

**Load Short Form**  
**Entire House**  
**Quality Heating**

Job: M-011721  
 Date: January 17 2021  
 By: Max Mora  
 Plan: Dalton 1514 sf

**Project Information**

For: Rockwell Development (2015 IEC)  
 7187 Branston Ave.

**Design Information**

	Htg	Clg	Method	Infiltration
Outside db (°F)	-6	89		
Inside db (°F)	70	75	Construction quality	Simplified
Design TD (°F)	76	14	Fireplaces	Semi-tight
Daily range	-	H		0
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	66000 Btuh
Heating output	62000 Btuh
Temperature rise	71 °F
Actual air flow	950 cfm
Air flow factor	0.030 cfm/Btuh
Static pressure	0.80 in H2O
Space thermostat	

**COOLING EQUIPMENT**

Make	Lennox
Trade	MERIT
Cond	13ACX-030-230-**
Coil	CH33-36++TDR+TXV
AHRI ref	5549085
Efficiency	11.0 EER, 13 SEER
Sensible cooling	20020 Btuh
Latent cooling	8580 Btuh
Total cooling	28600 Btuh
Actual air flow	950 cfm
Air flow factor	0.053 cfm/Btuh
Static pressure	0.80 in H2O
Load sensible heat ratio	1.00

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
M Bathroom	109	2149	416	64	22
fam-kit-din-entry	759	9161	7719	273	410
bedroom 1	170	2920	2552	87	136
bathroom	44	0	0	0	0
laundry	49	800	1165	24	62
Family Room	727	6144	648	183	34
B Bath	60	284	3	8	0
Bedroom 5	219	1937	726	58	39
Bedroom 3	120	886	1040	26	55
Closet 3	39	261	4	8	0
Closet 4	39	499	8	15	0
Bedroom 4	213	2042	421	61	22
Mechanical	50	0	0	0	0
master closet	63	0	0	0	0

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

bedroom 2	138	1955	923	58	49
Master bedroom	180	2816	2259	84	120
Stairs	35	0	0	0	0
Closet	58	0	0	0	0
B-Stairs	74	0	0	0	0
Pantry	15	0	0	0	0
Entire House	3160	31854	17884	950	950
Other equip loads		15883	1402		
Equip. @ 0.94 RSM			18128		
Latent cooling			0		
TOTALS	3160	47737	18128	950	950

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

# Building Analysis

## Entire House

### Quality Heating

Job: M-011721  
 Date: January 17 2021  
 By: Max Mora  
 Plan: Dalton 1514 sf

## Project Information

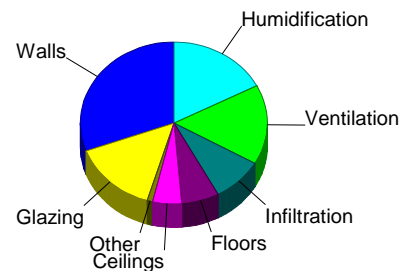
For: Rockwell Development (2015 IEC)  
 7187 Branston Ave.

## 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>		
Dry bulb (°F)	-6	89	Method	Simplified	
Daily range (°F)	-	34 (H)	Construction quality	Semi-tight	
Wet bulb (°F)	-	60	Fireplaces	0	
Wind speed (mph)	15.0	7.5			

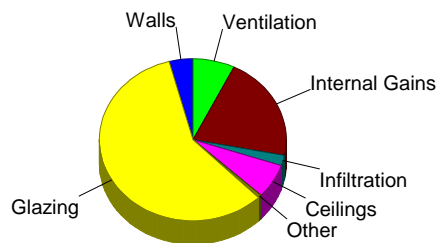
## Heating

Component	Btuh/ft²	Btuh	% of load
Walls	4.4	14591	30.6
Glazing	25.1	7068	14.8
Doors	11.4	469	1.0
Ceilings	1.5	2375	5.0
Floors	1.9	3124	6.5
Infiltration	2.0	4227	8.9
Ducts		0	0
Piping		0	0
Humidification		8275	17.3
Ventilation		7608	15.9
Adjustments		0	0
<b>Total</b>		<b>47737</b>	<b>100.0</b>



## Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	0.2	787	4.1
Glazing	39.9	11251	58.3
Doors	2.8	114	0.6
Ceilings	0.8	1312	6.8
Floors	0	0	0
Infiltration	0.2	410	2.1
Ducts		0	0
Ventilation		1402	7.3
Internal gains		4010	20.8
Blower		0	0
Adjustments		0	0
<b>Total</b>		<b>19285</b>	<b>100.0</b>



Latent Cooling Load = 0 Btuh  
 Overall U-value = 0.052 Btuh/ft²·°F

Data entries checked.

# Component Constructions

## Entire House

### Quality Heating

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 7187 Branston Ave.

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Dry bulb (°F)	-6	89	Method	Simplified	
Daily range (°F)	-	34 ( H )	Construction quality	Semi-tight	
Wet bulb (°F)	-	60	Fireplaces	0	
Wind speed (mph)	15.0	7.5			

## 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, 1/2" wood shth, r-21 cav ins, 1/2" gypsum board intfnsh, 2"x6" wood frm, 16" o.c. stud	n	410	0.065	21.0	4.94	2025	0.47	195
	e	359	0.065	21.0	4.94	1774	0.47	170
	s	452	0.065	21.0	4.94	2233	0.47	214
	s	32	0.065	21.0	4.94	158	0.47	15
	w	254	0.065	21.0	4.94	1255	0.47	121
	all	1507	0.065	21.0	4.94	7445	0.47	715
15B19-0wc-6: Bg wall, heavy dry or light damp soil, 2"x4" wood intfrm, concrete wall, r-19 cav ins, 8" thk, 1/2" gypsum board intfnsh	n	340	0.043	19.0	3.69	1255	0.04	13
	e	388	0.043	19.0	3.70	1436	0.04	15
	s	324	0.043	19.0	3.62	1171	0.03	10
	w	404	0.043	19.0	3.76	1520	0.04	18
	all	1456	0.043	19.0	3.70	5383	0.04	57
<b>Partitions</b>								
12C-0sw: Frm wall, stucco ext, r-13 cav ins, 2"x4" wood frm, 16" o.c. stud		45	0.091	13.0	6.92	311	0.33	15
12F-0sw: Frm wall, vnl ext, 1/2" wood shth, r-21 cav ins, 1/2" gypsum board intfnsh, 2"x6" wood frm, 16" o.c. stud		175	0.065	21.0	4.94	862	0	0
		119	0.065	21.0	4.94	590	0	0
	all	294	0.065	21.0	4.94	1452	0	0
<b>Windows</b>								
u factor 330-A: 2 glazing, clr low-e out, argon gas, mtl no brk frm mat, clr innr, 1/4" gap, 1/4" thk; 6.67 ft head ht	n	18	0.330	0	25.1	451	13.7	247
	n	16	0.330	0	25.1	401	13.7	220
	e	138	0.330	0	25.1	3457	49.5	6828
	e	16	0.330	0	25.1	401	49.5	793
	s	32	0.330	0	25.1	803	26.2	839
	s	32	0.330	0	25.1	803	26.2	839
	w	30	0.330	0	25.1	752	49.5	1486
	all	282	0.330	0	25.1	7068	39.9	11251
<b>Doors</b>								
DftDoor-A: Door, wd sc type	w	21	0.150	8.7	11.4	239	2.78	58
	n	20	0.150	8.7	11.4	229	2.77	56
	all	41	0.150	8.7	11.4	469	2.78	114

**Ceilings**

16B-50ad:Attic ceiling, asphalt shingles roof mat, r-50 ceil ins, 1/2" gypsum board int fnsh	1562	0.020	50.0	1.52	2375	0.84	1312
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**Floors**

21A-24c:Bg floor, heavy dry or light damp soil, 6' depth, carpet flr fnsh	1597	0.025	0	1.90	3035	0	0
	47	0.025	0	1.90	89	0	0
all	1644	0.025	0	1.90	3124	0	0

**Component Constructions**  
**M Bathroom**  
**Quality Heating**

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 7187 Branston Ave.

**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, 1/2" 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	4.94	422	0.47	41
	e	36	0.065	21.0	4.94	178	0.47	17
	w	36	0.065	21.0	4.94	178	0.47	17
	all	158	0.065	21.0	4.94	778	0.47	75
<b>Partitions</b>								
12F-0sw: Frm wall, vnl ext, 1/2" wood shth, r-21 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm, 16" o.c. stud		50	0.065	21.0	4.94	245	0	0
<b>Windows</b>								
u factor 330-A: 2 glazing, clr low-e out, argon gas, mtl no brk frm mat, clr innr, 1/4" gap, 1/4" thk; 6.67 ft head ht	n	18	0.330	0	25.1	451	13.7	247
<b>Doors</b> (none)								
<b>Ceilings</b>								
16B-50ad: Attic ceiling, asphalt shingles roof mat, r-50 ceil ins, 1/2" gypsum board int fnsh		109	0.020	50.0	1.52	166	0.84	92
<b>Floors</b>								
21A-24c: Bg floor, heavy dry or light damp soil, 6' depth, carpet flr fnsh		10	0.025	0	1.90	18	0	0

**Component Constructions**  
**fam-kit-din-entry**  
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**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, 1/2" wood shth, r-21 cav ins, 1/2" gypsum board intfnsh, 2"x6" wood frm, 16" o.c. stud	n	20	0.065	21.0	4.94	99	0.47	9
	e	167	0.065	21.0	4.94	826	0.47	79
	s	199	0.065	21.0	4.94	983	0.47	94
	w	54	0.065	21.0	4.94	267	0.47	26
	all	440	0.065	21.0	4.94	2174	0.47	209
<b>Partitions</b>								
12F-0sw: Frm wall, vnl ext, 1/2" wood shth, r-21 cav ins, 1/2" gypsum board intfnsh, 2"x6" wood frm, 16" o.c. stud		125	0.065	21.0	4.94	617	0	0
<b>Windows</b>								
u factor 330-A: 2 glazing, clr low-e outr, argon gas, mtl no brk frm mat, clr innr, 1/4" gap, 1/4" thk; 6.67 ft head ht	e	108	0.330	0	25.1	2704	49.5	5342
	s	16	0.330	0	25.1	401	26.2	419
	all	124	0.330	0	25.1	3106	46.5	5761
<b>Doors</b>								
DftDoor-A: Door, wd sc type	w	21	0.150	8.7	11.4	239	2.78	58
<b>Ceilings</b>								
16B-50ad: Attic ceiling, asphalt shingles roof mat, r-50 ceil ins, 1/2" gypsum board intfnsh		759	0.020	50.0	1.52	1154	0.84	638
<b>Floors</b>								
21A-24c: Bg floor, heavy dry or light damp soil, 6' depth, carpet flr fnsh		22	0.025	0	1.90	42	0	0

**Component Constructions**  
**bedroom 1**  
**Quality Heating**

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<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, 1/2" wood shth, r-21 cav ins, 1/2" gypsum board intfnsh, 2"x6" wood frm, 16" o.c. stud	n	77	0.065	21.0	4.94	378	0.47	36
	s	95	0.065	21.0	4.94	467	0.47	45
	w	96	0.065	21.0	4.94	474	0.47	46
	all	267	0.065	21.0	4.94	1319	0.47	127
<b>Partitions</b> (none)								
<b>Windows</b>								
u factor 330-A: 2 glazing, clr low-e outr, argon gas, mtl no brk frm mat, clr innr, 1/4" gap, 1/4" thk; 6.67 ft head ht	w	30	0.330	0	25.1	752	49.5	1486
<b>Doors</b> (none)								
<b>Ceilings</b>								
16B-50ad: Attic ceiling, asphalt shingles roof mat, r-50 ceil ins, 1/2" gypsum board intfnsh		170	0.020	50.0	1.52	258	0.84	143
<b>Floors</b> (none)								



**Component Constructions**  
**bathroom**  
**Quality Heating**

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 Plan: Dalton 1514 sf

**Project Information**

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 7187 Branston Ave.

**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>		
Dry bulb (°F)	-6	89	Method	Simplified	
Daily range (°F)	-	34 ( H )	Construction quality	Semi-tight	
Wet bulb (°F)	-	60	Fireplaces	0	
Wind speed (mph)	15.0	7.5			

**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> (none)								
<b>Partitions</b> (none)								
<b>Windows</b> (none)								
<b>Doors</b> (none)								
<b>Ceilings</b> 16B-50ad: Attic ceiling, asphalt shingles roof mat, r-50 ceil ins, 1/2" gypsum board int fnsh		44	0.020	50.0	1.52	67	0.84	37
<b>Floors</b> (none)								

**Component Constructions**  
**laundry**  
**Quality Heating**

**Job:** M-011721  
**Date:** January 17 2021  
**By:** Max Mora  
**Plan:** Dalton 1514 sf

**Project Information**

For: Rockwell Development (2015 IEC)  
 7187 Branston Ave.

**Design Conditions**

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**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> (none)								
<b>Partitions</b> 12F-0sw: Frm wall, vnl ext, 1/2" wood shth, r-21 cav ins, 1/2" gypsum board intfnsh, 2"x6" wood frm, 16" o.c. stud		70	0.065	21.0	4.94	345	0	0
<b>Windows</b> (none)								
<b>Doors</b> DftDoor-A: Door, wd sc type	n	20	0.150	8.7	11.4	229	2.77	56
<b>Ceilings</b> 16B-50ad: Attic ceiling, asphalt shingles roof mat, r-50 ceil ins, 1/2" gypsum board intfnsh		49	0.020	50.0	1.52	74	0.84	41
<b>Floors</b> 21A-24c: Bg floor, heavy dry or light damp soil, 6' depth, carpet flr fnsh		10	0.025	0	1.90	19	0	0

**Component Constructions**  
**Family Room**  
**Quality Heating**

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	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>								
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 ftnsh	n	176	0.043	19.0	3.76	662	0.04	8
	e	32	0.043	19.0	3.76	120	0.04	1
	s	228	0.043	19.0	3.66	834	0.04	8
	w	204	0.043	19.0	3.76	767	0.04	9
	all	640	0.043	19.0	3.72	2384	0.04	27
<b>Partitions</b> (none)								
<b>Windows</b>								
u factor 330-A: 2 glazing, clr low-e out, argon gas, mtl no brk frm mat, clr innr, 1/4" gap, 1/4" thk; 6.67 ft head ht	s	16	0.330	0	25.1	401	26.2	419
<b>Doors</b> (none)								
<b>Ceilings</b> (none)								
<b>Floors</b>								
21A-24c: Bg floor, heavy dry or light damp soil, 6' depth, carpet flr ftnsh		727	0.025	0	1.90	1381	0	0

**Component Constructions**  
**B Bath**  
**Quality Heating**

Job: M-011721  
 Date: January 17 2021  
 By: Max Mora  
 Plan: Dalton 1514 sf

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 7187 Branston Ave.

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			Moisture difference (gr/lb)	61.5	-31.5
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Dry bulb (°F)	-6	89	Method	Simplified	
Daily range (°F)	-	34 ( H )	Construction quality	Semi-tight	
Wet bulb (°F)	-	60	Fireplaces	0	
Wind speed (mph)	15.0	7.5			

**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> 15B19-0wc-6: Bg wall, heavy dry or light damp soil, 2"x4" wood intfrm, concrete wall, r-19 cav ins, 8" thk, 1/2" gypsum board intfnsh	e	40	0.043	19.0	3.76	150	0.04	2
<b>Partitions</b> (none)								
<b>Windows</b> (none)								
<b>Doors</b> (none)								
<b>Ceilings</b> (none)								
<b>Floors</b> 21A-24c: Bg floor, heavy dry or light damp soil, 6' depth, carpet flr fnsh		60	0.025	0	1.90	114	0	0

**Component Constructions**  
**Bedroom 5**  
**Quality Heating**

Job: M-011721  
 Date: January 17 2021  
 By: Max Mora  
 Plan: Dalton 1514 sf

**Project Information**

For: Rockwell Development (2015 IEC)  
 7187 Branston Ave.

**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>								
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 fsh	e	132	0.043	19.0	3.76	497	0.04	6
	s	96	0.043	19.0	3.52	337	0.02	2
	all	228	0.043	19.0	3.66	834	0.04	8
<b>Partitions</b> (none)								
<b>Windows</b>								
u factor 330-A: 2 glazing, clr low-e out; argon gas, mtl no brk frm mat, clr innr; 1/4" gap, 1/4" thk; 6.67 ft head ht	s	16	0.330	0	25.1	401	26.2	419
<b>Doors</b> (none)								
<b>Ceilings</b> (none)								
<b>Floors</b>								
21A-24c: Bg floor, heavy dry or light damp soil, 6' depth, carpet flr fsh		219	0.025	0	1.90	416	0	0

**Component Constructions**  
**Bedroom 3**  
**Quality Heating**

Job: M-011721  
 Date: January 17 2021  
 By: Max Mora  
 Plan: Dalton 1514 sf

**Project Information**

For: Rockwell Development (2015 IEC)  
 7187 Branston Ave.

**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> 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 fsh	e	64	0.043	19.0	3.39	217	0.01	1
<b>Partitions</b> (none)								
<b>Windows</b> u factor 330-A: 2 glazing, clr low-e out; argon gas, mtl no brk frm mat, clr innr; 1/4" gap, 1/4" thk; 6.67 ft head ht	e	16	0.330	0	25.1	401	49.5	793
<b>Doors</b> (none)								
<b>Ceilings</b> (none)								
<b>Floors</b> 21A-24c: Bg floor, heavy dry or light damp soil, 6' depth, carpet flr fsh		120	0.025	0	1.90	228	0	0

**Component Constructions**  
**Closet 3**  
**Quality Heating**

Job: M-011721  
 Date: January 17 2021  
 By: Max Mora  
 Plan: Dalton 1514 sf

**Project Information**

For: Rockwell Development (2015 IEC)  
 7187 Branston Ave.

**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>		
Dry bulb (°F)	-6	89	Method	Simplified	
Daily range (°F)	-	34 ( H )	Construction quality	Semi-tight	
Wet bulb (°F)	-	60	Fireplaces	0	
Wind speed (mph)	15.0	7.5			

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> 15B19-0wc-6: Bg wall, heavy dry or light damp soil, 2"x4" wood intfrm, concrete wall, r-19 cav ins, 8" thk, 1/2" gypsum board intfnsh	e	44	0.043	19.0	3.76	166	0.04	2
<b>Partitions</b> (none)								
<b>Windows</b> (none)								
<b>Doors</b> (none)								
<b>Ceilings</b> (none)								
<b>Floors</b> 21A-24c: Bg floor, heavy dry or light damp soil, 6' depth, carpet flr fnsh		39	0.025	0	1.90	73	0	0

**Component Constructions**  
**Closet 4**  
**Quality Heating**

**Job:** M-011721  
**Date:** January 17 2021  
**By:** Max Mora  
**Plan:** Dalton 1514 sf

**Project Information**

For: Rockwell Development (2015 IEC)  
 7187 Branston Ave.

**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> 15B19-0wc-6: Bg wall, heavy dry or light damp soil, 2"x4" wood intfrm, concrete wall, r-19 cav ins, 8" thk, 1/2" gypsum board intfnsh	n e all	56 44 100	0.043 0.043 0.043	19.0 19.0 19.0	3.76 3.76 3.76	211 166 376	0.04 0.04 0.04	3 2 4
<b>Partitions</b> (none)								
<b>Windows</b> (none)								
<b>Doors</b> (none)								
<b>Ceilings</b> (none)								
<b>Floors</b> 21A-24c: Bg floor, heavy dry or light damp soil, 6' depth, carpet flr fnsh		39	0.025	0	1.90	73	0	0



**Component Constructions**  
**Bedroom 4**  
**Quality Heating**

**Job:** M-011721  
**Date:** January 17 2021  
**By:** Max Mora  
**Plan:** Dalton 1514 sf

**Project Information**

For: Rockwell Development (2015 IEC)  
 7187 Branston Ave.

**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>		
Dry bulb (°F)	-6	89	Method	Simplified	
Daily range (°F)	-	34 ( H )	Construction quality	Semi-tight	
Wet bulb (°F)	-	60	Fireplaces	0	
Wind speed (mph)	15.0	7.5			

**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>								
15B19-0wc-6: Bg wall, heavy dry or light damp soil, 2"x4" wood intfrm, concrete wall, r-19 cav ins, 8" thk, 1/2" gypsum board intfnsh	n	108	0.043	19.0	3.54	383	0.02	3
	e	32	0.043	19.0	3.76	120	0.04	1
	w	120	0.043	19.0	3.76	451	0.04	5
	all	260	0.043	19.0	3.67	954	0.04	10
<b>Partitions</b> (none)								
<b>Windows</b>								
u factor 330-A: 2 glazing, clr low-e outr, argon gas, mtl no brk frm mat, clr innr, 1/4" gap, 1/4" thk; 6.67 ft head ht	n	16	0.330	0	25.1	401	13.7	220
<b>Doors</b> (none)								
<b>Ceilings</b> (none)								
<b>Floors</b>								
21A-24c: Bg floor, heavy dry or light damp soil, 6' depth, carpet flr fnsh		213	0.025	0	1.90	404	0	0

**Component Constructions**  
**Mechanical**  
**Quality Heating**

Job: M-011721  
 Date: January 17 2021  
 By: Max Mora  
 Plan: Dalton 1514 sf

**Project Information**

For: Rockwell Development (2015 IEC)  
 7187 Branston Ave.

**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> 15B19-0wc-6: Bg wall, heavy dry or light damp soil, 2"x4" wood intfrm, concrete wall, r-19 cav ins, 8" thk, 1/2" gypsum board intfnsh	w	80	0.043	19.0	3.76	301	0.04	4
<b>Partitions</b> (none)								
<b>Windows</b> (none)								
<b>Doors</b> (none)								
<b>Ceilings</b> (none)								
<b>Floors</b> 21A-24c: Bg floor, heavy dry or light damp soil, 6' depth, carpet flr fnsh		50	0.025	0	1.90	95	0	0

**Component Constructions**  
**master closet**  
**Quality Heating**

**Job:** M-011721  
**Date:** January 17 2021  
**By:** Max Mora  
**Plan:** Dalton 1514 sf

**Project Information**

For: Rockwell Development (2015 IEC)  
 7187 Branston Ave.

**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> (none)								
<b>Partitions</b> 12F-0sw: Frm wall, vnl ext, 1/2" wood shth, r-21 cav ins, 1/2" gypsum board intfnsh, 2"x6" wood frm, 16" o.c. stud		50	0.065	21.0	4.94	245	0	0
<b>Windows</b> (none)								
<b>Doors</b> (none)								
<b>Ceilings</b> 16B-50ad: Attic ceiling, asphalt shingles roof mat, r-50 ceil ins, 1/2" gypsum board intfnsh		63	0.020	50.0	1.52	96	0.84	53
<b>Floors</b> 21A-24c: Bg floor, heavy dry or light damp soil, 6' depth, carpet flr fnsh		6	0.025	0	1.90	10	0	0

**Component Constructions**  
**bedroom 2**  
**Quality Heating**

**Job:** M-011721  
**Date:** January 17 2021  
**By:** Max Mora  
**Plan:** Dalton 1514 sf

**Project Information**

For: Rockwell Development (2015 IEC)  
 7187 Branston Ave.

**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, 1/2" wood shth, r-21 cav ins, 1/2" gypsum board intfnsh, 2"x6" wood frm, 16" o.c. stud	e	36	0.065	21.0	4.94	178	0.47	17
	s	115	0.065	21.0	4.94	566	0.47	54
	w	36	0.065	21.0	4.94	178	0.47	17
	all	187	0.065	21.0	4.94	921	0.47	88
<b>Partitions</b> (none)								
<b>Windows</b>								
u factor 330-A: 2 glazing, clr low-e outr, argon gas, mtl no brk frm mat, clr innr, 1/4" gap, 1/4" thk; 6.67 ft head ht	s	16	0.330	0	25.1	401	26.2	419
<b>Doors</b> (none)								
<b>Ceilings</b>								
16B-50ad: Attic ceiling, asphalt shingles roof mat, r-50 ceil ins, 1/2" gypsum board intfnsh		138	0.020	50.0	1.52	210	0.84	116
<b>Floors</b> (none)								

**Component Constructions**  
**Master bedroom**  
**Quality Heating**

Job: M-011721  
 Date: January 17 2021  
 By: Max Mora  
 Plan: Dalton 1514 sf

**Project Information**

For: Rockwell Development (2015 IEC)  
 7187 Branston Ave.

**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, 1/2" wood shth, r-21 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm, 16" o.c. stud	n	120	0.065	21.0	4.94	593	0.47	57
	e	120	0.065	21.0	4.94	593	0.47	57
	all	240	0.065	21.0	4.94	1186	0.47	114
<b>Partitions</b> (none)								
<b>Windows</b>								
u factor 330-A: 2 glazing, clr low-e out; argon gas, mtl no brk frm mat, clr innr; 1/4" gap, 1/4" thk; 6.67 ft head ht	e	30	0.330	0	25.1	752	49.5	1486
<b>Doors</b> (none)								
<b>Ceilings</b>								
16B-50ad: Attic ceiling, asphalt shingles roof mat, r-50 ceil ins, 1/2" gypsum board int fnsh		180	0.020	50.0	1.52	274	0.84	151
<b>Floors</b> (none)								

**Component Constructions**  
**Stairs**  
**Quality Heating**

Job: M-011721  
 Date: January 17 2021  
 By: Max Mora  
 Plan: Dalton 1514 sf

**Project Information**

For: Rockwell Development (2015 IEC)  
 7187 Branston Ave.

**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> (none)								
<b>Partitions</b> 12C-0sw: Frm wall, stucco ext, r-13 cav ins, 2"x4" wood frm, 16" o.c. stud		45	0.091	13.0	6.92	311	0.33	15
<b>Windows</b> (none)								
<b>Doors</b> (none)								
<b>Ceilings</b> 16B-50ad: Attic ceiling, asphalt shingles roof mat, r-50 ceil ins, 1/2" gypsum board int fnsh		35	0.020	50.0	1.52	53	0.84	29
<b>Floors</b> (none)								

**Component Constructions**  
**Closet**  
**Quality Heating**

**Job:** M-011721  
**Date:** January 17 2021  
**By:** Max Mora  
**Plan:** Dalton 1514 sf

**Project Information**

For: Rockwell Development (2015 IEC)  
 7187 Branston Ave.

**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, 1/2" wood shth, r-21 cav ins, 1/2" gypsum board intfnsh, 2"x6" wood frm, 16" o.c. stud	s	44	0.065	21.0	4.94	217	0.47	21
<b>Partitions</b> (none)								
<b>Windows</b> (none)								
<b>Doors</b> (none)								
<b>Ceilings</b> (none)								
<b>Floors</b> 21A-24c: Bg floor, heavy dry or light damp soil, 6' depth, carpet flr fnsh		58	0.025	0	1.90	110	0	0

**Component Constructions**  
**B-Stairs**  
**Quality Heating**

**Job:** M-011721  
**Date:** January 17 2021  
**By:** Max Mora  
**Plan:** Dalton 1514 sf

**Project Information**

For: Rockwell Development (2015 IEC)  
 7187 Branston Ave.

**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, 1/2" wood shth, r-21 cav ins, 1/2" gypsum board intfnsh, 2"x6" wood frm, 16" o.c. stud	n	108	0.065	21.0	4.94	534	0.47	51
	w	32	0.065	21.0	4.94	158	0.47	15
	all	140	0.065	21.0	4.94	692	0.47	66
<b>Partitions</b> (none)								
<b>Windows</b> (none)								
<b>Doors</b> (none)								
<b>Ceilings</b> (none)								
<b>Floors</b> 21A-24c: Bg floor, heavy dry or light damp soil, 6' depth, carpet flr fnsh		74	0.025	0	1.90	141	0	0



**Component Constructions**  
**Pantry**  
**Quality Heating**

Job: M-011721  
 Date: January 17 2021  
 By: Max Mora  
 Plan: Dalton 1514 sf

**Project Information**

For: Rockwell Development (2015 IEC)  
 7187 Branston Ave.

**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, 1/2" wood shth, r-21 cav ins, 1/2" gypsum board intfnsh, 2"x6" wood frm, 16" o.c. stud	s	32	0.065	21.0	4.94	158	0.47	15
<b>Partitions</b> (none)								
<b>Windows</b> (none)								
<b>Doors</b> (none)								
<b>Ceilings</b> 16B-50ad: Attic ceiling, asphalt shingles roof mat, r-50 ceil ins, 1/2" gypsum board intfnsh		15	0.020	50.0	1.52	23	0.84	12
<b>Floors</b> (none)								

**Project Summary**  
**Entire House**  
**Quality Heating**

Job: M-011721  
 Date: January 17 2021  
 By: Max Mora  
 Plan: Dalton 1514 sf

**Project Information**

For: Rockwell Development (2015 IEC)  
 7187 Branston Ave.

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 31854 Btuh  
 Ducts 0 Btuh  
 Central vent (108 cfm) 7608 Btuh  
 Outside air  
 Humidification 8275 Btuh  
 Piping 0 Btuh  
 Equipment load 47737 Btuh

**Sensible Cooling Equipment Load Sizing**

Structure 17884 Btuh  
 Ducts 0 Btuh  
 Central vent (108 cfm) 1402 Btuh  
 Outside air  
 Blower 0 Btuh  
 Use manufacturer's data n  
 Rate/swing multiplier 0.94  
 Equipment sensible load 18128 Btuh

**Infiltration**

Method Simplified  
 Construction quality Semi-tight  
 Fireplaces 0

**Latent Cooling Equipment Load Sizing**

Structure 830 Btuh  
 Ducts 0 Btuh  
 Central vent (108 cfm) -1948 Btuh  
 Outside air  
 Equipment latent load 0 Btuh

	Heating	Cooling
Area (ft <sup>2</sup> )	3160	3160
Volume (ft <sup>3</sup> )	19006	19006
Air changes/hour	0.19	0.10
Equiv. AVF (cfm)	60	32

**Equipment Total Load (Sen+Lat)** 18128 Btuh  
 Req. total capacity at 0.70 SHR 2.2 ton

**Heating Equipment Summary**

Make Lennox  
 Trade MERIT 90  
 Model ML193UH070XP36B-\*  
 AHRI ref 4792133  
 Efficiency 93 AFUE  
 Heating input 66000 Btuh  
 Heating output 62000 Btuh  
 Temperature rise 71 °F  
 Actual air flow 950 cfm  
 Air flow factor 0.030 cfm/Btuh  
 Static pressure 0.80 in H2O  
 Space thermostat

**Cooling Equipment Summary**

Make Lennox  
 Trade MERIT  
 Cond 13ACX-030-230-\*\*  
 Coil CH33-36++TDR+TXV  
 AHRI ref 5549085  
 Efficiency 11.0 EER, 13 SEER  
 Sensible cooling 20020 Btuh  
 Latent cooling 8580 Btuh  
 Total cooling 28600 Btuh  
 Actual air flow 950 cfm  
 Air flow factor 0.053 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.

**AED Assessment**  
**Entire House**  
**Quality Heating**

Job: M-011721  
 Date: January 17 2021  
 By: Max Mora  
 Plan: Dalton 1514 sf

**Project Information**

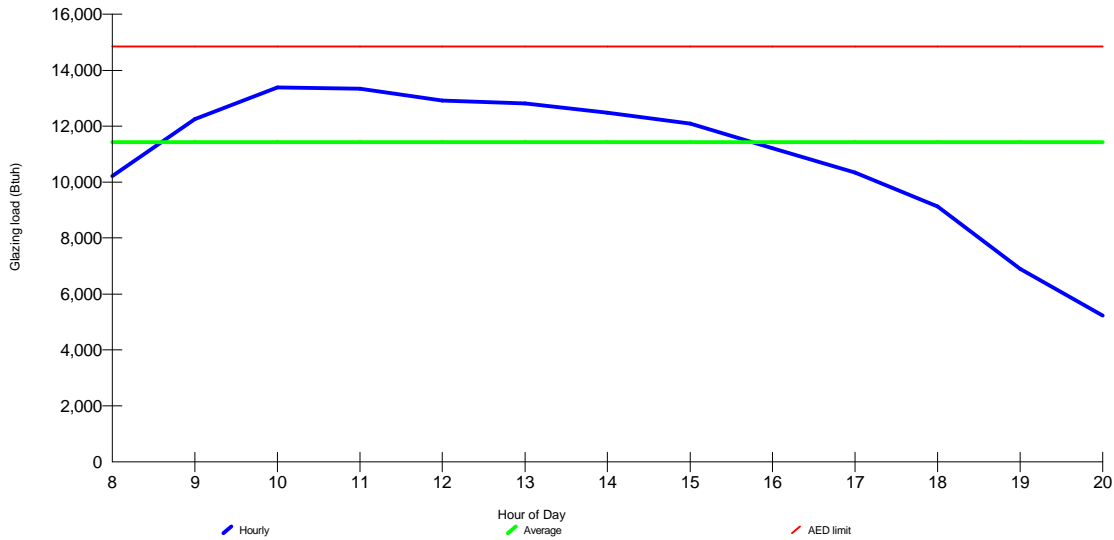
For: Rockwell Development (2015 IEC)  
 7187 Branston Ave.

**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>		
Dry bulb (°F)	-6	89			
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 17.2%.**

**House has adequate exposure diversity (AED), based on AED limit of 30%.**

**AED excursion: 0 Btuh**

**Right-J® Worksheet**  
**Entire House**  
**Quality Heating**

**Job:** M-011721  
**Date:** January 17 2021  
**By:** Max Mora  
**Plan:** Dalton 1514 sf

1		Room name		Entire House				MBathroom						
2		Exposed wall		8.8 ft				19.5 ft						
3		Room height		377.5 ft				9.0 ft						
4		Room dimensions		3159.6 ft²				9.5 x 11.5 ft						
5		Room area						109.3 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	NP/S	Heat	Cool	Gross	NP/S	Heat	Cool
6	W	12F-0sw	0.065	n	4.94	0.47	428	410	2025	195	104	86	422	41
	W	u factor 330-A	0.330	n	25.08	13.73	18	0	451	247	18	0	451	247
	W	15B19-0wc-6	0.069	n	3.69	0.04	356	340	1255	13	0	0	0	0
	W	u factor 330-A	0.330	n	25.08	13.73	16	0	401	220	0	0	0	0
11	W	12F-0sw	0.065	e	4.94	0.47	497	359	1774	170	36	36	178	17
	W	u factor 330-A	0.330	e	25.08	49.54	138	0	3457	6828	0	0	0	0
	W	15B19-0wc-6	0.069	e	3.70	0.04	404	388	1436	15	0	0	0	0
	W	u factor 330-A	0.330	e	25.08	49.54	16	0	401	793	0	0	0	0
	W	12F-0sw	0.065	s	4.94	0.47	484	452	2233	214	0	0	0	0
	W	u factor 330-A	0.330	s	25.08	26.21	32	0	803	839	0	0	0	0
	W	12F-0sw	0.065	s	4.94	0.47	32	32	158	15	0	0	0	0
	W	15B19-0wc-6	0.069	s	3.62	0.03	356	324	1171	10	0	0	0	0
	W	u factor 330-A	0.330	s	25.08	26.21	32	0	803	839	0	0	0	0
	W	12F-0sw	0.065	w	4.94	0.47	305	254	1255	121	36	36	178	17
	W	u factor 330-A	0.330	w	25.08	49.54	30	0	752	1486	0	0	0	0
	D	DflDoor-A	0.150	w	11.40	2.78	21	21	239	58	0	0	0	0
	W	15B19-0wc-6	0.069	w	3.76	0.04	404	404	1520	18	0	0	0	0
	P	12C-0sw	0.091	-	6.92	0.33	45	45	311	15	0	0	0	0
	P	12F-0sw	0.065	-	4.94	0.00	175	175	862	0	50	50	245	0
	P	12F-0sw	0.065	-	4.94	0.00	140	119	590	0	0	0	0	0
	D	DflDoor-A	0.150	n	11.40	2.78	20	20	229	56	0	0	0	0
	C	16B-50ad	0.020	-	1.52	0.84	1562	1562	2375	1312	109	109	166	92
	F	21A-24c	0.025	-	1.90	0.00	1597	1597	3035	0	0	0	0	0
	F	21A-24c	0.025	-	1.90	0.00	47	47	89	0	10	10	18	0
6	c) AED excursion								0					-51
	Envelope loss/gain								27627	13464			1658	363
12	a) Infiltration								4227	410			349	34
	b) Room ventilation								0	0			0	0
13	Internal gains:		Occupants @	230		7			1610	2400	0			0
			Appliances/other						2400					0
	Subtotal (lines 6 to 13)								31854	17884			2007	397
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			142	19
14	Subtotal								31854	17884			2149	416
15	Duct loads								0	0	-0%	0%	0	0
	Total room load								31854	17884			2149	416
	Air required (cfm)								950	950			64	22

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

**Right-J® Worksheet**  
**Entire House**  
**Quality Heating**

**Job:** M-011721  
**Date:** January 17 2021  
**By:** Max Mora  
**Plan:** Dalton 1514 s/f

1 Room name				fam-kit-din-entry		bedroom 1								
2 Exposed wall				58.5 ft		33.0 ft								
3 Room height				10.0 ft		9.0 ft								
4 Room dimensions				1.0 x 759.0 ft		1.0 x 170.0 ft								
5 Room area				759.0 ft²		170.0 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	20	20	99	9	77	77	378	36
	W-G	u factor 330-A	0.330	n	25.08	13.73	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	n	3.69	0.04	0	0	0	0	0	0	0	0
	W-G	u factor 330-A	0.330	n	25.08	13.73	0	0	0	0	0	0	0	0
11	W	12F-0sw	0.065	e	4.94	0.47	275	167	826	79	0	0	0	0
	W-G	u factor 330-A	0.330	e	25.08	49.54	108	0	2704	5342	0	0	0	0
	W	15B19-0wc-6	0.069	e	3.70	0.04	0	0	0	0	0	0	0	0
	W-G	u factor 330-A	0.330	e	25.08	49.54	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	s	4.94	0.47	215	199	983	94	95	95	467	45
	W-G	u factor 330-A	0.330	s	25.08	26.21	16	0	401	419	0	0	0	0
	W	12F-0sw	0.065	s	4.94	0.47	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	s	3.62	0.03	0	0	0	0	0	0	0	0
	W-G	u factor 330-A	0.330	s	25.08	26.21	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	w	4.94	0.47	75	54	267	26	126	96	474	46
	W-G	u factor 330-A	0.330	w	25.08	49.54	0	0	0	0	30	0	752	1486
	D	DflDoor-A	0.150	w	11.40	2.78	21	21	239	58	0	0	0	0
	W	15B19-0wc-6	0.069	w	3.76	0.04	0	0	0	0	0	0	0	0
	P	12C-0sw	0.091	-	6.92	0.33	0	0	0	0	0	0	0	0
	P	12F-0sw	0.065	-	4.94	0.00	125	125	617	0	0	0	0	0
	P	12F-0sw	0.065	-	4.94	0.00	0	0	0	0	0	0	0	0
	D	DflDoor-A	0.150	n	11.40	2.78	0	0	0	0	0	0	0	0
	C	16B-50eal	0.020	-	1.52	0.84	759	759	1154	638	170	170	258	143
	F	21A-24c	0.025	-	1.90	0.00	0	0	0	0	0	0	0	0
	F	21A-24c	0.025	-	1.90	0.00	22	22	42	0	0	0	0	0
6	c) AED excursion									-355				509
	Envelope loss/gain								7333	6311			2330	2264
12	a) Infiltration								1163	113			591	57
	b) Room ventilation								0	0			0	0
13	Internal gains:		Occupants @	230		0				0	1			230
			Appliances/other							1200				0
	Subtotal (lines 6 to 13)								8496	7623			2920	2552
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								665	96			0	0
14	Subtotal								9161	7719			2920	2552
15	Duct loads								0	0	-0%	0%	0	0
	Total room load								9161	7719			2920	2552
	Air required (cfm)								273	410			87	136

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

**Right-J® Worksheet**  
**Entire House**  
**Quality Heating**

**Job:** M-011721  
**Date:** January 17 2021  
**By:** Max Mora  
**Plan:** Dalton 1514 sf

1 Room name		bathroom		laundry											
2 Exposed wall		0 ft		0 ft											
3 Room height		9.0 ft		9.0 ft											
4 Room dimensions		5.5 x 8.0 ft		1.0 x 49.0 ft											
5 Room area		44.0 ft²		49.0 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	0	0	0	0	0	0	0	0	
	W-G	u factor 330-A	0.330	n	25.08	13.73	0	0	0	0	0	0	0	0	
	W	15B19-0wc-6	0.069	n	3.69	0.04	0	0	0	0	0	0	0	0	
	W-G	u factor 330-A	0.330	n	25.08	13.73	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	
	W-G	u factor 330-A	0.330	e	25.08	49.54	0	0	0	0	0	0	0	0	
	W	15B19-0wc-6	0.069	e	3.70	0.04	0	0	0	0	0	0	0	0	
	W-G	u factor 330-A	0.330	e	25.08	49.54	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	
	W-G	u factor 330-A	0.330	s	25.08	26.21	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	
	W-G	u factor 330-A	0.330	s	25.08	26.21	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-G	u factor 330-A	0.330	w	25.08	49.54	0	0	0	0	0	0	0	0	
	D	DflDoor-A	0.150	w	11.40	2.78	0	0	0	0	0	0	0	0	
	W	15B19-0wc-6	0.069	w	3.76	0.04	0	0	0	0	0	0	0	0	
	P	12C-0sw	0.091	-	6.92	0.33	0	0	0	0	0	0	0	0	
	P	12F-0sw	0.065	-	4.94	0.00	0	0	0	0	0	0	0	0	
	P	12F-0sw	0.065	-	4.94	0.00	0	0	0	0	90	70	345	0	
	P-D	DflDoor-A	0.150	n	11.40	2.78	0	0	0	0	20	20	229	56	
	C	16B-50ad	0.020	-	1.52	0.84	44	44	67	37	49	49	74	41	
	F	21A-24c	0.025	-	1.90	0.00	0	0	0	0	0	0	0	0	
	F	21A-24c	0.025	-	1.90	0.00	0	0	0	0	10	10	19	0	
6	c) AED excursion									-4				-147	
	Envelope loss/gain									67	33			668	-50
12	a) Infiltration									0	0			0	0
	b) Room ventilation									0	0			0	0
13	Internal gains:		Occupants @	230			0			0	0			0	0
			Appliances/other							0				1200	
	Subtotal (lines 6 to 13)									67	33			668	1150
	Less external load									0	0			0	0
	Less transfer									0	0			0	0
	Redistribution									-67	-33			132	15
14	Subtotal									0	0			800	1165
15	Duct loads									0	0			0	0
	Total room load									0	0			800	1165
	Air required (cfm)									0	0			24	62

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

**Right-J® Worksheet**  
**Entire House**  
**Quality Heating**

**Job:** M-011721  
**Date:** January 17 2021  
**By:** Max Mora  
**Plan:** Dalton 1514 sf

1		Room name		Family Room				B Bath						
2		Exposed wall		82.0 ft				5.0 ft						
3		Room height		8.0 ft				8.0 ft						
4		Room dimensions		1.0 x 727.0 ft				5.0 x 12.0 ft						
5		Room area		727.0 ft²				60.0 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	NP/S	Heat	Cool	Gross	NP/S	Heat	Cool
6	W	12F-0sw	0.065	n	4.94	0.47	0	0	0	0	0	0	0	0
	G	u factor 330-A	0.330	n	25.08	13.73	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	n	3.69	0.04	176	176	662	8	0	0	0	0
	G	u factor 330-A	0.330	n	25.08	13.73	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	u factor 330-A	0.330	e	25.08	49.54	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	e	3.70	0.04	32	32	120	1	40	40	150	2
	G	u factor 330-A	0.330	e	25.08	49.54	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	u factor 330-A	0.330	s	25.08	26.21	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	u factor 330-A	0.330	s	25.08	26.21	16	16	401	419	0	0	0	0
	W	15B19-0wc-6	0.069	s	3.62	0.03	244	228	834	8	0	0	0	0
	G	u factor 330-A	0.330	s	25.08	26.21	16	16	401	419	0	0	0	0
	W	12F-0sw	0.065	w	4.94	0.47	0	0	0	0	0	0	0	0
	G	u factor 330-A	0.330	w	25.08	49.54	0	0	0	0	0	0	0	0
	D	DflDoor-A	0.150	w	11.40	2.78	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	w	3.76	0.04	204	204	767	9	0	0	0	0
	P	12C-0sw	0.091	-	6.92	0.33	0	0	0	0	0	0	0	0
	P	12F-0sw	0.065	-	4.94	0.00	0	0	0	0	0	0	0	0
	P	12F-0sw	0.065	-	4.94	0.00	0	0	0	0	0	0	0	0
	D	DflDoor-A	0.150	n	11.40	2.78	0	0	0	0	0	0	0	0
	C	16B-50ad	0.020	-	1.52	0.84	0	0	0	0	0	0	0	0
	F	21A-24c	0.025	-	1.90	0.00	727	727	1381	0	60	60	114	0
	F	21A-24c	0.025	-	1.90	0.00	0	0	0	0	0	0	0	0
6	c) AED excursion								68					0
	Envelope loss/gain								4167	514			264	1
12	a) Infiltration								326	32			20	2
	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)								4493	545			284	3
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								1651	103			0	0
14	Subtotal								6144	648			284	3
15	Duct loads								0	0			0	0
	Total room load								6144	648			284	3
	Air required (cfm)								183	34			8	0

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

**Right-J® Worksheet**  
**Entire House**  
**Quality Heating**

**Job:** M-011721  
**Date:** January 17 2021  
**By:** Max Mora  
**Plan:** Dalton 1514 sf

1		Room name		Bedroom 5				Bedroom 3						
2		Exposed wall		8.0 ft 30.5 ft heat/cool				8.0 ft 10.0 ft heat/cool						
3		Room height		1.0 x 219.0 ft				10.0 x 12.0 ft						
4		Room dimensions		219.0 ft²				120.0 ft²						
5		Room area												
	Ty	Construction number	U-value (Btuh/ft²-F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12F-0sw	0.065	n	4.94	0.47	0	0	0	0	0	0	0	0
	G	u factor 330-A	0.330	n	25.08	13.73	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	n	3.69	0.04	0	0	0	0	0	0	0	0
	G	u factor 330-A	0.330	n	25.08	13.73	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	u factor 330-A	0.330	e	25.08	49.54	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	e	3.70	0.04	132	132	497	6	80	64	217	1
	G	u factor 330-A	0.330	e	25.08	49.54	0	0	0	0	16	0	401	793
	W	12F-0sw	0.065	s	4.94	0.47	0	0	0	0	0	0	0	0
	G	u factor 330-A	0.330	s	25.08	26.21	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	u factor 330-A	0.069	s	3.62	0.03	112	96	337	2	0	0	0	0
	W	15B19-0wc-6	0.330	s	25.08	26.21	16	0	401	419	0	0	0	0
	G	u factor 330-A	0.065	w	4.94	0.47	0	0	0	0	0	0	0	0
	D	DflDoor-A	0.150	w	11.40	2.78	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	w	3.76	0.04	0	0	0	0	0	0	0	0
	P	12C-0sw	0.091	-	6.92	0.33	0	0	0	0	0	0	0	0
	P	12F-0sw	0.065	-	4.94	0.00	0	0	0	0	0	0	0	0
	P	12F-0sw	0.065	-	4.94	0.00	0	0	0	0	0	0	0	0
	D	DflDoor-A	0.150	n	11.40	2.78	0	0	0	0	0	0	0	0
	C	16B-50eal	0.020	-	1.52	0.84	0	0	0	0	0	0	0	0
	F	21A-24c	0.025	-	1.90	0.00	219	219	416	0	120	120	228	0
	F	21A-24c	0.025	-	1.90	0.00	0	0	0	0	0	0	0	0
6	c) AED excursion									46				13
	Envelope loss/gain								1651	473			846	806
12	a) Infiltration								121	12			40	4
	b) Room ventilation								0	0			0	0
13	Internal gains:		Occupants @	230			1			230	1			230
			Appliances/other							0				0
	Subtotal (lines 6 to 13)								1773	715			886	1040
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								164	10			0	0
14	Subtotal								1937	726			886	1040
15	Duct loads								0	0			0	0
	Total room load								1937	726			886	1040
	Air required (cfm)								58	39			26	55

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



**Right-J® Worksheet**  
**Entire House**  
**Quality Heating**

**Job:** M-011721  
**Date:** January 17 2021  
**By:** Max Mora  
**Plan:** Dalton 1514 sf

1	Room name				Closet 3				Closet 4					
	Exposed wall				8.0 ft 5.5 ft heat/cool				8.0 ft 12.5 ft heat/cool					
	Room height				5.5 x 7.0 ft				5.5 x 7.0 ft					
2	Room dimensions				38.5 ft²				38.5 ft²					
3	Room area													
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	0	0	0	0	0	0	0	0
	G	u factor 330-A	0.330	n	25.08	13.73	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	n	3.69	0.04	0	0	0	0	56	56	211	3
	G	u factor 330-A	0.330	n	25.08	13.73	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	u factor 330-A	0.330	e	25.08	49.54	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	e	3.70	0.04	44	44	166	2	44	44	166	2
	G	u factor 330-A	0.330	e	25.08	49.54	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	u factor 330-A	0.330	s	25.08	26.21	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	u factor 330-A	0.330	s	25.08	26.21	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	s	3.62	0.03	0	0	0	0	0	0	0	0
	G	u factor 330-A	0.330	s	25.08	26.21	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	w	4.94	0.47	0	0	0	0	0	0	0	0
	G	u factor 330-A	0.330	w	25.08	49.54	0	0	0	0	0	0	0	0
	D	DflDoor-A	0.150	w	11.40	2.78	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	w	3.76	0.04	0	0	0	0	0	0	0	0
	P	12C-0sw	0.091	-	6.92	0.33	0	0	0	0	0	0	0	0
	P	12F-0sw	0.065	-	4.94	0.00	0	0	0	0	0	0	0	0
	P	12F-0sw	0.065	-	4.94	0.00	0	0	0	0	0	0	0	0
	D	DflDoor-A	0.150	n	11.40	2.78	0	0	0	0	0	0	0	0
	C	16B-50ad	0.020	-	1.52	0.84	0	0	0	0	0	0	0	0
	F	21A-24c	0.025	-	1.90	0.00	39	39	73	0	39	39	73	0
	F	21A-24c	0.025	-	1.90	0.00	0	0	0	0	0	0	0	0
6	c) AED excursion								0					-1
	Envelope loss/gain								239	2			449	3
12	a) Infiltration								22	2			50	5
	b) Room ventilation								0	0			0	0
13	Internal gains:				Occupants @ 230		0		0	0	0		0	0
					Appliances/other		0		0	0		0	0	0
	Subtotal (lines 6 to 13)								261	4			499	8
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								261	4			499	8
15	Duct loads								0	0			0	0
	Total room load								261	4			499	8
	Air required (cfm)								8	0			15	0

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

**Right-J® Worksheet**  
**Entire House**  
**Quality Heating**

**Job:** M-011721  
**Date:** January 17 2021  
**By:** Max Mora  
**Plan:** Dalton 1514 sf

1 Room name		2 Exposed wall		3 Room height		4 Room dimensions		5 Room area		Bedroom 4				Mechanical			
						8.0 ft		34.5 ft		heat/cool		8.0 ft		10.0 ft		heat/cool	
						1.0 x		212.5 ft				50.0 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	NP/S	Heat	Cool	Gross	NP/S	Heat	Cool			
6	W	12F-0sw	0.065	n	4.94	0.47	0	0	0	0	0	0	0	0	0	0	0
	G	u factor 330-A	0.330	n	25.08	13.73	0	0	0	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	n	3.69	0.04	124	108	383	3	0	0	0	0	0	0	0
	G	u factor 330-A	0.330	n	25.08	13.73	16	0	401	220	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	0	0	0
	G	u factor 330-A	0.330	e	25.08	49.54	0	0	0	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	e	3.70	0.04	32	32	120	1	0	0	0	0	0	0	0
	G	u factor 330-A	0.330	e	25.08	49.54	0	0	0	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	0	0	0
	G	u factor 330-A	0.330	s	25.08	26.21	0	0	0	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	0	0	0
	G	u factor 330-A	0.330	s	25.08	26.21	0	0	0	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	0	0	0
	G	u factor 330-A	0.330	w	25.08	49.54	0	0	0	0	0	0	0	0	0	0	0
	D	DftDoor-A	0.150	w	11.40	2.78	0	0	0	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	w	3.76	0.04	120	120	451	5	80	80	301	4	0	0	0
	P	12C-0sw	0.091	-	6.92	0.33	0	0	0	0	0	0	0	0	0	0	0
	P	12F-0sw	0.065	-	4.94	0.00	0	0	0	0	0	0	0	0	0	0	0
	P	12F-0sw	0.065	-	4.94	0.00	0	0	0	0	0	0	0	0	0	0	0
	D	DftDoor-A	0.150	n	11.40	2.78	0	0	0	0	0	0	0	0	0	0	0
	C	16B-50ad	0.020	-	1.52	0.84	0	0	0	0	0	0	0	0	0	0	0
	F	21A-24c	0.025	-	1.90	0.00	213	213	404	0	50	50	95	0	0	0	0
	F	21A-24c	0.025	-	1.90	0.00	0	0	0	0	0	0	0	0	0	0	0
6	c) AED excursion									-54							-1
	Envelope loss/gain								1759	176			396				3
12	a) Infiltration								137	13			40				4
	b) Room ventilation								0	0			0				0
13	Internal gains:		Occupants @	230			1			230	0						0
			Appliances/other							0							0
	Subtotal (lines 6 to 13)								1897	419			436				7
	Less external load								0	0			0				0
	Less transfer								0	0			0				0
	Redistribution								145	2			-436				-7
14	Subtotal								2042	421			0				0
15	Duct loads								0	0			0				0
	Total room load								2042	421			0				0
	Air required (cfm)								61	22			0				0

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

**Right-J® Worksheet**  
**Entire House**  
**Quality Heating**

**Job:** M-011721  
**Date:** January 17 2021  
**By:** Max Mora  
**Plan:** Dalton 1514 sf

1 2 3 4 5	Room name				master closet				bedroom 2					
	Exposed wall				0 ft				22.5 ft					
	Room height				9.0 ft				9.0 ft					
Room dimensions				5.5 x 11.5 ft				1.0 x 138.0 ft						
Room area				63.3 ft²				138.0 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
	W-G	u factor 330-A	0.330	n	25.08	13.73	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	n	3.69	0.04	0	0	0	0	0	0	0	0
	W-G	u factor 330-A	0.330	n	25.08	13.73	0	0	0	0	0	0	0	0
11	W	12F-0sw	0.065	e	4.94	0.47	0	0	0	0	36	36	178	17
	W-G	u factor 330-A	0.330	e	25.08	49.54	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	e	3.70	0.04	0	0	0	0	0	0	0	0
	W-G	u factor 330-A	0.330	e	25.08	49.54	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	s	4.94	0.47	0	0	0	0	131	115	566	54
	W-G	u factor 330-A	0.330	s	25.08	26.21	0	0	0	0	16	0	401	419
	W	12F-0sw	0.065	s	4.94	0.47	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	s	3.62	0.03	0	0	0	0	0	0	0	0
	W-G	u factor 330-A	0.330	s	25.08	26.21	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	w	4.94	0.47	0	0	0	0	36	36	178	17
	W-G	u factor 330-A	0.330	w	25.08	49.54	0	0	0	0	0	0	0	0
	D	DflDoor-A	0.150	w	11.40	2.78	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	w	3.76	0.04	0	0	0	0	0	0	0	0
	P	12C-0sw	0.091	-	6.92	0.33	0	0	0	0	0	0	0	0
	P	12F-0sw	0.065	-	4.94	0.00	0	0	0	0	0	0	0	0
	P	12F-0sw	0.065	-	4.94	0.00	50	50	245	0	0	0	0	0
	D	DflDoor-A	0.150	n	11.40	2.78	0	0	0	0	0	0	0	0
	C	16B-50ad	0.020	-	1.52	0.84	63	63	96	53	138	138	210	116
	F	21A-24c	0.025	-	1.90	0.00	0	0	0	0	0	0	0	0
	F	21A-24c	0.025	-	1.90	0.00	6	6	10	0	0	0	0	0
6	c) AED excursion													21
	Envelope loss/gain								351	47			1532	644
12	a) Infiltration								0	0			403	39
	b) Room ventilation								0	0			0	0
13	Internal gains: Occupants @ 230						0				1			230
	Appliances/other													0
	Subtotal (lines 6 to 13)								351	47			1935	913
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								-351	-47			20	10
14	Subtotal								0	0			1955	923
15	Duct loads						-0%	0%	0	0	-0%	0%	0	0
	Total room load								0	0			1955	923
	Air required (cfm)								0	0			58	49

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

**Right-J® Worksheet**  
**Entire House**  
**Quality Heating**

**Job:** M-011721  
**Date:** January 17 2021  
**By:** Max Mora  
**Plan:** Dalton 1514 sf

1		Room name		Master bedroom		Stairs								
2		Exposed wall		27.0 ft		0 ft								
3		Room height		10.0 ft		10.0 ft								
4		Room dimensions		15.0 x 12.0 ft		3.5 x 10.0 ft								
5		Room area		180.0 ft²		35.0 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	120	120	593	57	0	0	0	0
	G	u factor 330-A	0.330	n	25.08	13.73	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	n	3.69	0.04	0	0	0	0	0	0	0	0
	G	u factor 330-A	0.330	n	25.08	13.73	0	0	0	0	0	0	0	0
11	W	12F-0sw	0.065	e	4.94	0.47	150	120	593	57	0	0	0	0
	G	u factor 330-A	0.330	e	25.08	49.54	30	0	752	1486	0	0	0	0
	W	15B19-0wc-6	0.069	e	3.70	0.04	0	0	0	0	0	0	0	0
	G	u factor 330-A	0.330	e	25.08	49.54	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	u factor 330-A	0.330	s	25.08	26.21	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	u factor 330-A	0.330	s	25.08	26.21	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	s	3.62	0.03	0	0	0	0	0	0	0	0
	G	u factor 330-A	0.330	s	25.08	26.21	0	0	0	0	0	0	0	0
	W	12F-0sw	0.065	w	4.94	0.47	0	0	0	0	0	0	0	0
	G	u factor 330-A	0.330	w	25.08	49.54	0	0	0	0	0	0	0	0
	D	DflDoor-A	0.150	w	11.40	2.78	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	w	3.76	0.04	0	0	0	0	0	0	0	0
	P	12C-0sw	0.091	-	6.92	0.33	0	0	0	0	45	45	311	15
	P	12F-0sw	0.065	-	4.94	0.00	0	0	0	0	0	0	0	0
	P	12F-0sw	0.065	-	4.94	0.00	0	0	0	0	0	0	0	0
	D	DflDoor-A	0.150	n	11.40	2.78	0	0	0	0	0	0	0	0
	C	16B-50ad	0.020	-	1.52	0.84	180	180	274	151	35	35	53	29
	F	21A-24c	0.025	-	1.90	0.00	0	0	0	0	0	0	0	0
	F	21A-24c	0.025	-	1.90	0.00	0	0	0	0	0	0	0	0
6	c) AED excursion									-14				-5
	Envelope loss/gain								2212	1737			364	39
12	a) Infiltration								537	52			0	0
	b) Room ventilation								0	0			0	0
13	Internal gains:		Occupants @	230		2				460	0			0
			Appliances/other							0				0
	Subtotal (lines 6 to 13)								2748	2249			364	39
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								68	9			-364	-39
14	Subtotal								2816	2259			0	0
15	Duct loads								0	0			0	0
	Total room load								2816	2259			0	0
	Air required (cfm)								84	120			0	0

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

**Right-J® Worksheet**  
**Entire House**  
**Quality Heating**

**Job:** M-011721  
**Date:** January 17 2021  
**By:** Max Mora  
**Plan:** Dalton 1514 sf

1 2 3 4 5	Room name Exposed wall Room height Room dimensions Room area				Closet 5.5 ft 8.0 ft 10.5 x 5.5 ft 57.8 ft²				B-Stairs 17.5 ft 8.0 ft 4.0 x 18.5 ft 74.0 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-G	12F-0sw	0.065	n	4.94	0.47	0	0	0	0	108	108	534	51
	W-G	u factor 330-A	0.330	n	25.08	13.73	0	0	0	0	0	0	0	0
	W-G	15B19-0wc-6	0.069	n	3.69	0.04	0	0	0	0	0	0	0	0
	W-G	u factor 330-A	0.330	n	25.08	13.73	0	0	0	0	0	0	0	0
11	W-G	12F-0sw	0.065	e	4.94	0.47	0	0	0	0	0	0	0	0
	W-G	u factor 330-A	0.330	e	25.08	49.54	0	0	0	0	0	0	0	0
	W-G	15B19-0wc-6	0.069	e	3.70	0.04	0	0	0	0	0	0	0	0
	W-G	u factor 330-A	0.330	e	25.08	49.54	0	0	0	0	0	0	0	0
	W-G	12F-0sw	0.065	s	4.94	0.47	44	44	217	21	0	0	0	0
	W-G	u factor 330-A	0.330	s	25.08	26.21	0	0	0	0	0	0	0	0
	W-G	12F-0sw	0.065	s	4.94	0.47	0	0	0	0	0	0	0	0
	W-G	15B19-0wc-6	0.069	s	3.62	0.03	0	0	0	0	0	0	0	0
	W-G	u factor 330-A	0.330	s	25.08	26.21	0	0	0	0	0	0	0	0
	W-G	12F-0sw	0.065	w	4.94	0.47	0	0	0	0	32	32	158	15
	W-G	u factor 330-A	0.330	w	25.08	49.54	0	0	0	0	0	0	0	0
	D	DflDoor-A	0.150	w	11.40	2.78	0	0	0	0	0	0	0	0
	W	15B19-0wc-6	0.069	w	3.76	0.04	0	0	0	0	0	0	0	0
	P	12C-0sw	0.091	-	6.92	0.33	0	0	0	0	0	0	0	0
	P	12F-0sw	0.065	-	4.94	0.00	0	0	0	0	0	0	0	0
	P	12F-0sw	0.065	-	4.94	0.00	0	0	0	0	0	0	0	0
	D	DflDoor-A	0.150	n	11.40	2.78	0	0	0	0	0	0	0	0
	C	16B-50ad	0.020	-	1.52	0.84	0	0	0	0	0	0	0	0
	F	21A-24c	0.025	-	1.90	0.00	58	58	110	0	74	74	141	0
	F	21A-24c	0.025	-	1.90	0.00	0	0	0	0	0	0	0	0
6	c) AED excursion													-11
	Envelope loss/gain								327	18			832	56
12	a) Infiltration								87	8			278	27
	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)								415	26			1111	83
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								-415	-26			-1111	-83
14	Subtotal								0	0			0	0
15	Duct loads						-0%	0%	0	0	-0%	0%	0	0
	Total room load								0	0			0	0
	Air required (cfm)								0	0			0	0

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

**Right-J® Worksheet**  
**Entire House**  
**Quality Heating**

**Job:** M-011721  
**Date:** January 17 2021  
**By:** Max Mora  
**Plan:** Dalton 1514 s/f

1 Room name		2 Exposed wall		3 Room height		4 Room dimensions		5 Room area		Pantry		4.0 ft		heat/cool	
		8.0 ft		1.0		x		14.9 ft		14.9 ft²					
	Ty	Construction number	U-value (Btuh/ft²-°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area or perimeter		Load		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	12F-0sw	0.065	n	4.94	0.47	0	0	0	0					
	G	u factor 330-A	0.330	n	25.08	13.73	0	0	0	0					
	W	15B19-0wc-6	0.069	n	3.69	0.04	0	0	0	0					
	G	u factor 330-A	0.330	n	25.08	13.73	0	0	0	0					
11	W	12F-0sw	0.065	e	4.94	0.47	0	0	0	0					
	G	u factor 330-A	0.330	e	25.08	49.54	0	0	0	0					
	W	15B19-0wc-6	0.069	e	3.70	0.04	0	0	0	0					
	G	u factor 330-A	0.330	e	25.08	49.54	0	0	0	0					
	W	12F-0sw	0.065	s	4.94	0.47	0	0	0	0					
	G	u factor 330-A	0.330	s	25.08	26.21	0	0	0	0					
	W	12F-0sw	0.065	s	4.94	0.47	32	32	158	15					
	W	15B19-0wc-6	0.069	s	3.62	0.03	0	0	0	0					
	G	u factor 330-A	0.330	s	25.08	26.21	0	0	0	0					
	W	12F-0sw	0.065	w	4.94	0.47	0	0	0	0					
	G	u factor 330-A	0.330	w	25.08	49.54	0	0	0	0					
	D	DftDoor-A	0.150	w	11.40	2.78	0	0	0	0					
	W	15B19-0wc-6	0.069	w	3.76	0.04	0	0	0	0					
	P	12C-0sw	0.091	-	6.92	0.33	0	0	0	0					
	P	12F-0sw	0.065	-	4.94	0.00	0	0	0	0					
	P	12F-0sw	0.065	-	4.94	0.00	0	0	0	0					
	D	DftDoor-A	0.150	n	11.40	2.78	0	0	0	0					
	C	16B-50ad	0.020	-	1.52	0.84	15	15	23	12					
	F	21A-24c	0.025	-	1.90	0.00	0	0	0	0					
	F	21A-24c	0.025	-	1.90	0.00	0	0	0	0					
6	c) AED excursion									-4					
	Envelope loss/gain									181	24				
12	a) Infiltration									64	6				
	b) Room ventilation									0	0				
13	Internal gains:		Occupants @	230			0			0	0				
			Appliances/other							0	0				
	Subtotal (lines 6 to 13)									244	30				
	Less external load									0	0				
	Less transfer									0	0				
	Redistribution									-244	-30				
14	Subtotal									0	0				
15	Duct loads									0	0				
	Total room load									0	0				
	Air required (cfm)									0	0				

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

# Loads for Multiple Orientations

## Entire House

### Quality Heating

Job: M-011721  
 Date: January 17 2021  
 By: Max Mora  
 Plan: Dalton 1514 sf

## Project Information

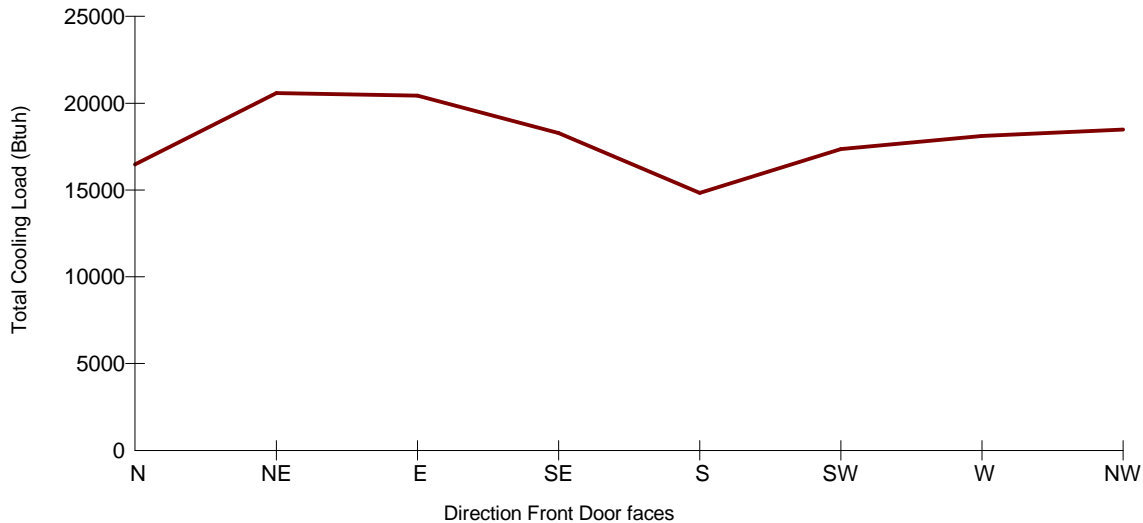
For: Rockwell Development (2015 IEC)  
 7187 Branston Ave.

## 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	-31.5
Dry bulb (°F)	-6	89	<b>Infiltration:</b>		
Daily range (°F)	-	34 ( H )			
Wet bulb (°F)	-	60			
Wind speed (mph)	15.0	7.5			

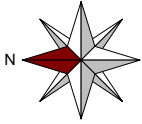
Front Door	North	Northeast	East	Southeast	South	Southwest	West	Northwest
Sensible Load (Btuh)	16471	20599	20435	18290	14841	17357	18128	18488
Latent Load (Btuh)	0	0	0	0	0	0	0	0
Total Load (Btuh)	16471	20599	20435	18290	14841	17357	18128	18488
Heating AVF (cfm)	950	950	950	950	950	950	950	950
Cooling AVF (cfm)	950	950	950	950	950	950	950	950

Building Orientation Cooling Load

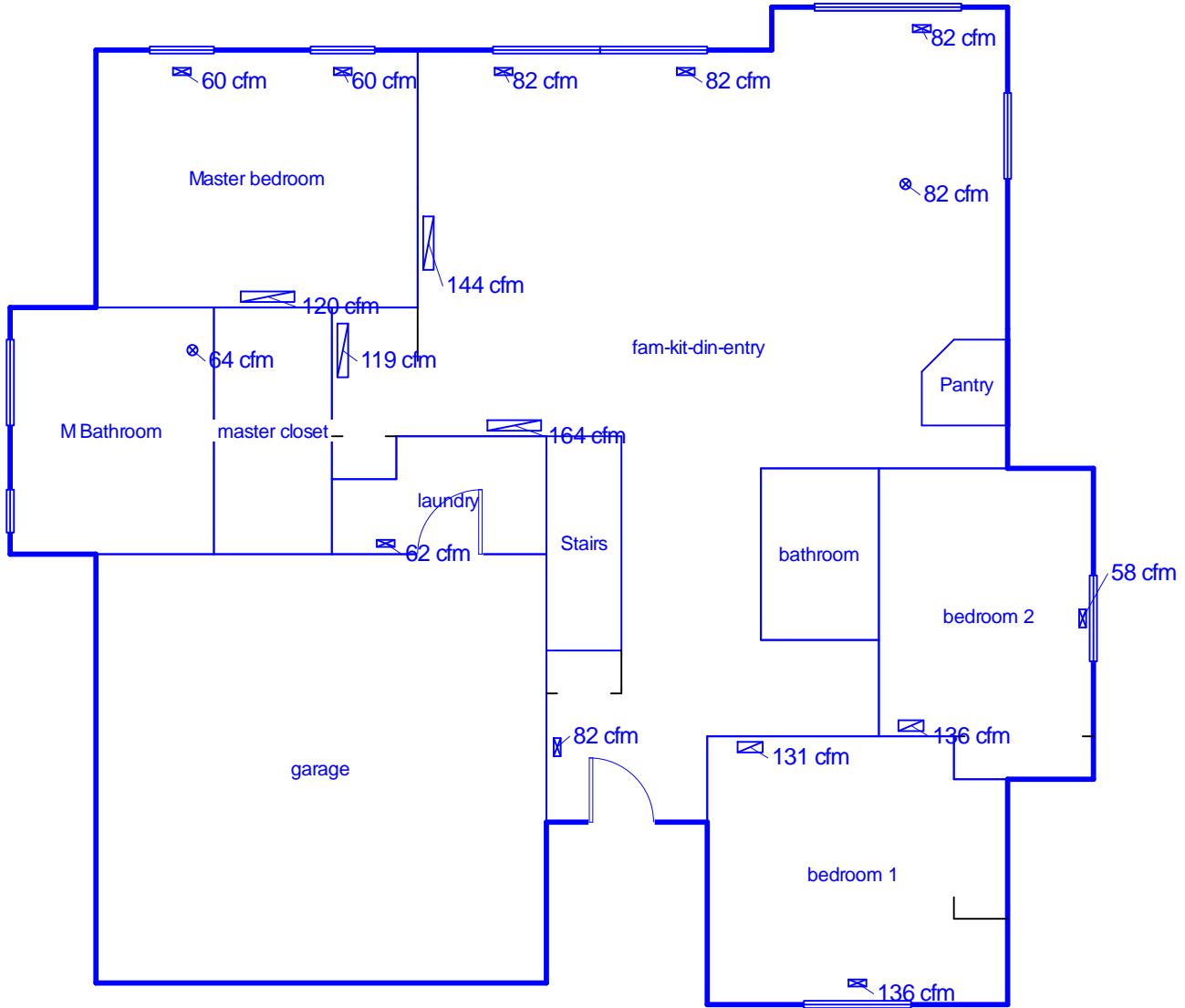


Current Orientation: Front Door faces West  
 Highest Cooling Load: Front Door faces Northeast

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



### Main Floor

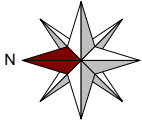


**Job #: M - 011721**  
**Performed by Max Mora for:**  
Rockwell Development (2015 IEC)  
7187 Branston Ave.

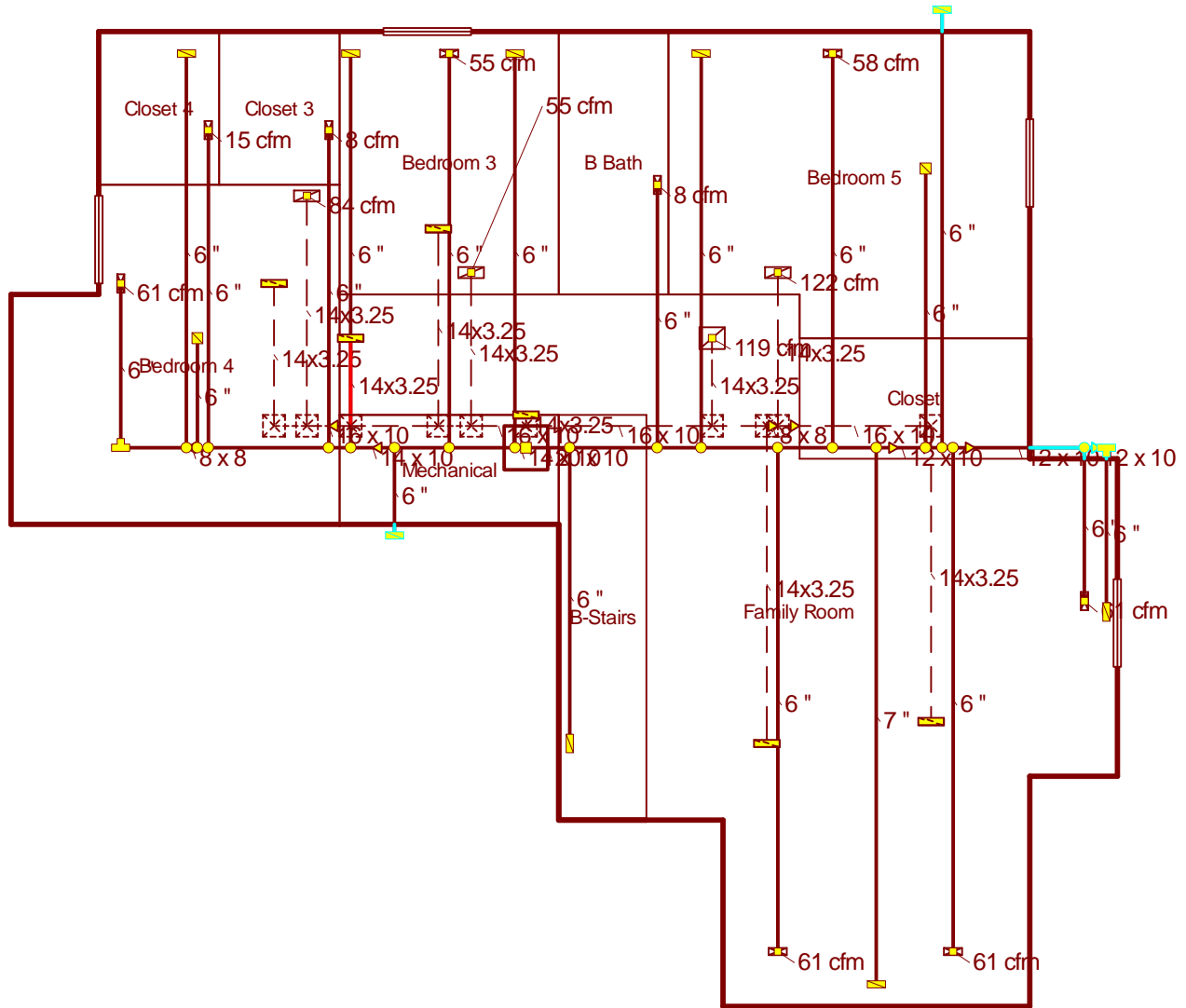
**Quality Heating**

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### Basement



**Job #: M - 011721**  
**Performed by Max Mora for:**  
Rockwell Development (2015 IEC)  
7187 Branston Ave.

**Quality Heating**

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# Duct System Summary

## Entire House

### Quality Heating

Job: M-011721  
 Date: January 17 2021  
 By: Max Mora  
 Plan: Dalton 1514 sf

## Project Information

For: Rockwell Development (2015 IEC)  
 7187 Branston Ave.

	Heating	Cooling
External static pressure	0.80 in H2O	0.80 in H2O
Pressure losses	0.37 in H2O	0.37 in H2O
Available static pressure	0.43 in H2O	0.43 in H2O
Supply / return available pressure	0.261 / 0.169 in H2O	0.261 / 0.169 in H2O
Lowest friction rate	0.086 in/100ft	0.086 in/100ft
Actual air flow	950 cfm	950 cfm
Total effective length (TEL)	501 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
B Bath	h 284	8	0	0.112	6.0	0x0	ShMt	18.0	215.0	st1
Bedroom 3	c 1040	26	55	0.123	6.0	0x0	ShMt	21.5	190.0	st2
Bedroom 4	h 2042	61	22	0.113	6.0	0x0	ShMt	26.0	205.0	st2B
Bedroom 5	h 1937	58	39	0.117	6.0	0x0	ShMt	32.0	190.0	st1
Closet 3	h 261	8	0	0.099	6.0	0x0	ShMt	23.5	240.0	st2A
Closet 4	h 499	15	0	0.101	6.0	0x0	ShMt	29.0	230.0	st2A
Family Room	h 2048	61	11	0.099	6.0	0x0	ShMt	42.5	220.0	st1A
Family Room-A	h 2048	61	11	0.111	6.0	0x0	ShMt	34.5	200.0	st1
Family Room-B	h 2048	61	11	0.089	6.0	0x0	ShMt	32.5	260.0	st1B
M Bathroom	h 2149	64	22	0.109	6.0	0x0	ShMt	20.0	220.0	st2A
Master bedroom	c 1129	42	60	0.086	6.0	0x0	ShMt	33.5	270.0	st2B
Master bedroom-A	c 1129	42	60	0.094	6.0	0x0	ShMt	26.0	250.0	st2A
bedroom 1	c 2552	87	136	0.118	7.0	0x0	ShMt	40.5	180.0	st1
bedroom 2	h 1955	58	49	0.093	6.0	0x0	ShMt	34.0	245.0	st1C
fam-kit-din-entry	c 1544	55	82	0.110	6.0	0x0	ShMt	26.0	210.0	st1
fam-kit-din-entry-A	c 1544	55	82	0.119	6.0	0x0	ShMt	18.5	200.0	st2
fam-kit-din-entry-B	c 1544	55	82	0.108	6.0	0x0	ShMt	15.5	225.0	st1
fam-kit-din-entry-C	c 1544	55	82	0.097	6.0	0x0	ShMt	39.0	230.0	st1A
fam-kit-din-entry-D	c 1544	55	82	0.096	6.0	0x0	ShMt	31.0	240.0	st1A
laundry	c 1165	24	62	0.137	6.0	0x0	ShMt	10.0	180.0	st2

## Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st1C	Peak AVF	58	49	0.093	70	<b>5.7</b>	<b>10</b> x <b>12</b>	ShtMetl	st1B
st1B	Peak AVF	119	61	0.089	143	<b>6.4</b>	<b>10</b> x <b>12</b>	ShtMetl	st1A
st1A	Peak AVF	290	236	0.089	348	<b>8.8</b>	<b>10</b> x <b>12</b>	ShtMetl	st1
st1	Peak AVF	613	586	0.089	442	<b>11.7</b>	<b>10</b> x <b>20</b>	ShtMetl	
st2	Peak AVF	337	364	0.086	375	<b>10.0</b>	<b>10</b> x <b>14</b>	ShtMetl	
st2A	Peak AVF	232	165	0.086	238	<b>5.7</b>	<b>10</b> x <b>14</b>	ShtMetl	st2
st2B	Peak AVF	103	82	0.086	232	6.1	8 x 8	ShtMetl	st2A

## 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
rb2	0x 0	109	164	60.5	0.280	519	5.7	3.25x14	10x9	SJSp	rt2
rb1	0x 0	79	144	103.0	0.164	455	6.0	3.25x14	10x9	SJSp	rt2
rb3	0x 0	119	104	112.0	0.151	376	5.7	3.25x14	10x9	SJSp	rt2A
rb4	0x 0	84	120	173.0	0.098	380	6.3	3.25x14	10x9	SJSp	rt1B
rb5	0x 0	87	136	197.0	0.086	429	6.7	3.25x14	10x9	SJSp	rt1
rb6	0x 0	113	131	145.5	0.116	415	6.3	3.25x14	10x9	SJSp	rt1A
rb7	0x 0	122	23	153.5	0.110	387	6.2	3.25x14	10x9	SJSp	rt2
rb8	0x 0	35	55	89.5	0.189	175	4.1	3.25x14	10x9	SJSp	rt2A
rb9	0x 0	84	23	165.5	0.102	264	5.4	3.25x14	10x9	SJSp	rt1
rb10	0x 0	119	50	92.5	0.183	376	5.5	3.25x14	10x9	SJSp	

## 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	87	136	0.086	122	<b>6.0</b>	<b>10</b> x <b>16</b>	ShtMetl	rt1A
rt1A	Peak AVF	209	158	0.086	471	7.9	8 x 8	ShtMetl	rt1
rt1	Peak AVF	441	340	0.086	397	<b>10.4</b>	<b>10</b> x <b>16</b>	ShtMetl	
rt2	Peak AVF	400	446	0.098	402	<b>10.7</b>	<b>10</b> x <b>16</b>	ShtMetl	
rt2A	Peak AVF	168	143	0.098	151	<b>7.3</b>	<b>10</b> x <b>16</b>	ShtMetl	rt2

*Bold/italic values have been manually overridden*