

**MECHANICAL PLAN**  
 MEZZANINE EQUIPMENT LAYOUT  
 SCALE: 1/8"=1'-0"

SEE ENLARGED PLAN  
 THIS SHEET

**MECHANICAL PLAN**  
 DUCT, EQUIPMENT & GAS PIPING LAYOUT  
 SCALE: 1/8"=1'-0"

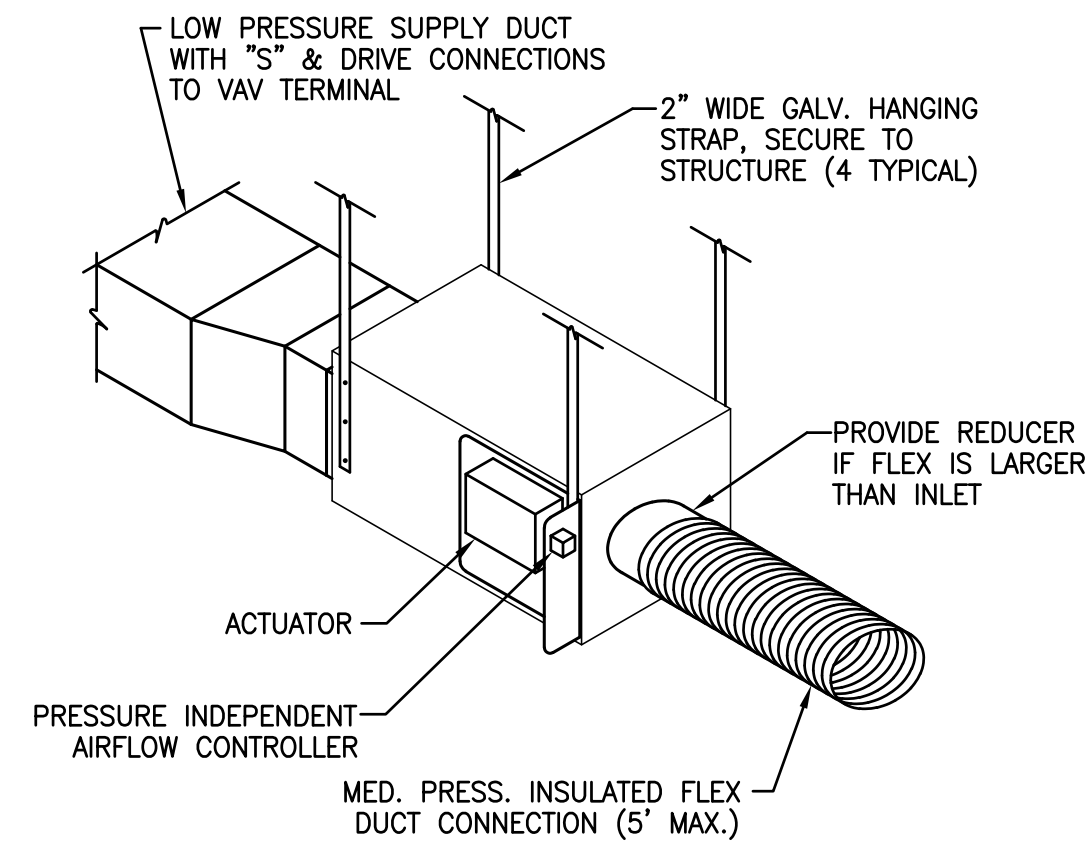
DESIGNED BY:  
**EN-TECH**  
 ENGINEERING  
 P.O. BOX 11527  
 GOLDSBORO, NC 27532  
 TEL: (919) 778-9064  
 FAX: (919) 778-9069

PREPARED FOR:  
 J. Michael Dunn, AIA  
 ARCHITECT  
 P.O. BOX 1045, KENNESAW, NC TEL: (919) 587-6121 FAX: (919) 587-1091

PROJECT NO.	PROJECT MGR.
97038	R. BROWN
DRAWN BY	DATE
C. MELTON	9/23/97
REV/DATE	DESCRIPTION

DRAWING TITLE  
**MECHANICAL PLAN**  
**DUCT, EQUIP. & GAS PIPING**  
 PROJECT LOCATION  
 DIMON INTERNATIONAL, INC. OFFICE RENOVATION  
 FARMVILLE, NORTH CAROLINA

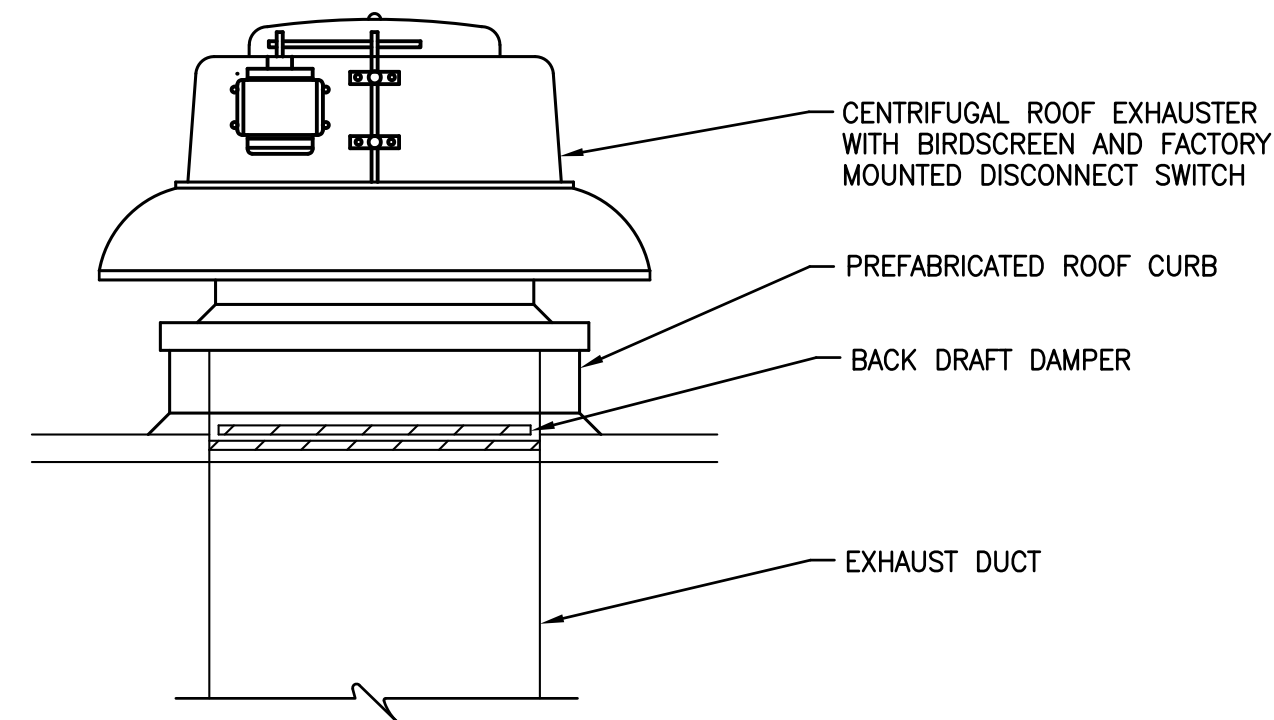
SCALE  
 1/8"=1'-0"  
 SHEET NO.  
**M1.1**  
 OF 3 REV.  $\Delta$



NOTE: SECURE ENDS OF FLEX WITH NYLON BANDS AND 3" WIDE METALIZED DUCT TAPE.

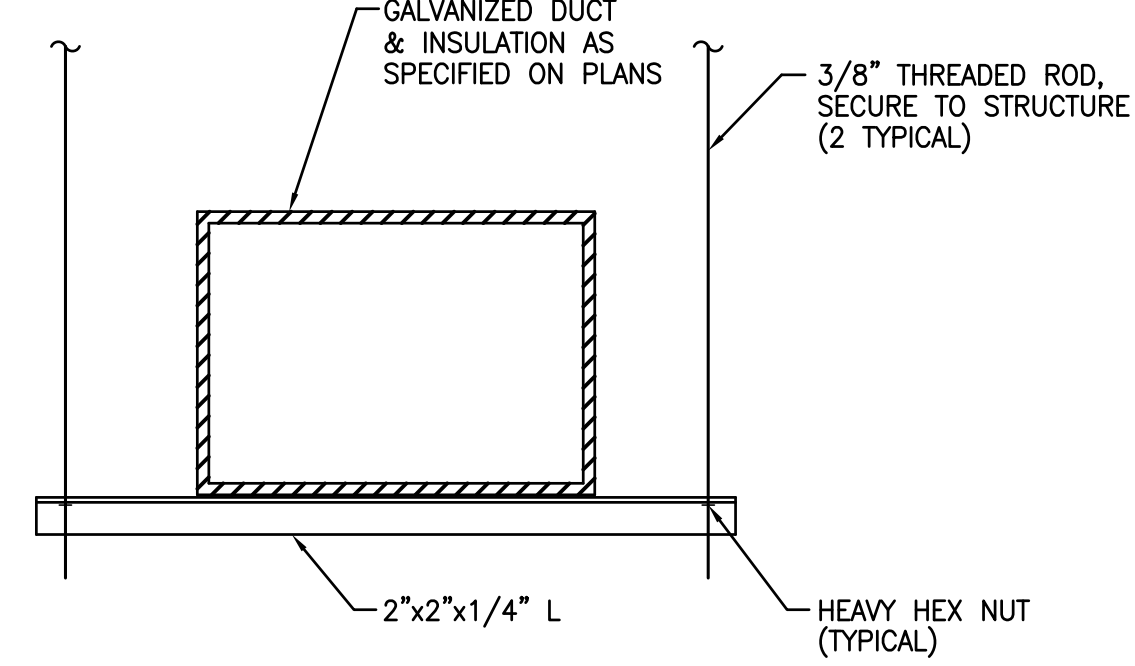
DETAIL NO. \_\_\_\_\_

VAV TERMINAL  
SCALE: NTS



DETAIL NO. \_\_\_\_\_

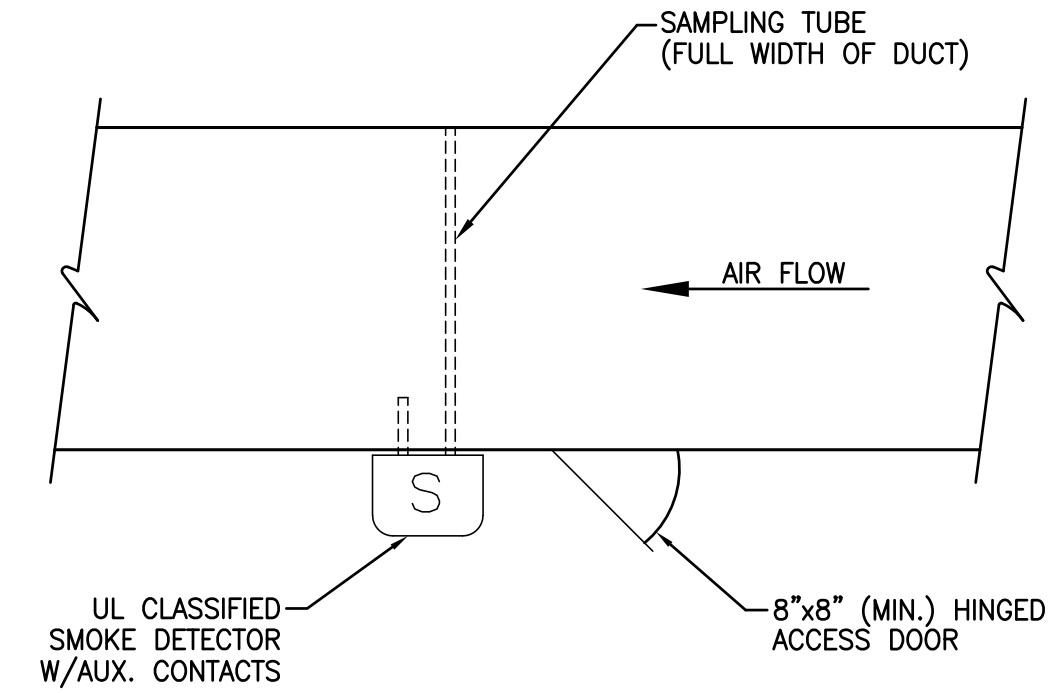
CENTRIFUGAL ROOF EXHAUSTER  
SCALE: NTS



NOTE: CONTRACTOR SHALL VERIFY ALLOWABLE LOAD FOR EACH TRAPEZE HANGER PER SMACNA HVAC DUCT CONSTRUCTION STANDARDS.

DETAIL NO. \_\_\_\_\_

TRAPEZE HANGER  
SCALE: NTS

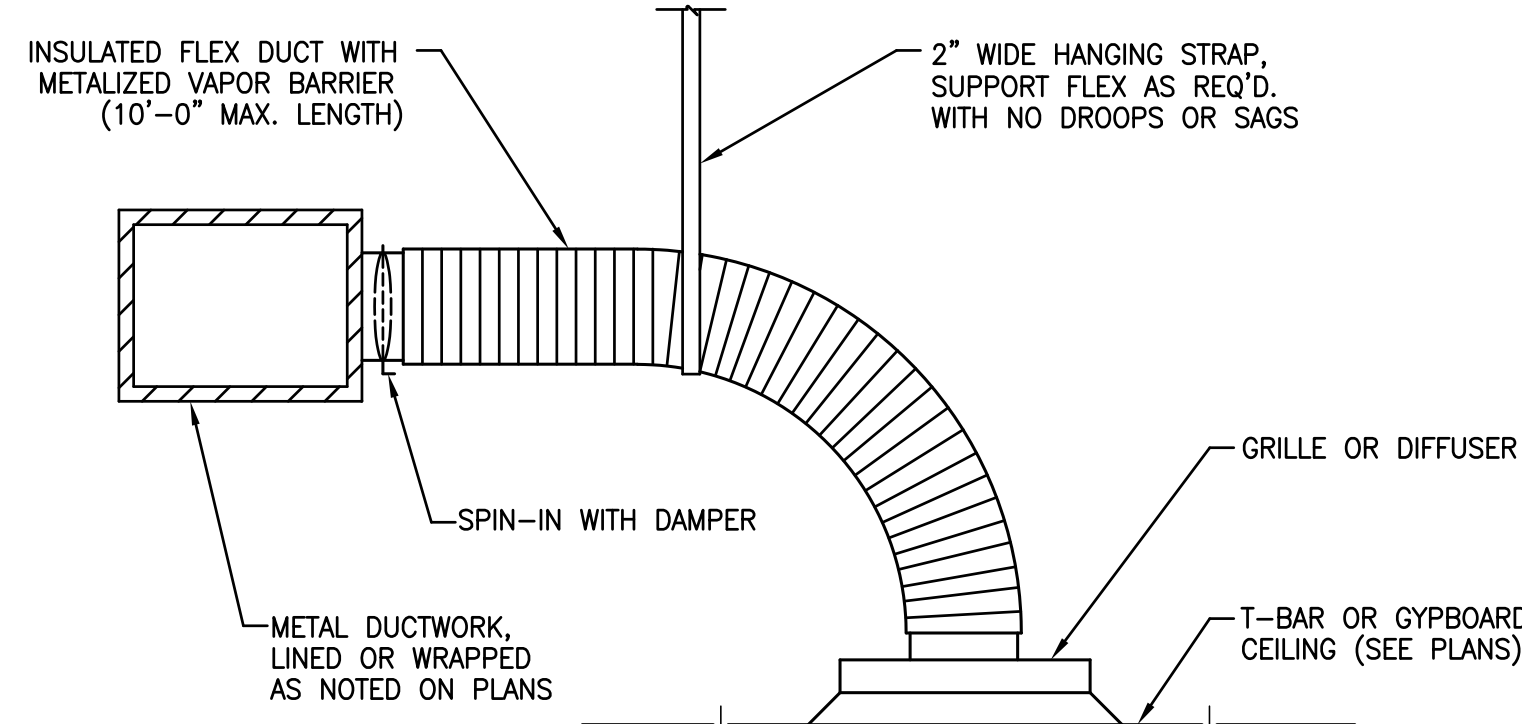


NOTES:

1. IF DUCT WIDTH EXCEEDS 36", SAMPLING TUBE SHALL PENETRATE FAR SIDE OF DUCT & HAVE INTERMEDIATE SUPPORT. PENETRATION SHALL BE SEALED AIRTIGHT.
2. LOCATE SMOKE DETECTOR IN RETURN DUCT UPSTREAM OF OUTSIDE AIR INTAKE IN NON-TURBULANT AIRSTREAM. INSTALL PER MFG'S. DETAILED INSTALLATION INSTRUCTIONS.

DETAIL NO. \_\_\_\_\_

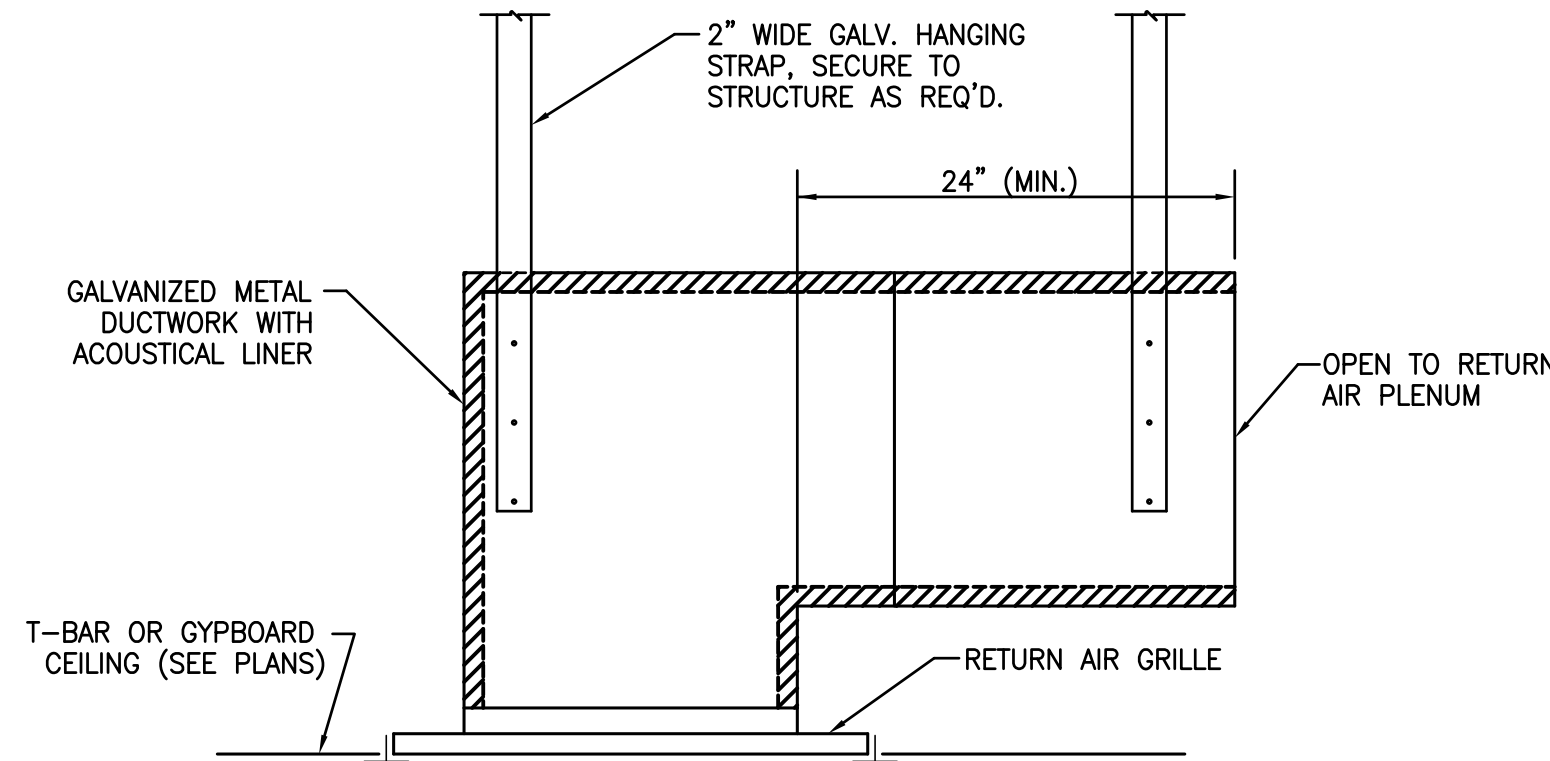
DUCT MOUNTED SMOKE DETECTOR  
SCALE: NTS



NOTE: SECURE ENDS OF FLEX WITH NYLON BANDS AND 3" WIDE METALIZED DUCT TAPE.

DETAIL NO. \_\_\_\_\_

AIR DISTRIBUTION INSTALLATION  
SCALE: NTS

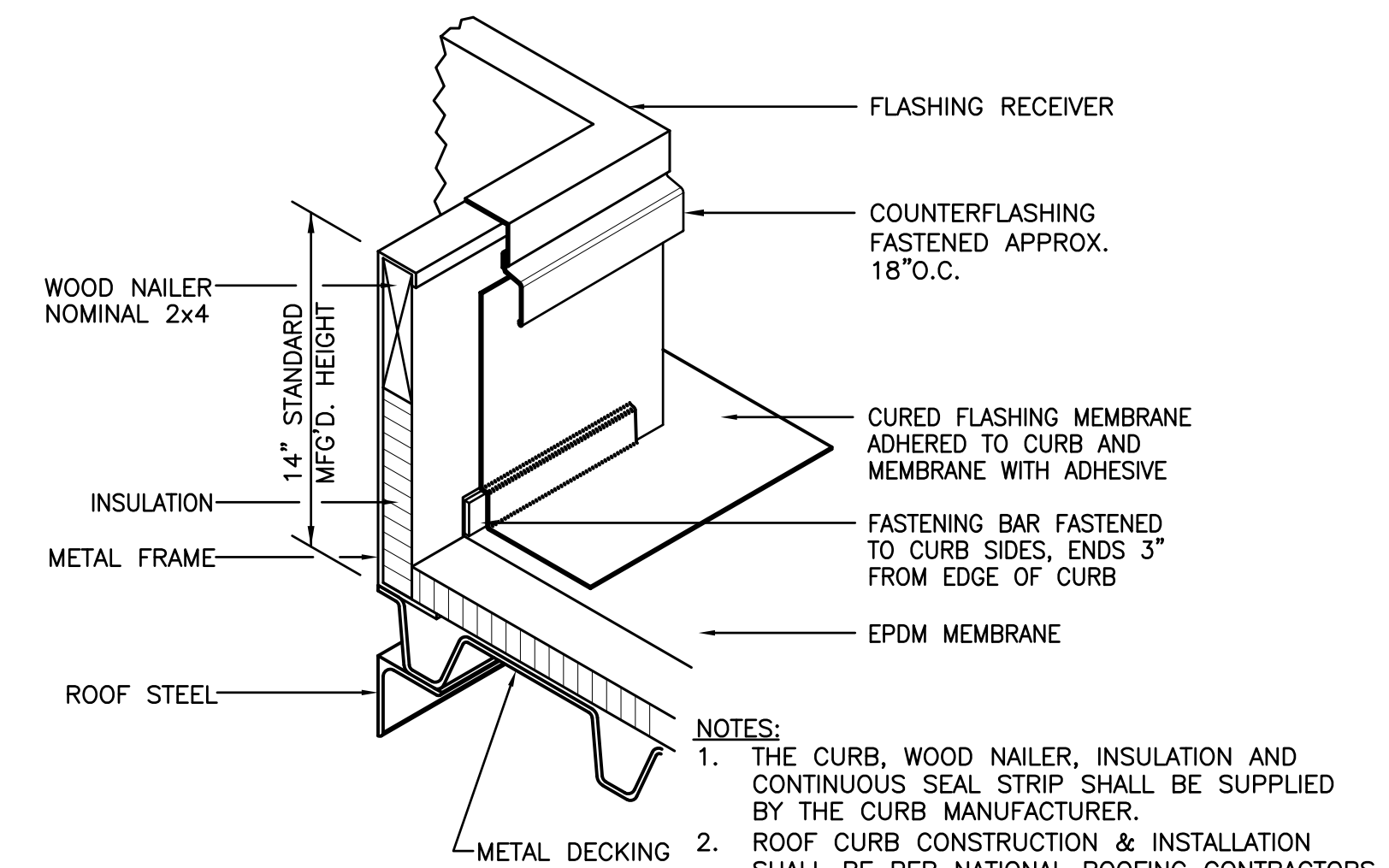


NOTES:

1. SOUND TRAP SHALL BE LINED WITH 1/2" THICK, 3.0 LB. DENSITY ACOUSTICAL LINER, SECURE WITH PINS & ADHESIVE PER SMACNA.
2. METAL DIMENSIONS OF DUCTWORK SHALL MAINTAIN SAME DIMENSIONS AS NECK OF RA GRILLE.

DETAIL NO. \_\_\_\_\_

PLENUM RETURN SOUND TRAP  
SCALE: NTS

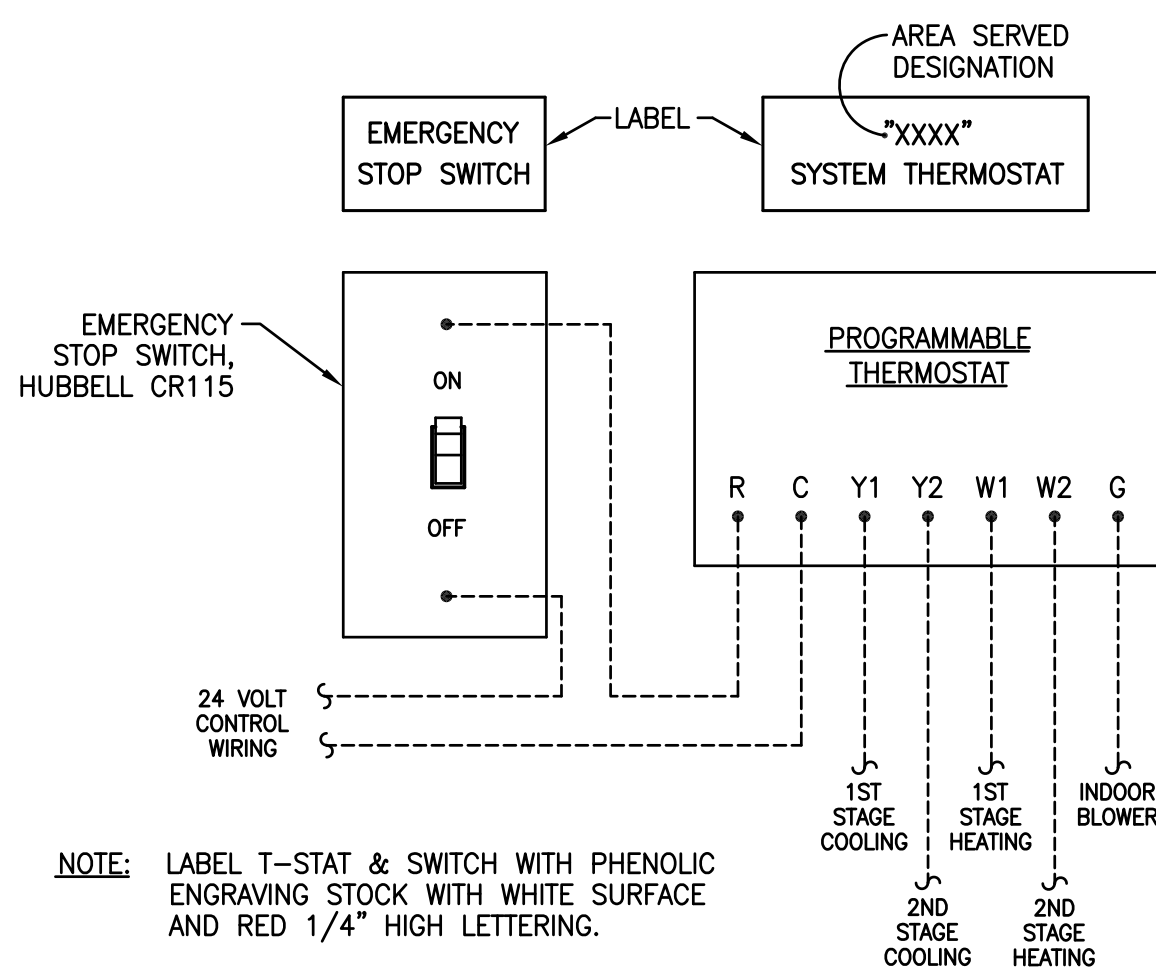


NOTES:

1. THE CURB, WOOD NAILER, INSULATION AND CONTINUOUS SEAL STRIP SHALL BE SUPPLIED BY THE CURB MANUFACTURER.
2. ROOF CURB CONSTRUCTION & INSTALLATION SHALL BE PER NATIONAL ROOFING CONTRACTORS ASSOCIATION STANDARDS FOR EPDM MEMBRANE ROOFING.

DETAIL NO. \_\_\_\_\_

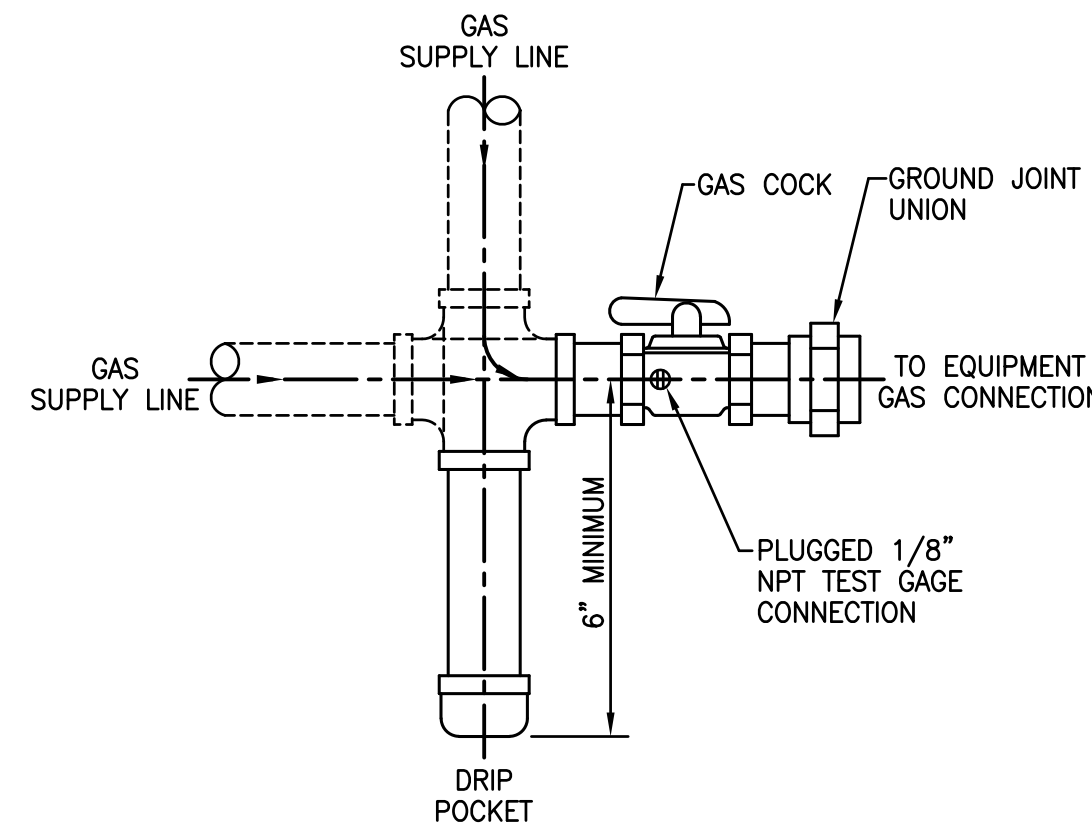
ROOF CURB - EPDM MEMBRANE ROOF  
SCALE: NTS



NOTE: LABEL T-STAT & SWITCH WITH PHENOLIC ENGRAVING STOCK WITH WHITE SURFACE AND RED 1/4" HIGH LETTERING.

DETAIL NO. \_\_\_\_\_

T-STAT/EMERGENCY STOP SWITCH INSTALLATION  
SCALE: NTS



DETAIL NO. \_\_\_\_\_

EQUIPMENT GAS CONNECTION  
SCALE: NTS

DESIGNED BY:  
**EN-TECH ENGINEERING**  
P.O. BOX 11927  
GOLDSBORO, NC 27532  
TEL: (919) 778-9064  
FAX: (919) 778-9069

PREPARED FOR:  
**J. Michael Dunn, AIA**  
**ARCHITECT**  
POST OFFICE BOX 1046, KENNESAW, NC TEL: (919) 587-0121 FAX: (919) 587-1091

PROJECT NO.	PROJECT MGR.
97038	R. BROWN
DRAWN BY	DATE
C. MELTON	9/23/97
REV/DATE	DESCRIPTION

DRAWING TITLE  
**MECHANICAL DETAILS**  
PROJECT/LOCATION  
DIMON INTERNATIONAL, INC. OFFICE RENOVATION  
FARMVILLE, NORTH CAROLINA

SCALE  
NONE  
SHEET NO.  
**M2.1**  
OF 3 REV. 0

ROOFTOP UNIT SCHEDULE																		
MARK	SUPPLY FAN			REQUIRED COOLING CAPACITY				GAS HEAT			VOLT/PH	FLA	MCA	MOCOP	MIN. RATING	MANF.	MODEL	WEIGHT
	SA CFM	OA CFM	EXT SP	MTR HP	EAT(DB/WB)	TOT CAP	SEN CAP	MBH (INPUT)	STAGES	MIN. EFF.								
RT-2	3200	700	0.6*	--	82.9/67.5*	104.4 MBH	85.2 MBH	90.0/125.0	2	82%	208/3Ø	44.9	48.7	60A	10.8 SEER	CARRIER	48HJD009-5	1285 LBS

- NOTES:
1. PROVIDE WITH INTEGRATED PARABLADE ECONOMIZER WITH ENTHALPY SENSOR AND FIELD INSTALLED POWER EXHAUST ACCESSORY.
  2. PROVIDE WITH CARRIER ELECTRONIC PROGRAMMABLE THERMOSTAT (WITH CLEAR LOCKING COVER).
  3. PROVIDE WITH OUTDOOR AIR INLET SCREEN, 14 INCH HIGH ROOF CURB, FILTER FRAME FOR 2 INCH THICK FILTERS, 5-YEAR COMP. WARRANTY AND SHORT CYCLE DELAY.

EXHAUST FAN SCHEDULE												
MARK	TYPE	CFM	SP	MTR HP	VOLT/PH	FLA	MANF.	MODEL	SONES	WEIGHT	NOTES	
CF-1	CEILING	400	125*	1/4	120/1Ø	5.8	GREENHECK	TTA036C4	X	200 LBS	1	

- NOTES:
1. INTERLOCK CEILING FANS WITH LIGHT SWITCHES.
  2. PROVIDE WITH DISC, BDD, BIRD SCREEN & ROOF CAP.
  3. PROVIDE WITH DISC, CURB, BDD & BIRD SCREEN.

VAV UNIT WITH HW HEAT SCHEDULE									
MARK	VAV UNIT			HW COIL			MANF.	MODEL	
	DES CFM	MIN CFM	MODEL	CAPACITY	GPM	WPD			
VA-1	1600	750	STHW	28.8 MBH	1.0	0.8 FT	TRANE	VCWE-17	

- NOTES:
1. X
  2. X

AIR DISTRIBUTION SCHEDULE										
MARK	CFM RANGE	TYPE	FACE	NECK	PATTERN	MAT'L	FINISH	MANF.	MODEL	NOTES
A	0-100	T-BAR - LOUVER SUPPLY	24x24	6x6x6Ø	4-WAY	STEEL	WHITE ENAMEL	CARNES	SKTA	
B	105-220	T-BAR - LOUVER SUPPLY	24x24	9x9x6Ø	4-WAY	STEEL	WHITE ENAMEL	CARNES	SKTA	
C	225-420	T-BAR - LOUVER SUPPLY	24x24	12x12x10Ø	4-WAY	STEEL	WHITE ENAMEL	CARNES	SKTA	
D	425-500	T-BAR - LOUVER SUPPLY	24x24	12x12x12Ø	4-WAY	STEEL	WHITE ENAMEL	CARNES	SKTA	
E	505-700	T-BAR - LOUVER SUPPLY	24x24	15x15x14Ø	4-WAY	STEEL	WHITE ENAMEL	CARNES	SKTA	
F	0-100	SURFACE - LOUVER SUPPLY	9x9	6x6x6Ø	4-WAY	STEEL	WHITE ENAMEL	CARNES	SKSA	
G	105-220	SURFACE - LOUVER SUPPLY	12x12	9x9x8Ø	4-WAY	STEEL	WHITE ENAMEL	CARNES	SKSA	
H	225-420	SURFACE - LOUVER SUPPLY	15x15	12x12x10Ø	4-WAY	STEEL	WHITE ENAMEL	CARNES	SKSA	
J	0-100	T-BAR - PERF RET/EXH	24x24	24x24x6Ø	--	STEEL	WHITE ENAMEL	CARNES	SPRB	
K	105-200	T-BAR - PERF RET/EXH	24x24	24x24x6Ø	--	STEEL	WHITE ENAMEL	CARNES	SPRB	
L	205-400	T-BAR - PERF RET/EXH	24x24	24x24x10Ø	--	STEEL	WHITE ENAMEL	CARNES	SPRB	
M	405-600	T-BAR - PERF RET/EXH	24x24	24x24x12Ø	--	STEEL	WHITE ENAMEL	CARNES	SPRB	
N	605-900	T-BAR - PERF RET/EXH	24x24	24x24x14Ø	--	STEEL	WHITE ENAMEL	CARNES	SPRB	
P	905-1400	T-BAR - PERF RET/EXH	24x24	24x24x16Ø	--	STEEL	WHITE ENAMEL	CARNES	SPRB	
R	0-100	SURFACE - RET/EXH	6x6	6x6x6Ø	--	STEEL	WHITE ENAMEL	CARNES	RSLA	
S	105-200	SURFACE - RET/EXH	8x8	8x8x8Ø	--	STEEL	WHITE ENAMEL	CARNES	RSLA	
T	205-400	SURFACE - RET/EXH	10x10	10x10x10Ø	--	STEEL	WHITE ENAMEL	CARNES	RSLA	
U	405-600	SURFACE - RET/EXH	12x12	12x12x12Ø	--	STEEL	WHITE ENAMEL	CARNES	RSLA	
V	0-1000	FILTER RETURN GRILLE	24x24	--	--	STEEL	WHITE ENAMEL	CARNES	RSLAH	4
W	0-1450	T-BAR - EGGRATE RETURN	24x24	SEE PLANS	--	ALUM.	ANODIZE	CARNES	RAPAH	2

- NOTES:
1. VERIFY AIR DISTRIBUTION TYPE WITH ARCHITECTURAL REFLECTED CEILING PLAN.
  2. PROVIDE EGGRATE RETURN GRILLES WITH LINED SHEET METAL BOX AND ROUND CONNECTION.
  3. PROVIDE WITH RADIATION DAMPER, INSULATING BLANKET & SUPPORT WIRE PER UL. (AIR DISTRIBUTION SHOWN WITH AN "\*" ON PLANS, ONLY)
  4. PROVIDE FILTER GRILLES WITH CLIPS AND 1" THICK FILTERS. (SEE PLANS FOR NECK SIZES)

HVAC LEGEND	
	RIGID RECTANGULAR DUCT
	RIGID RECTANGULAR DUCT WITH LINER
	RIGID ROUND DUCT
	FLEXIBLE DUCT
	OFFSET UP IN DIRECTION OF AIR FLOW
	OFFSET DOWN IN DIRECTION OF AIR FLOW
	90° ELBOW WITH TURNING VANES
	FLEXIBLE CONNECTION
	MANUAL VOLUME DAMPER
	MOTOR OPERATED DAMPER
	SMOKE DETECTOR WITH ACCESS DOOR
	BACK DRAFT DAMPER
	ACCESS DOOR VERTICAL OR HORIZONTAL
	VERTICAL FIRE DAMPER
	HORIZONTAL FIRE DAMPER
	SIDEWALL GRILLE WITH 45° TAP
	SUPPLY DIFFUSER
	SUPPLY DIFFUSER WITH ROUND NECK
	RETURN/EXHAUST GRILLE
	RETURN/EXHAUST GRILLE W/ROUND NECK
	RETURN GRILLE WITH LINED BOX
	SUPPLY SLOT DIFFUSER
	RETURN SLOT GRILLE
	INLINE DUCT FAN
	FAN POWERED TERMINAL UNIT
	VAV TERMINAL UNIT
	ROOF VENTILATOR, INTAKE
	ROOF VENTILATOR, EXHAUST
	POWERED ROOF EXHAUSTER
	CEILING EXHAUST FAN
	UNIT HEATER
	WALL THERMOSTAT FOR AH-3
	TEMPERATURE SENSOR FOR VA-7
	HUMIDITY SENSOR FOR AC-1
	PRESSURE SENSOR
	AIR DISTRIBUTION MARK "B", 200 CFM
	EQUIPMENT MARK (SEE SCHEDULES)
	FLOW DIRECTION ARROW
	INDICATES NEW/EXISTING CONNECTION
	GAS PIPING
	CONDENSATE PIPING
	GATE VALVE
	GAS COCK
	UNION
	REDUCER

**MECHANICAL NOTES:**

1. MECHANICAL PLANS ARE INTENDED TO PROVIDE INFORMATION FOR INSTALLATION OF A COMPLETE OPERATING MECHANICAL SYSTEM. PROVIDE ALL ESSENTIAL LABOR, MATERIALS & DEVICES REQUIRED TO PRODUCE A QUALITY END PRODUCT.
2. DESIGN COORDINATION WITH BUILDING COMPONENTS & OTHER TRADES HAS BEEN PERFORMED. CONTRACTOR SHALL PROVIDE REQUIRED PLANNING, COORDINATING AND SEQUENCING OF INSTALLATION OF MECHANICAL EQUIPMENT & MATERIALS WITH BUILDING COMPONENTS & OTHER TRADES.
3. ALL WORK SHALL COMPLY WITH LOCAL, STATE & NATIONAL CODES. WORKMANSHIP SHALL MEET OR EXCEED INDUSTRY STANDARDS.
4. PROTECT ALL NEW MATERIALS FROM THE WEATHER IN STORAGE TRAILERS OR PROVIDE SUITABLE COVERING.
5. FABRICATE AND INSTALL DUCT PER SMACNA STANDARDS FOR 2 INCH WC WITH GALVANIZED METAL (26 GAUGE MINIMUM). ALL RADIUS ELBOWS & TEES SHALL HAVE CENTERLINE RADIUS OF 1.5 X DUCT WIDTH. ALL SQUARE ELBOWS & TEES SHALL HAVE TURNING VANES.
6. ALL EXPOSED & EXTERIOR DUCT SHALL BE CONSTRUCTED OF PAINT GRIP GALVANIZED METAL. SEAL ALL JOINTS & SEAMS WEATHERTIGHT USING SMACNA APPROVED DUCT SEALER WITH UV PROTECTION.
7. ROUND RUNOUTS SHALL HAVE SPIN-INS WITH DAMPERS, RECTANGULAR BRANCH DUCTS SHALL HAVE 45 DEGREE TAPS WITH AIR EXTRACTORS AND ALL TEES SHALL HAVE SPLITTER DAMPERS. PROVIDE ANY OTHER DEVICES REQUIRED TO BALANCE AIR SYSTEM.
8. ALL FLEX DUCT SHALL HAVE METALIZED VAPOR BARRIER EQUAL TO THERMAFLEX M-KE. FLEX DUCT SHALL NOT EXCEED 10 FEET IN LENGTH. BOTH ENDS SHALL BE SECURED WITH NYLON BANDS AND METALIZED DUCT TAPE PER MFGS. RECOMMENDATIONS.
9. RIGID ROUND AND RECTANGULAR DUCT SHALL BE EXTERNALLY INSULATED WITH 2 INCH THICK 3/4 LB. DENSITY FIBERGLASS BLANKET WITH FSK VAPOR BARRIER. STAPLE AND SEAL ALL JOINTS WITH 3 INCH WIDE METALIZED DUCT TAPE EQUAL TO SHURFLEX SF-683.
10. EXPOSED & EXTERIOR DUCT SHALL BE INTERNALLY LINED WITH 1 INCH THICK, 1.5 LB. DENSITY LINER. SECURE WITH PINS & ADHESIVE PER SMACNA STANDARDS. DUCT SIZES ON PLANS ARE METAL DIMENSIONS AND INCLUDE ALLOWANCES FOR LINER.
11. INSULATE & SEAL ALL GRILLE & DIFFUSER NECKS TO MAINTAIN VAPOR BARRIER AND ELIMINATE CONDENSATION.
12. CONDENSATE TRAPS FOR ALL AC UNITS SHALL BE SIZED AS RECOMMENDED BY UNIT MFG. CONDENSATE PIPING AND TRAPS SHALL BE SCHEDULE 40 PVC ROUTED TO DRYWELL OR FLOOR DRAIN. INSULATE INTERIOR PIPING WITH 1/2 INCH THICK UNICELLULAR INSULATION.
13. REFRIGERANT PIPING SHALL BE TYPE ACR COPPER WITH SILVER SOLDERED JOINTS. SIZE, INSULATE AND INSTALL PER EQUIPMENT INSTALLATION INSTRUCTIONS.
14. GAS PIPING SHALL BE A-53 SCHEDULE 40 BLACK STEEL WITH MALLEABLE FITTINGS. PIPING BELOW GRADE SHALL HAVE FRP COATING AND ABOVE GRADE SHALL BE PRIMED & PAINTED. GROUND ALL GAS PIPING ABOVE GRADE & WITHIN BUILDING.
15. ALL PIPING SHALL BE SUPPORTED & SECURED WITH SUITABLE HANGERS, STRAPS OR TREATED BLOCK SUPPORTS. SUPPORT WITH NO DROOPS OR SAGS.
16. POWER WIRING, DISCONNECTS & STARTERS NOT FURNISHED WITH HVAC EQUIPMENT AND FINAL CONNECTIONS SHALL BE BY ELECTRICAL CONTRACTOR.
17. CONTROL WIRING, RELAYS AND INTERLOCKING DEVICES SHALL BE PROVIDED BY MECHANICAL CONTRACTOR.
18. ON AIR HANDLERS SUPPLYING GREATER THAN 2000 CFM, PROVIDE AND INSTALL U.L. LISTED SMOKE DETECTORS IN RETURN DUCTS TO SHUTDOWN UNITS UPON SENSING SMOKE. CONTRACTOR SHALL TEST ALL SMOKE DETECTORS.
19. TEMPERATURE CONTROLS FOR EACH HEATING-COOLING SYSTEM SHALL CONSIST OF A 7-DAY PROGRAMMABLE HEATING-COOLING THERMOSTAT WITH HEAT-OFF-COOL-AUTO SYSTEM SWITCH & AUTO-ON FAN SWITCH. MOUNT THERMOSTATS 5 FEET A.F.F.
20. INSTALL EQUIPMENT TO FACILITATE SERVICING, MAINTENANCE & REPAIR IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AS WELL AS SPECIFIC INSTRUCTIONS ON PLANS.
21. CONTRACTOR SHALL BALANCE AIR SYSTEM TO QUANTITIES INDICATED ON PLANS.
22. ALL EQUIPMENT & SYSTEMS SHALL BE WASHED, MECHANICAL AREAS CLEANED AND PAINTED SURFACES TOUCHED UP TO MATCH FACTORY APPLIED FINISHES.
23. CONTRACTOR SHALL INSTALL A NEW SET OF PLEATED FILTERS BEFORE TURNING BUILDING OVER TO OWNER.
24. CONTRACTOR SHALL PROVIDE BUILDING OWNER WITH A COMPLETE OPERATING & MAINTENANCE MANUAL INCLUDING EQUIPMENT BASIC DATA, CONTROL INFORMATION, ROUTINE MAINTENANCE ACTIONS AND SERVICE AGENCIES NAME, PHONE NUMBER & ADDRESS.
25. GUARANTEE ALL EQUIPMENT, MATERIALS AND INSTALLATION FREE OF DEFECTS FOR A PERIOD OF 1 YEAR AFTER DATE OF ACCEPTANCE. EXTENDED GUARANTEES ON EQUIPMENT SHALL BE AS PUBLISHED ON MANUFACTURER'S EXTENDED WARRANTIES.

DESIGNED BY:

TEL: (919) 778-0064  
P.O. BOX 11927  
GOLDSBORO, NC 27532  
FAX: (919) 778-9069

PREPARED FOR:

J. Michael Dunn, AIA  
ARCHITECT

POST OFFICE BOX 1046, KENNESAW, NC TEL: (919) 587-0121 FAX: (919) 587-1091

PROJECT NO.	PROJECT MGR.
9703B	R. BROWN
DRAWN BY	DATE
C. MELTON	9/23/97
REV/DATE	DESCRIPTION

DRAWING TITLE

**MECHANICAL SCHEDULES,  
NOTES & LEGEND**

PROJECT/LOCATION

DIMON INTERNATIONAL, INC. OFFICE RENOVATION  
FARMVILLE, NORTH CAROLINA

SCALE

NONE

SHEET NO.

**M3.1**

OF 3 REV. 0