

HVAC NOTES	
1. GENERAL	
A. ALL WORKMANSHIP AND MATERIALS SHALL BE IN STRICT ACCORDANCE WITH THE APPLICABLE NATIONAL, STATE (FLORIDA BUILDING CODE) AND LOCAL CODES, RULES AND ORDINANCE.	
B. MECHANICAL PLANS IN GENERAL, ARE DIAGRAMATIC IN NATURE, AND ARE TO BE READ IN CONJUNCTION WITH ARCHITECTURAL, PLUMBING, ELECTRICAL, AND STRUCTURAL PLANS AND SHALL BE CONSIDERED AS ONE SET OF DOCUMENTS. DUCT AND PIPING OFFSETS, BENDS AND TRANSITIONS WILL BE REQUIRED TO PROVIDE AND INSTALL A COMPLETE FUNCTIONAL SYSTEM AND SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. DO NOT SCALE DRAWINGS FOR THE EXACT LOCATION OF EQUIPMENT, PIPING, DUCTWORK, ETC.	
C. THESE DRAWINGS ARE NOT INTENDED TO SHOW EVERY MINOR DETAIL, BUT THE CONTRACTOR SHALL FURNISH AND INSTALL ALL ITEMS REQUIRED FOR A COMPLETE ACCEPTABLE WORKING INSTALLATION.	
D. ALL WORK SHALL BE PERFORMED BY A LICENSED CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETE SYSTEM SHALL BE FULLY OPERATIVE AND ACCEPTANCE BY THE ARCHITECT AND / OR ENGINEER MUST BE CONDITION OF THE CONTRACT.	
E. ALL REQUIRED INSURANCE SHALL BE PROVIDED BY THE CONTRACTOR FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK.	
F. THE CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD NOT LESS THAN 1 YEAR FROM THE DATE OF ACCEPTANCE, UNLESS OTHERWISE NOTED.	
G. CONTRACTOR WILL PAY FOR ALL PERMITS, FEES, INSPECTIONS AND TESTS.	
H. THE CONTRACTOR SHALL VISIT THE JOB SITE AND THOROUGHLY FAMILIARIZE WITH EXISTING CONDITIONS.	
I. PRIOR TO INSTALLING EQUIPMENT AND / OR FABRICATING DUCTWORK, HVAC CONTRACTOR SHALL CHECK THAT THERE IS SUFFICIENT CLEARANCES FOR EQUIPMENT, DUCTWORK, ETC. AND ALSO TO AVOID ANY INTERFERENCE WITH THE PROCESS OF CONSTRUCTION.	
J. DUCTWORK TRUNK LINE AND DROP LOCATIONS MAY VARY FROM PLAN DUE TO TRUSS CONFIGURATION.	
K. AS BUILT DRAWINGS SHALL BE SUBMITTED TO OWNER AT THE COMPLETION OF PROJECT.	
2. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL EQUIPMENT, FOR REVIEW PRIOR TO PURCHASING.	
3. DESIGN PARAMETERS:	
A. OUTDOOR DESIGN TEMPERATURE (SUMMER): 91° DB AND 77° WB	
B. OUTDOOR DESIGN TEMPERATURE (WINTER): 46°	
C. INDOOR DESIGN TEMPERATURE (SUMMER): 75° DB	
D. INDOOR DESIGN TEMPERATURE (WINTER): 70° DB	
4. ALL THERMOSTATS SHALL HAVE HEATING MODE MAXIMUM SETTING OF 75 F, AND COOLING MODE MINIMUM SETTING OF 70 F. THE THERMOSTAT SHALL BE ARRANGED TO PREVENT THE SIMULTANEOUS OPERATION OF HEATING AND COOLING.	
5. ELECTRICAL CONTROLS AND POWER WIRING: UNDER ELECTRICAL CONTRACT.	
6. EQUIPMENT SPECIFIED BY MANUFACTURER'S NUMBER SHALL INCLUDE ALL ACCESSORIES, CONTROLS, ETC., LISTED IN THE CATALOG AS STANDARD WITH THE EQUIPMENT. OPTIONAL OR ADDITIONAL ACCESSORIES SHALL BE FURNISHED AS SPECIFIED.	
7. MATERIALS:	
A. REFRIGERANT PIPING: SHALL BE TYPE L SOFT DRAWN, COPPER TUBING, DEHYDRATED FOR REFRIGERANT USE. SIZED AS SHOWN ON DRAWINGS OR AS PER AIR CONDITIONING EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.	
B. INSULATION: REFRIGERANT SUCTON PIPING SHALL BE INSULATED WITH 1/2" THICK FOAMED PLASTIC INSULATION, FIRE RETARDANT TYPE. INSULATION SHALL BE INSTALLED IN PIPING BEFORE ASSEMBLY. NO SPLIT INSULATION WILL BE ACCEPTABLE. SEAL JOINTS WITH MANUFACTURER'S APPROVED ADHESIVE AND GREY TAPE.	
8. DUCTWORK:	
A. ALL HVAC DUCTWORK SHALL CONFORM TO SMACNA STANDARDS. ALL EXTERIOR DUCTWORK SHALL BE GALVANIZED SHEET METAL WITH INTERNAL R-B INSULATION. ALL INTERIOR DUCTWORK TO BE FIBERGLASS BOARD UNLESS OTHERWISE NOTED AND CONFORM WITH LOCAL CODES. FIBERGLASS DUCT BOARD SHALL BE RESISTANT TO CONDENSATION, MOLD, BACTERIAL GROWTH AND SHALL BE TREATED WITH AN EPA-REGISTERED ANTI MICROBIAL AGENT. DUCTWORK SHALL BE MINIMUM 1-1/2" THICK (R-6.0).	
B. EXHAUST AIR - MINIMUM 26 GAUGE, GALVANIZED METAL OR MINIMUM 26 GAGE ALUMINUM.	
- RANGE HOOD TO BE 400 CFM MAXIMUM. IF MORE THAN 400 CFM MAKE UP AIR MUST BE SHOWN AS PER FBC MECH 505.2. MECH. CONTRACTOR SHALL FIELD COORDINATE WITH EQUIPMENT MANUFACTURER PRIOR TO EQUIPMENT INSTALLATION.	
- ALL EXHAUST DUCT TO BE INSULATED WHEN RUNNING IN CONDITIONED SPACE (INCLUDING UNVENTED ATTIC) AND BACK DRAFT DAMPER TO BE INSTALLED AT THE POINT OF EXITING THE BUILDING, THROUGH EITHER WALL CAP OR ROOF CAP.	
C. ALL DUCT DIMENSIONS ARE CLEAR INSIDE DIMENSIONS.	
D. FLEXIBLE INSULATED DUCTWORK WITH 1 1/2" FIBERGLASS INSULATION WITH FRK VAPOR BARRIER, CLASS 1 AIR DUCT, ULL R-6.0 MIN.	
E. DRYER DUCTWORK: MINIMUM 26 GAGE, GALVANIZED STEEL, HAVING A SMOOTH INTERIOR SURFACE WITH JOINTS RUNNING IN THE DIRECTION OF AIRFLOW AND WITHOUT SHEET METAL SCREWS OR FASTENERS IN THE AIR STREAM. MAXIMUM LENGTH SHALL NOT EXCEED 25 FEET. MAXIMUM LENGTH SHALL BE REDUCED 2-1/2 FT FOR EACH 45° BEND AND 5 FT FOR EACH 90° BEND. EXHAUST DUCT SHALL BE A MINIMUM NOMINAL SIZE OF 4" DIAMETER. WALL CAP SHALL BE PROVIDED WITH BACK DRAFT DAMPER, NO SCREEN.	
9. AIR DISTRIBUTION DEVICES AND ACCESSORIES SHALL BE TITUS OR APPROVED EQUAL.	
10. ALL HVAC DUCT ELBOWS MUST BE FURNISHED WITH APPROVED TURNING VANES.	
11. PROVIDE METAL ROUND FITTINGS WITH SCOOP AT ALL FLEXIBLE DUCT CONNECTION TO SUPPLY DUCT.	
12. PROVIDE ACCESS DOORS AS REQUIRED FOR ALL MECHANICAL EQUIPMENT TO SERVICE AND VISUALLY CHECK ROTATION OF FANS AND MOTORS, ADJUST OR REPLACE CONTROLS, ETC.	
13. TEST AND BALANCE: CONTRACTOR SHALL TEST AND BALANCE ALL VENTILATION AND AIR CONDITIONING SYSTEMS. SUBMIT FOUR COPIES OF TEST AND BALANCE REPORT TO OWNER FOR APPROVAL.	
14. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENTS OR REPAIRS OF ANY PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED OR IS NOT OPERATING PROPERLY.	
15. ARCHITECTURAL AND / OR ENGINEERING EXPENSES THAT ARE INCURRED DUE TO REVISIONS FOR SUBSTITUTIONS BY THE CONTRACTOR SHALL BE PAID FOR BY THE CONTRACTOR.	
16. ALL MATERIALS SHALL BE NEW AND SHALL BEAR UNDERWRITER'S LABEL WHERE APPLICABLE.	
17. CONTROLS: AIR CONDITIONING UNITS SHALL BE STARTED AND STOPPED THRU INDIVIDUAL THERMOSTAT. INDIVIDUAL THERMOSTATS SHALL START/STOP SUPPLY FANS AND ACTIVATE COOLING/HEATING SYSTEMS AS SELECTED.	
18. IF THERE ARE ANY CHANGES IN ENGINEER'S DRAWINGS, IN DESIGN OR IN EQUIPMENT, WITHOUT ENGINEER'S CONSENT, THE AC CONTRACTOR SHALL ASSUME ALL RESPONSIBILITIES FOR THE PROJECT.	
19. NO SUBSTITUTION WILL BE CONSIDERED PRIOR TO BID UNLESS WRITTEN REQUEST FOR APPROVAL HAS BEEN RECEIVED BY THE ARCHITECT OR ENGINEER AT LEAST 10 DAYS PRIOR TO THE DATE OF BID. SUCH REQUEST SHALL INCLUDE THE NAME OF EQUIPMENT OR MATERIAL FOR WHICH IT IS TO BE SUBSTITUTED.	
20. REFRIGERANT SUCTON LINE SHALL BE INSULATE WITH INSULATION HAVING A THERMAL RESISTIVITY OF NOT LESS THAN R-3 AND HAVING EXTERNAL SURFACE PERMEANCE NOT EXCEEDING 0.05 PERM WHEN TESTED IN ACCORDANCE WITH ASTM E 96	

OUTSIDE AIR REQUIRED CALCULATION SCHEDULE (CFM)							
UNIT	AREA SERVED	# OF PEOPLE	SF	0.35 ACH	CFM/PEOPLE	O/A REQUIRED	O/A PROVIDED
AHU-1	DINING & LIVING ROOMS	7	1697	89.1	7.5	141.6	145
AHU-2	KITCHEN & FAMILY ROOM	4	1518	79.7	7.5	109.7	110
AHU-3	BEDROOMS & BATHS	4	1756	92.1	7.5	122.1	125
AHU-4	BEDROOMS	4	1575.6	82.7	7.5	112.7	115
AHU-5	MASTER	2	1555	81.6	8.5	98.6	100
NOTES:				800.6		584.8	595
1. DESIGN BASED ON THE VENTILATION RATE PROCEDURE PER F.B.C. MECH. TABLE 403.3.							
2. THE DESIGN WILL NEED TO BE RE-EVALUATED IF, AT A LATER TIME, CHANGES OCCUR IN THE USAGE OF							

AIR DISTRIBUTION SCHEDULE				
SYMBOL	USE	TYPE	ACCESSORIES	DESIGN MANUFACTURER & MODEL Mo.
A	SUPPLY AIR	LINEAR SLOT DIFFUSER	INSULATED PLENUM O.B.D.	TITUS FL-15 HIGHTHROW
B	SUPPLY AIR	LINEAR 2 SLOT DIFFUSER	INSULATED PLENUM O.B.D.	TITUS FL-15 HIGHTHROW
C	RETURN AIR / TRANSFER	LINEAR SLOT DIFFUSER	-	TITUS FL-15 JETHROW
D	OUTSIDE AIR / MAKE-UP	LINEAR 2 SLOT DIFFUSER	-	TITUS FL-20 JETHROW

- NOTE:
1. PROVIDE SPIN-IN COLLAR WITH VOLUME DAMPER AT TRUNK TO BRANCH CONNECTION.
 2. PROVIDE 4 WAY DIFFUSION UNLESS NOTE ON PLAN.
 3. REFER TO ARCHITECT PLANS FOR CEILING TYPE.
 4. FINAL COLOR SELECTION SUBJECT TO ARCHITECT APPROVAL.
 5. PROVIDE INSULATION ON THE BACK OF DIFFUSER IF IN UNCONDITIONED SPACE.
 6. MAXIMUM IN 19.

HVAC SYMBOL LEGEND	
SYMBOL	DESCRIPTION
	SUPPLY DUCT
	RETURN/EXHAUST DUCT
	FLEXIBLE DUCT
	ELBOW W/ TURNING VALVES
	CEILING EXHAUST FAN # CFM
	EXHAUST REGISTER
	CEILING DIFFUSERS
	OUTDOOR AIR LOUVER / RETURN AIR GRILLE AT WALL
	SUPPLY AIR GRILLE AT WALL
	COOLING THERMOSTAT / HUMIDISTAT
	TEMPERATURE SENSOR
	MOTORIZED DAMPER
	VOLUME DAMPER
	X: AIR DEVICE TYPE AXB: NECK SIZE # CFM
	CONDENSATE DRAIN LINE
	REFRIGERANT LINES SET
	AIR HANDLING UNIT
	CUBIC FEET PER MINUTE
	CONDENSING UNIT
	CONDENSATE DRAIN LINE
	EXHAUST FAN UNIT
	GAS WATER HEATER
	MOTORIZED DAMPER
	NOT APPLICABLE.
	RETURN AIR
	REFRIGERANT GAS & LIQUID LINES
	SUPPLY AIR
	OPPOSED BLADE DAMPER
	VOLUME DAMPER
	UNDERCUT DOOR

FAN SCHEDULE	
UNIT DESIGNATION	EF-1
AREA SERVED	BATHROOM
OPERATING WEIGHT, LBS	8.82
LOCATION	CEILING
FAN TYPE	CLG. BLOWER
TOTAL AIR, CFM	50-80-100
DRIVE TYPE	SIROCCO
FAN WHEEL TYPE	CENTRIFUGAL
POWER CONGS., W.	4.4-7.2-11.1
FAN SPEED, RPM	---
TOTAL STATIC PRESSURE, IN. OF W.C.	0.25"
FAN MOTOR (AMPS)	0.09-0.13-0.20
FAN MOTOR STARTER TYPE	WALL SWITCH
STARTER FURNISHED BY	MC
ELECTRICAL SERVICE	120-1-60
UNIT DIMENSIONS HXWD (IN)	7 X 15 X 16
SONES	0.1
DESIGN MANUFACTURER	PANASONIC
MODEL NUMBER	FV-0510VS1
SERVICE SWITCH	YES
SMOKE DETECTOR (ULL APPROVED)	NO
DUCT DIAM. INCH	4
CONSTRUCTION	ALUM/PLASTIC
BACKDRAFT DAMPER	YES
BIRDSCREEN	NO
THERMAL FUSE PROTECTION	YES
THERMOSTAT CONTROL	NO
MOUNTING OPENING	10.5" SQ
FILTER AND FILTER FRAME	NO

NOTES:

1- ULL LISTED FOR TUB/SHOWER ENCLOSURE.

2- MFC IN ISO 9001 CERTIFIED FACILITY.

3- ENERGY STAR QUALIFIED.

4- ALL FANS WITH BACKDRAFT DAMPER.

5- ALL FANS PROVIDE WITH SPEED CONTROLLER.

TECHNICAL SUMMARY OF CARRIER EQUIPMENTS			
SINGLE CIRCUIT SPLIT SYSTEMS - INVERTER		(208/116/0)	
NOM TONS	4.0	5.0	
SEER	22.0	20.0	
SEER2	22.0	20.0	
MODEL NO:	24VNA648-3	24VNA660-3	
MODEL NO:	FE4ANF005	FE4ANB006	
CFM	1600 @ 5"	2000 @ 5"	
REFRIGERANT	R-410A	R-410A	
AMBIENT	95	95	
CAP (MBH) @ 80/67 (TC/SC)	45.9 / 33.9	57.5 / 40.6	
CAP (MBH) @ 75/62 (TC/SC)	43.6 / 31.7	54.1 / 39.4	
CONDENSING UNIT DATA:	CU-1, 2, 3 & 4	CU-5	
COMPRESSOR QTY / STAGES	1 / Variable	1 / Variable	
COMPRESSOR 1 RLA	14.6	20.1	
COND. FAN FLA	0.88	0.88	
MCA	19.2	26	
MOCP	30	40	
DIMENSIONS (LxWxH) (IN)	35" x 35" x 48"	35" x 35" x 48"	
STD WEIGHT (LBS)	357	362	
AIR HANDLER DATA:	AHU-1, 2, 3 & 4	AHU-5	
EVAP. FAN FLA - BHP	4.3 - 1/2	6.8 - 3/4	
HEATER KW	10.0	10.0	
MCA (208 / 230)	53.8 / 58.5	53.8 / 58.5	
MOCP (208 / 230)	60 / 60	60 / 60	
DIMENSIONS (LxWxH) (IN)	22" x 22" x 54"	22" x 25" x 60"	
STD WEIGHT (LBS)	172	207	
REF. TUBES O.D. (IN):			
SUCTION LINE	7/8	7/8	
LIQUID LINE	3/8	3/8	

DAIKIN MINI SPLIT SYSTEM AC	
AIR HANDLING UNIT	BASIC UNIT INFORMATION
	TAG M-AHU-1
CONDENSING UNIT	QUANTITY SEE PLANS
	LOCATION SEE PLANS
CONDENSING UNIT	MANUFACTURER DAIKIN
	MODEL FTK12BXVJU
CONDENSING UNIT	SYSTEM EFFICIENCY (SEER2) 20
	UNIT DIMENSIONS (HxWxD) (in) 11-1/3 x 30-29/32 x 9-27/32
CONDENSING UNIT	SHIP WEIGHT (LBS) 21.4
	AIRSIDE INFORMATION
CONDENSING UNIT	AIRFLOW RATE (CFM) [H / M / L / S] 436/ 316 / 247 / 132
	CAPACITY RATED (MBH) 12
CONDENSING UNIT	BASIC UNIT INFORMATION
	TAG M-CU-1
CONDENSING UNIT	QUANTITY SEE PLANS
	LOCATION SEE PLANS
CONDENSING UNIT	MANUFACTURER DAIKIN
	MODEL RK12BXVJU
CONDENSING UNIT	HEAT PUMP OR AIR CONDITIONER AC
	AIRFLOW DISCHARGE SIDE DISCHARGE
CONDENSING UNIT	AMBIENT TEMPERATURE 95F
	CAPACITY RATED (MBH) (COOLING) 10.9
CONDENSING UNIT	COMPRESSOR TYPE Inverter - Variable Speed
	UNIT DIMENSIONS (HxWxD) (in) 21-11/16 x 26-1/2 x 11-3/16
CONDENSING UNIT	EQUIPMENT WEIGHT (LBS) 60
	ELECTRICAL INFORMATION
CONDENSING UNIT	UNIT VOLTAGE 208/230-1-60
	UNIT MCA / MOP (Amps) 12.4 / 15

NOTES:

1. Manufacturer is Daikin.

Any alternate manufacturer must be in full compliance with the schedule and notes.

2. Unit shall be AHRI Certified, ETL Listed.

3. Condensing unit must have an INVERTER compressor with horizontal airflow discharge and low profile.

4. All fans provide with speed controller.

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