



Load Short Form
Entire House
High Country Heating

Job: New Beginnings
 Date: 12/18/18
 By: Vince Byram

P.O. Box 627, Rigby, Idaho 83442 Phone: 208-745-8056 Fax: 208-745-4329 Email: highcountryph@yahoo.com

Project Information

For: Vantage Pointe Homes

Design Information

	Htg	Clg		Infiltration	
Outside db (°F)	-6	89	Method		Simplified
Inside db (°F)	70	75	Construction quality		Semi-tight
Design TD (°F)	76	14	Fireplaces		0
Daily range	-	H			
Inside humidity (%)	50	50			
Moisture difference (gr/lb)	62	-31			

HEATING EQUIPMENT

Make	Goodman Mfg.
Trade	GOODMAN
Model	GMSS960603BN
AHRI ref	7365096
Efficiency	96.1 AFUE
Heating input	60000 Btuh
Heating output	58000 Btuh
Temperature rise	66 °F
Actual air flow	950 cfm
Air flow factor	0.035 cfm/Btuh
Static pressure	0.70 in H2O
Space thermostat	

COOLING EQUIPMENT

Make	Amana
Trade	AMANA DISTINCTIONS
Cond	GSX130181C*
Coil	CA*F1824
AHRI ref	3873380
Efficiency	11.6 EER, 14 SEER
Sensible cooling	12600 Btuh
Latent cooling	5400 Btuh
Total cooling	18000 Btuh
Actual air flow	1050 cfm
Air flow factor	0.120 cfm/Btuh
Static pressure	0.70 in H2O
Load sensible heat ratio	1.00

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
Room1	313	3452	1690	122	203
Room2	86	1137	146	40	18
Room3	50	377	61	13	7
Room4	172	2195	884	77	106
Room5	130	1473	800	52	96
Room6	48	397	62	14	7
Room7	77	414	81	15	10
Room8	761	7362	4134	260	497
Room9	166	1576	294	56	35
Room10	174	1431	292	51	35
Room12	108	467	4	16	0
Room13	246	1829	176	65	21
Room14	210	1421	62	50	7
Room15	728	3380	45	119	5

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



Entire House	d	3266	26911	8731	950	1050
Other equip loads			9953	837		
Equip. @ 0.94 RSM				8994		
Latent cooling				0		
TOTALS		3266	36864	8994	950	1050

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



Project Information

For: Vantage Pointe Homes

Design Conditions

Location:

Idaho Falls, ID, US
 Elevation: 4741 ft
 Latitude: 44°N

Outdoor:

Dry bulb (°F)
 Daily range (°F)
 Wet bulb (°F)
 Wind speed (mph)

Heating

-6
 -
 -
 15.0

Cooling

89
 34 (H)
 60
 7.5

Indoor:

Indoor temperature (°F)
 Design TD (°F)
 Relative humidity (%)
 Moisture difference (gr/lb)

Heating

70
 76
 50
 61.5

Cooling

75
 14
 50
 -31.5

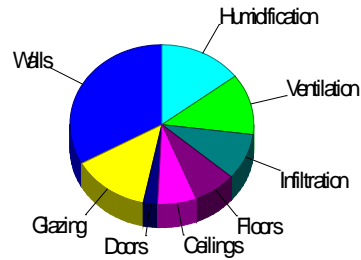
Infiltration:

Method
 Construction quality
 Fireplaces

Simplified
 Semi-tight
 0

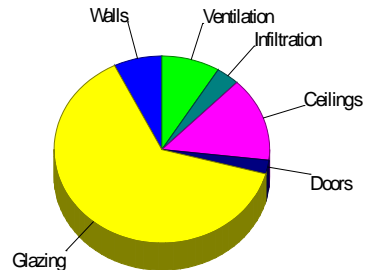
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	4.2	12190	33.1
Glazing	22.8	5039	13.7
Doors	11.4	930	2.5
Ceilings	1.5	2523	6.8
Floors	1.7	2775	7.5
Infiltration	1.8	3454	9.4
Ducts		0	0
Piping		0	0
Humidification		5408	14.7
Ventilation		4545	12.3
Adjustments		0	0
Total		36864	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	0.2	694	7.3
Glazing	27.5	6081	63.6
Doors	2.8	226	2.4
Ceilings	0.8	1394	14.6
Floors	0	0	0
Infiltration	0.2	335	3.5
Ducts		0	0
Ventilation		837	8.7
Internal gains		0	0
Blower		0	0
Adjustments		0	0
Total		9568	100.0



Latent Cooling Load = 0 Btuh
 Overall U-value = 0.047 Btuh/ft²-°F

Data entries checked.

Project Information

For: Vantage Pointe Homes

Design Conditions

Location: Idaho Falls, ID, US Elevation: 4741 ft Latitude: 44°N		Indoor: Indoor temperature (°F) 70 Design TD (°F) 76 Relative humidity (%) 50 Moisture difference (gr/lb) 61.5	Heating 70 Cooling 75 14 50 -31.5															
Outdoor: Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	<table border="0" style="width: 100%;"> <tr> <td style="text-align: center;">Heating</td> <td style="text-align: center;">Cooling</td> <td></td> </tr> <tr> <td style="text-align: center;">-6</td> <td style="text-align: center;">89</td> <td></td> </tr> <tr> <td style="text-align: center;">-</td> <td style="text-align: center;">34 (H)</td> <td></td> </tr> <tr> <td style="text-align: center;">-</td> <td style="text-align: center;">60</td> <td></td> </tr> <tr> <td style="text-align: center;">15.0</td> <td style="text-align: center;">7.5</td> <td></td> </tr> </table>	Heating	Cooling		-6	89		-	34 (H)		-	60		15.0	7.5		Infiltration: Method Simplified Construction quality Semi-tight Fireplaces 0	
Heating	Cooling																	
-6	89																	
-	34 (H)																	
-	60																	
15.0	7.5																	

Construction descriptions

Construction descriptions	Or	Area ft ²	U-value Btuh/ft ² -°F	Insul R ft ² -°F/Btuh	Htg HTM Btuh/ft ²	Loss Btuh	Clg HTM Btuh/ft ²	Gain Btuh
Walls 12F-0sw: Frm wall, vnl ext, 3/8" wood shth, r-21 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm, 16" o.c. stud	n	383	0.065	21.0	4.94	1892	0.47	182
	e	311	0.065	21.0	4.94	1537	0.47	148
	s	392	0.065	21.0	4.94	1935	0.47	186
	w	292	0.065	21.0	4.94	1442	0.47	139
	all	1378	0.065	21.0	4.94	6806	0.47	654
15B19-0wc-6: Bg wall, heavy dry or light damp soil, 2"x4" wood int frm, concrete wall, r-19 cav ins, 8" thk, 1/2" gypsum board int fnsh	n	380	0.043	19.0	3.55	1351	0.03	10
	e	372	0.043	19.0	3.55	1319	0.03	10
	s	368	0.043	19.0	3.50	1288	0.02	8
	w	392	0.043	19.0	3.64	1426	0.03	13
	all	1512	0.043	19.0	3.56	5384	0.03	40

Partitions (none)

Windows

61C: 61C; NFRC rated (SHGC=0.33); 50% outdoor insect screen; 1.6 ft overhang (3 ft window ht, 2 ft sep.); 6.67 ft head ht	n	9	0.300	0	22.8	205	9.42	85
61C: 61C; NFRC rated (SHGC=0.33); 50% outdoor insect screen; 1.6 ft overhang (5 ft window ht, 2 ft sep.); 6.67 ft head ht	n	20	0.300	0	22.8	456	9.42	188
	e	40	0.300	0	22.8	912	31.6	1263
	w	60	0.300	0	22.8	1368	31.6	1894
	w	40	0.300	0	22.8	912	31.6	1263
	all	180	0.300	0	22.8	4104	26.6	4797
61C: 61C; NFRC rated (SHGC=0.33); 50% outdoor insect screen; 1.6 ft overhang (4 ft window ht, 2 ft sep.); 6.67 ft head ht	s	32	0.300	0	22.8	730	14.7	469

Doors

metal: Door, mtl pur core type	e	41	0.150	10.5	11.4	465	2.78	113
	e	20	0.150	10.5	11.4	233	2.78	57
	s	20	0.150	10.5	11.4	233	2.78	57
	all	82	0.150	10.5	11.4	930	2.78	226

Ceilings								
16B-50ad: Attic ceiling, asphalt shingles roof mat, r-50 ceil ins, 1/2" gypsum board int fnsh	1660	0.020	50.0	1.52	2523	0.84	1394	
Floors								
21A-28c: Bg floor, heavy dry or light damp soil, 6.5' depth, carpet flr fnsh	1631	0.022	0	1.67	2727	0	0	
	29	0.022	0	1.67	48	0	0	
all	1660	0.022	0	1.67	2775	0	0	



Project Summary
Entire House
High Country Heating

Job: New Beginnings
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 By: Vince Byram

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Project Information

For: Vantage Pointe Homes

Notes:

Design Information

Weather: Idaho Falls, ID, US

Winter Design Conditions

Outside db -6 °F
 Inside db 70 °F
 Design TD 76 °F

Summer Design Conditions

Outside db 89 °F
 Inside db 75 °F
 Design TD 14 °F
 Daily range H
 Relative humidity 50 %
 Moisture difference -31 gr/lb

Heating Summary

Structure 26911 Btuh
 Ducts 0 Btuh
 Central vent (65 cfm) 4545 Btuh
 Outside air
 Humidification 5408 Btuh
 Piping 0 Btuh
 Equipment load 36864 Btuh

Sensible Cooling Equipment Load Sizing

Structure 8731 Btuh
 Ducts 0 Btuh
 Central vent (65 cfm) 837 Btuh
 Outside air
 Blower 0 Btuh
 Use manufacturer's data n
 Rate/swing multiplier 0.94
 Equipment sensible load 8994 Btuh

Infiltration

Method Simplified
 Construction quality Semi-tight
 Fireplaces 0

Latent Cooling Equipment Load Sizing

Structure -465 Btuh
 Ducts 0 Btuh
 Central vent (65 cfm) -1164 Btuh
 Outside air
 Equipment latent load 0 Btuh

	Heating	Cooling
Area (ft ²)	3266	3266
Volume (ft ³)	15530	15530
Air changes/hour	0.19	0.10
Equiv. AVF (cfm)	49	26

Equipment Total Load (Sen+Lat) 8994 Btuh
 Req. total capacity at 0.70 SHR 1.1 ton

Heating Equipment Summary

Make Goodman Mfg.
 Trade GOODMAN
 Model GMSS960603BN
 AHRI ref 7365096

Efficiency 96.1 AFUE
 Heating input 60000 Btuh
 Heating output 58000 Btuh
 Temperature rise 66 °F
 Actual air flow 950 cfm
 Air flow factor 0.035 cfm/Btuh
 Static pressure 0.70 in H2O
 Space thermostat

Cooling Equipment Summary

Make Amana
 Trade AMANA DISTINCTIONS
 Cond GSX130181C*
 Coil CA*F1824
 AHRI ref 3873380

Efficiency 11.6 EER, 14 SEER
 Sensible cooling 12600 Btuh
 Latent cooling 5400 Btuh
 Total cooling 18000 Btuh
 Actual air flow 1050 cfm
 Air flow factor 0.120 cfm/Btuh
 Static pressure 0.70 in H2O
 Load sensible heat ratio 1.00

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



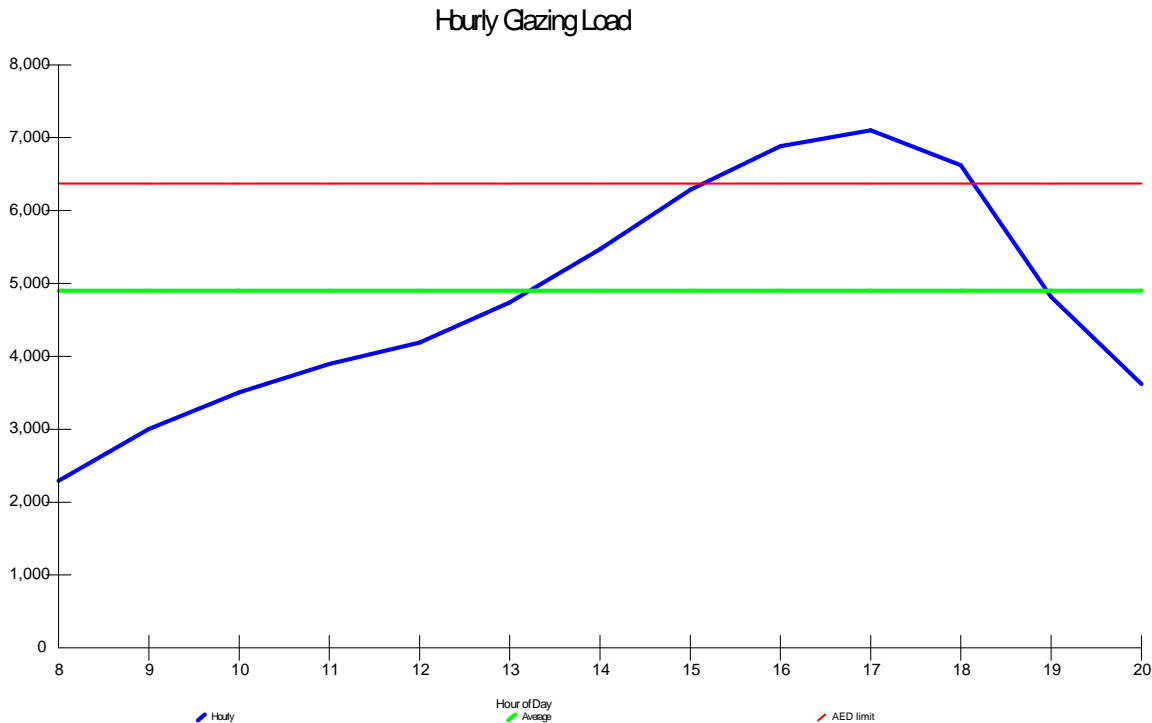
Project Information

For: Vantage Pointe Homes

Design Conditions

Location:		Indoor:	Heating	Cooling
Idaho Falls, ID, US		Indoor temperature (°F)	70	75
Elevation: 4741 ft		Design TD (°F)	76	14
Latitude: 44°N		Relative humidity (%)	50	50
		Moisture difference (gr/lb)	61.5	-31.5
Outdoor:	Heating	Cooling		
Dry bulb (°F)	-6	89		
Daily range (°F)	-	34 (H)		
Wet bulb (°F)	-	60		
Wind speed (mph)	15.0	7.5		
		Infiltration:		

Test for Adequate Exposure Diversity



Maximum hourly glazing load exceeds average by 44.9%.

House does not have adequate exposure diversity (AED), based on AED limit of 30%.

AED excursion: 730 Btuh (PFG - 1.3*AFG)

P.O. Box 627, Rigby, Idaho 83442 Phone: 208-745-8056 Fax: 208-745-4329 Email: highcountryph@yahoo.com

1 Room name				Entire House				Room1						
2 Exposed wall				398.9 ft				45.0 ft						
3 Room height				8.0 ft				8.0 ft						
4 Room dimensions				d				1.0 x 312.8 ft						
5 Room area				3266.3 ft²				312.8 ft²						
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12F-0sw	0.065	n	4.94	0.47	412	383	1892	182	52	52	257	25
	G	61C	0.300	n	22.80	9.42	9	0	205	85	0	0	0	0
	G	61C	0.300	n	22.80	9.42	20	0	456	188	0	0	0	0
	W	15B19-0wc-6	0.069	n	3.55	0.03	400	380	1351	10	0	0	0	0
11	G	61C	0.300	n	22.80	9.42	20	0	456	188	0	0	0	0
	W	12F-0sw	0.065	e	4.94	0.47	392	311	1537	148	0	0	0	0
	G	61C	0.300	e	22.80	31.57	40	0	912	1263	0	0	0	0
	D	metal	0.150	e	11.40	2.78	41	41	465	113	0	0	0	0
	W	15B19-0wc-6	0.069	e	3.55	0.03	392	372	1319	10	0	0	0	0
	D	metal	0.150	e	11.40	2.78	20	20	233	57	0	0	0	0
	W	12F-0sw	0.065	s	4.94	0.47	412	392	1935	186	152	152	751	72
	D	metal	0.150	s	11.40	2.78	20	20	233	57	0	0	0	0
	W	15B19-0wc-6	0.069	s	3.50	0.02	400	368	1288	8	0	0	0	0
	G	61C	0.300	s	22.80	14.67	32	10	730	469	0	0	0	0
	W	12F-0sw	0.065	w	4.94	0.47	392	292	1442	139	156	126	622	60
	G	61C	0.300	w	22.80	31.57	60	0	1368	1894	30	0	684	947
	G	61C	0.300	w	22.80	31.57	40	0	912	1263	0	0	0	0
	W	15B19-0wc-6	0.069	w	3.64	0.03	392	392	1426	13	0	0	0	0
	C	16B-50ad	0.020	-	1.52	0.84	1660	1660	2523	1394	313	313	475	263
	F	21A-28c	0.022	-	1.67	0.00	1631	1631	2727	0	0	0	0	0
	F	21A-28c	0.022	-	1.67	0.00	29	29	48	0	6	6	9	0
6	c) AED excursion									730				260
	Envelope loss/gain								23457	8396			2799	1626
12	a) Infiltration								3454	335			653	63
	b) Room ventilation								0	0			0	0
13	Internal gains:		Occupants @	230			0			0	0			0
			Appliances/other							0				0
	Subtotal (lines 6 to 13)								26911	8731			3452	1690
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								26911	8731			3452	1690
15	Duct loads								0	0	-0%	0%	0	0
	Total room load								26911	8731			3452	1690
	Air required (cfm)								950	1050			122	203

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1 Room name				Room2 18.5 ft				Room3 5.5 ft						
2 Exposed wall				8.0 ft 9.5 x 9.0 ft heat/cool				8.0 ft 5.5 x 9.0 ft heat/cool						
3 Room height				85.5 ft²				49.5 ft²						
4 Room dimensions														
5 Room area														
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12F-0sw	0.065	n	4.94	0.47	0	0	0	0	0	0	0	0
	G	61C	0.300	n	22.80	9.42	0	0	0	0	0	0	0	0
	G	61C	0.300	n	22.80	9.42	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	n	3.55	0.03	0	0	0	0	0	0	0	0
11	G	61C	0.300	n	22.80	9.42	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	e	4.94	0.47	76	76	375	36	44	44	217	21
	G	61C	0.300	e	22.80	31.57	0	0	0	0	0	0	0	0
	D	metal	0.150	e	11.40	2.78	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	e	3.55	0.03	0	0	0	0	0	0	0	0
	D	metal	0.150	e	11.40	2.78	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	s	4.94	0.47	72	72	356	34	0	0	0	0
	D	metal	0.150	s	11.40	2.78	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	s	3.50	0.02	0	0	0	0	0	0	0	0
	G	61C	0.300	s	22.80	14.67	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	w	4.94	0.47	0	0	0	0	0	0	0	0
	G	61C	0.300	w	22.80	31.57	0	0	0	0	0	0	0	0
	G	61C	0.300	w	22.80	31.57	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	w	3.64	0.03	0	0	0	0	0	0	0	0
	C	16B-50ad	0.020	-	1.52	0.84	86	86	130	72	50	50	75	42
	F	21A-28c	0.022	-	1.67	0.00	0	0	0	0	0	0	0	0
	F	21A-28c	0.022	-	1.67	0.00	5	5	8	0	3	3	5	0
6	c) AED excursion													
	Envelope loss/gain								869	120			297	53
12	a) Infiltration								268	26			80	8
	b) Room ventilation								0	0			0	0
13	Internal gains:		Occupants @	230			0			0	0			0
			Appliances/other							0				0
	Subtotal (lines 6 to 13)								1137	146			377	61
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								1137	146			377	61
15	Duct loads								-0%	0%			0	0
	Total room load								1137	146			377	61
	Air required (cfm)								40	18			13	7

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1 Room name				Room4 29.0 ft				Room5 16.9 ft						
2 Exposed wall				8.0 ft 1.0 x 172.1 ft heat/cool				8.0 ft 1.0 x 129.8 ft heat/cool						
3 Room height				172.1 ft ²				129.8 ft ²						
4 Room dimensions														
5 Room area														
	Ty	Construction number	U-value (Btuh/ft ² -°F)	Or	HTM (Btuh/ft ²)		Area (ft ²) or perimeter (ft)		Load (Btuh)		Area (ft ²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12F-0sw	0.065	n	4.94	0.47	124	124	613	59	0	0	0	0
	G	61C	0.300	n	22.80	9.42	0	0	0	0	0	0	0	0
	G	61C	0.300	n	22.80	9.42	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	n	3.55	0.03	0	0	0	0	0	0	0	0
11	G	61C	0.300	n	22.80	9.42	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	e	4.94	0.47	92	72	356	34	80	60	296	28
	G	61C	0.300	e	22.80	31.57	20	0	456	631	20	0	456	631
	D	metal	0.150	e	11.40	2.78	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	e	3.55	0.03	0	0	0	0	0	0	0	0
	D	metal	0.150	e	11.40	2.78	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	s	4.94	0.47	16	16	79	8	56	56	277	27
	D	metal	0.150	s	11.40	2.78	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	s	3.50	0.02	0	0	0	0	0	0	0	0
	G	61C	0.300	s	22.80	14.67	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	w	4.94	0.47	0	0	0	0	0	0	0	0
	G	61C	0.300	w	22.80	31.57	0	0	0	0	0	0	0	0
	G	61C	0.300	w	22.80	31.57	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	w	3.64	0.03	0	0	0	0	0	0	0	0
	C	16B-50ad	0.020	-	1.52	0.84	172	172	262	145	130	130	197	109
	F	21A-28c	0.022	-	1.67	0.00	0	0	0	0	0	0	0	0
	F	21A-28c	0.022	-	1.67	0.00	6	6	10	0	0	0	0	0
6	c) AED excursion									-33				-20
	Envelope loss/gain								1775	844			1226	776
12	a) Infiltration								421	41			247	24
	b) Room ventilation								0	0			0	0
13	Internal gains:		Occupants @	230			0			0	0			0
			Appliances/other							0				0
	Subtotal (lines 6 to 13)								2195	884			1473	800
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								2195	884			1473	800
15	Duct loads								-0%	0%			0	0
	Total room load								2195	884			1473	800
	Air required (cfm)								77	106			52	96

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

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1 Room name				Room6 6.0 ft				Room7 5.5 ft						
2 Exposed wall				8.0 ft heat/cool				8.0 ft heat/cool						
3 Room height				8.0 x 6.0 ft				14.0 x 5.5 ft						
4 Room dimensions				48.0 ft²				77.0 ft²						
5 Room area														
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12F-0sw	0.065	n	4.94	0.47	48	48	237	23	44	44	217	21
	G	61C	0.300	n	22.80	9.42	0	0	0	0	0	0	0	0
	G	61C	0.300	n	22.80	9.42	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	n	3.55	0.03	0	0	0	0	0	0	0	0
11	G	61C	0.300	n	22.80	9.42	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	e	4.94	0.47	0	0	0	0	0	0	0	0
	G	61C	0.300	e	22.80	31.57	0	0	0	0	0	0	0	0
	D	metal	0.150	e	11.40	2.78	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	e	3.55	0.03	0	0	0	0	0	0	0	0
	D	metal	0.150	e	11.40	2.78	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	s	4.94	0.47	0	0	0	0	0	0	0	0
	D	metal	0.150	s	11.40	2.78	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	s	3.50	0.02	0	0	0	0	0	0	0	0
	G	61C	0.300	s	22.80	14.67	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	w	4.94	0.47	0	0	0	0	0	0	0	0
	G	61C	0.300	w	22.80	31.57	0	0	0	0	0	0	0	0
	G	61C	0.300	w	22.80	31.57	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	w	3.64	0.03	0	0	0	0	0	0	0	0
	C	16B-50ad	0.020	-	1.52	0.84	48	48	73	40	77	77	117	65
	F	21A-28c	0.022	-	1.67	0.00	0	0	0	0	0	0	0	0
	F	21A-28c	0.022	-	1.67	0.00	0	0	0	0	0	0	0	0
6	c) AED excursion									-10				-12
	Envelope loss/gain								310	54			334	73
12	a) Infiltration								87	8			80	8
	b) Room ventilation								0	0			0	0
13	Internal gains:		Occupants @	230			0			0	0			0
			Appliances/other							0				0
	Subtotal (lines 6 to 13)								397	62			414	81
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								397	62			414	81
15	Duct loads								-0%	0%			0	0
	Total room load								397	62			414	81
	Air required (cfm)								14	7			15	10

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

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1		Room name				Room8 74.5 ft				Room9 32.0 ft				
2		Exposed wall				8.0 ft 1.0 x 760.9 ft heat/cool				8.0 ft 1.0 x 165.5 ft heat/cool				
3		Room height				760.9 ft ²				165.5 ft ²				
4		Room dimensions												
5		Room area												
	Ty	Construction number	U-value (Btuh/ft ² -°F)	Or	HTM (Btuh/ft ²)		Area (ft ²) or perimeter (ft)		Load (Btuh)		Area (ft ²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12F-0sw	0.065	n	4.94	0.47	144	115	568	55	0	0	0	0
	G	61C	0.300	n	22.80	9.42	9	0	205	85	0	0	0	0
	G	61C	0.300	n	22.80	9.42	20	0	456	188	0	0	0	0
	W	15B19-0wc-6	0.069	n	3.55	0.03	0	0	0	0	44	44	160	1
11	G	61C	0.300	n	22.80	9.42	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	e	4.94	0.47	100	59	292	28	0	0	0	0
	G	61C	0.300	e	22.80	31.57	0	0	0	0	0	0	0	0
	D	metal	0.150	e	11.40	2.78	41	41	465	113	0	0	0	0
	W	15B19-0wc-6	0.069	e	3.55	0.03	0	0	0	0	0	0	0	0
	D	metal	0.150	e	11.40	2.78	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	s	4.94	0.47	116	96	472	45	0	0	0	0
	D	metal	0.150	s	11.40	2.78	20	20	233	57	0	0	0	0
	W	15B19-0wc-6	0.069	s	3.50	0.02	0	0	0	0	108	92	309	1
	G	61C	0.300	s	22.80	14.67	0	0	0	0	16	5	365	235
	W	12F-0sw	0.065	w	4.94	0.47	236	166	820	79	0	0	0	0
	G	61C	0.300	w	22.80	31.57	30	0	684	947	0	0	0	0
	G	61C	0.300	w	22.80	31.57	40	0	912	1263	0	0	0	0
	W	15B19-0wc-6	0.069	w	3.64	0.03	0	0	0	0	104	104	378	3
	C	16B-50ad	0.020	-	1.52	0.84	761	761	1157	639	0	0	0	0
	F	21A-28c	0.022	-	1.67	0.00	0	0	0	0	166	166	277	0
	F	21A-28c	0.022	-	1.67	0.00	10	10	17	0	0	0	0	0
6	c) AED excursion									530				46
	Envelope loss/gain								6281	4029			1489	286
12	a) Infiltration								1081	105			87	8
	b) Room ventilation								0	0			0	0
13	Internal gains:		Occupants @	230			0			0	0			0
			Appliances/other							0				0
	Subtotal (lines 6 to 13)								7362	4134			1576	294
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								7362	4134			1576	294
15	Duct loads								-0%	0%			0	0
	Total room load								7362	4134			1576	294
	Air required (cfm)								260	497			56	35

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1		Room name				Room10		Room12						
2		Exposed wall				27.0 ft		9.0 ft						
3		Room height				8.0 ft		8.0 ft						
4		Room dimensions				1.0 x 174.0 ft		9.0 x 12.0 ft						
5		Room area				174.0 ft²		108.0 ft²						
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12F-0sw	0.065	n	4.94	0.47	0	0	0	0	0	0	0	0
	G	61C	0.300	n	22.80	9.42	0	0	0	0	0	0	0	0
	G	61C	0.300	n	22.80	9.42	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	n	3.55	0.03	0	0	0	0	0	0	0	0
11	G	61C	0.300	n	22.80	9.42	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	e	4.94	0.47	0	0	0	0	0	0	0	0
	G	61C	0.300	e	22.80	31.57	0	0	0	0	0	0	0	0
	D	metal	0.150	e	11.40	2.78	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	e	3.55	0.03	104	104	378	3	72	72	262	2
	D	metal	0.150	e	11.40	2.78	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	s	4.94	0.47	0	0	0	0	0	0	0	0
	D	metal	0.150	s	11.40	2.78	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	s	3.50	0.02	112	96	324	1	0	0	0	0
	G	61C	0.300	s	22.80	14.67	16	5	365	235	0	0	0	0
	W	12F-0sw	0.065	w	4.94	0.47	0	0	0	0	0	0	0	0
	G	61C	0.300	w	22.80	31.57	0	0	0	0	0	0	0	0
	G	61C	0.300	w	22.80	31.57	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	w	3.64	0.03	0	0	0	0	0	0	0	0
	C	16B-50ad	0.020	-	1.52	0.84	0	0	0	0	0	0	0	0
	F	21A-28c	0.022	-	1.67	0.00	174	174	291	0	108	108	181	0
	F	21A-28c	0.022	-	1.67	0.00	0	0	0	0	0	0	0	0
6	c) AED excursion									46				-1
	Envelope loss/gain								1358	285			443	2
12	a) Infiltration								73	7			24	2
	b) Room ventilation								0	0			0	0
13	Internal gains:		Occupants @	230			0		0	0			0	0
			Appliances/other						0	0			0	0
	Subtotal (lines 6 to 13)								1431	292			467	4
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								1431	292			467	4
15	Duct loads								-0%	0%			0	0
	Total room load								1431	292			467	4
	Air required (cfm)								51	35			16	0

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						Room13 33.5 ft 8.0 ft 1.0 x 245.5 ft heat/cool 245.5 ft²				Room14 29.5 ft 8.0 ft 1.0 x 210.0 ft heat/cool 210.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12F-0sw	0.065	n	4.94	0.47	0	0	0	0	0	0	0	0
	G	61C	0.300	n	22.80	9.42	0	0	0	0	0	0	0	0
	G	61C	0.300	n	22.80	9.42	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	n	3.55	0.03	152	132	448	2	0	0	0	0
11	G	61C	0.300	n	22.80	9.42	20	0	456	188	0	0	0	0
	W	12F-0sw	0.065	e	4.94	0.47	0	0	0	0	0	0	0	0
	G	61C	0.300	e	22.80	31.57	0	0	0	0	0	0	0	0
	D	metal	0.150	e	11.40	2.78	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	e	3.55	0.03	104	104	378	3	112	92	301	0
	D	metal	0.150	e	11.40	2.78	0	0	0	0	20	20	233	57
	W	12F-0sw	0.065	s	4.94	0.47	0	0	0	0	0	0	0	0
	D	metal	0.150	s	11.40	2.78	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	s	3.50	0.02	12	12	44	0	124	124	451	4
	G	61C	0.300	s	22.80	14.67	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	w	4.94	0.47	0	0	0	0	0	0	0	0
	G	61C	0.300	w	22.80	31.57	0	0	0	0	0	0	0	0
	G	61C	0.300	w	22.80	31.57	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	w	3.64	0.03	0	0	0	0	0	0	0	0
	C	16B-50ad	0.020	-	1.52	0.84	1	1	1	1	4	4	5	3
	F	21A-28c	0.022	-	1.67	0.00	246	246	410	0	210	210	351	0
	F	21A-28c	0.022	-	1.67	0.00	0	0	0	0	0	0	0	0
6	c) AED excursion													-10
	Envelope loss/gain								1738	167			1341	54
12	a) Infiltration								91	9			80	8
	b) Room ventilation								0	0			0	0
13	Internal gains:		Occupants @		230		0			0	0			0
			Appliances/other							0				0
	Subtotal (lines 6 to 13)								1829	176			1421	62
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								1829	176			1421	62
15	Duct loads								-0%	0%			0	0
	Total room load								1829	176			1421	62
	Air required (cfm)								65	21			50	7

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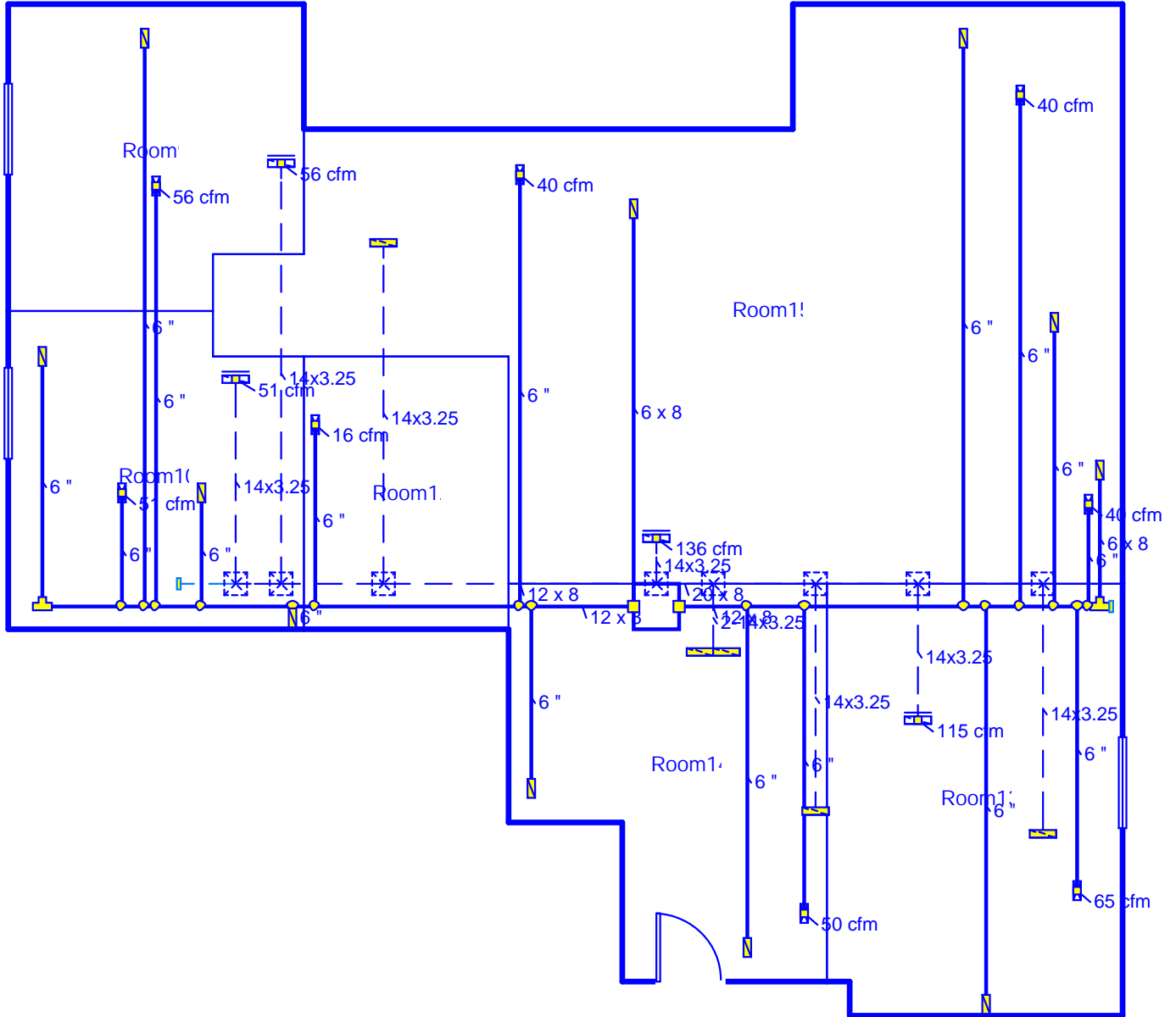
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1		Room name			Room15									
2		Exposed wall			8.0 ft				67.0 ft					
3		Room height			1.0				x		727.8 ft		heat/cool	
4		Room dimensions			727.8 ft ²									
5		Room area												
	Ty	Construction number	U-value (Btuh/ft ² -°F)	Or	HTM (Btuh/ft ²)		Area (ft ²) or perimeter (ft)		Load (Btuh)		Area or perimeter		Load	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12F-0sw	0.065	n	4.94	0.47	0	0	0	0				
	G	61C	0.300	n	22.80	9.42	0	0	0	0				
	G	61C	0.300	n	22.80	9.42	0	0	0	0				
	W	15B19-0wc-6	0.069	n	3.55	0.03	204	204	742	7				
11	G	61C	0.300	n	22.80	9.42	0	0	0	0				
	W	12F-0sw	0.065	e	4.94	0.47	0	0	0	0				
	G	61C	0.300	e	22.80	31.57	0	0	0	0				
	D	metal	0.150	e	11.40	2.78	0	0	0	0				
	W	15B19-0wc-6	0.069	e	3.55	0.03	0	0	0	0				
	D	metal	0.150	e	11.40	2.78	0	0	0	0				
	W	12F-0sw	0.065	s	4.94	0.47	0	0	0	0				
	D	metal	0.150	s	11.40	2.78	0	0	0	0				
	W	15B19-0wc-6	0.069	s	3.50	0.02	44	44	160	1				
	G	61C	0.300	s	22.80	14.67	0	0	0	0				
	W	12F-0sw	0.065	w	4.94	0.47	0	0	0	0				
	G	61C	0.300	w	22.80	31.57	0	0	0	0				
	G	61C	0.300	w	22.80	31.57	0	0	0	0				
	W	15B19-0wc-6	0.069	w	3.64	0.03	288	288	1048	10				
	C	16B-50ad	0.020	-	1.52	0.84	20	20	30	17				
	F	21A-28c	0.022	-	1.67	0.00	728	728	1217	0				
	F	21A-28c	0.022	-	1.67	0.00	0	0	0	0				
6	c) AED excursion									-7				
	Envelope loss/gain								3197	28				
12	a) Infiltration								182	18				
	b) Room ventilation								0	0				
13	Internal gains:			Occupants @	230		0			0				
				Appliances/other						0				
	Subtotal (lines 6 to 13)								3380	45				
	Less external load								0	0				
	Less transfer								0	0				
	Redistribution								0	0				
14	Subtotal								3380	45				
15	Duct loads						-0%	0%	0	0				
	Total room load								3380	45				
	Air required (cfm)								119	5				

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



Basement



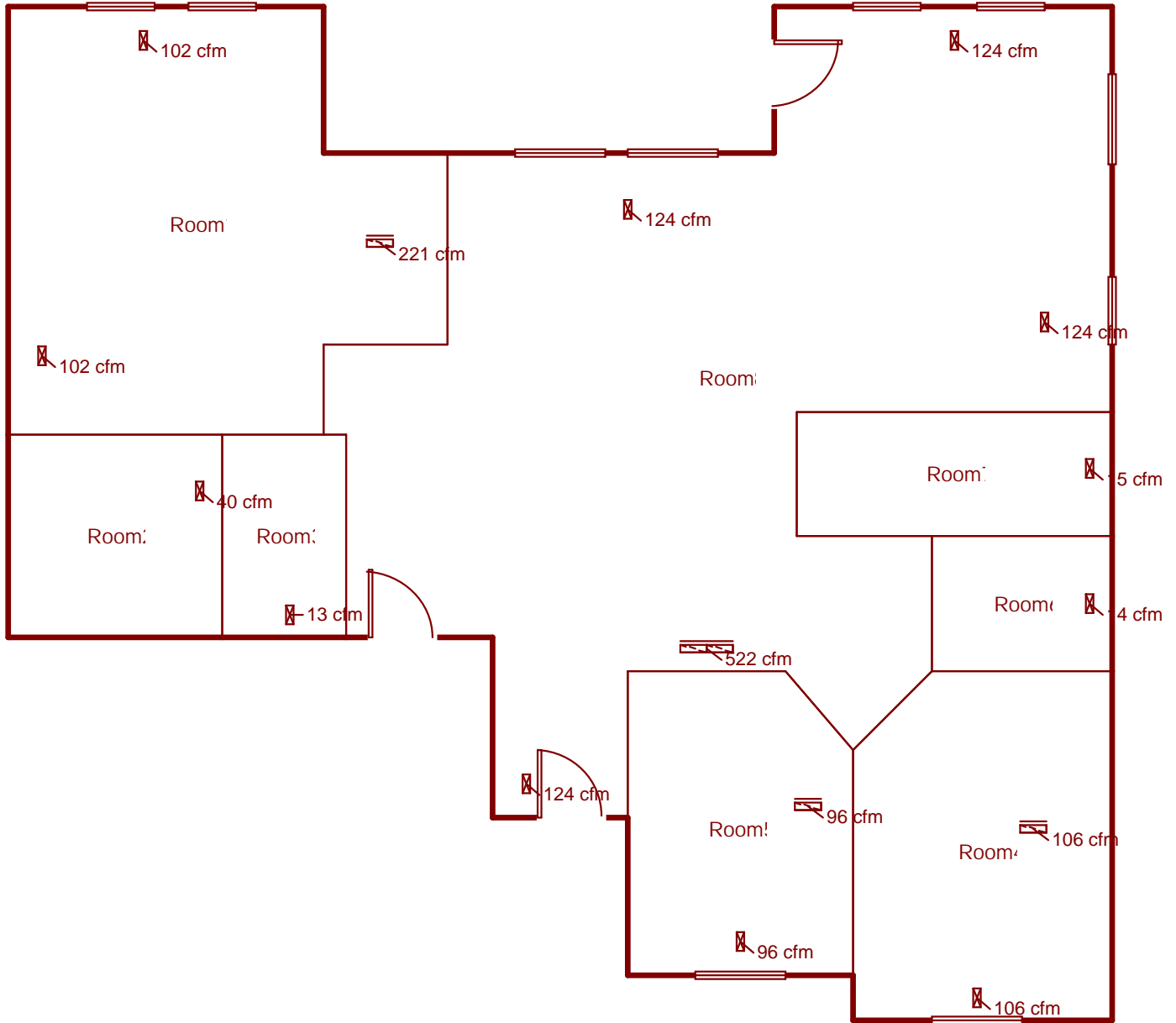
Job #: New Beginnings
Performed by Vince Byram for:
Vantage Pointe Homes

High Country Heating
P.O. Box 627
Rigby, Idaho 83442
Phone: 208-745-8056 Fax: 208-745-4329
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Main



Job #: New Beginnings
Performed by Vince Byram for:
Vantage Pointe Homes

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Duct System Summary

Entire House

High Country Heating

Job: New Beginnings
 Date: 12/18/18
 By: Vince Byram

P.O. Box 627, Rigby, Idaho 83442 Phone: 208-745-8056 Fax: 208-745-4329 Email: highcountryph@yahoo.com

Project Information

For: Vantage Pointe Homes

	Heating	Cooling
External static pressure	0.70 in H2O	0.70 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0.70 in H2O	0.70 in H2O
Supply / return available pressure	0.475 / 0.225 in H2O	0.475 / 0.225 in H2O
Lowest friction rate	0.152 in/100ft	0.152 in/100ft
Actual air flow	950 cfm	1050 cfm
Total effective length (TEL)	461 ft	

Supply Branch Detail Table

Name	Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
Room1	c 845	61	102	0.214	6.0	0x0	ShMt	37.0	185.0	st2
Room1-A	c 845	61	102	0.160	6.0	0x0	ShMt	46.5	250.0	st2
Room10	h 1431	51	35	0.178	6.0	0x0	ShMt	27.5	240.0	st2
Room12	h 467	16	0	0.160	6.0	0x0	ShMt	22.0	275.0	st2
Room13	h 1829	65	21	0.170	6.0	0x0	ShMt	30.0	250.0	st1
Room14	h 1421	50	7	0.162	6.0	0x0	ShMt	19.0	275.0	st1
Room15	h 1127	40	2	0.159	6.0	0x0	ShMt	24.0	275.0	st2
Room15-A	h 1127	40	2	0.157	6.0	0x0	ShMt	37.5	265.0	st1
Room15-B	h 1127	40	2	0.181	6.0	0x0	ShMt	22.5	240.0	st1
Room2	h 1137	40	18	0.164	6.0	0x0	ShMt	24.0	265.0	st2
Room3	h 377	13	7	0.164	6.0	0x0	ShMt	15.5	275.0	st2
Room4	c 884	77	106	0.155	6.0	0x0	ShMt	31.0	275.0	st1
Room5	c 800	52	96	0.162	6.0	0x0	ShMt	18.0	275.0	st1
Room6	h 62	14	7	0	0	0x0	ShMt	0	0	
Room7	h 414	15	10	0.187	2.5	8x6	ShMt	24.5	230.0	st1
Room8	c 1033	65	124	0.152	6.0	0x0	ShMt	37.5	275.0	st1
Room8-A	c 1033	65	124	0.164	6.0	0x0	ShMt	29.0	260.0	st1
Room8-B	c 1033	65	124	0.260	5.2	8x6	ShMt	17.5	165.0	
Room8-C	c 1033	65	124	0.165	6.0	0x0	ShMt	12.5	275.0	st2
Room9	h 1576	56	35	0.159	6.0	0x0	ShMt	39.5	260.0	st2

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st2	Peak AVF	403	425	0.159	638	9.1	8 x 12	ShtMetl	
st1	Peak AVF	468	493	0.152	740	9.7	8 x 12	ShtMetl	

Return Branch Detail Table

Name	Grille Size (in)	Htg (cfm)	Clg (cfm)	TEL (ft)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Stud/Joist Opening (in)	Duct Matl	Trunk
rb1	0x0	162	221	117.0	0.192	698	6.9	3.25x14	10x9	SJSp	rt1
rb6	0x0	302	522	95.5	0.236	825	9.1	2-3.25x14	2-10x18	SJSp	rt2
rb8	0x0	52	96	117.0	0.192	304	5.0	3.25x14	10x9	SJSp	rt2
rb7	0x0	77	106	148.0	0.152	337	5.5	3.25x14	10x9	SJSp	rt2
rb5	0x0	56	35	135.0	0.167	176	4.2	3.25x14	10x9	SJSp	rt1
rb4	0x0	51	35	127.5	0.176	160	4.0	3.25x14	10x9	SJSp	rt1
rb3	0x0	136	6	72.0	0.312	430	5.2	3.25x14	10x9	SJSp	
rb2	0x0	115	29	127.5	0.176	363	5.5	3.25x14	10x9	SJSp	rt2

Return Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
rt1	Peak AVF	268	291	0.167	437	7.8	8 x 12	ShtMetl	
rt2	Peak AVF	546	753	0.152	678	11.4	8 x 20	ShtMetl	