

Table with 4 columns: No., DATE, ISSUE, Description. Row 1: 10/31/2018, ISSUED FOR PERMIT AND PRICING.

PROJECT NAME: SHI INTERNATIONAL

PROJECT ADDRESS: I BRIAR LAKE PLAZA 8FL, 2000 W SAM HOUSTON PKWY, SUITE 800 HOUSTON, TX 77042

KIRKSEY PROJECT NO. 2018231

KEY PLAN

SHEET TITLE: MECHANICAL COVER SHEET

SHEET NUMBER: M0.00

Mechanical Drawing Index table with 4 columns: MECHANICAL LEGEND, ABBREVIATIONS, GENERAL NOTES, MECHANICAL SPECIFICATIONS, MECHANICAL REQUIRED SUBMITTALS. Includes symbols for ductwork, dampers, and various notes regarding materials and installation.

These drawings have been prepared as one coordinated set of drawings and are complimentary. What is required by one drawing is required by all of the drawings, even if a detail or component part is not identified on every sheet. Any user's reliance on a single or select few sheet(s) of the drawings without consideration for the information included in the entire set of drawings will be at the user's sole risk and shall not form the basis for a request for additional compensation or time.



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**1 MECHANICAL DEMOLITION PLAN**  
1/8" = 1'-0"

**MECHANICAL GENERAL DEMOLITION NOTES**

- PRIOR TO DEMOLITION WORK, GENERAL AND MECHANICAL CONTRACTORS SHALL OBTAIN CONFIRMATION FROM BUILDING OWNER BEFORE REMOVING ANY CONDUIT, CIRCUIT, WIRING, PIPING, EQUIPMENT OR CONTROL WIRING WHICH MAY STILL BE IN USE. THE CONTRACTOR SHALL REPLACE ANY ITEM REMOVED DURING THE DEMOLITION PROCESS, WHICH IS INTENDED TO REMAIN, AT NO ADDITIONAL COST TO THE OWNER.
- DEMOLISH ALL DUCT BRANCHES PREVIOUSLY SERVING AIR DEVICES WHICH ARE TO BE REMOVED OR RELOCATED. CAP ALL UNUSED DUCT TAPS AT THE MAIN DUCT. ALL CAPS SHALL BE SHEETMETAL, SEALED AIR-TIGHT, AND INSULATED AS SPECIFIED.
- DEMOLISH INACTIVE PIPING BACK TO NEAREST ACTIVE MAIN AND CAP.
- REMOVE EXISTING UNUSED MECHANICAL EQUIPMENT, CONTROLS, PIPING, HANGERS, WIRING, ETC. FROM ABOVE CEILINGS.
- EXISTING EQUIPMENT THAT IS REMOVED AND NOT REUSED SHALL BE RETURNED TO THE BUILDING OWNER. IF THE BUILDING OWNER DOES NOT WISH TO RETAIN EQUIPMENT, DISPOSE OF IN A MANNER ACCEPTABLE TO ALL AUTHORITIES HAVING JURISDICTION.
- EXISTING AIR DEVICES MAY BE RE-USED WHERE DEVICES ARE IN "LIKE NEW" CONDITION AND WHERE EXISTING DEVICES MEET SCHEDULED PERFORMANCE. CLEAN AND TOUCH UP PAINT ON ALL RE-USED DEVICES. FIELD VERIFY EXACT QUANTITIES OF AIR DEVICES TO BE RE-USED PRIOR TO SUBMITTING A BID.
- THE CONTRACTOR SHALL REPLACE ANY ITEM REMOVED DURING THE DEMOLITION PROCESS, WHICH IS INTENDED TO REMAIN, AT NO ADDITIONAL COST TO THE OWNER.
- PATCH ALL WALL AND SLAB PENETRATIONS WHERE EQUIPMENT, DUCTWORK, AND PIPING HAVE BEEN REMOVED. REFER TO ARCHITECT FOR WALL AND SLAB PATCHING SPECIFICATIONS.

**MECHANICAL KEYED NOTES**

- DEMOLISH EXISTING DUCTWORK BEYOND THIS POINT. CAP, SEAL AND RE-INSULATE TO MATCH EXISTING.
- EXISTING PERIMETER SLOT TO BE DEMOLISHED.
- EXISTING PERIMETER SLOT TO BE RELOCATED. REFER TO M2.21 FOR NEW LOCATION.
- EXISTING SUPPLY AIR DEVICE TO BE RE-USED IF POSSIBLE.
- EXISTING RETURN AIR DEVICE TO BE RE-USED IF POSSIBLE.
- EXISTING T-STAT TO BE RELOCATED. REFER TO M2.21 FOR LOCATION.
- EXISTING T-STAT TO REMAIN.
- DEMOLISH EXISTING DUCTWORK BEYOND THIS POINT.
- EXISTING RETURN AIR DEVICE TO REMAIN.
- EXISTING SUPPLY AIR DEVICE TO REMAIN.
- EXISTING AHU TO BE REMOVED. DEMOLISH ALL ASSOCIATED AIR DEVICES, DUCTWORK, HANGERS, CONTROLS, CONDENSATE PIPING, ETC. DEMOLISH CONDENSER WATER PUMP IN MECHANICAL ROOM. REMOVE ASSOCIATED CONDENSER WATER PIPING BACK TO SOURCE AND CAP.

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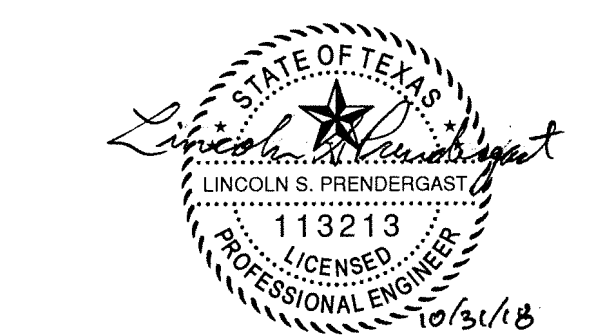
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KEY PLAN

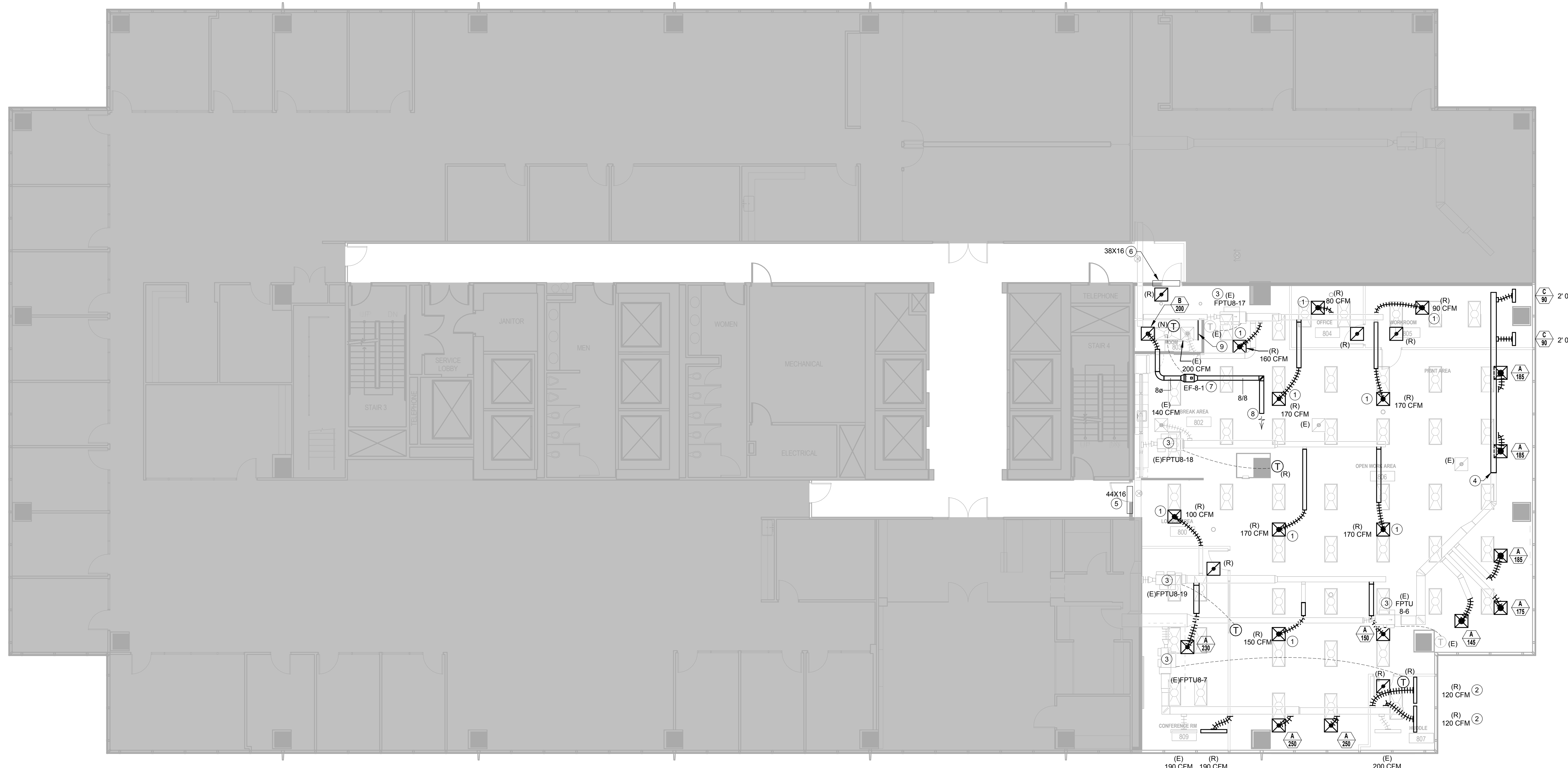
SHEET TITLE  
**MECHANICAL  
DEMOLITION PLAN**

SHEET NUMBER  
**M2.11**

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**1 MECHANICAL PLAN**  
1/8" = 1'-0"

**MECHANICAL GENERAL NOTES**

- REFER TO MECHANICAL COVER SHEET FOR SYMBOLS, ABBREVIATIONS, AND ADDITIONAL INFORMATION.
- REFER TO MECHANICAL SCHEDULES AND DETAIL DRAWINGS FOR ADDITIONAL INFORMATION.
- MAINTAIN MANUFACTURER'S RECOMMENDED SERVICE CLEARANCE FOR NEW AND EXISTING MECHANICAL EQUIPMENT.
- THE CONTRACTOR SHALL VERIFY THAT ALL EXISTING AND NEW MECHANICAL EQUIPMENT ARE MOUNTED SO THAT ALL REQUIRED CLEARANCES ARE MAINTAINED AT THE BOTTOM AND SIDES OF EACH UNIT FOR PROPER SERVICING AND MAINTENANCE. COORDINATE COMPLETELY WITH ALL NEW WALLS TO STRUCTURE, AND RELOCATE AS REQUIRED TO MAINTAIN PROPER CLEARANCES.
- CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATIONS OF ALL EQUIPMENT, DUCTWORK, & PIPING PRIOR TO SUBMITTING A BID. COORDINATE COMPLETELY WITH ALL OTHER TRADES. RELOCATE TERMINAL UNITS AND PROVIDE ADDITIONAL DUCTWORK, OFFSETS, FITTINGS, ETC. AS REQUIRED.
- PRIOR TO ANY CONSTRUCTION THE MECHANICAL CONTRACTOR SHALL RECORD THE AIR QUANTITY FOR EACH EXISTING AIR DEVICE IN THE ADJACENT SPACES AND RESTROOMS CONNECTED TO COMMON EQUIPMENT SERVING THIS LEASE SPACE. AFTER THE COMPLETION OF THE RENOVATION WORK, MECHANICAL CONTRACTOR SHALL USE THE SAME BALANCING EQUIPMENT TO REBALANCE ALL EXISTING AIR DEVICES TO THE ORIGINAL AIR QUANTITIES.
- IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO BRING TO THE ATTENTION OF THE MECHANICAL ENGINEER ANY SLAB-TO-SLAB PARTITIONS THAT DO NOT HAVE PROPER RETURN AIR PATHWAYS. ALL PENETRATIONS OF SLAB-TO-SLAB PARTITIONS SHALL BE SEALED AIR-TIGHT.
- MECHANICAL CONTRACTOR SHALL VERIFY THAT LOCATION OF CEILING AND WALL MOUNTED AIR CONDITIONING SLOTS, DIFFUSERS, GRILLES, AND REGISTERS SHOWN ON THE DRAWINGS ARE ACCEPTABLE TO THE ARCHITECT PRIOR TO INSTALLATION.
- DUE TO DRAWING SCALE, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS AND ACCESSORIES WHICH MAY BE REQUIRED. THE CONTRACTOR SHALL EXAMINE FIELD CONDITIONS AND FURNISH THE NECESSARY FITTINGS WHICH MAY BE REQUIRED TO COMPLETE THE INSTALLATION. CONTRACTOR SHALL FURNISH AND INSTALL BALANCING DAMPERS IN HVAC SYSTEMS THAT HAVE MORE THAN ONE INLET/OUTLET UNLESS NOTED OTHERWISE. BALANCING DAMPERS SHALL APPLY TO NEW AND EXISTING DUCTWORK.
- THE CONTRACTOR SHALL VERIFY THAT THERE ARE NO NON-PLENUM RATED MATERIALS IN THE RETURN AIR PLENUM. THE CONTRACTOR SHALL ENCAPSULATE ALL NON-PLENUM RATED MATERIALS IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION. IF NON-PLENUM RATED MATERIALS ARE NOT ENCAPSULATED IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION, THEN THE CONTRACTOR SHALL REPLACE MATERIAL WITH AN APPROVED PLENUM RATED MATERIAL.
- DURING CONSTRUCTION, SEAL ALL OPEN DUCTS WITH PLASTIC TO PREVENT DUST/DIRT. CLEAN ALL INTERIOR DUCT SURFACES PRIOR TO DUCT INSTALLATION. ALL VAV TERMINAL UNIT FILTERS SHALL BE MAINTAINED DURING CONSTRUCTION AND REPLACED AT THE END OF CONSTRUCTION. PROVIDE CONSTRUCTION FILTERS OVER AIR HANDLING UNIT INTAKES AND MAINTAIN FILTER MEDIA DURING CONSTRUCTION. REPLACE ALL FILTERS AT END OF CONSTRUCTION. ALL RETURN AIR INTAKES TO MECHANICAL ROOM SHALL BE COVERED WITH FILTER MEDIA DURING CONSTRUCTION. REMOVE UPON COMPLETION.
- THE CONTRACTOR SHALL REPLACE ANY DAMAGED OR NON-FUNCTIONING THERMOSTATS. NEW THERMOSTATS SHALL MATCH BUILDING STANDARD.
- ALL MECHANICAL DUCTWORK ROUTED ABOVE CEILING THAT WILL BE DEEMED ABANDONED AFTER THE SCOPE OF THIS PROJECT IS COMPLETED AS INDICATED SHALL BE DEMOLISHED IN ITS ENTIRETY. EXISTING DUCTWORK AND EQUIPMENT SHOWN FOR COORDINATION ONLY. CONTRACTOR TO FIELD VERIFY ALL EXISTING COMPONENTS. IF ANY ISSUES ARE ENCOUNTERED, CONTACT THE ARCHITECT OR ENGINEER IMMEDIATELY.
- RE-USE EXISTING TAPS IF POSSIBLE. CAP AND SEAL ALL UNUSED TAPS AIR TIGHT.

**MECHANICAL KEYED NOTES**

- EXISTING SUPPLY AIR DEVICE TO BE RELOCATED. VERIFY NECK SIZE WITH AIR SCHEDULE. BALANCE TO CFM INDICATED. PROVIDE NEW AIR DEVICES TO MATCH EXISTING AS REQUIRED.
- RELOCATE EXISTING PERIMETER SLOT TO ACCOMMODATE NEW WALLS. SLOT SHALL NOT CROSS NEW WALLS. BALANCE TO CFM INDICATED.
- EXISTING FPTU TO REMAIN. BALANCE TO CFM QUANTITIES INDICATED.
- EXTEND EXISTING 10/12 DUCT AS INDICATED.
- EXISTING RETURN AIR OPENING TO REMAIN.
- PROVIDE NEW FRAMED RETURN AIR OPENING. SIZE AS INDICATED ON PLAN.
- NEW EXHAUST FAN TO BE CONTROLLED BY HIGH LIMIT THERMOSTAT. CONTRACTOR TO PROVIDE ALL RELAYS, WIRING, ETC. FOR A COMPLETE SYSTEM. FAN SHALL ENERGIZE UPON SENSING A SPACE TEMPERATURE OF 78°F. (ADJUSTABLE) COORDINATE EXACT MOUNTING LOCATION WITH EXISTING CONDITIONS.
- EXTEND EXHAUST DISCHARGE A MINIMUM OF 20' FROM IT ROOM. COORDINATE EXACT ROUTING OF DUCT WITH EXISTING CONDITIONS.
- CONTRACTOR SHALL UNDERCUT DOOR 1" TO ALLOW FOR RETURN/MAKEUP AIR PATH.

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**MECHANICAL PLAN**

SHEET NUMBER  
**M2.21**

OUTSIDE AIR CALCULATIONS						
Space	Ra	Ra	Occupant Density	Vbz=RaPz+RaAz		
Office Space	5	0.06	5/1000	Vbz=Vbz/Ez		
Corridor	0	0.06	0	Ez= 0.8		
Break Area	5	0.06	25/1000			
Conference Room	5	0.06	50/1000			
Offices	Ra	Pz	Ra	Az	Vbz	Voz
Corridor	0	0	0.06	324	19	24
Conference Room	5	16	0.06	520	111	139
Break Room	5	2	0.06	201	22	28

633 CFM OF OUTSIDE AIR IS REQUIRED

FAN-POWERED TERMINAL UNIT FLOOR ALLOCATION TABLE							
UNIT DESIGNATION (FPTU)	TERMINAL TYPE (1)	PRIMARY AIR CFM (CFM) (2)	SECONDARY AIR CFM (CFM) (3)	HEATING COIL DATA			UNIT ELECTRICAL POWER (V/PH)
				HEATING CAPACITY (BTUH)	ELECTRICAL INPUT (KW)	STEPS	
8-6 (E)	A	930	1,055	14,200	4	2	277/1
8-7 (E)	B	1,160	1,315	20,800	6	2	480/3
8-17 (E)	A	765	870	---	---	---	277/1
8-18 (E)	A	420	480	---	---	---	277/1
8-19 (E)	A	555	630	---	---	---	277/1

- NOTES: (1) REFER TO THE "SCHEDULE OF FAN-POWERED TERMINAL UNITS" FOR DESCRIPTION OF THE TERMINAL TYPE.  
 (2) THIS AIR QUANTITY IS TO BE USED BY THE MANUFACTURER TO PRESET THE PRIMARY AIR SUPPLY AIR DAMPER.  
 (3) THIS AIR QUANTITY IS TO BE USED BY THE CONTRACTOR TO BALANCE THE SECONDARY SIDE SUPPLY AIR QUANTITY OF THE FAN-POWERED TERMINAL.  
 (4) INDICATED EXISTING FAN-POWERED TERMINAL UNIT TO BE DE-ENERGIZED AND ABANDONED IN PLACE FOR FUTURE USE. AIR VOLUME DATA IS GIVEN FOR REFERENCE PURPOSES ONLY.  
 (5) MINIMUM PRIMARY CFM SHALL BE SET TO 20% OF PRIMARY CFM.

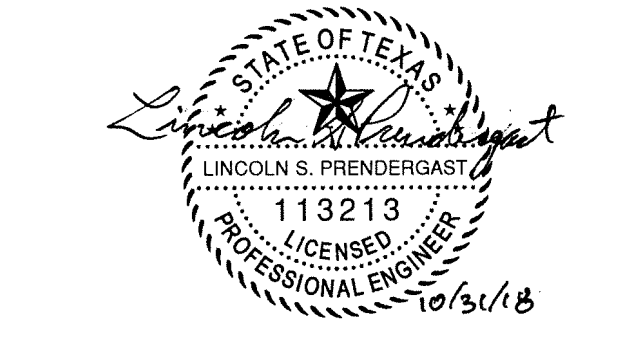
AIR DEVICE SCHEDULE			
MARK	MANUF. & MODEL	TYPE	REMARKS
1	NAILOR MODEL 4320CBA	PERFORATED FACE SUPPLY DIFFUSER	24"x24" SQUARE CEILING DIFFUSER WITH OFF-WHITE EXTERIOR, FLAT-BLACK INTERIOR FINISHES. AIR QUANTITY AS INDICATED ON PLAN. COORDINATE FRAME TYPE WITH CEILING TYPE.
2	NAILOR MODEL 4360A	PERFORATED FACE RETURN AIR GRILLE	24"x24" SQUARE CEILING GRILLE WITH OFF-WHITE EXTERIOR, COORDINATE FRAME TYPE WITH CEILING TYPE.
3	AIR ZONE MODEL N-148-9R	SUPPLY/RETURN SLOT DIFFUSER	2" 0" OR 4" 0" LONG WITH 3/4" WIDE SUPPLY SLOT DIFFUSER WITH 8" NECK, 2" WIDE LIGHT SHIELDED RETURN SLOT, AND FLAT-BLACK FINISH.

SCHEDULE OF NECK SIZES		
CFM RANGE	SQUARE NECK SIZE	ROUND NECK SIZE
0 - 120	6 X 6	6"
125 - 220	8 X 8	8"
225 - 330	10 X 10	10"
335 - 450	12 X 12	12"
455 - 530	15 X 15	14"
535 - 700	16 X 16	16"

SCHEDULE OF EXHAUST AND VENTILATION FANS																	
UNIT DESIGNATION	LOCATION	SERVICE	FAN TYPE	DRIVE TYPE	AIR VOLUME CFM	EXT. STATIC PRESSURE - IN W.G.	FAN R.P.M.	MAXIMUM TIP SPEED F.P.M.	BHP	MOTOR H.P.	ELECTRICAL DATA			CONTROL SEQUENCE TYPE	ACCESSORIES	MANUFACTURER BASIS FOR DESIGN	REMARKS/NOTES
											VOLTAGE	PHASE	HERTZ				
EF-8-1	LEVEL 8	IT ROOM	DIRECT	DIRECT	200	0.3	1300	-	0.25	1/6	120	1	60	-	-	GREENHECK SQ-80-VG	

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

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SCHEDULES & DETAILS

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