MECHANICAL HVAC NOTES

1. GENERAL

   A. ALL WORK TO BE DONE IN ACCORDANCE WITH NFPA 90-A; ASHRAE GUIDE AND SMACNA DUCT CONSTRUCTION STANDARDS AS WELL AS WITH FBC 2014 AND ADDENDUMS, ALL STATE AND LOCAL CODES HAVING JURISDICTION. CONTRACTOR SHALL VERIFY ALL SPACE CONDITIONS AT JOB SITE PRIOR TO SUBMITTING BID PROPOSAL.

2. WORKMANSHIP

   A. ALL WORK SHALL BE PERFORMED BY A LICENCED AIR CONDITIONING CONTRACTOR. WORK SHALL BE DONE IN A FIRST CLASS MANNER, FULLY OPERATIVE, AND TO THE ACCEPTANCE OF THE ARCHITECT/ENGINNER. CONTRACTOR SHALL PROVIDE FOR ALL NECESSARY LABOR AND MATERIAL REQUIRED FOR COMPLETION OF THE WORK INCLUDING BUT NOT LIMITED TO CONNECTIONS TO RELATED WORK SUCH AS CONNECTION TO EXISTING SYSTEM, EXCAVATIONS AND BACKFILLING.

3. PERMITS AND INSURANCE

   A. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL INSURANCE, PERMITS, FEE, TAXES, INSPECTIONS, TEST, FINES AND OTHER ITEMS AS REQUIRED FOR THE INSTALLATION OF COMPLETE AIR CONDITIONING SYSTEM AS OUTLINED HEREIN AND SHOWN ON PLANS. PROVIDE ALL REQUIRED INSURANCE FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK.

4. DUCTWORK

   A. ALL METAL DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED STEEL IN ACCORDANCEWITH THE LATEST INDUSTRY STANDARDS, PUBLISHED BY THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, INC. (SMACNA) "HVAC DUCT CONSTRUCTION STANDARD" MANUAL AND THE LATEST ASHRAE HANDBOOKS.IF APPROVED BY OWNER, ALL AIR CONDITIONING AND VENTILATION AIR DUCTS SERVING UNITS TO BE MINIMUM 1" THICK (R-4.2 MIN), FIBERGLASS WITH VAPOR BARRIER. FABRICATION AND INSTALLATION OF FIBERGLASS DUCTWORK SHALL BE IN COMPLETE ACCORDANCE WITH THE LATEST REQUIREMENTS OF DUCT CONSTRUCTION MANUAL BY SMACNA LATEST EDITION AND ASHRAE.DUCT DIMENSIONS ARE IN INCHES AND CORRESPOND TO INSIDE DIMENSIONS WIDTH x HEIGHT. PROVIDE TURNING VANES AT ALL ELBOWS.

   B. ALL INTERIOR EXPOSED SUPPLY AIR CONDITIONING DUCTWORK SHALL BE LINED WITH 1" THICK, TYPE 300 GLASS FIBER, ACOUSTIC THERMAL DUCT LINER IN ACCORDANCE WITH THE SMACNA DUCT LINER APPLICATION STANDARD.

   C. EXPOSED DUCTWORK MATERIALS: WHERE DUCTWORK IS INDICATED TO BE EXPOSED TO VIEW IN OCCUPIED SPACES, PROVIDE MATERIALS WHICH ARE FREE FROM VISUAL IMPERFECTIONS INCLUDING PITTING, SEAM MARKS, ROLLER MARKS, OIL CANNING, STAINS AND DISCOLORATIONS, AND OTHER IMPERFECT-IONS, INCLUDING THOSE WHICH WOULD IMPAIR PAINTING.

   D. FLEXIBLE DUCT: FACTORY INSULATED FLEXIBLE DUCTWORK SHALL BE SIMILAR TO OWENS-CORNING MODEL # INL-25 OR AS APPROVED EQUAL WITH RESILIENT CORE OF CONTINUOUS INNER AIR BARRIER AND JACKETED WITH A REINFORCED VAPORT JACKET. FIRE HAZARD CLASSIFICATION SHALL HAVE A FLAME SPREAD OF 25, SMOKE RATING OF 50, IN ACCORDANCE WITH ASTM, C518-70, ASTM E-84, AND UL 723 STANDARDS. FLEXIBLE DUCT SHALL BE INDEPENDENTLY SUPPORTED TO PREVENT SAGGING AND KINKING.

   E. PROVIDE BALANCING DAMPERS AT EACH BRANCH TAKE-OFF FROM MAIN DUCTS AND OTHER LOCATIONS AS REQUIRED TO PROPERLY BALANCE THE SYSTEM.

5. INSULATION

   A. ALL INTERIOR SUPPLY AND RETURN AIR CONDITIONING DUCTWORK (INSIDE CEILING SPACE) SHALL BE INTERNALLY INSULATED WITH 1 INCH MINIMUM THICKNESS OF 1" P.C.F. DENSITY FIBERGLASS INSULATION WITH VAPOR SEAL FACING. ALL JOINTS SHALL BE COATED WITH ADHESIVE.

6. DRAWINGS

   A. CONTRACTOR SHALL VERIFY ALL CEILING SPACE CONDITIONS AT SITE BEFORE FABRICATION AND INSTALLATION OF DUCTWORK.

   B. CONTRACTOR SHALL THOROUGHLY CHECK REFLECTED CEILING PLANS AND CEILING HEIGHTS TO COORDINATE FINAL LOCATION OF AIR DEVICES AND DUCT RUNS.

   C. CONTRACTOR SHALL INSTALL ALL DIFFUSERS AND DUCTWORK AS SHOWN ON A/C DRAWING. IF THERE ARE SPACE CONDITION PROBLEMS DUE TO STRUCTURAL MEMBERS, THE ARCHITECT/ENGINEER SHALL BE NOTIFIED IMMEDIATELY AFTER ARCHITECT/ENGINEER APPROVAL TO COMPLETE THE INSTALLATION.

   D. THE DUCTWORK LAYOUT INDICATED IN THE DRAWINGS ARE DIAGRAMMATIC AND DOES NOT SHOW ALL OFFSETS, DEVIATIONS OR TRANSFORMATIONS THAT FIELD CONDITIONS MAY REQUIRE TO AVOID INTERFERENCES WITH SOME OBSTRUCTIONS.

   E. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY CHANGES IN DUCTWORK TO AVOID INTERFERENCES WITH THE WORK OF OTHER TRADES, STRUCTURAL ELEMENTS OR ANY OTHER EXISTING OBSTRUCTION WITHOUT ANY ADDITIONAL CHARGE TO THE OWNER.

   F. DUCTWORK SIZES SHOWN ARE INSIDE DIMENSIONS.

7. GRILLES, REGISTERS AND DIFFUSERS

   A. ALL GRILLES, REGISTERS, DIFFUSERS SHALL BE OF ALUMINUM CONSTRUCTION AND SHALL BE FURNISHED AND INSTALLED WITH ALL SPECIFIED ACCESSORIES AS SHOWN ON THE SCHEDULE, FINISHED COLOR BY ARCHITECT.

   B. MANUFACTURERS: TITUS, AIR GUIDE, NAILOR.

8. FILTERS

   A. THROWAWAY TYPE LOCATED IN AIR HANDLING UNIT OR AT RETURN AIR GRILLE UNLESS OTHERWISE NOTED. FURNISH ONE (1) SPARE SET TO OWNER.

9. CONDENSER WATER LINES

   C. PIPING SHALL BE BLACK STEEL SEAMLESS SCHEDULE 40. ALL PIPING, FITTINGS, VALVES, ACCESSORIES, AND HVAC EQUIPMENT, SHALL HAVE 150 PSIG. DESIGN WORKING PRESSURE. ERW PIPING SHALL NOT BE ACCEPTABLE.

10. CONTROLS

   D. PROVIDE A THERMOSTAT WITH SUB-BASE AND LOCKING THERMOSTAT COVER 5'-6" AFF. SUB-BASE SHALL HAVE MANUAL CHANGEOVER FOR HEATING AND COOLING AND ON-AUTO-FAN SWITCH. THERMOSTAT SHALL BE COMPATIBLE WITH UNIT MANUFACTURER. CONNECT TO BMS SYSTEM IF AVAILABLE.

11. TEST AND BALANCE

   E. THE ENTIRE HVAC SYSTEM SHALL BE TESTED, ADJUSTED AND BALANCED TO DELIVER THE AIR QUANTITIES SHOWN ON DRAWINGS. TEST AND BALANCE SHALL BE DONE BY AN INDEPENDENT THIRD PARTY CERTIFIED TEST AND BALANCE COMPANY.

12. GUARANTEE

   F. ALL MATERIALS, EQUIPMENT AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE OF THIS PROJECT.

   G. ALL WORK FOUND TO BE DEFECTIVE SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR WITHOUT ANY CHARGE TO THE OWNER.

RESIDENTIAL GEOTHERMAL HEAT PUMP

HP-1
REPLACED/RELOCATED
(RP/RL)

HEAT PUMP, MANUFACTURER: BOSCH, MODEL: CE61-1VTC-FLT, 5TONS, 2,000CFM, EXTERNAL STATIC PRESSURE 0.20 IN WC, EER 14.0, 9.0 GPM, COOLING CAPACITY 60,000 BTUH, HEATING CAPACITY 72,000 BTUH, COP 4.7.
PHYSICAL DATA:
COMPRESSOR: TYPE (QTY 1) SCROLL, MAX WATER WORKING PRESSURE 450 PSI.
ECM FAN MOTOR&BLOWER: FAN MOTOR TYPE ECM CONST AIR FLOW, FAN MOTOR 1 HP.
WATER CONNECTIONS SIZE: FPT 1", COAXIAL COIL 0.74 GAL.
VERTICAL GABINET: REFRIGERATION CHARGE 90 OZ, AIR COIL DIMENSIONS (24"Hx27"W).
STANDARD FILTER-2" (24"x30").
WEIGHT 390 LBS.
ELECTRICAL DATA:
VOLTAGE 208-230/1/60, COMPRESSOR 27.1 RLA, 179.2 LRA, TOTAL UNIT W/CONSTANT CFM MOTOR 9.1 FLA, 46.2 MCA, 70 MOCP.
DIMENSION UNIT: 51.25"Hx26.0"Wx33.25"D.

HP-2
REPLACED/RELOCATED
(RP/RL)

HEAT PUMP, MANUFACTURER: BOSCH, MODEL: CE35-1VTC-FLT, 3TONS, 1,200CFM, EXTERNAL STATIC PRESSURE 0.20 IN WC, EER 14.6, 9.0 GPM, COOLING CAPACITY 36,000 BTUH, HEATING CAPACITY 43,000 BTUH, COP 4.8.
PHYSICAL DATA:
COMPRESSOR: TYPE (QTY 1) SCROLL, MAX WATER WORKING PRESSURE 450 PSI.
ECM FAN MOTOR&BLOWER: FAN MOTOR TYPE ECM CONST AIR FLOW, FAN MOTOR 0.50 HP.
WATER CONNECTIONS SIZE: FPT 1", COAXILA COIL 0.46 GAL.
VERTICAL GABINET: REFRIGERATION CHARGE 68 OZ, AIR COIL DIMENSIONS (24"Hx21"W).
STANDARD FILTER-2" (24"x24").
WEIGHT 290 LBS.
ELECTRICAL DATA:
VOLTAGE 208-230/1/60, COMPRESSOR 15.3 RLA, 83.0 LRA, TOTAL UNIT W/CONSTANT CFM MOTOR 4.3 FLA, 23.4 MCA, 35 MOCP.
DIMENSION UNIT: 47.5"Hx21.50"Wx26.0"D.

2

HVAC LEGEND

SYMBOL	DESCRIPTION
12"x10"	SUPPLY DUCT, SIZE AS NOTED
8"D EXH	EXHAUST DUCT SIZE AS NOTED
14"x8" RA	RETURN DUCT, SIZE AS NOTED
8"D	FLEXIBLE RETURN AIR DUCT WITH MANUAL VOLUME DAMPER (M.V.D.) BRANCH TAP AT SUPPLY.
8"D	FLEXIBLE DUCT WITH MANUAL VOLUME DAMPER (M.V.D.) BRANCH TAP AT SUPPLY.
CD	SUPPLY CEILING DIFFUSER. CEILING MOUNTED DISCHARGE PATTERN AS NOTED 1W, 2W, 3W, 4W
	SUPPLY LINEAR CEILING/WALL DIFFUSER. DISCHARGE PATTERN AS NOTED
	POINT OF CONNECTION TIE TO EXISTING
EF	EXHAUST FAN CEILING MOUNTED
R.A.	RETURN AIR GRILL (RAG), CEILING MOUNTED
T	PROGRAMMABLE THERMOSTAT
C.D.	CEILING DIFFUSER
E.F.	EXHAUST FAN
R.A.	RETURN AIR
M.V.D.	MANUAL VOLUME DAMPER
HP	HEAT PUMP
LDW	WALL LINEAR DIFFUSER
LDC	CEILING LINEAR DIFFUSER
F.L.D.	FULLY LOUVERED DOOR
HP	HEAT PUMP SYSTEM
EA	EXHAUST AIR
E	EXISTING
RL	RELOCATED
RP	REPLACED

MECHANICAL NOTES AND SCOPE OF WORK:

1. SCOPE OF WORK INCLUDES INTERIOR REMODELING OF THIS APARTMENT AS SHOWN ON PLANS.
2. APARTMENT IS BEING SERVED BY TWO EXISTING HP-1&2 TO BE RELOCATED AS SHOWN AS PLANS.
3. BEFORE COMMENCING WORK CONTRACTOR SHALL FIELD VERIFY AND COORDINATE WITH EXISTING BUILDING CONDITIONS, FOR EXISTING DUCTWORK, PLUMBING/FP PIPING, ELECTRICAL SYSTEMS TO AVOID ANY CONFLICTS.
4. ALL EXISTING DUCTWORK TO BE RE-USED OR REMOVED AS SHOWN ON PLANS.
5. NO COMBUSTIBLE MATERIALS SHALL BE PERMITTED WITHIN PLENUM SPACES. NO PVC OR WOOD ALLOWED.
6. PROVIDE M.V.D. AT EACH DUCT BRANCH.
7. CONTRACTOR TO COORDINATE WITH ARCH/OWNER FOR FINAL DIFFUSER MANUFACTURER AND MODEL SELECTION.
8. ALL DOORS WILL BE 1" UNDER CUT (UC).
9. ALL WORK WILL BE DONE AS PER FBC2014 AND ADDENDUMS. 1
10. THE AHU CLOSET RETURN AIR PLENUM 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 OR UL 723.

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		●

SUPPLY AIR DISTRIBUTION SCHEDULE

No.	SYMBOL	FACE OR CEILING MODULE SIZE	BORDER TYPE	MANUFACTURER	MODEL No.	CONSTRUCTION	REMARK
A		AS NOTED ON PLANS	TYPE 1 (SURFACE) CEILING MOUNTED	TITUS	250-AA	ALUMINUM FINISH 26 (WHITE)	PLENUM SIZE TO MATCH DUCT 3/4" BLADE DOUBLE DEFLECTION
B		AS NOTED ON PLANS	CONCEALED FAST. 2 WAY CEILING/WALL MOUNTED	TITUS	FL-10-30 1-3" SLOT	ALUMINUM FINISH 26 (WHITE)	HIGH THROW PATTERN CONTROLLER, WITH PLENUM BOX AND INLET DAMPER. PROVIDE 270-275 BOWDEN CABLE CONTROL SYSTEM, REFER TO DETAIL.

RETURN AIR DISTRIBUTION SCHEDULE

No.	SYMBOL	FACE OR CEILING MODULE SIZE	BORDER TYPE	MANUFACTURER	MODEL No.	CONSTRUCTION	REMARK
C	RA	AS NOTED ON PLANS	CEILING/WALL MOUNTED	TITUS	3-1" SLOT	FINISH 26 (WHITE)	HIGH THROW PATTERN CONTROLLER, WITH PLENUM BOX AND INLET DAMPER.
D	RA	24"X24" OR AS NOTED ON PLANS	TYPE 1 (SURFACE), TYPE 3(LAY-IN) CEILING MOUNTED	TITUS	350 FL	ALUMINUM FINISH 26 (WHITE)	NECK SIZE TO MATCH DUCT SIZE GRILL WITH BORDER, 3/4" SPACING.

NOTES:
1. SEE HVAC FLOOR PLANS FOR DISCHARGE PATTERN.
2. BEFORE COMMENCING WORK CONTRACTOR SHALL VERIFY WITH ARCH/OWNER FOR FINAL MODEL AND FINISH OF REGISTERS TO COMPLY WITH SIMILAR PARAMETERS SUCH AS THROW, NOISE LEVEL AND CORE VELOCITY.

atelier
space planning
CERTIFIED GENERAL CONTRACTOR
9450 NW 58 st. # 104 Doral, FL. 33178
305.934.8842 - tel/ fax 305.715.7150
aeatelier@comcast.net

PROJECT NUMBER (1123) 2016

OWNER
REICH RESIDENCE

ADDRESS
7872 FISHER ISLAND DRIVE
FISHER ISLAND FL. 33109

DRAWN
S.C

PJV ENGINEERING, INC.
Mechanical & Electrical Engineers
email: info@pjveng.com
www.pjveng.com
Tel: (305) 742-2112
C.A.# 25987

DATE
03/ 01/ 2016

SCALE
SCALE: AS SHOWN

SHEET DESCRIPTION
MECHANICAL NOTES

REVISIONS
1 BLDG. DEPT 04/11/16
2 FIELD REV 06/29/16

PABLO J. VITERI
PE# 59535
JUL 01 2016

SEAL

SHEET NUMBER
M-0

Miami Dade County Department of Regulatory And Economic Resources
0001123882 - 7/13/2016 8:14:29 AM
M-0-07052016.pdf
Examiner Date Time Stamp Disp. Trade Stamp Name
David Ferreira 7/7/2016 7:20:05 AM A MECH Approved