



**Load Short Form**  
*Entire House*  
**Modern Plumbing and heating**

Job: 3231 Stella  
 Date:  
 By: Andrew B  
 Plan: clinton

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

**Project Information**

For: Rockwell Homes  
 Ammon, Id 83406

**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	Lennox
Trade	MERIT 90
Model	ML193UH070XP36B-*
AHRI ref	4792133
Efficiency	93 AFUE
Heating input	53000 Btuh
Heating output	48000 Btuh
Temperature rise	58 °F
Actual air flow	900 cfm
Air flow factor	0.035 cfm/Btuh
Static pressure	0.70 in H2O
Space thermostat	

**COOLING EQUIPMENT**

Make	Lennox
Trade	ADP
Cond	13ACX-018-230-**
Coil	BC**A1(6,9)24++TD
AHRI ref	6493431
Efficiency	10.0 EER, 13 SEER
Sensible cooling	11410 Btuh
Latent cooling	4890 Btuh
Total cooling	16300 Btuh
Actual air flow	543 cfm
Air flow factor	0.074 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	162	1556	776	54	58
Room2	169	1055	359	37	27
Room3	57	713	16	25	1
Room4	567	3448	618	121	46
Room6	203	2737	609	96	45
Room7	86	0	0	0	0
Room8	210	2504	735	88	55
Room9	88	748	317	26	24
Room10	154	2168	417	76	31
Room11	150	2240	457	78	34
Room12	47	71	34	2	3
Room13	680	7930	2914	278	216
Room14	41	532	69	19	5

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



Entire House	d	2613	25702	7322	900	543
Other equip loads			4337	799		
Equip. @ 0.94 RSM				7633		
Latent cooling				0		
TOTALS		2613	30040	7633	900	543

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



**Project Information**

For: Rockwell Homes  
 Ammon, Id 83406

**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

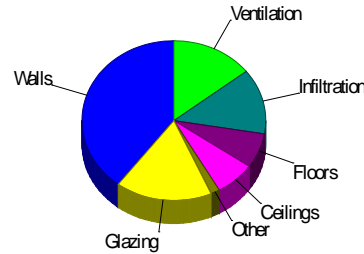
**Infiltration:**

Method  
 Construction quality  
 Fireplaces

Simplified  
 Semi-tight  
 0

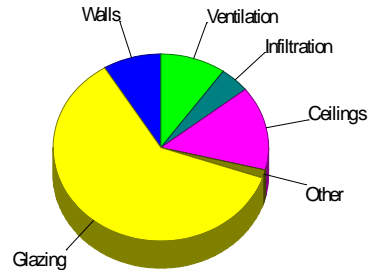
**Heating**

Component	Btuh/ft²	Btuh	% of load
Walls	4.3	11912	39.7
Glazing	22.8	5095	17.0
Doors	11.4	479	1.6
Ceilings	1.5	2132	7.1
Floors	1.7	2109	7.0
Infiltration	2.0	3976	13.2
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		4337	14.4
Adjustments		0	0
<b>Total</b>		<b>30040</b>	<b>100.0</b>



**Cooling**

Component	Btuh/ft²	Btuh	% of load
Walls	0.3	711	8.8
Glazing	22.1	4949	60.9
Doors	2.8	117	1.4
Ceilings	0.8	1178	14.5
Floors	0	0	0
Infiltration	0.2	366	4.5
Ducts		0	0
Ventilation		799	9.8
Internal gains		0	0
Blower		0	0
Adjustments		0	0
<b>Total</b>		<b>8121</b>	<b>100.0</b>



Latent Cooling Load = 0 Btuh  
 Overall U-value = 0.049 Btuh/ft²-°F

Data entries checked.



**Component Constructions**  
*Entire House*  
**Modern Plumbing and heating**

**Job:** 3231 Stella  
**Date:**  
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**Plan:** clinton

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

**Project Information**

For: Rockwell Homes  
 Ammon, Id 83406

**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**

	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
<b>Walls</b>								
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	345	0.065	21.0	4.94	1704	0.47	164
	e	350	0.065	21.0	4.94	1727	0.47	166
	s	323	0.065	21.0	4.94	1597	0.47	153
	w	356	0.065	21.0	4.94	1756	0.47	169
	all	1373	0.065	21.0	4.94	6784	0.47	652
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	374	0.043	19.0	3.82	1426	0.05	19
	e	333	0.043	19.0	3.68	1225	0.04	12
	s	412	0.043	19.0	3.76	1548	0.04	18
	w	250	0.043	19.0	3.73	929	0.04	10
	all	1367	0.043	19.0	3.75	5128	0.04	60
<b>Partitions</b> (none)								
<b>Windows</b>								
61C: 61C; NFRC rated (SHGC=0.33); 6.67 ft head ht	n	45	0.300	0	22.8	1026	10.5	471
	e	6	0.300	0	22.8	137	35.1	210
	e	32	0.300	0	22.8	722	35.1	1111
	s	109	0.300	0	22.8	2481	19.0	2072
	s	16	0.300	0	22.8	365	19.0	305
	w	16	0.300	0	22.8	365	35.1	561
	all	223	0.300	0	22.8	5095	21.2	4731
<b>Doors</b>								
metal: Door, mtl pur core type	n	42	0.150	10.5	11.4	479	2.78	117
<b>Ceilings</b>								
16B-50ad: Attic ceiling, asphalt shingles roof mat, r-50 ceil ins, 1/2" gypsum board int fnsh		1403	0.020	50.0	1.52	2132	0.84	1178
<b>Floors</b>								
21A-28c: Bg floor, heavy dry or light damp soil, 6.5' depth, carpet flr fnsh		1243	0.022	0	1.67	2079	0	0
		18	0.022	0	1.67	30	0	0
	all	1261	0.022	0	1.67	2109	0	0







**Project Summary**  
*Entire House*  
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**Project Information**

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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 25702 Btuh  
 Ducts 0 Btuh  
 Central vent (62 cfm) 4337 Btuh  
 Outside air  
 Humidification 0 Btuh  
 Piping 0 Btuh  
 Equipment load 30040 Btuh

**Sensible Cooling Equipment Load Sizing**

Structure 7322 Btuh  
 Ducts 0 Btuh  
 Central vent (62 cfm) 799 Btuh  
 Outside air  
 Blower 0 Btuh  
 Use manufacturer's data n  
 Rate/swing multiplier 0.94  
 Equipment sensible load 7633 Btuh

**Infiltration**

Method Simplified  
 Construction quality Semi-tight  
 Fireplaces 0

**Latent Cooling Equipment Load Sizing**

Structure -509 Btuh  
 Ducts 0 Btuh  
 Central vent (62 cfm) -1111 Btuh  
 Outside air  
 Equipment latent load 0 Btuh

	Heating	Cooling
Area (ft <sup>2</sup> )	2613	2613
Volume (ft <sup>3</sup> )	15438	15438
Air changes/hour	0.22	0.11
Equiv. AVF (cfm)	57	28

**Equipment Total Load (Sen+Lat)** 7633 Btuh  
 Req. total capacity at 0.70 SHR 0.9 ton

**Heating Equipment Summary**

Make Lennox  
 Trade MERIT 90  
 Model ML193UH070XP36B-\*  
 AHRI ref 4792133

Efficiency 93 AFUE  
 Heating input 53000 Btuh  
 Heating output 48000 Btuh  
 Temperature rise 58 °F  
 Actual air flow 900 cfm  
 Air flow factor 0.035 cfm/Btuh  
 Static pressure 0.70 in H2O  
 Space thermostat

**Cooling Equipment Summary**

Make Lennox  
 Trade ADP  
 Cond 13ACX-018-230-\*\*  
 Coil BC\*\*A1(6,9)24+++TD  
 AHRI ref 6493431

Efficiency 10.0 EER, 13 SEER  
 Sensible cooling 11410 Btuh  
 Latent cooling 4890 Btuh  
 Total cooling 16300 Btuh  
 Actual air flow 543 cfm  
 Air flow factor 0.074 cfm/Btuh  
 Static pressure 0.70 in H2O  
 Load sensible heat ratio 1.00

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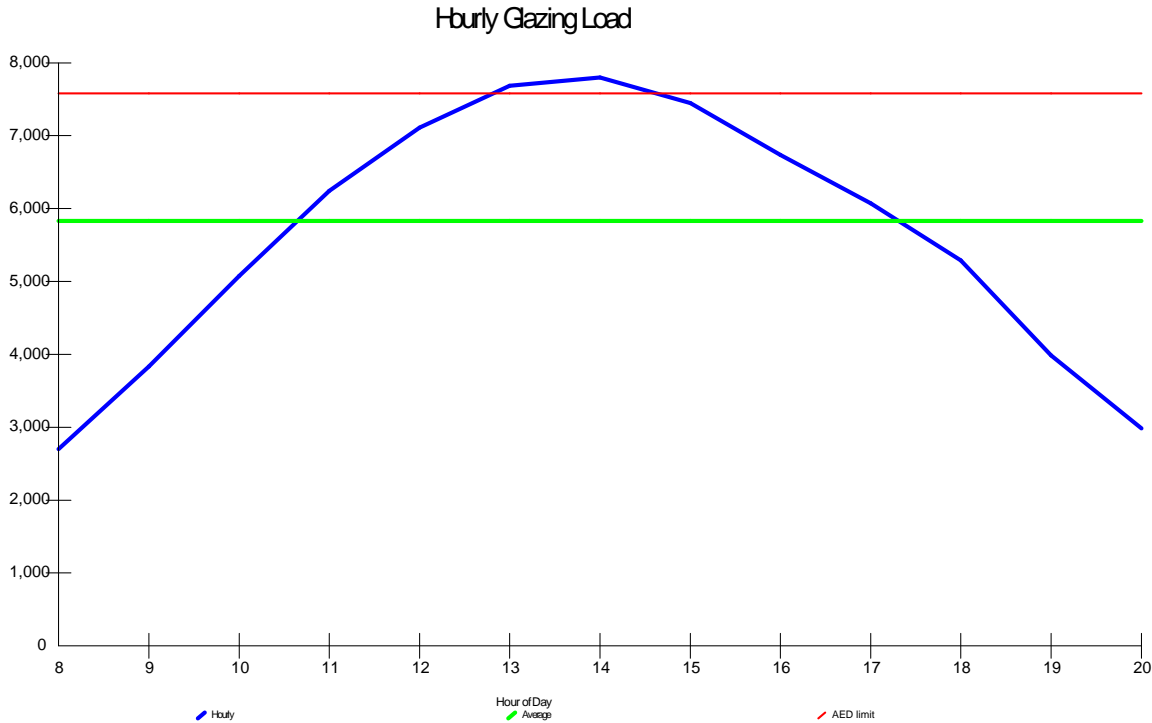
## Project Information

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 Ammon, Id 83406

## 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
		Moisture difference (gr/lb)		61.5	-31.5
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>		
Drybulb (°F)	-6	89			
Daily range (°F)	-	34 ( H )			
Wet bulb (°F)	-	60			
Wind speed (mph)	15.0	7.5			

## Test for Adequate Exposure Diversity



**Maximum hourly glazing load exceeds average by 33.7%.**

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

**AED excursion: 219 Btuh ( PFG - 1.3\*AFG )**

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1 Room name		Entire House						Room1						
2 Exposed wall		334.0 ft						25.5 ft						
3 Room height		9.0 ft						9.0 ft						
4 Room dimensions		d						13.5 x 12.0 ft						
5 Room area		2613.3 ft²						162.0 ft²						
6	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	432	345	1704	164	0	0	0	0
	G	61C	0.300	n	22.80	10.47	45	0	1026	471	0	0	0	0
	D	metal	0.150	n	11.40	2.78	42	42	479	117	0	0	0	0
	W	15B19-0wc-6	0.069	n	3.82	0.05	374	374	1426	19	0	0	0	0
11	W	12F-0sw	0.065	e	4.94	0.47	356	350	1727	166	0	0	0	0
	G	61C	0.300	e	22.80	35.08	6	0	137	210	0	0	0	0
	W	15B19-0wc-6	0.069	e	3.68	0.04	365	333	1225	12	0	0	0	0
	G	61C	0.300	e	22.80	35.08	32	0	722	1111	0	0	0	0
	W	12F-0sw	0.065	s	4.94	0.47	432	323	1597	153	0	0	0	0
	G	61C	0.300	s	22.80	19.05	109	0	2481	2072	0	0	0	0
	W	15B19-0wc-6	0.069	s	3.76	0.04	428	412	1548	18	122	122	464	6
	G	61C	0.300	s	22.80	19.05	16	0	365	305	0	0	0	0
	W	12F-0sw	0.065	w	4.94	0.47	356	356	1756	169	0	0	0	0
	W	15B19-0wc-6	0.069	w	3.73	0.04	266	250	929	10	108	92	328	3
	G	61C	0.300	w	22.80	35.08	16	0	365	561	16	0	365	561
	C	16B-50ad	0.020	-	1.52	0.84	1403	1403	2132	1178	0	0	0	0
	F	21A-28c	0.022	-	1.67	0.00	1243	1243	2079	0	162	162	271	0
	F	21A-28c	0.022	-	1.67	0.00	18	18	30	0	0	0	0	0
6	c) AED excursion									219				195
	Envelope loss/gain								21727	6955			1428	764
12	a) Infiltration								3976	366			128	12
	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)								25702	7322			1556	776
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								25702	7322			1556	776
15	Duct loads						0%	0%	0	0	-0%	0%	0	0
	Total room load								25702	7322			1556	776
	Air required (cfm)								900	543			54	58

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1		Room name				Room2		Room3						
2		Exposed wall				12.5 ft		15.5 ft						
3		Room height				9.0 ft		9.0 ft						
4		Room dimensions				12.5 x 13.5 ft		9.5 x 6.0 ft						
5		Room area				168.8 ft²		57.0 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	10.47	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-6	0.069	n	3.82	0.05	0	0	0	0	86	86	326	4
11	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	35.08	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	e	3.68	0.04	0	0	0	0	0	0	0	0
	G	61C	0.300	e	22.80	35.08	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
	G	61C	0.300	s	22.80	19.05	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	s	3.76	0.04	113	97	345	3	0	0	0	0
	G	61C	0.300	s	22.80	19.05	16	0	365	305	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-6	0.069	w	3.73	0.04	0	0	0	0	54	54	206	3
	G	61C	0.300	w	22.80	35.08	0	0	0	0	0	0	0	0
	C	16B-50ad	0.020	-	1.52	0.84	0	0	0	0	5	5	7	4
	F	21A-28c	0.022	-	1.67	0.00	169	169	282	0	57	57	95	0
	F	21A-28c	0.022	-	1.67	0.00	0	0	0	0	0	0	0	0
6	c) AED excursion									46				-2
	Envelope loss/gain								992	353			635	9
12	a) Infiltration								63	6			78	7
	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)								1055	359			713	16
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								1055	359			713	16
15	Duct loads								-0%	0%			0	0
	Total room load								1055	359			713	16
	Air required (cfm)								37	27			25	1

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1 Room name				Room4 56.0 ft				Room6 25.0 ft						
2 Exposed wall				9.0 ft heat/cool				9.0 ft heat/cool						
3 Room height				1.0 x 567.0 ft				13.5 x 15.0 ft						
4 Room dimensions				567.0 ft²				202.5 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	0	0	0	0	0	0	0	0
	G	61C	0.300	n	22.80	10.47	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-6	0.069	n	3.82	0.05	86	86	326	4	90	90	344	4
11	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	35.08	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	e	3.68	0.04	194	178	655	7	135	119	433	4
	G	61C	0.300	e	22.80	35.08	16	0	365	561	16	0	357	550
	W	12F-0sw	0.065	s	4.94	0.47	0	0	0	0	0	0	0	0
	G	61C	0.300	s	22.80	19.05	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	s	3.76	0.04	194	194	739	10	0	0	0	0
	G	61C	0.300	s	22.80	19.05	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-6	0.069	w	3.73	0.04	32	32	120	2	0	0	0	0
	G	61C	0.300	w	22.80	35.08	0	0	0	0	0	0	0	0
	C	16B-50ad	0.020	-	1.52	0.84	9	9	13	7	5	5	8	4
	F	21A-28c	0.022	-	1.67	0.00	567	567	948	0	203	203	339	0
	F	21A-28c	0.022	-	1.67	0.00	0	0	0	0	0	0	0	0
6	c) AED excursion									1				5
	Envelope loss/gain								3166	592			1480	567
12	a) Infiltration								282	26			126	12
	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)								3448	618			1606	579
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			1130	30
14	Subtotal								3448	618			2737	609
15	Duct loads								-0%	0%			0	0
	Total room load								3448	618			2737	609
	Air required (cfm)								121	46			96	45

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1 Room name				Room7 24.5 ft				Room8 29.0 ft						
2 Exposed wall				9.0 ft 1.0 x 86.0 ft heat/cool				9.0 ft 15.0 x 14.0 ft heat/cool						
3 Room height				86.0 ft <sup>2</sup>				210.0 ft <sup>2</sup>						
4 Room dimensions														
5 Room area														
	Ty	Construction number	U-value (Btuh/ft <sup>2</sup> -°F)	Or	HTM (Btuh/ft <sup>2</sup> )		Area (ft <sup>2</sup> ) or perimeter (ft)		Load (Btuh)		Area (ft <sup>2</sup> ) 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	10.47	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-6	0.069	n	3.82	0.05	113	113	429	6	0	0	0	0
11	W	12F-0sw	0.065	e	4.94	0.47	0	0	0	0	126	126	622	60
	G	61C	0.300	e	22.80	35.08	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	e	3.68	0.04	36	36	137	2	0	0	0	0
	G	61C	0.300	e	22.80	35.08	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	s	4.94	0.47	0	0	0	0	135	115	568	55
	G	61C	0.300	s	22.80	19.05	0	0	0	0	20	0	456	381
	W	15B19-0wc-6	0.069	s	3.76	0.04	0	0	0	0	0	0	0	0
	G	61C	0.300	s	22.80	19.05	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-6	0.069	w	3.73	0.04	72	72	275	4	0	0	0	0
	G	61C	0.300	w	22.80	35.08	0	0	0	0	0	0	0	0
	C	16B-50ad	0.020	-	1.52	0.84	14	14	21	12	210	210	319	176
	F	21A-28c	0.022	-	1.67	0.00	86	86	144	0	0	0	0	0
	F	21A-28c	0.022	-	1.67	0.00	0	0	0	0	7	7	12	0
6	c) AED excursion													15
	Envelope loss/gain								1007	18			1977	687
12	a) Infiltration								123	11			526	48
	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)								1130	30			2504	735
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								-1130	-30			0	0
14	Subtotal								0	0			2504	735
15	Duct loads								-0%	0%			0	0
	Total room load								0	0			2504	735
	Air required (cfm)								0	0			88	55

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

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1		Room name		Room9				Room10						
2		Exposed wall		8.0 ft				25.0 ft						
3		Room height		9.0 ft				9.0 ft						
4		Room dimensions		11.0 x 8.0 ft				11.0 x 14.0 ft						
5		Room area		88.0 ft²				154.0 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	99	79	390	37
	G	61C	0.300	n	22.80	10.47	0	0	0	0	20	0	456	209
	D	metal	0.150	n	11.40	2.78	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	n	3.82	0.05	0	0	0	0	0	0	0	0
11	W	12F-0sw	0.065	e	4.94	0.47	72	66	326	31	126	126	622	60
	G	61C	0.300	e	22.80	35.08	6	0	137	210	0	0	0	0
	W	15B19-0wc-6	0.069	e	3.68	0.04	0	0	0	0	0	0	0	0
	G	61C	0.300	e	22.80	35.08	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
	G	61C	0.300	s	22.80	19.05	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	s	3.76	0.04	0	0	0	0	0	0	0	0
	G	61C	0.300	s	22.80	19.05	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-6	0.069	w	3.73	0.04	0	0	0	0	0	0	0	0
	G	61C	0.300	w	22.80	35.08	0	0	0	0	0	0	0	0
	C	16B-50ad	0.020	-	1.52	0.84	88	88	134	74	154	154	234	129
	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	4	4	7	0	7	7	12	0
6	c) AED excursion													-61
	Envelope loss/gain								603	304			1714	375
12	a) Infiltration								145	13			454	42
	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)								748	317			2168	417
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								748	317			2168	417
15	Duct loads								0	0			0	0
	Total room load								748	317			2168	417
	Air required (cfm)								26	24			76	31

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

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1		Room name		Room11				Room12						
2		Exposed wall		25.0 ft				0 ft						
3		Room height		9.0 ft				9.0 ft						
4		Room dimensions		12.0 x 12.5 ft				8.5 x 5.5 ft						
5		Room area		150.0 ft²				46.8 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	108	83	410	39	0	0	0	0
	G	61C	0.300	n	22.80	10.47	25	0	570	262	0	0	0	0
	D	metal	0.150	n	11.40	2.78	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	n	3.82	0.05	0	0	0	0	0	0	0	0
11	W	12F-0sw	0.065	e	4.94	0.47	32	32	156	15	0	0	0	0
	G	61C	0.300	e	22.80	35.08	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	e	3.68	0.04	0	0	0	0	0	0	0	0
	G	61C	0.300	e	22.80	35.08	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
	G	61C	0.300	s	22.80	19.05	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	s	3.76	0.04	0	0	0	0	0	0	0	0
	G	61C	0.300	s	22.80	19.05	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	w	4.94	0.47	86	86	422	41	0	0	0	0
	W	15B19-0wc-6	0.069	w	3.73	0.04	0	0	0	0	0	0	0	0
	G	61C	0.300	w	22.80	35.08	0	0	0	0	0	0	0	0
	C	16B-50ad	0.020	-	1.52	0.84	150	150	228	126	47	47	71	39
	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									-67				-5
	Envelope loss/gain								1786	415			71	34
12	a) Infiltration								454	42			0	0
	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)								2240	457			71	34
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								2240	457			71	34
15	Duct loads								-0%	0%			0	0
	Total room load								2240	457			71	34
	Air required (cfm)								78	34			2	3

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

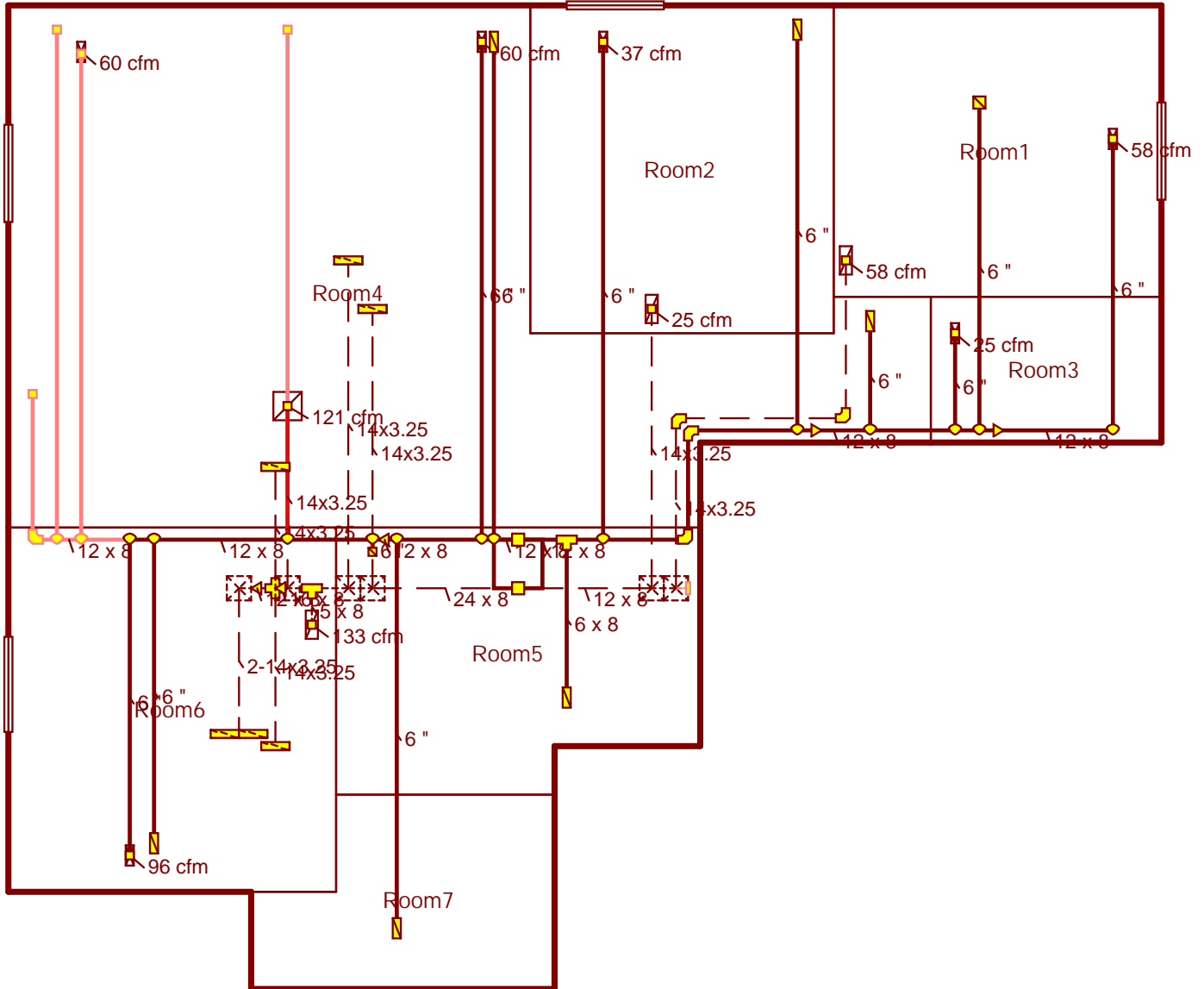
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1		Room name		Room13				Room14						
2		Exposed wall		80.5 ft				7.5 ft						
3		Room height		9.0 ft				9.0 ft						
4		Room dimensions		1.0 x 680.0 ft				7.5 x 5.5 ft						
5		Room area		680.0 ft²				41.3 ft²						
	Ty	Construction number	U-value (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	158	116	571	55	68	68	333	32
	G	61C	0.300	n	22.80	10.47	0	0	0	0	0	0	0	0
	D	metal	0.150	n	11.40	2.78	42	42	479	117	0	0	0	0
	W	15B19-0wc-6	0.069	n	3.82	0.05	0	0	0	0	0	0	0	0
11	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	35.08	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	e	3.68	0.04	0	0	0	0	0	0	0	0
	G	61C	0.300	e	22.80	35.08	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	s	4.94	0.47	297	208	1029	99	0	0	0	0
	G	61C	0.300	s	22.80	19.05	89	0	2025	1691	0	0	0	0
	W	15B19-0wc-6	0.069	s	3.76	0.04	0	0	0	0	0	0	0	0
	G	61C	0.300	s	22.80	19.05	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	w	4.94	0.47	270	270	1334	128	0	0	0	0
	W	15B19-0wc-6	0.069	w	3.73	0.04	0	0	0	0	0	0	0	0
	G	61C	0.300	w	22.80	35.08	0	0	0	0	0	0	0	0
	C	16B-50ad	0.020	-	1.52	0.84	680	680	1034	571	41	41	63	35
	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									119				-10
	Envelope loss/gain								6470	2779			396	57
12	a) Infiltration								1460	135			136	13
	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)								7930	2914			532	69
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								7930	2914			532	69
15	Duct loads								-0%	0%			0	0
	Total room load								7930	2914			532	69
	Air required (cfm)								278	216			19	5

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



### Basement



**Job #: 3231 Stella**  
**Performed by Andrew B for:**  
Rockwell Homes  
Ammon, Id 83406

### Modern Plumbing and heating

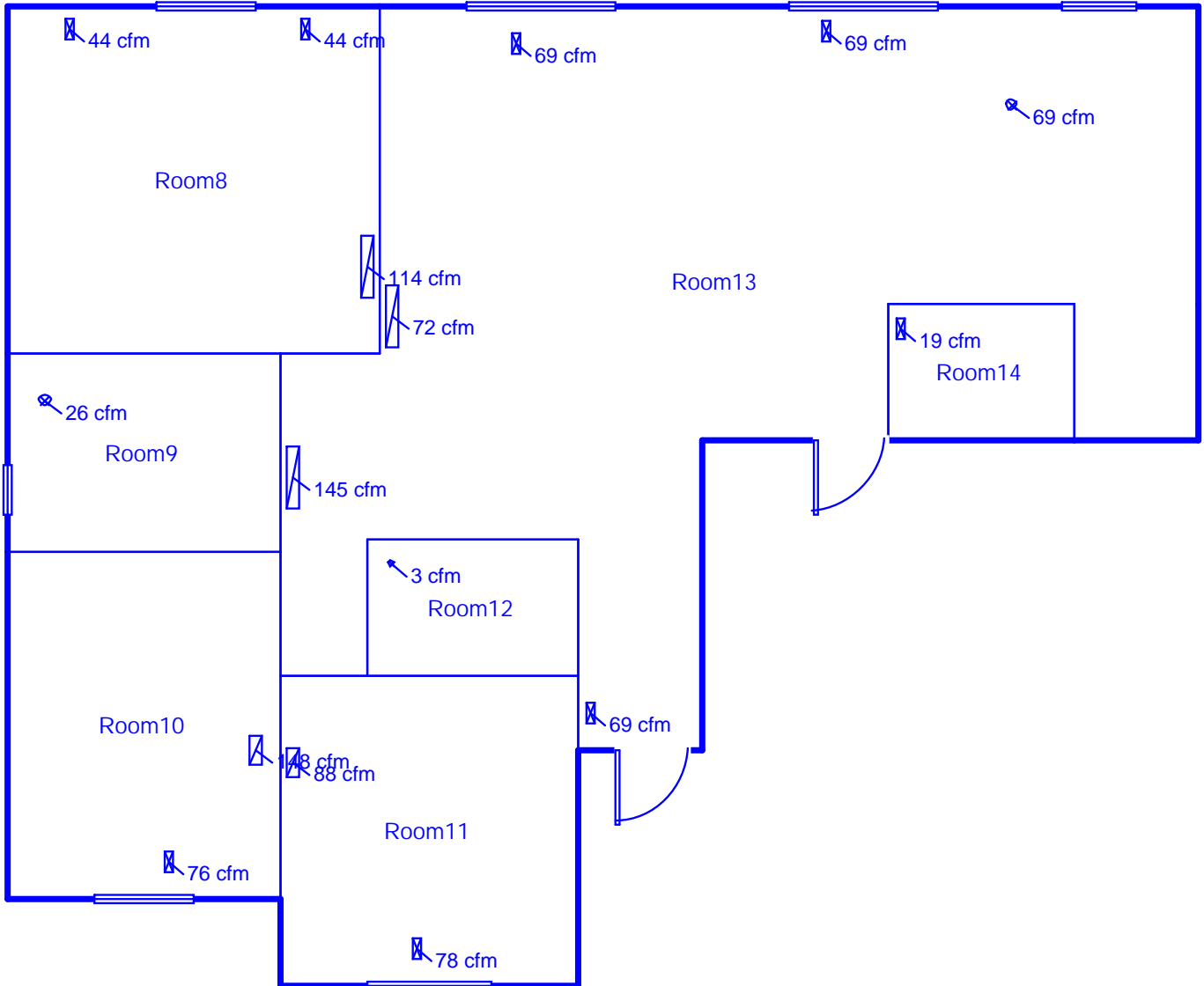
Rigby, Id 83442  
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highcountryph@yahoo.com

Scale: 1 : 82

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**Job #: 3231 Stella**  
**Performed by Andrew B for:**  
Rockwell Homes  
Ammon, Id 83406

**Modern Plumbing and heating**

Rigby, Id 83442  
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Scale: 1 : 82  
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# Duct System Summary

## Entire House

### Modern Plumbing and heating

Job: 3231 Stella  
 Date:  
 By: Andrew B  
 Plan: clinton

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

## Project Information

For: Rockwell Homes  
 Ammon, Id 83406

	<b>Heating</b>	<b>Cooling</b>
External static pressure	0.70 in H2O	0.70 in H2O
Pressure losses	0.35 in H2O	0.35 in H2O
Available static pressure	0.35 in H2O	0.35 in H2O
Supply / return available pressure	0.191 / 0.159 in H2O	0.191 / 0.159 in H2O
Lowest friction rate	0.054 in/100ft	0.054 in/100ft
Actual air flow	900 cfm	543 cfm
Total effective length (TEL)	654 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 776	54	58	0.054	6.0	0x0	ShMt	41.0	315.0	st1B
Room10	h 2168	76	31	0.073	6.0	0x0	ShMt	27.5	235.0	st7
Room11	h 2240	78	34	0.095	6.0	0x0	ShMt	21.0	180.0	st2
Room12	c 34	2	3	0.076	6.0	0x0	ShMt	6.5	245.0	st2A
Room13	h 1983	69	54	0.060	6.0	0x0	ShMt	32.5	285.0	st1
Room13-A	h 1983	69	54	0.101	5.1	8x6	ShMt	8.5	180.0	st1
Room13-B	h 1983	69	54	0.086	6.0	0x0	ShMt	21.5	200.0	st2
Room13-C	h 1983	69	54	0.056	6.0	0x0	ShMt	37.0	305.0	st1A
Room14	h 532	19	5	0.055	6.0	0x0	ShMt	23.5	325.0	st1A
Room2	h 1055	37	27	0.068	6.0	0x0	ShMt	24.0	255.0	st1
Room3	h 713	25	1	0.056	6.0	0x0	ShMt	26.5	315.0	st1A
Room4	h 309	60	23	0	0	0x0	ShMt	0	0	
Room4-A	h 1724	60	23	0.090	6.0	0x0	ShMt	22.0	190.0	st2
Room6	h 2737	96	45	0.074	6.0	0x0	ShMt	29.0	230.0	st7
Room8	h 368	44	27	0	0	0x0	ShMt	0	0	
Room8-A	h 368	44	27	0	0	0x0	ShMt	0	0	
Room9	h 317	26	24	0	0	0x0	ShMt	0	0	

## Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st7	Peak AVF	172	76	0.073	258	7.6	8 x 12	ShtMetl	st2A
st2	Peak AVF	382	189	0.073	574	10.3	8 x 12	ShtMetl	
st2A	Peak AVF	174	79	0.073	261	7.6	8 x 12	ShtMetl	st2
st1	Peak AVF	343	253	0.054	515	10.5	8 x 12	ShtMetl	
st1B	Peak AVF	54	58	0.054	86	5.4	8 x 12	ShtMetl	st1A
st1A	Peak AVF	168	118	0.054	251	8.0	8 x 12	ShtMetl	st1

## 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
rb6	0x0	148	88	297.5	0.054	234	7.6	2-3.25x14	2-10x18	SJSp	rt1B
rb5	0x0	88	59	211.5	0.075	279	5.9	3.25x14	10x9	SJSp	rt1A
rb4	0x0	133	72	165.0	0.097	478	6.5	8x 5		ShMt	rt1
rb9	0x0	145	85	210.0	0.076	460	7.1	3.25x14	10x9	SJSp	rt1A
rb2	0x0	121	46	192.0	0.083	382	6.5	3.25x14	10x9	SJSp	rt1
rb7	0x0	114	78	110.5	0.144	360	5.7	3.25x14	10x9	SJSp	rt1
rb8	0x0	72	57	97.5	0.163	228	4.7	3.25x14	10x9	SJSp	rt1
rb1	0x0	54	58	212.0	0.075	182	5.0	3.25x14	10x9	SJSp	rt2
rb3	0x0	25	1	97.0	0.164	79	3.1	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
rt1B	Peak AVF	148	88	0.054	222	7.6	8 x 12	ShtMetl	rt1A
rt1	Peak AVF	821	484	0.054	615	14.5	8 x 24	ShtMetl	
rt1A	Peak AVF	381	232	0.054	429	10.9	8 x 16	ShtMetl	rt1
rt2	Peak AVF	79	59	0.075	119	5.7	8 x 12	ShtMetl	