

Project Information

For: Cavness Addition, Penrose Drafting  
41200 N 56th St, Cave Creek, AZ 85331

Notes: This is for ductwork only. Installing contractor to follow all local codes and to verify existing system size will accommodate the additional cooling needs.

Design Information

Weather: Chandler, AZ US

Winter Design Conditions

Outside db: 32 °F  
Inside db: 70 °F  
Design TD: 38 °F

Summer Design Conditions

Outside db: 107 °F  
Inside db: 75 °F  
Design TD: 32 °F  
Relative humidity: 45 %  
Moisture difference: -5 %

Heating Summary

Structure: 4298 Buh  
Ducts: 1826 Buh  
Central vent (48 cfm): 0 Buh  
Outside air: 0 Buh  
Humidification: 0 Buh  
Piping: 0 Buh  
Equipment load: 6748 Buh

Latent Cooling Equipment Load Sizing

Structure: 3992 Buh  
Ducts: 1175 Buh  
Central vent (48 cfm): 1337 Buh  
Outside air: 0 Buh  
Blower: 0 Buh  
Use manufacturer's data: 1.12 Buh  
Equipment sensible load: 6233 Buh

Heating Equipment Summary

Heating: 238 Buh  
Ventilation: 238 Buh  
Air change/hour: 0.21  
Equip. AVF (cfm): 0.11  
Total: 8

Cooling Equipment Summary

Efficiency: 80 AFUE  
Heating input: 0 Buh  
Temperature rise: 0 °F  
Actual air flow: 174 cfm  
Sensible heat: 0 Buh  
Space thermostat: 0 Buh

Project Summary  
Entire House  
AZ Load Calcs

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Heating Summary

Structure: 10626 Buh  
Ducts: 4183 Buh  
Central vent (48 cfm): 1939 Buh  
Outside air: 0 Buh  
Humidification: 0 Buh  
Piping: 0 Buh  
Equipment load: 18759 Buh

Latent Cooling Equipment Load Sizing

Structure: 9973 Buh  
Ducts: 7093 Buh  
Central vent (48 cfm): 1633 Buh  
Outside air: 0 Buh  
Blower: 0 Buh  
Use manufacturer's data: 27751 Buh  
Equipment sensible load: 27751 Buh

Heating Equipment Summary

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Total: 8

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Heating Summary

Structure: 448 Buh  
Ducts: 143 Buh  
Central vent (48 cfm): 286 Buh  
Outside air: 0 Buh  
Humidification: 0 Buh  
Piping: 0 Buh  
Equipment load: 6748 Buh

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Manual S Compliance Report  
Entire House  
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MECHANICAL CALCULATIONS

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NEW GUEST HOUSE, ROOM ADDITION AND CARPORT FOR THE CAVNESS FAMILY  
41200 N. 56th STREET  
CAVE CREEK, ARIZONA 85331