

HVAC GENERAL NOTES

GENERAL:

1. ALL MECHANICAL EQUIPMENT AND INSTALLATIONS SHALL CONFORM WITH THE REQUIREMENTS OF THE 2008 INTERNATIONAL MECHANICAL CODE, THE 2008 INTERNATIONAL BUILDING CODE, 2009 INTERNATIONAL ENERGY CONSERVATION CODE, APPLICABLE ASHRAE AND ASHRAE STANDARDS, STATE AMENDMENTS, NAPA SIA, 101, UNDERWRITERS LABORATORIES (OR ETL) AND ALL APPLICABLE LOCAL CODES, ORDINANCES, AND ORDINANCES.
2. PRIOR TO RELOCATING ANY MATERIALS OR STATING ANY WORK, CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS, DUCTWORK SIZES AND LOCATIONS, EQUIPMENT, ETC. SHOWN ON THE DRAWINGS OR AFFECTING THIS WORK AND SHALL REPORT ANY DEVIATIONS TO THE ARCHITECT.
3. SHOP DRAWINGS SHALL BE SUBMITTED TO AND APPROVED BY THE ENGINEER/ARCHITECT PRIOR TO ORDERING, PURCHASING, OR FABRICATING ANY MECHANICAL EQUIPMENT. SHOP DRAWINGS SHALL INCLUDE: ALL EQUIPMENT SCHEDULED OR SPECIFIED ON THE DRAWINGS; DUCTWORK DRAIN TO 1/4" SCALE OR THE SCALE SHOWN ON THE DRAWINGS; REFRIGERANT PIPING AND CONTROL WIRING SCHEMATICS CERTIFIED BY THE AIR CONDITIONING EQUIPMENT MANUFACTURER.
4. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
5. ALL MECHANICAL EQUIPMENT AND SYSTEMS SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE BY OWNER.
6. ALL HVAC COMPRESSORS SHALL HAVE EXTENDED 5-YEAR MANUFACTURER'S WARRANTY.
7. FOR EXACT LOCATION OF OUTDOOR AIR CONDITIONING UNITS SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
8. PORTIONS OF DUCTWORK AND PIPE INSULATION VISIBLE THROUGH AIR DISTRIBUTION DEVICES IN FINISHED AREAS SHALL BE PAINTED FLAT BLACK.
9. MOUNT THERMOSTATS AND SENSORS 4'-0" AFF UNLESS NOTED OTHERWISE. COORDINATE THERMOSTAT LOCATIONS WITH OTHER TRADES. LOCATE HUMIDISTAT AND CO2 SENSOR ADJACENT TO THERMOSTAT WHERE APPLICABLE.
10. ANY EXISTING WALL, FLOOR, OR CEILING SURFACE THAT IS DISTURBED DURING THE COURSE OF THE HVAC WORK SHALL BE REPAIRED TO MATCH NEW AND/OR EXISTING CONDITIONS.
11. AFTER CONSTRUCTION, THE ENTIRE HVAC SYSTEM SHALL BE TESTED, ADJUSTED, AND BALANCED TO DELIVER THE AIR QUANTITIES SHOWN ON THE DRAWINGS. SUBMIT CERTIFIED (IABC OR NEBB) TEST AND BALANCE REPORT TO THE ARCHITECT FOR APPROVAL. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
12. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL MECHANICAL EQUIPMENT, DUCTWORK, PIPING, ETC. TO FIT WITHIN THE SPACE ALLOWED BY THE ARCHITECTURAL AND STRUCTURAL CONDITIONS. CUTTING OR OTHERWISE ALTERING ANY STRUCTURAL MEMBERS SHALL NOT BE PERMITTED WITHOUT WRITTEN PERMISSION FROM THE ARCHITECT.
13. AIR HANDLING AND FAN COIL UNITS LOCATED ABOVE THE LOWEST LEVEL FINISHED FLOOR SHALL BE INSTALLED WITH AN AUXILIARY CONDENSATE DRAIN PAN UNDER THE UNIT. PROVIDE AN ELECTRONIC WATER LEVEL DETECTOR WIRED TO SHUTDOWN THE UNIT UPON DETECTION IN SECONDARY DRAIN PAN.
14. ALL PIPE AND DUCT PENETRATIONS OF FIRE AND/OR SMOKE-RATED ASSEMBLIES SHALL BE FIRE-STOPPED AS REQUIRED TO RESTORE THE ASSEMBLY TO ITS ORIGINAL INTEGRITY. FIRE BARRIER PRODUCTS SHALL BE AS MANUFACTURED BY TREMO, HULTI, 3M OR APPROVED EQUAL.
15. PROVIDE ACCESS PANELS IN NON-ACCESSIBLE CEILINGS AND IN WALL STRUCTURE TO ALLOW ADEQUATE ROOM FOR MAINTENANCE OF EQUIPMENT AND BALANCING OF SYSTEMS. ACCESS PANELS IN CEILING AND WALLS SHALL BE PROVIDED WHERE SHOWN ON THE DRAWINGS OR NECESSARY TO ACCESS DAMPERS, VALVES, ETC. COORDINATE EXACT LOCATION ON ALL ACCESS PANELS WITH THE ARCHITECT DURING THE SHOP DRAWING PROCESS.
16. MECHANICAL EQUIPMENT SHALL BE LABELED WITH A SEMI-RIGID PLASTIC NAMEPLATE WITH 7/16" HIGH WHITE LETTERS ON A BLACK BACKGROUND SECURELY AFFIXED TO THE EQUIPMENT. THE NAMEPLATE SHALL SHOW THE EQUIPMENT TAG USED ON THESE DRAWINGS.
17. PROTECT ALL DUCT AND EQUIPMENT OPENINGS DURING CONSTRUCTION WITH PLASTIC. ALL RETURN AIR OPENINGS SHALL BE PROVIDED WITH MERV-8 TEMPORARY FILTRATION IF SYSTEMS ARE OPERATED DURING CONSTRUCTION.
18. LABEL ALL WAREHOUSE ROOFTOP EQUIPMENT ON THE UNDERSIDE OF THE ROOF DECK WITH DESSONATION TO MATCH CONSTRUCTION DOCUMENTS. LABELS TO BE MINIMUM 12-INCH HIGH LETTERS/DIGITS TO BE VISIBLE FROM GROUND LEVEL.

MECHANICAL/ELECTRICAL COORDINATION:

1. CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH ELECTRICAL DRAWINGS PRIOR TO ORDERING EQUIPMENT OR SUBMITTING SHOP DRAWINGS, AND SHALL FURNISH EQUIPMENT DATA FOR THE VEHICLES SHOW THEREIN. SHOP DRAWING SUBMITTALS SHALL CLEARLY STATE THAT THE ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT HAVE BEEN COORDINATED WITH THE ELECTRICAL CONTRACT DOCUMENTS AND THE ELECTRICAL CONTRACTOR.
2. ALL MECHANICAL EQUIPMENT REQUIRING ELECTRICAL POWER SHALL BE INSTALLED WITH DISCONNECT SWITCHES AT EACH PLACE OF EQUIPMENT. COORDINATE SWITCH TYPE (FUSED OR NON-FUSED) WITH ELECTRICAL CHARACTERISTICS, MANUFACTURER'S RECOMMENDATIONS AND THE ELECTRICAL DRAWINGS.
3. ALL REQUIRED CONTROL WIRING (INCLUDING POWER WIRING REQUIRED FOR CONTROL PANELS, DEVICES, ETC.) NOT SHOWN ON THE ELECTRICAL DRAWINGS SHALL BE INCLUDED AS PART OF THE MECHANICAL WORK. WIRING IN HVAC RETURN SPACES SHALL BE INSTALLED ACCORDING TO CODE REQUIREMENTS.
4. UNLESS NOTED OTHERWISE, TRANSFORMERS, CONTROLS AND CONTROL WIRING REQUIRED FOR ALL MECHANICAL SYSTEMS SHALL BE FURNISHED WITH THE EQUIPMENT IT SERVES AND INSTALLED BY THE MECHANICAL CONTRACTOR. MOTOR STARTERS FOR MECHANICAL EQUIPMENT SHALL BE FURNISHED WITH THE MOTOR OR APPARATUS WHICH IT OPERATES. MOTOR STARTER INSTALLATION SHALL BE BY THE DIVISION 16 CONTRACTOR.

1. ALL FANS SUPPLYING MORE THAN 2000 CFM OF AIR TO ANY SPACE AND ALL RECIRCULATING FAN SYSTEMS SERVING AREAS OF EGRESS SHALL BE INSTALLED WITH A SMOKE DETECTOR IN THE SUPPLY DUCTWORK. DUCT SMOKE DETECTORS SHALL BE INSTALLED IN THE RETURN AIR PATH OF AIR DISTRIBUTION SYSTEMS UTILIZING A COMMON SUPPLY AND/OR RETURN AIR PLENUM WITH A COMBINED DESIGN CAPACITY GREATER THAN 2000 CFM. THE SMOKE DETECTOR SHALL BE WIRED TO THE RETURN AIR DETECTION OF SMOKE, AND SIGNAL THE BUILDING FIRE ALARM CONTROL PANEL, UNLESS OTHERWISE INDICATED. THE SMOKE DETECTOR SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR, MOUNTED IN THE DUCT BY THE MECHANICAL CONTRACTOR, AND WIRED BY THE ELECTRICAL CONTRACTOR.

2. SUPPLY, RETURN AND EXHAUST DUCTS SHALL BE CONSTRUCTED OF GALVANIZED STEEL WITH A MINIMUM THICKNESS OF 1/8" (2.08 MM) FOR RECTANGULAR DUCTS AND 1/4" (6.35 MM) FOR ROUND DUCTS. ALL SAMS AND SEAMS IN ALL SECTORS WITH THROUGH SHALL BE SEALED WITH DUCT-SEALING TAPE TO MEET ULF 1785, CLASSIFIED (HASTING DUCT SEAL) 300 OR EQUIV.

3. CONCEALED STEEL METAL SUPPLY & O.A. DUCTWORK IN NON-AIR CONDITIONED AREAS SHALL BE INSULATED WITH 3" THICK, 0.75 LB/FT³ DENSITY FIBERGLASS BLANKET INSULATION WITH FOIL VAPOR BARRIER, ULL LISTED, R=10.2. PUNCTURES AND TEARS IN THE FOIL JACKET SHALL BE PATCHED WITH FOIL TAPE TO MAINTAIN THE INTEGRITY OF THE VAPOR BARRIER.

4. RETURN AND TRANSFER AIR DUCTWORK AND EXPOSED STEEL METAL DUCTWORK (IN WAREHOUSE AREAS) SHALL BE INTERNALLY INSULATED/UNLINED. SEE SPECIFICATIONS 23 3100.

5. ALL DUCTWORK SHALL BE METAL UNLESS OTHERWISE SPECIFIED TO BE NON-METAL.

6. EXHAUST DUCTWORK SHALL BE GALVANIZED SHEET METAL CONSTRUCTED TO SMACNA STANDARDS AND SHALL NOT REST ON CEILING TIES OR CEILING STRUCTURE. DUCT SUPPORTS AND ATTACHMENT TO STRUCTURE SHALL BE PER SMACNA STANDARDS.

7. ALL DUCTWORK SHALL BE SUPPORTED BY THE BUILDING STRUCTURE AND SHALL NOT REST ON CEILING TIES OR CEILING STRUCTURE. DUCT SUPPORTS AND ATTACHMENT TO STRUCTURE SHALL BE PER SMACNA STANDARDS.

8. FLEXIBLE DUCTWORK SHALL BE THERMAFLEX U.L. 181 LISTED, CLASS 1 FLEXIBLE AIR DUCT OR EQUAL, R=8.0 (2-1/4" THICK, 0.75 PFD DENSITY FIBERGLASS WITH METALLIZED POLYESTER FILM VAPOR BARRIER). AIR CONNECTORS ARE NOT ACCEPTABLE. FLEX DUCT DIAMETER SHALL MATCH DUCT SIZE DIAMETER. PROVIDE ROUND ROUNDED STEEL DUCT RUNGINS TO MAINTAIN A MAINTAINED DUCT LENGTH OF 8'-0". FLEXIBLE DUCTWORK SHALL BE INSTALLED AS STRAIGHT AS POSSIBLE & SHALL BE ROUTED AND SUPPORTED WITHOUT FORMING CRUMPS OR OTHER AIR FLOW RESTRICTIONS. PROVIDE SQUARE TO ROUND ADAPTERS OR BOOTS TO CONNECT TO AIR DEVICE NECK WHEN REQUIRED. INSTALL FLEXIBLE DUCTWORK SUPPORTS AT ALL ROUND NECK INLETS/OUTLETS EQUAL TO GALVANIZED FLEX-FLOW BELLOW.

9. ROUND AND FLEXIBLE SUPPLY AIR DUCTWORK SHALL BE CONNECTED TO MAIN DUCTS WITH A SPIN-IN FITTING WITH SCOOP AND BALANCING DAMPER (EXCEPT WHERE INSTALLED ABOVE INACCESSIBLE CEILING). THE DAMPER SHALL BE OILMENT AND PROVIDED IN THE AIR DEVICE NECK).

10. IN ADDITION TO EXTERNAL INSULATION REQUIREMENTS, UNLESS SHEET METAL DUCTWORK A MINIMUM OF 10'-0" (OR AS INDICATED) DOWNSTREAM OF ALL AIR HANDLING UNITS, FAN COIL UNITS AND ROOFTOP UNITS. DUCT LINER SHALL BE 1" THICK, 3 LB/FT³ DENSITY (MINIMUM R VALUE 4.0 OR AS REQUIRED) BY AFFORDABLE ENERGY CODE), CERTAINTED 2000-27 OR EQUAL BY KNAUF OR JOHNS-MANVILLE. THE LEADING EDGE OF THE DUCT LINER SHALL HAVE A SHEET METAL NOSING.

11. DUCTWORK DIMENSIONS SHOWN ON THE DRAWINGS ARE INSIDE CLEAR DIMENSIONS.

12. INTERNAL STATIC PRESSURE (ESP) DOES NOT INCLUDE COIL, CASING OR FILTER PRESSURE DROP.

13. EXIST. FIRE DAMPERS IN ALL RATED WALLS, FLOOR AND CEILING PENETRATIONS. FIRE DAMPERS SHALL BE THE DYNAMIC TYPE WITH BLADES OUT OF THE AIRSTREAM WHERE POSSIBLE. REFER TO THE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF DRAFT ASSEMBLIES. PROVIDE ACCESS DOORS IN DUCTWORK AT EACH FIRE DAMPER LOCATION. INSTALL SMOKE DAMPERS IN ALL DUCT PENETRATIONS THROUGH ROOFED WALLS WHERE DUCTS PENETRATE WALLS THAT CARRY BOTH FIRE AND SMOKE RATINGS. THE DAMPERS INSTALLED SHALL BE COMBINATION FIRE AND SMOKE DAMPERS. ALL DAMPERS SHALL BE U.L. 555 AND/OR 555S LABELED.

14. LOCATIONS OF COILS, REGISTER, & OUTFITTERS SHOWN ON THE DRAWINGS ARE APPROXIMATE. COORDINATE EXACT LOCATIONS WITH LIGHTS, CEILING GRID, ETC. AND ARCHITECTURAL, REFLECTED CEILING PLAN.

PINNING:




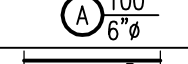
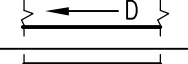
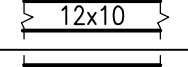
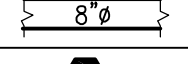



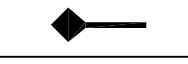


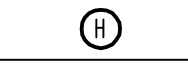
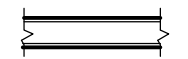

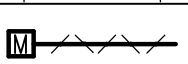
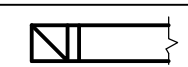
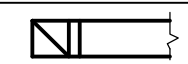
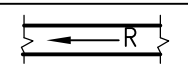
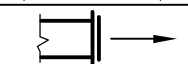


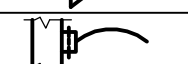
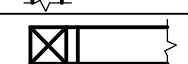
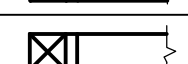


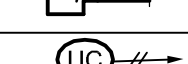
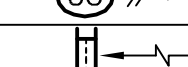
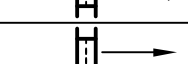

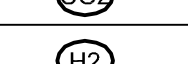
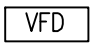
1. RETROFIT PIPING SHALL BE TYPE L OR REGISTRATION SERVICE COPPER TUBING WITH BRAZED JOINTS. SUCTION PIPING SHALL BE INSULATED WITH 3/4" MANVILLE AEROTUBE. IF PIPE INSULATION SLID OVER TUBING WITHOUT CUTTING, ALL JOINTS AND SEAMS SHALL BE SEALED WITH ADHESIVE.
2. CONDENSATE FROM ALL AIR HANDLING EQUIPMENT SHALL BE TRAPPED AND ROUTED TO THE NEAREST ROOF/FLOOR DRAIN. CONDENSATE PIPING SHALL BE SCHEDULE 40 PVC (EXCEPT INSULATED COPPER IN HVAC PLENUMS). CONDENSATE SHALL BE PRIMED AS REQUIRED.

BUILDING AUTOMATION SYSTEM:

1. PROVIDE BUILDING AUTOMATION SYSTEM FOR DIRECT DIGITAL CONTROL AND MONITORING OF ALL HVAC EQUIPMENT, WITH OPERATOR WORKSTATION AND FULL GRAPHICAL OPERATOR INTERFACE. SYSTEM SHALL HAVE CAPABILITY TO INTERFACE WITH LIGHTING CONTROL PANELS FOR ZONED LIGHTING CONTROL AND HAVE LOAD SHEDDING CAPABILITY. SYSTEM SHALL BE TRANE TRACER SUMMIT OR EQUAL.

MECHANICAL CONTRACTOR SHALL COORDINATE THE ELECTRICAL CHARACTERISTICS OF ALL HVAC EQUIPMENT (VOLTAGE, PHASE, ETC.) WITH THE ELECTRICAL CONTRACTOR AND ELECTRICAL PLANS, BEFORE ORDERING ANY MECHANICAL EQUIPMENT. ANY SUBSEQUENT MISMATCH BETWEEN MECHANICAL EQUIPMENT ELECTRICAL REQUIREMENTS AND THE ELECTRICAL SERVICE, AS DESIGNED AND PROVIDED SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.

HVAC LEGEND								
SYMBOL	DESCRIPTION	ABBREVIATIONS	SYMBOL	DESCRIPTION	ABBREVIATIONS	SYMBOL	DESCRIPTION	ABBREVIATIONS

	BACK DRAFT DAMPER	BDD	---	1000 BTU/H/HR	MBH	---	GARAGE EXHAUST FAN	GEF
	CEILING DIFFUSER	CD	---	ABOVE CEILING	A/C	---	GARAGE SUPPLY FAN	GSF
	CEILING RETURN GRILLE	CRA	---	ABOVE FINISHED FLOOR	AFF	---	HEAT EXCHANGER	HEX
	DIFFUSER TAG, TYPE "A", BALANCED FOR 100 CFM, 6" NECK	---	---	ADJUSTABLE FREQUENCY DRIVE	AFD	---	INTAKE HOOD	IH
	DROP	D	---	AIR-COOLED CONDENSING UNIT	ACU	---	KITCHEN HOOD EXHAUST FAN	KEF
	DUCT SIZE -- RECTANGULAR	---	---	AIR CONDITIONER	A.C.	---	KITCHEN MAKE-UP AIR UNIT	KMU
	DUCT SIZE -- ROUND	---	---	AIR HANDLER	AH	---	LEAVING AIR TEMPERATURE	LAT
	DUCT SMOKE DETECTOR	---	---	AIR HANDLING UNIT	AHU	---	LEAVING WATER TEMPERATURE	LWT
	DUCT TRANSITION	---	---	AIR SEPARATOR	AS	---	MAKE-UP AIR	MA
	EQUIPMENT DESIGNATION	---	---	BOILER	B	---	MAKE-UP AIR UNIT	MAU
	FIRE DAMPER (HORIZONTAL)	FD	---	BOOSTER FAN	BF	---	NORMALLY CLOSED	NC
	FIRE DAMPER (VERTICAL)	FD	---	BOTTOM OF DUCT	BOD	---	NORMALLY OPEN	NO
	FLEXIBLE DUCT	---	---	CABINET UNIT HEATER	CUH	---	ON CENTER	OC
	HUMIDISTAT	H	---	CHILLER	CH	---	OPPOSED BLADE DAMPER	OBD
	LINED DUCT	---	---	CHILLED WATER PUMP	CHWP	---	OUTSIDE AIR	OA
	MANUAL VOLUME DAMPER	MVD	---	COMBINATION FIRE/SMOKE DAMPER	FSD	---	POWERED INDUCTION UNIT	PIU
	MOTORIZED DAMPER	MD	---	CONDENSATE DRAIN	CD	---	REFRIGERANT LIQUID	RL
	RETURN AIR DUCT TURNED DOWN	---	---	CONDENSATE RECEIVER & PUMP	CRP	---	REFRIGERANT SUCTION	RS
	RETURN AIR DUCT TURNED UP	---	---	CONDENSER WATER	CW	---	RELIEF HOOD	RH
	RISE	R	---	CONDENSER WATER PUMP	CWP	---	RETURN AIR	RA
	SIDEWALL SUPPLY REGISTER OR GRILLE	---	---	COOLING TOWER	CT	---	ROOF TOP UNIT	RTU
	SIDEWALL RETURN AIR REGISTER OR GRILLE	---	---	DEAERATOR	DA	---	SELF CONTAINED AIR CONDITIONING UNIT	SCU
	SMOKE DAMPER	---	---	DUCT ACCESS DOOR	AD	---	STAINLESS STEEL (TYPE 316 U.N.O.)	SS
	SPIN IN FITTING W/ DAMPER & FLEX DUCTWORK	---	---	DUCT SILENCER	DS	---	STATIC PRESSURE (IN. W.C.)	SP
	SUPPLY AIR DUCT TURNED DOWN	---	---	DRY BULB	DB	---	SUPPLY AIR	SA
	SUPPLY AIR DUCT TURNED UP	---	---	ELECTRIC BASEBOARD HEATER	EBH	---	SUPPLY FAN	SF
	THERMOSTAT, WALL MOUNTED	TSTAT	---	ELECTRIC DUCT HEATER	EDH	---	SUPPLY GRILLE	SG
	TURNING VANES	---	---	ELECTRIC CEILING HEATER	ECH	---	SUPPLY REGISTER	SR
	UNDER CUT (DOOR) 1"	UC	---	ELECTRIC UNIT HEATER	EUH	---	STEAM BOILER	SB
	WALL LOUVER INTAKE	WL	---	ELECTRIC WALL HEATER	EWH	---	STEEL RELIEF HOOD	SRH
	WALL LOUVER EXHAUST	WL	---	ENERGY RECOVERY UNIT	ERU	---	TOILET EXHAUST FAN	TEF
	CARBON DIOXIDE SENSOR, WALL MOUNTED	---	---	ENTERING AIR TEMPERATURE	EAT	---	TOP OF DUCT	TOD
	HYDROGEN SENSOR, WALL MOUNTED	---	---	ENTERING WATER TEMPERATURE	EWT	---	UNLESS NOTED OTHERWISE	UNO
			---	EXHAUST FAN	EF	---	VARIABLE AIR VOLUME UNIT	VAV
			---	EXHAUST REGISTER	ER		VARIABLE FREQUENCY DRIVE	VFD
			---	EXPANSION TANK	ET	---	WALL LOUVER	WL
			---	EXTERNAL STATIC PRESSURE (IN W.C.)	ESP	---	WET BULB	WB
			---	FAN COIL UNIT	FCU	---	DUCTLESS SPLIT--SYSTEM INDOOR UNIT	DSI
			---	FLY FAN	FF	---	DUCTLESS SPLIT--SYSTEM OUTDOOR UNIT	DSO

DESIGN CONDITIONS

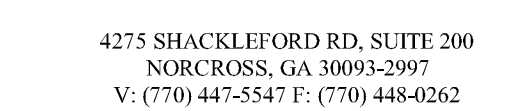
SITE LOCATION: JACKSON COUNTY, GEORGIA
34.27N LAT., 83.83W LONG.
1276 FEET ELEVATION
ASHRAE 90.1-2004 CLIMATE ZONE 3A

DESIGN CONDITIONS: 23.0°F WINTER DESIGN DRY BULB (ASHRAE 99.6%)
90.3°F DRY BULB AND 73.7°F MEAN COINCIDENT WET BULB SUMMER DESIGN (ASHRAE 1%)
65°F WINTER INDOOR DESIGN DRY BULB (HEATING – WAREHOUSE)
78°F DRY BULB AND 50% RH INDOOR DESIGN (COOLING – WAREHOUSE)
70°F WINTER INDOOR DESIGN DRY BULB (HEATING – OFFICE AREA)
75°F DRY BULB AND 50% RH INDOOR DESIGN (COOLING – OFFICE AREA)

CALCULATIONS BASED ON ASHRAE DESIGN CRITERIA AND CALCULATION METHODOLOGY.

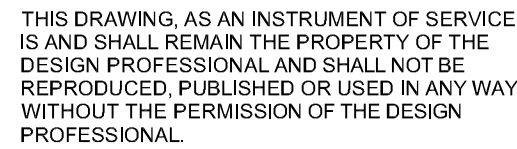
NO CAPACITY HAS BEEN INCLUDED IN THIS DESIGN FOR FUTURE ADDITIONS.

DRAWING INDEX - MECHANICAL	
SHEET NO.	SHEET NAME
M-001	NOTES, LEGEND, & ABBREVIATIONS - H.V.A.C.
M-002	EQUIPMENT SCHEDULES - H.V.A.C.
M-003	DETAILS - H.V.A.C.
M-202	PARTIAL FLOOR PLAN - H.V.A.C.
M-203	PARTIAL FLOOR PLAN - H.V.A.C.
M-204	PARTIAL FLOOR PLAN - H.V.A.C.
M-205	PARTIAL FLOOR PLAN - H.V.A.C.
M-206	PARTIAL FLOOR PLAN - H.V.A.C.
M-207	PARTIAL FLOOR PLAN - H.V.A.C.
M-208	MAIN OFFICE FLOOR PLAN - H.V.A.C.
M-210	WAREHOUSE OFFICES & RESTROOM FLOOR PLANS - H.V.A.C.



NUMBER	DATE	DESCRIPTION
A	06/20/2013	PROGRESS/REVIEW
	07/04/2013	75% REVIEW
	07/31/2013	ISSUED FOR BID/PERMIT
	08/09/2013	ADDENDUM NO. 1

125 LOGISTICS CENTER PARKWAY
JEFFERSON, GEORGIA 30549



DATE	PROJECT NO
07/31/2013	2013-018

SHEET NUMBER _____

FOR CONSTRUCTION

HVLS FANS									
TAG	MODEL	DUTY	CFM	S.P.	MOTOR SIZE	RPM	DRIVE	WEIGHT (Lb)	ACCESSORIES
HVLS-A	SERCO VELOCITY SF28XL2006	HVLS CIRCULATION - 24 FT.	376,804	--	2 HP	VARIABLE	DIRECT	232	1,2
HVLS-B	SERCO VELOCITY SF10XL1006	HVLS CIRCULATION - 10 FT.	83,025	--	1 HP	VARIABLE	DIRECT	181	1,2

NOTES:

1. WAREHOUSE CIRCULATION FANS (HVLS) SHALL BE SUSPENDED FROM STRUCTURE AS AN ASSEMBLY. SEE WAREHOUSE PLAN FOR LOCATIONS.

ACCESSORIES:

1. FIRE ALARM PACKAGE - COORDINATE EMERGENCY SHUTDOWN WITH FIRE PROTECTION CONTRACTOR.

2. BACNET CONTROL MODULE INTERFACED WITH BUILDING AUTOMATION SYSTEM - COORDINATE. ALL FANS TO BE CONTROLLED VIA BAS OPERATOR'S STATION.

SELECTION BASED ON PRODUCTS BY SERCO. EQUAL PRODUCTS BY BIG ASS FANS, MACROAIRE.

GRILLE, REGISTERS & DIFFUSERS										
TAG	MANUFACTURER	SERIES	CFM	DUTY	NECK (IN. DIA.)	FACE SIZE	DAMPER	MATERIAL	TYPE	ACCESSORIES
A	TITUS	TMS	SEE DWGS	SUPPLY	SEE DWGS	24X24	YES	STEEL	SQUARE CONE FACED DIFFUSER	2
B	TITUS	50F	SEE DWGS	RETURN	SEE DWGS	24X24	YES	ALUMINUM	EGG CRATE FACE GRILLE	2
C	TITUS	TMS	SEE DWGS	SUPPLY	SEE DWGS	12X12	YES	STEEL	SQUARE CONE FACED DIFFUSER	2
D	TITUS	TB010	SEE DWGS	SUPPLY	SEE DWGS	48" LONG	YES	STEEL	LINEAR SLOT DIFFUSER	2,3,4
E	TITUS	TISQ-4	SEE DWGS	SUPPLY	SEE DWGS	24X24	NO	STEEL	VAV DIFFUSER	5
F	TITUS	CT-700L	SEE DWGS	TRANSFER	SEE DWGS	SEE DWGS	NO	STEEL	DOOR GRILLE VISION PROOF	6
G	TITUS	50F	SEE DWGS	EXHAUST	SEE DWGS	12X12	YES	ALUMINUM	EGG CRATE FACE REGISTER	2
H	TITUS	50F	SEE DWGS	EXHAUST	SEE DWGS	24X24	YES	ALUMINUM	EGG CRATE FACE REGISTER	
I										
J										
K										
L										

NOTES:
1. REFER TO ARCHITECTURAL DRAWINGS FOR TYPE OF CEILING AND/ OR SUSPENSION SYSTEM.
2. FINISH SHALL BE OF THE TYPE AND COLOR SELECTED BY THE ARCHITECT. SUBMIT CHART FOR SHOP DRAWINGS.

ACCESSORIES:
1. FIXED LOUVERS, 45 DEG. DEFLECTION, 3/4" BLADE SPACING
2. PROVIDE ADAPTOR FRAME FOR SURFACE MOUNT APPLICATION WHERE APPLICABLE
3. C2 1/2" SLOTS
4. INSULATED PLENUM
5. THERMAL VARIABLE VOLUME DIFFUSER
6. AUXILIARY FRAME

EQUIPMENT SELECTIONS BASED ON PRODUCTS BY PRICE. EQUAL PRODUCTS, SUBJECT TO COMPLIANCE WITH ALL CRITERIA, BY TITUS, NAILOR, METAL AIRE.

[illegible]

ELECTRIC HEATERS										
TAG	MANUFACTURER	MODEL No.	APPLICATION	MOUNTING	K.W.	CFM	FAN HP	RPM	WEIGHT (LB)	ACCESSORIES
DWH-A	RAYWALL	APH	WALL HEATER	WALL	3.0	245	FRAC.	1400	55	2,3,4
DWH-B	RAYWALL	APH	WALL HEATER	WALL	1.5	245	FRAC.	1400	55	2,3,4
DUH-P1	RAYWALL	S100	UNIT HEATER	WALL	5.0	100	1/125	1550	25	1,2,3,4
ECH-A	RAYWALL	RCH	CEILING HEATER	RECESSED	5.0	400	FRAC.	1300	50	2,3,4

ACCESSORIES:
 1. FAN DELAY
 2. DISCONNECT SWITCH.
 3. AUTO-RESET THERMAL OVER LOADS.
 4. INTEGRAL TAMP-PROOF THERMOSTAT

EQUIPMENT SELECTIONS BASED ON PRODUCTS BY RAYWALL. EQUAL PRODUCTS BY MARKEL, Q. MARK.

[illegible][illegible]

TAG	MODEL No.	GFM	E.S.P.	FAN HP	LBH TOTAL COOL	MBH SENS COOL	DESIGN CONDITIONS	HUMIDIFIER (w/Hr)	KW REHEAT	NOTES/ACCESSORIES
CRAC-1,2	LIBERT DS-070	9,000	0.2"	5	214.9	191.0	75°F/45%RH	22	25	1 THROUGH 19
CRAC-3,4	LIBERT DS-070	9,000	0.2"	5	214.9	191.0	75°F/45%RH	22	25	1 THROUGH 19

NOTE: CAPACITIES BASED ON 105 DEGREES F AMBIENT TEMPERATURE.

NOTES/ACCESSORIES:

1. DOWNFLOW, FRONT RETURN, AIR-COOLED DX PRECISION COOLING UNITS, PRIMARY/STANDY
2. SEMI-HERMETIC COMPRESSORS WITH 4 STAGES OF UNLOADING
3. FRONT ACCESS/SERVICEABILITY
4. BELT DRIVE CENTRIFUGAL FANS
5. DUAL REFRIGERATION CIRCUITS
6. STEAM GENERATING CANISTER HUMIDIFIER
7. CONDENSATE PUMP, DUAL FLOAT, 15 GPM @ 20 FT. HEAD, WITH ALARM INDICATION AND UNIT SHUT/DOWN AFTER HIGH WATER LEVEL
8. RETURN AIR SMOKE DETECTOR /SENSOR WITH SUPERVISION CONTACTS
9. DEHUMIDIFICATION CYCLE
10. 4 THICK MEV II FILTERS
11. 5 STAGE ELECTRIC REHEAT, STAINLESS STEEL FIN TUBULAR
12. ROOF-MOUNTED AIR-COOLED CONDENSING UNIT
13. WALL-MOUNTED GRAPHICAL CONTROL PANEL INCORPORATING LEAD/LAG FUNCTION(LIBERT - I.COM)
14. INTERFACE WITH FIRE SUPPRESSION SYSTEM TO DEACTIVATE ON ALARM INITIATION
15. NON-LOADING DISCONNECT SWITCH
17. FLOOR STAND FOR 12 INCH BASED FLOOR
18. FACTORY RETURN AIR PLENUM MOUNTED ON TOP OF UNIT WITH FRONT FACING RETURN AIR GRILLE
19. LIQUI-TECH BELOW FLOOR LEAK DETECTION SENSORS/ALARM

SELECTIONS BASED ON PRODUCTS BY LIBERT. APPROVED EQUAL BY STULZ, DATA.AIRE.

SPLIT SYSTEM HEAT PUMP												
TAG	MODEL No. AHU/HPU	TOTAL CFM	OUTDOOR AIR CFM	ESP	MBH TOTAL COOL	MBH SENS COOL	MBH INTL HEAT	MAX FAN HP	AUX. HEAT KW	MIN SEER	MIN HSPF	ACCESSORIES
AHU/HPU-1	GAMASB0A18/4TWB3018	600	60	0.4	18	12.6	18	1/3	5	13.0	8.0	1,2,3,4,5
AHU/HPU-2	GAMASB0A18/4TWB3018	600	60	0.4	18	12.6	18	1/3	5	13.0	8.0	1,2,3,4,5

NOTES:

- COOLING CAPACITY BASED ON EAT 95 DEG. F. AMBIENT, 80 DEG. F. DB/67 DEG. F. WB ENTERING AIR TEMPERATURE.
- INTEGRATED HEATING CAPACITIES BASED ON 47 DEG. F. AMBIENT TEMPERATURE.
- UNITS SHALL UTILIZE R410a REFRIGERANT.

ACCESSORIES:

- FACTORY INSTALLED ELECTRIC HEAT WITH THERMAL OVERLOADS
- SINGLE POINT POWER CONNECTION.
- DUAL SET POINT AUTOMATIC CHANGEOVER THERMOSTAT & SUB-BASE
- DISCONNECT FOR EACH AIR HANDLER AND HEAT PUMP
- COMPRESSOR ANT-RECYCLE CONTROL

SELECTIONS BASED ON PRODUCTS BY TRANE. EQUAL PRODUCTS BY CARRIER, LENOX, YORK/ICI.

WALL LOUVERS								
TAG	MODEL No.	SIZE WxH (INCHES)	CFM	MAX. PRESS. DROP (IN. W.C.)	OPERATOR	INTERLOCK	FRAME	ACCESSORIES
WL-P1	EA-680D	48"x48"	7000	0.19"	ELEC.	EF-1	ALUMINUM	1,2,3,4,5

NOTES:

- A. FINAL COLOR SELECTION SHALL BE MADE BY ARCHITECT AT TIME OF SHOP DRAWINGS APPROVAL.
- B. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF LOUVERS.

ACCESSORIES

1. PROVIDE ELECTRIC ACTUATOR W/ ALL NECESSARY DAMPER LINKAGES AND MOUNTING HARDWARE.
2. INTERLOCK LOUVER W/ ASSOCIATED FANS AS SCHEDULED
3. ADJUST ACTUATORS & LINKAGES TO PROVIDE FULL OPENING & CLOSING OF THE LOUVER.
4. ROTARY FINISH
5. INSECT SCREEN

SELECTIONS ARE BASED ON ARROW. APPROVED EQUALS BY GREENHECK, RUSSIN.

