HVAC NOTES

GENERAL NOTES:

1. ALL MECHANICAL SYSTEMS ARE TO BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE SECTIONS OF THE NFPA STANDARDS, ANSI STANDARDS, THE LOCAL BUILDING CODE, NOISE & HEIGHT ORDINANCES, PLANS AND SPECIFICATIONS.
2. ALL MATERIALS SHALL BE NEW AND ALL WORKMANSHIP AND MATERIALS SHALL BE IN STRICT ACCORDANCE WITH APPLICABLE LOCAL CODES, PRODUCT APPROVAL, RULES AND ORDINANCES, ANY DAMAGED EQUIPMENT SHALL BE REPLACED OR RESTORED TO ORIGINAL CONDITION.
3. THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, ACCESS PANELS, CONTROL SYSTEMS, DEVICES, PERMITS AND SERVICES NECESSARY FOR FURNISHING AND INSTALLING A COMPLETE OPERABLE MECHANICAL SYSTEM.
4. ALL LOUVERS, GRILLES, PIPING, ETC. SHALL BE PAINTED TO MATCH SURROUNDING COLOR AND TEXTURES AS REQUIRED BY ARCHITECT. VERIFY COLOR AND TEXTURE WITH ARCHITECT. PAINT ALL EXPOSED MECHANICAL EQUIPMENT WITH BENJAMIN MOORE EPOXY ENAMEL 182.
5. THE CONTRACTOR SHALL PROVIDE PLASTIC OR ALUMINUM TYPE EQUIPMENT IDENTIFICATION LABELS FOR ALL MECHANICAL EQUIPMENT AS PER SCHEDULE TAGS. (SETON OR SIMILAR)
6. ALL O/A INTAKES SHALL HAVE A 2" HIGH STENCILED LETTERING READING "INTAKE" PER FBC REQUIREMENTS.
7. ALL CUTTING, PATCHING, STRUCTURAL STEEL, WEATHER PROOFING, PAINTING, AND WALL OPENINGS SHALL BE BY THE GENERAL CONTRACTOR.
8. ALL OPENINGS IN BUILDING STRUCTURE, FOR DUCTWORK, PIPING, ETC. TO BE 1/2" LARGER (ON ALL SIDES) THEN THE OUTSIDE DIMENSIONS. FILL VOIDS WITH FIRE RETARDANT SILICONE FOAM (I.E. CHASE-FOAM CTC PR-855 BY CHASE TECHNOLOGY CORP.).
9. PROVIDE FLEXIBLE DUCT CONNECTORS, RATED AS REQUIRED, TO ALL FANS, A/C UNITS, OR MECHANICAL EQUIPMENT.
10. PROVIDE MAINTENANCE AND OPERATION MANUAL ON ALL MECHANICAL EQUIPMENT OR SYSTEMS. PROVIDE 5 SETS OF SUBMITTALS ON ALL HVAC EQUIPMENT. SUBMITTALS SHALL HAVE A SUMMARY SHEET SHOWING ALL SCHEDULED INFORMATION.
11. HVAC CONTRACTOR WILL WARRANTY ALL MECHANICAL SYSTEMS, DUCTWORK, THERMOSTATS, AND ALL OTHER EQUIPMENT,PARTS AND LABOR UNDER THESE DRAWINGS AND SPECIFICATIONS FOR A PERIOD OF ONE (1) YEAR AFTER C.O. OF BUILDING. ANY REPAIRS REQUIRING SYSTEM SHUT DOWN WILL BE DONE DURING NON OPERATIONAL PERIODS. HVAC CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES PRIOR TO BIDDING AND PURCHASING ANY EQUIPMENT.
12. AIR QUALITY SHOULD BE TESTED BEFORE OCCUPANCY AND SHOULD BE INSTRUMENTED AND MONITORED THEREAFTER, OR AT LEAST AT REGULAR INTERVALS.

MECHANICAL EQUIPMENT NOTES:

1. ALL MECHANICAL EQUIPMENT SHALL BE ARI & U.L. LISTED WHERE APPLICABLE AND RATED FOR THE REQUIRED SERVICE, PRESSURES, TEMPERATURES, AND SHALL BE PROVIDED WITH ALL NECESSARY TRANSFORMERS, SEALS, VALVES, CONNECTIONS, ETC. TO FUNCTION PROPERLY.
2. PROVIDE IONIZATION TYPE SMOKE DETECTORS IN THE S/A DUCT OF ALL AIR HANDLING EQUIPMENT WITH AIR DELIVERY CAPACITIES GREATER THAN 2000 CFM TO SHUT DOWN THE UNIT UPON DETECTION OF SMOKE. SMOKE DETECTORS SHALL BE LOCATED TO PROVIDE ACCESS FOR MAINTENANCE AND INSPECTION AND SHALL NOT BE HIGHER THAN 48"ABOVE CEILING. SMOKE DETECTOR SHALL BE UL268A LISTED AND COMPATIBLE WITH THE FACP, SIMPLEX SERIES 2098 OR APPROVED EQUIVALENT. PROVIDE AUDIO-VISUAL TEST STATION, PER NFPA 90A-4-4, MOUNTED BELOW THE CEILING OVER NORMALLY-OCCUPIED SPACE. DO NOT LOCATE IN RESTROOMS, JANITOR OR STORAGE.). PROVIDE DUCT ACCESS DOORS FOR MAINTENANCE AND INSPECTION OF SMOKE DETECTORS. ALL SMOKE DETECTORS SHALL BE BY ONE MANUFACTURER; COORDINATE VOLTAGE ETC. WITH ELECTRICAL CONTRACTOR AND FIRE ALARM SYSTEM BEFORE ORDERING.
3. PROVIDE TYPE "B" FIRE DAMPERS IN ALL DUCTS OR OPENINGS PENETRATING FIRE RATED WALLS, PARTITIONS, FLOORS OR ROOF SLABS AND AT FRESH AIR INTAKES IF REQUIRED (SEE ARCHITECTS PLANS FOR RATINGS). PROVIDE RADIATION DAMPERS IN RATED CEILINGS FOR ALL CEILING OPENINGS, CEILING FANS, DIFFUSERS OR GRILLES RATED FOR USE IN THE CEILING ASSEMBLY AS SPECIFIED BY ARCHITECT.
4. IN CASE OF FIRE RATED CORRIDOR DUCTS SHALL PENETRATE THROUGH SIDE OF RATED ENCLOSURE ONLY. (NO PENETRATIONS THROUGH HORIZONTAL RATED STRUCTURE).
5. PROVIDE BACKDRAFT DAMPERS ON ALL EXHAUST FANS AND/OR INLINE FANS.
6. PROVIDE VIBRATION ISOLATORS ON ALL MECHANICAL EQUIPMENT AS CALLED FOR IN THE SPECIFICATIONS. IF NOT SPECIFIED, AS RECOMMENDED BY MANUFACTURER FOR QUIET OPERATION (WITH 99% ISOLATION EFFICIENCY).
7. PROVIDE A MIN. OF 10' CLEARANCE BETWEEN O/A INTAKES AND VTR OR EXHAUST OPENINGS.
8. ALL SERVICEABLE EQUIPMENT SUCH AS TERMINAL BOXES, VALVES, FIRE DAMPERS, EXHAUST FANS, AIR HANDLING UNITS, ETC., SHALL BE MOUNTED A MAXIMUM OF 14 FEET ABOVE FINISH FLOOR.
9. TEMPERATURE AND HUMIDITY SENSOR(S) LOCATION SHALL BE APPROVED BY OWNER AND ARCHITECT BEFORE INSTALLATION.
10. RUN INSULATED CONDENSATE DRAINS AS PER PLUMBING DRAWINGS.
11. MOUNT ALL ROOFTOP EQUIPMENT (IF USED) FOR WIND LOADS AND MOUNTING HEIGHTS AS REQUIRED BY LOCAL CODES.
12. ALL PIPING AND DUCTWORK SHALL BE SLEEVED THRU WALLS, BEAMS, SLABS, ETC, AS REQUIRED AND COORDINATED WITH THE STRUCTURAL ENGINEER. REWORK BAR JOIST CROSS BRACING AND PROVIDE NECESSARY TRANSITIONS AS REQUIRED FOR DUCTWORK INSTALLATION.
13. ALL INSULATION WILL HAVE FIRE/SMOKE RATING LESS THAN 25/50.
14. PROVIDE MOTOR STARTERS AS FOLLOWS (UNLESS OTHERWISE RECOMMENDED BY MOTOR MANUFACTURER):
    A: PROVIDE OVERLOAD PROTECTION - 1/3 HP AND ABOVE (ALL PHASES).
    B: PROVIDE ACROSS THE LINE VOLTAGE STARTING BELOW 25 HP.
15. ALL OUTDOOR EQUIPMENT SHALL COMPLY WITH LOCAL ZONING NOISE ORDINANCES. MIN. REQUIREMENT SHALL NOT EXCEED A NOISE LEVEL OF 65 DB AS MEASURED RADIALLY 30 FT FROM THE EQUIPMENT IN ALL DIRECTIONS.
16. FILTERS SHALL BE IN PLACE DURING CONSTRUCTION. PROVIDE A NEW SET PRIOR TO TEST AND BALANCE AND A FINAL SET AT THE END OF ONE YEAR SERVICE PERIOD.
17. COUNTERBALANCED BACKDRAFT DAMPERS SHALL BE HEAVY DUTY EXTRUDED ALUMINUM RUSKIN MODEL CBD2 OR APPROVED EQUAL.

AIR DISTRIBUTION/DUCTWORK NOTES:

1. REFER TO ARCHITECTURAL PLANS FOR CEILING TYPE.
2. PROVIDE OFF WHITE FINISH (SUBJECT TO ARCHITECT'S APPROVAL).
3. ALL DUCTWORK WHERE ALLOWED BY LOCAL CODES AND CEILING RATING SHALL BE 1" LOW PRESSURE DUCT, SEAL CLASS "C" AND AS FOLLOWS:
   - A.1. S/A AND R/A: PROVIDE 1-1/2" THICK FIBERGLASS DUCT BOARD WITH VAPOR BARRIER (R-6 MIN) JOHNNS MANVILLE MAT-FACED MICRO AIRE OR EQUIVALENT.
   - A.2. O/A : PROVIDE GALVANIZED SHEET METAL W/ DUCT WRAP INSULATION WITH VAPOR BARRIER: JOHNS MANVILLE MICROLITE TYPE 75, 1.5 INCH THICKNESS, R=4.2 (MIN.) UNLESS OTHERWISE NOTED.
   - B. GENERAL EXHAUST AIR DUCTWORK: GALVANIZED SHEETMETAL
   - C. FLEXIBLE AIR DUCT SHALL BE UL 181 RATED. SUCH DUCTS SHALL BE LISTED AND LABELED AS CLASS 0 OR CLASS 1 FLEXIBLE DUCTS. FLEXIBLE DUCT INSULATION TO BE R-4.2 MINIMUM. FLEXIBLE DUCTWORK IS ALLOWED ONLY FOR THE LAST 6 FT OF DUCTWORK FOR CONNECTION TO AIR DEVICES.
   - D. DUCT SEAL CLASS AS PER SMACNA STANDARD DUCT SEALING REQUIREMENTS. (REFER TO TABLE)
4. INSULATION SHALL BE PROTECTED FROM DAMAGE, INCLUDING THAT DUE TO SUNLIGHT, MOISTURE, EQUIPMENT MAINTENANCE, AND WIND, BUT NOT LIMITED TO THE FOLLOWING:
   - A. INSULATION EXPOSED TO WEATHER SHALL BE PROTECTED BY 20 GA SHEET METAL.
   - B. INSULATION COVERING COOILING DUCTS LOCATED OUTSIDE THE CONDITIONED SPACE SHALL INCLUDE A VAPOR RETARD LOCATED OUTSIDE THE INSULATION.
5. PROVIDE FOIL-FACED INSULATION (MIN. R-5.6) ON TOP/BACK OF ALL AIR DEVICES. TAPE ALL JOINTS AND SEAMS TO PROVIDE CONTINUOS VAPOR BARRIER OVER DEVICE AND FLEXIBLE CONNECTION.
6. ALL DUCTWORK AND DIFFUSERS SHALL BE RATED FOR THE USE, PRESSURE AND TEMPERATURE SPECIFIED AND AS REQUIRED BY THE CEILING SYSTEM RATING.
7. ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH "SMACNA" STANDARDS AND LOCAL BUILDING CODES.
8. ALL DUCT SIZES ARE CLEAR INSIDE DIMENSIONS.
9. SEAL ALL DUCTS, JOINTS AND SEAMS IN AN APPROVED MANNER AND INSURE AGAINST LEAKAGE.
10. PROVIDE ACCESS DOORS AS REQUIRED FOR ALL MECHANICAL EQUIPMENT TO SERVICE AND VISUALLY CHECK ROTATION OF FANS AND MOTORS, POSITION OF DAMPERS, REPLACE FIRE DAMPER LINKS, ADJUST OR REPLACE CONTROLS, ETC.
11. PROVIDE VANED ELBOWS IN ALL CASES, SPLITTER DAMPERS WHERE INDICATED ON DRAWINGS AND VOLUME CONTROL DAMPERS IN ALL BRANCH DUCTS OR DIFFUSER CONNECTIONS.
12. PIPE HANGERS AND SUPPORTS SHALL HAVE SUFFICIENT STRENGT TO WITHSTAND ALL ANTICIPATED STATIC AND SPECIFIED DYNAMIC LOADING CONDITIONS ASSOCIATED WITH THE INTENDED USE. PIPE HANGERS AND SUPPORTS THAT ARE IN DIRECT CONTACT WITH PIPING SHALL BE OF APPROVED MATERIALS THAT ARE COMPATIBLE WITH THE PIPING AND THAT WILL NOT PROMOTE GALVANIC ACTION. (305.2 - 2020 FBC-M).
13. HANGERS AND ANCHORS SHALL BE ATTACHED TO THE BUILDING CONSTRUCTION IN AN APPROVED MANNER. CONTRACTOR TO REFER TO TABLE 305.4- 2020 FBC-M FOR HANGERS AND SPACING FOR ROOFTOP DUCTS AND REFRIGERANT LINES. CONTRACTOR SHALL PROVIDE ALL NOA'S OR WIND CALCULATIONS FOR ALL SUPPORTS BEING USED. CONTRACTOR TO PROVIDE SHOP DRAWINGS ACCORDING TO PROJECT SPECIFIC DESIGN REQUIREMENTS. CONTACT MIRO INDUSTRIES, INC. : (800) 768-6978 FOR TECHNICAL SERVICES.
14. CONTRACTOR TO REFER TO STRUCTURAL DRAWINGS FOR ROOF TOP EQUIPMENT WIND LOAD CALCULATIONS AND DESIGN REQUIREMENTS.

LEGEND AND SYMBOLS

Symbol	Description
SD	SMOKE DETECTOR
T	THERMOSTAT
H	HUMIDITY SENSOR
S	REMOTE TEMPERATURE SENSOR
	SUPPLY AIR (DIRECTION OF THROW)
	RETURN AIR
	NEW HVAC PIPING
	NEW DUCTWORK
BDD	BACK DRAFT DAMPER
	MANUAL VOLUME DAMPER
M	MOTOR CONTROLLED DAMPER
	FIRE DAMPER
A1	DIFFUSER/GRILLE TYPE, REF. SCHEDULE
100	DESIGN CFM (WHERE APPLICABLE)
RAG	RETURN AIR GRILLE
CD	CEILING DIFFUSER
CG	CEILING GRILLE
EG	EXHAUST GRILLE
MCD	MOTOR CONTROLLED DAMPER
OBD	OPPOSED BLADE DAMPER
RTU	ROOFTOP UNIT
EF	EXHAUST FAN
WMS	WIRE MESH SCREEN

NOTE: HVAC LEGEND IS PROVIDED AS A GENERAL REFERENCE. SOME SYMBOLS SHOWN MAY NOT PERTAIN TO THIS PROJECT.

TESTING AND BALANCING NOTES

1. AIR DISTRIBUTION SYSTEM TESTING, ADJUSTING AND BALANCING SHALL BE PERFORMED ACCORDING TO 2020 FLORIDA BUILDING CODE, ENERGY CONSERVATION, SECTION 503.2.9.
2. AIR BALANCE CONTRACTOR TO BE REGISTERED WITH BROWARD COUNTY. LICENSED MECHANICAL CONTRATORS ARE ALLOWED TO TEST AND BALANCE SYSTEMS OF 15.0 TON OR LESS IN COOLING OR HEATING CAPACITY.
3. COOLING OR HEATING SYSTEM CAPACITIES OF 65,000 BTUH OR LESS ARE EXCEMPT FROM THE TEST AND BALANCE REQUIREMENT LISTED IN THE CODE.
4. ALL HVAC SYSTEMS SHALL BE BALANCED IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING STANDARDS. A WRITTEN BALANCE REPORT SHALL BE PROVIDED TO THE OWNER FOR HVAC SYSTEMS SERVING ZONES WITH A TOTAL AIR CONDITIONING AREA EXCEDING 5,000 SQFT OR OTHERWISE REQUESTED BY THE OWNER FOR SMALLER SPACES.
5. BALANCING PROCEDURES SHALL BE IN ACCORDANCE WITH THE NEBB PROCEDURAL STANDARDS, THE AABC NATIONAL STANDARDS, OR EQUIVALENT PROCEDURES.
6. UPON CONSTRUCTION COMPLETION, ALL REUSED MECHANICAL SYSTEMS SHALL BE REBALANCED. ALL GRILLES IN SERVED AREAS SHALL BE BALANCED TO ACHIEVE REQUIRED DESIGN VALUES.

APPLICABLE CODES AND STANDARDS

1. FLORIDA BUILDING CODE (FBC) / FLORIDA MECHANICAL CODE (FMC) 2020 EDITION.
2. ANSI/ASHRAE/ASHE STANDARD 170-2013.
3. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) CODE 70 (2014 EDITION).
4. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) CODE 101 (2015 EDITION).
5. RULE CHAPTER 69A-60 FLORIDA ADMINISTRATIVE CODE (FAC).
6. FLORIDA STATUTE SECTION 633.022.
7. RULE CHAPTER 69A-3.012 FLORIDA ADMINISTRATIVE CODE (FAC).
8. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) CODE 99 (2015 EDITION).

FAN INTERLOCK

MARK	FAN INTERLOCK	REMARKS
EF-1	---	FAN SHALL RUN CONTINUOUSLY
EF-2	RTU-2	---
EF-3	RTU-2	---
EF-4	RTU-3	
EF-5	RTU-4	---
EF-6	RTU-5	---

NOTE: REFER ALSO TO FAN SCHEDULES.

BUILDING ENVELOPE DATA FOR HVAC CALCULATIONS

BUILDING HVAC CALCULATIONS ARE BASED ON THE FOLLOWING:
GLASS THERMAL PROPERTIES:

GLASS U VALUE	0.50
GLASS S.C	0.29
GLASS SHGC	0.25
WALL INSULATION R-VALUE:	5.7
ROOF INSULATION R-VALUE:	38.0

CLOTHES DRYER EXHAUST NOTES

1. CLOTHES DRYERS SHALL BE EXHAUSTED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
2. CLOTHES DRYERS EXHAUST SYSTEMS SHALL BE INSTALLED TO COMPLY WITH THE FBC(M). SECTION 504.
3. WHERE A CLOTHES DRYER EXHAUST DUCT PENETRATES A WALL OR CEILING MEMBRANE, THE ANNULAR SPACE SHALL BE SEALED WITH NONCOMBUSTIBLE MATERIAL.
4. DRYER EXHAUST DUCT MUST TO BE CONSTRUCTED OF SHEET METAL AND SHALL HAVE SMOOTH INTERIOR SURFACES. DUCTS SHALL NO BE INSTALLED WITH SHEET METAL SCREWS OR OTHER FASTENERS THAT WILL OBSTRUCT THE EXHAUST FLOW.
5. SCREEN SHALL NOT BE INSTALLED AT THE DUCT TERMINATION. PROVIDE BACKDRAFT DAMPER.
6. THE PASSAGEWAY OF DRYER EXHAUST DUCT TERMINALS SHALL BE UNDIMINISHED IN SIZE AND SHALL PROVIDE AN OPEN AREA OF NOT LESS THAN 12.5 SQUARE INCHES.
7. DOMESTIC CLOTHES DRYER EXHAUST SHALL BE CONSTRUCTED OF METAL A MINIMUM 0.016 IN.
8. CLOTHES DRYER EXHAUST DUCTS SHALL BE SUPPORTED AT 4-FOOT INTERVALS.

PACKAGED OUTDOOR AIR-COOLED CONDENSER

MARK	MODEL NUMBER	VOLTAGE	NO. OF MOTORS	MOTORS HP	MCA A	MOP A
RTU-1-CU	NC-Z-2V	480-3-60	2	1.5	5	15

NOTES:
1. PROVIDE COATED CONDENSER COIL FOR CORROSION PROTECTION.
2. PROVIDE WIND LOAD CALCULATIONS PER FBC 2020.

AIR DISTRIBUTION SCHEDULE

SYMBOL	USE	TYPE	MANUFACTURER & MODEL NO.	REMARKS	ACCESSORIES
A1	SUPPLY AIR	DIFFUSER	TITUS FL-20	2" SLOT W; 2-SLOT; 7 FT L 214 CFM/FT; NC<19; 11-16-33 THROW JET THROW	W/ PATTERN CONTROLLERS
A2	SUPPLY AIR	DIFFUSER	TITUS TDC-AA	24X24 MODULE SURFACE MOUNT ROUND NECK	OBD W/ SCREWDRIVER ADJUSTMENT ACCESSIBLE THROUGH FACE OF DIFF.
A3	SUPPLY AIR	GRILLES & REGISTERS	TITUS 300FS	12X6 DUCT SIZE SURFACE MOUNT	OBD W/ SCREWDRIVER ADJUSTMENT ACCESSIBLE THROUGH FACE OF DIFF.
A4	SUPPLY AIR	GRILLES & REGISTERS	TITUS 300FS	30X6 DUCT SIZE SURFACE MOUNT	OBD W/ SCREWDRIVER ADJUSTMENT ACCESSIBLE THROUGH FACE OF DIFF.
A5	SUPPLY AIR	DIFFUSER	TITUS TDC-AA	12X12 MODULE SURFACE MOUNT ROUND NECK	OBD W/ SCREWDRIVER ADJUSTMENT ACCESSIBLE THROUGH FACE OF DIFF.
B1	RETURN AIR	GRILLES & REGISTERS	TITUS 350FL	22X22 DUCT SIZE SURFACE MOUNT	OBD W/ SCREWDRIVER ADJUSTMENT ACCESSIBLE THROUGH FACE OF GRILLE.
B2	RETURN AIR	GRILLES & REGISTERS	TITUS 350FL	12X12 DUCT SIZE SURFACE MOUNT	OBD W/ SCREWDRIVER ADJUSTMENT ACCESSIBLE THROUGH FACE OF GRILLE.
B3	RETURN AIR	GRILLES & REGISTERS	TITUS 350FL	14X6 DUCT SIZE SURFACE MOUNT	OBD W/ SCREWDRIVER ADJUSTMENT ACCESSIBLE THROUGH FACE OF GRILLE.
B4	RETURN AIR	GRILLES & REGISTERS	TITUS 350FL	48X30 DUCT SIZE SURFACE MOUNT	OBD W/ SCREWDRIVER ADJUSTMENT ACCESSIBLE THROUGH FACE OF GRILLE.
B5	RETURN AIR	GRILLES & REGISTERS	TITUS 350FL	30X6 DUCT SIZE SURFACE MOUNT	OBD W/ SCREWDRIVER ADJUSTMENT ACCESSIBLE THROUGH FACE OF GRILLE.
C1	EXH. AIR	GRILLES & REGISTERS	TITUS 50F	8X8 DUCT SIZE SURFACE MOUNT	OBD W/ SCREWDRIVER ADJUSTMENT ACCESSIBLE THROUGH FACE OF GRILLE.
C2	EXH. AIR	GRILLES & REGISTERS	TITUS 50F	22X22 DUCT SIZE SURFACE MOUNT	OBD W/ SCREWDRIVER ADJUSTMENT ACCESSIBLE THROUGH FACE OF GRILLE.
C3	EXH. AIR	GRILLES & REGISTERS	TITUS 350FL	48X30 DUCT SIZE SURFACE MOUNT	OBD W/ SCREWDRIVER ADJUSTMENT ACCESSIBLE THROUGH FACE OF GRILLE.
TG	TRANSFER AIR	GRILLES & REGISTERS	TITUS 350FL	22X22 DUCT SIZE SURFACE MOUNT	---

NOTES:
1. GENERAL AND HVAC CONTRACTOR TO COORDINATE FINISH AND COLOR OF ALL AIR DISTRIBUTION PRODUCTS PRIOR TO ORDERING.
2. ALL AIR DEVICES INSTALLED IN ACCESSIBLE AND/OR LAY-IN CEILINGS SHALL HAVE SPIN-IN FITTINGS (WITHOUT SCOOPS) WITH A MANUAL DAMPER INSTALLED IN THE BRANCH TAKE-OFF.
3. ALL AIR DEVICES INSTALLED IN INACCESSIBLE AND/OR DRYWALL CEILINGS SHALL BE PROVIDED WITH ADJUSTING DAMPER TO ADJUST THE AIR FLOW BY INSERTING SCREWDRIVER THROUGH THE FACE OF THE DIFFUSER.
4. INSTALLATION OF MVD IN ALL SUPPLY, RETURN OR EXHAUST DUCT BRANCH IS REQUIRED.

STANDARD DUCT SEALING REQUIREMENTS

SEAL CLASS	SEALING REQUIREMENTS	APPLICABLE STATIC PRESSURE CONSTRUCTION STANDARD
A	ALL TRANSVERSE JOINTS, LONGITUDINAL SEAMS, AND DUCT WALL PENETRATIONS	4" WG AND UP (1000 PA)
B	ALL TRANSVERSE JOINTS AND LONGITUDINAL SEAMS ONLY	3" WG (750 PA)
C	TRANSVERSE JOINTS ONLY	2" WG (500 PA)

NOTE:
IN ADDITION TO THE ABOVE, ANY VARIABLE AIR VOLUME SYSTEM DUCT OF 1" (250 PA) AND 1/2" WG (125 PA) CONSTRUCTION CLASS THAT IS UPSTREAM OF THE VAV BOXES SHALL MEET SEAL CLASS C.

MECHANICAL SHEET INDEX

Sheet Number	Sheet Name
M001	INDEX, NOTES AND SYMBOL LEGEND
M002	MECHANICAL SCHEDULES
M101	LEVEL 1 - MECHANICAL PLAN
M102	ROOF MECHANICAL PLAN
M201	MECHANICAL DETAILS

SHOP DRAWING REQUIREMENTS

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS.
2. ALL SUBMITTALS MUST CLEARLY INDICATE EXACTLY WHICH ITEMS ARE BEING PROPOSED FOR USE. IF NOT, THE SUBMITTAL SHALL BE REJECTED.
3. SUBSTITUTIONS SHALL BE LIMITED TO ONE OF THE ALTERNATES LISTED IN THE CONSTRUCTION DOCUMENTS. PRODUCTS CONSIDERED TO BE EQUAL SHALL BE REVIEWED AND ACCEPTED BY THE ENGINEER, ARCHITECT AND OWNER (10) DAYS PRIOR TO BID DATE.
4. THE CONTRACTOR ASSUMES ALL DESIGN RESPONSIBILITY AND ALL FINANCIAL RISKS FOR PROCEEDING PRIOR TO SHOP DRAWINGS PROCESSING, AND ON ANY ITEM OR WORK THAT IS AT VARIANCE TO THE CONSTRUCTION DOCUMENTS.
5. SHOP DRAWINGS AND SUBMITTALS FOR EACH ITEM SHALL BE REVIEWED NO MORE THAN TWICE. A THIRD SUBMITTAL ON AN ITEM MUST BE ACCOMPANIED BY A PURCHASE ORDER FROM THE CONTRACTOR OR IT SHALL BE REJECTED.
6. CIRCUMSTANCES NECESSITATING A REVISION TO THE PERMITTED DOCUMENTS NOT PROCESSED PRIOR TO INSTALLATION MAY NOT BE ACCEPTED. IF ACCEPTED IT MUST BE LEGIBLE, ACCURATE AND ACCOMPANIED BY A PURCHASE ORDER ORDER FROM THE CONTRACTOR. THE REVISION SHALL BE CHARGED TO THE CONTRACTOR AND DELIVERED TO HIM ON A C.O.D. BASIS.
7. SUBSTITUTIONS FROM THE BASE DESIGN OR VARIATIONS TO THE PERMITTED CONTRACT DOCUMENTS, WHETHER RESULTING FROM PROCESSED SHOP DRAWINGS OR NOT, THAT RESULT IN REQUIREMENTS IN LETTERS OF AUTHORIZATION AND/OR PERMIT CONTRACT DOCUMENT CHANGES MANDATED BY THE AUTHORITY HAVING JURISDICTION WILL NOT BE MADE BY THIS OFFICE UNLESS ACCOMPANIED BY A PURCHASE ORDER FROM THE CONTRACTOR, AND RELEASED ON A C.O.D. BASIS.

COORDINATION NOTES

1. A/C CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE HIS WORK FOR SIZE, LOCATION, CLEARANCE, ACCESS AND ELECTRICAL CHARACTERISTICS WITH ALL OTHER TRADES AND TO PROVIDE SHOP DRAWINGS TO THE ENGINEER FOR REVIEW BEFORE INSTALLATION OF DUCTWORK OR EQUIPMENT. SHOP DRAWING WILL INCLUDE BEAM OR STRUCTURE ELEVATION & REQUIRED EQUIPMENT ACCESS AREAS.
2. WALL, ROOF, AND CEILING OPENINGS INDICATED ON CONTRACTOR DRAWINGS ARE NOMINAL DIMENSIONS ONLY AND ALL DUCT, PIPE OR EQUIPMENT PENETRATIONS SHALL BE SLEEVED AND FIRE RATED AS REQUIRED, ADJUST OPENINGS
3. COORDINATE LOCATION OF CEILING DIFFUSERS, GRILLES AND REGISTERS IN THE FIELD WITH LIGHTS, SPRINKLERS AND ARCHITECTURAL ELEMENTS.
4. COORDINATE LOCATION OF A/C UNITS, THERMOSTATS, FANS AND DUCTWORK WITH BUILDING STRUCTURE AND OTHER TRADES SO THAT NO INTERFERENCES OCCUR.
5. IN GENERAL, DUCT OFFSETS HAVE NOT BEEN SHOWN. A/C CONTRACTOR TO COORDINATE THESE AS REQUIRED.
6. 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.
7. CONTRACTOR SHALL COORDINATE DUCTWORK LAYOUT WITH EXISTING ELECTRICAL CONDUITS, PLUMBING PIPES, ETC. REROUTE EXISTING DUCTWORK, PIPES AND CONDUITS AS NECESSARY. NOTIFY OWNER, ARCHITECT AND ENGINEER OF ANY CONFLICTS WITH EXISTING CONDITIONS TO PROVIDE SOLUTIONS.
8. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO BIDDING, ORDERING, FABRICATION OR INSTALLATION OF MATERIALS OR EQUIPMENT. PERFORM SITE SURVEY PRIOR TO BID AND IDENTIFY AREAS OF CONFLICTS. INCLUDE ALL REQUIRED WORKS IN PROJECT BIDDING.

POOL ROOM AIR CONDITIONING EQUIPMENT SCHEDULE

(SELECTION BASED ON DECTRON)

MARK	MODEL NUMBER	CFM TOTAL	CFM OA	CFM EA	HEATER KW	HEATER STEP	SUPPLY FAN ESP	SUPPLY FAN HP	SUPPLY FAN FLA	COMPRESSOR NO.	COMPRESSOR RLA/LRA	EXH. FAN NO.	EXH. FAN HP	EXH. FAN FLA	UNIT MCA	UNIT MOCP	ELECTRICAL VOLTS-PH-HZ	CAPACITY TMBH	CAPACITY SMBH	REHEAT COIL MBH	HEAT RECOVERY (GLYCOL RUNAROUND 33% PROPYLENE) COILS ROW (OA/EA)	PUMP HP	PUMP FLA	EER	IEER	DIMENSIONS L X W X H	WT LBS	WT LBS	REFRIG.	SERVICE
RTU-1	DS-050-RL-X-P5AT1342N0C2AD3H	3450	800	880	10.0	MODULATING	0.75	7.5	11.0	1	18.0 / 97.0	1	2.1	3.4	48.9	60	480-3-60	124.1	75.0	155.1	4/4	0.25	1.3	N/A	N/A	216 X 74 X 79	1400	1400	R410A	MIKVAH ROOM

NOTES:
1. OUTSIDE DESIGN CONDITIONS: 93.4°FDB - 77.8°FDB (OKEECHOBEE, FL)
2. ROOM DESIGN CONDITIONS: 75.0°FDB - 60.0% RH.
3. PROVIDE TEMPERATURE AND HUMIDITY CONTROL.
4. PROVIDE VFD.
5. PROVIDE VERTICAL DISCHARGE.
6. PROVIDE OUTSIDE AIR INTAKE WITH RAINHOOD, WMS, MOTORIZED CONTROL DAMPER AND FILTER.
7. PROVIDE FACTORY FABRICATED ROOFCURB WITH PROPER VIBRATION ISOLATORS
8. PROVIDE UNIT MOUNTED ELECTRIC HEATER-SINGLE POINT POWER CONNECTION.
9. PROVIDE HEAT RECOVERY SECTION.
10. PROVIDE DISCONNECT SWITCH WITH ALL ROOFTOP PACKAGE UNITS.
11. PROVIDE WIND LOAD CALCULATIONS PER FBC 2020.
12. WARRANTY: 2 YEARS ON DRIVELINE, 5 YEARS ON COMPRESSOR, 2 YEARS ON COILS.

NOTE: A PACKAGED OUTDOOR AIR-COOLED CONDENSER IS PART OF THIS AC SYSTEM. REFER TO PACKAGED OUTDOOR AIR-COOLED CONDENSER SCHEDULE.

PACKAGED ROOFTOP AIR CONDITIONING EQUIPMENT SCHEDULE

MARK	MODEL NUMBER	CFM TOTAL	CFM OA	HEATER KW	HEATER STEP	FAN ESP	FAN HP	FAN FLA	COMPRESSOR NO.	COMPRESSOR RLA/LRA	COMPRESSOR RLA/LRA	COND. FAN NO.	COND. FAN HP (FLA)	UNIT MCA	UNIT MOCP	ELECTRICAL VOLTS-PH-HZ	C.C EAT	C.C LAT	CAPACITY TMBH	CAPACITY SMBH	HOT GAS REHEAT MBH	EER	IEER	DIMENSIONS L X W X H	WT LBS	SERVICE
RTU-2	DFC3004W030CXA	5495	1750	30	3 (MIN.)	1.5	5.0	-	-	-	-	-	-	70	80	480-3-60	78.2/67.4	49.2/49.2	287.910	174.757	---	10	13	132 X 87 X 54	2083	SEE PLANS
RTU-3	DPS018A	4360	1000	30	4	2.0	3.0	4.5	1	22.9	-	1 OR 2	(5.2) TOTAL	52.8	60	480-3-60	74.4/64.5	49.9/49.9	183.556	116.668	94.947	11.8	20.7	163 X 77 X 83	3784	SEE PLANS
RTU-4	DPSA040	12000	3000	20	SCR	2.0	2 X 7	7.2 (EACH)	4	15.7 (EACH)	-	4	(2.1) EACH	91.1	100	480-3-60	74.9/65.0	50.9/50.9	494.793	314.532	248.181	10.8	15.6	245 X 97 X 78	6739	SEE PLANS
RTU-5	DPS018A	4425	1000	30	4	2.0	3.0	4.5	1	22.9	-	1 OR 2	(5.2) TOTAL	52.8	60	480-3-60	74.4/64.5	50.1/50.1	184.121	117.454	95.417	11.8	20.7	163 X 77 X 83	3784	SEE PLANS

ROOFTOP AC NOTES:

1. OUTSIDE DESIGN CONDITIONS: 93.4°FDB - 77.8°FDB (OKEECHOBEE, FL)
2. PROVIDE A/C UNITS WITH HEATING AND COOLING PROGRAMMABLE THERMOSTAT.
3. PROVIDE OUTSIDE AIR INTAKE WITH RAINHOOD, WMS AND MOTORIZED CONTROL DAMPER.
4. PROVIDE FACTORY FABRICATED ROOFCURB WITH PROPER VIBRATION ISOLATORS
5. PROVIDE SINGLE POINT KIT FOR ELECTRICAL HOOK-UP.
6. PROVIDE DISCONNECT SWITCH WITH ALL ROOFTOP PACKAGE UNITS.
7. PROVIDE DUCT SMOKE DETECTOR.
8. PROVIDE WIND LOAD CALCULATIONS PER FBC 2020.
9. PROVIDE INDOOR, OUTDOOR, HGRH COIL COATED FOR CORROSION PROTECTION.
10. PROVIDE FACTORY INSTALLED TWO STAGE COOLING MODES FOR RTU-2.
11. PROVIDE FACTORY INSTALLED ELECTRO-MECHANICAL CONTROLS FOR RTU-2.
12. PROVIDE FIELD INSTALLED 25% MOTORIZED FRESH AIR DAMPER FOR RTU-2.
13. PROVIDE VFD FOR RTU-3, 4 AND 5 (SINGLE ZONE VAV SYSTEMS).
14. PROVIDE FACTORY MHGRH W/ COMBINATION SPACE TEMP. AND HUMIDITY SENSOR FOR RTU-3,4 AND 5.
15. PROVIDE VAV SYSTEM WITH DUCT SP CONTROL FOR RTU-3,4 AND 5.
16. PROVIDE MOD. CONTROL W/ INVERTER COMPRESSOR FOR RTU-3 AND 5.
17. PROVIDE BACNET/MSTP CARD, FACTORY INSTALLED FOR ALL RTU.
18. PROVIDE SPACE TEMPERATURE, HUMIDITY AND CO2 SENSOR FOR DEMAND CONTROL VENT. FOR RTU-3, 4 AND 5.

REQUIREMENTS FOR SUBMITTALS

IF CONTRACTOR SUBMITS A DIFFERENT EQUIPMENT MANUFACTURER-MODEL, THE CONTRACTOR SHALL ASSURE THAT THE SUBSTITUTION HAS EQUAL OR BETTER ENERGY AND INDOOR ENVIRONMENTAL PERFORMANCE WHEN COMPARED TO THE EQUIPMENT SPECIFIED ON THE ORIGINAL CONSTRUCTION DOCUMENT.

THE PROPOSED SUBSTITUTION SHALL ALSO BE CONSISTENT WITH THE FOLLOWING REQUIREMENTS:
- CAPACITY
- EFFICIENCY
- REFRIGERANT
- ELECTRICAL DATA
- WEIGHT
- AUTOMATIC CONTROL
- PROYECT DESIGN WIND PRESSURES. NOA. NUMBER OR FLORIDA PRODUCT APPROVAL.
- ANY SPECIAL NOTE OR ACCESSORY LISTED ON SCHEDULES

COMMISSIONING NOTES

SYSTEM COMMISSIONING SHALL BE PROVIDED IN ACCORDANCE WITH 2020 FLORIDA BUILDING CODE, ENERGY CONSERVATION, SECTION C408.

COMMISSIONING SHALL BE PERFORMED BY A CERTIFIED COMMISSIONING AGENT AND A REGISTERED DESIGN PROFESSIONAL.

AIRSIDE TESTING, HYDRONIC TESTING, AND LIGHTING SYSTEM FUNCTIONALITY TESTING SHALL BE INCLUDED IN COMMISSIONING REVIEW/REPORTS.

COMMISSIONING AGENT SHALL PREPARE A COMMISSIONING PLAN, PRELIMINARY REPORT AND FINAL REPORT AS PER FBC-E C408.

COPIES OF ALL DOCUMENTATION SHALL BE PROVIDED TO THE OWNER AND SHALL BE MADE AVAILABLE FOR THE CODE OFFICIAL UPON REQUEST.

NOTE:
DRAWINGS/DETAILS ARE TO BE CONSIDERED DIAGRAMMATIC, NOT NECESSARILY SHOWING IN DETAIL OR TO SCALE ALL MINOR ITEMS. UNLESS SPECIFIC DIMENSIONS ARE SHOWN, THE STRUCTURAL, ARCHITECTURAL AND SITE CONDITIONS SHALL GOVERN EXACT LOCATIONS. CONTRACTOR SHALL FOLLOW DRAWINGS IN LAYING OUT WORK, AND CHECK/COORDINATE DRAWINGS OF ALL TRADES

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Project Mgr.: Stephen Bender, P.E.
Project No.: 230515-F

CIVIL CONSULTANT:

REVISIONS:

NO.	DATE	DESCRIPTION

CLIENT: JAM EQUITIES

PROJECT NAME / LOCATION: OKEE - SHUL
PROJECT ADDRESS

DRAWING TITLE: INDEX, NOTES AND SYMBOL LEGEND

EXAMINER'S SIGNATURE:

PROFESSIONAL SEAL:
Digitally signed by George SanJuan Date: 2023.12.27 10:44:41 -05'00'

SCALE: 12" = 1'-0"
DATE:
PROJECT NO. NJ079.4

M001
DRAWING NO.

12/22/2023 12:07:31 PM

BARCODE

THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECTS. DO NOT SCALE DRAWING. THE DRAWING SHALL NOT BE USED UNTIL SIGNED BY CONSULTANTS.