

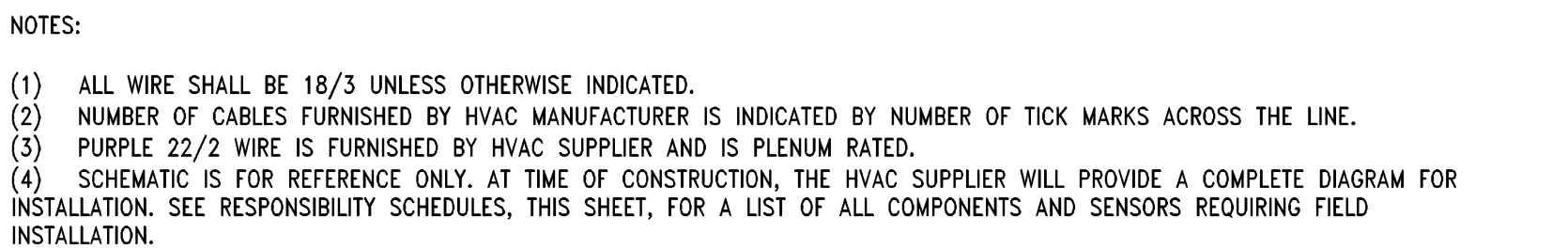
OUTSIDE AIR CALCULATIONS

DESIGN WEATHER PARAMETERS

City Name	Houston
Location	Texas
Latitude	30.0 Deg
Longitude	95.4 Deg
Elevation	106.0 ft
Summer Design Dry-Bulb	95.0 °F
Summer Coincident Wet-Bulb	77.0 °F
Summer Day Range	18.2 °F
Winter Design Dry-Bulb	27.0 °F
Winter Design Wet-Bulb	22.7 °F
Atmospheric Cleanliness Number	0.90
Average Ground Reflectance	0.20
Soil Conductivity	0.000 BTU/hr-ft-F)
Local Time Zone (GMT +/- H:hours)	5.0 hours
Consider Daylight Savings Time	
Simulation Weather Data	none/N/A
Current Data File	2007 ASHRAE Handbook
Design Cooling Months	January to December

THE LEAD EXPERIMENTERS

HVAC LOAD CALCULATIONS



MANUFACTURER SHALL FURNISH AND/OR INSTALL ALL NECESSARY CONTROL DEVICES TO ACCOMPLISH THE FOLLOWING SEQUENCE OF OPERATION (REFER TO RESPONSIBILITY SCHEDULE FOR FIELD INSTALLATION REQUIREMENTS):

DURING OCCUPIED HOURS THE SUPPLY FANS SHALL OPERATE CONTINUOUSLY, AND THE OUTSIDE AIR DAMPER SHALL OPEN TO THE MINIMUM SCHEDULED POSITION (ADJUSTABLE), WHEN THE OUTDOOR TEMPERATURE IS ABOVE 55 DEGREES FAHRENHEIT (ADJUSTABLE), AND THE SPACE TEMPERATURE IS ABOVE THE SETPOINT. WHEN THE OUTDOOR TEMPERATURE IS BELOW 55 DEGREES FAHRENHEIT (ADJUSTABLE), AND THE SPACE TEMPERATURE IS ABOVE THE COOLING SETPOINT, COOLING SHALL DEREGULATE, AND OUTSIDE AIR DAMPERS AND RETURN AIR DAMPERS SHALL MODULATE TO PROVIDE A SUPPLY AIR TEMPERATURE TO SATISFY THE DEMAND FOR COOLING. IF THE SPACE TEMPERATURE FALLS 1° BELOW THE HEATING SETPOINT, THE OUTSIDE AIR DAMPER IS AT THE MINIMUM POSITION, GAS HEAT SHALL BE ENABLED IN STAGES (WHERE APPLICABLE) UNTIL 1° ABOVE SETPOINT IS ACHIEVED.

DURING UNOCCUPIED HOURS, THE SUPPLY FANS SHALL BE DEENERGIZED. IF THE SPACE TEMPERATURE RISES ABOVE THE COOLING SETPOINT, THE FANS SHALL ENERGIZE, AND THE OUTSIDE AIR DAMPERS SHALL REMAIN CLOSED. COOLING SHALL BE ENERGIZED, WHEN THE SPACE TEMPERATURE FALLS 1°F BELOW THE COOLING SETPOINT. COOLING AND FANS SHALL BE DEENERGIZED, IF THE SPACE TEMPERATURE FALLS 1°F BELOW THE HEATING SETPOINT, THE FANS SHALL OPERATE, AND THE OUTSIDE AIR DAMPERS SHALL REMAIN CLOSED. GAS HEAT SHALL BE ENABLED IN STAGES (WHERE APPLICABLE). WHEN THE SPACE TEMPERATURE RISES 1°F ABOVE THE HEATING SETPOINT, GAS HEAT AND FANS SHALL BE DISABLED.

POWER EXHAUST FAN (WHERE APPLICABLE) SHALL BE ENERGIZED WHENEVER THE SUPPLY FANS ARE OPERATING, AND THE UNIT IS IN THE ECONOMIZER MODE OF OPERATION. THE RELIEF FAN SPEED SHALL BE VARIED THROUGH A VARIABLE SPEED DRIVE CONTROLLED BY SPACE PRESSURE DIFFERENTIAL RELATIVE TO OUTDOOR PRESSURE. FAN SPEED SHALL MODULATE TO MAINTAIN A SPACE PRESSURE OF 0.05" POSITIVE RELATIVE TO OUTDOOR PRESSURE. RELIEF DAMPER SHALL OPEN WHEN RELIEF FAN IS ENERGIZED.

A FIELD INSTALLED CO2 SENSOR SHALL MODULATE THE OUTDOOR AIR DAMPER DURING OCCUPIED OPERATION BETWEEN SCHEDULED OA FLOW CFM AND MIN SCHEDULED OA FLOW TO MAINTAIN A CO2 CONCENTRATION BETWEEN 1000PPM AND 500PPM.

A FIELD INSTALLED HUMIDITY SENSOR SHALL ENERGIZE THE COOLING IN STAGES (WHERE APPLICABLE) WHEN THE CONDITIONED SPACE RISES ABOVE 55% RH. THE UNIT WILL OPERATE IN THE DEHUMIDIFICATION MODE UNTIL THE RELATIVE HUMIDITY OF THE CONDITIONED SPACE IS 5% BELOW THE RH SETPOINT. REHEAT OPERATION WILL INITIATE ON A DEHUMIDIFICATION DEMAND AND DOES NOT REQUIRE A COOLING DEMAND.

A DUCT MOUNTED SMOKE DETECTOR SHALL DEENERGIZE THE SUPPLY AND RELIEF FAN, AND CLOSE THE OUTDOOR AIR DAMPER WHEN ACTIVATED.

SETPOINTS:

OCCUPIED HEATING: 70°F COOLING: 74°F
UNOCCUPIED HEATING: 60°F COOLING: 85°F
HUMIDITY SETPOINT: 50%RH

MANUFACTURER SHALL FURNISH AND/OR INSTALL ALL NECESSARY CONTROL DEVICES TO ACCOMPLISH THE FOLLOWING SEQUENCE OF OPERATION (REFER TO RESPONSIBILITY SCHEDULE FOR FIELD INSTALLATION REQUIREMENTS):

DURING OCCUPIED HOURS THE VARIABLE AIR VOLUME TERMINAL UNIT FAN SHALL BE ENERGIZED AND DAMPER SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE.

IF THE SPACE TEMPERATURE DROPS ONE DEGREE BELOW SETPOINT AND THE DAMPER IS AT MINIMUM POSITION, THE UNIT'S ELECTRIC HEAT SHALL ENERGIZE. THE HEAT WILL REMAIN ON UNTIL THE SPACE TEMPERATURE IS SATISFIED.

THE TERMINAL UNIT DAMPER SHALL FULLY CLOSE AND THE FAN SHALL DEENERGIZE UPON A SIGNAL FROM THE FIRE ALARM SYSTEM.

DURING THE UNOCCUPIED SCHEDULE, THE DAMPER SHALL CLOSE AND FAN/HEATER WILL DEENERGIZE. THE DAMPER SHALL OPEN AND THE FAN SHALL ENERGIZE IF UNOCCUPIED COOLING SETPOINT IS REACHED. THE FAN AND HEATER SHALL ENABLE IF UNOCCUPIED TEMPERATURE IS 2°F BELOW UNOCCUPIED SETPOINT. FAN AND HEATER SHALL STOP WHEN SETPOINT IS REACHED.

NETWORK WIRING AND SEQUENCE	NTS	E 02/18/14
	00D-M0401-E01-SCHD	

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

HVAC RESPONSIBILITY SCHEDULE

HVAC RESPONSIBILITY SCHEDULES	NIS	/
1. Heating		
2. Cooling		
3. Ventilation		
4. Air Conditioning		
5. Humidity Control		
6. Air Filtration		
7. Air Distribution		
8. Air Quality		
9. Air Flow		
10. Air Pressure		
11. Air Temperature		
12. Air Velocity		
13. Air Density		
14. Air Humidity		
15. Air Pollution		
16. Air Noise		
17. Air Vibration		
18. Air Odor		
19. Air Taste		
20. Air Color		
21. Air Smell		
22. Air Sound		
23. Air Light		
24. Air Heat		
25. Air Cold		
26. Air Dry		
27. Air Wet		
28. Air Soft		
29. Air Hard		
30. Air Smooth		
31. Air Rough		
32. Air Clean		
33. Air Dirty		
34. Air Fresh		
35. Air Stale		
36. Air Pleasant		
37. Air Unpleasant		
38. Air Comfortable		
39. Air Uncomfortable		
40. Air Healthy		
41. Air Unhealthy		
42. Air Safe		
43. Air Unsafe		
44. Air Secure		
45. Air Insecure		
46. Air Trustworthy		
47. Air Untrustworthy		
48. Air Dependable		
49. Air Undependable		
50. Air Reliable		
51. Air Unreliable		
52. Air Accurate		
53. Air Inaccurate		
54. Air Precise		
55. Air Imprecise		
56. Air Exact		
57. Air Inexact		
58. Air Perfect		
59. Air Imperfect		
60. Air Ideal		
61. Air Non-ideal		
62. Air Optimal		
63. Air Sub-optimal		
64. Air Superior		
65. Air Inferior		
66. Air Excellent		
67. Air Poor		
68. Air Good		
69. Air Bad		
70. Air Great		
71. Air Terrible		
72. Air Wonderful		
73. Air Horrible		
74. Air Amazing		
75. Air Disappointing		
76. Air Surprising		
77. Air Expected		
78. Air Unexpected		
79. Air Predictable		
80. Air Unpredictable		
81. Air Consistent		
82. Air Inconsistent		
83. Air Uniform		
84. Air Non-uniform		
85. Air Stable		
86. Air Unstable		
87. Air Steady		
88. Air Unsteady		
89. Air Firm		
90. Air Soft		
91. Air Hard		
92. Air Gentle		
93. Air Rude		
94. Air Polite		
95. Air Impolite		
96. Air Respectful		
97. Air Disrespectful		
98. Air Considerate		
99. Air Inconsiderate		
100. Air Helpful		
101. Air Unhelpful		
102. Air Supportive		
103. Air Unsupportive		
104. Air Encouraging		
105. Air Discouraging		
106. Air Inspiring		
107. Air Uninspiring		
108. Air Motivating		
109. Air Demotivating		
110. Air Uplifting		
111. Air Degrading		
112. Air Enriching		
113. Air Depleting		
114. Air Nourishing		
115. Air Starving		
116. Air Satisfying		
117. Air Dissatisfying		
118. Air Fulfilling		
119. Air Unfulfilling		
120. Air Meaningful		
121. Air Meaningless		
122. Air Purposeful		
123. Air Purposeless		
124. Air Significant		
125. Air Insignificant		
126. Air Important		
127. Air Unimportant		
128. Air Valuable		
129. Air Worthless		
130. Air Precious		
131. Air Cheap		
132. Air Expensive		
133. Air Affordable		
134. Air Unaffordable		
135. Air Accessible		
136. Air Inaccessible		
137. Air Available		
138. Air Unavailable		
139. Air Convenient		

HVAC RESPONSIBILITY SCHEDULES

Limited brands

LIMITED STORE PLANNING, INC.
d/b/a STORE DESIGN & CONSTRUCTION
Three Limited Parkway • Columbus, Ohio 43230
Telephone: 614.415.7000 • Fax: 614.415.7349

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02 WORK

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INFORMATION:
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PROJECT
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MEMC
303 ME
SUITE 7
HOUSTO

SCOPE:
DESIGN T
150% R

REVISIONS:

REQUIRED BY:
STOREFRONT - REV 1

DATE:
6/10/20

2 REVISION 2 - LL / PERMIT COMMENTS 6/27/20

ELITE CONSTRUCTION GROUP
LAKE JACKSON, TX
PHONE: 979-285-0712
NOTE: THESE PRINTS HAVE BEEN
REDUCED BY 50 PERCENT. SCALE
WILL BE 50 PERCENT OF WHAT IS
NOTED ON PLANS

DATE ISSUED: 04/11/201
DESIGNED BY: JO
DRAWN BY: JO
CHECKED BY: JM

MECHANICAL RESPONSIBILITY SCHEDULES

DRAWING NUMBER:
M04.01