEPARATE WALL SWITCH (NOT WITH LIGHTS). B. SWITCH ON WITH ROOM LIGHTS. C. 7-DAY TIME CLOCK SET ON DURING OCCUPED HOURS. D. TO OPERATE CONTINUOUSLY. E. INTERLOCK TO OPERATE WITH EQUIPMENT NOTED. F. SEPARATE WALL THERM FOR SOMEBODY VENTILATION ONLY. G. LINE VOLTAGE COOLING ONLY THERMOSTAT. SET TO 86F.																	

DUCTLESS FAN COIL UNIT SCHEDULE																
PLAN CODE <div>DFC #</div>	MANUFACTURER	MODEL	TYPE	COOLING DATA SEE CU SCHEDULE		HEATING DATA	FAN DATA					ELECTRICAL		OUTDOOR AIR CFM	AREA SERVED	Notes
				NOMINAL ARI TONS	CU-#	MBH TOTAL	CFM @ ALT.	E.S.P. *W.C.	HP	MCA	WATTS	VOLTS	PHASE			
DFC-1	SAMSUNG	RN509ABC	WALL MOUNTED	0.75	CU-1	-	392	-	-	1	27	208/230	1	-	SEE PLANS	1, 2, 3, 6, 7, 8, 9, 10, 11, 12

1. EQUIPMENT SCHEDULE BASED ON SAMPLING. ACCEPTABLE ALTERNATES INCLUDE CARRIER, MITSUBISHI, AND LENNIX.

2. EXTERNAL STATIC PRESSURE DOES NOT INCLUDE LOSSES FOR FAN, DUCTS, FILTERS, OR COLLS.

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

4. MERV14 FILTERS.

5. MERV-13 FILTERS.

6. WIRELESS REMOTE THERMOSTAT.

7. FACTORY LINE SET. VERIFY REQUIREMENTS LENGTH PRIOR TO ORDERING.

8. GRAVITY DRAIN IF POSSIBLE. RECOMMEND 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, RCA, AND MCCC* WITH EIC PRIOR TO ORDERING.

12. COOLING ONLY OPERATION.

AIR COOLED CONDENSING UNIT SCHEDULE																			
PLAN CODE	MANUFACTURER	MODEL	COOLING DATA				HEATING DATA		COMPRESSOR/FAN DATA				ELECTRICAL DATA				WT. (LBS) INC. CURB	EQUIPMENT SERVED	NOTES
			95F AMBIENT, 80F DB RET, 62F WB RET																
CUR #			NOMINAL ARI TONS	MBH TOTAL	MBH SENSIBLE	EER (SEER)	REFRIGERANT	MBH TOTAL	CONDENSER FAN CFM (6 1/2" SP)	COMPRESSOR STAGES	SOUND RATING (DB)	VOLTS	PHASE	MCA	MOCP				
CUR #	SAMSUNG	RXS08ACC	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	
<div>1. EQUIPMENT SCHEDULE BASED ON SAMUNG. ACCEPTABLE ALTERNATES INCLUDE CARRIER, MITSUBISHI, AND LENNOX.</div> <div>2. COMPRESSOR: ANTI-SHORTCICLE, HIGH-LOW PRESSURE SWITCHES, OVERCARG HEATER, START ASSIST.</div> <div>3. ELECTRONS: EXPANSION VALVE, FILTER DRIER.</div> <div>4. SOUND: ATTENUATING BLANKET OR EQUAL ON COMPRESSORS.</div> <div>5. LOW AMBIENT CONTROL TO -40F WITH WIND BAFFLES. OF WITHOUT WIND BAFFLES.</div> <div>6. HAL GUARD OR WIND BAFFLE KIT.</div> <div>7. 1" COUPLER BUNG BUSHING MOUNTING RAIL.</div> <div>8. VENTPIR-SEAL PORT CONNECTION TO OUTDOOR UNIT PROVIDES POWER TO INDOOR UNIT.</div> <div>9. FACTORY MOUNTED DISCONNECT.</div> <div>10. VOLTAGE, PHASE, MCA, AND MOCP WITH EC PRIOR TO ORDERING.</div> <div>11. COOLING ONLY OPERATION.</div> <div>12. VERIFY TYPING.</div>																			

ELECTRIC UNIT HEATER SCHEDULE												
PLAN CODE	MANUFACTURER	MODEL	WATTS	BTU/H	ELECTRICAL DATA		WT. (LBS)	CFM @ S.L.	AREA SERVED	EQUIPMENT CONTROL	DIMENSIONS	NOTES
					VOLTS	PHASE						
EUH-1	MODINE	HER 50	5,000	17,100	208	1	40	380	SEE PLANS	8	15" X 17.5" X 17.5"H	1, 3, 4, 6, 7, 8

1. EQUIPMENT SCHEDULE BASED ON MODINE. ACCEPTABLE ALTERNATES INCLUDE REDNOR, INDECO, AND TRANE.

2. EXPLOSION PROOF UNIT.

3. THERMAL CUTOFF.

4. FAN DELAY.

5. WALL MOUNTING KIT.

6. HANGING MOUNTING KIT.

7. DISCONNECT SWITCH.

8. VERIFY VOLTAGE, PHASE, AND KW WITH EIC PRIOR TO ORDERING.

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

CEILING FAN SCHEDULE																
PLAN CODE	MANUFACTURER	MODEL	TYPE	AREA SERVED	FAN DATA					ELECTRICAL DATA				WT (LBS)	FAN CONTROL	NOTES:
					SIZE	S.P. -WC	RPM	FINISH	BLADE TYPE	DRIVE	VOLTS	PHASE	HP (WATTS)			
FAN # 1-2	BIG ASS FANS	BAG-24	STRUCTURE MOUNTED	SEE PLANS	24 FT	-	61	ALUM	AIRFOIL	GEAR	460	3	2.0	250	B	1, 2, 3, 4, 5, 6, ONE CONTROLLER TO OPERATE BOTH HANGAR FANS

1. EQUIPMENT SCHEDULE BASED ON BIG ASS FANS. ACCEPTABLE ALTERNATES INCLUDE GREENBICH, HUNTER, AND EPIC.

2. MOUNT PER MANUFACTURER RECOMMENDATIONS.

3. FAN APPROXIMATELY 1' BETWEEN THE NEAREST FOUR SPRINKLER HEADS, MAINTAINING 3 FT VERTICAL CLEARANCE TO NEAREST SPRINKLER DEFLECTOR.

INTER LOCK FANS ARE TO BE SET DOWN OPERATION OF FAN WITH FIRE ALARM ACTIVATION.

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

6. COORDINATE LOCATION AND MOUNTING HEIGHT WITH OWNER/ARCHITECT, STRUCTURE, COLUMNS, AND RACING. PROVIDE PROPER CORDING LENGTH.

A. STANDARD WALL CONTROLLER


B. SMARTTIE WALL CONTROLLER WITH UPPER TEMPERATURE SENSOR

C. SEPARATE WALL SWITCH

D. 24-HOUR DIGITAL TIMER

ENERGY RECOVERY VENTILATOR UNIT SCHEDULE																		
PLAN CODE	SUMMER (COOLING) DATA 95F AMBIENT, 70F DB RET, 68F WB RET				WINTER (HEATING) DATA -10F AMBIENT, 70F DB RET, 63F WB RET				FAN DATA		ELECTRICAL DATA				WT. (LBS) INC. CURB	AREA SERVED	DIMENSIONS INC. CURB (LxWxH)	NOTES
ERV #	MANUFACTURER	MODEL #	NOMINAL SUPPLY TEMPERATURE (DEG F)	OSA ENTHALPY RECOVERY RATIO (%)	NOMINAL SUPPLY TEMPERATURE (DEG F)	OSA ENTHALPY RECOVERY RATIO (%)	SUPPLY @ ALT	EXHAUST CFM @ ALT	E.S.P. (\"W.C.)	VOLTS	PHASE	MCA	MOCP					
ERV 3	GREENHECK	ERV10-20L-VG	74.4	85.8	54.0	79	600	600	0.75	208	1	21.9	25	300	SEE PLANS	46"x34"x28"	1, 2, 5, 6, 7, 8, 9, 11, 12, 15 (2 KW), 19, 20	
ERV 3	<div><div><p>1. EQUIPMENT SCHEDULE BASED ON GREENHECK. ACCEPTABLE ALTERNATES INCLUDE COOK, RENHEAIRE, ACOM, OR YORK.</p><p>2. POLYMER ENERGY RECOVERY WHEEL TYPE.</p><p>3. FIBER ENERGY RECOVERY CORE TYPE.</p><p>4. POLYMER ENERGY RECOVERY CORE TYPE.</p><p>5. CONTROL CASING AND PRESSURE DOES NOT INCLUDE LOSSES FOR UNIT CASING, FILTERS, OR WHEEL/CORE.</p><p>6. HIGH EFFICIENCY, MULTI-SPEED DIRECT DRIVE FAN MOTORS.</p><p>7. MERV-8 FILTERS.</p></div><div><p>8. 7 DAY TIME CLOCK SET TO RUN DURING OCCURED HOURS.</p><p>9. SUPPLY AND EXHAUST AIRFLOW MONITORING.</p><p>10. DIRTY FILTER SENSOR.</p><p>11. IF FACTORY ROOF CURB, FLASH INTO ROOF.</p><p>12. UNIT CASING AND CURB SHALL BE GASTIGHT RATED OR COATED WITH A GASTIGHT RATED COATING OR COATING.</p><p>13. TIED EXHAUST FROST CONTROL.</p><p>14. MODULATING WHEEL, FROST CONTROL.</p></div><div><p>15. ELECTRIC PREHEAT FROST CONTROL. SEE NOTES FOR HEATER SIZE.</p><p>16. OUTDOOR AIR DAMPER.</p><p>17. RETURN AIR DAMPER.</p><p>18. POWERED CONVEIENCE OUTLET AND STEP DOWN TRANSFORMER BY MANUFACTURER.</p><p>19. FACTORY MOUNTED DISCREET.</p><p>20. VERIFY VOLTAGE, PHASE, MCA, AND MOCP WITH EC PRIOR TO ORDERING.</p></div></div>																	

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REVISIONS		
MARK	DESCRIPTION	DATE
1	PERMIT COMMENTS	6/28/2024
3	BID RFI	8/12/2024

Key Plan

SIGNATURE STEWART (SWF)
HANGAR

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SIGNATURE
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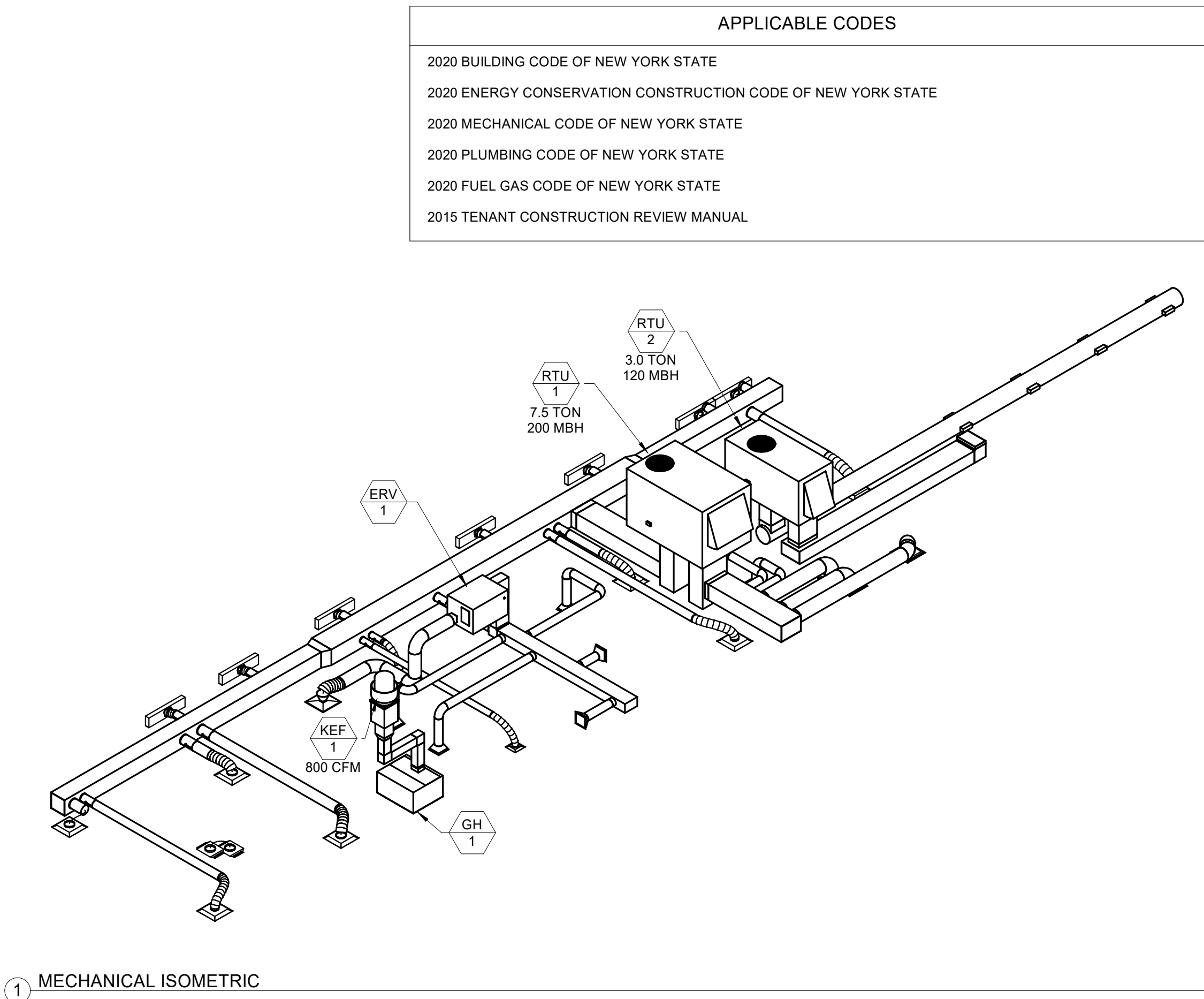
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COMM. NO.: 2023-177

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MECHANICAL DETAILS AND SCHEDULES

M001

R
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A



1 MECHANICAL ISOMETRIC

CO2 PURGE SYSTEM SEQUENCE OF OPERATIONS

WHEN CO2 SENSOR DETECTS LEVELS OF SPACE CO2 ABOVE 900 PPM, THE ASSOCIATED UNIT SHALL OPEN THE OSA DAMPER TO THE HIGH VALUE. THE OSA DAMPER SHALL STAY AT THE HIGH VALUE UNTIL THERE IS A CALL FOR ECONOMIZING OR THE CO2 LEVEL HAS DROPPED BELOW THE CO2 SENSOR SETPOINT (500 PPM).

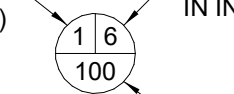
RTU-1: 30%
RTU-2: 20%

SENSOR SPECIFICATIONS:
ARMSTRONG MODEL AMC-310
CO2 SENSOR MUST BE INSTALLED 3-6 FEET ABOVE FINISHED FLOOR

OUTSIDE AIR CALCULATIONS: IMC Code (table 403.3)												
HVAC SYSTEM:		RTU-1		7.5 Ton Cooling			Total SA =		3,000 CFM		Set OSA min set = 20.0%	
Room Type:	Room Name and Room #	Az	Rp	Ra	Default Occ	Pz	If all Return Air is at Ceiling Level	Effectiveness Factor = 0.8	Total Room Supply Air (SA) CFM	Total OSA CFM Provided	Result:	
	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					
Break Rooms (ASHRAE62.1 2016.7.6.2.2.1)	101 - Kitchenette (PARTIAL)	234	5.0	0.12	50	12	87	108	900	180	Complies.	
Occupiable Storage Rooms (ASHRAE62.1)	102 - Stock Room/Pantry	300	5.0	0.06	2	1	21	26	475	95	Complies.	
Corridors	103 - Corridor	342	0.0	0.06	0.0	0.0	21	26	400	80	Complies.	
Corridors	104 - Corridor	134	0.0	0.06	0.0	0.0	8	10	50	10	Complies.	
Toilet Rooms (EXHAUST)	105 - Women	64					0	0	50	10	Complies.	
Toilet Rooms (EXHAUST)	106 - Men	63					0	0	100	20	Complies.	
Toilet Rooms (EXHAUST)	109 - Unisex	81					0	0	100	20	Complies.	
Office	111 - Flt. Ops. Office	120	5.0	0.06	5	1	10	13	125	25	Complies.	
Office	112 - Maint. Office	119	5.0	0.06	5	1	10	13	125	25	Complies.	
Conference	113 - Conf.	376	5.0	0.06	50	19	117	146	675	135	*	
Total Floor Area =		1,833	sqft		Totals =		273	341	3,000	600		
* SPACE CONTAINS DEMAND CONTROLLED VENTILATION. REFER TO CO2 SEQUENCE FOR DETAIL.												

TYPE I HOOD SCHEDULE												
TOTAL CFM	SUPPLY DATA		ELECTRICAL DATA		FIRE PROTECTION SYSTEM	WT (LBS)	NOTES					
	SP (" W.C.)	TOTAL CFM	VOLTS	PHASE								
800	-	-	115	1	ANSUL R-102	200	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15					
1. EQUIPMENT SCHEDULE BASED ON GREENHECK. ACCEPTABLE ALTERNATES INCLUDE CAPTIVEAIR. 2. MOUNT SUCH THAT THE BOTTOM OF HOOD IS AT 6" AFF. 3. TYPE 430 STAINLESS STEEL. ALL WELDS SHALL BE LIQUID TIGHT. 4. PROVIDE WITH STAINLESS STEEL FILTERS. 5. PROVIDE WITH GREASE TROUGH. 6. ROUND LED LIGHTS. 7. SUPPLY MAKEUP AIR NOT ENTERING THROUGH HOOD. SEE PLANS. 8. INTEGRAL SUPPLY PLENUM. 9. CONSTRUCT IN ACCORDANCE WITH UL 710 AND NFPA 96. 10. BEAR NSF SEAL OF APPROVAL. 11. IF REMOTE CABINET WITH REMOTE INTEGRAL FIRE PROTECTION SYSTEM INCLUDING UTILITY CABINET, TANK, PIPING, PULL STATION, AND ACTION, 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 MANUFACTURER'S INSTRUCTIONS. MAINTAIN ALL REQUIRED CLEARANCES. 14. EC TO PROVIDE JUNCTION BOX AND WIRING TO HOOD. 15. VERIFY VOLTAGE AND PHASE WITH EC PRIOR TO ORDERING.												

EXTERIOR LOUVER SCHEDULE											
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
1. VERIFY FINAL LOCATION WITH ARCHITECT. COORDINATE OPENING WITH STRUCTURAL. 2. PRESSURE DROP NOT TO EXCEED SCHEDULE VALUE. 3. 120V MOTORIZED BACKDRAFT DAMPER. FAIL OPEN. 4. 1/4" GALVANIZED MESH BIRD SCREEN. 5. INSECT SCREEN. 6. SECURITY BARS. 7. FILTER RACK. MERV-8 FILTERS.											

AIR DEVICE SCHEDULE									AIR DEVICE NUMBER (SEE SCHEDULE)		NECK SIZE IN INCHES
PLAN CODE # X XXX	MANUFACTURER	MODEL # / SERIES	TYPE	CONSTRUCTION	NOMINAL CFM	SIZE (INCHES)	FINISH	NOTES			
1 X XXX	PRICE	SCD	CEILING DIFFUSER	STEEL	SEE PLANS	SEE PLANS	SEE ARCH	2	* CONTRACTOR SHALL PROVIDE MANUAL BALANCING DAMPERS AS REQUIRED TO BALANCE AIR DEVICES TO VALUES SHOWN ON PLANS		
2 X XXX	PRICE	TBD3	SLOT SUPPLY DIFFUSER	STEEL	SEE PLANS	4 FT LONG	SEE ARCH	2, 7, 12, 14, 17			
3 X XXX	PRICE	PDF	PERFORATED CEILING DIFFUSER	ALUMINUM	SEE PLANS	SEE PLANS	STANDARD	2, 6			
4 X XXX	PRICE	81	RETURN GRILLE	ALUMINUM	SEE PLANS	SEE PLANS	STANDARD	2, 9, 19			
5 X XXX	PRICE	81	EXHAUST REGISTER	ALUMINUM	SEE PLANS	SEE PLANS	STANDARD	2, 9, 19			
6 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			
1. T-BAR CEILING TYPE. 2. SURFACE MOUNT. GYPOBOARD WALL/CILING. 3. SURFACE MOUNT. DOOR. 4. DUCT MOUNTED. 5. MULTI-BLADE DAMPER. 6. ADJUSTABLE BLADES DAMPER. 7. REMOTE BALANCING DAMPER. 8. PERFORATED 4-WAY. 9. CUBE CORE. 1/2" X 1/2" X 1". 10. FILTER GRILLE. 11. FIXED CORE. 12. ENGINEERED SUPPLY PLENUM. INLET TO MATCH NECK SIZE ON PLANS. 13. ENGINEERED RETURN PLENUM. OUTLET TO MATCH NECK SIZE ON PLANS. 14. 1" SLOT. 14. 1/2" SLOT. 15. 3/4" SLOT. 16. 1" SLOT. 17. 2" SLOT. 18. FRAMELESS. MOUNT FLUSH TO GYPOBOARD. 19. SQUARE TO ROUND ADAPTOR. MATCH RECTANGULAR AND NECK DIMENSIONS ON PLANS. 20. PRESSURE RELIEF COLLAR. 21. 24 VAC INPUT. PROVIDE TEN 115/208-20 VA. TRANSFORMER ON MASTER DIFFUSER ONLY.											

OUTSIDE AIR CALCULATIONS: IMC Code (table 403.3)												
HVAC SYSTEM:		GSH-1		0.0 Ton Cooling		Total SA =		8,565 CFM		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	Total Room Supply Air (SA) CFM	Total OSA CFM Provided	Result:	
	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					
Warehouses	100 - Hangar	33,813	10.0	0.06	0.0	0.0	2,029	2,536	8,565	8,565	Complies.	
Total Floor Area =		33,813	sqft		Totals =		2,029	2,536	8,565	8,565		

OUTSIDE AIR CALCULATIONS: IMC Code (table 403.3)												
HVAC SYSTEM:		RTU-2		3.0 Ton Cooling			Total SA =		1,200 CFM		Set OSA min set = 10.0%	
Room Type:	Room Name and Room #	Az	Rp	Ra	Default Occ. People per 1000sqft	Pz	If all Return Air is at Ceiling Level	Effectiveness Factor = 0.8	Total Room Supply Air (SA) CFM	Total OSA CFM Provided	Result:	
	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					
Occupiable Storage Rooms (ASHRAE62.1)	114 - Maintenance Parts & Shop	808	5.0	0.06	2	2	57	71	1,200	120	*	
Total Floor Area =		808	sqft			Totals =		57	71	1,200	120	
* SPACE CONTAINS DEMAND CONTROLLED VENTILATION. REFER TO CO2 SEQUENCE FOR DETAIL.												

OUTSIDE AIR CALCULATIONS: IMC Code (table 403.3)												
HVAC SYSTEM:		ERV-1		0.0 Ton Cooling		Total SA =		600 CFM		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	Total Room Supply Air (SA) CFM	Total OSA CFM Provided	Result:	
	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					
Break Rooms (ASHRAE62.1 2016.7.6.2.2.1)	101 - Kitchenette (PARTIAL)	334	5.0	0.12	50	17	124	154	600	600	Complies.	
Total Floor Area =		334	sqft		Totals =		124	154	600	600		



REVISIONS		
MARK	DESCRIPTION	DATE
1	PERMIT COMMENTS	8/12/2024
2	RED RFI	8/12/2024

Key Plan

SIGNATURE STEWART (SWF)
HANGAR

1188 1ST STREET, NEW WINDSOR, NY 12553



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

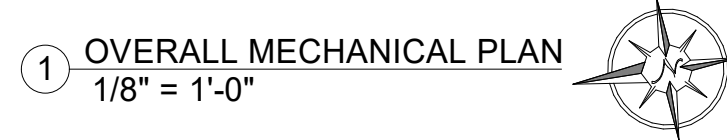
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MECHANICAL DETAILS AND
SCHEDULES

M002

100% PERMIT SET



1. ALL ROOFTOP EQUIPMENT TO BE INSTALLED A MINIMUM OF 10 FEET FROM BUILDING EDGE UNLESS 42" PARAPET IS PROVIDED.
2. ALL EXHAUST, FLUES, AND VENT OUTLETS TO DISCHARGE A MINIMUM OF 10 FEET FROM ANY OUTSIDE AIR INTAKE.
3. ALL EQUIPMENT TO BE INSTALLED PER MANUFACTURERS SPECIFICATIONS. MAINTAIN ALL CLEARANCES.
4. ALL RETURN PLENUM MATERIALS TO BE PLENUM RATED.

- 1 INTERLOCK FAN RELAY TO SHUT DOWN OPERATION OF FAN WITH FIRE ALARM ACTIVATION.
- 2 MOUNT EXHAUST FAN IN HANGAR WALL AT ELEVATION SHOWN.
- 3 MOUNT SPACE HEATER SUCH THAT THE BOTTOM OF DISCHARGE DUCT/ELBOWS ARE 45" A.F.F. VERIFY ALL EQUIPMENT WILL BE CLEAR OF AIRCRAFT COMPONENTS.
- 4 PROVIDE FULL SIZE EXHAUST FAN CONNECTION DOWN THROUGH ROOF TO 12" BELOW STRUCTURE AND COVER OPENING WITH 1/4" MESH.
- 5 PROVIDE FULL SIZE ROOF TOP UNIT CONNECTIONS DOWN THROUGH ROOF AND TRANSITION TO DUCTWORK AS SHOWN.
- 6 PROVIDE FULL SIZE HOOD CONNECTION UP THROUGH ROOF TO KEF-1. TRANSITION TO EXHAUST FAN CONNECTION SIZE AT ROOF. PROVIDE 3" FIRE WRAP INSULATION ON ALL GREASE DUCT OR APPROVED PREFABRICATED GREASE EXHAUST DUCT.
- 7 16"x10" EXHAUST UP TO ROOF. SEE SHEET M200.
- 8 12" OSA DOWN FROM ROOF. SEE SHEET M200.
- 9 ANSLU SWITCH LOCATION. MOUNT BETWEEN 42"-48" A.F.F.
- 10 PROVIDE 4" ROUND DRYER EXHAUST DUCT THROUGH SIDE WALL TO MANUFACTURERS. RECOMMENDED TERMINATION. DO NOT EXCEED MAXIMUM DEVELOPED LENGTH PUBLISHED BY DRYER MANUFACTURER. MAINTAIN 10' SEPARATION FROM ANY OUTSIDE AIR INTAKES.

SEAL

STATE OF NEW YORK
 RICHARD ALLAN SABA
 LICENSED PROFESSIONAL ENGINEER
 100892
 08/12/2024

REVISIONS		
MARK	DESCRIPTION	DATE
1	PERMIT COMMENTS	6/28/2024
2	BID RFI	8/12/2024

Key Plan

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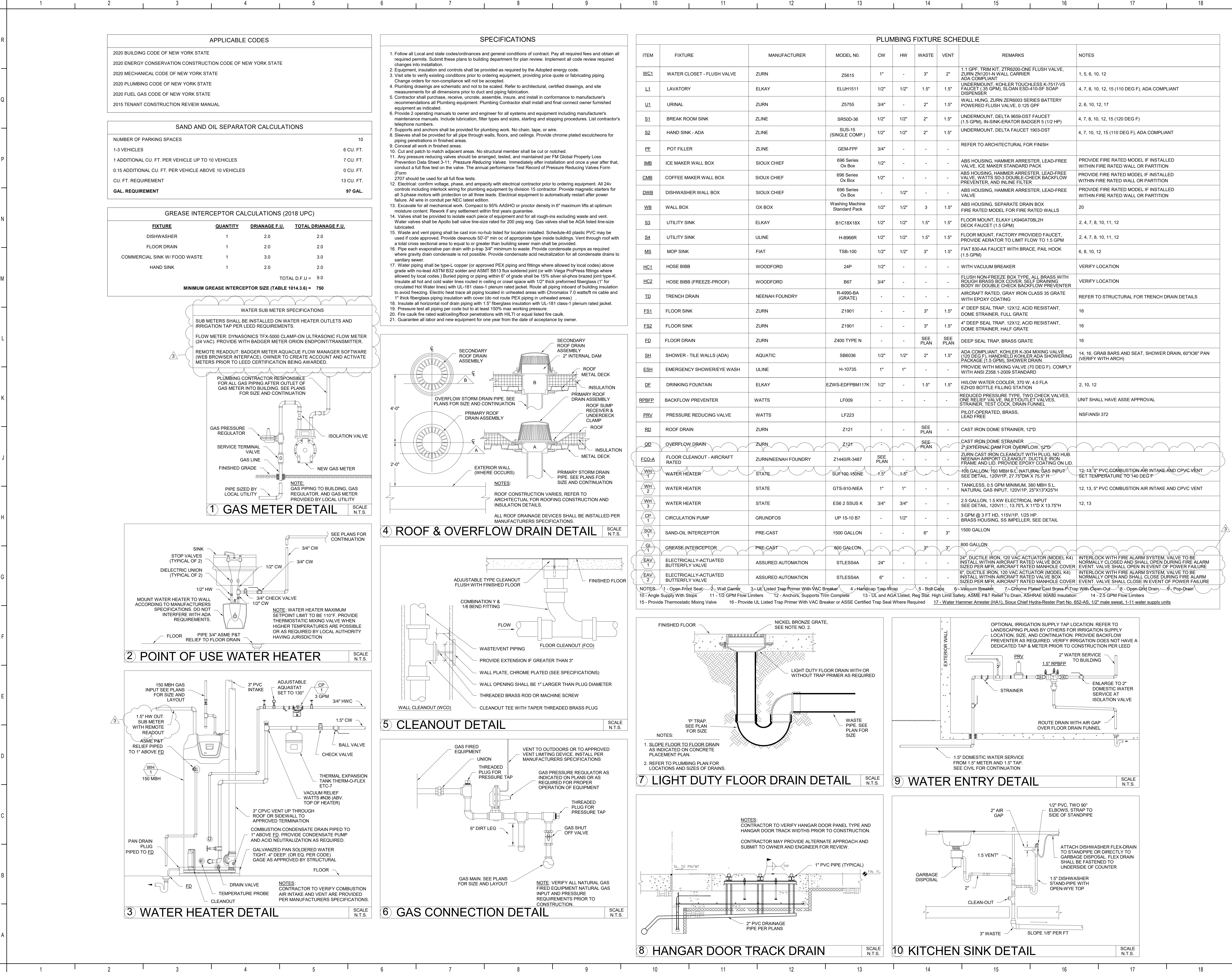
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OVERALL MECHANICAL PLAN

M100

100% PERMIT SET



HDg

Architecture

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SEAL

STATE OF NEW YORK

BOARD OF PROFESSIONAL ENGINEERS

10082

08/12/2024

REVISIONS

MARK	DESCRIPTION	DATE
1	PERMIT COMMENTS	8/26/2024
2	REVISION	8/13/2024

Key Plan

1188 1ST STREET, NEW WINDSOR, NY 12553

SIGNATURE STEWART (SWF)
HANGAR

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SIGNATURE AVIATION

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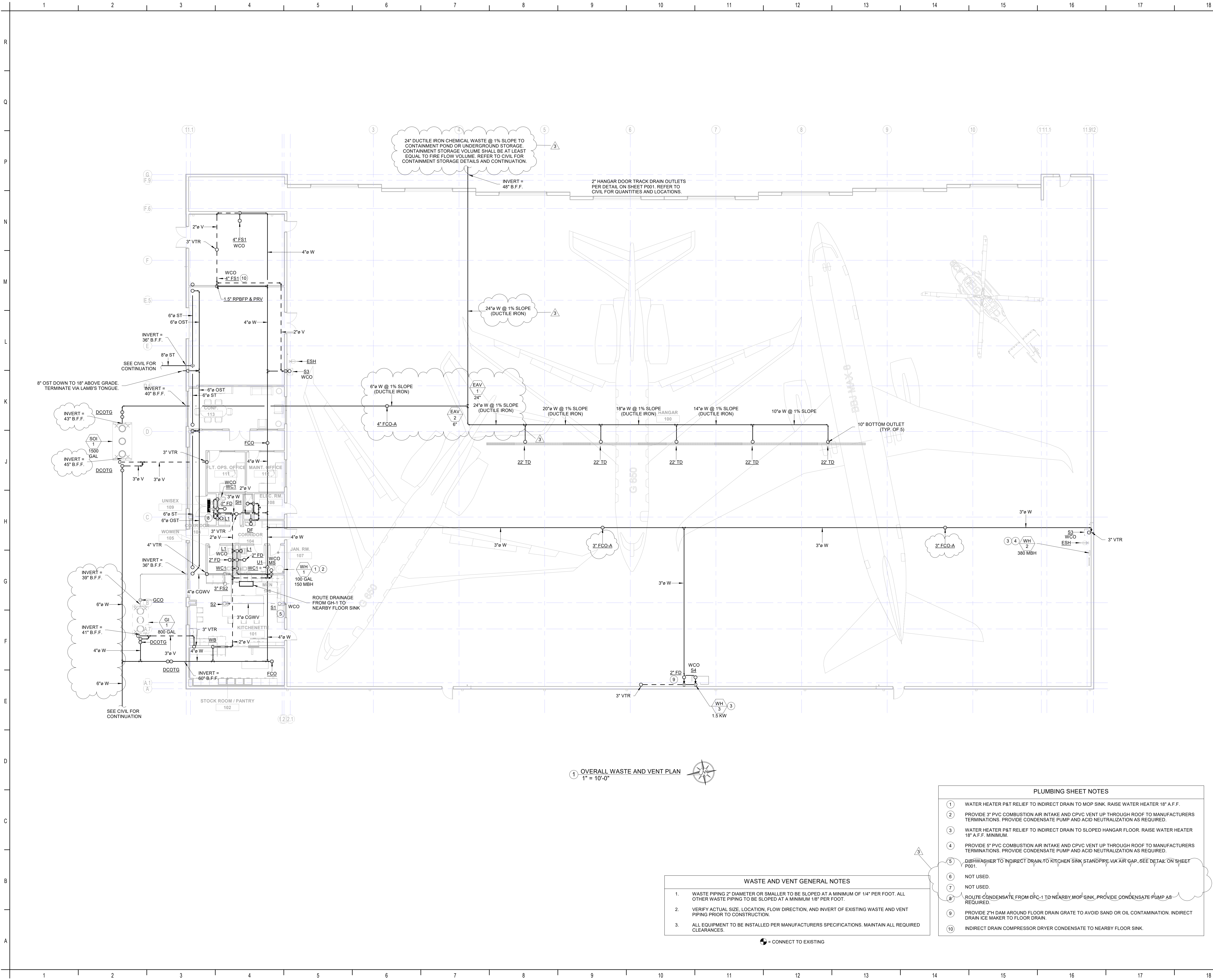
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PLUMBING DETAILS AND
SCHEDULES

P001

100% PERMIT SET



REVISIONS		
MARK	DESCRIPTION	DATE
1	PERMIT COMMENTS	8/26/2024
2	(REV. RPT)	8/13/2024

Key Plan

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OVERALL WASTE AND VENT
PLAN

P100

100% PERMIT SET

