



**Load Short Form**  
*Entire House*  
**High Country Heating**

Job: Townhomes  
 Date: 5/15/16  
 By: Vince

P.O. Box 627, Rigby, Id 83442 Phone: 208-745-8056 Fax: 208-745-0817 Email: highcountryph@yahoo.com

**Project Information**

For: Comfort Construction

**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	GMH950703BX
AHRI ref	2002183
Efficiency	96 AFUE
Heating input	69000 Btuh
Heating output	52240 Btuh
Temperature rise	66 °F
Actual air flow	860 cfm
Air flow factor	0.039 cfm/Btuh
Static pressure	0.70 in H2O
Space thermostat	

**COOLING EQUIPMENT**

Make	Amana
Trade	Aman
Cond	GSX130241C*
Coil	CA*F1824*6D*
AHRI ref	4765508
Efficiency	11.5 EER, 14 SEER
Sensible cooling	16100 Btuh
Latent cooling	6900 Btuh
Total cooling	23000 Btuh
Actual air flow	860 cfm
Air flow factor	0.122 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)
Room2	250	1764	755	69	92
Room6	64	352	3	14	0
Room7	257	1870	209	73	26
Room8	553	2527	759	99	93
Room10	257	2980	588	117	72
Room11	52	500	81	20	10
Room12	100	670	129	26	16
Room13	226	2524	453	99	55
Room14	52	597	90	23	11
Room15	42	1153	167	45	20
Room16	649	6967	3798	274	464

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

Entire House	d	2501	21902	7033	860	860
Other equip loads			8617	700		
Equip. @ 0.94 RSM				7268		
Latent cooling				0		
TOTALS		2501	30519	7268	860	860

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# Building Analysis

## Entire House

### High Country Heating

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## Project Information

For: Comfort Construction

## 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

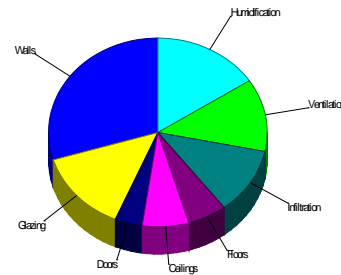
### Infiltration:

Method  
 Construction quality  
 Fireplaces

Simplified  
 Semi-tight  
 0

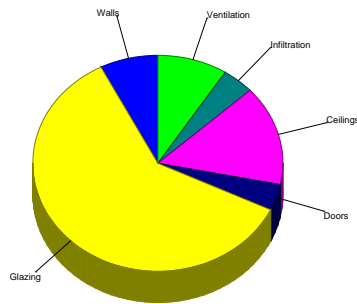
## Heating

Component	Btuh/ft²	Btuh	% of load
Walls	4.1	9065	29.7
Glazing	23.6	4252	13.9
Doors	11.4	1244	4.1
Ceilings	1.5	2094	6.9
Floors	1.5	1766	5.8
Infiltration	2.3	3482	11.4
Ducts		0	0
Piping		0	0
Humidification		4818	15.8
Ventilation		3799	12.4
Adjustments		0	0
<b>Total</b>		<b>30519</b>	<b>100.0</b>



## Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	0.3	582	7.5
Glazing	25.9	4670	60.4
Doors	2.8	303	3.9
Ceilings	0.8	1157	15.0
Floors	0	0	0
Infiltration	0.2	321	4.1
Ducts		0	0
Ventilation		700	9.1
Internal gains		0	0
Blower		0	0
Adjustments		0	0
<b>Total</b>		<b>7732</b>	<b>100.0</b>



Latent Cooling Load = 0 Btuh  
 Overall U-value = 0.048 Btuh/ft²-°F

Data entries checked.



**Component Constructions**  
*Entire House*  
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**Project Information**

For: Comfort Construction

**Design Conditions**

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

**Construction descriptions**

**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

	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
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	230	0.065	21.0	4.94	1135	0.47	109
	e	319	0.065	21.0	4.94	1577	0.47	151
	s	239	0.065	21.0	4.94	1178	0.47	113
	w	414	0.065	21.0	4.94	2045	0.47	196
	all	1201	0.065	21.0	4.94	5935	0.47	570
15B19-0wc-8: Bg wall, heavy dry or light damp soil, 2"x4" wood int frm, concrete wall, r-19 cav ins, 8" thk	n	250	0.040	19.0	3.13	782	0.01	3
	e	374	0.040	19.0	3.08	1150	0.00	1
	s	122	0.040	19.0	3.28	399	0.02	2
	w	243	0.040	19.0	3.28	798	0.02	5
	all	989	0.040	19.0	3.17	3130	0.01	12

**Partitions**

(none)

**Windows**

61C: 61C; 6.67 ft head ht

n	47	0.310	0	23.6	1101	10.2	478
n	20	0.310	0	23.6	471	10.2	205
e	74	0.310	0	23.6	1737	33.3	2459
e	40	0.310	0	23.6	942	33.3	1334
all	180	0.310	0	23.6	4252	24.8	4475

**Doors**

metal: Door, mtl pur core type

n	25	0.150	6.5	11.4	286	2.78	70
e	21	0.150	6.5	11.4	239	2.78	58
s	63	0.150	6.5	11.4	718	2.78	175
all	109	0.150	6.5	11.4	1244	2.78	303

**Ceilings**

16B-50ad: Attic ceiling, asphalt shingles roof mat, r-50 ceil ins, 5/8" gypsum board int fnsh

	1378	0.020	50.0	1.52	2094	0.84	1157
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**Floors**

21A-32t: Bg floor, heavy dry or light damp soil, 8' depth

	1123	0.020	0	1.52	1707	0	0
	39	0.020	0	1.52	59	0	0
all	1162	0.020	0	1.52	1766	0	0



**Project Summary**  
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**Project Information**

For: Comfort Construction

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 21902 Btuh  
 Ducts 0 Btuh  
 Central vent (54 cfm) 3799 Btuh  
 Humidification 4818 Btuh  
 Piping 0 Btuh  
 Equipment load 30519 Btuh

**Sensible Cooling Equipment Load Sizing**

Structure 7033 Btuh  
 Ducts 0 Btuh  
 Central vent (54 cfm) 700 Btuh  
 Blower 0 Btuh  
 Use manufacturer's data n  
 Rate/swing multiplier 0.94  
 Equipment sensible load 7268 Btuh

**Infiltration**

Method Simplified  
 Construction quality Semi-tight  
 Fireplaces 0

	Heating	Cooling
Area (ft <sup>2</sup> )	2501	2501
Volume (ft <sup>3</sup> )	13522	13522
Air changes/hour	0.22	0.11
Equiv. AVF (cfm)	50	25

**Latent Cooling Equipment Load Sizing**

Structure -446 Btuh  
 Ducts 0 Btuh  
 Central vent (54 cfm) -973 Btuh  
 Equipment latent load 0 Btuh  
 Equipment total load 7268 Btuh  
 Req. total capacity at 0.70 SHR 0.9 ton

**Heating Equipment Summary**

Make Goodman Mfg.  
 Trade GOODMAN  
 Model GMH950703BX  
 AHRI ref 2002183

Efficiency 96 AFUE  
 Heating input 69000 Btuh  
 Heating output 52240 Btuh  
 Temperature rise 66 °F  
 Actual air flow 860 cfm  
 Air flow factor 0.039 cfm/Btuh  
 Static pressure 0.70 in H2O  
 Space thermostat

**Cooling Equipment Summary**

Make Amana  
 Trade Aman  
 Cond GSX130241C\*  
 Coil CA\*F1824\*6D\*  
 AHRI ref 4765508

Efficiency 11.5 EER, 14 SEER  
 Sensible cooling 16100 Btuh  
 Latent cooling 6900 Btuh  
 Total cooling 23000 Btuh  
 Actual air flow 860 cfm  
 Air flow factor 0.122 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.



**AED Assessment**  
*Entire House*  
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**Project Information**

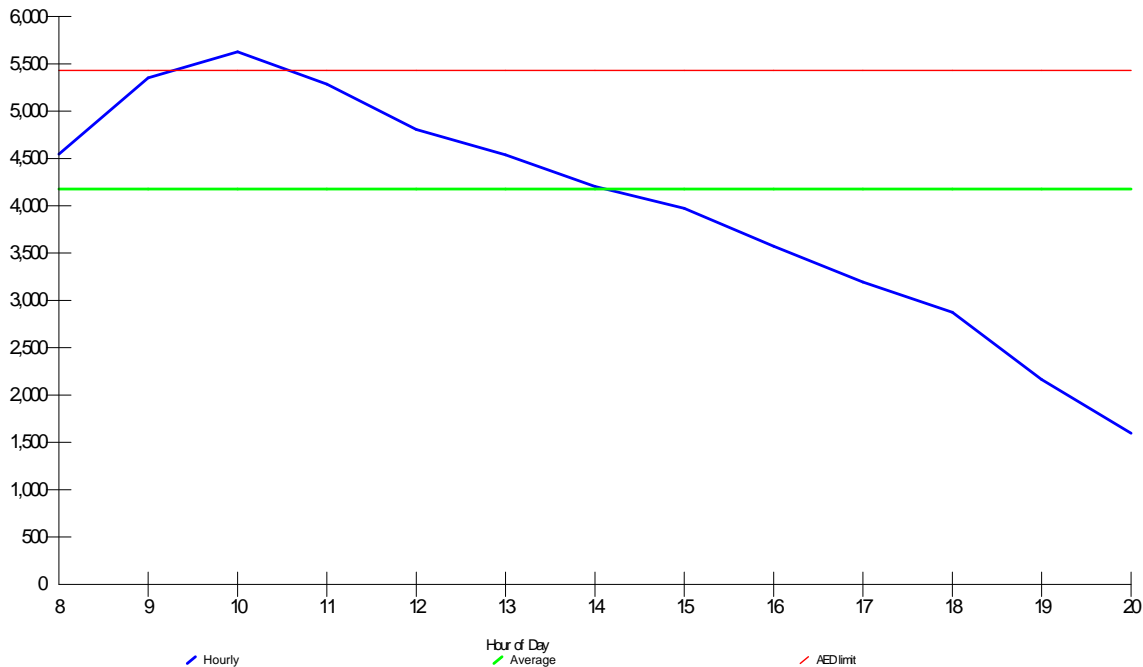
For: Comfort Construction

**Design Conditions**

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

**Test for Adequate Exposure Diversity**

Hourly Glazing Load



**Maximum hourly glazing load exceeds average by 34.7%.**

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

**AED excursion: 195 Btuh ( PFG - 1.3\*AFG )**



# Right-J® Worksheet

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P.O. Box 627, Rigby, Id 83442 Phone: 208-745-8056 Fax: 208-745-0817 Email: highcountryph@yahoo.com

1		Room name		Entire House				Room2						
2		Exposed wall		275.5 ft				32.0 ft						
3		Room height		9.0 ft				9.0 ft						
4		Room dimensions		d				13.5 x 18.5 ft						
5		Room area		2500.6 ft²				249.8 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	302	230	1135	109	0	0	0	0
	G	61C	0.310	n	23.56	10.23	47	0	1101	478	0	0	0	0
	D	metal	0.150	n	11.40	2.78	25	25	286	70	0	0	0	0
	W	15B19-0wc-8	0.069	n	3.13	0.01	270	250	782	3	0	0	0	0
11	G	61C	0.310	n	23.56	10.23	20	0	471	205	0	0	0	0
	W	12F-0sw	0.065	e	4.94	0.47	414	319	1577	151	0	0	0	0
	G	61C	0.310	e	23.56	33.35	74	0	1737	2459	0	0	0	0
	D	metal	0.150	e	11.40	2.78	21	21	239	58	0	0	0	0
	W	15B19-0wc-8	0.069	e	3.08	0.00	414	374	1150	1	167	147	442	0
	G	61C	0.310	e	23.56	33.35	40	0	942	1334	20	0	471	667
	W	12F-0sw	0.065	s	4.94	0.47	302	239	1178	113	0	0	0	0
	D	metal	0.150	s	11.40	2.78	63	63	718	175	0	0	0	0
	W	15B19-0wc-8	0.069	s	3.28	0.02	122	122	399	2	122	122	399	2
	W	12F-0sw	0.065	w	4.94	0.47	414	414	2045	196	0	0	0	0
	W	15B19-0wc-8	0.069	w	3.28	0.02	243	243	798	5	0	0	0	0
	C	16B-50ad	0.020	-	1.52	0.84	1378	1378	2094	1157	0	0	0	0
	F	21A-32t	0.020	-	1.52	0.00	1123	1123	1707	0	250	250	380	0
	F	21A-32t	0.020	-	1.52	0.00	39	39	59	0	0	0	0	0
6	c) AED excursion									195				79
	Envelope loss/gain								18420	6712			1692	749
12	a) Infiltration								3482	321			72	7
	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)								21902	7033			1764	755
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								21902	7033			1764	755
15	Duct loads								0	0	-0%	0%	0	0
	Total room load								21902	7033			1764	755
	Air required (cfm)								860	860			69	92

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# Right-J® Worksheet

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P.O. Box 627, Rigby, Id 83442 Phone: 208-745-8056 Fax: 208-745-0817 Email: highcountryph@yahoo.com

1		Room name				Room6				Room7				
2		Exposed wall				8.0 ft				35.0 ft				
3		Room height				9.0 ft				9.0 ft				
4		Room dimensions				8.0 x 8.0 ft				13.5 x 19.0 ft				
5		Room area				64.0 ft²				256.5 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	0.310	n	23.56	10.23	0	0	0	0	0	0	0	0
	D	metal	0.150	n	11.40	2.78	0	0	0	0	0	0	0	0
	W	15B19-0wc-8	0.069	n	3.13	0.01	0	0	0	0	122	102	294	0
11	G	61C	0.310	n	23.56	10.23	0	0	0	0	20	0	471	205
	W	12F-0sw	0.065	e	4.94	0.47	0	0	0	0	0	0	0	0
	G	61C	0.310	e	23.56	33.35	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-8	0.069	e	3.08	0.00	0	0	0	0	23	23	74	0
	G	61C	0.310	e	23.56	33.35	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-8	0.069	s	3.28	0.02	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
	W	15B19-0wc-8	0.069	w	3.28	0.02	72	72	237	1	171	171	562	3
	C	16B-50ad	0.020	-	1.52	0.84	0	0	0	0	0	0	0	0
	F	21A-32t	0.020	-	1.52	0.00	64	64	97	0	257	257	390	0
	F	21A-32t	0.020	-	1.52	0.00	0	0	0	0	0	0	0	0
6	c) AED excursion									0				-7
	Envelope loss/gain									334	1			1791 202
12	a) Infiltration									18	2			79 7
	b) Room ventilation									0	0			0 0
13	Internal gains:		Occupants @	230			0			0	0			0 0
			Appliances/other							0				0 0
	Subtotal (lines 6 to 13)									352	3			1870 209
	Less external load									0	0			0 0
	Less transfer									0	0			0 0
	Redistribution									0	0			0 0
14	Subtotal									352	3			1870 209
15	Duct loads									0	0			0 0
	Total room load									352	3			1870 209
	Air required (cfm)									14	0			73 26

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						Room8 41.5 ft 9.0 ft 1.0 x 552.8 ft heat/cool 552.8 ft²				Room10 34.8 ft 9.0 ft 13.5 x 19.0 ft heat/cool 256.5 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	122	103	510	49
	G	61C	0.310	n	23.56	10.23	0	0	0	0	18	0	432	187
	D	metal	0.150	n	11.40	2.78	0	0	0	0	0	0	0	0
	W	15B19-0wc-8	0.069	n	3.13	0.01	149	149	488	3	0	0	0	0
11	G	61C	0.310	n	23.56	10.23	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	e	4.94	0.47	0	0	0	0	20	20	100	10
	G	61C	0.310	e	23.56	33.35	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-8	0.069	e	3.08	0.00	225	205	634	1	0	0	0	0
	G	61C	0.310	e	23.56	33.35	20	0	471	667	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-8	0.069	s	3.28	0.02	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	w	4.94	0.47	0	0	0	0	171	171	845	81
	W	15B19-0wc-8	0.069	w	3.28	0.02	0	0	0	0	0	0	0	0
	C	16B-50ad	0.020	-	1.52	0.84	0	0	0	0	257	257	390	215
	F	21A-32t	0.020	-	1.52	0.00	553	553	840	0	0	0	0	0
	F	21A-32t	0.020	-	1.52	0.00	0	0	0	0	0	0	0	0
6	c) AED excursion									79				-19
	Envelope loss/gain								2433	750			2276	524
12	a) Infiltration								93	9			704	65
	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)								2527	759			2980	588
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								2527	759			2980	588
15	Duct loads								-0%	0%			0	0
	Total room load								2527	759			2980	588
	Air required (cfm)								99	93			117	72

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



# Right-J® Worksheet

## Entire House

### High Country Heating

Job: Townhomes  
 Date: 5/15/16  
 By: Vince

P.O. Box 627, Rigby, Id 83442 Phone: 208-745-8056 Fax: 208-745-0817 Email: highcountryph@yahoo.com

1		Room name				Room11 6.5 ft				Room12 8.0 ft				
2		Exposed wall				9.0 ft				9.0 ft				
3		Room height				8.0				12.5				
4		Room dimensions				x 6.5 ft				x 8.0 ft				
5		Room area				52.0 ft²				100.0 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	0.310	n	23.56	10.23	0	0	0	0	0	0	0	0
	D	metal	0.150	n	11.40	2.78	0	0	0	0	0	0	0	0
	W	15B19-0wc-8	0.069	n	3.13	0.01	0	0	0	0	0	0	0	0
11	G	61C	0.310	n	23.56	10.23	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	0.310	e	23.56	33.35	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-8	0.069	e	3.08	0.00	0	0	0	0	0	0	0	0
	G	61C	0.310	e	23.56	33.35	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-8	0.069	s	3.28	0.02	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	w	4.94	0.47	59	59	289	28	72	72	356	34
	W	15B19-0wc-8	0.069	w	3.28	0.02	0	0	0	0	0	0	0	0
	C	16B-50ad	0.020	-	1.52	0.84	52	52	79	44	100	100	152	84
	F	21A-32t	0.020	-	1.52	0.00	0	0	0	0	0	0	0	0
	F	21A-32t	0.020	-	1.52	0.00	0	0	0	0	0	0	0	0
6	c) AED excursion													
	Envelope loss/gain								368	69			508	114
12	a) Infiltration								132	12			162	15
	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)								500	81			670	129
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								500	81			670	129
15	Duct loads								-0%	0%			0	0
	Total room load								500	81			670	129
	Air required (cfm)								20	10			26	16

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



# Right-J® Worksheet

## Entire House

### High Country Heating

Job: Townhomes  
 Date: 5/15/16  
 By: Vince

P.O. Box 627, Rigby, Id 83442 Phone: 208-745-8056 Fax: 208-745-0817 Email: highcountryph@yahoo.com

1		Room name				Room13 29.5 ft 9.0 ft heat/cool 1.0 x 226.0 ft 226.0 ft²				Room14 8.0 ft 9.0 ft heat/cool 8.0 x 6.5 ft 52.0 ft²				
2		Exposed wall												
3		Room height												
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	0.310	n	23.56	10.23	0	0	0	0	0	0	0	0
	D	metal	0.150	n	11.40	2.78	0	0	0	0	0	0	0	0
	W	15B19-0wc-8	0.069	n	3.13	0.01	0	0	0	0	0	0	0	0
11	G	61C	0.310	n	23.56	10.23	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	0.310	e	23.56	33.35	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-8	0.069	e	3.08	0.00	0	0	0	0	0	0	0	0
	G	61C	0.310	e	23.56	33.35	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	s	4.94	0.47	153	111	548	53	72	72	356	34
	D	metal	0.150	s	11.40	2.78	42	42	479	117	0	0	0	0
	W	15B19-0wc-8	0.069	s	3.28	0.02	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	w	4.94	0.47	113	113	556	53	0	0	0	0
	W	15B19-0wc-8	0.069	w	3.28	0.02	0	0	0	0	0	0	0	0
	C	16B-50ad	0.020	-	1.52	0.84	226	226	344	190	52	52	79	44
	F	21A-32t	0.020	-	1.52	0.00	0	0	0	0	0	0	0	0
	F	21A-32t	0.020	-	1.52	0.00	0	0	0	0	0	0	0	0
6	c) AED excursion													-3
	Envelope loss/gain								1926	398			435	75
12	a) Infiltration								597	55			162	15
	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)								2524	453			597	90
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								2524	453			597	90
15	Duct loads						-0%	0%	0	0	-0%	0%	0	0
	Total room load								2524	453			597	90
	Air required (cfm)								99	55			23	11

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



# Right-J® Worksheet

## Entire House

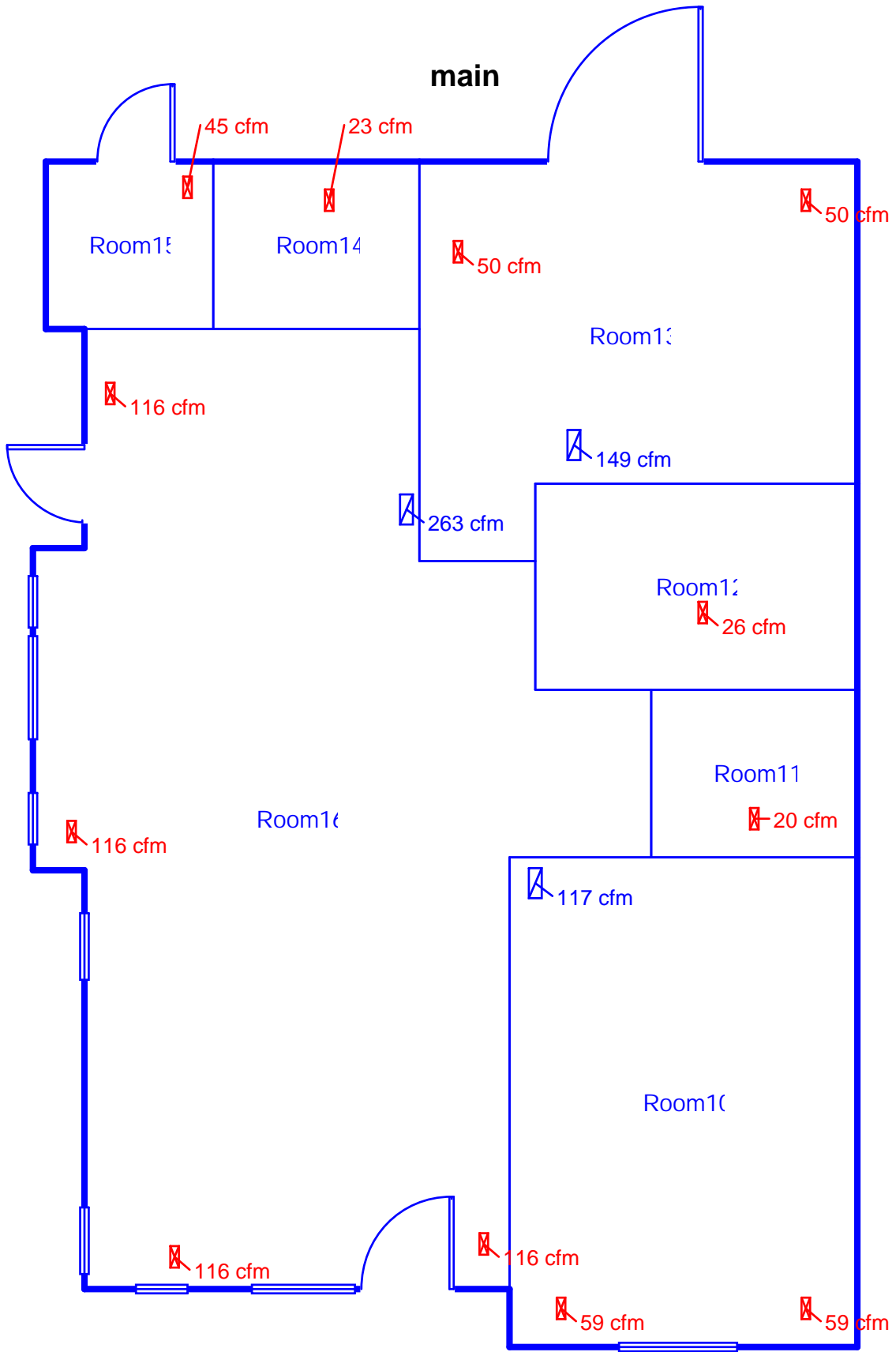
### High Country Heating

Job: Townhomes  
 Date: 5/15/16  
 By: Vince

P.O. Box 627, Rigby, Id 83442 Phone: 208-745-8056 Fax: 208-745-0817 Email: highcountryph@yahoo.com

						Room15 14.5 ft 9.0 ft heat/cool 6.5 x 6.5 ft 42.3 ft²				Room16 57.8 ft 9.0 ft heat/cool 1.0 x 648.9 ft 648.9 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	14	14	67	6	167	113	558	54
	G	61C	0.310	n	23.56	10.23	0	0	0	0	28	0	669	290
	D	metal	0.150	n	11.40	2.78	0	0	0	0	25	25	286	70
	W	15B19-0wc-8	0.069	n	3.13	0.01	0	0	0	0	0	0	0	0
11	G	61C	0.310	n	23.56	10.23	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	e	4.94	0.47	59	59	289	28	335	241	1188	114
	G	61C	0.310	e	23.56	33.35	0	0	0	0	74	0	1737	2459
	D	metal	0.150	e	11.40	2.78	0	0	0	0	21	21	239	58
	W	15B19-0wc-8	0.069	e	3.08	0.00	0	0	0	0	0	0	0	0
	G	61C	0.310	e	23.56	33.35	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	s	4.94	0.47	59	38	185	18	18	18	89	9
	D	metal	0.150	s	11.40	2.78	21	21	239	58	0	0	0	0
	W	15B19-0wc-8	0.069	s	3.28	0.02	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
	W	15B19-0wc-8	0.069	w	3.28	0.02	0	0	0	0	0	0	0	0
	C	16B-50ad	0.020	-	1.52	0.84	42	42	64	35	649	649	986	545
	F	21A-32t	0.020	-	1.52	0.00	0	0	0	0	0	0	0	0
	F	21A-32t	0.020	-	1.52	0.00	10	10	15	0	29	29	44	0
6	c) AED excursion									-5				92
	Envelope loss/gain									859	140		5798	3690
12	a) Infiltration									294	27		1170	108
	b) Room ventilation									0	0		0	0
13	Internal gains:		Occupants @	230			0			0	0		0	0
			Appliances/other							0			0	0
	Subtotal (lines 6 to 13)									1153	167		6967	3798
	Less external load									0	0		0	0
	Less transfer									0	0		0	0
	Redistribution									0	0		0	0
14	Subtotal									1153	167		6967	3798
15	Duct loads									0	0		0	0
	Total room load									1153	167		6967	3798
	Air required (cfm)									45	20		274	464

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



**Job #: Townhomes**  
**Performed by Vince for:**  
Comfort Construction

**High Country Heating**

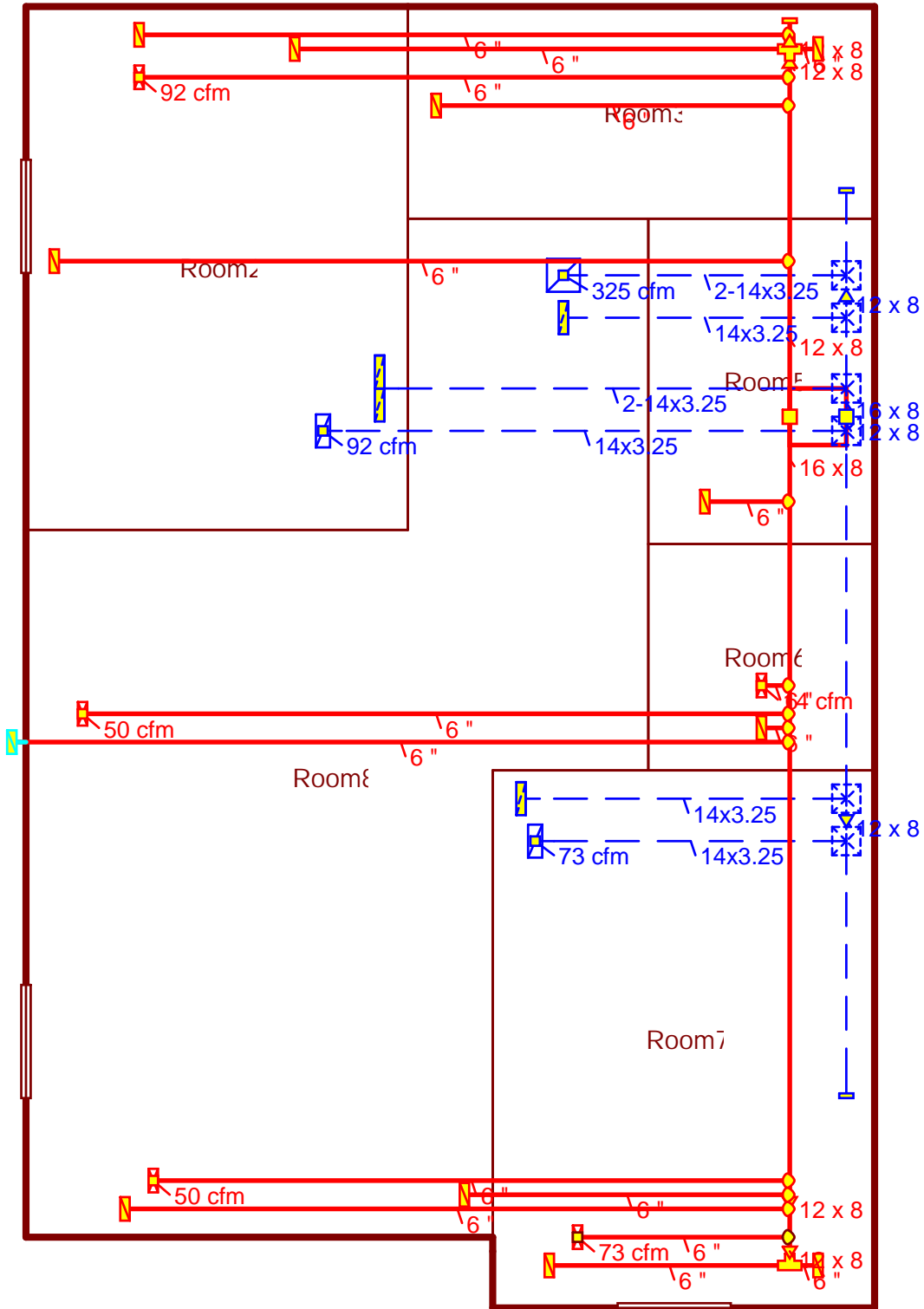
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highcountryph@yahoo.com

Scale: 1 : 71

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# Basement



**Job #: Townhomes**  
**Performed by Vince for:**  
Comfort Construction

## High Country Heating

P.O. Box 627  
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Scale: 1 : 71

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# Duct System Summary

Entire House  
High Country Heating

Job: Townhomes  
Date: 5/15/16  
By: Vince

P.O. Box 627, Rigby, Id 83442 Phone: 208-745-8056 Fax: 208-745-0817 Email: highcountryph@yahoo.com

## Project Information

For: Comfort Construction

	Heating	Cooling
External static pressure	0.70 in H2O	0.70 in H2O
Pressure losses	0.30 in H2O	0.30 in H2O
Available static pressure	0.40 in H2O	0.40 in H2O
Supply / return available pressure	0.249 / 0.151 in H2O	0.249 / 0.151 in H2O
Lowest friction rate	0.088 in/100ft	0.088 in/100ft
Actual air flow	860 cfm	860 cfm
Total effective length (TEL)		453 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
Room10	h 1490	59	36	0.114	6.0	0x0	ShMt	38.5	180.0	st1B
Room10-A	h 1490	59	36	0.118	6.0	0x0	ShMt	31.0	180.0	st1B
Room11	h 500	20	10	0.137	6.0	0x0	ShMt	12.0	170.0	st1
Room12	h 670	26	16	0.130	6.0	0x0	ShMt	6.0	185.0	st1
Room13	h 1262	50	28	0.143	6.0	0x0	ShMt	23.5	150.0	st2
Room13-A	h 1262	50	28	0.143	6.0	0x0	ShMt	14.0	160.0	st2A
Room14	h 597	23	11	0.131	6.0	0x0	ShMt	30.5	160.0	st2A
Room15	h 1153	45	20	0.088	6.0	0x0	ShMt	36.5	245.0	st2B
Room16	c 950	68	116	0.139	6.0	0x0	ShMt	39.0	140.0	st1
Room16-A	c 950	68	116	0.112	6.0	0x0	ShMt	51.5	170.0	st1A
Room16-C	c 950	68	116	0.125	6.0	0x0	ShMt	39.0	160.0	st1
Room16-D	c 950	68	116	0.130	6.0	0x0	ShMt	31.5	160.0	st2
Room2	c 755	69	92	0.142	6.0	0x0	ShMt	35.0	140.0	st2
Room6	h 352	14	0	0.127	6.0	0x0	ShMt	10.5	185.0	st1
Room7	h 1870	73	26	0.127	6.0	0x0	ShMt	36.5	160.0	st1A
Room8	h 1263	50	46	0.118	6.0	0x0	ShMt	35.5	175.0	st1
Room8-A	h 1263	50	46	0.125	6.0	0x0	ShMt	49.5	150.0	st1



## Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st1B	Peak AVF	117	72	0.114	176	6.0	8 x 12	ShtMetl	st1A
st1A	Peak AVF	259	214	0.112	388	8.1	8 x 12	ShtMetl	st1
st2	Peak AVF	305	295	0.088	458	9.1	8 x 12	ShtMetl	
st1	Peak AVF	555	565	0.112	635	10.9	8 x 16	ShtMetl	
st2A	Peak AVF	118	59	0.088	177	6.4	8 x 12	ShtMetl	st2
st2B	Peak AVF	45	20	0.088	68	4.4	8 x 12	ShtMetl	st2A

## Return Branch Detail Table

Name	Grill 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	250	325	160.0	0.094	515	9.2	2-3.25x14	2-10x18	SJSp	rt1A
rb2	0x0	117	72	125.0	0.121	370	5.9	3.25x14	10x9	SJSp	rt2
rb3	0x0	202	263	92.5	0.163	416	7.6	2-3.25x14	2-10x18	SJSp	rt1
rb4	0x0	149	82	113.5	0.133	471	6.4	3.25x14	10x9	SJSp	rt1
rb5	0x0	69	92	94.0	0.161	292	5.1	3.25x14	10x9	SJSp	rt2
rb6	0x0	73	26	171.0	0.088	232	5.3	3.25x14	10x9	SJSp	rt2A

## Return Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
rt1A	Peak AVF	250	325	0.094	488	9.2	8 x 12	ShtMetl	rt1
rt2A	Peak AVF	73	26	0.088	110	5.3	8 x 12	ShtMetl	rt2
rt2	Peak AVF	260	190	0.088	390	8.5	8 x 12	ShtMetl	
rt1	Peak AVF	600	670	0.094	754	12.0	8 x 16	ShtMetl	