

GENERAL NOTES:

- 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.
- 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.
- 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.
- ALL CUTTING, PATCHING, STRUCTURAL STEEL, WEATHER PROOFING, PAINTING, AND WALL OPENINGS SHALL BE BY THE GENERAL CONTRACTOR.
- ALL OPENINGS IN BUILDING STRUCTURE, FOR DUCTWORK, PIPING, ETC. TO BE 1/2" LARGER (ON ALL SIDES) THAN THE OUTSIDE DIMENSIONS. FILL VOIDS WITH FIRE RETARDANT SILICONE FOAM (I.E. CHASE-FOAM CTC FR-855 BY CHASE TECHNOLOGY CORP.).
- BUILDING HVAC CALCULATIONS ARE BASED ON THE FOLLOWING:
 - A. INDOOR DESIGN: SUMMER 75 DDG/50F RH, WINTER 72 DDG
 - B. OUTDOOR DESIGN: SUMMER 91 DDG/78 DWB, WINTER 42 DDG
- PROVIDE FLEXIBLE DUCT CONNECTORS, RATED AS REQUIRED, TO ALL FANS, A/C UNITS, OR MECHANICAL EQUIPMENT.
- 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.
- 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.
- AIR QUALITY SHOULD BE TESTED BEFORE OCCUPANCY AND SHOULD BE INSTRUMENTED AND MONITORED THEREAFTER, OR AT LEAST AT REGULAR INTERVALS.

AIR DISTRIBUTION / DUCTWORK NOTES :

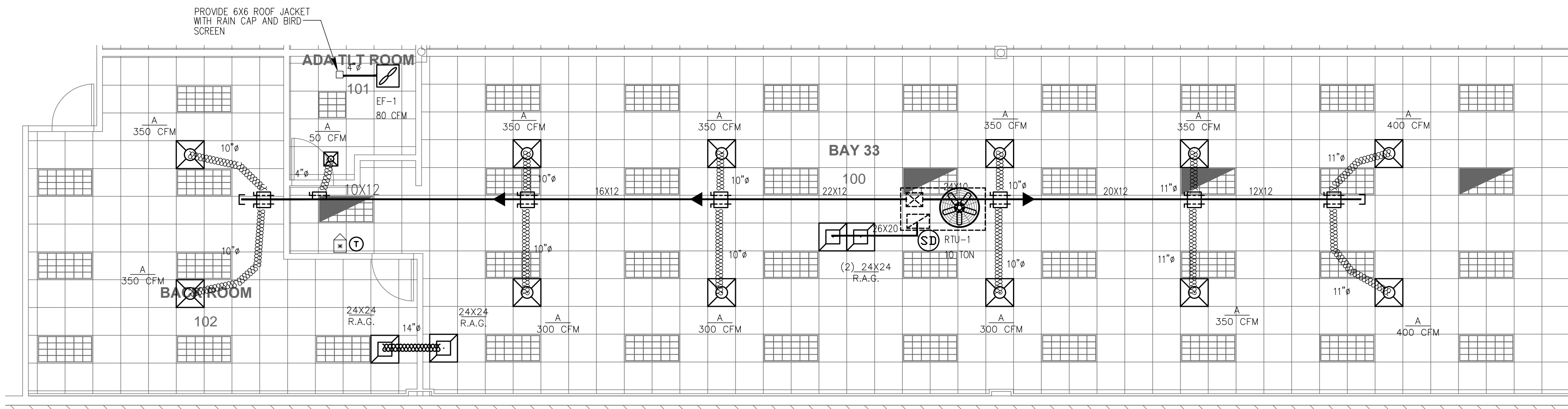
- REFER TO ARCHITECTURAL PLANS FOR CEILING TYPE.
- PROVIDE OFF WHITE FINISH (SUBJECT TO ARCHITECT'S APPROVAL).
- ALL DUCTWORK WHERE ALLOWED BY LOCAL CODES AND AND CEILING RATING SHALL BE 1" LOW PRESSURE DUCT, SEAL CLASS "C" AND S FOLLOWS:
 - A. S/A & R/A - FIBERGLASS DUCTBOARD WITH R-6 MIN. INSULATION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

MECHANICAL EQUIPMENT NOTES:

- ALL MECHANICAL EQUIPMENT SHALL BE ARI & U.L. LISTED WHERE APPLICABLE AND RATED FOR THE REQUIRED SERVICE, PRESSURE, TEMPERATURES, AND SHALL BE PROVIDED WITH ALL NECESSARY TRANSFORMERS, SEALS, VALVES, CONNECTIONS, ETC. TO FUNCTION PROPERLY.
- 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.
- 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 ARCHITECT'S PLANS FOR RATINGS). PROVIDE RADIATION DAMPERS IN RATED CEILINGS FOR ALL EXHAUST OPENINGS. PROVIDE FANS, DIFFUSERS OR GRILLES RATED FOR USE IN THE CEILING ASSEMBLY AS SPECIFIED BY ARCHITECT.
- PROVIDE BACKDRAFT DAMPERS ON ALL EXHAUST FANS AND/OR INLINE FANS.
- 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).
- PROVIDE A MIN. OF 10" CLEARANCE BETWEEN O/A INTAKES AND VIR OR EXHAUST OPENINGS.
- 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.
- THERMOSTAT LOCATION SHALL BE APPROVED BY OWNER AND ENGINEER BEFORE INSTALLATION.
- RUN INSULATED CONDENSATE DRAINS AS PER PLUMBING DRAWINGS.
- MOUNT ALL ROOFTOP EQUIPMENT FOR WIND LOADS AND MOUNTING HEIGHTS AS REQUIRED BY LOCAL CODES. ALL CURBS SHALL EXTEND 8" MIN. ABOVE FINISHED ROOF.
- 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.
- ALL INSULATION WILL HAVE FIRE/SMOKE RATING LESS THAN 25/50.
- 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.
- 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.
- FOR ALL BELT DRIVEN RTU'S PROVIDE ADJUSTABLE PULLEYS
- 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**
- NEW FLEXIBLE DUCT, U.L. CLASS 1 (R-6)
- FIRE DAMPER
- POINT OF CONNECTION EXISTING TO NEW.
- NEW DUCT
- PROGRAMMABLE T-SLAT
- DUCT DETECTOR REMOTE TEST/RESET STATION
- DUCT SMOKE DETECTOR (WITH AUDIBLE & VISIBLE CAPABILITY)



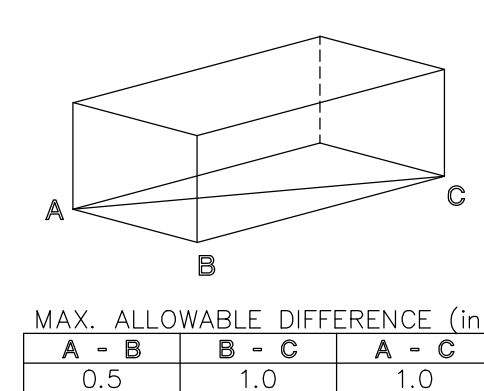
MECHANICAL PLAN

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



ROOFTOP UNIT SCHEDULE	
RTU UNIT TAG #	RTU-1
MANUFACTURER	TRANE
MODEL #	THC120E
TOTAL SENSIBLE MBH	94.1
TOTAL COOLING MBH	116.8
ENT AIR TEMP D.B /W.B. °F	80/67
SUPPLY AIR CFM @ EXT. S.P.	4000
OUTSIDE AIR CFM	SEE O/A TABLE
POWER - VOLTS/PHASE	208-3-60
MIN. CIRCUIT AMPS/ MAX. FUSE	57.5/60
OPERATING WEIGHT (lbs)	---
MINIMUM EER/SEER	12.5/14.7 EER
DIMENSIONS (LXWXH)	99.7X63.2X50.9
COMPRESSORS:	
NO. OF COMPRESSORS	2
MODEL #	---
NO. OF STEPS	1
NOMINAL TONS	10.0
F.L.A. EACH	10.4
L.R.A. EACH	10.4
OUTDOOR FANS:	
NO. OF FAN MOTORS	1
FAN MOTOR H.P. EACH	1
FAN MOTOR F.L.A. EACH	2.7
INDOOR FAN:	
FAN CFM	4000
FAN E.S.P.	1.0
FAN MOTOR H.P.	3.8
FAN MOTOR F.L.A.	8.5
ELECTRIC HEATER:	
HEATER KW	13.5
NO. OF STEPS	---
HEATER F.L.A.	---

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



ROOFTOP UNIT LEVELING TOLERANCES

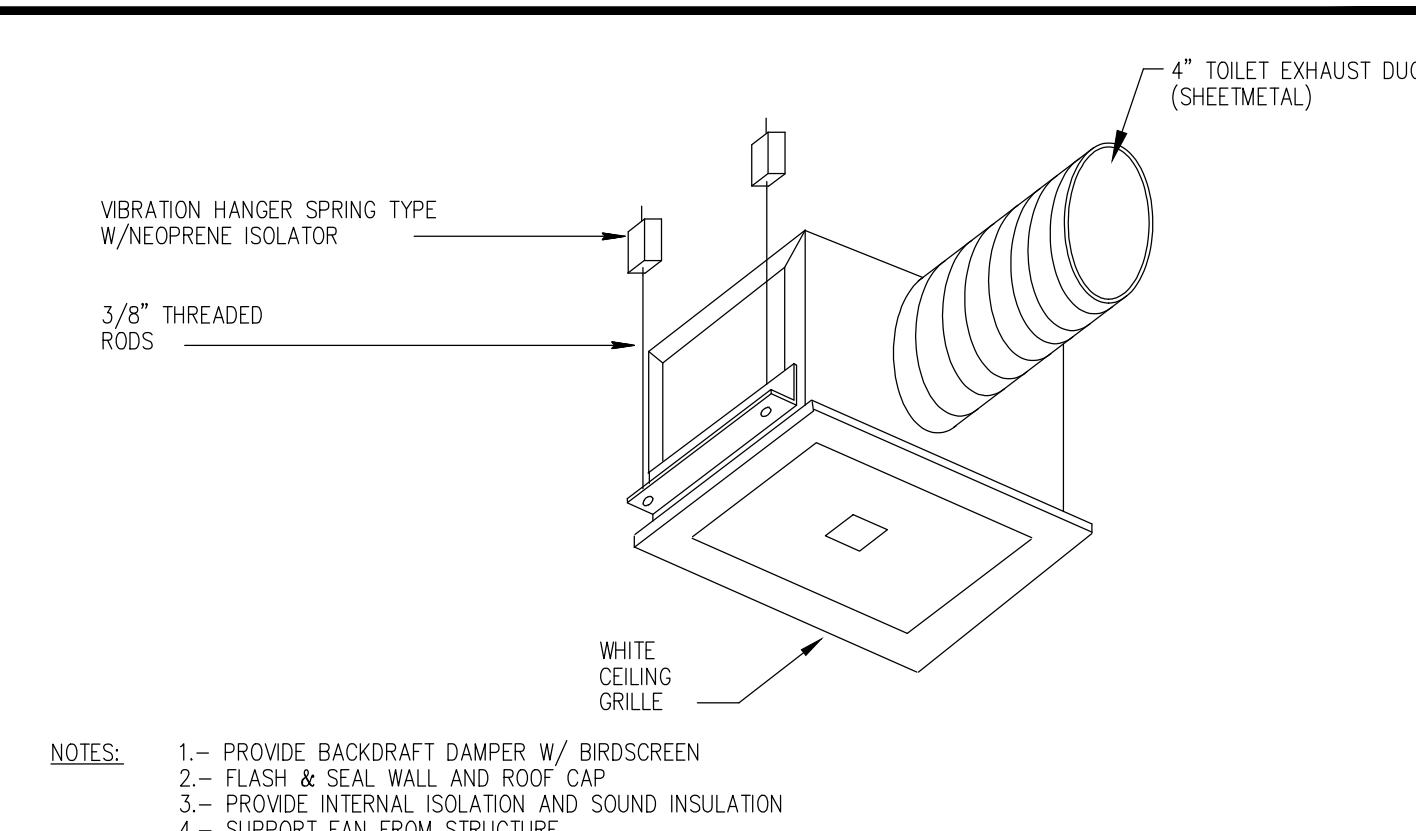
MAX. ALLOWABLE DIFFERENCE (in)	
A - B	B - C
0.5	1.0
1.0	1.0

ROOFTOP UNIT INSTALLATION NOTES

- DUCT TRANSITION FROM RTU TO DUCT SIZE SHOWN ON MECH. FLOOR PLAN SHALL BE MADE BETWEEN RTU & TOP OF ROOF WITHIN CURB.
- SIZE OF OPENING IN ROOF DECK TO BE AS SMALL AS POSSIBLE, 6" MAX. LARGER THAN DUCT SIZE SHOWN. COORDINATE W/STRUCTURAL PLANS.
- INSTALL PER MANUFACTURER'S RECOMMENDATION AND INSTALLATION MANUAL.
- ALL WIRING BY ELECTRICAL CONTRACTOR.
- SHIM CURB AS REQUIRED TO PROVIDE HORIZONTAL INSTALLATION OF UNIT WITHIN PRESCRIBED TOLERANCES
- CONTRACTOR SHALL COORDINATE LOCATION OF ROOF CURB WITH STRUCTURE PRIOR TO INSTALLATION.
- ROOF CURB BY AIR CONDITIONER MANUFACTURER. PROVIDE ADDITIONAL BRACING AND SUPPORT, AS REQUIRED FOR ROOF CURB INSTALLATION TO WITHSTAND WIND LOAD PER LOCAL CODES.
- CURB TO BE HEAVY GAUGE GALVANIZED STEEL CONSTRUCTION AS RECOMMENDED BY MANUFACTURER. ALL FASTENERS SHALL BE CORROSION PROTECTED IF EXPOSED TO OUTDOORS
- 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
- SEE ROOF PLAN FOR UNIT DISCHARGE CONFIGURATION. COORDINATION WITH MECHANICAL CONTRACTOR AND ARCHITECT IS REQUIRED PRIOR TO ANY PURCHASE.
- PROVIDE MANUFACTURE INSTALLED SMOKE DETECTOR IN RETURN DUCT ON UNIT WITH OVER 2000 CFM
- PROVIDE MOTORIZED DAMPER OPTION FOR O/A.

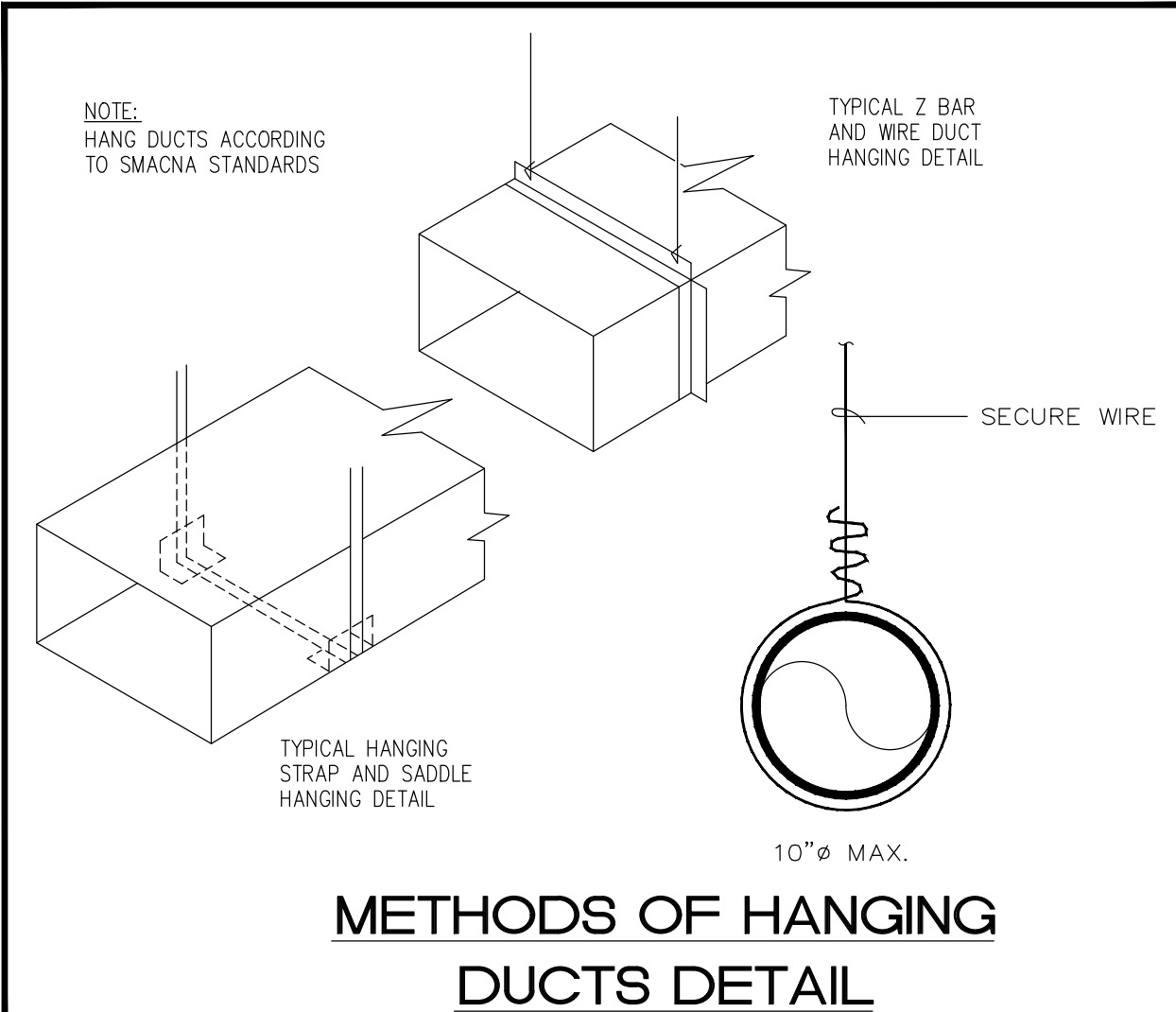
HVAC EQUIPMENT ROOF CURB DETAIL

NOT TO SCALE



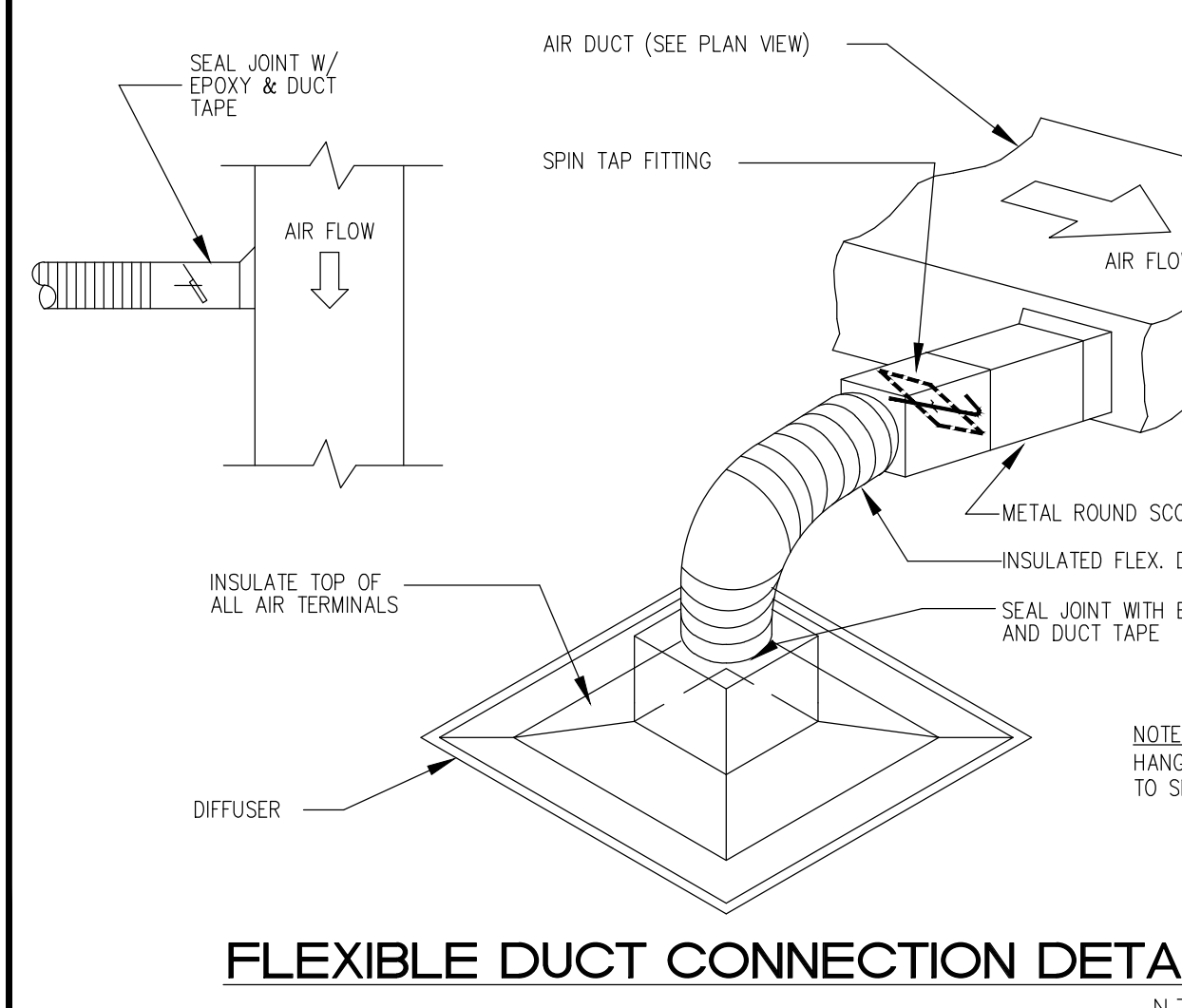
CABINET EXHAUST FAN DETAIL

N.T.S.



METHODS OF HANGING DUCTS DETAIL

N.T.S.



FLEXIBLE DUCT CONNECTION DETAIL

N.T.S.

FAN SCHEDULE							
MARK	SELECTION BASED ON	TYPE/MAKE	CFM	TSP	MOTDR DATA	SDNES	
		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

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 PROVIDED
RETAIL	RTU-1	2,725/2,045	15	31	7.5	.12	477
ADJUST OUTSIDE AIR TO VALUE AS SHOWN							480

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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: 2016-00-1
DATE: 06-06-2016
CAD FILE NO:

- ADDENDAS/REVISIONS**
- 1.
 - 2.
 - 3.
 - 4.
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SEAL:

CYNTHIA C. SPRAY, AIA AR-94167

DRAWING TITLE:
MECHANICALPLAN

DRAWING NO:

M-1

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