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 CUTTING, PATCHING, STRUCTURAL STEEL, WEATHER PROOFING, PAINTING, AND WALL OPENINGS SHALL BE BY THE GENERAL CONTRACTOR.
5. 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.).
6. BUILDING HVAC CALCULATIONS ARE BASED ON THE FOLLOWING:

   A. INDOOR DESIGN: SUMMER 75 DDB/50% RH, WINTER 72 DDB.
   B. OUTDOOR DESIGN: SUMMER 91 DDB/78 DWB, WINTER 42 DDB.
7. PROVIDE FLEXIBLE DUCT CONNECTORS, RATED AS REQUIRED, TO ALL FANS, A/C UNITS, OR MECHANICAL EQUIPMENT.
8. 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.
9. 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.
10. AIR QUALITY SHOULD BE TESTED BEFORE OCCUPANCY AND SHOULD BE INSTRUMENTED AND MONITORED THEREAFTER, OR AT LEAST AT REGULAR INTERVALS

AIR DISTRIBUTION / DUCTWORK NOTES :

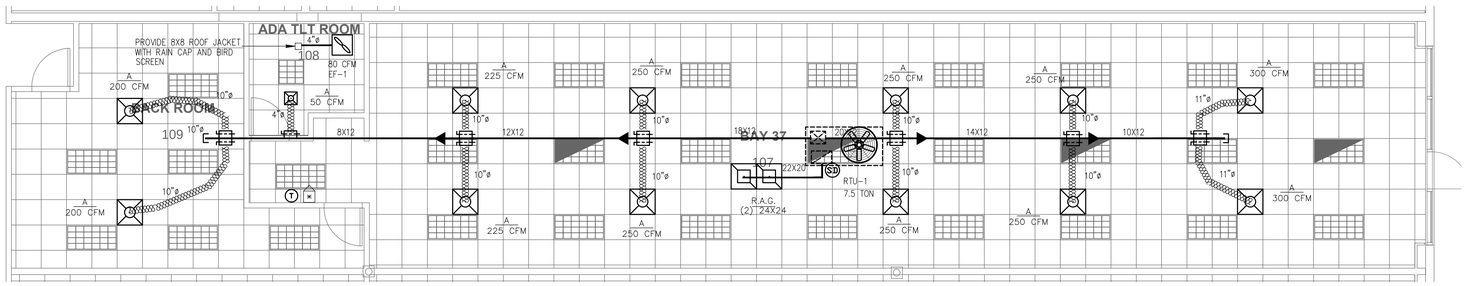
1. REFER TO ARCHITECTURAL PLANS FOR CEILING TYPE.
2. PROVIDE OFF WHITE FINISH (SUBJECT TO ARCHITECT'S APPROVAL).
3. ALL DUCTWORK WHERE ALLOWED BY LOCAL CODES AND AND CEILING RATING SHALL BE 1" LOW PRESSURE DUCT, SEAL CLASS "C" AND AS FOLLOWS:
   A. S/A & R/A – FIBERGLASS DUCTBOARD WITH R-6 MIN. INSULATION
   B. EXHAUST AIR DUCTWORK – GALVANIZED SHEETMETAL
   B. OUTSIDE AIR DUCTWORK – INSULATED GALVANIZED SHEETMETAL
4. ALL DUCTWORK AND DIFFUSERS SHALL BE RATED FOR THE USE, PRESSURE AND TEMPERATURE SPECIFIED AND AS REQUIRED BY THE CEILING SYSTEM RATING.
5. ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH "SMACNA" STANDARDS AND LOCAL BUILDING CODES.
6. ALL DUCT SIZES ARE CLEAR INSIDE DIMENSIONS.
7. SEAL ALL DUCTS, JOINTS AND SEAMS IN AN APPROVED MANNER AND INSURE AGAINST LEAKAGE.
8. 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.
9. PROVIDE VANED ELBOWS IN ALL CASES, SPLITTER DAMPERS WHERE INDICATED

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 SMOKE DETECTORS WITH ACCESS DOORS IN ALL SUPPLY AIR DUCTS FOR FANS AND AHU'S OF 2000 CFM OR ABOVE. ALL SMOKE DETECTORS SHALL BE BY ONE MANUFACTURER; COORDINATE VOLTAGE ETC. WITH ELECTRICAL CONTRACTOR AND FIRE ALARM SYSTEM BEFORE ORDERING. UPON DETECTION, SMOKE DETECTORS SHALL SHUT DOWN ASSOCIATED AIR MOVING EQUIPMENT.
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. PROVIDE BACKDRAFT DAMPERS ON ALL EXHAUST FANS AND/OR INLINE FANS.
5. 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).
6. PROVIDE A MIN. OF 10' CLEARANCE BETWEEN O/A INTAKES AND VTR OR EXHAUST OPENINGS.
7. INDEPENDENT CONTRACTOR SHALL TEST AND BALANCE ALL MECHANICAL EQUIPMENT AIR DEVICES, EXTRACTORS, DAMPERS, AHU'S & FAN RATES, ETC. TO PROVIDE THE DESIGN QUANTITIES AS SHOWN ON THE PLANS OR SCHEDULES. PROVIDE T & B REPORT IN ACCORDANCE WITH THE AIR BALANCE COUNCIL STANDARDS, SIGNED AND SEALED BY A REGISTERED FLORIDA ENGINEER. PROVIDE FINAL BALANCING FOR ALL SYSTEMS TO SATISFACTION OF OWNER AND ENGINEER.T & B CONTRACTOR SHALL VISIT JOB SITE DURING CONSTRUCTION TO ENSURE THAT ALL DUCTS, DAMPERS, ETC. ARE INSTALLED FOR PROPER AND QUIET AIR DELIVERY.
8. THERMOSTAT LOCATION SHALL BE APPROVED BY OWNER AND ENGINEER BEFORE INSTALLATION.
9. RUN INSULATED CONDENSATE DRAINS AS PER PLUMBING DRAWINGS.
10. MOUNT ALL ROOFTOP EQUIPMENT FOR WIND LOADS AND MOUNTING HEIGHTS AS REQUIRED BY LOCAL CODES, ALL CURBS SHALL EXTEND 8" MIN. ABOVE FINISHED ROOF.
11. 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.
12. ALL INSULATION WILL HAVE FIRE/SMOKE RATING LESS THAN 25/50.
13. 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.
14. 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.
15. FOR ALL BELT DRIVEN RTU'S PROVIDE ADJUSTABLE PULLEYS
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.

LEGEND

- NEW SUPPLY DIFFUSER
- NEW 24X24 RETURN AIR GRILLE.
- MANUAL VOLUME DAMPER
- NEW FLEXIBLE DUCT, U.L. CLASS 1 (R-6)
- FIRE DAMPER
- POINT OF CONNECTION EXISTING TO NEW.
- NEW DUCT
- (T) PROGRAMMABLE T-STAT
- DUCT DETECTOR REMOTE TEST/RESET STAION
- (SD) DUCT SMOKE DETECTOR (WITH AUDIBLE AND VISIBLE CAPABILITY)



MECHANICAL PLAN

scale: 3/16" = 1'-0"

N

ROOFTOP UNIT SCHEDULE

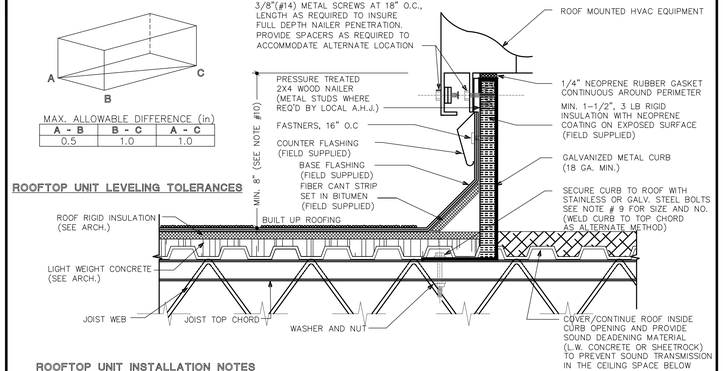
SYSTEM	RTU UNIT TAG #	RTU-1	
	MANUFACTURER	TRANE	
	MODEL #	THC092E	
	TOTAL SENSIBLE MBH	68.6	
	TOTAL COOLING MBH	92.0	
	ENT AIR TEMP D.B /W.B. °F	80/67	
	SUPPLY AIR CFM @ EXT. S.P.	3000	
	OUTSIDE AIR CFM	SEE O/A TABLE	
	POWER – VOLTS/PHASE	208-3-60	
	MIN. CIRCUIT AMPS/ MAX. FUSE	41.9/50	
	OPERATING WEIGHT (lbs)	---	
	MINIMUM EER/SEER	12.6/14.5 IEER	
	DIMENSIONS (LXWXH)	88.6X53.3X46.9	
CONDENSING SECTION	COMPRESSORS:		
	NO. OF COMPRESSORS	2	
	MODEL #	–	
	NO. OF STEPS	1	
	NOMINAL TONS	7.5	
	F.L.A. EACH	–	
	L.R.A. EACH	10	
	OUTDOOR FANS:		
	NO. OF FAN MOTORS	1	
	FAN MOTOR H.P. EACH	–	
	FAN MOTOR F.L.A. EACH	3.5	
EVAPORATOR SECTION	INDOOR FAN:		
	FAN CFM	3000	
	FAN E.S.P.	1.0	
	FAN MOTOR H.P.	3.8	
	FAN MOTOR F.L.A.(208/3/60)	8.5	
	ELECTRIC HEATER:	YES	
	HEATER KW	6.8	
	NO. OF STEPS	–	
	HEATER F.L.A.	–	

NOTE:

1. BASIS OF DESIGN IS TRANE UNITARY PRODUCT
2. PROVIDE PROGRAMMABLE THERMOSTAT WITH HUMINITY CONTROL.
3. MAY REQUIRED HI-STATIC INDOOR FAN MOTOR AND/OR FILED SUPPLIED DRIVE
4. PROVIDE FACTORY INSTALLED HOT GAS REHEAT
5. PROVIDE ALL UNITS WITH ELECTRICAL CONVENIENCE OUTLET.
6. SEE ROOF PLAN FOR UNIT DISCHARGE CONFIGURATION. COORDINATION BETWEEN MECHANICAL CONTRACTOR AND ARCHITECT IS REQUIRED PRIOR TO ANY PURCHASE.
7. PROVIDE MANUFACTURE INSTALLED SMOKE DETECTOR IN RETURN DUCT ON UNIT WITH OVER 2000 CFM
8. PROVIDE MOTORIZED DAMPER OPTION FOR O/A.

NOTE

DETAIL SHOWN FOR REFERENCE ONLY FOR ATTACHMENT PURPOSES. CODE COMPLIANCE SHALL BE DETERMINED AND VERIFIED BY A LICENSED STRUCTURAL ENGINEER.



MAX. ALLOWABLE DIFFERENCE (in)

A - B	B - C	A - C
0.5	1.0	1.0

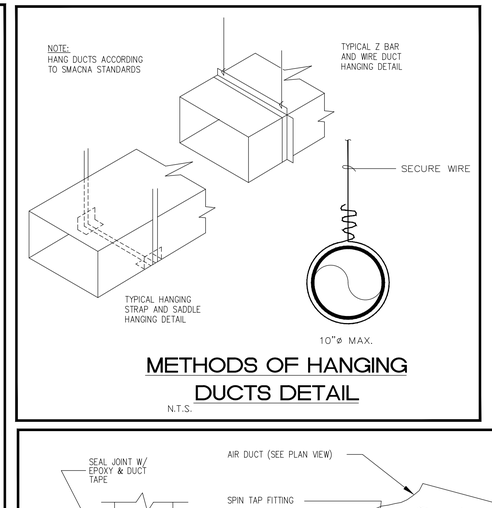
ROOFTOP UNIT LEVELING TOLERANCES

ROOFTOP UNIT INSTALLATION NOTES

1. DUCT TRANSITION FROM RTU TO DUCT SIZE SHOWN ON MECH. FLOOR PLAN SHALL BE MADE BETWEEN RTU & TOP OF ROOF WITHIN CURB.
2. SIZE OF OPENING IN ROOF DECK TO BE AS SMALL AS POSSIBLE, 6" MAX. LARGER THAN DUCT SIZE SHOWN. COORDINATE W/STRUCTURAL PLANS.
3. INSTALL PER MANUFACTURER'S RECOMMENDATION AND INSTALLATION MANUAL.
4. ALL WIRING BY ELECTRICAL CONTRACTOR.
5. SHIM CURB AS REQUIRED TO PROVIDE HORIZONTAL INSTALLATION OF UNIT WITHIN PRESCRIBED TOLERANCES
6. CONTRACTOR SHALL COORDINATE LOCATION OF ROOF CURB WITH STRUCTURE PRIOR TO INSTALLATION.
7. ROOF CURB BY AIR CONDITIONER MANUFACTURER. PROVIDE ADDITIONAL BRACING AND SUPPORT. AS REQUIRED FOR ROOF CURB INSTALLATION TO WITHSTAND WIND LOAD PER LOCAL CODES.
8. CURB TO BE HEAVY GAUGE GALVANIZED STEEL CONSTRUCTION AS RECOMMENDED BY MANUFACTURER, ALL FASTENERS SHALL BE CORROSION PROTECTED IF EXPOSED TO OUTDOORS
9. FOR A/C UNIT ROOFCURB, PROVIDE "RED HEAD" WEDGE TYPE ANCHOR/TAPCON WITH MIN. EMBEDMENT AS RECOMMENDED BY ANCHOR MANUFACTURER. PROVIDE NUMBER AND SIZE OF ANCHORS AS RECOMMENDED BY STRUCTURAL ENGINEER
10. CLEARANCE OF UNIT TO ABOVE FINISHED ROOF SHALL COMPLY WITH LOCAL CODE REQUIREMENTS: PAR. 1509.7 FOR FLORIDA BUILDING CODE, 2010 ED.

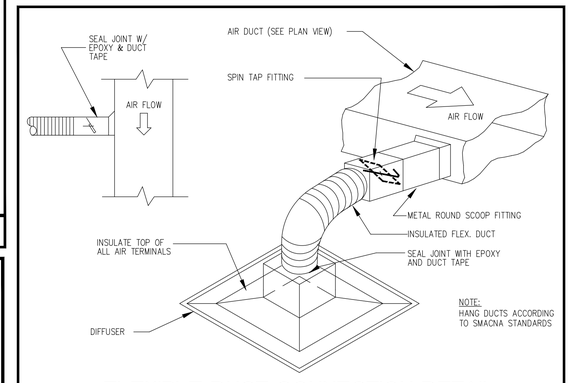
HVAC EQUIPMENT ROOF CURB DETAIL

NOT TO SCALE



METHODS OF HANGING DUCTS DETAIL

N.T.S.



FLEXIBLE DUCT CONNECTION DETAIL

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FAN SCHEDULE

MARK	SELECTION BASED ON		TYPE/	CFM	TSP	MOTOR DATA		SONES
	MAKE	MODEL NO.	SERVICE		IN WG	WATT	VOLTS-PH-HZ	DR NC
EF-1	GREENHECK	SP-B80	BATHROOM	80	.125	29	129-1-60	1.1

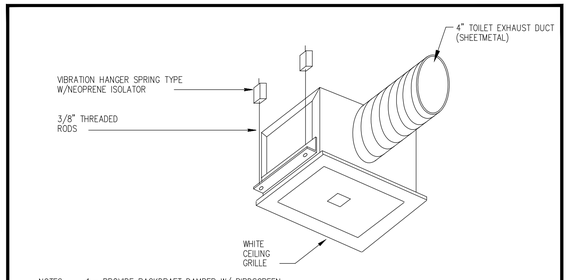
GENERAL FAN NOTES:

1. PROVIDE BACKDRAFT FOR ALL EXHAUST FANS .
2. FIELD ADJUST OPENINGS WITH STRUCTURE.
3. COORDINATE WITH ELECTRICAL CONTRACTOR BEFORE BIDDING OR ORDERING ANY EQUIPMENT.
4. SEE GENERAL AIR CONDITIONING, DUCTWORK, AND COORDINATION NOTES FOR OTHER FIELD SUPPLIED ITEMS.
5. PROVIDE BIRDSCREEN ON ALL INLETS AND OUTLETS.
6. SWITCH WITH LIGHTS

MIN. VENTILATION RATE (2014 FBCM TABLE 403.3)

AREA	SYSTEM	GR/NET SQ FT	PERS/ 1000 SF	TOTAL PERS	CFM/ PERS	CFM/ SQ FT	CFM REQ'D	CFM PROVIDED
RETAIL	RTU-1	2,150/1,600	15	24	7.5	.12	438	450

ADJUST OUTSIDE AIR TO VALUE AS SHOWN



NOTES: 1.- PROVIDE BACKDRAFT DAMPER W/ BIRDSCREEN
2.- FLASH & SEAL WALL AND ROOF CAP
3.- PROVIDE INTERNAL ISOLATION AND SOUND INSULATION
4.- SUPPORT FAN FROM STRUCTURE

CABINET EXHAUST FAN DETAIL

N.T.S.

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PROJECT:

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WESTGATE SHOPPING CENTER
100 N STATE ROAD 7
LAUDERDALE LAKES, FL 33317

INTERIOR IMPROVEMENTS

FINAL CONTRACT DOCUMENTS

PROJECT NUMBER: 2016.00-3
DATE: 06-06-2016
CAD FILE NO:

ADDENDA/REVISIONS

SEAL:

CYNTHIA C. SPRAY, AIA AR-94167

DRAWING TITLE:
MECHANICALPLAN

DRAWING NO: M-1

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