

HVAC GENERAL NOTES

1. GENERAL

1.1. INSTALL IN ACCORDANCE WITH THE 2020 FBC 7TH EDITION, BUILDING, ENERGY CONSERVATION AND MECHANICAL, ASHRAE, SMACNA, NFPA AND LOCAL ORDINANCES.

1.2. THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE OF THE WORK AND BECOMING FAMILIAR WITH THE CONDITIONS OF THE WORK PRIOR TO SUBMITTING A BID. THE CONTRACTOR IS REQUIRED TO BECOME FAMILIAR WITH ALL THE CONTRACT DOCUMENTS PERTAINING TO THE PROPOSED WORK. THE SUBMISSION OF A BID SHALL BE SUFFICIENT TO ESTABLISH THAT THE CONTRACTOR HAS INVESTIGATED THE SITE OF THE WORK AND IS SATISFIED TO ALL REASONABLE CONDITIONS BE ENCOUNTERED. THE WORK TO BE PERFORMED AND THE MATERIALS TO BE PROVIDED IN THE COMPLETION OF THE PROJECT.

1.3. THE CONTRACTOR MUST BE FAMILIAR WITH THIS TYPE OF INSTALLATION AND THOROUGHLY UNDERSTAND ALL THE REQUIREMENTS FOR THE INSTALLATION OF EACH PIECE OF EQUIPMENT HEREIN SHOWN. ITS PROPER OPERATION REQUIREMENTS AND TESTING PROCEDURES FOR CITY APPROVALS.

1.4. PROVIDE (FURNISH AND INSTALL) ALL NECESSARY MATERIALS AND LABOR FOR A COMPLETELY OPERATIONAL AIR CONDITIONING, HEATING AND VENTILATING SYSTEM AS SHOWN ON THE DRAWINGS AND HEREIN SPECIFIED.

1.5. PAY FOR ALL FEES, INSPECTIONS AND CONNECTION CHARGES REQUIRED.

1.6. VERIFY AT JOB SITE ALL SPACE CONDITIONS, DIMENSIONS AND EQUIPMENT SIZES PRIOR TO DUCT FABRICATION OR INSTALLATION. COORDINATE REQUIREMENTS TO AVOID INTERFERENCE WITH OTHER TRADES.

1.7. NATURE OF DESIGN DRAWINGS: DESIGN DRAWINGS ARE DIAGRAMMATIC AND DO NOT INTEND TO SHOW EVERY FITTING, ELBOW, TRANSITION, ETC. THAT WILL BE NECESSARY FOR A COMPLETE OPERATIONAL SYSTEM AS REQUIRED BY THESE SPECIFICATIONS.

1.8. COORDINATION DRAWINGS: PREPARE 1/4" SCALE COORDINATION DRAWINGS SHOWING MAJOR SYSTEM COMPONENTS FOR A/E APPROVAL. SUBMIT SHOP DRAWINGS FOR ARCHITECT/ENGINEER APPROVAL BEFORE PROCEEDING WITH THE PURCHASE OR INSTALLATION OF EQUIPMENT AND MATERIALS. SUBMIT ALL AT ONCE IN A BINDER WITH AN INDEX AND DIVIDERS AS REQUIRED TO SEPARATE ALL DIFFERENT MATERIALS AND EQUIPMENT.

1.9. GUARANTEE ALL WORK FREE OF DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE.

2. MATERIALS

2.1. DUCTWORK: ALL JOINTS SEALED WITH HIGH PRESSURE MASTIC.

2.1.1. GENERAL: ALL DUCT SIZES SHOWN ARE CLEAR INSIDE DIMENSIONS.

2.1.2. DUCTWORK MATERIALS:
A. AIR CONDITIONING DUCTWORK SHALL BE 1-1/2" STANDARD DUTY FOIL REINFORCED FIBERGLASS (R-6.0) MANUFACTURED LOGO PRINTED ON THE VAPOR BARRIER. DUCTWORK RUNNING IN ATTIC SPACE SHALL BE 2" STANDARD DUTY FOIL REINFORCED FIBERGLASS (R-8.0) MANUFACTURED LOGO PRINTED ON THE VAPOR BARRIER. ALL DUCTWORK SHALL BE DESIGNED, CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH SMACNA'S LOW PRESSURE DUCT MANUAL AND NAIMA FIBROUS GLASS DUCT CONSTRUCTION STANDARDS. ALL DUCT JOINTS SHALL BE SEALED AND TAPED. DUCTS SHALL COMPLY WITH UL 181.
B. VENTILATION DUCTWORK (EXHAUST AND OUTDOOR AIR): GALVANIZED SHEET METAL, CONSTRUCTED AND INSTALLED ACCORDING TO LATEST EDITION OF SMACNA'S LOW PRESSURE CONSTRUCTION STD. (0.5" W.G.) SEAL ALL JOINTS WITH APPROVED FIRE RATED MASTIC (30 GAUGE MINIMUM). OUTDOOR AIR INTAKE SHALL BE INSULATED R-8.0 WHEN IN ATTIC SPACE AND R-6.0 ELSEWHERE.
C. DRYER EXHAUST: GALVANIZED SHEET METAL, CONSTRUCTED AND INSTALLED ACCORDING TO LATEST EDITION OF SMACNA'S LOW PRESSURE CONSTRUCTION STD. (0.5" W.G.). INSTALLATION SHALL BE AS PER FMC. (26 GAUGE MINIMUM).
E. ROUND INSULATED FLEXIBLE DUCT: PROVIDE AS SHOWN ON PLANS, WIREMOLD WCK W/ 1-1/2" INSULATION & REINFORCED ALUM. VAPOR OR APPROVED EQUAL.
F. RANGE EXHAUST DUCT SHALL BE GALVANIZED SHEET METAL (24 GAUGE MINIMUM) AND TERMINATING WITH ROOF OR WALL CAP WITH BACK DRAFT DAMPER. PROVIDE CORROSION RESISTANT SCREEN.

2.1.3. DUCTWORK ACCESSORIES:
A. PROVIDE DOUBLE THICKNESS TURNING VANES AT ALL SQUARE ELBOWS. WHERE THE ELBOWS ARE RECTANGULAR INSTALL SINGLE THICKNESS INSTEAD.
A.1. ALTERNATE A: PROVIDE 3-PIECE ELBOWS IN LIEU OF TURNING VANES FOR GLASS FIBER DUCTS ONLY.
A.2. ALTERNATE B: PROVIDE FULL RADIUS ELBOWS IN LIEU OF TURNING VANES.
B. PROVIDE VOLUME EXTRACTORS BEHIND EACH SUPPLY OUTLET AND AT EACH DUCT BRANCH.

2.2. AIR DISTRIBUTION PRODUCTS:
2.2.1. PROVIDE SUPPLY AND RETURN GRILLES AND DIFFUSERS AS INDICATED ON THE DRAWINGS.
2.2.2. PROVIDE EXTRUDED ALL ALUMINUM AIR DISTRIBUTION PRODUCTS.
2.2.3. PROVIDE FINISHES AND TYPES OF MOUNT IN COORDINATION WITH THE CEILING TYPES AS SHOWN ON ARCHITECTURAL DRAWINGS.
2.2.4. PROVIDE OPPOSED BLADE, KEY OPERATED DAMPERS BEHIND ALL AIR SUPPLY OUTLETS.

2.3. PIPING
2.3.1. REFRIGERANT PIPING: SEAMLESS COPPER TYPE "L" AND HARD OR SOFT DRAWN OC ACR COPPER TUBING WITH WROUGHT COPPER BRAZED JOINT FITTINGS, WITH SILVER BRAZING CONTAINING NOT LESS THAN 49% SILVER.
2.3.2. INSULATION: INSULATE ALL REFRIGERANT SUCTION PIPING WITH 3/4" CLOSED CELL POLYETHYLENE PRE MOLDED INSULATION, WITH AND APPROVED PIPE AND SMOKE JACKET, PAINT ALL EXPOSED INSULATION WITH TWO COATS OF WHITE LATEX PAINT.

2.4. CONTROLS
2.4.1. GENERAL: PROVIDE THE NECESSARY AUTOMATIC CONTROLS FOR PROPER OPERATION OF ALL EQUIPMENT SPECIFIED HEREIN. FURNISH MAGNETIC STARTERS AND INTERLOCK WIRING INDICATED FOR EACH PIECE OF EQUIPMENT.
2.4.2. PROVIDE AIR CONDITIONING UNITS WITH PROGRAMMABLE MATCHING LOW VOLTAGE HEAT-COOL THERMOSTATS WITH ON-OFF AUTO SUB-BASE SWITCH, FURNISHED BY THE EQUIPMENT MANUFACTURER WITH HEAT-COOL STEPS AS REQUIRED. THERMOSTATS SHALL BE A COMBINATION COOLING/HEATING WITH SYSTEM COOL/AUTO/HEAT/OFF AND FAN ON/AUTO SELECTOR SWITCHES. 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.
2.4.3. CONTROL WIRING: INCLUDE STARTERS, DISCONNECTS AND REQUIRED ELECTRICAL DEVICES, INTERLOCK WIRING, RACEWAY, CONDUITS, PULL WIRES AND EXPOSED CONDUITS FOR TEMPERATURE CONTROL SYSTEM. ALL WIRING SHALL RUN IN CONDUITS, NO EXCEPTION.

2.5. IDENTIFICATION: LABEL ALL EQUIPMENT WITH ENGRAVED BLACK PLASTIC PLAQUES 12"x4" HIGH WITH 1.5" LETTERS.

3. EXECUTION

3.1. INSTALL ALL EQUIPMENT AND MATERIALS IN STRICT ACCORDANCE WITH THE MANUFACTURES MANUAL AND RECOMMENDATIONS, FOR INSTALLATION, OPERATION AND SERVICE. VERIFY APPLIANCES CLEARANCE PER FBC RESIDENTIAL M1306.1 AND M1306.2. EQUIPMENT AND APPLIANCES INSTALLED OUTDOORS SHALL BE LISTED AND LABELED FOR OUTDOOR INSTALLATION. SUPPORT AND FOUNDATIONS SHALL PREVENT EXCESSIVE VIBRATION, SETTLEMENT OR MOVEMENT OF THE EQUIPMENT PER FBC M1401.4. SUPPORT AND FOUNDATIONS SHALL BE IN ACCORDANCE WITH SECTION M1305.1.4.1. IN FLOOD HAZARD AREAS PER TABLE R301.2(1), EQUIPMENT AND APPLIANCES SHALL BE LOCATED IN ACCORDANCE WITH SECTION R322.1.6.

3.2. SEAL ALL DUCT JOINTS WITH APPROVED FIRE AND SMOKE RATED HIGH PRESSURE MASTIC.

3.3. THERMOSTAT LOCATION IS CRITICAL TO PROPER EQUIPMENT OPERATION. INSTALL THERMOSTAT AT LOCATIONS SHOWN ON PLANS. RELOCATE ONLY WHEN APPROVED BY THE ARCHITECT/ENGINEER IN WRITING. SENSORS MUST BE BETWEEN 3 AND 6 FEET (BETWEEN 1 AND 2 METERS) ABOVE THE FLOOR.

3.4. WHERE RETURN AIR IS PROPOSED BY WAY OF DOOR UNDERCUTS, PROVIDE A MINIMUM 1" CLEAR SPACE BETWEEN THE BOTTOM OF THE DOOR AND THE FLOOR FINISH CARPET OR TILE.

3.5. EQUIPMENT MUST OPERATE FREE OF OBJECTIONABLE NOISE AND VIBRATION REPAIR AND/OR REPLACE ALL SOURCES OF NOISE AND VIBRATION FOUND TO BE OBJECTIONABLE, TO THE SATISFACTION OF THE ARCHITECT/ENGINEER.

3.6. BALANCE ALL SYSTEMS TO PROVIDE AIR QUANTITIES AND CAPACITIES TO MATCH SPECIFIED FLOWS AND CAPACITIES. NOTIFY A/E OF ANY DEFICIENCIES NOTED DURING TESTING & BALANCING. CALIBRATE FLOWS TO NEW EQUIPMENT PER MANUFACTURES REQUIREMENTS. BEFORE COMPLETING TEST & BALANCE PROCEDURES, ALLOW NECESSARY TIME FOR IMPLEMENTING PROPOSED SOLUTIONS BEFORE CONTINUING WITH TEST & BALANCE. AT END OF TEST AND BALANCE ISSUE A COMPLETE REPORT FOR A/E APPROVAL. AND ALLOW TIME AND PROVIDE NECESSARY INSTRUMENTS FOR SPOT CHECKING WITH ARCHITECT/ENGINEER. SUBMIT FINAL TEST AND BALANCE REPORT TO A/E FOR ACCEPTANCE. AIR QUANTITIES SHOWN ARE TO BE ADJUSTED AS REQUIRED TO MEET SPECIFIC JOB CONDITIONS.

3.7. PROVIDE NEW FILTERS FOR AHUs BEFORE STARTING. THESE FILTERS MUST ALSO BE REPLACED PRIOR TO FINAL ACCEPTANCE BY OWNER.

3.8. ALL OUTSIDE EQUIPMENT SHALL BE SECURED TO WITHSTAND 175 MPH WINDS.

3.9. STRICTLY FOLLOW ALL MANUFACTURERS INSTALLATION MANUALS AND INSTRUCTIONS IN THE INSTALLATION OF ALL EQUIPMENT. OBTAIN, FROM EACH MANUFACTURER, PROPER CERTIFICATION FOR THE ADEQUACY OF THE INSTALLATION OF ALL PIECES OF EQUIPMENT BEFORE PLACING SYSTEM IN OPERATION.

3.10. PROVIDE MAINTENANCE AND OPERATION MANUAL.

3.11. PROVIDE AS-BUILT REPRODUCIBLE DRAWINGS.

3.12. PROVIDE INSTRUCTION TO OWNERS DESIGNATED PERSONNEL.

3.13. PROVIDE ACCESS PANELS TO DAMPERS AS SHOWN ON PLANS. CABLE CONTROL FOR VOLUME DAMPERS MUST BE PROVIDED TO AVOID THE USE OF ACCESS PANELS.

DESIGN PARAMETERS		
CLIMATE ZONE		1A
SUMMER INDOOR DESIGN CONDITIONS	75.0°F DB/50.0% RH	
WINTER INDOOR DESIGN CONDITIONS	72.0°F DB	
SUMMER OUTDOOR DESIGN CONDITIONS	91.9°F DB/77.6°F WB	
WINTER OUTDOOR DESIGN CONDITIONS	48.8°F DB/40.9°F WB	
GLASS U-VALUE/SHGC	0.48/0.35	
WALL INSULATION R-VALUE	5.0	
EXPOSED FLOORS R-VALUE	13.0	
CEILING INSULATION R-VALUE	30.0	

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

AIR DISTRIBUTION SCHEDULE								
DESIGNATION	DESCRIPTION	MOUNTING	AIR PATTERN	MODULE DIMENSIONS (in)	MATERIAL	ACCESORIES	MANUFACTURER/ MODEL NO.	KEYNOTES
A	ARCHITECTURAL LINEAR DIFFUSER WITH CONTINUOUS SLOT PLENUM	CEILING/ SIDEWALL	N/A	N/A	ALUMINUM	CABLE CONTROL SYSTEM FOR VOLUME DAMPERS	TITUS FL-15 (JET THROW PATTERN CONTROLLER)	
B	ARCHITECTURAL LINEAR DIFFUSER WITH CONTINUOUS SLOT PLENUM	CEILING/ SIDEWALL	AS PER PLANS	N/A	ALUMINUM	CABLE CONTROL SYSTEM FOR VOLUME DAMPERS	TITUS FL-15 (HIGH THROW PATTERN CONTROLLER)	
C	ARCHITECTURAL LINEAR DIFFUSER	CEILING/ SIDEWALL	N/A	N/A	ALUMINUM	OPPOSED BLADE DAMPER	TITUS FL-15 (JET THROW PATTERN CONTROLLER)	
D	SQUARE DIFFUSER	CEILING	AS PER PLANS	N/A	ALUMINUM	OPPOSED BLADE DAMPER/ROUND TO RECTANGULAR TRANSITION	TITUS 250-AA	1
E	ALUMINUM LOUVERED SUPPLY AIR GRILLES	CEILING	0" DEFLECTION	N/A	ALUMINUM	N/A	TITUS 271FL	
F	ALUMINUM LOUVERED RETURN/EXHAUST AIR GRILLES	SIDEWALL/ CEILING	N/A	N/A	ALUMINUM	OPPOSED BLADE DAMPER	TITUS 355ZFL	2

KEYNOTES:

1. OPPOSED BLADE DAMPER ONLY FOR DUCT MOUNTED DIFFUSERS. CABLE CONTROL FOR VOLUME DAMPERS WHERE CONNECTED WITH FLEX DUCTS.

2. ELEMENTS THAT SERVE AS TRANSFER, DO NOT REQUIRE OPPOSED BLADE DAMPER.

NOTES:

1. REFER TO ARCHITECT PLANS FOR CEILING TYPE.

2. FINAL COLOR SELECTION SUBJECT TO ARCHITECT APPROVAL.

3. PROVIDE INSULATION ON THE BACK OF DIFFUSER IF IN UNCONDITIONED SPACE.

5. MAXIMUM NC 20.

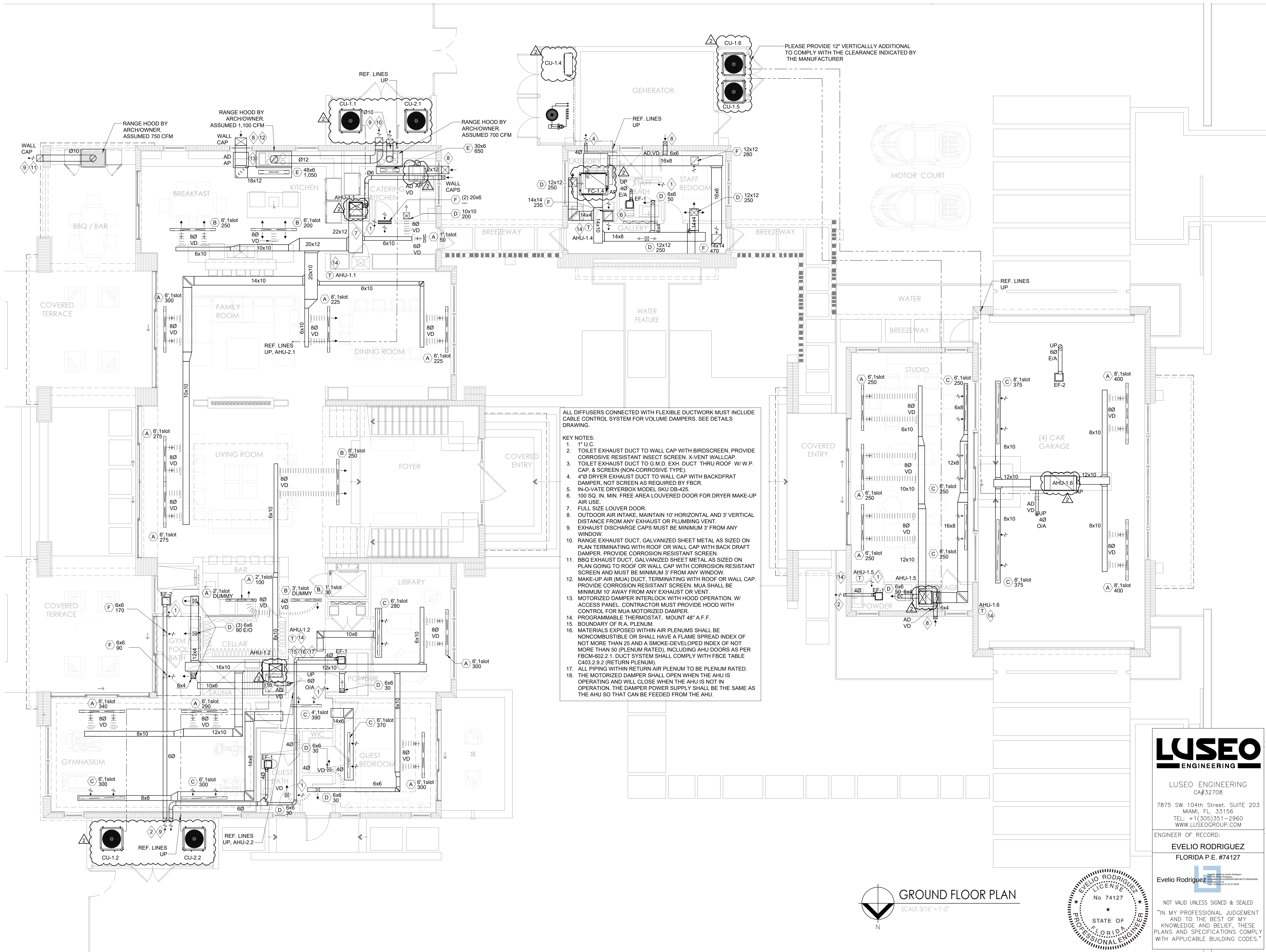
SPLIT H/P UNITS SCHEDULE					
AIR HANDLING UNIT	UNIT DESIGNATION	AHU-1.1/1.2	AHU-1.5/1.6	AHU-2.1	AHU-2.2
	AREA SERVED	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS
	OPERATING WEIGHT, LB	140	123	140	123
	DIMENSIONS (WxHxD) in	21 x 57 x 21 11/16	21 x 50 1/2 x 21 11/16	21 x 57 x 21 11/16	21 x 50 1/2 x 21 11/16
	DESIGN MANUFACTURER	RHEEM	RHEEM	RHEEM	RHEEM
	MODEL NO.	RHMVY6021SEACAJ	RHMVY3621MEACAJ	RHMVY4821MEACAJ	RHMVY3621MEACAJ
	NOMINAL CAPACITY, TON	5.0	2.0	4.0	3.0
	REFRIGERANT	R-454B	R-454B	R-454B	R-454B
	CONFIGURATION	VERTICAL	VERTICAL	VERTICAL	VERTICAL
	MCAMOP	8.0/15.0	5.0/15.0	8.0/15.0	5.0/15.0
FAN	TOTAL AIR, CFM	2,000	800	1,600	1,200
	OUTSIDE AIR, CFM	100	50	30	100
	EXT. STATIC PRESSURE, in w.g.	0.60	0.60	0.50	0.60
	FAN MOTOR HP	3/4	1/2	3/4	1/2
	ELECTRICAL SERVICE AVAILABLE	240V/1ph/60Hz	240V/1ph/60Hz	240V/1ph/60Hz	240V/1ph/60Hz
	FACE VELOCITY, FPM	---	---	---	---
	TOTAL CAPACITY, Btu/h	54,000	22,800	45,500	34,200
	SENSIBLE CAPACITY, Btu/h	41,400	17,500	34,900	26,200
	ENTERING AIR TEMP, DBWB, °F	75.8/63.5	76.2/62.6	75.6/63.1	76.5/65.1
	LEAVING AIR TEMP, DBWB, °F	54.7/63.6	53.3/62.1	55.6/64.5	57.7/66.7
COOLING	EER/2SEER2	10.5/17.5	12.0/19.0	12.0/19.0	12.0/19.0
	HSPF2	8.5	8.5	8.5	8.5
	ENTERING AIR TEMP, DB, °F	70.6	68.2	71.0	69.9
	CAPACITY @ 47°F, Btu/h	54,000	22,800	45,500	34,200
	COP @ 47°F	3.5	4.0	3.5	4.0
	CAPACITY @ 17°F, Btu/h	54,000	20,000	43,000	30,500
	COP @ 17°F	2.0	2.0	2.0	2.0
	FILTER TYPE & THICKNESS	MERV4, 1"	MERV4, 1"	MERV4, 1"	MERV4, 1"
	QUANTITY AND SIZE	AS PER MANUF.	AS PER MANUF.	AS PER MANUF.	AS PER MANUF.
	MAX. FACE VELOCITY, FPM	400	400	400	400
HEATING	UNIT DESIGNATION	CU-1.1/1.2	CU-1.5/1.6	CU-2.1	CU-2.2
	TYPE OF FAN	PROPELLER	PROPELLER	PROPELLER	PROPELLER
	NO. OF FANS AND POWER, #/HP	1/1/2	1/1/2	1/1/2	1/1/2
	AMBIENT AIR TEMPERATURE, DB, °F	91.9	91.9	91.9	91.9
	NO. OF COMPRESSORS/TYPE	1/Scroll	1/Scroll	1/Scroll	1/Scroll
	CAPACITY REDUCTION	25%-100%	25%-100%	25%-100%	25%-100%
	COMPRESSOR RLA/RLA	25/60.0	9.0/35.0	19.0/50.0	16.0/50.0
	MIN. CIRCUIT AMPCITY, MCA	30.0	12.0	40.0	20.0
	MAX. OVERCURRENT PROTECTION, MOP	50.0	20.0	24.0	35.0
	ELECTRICAL SERVICE AVAILABLE	240V/1ph/60Hz	240V/1ph/60Hz	240V/1ph/60Hz	240V/1ph/60Hz
CONDENSING UNIT	OPERATING WEIGHT, LB	301	278	298	298
	DIMENSIONS (WxHxD) in	36 1/8 x 51 11/64 x 36 1/8	36 1/8 x 45 11/64 x 36 1/8	36 1/8 x 51 11/64 x 36 1/8	35 3/4 x 45 x 35 3/4
	DESIGN MANUFACTURER	RHEEM	RHEEM	RHEEM	RHEEM
	MODEL NO.	RP19AY60AJVCA	RP19AY24AJVCA	RP19AY48AJVCA	RP19AY36AJVCA
	PIPING SIZES, SUCTION/LIQUID	7/8", 3/8"	3/4", 3/8"	7/8", 3/8"	7/8", 3/8"
	UNIT DESIGNATION	EF-1	EF-2	EF-3	EF-4
	AREA SERVED	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS
	LOCATION	CEILING	CEILING	CEILING	CEILING
	DUTY, SUPPLY/EXH.	EXHAUST	EXHAUST	EXHAUST	EXHAUST
	FAN TYPE	INLINE/CENT.	INLINE/CENT.	INLINE/CENT.	INLINE/CENT.
FANS	DRIVE, DIRECT/BELT	DIRECT	DIRECT	DIRECT	DIRECT
	FAN SPEED, RPM	820	940	1,068	986
	AIRFLOW, CFM	50	100	130	320
	TOTAL STATIC PRESSURE, in w.g.	0.40	0.35	0.35	0.30
	OPENING REQUIRED, in	---	---	---	---
	FAN MOTOR	15.0 W	15.0 W	25.0 W	60.0 W
	FULL LOAD AMPS	0.29	0.20	1.50	3.50
	ELECTRICAL SERVICE AVAILABLE	120V/1ph/60Hz	120V/1ph/60Hz	120V/1ph/60Hz	120V/1ph/60Hz
	DESIGN MANUFACTURER	GREENHECK	GREENHECK	GREENHECK	GREENHECK
	MODEL NO.	SP-LP0511	SP-110-VG	CSP-A390-VG	CSP-A710-VG
MINI-SPLIT H/P UNITS	OPERATING WEIGHT, LB	8	12	24	37
	REMARKS, SONES	1.30	2.00	0.80	0.60
	ROOF CURB	---	---	---	---
	SERVICE SWITCH	YES	YES	YES	YES
	CONSTRUCTION	GALV./PLASTIC	ALUM/PLASTIC	ALUM/PLASTIC	ALUM/PLASTIC
	BACKDRAFT DAMPER	YES	YES	YES	YES
	THERMAL FUSE PROTECTION	YES	YES	YES	YES
	NOTES	1-5	1-5	1-5	1-5
	NOTES:	1. UL 507 LISTED-ELECTRIC FAN. 2. ADJUSTABLE EASY INSTALLATION MOUNTING BRACKET. 3. ENERGY STAR CERTIFIED. 4. POLYPROPYLENE WHEEL MATERIAL. 5. MANUFACTURED IN ISO 9001 CERTIFIED FACILITY.			

MECHANICAL DRAWING INDEX		
SHEET	DESCRIPTION	ISSUED
M-00.0	MECHANICAL GENERAL NOTES & SCHEDULES	YES
M-01.0	GROUND FLOOR PLAN	YES
M-02.0	SECOND FLOOR PLAN	YES
M-03.0	ROOF PLAN	YES
M-04.0	CABANA FLOOR PLAN AND CABANA ROOF PLAN	YES
M-05.0	MECHANICAL DETAILS	YES

VENTILATION SCHEDULE		
Qoa = 0.01*Afloor+7.5(Nbr+1)		
WHERE:		
Qoa, CFM	Outdoor airflow rate	
Afloor, ft²	Floor area	
Nbr	Number of bedrooms, not to be less than one	
MAIN HOUSE		
Afloor	6,355 ft²	
Nbr	5	
Qoa	109 CFM	
Provided		
AHU-1.1	100 CFM	
AHU-1.2	100 CFM	
AHU-2.1	30 CFM	
AHU-2.2	100 CFM	
SERVICE HOUSE		
Afloor	262 ft²	
Nbr	1	
Qoa	18 CFM	
Provided		
AHU-1.4	100 CFM	

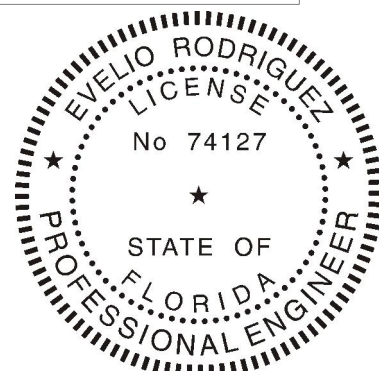
HVAC SYMBOL LEGEND	
SYMBOL	DESCRIPTION
	SUPPLY DUCT
	RETURN/EXHAUST DUCT
	FLEX DUCT
	THERMOSTAT
CFM	CUBIC FEET PER MINUTE
EF	EXHAUST FAN
CU	CONDENSING UNIT
AHU	AIR HANDLING UNIT
VD	VOLUME DAMPER
AD	AUTOMATIC LOUVERED DAMPER
AP	ACCESS PANEL
	DAMPER, TYPE AS NOTED: VD, AD
	SUPPLY AIR FLOW DIRECTION
	RETURN/EXHAUST AIR FLOW DIRECTION
	RECTANGULAR DUCT SIZE (CLEAR INSIDE DIMENSION)
	ROUND DUCT DIAMETER SIZE (CLEAR INSIDE DIMENSION)
	TRANSITION
	TRANSITION CENTER
	ELBOW W/ TURNING VANE
	45° BRANCH DUCT TAKE-OFF
	SUPPLY DIFFUSER/GRILLE
	RETURN/EXHAUST DIFFUSER/GRILLE

MINI-SPLIT H/P UNITS			
AREA SERVED	SEE PLANS	SEE PLANS	SEE PLANS
NOMINAL COOLING CAPACITY, Btu/h	24,000	24,000	24,000
MIN.-MAX. COOLING CAPACITY, Btu/h	9,000-31,500	9,000-31,500	9,000-31,500
NOMINAL HEATING CAPACITY, Btu/h	24,000	24,000	24,000
MIN.-MAX. HEATING CAPACITY, Btu/h	7,600-37,500	7,600-37,500	7,600-37,500
EER2/SEER2	11.7/19.0	11.7/19.0	11.7/19.0
HSPF2/COP @ 47°F	9.5/3.52	9.5/3.52	9.5/3.52
MCAMOP	22/30.0	22/30.0	22/30.0
ELECTRICAL SERVICE AVAILABLE	240V/1ph/60Hz	240V/1ph/60Hz	240V/1ph/60Hz
REFRIGERANT	R-454B	R-454B	R-454B
INDOOR UNIT	UNIT DESIGNATION	FC-1.3	FC-1.4
	DESIGN MANUFACTURER	RHEEM	RHEEM
	MODEL NO.	FPHFD24A3D	FPHFD24A3D
	CONFIGURATION	DUCTED	DUCTED
	INDOOR FAN FLA	---	---
	INDOOR FAN INPUT, W	---	---
	DIMENSIONS (WxHxD) in	43 1/4 x 9 5/8 x 27 1/2	43 1/4 x 9 5/8 x 27 1/2
	OPERATING WEIGHT, LB	73.9	73.9
	TOTAL AIR, CFM	800	800
	EXT. STATIC PRESSURE, in w.g.	0.60	0.6
CONDENSING UNIT	FILTER TYPE & THICKNESS	WASHABLE, 1"	WASHABLE, 1"
	QUANTITY AND SIZE	AS PER MANUF.	AS PER MANUF.
	MAX. FACE VELOCITY, FPM	400	400
	UNIT DESIGNATION	CU-1.3	CU-1.4
	TYPE OF FAN	PROPELLER	PROPELLER
	NO. OF COMPRESSORS/TYPE	1/Scroll	1/Scroll
	CAPACITY REDUCTION	50%-100%	50%-100%
	COMPRESSOR RLA	---	---
	OUTDOOR FAN FLA	---	---
	DIMENSIONS (WxHxD) in	35 3/8 x 29 1/2 x 13 3/8	35 3/8 x 29 1/2 x 13 3/8
FANS SCHEDULE	OPERATING WEIGHT, LB	132.3	132.3



- ALL DIFFUSERS CONNECTED WITH FLEXIBLE DUCTWORK MUST INCLUDE CABLE CONTROL SYSTEM FOR VOLUME DAMPERS. SEE DETAILS DRAWING.
- KEY NOTES:
- 1" U.C.
 - TOILET EXHAUST DUCT TO WALL CAP WITH BIRDSCREEN. PROVIDE CORROSIVE RESISTANT INSECT SCREEN. X-VENT WALLCAP.
 - TOILET EXHAUST DUCT TO G.M.D. EXH. DUCT THRU ROOF W/ W.P. CAP & SCREEN (NON-CORROSIVE TYPE).
 - 4" DRYER EXHAUST DUCT TO WALL CAP WITH BACKDRIFT DAMPER, NOT SCREEN AS REQUIRED BY FBCE.
 - IN-O-VATE DRYERBOX MODEL SKU DB-425.
 - 100 SQ. IN. MIN. FREE AREA LOUVERED DOOR FOR DRYER MAKE-UP AIR USE.
 - FULL SIZE LOUVER DOOR.
 - OUTDOOR AIR INTAKE, MAINTAIN 10' HORIZONTAL AND 3' VERTICAL DISTANCE FROM ANY EXHAUST OR PLUMBING VENT.
 - EXHAUST DISCHARGE CAPS MUST BE MINIMUM 3' FROM ANY WINDOW.
 - RANGE EXHAUST DUCT, GALVANIZED SHEET METAL AS SIZED ON PLAN TERMINATING WITH ROOF OR WALL CAP WITH BACK DRAFT DAMPER. PROVIDE CORROSION RESISTANT SCREEN.
 - BBQ EXHAUST DUCT, GALVANIZED SHEET METAL AS SIZED ON PLAN GOING TO ROOF OR WALL CAP WITH CORROSION RESISTANT SCREEN AND MUST BE MINIMUM 3' FROM ANY WINDOW.
 - MAKE-UP AIR (MUA) DUCT, TERMINATING WITH ROOF OR WALL CAP. PROVIDE CORROSION RESISTANT SCREEN. MUA SHALL BE MINIMUM 10' AWAY FROM ANY EXHAUST OR VENT.
 - MOTORIZED DAMPER INTERLOCK WITH HOOD OPERATION, W/ ACCESS PANEL. CONTRACTOR MUST PROVIDE HOOD WITH CONTROL FOR MUA MOTORIZED DAMPER.
 - PROGRAMMABLE THERMOSTAT, MOUNT 48" A.F.F.
 - BOUNDARY OF R.A. PLENUM.
 - MATERIALS EXPOSED WITHIN AIR 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 (PLENUM RATED), INCLUDING AHU DOORS AS PER FBCE-602.2.1. DUCT SYSTEM SHALL COMPLY WITH FBCE TABLE C403.2.9.2 (RETURN PLENUM).
 - ALL PIPING WITHIN RETURN AIR PLENUM TO BE PLENUM RATED.
 - THE MOTORIZED DAMPER SHALL OPEN WHEN THE AHU IS OPERATING AND WILL CLOSE WHEN THE AHU IS NOT IN OPERATION. THE DAMPER POWER SUPPLY SHALL BE THE SAME AS THE AHU SO THAT CAN BE FEEDED FROM THE AHU.

GROUND FLOOR PLAN
SCALE 3/16" = 1'-0"



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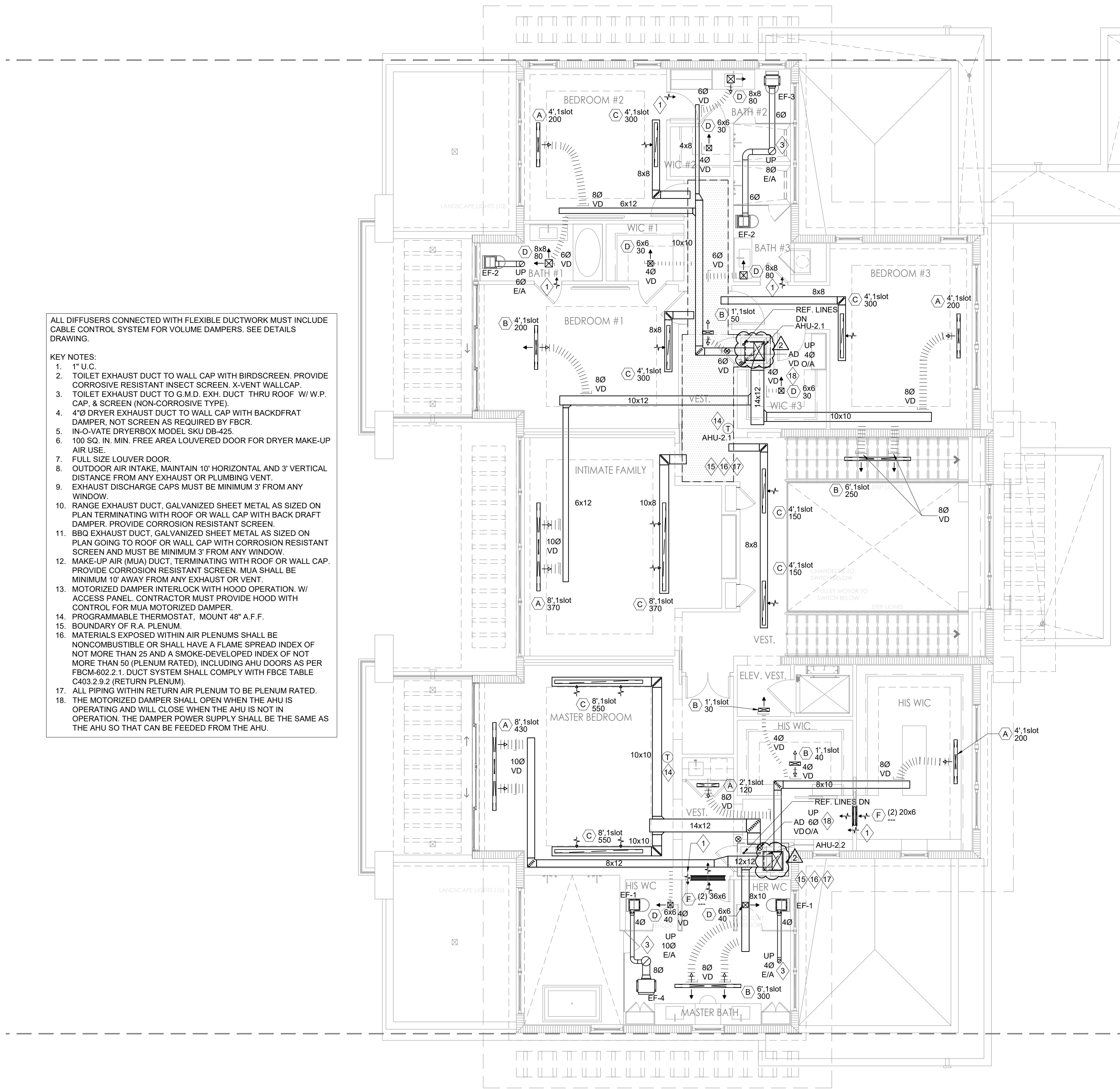
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1 BDC-04/25/2025
2 BDC-05/16/2025

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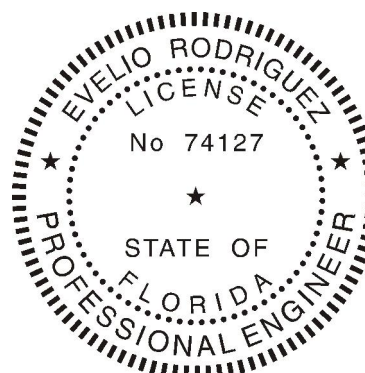


- ALL DIFFUSERS CONNECTED WITH FLEXIBLE DUCTWORK MUST INCLUDE CABLE CONTROL SYSTEM FOR VOLUME DAMPERS. SEE DETAILS DRAWING.
- KEY NOTES:
- 1" U.C.
 - TOILET EXHAUST DUCT TO WALL CAP WITH BIRDSCREEN. PROVIDE CORROSIVE RESISTANT INSECT SCREEN. X-VENT WALLCAP.
 - TOILET EXHAUST DUCT TO G.M.D. EXH. DUCT THRU ROOF W/ W.P. CAP. & SCREEN (NON-CORROSIVE TYPE).
 - 4"Ø DRYER EXHAUST DUCT TO WALL CAP WITH BACKDRIFT DAMPER, NOT SCREEN AS REQUIRED BY FBCR.
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SECOND FLOOR PLAN

SCALE 3/16" = 1'-0"



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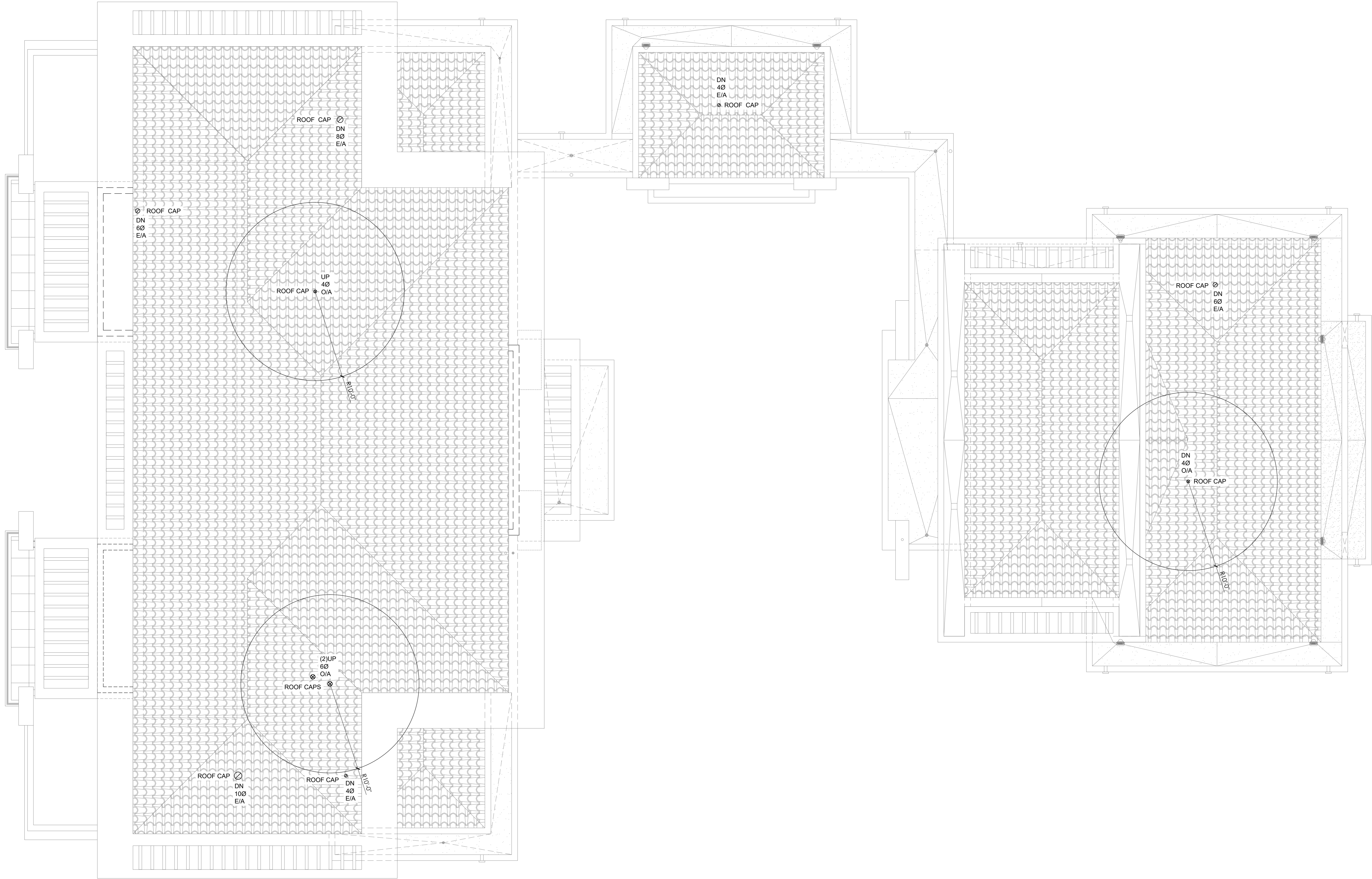
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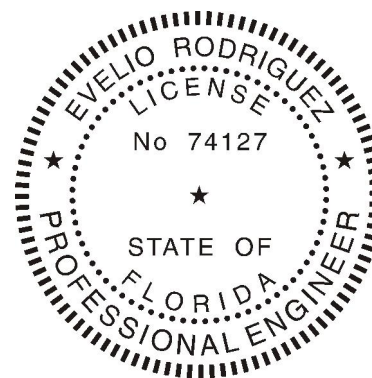
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ROOF PLAN
SCALE: 3/16" = 1'-0"



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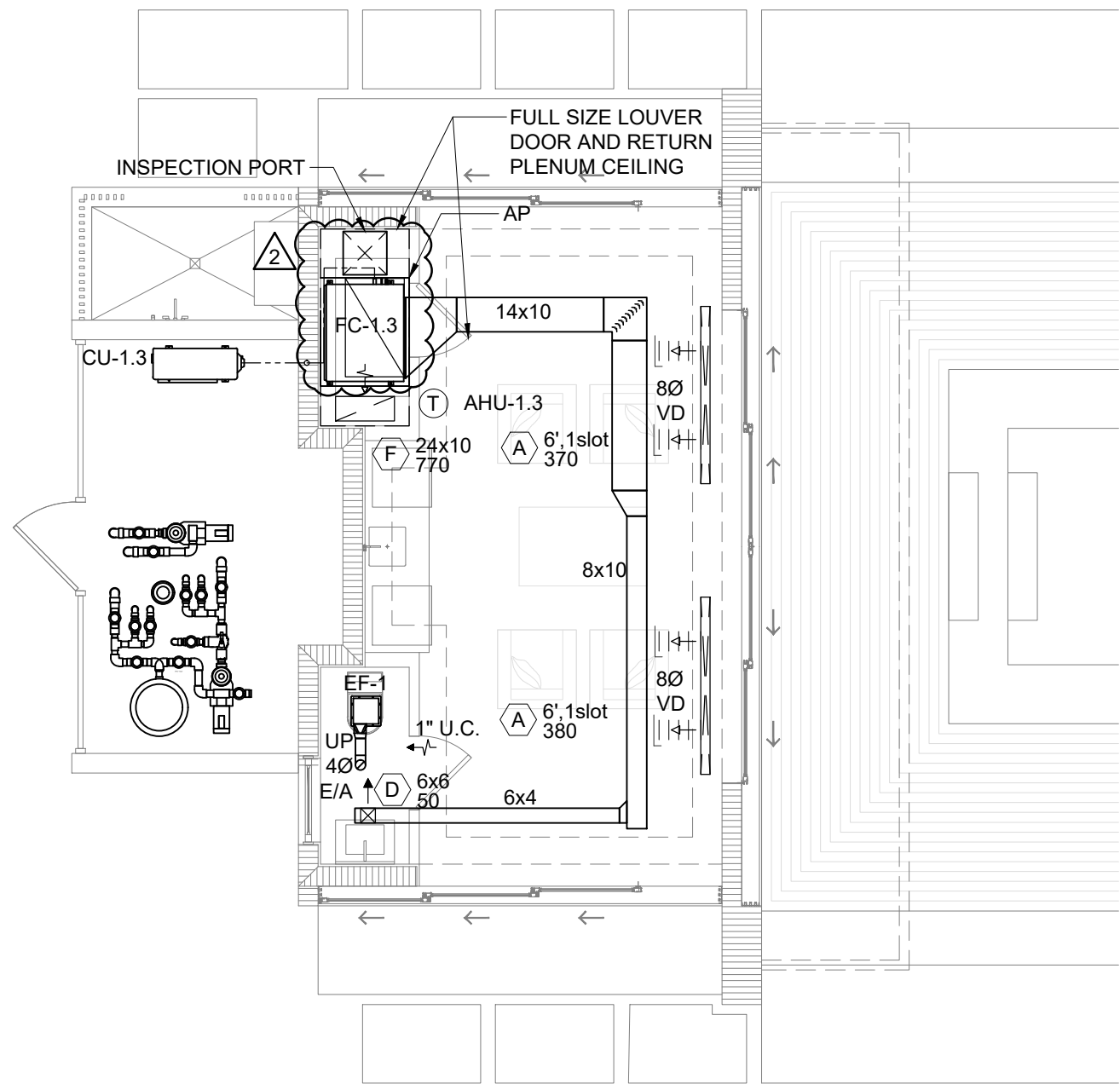
Evelio Rodriguez
Evelio Rodriguez is duly registered as a Professional Engineer in the State of Florida, License No. 74127, and is authorized to practice in the State of Florida. He is not authorized to practice in any other state or country.

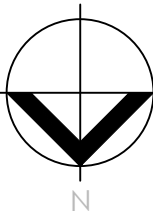
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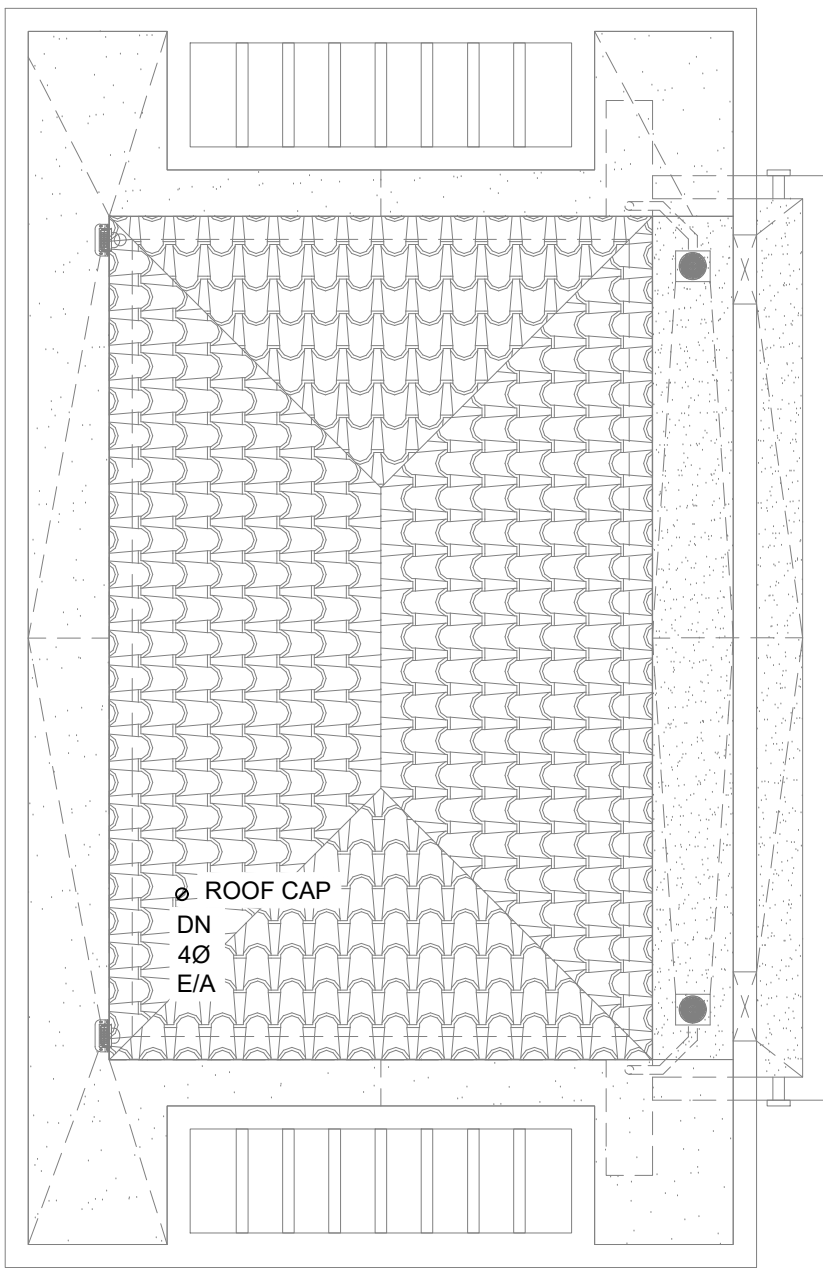
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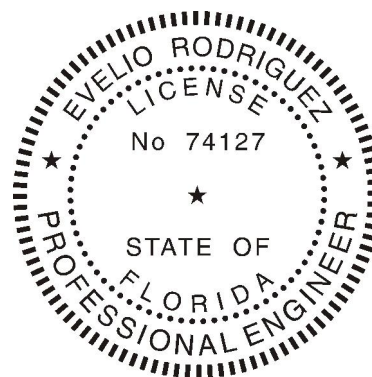
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 **CABANA FLOOR PLAN**
SCALE 3/16" = 1'-0"



 **CABANA ROOF PLAN**
SCALE 3/16" = 1'-0"



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EXPIRATION DATE: 12/31/2025
ISSUED DATE: 07/28/2020

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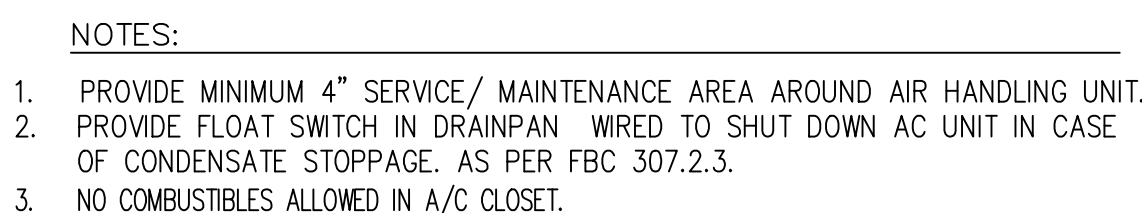
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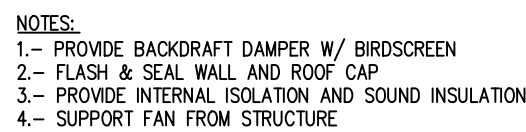
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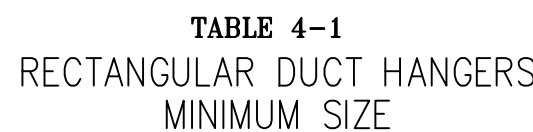
N.T.S.



CONDENSING UNIT MOUNTING DETAIL
TIE DOWN AS PER MAIMI-DADE APPROVED METHOD. N.T.S.



CABINET EXHAUST FAN DETAIL
N.T.S.



AS PER SMACNA TABLE 4-1 & FIG. 4-4

HVAC DUCT DETAILS

