

(NOTE: NOT ALL SYMBOLS SHOWN ARE USED ON DRAWINGS)

MECHANICAL AND ELECTRICAL SYMBOL LEGEND			
SYMBOL		DESCRIPTION	SYMBOL
SINGLE LINE	DOUBLE LINE		
		RIGID DUCTWORK, 1ST NUMBER IS VISIBLE DIMENSION	
		FLEX DUCTWORK	
		90 DEGREE ROUND DUCT DOWN	
		90 DEGREE ROUND DUCT UP	
		ROUND RADIUS ELBOW	
		SIZE OR SHAPE TRANSITION	
		90 DEGREE S/A ELBOW DOWN	
		90 DEGREE S/A ELBOW UP	
		90 DEGREE OR RADIUS RETURN AIR OR EXHAUST ELBOW DOWN	
		90 DEGREE OR RADIUS RETURN AIR OR EXHAUST ELBOW UP	
		SUPPLY DUCT RISER	
		RETURN OR EXHAUST DUCT RISER	
		RECTANGULAR RADIUS ELBOW	
		RECTANGULAR ELBOW WITH TURNING VANES	
		RECTANGULAR BRANCH TAKE-OFF WITH ADJUSTABLE VANED EXTRACTOR	
		BRANCH TAKE-OFF WITH ADJUSTABLE VANED EXTRACTOR	
		TEE WITH SQUARE ELBOWS, TURNING VANES & SPLITTER DAMPER	
		DUCTWORK W/LINER (OR AS SPECIFIED)	
		CONICAL TAP	
		S/A GRILLE OR REGISTER	
		R/A, E/A, T/A GRILLE OR REGISTER	
		DUCT VOLUME DAMPER	
		ROUND DUCT TAKE-OFF DAMPER	

ABBREVIATIONS			
ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
A/C	AIR CONDITIONING	MAX	MAXIMUM
ABF	ABOVE FINISHED FLOOR	MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
AFG	ABOVE FINISHED GRADE	MCA	MINIMUM CIRCUIT AMPS
AHU	AIR HANDLING UNIT	MCB	MAIN CIRCUIT BREAKER
ALT	ALTERNATE	MCC	MOTOR CONTROLLED CENTER
ARCH	ARCHITECT	MECH	MECHANICAL
AUTO	AUTOMATIC	MFR	MANUFACTURER
AUX	AUXILIARY	MIN	MINIMUM
BLDG	BUILDING	MISC	MISCELLANEOUS
BKR	BREAKER	MOCP	MAXIMUM OVER CURRENT PROTECTION
BTUH	BRITISH THERMAL UNIT PER HOUR	MTD	MOUNTED
C	CONDUIT	MTG	MOUNTING
CFM	CUBIC FEET PER MINUTE	NA	NOT APPLICABLE
CKT	CIRCUIT	NC	NORMALLY CLOSED
E	CENTER	NFDS	NON-FUSED DISCONNECT SWITCH
CLG	CEILING	NI	NOT IN CONTRACT
COL	COLUMN	NO	NORMALLY OPEN
COMP	COMPRESSOR	NTS	NOT TO SCALE
COND	CONDENSER	OA	OUTSIDE AIR
CU	COPPER	OB	OPPOSED BLADE DAMPER
DB	DEGREES	OC	ON CENTER
DEC	DIAMETER	OD	OUTSIDE DIAMETER
DN	DOWN	OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
DET	DETAIL	OFOI	OWNER FURNISHED, OWNER INSTALLED
DWG	DRAWING	PH	PHASE
DX	DIRECT EXPANSION	PLBG	PLUMBING
E/A	EXHAUST AIR	PI	PRESSURE INDICATOR (GUAGE)
EXIST	EXISTING	PRV	PRESSURE REDUCING VALVE
EAT	ENTERING AIR TEMPERATURE	PSI	POUND PER SQUARE INCH
EER	ENERGY EFFICIENCY RATING	QTY	QUANTITY
EQ	EQUIPMENT	R	RISE
ESP	EXTERNAL STATIC SYSTEM	RA	RETURN AIR
EXH	EXHAUST	REF	REFERENCE
F	FAHRENHEIT, FALL	REQ	REQUIRED
FCU	FAN COIL UNIT	RH	RELATIVE HUMIDITY
FF	FINISH FLOOR	RPM	REVOLUTION PER MINUTE
FG	FINISH GRADE	RTU	ROOFTOP UNIT
FLA	FULL LOAD AMPS	SEER	SEASONAL ENERGY EFFICIENCY RATING
FT	FEET PER MINUTE	SP	STATIC PRESSURE
FT	FEET/FOOT (")	SPECS	SPECIFICATIONS
G	GROUND	SQ	SQUARE
GA	GALVANIZED	SS	STAINLESS STEEL
HP	HORSEPOWER	TEMP	TEMPERATURE
HR	HOUR	T&P	TEMPERATURE AND PRESSURE RELIEF VALVE
HT	HEIGHT	TSP	TOTAL STATIC PRESSURE
HTR	HEATER	TYP	TYPICAL
HVAC	HEATING VENTILATION AND AIR CONDITIONING	UH	UNIT HEATER
HZ	HERTZ-FREQUENCY IN CYCLE PER SECOND	UL	UNDERWRITER'S LABORATORY
ID	INSIDE DIAMETER	UN	UNLESS OTHERWISE NOTED
IN	INCH/INCHES (")	V	VOLTS
KAIC	KILO-AMPERE INTERRUPTING CAPACITY	VD	VOLUME DAMPER
KW	KILOWATT (THOUSAND WATTS)	W/O	WITH
LAT	LEAVING AIR TEMPERATURE	W/B	NET BULB (TEMPERATURE)
LBS	POUNDS	WP	WATER PROOF
		WT	WATERTIGHT

CODE NOTES			
1.	VENTILATION RATE PER ASHRAE 62-2001		
	966 PEOPLE X 15 CFM PER PERSON	=	14,490 CFM
	TOTAL REQUIRED OA	=	14,490 CFM
	TOTAL PROVIDE BY NEW RTU'S	=	15,000 CFM

GENERAL NOTES (APPLIES TO ALL SHEETS)			
1.	IN ANY CASE WHERE A PIPE OR DUCT SHOWN ON A PLAN SHEET DIFFERS FROM THAT SHOWN IN A SCHEMATIC OR DETAIL, USE THE LARGER OF THE TWO SIZES SHOWN.		
2.	PIPING SHOWN ON EACH PLAN IS RUN ABOVE THE CEILING ON THE FLOOR WHERE IT IS SHOWN UNLESS OTHERWISE NOTED.		
3.	MOUNT THERMOSTATS 48 INCHES ABOVE FINISHED FLOOR AND CENTERED ABOVE THE LIGHT SWITCHES WHERE BOTH OCCUR IN THE SAME LOCATION, UNLESS OTHERWISE NOTED.		
4.	NORMAL DESIGN CONDITIONS ARE BASED ON ASHRAE AT THE FOLLOWING:		
	SUMMER: 98°F/78°F	OUTSIDE: 75°F, 50% RH	INSIDE: 75°F
	WINTER: 20 °F		
5.	DO NOT RUN AIR HANDLERS OR EXHAUST FANS UNTIL ALL INTERIOR CLEANING AND PAINTING IS COMPLETE. THE CLEANING OF FOULED COILS OR FAN ASSEMBLIES DUE TO PAINT OR CONSTRUCTION DEBRIS WILL BE THE RESPONSIBILITY OF THE HVAC CONTRACTOR.		
6.	ALL EQUIPMENT, INSTALLATION METHODS AND MATERIALS USED ARE TO MEET LOCAL, STATE AND OTHER APPLICABLE CODES.		
7.	THESE PLANS ARE DIAGRAMMATIC IN NATURE, CONTRACTORS SHALL INCLUDE APPROPRIATE ALLOWANCES FOR OFFSETS AS REQUIRED TO ACCOMMODATE VERTICAL AND HORIZONTAL VARIATIONS IN THE LOCATIONS AND ELEVATIONS OF DUCTWORK AND TERMINAL DEVICES.		
8.	SIZES INDICATED FOR ALL DUCTWORK ARE FREE AREA DIMENSIONS.		
9.	PROVIDE RECTANGULAR TO ROUND DUCT TRANSITIONS AS REQUIRED.		
10.	ALL CONSTRUCTION DEBRIS SHALL BE DISPOSED OF BY THE CONTRACTOR UNLESS NOTED OTHERWISE.		
11.	MECH. EQUIP. SIZES ARE AS DESIGNED. BREAKERS, CONDUIT, WIRING, STARTERS, CONDUITORS, ETC., SHALL BE ADJUSTED ON TO THE EQUIPMENT APPROVED FOR INSTALLATION ON THIS PROJECT WITH NO ADDITIONAL COST TO THE OWNER.		

MULTIZONE ROOFTOP AIR CONDITIONING UNIT SCHEDULE

MARK	UNIT					COOLING COIL (DX)					HEATING COIL (NAT. GAS)			NO. OF COMP.	COND. EAT (F)	INDIVIDUAL ZONE CFM										MCA AMFS	MCB AMFS	REFRIG.	ON EMERGENCY POWER	REMARKS
	VOLTS/ PH/HZ	TOTAL CFM	OUTSIDE AIR CFM	EXTER SP (IN. WATER)	SUPPLY FAN HP	MIN SENSIBLE CAPACITY (BTUH)	MIN TOTAL CAPACITY (BTUH)	EDB (F)	EWB (F)	CONDENSING TEMP. F	EDB (F)	INPUT BTUH	OUTPUT BTUH			1	2	3	4	5	6	7	8	9	10					
RTU-1	460/3/60	12,615	3,500	1.30	20	302,500	340,500	77.2	63.5	105	64.4	725,000	580,000	3	105	990	890	990	990	890	2615	1550	1100	1300	1300	100	125	R-407C	YES	INNOVENT TRIPLE DECK MULTIZONE
RTU-2	460/3/60	13,080	4,000	1.30	20	320,500	380,000	77.0	63.4	105	64	920,000	735,800	3	105	2160	1020	755	1220	2300	2300	1020	905	700	700	125	150	R-407C	YES	INNOVENT TRIPLE DECK MULTIZONE
RTU-4	460/3/60	12,155	4,050	1.30	20	291,500	332,700	77.0	63.4	105	64	710,000	567,300	3	105	1010	855	740	740	855	1030	2615	1615	1360	1335	100	125	R-407C	NO	INNOVENT TRIPLE DECK MULTIZONE
RTU-5	460/3/60	11,270	3,450	1.30	20	270,200	310,000	77.0	63.4	105	64	765,000	611,280	3	105	1710	1085	1090	705	745	1585	1470	940	1060	880	100	125	R-407C	NO	INNOVENT TRIPLE DECK MULTIZONE

- NOTES:
- PROVIDE SINGLE POINT ELECTRICAL CONNECTION.
 - PROVIDE VIBRATION ISOLATION ROOF CURB.
 - PROVIDE FACTORY PROVIDED DUCT MOUNTED SMOKE DETECTOR FOR SUPPLY AND RETURN DUCTS. CONTRACTOR TO CONNECT TO FIRE ALARM SYSTEM.

- PROVIDE 2" PLYURETHANE, FOAM FILLED PANEL CONSTRUCTION THROUGHOUT CASING.
- PROVIDE DDC INTERFACE. COORDINATE WITH CONTROLS FOR PLATFORM SYSTEM.
- PROVIDE LOCKABLE HANDLES ON ALL EQUIPMENT.

- PROVIDE RETURN FAN AN SET FOR RELIEF AIR QUANTITY AS FOLLOWS:
6.1. RTU-1 – 1630 CFM
6.2. RTU-2 – 1690 CFM
6.3. RTU-3 – 1570 CFM
6.4. RTU-4 – 1450 CFM

(TYP.)

SINGLE ZONE ROOFTOP AIR CONDITIONING UNIT SCHEDULE

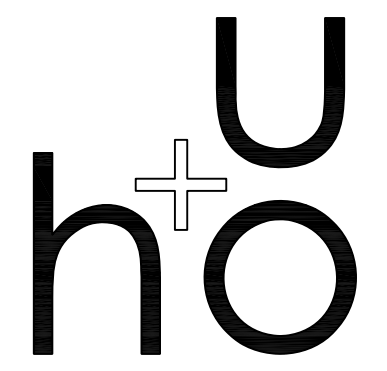
MARK	UNIT						COOLING COIL (DX)					HEATING COIL (NATURAL GAS)		MCA AMPS	MCB AMPS	MINIMUM EER	WEIGHT (LBS) INCLUDING CURB	FOOTPRINT DIMENSIONS (CASING IS LARGER, CURB HEIGHT IS NOT INCLUDED)	ON EMERGENCY POWER	REMARKS
	REFRIG.	VOLTS/ PH/HZ	TOTAL CFM	OUTSIDE AIR CFM	EXTER. SP (IN. WATER)	SUPPLY FAN HP	MIN. SENSIBLE CAPACITY (BTUH)	MIN. TOTAL CAPACITY (BTUH)	EDB (°F)	EWB (°F)	CONDENSING TEMP. °F	BTUH INPUT	BTUH OUTPUT							
RTU-3	R-410A	460/3/60	5000	625	0.6	5	127,000	144,000	80.0	66	105	180,000	144,000	30.2	35	11.1 EER	1,800	89"x59"x51"H	YES	JOHNSON CONTROLS MagnaDRY DR150
RTU-6	R-410A	460/3/60	7500	1200	0.9	7.5	202,000	289,000	80.8	67	105	300,000	240,000	71.0	90	10.5 EER	3,800	92"x136"x52"H	YES	JOHNSON CONTROLS SUNLINE MAGNUM DU300

- NOTES:
- PROVIDE FACTORY CURB AND HAIL GUARDS.
 - PROVIDE 7-DAY PROGRAMMABLE THERMOSTAT AND HUMIDISTAT WITH REMOTE TEMPURTURE AND HUMIDITY SENSORS AS SHOWN ON PLANS.
 - PROVIDE RETURN SMOKE DETECTORS AND INTERFACE WITH FIRE ALARM SYSTEM.
 - STATIC PRESSURE INDICATED ABOVE IS THE EXTERNAL STATIC PRESSURE WHICH EXCLUDES ANY PRESSURE DROPS WITHIN THE UNIT. UNITS SHALL BE OF DOUBLE WALL CONSTRUCTION.
 - UNITS SHALL BE COMPLETE WITH SIDE OUTLET DRAIN AND ACCESS DOORS.
 - CONTRACTOR TO ENSURE THAT OUTDOOR AIR INTAKES ARE A MINIMUM OF 10'-0" AWAY FROM ANY EXHAUST FAN DISCHARGE, PLUMBING VENT OR OTHER CONTAMINANT SOURCE.
 - MAXIMUM AIR VELOCITY THROUGH COOLING COIL SHALL NOT EXCEED 500 FEET PER MIN.
 - ELECTRICAL CONNECTION TO BE SINGLE POINT AND TO BE THROUGH THE BOTTOM OF THE UNIT.
 - UNIT TO INCLUDE REHEAT SEQUENCE FOR DEHUMIDIFICATION CYCLE.
 - RTU'S SHALL INCLUDE A 2-POSITION MOTORIZED VOLUME DAMPER. SEQUENCE TO BE SUCH THAT WHEN UNIT IS ENERGIZED, DAMPER TO OPEN TO ADJUSTABLE POSITION TO ATTAIN PRESCRIBED OUTDOOR AIR QUANTITIES. WHEN UNIT IS DE-ENERGIZED, DAMPER TO CLOSE 100%.

100% OUTSIDE AIR ROOFTOP UNIT SCHEDULE

MARK	SUPPLY AIRFLOW				DX COIL					CONDENSER RE-HEAT COIL					NUMBER OF COMPS	GAS HEAT COIL			ELECTRICAL				PHYSICAL DATA				ON EMERGENCY POWER	REMARKS
	TOTAL CFM	OUTSIDE AIR CFM	EXTER. SP (IN. WATER)	MOTOR HP	EAT °F		LAT °F		TOTAL CAP. MBH	EAT °F		LAT °F		TOTAL CAP. MBH		INPUT TOTAL CAP. MBH	OUTPUT TOTAL CAP. MBH	TEMP. RISE °F	VOLTS	PHASE	MCA	MOCP	LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	WEIGHT (LBS.)		
					DB	WB	DB	WB		DB	WB	DB	WB															
OUA-1 & 2	7,500	7,500	0.9	7.5	96.0	80.0	53	53	723.03	53	53	75	59.6	180.0	5	355,000	283,500	35	460	3	129.9	147.9	264	118	88	10,000	NO	ENGINEERED AIR FWB605/DJ40/C/O
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- NOTES:
- 105°F AMBIENT DESIGN TEMPERATURE.
 - SYSTEM MUST HAVE TWO DX COILS AND ONE CONDENSER REHEAT COIL FOR REHEAT.
 - THE FIRST DX COIL TO HAVE 4 INDEPENDENT COMPRESSOR CIRCUITS AND THE COIL IS TO BE ALTERNATE TUBE CIRCUITED.
 - THE SECOND DX COIL IS TO HAVE 1 INDEPENDENT COMPRESSOR CIRCUIT.
 - 24" ACCESS SECTION BETWEEN THE DX COIL AND THE CONDENSER REHEAT COIL.
 - 2" X 1 LB INSULATION DOUBLE WALL CONSTRUCTION.
 - STAINLESS STEEL DRAIN PANS.
 - ALUMINUM FRAME DOUBLE WALL, THERMALLY BROKE ACCESS DOORS.
 - STAINLESS STEEL DRAIN AND TUBE HEAT EXCHANGER.
 - 14" HIGH ROOF CURB.
 - UNIT C/W PACKAGED CONTROLS.
 - HAIL GUARDS
 - SINGLE POINT ELECTRICAL CONNECTION. PREWIRED, INCLUDING 120V OFCI DUPLEX, CONTROL TRANSFORMER, DISCONNECT, STARTERS, ETC.
 - PROVIDE Z-STRIP GASKET FOR CURB INSTALLATION.
 - UNITS SHALL INCLUDE A 2-POSITION MOTORIZED VOLUME DAMPER. SEQUENCE TO BE SUCH THAT WHEN UNIT IS ENERGIZED, DAMPER TO OPEN 100%. WHEN UNIT IS DE-ENERGIZED, DAMPER TO CLOSE 100%.



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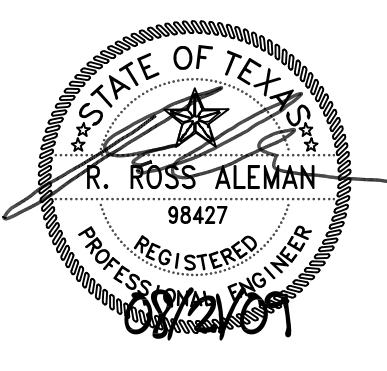
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ISSUE DATES:

date	issue
06.5.09	Permit Set
08.21.09	COH REVIEW 1

MECHANICAL LEGEND &
SCHEDULES

M1.0

AYS

