

1 TYPICAL DUCT FITTING DETAIL
SCALE: N.T.S.

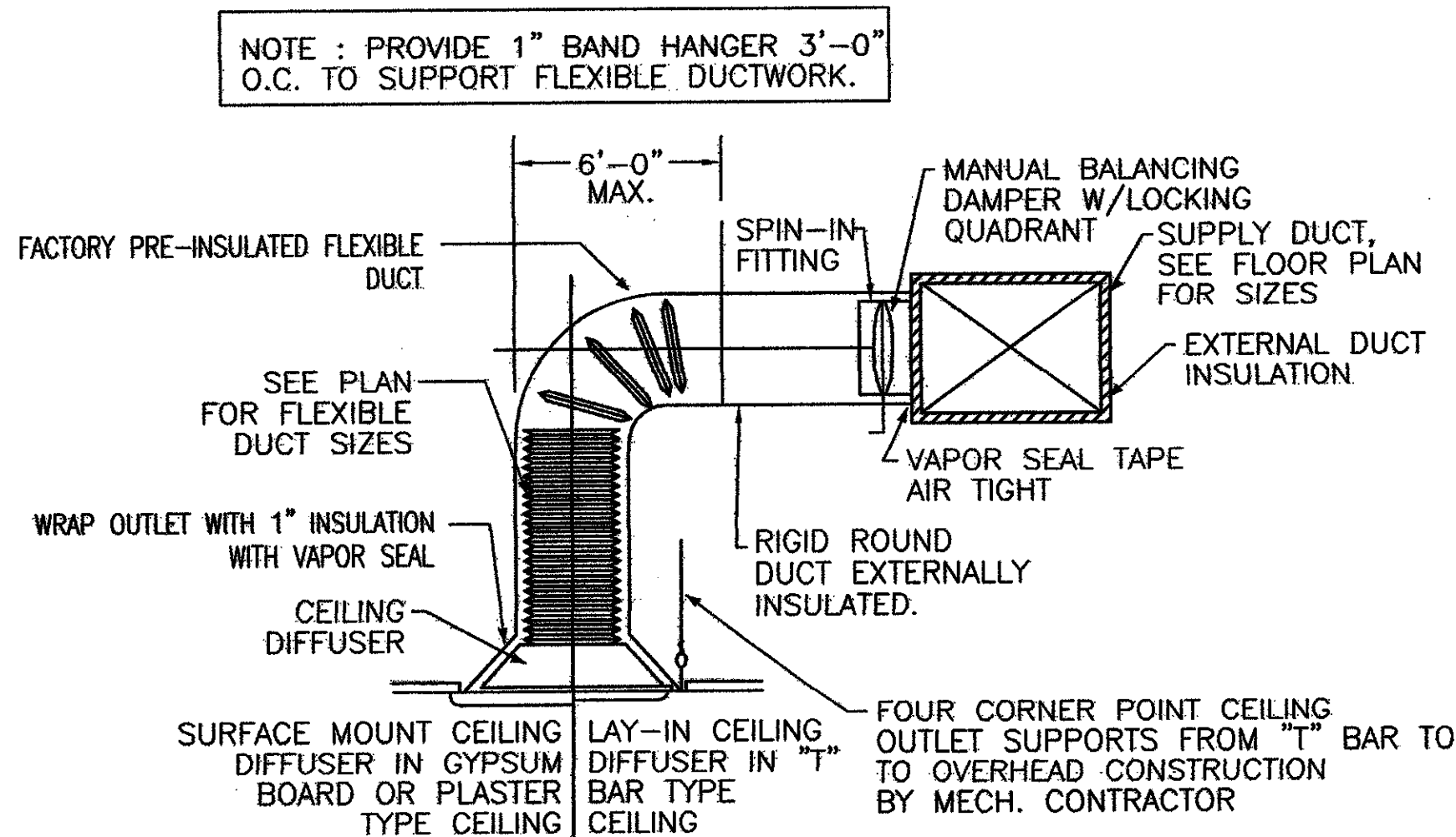
HVAC GENERAL NOTES:

1. CONTRACTOR SHALL PROVIDE ALL MATERIAL, LABOR AND EQUIPMENT FOR A COMPLETE AND OPERATING SYSTEM.
2. ALL WORK AND MATERIALS SHALL COMPLY WITH ALL APPLICABLE STATE, CITY, AND LOCAL CODES, AND THE REQUIREMENTS OF NFPA 90A AND THE STATE FIRE MARSHAL.
3. ALL CUTTING AND PATCHING SHALL BE DONE BY THIS CONTRACTOR.
4. CONTRACTOR SHALL PAY ALL APPLICABLE FEES FOR THE PERMIT AND INSPECTION.
5. TEST AND BALANCE HVAC SYSTEM, PROVIDE WRITTEN REPORT.
6. ALL RECTANGULAR SUPPLY AIR DUCT SHALL BE INSULATED WITH 2" THICK FIBERGLAS WITH 0.75 LB DENSITY EXTERNAL INSULATION. THE RECTANGULAR DUCT DIMENSIONS INDICATED ARE SHEETMETAL SIZES. RETURN AIR SHALL BE INSULATED WITH 1.5" THICK EXTERNALLY. MECHANICAL ROOM EXPOSED DUCT SHALL BE INSULATED WITH 2" BOARD INSULATION. EXHAUST AND OUTSIDE DUCTS SHALL BE INSULATED WITH 1" THICK EXTERNALLY.
7. DUCT MATERIAL SHALL CONFORM WITH NFPA 90A AND GAUGES SHALL CONFORM TO SMACNA STANDARD.
8. DUCTS PENETRATING ROOF TO BE FLASHED AND COUNTER FLASHED, AND PROVIDED WITH CONTINUOUS CANT STRIPS. PROVIDE PLASINGS FOR EACH PIPE AT ROOF PENETRATIONS FOR ALL FLAT ROOFS.
9. REFRIGERANT PIPING SHALL BE ASTM B-280 SEAMLESS COPPER TUBING (ACR) TYPE L, HARD DRAWN WITH SOLDER JOINT FITTINGS. ALL REFRIGERANT PIPING SHALL BE SIZED AND INSTALLED AS PER EQUIPMENT MANUFACTURERS. PROVIDE FIELD INSTALLED FILTER DRYER IN LIQUID LINES.
10. REFRIGERANT SUCTION AND METAL CONDENSATE DRAIN LINES SHALL BE INSULATED WITH 3/4" THICK FORMED TUBULAR ELASTOMERIC AND CONFORM WITH NFPA 90A.
11. ALL DRAIN AND VENT PIPING SUBJECT TO CONDENSATION TO BE BRASS-COOLING COILS, PUMPS, ETC.
12. LOW VELOCITY AND PRESSURE FLEXIBLE DUCT SHALL BE FACTORY FABRICATED AND MUST BE INNER LINED INSULATION AND OUTER JACKETED, U.L. LISTED AT FLAME SPREAD RATE NOT OVER 25 AND SMOKE DEVELOPER RATE OVER 50 AND COMPLYING WITH NFPA 90A.
13. PROVIDE DUCT TYPE SMOKE DETECTOR IN DISCHARGE OF AIR HANDLING UNIT WITH 2000 CFM AND OVER CAPACITY AND INTERLOCK WITH UNIT CONTROL SYSTEM TO STOP THE FAN IN THE EVENT OF DETECTING SMOKE IN THE SYSTEM. INSTALL DUCT DETECTOR IN SUPPLY AND RETURN AIR FOR UNIT WITH 15,000 CFM AND OVER CAPACITY AND CONNECT TO FIRE ALARM SYSTEM AS PER NFPA-90A. COORDINATE WITH FIRE ALARM SYSTEM.
14. INSULATE ALL ROUND RIGID DUCT WITH 1 1/2" THICK FIBERGLASS, 0.75LB DENSITY WITH ALUMINUM VAPOR BARRIER
15. REFER TO SPECIFICATION FOR DETAIL MATERIAL SPECIFICATION DENSITY WITH ALUMINUM VAPOR BARRIER
16. ALL PIPE SUBJECT TO CONDENSATION SHALL BE BRASS.
17. INSULATE ALL PIPING AND DUCTS AS SPECIFIED.

HVAC SCHEDULE

— CHWS —	CHILLED WATER SUPPLY
— CHWR —	CHILLED WATER RETURN
	DIRECTION OF FLOW
	TOP CONNECTION 45° OR 90°
	CAP ON END OF PIPE
	RISE OR DROP IN PIPE
	UNION
	STRAINER WITH BLOW DOWN VALVE
	GATE VALVE
	CHECK VALVE
	BALANCING VALVE
	THREE WAY MODULATING VALVE
	TWO WAY MODULATING VALVE
	SAFETY OR PRESSURE RELIEF VALVE
	BALL VALVE
	TEMPERATURE AND PRESSURE PLUG
	CIRCUIT SETTER
	STANDARD BRANCH, RETURN
	DUCT TRANSITION
	SUPPLY AIR DIFFUSER W/ DIRECTION OF THROWN
	RETURN AIR GRILLE
	SPIN-IN FITTING W/ DAMPER AND LOCKING DEVICE
	MOTORIZED DAMPER
	MANUAL VOLUME DAMPER IN DUCT
	SPLITTER DAMPER & TURNING VANES IN ELBOW
	SWITCH
	THERMOSTAT
	DUCT SMOKE DETECTOR
	FIRE DAMPER
	FIRESTAT
	CD
	O.A.
	SR
	SD
	UTR
	U/C
	DG
	TG
	RAG
	EF
	SF
	CH
	P
	VAV

(SOME SYMBOLS MAY NOT APPLICABLE)

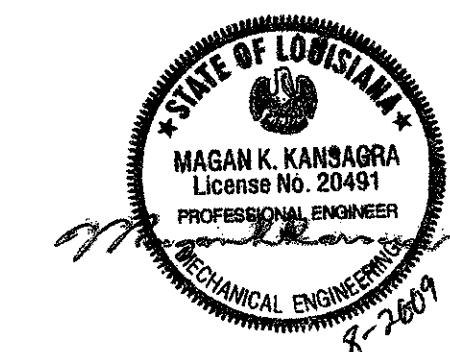


2 CEILING SUPPLY DIFFUSER DETAIL
SCALE: N.T.S.

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