STANDARD DIFFUSER TAG LEGEND

DIFFUSER DESCRIPTION — 1W

SIZE LISTED IN INCHES LENGTH x WIDTH — 24x24

200 — DESIGN AIRFLOW CFM

HVAC DIFFUSER SPECIFICATIONS

SUPPLY DIFFUSER - CEILING

MANUFACTURER: AIRGUIDE
MODEL: CBHML-(1,2,3,4)ME
DESCRIPTION: WHITE ALUMINUM ADJUSTABLE CURVED BLADE WITH PARALLEL BLADE DAMPER

SUPPLY DIFFUSER - SIDEWALL

MANUFACTURER: AIRGUIDE
MODEL: VML-ME
DESCRIPTION: WHITE ALUMINUM SINGLE DEFLECTION WITH PARALLEL BLADE DAMPER

RETURN DIFFUSER - CEILING/SIDEWALL

MANUFACTURER: AIRGUIDE
MODEL: RA
DESCRIPTION: WHITE ALUMINUM 38" BLADE/NON-FILTER BACK

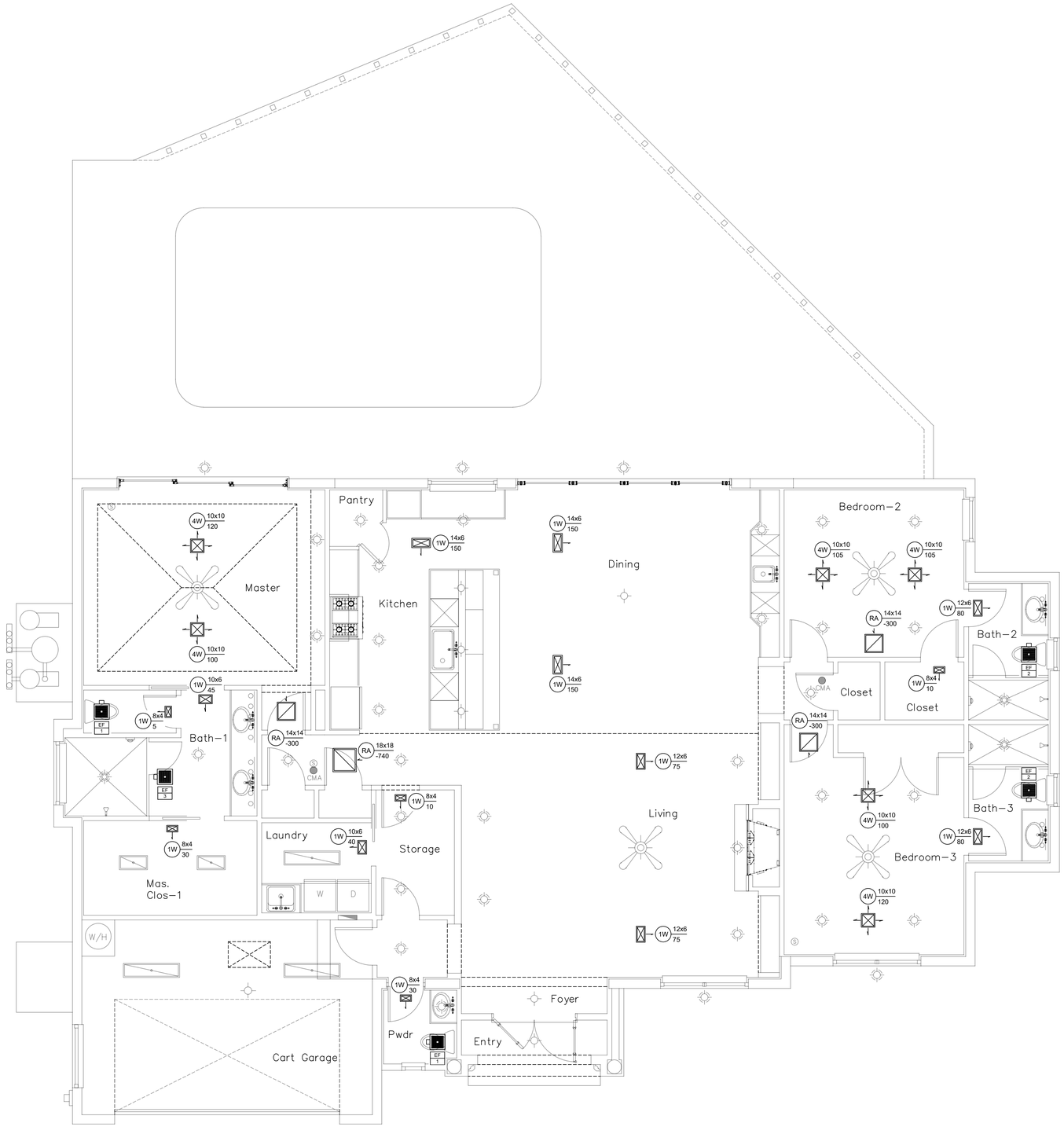
RETURN DIFFUSER - CEILING/SIDEWALL

MANUFACTURER: AIRGUIDE
MODEL: RF-2
DESCRIPTION: WHITE ALUMINUM 38" BLADE/FILTER BACK *FOR RANGE HOOD MAKE-UP AIR DIFFUSER. PROVIDE PERMANENT WASHABLE FILTER.

AIR DIFFUSER DESCRIPTION

- ONE WAY SUPPLY — WG
- ONE WAY SUPPLY — 1W
- TWO WAY SUPPLY — 2W
- THREE WAY SUPPLY — 3W
- FOUR WAY SUPPLY — 4W
- CEILING MOUNT RETURN DIFFUSER — RA

DIFFUSER SIZES LISTED IN INCHES BOTH DIMENSIONS



DIFFUSER COORDINATION PLAN

SCALE: 1/4" = 1'

CACO27359 / R1-189 / NPC-066 / NBI-0291311

CALCS-PLUS

BUILDING PERFORMANCE CONSULTANTS

121 Triple Diamond Blvd., #16, Venice, FL 34275 / 941-488-1700 /

PROJECT:

SMITH RESIDENCE

123 MAIN ST

FLORIDA

NO NAME

DATE: ------

DR. BY: ----

FILE:------

SHEET M-1

HVAC EQUIPMENT TAG LEGEND

ZD — EQUIPMENT DESIGNATION-SEE HVAC LEGEND

EQUIPMENT TAG NUMBER — 2-2 — AIR CONDITIONING SYSTEM NUMBER

HVAC ABBREVIATION LEGEND

AHU	AIR HANDLING UNIT
CU	CONDENSING UNIT
RTU	ROOFTOP PACKAGED UNIT
PACU	PACKAGED AIR CONDITIONING UNIT
EF	EXHAUST FAN
DH	DEHUMIDIFIER
DOAS	DEDICATED OUTDOOR AIR SYSTEM
OAD	OUTSIDE AIR DAMPER
ZD	ZONE DAMPER
BD	BALANCE DAMPER
T	THERMOSTAT
DHC	DEHUMIDIFICATION CONTROL
C	CO2 SENSOR / CONTROLLER
S	SHUT DOWN SMOKE DETECTOR
AF	AIR FILTRATION
CP	CONDENSATE PUMP
SA	SUPPLY AIR
RA	RETURN AIR
ODA	OUTDOOR AIR
MUA	MAKE-UP AIR
DB	DUCT BOARD

A/C DUCT WORK SPECIFICATIONS

SIZE/ROUND

FLEXIBLE DUCT

CLASS 1 FLEXIBLE DUCT WITH SILVER VAPOR JACKET.
R-VALUE 6.0
MANUFACTURER: ATCO
MODEL: #036

SIZE/ROUND

METAL DUCT ROUND

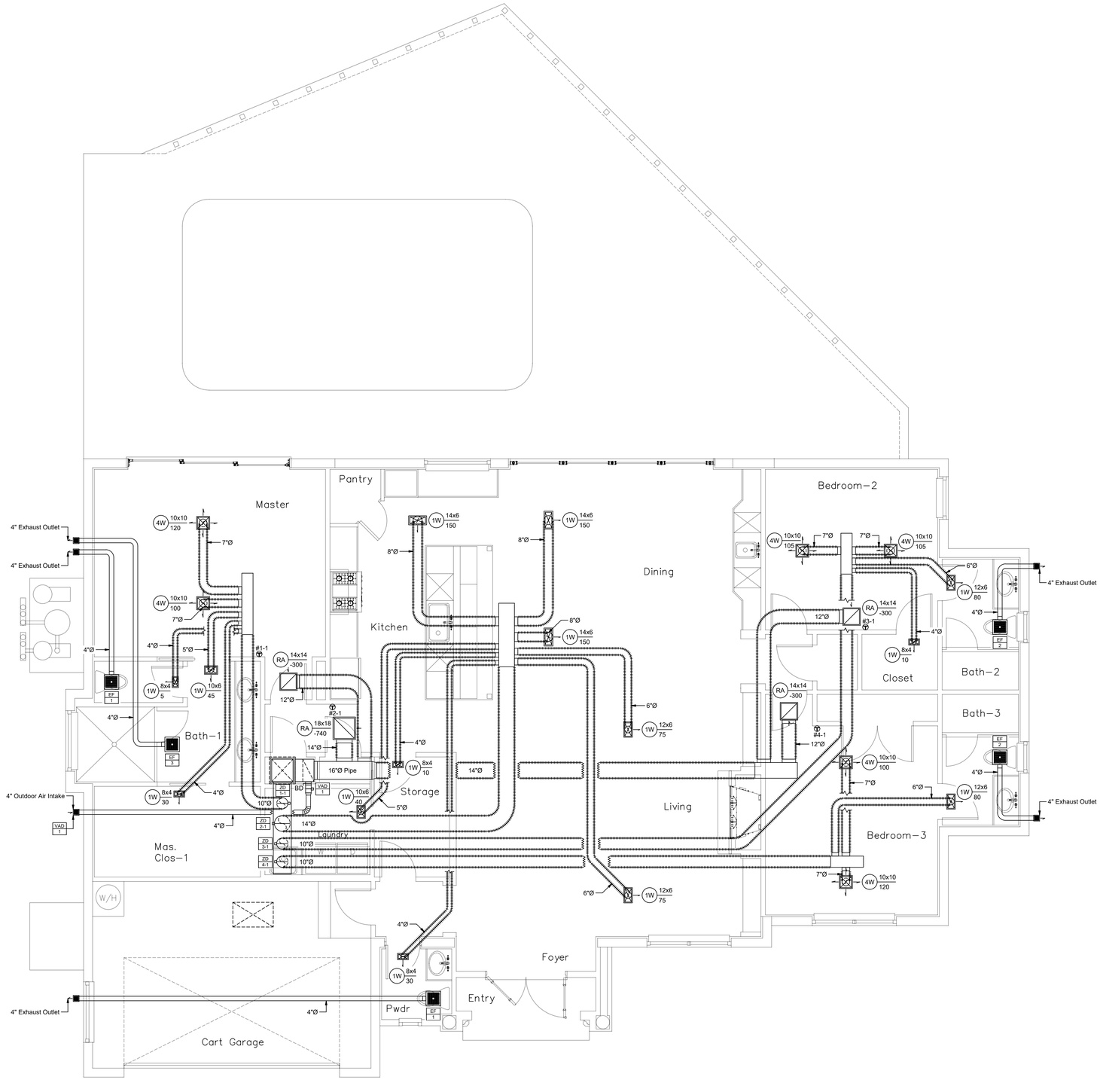
GALVANIZED METAL SNAPLOCK PIPE WITH SILVER DUCT WRAP.
R-VALUE = 6.0
MANUFACTURER: CERTAINTEED
MODEL: SOFT TOUCH

SIZE/WxH

METAL DUCT RECTANGLE

"TOUGHGARD" BLACK DUCT BOARD
R-VALUE 6.0
MANUFACTURER: CERTAINTEED "TOUGHGARD R"

ALL DUCT SIZES LISTED ON PLANS ARE INSIDE DIAMETER AND ARE LISTED IN INCHES.
ADD 3" TO EACH DIMENSION FOR OUTSIDE DIAMETER



HVAC PLAN

SCALE: 1/4" = 1'

CAC:027359 / R1-189 / NPC-066 / NBI-0291311

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DATE: ------

DR. BY: ----

FILE:------

SHEET M-2

SPLIT HEAT PUMP SYSTEM SCHEDULE

SYSTEM	TOTAL CAPACITY BTUH	32,579
	SENSIBLE CAPACITY BTUH	24,427
	AHRI REF. #	9160640
	MANUFACTURER	CARRIER
	SEER/HSPF	16.00/9.00
	NOMINAL TONNAGE	3
AIR HANDLING UNIT	DESIGNATION	AHU-1
	MODEL NO.	FE4ANF003L
	SUPPLY AIR CFM	1050
	ENTERING AIR TEMP. DB/WB	75/63
	EXTERNAL STATIC PRESS. IN. W. G.	0.7"
	INDOOR FAN FLA	4.3
	ELECTRIC HEAT KW	8.0
	MCA/MOCP	48.5/50
CONDENSING UNIT	DESIGNATION	CU-1
	MODEL NO.	25HNB636A003
	COMPRESSOR R.L.A.	18.5
	OUTDOOR FAN FLA	0.60
	OUTDOOR DESIGN TEMP. DB	95
	MCA/MOCP	23.7/40
	ELECTRIC SERVICE	230/1/60

THERMOSTAT / ZONE DAMPER CONTROLS SCHEDULE

SYSTEM	CONTROL DESGINATION	T-STAT BRAND	T-STAT MODEL	ZONE DAMPER DESGINATION	DAMPER BRAND	DAMPER MODEL	ZONE AREA	ZONE PANEL MODEL	DESIGN CFM
SYSTEM #1	T #1-1	CARRIER	SYSTXCCSMS01	ZD #1-1	CARRIER	DMPRND10INC	MASTER SUITE	SYSTXCC4ZC01	300
SYSTEM #1	T #2-1	CARRIER	SYSTXCCUIZ01-B	ZD #2-1	CARRIER	DMPRND14INC	MAIN LIVING	SYSTXCC4ZC01	740
SYSTEM #1	T #3-1	CARRIER	SYSTXCCSMS01	ZD #3-1	CARRIER	DMPRND10INC	BEDROOM 2	SYSTXCC4ZC01	300
SYSTEM #1	T #4-1	CARRIER	SYSTXCCSMS01	ZD #4-1	CARRIER	DMPRND10INC	BEDROOM 3	SYSTXCC4ZC01	300

OUTDOOR AIR DAMPER SCHEDULE

VENT. DAMPER DESGINATION	BRAND	MODEL	CFM	LOCATION
VAD #1	HONEYWELL	EARD 5	55 CFM	ODA #1

1. WIRE VAD TO OPEN WITH CORRESPONDING SYSTEM COMPRESSOR CIRCUIT ONLY. VAD SHALL NOT OPEN WITH INDOOR FAN ONLY.
2. PROVIDE COMMON "ON/OFF" SWITCH FOR OWNER/OPERATOR OVER RIDE OF VENTILATION AIR.

EXHAUST FAN SCHEDULE

DESIGNATION	EF #1	EF #2	EF #3
FAN TYPE	CEILING	CEILING	CEILING
DRIVE TYPE	DIRECT	DIRECT	DIRECT
AIR FLOW CFM	53	82	113
STATIC PRESS. IN. W.G.	0.25	0.25	0.25
RPM	1072	1131	1205
ELECTRIC SERVICE	120/1/60	120/1/60	120/1/60
MAX AMPS	.07	.10	.16
MANUFACTURER	PANASONIC	PANASONIC	PANASONIC
MODEL NO.	FV-05-11VKSL1	FV-05-11VKSL1	FV-05-11VKS1
ACCESSORIES	1	1	1

NOTES :

1. EF #1 AND EF #2 -FAN/LIGHT COMBINATION
2. EF #3 - FAN ONLY

SETTINGS:

MULTI-SPEED SETTING EXHAUST FAN. EXHAUST FAN SETTINGS FOR "PICK-A-FLOW FEATURE" AS FOLLOWS:

1. EF #1 - SET TO 50 CFM.
2. EF #2 - SET TO 80 CFM
3. EF #3 - SET TO 110 CFM.

ACCESSORIES:

1. EF #1 AND EF #2 - MOTION SENSOR OPTION - MODEL FV-MSVK1
2. EF #3 - CONDENSATION SENSOR OPTION - MODEL FV-CSVK1

HVAC NOTES:

GENERAL NOTES

1. ALL WORK TO BE DONE IN ACCORDANCE WITH THESE PLANS & THE 2020 FLORIDA BUILDING CODE.
2. MECHANICAL DRAWINGS ARE SCHEMATIC IN NATURE & ARE NOT INTENDED TO SHOW EVERY MINOR DETAIL. THE HVAC CONTRACTOR SHALL INCLUDE THE FURNISHINGS OF ALL LABOR AND MATERIALS TO COMPLETE THE AIR CONDITIONING, HEATING, AND VENTILATION SHOWN ON THE DRAWINGS TO INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:
   - PERMIT FEES
   - ALL AIR CONDITIONING EQUIPMENT
   - EXHAUST FANS
   - SUPPLY, RETURN, VENTILATION, & EXHAUST AIR DUCT WORK
   - SUPPLY AND RETURN DIFFUSERS AND REGISTERS, DAMPERS, WEATHERPROOF VENTILATION & EXHAUST LOUVERS
   - AIR FILTRATION
   - THERMOSTATS, CO2 SENSORS, SHUT DOWN SWITCHES & RELATED CONTROL WIRING
   - EQUIPMENT SUPPORTS, HANGERS, & RACKS
   - CONDENSATE DRAIN PANS & PIPING
   - REFRIGERANT FIELD COPPER LINE SET & PIPING
3. ALL WORK SHALL BE PERFORMED BY A LICENSED HVAC CONTRACTOR CERTIFIED IN THE STATE OF FLORIDA.
4. THE HVAC CONTRACTOR SHALL VISIT THE JOB SITE, MEET WITH RELATED TRADES, & FAMILIARIZE THEMSELVES WITH ANY AND ALL CONDITIONS RELATED TO THEIR WORK.
5. ALL EQUIPMENT AND MATERIALS SHALL BE AS SPECIFIED. ANY CHANGES OR DEVIATIONS FROM THESE PLANS MUST BE APPROVED BY ENGINEER OF RECORD.
6. AIR CONDITIONING AND HEATING EQUIPMENT SHALL BE NOT BE SIZED BASED ON A.R.I. CAPACITY RATINGS, BUT RATHER BASED ON SPECIFIC DESIGN CONDITIONS.
7. REVISIONS OR CHANGES FROM THESE PLANS THAT MAY BE REQUIRED BECAUSE OF CONTRACTOR OPTED REVISIONS, SHALL BE COMPENSATED TO THE ENGINEER OF RECORD BY THE REQUESTING CONTRACTOR.
8. PROVIDE OPTIONAL WARRANTY PRICING FOR A 10 YEAR PARTS AND LABOR WARRANTY WITH ANY EXCLUSIONS OR HIDDEN FEES.

SPLIT SYSTEM AIR CONDITIONING EQUIPMENT

1. CONDENSING UNIT SHALL BE INSTALLED AS PER SECTION 304.1 AND 304.2 OF THE 2020 FLORIDA BUILDING CODE.
2. CONDENSING UNIT SHALL HAVE SEACOAST PROTECTIVE COAT APPLIED IN ACCORDANCE WITH THE MANUFACTURERS' INSTRUCTIONS.
3. CONDENSING UNIT SHALL BE LOCATED ON CONCRETE PAD. TIE DOWN WITH FBC APPROVED HURRICANE STRAPS.
4. CLEARANCE AROUND NON SERVICE SIDES OF THE CONDENSING UNIT SHALL COMPLY WITH MANUFACTURERS RECOMMENDATIONS AS PER MANUFACTURERS INSTALLATION INSTRUCTIONS.
5. CLEARANCE ABOVE THE CONDENSING UNIT SHALL COMPLY WITH MANUFACTURERS RECOMMENDATION AS PER MANUFACTURERS INSTALLATION INSTRUCTIONS.
6. AIR HANDLERS SHALL BE INSTALLED AS PER MANUFACTURERS INSTALLATION INSTRUCTIONS AND THE 2020 FLORIDA BUILDING CODE.
7. THE AIR HANDLER SHALL INCORPORATE A FILTER HOUSING WITH EASY ACCESS. THE FILTER COMPARTMENT SHALL NOT BE OBSTRUCTED IN ANY WAY BY THE REFRIGERANT PIPING, CONDENSATE PIPING, OR ANY OTHER ITEM WHICH MAY PREVENT REMOVAL AND INSTALLATION OF THE FILTER.
8. FILTERS SHALL BE LOCATED AT THE AIR HANDLER DIRECTLY BEFORE THE EVAPORATOR COIL. NO FILTER BACK GRILLS SHALL BE USED.
9. CLEARANCE AROUND THE AIR HANDLER SHALL BE 4" FOR NON-SERVICE SIDES AND 36' FOR SERVICE SIDE.

CONDENSATE DISPOSAL

1. CONDENSATE DISPOSAL SHALL BE PROVIDED FOR EQUIPMENT AND APPLIANCES CONTAINING EVAPORATOR COILS.
2. CONDENSATE DRAIN SYSTEM SHALL BE DESIGNED, CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH SECTIONS 307.2.1 THROUGH 307.2.4 OF THE 2020 FLORIDA BUILDING CODE.
3. ALL PRIMARY CONDENSATE PIPING LOCATED WITHIN THE INSIDE OF THE BUILDING SHALL BE INSULATED TO PREVENT CONDENSATION FROM FORMING ON THE EXTERIOR OF THE DRAIN LINE.
4. MAIN AND EMERGENCY CONDENSATE DRAIN LINES SHALL BE SCHEDULE 40 PVC.
5. AUXILIARY DRAIN LINE CONNECTION AT THE EVAPORATOR DRAIN PAN SHALL INCORPORATE AN SAFETY CUT-OFF SWITCH.
6. AIR HANDLERS SHALL INCORPORATE AN EMERGENCY DRAIN PAN THAT IS PIPED TO A CONSPICUOUS LOCATION AT THE EXTERIOR OF THE BUILDING OR INCORPORATES A SAFETY CUT-OFF SWITCH.
7. SLOPE HORIZONTAL CONDENSATE DRAINS A MINIMUM OF 1/4" PER FOOT.
8. CONDENSATE SHALL BE CONVEYED FROM THE DRAIN PAN OUTLET TO AN APPROVED PLACE OF DISPOSAL. CONDENSATE SHALL NOT DISCHARGE INTO A STREET, SIDEWALK, OR ANY OTHER LOCATION AS TO CAUSE A NUISANCE. IF NO APPROVED LOCATION IS AVAILABLE, THEN A DRY WELL SHALL BE INSTALLED.
9. ALL DRAIN LINES SHALL BE PROVED AND TESTED UPON EQUIPMENT START-UP.
10. ALL DRAIN LINE AND DRAIN PAN SAFETY CUT OFF CONTROLS SHALL BE TESTED UPON EQUIPMENT START-UP.

DUCTWORK

1. DUCT CONSTRUCTION AND INSTALLATION SHALL COMPLY WITH SECTION M603 OF THE 2020 FLORIDA BUILDING CODE.
2. AIR CONDITIONING DUCT SYSTEM MATERIALS SHALL BE BASED ON THE FOLLOWING:
   - FLEXIBLE DUCT WORK - BRAND - ATCO #036 / UL 181, CLASS 1 AIR DUCT WITH REINFORCED METALLIZED POLYESTER JACKET WITH WIRE HELIX ENFORCED AIR TIGHT INNER LINER. INSULATION SHALL BE R-6.0
   - ROUND METAL DUCT WORK - CROWN #101 SNAPLOCK ROUND PIPE. DUCT SIZE 14"Ø OR LESS SHALL BE 30 GAUGE MINIMUM. DUCT SIZE OVER 14"Ø SHALL BE 28 GAUGE MINIMUM. DUCT SHALL BE INSULATED WITH CERTAINTEED EXTERIOR WRAP WITH R-6.0 INSULATION & VAPOR RETARD FACING.
   - RECTANGLE DUCT - FIBER DUCT BOARD. CERTAINTEED BLACK TOUGHGARD . THE AIR STREAM SURFACE CONTAINS AN EPA REGISTERED ANIT-MICROBIAL AGENT IN ORDER TO REDUCE THE POTENTIAL OF MICROBIAL GROWTH ON THIS PRODUCT. INSULATION SHALL BE R-6.0
3. ALL DUCT SIZES LISTED ARE NET INSIDE DIMENSIONS.
4. ALL DUCTS AND PLENUMS SHALL BE MADE AIR TIGHT. DUCT WORK SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITION OF CHAPTER 13 OF THE 2020 FLORIDA BUILDING CODE.
5. DUCT LEAKAGE SHALL NOT EXCEED 5% OF THE RATED AIR HANDLER FLOW.
6. BRANCH DUCT RUN-OUTS SHALL HAVE A MANUAL BALANCE DAMPER AT THE CONNECTION TO THE MAIN TRUNK LINE. DAMPER SHALL BE HAVE AN INDICATOR FLAG ATTACHED TO THE DAMPER FOR EASY IDENTIFICATION.
7. FLEXIBLE DUCT SHALL BE EXTENDED TO ITS FULL LENGTH. EXCESS DUCT MATERIAL IN A RUN SHALL BE LESS THAN 5%.
8. FLEXIBLE DUCT SHALL BE SUPPORTED AT MANUFACTURERS RECOMMENDED INTERVALS, BUT AT NO GREATER DISTANCE THAN 4 FEET. MAXIMUM PERMISSIBLE SAG IS 1/2" PER FOOT OF SPACING BETWEEN SUPPORTS.
9. FIRE DAMPERS SHALL BE INSTALLED INSTALLED IN ACCORDANCE WITH SECTION 716 OF THE 2020 FLORIDA BUILDING CODE.
10. DUCTS AND TRANSFER OPENINGS THAT PENETRATE FIRE RESITANT-RATED ASSEMBLIES AND ARE NOT REQUIRED BY THIS SECTION TO HAVE DAMPERS, SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 712 OF THE 2020 FLORIDA BUILDING CODE.
11. SMOKE DETECTORS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION M606 OF 2020 FLORIDA BUILDING CODE.

AIR REGISTERS BOXES AND DIFFUSERS

1. REFER TO DIFFUSER LEGEND FOR MANUFACTURER TYPE AND MODEL. ALTERNATE DIFFUSERS MUST BE APPROVED BY ENGINEER OF RECORD.
2. REGISTER BOXES SHALL BE CROWN 1275-FL / 4" FRAMED GALVANIZED STEEL INSULATED WITH R-4 DUCT LINER OR 1269-FL FRAMED BOX WITH SIDE DUCT ENTRY.
3. REGISTER BOXES SHALL BE SEALED AIR TIGHT AT DRYWALL CONNECTION.
4. ALL REGISTER BOXES AND VENT OPENINGS SHALL BE COVERED AFTER ROUGH-IN. ALL OPENINGS TO REMAIN SEALED CLOSED UNTIL TRIM OUT AND EQUIPMENT START UP OF THE A/C SYSTEM. A/C SYSTEM SHALL NOT BE OPERATED PRIOR TO FINAL START UP.
5. DIFFUSER LOCATIONS ARE FOR GENERAL REFERENCE. FIELD VERIFY DIFFUSER LOCATIONS AND COORDINATE WITH CEILING LIGHTING AND INTERIOR CEILING ELEVATIONS.

VENTILATION AIR & EXHAUST AIR SYSTEMS

1. ALL EXHAUST DUCTS SHALL TERMINATE TO EXTERIOR ROOF CAP, SIDEWALL CAP, OR SOFFIT HOOD AS INDICATED ON THE HVAC PLANS.
2. EXHAUST FANS SHALL HAVE BACK DRAFT DAMPER INSTALLED.
3. ALL EXHAUST FANS SHALL BE WIRED TO AN OCCUPANCY SENSOR OR AN AUTOMATIC TIMER TO RUN THE FAN FOR A TIMED INTERVAL.
4. EXHAUST FANS FOR EXCLUSIVE SHOWER OR TUB ENCLOSURE SHALL BE WIRE TO A HUMIDISTAT CONTROL.
5. MAKE-UP AIR REQUIRED FOR RANGE HOOD EXHAUST EXCEEDING 800 CFM PER FBC - M 505.2.
6. DRYER VENT DUCT LENGTH SHALL NOT EXCEED 25' EQUIVALENT LENGTH. ADD 5' FOR A 90° ELBOW AND 2.5' FOR A 45° ELBOW. LENGTHS EXCEEDING 25' EQUIVALENT LENGTH SHALL INCORPORATE A DRYER BOOSTER FAN.
7. DRYER BOOSTER FANS SHALL BE INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS.
8. DRYER BOOSTER FAN SHALL HAVE AN INDICATOR LIGHT AT DRYER LOCATION MOUNTED IN A VISIBLE PROXIMITY TO THE DRYER.
9. VENTILATION AIR DUCT SHALL BE CONNECTED TO THE RETURN SIDE OF THE AIR STREAM AT THE RETURN AIR PLENUM.
10. VENTILATION AIR DUCT SHALL INCORPORATE A MANUAL VOLUME BALANCE DAMPER AT THE RETURN AIR PLENUM FOR INTAKE BALANCE.
12. VENTILATION AIR DUCT SHALL INCORPORATE A NORMALLY CLOSED ELECTRIC DAMPER. THE DAMPER SHALL BE WIRED TO ENERGIZE WITH THE COMPRESSOR CONTRACTOR. VENTILATION AIR DUCT SHALL NOT OPEN WITH INDOOR FAN CIRCUIT.
13. VENTILATION AIR INTAKES SHALL HAVE INSECT SCREEN AT INTAKE CAP.
14. KEEP ALL VENTILATION AIR INTAKES A MINIMUM 10' FROM EXHAUST FAN TERMINATION POINTS AND SANITARY SEWER VENT OUTLETS.

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