Krasnoyarsk HVAC Load Calculations

for

KRASVZRIVPROM



Prepared By:

Vladimir HVAC SPB

8(812)954-17-67 6 Äåêàáðü 2010 ã

Rhvac - Residential & Light Commercial HVAC Loads

Vadim Chernets



Elite Software Development, Inc.

Krasnoyarsk Page 2

Project Report

Richboro, PA 18954

General Project Information

Project Title: Krasnoyarsk
Designed By: Vladimir
Project Date: 12.14.2008

Client Name: KRASVZRIVPROM

Company Name: HVAC SPB Company Representative: Vladimir

Company Phone: 8(812)954-17-67
Company E-Mail Address: expert@rhvac.ru
Company Website: www.rhvac.ru

Company Comment:

Design Data

Reference City: Krasnoyarsk, _Russia

Daily Temperature Range:

Latitude:
56 Degrees
Elevation:
908 ft.
Altitude Factor:

Altitude Factor: 0,968
Elevation Sensible Adj. Factor: 1,000
Elevation Total Adj. Factor: 1,000
Elevation Heating Adj. Factor: 1,000
Elevation Heating Adj. Factor: 1,000

	Outdoor	Outdoor	Indoor	Indoor	Grains
	<u>Dry Bulb</u>	Wet Bulb	Rel.Hum	<u>Dry Bulb</u>	<u>Difference</u>
Winter:	-45	0	30	72	36
Summer:	95	63	50	75	-29

Check Figures

Total Building Supply CFM: 2 000 CFM Per Square ft.: 0,635 Square ft. of Room Area: 3 152 Square ft. Per Ton: 1 100 Volume (ft?) of Cond. Space: 31 033

Building Loads

Total Heating Required Including Ventilation Air: 110 531 Btuh 110,531 MBH Total Sensible Gain: 25 782 Btuh 128 % Total Latent Gain: -5 635 Btuh -28 %

Total Cooling Required Including Ventilation Air: 20 147 Btuh 1,68 Tons (Based On Sensible + Latent)

2,86 Tons (Based On 75% Sensible Capacity)

Notes

Calculations are based on 8th edition of ACCA Manual J.

All computed results are estimates as building use and weather may vary.

Be sure to select a unit that meets both sensible and latent loads.

Vadim Chernets Richboro, PA 18954 Krasnoyarsk Page 3

Load Preview Report

Scope	Has AED	Net Ton	Rec Ton	ft.? /Ton	Area	Sen Gain	Lat Gain	Net Gain	Sen Loss	Min Htg CFM	Min Clg CFM	Sys Htg CFM	Sys Clg CFM	Sys Act CFM	Duc Size
Building		1,68	2,86	1 100	3 152	25 782	-5 635	20 147	110 531	1 320	1 113	1 700	2 000	2 000	
System 1	Yes	1,68	2,86	1 100	3 152	25 782	-5 635	20 147	110 531	1 320	1 113	1 700	2 000	2 000	18x18
Ventilation						2 086	-1 876	211	12 204						
Duct Latent							-2 175	-2 175							
Humidification									6 184						
Zone 1					1 388	20 714	-580	20 134	38 510	552	973	710	1 037	1 037	12x15
6-Bedroom 1					180	3 787	-130	3 657	7 455	107	178	138	190	190	2-6
10-Kitchen					141	3 019	-130	2 889	7 504	107	142	138	151	151	1-7
11-Living Room					538	9 939	-173	9 766	14 134	202	467	261	498	498	5-6
16-Living					331	3 652	-147	3 505	8 268	118	172	153	183	183	2-6
17-Recreation Room					198	317	0	317	1 149	16	15	21	16	16	1-4
Zone 2					363	9 781	-173	9 608	14 846	213	459	274	490	490	9x12
2-Game Room					363	9 781	-173	9 608	14 846	213	459	274	490	490	4-7
Zone 3					1 401	9 436	-831	8 605	38 787	556	443	716	473	473	8x12
1-Storage					144	3 286	-131	3 155	6 812	98	154	126	165	165	1-8
3-Basement					144	582	-131	451	4 865	70	27	90	29	29	1-4
4-Laundry					216	227	-71	156	2 648	38	11	49	11	11	1-4
5-Laundry					234	239	-75	164	2 802	40	11	52	12	12	1-4
7-Storage Room					105	422	-62	360	2 613	37	20	48	21	21	1-4
8-Bath 1					98	500	-31	469	2 287	33	23	42	25	25	1-4
9-Entry					45	329	-52	277	2 162	31	15	40	16	16	1-4
12-Bedroom 2					130	1 014	-71	943	4 852	69	48	90	51	51	1-4
13-Bath 2					60	231	-43	188	1 615	23	11	30	12	12	1-4
14-Bedroom 3					115	822	-83	739	4 103	59	39	76	41	41	1-4
15-Hall					110	1 786	-81	1 705	4 028	58	84	74	89	89	1-6
Course of warms significant and the second state of the second significant to a second significant significant significant significant significant significant significant sig															
Sum of room airflows may be greater than system airflow because system has multiple zones.															

Rhvac - Residential & Light Commercial HVAC Loads Vadim Chernets		1		Elite Sof	tware Development, Inc Krasnoyarsk
Richboro, PA 18954		4 /			Page 4
Total Building Summary Loads					
Component Description	Area Quan	Sen Loss	Lat Gain	Sen Gain	Tota Gair
E-cw: Glazing-Double pane window, fixed sash, clear, wood frame, outdoor insect screen with 100% coverage, light color drapes with medium weave with 50% coverage, u-value 0,56, SHGC 0,66	530,8	34 778	0	16 706	16 706
1P: Door-Metal - Polyurethane Core	59	2 004	0	531	53 ⁻
4B1-6.5s: Wall-structural insulated panel (SIP), R -3.85 per inch EPS core, stucco or wood siding, interior finish, 6.5 inch R-23.04 SIP panels	3455	19 000	0	2 760	2 760
7A1-6: Roof/Ceiling-Roof Deck (roofing, wood, insulation) or SIP Panels Supported on Beams, Structural Insulated Panels (SIPs), R -3.85 per Inch EPS Core, Dark or Bold-Color Asphalt Shingle, Dark Metal, Dark Membrane, Dark Tar and Gravel, 6.5 inch R-23.04 SIP panels	944,7	4 974	0	1 488	1 488
1B-20: Floor-Basement, Concrete slab, any thickness, 2 or more feet below grade, R-3 or higher insulation installed below floor, any floor cover, shortest side of floor slab is 20' wide	1100,5	2 446	0	0	(
Subtotals for structure:		63 202	0	21 485	21 485
People:	0		0	0	(
Equipment:			0	0	(
Lighting:	0			0	(
Ductwork:		8 329	-2 175	450	-1 725
Infiltration: Winter CFM: 166, Summer CFM: 83		20 612	-1 584	1 760	176
Ventilation: Winter CFM: 98, Summer CFM: 98		12 204	-1 876	2 086	21
Humidification (Winter) 16,86 gal/day :		6 184	0	0	
Total Building Load Totals:		110 531	-5 635	25 782	20 147
Check Figures Total Building Supply CFM: 2 000			CFM Per Square ft.:	0.4	635
Square ft. of Room Area: 3 152 Volume (ft?) of Cond. Space: 31 033			Square ft. Per Ton:		100
Building Loads Total Heating Required Including Ventilation Air: Total Sensible Gain: Total Latent Gain: Total Cooling Required Including Ventilation Air: 110 531 Btt 25 782 Btt -5 635 Btt 20 147 Btt	ih 128 ih -28 ih 1,68	MBH % % Tons (Based On Sensible + Tons (Based On 75% Sensi	· Latent) ible Capacity)		
Notes					
Calculations are based on 8th edition of ACCA Manual J.					
All computed results are estimates as building use and weather may	\(\alpha\)				

System 1 Summary Loads	ware Development, Inc. Krasnoyarsk Page 5	Elite Software D					Commercial HVAC Loads	Rhvac - Residential & Light Con Vadim Chernets Richboro, PA 18954
Description Loss Gain Gain Loss							ary Loads	
1E-cov: Glazing-Double pane window, fixed sash, clear, wood frame, outdoor insect screen with 100% coverage, light color drapes with medium weave with 50% coverage, light color drapes with medium weave with 50% coverage, light color drapes with medium weave with 50% coverage, light color drapes with medium weave with 50% coverage, light color drapes with medium weave with 50% coverage, light color drapes with medium weave with 50% coverage, light color drapes with medium weave with 50% coverage, light color drapes with medium weave with 50% coverage, light color drapes with medium weave with 50% coverage, light color drapes with medium weave with 50% coverage, light color drapes with medium weave with 50% coverage, light color drapes with medium weave with 50% coverage, light color drapes with medium weave with 50% coverage, light color drapes with medium weave with 50% coverage, light color drapes with medium weave with 50% coverage, light color drapes with medium weave with 50% coverage, light color drapes with 50% coverage, light color drapes with 50% coverage, light color drapes with medium weave with 50% coverage, light color drapes with 50% coverage, light 50% coverage, lig	Total Gain							
11P: Door-Metal - Polyurethane Core 59 2 004 0 531 14B1-6.5s: Wall-structural insulated panel (SIP), R -3.85 per inch EPS core, stucco or wood siding, interior finish, 6.5 inch R-23.04 SIP panels 19 000 0 2 760 17A1-6: Roof-Ceiling-Roof Deck (roofing, wood, insulation) or SIP Panels Supported on Beams, Structural Insulated Panels (SIPs), R -3.85 per Inch EPS Core, Dark or Bold-Color Asphalt Shingle, Dark Metal, Dark Membrane, Dark Tar and Gravel, 6.5 inch R-23.04 SIP panels 4 974 0 1 488 21B-20: Floor-Basement, Concrete slab, any thickness, 2 or more feet below grade, R-3 or higher insulation installed below floor, any floor cover, shortest side of floor slab is 20' wide 1 100,5 2 446 0 0 Subtotals for structure: 63 202 0 21 485 People: 0 0 0 Equipment: 0 0 0 Lighting: 0 8 329 -2 175 450 Nentilitation: Winter CFM: 166, Summer CFM: 83 20 612 -1 584 1 760 Ventilation: Winter CFM: 98, Summer CFM: 98 12 204 -1 876 2 086 Hurnidification (Winter) 16,86 gal/day: 6 184 0 0 System Load Totals: 3 152 Square ft. Per Ton: 1 100	16 706						ect screen with 100% pes with medium weave with	1E-cw: Glazing-Double pane wi wood frame, outdoor insect coverage, light color drapes
14B1-6.5s: Wall-structural insulated panel (SIP), R -3.85 3455 19 000 0 2 760 per inch EPS core, stucco or wood siding, interior finish, 6.5 inch R-23.04 SIP panels 17A1-6: Roof/Ceiling-Roof Deck (roofing, wood, insulation) or SIP Panels Supported on Beams, Structural Insulated Panels (SIPS), R -3.85 per Inch EPS core, park or Bold-Color Asphalt Shingle, Dark Metal, Dark Membrane, Dark Tar and Gravel, 6.5 inch R-23.04 SIP panels 100,5 2 446 0 0 0 0 0 0 0 0 0	531	531	0	2 004	59			
17A1-6: Roof/Ceiling-Roof Deck (troofing, wood, insulation) or SIP Panels Supported on Beams, Structural Insulated Panels (SIPs), R3.85 per Inch EPS Core, Dark or Bold-Color Asphalt Shingle, Dark Metal, Dark Membrane, Dark Tar and Gravel, 6.5 inch R-23.04 SIP panels 494,7 4 974 0 1 488 21B-20: Floor-Basement, Concrete slab, any thickness, 2 or more feet below grade, R-3 or higher insulation installed below floor, any floor cover, shortest side of floor slab is 20' wide 63 202 0 21 485 Subtotals for structure: 0 0 0 0 Equipment: 0 0 0 0 0 Lighting: 0 8 329 -2 175 450 450 1760 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2 760					5	sulated panel (SIP), R -3.85 co or wood siding, interior	14B1-6.5s: Wall-structural insul- per inch EPS core, stucco
21B-20: Floor-Basement, Concrete slab, any thickness, 2 or higher insulation installed below grade, R-3 or higher insulation installed below floor, any floor cover, shortest side of floor slab is 20' wide Subtotals for structure: Subtotals for subtotals for subtotals subt	1 488	1 488	0	4 974	944,7		eck (roofing, wood, s Supported on Beams, els (SIPs), R -3.85 per Inch -Color Asphalt Shingle, Dark Dark Tar and Gravel, 6.5	17A1-6: Roof/Ceiling-Roof Deck insulation) or SIP Panels S Structural Insulated Panels EPS Core, Dark or Bold-Co Metal, Dark Membrane, Da
People: 0 0 0 Equipment: 0 0 Lighting: 0 0 Ductwork: 8 329 -2 175 450 Infiltration: Winter CFM: 166, Summer CFM: 83 20 612 -1 584 1 760 Ventilation: Winter CFM: 98, Summer CFM: 98 12 204 -1 876 2 086 Humidification (Winter) 16,86 gal/day: 6 184 0 0 System 1 Load Totals: 110 531 -5 635 25 782 Check Figures Supply CFM: 2 000 CFM Per Square ft.: 0,635 Square ft. of Room Area: 3 152 Square ft. Per Ton: 1 100 Volume (ft?) of Cond. Space: 31 033 Square ft. Death	0	0	0	2 446	1100,5		ncrete slab, any thickness, 2 e, R-3 or higher insulation	21B-20: Floor-Basement, Conci or more feet below grade, F installed below floor, any flo
People: 0 0 0 Equipment: 0 0 Lighting: 0 0 Ductwork: 8 329 -2 175 450 Infiltration: Winter CFM: 166, Summer CFM: 83 20 612 -1 584 1 760 Ventilation: Winter CFM: 98, Summer CFM: 98 12 204 -1 876 2 086 Humidification (Winter) 16,86 gal/day: 6 184 0 0 System 1 Load Totals: 110 531 -5 635 25 782 Check Figures Supply CFM: 2 000 CFM Per Square ft.: 0,635 Square ft. of Room Area: 3 152 Square ft. Per Ton: 1 100 Volume (ft?) of Cond. Space: 31 033	21 485	21 485	0	63 202				Subtotals for structure:
Equipment: 0 0 Lighting: 0 0 Ductwork: 8 329 -2 175 450 Infiltration: Winter CFM: 166, Summer CFM: 83 20 612 -1 584 1 760 Ventilation: Winter CFM: 98, Summer CFM: 98 12 204 -1 876 2 086 Humidification (Winter) 16,86 gal/day: 6 184 0 0 System 1 Load Totals: 110 531 -5 635 25 782 Check Figures Supply CFM: 2 000 CFM Per Square ft.: 0,635 Square ft. of Room Area: 3 152 Square ft. Per Ton: 1 100 Volume (ft?) of Cond. Space: 31 033 Square ft. Per Ton: 1 100	0	_			0			
Lighting: 0 0 Ductwork: 8 329 -2 175 450 Infiltration: Winter CFM: 166, Summer CFM: 83 20 612 -1 584 1 760 Ventilation: Winter CFM: 98, Summer CFM: 98 12 204 -1 876 2 086 Humidification (Winter) 16,86 gal/day: 6 184 0 0 System 1 Load Totals: 110 531 -5 635 25 782 Check Figures Supply CFM: 2 000 CFM Per Square ft.: 0,635 Square ft. of Room Area: 3 152 Square ft. Per Ton: 1 100 Volume (ft?) of Cond. Space: 31 033 System Loads	0	0			•			
Ductwork: 8 329 -2 175 450 Infiltration: Winter CFM: 166, Summer CFM: 83 20 612 -1 584 1 760 Ventilation: Winter CFM: 98, Summer CFM: 98 12 204 -1 876 2 086 Humidification (Winter) 16,86 gal/day: 6 184 0 0 System 1 Load Totals: 110 531 -5 635 25 782 Check Figures Supply CFM: 2 000 CFM Per Square ft.: 0,635 Square ft. of Room Area: 3 152 Square ft. Per Ton: 1 100 Volume (ft?) of Cond. Space: 31 033 System Loads	0	0	-		0			
Infiltration: Winter CFM: 166, Summer CFM: 83 20 612 -1 584 1 760 Ventilation: Winter CFM: 98, Summer CFM: 98 12 204 -1 876 2 086 Humidification (Winter) 16,86 gal/day: 6 184 0 0 System 1 Load Totals: 110 531 -5 635 25 782 Check Figures Supply CFM: 2 000 CFM Per Square ft.: 0,635 Square ft. of Room Area: 3 152 Square ft. Per Ton: 1 100 Volume (ft?) of Cond. Space: 31 033	-1 725		-2 175	8 329	· ·			
Ventilation: Winter CFM: 98, Summer CFM: 98 12 204 -1 876 2 086 Humidification (Winter) 16,86 gal/day: 6 184 0 0 System 1 Load Totals: 110 531 -5 635 25 782 Check Figures Supply CFM: 2 000 CFM Per Square ft.: 0,635 Square ft. of Room Area: 3 152 Square ft. Per Ton: 1 100 Volume (ft?) of Cond. Space: 31 033 System Loads	176		_				S. Summer CFM: 83	
Humidification (Winter) 16,86 gal/day : 6 184 0 0 System 1 Load Totals: 110 531 -5 635 25 782 Check Figures Supply CFM: 2 000 CFM Per Square ft.: 0,635 Square ft. of Room Area: 3 152 Square ft. Per Ton: 1 100 Volume (ft?) of Cond. Space: 31 033	211							
System 1 Load Totals: 110 531 -5 635 25 782 Check Figures Supply CFM: 2 000 CFM Per Square ft.: 0,635 Square ft. of Room Area: 3 152 Square ft. Per Ton: 1 100 Volume (ft?) of Cond. Space: 31 033 System Loads	0							
Supply CFM: 2 000 CFM Per Square ft.: 0,635 Square ft. of Room Area: 3 152 Volume (ft?) of Cond. Space: 31 033 System Loads	20 147	25 782	-5 635	110 531				· · · · · ·
Square ft. of Room Area: 3 152 Square ft. Per Ton: 1 100 Volume (ft?) of Cond. Space: 31 033								
Volume (ft?) of Cond. Space: 31 033 System Loads								
)0	1 100	re ft. Per Ton:	Squa				
Total Heating Required Including Ventilation Air: 110 531 Btuh 110,531 MBH								System Loads
					110,531 MBH	110 531 Btuh	uding Ventilation Air: 1	Total Heating Required Includi
Total Sensible Gain: 25 782 Btuh 128 %						25 782 Btuh		Total Sensible Gain:
Total Latent Gain: -5 635 Btuh -28 %								Total Latent Gain:
Total Cooling Required Including Ventilation Air: 20 147 Btuh 1,68 Tons (Based On Sensible + Latent) 2,86 Tons (Based On 75% Sensible Capacity)						20 147 Btuh	uding Ventilation Air:	Total Cooling Required Including
Notes								Notes
Calculations are based on 8th edition of ACCA Manual J.						J.	th edition of ACCA Manual .	
All computed results are estimates as building use and weather may vary.								

Rhvac - Residential & Light Commercial HVAC Loads Vadim Chernets Richboro, PA 18954			•		Elite So	ftware Development, Inc. Krasnoyarsk Page 6
System 1, Zone 1 Summary Loads (Peak Load	d Proce	dure for Rooms)			
Component Description		Area Quan	Sen Loss	Lat Gain	Sen Gain	Total Gain
1E-cw: Glazing-Double pane window, fixed sash, clear, wood frame, outdoor insect screen with 100% coverage, light color drapes with medium weave with 50% coverage, u-value 0,56, SHGC 0,66		275,9	18 077	0	9 146	9 146
14B1-6.5s: Wall-structural insulated panel (SIP), R -3.85 per inch EPS core, stucco or wood siding, interior finish, 6.5 inch R-23.04 SIP panels		1204,4	6 623	0	963	963
17A1-6: Roof/Ceiling-Roof Deck (roofing, wood, insulation) or SIP Panels Supported on Beams, Structural Insulated Panels (SIPs), R -3.85 per Inch EPS Core, Dark or Bold-Color Asphalt Shingle, Dark Metal, Dark Membrane, Dark Tar and Gravel, 6.5 inch R-23.04 SIP panels		529,1	2 786	0	834	834
Subtotals for structure:			27 486	0	19 835	19 835
People:		0		0	0	0
Equipment:		•		0	0	0
Lighting:		0	0.404	•	0	0
Ductwork:			3 481 7 543	0	234	234
Infiltration: Winter CFM: 61, Summer CFM: 30				-580	645	65
System 1, Zone 1 Load Totals:			38 510	-580	20 714	20 134
Check Figures				0.511.5		
Supply CFM: 1 037				CFM Per Square ft.:		747
Square ft. of Room Area: 1 388				Square ft. Per Ton:		752
Volume (ft?) of Cond. Space: 13 666 Zone Loads						
	88 510 Btuh	38,510	MDL			
	20 714 Btuh	103				
Total Latent Gain:	-580 Btuh		%			
	20 134 Btuh	1,68	Tons (Based On Sensible +			
		1,85	Tons (Based On 75% Sens	sible Capacity)		
Notes						
Calculations are based on 8th edition of ACCA Manual J.						
All computed results are estimates as building use and we	eather may vary					
Be sure to select a unit that meets both sensible and later						

Be sure to select a unit that meets both sensible and latent loads.

Rhvac - Residential & Light Commercial HVAC Loads				Elite So	ftware Development, Inc.
Vadim Chernets Richboro, PA 18954					Krasnoyarsk Page 7
					rage /
System 1, Zone 2 Summary Loads (Peak L	oad Proce	dure for Rooms)			
Component	Area	Sen	Lat	Sen	Total
Description	Quan	Loss	Gain	Gain	Gain
1E-cw: Glazing-Double pane window, fixed sash, clear, wood frame, outdoor insect screen with 100% coverage, light color drapes with medium weave with 50% coverage, u-value 0,56, SHGC 0,66	133,7	8 759	0	4 303	4 303
14B1-6.5s: Wall-structural insulated panel (SIP), R -3.85 per inch EPS core, stucco or wood siding, interior finish, 6.5 inch R-23.04 SIP panels	307,5	1 691	0	246	246
21B-20: Floor-Basement, Concrete slab, any thickness, 2 or more feet below grade, R-3 or higher insulation installed below floor, any floor cover, shortest side of floor slab is 20' wide	362,5	806	0	0	0
Subtotals for structure:		11 256	0	9 479	9 479
People:	0		0	0	0
Equipment:			0	0	0
Lighting:	0			0	0
Ductwork:		1 342	0	110	110
Infiltration: Winter CFM: 18, Summer CFM: 9		2 248	-173	192	19
System 1, Zone 2 Load Totals:		14 846	-173	9 781	9 608
Check Figures					
Supply CFM: 490			CFM Per Square ft.:		,350
Square ft. of Room Area: 363			Square ft. Per Ton:		427
Volume (ft?) of Cond. Space: 3 568					
Zone Loads					
Total Heating Required: 14 846 Bt	uh 14,846	MBH			
	uh 102				
Total Latent Gain: -173 Bt	uh -2	%			
Total Cooling Required: 9 608 Bi	uh 0,80 0,85	Tons (Based On Sensible + Tons (Based On 75% Sensi			
Notes					
Calculations are based on 8th edition of ACCA Manual J.					
All computed results are estimates as building use and weather ma Be sure to select a unit that meets both sensible and latent loads.	y vary.				

System 1, Zone 3 Summary Loads (Peak Load Procedure for Rooms)	Rhvac - Residential & Light Commercial HVAC Loads				Elite Software [Development, Inc
System 1, Zone 3 Summary Loads (Peak Load Procedure for Rooms)	Vadim Chernets		1			Krasnoyarsk
Component Description Quan Loss Gain Ga						Page 8
Description	System 1, Zone 3 Summary Loads (Peak Lo	oad Procedu	ire for Rooms)			
1E-ow. Glazing-Double pane window, fixed sash, clear, wood frame, outdoor insect screen with 10% coverage, light color drapes with medium weave with 50% coverage, light color drapes with medium weave with 50% coverage, light color drapes with medium weave with 50% coverage, light color drapes with medium weave with 50% coverage, light color drapes with medium weave with 50% coverage, light color drapes with medium weave with 50% coverage, u-value, 0,65, SHC4C, 0,66						Tota
wood frame, outdoor insect screen with 100% coverage, u-value 0,56, SHCC 0,66 11P. Door-Matel. Polyurethane Core 14B1-6.5s: Wall-structural insulated panel (SIP), R-3.85 1943,2 10.686 0 1551 15 14B1-6.5s: Wall-structural insulated panel (SIP), R-3.85 1943,2 10.686 0 1551 15 15 per inch. EPS core, stucco or wood siding, interior finish, 6.5 inch R-23.04 SIP panels 17A1-6. Roof/calling-Roof Deck (roofing, wood, insulation) or SIP Panels Supported on Beams, Structural Insulated Panels (SIPs), R-3.85 per Inch. EPS Core, Stucco in Roulet and Panels (SIPs), R-3.85 per Inch. EPS Core, stucco in Roulet Panels (SIPs), R-3.85 per Inch. EPS Core, Dark or Boil-Color Asphalt Shingle, Dark Metal. Dark Membrane, Dark Tar and Gravel, 6.5 inch R-23.04 SIP panels 18-20: Floor-Basement, Concrete slab, any thickness, 2 or more feet below grade, R-3 or higher insulation installed below floor, any floor cover, shortest side of floor slab is 20' wide Subtotals for structure: 2 24 460 0 0 8 407 8 408 15 20' wide Subtotals for structure: 3 24 460 0 0 8 407 8 408 15 20' wide Subtotals for structure: 3 24 460 0 0 8 407 8 408 15 20' wide Subtotals for structure: 3 3 506 0 106 10 106 11						Gair
14B1-6.5s: Wall-structural insulated panel (SIP), R. 3.85 1943,2 10 686 0 1 551 1 5	wood frame, outdoor insect screen with 100% coverage, light color drapes with medium weave with	121,2	7 942	0	3 257	3 257
per inch EPS core, stucco or wood siding, interior finish, 6, 5 inch R-23.04 SIP panels 17A1-6: Roof/Ceiling-Roof Deck (roofing, wood, insulation) or SIP Panels Supported to Beams, Structural Insulated Panels (SIPs), R-3.85 per Inch EPS Core, Dark or Bold-Color Asphalt Shingle, Dark Metal, Dark Membrane, Dark Tar and Gravel, 6.5 inch R-23.04 SIP panels 18-20: Floor-Basement, Concrete slab, any thickness, 2 or 738 1640 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	11P: Door-Metal - Polyurethane Core	59	2 004	0	531	531
insulation) or SiP Panels Supported on Beams, Structural Insulated Panels (SIPS), R - 3.85 per Inch EPS Core, Dark or Bold-Color Asphalt Shingle, Dark Metal, Dark Membrane, Dark Tar and Gravel, 6.5 inch R-23.04 SIP panels 218-20: Floor-Basement, Concrete slab, any thickness, 2 738 1 640 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	per inch EPS core, stucco or wood siding, interior	1943,2	10 686	0	1 551	1 551
21B-20: Floor-Basement, Concrete slab, any thickness, 2 or more feet below grade, R-3 or higher insulation installed below floor, any floor cover, shortest side of floor slab is 20' wide Subtotals for structure: 24 460 0 0 8 407 84 People: 0 0 0 0 0 0 0 Equipment: 0 0 0 0 0 0 Equipment: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	insulation) or SIP Panels Supported on Beams, Structural Insulated Panels (SIPs), R -3.85 per Inch EPS Core, Dark or Bold-Color Asphalt Shingle, Dark Metal, Dark Membrane, Dark Tar and Gravel, 6.5	415,6	2 188	0	654	654
People:	21B-20: Floor-Basement, Concrete slab, any thickness, 2 or more feet below grade, R-3 or higher insulation installed below floor, any floor cover, shortest side of	738	1 640	0	0	C
People:	Subtotals for structure:		24 460	0	8 407	8 407
Equipment: Lighting: Ductwork: Suptyment: System 1, Zone 3 Load Totals: Check Figures Supply CFM: Sup	People:	0		0	0	C
Lighting: 0 0 10ctwork: 3 506 0 106 1166 1161tration: Winter CFM: 87, Summer CFM: 43 10 821 -831 923 185 1923 1923 1923 1923 1923 1923 1923 1923				0	0	C
Ductwork 3 506 0 106		0			0	C
Infiltration: Winter CFM: 87, Summer CFM: 43			3 506	0	106	106
System 1, Zone 3 Load Totals: 38 787 -831 9 436 8 6	Infiltration: Winter CFM: 87, Summer CFM: 43			-831		92
Supply CFM: 473 CFM Per Square ft.: 0,337 Square ft. of Room Area: 1 401 Square ft. Per Ton: 1 462 Volume (ft?) of Cond. Space: 13 799 1 462 Zone Loads Total Heating Required: 38 787 Btuh 38,787 MBH Total Sensible Gain: 9 436 Btuh 110 % Total Latent Gain: -831 Btuh -10 % Total Cooling Required: 8 605 Btuh 0,72 Tons (Based On Sensible + Latent) Notes Calculations are based on 8th edition of ACCA Manual J.	System 1, Zone 3 Load Totals:		38 787	-831	9 436	8 605
Square ft. of Room Area: 1 401 Square ft. Per Ton: 1 462 Volume (ft?) of Cond. Space: 13 799 Square ft. Per Ton: 1 462 Zone Loads Total Heating Required: 38 787 Btuh 38,787 MBH Total Sensible Gain: 9 436 Btuh 110 % Total Latent Gain: -831 Btuh -10 % Total Cooling Required: 8 605 Btuh 0,72 Tons (Based On Sensible + Latent) Notes Calculations are based on 8th edition of ACCA Manual J.	Check Figures					
Total Heating Required: Total Sensible Gain: Total Latent Gain: Total Cooling Required: 8 605 Btuh Total Cooling Required: 8 605 Btuh 9 436 Btuh -10 % Total Cooling Required: 8 605 Btuh 0,72 Tons (Based On Sensible + Latent) 0,96 Tons (Based On 75% Sensible Capacity) Notes Calculations are based on 8th edition of ACCA Manual J.	Square ft. of Room Area: 1 401					
Total Sensible Gain: Total Latent Gain: -831 Btuh -10 % Total Cooling Required: 8 605 Btuh 0,72 Tons (Based On Sensible + Latent) 0,96 Tons (Based On 75% Sensible Capacity) Notes Calculations are based on 8th edition of ACCA Manual J.	Zone Loads					
Total Latent Gain: Total Cooling Required: 8 605 Btuh 0,72 Tons (Based On Sensible + Latent) 0,96 Tons (Based On 75% Sensible Capacity) Notes Calculations are based on 8th edition of ACCA Manual J.						
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Calculations are based on 8th edition of ACCA Manual J.	Total Cooling Required: 8 605 Btul		ons (Based On Sensible + Latent ons (Based On 75% Sensible Ca	i) pacity)		
All computed results are estimates as huilding use and weather may vary						
All computed results are estimates as building use and weather may vary.	All computed results are estimates as building use and weather may	vary.				