HVAC LOAD CALCULATIONS

Air System Sizing Summary for TOTAL

Project Name: VS Park Plaza
Prepared by: M Engineering

05/23/2014
09:41AM

Air System Information

Air System Name....TOTAL
Equipment Class....TERM
Air System Type....PKG-FC

Number of zones....1
Floor Area....8731.0 ft²
Location.... Little Rock, Arkansas

Sizing Calculation Information

Calculation Months.... Jan to Dec
Sizing Data....Calculated

Zone CFM Sizing....Sum of space airflow rates
Space CFM Sizing....Individual peak space loads

Ventilation Fan Sizing Data

Actual max CFM....873 CFM
Standard CFM....863 CFM
Actual max CFM/ft²....0.10 CFM/ft²

Fan motor BHP....0.00 BHP
Fan motor kW....0.00 kW
Fan static....0.00 in wg

Zone Sizing Summary for TOTAL

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Equipment Class....TERM
Air System Type....PKG-FC

Number of zones....1
Floor Area....8731.0 ft²
Location.... Little Rock, Arkansas

Sizing Calculation Information

Zone Name	Maximum Cooling Sensible (MBH)	Design Airflow (CFM)	Minimum Airflow (CFM)	Time of Peak Load	Maximum Heating Load (MBH)	Zone Floor Area (ft²)	Zone CFM/ft²
Zone 1	165.2	9099	9099	Jan 2300	0.0	8731.0	1.04

Terminal Unit Sizing Data - Cooling

Zone Name	Total Coil Load (MBH)	Sens Coil Load (MBH)	Coil Entering DB / WB (°F)	Coil Leaving DB/ WB (°F)	Water Flow @ 10.0 °F (gpm)	Time of Peak Load
Zone 1	244.0	186.9	78.0 / 66.4	58.8 / 57.7	-	Jul 1600

Terminal Unit Sizing Data - Heating, Fan, Ventilation

Zone Name	Heating Coil Load (MBH)	Heating Coil Ent/Lvg DB (°F)	Htg Coil Water Flow @20.0 °F (gpm)	Fan Design Airflow (CFM)	Fan Motor (BHP)	Fan Motor (kW)	OA Vent Design Airflow (CFM)
Zone 1	50.3	64.8 / 70.0	-	9099	0.000	0.000	873

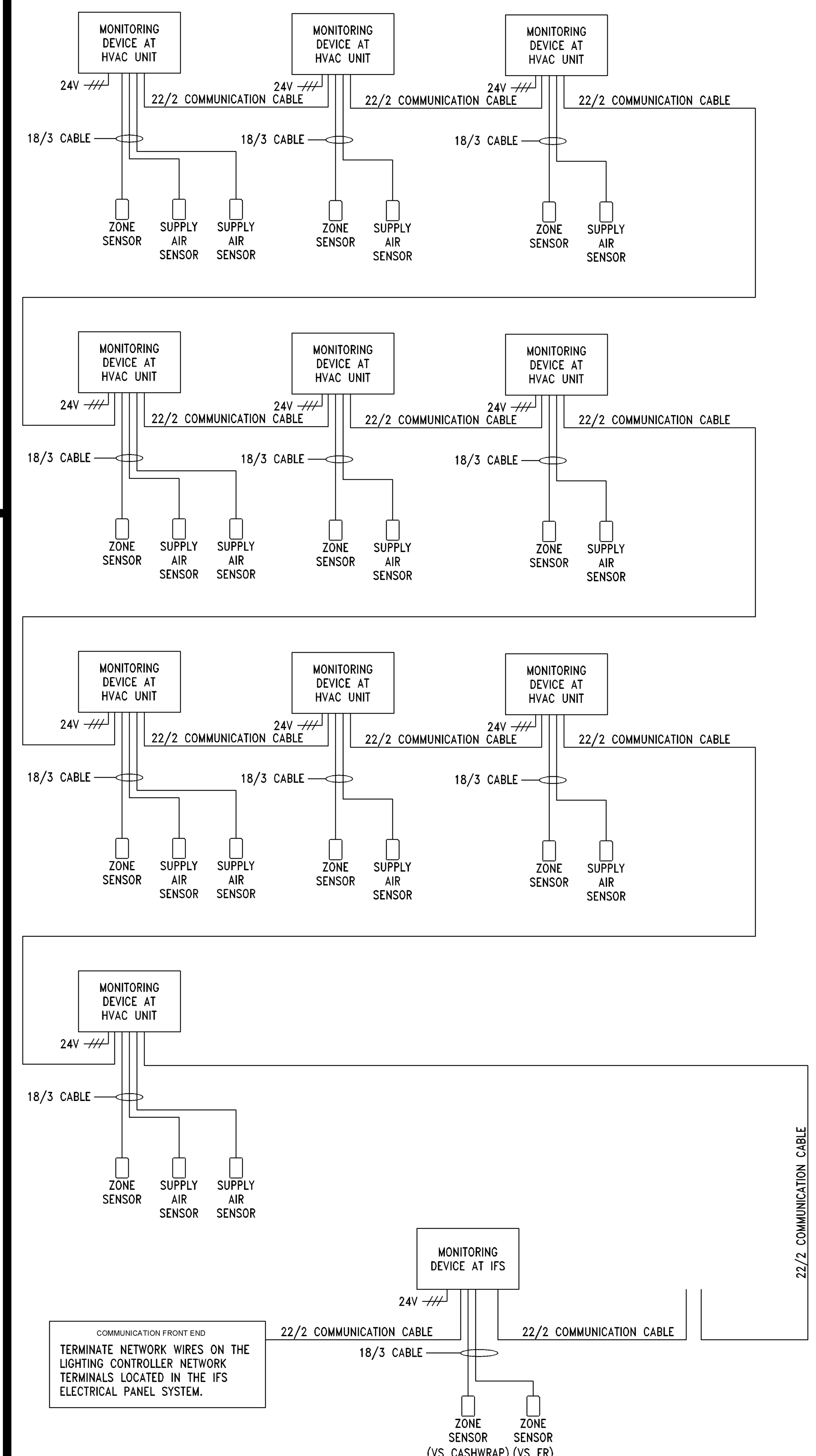
Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
3P MAN OFFICE	1	3.3	Jan 2300	182	0.0	151.0	1.20
BEAUTY 1	1	15.8	Jan 2300	872	0.0	889.0	0.98
BEAUTY 2	1	6.5	Jan 2300	359	0.0	345.0	1.04
BRA SALON	1	19.8	Jan 2300	1089	0.0	1171.0	0.93
BREAK RM	1	3.6	Jan 2300	201	0.0	184.0	1.09
CASHWRAP	1	11.3	Jan 2300	623	0.0	199.0	3.13
ELECTRICAL RM	1	3.4	Jan 2300	187	0.0	160.0	1.17
FITTING ROOM	1	10.8	Jan 2300	596	0.0	774.0	0.77
HALLWAY 1	1	6.5	Jan 2300	358	0.0	417.0	0.86
PINK REMOTE STOCK	1	8.5	Jan 2300	468	0.0	482.0	0.97
QUEING	1	3.2	Jan 2300	177	0.0	157.0	1.13
RR & MOP SINK	1	6.2	Jan 2300	344	0.0	157.0	2.19
VESTIBULE	1	0.5	Jan 2300	29	0.0	50.0	0.58
VS REMOTE STOCK	1	15.6	Jan 2300	861	0.0	834.0	1.03
VSL 2	1	19.7	Jan 2300	1088	0.0	1047.0	1.04
VSL1	1	26.9	Jan 2300	1481	0.0	1558.0	0.95
VSS STOCK	1	3.4	Jan 2300	185	0.0	156.0	1.18

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1600			HEATING DATA AT DES HTG		
	COOLING OA DB / WB 96.4 °F / 76.9 °F			HEATING OA DB / WB 16.0 °F / 13.0 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	24333 W	83023	-	0	0	-
Task Lighting	628 W	2143	-	0	0	-
Electric Equipment	13900 W	47427	-	0	0	-
People	116	32595	37834	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	**165187**	**37834**	-	**0**	**0**
Zone Conditioning	-	167986	37834	-	0	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Exhaust Fan Load	873 CFM	0	-	873 CFM	0	-
Ventilation Load	873 CFM	18947	19184	873 CFM	50348	0
Ventilation Fan Load	873 CFM	0	-	873 CFM	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**186932**	**57018**	-	**50348**	**0**
Terminal Unit Cooling	-	186932	57051	-	0	0
Terminal Unit Heating	-	0	-	-	50348	-
>> Total Conditioning	-	**186932**	**57051**	-	**50348**	**0**
Key:	**Positive values are clg loads**			**Positive values are htg loads**		
	Negative values are htg loads			**Negative values are clg loads**		

HVAC LOAD CALCULATIONS | NTS | 00D-M0401-J00-LOAD | J | 08/11/11

MONITOR ONLY NETWORK WIRING AND SEQUENCE



NOTES:

(1) ALL WIRE SHALL BE 18 GAUGE UNLESS OTHERWISE INDICATED.
(2) NUMBER OF WIRES FURNISHED BY HVAC MANUFACTURER IS INDICATED BY NUMBER OF TICK MARKS ACROSS THE LINE.
(3) PURPLE 22/2 WIRE IS PROVIDE BY HVAC SUPPLIER AND IS PLENUM RATED.
LSD&C HVAC VENDOR SHALL FURNISH AND/OR INSTALL ALL NECESSARY DEVICES TO EFFECTIVELY MONITOR THE LANDLORD CONTROLLED SYSTEM.

MONITOR ONLY RESPONSIBILITY SCHEDULE

ITEM	FURNISHED BY			INSTALLED OR PERFORMED BY			RE-USE EXISTING	N/A	REMARKS
	LSD&C	LANDLORD	CONTR.	LANDLORD	CONTR.	OTHER			
MONITOR ONLY DEVICES WITH ANALOG INPUTS AND COMMUNICATION CAPABILITY	AC				MC			●	
SPACE TEMPERATURE SENSOR	AC				MC				ONE PER UNIT
SUPPLY AIR TEMPERATURE SENSOR	AC				MC				REFER TO SHEET M02.XX.X FOR LOCATIONS AND QUANTITY
CONTROL TRANSFORMERS			MC		MC				ONE PER MONITORING DEVICE
CARBON DIOXIDE SENSOR	AC				MC				

NETWORK WIRING AND SEQUENCE | NTS | 00D-M0401-E10-SCHD | E | 02/18/14

NOTE TO CONTRACTOR

ITEM(S) NOT SHOWN ON ANY OF THE RESPONSIBILITY SCHEDULES ARE THE RESPONSIBILITY OF THE CONTRACTOR.

LOCAL AREA REQUIREMENTS

YES	NO		YES	NO	
☐	☒	1. SMOKE EVACUATION	☐	☒	5. SPECIAL CURB HEIGHT REQUIREMENTS
☒	☐	2. CARBON DIOXIDE MONITORING	☐	☒	6. FIVE MILE COASTAL PROXIMITY
☐	☒	3. HURRICANE ZONE	☐	☒	7. OTHERS, I.E. METHANE, CARBON MONOXIDE, SOUND SENSITIVE, ETC. DESCRIPTION. . .
☐	☒	4. SEISMIC ZONE			

ABBREVIATIONS, RESPONSIBILITY SCHEDULES

AC	HVAC EQUIPMENT SUPPLIER	GC	GENERAL CONTRACTOR
AHJ	AUTHORITY HAVING JURISDICTION	LC	LANDLORD CONTRACTOR
BAS	BUILDING AUTOMATION SYSTEM	LD	LIGHTING PACKAGE DISTRIBUTOR
EC	ELECTRICAL CONTRACTOR	LL	LANDLORD
FAC	FIRE ALARM CONTRACTOR	LSD&C	LIMITED STORE DESIGN & CONSTRUCTION
		MC	MECHANICAL CONTRACTOR

FAN POWERED VARIABLE AIR VOLUME (FPVAV) & VARIABLE AIR VOLUME (VAV) BOX RESPONSIBILITY SCHEDULE

ITEM	FURNISHED BY			INSTALLED OR PERFORMED BY			RE-USE EXISTING	N/A	REMARKS
	LSD&C	LANDLORD	CONTR.	LANDLORD	CONTR.	OTHER			
SERIES ARRANGEMENT FAN POWERED VAV BOX (WITH HEAT AND NO HEAT OPTIONS)	AC				MC				
NON-FAN POWERED VAV BOX	AC				MC				
FAN POWERED BOX ELECTRICAL DISCONNECT	AC					AC			
NON-FAN POWERED BOX ELECTRICAL DISCONNECT	AC					AC			
BAS CONTROLLER WITH INTEGRATED ACTUATOR	AC					AC			
SUPPLY AIR TEMPERATURE SENSOR	AC				MC				
SPACE TEMPERATURE SENSORS	AC				MC				
TERMINAL UNIT COMMISSIONING	AC					AC			CALL HVAC SUPPLIER
LANDLORD UNIT CONTROLLER			MC		MC			●	HIRE LANDLORD DESIGNATED CONTROLS CONTRACTOR
LANDLORD SPACE TEMPERATURE SENSOR/THERMOSTAT			MC		MC			●	HIRE LANDLORD DESIGNATED CONTROLS CONTRACTOR
ADDITIONAL LANDLORD CONTROL SYSTEM COMPONENTS			MC		MC			●	HIRE LANDLORD DESIGNATED CONTROLS CONTRACTOR

HVAC RESPONSIBILITY SCHEDULE

ITEM	FURNISHED BY			INSTALLED OR PERFORMED BY			RE-USE EXISTING	N/A	REMARKS
	LSD&C	LANDLORD	CONTR.	LANDLORD	CONTR.	OTHER			
ROOFING CUT & PATCH, INSULATED TOE KICK & CURB LEVELING.			MC		MC			●	HIRE LANDLORD APPROVED ROOFING CONTRACTOR
DUCT SMOKE DETECTOR			FAC		MC				IF NO FIRE ALARM, FURNISHED & INSTALLED BY AC
SMOKE SYSTEM ACCESSORIES, ETC.			MC		MC				UNLESS FACTORY INSTALLED
DIFFUSERS AND GRILLES	LD				MC				
DIFFUSERS/GRILLES FIRE DAMPERS			MC		MC				
WALL FIRE DAMPERS			MC		MC				
COMBINATION FIRE/SMOKE DAMPERS			MC		MC				
LOW PRESSURE DUCTWORK			MC		MC				
RECTANGULAR TO ROUND DUCT ADAPTER			MC		MC				
HIGH/MEDIUM PRESSURE DUCTWORK			MC		MC				
DUCT SUPPORTS			MC		MC				
SEISMIC BRACING			MC		MC				
DUCT HEATER(S)			MC		MC				
UNIT HEATER(S)			MC		MC				
TOILET EXHAUST FAN(S) WITH TOGGLE DISCONNECT SWITCH	LD				MC				
TOILET EXHAUST DUCTWORK WALL OR ROOF CAP			MC		MC				
PIPING AND PIPING APPURTENANCES (CIRCUIT SETTERS, ETC.)			MC		MC				
BALANCE CONTRACTOR REPORT			GC						AABC OR NEBB CERTIFIED
AS-BUILT DRAWINGS			MC						
TEMPERATURE CONTROL SYSTEM COMPONENTS	AC				MC				
TEMPERATURE CONTROL SYSTEM WIRE	AC				MC				FINAL CONN. BY MC
YOUNG REGULATOR W/ BOWDEN CABLE			MC		MC				
LOCKING QUADRANT VOLUME DAMPER			MC		MC				ROUND DAMPERS PROVIDED THROUGH GRAINGER NATIONAL ACCOUNT.
PNEUMATIC TUBING			MC		MC				
FIRE ALARM SHUTDOWN RELAY			FAC		FAC				WHERE APPLICABLE FOR FIRE ALARM SYSTEMS
RELIEF AIR DAMPER AND ACTUATOR			MC		MC				
RELIEF AIR FAN OR RETURN AIR FAN			MC		MC				
SMOKE EVACUATION			MC		MC				
OUTSIDE AIR INTAKE HOOD/LOUVER WITH DAMPER			MC		MC				
OUTSIDE AIR INTAKE DAMPER ACTUATOR			MC		MC				
RELIEF AIR HOOD OR LOUVER WITH COUNTER-BALANCED BACKDRAFT DAMPER			MC		MC				
ECONOMIZER DAMPER			MC		MC				
ECONOMIZER DAMPER ACTUATOR	AC				MC				
OUTSIDE AIR DAMPER			MC		MC				
OUTSIDE AIR DAMPER ACTUATOR			MC		MC				

HVAC RESPONSIBILITY SCHEDULES | NTS | 00D-M0401-A00-SCHD | A | 09/13/13

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PROJECT INFORMATION: **010500295**

VICTORIA'S SECRET
PARK PLAZA MALL
6000 W. MARKHAM STREET
SPACE# 2050
LITTLE ROCK, AR 72205

SCOPE: FULL REMODEL | PACKAGE: FALL 2014 PGK 2
DESIGN TYPE: NMA | GENERATION: (141Fa)
LSD&C PROJECT #: 00059784 | A/E PROJECT #: 140153

REVISIONS:
REQUIRED BY: DATE

DATE ISSUED: 05/23/2014
DESIGNED BY: GMT
DRAWN BY: GMT
CHECKED BY: JAH

MECHANICAL RESPONSIBILITY SCHEDULES

DRAWING NUMBER:
M04.01