## HVAC NOTES

### 1. GENERAL

A. ALL WORK SHALL BE DONE in accordance with the Florida Building Code 2020 (7th EDITION) and with all applicable regulations.
B. DRAWINGS: Refer to all drawings for coordination of the HVAC work.
C. ARRANGE AND PAY for all permits licenses, inspections and tests. Obtain the required certificates and present to owner.
D. GUARANTEE: The completed installation shall be fully guaranteed against defective materials and/or improper workmanship for a minimum of one year for material and labor. Compressors shall be guaranteed for a period of five years.
E. As built drawings shall be submitted to owner at the completion of project.

2. SHOP DRAWINGS: Contractors shall submit for approval, within 30 days after signing contract, a minimum of five copies of fully descriptive literature, including but not limited to: fans, air conditioning units, air outlets. No work shall proceed without approval of these submittals.

3. DESIGN PARAMETERS:
A. Outdoor design temperature (Summer): 91°F DB and 77°F WB
B. Outdoor design temperature (Winter): 46°F
C. Indoor design temperature (Summer): 78°F DB
D. Indoor design temperature (Winter): 72°F 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 suction piping shall be insulated with 1/2" thick foamed plastic insulation, fire retarding type. Insulation shall be installed in piping before assembly. No split insulation will be acceptable. Seal joints with manufacturer's approved adhesive and gray tape.
– Refrigerant suction line to be insulated w/ insulation having a thermal resistivity of at least R–4 and having an external permanence not exceeding 0.05 perm when tested in accordance w/ ASTM E96. and in compliance w/ FMC–M1411.5
C. DUCTWORK:
a. All supply air ductwork shall be fiberglass duct board, fabricated and installed as per latest edition of SMACNA "Fibrous Glass Duct Manual". 1–1/2" thick R–8.0
b. All exhaust ductwork shall be galvanized sheet metal duct not lighter than 26 gage.
c. All duct dimensions are clear inside dimensions.
d. Flexible insulated ductwork with 1 1/2" thick fiberglass insulation with FRK vapor barrier, class I air duct, U.L. R–6.0 MIN.
D. CLOTHES DRYER EXHAUST::

* Installation: clothes dryers shall be exhausted in accordance with the manufacturer recommendation and as per section 504/502.6 /FMC
* Makeup air: Installations exhausting more than 200 CFM shall be provided with make up air. Where a closet is designed for installation or a clothes dryer exhaust ducts shall not extend into or through ducts or plenums.
* Dryer ductwork: 26 ga. min. galvanized steel (as per FBC R–M1502.4.1), having a smooth interior surface with joints running in the direction of airflow and without sheet metal screws or other fasteners in the air stream. Maximun length shall not exceed 25 feet. wall caps shall be provided with backdraft damper.
* Dryer wall cap shall not be screened as per FBCR–M1502.3.
* Dryer wall cap shall have a min. of 3ft clearence from any operable bldg. opening FMC 501.2.1(3)

8. Provide metal round fittings with scoop at all flexible duct connection to supply duct.

9. 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.

10. 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.

11. Mechanical plans in general, are diagrammatic in nature, and are to be read in conjunction with arch. 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.

12. Contractor shall verify job conditions prior to ordering, fabrication or installation of materials or equipment. Notify architect/engineer of any conflicts before fabrication.

### IMPORTANT NOTE:

– ALL MECH. ROOMS SHALL HAVE A MINIMUM WORKING SPACE CLEARANCE OF 4 " ALONG THE SIDES, BACK AND TOP WITH A TOTAL WIDTH OF THE ENCLOSING SPACE BEING AT LEAST 12 INCHES WIDER THAN THE AIR HANDLER. AS PER SECTION 1305.1.1. MFBCR 2020.

– DISCHARGE LOCATION OF THE CONDENSATE DRAIN SHALL BE IN COMPLIANCE BY SECTION 307 OF THE FMC AND SECTION 1503.7 OF THE 2020 FBC.

– PROVIDE 1"UC DOOR ALL ROOM DOORS TO MAKE UP AIR IN COMPLIANCE WITH SECTION 601.4, MFBC 2020

– ALL MECHANICAL EQUIPMENT SHALL BE LOCATED AT OR ABOVE THE FLOOD ELEVATION. REFER TO ARCH. DWGS FOR ALL EXISTING AND PROPOSED FFE AND CROWN OF THE ROAD ELEVATION IN NGVD FOR ALL MECH. EQUIPMENT.

– KITCHEN HOOD (26ga. METAL DUCT AS PER FBCR–M1503.2 ).
–EXHAUST FAN SHALL NOT EXCEED 400 CFM OF EXHAUST AIR, AS PER FBCR–M1507.3. & 1503.4. REFER TO CUTSHEET SPECS.
–KITCHEN HOOD TO ROOF CAP AND BACKDRAFT DAMPER, AS PER FBCR–M1503.1
–HOOD VENTILATION SYSTEM DUCT TERMINATION POINT TO BE PROVIDE W/ A CORROSION RESISTANT SCREEN, AS PER FBC–R303.5

– TOILET EXHAUST DUCT UP TO ROOF (WALL) CAP W/ CORROSION RESISTANT SCREEN. AS PER FBC 401.5. 2020.
– MIN. 3FT CLEARENCE FROM ANY OPERABLE BLDG. OPENING FMC 501.2.1(3)

– PROVIDE CORROSION RESISTANT BIRDSCREEN FOR ALL INTAKE/EXHAUST WALL LOUVER, WALL/ROOF CAP AND ROOF GOOSE NECK (EXCEPT DRYER EXHAUST) AS PER FBC 401.5, 2020.

– ALL DRYER CLOSETS TO HAVE FULL LOUVER DOOR OR 18x6 LOUVER ABOVE DOOR TO COMPLY WITH FMC 504.5.

– CONDENSATE DRAIN PIPING LINE WITHIN UNCONDIOTIONED AREAS (ATTIC AND PARTITION SPACES) SHALL BE INSULATED WITH 3/4" AMCOFLEX TO PREVENT EXTERIOR PIPE CONDESATATION AS PER FBC M–307.2.5

– REFRIGERANT CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE FITTED WITH LOCKING–TYPE TAMPER RESISTANT CAPS OR SHALL BE OTHERWISE SECURES TO PREVENT UNAUTHORIZED ACCESS UNLESS THE PORTS ARE LOCATED INSIDE THE CONDENSING UNIT CABINET COMPLIANCE WITH FBC–R SECTION M1411.8

– EXHAUST OPENINGS SHALL BE IN COMPLINACES WITH FBC 2020 RESIDENTIAL M1506.3
AIR EXHAUST OPENINGS SHALL TERMINATE NOT LESS THAN 3 FEET FROM PROPERTY LINES; 3 FEET FROM OPERABLE AND NONOPERABLE OPENINGS INTO THE BUILDING AND 10 FEET FROM MECHANICAL AIR INTAKES EXCEPT WHERE THE OPENING IS LOCATED 3 FEET ABOVE THE AIR INTAKE. OPENINGS SHALL COMPLY WITH SECTIONS R303.5.2 AND R303.6.

– AIR HANDLERS WITHIN COMPARTMENTS SHALL HAVE A MIN. WORKING SPACE CLEARANCE OF 3 INCHES ALONG SIDES, BACK AND TOP WITH A TOTAL WIDTH OF THE ENCLOSING SPACE BEING AT LEAST 12 INCHES WIDER THAN THE AIR HANDLER.
AS PER FBC R 2020 M1305.1.1

– FOR WIND RESISTANCE DESIGN, SUPPORT AND INSTALLATION OF MECHANICAL EQUIPMENT THAT ARE EXPOSED TO WIND, PROVIDE COMPLIANCE WITH FBC M301.15 , FBC 1620 AND THE INTERPRETATION FROM THE BOARD OF RULES AND APPEALS DATED DECEMBER13, 2020 (BORA INTERPRETATION WIND RESISTANCE OF MECHANICAL EQUIPMENT.

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– MATERIALS EXPOSED WITHIN PLENUMS SHALL BE NONCOMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE–DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E–84. FBC 602.2.1

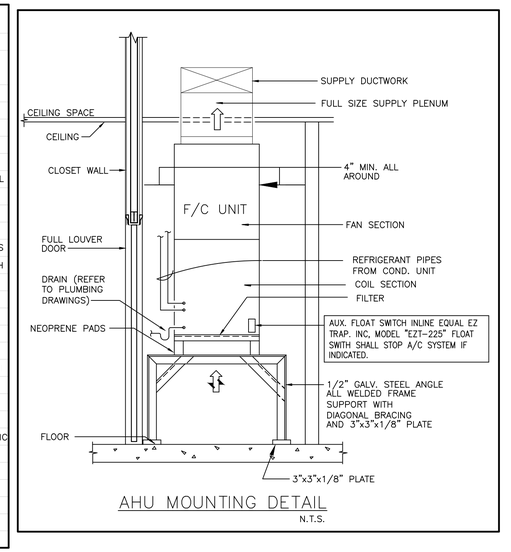
## SPLIT AC UNIT SCHEDULE

| | UNIT DESIGNATION | AHU–1 |
|---|---|---|
| | AREA SERVED | SEE PLAN |
| | LOCATION | UTILITY ROOM |
| | DIMENSIONS, (L,W,H) | 22 X 25 X 54 |
| | OPERATING WEIGHT, LBS | 207 |
| | MODEL NUMBER | FV4CNF006 |
| | SEER | 17.0 |
| | SEER 2 | 16.0 |
| FAN SECTION | TOTAL AIR, CFM | 1600 |
| | OUTSIDE AIR, CFM | 0 |
| | EXTERNAL STATIC PRESSURE, IN OF WATER | 0.5 |
| | FAN MOTOR .FLA–HP | 6.0 – 3/4 |
| | ELECTRICAL SERVICE AVAILABLE | 208/1/60 |
| CLG. COIL | M.C.A. (AHU+HTR)(208 V) | 26.1 |
| | M.O.C.P. (AHU+HTR)(208 V) | 40 |
| | DESIGN AIR FLOW, CFM. | 1600 |
| | TOTAL CAPACITY, MBH | 47.4 |
| | SENSIBLE CAPACITY, MBH | 33.3 |
| | ENTERING AIR TEMP., F°DB/WB | 80/67 |
| HEATER | COIL MODEL NO. | ––– |
| | FILTER | CLEANABLE /1" |
| | HEATER KW (240 V) | ELECT.(10 KW) |
| | ELECTRICAL SERVICE AVAILABLE | 208–240/1/60 |
| AIR COOLED CONDENSING UNIT | UNIT DESIGNATION | CU–1 |
| | NO. OF FANS | 1/–– |
| | CONDENSER FAN F.L.A. – H.P | 1.2–1/4 |
| | AMBIENT AIR TEMP. °F DB | 95 |
| | CONDENSING TEMP. °F DB | –– |
| | NO. OF COMPRESSORS | 1 |
| | CAPACITY REDUCTION EA. | –– |
| | COMPRESSOR L.R.A. EA. | 14.6 |
| | ELECTRICAL SERVICE AVAILABLE | 208/1/60 |
| | OPERATING WEIGHT, LBS | 357 |
| | DESIGN MANUFACTURER | CARRIER |
| | DIMENSIONS, (L,W,H) | 35 X 35 X 32 |
| | MODEL NUMBER | 24TPA748–3 |
| | M.C.A. | 58.5 |
| | M.O.C.P. | 60 |
| | SUCTION (IN. OD) | 1–1/8 |
| | LIQUID (IN. OD) | 3/8 |
| | REFRIGERANT | R–410A |

NOTES:
1.– ALL FAN COIL UNITS SHALL BE PROVIDED WITH FACTORY INSTALLED CIRCUIT BREAKER.
2.– ALL THERMOSTATS SHALL BE PROGRAMMABLE TYPE.
3.– DESIGN IS BASED ON CARRIER OR APPROVED EQUAL. W/ SIMILAR SPEC.'S AS SHOWN. (SAME SENSIBLE CAPACITY )
4.– VOLTAGE VALUES BETWEEN PARENTHESIS DENOTES ONLY FOR ELECTRICAL CALCULATIONS. FOR GOOD PRACTICE VOLTAGE AND SPECIFICATION TO BE COORDINATED WITH MANUFACTURER AND ELECTRICAL SERVICE AVAILABLE.
5.– REFER TO ELEC. DWGS FOR ELEC. SPEC'S.
6.– WE RECOMMEND UNITS WITH HUMIDITY CONTROL MIN. TWO STEPS VELOCITY, VFD OR ECM (HIGH EFFICIENCY, VARIABLE SPEED MOTOR). COORDINATE WITH OWNER.

## VENTILATION FAN SCHEDULE

| | UNIT DESIGNATION | EF–1 |
|---|---|---|
| | AREA SERVED | SEE DWG |
| | OPERATING WEIGHT, LBS | 19 |
| | LOCATION | CEILING |
| FAN | FAN TYPE | SEE DWGS |
| | TOTAL AIR, CFM | 80 |
| | DRIVE TYPE | DIRECT |
| | FAN WHEEL TYPE | CENTRIFUGAL |
| | FAN TIP SPEED, FPM MAX. | ––– |
| | FAN SPEED, RPM | ––– |
| | TOTAL STATIC PRESSURE, IN OF WATER | ––– |
| | FAN MOTOR HP. (NON–OVERLOAD) | 23.3 WATTS |
| | FAN MOTOR STARTER TYPE | WALL SWITCH |
| | STARTER FURNISHED BY | MC |
| | ELECTRICAL SERVICE AVAILABLE | 120–1–60 |
| | ––– | ––– |
| | SONES | 1.4 |
| | DESIGN MANUFACTURER | PANASONIC |
| | MODEL NUMBER | FV–08VS1 |
| ACCESSORIES | SERVICE SWITCH | YES |
| | SMOKE DETECTOR (U.L. APPROVED ) | NO |
| | FIRE DAMPER | ––– |
| | CONSTRUCTION | ALUM/PLASTIC |
| | MULTIBLADE BACK DRAFT DAMPER | YES |
| | BIRD SCREEN | NO |
| | SOLID STATE SPEED CONTROL | NO |
| | THERMOSTAT CONTROL | NO |
| | FACTORY FABRICATED CURB | NO |
| | FILTER AND FILTER FRAME | NO |




AHU MOUNTING DETAIL
N.T.S.

| HVAC DESIGN REQUIRES: | YES | NO |
|---|---|---|
| DUCT SMOKE DETECTOR | | ● |
| FIRE DAMPER(S) | | ● |
| SMOKE DAMPER(S) | | ● |
| FIRE RATED ENCLOSURE | | ● |
| FIRE RATED ROOF/FLOOR CEILING ASSEMBLY | | ● |
| FIRE STOPPING | | ● |
| SMOKE CONTROL | | ● |

## AIR DISTRIBUTION SCHEDULE

| SYMBOL | TAG | USE | TYPE | ACCESSORIES | MFG. & MODEL NO. | REMARK |
|---|---|---|---|---|---|---|
| | A | SUPPLY AIR | ALUMINUM CEILING DIFFUSER | O.B.D. | TITUS TITUS 250–AA | CEILING MOUNTED |
| | B | RETURN AIR | ALUMINUM CEILING GRILLE | ––– | TITUS TITUS 23R | CEILING MOUNTED |

NOTE: 1. ALL AIR DISTRIBUTION DEVICES SHALL BE ALL ALUMINUM CONSTRUCTION.
2. FINISHES AND TYPES OF MOUNTS SHALL BE COORDINATED WITH ARCHITECTURAL DRAWING. COORDINATE COLOR FINISH
3. DESIGN IS BASED ON TITUS AND METAL AIR OR APPROVED EQUAL.
4. MAX. ACCEPTABLE FACE VELOCITY THROUGH NET FREE AREA: 400 FT/MIN.
5. 30 MAX NOISE CRITERIA

Karel Valdes

Digitally signed by Karel Valdes
DN: c=US, o=Florida, dnQualifier=A01410D0000018 3420D30280006BAC0, cn=Karel Valdes
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Issue

| No. | Date | Description |
|---|---|---|
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SIGN & SEAL

KAREL VALDES LICENSE No.74576 STATE OF FLORIDA PROFESSIONAL ENGINEER

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SHEET TITLE:

GENERAL NOTES, SCHEDULES AND DETAILS

| | |
|---|---|
| Drawn by | A.M |
| Checked by | K.V |
| Project Number | 021123A |
| Issued for | |
| Issue date | 02/11/23 |
| Scale | SEE DWG. |
| Sheet # | M–2 |