



REVISIONS

NO.	ISSUE	DATE

ISSUED FOR CONSTRUCTION		04/18/2019
DATE		
SHEET INFORMATION		
DATE		07/03/2018
JOB NUMBER		17103.00
TITLE		

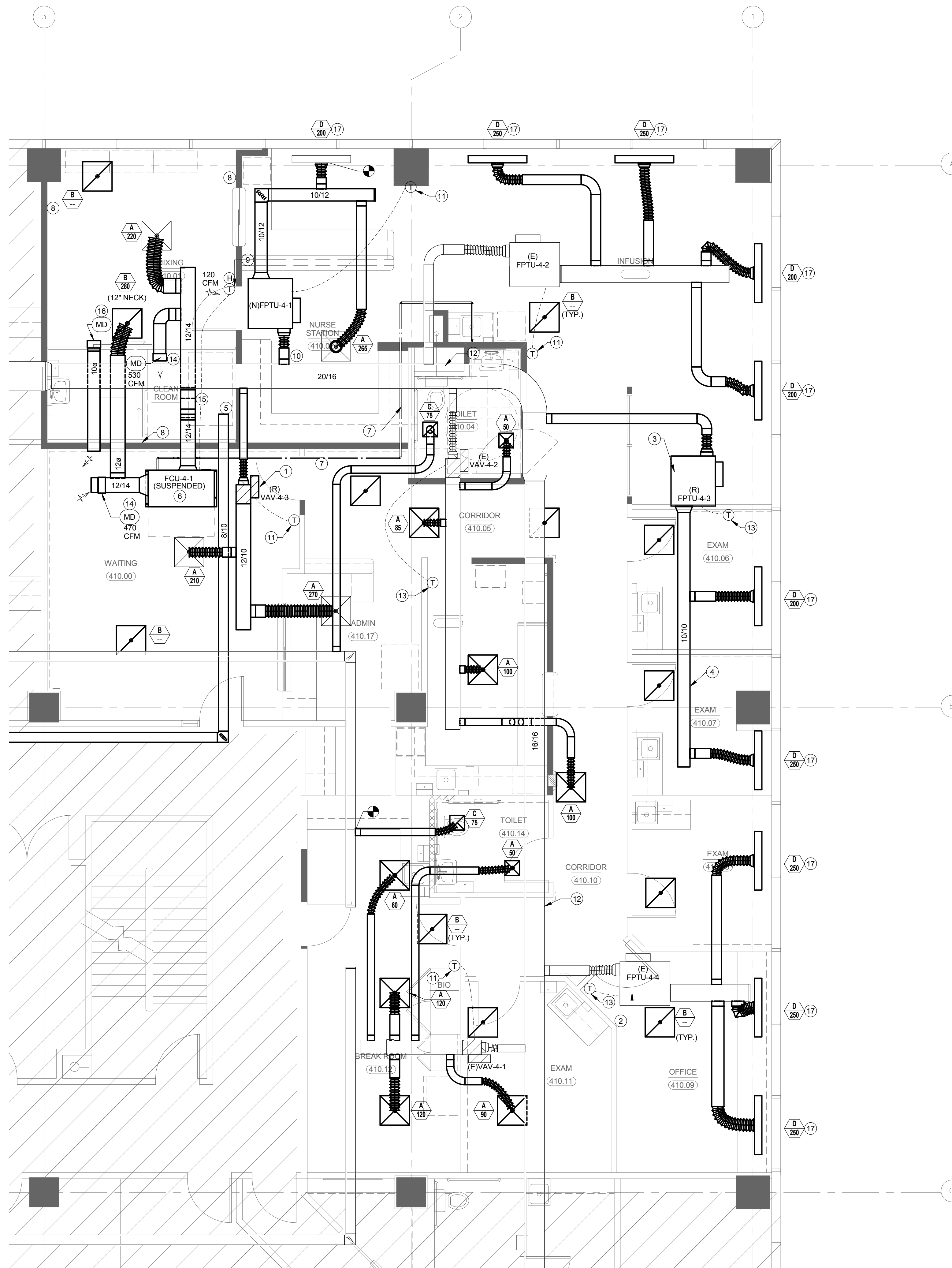
MECHANICAL
PLAN

MECHANICAL GENERAL NOTES

- REFER TO DETAIL PLANS AND SCHEDULE PLANS FOR ALL WORK ASSOCIATED WITH THIS PLAN. ALL WORK SHALL COMPLY WITH BASE BUILDING MASTER SPECIFICATIONS.
- FLEXIBLE DUCTWORK LENGTHS TO DIFFUSERS SHALL NOT EXCEED 6'-0". USE INSULATED RIGID ROUND DUCTWORK WHERE REQUIRED. REFER TO NECK SIZE SCHEDULE FOR FLEXIBLE DUCTWORK CONNECTION SIZE TO DIFFUSER.
- FLEXIBLE DUCTWORK LENGTHS TO TERMINAL UNITS SHALL NOT EXCEED 48". USE INSULATED RIGID ROUND DUCTWORK WHERE REQUIRED. REFER TO RUNOUT TO TERMINAL BOX SCHEDULE FOR FLEXIBLE DUCTWORK CONNECTION SIZE TO TERMINAL DEVICE.
- THE CONTRACTOR SHALL ENSURE THAT NEW AND EXISTING RETURN AIR OPENINGS ARE NOT OBSTRUCTED. AIR IS RETURNED TO THE CEILING PLenum AND THEN TO THE AIR HANDLING UNIT THROUGH RETURN AIR OPENINGS AND GRILLES. ARCHITECTURAL OPENINGS NOT USED FOR AIR SUPPLY SHALL BE USED FOR RETURN AIR.
- THE ENTIRE AIR SUPPLY SYSTEM SHALL BE BALANCED TO THE AIR QUANTITIES INDICATED ON THIS DRAWING BY AN INDEPENDENT AIR BALANCE CONTRACTOR. THE AIR BALANCE CONTRACTOR SHALL SUBMIT NEBB CERTIFIED AIR BALANCE REPORTS TO ENGINEER AND OWNER FOR REVIEW.
- STANDARD DETAILS ILLUSTRATED ON THE DRAWINGS SHALL BE APPLIED IN ALL CASES WHERE THE FEATURE OCCURS IN THE SYSTEM DESIGN.
- THE MECHANICAL CONTRACTOR SHALL VISIT THE SITE AND BE RESPONSIBLE FOR COORDINATING WITH ALL OTHER TRADES PRIOR TO THE CONSTRUCTION OF DUCTWORK OR INSTALLATION OF MECHANICAL EQUIPMENT.
- DRAWINGS ARE SCHEMATIC IN NATURE AND SHALL NOT BE SCALED. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL DUCTWORK AND PIPING WITH OTHER TRADES, AND PROVIDING OFFSETS IN DUCTWORK AND PIPING AS REQUIRED. ALL DUCTWORK SHALL BE ROUTED AS CLOSE TO STRUCTURE AS POSSIBLE WITH MAIN TRUNK DUCTS ABOVE BRANCH DUCTS TO CEILING DEVICES.
- ALL DUCTWORK SIZES SHOWN ARE CLEAR INSIDE DIMENSIONS IN INCHES. SUPPLY AND RETURN DUCTWORK IS EXTERNALLY INSULATED UNLESS OTHERWISE INDICATED. CONTRACTOR IS REQUIRED TO COORDINATE ACTUAL DUCT ROUTING AND SIZING WHEN NECESSARY FOR MAINTAINING REQUIRED CLEARANCES IN COORDINATION WITH OTHER TRADES. RESIZING OF DUCT, IF NECESSARY, SHALL BE BASED ON EQUAL FRICTION METHOD.
- MAJOR EQUIPMENT SHOWN ON PLANS ILLUSTRATE THE GENERAL ARRANGEMENT AND SPACE ALLOCATIONS. THE CONTRACTOR SHALL VERIFY THE SPACE REQUIREMENTS FOR EACH SYSTEM COMPONENT USING MANUFACTURER CERTIFIED SHOP DRAWINGS AND MAKE THE NECESSARY ADJUSTMENTS IN EQUIPMENT PLACEMENT AND CONNECTION IN ORDER TO ACCOMMODATE THE EXACT EQUIPMENT INSTALLED.
- CEILING SUPPLY DIFFUSERS ARE FOUR-WAY THROW UNLESS NOTED ON THE DRAWINGS WITH AIR FLOW ARROWS.
- COORDINATE THE MECHANICAL EQUIPMENT ABOVE CEILING WITH LIGHT FIXTURES, ELECTRICAL EQUIPMENT, AND PIPING TO MAINTAIN CLEARANCE FOR MAINTENANCE.
- FAN POWERED TERMINAL UNITS (FPTU) SHALL BE SUSPENDED AS HIGH AS POSSIBLE, TIGHT TO STRUCTURE. COORDINATE FPTU LOCATION WITH STRUCTURAL AND ARCHITECTURAL ELEMENTS TO MAINTAIN REQUIRED ACCESS TO MOTOR, FILTER, ELECTRICAL CONTROL PANEL AND ACCESS PANEL ON UNIT. CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING WORKING CLEARANCES FREE OF PIPING, CONDUIT, DUCTS AND OTHER OBSTRUCTIONS. REFER TO DETAILS FOR ADDITIONAL INFORMATION.
- ALL FPTU'S ARE NEW UNLESS NOTED OTHERWISE. NEW DUCTWORK SHOWN WITH BOLD LINES. EXISTING DUCTWORK IS SHOWN WITH THIN LINES.
- ALL WORK SHALL COMPLY WITH BUILDING MANAGEMENT'S CONTRACTOR RULES AND REGULATIONS.

MECHANICAL KEYED NOTES

- RE-INSTALL EXISTING VAV TERMINAL UNIT AS SHOWN. COORDINATE LOCATION WITH NEW PARTITION. REFER TO M3.01 FOR INSTALLATION DETAIL.
- FIELD VERIFY EXACT LOCATION OF EXISTING FAN POWERED TERMINAL UNIT AND RELOCATE FROM ABOVE PARTITION. COORDINATE WITH ELECTRICAL AS REQUIRED.
- RE-INSTALL EXISTING FPTU AND CONNECT TO EXISTING PRIMARY DUCT. PROVIDE TRANSITION AS REQUIRED AND CONNECT TO EXISTING SECONDARY DUCT. REFER TO M3.01 FOR INSTALLATION DETAIL.
- NEW SECONDARY DUCT. EXTERNALLY INSULATE SECONDARY SUPPLY.
- PROVIDE THIMBLE AS REQUIRED AND CONNECT NEW EXHAUST DUCT TO FUME HOOD. ROUTE DUCT DOWN PROVIDE SQUARE-TO-ROUND TRANSITION AT CONNECTION AS REQUIRED.
- SUSPEND UNIT FROM BOTTOM OF STRUCTURE AND SUPPORT WITH ALL THREADED RODS AND SPRING VIBRATION ISOLATORS. SIZE ISOLATORS FOR 1" DEFLECTION. PROVIDE CONDENSATE DRAIN PAN WITH FLOAT SWITCH BENEATH ENTIRE UNIT. FLOAT SWITCH SHALL DISABLE UNIT UPON COLLECTION OF WATER WITHIN DRAIN PAN. PROVIDE DRAIN PAN WITH GROSS-BREAK AND THREADED HOSE CONNECTION CAPPED FOR FUTURE USE. RE: DETAILS FOR ADDITIONAL INFORMATION.
- PROVIDE 1" CONDENSATE DRAIN PIPE AND ROUTE TO INDIRECT WASTE RECEPTOR (IWR) LOCATED BELOW SINK. RE: PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
- GENERAL CONTRACTOR SHALL ENSURE TO SEAL ALL WALL AND CEILING PENETRATIONS OF MIXING ROOM TO PROVIDE AN AIR-TIGHT CONSTRUCTION. THIS INCLUDES, BUT IS NOT LIMITED TO, DUCTWORK, CONDUIT, CONTROL WIRING, JUNCTION BOXES, LIGHT FIXTURES, AND SPRINKLER PIPING.
- PROVIDE NEW 7-DAY PROGRAMMABLE THERMOSTAT AND COORDINATE FINAL LOCATION WITH ARCHITECT/TENANT PRIOR TO INSTALLATION.
- INSTALL SIDE TAKE-OFF FITTING WITHOUT VOLUME CONTROL DAMPER. RE: M3.01 TERMINAL UNIT INSTALLATION DETAILS.
- RELOCATE EXISTING THERMOSTAT AS SHOWN. FIELD VERIFY EXACT UNIT SERVED AND RECALIBRATE AS REQUIRED. COORDINATE THERMOSTAT LOCATION WITH ARCHITECT PRIOR TO INSTALLATION.
- EXISTING BASE BUILDING DUCTWORK SHOWN SCREENED FOR COORDINATION. FIELD VERIFY EXACT LOCATION AND ROUTING.
- EXISTING THERMOSTAT SHOWN FOR COORDINATION AND SHALL REMAIN. FIELD VERIFY EXACT LOCATION.
- PROVIDE MANUAL DAMPER AND BALANCE FOR AIR FLOW INDICATED.
- PROVIDE TRANSITION AND ROUTE DUCT DOWN BELOW EXISTING PRIMARY SUPPLY DUCT AS SHOWN.
- PROVIDE BAROMETRIC RELIEF DAMPER BALANCED TO RELIEVE "300" CFM WHEN EXHAUST FAN EF-R-1 IS OFF.
- REBALANCE EXISTING PERIMETER SLOT DIFFUSER TO AIR FLOW INDICATED. PROVIDE NEW DIFFUSERS AS REQUIRED. RE: M2.01 FOR ADDITIONAL INFORMATION.



1 MECHANICAL PLAN
1/4" = 1'-0"

DIFFUSER SIZING SCHEDULE / LEGEND							
DIFFUSER DESIGNATION	DESCRIPTION	NECK SIZE (INCHES) CFM RANGE					
		6"Ø	8"Ø	10"Ø	12"Ø	14"Ø	16"Ø
A	ARCHITECTURAL SQUARE PANEL SUPPLY AIR DEVICE: TITUS MODEL OMNI (OR EQUAL BY LISTED MANUFACTURER). 12"X12" OR 24"X24" FACE AREA. AIR PATTERN SHALL BE 4-WAY THROW UNLESS OTHERWISE NOTED ON DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPE & CONSTRUCTION DETAILS. FLEX SUPPLYING DIFFUSER TO BE SAME AS NECK SIZE.	0-125	130-220	225-345	350-500	505-750	15"Ø 755-850
B	ARCHITECTURAL SQUARE PANEL RETURN/EXHAUST AIR DEVICE: TITUS MODEL OMNI (OR EQUAL BY LISTED MANUFACTURER). 24"X24" FACE AREA. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPE & CONSTRUCTION DETAILS. FLEX SERVING GRILLE TO BE SAME AS NECK SIZE. USE 15"Ø NECK FOR UNDUCTED APPLICATIONS.	0-120	125-220	225-345	335-450	455-530	15"Ø 535-700
C	ARCHITECTURAL SQUARE PANEL RETURN/EXHAUST AIR DEVICE: TITUS MODEL OMNI (OR EQUAL BY LISTED MANUFACTURER). 12"X12" FACE AREA. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPE & CONSTRUCTION DETAILS. FLEX SERVING GRILLE TO BE SAME AS NECK SIZE. USE 15"Ø NECK FOR UNDUCTED APPLICATIONS.	-	-	-	-	-	-
D	PLENUM SLOT DIFFUSER: TITUS MODEL N-1 (OR EQUAL BY LISTED MANUFACTURER) STEEL SLOT WITH BLACK FINISH. 3/4" SLOT WIDTH. LENGTH SHALL BE 48" WITH 15" NECK UNLESS SPECIFIED OTHERWISE IN THE PLANS. REFER TO ARCHITECTURAL PLANS FOR CEILING TYPE AND CONSTRUCTION DETAILS.	-	-	-	-	-	-

REFER TO MECHANICAL FLOOR PLANS FOR SIZES AND AIR QUANTITY.
NOTE: 1. PROVIDE SUBMITTALS ON ALL AIR DISTRIBUTION DEVICES TO BE FURNISHED.
2. FOR 3-WAY, 2-WAY AND 1-WAY THROW PROVIDE OPTIONAL BLOW CLIPS MODEL "BP".

LEGEND OF MECHANICAL SYMBOLS			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SUPPLY DUCT VIEW INTO DUCT		EXISTING S.A. DIFFUSER
	SUPPLY DUCT VIEW HEEL OF ELBOW		EXISTING R.A. DIFFUSER
	RETURN OR EXHAUST DUCT VIEW INTO DUCT		EXISTING FLEX DUCT
	RETURN OR EXHAUST DUCT VIEW HEEL OF ELBOW		TENANT FLEX DUCT
	SQUARE TO ROUND TRANSITION		THERMOSTAT/REMOTE SENSOR
	SQUARE ELBOW WITH TURNING VANES		CO2 MONITOR
	RADIUS ELBOW WITHOUT TURNING VANES	(D)	DEMOLISH
	SUPPLY SIDEWALL REGISTER	(E)	EXISTING
	RETURN OR EXHAUST SIDEWALL REGISTER	(R)	RELOCATED
	SQUARE CEILING DIFFUSER	R.A.	RETURN AIR
	RETURN AIR GRILLE	S.A.	SUPPLY AIR
	RETURN OR EXHAUST AIR REGISTER W/ SQUARE NECK	E.A.	EXHAUST AIR
	RETURN OR EXHAUST AIR REGISTER W/ ROUND NECK	T.E.	TOILET EXHAUST
	AIR DEVICE WITH INSULATED SHEETMETAL PLENUM FOR LOW CLEARANCE INSTALLATION. TYPICAL FOR SUPPLY AND RETURN/EXHAUST AIR DEVICES.		
	MANUAL DAMPER	CFM	CUBIC FEET PER MINUTE
	AUTOMATIC DAMPER	AHU	AIR HANDLING UNIT
	FIRE DAMPER TYPE "B" WITH ACCESS DOOR	FPTU	FAN POWERED TERMINAL UNIT
	FIRE DAMPER TYPE "C" WITH ACCESS DOOR	— D —	DRAIN LINE
	BACK DRAFT DAMPER		
	AUTOMATIC FIRE/SMOKE DAMPER W/ ACCESS DOOR		

NOTES: 1. ALL SYMBOLS MAY NOT BE USED ON THESE DRAWINGS.

FAN-POWERED TERMINAL UNIT - FLOOR ALLOCATION TABLE											
DESIGNATION	TERMINAL TYPE	PRIMARY AIR VALVE DATA			FAN DATA			HEATING COIL DATA			UNIT ELECTRICAL POWER (V/PH)
		MAXIMUM PRIMARY CFM	MINIMUM PRIMARY CFM	AIR VALVE SIZE (IN.)	HEATING CFM	ESP AT MAX CFM (IN. W.G.)	FAN HP	ENTERING AIR TEMP. (°F)	LEAVING AIR TEMP. (°F)	ELECTRIC COIL (KW)	
(N) FPTU-4-1	A	470	230	8"Ø	350	0.3	13	65	85.0	2	277/160
(E) FPTU-4-2	(E)	900	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)
(E) FPTU-4-3	(E)	450	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)
(E) FPTU-4-4	(E)	750	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)	(E)

NOTES:
1. NEW FPTU'S TO MATCH EXISTING
2. PROGRAM AND TAG FPTUS WITH FULL UNIT DESIGNATION IN FIELD. (E. FPTU-4-#)

SCHEDULE OF FAN POWERED TERMINAL UNITS								
TERMINAL TYPE	AIR QUANTITY @ 0.3 W.G. (CFM)		FAN MOTOR DATA		MINIMUM INLET DIAMETER (IN.)	MAXIMUM DEPTH	MANUFACTURER/ BASIS FOR DESIGN	REMARKS/ NOTES**
	MINIMUM	MAXIMUM	HORSEPOWER	VOLTAGE / PHASE				
A	0	660	1/8	277/1	8"Ø	17-1/8"	"TITUS" CONSTANT VOLUME QUIET OPERATION DTOS SERIES SIZE #2 (SEE SPECIFICATIONS)	NOTES 1, 2, 3
B	651	1,000	1/4	277/1	10"Ø		"TITUS" CONSTANT VOLUME QUIET OPERATION DTOS SERIES SIZE #3 (SEE SPECIFICATIONS)	
C	1,001	1,500	1/3	277/1	12"Ø		"TITUS" CONSTANT VOLUME QUIET OPERATION DTOS SERIES SIZE #4 (SEE SPECIFICATIONS)	
D	1,501	1,800	3/4	277/1	14"Ø	20-1/8"	"TITUS" CONSTANT VOLUME QUIET OPERATION DTOS SERIES SIZE #5 (SEE SPECIFICATIONS)	

** REFER TO SCHEDULE TITLED "FAN-POWERED TERMINAL UNIT FLOOR ALLOCATION TABLE" FOR HEATER SIZE AND ADDITIONAL INFORMATION.

NOTES:
1. WITH 1" THICK INDUCED AIR INLET FILTER
2. ALL SIZES AND CAPACITIES BASED ON MAXIMUM ROOM NC 35 @ 1.0" INLET STATIC PRESSURE
3. SIZES ARE BASED ON UNIT WITH ELECTRIC HEAT ONLY. UNITS MUST BE DE-RATED FOR HOT WATER COIL APPLICATIONS.

SCHEDULE OF EXHAUST AND VENTILATION FANS

DESIGNATION EF-	LOCATION	SERVICE	CAPACITIES					ELECTRICAL				MISC		MANUFACTURER/ SERIES BASIS FOR DESIGN	REMARKS/NOTES
			FAN TYPE	DRIVE TYPE	AIR VOLUME CFM	EXT. STATIC PRESSURE - IN. W.G.	FAN RPM	MAXIMUM TIP SPEED F.P.M	BHP	MOTOR HP	VOLTAGE/PHASE/HZ	CONTROL SEQUENCE TYPE	ACCESSORIES		
EF-R-1	ROOF	CLEAN ROOM 410.01	UTILITY	DIRECT	360	0.75	1384	4,347	0.12	1/4	120/1/60	NOTE #1	WH	GREENHECK BCSW	1, 2

* BS - BIRDSCREEN; BD - BACKDRAFT DAMPER; MBD - MOTORIZED BACKDRAFT DAMPER; SC - SOUND ATTENUATING CURB; SI - INLET SCREEN; WH - WEATHERPROOF MOTOR HEAD; WC - WALL COLLAR; SFC - SOLID - STATE FAN SPEED CONTROL.

NOTES:
1. INTERLOCK FAN WITH HOOD OPERATION.
2. PROVIDE WITH OPTIONAL NEMA-3R DISCONNECT SWITCH.

SCHEDULE OF FACTORY-BUILT FAN COIL UNITS

UNIT DESIGNATION	FCU-4-1/ ACCUR-1	
SERVICE	MIXING 410.01	
LOCATION	CEILING PLENUM/ ROOF	
ROOM DESIGN TEMPERATURE °F D. B.	73°F	
E V A P O R A T O R F A N D A T A	TOTAL AIR VOLUME / CFM	750
	OUT SIDE AIR VOLUME / CFM	-
	OUTSIDE AIR VOLUME / CFM (SUMMER)	-
	OUTSIDE AIR VOLUME / CFM (WINTER)	-
F A N	FAN SPEED MAXIMUM R.P.M	-
D A T A	MINIMUM FAN DIAMETER	-
E V A P	EXT. STATIC PRESS. INCL. FILTERS IN. W. G.	1.0
C O I L	MAXIMUM FAN MOTOR H. P.	-
D A T A	TOTAL AIR VOLUME / CFM	750
E V A P	MAXIMUM COIL FACE VELOCITY FT. PER MIN.	500
C O I L	ENTERING AIRTEMP °F - D. B. / W.B.	74.5/61.5
D A T A	LEAVING AIR TEMPERATURE °F - D. B.	53/52
E V A P	TOTAL SENSIBLE HEAT BTU/HR. **	17,420
C O I L	GRAND TOTAL HEAT BTU/HR.	19,575
E V A P	TOTAL AIR VOLUME / CFM	-
C O I L	EXTERNAL STATIC PRESSURE / IN. W. G.	-
D A T A	MAX. ENTERING AIR TEMPERATURE °F	105
E V A P	MIN. ENTERING AIR TEMPERATURE °F	27
C O I L	FAN MOTOR HP	-
E V A P	TOTAL AIR VOLUME / CFM	500
C O I L	ENTERING AIR TEMPERATURE °F	68
D A T A	ROOM HEATING LOAD - BTUH	13,770
E V A P	ELECTRIC HEATING COIL KW	4
C O I L	CONTROL STEPS	-
E V A P	INDOOR UNIT VOLTAGE / PHASE	208/230, 1-Phase, 60Hz
C O I L	MCA / MOCP *	4.16A / 15A
D A T A	OUTDOOR UNIT VOLTAGE/PHASE	208/230, 1-Phase, 60Hz
E V A P	MCA / MOCP *	31A / 44A
M I S C	UNIT TYPE	VARIABLE REFRIGERANT FLOW HEAT PUMP
D A T A	FILTER TYPE	SEE NOTE 1
E V A P	CONTROL SEQUENCE TYPE	SEE NOTE 2
M I S C	MANUFACTURER BASIS FOR DESIGN	MTSUBISHI PEFY/PUMY
D A T A	REMARKS / NOTES	1 - 5

* DIVISION 15 CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING CIRCUIT BREAKER SIZE WITH DIVISION 16 CONTRACTOR AND SHALL BE RESPONSIBLE FOR ANY COSTS ASSOCIATED WITH SAME.
** SCHEDULED SENSIBLE HEAT DOES NOT INCLUDE MOTOR HEAT.
*** EXTERNAL STATIC PRESSURE INCLUDES FILTER RESISTANCE.

NOTES:

- PROVIDE WITH OPTIONAL FILTER BOX AND 1", 30% EFFICIENCY FILTERS.
- PROVIDE STANDARD MICROPROCESSOR CONTROLS AND PROGRAMMABLE THERMOSTAT.
- LINEAR DISTANCE BETWEEN EVAPORATOR AND CONDENSER IS APPROXIMATELY LESS THAN 250FT. INCLUDE ACCESSORIES AND PROVISIONS AS REQUIRED FOR LONG REFRIGERANT PIPE LENGTH.
- PROVIDE EXTERNAL DISCONNECT SWITCH. IECC EFFICIENCY REQUIREMENTS.
- UNIT IS USED FOR PROCESS COOLING (COMPUTING FACILITY), AND IS THUS EXEMPT FROM IECC EFFICIENCY REQUIREMENTS.

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MECHANICAL SCHEDULES

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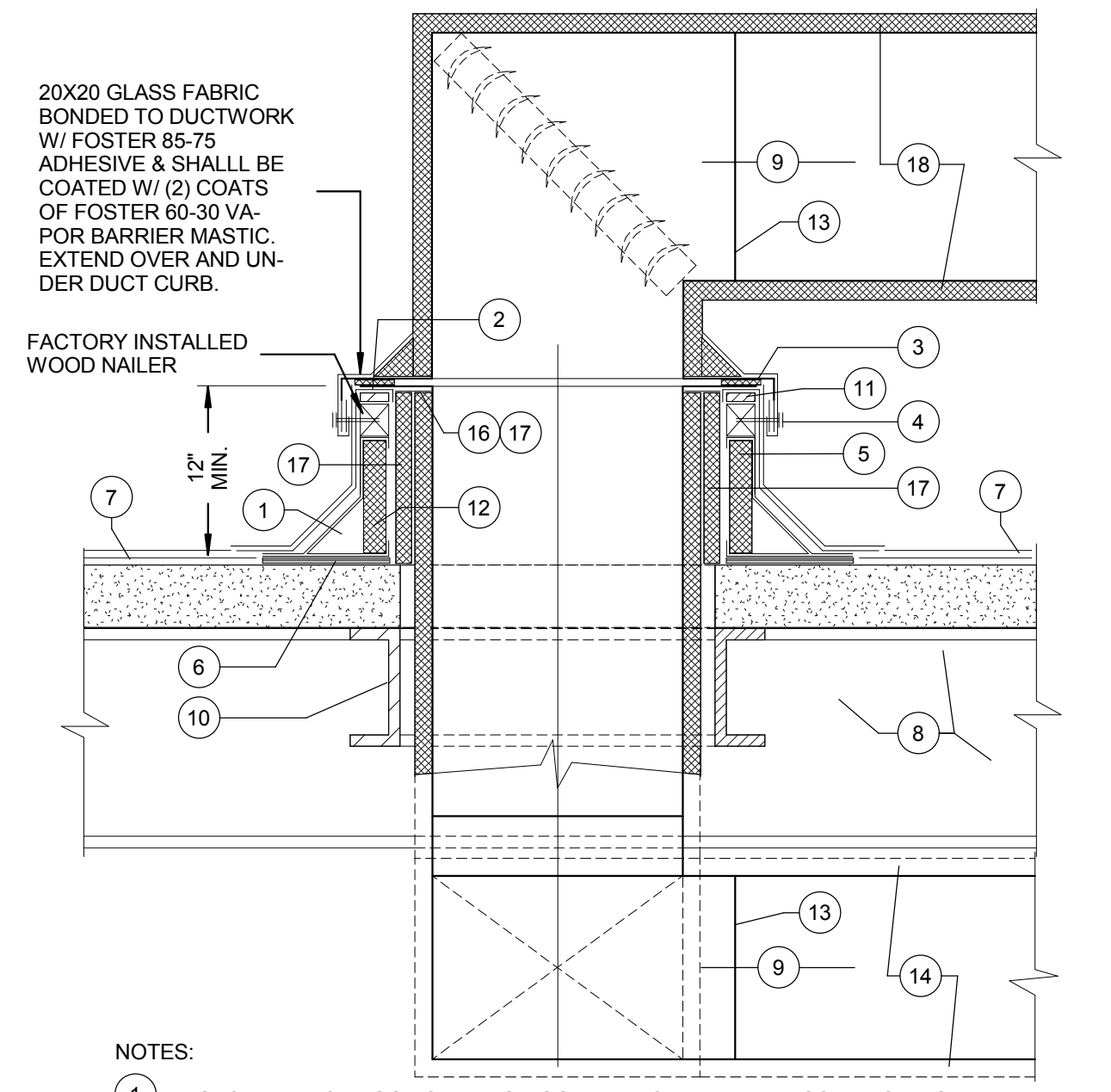
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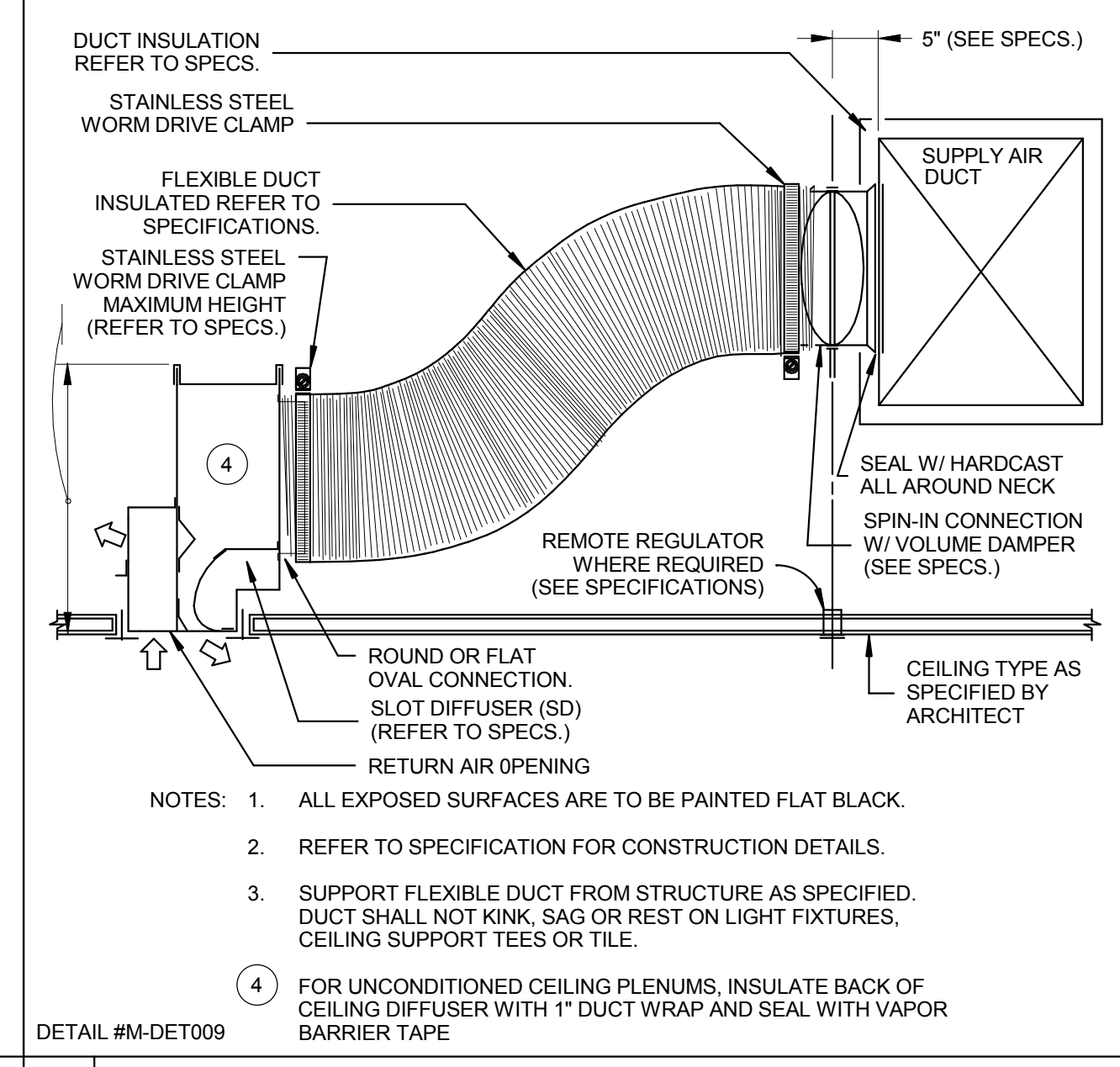
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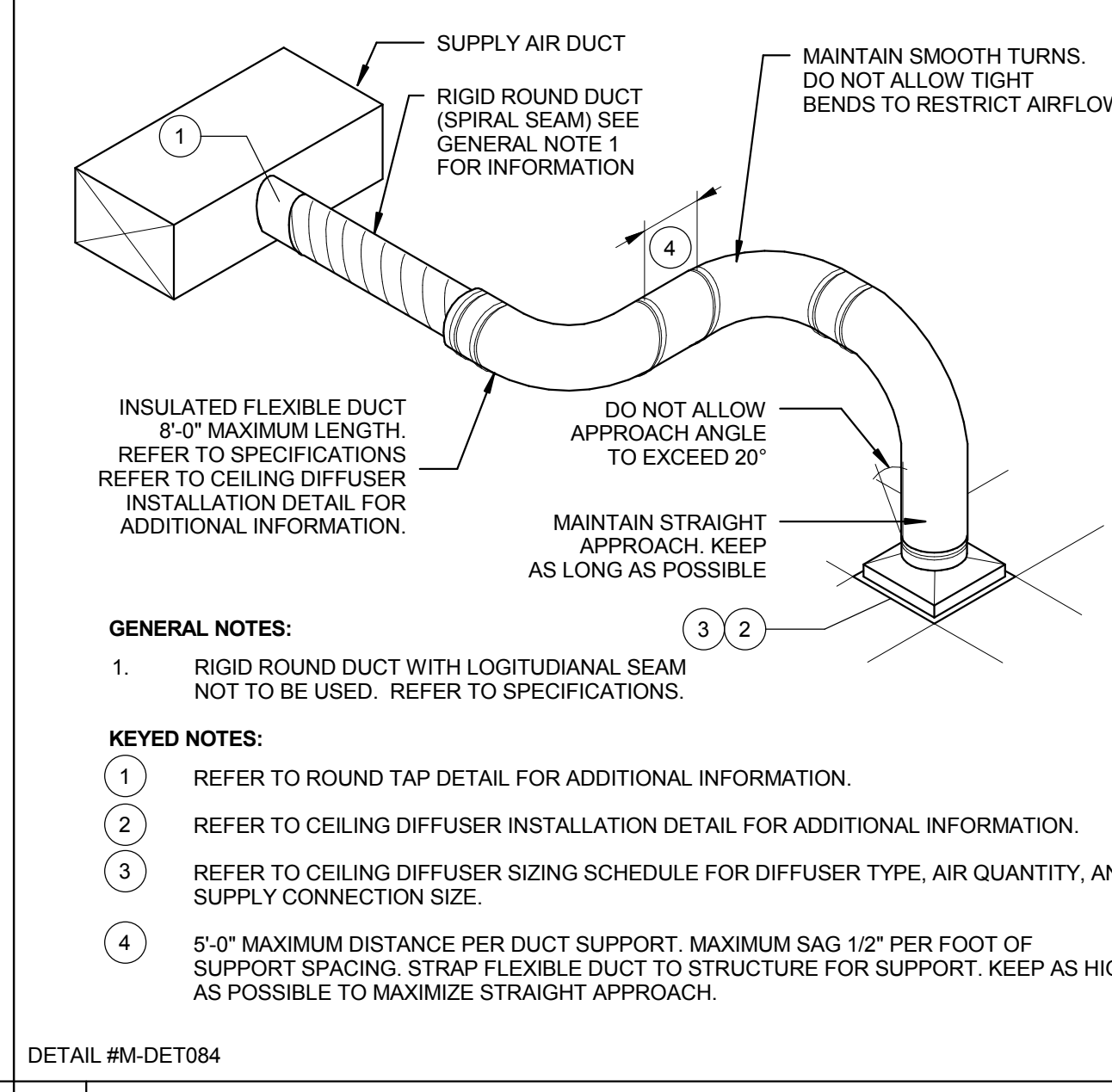
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- NOTES:
- SECURE DUCT ROOF CURB TO ROOF WITH SHEET METAL SCREWS, LAG BOLTS OR OTHER METHOD CONSISTENT WITH ROOF CONSTRUCTION. SECURE DUCT ROOF CURB TO ROOF USING FASTENERS AT 12" O.C. BEFORE APPLYING ROOFING FELT & ROOF INSULATION. (IF REQUIRED)
 - ROOFING FELT TO EXTEND UP AND OVER TOP OF ROOF CURB.
 - CONTINUOUS SEAL WITH NON-HARDENING MASTIC. REFER TO BASE BUILDING SPECIFICATION.
 - SECURE DUCT TO ROOF CURB WITH SHEET METAL SCREWS AT 12" O.C. ALL AROUND (MINIMUM OF 2) 3/4" LONG PER SIDE. SEE SPECS.
 - THERMAL / ACOUSTICAL DUCT ROOF CURB EQUAL TO PATE MODEL PC-1A.
 - SEAL ROOF AREA BELOW CURB WITH SILICONE CAULK.
 - ROOF MEMBRANE. REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS.
 - ROOF STRUCTURE. REFER TO ARCHITECTURAL DRAWINGS AND STRUCTURAL DRAWING FOR DETAILS.
 - SUPPLY OR RETURN AIR DUCT - REFER TO PLANS FOR SIZE. REFER TO BASE BUILDING SPECIFICATION FOR ADDITIONAL INFORMATION.
 - FRAMED ROOF OPENING - REFER TO STRUCTURAL DRAWING.
 - NEOPRENE GASKET ALL AROUND.
 - 1-1/2" THICK RIGID INSULATION.
 - SEAL ALL AROUND WITH HARDCAST. SEE SPECIFICATIONS.
 - DUCT INSULATION. REFER TO BASE BUILDING SPECIFICATION.
 - DUCT INSULATION SHALL EXTEND AS FAR AS POSSIBLE UNDER WEATHER FLASHING.
 - EXPOSED EDGES ON INSULATION TO BE SEALED VAPOR TIGHT WITH SEALANT.
 - FILL VOID SPACE WITH INSULATION AS REQUIRED. REFER TO SPECIFICATION FOR INSULATION TYPE.
 - CELLULAR GLASS INSULATION BONDED TO DUCTWORK WITH FOSTER 65-75 ADHESIVE. THE ENTIRE SURFACE OF THE INSULATION SHALL BE COATED WITH (2) COATS OF FOSTER 60-30 VAPOR BARRIER MASTIC REINFORCED 20x20 GLASS FABRIC.



- NOTES:
- ALL EXPOSED SURFACES ARE TO BE PAINTED FLAT BLACK.
 - REFER TO SPECIFICATION FOR CONSTRUCTION DETAILS.
 - SUPPORT FLEXIBLE DUCT FROM STRUCTURE AS SPECIFIED. DUCT SHALL NOT KINK, SAG OR REST ON LIGHT FIXTURES, CEILING SUPPORT TEES OR TILE.
 - FOR UNCONDITIONED CEILING PLENUMS, INSULATE BACK OF CEILING DIFFUSER WITH 1" DUCT WRAP AND SEAL WITH VAPOR BARRIER TAPE.



- GENERAL NOTES:
- RIGID ROUND DUCT WITH LOGITUDINAL SEAM NOT TO BE USED. REFER TO SPECIFICATIONS.
 - REFER TO ROUND TAP DETAIL FOR ADDITIONAL INFORMATION.
 - REFER TO CEILING DIFFUSER INSTALLATION DETAIL FOR ADDITIONAL INFORMATION.
 - REFER TO CEILING DIFFUSER SIZING SCHEDULE FOR DIFFUSER TYPE, AIR QUANTITY, AND SUPPLY CONNECTION SIZE.
 - 5'-0" MAXIMUM DISTANCE PER DUCT SUPPORT. MAXIMUM SAG 1/2" PER FOOT OF SUPPORT SPACING. STRAP FLEXIBLE DUCT TO STRUCTURE FOR SUPPORT. KEEP AS HIGH AS POSSIBLE TO MAXIMIZE STRAIGHT APPROACH.
- KEY NOTES:
- REFER TO ROUND TAP DETAIL FOR ADDITIONAL INFORMATION.
 - REFER TO CEILING DIFFUSER INSTALLATION DETAIL FOR ADDITIONAL INFORMATION.
 - REFER TO CEILING DIFFUSER SIZING SCHEDULE FOR DIFFUSER TYPE, AIR QUANTITY, AND SUPPLY CONNECTION SIZE.
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