

## Project Information

For: Sample Manual J  
 890 E Myrtle Street, Fort Collins, Co

Notes:

## Design Information

Weather: Fort Collins (AWOS), CO, US

### Winter Design Conditions

Outside db	6 °F
Inside db	72 °F
Design TD	66 °F

### Summer Design Conditions

Outside db	90 °F
Inside db	75 °F
Design TD	15 °F
Daily range	H
Relative humidity	50 %
Moisture difference	-23 gr/lb

### Heating Summary

Structure	33245 Btuh
Ducts	3246 Btuh
Central vent (56 cfm)	3396 Btuh
Outside air	
Humidification	3231 Btuh
Piping	0 Btuh
Equipment load	43118 Btuh

### Sensible Cooling Equipment Load Sizing

Structure	18524 Btuh
Ducts	1686 Btuh
Central vent (56 cfm)	767 Btuh
Outside air	
Blower	0 Btuh
Use manufacturer's data	y
Rate/swing multiplier	1.00
Equipment sensible load	20977 Btuh

### Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	0

### Latent Cooling Equipment Load Sizing

Structure	334 Btuh
Ducts	20 Btuh
Central vent (56 cfm)	-715 Btuh
Outside air	
Equipment latent load	0 Btuh

	Heating	Cooling
Area (ft <sup>2</sup> )	2592	2592
Volume (ft <sup>3</sup> )	19865	19865
Air changes/hour	0.22	0.11
Equiv. AVF (cfm)	73	36

<b>Equipment Total Load (Sen+Lat)</b>	20977 Btuh
Req. total capacity at 1.00 SHR	1.7 ton

### Heating Equipment Summary

Make	Amana
Trade	AMANA
Model	AMSS920603BN
AHRI ref	
Efficiency	92.1 AFUE
Heating input	60000 Btuh
Heating output	49128 Btuh
Temperature rise	58 °F
Actual air flow	927 cfm
Air flow factor	0.025 cfm/Btuh
Static pressure	0.70 in H2O
Space thermostat	

### Cooling Equipment Summary

Make	Amana
Trade	AMANA
Cond	ASX130301C*
Coil	CA*FCAPF3137*6B
AHRI ref	
Efficiency	11.5 EER, 13.5 SEER
Sensible cooling	25320 Btuh
Latent cooling	0 Btuh
Total cooling	25320 Btuh
Actual air flow	1059 cfm
Air flow factor	0.052 cfm/Btuh
Static pressure	0.80 in H2O
Load sensible heat ratio	1.00

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

## Project Information

For: Sample Manual J  
890 E Myrtle Street, Fort Collins, Co

## Design Conditions

### Location:

Fort Collins (AWOS), CO, US  
Elevation: 5016 ft  
Latitude: 40°N

### Outdoor:

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

### Heating

6  
-  
-  
15.0

### Cooling

90  
28 ( H )  
62  
7.5

### Indoor:

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

### Heating

72  
66  
30  
35.0

### Cooling

75  
15  
50  
-22.6

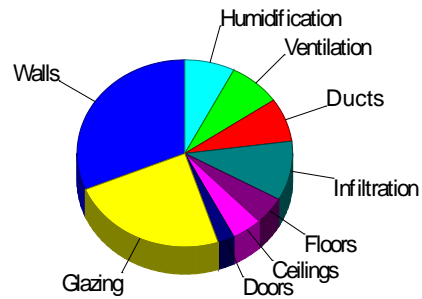
### Infiltration:

Method  
Construction quality  
Fireplaces

Simplified  
Semi-tight  
0

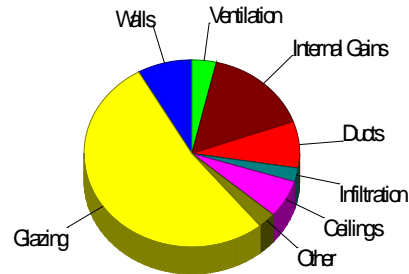
## Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.9	13493	31.3
Glazing	31.0	10226	23.7
Doors	25.9	1088	2.5
Ceilings	1.6	1972	4.6
Floors	1.4	2043	4.7
Infiltration	1.5	4424	10.3
Ducts		3246	7.5
Piping		0	0
Humidification		3231	7.5
Ventilation		3396	7.9
Adjustments		0	0
<b>Total</b>		<b>43118</b>	<b>100.0</b>



## Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	0.5	1721	8.2
Glazing	33.5	11055	52.7
Doors	8.7	365	1.7
Ceilings	1.1	1360	6.5
Floors	0.1	203	1.0
Infiltration	0.2	500	2.4
Ducts		1686	8.0
Ventilation		767	3.7
Internal gains		3320	15.8
Blower		0	0
Adjustments		0	0
<b>Total</b>		<b>20977</b>	<b>100.0</b>



Latent Cooling Load = 0 Btuh  
Overall U-value = 0.098 Btuh/ft²-°F

Data entries checked.



# Component Constructions

## Entire House

### Rockview Designs

Job:  
Date: September 16th, 2018  
By:

## Project Information

For: Sample Manual J  
890 E Myrtle Street, Fort Collins, Co

## Design Conditions

<b>Location:</b>		<b>Indoor:</b>		<b>Heating</b>	<b>Cooling</b>
Fort Collins (AWOS), CO, US		Indoor temperature (°F)		72	75
Elevation: 5016 ft		Design TD (°F)		66	15
Latitude: 40°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		35.0	-22.6
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>		
Dry bulb (°F)	6	90	Method	Simplified	
Daily range (°F)	-	28 ( H )	Construction quality	Semi-tight	
Wet bulb (°F)	-	62	Fireplaces	0	
Wind speed (mph)	15.0	7.5			

## Construction descriptions

### Walls

Construction descriptions	Or	Area ft <sup>2</sup>	U-value Btuh/ft <sup>2</sup> -°F	Insul R ft <sup>2</sup> -°F/Btuh	Htg HTM Btuh/ft <sup>2</sup>	Loss Btuh	Clg HTM Btuh/ft <sup>2</sup>	Gain Btuh
12D-5sw: Frm wall, wd ext, 3/8" wood shth, r-15 cav ins, 1/2" gypsum board int fnsh, r-5 ext bd ins, 2"x6" wood frm, 16" o.c. stud	n	350	0.062	20.0	4.12	1439	0.53	184
	e	318	0.062	20.0	4.12	1309	0.53	168
	s	350	0.062	20.0	4.12	1439	0.53	184
	w	243	0.062	20.0	4.12	998	0.53	128
	all	1260	0.062	20.0	4.12	5185	0.53	664
12F-0sw: Frm wall, wd ext, 3/8" wood shth, r-21 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm, 16" o.c. stud	n	206	0.065	21.0	4.32	887	0.72	148
	e	216	0.065	21.0	4.32	932	0.72	156
	s	56	0.065	21.0	4.32	240	0.72	40
	w	211	0.065	21.0	4.32	911	0.72	152
	all	688	0.065	21.0	4.32	2969	0.72	496
15B19-0wc-8: Bg wall, heavy dry or light damp soil, 2"x6" wood int frm, concrete wall, r-19 cav ins, 8" thk, 1/2" gypsum board int fnsh	n	275	0.040	19.0	2.87	788	0.05	13
	e	200	0.040	19.0	2.73	547	0.04	7
	s	275	0.040	19.0	2.87	788	0.05	13
	w	216	0.040	19.0	2.87	620	0.05	11
	all	965	0.040	19.0	2.84	2742	0.05	45
12E-0sw: Frm wall, wd ext, 3/8" wood shth, r-19 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm, 16" o.c. stud	e	215	0.068	19.0	4.52	969	0.90	193
	s	154	0.068	19.0	4.52	695	0.90	138
	w	207	0.068	19.0	4.52	932	0.90	185
	all	575	0.068	19.0	4.52	2596	0.90	516

### Partitions

(none)



## Windows

Low E 2012: 2 glazing, clr outr, air gas, mtl no brk frm mat, clr innr, 1/4" gap, 1/8" thk; 6.67 ft head ht	n	24	0.320	0	21.2	510	11.0	263
	n	75	0.320	0	21.2	1594	11.0	822
	e	24	0.320	0	21.2	510	35.0	839
	e	24	0.870	0	57.8	1386	76.2	1829
	e	16	0.320	0	21.2	340	35.0	559
	s	24	0.320	0	21.2	510	18.1	435
	s	32	0.870	0	57.8	1849	40.9	1310
	s	12	0.320	0	21.2	255	18.1	217
	w	47	0.320	0	21.2	999	35.0	1643
	w	32	0.870	0	57.8	1849	76.2	2438
	w	20	0.320	0	21.2	425	35.0	699
	all	330	0.320	0	31.0	10226	33.5	11055

## Doors

11D0: Door, wd sc type	n	21	0.390	0	25.9	544	8.70	183
	s	21	0.390	0	25.9	544	8.70	183
	all	42	0.390	0	25.9	1088	8.70	365

## Ceilings

16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh		532	0.026	38.0	1.73	919	1.19	634
R-49 Ceiling: Attic ceiling, asphalt shingles roof mat, r-5 roof ins, r-44 ceil ins, 1/2" gypsum board int fnsh		721	0.022	49.0	1.46	1053	1.01	726

## Floors

19D-0cscp: Flr floor, frm flr, 12" thkns, carpet flr fnsh, tight crwl ovr, r-19 wall insul		610	0.368	19.0	1.15	704	0.26	159
20P-30c: Flr floor, frm flr, 12" thkns, carpet flr fnsh, r-30 cav ins, amb ovr		216	0.035	30.0	2.32	502	0.20	44
21A-32t: Bg floor, heavy dry or light damp soil, 8' depth		631	0.020	0	1.33	838	0	0



**Component Constructions**  
*Mudroom*  
 Rockview Designs

Job:  
 Date: September 16th, 2018  
 By:

**Project Information**

For: Sample Manual J  
 890 E Myrtle Street, Fort Collins, Co

**Design Conditions**

<b>Location:</b>		<b>Indoor:</b>		<b>Heating</b>	<b>Cooling</b>
Fort Collins (AWOS), CO, US		Indoor temperature (°F)		72	75
Elevation: 5016 ft		Design TD (°F)		66	15
Latitude: 40°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		35.0	-22.6
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>		
Dry bulb (°F)	6	90	Method		
Daily range (°F)	-	28 ( H )	Construction quality		
Wet bulb (°F)	-	62	Fireplaces		
Wind speed (mph)	15.0	7.5	Simplified		
			Semi-tight		
			0		

**Construction descriptions**

**Walls**

	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, wd ext, 3/8" wood shth, r-21 cav ins, 1/2" gypsum	n	62	0.065	21.0	4.32	265	0.72	44
board int fnsh, 2"x6" wood frm, 16" o.c. stud	e	68	0.065	21.0	4.32	291	0.72	49
	all	129	0.065	21.0	4.32	557	0.72	93

**Partitions**  
(none)

**Windows**

Low E 2012: 2 glazing, clr outr, air gas, mtl no brk frm mat, clr innr, 1/4" gap, 1/8" thk; 6.67 ft head ht	n	12	0.320	0	21.2	255	11.0	132
---	---	----	-------	---	------	-----	------	-----

**Doors**

11D0: Door, wd sc type	n	21	0.390	0	25.9	544	8.70	183
------------------------	---	----	-------	---	------	-----	------	-----

**Ceilings**  
(none)

**Floors**  
(none)

## Project Information

For: Sample Manual J  
 890 E Myrtle Street, Fort Collins, Co

## Design Conditions

<b>Location:</b> Fort Collins (AWOS), CO, US Elevation: 5016 ft Latitude: 40°N				<b>Indoor:</b> Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)	<b>Heating</b> 72 66 30 35.0	<b>Cooling</b> 75 15 50 -22.6
<b>Outdoor:</b> Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	<b>Heating</b> 6 - - 15.0	<b>Cooling</b> 90 28 ( H ) 62 7.5	<b>Infiltration:</b> Method Construction quality Fireplaces	Simplified Semi-tight 0		

### Construction descriptions

	Or	Area	U-value	Insul R	Htg HTM	Loss	Clg HTM	Gain
		ft <sup>2</sup>	Btuh/ft <sup>2</sup> -°F	ft <sup>2</sup> -°F/Btuh	Btuh/ft <sup>2</sup>	Btuh	Btuh/ft <sup>2</sup>	Btuh
<b>Walls</b>								
12F-0sw: Frm wall, wd ext, 3/8" wood shth, r-21 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm, 16" o.c. stud	n	59	0.065	21.0	4.32	252	0.72	42
	w	68	0.065	21.0	4.32	291	0.72	49
	all	126	0.065	21.0	4.32	544	0.72	91

**Partitions**  
(none)

**Windows**  
(none)

**Doors**  
(none)

**Ceilings**  
(none)

**Floors**  
(none)



# Component Constructions

## Dining

Rockview Designs

Job:  
Date: September 16th, 2018  
By:

### Project Information

For: Sample Manual J  
890 E Myrtle Street, Fort Collins, Co

### Design Conditions

<b>Location:</b>		<b>Indoor:</b>		<b>Heating</b>	<b>Cooling</b>
Fort Collins (AWOS), CO, US		Indoor temperature (°F)		72	75
Elevation: 5016 ft		Design TD (°F)		66	15
Latitude: 40°N		Relative humidity (%)		30	50
<b>Outdoor:</b>		Moisture difference (gr/lb)		35.0	-22.6
	<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>		
Drybulb (°F)	6	90	Method	Simplified	
Daily range (°F)	-	28 ( H )	Construction quality	Semi-tight	
Wet bulb (°F)	-	62	Fireplaces	0	
Wind speed (mph)	15.0	7.5			

### Construction descriptions

	Or	Area	U-value	Insul R	Htg HTM	Loss	Clg HTM	Gain
		ft <sup>2</sup>	Btuh/ft <sup>2</sup> -°F	ft <sup>2</sup> -°F/Btuh	Btuh/ft <sup>2</sup>	Btuh	Btuh/ft <sup>2</sup>	Btuh
<b>Walls</b>								
12F-0sw: Frm wall, wd ext, 3/8" wood shth, r-21 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm, 16" o.c. stud	n	86	0.065	21.0	4.32	369	0.72	62
	w	63	0.065	21.0	4.32	270	0.72	45
	all	148	0.065	21.0	4.32	639	0.72	107

### Partitions

(none)

### Windows

Low E 2012: 2 glazing, clr outr, air gas, mtl no brk frm mat, clr innr, 1/4" gap, 1/8" thk; 6.67 ft head ht	n	63	0.320	0	21.2	1339	11.0	691
	w	20	0.320	0	21.2	425	35.0	699
	all	83	0.320	0	21.2	1764	16.7	1390

### Doors

(none)

### Ceilings

(none)

### Floors

(none)

### Project Information

For: Sample Manual J  
 890 E Myrtle Street, Fort Collins, Co

### Design Conditions

<b>Location:</b> Fort Collins (AWOS), CO, US Elevation: 5016 ft Latitude: 40°N			<b>Indoor:</b> Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)	<b>Heating</b> 72 66 30 35.0	<b>Cooling</b> 75 15 50 -22.6
<b>Outdoor:</b> Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	<b>Heating</b> 6 - - 15.0	<b>Cooling</b> 90 28 ( H ) 62 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, wd ext, 3/8" wood shth, r-21 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm, 16" o.c. stud	s	42	0.065	21.0	4.32	181	0.72	30
	w	81	0.065	21.0	4.32	350	0.72	58
	all	123	0.065	21.0	4.32	531	0.72	89

### Partitions (none)

### Windows

Low E 2012: 2 glazing, clr outr, air gas, mtl no brk frm mat, clr innr, 1/4" gap, 1/8" thk; 6.67 ft head ht	s	12	0.320	0	21.2	255	18.1	217
---	---	----	-------	---	------	-----	------	-----

### Doors (none)

### Ceilings (none)

### Floors (none)





**Component Constructions**  
*Open Area*  
**Rockview Designs**

**Job:**  
**Date:** September 16th, 2018  
**By:**

**Project Information**

For: Sample Manual J  
 890 E Myrtle Street, Fort Collins, Co

**Design Conditions**

<b>Location:</b>		<b>Indoor:</b>		<b>Heating</b>	<b>Cooling</b>
Fort Collins (AWOS), CO, US		Indoor temperature (°F)		72	75
Elevation: 5016 ft		Design TD (°F)		66	15
Latitude: 40°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		35.0	-22.6
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>		
Dry bulb (°F)	6	90	Method		
Daily range (°F)	-	28 ( H )	Construction quality		
Wet bulb (°F)	-	62	Fireplaces		
Wind speed (mph)	15.0	7.5	Simplified		
			Semi-tight		
			0		

**Construction descriptions**

	Or	Area	U-value	Insul R	Htg HTM	Loss	Clg HTM	Gain
		ft²	Btuh/ft²-°F	ft²-°F/Btuh	Btuh/ft²	Btuh	Btuh/ft²	Btuh
<b>Walls</b>								
12F-0sw: Frm wall, wd ext, 3/8" wood shth, r-21 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm, 16" o.c. stud	e	149	0.065	21.0	4.32	641	0.72	107
	s	14	0.065	21.0	4.32	58	0.72	10
	all	162	0.065	21.0	4.32	699	0.72	117

**Partitions**  
(none)

**Windows**  
(none)

**Doors**  
(none)

**Ceilings**  
(none)

**Floors**  
(none)



# Component Constructions

## Master Bedroom

### Rockview Designs

Job:  
Date: September 16th, 2018  
By:

## Project Information

For: Sample Manual J  
890 E Myrtle Street, Fort Collins, Co

## Design Conditions

<b>Location:</b>		<b>Indoor:</b>		<b>Heating</b>	<b>Cooling</b>
Fort Collins (AWOS), CO, US		Indoor temperature (°F)		72	75
Elevation: 5016 ft		Design TD (°F)		66	15
Latitude: 40°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		35.0	-22.6
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>		
Drybulb (°F)	6	90	Method	Simplified	
Daily range (°F)	-	28 ( H )	Construction quality	Semi-tight	
Wet bulb (°F)	-	62	Fireplaces	0	
Wind speed (mph)	15.0	7.5			

## Construction descriptions

### Walls

12D-5sw: Frm wall, wd ext, 3/8" wood shth, r-15 cav ins, 1/2" gypsum board int fnsh, r-5 ext bd ins, 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
n	228	0.062	20.0	4.12	939	0.53	120
e	318	0.062	20.0	4.12	1309	0.53	168
s	240	0.062	20.0	4.12	988	0.53	126
w	97	0.062	20.0	4.12	399	0.53	51
all	883	0.062	20.0	4.12	3635	0.53	465

### Partitions

(none)

### Windows

Low E 2012: 2 glazing, clr outr, air gas, mtl no brk frm mat, clr innr, 1/4" gap, 1/8" thk; 6.67 ft head ht

n	24	0.320	0	21.2	510	11.0	263
e	24	0.320	0	21.2	510	35.0	839
s	12	0.320	0	21.2	255	18.1	217
w	35	0.320	0	21.2	744	35.0	1224
all	95	0.320	0	21.2	2019	26.8	2543

### Doors

(none)

### Ceilings

R-49 Ceiling: Attic ceiling, asphalt shingles roof mat, r-5 roof ins, r-44 ceil ins, 1/2" gypsum board int fnsh

	449	0.022	49.0	1.46	655	1.01	452
--	-----	-------	------	------	-----	------	-----

### Floors

20P-30c: Flr floor, frm flr, 12" thkns, carpet flr fnsh, r-30 cav ins, amb ovr

	210	0.035	30.0	2.32	488	0.20	43
--	-----	-------	------	------	-----	------	----



# Component Constructions

## Closet 2

Rockview Designs

Job:  
Date: September 16th, 2018  
By:

### Project Information

For: Sample Manual J  
890 E Myrtle Street, Fort Collins, Co

### Design Conditions

<b>Location:</b>		<b>Indoor:</b>		<b>Heating</b>	<b>Cooling</b>
Fort Collins (AWOS), CO, US		Indoor temperature (°F)		72	75
Elevation: 5016 ft		Design TD (°F)		66	15
Latitude: 40°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		35.0	-22.6
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>		
Dry bulb (°F)	6	90	Method		
Daily range (°F)	-	28 ( H )	Construction quality		
Wet bulb (°F)	-	62	Fireplaces		
Wind speed (mph)	15.0	7.5	Simplified		
			Semi-tight		
			0		

### Construction descriptions

	Or	Area	U-value	Insul R	Htg HTM	Loss	Clg HTM	Gain
		ft²	Btuh/ft²-°F	ft²-°F/Btuh	Btuh/ft²	Btuh	Btuh/ft²	Btuh
<b>Walls</b>								
12D-5sw: Frm wall, wd ext, 3/8" wood shth, r-15 cav ins, 1/2" gypsum board int fnsh, r-5 ext bd ins, 2"x6" wood frm, 16" o.c. stud	n	122	0.062	20.0	4.12	500	0.53	64
	w	59	0.062	20.0	4.12	241	0.53	31
	all	180	0.062	20.0	4.12	741	0.53	95
<b>Partitions</b>								
(none)								
<b>Windows</b>								
(none)								
<b>Doors</b>								
(none)								
<b>Ceilings</b>								
R-49 Ceiling: Attic ceiling, asphalt shingles roof mat, r-5 roof ins, r-44 ceil ins, 1/2" gypsum board int fnsh		88	0.022	49.0	1.46	128	1.01	88
<b>Floors</b>								
(none)								



# Component Constructions

## Master Bath

Rockview Designs

Job:  
Date: September 16th, 2018  
By:

### Project Information

For: Sample Manual J  
890 E Myrtle Street, Fort Collins, Co

### Design Conditions

<b>Location:</b>		<b>Indoor:</b>		<b>Heating</b>	<b>Cooling</b>
Fort Collins (AWOS), CO, US		Indoor temperature (°F)		72	75
Elevation: 5016 ft		Design TD (°F)		66	15
Latitude: 40°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		35.0	-22.6
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>		
Drybulb (°F)	6	90	Method		
Daily range (°F)	-	28 ( H )	Construction quality		
Wet bulb (°F)	-	62	Fireplaces		
Wind speed (mph)	15.0	7.5	Simplified		
			Semi-tight		
			0		

### Construction descriptions

	Or	Area ft <sup>2</sup>	U-value Btuh/ft <sup>2</sup> -°F	Insul R ft <sup>2</sup> -°F/Btuh	Htg HTM Btuh/ft <sup>2</sup>	Loss Btuh	Clg HTM Btuh/ft <sup>2</sup>	Gain Btuh
<b>Walls</b>								
12D-5sw: Frm wall, wd ext, 3/8" wood shth, r-15 cav ins, 1/2" gypsum board int fnsh, r-5 ext bd ins, 2"x6" wood frm, 16" o.c. stud	s	65	0.062	20.0	4.12	266	0.53	34
	w	87	0.062	20.0	4.12	358	0.53	46
	all	152	0.062	20.0	4.12	624	0.53	80
<b>Partitions</b>								
(none)								
<b>Windows</b>								
Low E 2012: 2 glazing, clr outr, air gas, mtl no brk frm mat, clr innr, 1/4" gap, 1/8" thk; 6.67 ft head ht	s	12	0.320	0	21.2	255	18.1	217
	w	12	0.320	0	21.2	255	35.0	420
	all	24	0.320	0	21.2	510	26.5	637
<b>Doors</b>								
(none)								
<b>Ceilings</b>								
R-49 Ceiling: Attic ceiling, asphalt shingles roof mat, r-5 roof ins, r-44 ceil ins, 1/2" gypsum board int fnsh		129	0.022	49.0	1.46	188	1.01	129
<b>Floors</b>								
20P-30c: Flr floor, frm flr, 12" thkns, carpet flr fnsh, r-30 cav ins, amb ovr		6	0.035	30.0	2.32	14	0.20	1



# Component Constructions

Toilet

Rockview Designs

Job:  
Date: September 16th, 2018  
By:

## Project Information

For: Sample Manual J  
890 E Myrtle Street, Fort Collins, Co

## Design Conditions

<b>Location:</b>		<b>Indoor:</b>		<b>Heating</b>	<b>Cooling</b>
Fort Collins (AWOS), CO, US		Indoor temperature (°F)		72	75
Elevation: 5016 ft		Design TD (°F)		66	15
Latitude: 40°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		35.0	-22.6
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>		
Drybulb (°F)	6	90	Method		
Daily range (°F)	-	28 ( H )	Simplified		
Wet bulb (°F)	-	62	Construction quality		
Wind speed (mph)	15.0	7.5	Semi-tight		
			Fireplaces		
			0		

## Construction descriptions

	Or	Area ft <sup>2</sup>	U-value Btuh/ft <sup>2</sup> -°F	Insul R ft <sup>2</sup> -°F/Btuh	Htg HTM Btuh/ft <sup>2</sup>	Loss Btuh	Clg HTM Btuh/ft <sup>2</sup>	Gain Btuh
<b>Walls</b> 12D-5sw: Frm wall, wd ext, 3/8" wood shth, r-15 cav ins, 1/2" gypsum board int fnsh, r-5 ext bd ins, 2"x6" wood frm, 16" o.c. stud	s	45	0.062	20.0	4.12	185	0.53	24
<b>Partitions</b> (none)								
<b>Windows</b> (none)								
<b>Doors</b> (none)								
<b>Ceilings</b> R-49 Ceiling: Attic ceiling, asphalt shingles roof mat, r-5 roof ins, r-44 ceil ins, 1/2" gypsum board int fnsh		20	0.022	49.0	1.46	29	1.01	20
<b>Floors</b> (none)								





**Component Constructions**  
*Closet 1*  
 Rockview Designs

Job:  
 Date: September 16th, 2018  
 By:

**Project Information**

For: Sample Manual J  
 890 E Myrtle Street, Fort Collins, Co

**Design Conditions**

<b>Location:</b>		<b>Indoor:</b>		<b>Heating</b>	<b>Cooling</b>
Fort Collins (AWOS), CO, US		Indoor temperature (°F)		72	75
Elevation: 5016 ft		Design TD (°F)		66	15
Latitude: 40°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		35.0	-22.6
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>		
Drybulb (°F)	6	90	Method		
Daily range (°F)	-	28 ( H )	Construction quality		
Wet bulb (°F)	-	62	Fireplaces		
Wind speed (mph)	15.0	7.5	Simplified		
			Semi-tight		
			0		

**Construction descriptions**

	Or	Area	U-value	Insul R	Htg HTM	Loss	Clg HTM	Gain
		ft²	Btuh/ft²-°F	ft²-°F/Btuh	Btuh/ft²	Btuh	Btuh/ft²	Btuh
<b>Walls</b> (none)								
<b>Partitions</b> (none)								
<b>Windows</b> (none)								
<b>Doors</b> (none)								
<b>Ceilings</b> R-49 Ceiling: Attic ceiling, asphalt shingles roof mat, r-5 roof ins, r-44 ceil ins, 1/2" gypsum board int fnsh		36	0.022	49.0	1.46	53	1.01	36
<b>Floors</b> (none)								



# Component Constructions

## Fut Bedroom

Rockview Designs

Job:  
Date: September 16th, 2018  
By:

### Project Information

For: Sample Manual J  
890 E Myrtle Street, Fort Collins, Co

### Design Conditions

<b>Location:</b>		<b>Indoor:</b>		<b>Heating</b>	<b>Cooling</b>
Fort Collins (AWOS), CO, US		Indoor temperature (°F)		72	75
Elevation: 5016 ft		Design TD (°F)		66	15
Latitude: 40°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		35.0	-22.6
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>		
Dry bulb (°F)	6	90	Method		
Daily range (°F)	-	28 ( H )	Construction quality		
Wet bulb (°F)	-	62	Fireplaces		
Wind speed (mph)	15.0	7.5	Simplified		
			Semi-tight		
			0		

### Construction descriptions

	Or	Area	U-value	Insul R	Htg HTM	Loss	Clg HTM	Gain
		ft²	Btuh/ft²-°F	ft²-°F/Btuh	Btuh/ft²	Btuh	Btuh/ft²	Btuh
<b>Walls</b>								
15B19-0wc-8: Bg wall, heavy dry or light damp soil, 2"x6" wood int frm,	n	153	0.040	19.0	2.87	439	0.05	8
concrete wall, r-19 cav ins, 8" thk, 1/2" gypsum board int fnsh	e	52	0.040	19.0	2.34	120	0	0
	w	68	0.040	19.0	2.87	194	0.05	3
	all	272	0.040	19.0	2.77	753	0.04	11
<b>Partitions</b>								
(none)								
<b>Windows</b>								
Low E 2012: 2 glazing, clr outr, air gas, mtl no brk frm mat, clr innr, 1/4" gap, 1/8" thk; 6.67 ft head ht	e	16	0.320	0	21.2	340	35.0	559
<b>Doors</b>								
(none)								
<b>Ceilings</b>								
(none)								
<b>Floors</b>								
21A-32t: Bg floor, heavy dry or light damp soil, 8' depth		128	0.020	0	1.33	169	0	0



**Component Constructions**  
*Basement*  
**Rockview Designs**

**Job:**  
**Date:** September 16th, 2018  
**By:**

**Project Information**

For: Sample Manual J  
 890 E Myrtle Street, Fort Collins, Co

**Design Conditions**

<b>Location:</b>		<b>Indoor:</b>		<b>Heating</b>	<b>Cooling</b>
Fort Collins (AWOS), CO, US		Indoor temperature (°F)		72	75
Elevation: 5016 ft		Design TD (°F)		66	15
Latitude: 40°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		35.0	-22.6
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>		
Dry bulb (°F)	6	90	Method		
Daily range (°F)	-	28 ( H )	Construction quality		
Wet bulb (°F)	-	62	Fireplaces		
Wind speed (mph)	15.0	7.5	Simplified		
			Semi-tight		
			0		

**Construction descriptions**

	Or	Area	U-value	Insul R	Htg HTM	Loss	Clg HTM	Gain
		ft²	Btuh/ft²-°F	ft²-°F/Btuh	Btuh/ft²	Btuh	Btuh/ft²	Btuh
<b>Walls</b>								
15B19-0wc-8: Bg wall, heavy dry or light damp soil, 2"x6" wood int frm,	n	122	0.040	19.0	2.87	349	0.05	6
concrete wall, r-19 cav ins, 8" thk, 1/2" gypsum board int fnsh	e	149	0.040	19.0	2.87	426	0.05	7
	s	275	0.040	19.0	2.87	788	0.05	13
	w	149	0.040	19.0	2.87	426	0.05	7
	all	693	0.040	19.0	2.87	1989	0.05	34
<b>Partitions</b>								
(none)								
<b>Windows</b>								
(none)								
<b>Doors</b>								
(none)								
<b>Ceilings</b>								
(none)								
<b>Floors</b>								
21A-32t: Bg floor, heavy dry or light damp soil, 8' depth		503	0.020	0	1.33	668	0	0





# Component Constructions

## Existing Bed 1

Rockview Designs

Job:  
Date: September 16th, 2018  
By:

### Project Information

For: Sample Manual J  
890 E Myrtle Street, Fort Collins, Co

### Design Conditions

<b>Location:</b>		<b>Indoor:</b>		<b>Heating</b>	<b>Cooling</b>
Fort Collins (AWOS), CO, US		Indoor temperature (°F)		72	75
Elevation: 5016 ft		Design TD (°F)		66	15
Latitude: 40°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		35.0	-22.6
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>		
Drybulb (°F)	6	90	Method		
Daily range (°F)	-	28 ( H )	Construction quality		
Wet bulb (°F)	-	62	Fireplaces		
Wind speed (mph)	15.0	7.5	Simplified		
			Semi-tight		
			0		

### Construction descriptions

	Or	Area ft <sup>2</sup>	U-value Btuh/ft <sup>2</sup> -°F	Insul R ft <sup>2</sup> -°F/Btuh	Htg HTM Btuh/ft <sup>2</sup>	Loss Btuh	Clg HTM Btuh/ft <sup>2</sup>	Gain Btuh
<b>Walls</b>								
12E-0sw: Frm wall, wd ext, 3/8" wood shth, r-19 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm, 16" o.c. stud	w	97	0.068	19.0	4.52	436	0.90	87
<b>Partitions</b>								
(none)								
<b>Windows</b>								
Standard Window: 2 glazing, clr outr, air gas, mtl no brk frm mat, clr innr, w 1/4" gap, 1/8" thk; 6.67 ft head ht		16	0.870	0	57.8	924	76.2	1219
<b>Doors</b>								
(none)								
<b>Ceilings</b>								
16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh		102	0.026	38.0	1.73	177	1.19	122
<b>Floors</b>								
19D-0cscp: Flr floor, frm flr, 12" thkns, carpet flr fnsh, tight crwl ovr, r-19 wall insul		119	0.368	19.0	1.15	137	0.26	31



# Component Constructions

## Existing Bed 2

Rockview Designs

Job:  
Date: September 16th, 2018  
By:

### Project Information

For: Sample Manual J  
890 E Myrtle Street, Fort Collins, Co

### Design Conditions

<b>Location:</b> Fort Collins (AWOS), CO, US Elevation: 5016 ft Latitude: 40°N			<b>Indoor:</b> Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)	<b>Heating</b> 72 66 30 35.0	<b>Cooling</b> 75 15 50 -22.6
<b>Outdoor:</b> Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	<b>Heating</b> 6 - - 15.0	<b>Cooling</b> 90 28 ( H ) 62 7.5	<b>Infiltration:</b> Method Construction quality Fireplaces	Simplified Semi-tight 0	

### Construction descriptions

#### Walls

	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
12E-0sw: Frm wall, wd ext, 3/8" wood shth, r-19 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm, 16" o.c. stud	s	74	0.068	19.0	4.52	332	0.90	66
	w	110	0.068	19.0	4.52	497	0.90	99
	all	184	0.068	19.0	4.52	829	0.90	165

#### Partitions (none)

#### Windows

Standard Window: 2 glazing, clr outr, air gas, mtl no brk frm mat, clr innr, s	s	12	0.870	0	57.8	693	40.9	491
1/4" gap, 1/8" thk; 6.67 ft head ht	w	16	0.870	0	57.8	924	76.2	1219
	all	28	0.320	0	57.8	1618	61.1	1710

#### Doors (none)

#### Ceilings

16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh		133	0.026	38.0	1.73	230	1.19	158
---	--	-----	-------	------	------	-----	------	-----

#### Floors

19D-0cscp: Flr floor, frm flr, 12" thkns, carpet flr fnsh, tight crwl ovr, r-19 wall insul		133	0.368	19.0	1.15	154	0.26	35
--	--	-----	-------	------	------	-----	------	----

### Project Information

For: Sample Manual J  
890 E Myrtle Street, Fort Collins, Co

### Design Conditions

<b>Location:</b> Fort Collins (AWOS), CO, US Elevation: 5016 ft Latitude: 40°N			<b>Indoor:</b> Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)	<b>Heating</b> 72 66 30 35.0	<b>Cooling</b> 75 15 50 -22.6
<b>Outdoor:</b> Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	<b>Heating</b> 6 - - 15.0	<b>Cooling</b> 90 28 ( H ) 62 7.5	<b>Infiltration:</b> Method Construction quality Fireplaces	Simplified Semi-tight 0	

### Construction descriptions

	Or	Area ft <sup>2</sup>	U-value Btuh/ft <sup>2</sup> -°F	Insul R ft <sup>2</sup> -°F/Btuh	Htg HTM Btuh/ft <sup>2</sup>	Loss Btuh	Clg HTM Btuh/ft <sup>2</sup>	Gain Btuh
<b>Walls</b>								
12E-0sw: Frm wall, wd ext, 3/8" wood shth, r-19 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm, 16" o.c. stud	e	215	0.068	19.0	4.52	969	0.90	193
	s	81	0.068	19.0	4.52	363	0.90	72
	all	295	0.068	19.0	4.52	1332	0.90	265
<b>Partitions</b> (none)								
<b>Windows</b>								
Standard Window: 2 glazing, clr outr, air gas, mtl no brk frm mat, clr innr, 1/4" gap, 1/8" thk; 6.67 ft head ht	e	24	0.870	0	57.8	1386	76.2	1829
	s	20	0.870	0	57.8	1155	40.9	818
	all	44	0.320	0	57.8	2542	60.2	2647
<b>Doors</b>								
11D0: Door, wd sc type	s	21	0.390	0	25.9	544	8.70	183
<b>Ceilings</b>								
16B-38ad: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh		297	0.026	38.0	1.73	513	1.19	354
<b>Floors</b>								
19D-0cscp: Flr floor, frm flr, 12" thkns, carpet flr fnsh, tight crwl ovr, r-19 wall insul		358	0.368	19.0	1.15	413	0.26	93

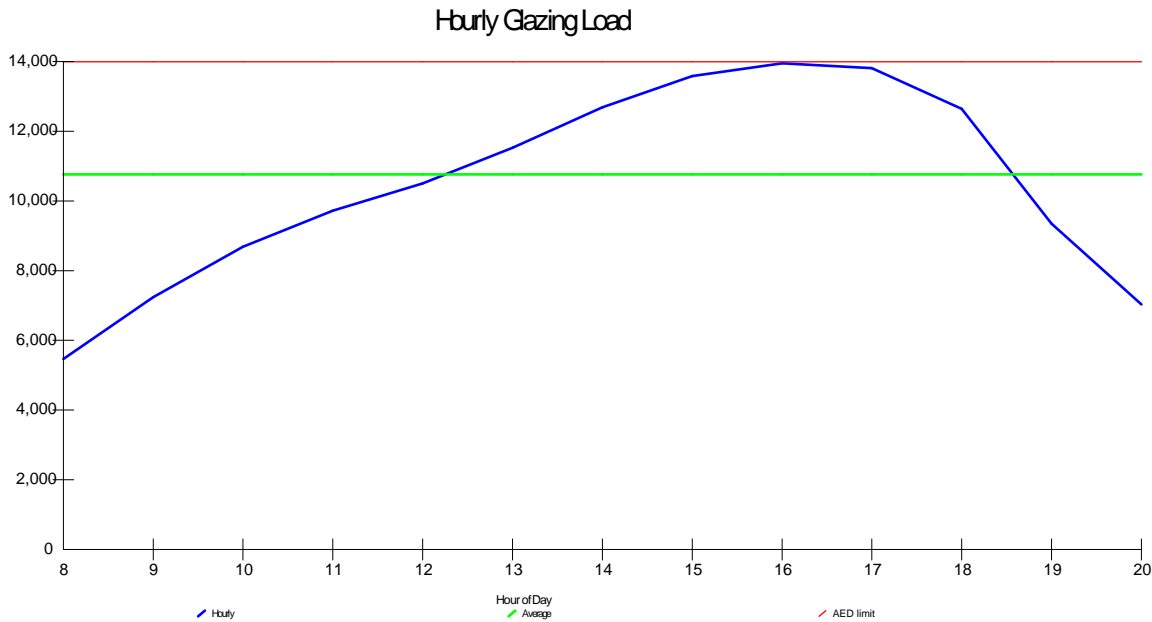
**Project Information**

For: Sample Manual J  
 890 E Myrtle Street, Fort Collins, Co

**Design Conditions**

<b>Location:</b>		<b>Indoor:</b>	<b>Heating</b>	<b>Cooling</b>
Fort Collins (AWOS), CO, US		Indoor temperature (°F)	72	75
Elevation: 5016 ft		Design TD (°F)	66	15
Latitude: 40°N		Relative humidity (%)	30	50
		Moisture difference (gr/lb)	35.0	-22.6
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>		
Dry bulb (°F)	6	90		
Daily range (°F)	-	28 ( H )		
Wet bulb (°F)	-	62		
Wind speed (mph)	15.0	7.5		
		<b>Infiltration:</b>		

**Test for Adequate Exposure Diversity**



**Maximum hourly glazing load exceeds average by 29.6%.**  
**House has adequate exposure diversity (AED), based on AED limit of 30%.**  
**AED excursion: 0 Btuh**



# Loads for Multiple Orientations

## Entire House

Rockview Designs

Job:  
Date: September 16th, 2018  
By:

### Project Information

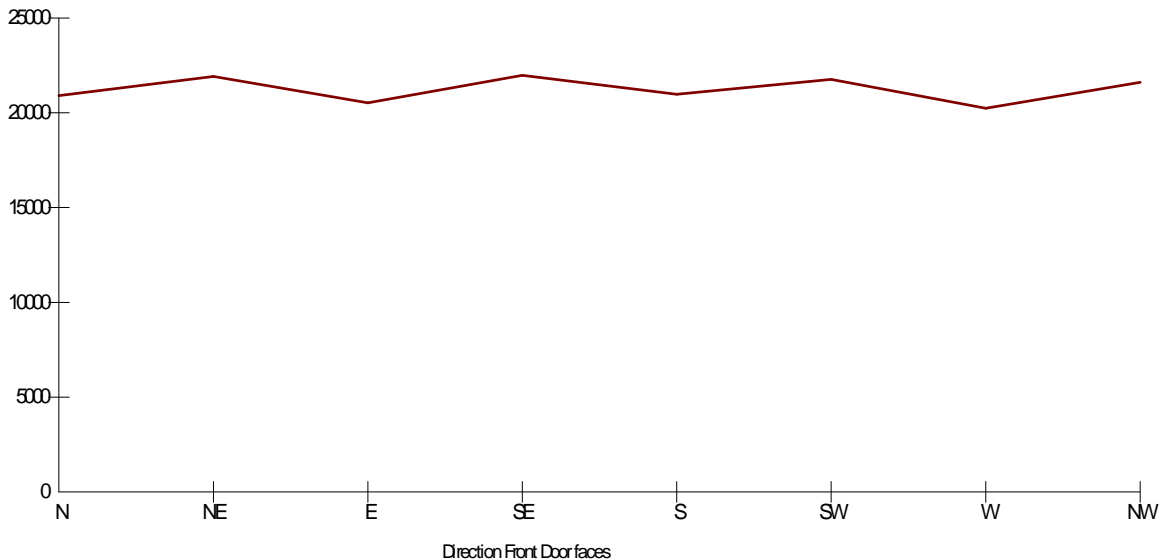
For: Sample Manual J  
890 E Myrtle Street, Fort Collins, Co

### Design Conditions

<b>Location:</b>			<b>Indoor:</b>	<b>Heating</b>	<b>Cooling</b>
Fort Collins (AWOS), CO, US			Indoor temperature (°F)	72	75
Elevation: 5016 ft			Design TD (°F)	66	15
Latitude: 40°N			Relative humidity (%)	30	50
			Moisture difference (gr/lb)	35.0	-22.6
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>		
Dry bulb (°F)	6	90			
Daily range (°F)	-	28 ( H )			
Wet bulb (°F)	-	62			
Wind speed (mph)	15.0	7.5			

Front Door	North	Northeast	East	Southeast	South	Southwest	West	Northwest
Sensible Load (Btuh)	20903	21910	20527	21976	20977	21764	20237	21610
Latent Load (Btuh)	0	0	0	0	0	0	0	0
Total Load (Btuh)	20903	21910	20527	21976	20977	21764	20237	21610
Heating AVF (cfm)	927	927	927	927	927	927	927	927
Cooling AVF (cfm)	1059	1059	1059	1059	1059	1059	1059	1059

Building Orientation Cooling Load



Current Orientation: Front Door faces South  
Highest Cooling Load: Front Door faces Southeast

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

