

**PLAN REVIEW ACCEPTANCE**FOR COMPLIANCE WITH THE APPLICABLE  
CONSTRUCTION CODES IDENTIFIED BELOW.

<input checked="" type="checkbox"/> BUILDING	<input checked="" type="checkbox"/> STRUCTURAL
<input checked="" type="checkbox"/> MECHANICAL	<input checked="" type="checkbox"/> PLUMBING
<input checked="" type="checkbox"/> ELECTRICAL	<input checked="" type="checkbox"/> ENERGY
<input type="checkbox"/> ACCESSIBILITY	<input type="checkbox"/> FIRE

PLAN REVIEW ACCEPTANCE OF DOCUMENTS  
DOES NOT AUTHORIZE CONSTRUCTION TO  
PROCEED IN VIOLATION OF ANY FEDERAL,  
STATE, OR LOCAL REGULATIONS.BY: **MEM** DATE: 01/17/20**WEST COAST CODE CONSULTANTS, INC.****Project Information**For: Kingsbury  
8549 E Spring Park, Eden, UT 84310**Cooling Equipment****Design Conditions**

Outdoor design DB:	94.5°F	Sensible gain:	33323	Btuh	Entering coil DB:	76.7°F
Outdoor design WB:	62.1°F	Latent gain:	749	Btuh	Entering coil WB:	56.9°F
Indoor design DB:	73.0°F	Total gain:	34072	Btuh		
Indoor RH:	35%	Estimated airflow:	1500	cfm		

**Manufacturer's Performance Data at Actual Design Conditions**

Equipment type:	Split AC			
Manufacturer:	Day & Night	Model:	NXA648GKA10+END4X48L21A1++TDR	
Actual airflow:	1500	cfm		
Sensible capacity:	31500	Btuh	95%	of load
Latent capacity:	13500	Btuh	1803%	of load
Total capacity:	45000	Btuh	132%	of load SHR: 70%

**Heating Equipment****Design Conditions**

Outdoor design DB:	-5.9°F	Heat loss:	88068	Btuh	Entering coil DB:	72.0°F
Indoor design DB:	72.0°F					

**Manufacturer's Performance Data at Actual Design Conditions**

Equipment type:	Gas furnace			
Manufacturer:	ICP Commercial, Int	Model:	N9MSE0801716A**	
Actual airflow:	1500	cfm		
Output capacity:	78000	Btuh	89%	of load
			Temp. rise:	50 °F

Meets all requirements of ACCA Manual S.



## Project Information

For: Kingsbury  
8549 E Spring Park, Eden, UT 84310

## Cooling Equipment

### Design Conditions

Outdoor design DB:	94.5°F	Sensible gain:	21835	Btuh	Entering coil DB:	73.0°F
Outdoor design WB:	62.1°F	Latent gain:	0	Btuh	Entering coil WB:	55.6°F
Indoor design DB:	73.0°F	Total gain:	21835	Btuh		
Indoor RH:	35%	Estimated airflow:	1500	cfm		

### Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split AC					
Manufacturer:	Day & Night	Model:	NXA648GKA10+END4X48L21A1++TDR			
Actual airflow:	1500	cfm				
Sensible capacity:	36000	Btuh	165% of load			
Latent capacity:	9000	Btuh	0% of load			
Total capacity:	45000	Btuh	206% of load SHR: 80%			

## Heating Equipment

### Design Conditions

Outdoor design DB:	-5.9°F	Heat loss:	52373	Btuh	Entering coil DB:	72.0°F
Indoor design DB:	72.0°F					

### Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Gas furnace					
Manufacturer:	ICP Commercial, Int	Model:	N9MSE0801716A			
Actual airflow:	1500	cfm				
Output capacity:	78000	Btuh	149% of load			
					Temp. rise:	50 °F

Meets all requirements of ACCA Manual S.

## Project Information

For: Kingsbury  
8549 E Spring Park, Eden, UT 84310

## Cooling Equipment

### Design Conditions

Outdoor design DB:	94.5°F	Sensible gain:	31715	Btuh	Entering coil DB:	75.1°F
Outdoor design WB:	62.1°F	Latent gain:	283	Btuh	Entering coil WB:	56.3°F
Indoor design DB:	73.0°F	Total gain:	31998	Btuh		
Indoor RH:	35%	Estimated airflow:	1500	cfm		

### Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split AC					
Manufacturer:	Day & Night	Model:	NXA648GKA10+ENH4X48L21A1++TDR			
Actual airflow:	1500	cfm				
Sensible capacity:	36000	Btuh	114%	of load		
Latent capacity:	9000	Btuh	3184%	of load		
Total capacity:	45000	Btuh	141%	SHR:	80%	

## Heating Equipment

### Design Conditions

Outdoor design DB:	-5.9°F	Heat loss:	55129	Btuh	Entering coil DB:	69.5°F	
Indoor design DB:	72.0°F						

### Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Gas furnace					
Manufacturer:	ICP Commercial, Int	Model:	N9MSE0801716A			
Actual airflow:	1500	cfm				
Output capacity:	78000	Btuh	141%	of load		
				Temp. rise:	50 °F	

Meets all requirements of ACCA Manual S.

## Project Information

For: Kingsbury  
 8549 E Spring Park, Eden, UT 84310

## Design Criteria

Occupants		Not occupied during the day	
Age	Number		
0-5	0	Dishwasher	
6-13	2	Clothes washer	
14-59	2	Additional use (gpd)	0
60+	0	Setpoint (°F)	120
		Daily use (gpd)	61

## Gas conventional (40 gal, 0.60 EF)

Manufacturer	Tank size (gal)	40
Trade name	Energy factor	0.60
Model	Input (MBtuh)	0.0
AHRI ref. number	1st hour (gal)	60
	Recovery eff. (%)	77

## Project Information

For: Kingsbury  
8549 E Spring Park, Eden, UT 84310

## Design Criteria

Occupants		Not occupied during the day	
Age	Number		
0-5	0	Dishwasher	
6-13	2	Clothes washer	
14-59	2	Additional use (gpd)	0
60+	0	Setpoint (°F)	120
		Daily use (gpd)	61

## Gas conventional (40 gal, 0.60 EF)

Manufacturer	Tank size (gal)	40
Trade name	Energy factor	0.60
Model	Input (MBtuh)	0.0
AHRI ref. number	1st hour (gal)	60
	Recovery eff. (%)	77

**Project Information**

For: Kingsbury  
8549 E Spring Park, Eden, UT 84310

**Design Criteria**

Occupants		Not occupied during the day	
Age	Number		
0-5	0	Dishwasher	
6-13	2	Clothes washer	
14-59	2	Additional use (gpd)	0
60+	0	Setpoint (°F)	120
		Daily use (gpd)	61

**Gas conventional (40 gal, 0.60 EF)**

Manufacturer	Tank size (gal)	40
Trade name	Energy factor	0.60
Model	Input (MBtuh)	0.0
AHRI ref. number	1st hour (gal)	60
	Recovery eff. (%)	77



# Residential Plans Examiner Review Form for HVAC System Design (Loads, Equipment, Ducts)

Form  
RPER 1  
15 Mar 09

### Header Information

Contractor: <b>Outfitters HVAC</b>	REQUIRED ATTACHMENTS	ATTACHED
Mechanical license:	Manual J1 Form (and supporting worksheets):	Yes <input type="checkbox"/> No <input type="checkbox"/>
Building plan #:	or MJ1AE Form* (and supporting worksheets):	Yes <input type="checkbox"/> No <input type="checkbox"/>
Home address (Street or Lot#, Block, Subdivision): <b>8549 E Spring Park, LOWER</b>	OEM performance data (heating, cooling, blower):	Yes <input type="checkbox"/> No <input type="checkbox"/>
	Manual D Friction Rate Worksheet:	Yes <input type="checkbox"/> No <input type="checkbox"/>
	Duct distribution sketch:	Yes <input type="checkbox"/> No <input type="checkbox"/>

## HVAC LOAD CALCULATION (IRC M1401.3)

### Design Conditions

#### Winter Design Conditions

Outdoor temperature: -6 °F  
 Indoor temperature: 72 °F  
 Total heat loss: 88068 Btuh

#### Summer Design Conditions

Outdoor temperature: 95 °F  
 Indoor temperature: 73 °F  
 Grains difference: -3 gr/lb @ 35% RH  
 Sensible heat gain: 33491 Btuh  
 Latent heat gain: 753 Btuh  
 Total heat gain: 34243 Btuh

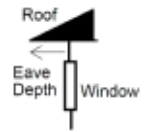
### Building Construction Information

#### Building

Orientation: **Front Door faces South**  
North, East, West, South, Northeast, Northwest, Southeast, Southwest  
 Number of bedrooms: 0  
 Conditioned floor area: 1923 ft<sup>2</sup>  
 Number of occupants: 4

#### Windows

Eave overhang depth: 0 ft  
 Internal shade: none  
Blinds, drapes, etc.  
 Number of skylights: 0



## HVAC EQUIPMENT SELECTION (IRC M1401.3)

### Heating Equipment Data

Equipment type: Gas furnace  
Furnace, Heat pump, Boiler, etc.  
 Model: ICP Commercial, International Comfort  
N9MSE081516A\*\*  
 Heating output capacity: 78000 Btuh  
Heat pumps - capacity at winter design outdoor conditions  
 Aux. heating output capacity: 0 Btuh

### Cooling Equipment Data

Equipment type: Split AC  
Air Conditioner, Heat pump, etc.  
 Model: Day & Night  
NXA648GKA10+END4X48L21A1++TDR  
 Total cooling capacity: 0 Btuh  
 Sensible cooling capacity: 0 Btuh  
 Latent cooling capacity: 0 Btuh

### Blower Data

Heating cfm: 1500  
 Cooling cfm: 1500  
 Static pressure: 0.60 in H<sub>2</sub>O  
Fan's rated external static pressure for design airflow

## HVAC DUCT DISTRIBUTION SYSTEM DESIGN (IRC M1601.1)

Design airflow: 1500 cfm	Longest supply duct: 314 ft	Duct Materials Used
Equipment design ESP: 0.60 in H <sub>2</sub> O	Longest return duct: 234 ft	Trunk duct: Fiberglass board
Total device pressure losses: -0.4 in H <sub>2</sub> O	<b>Total effective length (TEL): 548 ft</b>	Branch duct: Sheet metal, Stud/joist space
<b>Available static pressure (ASP): 0.22 in H<sub>2</sub>O</b>	<b>Friction rate: 0.040 in/100ft</b> <small>Friction Rate = ASP ÷ (TEL × 100)</small>	

I declare the load calculation, equipment, equipment selection and duct design were rigorously performed based on the building plan listed above. I understand the claims made on these forms will be subject to review and verification.

Contractor's printed name: \_\_\_\_\_  
 Contractor's signature: \_\_\_\_\_ Date: \_\_\_\_\_

Reserved for County, Town Municipality or Authority having jurisdiction use.

\*Home qualifies for MJ1AE Form based on Abridged Edition Checklist





# Residential Plans Examiner Review Form for HVAC System Design (Loads, Equipment, Ducts)

Form  
RPER 1  
15 Mar 09

### Header Information

Contractor: <b>Outfitters HVAC</b>	REQUIRED ATTACHMENTS	ATTACHED
Mechanical license:	Manual J1 Form (and supporting worksheets):	Yes <input type="checkbox"/> No <input type="checkbox"/>
Building plan #:	or MJ1AE Form* (and supporting worksheets):	Yes <input type="checkbox"/> No <input type="checkbox"/>
Home address (Street or Lot#, Block, Subdivision): <b>8549 E Spring Park, MAIN</b>	OEM performance data (heating, cooling, blower):	Yes <input type="checkbox"/> No <input type="checkbox"/>
	Manual D Friction Rate Worksheet:	Yes <input type="checkbox"/> No <input type="checkbox"/>
	Duct distribution sketch:	Yes <input type="checkbox"/> No <input type="checkbox"/>

## HVAC LOAD CALCULATION (IRC M1401.3)

### Design Conditions

#### Winter Design Conditions

Outdoor temperature: -6 °F  
 Indoor temperature: 72 °F  
 Total heat loss: 52373 Btuh

#### Summer Design Conditions

Outdoor temperature: 95 °F  
 Indoor temperature: 73 °F  
 Grains difference: -3 gr/lb @ 35% RH  
 Sensible heat gain: 21944 Btuh  
 Latent heat gain: 0 Btuh  
 Total heat gain: 21944 Btuh

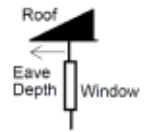
### Building Construction Information

#### Building

Orientation: **Front Door faces South**  
North, East, West, South, Northeast, Northwest, Southeast, Southwest  
 Number of bedrooms: 0  
 Conditioned floor area: 1698 ft<sup>2</sup>  
 Number of occupants: 0

#### Windows

Eave overhang depth: 0 ft  
 Internal shade: none  
Blinds, drapes, etc.  
 Number of skylights: 0



## HVAC EQUIPMENT SELECTION (IRC M1401.3)

### Heating Equipment Data

Equipment type: Gas furnace  
Furnace, Heat pump, Boiler, etc.  
 Model: ICP Commercial, International Comfort  
N9MSE080176A  
 Heating output capacity: 78000 Btuh  
Heat pumps - capacity at winter design outdoor conditions  
 Aux. heating output capacity: 0 Btuh

### Cooling Equipment Data

Equipment type: Split AC  
Air Conditioner, Heat pump, etc.  
 Model: Day & Night  
NXA648GKA10+END4X48L21A1++TDR  
 Total cooling capacity: 0 Btuh  
 Sensible cooling capacity: 0 Btuh  
 Latent cooling capacity: 0 Btuh

### Blower Data

Heating cfm: 1500  
 Cooling cfm: 1500  
 Static pressure: 0.60 in H<sub>2</sub>O  
Fan's rated external static pressure for design airflow

## HVAC DUCT DISTRIBUTION SYSTEM DESIGN (IRC M1601.1)

Design airflow: 1500 cfm	Longest supply duct: 427 ft	Duct Materials Used
Equipment design ESP: 0.60 in H <sub>2</sub> O	Longest return duct: 191 ft	Trunk duct: Fiberglass board
Total device pressure losses: 0 in H <sub>2</sub> O	<b>Total effective length (TEL): 618 ft</b>	Branch duct: Sheet metal, Stud/joist space
<b>Available static pressure (ASP): 0.60 in H<sub>2</sub>O</b>	<b>Friction rate: 0.097 in/100ft</b>	

Friction Rate = ASP ÷ (TEL × 100)

I declare the load calculation, equipment, equipment selection and duct design were rigorously performed based on the building plan listed above. I understand the claims made on these forms will be subject to review and verification.

Contractor's printed name: \_\_\_\_\_  
 Contractor's signature: \_\_\_\_\_ Date: \_\_\_\_\_

Reserved for County, Town Municipality or Authority having jurisdiction use.

\*Home qualifies for MJ1AE Form based on Abridged Edition Checklist







# Residential Plans Examiner Review Form for HVAC System Design (Loads, Equipment, Ducts)

Form  
RPER 1  
15 Mar 09

## Header Information

Contractor:	Outfitters HVAC	REQUIRED ATTACHMENTS	ATTACHED
Mechanical license:		Manual J1 Form (and supporting worksheets):	Yes <input type="checkbox"/> No <input type="checkbox"/>
Building plan #:		or MJ1AE Form* (and supporting worksheets):	Yes <input type="checkbox"/> No <input type="checkbox"/>
Home address (Street or Lot#, Block, Subdivision):	8549 E Spring Park, UPPER	OEM performance data (heating, cooling, blower):	Yes <input type="checkbox"/> No <input type="checkbox"/>
		Manual D Friction Rate Worksheet:	Yes <input type="checkbox"/> No <input type="checkbox"/>
		Duct distribution sketch:	Yes <input type="checkbox"/> No <input type="checkbox"/>

## HVAC LOAD CALCULATION (IRC M1401.3)

### Design Conditions

#### Winter Design Conditions

Outdoor temperature: -6 °F  
 Indoor temperature: 72 °F  
 Total heat loss: 55129 Btuh

#### Summer Design Conditions

Outdoor temperature: 95 °F  
 Indoor temperature: 73 °F  
 Grains difference: -3 gr/lb @ 35% RH  
 Sensible heat gain: 31875 Btuh  
 Latent heat gain: 284 Btuh  
 Total heat gain: 32159 Btuh

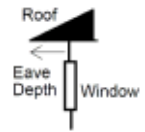
### Building Construction Information

#### Building

Orientation: Front Door faces South  
North, East, West, South, Northeast, Northwest, Southeast, Southwest  
 Number of bedrooms: 0  
 Conditioned floor area: 1249 ft<sup>2</sup>  
 Number of occupants: 2

#### Windows

Eave overhang depth: 0 ft  
 Internal shade: none  
Blinds, drapes, etc.  
 Number of skylights: 0



## HVAC EQUIPMENT SELECTION (IRC M1401.3)

### Heating Equipment Data

Equipment type: Gas furnace  
Furnace, Heat pump, Boiler, etc.  
 Model: ICP Commercial, International Comfort  
N9MSE080176A  
 Heating output capacity: 78000 Btuh  
Heat pumps - capacity at winter design outdoor conditions  
 Aux. heating output capacity: 0 Btuh

### Cooling Equipment Data

Equipment type: Split AC  
Air Conditioner, Heat pump, etc.  
 Model: Day & Night  
NXA648GKA10+ENH4X48L21A1++TDR  
 Total cooling capacity: 0 Btuh  
 Sensible cooling capacity: 0 Btuh  
 Latent cooling capacity: 0 Btuh

### Blower Data

Heating cfm: 1500  
 Cooling cfm: 1500  
 Static pressure: 0.60 in H<sub>2</sub>O  
Fan's rated external static pressure for design airflow

## HVAC DUCT DISTRIBUTION SYSTEM DESIGN (IRC M1601.1)

Design airflow:	1500 cfm	Longest supply duct:	142 ft	Duct Materials Used
Equipment design ESP:	0.60 in H <sub>2</sub> O	Longest return duct:	83 ft	Trunk duct:
Total device pressure losses:	0 in H <sub>2</sub> O	<b>Total effective length (TEL):</b>	226 ft	Branch duct:
<b>Available static pressure (ASP):</b>	0.60 in H <sub>2</sub> O	<b>Friction rate:</b>	0.266 in/100ft	Round flex vinyl

Friction Rate = ASP ÷ (TEL × 100)

I declare the load calculation, equipment, equipment selection and duct design were rigorously performed based on the building plan listed above. I understand the claims made on these forms will be subject to review and verification.

Contractor's printed name: \_\_\_\_\_  
 Contractor's signature: \_\_\_\_\_ Date: \_\_\_\_\_

Reserved for County, Town Municipality or Authority having jurisdiction use.

\*Home qualifies for MJ1AE Form based on Abridged Edition Checklist



**Project Information**

For: Kingsbury  
 8549 E Spring Park, Eden, UT 84310

**Design Information**

	Htg	Clg	Method	Infiltration	
Outside db (°F)	-6	95			Simplified
Inside db (°F)	72	73	Construction quality		Semi-tight
Design TD (°F)	78	22	Fireplaces		
Daily range	-	H			
Inside humidity (%)	30	35			
Moisture difference (gr/lb)	37	-3			

**HEATING EQUIPMENT**

Make	n/a
Trade	n/a
Model	n/a
AHRI ref	n/a
Efficiency	n/a
Heating input	
Heating output	0 Btuh
Temperature rise	0 °F
Actual air flow	0 cfm
Air flow factor	0 cfm/Btuh
Static pressure	0 in H2O
Space thermostat	n/a

**COOLING EQUIPMENT**

Make	n/a
Trade	n/a
Cond	n/a
Coil	n/a
AHRI ref	n/a
Efficiency	n/a
Sensible cooling	0 Btuh
Latent cooling	0 Btuh
Total cooling	0 Btuh
Actual air flow	0 cfm
Air flow factor	0 cfm/Btuh
Static pressure	0 in H2O
Load sensible heat ratio	0

ROOM NAME		Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
UPPER	d	1249	55129	31715	1500	1500
LOWER	d	1923	88068	28204	1500	1500
MAIN	d	1698	52373	21835	1500	1500
Entire House	d	4870	195570	80398	4500	4500
Other equip loads			0	0		
Equip. @ 1.00 RSM				79996		
Latent cooling				995		
<b>TOTALS</b>		<b>4870</b>	<b>195570</b>	<b>80991</b>	<b>4500</b>	<b>4500</b>

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



Project Information

For: Kingsbury  
8549 E Spring Park, Eden, UT 84310

Design Information

	Htg	Clg	Method	Infiltration
Outside db (°F)	-6	95	Method	Simplified
Inside db (°F)	72	73	Construction quality	Semi-tight
Design TD (°F)	78	22	Fireplaces	
Daily range	-	H		
Inside humidity (%)	30	35		
Moisture difference (gr/lb)	37	-3		

HEATING EQUIPMENT

Make ICP Commercial, International Comfort Products  
Trade ICP COMMERCIAL  
Model N9MSE0801716A\*\*  
AHRI ref 201712516

Efficiency 96 AFUE  
Heating input 80000 Btuh  
Heating output 78000 Btuh  
Temperature rise 56 °F  
Actual air flow 1500 cfm  
Air flow factor 0.017 cfm/Btuh  
Static pressure 0.60 in H2O  
Space thermostat

COOLING EQUIPMENT

Make Day & Night  
Trade CONSTANT COMFORT SX 2600 R410A...  
Cond NXA648GKA10  
Coil END4X48L21A1++TDR  
AHRI ref 9279669

Efficiency 12.0 EER, 14 SEER  
Sensible cooling 31500 Btuh  
Latent cooling 13500 Btuh  
Total cooling 45000 Btuh  
Actual air flow 1500 cfm  
Air flow factor 0.053 cfm/Btuh  
Static pressure 0.60 in H2O  
Load sensible heat ratio 0.98

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
L-MASBED	385	13485	4306	230	229
L-MASBTH	139	4148	1428	71	76
L-SKI	100	10255	2580	175	137
L-FAM	550	26349	10357	449	551
L-KITCHEN	276	25991	9508	443	506
L-BATH2	66	1807	7	31	0
L-MECH	91	0	0	0	0
L-BATH	126	2956	16	50	1
L-HALL	190	3076	2	52	0

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

LOWER	d	1923	88068	28204	1500	1500
Other equip loads			0	5120		
Equip. @ 1.00 RSM				33156		
Latent cooling				749		
TOTALS		1923	88068	33905	1500	1500

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



Project Information

For: Kingsbury  
8549 E Spring Park, Eden, UT 84310

Design Information

	Htg	Clg	Method	Infiltration
Outside db (°F)	-6	95	Method	Simplified
Inside db (°F)	72	73	Construction quality	Semi-tight
Design TD (°F)	78	22	Fireplaces	
Daily range	-	H		
Inside humidity (%)	30	35		
Moisture difference (gr/lb)	37	-3		

HEATING EQUIPMENT

Make ICP Commercial, International Comfort Products  
Trade ICP COMMERCIAL  
Model N9MSE0801716A  
AHRI ref 201702424

Efficiency 96 AFUE  
Heating input 80000 Btuh  
Heating output 78000 Btuh  
Temperature rise 56 °F  
Actual air flow 1500 cfm  
Air flow factor 0.029 cfm/Btuh  
Static pressure 0.60 in H2O  
Space thermostat

COOLING EQUIPMENT

Make Day & Night  
Trade CONSTANT COMFORT SX 2600 R410A...  
Cond NXA648GKA10  
Coil END4X48L21A1++TDR  
AHRI ref 9279669

Efficiency 12.0 EER, 14 SEER  
Sensible cooling 36000 Btuh  
Latent cooling 9000 Btuh  
Total cooling 45000 Btuh  
Actual air flow 1500 cfm  
Air flow factor 0.069 cfm/Btuh  
Static pressure 0.60 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-LAUND/HALL	572	13407	5177	384	356
M-BATH	107	8937	2667	256	183
M-PWD	56	3154	742	90	51
M-BED3	252	4927	1328	141	91
M-BED2	288	7772	5036	223	346
M-BED1	330	11470	6120	328	420
M-BATH2	92	2706	766	78	53

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

MAIN	d	1698	52373	21835	1500	1500
Other equip loads			0	0		
Equip. @ 1.00 RSM				21726		
Latent cooling				0		
TOTALS		1698	52373	21726	1500	1500

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



Project Information

For: Kingsbury  
8549 E Spring Park, Eden, UT 84310

Design Information

	Htg	Clg	Method	Infiltration
Outside db (°F)	-6	95	Method	Simplified
Inside db (°F)	72	73	Construction quality	Semi-tight
Design TD (°F)	78	22	Fireplaces	
Daily range	-	H		
Inside humidity (%)	30	35		
Moisture difference (gr/lb)	37	-3		

HEATING EQUIPMENT

Make ICP Commercial, International Comfort Products  
Trade ICP COMMERCIAL  
Model N9MSE0801716A  
AHRI ref 201702424

Efficiency 96 AFUE  
Heating input 80000 Btuh  
Heating output 78000 Btuh  
Temperature rise 56 °F  
Actual air flow 1500 cfm  
Air flow factor 0.027 cfm/Btuh  
Static pressure 0.60 in H2O  
Space thermostat

COOLING EQUIPMENT

Make Day & Night  
Trade CONSTANT COMFORT SX 2600 R410A...  
Cond NXA648GKA10  
Coil ENH4X48L21A1++TDR  
AHRI ref 9279675

Efficiency 12.0 EER, 14 SEER  
Sensible cooling 36000 Btuh  
Latent cooling 9000 Btuh  
Total cooling 45000 Btuh  
Actual air flow 1500 cfm  
Air flow factor 0.047 cfm/Btuh  
Static pressure 0.60 in H2O  
Load sensible heat ratio 0.99

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
U-KITCHEN	568	21670	10329	590	489
U-LIVING	633	27954	19931	761	943
U-PWD	47	5505	1455	150	69
UPPER	1249	55129	31715	1500	1500
Other equip loads		0	0		
Equip. @ 1.00 RSM			31557		
Latent cooling			283		
TOTALS	1249	55129	31839	1500	1500

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



**Project Information**

For: Kingsbury  
8549 E Spring Park, Eden, UT 84310

**Design Conditions**

**Location:**

Logan Cache, UT, US  
Elevation: 4455 ft  
Latitude: 42°N

**Outdoor:**

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

**Heating**

-6  
-  
-  
15.0

**Cooling**

95  
36 ( H )  
62  
7.5

**Indoor:**

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

**Heating**

72  
78  
30  
37.4

**Cooling**

73  
22  
35  
-2.9

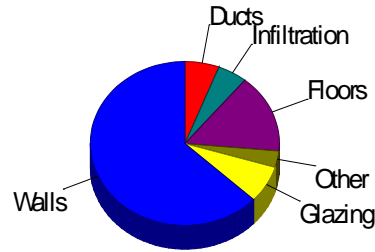
**Infiltration:**

Method  
Construction quality  
Fireplaces

Simplified  
Semi-tight  
0

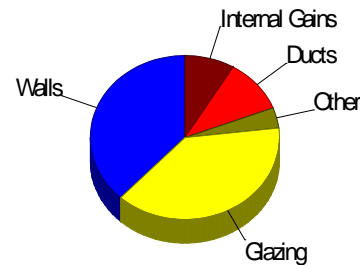
**Heating**

Component	Btuh/ft²	Btuh	% of load
Walls	36.2	123187	63.0
Glazing	12.5	14297	7.3
Doors	26.5	2781	1.4
Ceilings	1.7	3518	1.8
Floors	14.8	30377	15.5
Infiltration	2.5	9897	5.1
Ducts		11512	5.9
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	0
<b>Total</b>		<b>195570</b>	<b>100.0</b>



**Cooling**

Component	Btuh/ft²	Btuh	% of load
Walls	9.0	30648	38.1
Glazing	27.1	31128	38.7
Doors	8.4	887	1.1
Ceilings	0.4	919	1.1
Floors	0	0	0
Infiltration	0.4	1438	1.8
Ducts		8498	10.6
Ventilation		0	0
Internal gains		6880	8.6
Blower		0	0
Adjustments		0	0
<b>Total</b>		<b>80398</b>	<b>100.0</b>



Latent Cooling Load = 995 Btuh  
Overall U-value = 0.299 Btuh/ft²-°F

Data entries checked.



**Project Information**

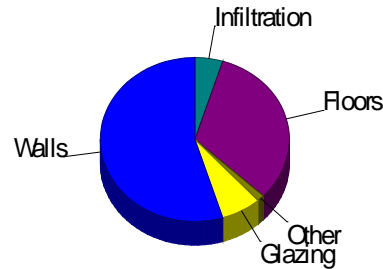
For: Kingsbury  
 8549 E Spring Park, Eden, UT 84310

**Design Conditions**

<b>Location:</b>		<b>Indoor:</b>		<b>Heating</b>	<b>Cooling</b>
Logan Cache, UT, US		Indoor temperature (°F)		72	73
Elevation: 4455 ft		Design TD (°F)		78	22
Latitude: 42°N		Relative humidity (%)		30	35
<b>Outdoor:</b>		Moisture difference (gr/lb)		37.4	-2.9
<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>			
Drybulb (°F)	-6	Method		Simplified	
Daily range (°F)	-	Construction quality		Semi-tight	
Wet bulb (°F)	-	Fireplaces		0	
Wind speed (mph)	15.0				

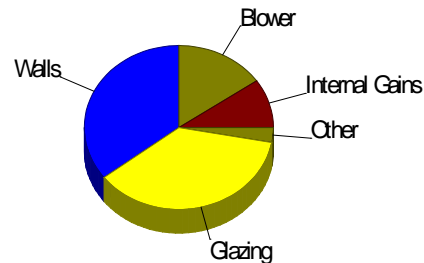
**Heating**

Component	Btuh/ft²	Btuh	% of load
Walls	30.4	48256	54.8
Glazing	12.5	6034	6.9
Doors	26.5	1112	1.3
Ceilings	1.7	1	0.0
Floors	14.8	28462	32.3
Infiltration	2.5	4203	4.8
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	0
<b>Total</b>		<b>88068</b>	<b>100.0</b>



**Cooling**

Component	Btuh/ft²	Btuh	% of load
Walls	7.4	11812	35.4
Glazing	25.2	12206	36.6
Doors	8.4	355	1.1
Ceilings	0.4	0	0.0
Floors	0	0	0
Infiltration	0.4	610	1.8
Ducts		0	0
Ventilation		0	0
Internal gains		3220	9.7
Blower		5120	15.4
Adjustments		0	0
<b>Total</b>		<b>33323</b>	<b>100.0</b>



Latent Cooling Load = 749 Btuh  
 Overall U-value = 0.356 Btuh/ft²-°F

WARNING: window to floor area ratio = 25.2% - more than 25%.

**Project Information**

For: Kingsbury  
 8549 E Spring Park, Eden, UT 84310

**Design Conditions**

**Location:**

Logan Cache, UT, US  
 Elevation: 4455 ft  
 Latitude: 42°N

**Outdoor:**

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

**Heating**

-6  
 -  
 -  
 15.0

**Cooling**

95  
 36 ( H )  
 62  
 7.5

**Indoor:**

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

**Heating**

72  
 78  
 30  
 37.4

**Cooling**

73  
 22  
 35  
 -2.9

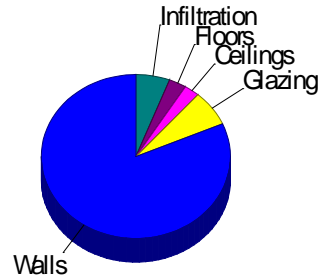
**Infiltration:**

Method  
 Construction quality  
 Fireplaces

Simplified  
 Semi-tight  
 0

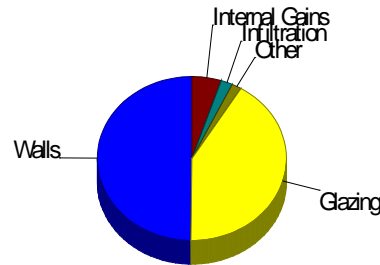
**Heating**

Component	Btuh/ft²	Btuh	% of load
Walls	47.5	42702	81.5
Glazing	12.5	3691	7.0
Doors	0	0	0
Ceilings	1.7	1376	2.6
Floors	14.8	1565	3.0
Infiltration	2.5	3038	5.8
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	0
<b>Total</b>		<b>52373</b>	<b>100.0</b>



**Cooling**

Component	Btuh/ft²	Btuh	% of load
Walls	12.1	10881	49.8
Glazing	30.6	9053	41.5
Doors	0	0	0
Ceilings	0.4	360	1.6
Floors	0	0	0
Infiltration	0.4	441	2.0
Ducts		0	0
Ventilation		0	0
Internal gains		1100	5.0
Blower		0	0
Adjustments		0	0
<b>Total</b>		<b>21835</b>	<b>100.0</b>



Latent Cooling Load = 0 Btuh  
 Overall U-value = 0.311 Btuh/ft²-°F

Data entries checked.

**Project Information**

For: Kingsbury  
 8549 E Spring Park, Eden, UT 84310

**Design Conditions**

**Location:**

Logan Cache, UT, US  
 Elevation: 4455 ft  
 Latitude: 42°N

**Outdoor:**

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

**Heating**

-6  
 -  
 -  
 15.0

**Cooling**

95  
 36 ( H )  
 62  
 7.5

**Indoor:**

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

**Heating**

72  
 78  
 30  
 37.4

**Cooling**

73  
 22  
 35  
 -2.9

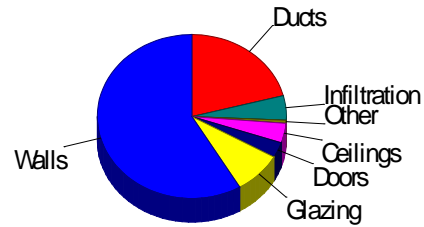
**Infiltration:**

Method  
 Construction quality  
 Fireplaces

Simplified  
 Semi-tight  
 0

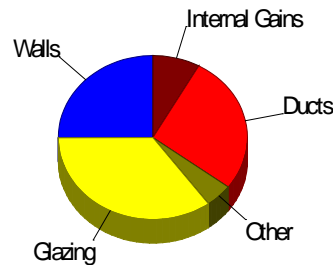
**Heating**

Component	Btuh/ft²	Btuh	% of load
Walls	35.0	32229	58.5
Glazing	12.5	4572	8.3
Doors	26.5	1669	3.0
Ceilings	1.7	2140	3.9
Floors	14.8	350	0.6
Infiltration	2.5	2656	4.8
Ducts		11512	20.9
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	0
<b>Total</b>		<b>55129</b>	<b>100.0</b>



**Cooling**

Component	Btuh/ft²	Btuh	% of load
Walls	8.6	7956	25.1
Glazing	30.2	11081	34.9
Doors	8.4	532	1.7
Ceilings	0.4	559	1.8
Floors	0	0	0
Infiltration	0.4	386	1.2
Ducts		8641	27.2
Ventilation		0	0
Internal gains		2560	8.1
Blower		0	0
Adjustments		0	0
<b>Total</b>		<b>31715</b>	<b>100.0</b>



Latent Cooling Load = 283 Btuh  
 Overall U-value = 0.202 Btuh/ft²-°F

WARNING: window to floor area ratio = 29.4% - more than 25%.

**Project Information**

For: Kingsbury  
8549 E Spring Park, Eden, UT 84310

**Design Conditions**

<b>Location:</b> Logan Cache, UT, US Elevation: 4455 ft Latitude: 42°N			<b>Indoor:</b> Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)	<b>Heating</b> 72 78 30 37.4	<b>Cooling</b> 73 22 35 -2.9
<b>Outdoor:</b> Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	<b>Heating</b> -6 - - 15.0	<b>Cooling</b> 95 36 ( 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>								
15B19-0wc-8: Bg wall, light dry soil, 2"x6" wood int frm, concrete wall, r-19 cav ins, 10" thk, 1/2" gypsum board int fnsh	n	450	0.040	19.0	3.51	1579	0.11	48
	e	169	0.040	19.0	4.20	708	0.30	50
	all	619	0.040	19.0	3.70	2287	0.16	98
Frm wall, splt log ext, split logs int fnsh, 2"x6" wood frm, 16" o.c. stud, r-7 int bd ins	n	473	0.610	7.0	47.5	22453	12.1	5721
	ne	17	0.610	7.0	47.5	814	12.1	207
	e	530	0.610	7.0	47.5	25173	12.1	6414
	s	772	0.610	7.0	47.5	36674	12.1	9345
	w	711	0.610	7.0	47.5	33765	12.1	8604
	all	2502	0.610	7.0	47.5	119k	12.1	30292
<b>Partitions</b>								
12C-0sw: Frm wall, stucco ext, r-13 cav ins, 2"x4" wood frm, 16" o.c. stud		285	0.091	13.0	7.09	2020	0.91	258
<b>Windows</b>								
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk:	e	179	0.160	0	12.5	2231	36.3	6502
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk;	s	592	0.160	0	12.5	7377	18.5	10959
6.67 ft head ht	w	279	0.160	0	12.5	3483	36.3	10149
	w	75	0.160	0	12.5	931	36.3	2712
	w	22	0.160	0	12.5	276	36.3	805
	all	1147	0.160	0	12.5	14297	27.1	31128
<b>Doors</b>								
Door, wd sc type	n	63	0.340	0	26.5	1669	8.45	532
	s	21	0.340	0	26.5	556	8.45	177
	n	21	0.340	0	26.5	556	8.45	177
	all	105	0.340	0	26.5	2781	8.45	887
<b>Ceilings</b>								
Rf/clg ceiling, asphalt shingles roof mat, frm cons, 1/2" gypsum board int fnsh, 6" thkns, r-49 ceil ins		2052	0.022	49.0	1.71	3518	0.45	919

**Floors**

Bg floor, light dry soil, on grade depth, r-9 edge ins, carpet flr fnsh

	1923	0.380	9.0	14.8	28462	0	0
	106	0.380	9.0	14.8	1565	0	0
	24	0.380	9.0	14.8	350	0	0
all	2052	0.380	9.0	14.8	30377	0	0



**Project Information**

For: Kingsbury  
 8549 E Spring Park, Eden, UT 84310

**Design Conditions**

<b>Location:</b> Logan Cache, UT, US Elevation: 4455 ft Latitude: 42°N			<b>Indoor:</b> Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)	<b>Heating</b> 72 78 30 37.4	<b>Cooling</b> 73 22 35 -2.9
<b>Outdoor:</b> Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	<b>Heating</b> -6 - - 15.0	<b>Cooling</b> 95 36 ( 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
15B19-0wc-8: Bg wall, light dry soil, 2"x6" wood int frm, concrete wall, r-19 cav ins, 10" thk, 1/2" gypsum board int fnsh	n	450	0.040	19.0	3.51	1579	0.11	48
	e	169	0.040	19.0	4.20	708	0.30	50
	all	619	0.040	19.0	3.70	2287	0.16	98
Frm wall, splt log ext, split logs int fnsh, 2"x6" wood frm, 16" o.c. stud, r-7 int bd ins	n	26	0.610	7.0	47.5	1247	12.1	318
	e	299	0.610	7.0	47.5	14196	12.1	3617
	s	406	0.610	7.0	47.5	19282	12.1	4913
	w	237	0.610	7.0	47.5	11243	12.1	2865
	all	967	0.610	7.0	47.5	45969	12.1	11713

**Partitions**

(none)

**Windows**

2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk;	e	77	0.160	0	12.5	960	36.3	2797
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk;	s	302	0.160	0	12.5	3764	18.5	5592
6.67 ft head ht	w	83	0.160	0	12.5	1033	36.3	3012
	w	22	0.160	0	12.5	276	36.3	805
	all	484	0.160	0	12.5	6034	25.2	12206

**Doors**

Door, wd sc type	n	21	0.340	0	26.5	556	8.45	177
	s	21	0.340	0	26.5	556	8.45	177
	all	42	0.340	0	26.5	1112	8.45	355

**Ceilings**

Rf/clg ceiling, asphalt shingles roof mat, frm cons, 1/2" gypsum board int fnsh, 6" thkns, r-49 ceil ins		1	0.022	49.0	1.71	1	0.45	0
---	--	---	-------	------	------	---	------	---

**Floors**

Bg floor, light dry soil, on grade depth, r-9 edge ins, carpet flr fnsh		1923	0.380	9.0	14.8	28462	0	0
---	--	------	-------	-----	------	-------	---	---

## Project Information

For: Kingsbury  
 8549 E Spring Park, Eden, UT 84310

## Design Conditions

<b>Location:</b>			<b>Indoor:</b>	<b>Heating</b>	<b>Cooling</b>
Logan Cache, UT, US			Indoor temperature (°F)	72	73
Elevation: 4455 ft			Design TD (°F)	78	22
Latitude: 42°N			Relative humidity (%)	30	35
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	Moisture difference (gr/lb)	37.4	-2.9
Dry bulb (°F)	-6	95	<b>Infiltration:</b>		
Daily range (°F)	-	36 ( H )	Method	Simplified	
Wet bulb (°F)	-	62	Construction quality	Semi-tight	
Wind speed (mph)	15.0	7.5	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>								
Frm wall, splt log ext, split logs int fnsh, 2"x6" wood frm, 16" o.c. stud,	n	44	0.610	7.0	47.5	2067	12.1	527
r-7 int bd ins	e	191	0.610	7.0	47.5	9052	12.1	2307
	s	146	0.610	7.0	47.5	6950	12.1	1771
	w	255	0.610	7.0	47.5	12139	12.1	3093
	all	636	0.610	7.0	47.5	30209	12.1	7698
<b>Partitions</b>								
12C-0sw: Frm wall, stucco ext, r-13 cav ins, 2"x4" wood frm, 16" o.c. stud		285	0.091	13.0	7.09	2020	0.91	258
<b>Windows</b>								
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk:	e	102	0.160	0	12.5	1271	36.3	3705
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk;	s	126	0.160	0	12.5	1570	18.5	2333
6.67 ft head ht	w	64	0.160	0	12.5	800	36.3	2331
	w	75	0.160	0	12.5	931	36.3	2712
	all	367	0.160	0	12.5	4572	30.2	11081
<b>Doors</b>								
Door, wd sc type	n	42	0.340	0	26.5	1112	8.45	355
	n	21	0.340	0	26.5	556	8.45	177
	all	63	0.340	0	26.5	1669	8.45	532
<b>Ceilings</b>								
Rf/clg ceiling, asphalt shingles roof mat, frm cons, 1/2" gypsum board int fnsh, 6" thkns, r-49 ceil ins		1249	0.022	49.0	1.71	2140	0.45	559
<b>Floors</b>								
Bg floor, light dry soil, on grade depth, r-9 edge ins, carpet flr fnsh		24	0.380	9.0	14.8	350	0	0

Project Information

For: Kingsbury  
8549 E Spring Park, Eden, UT 84310

Design Conditions

<b>Location:</b> Logan Cache, UT, US Elevation: 4455 ft Latitude: 42°N			<b>Indoor:</b> Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)	<b>Heating</b> 72 78 30 37.4	<b>Cooling</b> 73 22 35 -2.9
<b>Outdoor:</b> Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	<b>Heating</b> -6 - - 15.0	<b>Cooling</b> 95 36 ( 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
Frm wall, splt log ext, split logs int fnsh, 2"x6" wood frm, 16" o.c. stud, r-7 int bd ins	n	403	0.610	7.0	47.5	19138	12.1	4877
	ne	17	0.610	7.0	47.5	814	12.1	207
	e	41	0.610	7.0	47.5	1925	12.1	490
	s	220	0.610	7.0	47.5	10441	12.1	2661
	w	219	0.610	7.0	47.5	10383	12.1	2646
	all	899	0.610	7.0	47.5	42702	12.1	10881

Partitions

(none)

Windows

2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk:	s	164	0.160	0	12.5	2042	18.5	3034
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk;	w	132	0.160	0	12.5	1649	36.3	4807
6.67 ft head ht	all	296	0.160	0	12.5	3691	26.5	7841

Doors

(none)

Ceilings

Rf/clg ceiling, asphalt shingles roof mat, frm cons, 1/2" gypsum board int fnsh, 6" thkns, r-49 ceil ins		803	0.022	49.0	1.71	1376	0.45	360
--	--	-----	-------	------	------	------	------	-----

Floors

Bg floor, light dry soil, on grade depth, r-9 edge ins, carpet flr fnsh		106	0.380	9.0	14.8	1565	0	0
---	--	-----	-------	-----	------	------	---	---



**Project Information**

For: Kingsbury  
 8549 E Spring Park, Eden, UT 84310

**Design Conditions**

<b>Location:</b> Logan Cache, UT, US Elevation: 4455 ft Latitude: 42°N			<b>Indoor:</b> Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)	<b>Heating</b> 72 78 30 37.4	<b>Cooling</b> 73 22 35 -2.9
<b>Outdoor:</b> Drybulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	<b>Heating</b> -6 - - 15.0	<b>Cooling</b> 95 36 ( 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>								
Frm wall, splt log ext, split logs int fnsh, 2"x6" wood frm, 16" o.c. stud, r-7 int bd ins	n	44	0.610	7.0	47.5	2067	12.1	527
	e	84	0.610	7.0	47.5	3992	12.1	1017
	s	36	0.610	7.0	47.5	1711	12.1	436
	w	55	0.610	7.0	47.5	2625	12.1	669
	all	219	0.610	7.0	47.5	10394	12.1	2649
<b>Partitions</b>								
12C-0sw: Frm wall, stucco ext, r-13 cav ins, 2"x4" wood frm, 16" o.c. stud		285	0.091	13.0	7.09	2020	0.91	258
<b>Windows</b>								
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk:	e	60	0.160	0	12.5	748	36.3	2179
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk;	w	12	0.160	0	12.5	145	36.3	424
6.67 ft head ht	all	72	0.160	0	12.5	893	36.3	2603
<b>Doors</b>								
Door, wd sc type	n	42	0.340	0	26.5	1112	8.45	355
	n	21	0.340	0	26.5	556	8.45	177
	all	63	0.340	0	26.5	1669	8.45	532
<b>Ceilings</b>								
Rf/clg ceiling, asphalt shingles roof mat, frm cons, 1/2" gypsum board int fnsh, 6" thkns, r-49 ceil ins		568	0.022	49.0	1.71	973	0.45	254
<b>Floors</b>								
Bg floor, light dry soil, on grade depth, r-9 edge ins, carpet flr fnsh		24	0.380	9.0	14.8	350	0	0

**Project Information**

For: Kingsbury  
 8549 E Spring Park, Eden, UT 84310

**Design Conditions**

<b>Location:</b>			<b>Indoor:</b>	<b>Heating</b>	<b>Cooling</b>
Logan Cache, UT, US			Indoor temperature (°F)	72	73
Elevation: 4455 ft			Design TD (°F)	78	22
Latitude: 42°N			Relative humidity (%)	30	35
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	Moisture difference (gr/lb)	37.4	-2.9
Dry bulb (°F)	-6	95	<b>Infiltration:</b>		
Daily range (°F)	-	36 ( H )	Method	Simplified	
Wet bulb (°F)	-	62	Construction quality	Semi-tight	
Wind speed (mph)	15.0	7.5	Fireplaces	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>								
Frm wall, splt log ext, split logs int fnsh, 2"x6" wood frm, 16" o.c. stud,	e	107	0.610	7.0	47.5	5061	12.1	1290
r-7 int bd ins	s	110	0.610	7.0	47.5	5239	12.1	1335
	w	115	0.610	7.0	47.5	5458	12.1	1391
	all	332	0.610	7.0	47.5	15758	12.1	4015
<b>Partitions</b>								
(none)								
<b>Windows</b>								
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk:	e	42	0.160	0	12.5	523	36.3	1526
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk;	s	126	0.160	0	12.5	1570	18.5	2333
6.67 ft head ht	w	53	0.160	0	12.5	654	36.3	1907
	w	75	0.160	0	12.5	931	36.3	2712
	all	295	0.160	0	12.5	3679	28.7	8478
<b>Doors</b>								
(none)								
<b>Ceilings</b>								
Rf/clg ceiling, asphalt shingles roof mat, frm cons, 1/2" gypsum board		633	0.022	49.0	1.71	1086	0.45	284
int fnsh, 6" thkns, r-49 ceil ins								
<b>Floors</b>								
(none)								

**Project Information**

For: Kingsbury  
8549 E Spring Park, Eden, UT 84310

**Design Conditions**

<b>Location:</b>		<b>Indoor:</b>		<b>Heating</b>	<b>Cooling</b>
Logan Cache, UT, US		Indoor temperature (°F)		72	73
Elevation: 4455 ft		Design TD (°F)		78	22
Latitude: 42°N		Relative humidity (%)		30	35
<b>Outdoor:</b>		Moisture difference (gr/lb)		37.4	-2.9
<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>			
Dry bulb (°F)	-6	Method		Simplified	
Daily range (°F)	-	Construction quality		Semi-tight	
Wet bulb (°F)	-	Fireplaces		0	
Wind speed (mph)	15.0				

**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> Frm wall, spl't log ext, split logs int fnsh, 2"x6" wood frm, 16" o.c. stud, r-7 int bd ins	w	85	0.610	7.0	47.5	4057	12.1	1034
<b>Partitions</b> (none)								
<b>Windows</b> (none)								
<b>Doors</b> (none)								
<b>Ceilings</b> Rf/clg ceiling, asphalt shingles roof mat, frm cons, 1/2" gypsum board int fnsh, 6" thkns, r-49 ceil ins		47	0.022	49.0	1.71	81	0.45	21
<b>Floors</b> (none)								

**Project Information**

For: Kingsbury  
 8549 E Spring Park, Eden, UT 84310

**Design Conditions**

<b>Location:</b> Logan Cache, UT, US Elevation: 4455 ft Latitude: 42°N			<b>Indoor:</b> Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)	<b>Heating</b> 72 78 30 37.4	<b>Cooling</b> 73 22 35 -2.9
<b>Outdoor:</b> Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	<b>Heating</b> -6 - - 15.0	<b>Cooling</b> 95 36 ( 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>								
Frm wall, splt log ext, split logs int fnsh, 2"x6" wood frm, 16" o.c. stud, r-7 int bd ins	n	119	0.610	7.0	47.5	5667	12.1	1444
	w	56	0.610	7.0	47.5	2640	12.1	673
	all	175	0.610	7.0	47.5	8307	12.1	2117
<b>Partitions</b> (none)								
<b>Windows</b>								
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk: w		11	0.160	0	12.5	141	36.3	412
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk; 6.67 ft head ht								
<b>Doors</b> (none)								
<b>Ceilings</b>								
Rf/clg ceiling, asphalt shingles roof mat, frm cons, 1/2" gypsum board int fnsh, 6" thkns, r-49 ceil ins		9	0.022	49.0	1.71	15	0.45	4
<b>Floors</b> (none)								

**Project Information**

For: Kingsbury  
 8549 E Spring Park, Eden, UT 84310

**Design Conditions**

<b>Location:</b>			<b>Indoor:</b>	<b>Heating</b>	<b>Cooling</b>
Logan Cache, UT, US			Indoor temperature (°F)	72	73
Elevation: 4455 ft			Design TD (°F)	78	22
Latitude: 42°N			Relative humidity (%)	30	35
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	Moisture difference (gr/lb)	37.4	-2.9
Dry bulb (°F)	-6	95	<b>Infiltration:</b>		
Daily range (°F)	-	36 ( H )	Method	Simplified	
Wet bulb (°F)	-	62	Construction quality	Semi-tight	
Wind speed (mph)	15.0	7.5	Fireplaces	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>								
Frm wall, splt log ext, split logs int fnsh, 2"x6" wood frm, 16" o.c. stud, r-7 int bd ins	n	106	0.610	7.0	47.5	5025	12.1	1280
	ne	17	0.610	7.0	47.5	814	12.1	207
	s	105	0.610	7.0	47.5	5001	12.1	1274
	all	228	0.610	7.0	47.5	10840	12.1	2762
<b>Partitions</b> (none)								
<b>Windows</b>								
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk; 2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk; 6.67 ft head ht	s	86	0.160	0	12.5	1066	18.5	1583
<b>Doors</b> (none)								
<b>Ceilings</b>								
Rf/clg ceiling, asphalt shingles roof mat, frm cons, 1/2" gypsum board int fnsh, 6" thkns, r-49 ceil ins		140	0.022	49.0	1.71	241	0.45	63
<b>Floors</b>								
Bg floor, light dry soil, on grade depth, r-9 edge ins, carpet flr fnsh		31	0.380	9.0	14.8	463	0	0

Project Information

For: Kingsbury  
8549 E Spring Park, Eden, UT 84310

Design Conditions

<b>Location:</b>		<b>Indoor:</b>		<b>Heating</b>	<b>Cooling</b>
Logan Cache, UT, US		Indoor temperature (°F)		72	73
Elevation: 4455 ft		Design TD (°F)		78	22
Latitude: 42°N		Relative humidity (%)		30	35
<b>Outdoor:</b>		Moisture difference (gr/lb)		37.4	-2.9
<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>			
Dry bulb (°F)	-6	Method		Simplified	
Daily range (°F)	-	Construction quality		Semi-tight	
Wet bulb (°F)	-	Fireplaces		0	
Wind speed (mph)	15.0				

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> Frm wall, splt log ext, split logs int fnsh, 2"x6" wood frm, 16" o.c. stud, r-7 int bd ins	n	63	0.610	7.0	47.5	2994	12.1	763
<b>Partitions</b> (none)								
<b>Windows</b> (none)								
<b>Doors</b> (none)								
<b>Ceilings</b> (none)								
<b>Floors</b> (none)								

Project Information

For: Kingsbury  
8549 E Spring Park, Eden, UT 84310

Design Conditions

<b>Location:</b>		<b>Indoor:</b>		<b>Heating</b>	<b>Cooling</b>
Logan Cache, UT, US		Indoor temperature (°F)		72	73
Elevation: 4455 ft		Design TD (°F)		78	22
Latitude: 42°N		Relative humidity (%)		30	35
<b>Outdoor:</b>		Moisture difference (gr/lb)		37.4	-2.9
<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>			
Dry bulb (°F)	-6	Method		Simplified	
Daily range (°F)	-	Construction quality		Semi-tight	
Wet bulb (°F)	-	Fireplaces		0	
Wind speed (mph)	15.0				
		36 ( H )			
		62			
		7.5			

Construction descriptions

Walls

Frm wall, splnt log ext, split logs int fnsh, 2"x6" wood frm, 16" o.c. stud, r-7 int bd ins

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	56	0.610	7.0	47.5	2673	12.1	681
e	41	0.610	7.0	47.5	1925	12.1	490
all	97	0.610	7.0	47.5	4597	12.1	1171

Partitions  
(none)

Windows  
(none)

Doors  
(none)

Ceilings  
(none)

Floors

Bg floor, light dry soil, on grade depth, r-9 edge ins, carpet flr fnsh

6	0.380	9.0	14.8	83	0	0
---	-------	-----	------	----	---	---

**Project Information**

For: Kingsbury  
 8549 E Spring Park, Eden, UT 84310

**Design Conditions**

<b>Location:</b>		<b>Indoor:</b>		<b>Heating</b>	<b>Cooling</b>
Logan Cache, UT, US		Indoor temperature (°F)		72	73
Elevation: 4455 ft		Design TD (°F)		78	22
Latitude: 42°N		Relative humidity (%)		30	35
<b>Outdoor:</b>		Moisture difference (gr/lb)		37.4	-2.9
<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>			
Drybulb (°F)	-6	Method		Simplified	
Daily range (°F)	-	Construction quality		Semi-tight	
Wet bulb (°F)	-	Fireplaces		0	
Wind speed (mph)	15.0				

**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>								
Frm wall, splt log ext, split logs int fnsh, 2"x6" wood frm, 16" o.c. stud,	n	59	0.610	7.0	47.5	2780	12.1	708
r-7 int bd ins	w	70	0.610	7.0	47.5	3347	12.1	853
	all	129	0.610	7.0	47.5	6126	12.1	1561
<b>Partitions</b> (none)								
<b>Windows</b>								
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk:	w	61	0.160	0	12.5	754	36.3	2198
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk;								
6.67 ft head ht								
<b>Doors</b> (none)								
<b>Ceilings</b>								
Rf/clg ceiling, asphalt shingles roof mat, frm cons, 1/2" gypsum board		236	0.022	49.0	1.71	404	0.45	106
int fnsh, 6" thkns, r-49 ceil ins								
<b>Floors</b>								
Bg floor, light dry soil, on grade depth, r-9 edge ins, carpet flr fnsh		0	0.380	9.0	14.8	6	0	0



Project Information

For: Kingsbury  
8549 E Spring Park, Eden, UT 84310

Design Conditions

<b>Location:</b>			<b>Indoor:</b>	<b>Heating</b>	<b>Cooling</b>
Logan Cache, UT, US			Indoor temperature (°F)	72	73
Elevation: 4455 ft			Design TD (°F)	78	22
Latitude: 42°N			Relative humidity (%)	30	35
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	Moisture difference (gr/lb)	37.4	-2.9
Drybulb (°F)	-6	95	<b>Infiltration:</b>		
Daily range (°F)	-	36 ( H )	Method	Simplified	
Wet bulb (°F)	-	62	Construction quality	Semi-tight	
Wind speed (mph)	15.0	7.5	Fireplaces	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>								
Frm wall, splt log ext, split logs int fnsh, 2"x6" wood frm, 16" o.c. stud,	s	67	0.610	7.0	47.5	3186	12.1	812
r-7 int bd ins	w	93	0.610	7.0	47.5	4396	12.1	1120
	all	160	0.610	7.0	47.5	7582	12.1	1932
<b>Partitions</b>								
(none)								
<b>Windows</b>								
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk:	s	71	0.160	0	12.5	885	18.5	1315
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk;	w	61	0.160	0	12.5	754	36.3	2198
6.67 ft head ht	all	132	0.160	0	12.5	1639	26.7	3512
<b>Doors</b>								
(none)								
<b>Ceilings</b>								
Rf/clg ceiling, asphalt shingles roof mat, frm cons, 1/2" gypsum board		325	0.022	49.0	1.71	557	0.45	146
int fnsh, 6" thkns, r-49 ceil ins								
<b>Floors</b>								
Bg floor, light dry soil, on grade depth, r-9 edge ins, carpet flr fnsh		64	0.380	9.0	14.8	951	0	0

**Project Information**

For: Kingsbury  
 8549 E Spring Park, Eden, UT 84310

**Design Conditions**

<b>Location:</b>			<b>Indoor:</b>	<b>Heating</b>	<b>Cooling</b>
Logan Cache, UT, US			Indoor temperature (°F)	72	73
Elevation: 4455 ft			Design TD (°F)	78	22
Latitude: 42°N			Relative humidity (%)	30	35
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	Moisture difference (gr/lb)	37.4	-2.9
Dry bulb (°F)	-6	95	<b>Infiltration:</b>		
Daily range (°F)	-	36 ( H )	Method	Simplified	
Wet bulb (°F)	-	62	Construction quality	Semi-tight	
Wind speed (mph)	15.0	7.5	Fireplaces	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> Frm wall, splt log ext, split logs int fnsh, 2"x6" wood frm, 16" o.c. stud, r-7 int bd ins	s	47	0.610	7.0	47.5	2255	12.1	575
<b>Partitions</b> (none)								
<b>Windows</b> 2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk; 2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk; 6.67 ft head ht	s	7	0.160	0	12.5	91	18.5	136
<b>Doors</b> (none)								
<b>Ceilings</b> Rf/clg ceiling, asphalt shingles roof mat, frm cons, 1/2" gypsum board int fnsh, 6" thkns, r-49 ceil ins		92	0.022	49.0	1.71	158	0.45	41
<b>Floors</b> Bg floor, light dry soil, on grade depth, r-9 edge ins, carpet flr fnsh		4	0.380	9.0	14.8	62	0	0

**Project Information**

For: Kingsbury  
 8549 E Spring Park, Eden, UT 84310

**Design Conditions**

<b>Location:</b> Logan Cache, UT, US Elevation: 4455 ft Latitude: 42°N			<b>Indoor:</b> Indoor temperature (°F) 72 Design TD (°F) 78 Relative humidity (%) 30 Moisture difference (gr/lb) 37.4	<b>Heating</b> 72 78 30 37.4	<b>Cooling</b> 73 22 35 -2.9
<b>Outdoor:</b> Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	<b>Heating</b> -6 - - 15.0	<b>Cooling</b> 95 36 ( 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>								
15B19-0wc-8: Bg wall, light dry soil, 2"x6" wood int frm, concrete wall, r-19 cav ins, 10" thk, 1/2" gypsum board int fnsh	n	178	0.040	19.0	3.37	598	0.07	12
Frm wall, split log ext, split logs int fnsh, 2"x6" wood frm, 16" o.c. stud, r-7 int bd ins	w	127	0.610	7.0	47.5	6052	12.1	1542
<b>Partitions</b> (none)								
<b>Windows</b>								
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk:	w	51	0.160	0	12.5	639	36.3	1862
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk; 6.67 ft head ht								
<b>Doors</b> (none)								
<b>Ceilings</b> (none)								
<b>Floors</b>								
Bg floor, light dry soil, on grade depth, r-9 edge ins, carpet flr fnsh		385	0.380	9.0	14.8	5691	0	0

**Project Information**

For: Kingsbury  
 8549 E Spring Park, Eden, UT 84310

**Design Conditions**

<b>Location:</b>			<b>Indoor:</b>	<b>Heating</b>	<b>Cooling</b>
Logan Cache, UT, US			Indoor temperature (°F)	72	73
Elevation: 4455 ft			Design TD (°F)	78	22
Latitude: 42°N			Relative humidity (%)	30	35
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	Moisture difference (gr/lb)	37.4	-2.9
Dry bulb (°F)	-6	95	<b>Infiltration:</b>		
Daily range (°F)	-	36 ( H )	Method	Simplified	
Wet bulb (°F)	-	62	Construction quality	Semi-tight	
Wind speed (mph)	15.0	7.5	Fireplaces	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> Frm wall, splt log ext, split logs int fnsh, 2"x6" wood frm, 16" o.c. stud, r-7 int bd ins	w	36	0.610	7.0	47.5	1706	12.1	435
<b>Partitions</b> (none)								
<b>Windows</b> 2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk; 2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk; 6.67 ft head ht	w	20	0.160	0	12.5	245	36.3	714
<b>Doors</b> (none)								
<b>Ceilings</b> Rf/clg ceiling, asphalt shingles roof mat, frm cons, 1/2" gypsum board int fnsh, 6" thkns, r-49 ceil ins		0	0.022	49.0	1.71	1	0.45	0
<b>Floors</b> Bg floor, light dry soil, on grade depth, r-9 edge ins, carpet flr fnsh		139	0.380	9.0	14.8	2055	0	0

Project Information

For: Kingsbury  
8549 E Spring Park, Eden, UT 84310

Design Conditions

<b>Location:</b>		<b>Indoor:</b>		<b>Heating</b>	<b>Cooling</b>
Logan Cache, UT, US		Indoor temperature (°F)		72	73
Elevation: 4455 ft		Design TD (°F)		78	22
Latitude: 42°N		Relative humidity (%)		30	35
<b>Outdoor:</b>		Moisture difference (gr/lb)		37.4	-2.9
	<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>		
Drybulb (°F)	-6	95	Method	Simplified	
Daily range (°F)	-	36 ( H )	Construction quality	Semi-tight	
Wet bulb (°F)	-	62	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>								
Frm wall, splt log ext, split logs int fnsh, 2"x6" wood frm, 16" o.c. stud,	s	112	0.610	7.0	47.5	5344	12.1	1362
r-7 int bd ins	w	59	0.610	7.0	47.5	2811	12.1	716
	all	172	0.610	7.0	47.5	8155	12.1	2078
<b>Partitions</b>								
(none)								
<b>Windows</b>								
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk:	w	12	0.160	0	12.5	150	36.3	436
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk;								
6.67 ft head ht								
<b>Doors</b>								
(none)								
<b>Ceilings</b>								
Rf/clg ceiling, asphalt shingles roof mat, frm cons, 1/2" gypsum board		0	0.022	49.0	1.71	1	0.45	0
int fnsh, 6" thkns, r-49 ceil ins								
<b>Floors</b>								
Bg floor, light dry soil, on grade depth, r-9 edge ins, carpet flr fnsh		100	0.380	9.0	14.8	1483	0	0

Project Information

For: Kingsbury  
8549 E Spring Park, Eden, UT 84310

Design Conditions

<b>Location:</b> Logan Cache, UT, US Elevation: 4455 ft Latitude: 42°N			<b>Indoor:</b> Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)	<b>Heating</b> 72 78 30 37.4	<b>Cooling</b> 73 22 35 -2.9
<b>Outdoor:</b> Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	<b>Heating</b> -6 - - 15.0	<b>Cooling</b> 95 36 ( 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>								
Frm wall, splt log ext, split logs int fnsh, 2"x6" wood frm, 16" o.c. stud, r-7 int bd ins	e	61	0.610	7.0	47.5	2887	12.1	736
	s	206	0.610	7.0	47.5	9805	12.1	2499
	w	14	0.610	7.0	47.5	674	12.1	172
	all	281	0.610	7.0	47.5	13366	12.1	3406
<b>Partitions</b> (none)								
<b>Windows</b>								
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk;	s	213	0.160	0	12.5	2649	18.5	3935
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk;	w	22	0.160	0	12.5	276	36.3	805
6.67 ft head ht	all	235	0.160	0	12.5	2925	20.2	4740
<b>Doors</b>								
Door, wd sc type	s	21	0.340	0	26.5	556	8.45	177
<b>Ceilings</b> (none)								
<b>Floors</b>								
Bg floor, light dry soil, on grade depth, r-9 edge ins, carpet flr fnsh		550	0.380	9.0	14.8	8137	0	0

**Project Information**

For: Kingsbury  
 8549 E Spring Park, Eden, UT 84310

**Design Conditions**

<b>Location:</b> Logan Cache, UT, US Elevation: 4455 ft Latitude: 42°N			<b>Indoor:</b> Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)	<b>Heating</b> 72 78 30 37.4	<b>Cooling</b> 73 22 35 -2.9
<b>Outdoor:</b> Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	<b>Heating</b> -6 - - 15.0	<b>Cooling</b> 95 36 ( 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>								
15B19-0wc-8: Bg wall, light dry soil, 2"x6" wood int frm, concrete wall, r-19 cav ins, 10" thk, 1/2" gypsum board int fnsh	n	59	0.040	19.0	4.46	261	0.37	21
	e	128	0.040	19.0	4.46	572	0.37	47
	all	187	0.040	19.0	4.46	833	0.37	69
Frm wall, spl't log ext, split logs int fnsh, 2"x6" wood frm, 16" o.c. stud, r-7 int bd ins	n	26	0.610	7.0	47.5	1247	12.1	318
	e	238	0.610	7.0	47.5	11310	12.1	2882
	s	87	0.610	7.0	47.5	4133	12.1	1053
	all	351	0.610	7.0	47.5	16690	12.1	4253
<b>Partitions</b> (none)								
<b>Windows</b>								
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk:	e	77	0.160	0	12.5	960	36.3	2797
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk;	s	90	0.160	0	12.5	1116	18.5	1657
6.67 ft head ht	all	167	0.160	0	12.5	2075	26.8	4454
<b>Doors</b>								
Door, wd sc type	n	21	0.340	0	26.5	556	8.45	177
<b>Ceilings</b> (none)								
<b>Floors</b>								
Bg floor, light dry soil, on grade depth, r-9 edge ins, carpet flr fnsh		276	0.380	9.0	14.8	4087	0	0

**Project Information**

For: Kingsbury  
 8549 E Spring Park, Eden, UT 84310

**Design Conditions**

<b>Location:</b>		<b>Indoor:</b>		<b>Heating</b>	<b>Cooling</b>
Logan Cache, UT, US		Indoor temperature (°F)		72	73
Elevation: 4455 ft		Design TD (°F)		78	22
Latitude: 42°N		Relative humidity (%)		30	35
		Moisture difference (gr/lb)		37.4	-2.9
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>		
Drybulb (°F)	-6	95	Method	Simplified	
Daily range (°F)	-	36 ( 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
		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> (none)								
<b>Floors</b> Bg floor, light dry soil, on grade depth, r-9 edge ins, carpet flr fnsh		66	0.380	9.0	14.8	977	0	0



Project Information

For: Kingsbury  
8549 E Spring Park, Eden, UT 84310

Design Conditions

<b>Location:</b>		<b>Indoor:</b>		<b>Heating</b>	<b>Cooling</b>
Logan Cache, UT, US		Indoor temperature (°F)		72	73
Elevation: 4455 ft		Design TD (°F)		78	22
Latitude: 42°N		Relative humidity (%)		30	35
<b>Outdoor:</b>		Moisture difference (gr/lb)		37.4	-2.9
<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>			
Drybulb (°F)	-6	Method		Simplified	
Daily range (°F)	-	Construction quality		Semi-tight	
Wet bulb (°F)	-	Fireplaces		0	
Wind speed (mph)	15.0				
		36 ( H )			
		62			
		7.5			

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, light dry soil, 2"x6" wood int frm, concrete wall,	n	108	0.040	19.0	3.37	364	0.07	7
r-19 cav ins, 10" thk, 1/2" gypsum board int fnsh	e	41	0.040	19.0	3.37	136	0.07	3
	all	149	0.040	19.0	3.37	500	0.07	10
<b>Partitions</b>								
(none)								
<b>Windows</b>								
(none)								
<b>Doors</b>								
(none)								
<b>Ceilings</b>								
(none)								
<b>Floors</b>								
Bg floor, light dry soil, on grade depth, r-9 edge ins, carpet flr fnsh		91	0.380	9.0	14.8	1347	0	0

Project Information

For: Kingsbury  
8549 E Spring Park, Eden, UT 84310

Design Conditions

<b>Location:</b>		<b>Indoor:</b>		<b>Heating</b>	<b>Cooling</b>
Logan Cache, UT, US		Indoor temperature (°F)		72	73
Elevation: 4455 ft		Design TD (°F)		78	22
Latitude: 42°N		Relative humidity (%)		30	35
		Moisture difference (gr/lb)		37.4	-2.9
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>		
Dry bulb (°F)	-6	95	Method		
Daily range (°F)	-	36 ( H )	Simplified		
Wet bulb (°F)	-	62	Construction quality		
Wind speed (mph)	15.0	7.5	Semi-tight		
			Fireplaces		
			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-8: Bg wall, light dry soil, 2"x6" wood int frm, concrete wall, r-19 cav ins, 10" thk, 1/2" gypsum board int fnsh	n	106	0.040	19.0	3.37	356	0.07	7
<b>Partitions</b> (none)								
<b>Windows</b> (none)								
<b>Doors</b> (none)								
<b>Ceilings</b> (none)								
<b>Floors</b> Bg floor, light dry soil, on grade depth, r-9 edge ins, carpet flr fnsh		126	0.380	9.0	14.8	1870	0	0

**Project Information**

For: Kingsbury  
 8549 E Spring Park, Eden, UT 84310

**Design Conditions**

<b>Location:</b>			<b>Indoor:</b>	<b>Heating</b>	<b>Cooling</b>
Logan Cache, UT, US			Indoor temperature (°F)	72	73
Elevation: 4455 ft			Design TD (°F)	78	22
Latitude: 42°N			Relative humidity (%)	30	35
			Moisture difference (gr/lb)	37.4	-2.9
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>		
Drybulb (°F)	-6	95	Method	Simplified	
Daily range (°F)	-	36 ( 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
		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> (none)								
<b>Floors</b> Bg floor, light dry soil, on grade depth, r-9 edge ins, carpet flr fnsh		190	0.380	9.0	14.8	2816	0	0

**Project Information**

For: Kingsbury  
8549 E Spring Park, Eden, UT 84310

Notes:

**Design Information**

Weather: Logan Cache, UT, US

**Winter Design Conditions**

Outside db -6 °F  
Inside db 72 °F  
Design TD 78 °F

**Summer Design Conditions**

Outside db 95 °F  
Inside db 73 °F  
Design TD 22 °F  
Daily range H  
Relative humidity 35 %  
Moisture difference -3 gr/lb

**Heating Summary**

Structure 184058 Btuh  
Ducts 11512 Btuh  
Central vent (0 cfm) 0 Btuh  
  
Humidification 0 Btuh  
Piping 0 Btuh  
Equipment load 195570 Btuh

**Sensible Cooling Equipment Load Sizing**

Structure 71900 Btuh  
Ducts 8498 Btuh  
Central vent (0 cfm) 0 Btuh  
  
Blower 0 Btuh  
  
Use manufacturer's data n  
Rate/swing multiplier 1.00  
Equipment sensible load 79996 Btuh

**Infiltration**

Method Simplified  
Construction quality Semi-tight  
Fireplaces 0

**Latent Cooling Equipment Load Sizing**

Structure 1080 Btuh  
Ducts -85 Btuh  
Central vent (0 cfm) 0 Btuh  
  
Equipment latent load 995 Btuh  
  
**Equipment Total Load (Sen+Lat)** 80991 Btuh  
Req. total capacity at 0.70 SHR 9.5 ton

	Heating	Cooling
Area (ft <sup>2</sup> )	4870	4870
Volume (ft <sup>3</sup> )	42953	42953
Air changes/hour	0.19	0.10
Equiv. AVF (cfm)	136	72

**Heating Equipment Summary**

Make n/a  
Trade n/a  
Model n/a  
AHRI ref n/a  
  
Efficiency n/a  
Heating input  
Heating output 0 Btuh  
Temperature rise 0 °F  
Actual air flow 0 cfm  
Air flow factor 0 cfm/Btuh  
Static pressure 0 in H2O  
Space thermostat n/a

**Cooling Equipment Summary**

Make n/a  
Trade n/a  
Cond n/a  
Coil n/a  
AHRI ref n/a  
Efficiency n/a  
Sensible cooling 0 Btuh  
Latent cooling 0 Btuh  
Total cooling 0 Btuh  
Actual air flow 0 cfm  
Air flow factor 0 cfm/Btuh  
Static pressure 0 in H2O  
Load sensible heat ratio 0

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

**Project Information**

For: Kingsbury  
 8549 E Spring Park, Eden, UT 84310

Notes:

**Design Information**

Weather: Logan Cache, UT, US

**Winter Design Conditions**

Outside db -6 °F  
 Inside db 72 °F  
 Design TD 78 °F

**Summer Design Conditions**

Outside db 95 °F  
 Inside db 73 °F  
 Design TD 22 °F  
 Daily range H  
 Relative humidity 35 %  
 Moisture difference -3 gr/lb

**Heating Summary**

Structure 88068 Btuh  
 Ducts 0 Btuh  
 Central vent (0 cfm)  
 (none) 0 Btuh  
 Humidification 0 Btuh  
 Piping 0 Btuh  
 Equipment load 88068 Btuh

**Sensible Cooling Equipment Load Sizing**

Structure 28204 Btuh  
 Ducts 0 Btuh  
 Central vent (0 cfm)  
 (none) 0 Btuh  
 Blower 5120 Btuh  
 Use manufacturer's data n  
 Rate/swing multiplier 1.00  
 Equipment sensible load 33156 Btuh

**Infiltration**

Method Simplified  
 Construction quality Semi-tight  
 Fireplaces 0

**Latent Cooling Equipment Load Sizing**

Structure 749 Btuh  
 Ducts 0 Btuh  
 Central vent (0 cfm)  
 (none) 0 Btuh  
 Equipment latent load 749 Btuh

	Heating	Cooling
Area (ft <sup>2</sup> )	1923	1923
Volume (ft <sup>3</sup> )	16433	16433
Air changes/hour	0.21	0.11
Equiv. AVF (cfm)	58	30

**Equipment Total Load (Sen+Lat)** 33905 Btuh  
 Req. total capacity at 0.70 SHR 3.9 ton

**Heating Equipment Summary**

Make ICP Commercial, International Comfort Products  
 Trade ICP COMMERCIAL  
 Model N9MSE0801716A\*\*  
 AHRI ref 201712516

Efficiency 96 AFUE  
 Heating input 80000 Btuh  
 Heating output 78000 Btuh  
 Temperature rise 56 °F  
 Actual air flow 1500 cfm  
 Air flow factor 0.017 cfm/Btuh  
 Static pressure 0.60 in H2O  
 Space thermostat

**Cooling Equipment Summary**

Make Day & Night  
 Trade CONSTANT COMFORT SX 2600 R410A...  
 Cond NXA648GKA10  
 Coil END4X48L21A1++TDR  
 AHRI ref 9279669

Efficiency 12.0 EER, 14 SEER  
 Sensible cooling 31500 Btuh  
 Latent cooling 13500 Btuh  
 Total cooling 45000 Btuh  
 Actual air flow 1500 cfm  
 Air flow factor 0.053 cfm/Btuh  
 Static pressure 0.60 in H2O  
 Load sensible heat ratio 0.98

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

**Project Information**

For: Kingsbury  
 8549 E Spring Park, Eden, UT 84310

Notes:

**Design Information**

Weather: Logan Cache, UT, US

**Winter Design Conditions**

Outside db -6 °F  
 Inside db 72 °F  
 Design TD 78 °F

**Summer Design Conditions**

Outside db 95 °F  
 Inside db 73 °F  
 Design TD 22 °F  
 Daily range H  
 Relative humidity 35 %  
 Moisture difference -3 gr/lb

**Heating Summary**

Structure 52373 Btuh  
 Ducts 0 Btuh  
 Central vent (0 cfm)  
 (none) 0 Btuh  
 Humidification 0 Btuh  
 Piping 0 Btuh  
 Equipment load 52373 Btuh

**Sensible Cooling Equipment Load Sizing**

Structure 21835 Btuh  
 Ducts 0 Btuh  
 Central vent (0 cfm)  
 (none) 0 Btuh  
 Blower 0 Btuh  
 Use manufacturer's data n  
 Rate/swing multiplier 1.00  
 Equipment sensible load 21726 Btuh

**Infiltration**

Method Simplified  
 Construction quality Semi-tight  
 Fireplaces 0

**Latent Cooling Equipment Load Sizing**

Structure -37 Btuh  
 Ducts 0 Btuh  
 Central vent (0 cfm)  
 (none) 0 Btuh  
 Equipment latent load 0 Btuh

	Heating	Cooling
Area (ft <sup>2</sup> )	1698	1698
Volume (ft <sup>3</sup> )	15282	15282
Air changes/hour	0.16	0.09
Equiv. AVF (cfm)	42	22

**Equipment Total Load (Sen+Lat)** 21726 Btuh  
 Req. total capacity at 0.80 SHR 2.3 ton

**Heating Equipment Summary**

Make ICP Commercial, International Comfort Products  
 Trade ICP COMMERCIAL  
 Model N9MSE0801716A  
 AHRI ref 201702424

Efficiency 96 AFUE  
 Heating input 80000 Btuh  
 Heating output 78000 Btuh  
 Temperature rise 56 °F  
 Actual air flow 1500 cfm  
 Air flow factor 0.029 cfm/Btuh  
 Static pressure 0.60 in H2O  
 Space thermostat

**Cooling Equipment Summary**

Make Day & Night  
 Trade CONSTANT COMFORT SX 2600 R410A...  
 Cond NXA648GKA10  
 Coil END4X48L21A1++TDR  
 AHRI ref 9279669

Efficiency 12.0 EER, 14 SEER  
 Sensible cooling 36000 Btuh  
 Latent cooling 9000 Btuh  
 Total cooling 45000 Btuh  
 Actual air flow 1500 cfm  
 Air flow factor 0.069 cfm/Btuh  
 Static pressure 0.60 in H2O  
 Load sensible heat ratio 1.00

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

## Project Information

 For: Kingsbury  
 8549 E Spring Park, Eden, UT 84310

Notes:

## Design Information

Weather: Logan Cache, UT, US

### Winter Design Conditions

Outside db	-6 °F
Inside db	72 °F
Design TD	78 °F

### Summer Design Conditions

Outside db	95 °F
Inside db	73 °F
Design TD	22 °F
Daily range	H
Relative humidity	35 %
Moisture difference	-3 gr/lb

### Heating Summary

Structure	43616 Btuh
Ducts	11512 Btuh
Central vent (0 cfm) (none)	0 Btuh
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	55129 Btuh

### Sensible Cooling Equipment Load Sizing

Structure	23074 Btuh
Ducts	8641 Btuh
Central vent (0 cfm) (none)	0 Btuh
Blower	0 Btuh
Use manufacturer's data	n
Rate/swing multiplier	1.00
Equipment sensible load	31557 Btuh

### Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	0

### Latent Cooling Equipment Load Sizing

Structure	368 Btuh
Ducts	-85 Btuh
Central vent (0 cfm) (none)	0 Btuh
Equipment latent load	283 Btuh

	Heating	Cooling
Area (ft <sup>2</sup> )	1249	1249
Volume (ft <sup>3</sup> )	11238	11238
Air changes/hour	0.19	0.10
Equiv. AVF (cfm)	37	19

<b>Equipment Total Load (Sen+Lat)</b>	31839 Btuh
Req. total capacity at 0.80 SHR	3.3 ton

### Heating Equipment Summary

Make	ICP Commercial, International Comfort Products
Trade	ICP COMMERCIAL
Model	N9MSE0801716A
AHRI ref	201702424

Efficiency	96 AFUE
Heating input	80000 Btuh
Heating output	78000 Btuh
Temperature rise	56 °F
Actual air flow	1500 cfm
Air flow factor	0.027 cfm/Btuh
Static pressure	0.60 in H2O
Space thermostat	

### Cooling Equipment Summary

Make	Day & Night
Trade	CONSTANT COMFORT SX 2600 R410A...
Cond	NXA648GKA10
Coil	ENH4X48L21A1++TDR
AHRI ref	9279675

Efficiency	12.0 EER, 14 SEER
Sensible cooling	36000 Btuh
Latent cooling	9000 Btuh
Total cooling	45000 Btuh
Actual air flow	1500 cfm
Air flow factor	0.047 cfm/Btuh
Static pressure	0.60 in H2O
Load sensible heat ratio	0.99

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

1 Room name		Entire House						UPPER						
2 Exposed wall		430.3 ft						115.9 ft						
3 Room height		9.6 ft						9.0 ft						
4 Room dimensions														
5 Room area		4869.7 ft <sup>2</sup>						1248.7 ft <sup>2</sup>						
	Ty	Construction number	U-value (Btuh/ft <sup>2</sup> ·°F)	Or	HTM (Btuh/ft <sup>2</sup> )		Area (ft <sup>2</sup> ) or perimeter (ft)		Load (Btuh)		Area (ft <sup>2</sup> ) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	15B19-0wc-8	0.069	n	3.51	0.11	450	450	1579	48	0	0	0	0
	W	Frm wall, spl't log e	0.610	n	47.52	12.11	536	473	22453	5721	86	44	2067	527
	D	Door, wd sc type	0.340	n	26.49	8.45	63	63	1669	532	42	42	1112	355
	W	Frm wall, spl't log e	0.610	ne	47.52	12.11	17	17	814	207	0	0	0	0
11	W	15B19-0wc-8	0.069	e	4.20	0.30	169	169	708	50	0	0	0	0
	W	Frm wall, spl't log e	0.610	e	47.52	12.11	709	530	25173	6414	293	191	9052	2307
	G	2 glazing, clr low-e	0.160	e	12.46	36.32	179	0	2231	6502	102	0	1271	3705
	W	Frm wall, spl't log e	0.610	s	47.52	12.11	1385	772	36674	9345	272	146	6950	1771
	G	2 glazing, clr low-e	0.160	s	12.46	18.52	592	0	7377	10959	126	0	1570	2333
	D	Door, wd sc type	0.340	s	26.49	8.45	21	21	556	177	0	0	0	0
	W	Frm wall, spl't log e	0.610	w	47.52	12.11	1087	711	33765	8604	394	255	12139	3093
	G	2 glazing, clr low-e	0.160	w	12.46	36.32	279	0	3483	10149	64	0	800	2331
	G	2 glazing, clr low-e	0.160	w	12.46	36.32	75	0	931	2712	75	0	931	2712
	G	2 glazing, clr low-e	0.160	w	12.46	36.32	22	0	276	805	0	0	0	0
	R	12C-0sw	0.091	-	7.09	0.91	306	285	2020	258	306	285	2020	258
	D	Door, wd sc type	0.340	n	26.49	8.45	21	21	556	177	21	21	556	177
	C	Rf/clg ceiling, asph	0.022	-	1.71	0.45	2052	2052	3518	919	1249	1249	2140	559
	F	Bg floor, light dry	0.380	-	14.80	0.00	1923	1923	28462	0	0	0	0	0
	F	Bg floor, light dry	0.380	-	14.80	0.00	106	106	1565	0	0	0	0	0
	F	Bq floor, light drv	0.380	-	14.80	0.00	24	24	350	0	24	24	350	0
6	c) AED excursion									0			0	
	Envelope loss/gain								174160	63583			40960	20128
12	a) Infiltration								9897	1438			2656	386
	b) Room ventilation								0	0			0	0
13	Internal gains:		Occupants @	230		6			1380	2			460	
			Appliances/other						5500				2100	
	Subtotal (lines 6 to 13)								184058	71900			43616	23074
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								184058	71900			43616	23074
15	Duct loads					6%	12%		11512	8498	26%	37%	11512	8641
	Total room load								195570	80398			55129	31715
	Air required (cfm)								4500	4500			1500	1500

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





		LOWER 181.7 ft <sup>2</sup>						MAIN 132.7 ft <sup>2</sup>								
		10.5 ft			9.0 ft			181.7 ft			132.7 ft					
		1923.0 ft <sup>2</sup>						1698.0 ft <sup>2</sup>								
1	2	Room name	Exposed wall	Room height	Room dimensions	Room area	HTM (Btuh/ft <sup>2</sup> )		Area (ft <sup>2</sup> ) or perimeter (ft)		Load (Btuh)		Area (ft <sup>2</sup> ) or perimeter (ft)		Load (Btuh)	
							U-value (Btuh/ft <sup>2</sup> ·°F)	Or	Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S
6	W	15B19-0wc-8	0.069	n	3.51	0.11	450	450	1579	48	0	0	0	0	0	0
	W	Frm wall, split log e	0.610	n	47.52	12.11	47	26	1247	318	403	403	19138	4877		
	D	Door, wd sc type	0.340	n	26.49	8.45	21	21	556	177	0	0	0	0		
	W	Frm wall, split log e	0.610	ne	47.52	12.11	0	0	0	0	17	17	814	207		
11	W	15B19-0wc-8	0.069	e	4.20	0.30	169	169	708	50	0	0	0	0	0	0
	W	Frm wall, split log e	0.610	e	47.52	12.11	376	299	14196	3617	41	41	1925	490		
	G	2 glazing, clr low-e	0.160	e	12.46	36.32	77	0	960	2797	0	0	0	0		
	W	Frm wall, split log e	0.610	s	47.52	12.11	729	406	19282	4913	384	220	10441	2661		
	G	2 glazing, clr low-e	0.160	s	12.46	36.32	302	0	3764	5592	164	0	2042	3034		
	D	Door, wd sc type	0.340	s	26.49	8.45	21	21	556	177	0	0	0	0		
	W	Frm wall, split log e	0.610	w	47.52	12.11	342	237	11243	2865	351	219	10383	2646		
	G	2 glazing, clr low-e	0.160	w	12.46	36.32	83	0	1033	3012	132	0	1649	4807		
	G	2 glazing, clr low-e	0.160	w	12.46	36.32	0	0	0	0	0	0	0	0		
	G	2 glazing, clr low-e	0.160	w	12.46	36.32	22	0	276	805	0	0	0	0		
	R	12C-0sw	0.091	-	7.09	0.91	0	0	0	0	0	0	0	0		
	D	Door, wd sc type	0.340	n	26.49	8.45	0	0	0	0	0	0	0	0		
	C	Rf/clg ceiling, asph	0.022	-	1.71	0.45	1	1	1	0	803	803	1376	360		
	F	Bg floor, light dry	0.380	-	14.80	0.00	1923	1923	28462	0	0	0	0	0		
	F	Bg floor, light dry	0.380	-	14.80	0.00	0	0	0	0	106	106	1565	0		
	F	Bq floor, light drv	0.380	-	14.80	0.00	0	0	0	0	0	0	0	0		
6	c) AED excursion									0					1212	
	Envelope loss/gain								83866	24373			49335	20293		
12	a) Infiltration								4203	610			3038	441		
	b) Room ventilation								0	0			0	0		
13	Internal gains:		Occupants @		230		4			920	0				0	
			Appliances/other							2300					1100	
	Subtotal (lines 6 to 13)								88068	28204			52373	21835		
	Less external load								0	0			0	0		
	Less transfer								0	0			0	0		
	Redistribution								0	0			0	0		
14	Subtotal								88068	28204			52373	21835		
15	Duct loads						0%	0%	0	0	0%	0%	0	0		
	Total room load								88068	28204			52373	21835		
	Air required (cfm)								1500	1500			1500	1500		

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



**Right-J® Worksheet**  
**LOWER**  
**Outfitters HVAC**

**Job:**  
**Date:** Nov 2019  
**By:**

		LOWER							L-MASBED						
		181.7 ft							39.6 ft						
		10.5 ft							9.0 ft						
		1923.0 ft <sup>2</sup>							1.0 x 384.5 ft						
		1923.0 ft <sup>2</sup>							384.5 ft <sup>2</sup>						
	Ty	Construction number	U-value (Btuh/ft <sup>2</sup> -°F)	Or	HTM (Btuh/ft <sup>2</sup> )		Area (ft <sup>2</sup> ) or perimeter (ft)		Load (Btuh)		Area (ft <sup>2</sup> ) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	15B19-0wc-8	0.069	n	3.51	0.11	450	450	1579	48	178	178	598	12	
	W	Frm wall, split log e	0.610	n	47.52	12.11	47	26	1247	318	0	0	0	0	
	D	Door, wd sc type	0.340	n	26.49	8.45	21	21	556	177	0	0	0	0	
	W	Frm wall, split log e	0.610	ne	0.00	0.00	0	0	0	0	0	0	0	0	
11	W	15B19-0wc-8	0.069	e	4.20	0.30	169	169	708	50	0	0	0	0	
	W	Frm wall, split log e	0.610	e	47.52	12.11	376	299	14196	3617	0	0	0	0	
	G	2 glazing, clr low-e	0.160	e	12.46	36.32	77	0	960	2797	0	0	0	0	
	W	Frm wall, split log e	0.610	s	47.52	12.11	729	406	19282	4913	0	0	0	0	
	G	2 glazing, clr low-e	0.160	s	12.46	18.52	302	0	3764	5592	0	0	0	0	
	D	Door, wd sc type	0.340	s	26.49	8.45	21	21	556	177	0	0	0	0	
	W	Frm wall, split log e	0.610	w	47.52	12.11	342	237	11243	2865	179	127	6052	1542	
	G	2 glazing, clr low-e	0.160	w	12.46	36.32	83	0	1033	3012	51	0	639	1862	
	G	2 glazing, clr low-e	0.160	w	0.00	0.00	0	0	0	0	0	0	0	0	
	G	2 glazing, clr low-e	0.160	w	12.46	36.32	22	0	276	805	0	0	0	0	
	R	12C-0sw	0.091	-	0.00	0.00	0	0	0	0	0	0	0	0	
	D	Door, wd sc type	0.340	n	0.00	0.00	0	0	0	0	0	0	0	0	
	C	Rf/clg ceiling, asph	0.022	-	1.71	0.45	1	1	1	0	0	0	0	0	
	F	Bg floor, light dry	0.380	-	14.80	0.00	1923	1923	28462	0	385	385	5691	0	
	F	Bg floor, light dry	0.380	-	0.00	0.00	0	0	0	0	0	0	0	0	
	F	Bq floor, light drv	0.380	-	0.00	0.00	0	0	0	0	0	0	0	0	
6	c) AED excursion									0				617	
	Envelope loss/gain								83866	24373			12981	4033	
12	a) Infiltration								4203	610			504	73	
	b) Room ventilation								0	0			0	0	
13	Internal gains:		Occupants @		230		4			920	0			0	
			Appliances/other							2300				200	
	Subtotal (lines 6 to 13)								88068	28204			13485	4306	
	Less external load								0	0			0	0	
	Less transfer								0	0			0	0	
	Redistribution								0	0			0	0	
14	Subtotal								88068	28204			13485	4306	
15	Duct loads								0	0	-0%	0%	0	0	
	Total room load								88068	28204			13485	4306	
	Air required (cfm)								1500	1500			230	229	

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



**Right-J® Worksheet**  
**LOWER**  
**Outfitters HVAC**

**Job:**  
**Date:** Nov 2019  
**By:**

		L-MASBTH		L-SKI										
		6.2 ft		20.3 ft										
		9.0 ft x 138.8 ft		9.0 ft x 100.2 ft										
		138.8 ft <sup>2</sup>		100.2 ft <sup>2</sup>										
1	Room name													
	Exposed wall													
2	Room height													
3	Room dimensions													
4	Room area													
5	Room area													
	Ty	Construction number	U-value (Btuh/ft <sup>2</sup> -°F)	Or	HTM (Btuh/ft <sup>2</sup> )		Area (ft <sup>2</sup> ) or perimeter (ft)		Load (Btuh)		Area (ft <sup>2</sup> ) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	15B19-0wc-8	0.069	n	3.51	0.11	0	0	0	0	0	0	0	0
	W	Frm wall, spl't log e	0.610	n	47.52	12.11	0	0	0	0	0	0	0	0
	D	Door, wd sc type	0.340	n	26.49	8.45	0	0	0	0	0	0	0	0
	W	Frm wall, spl't log e	0.610	ne	0.00	0.00	0	0	0	0	0	0	0	0
11	W	15B19-0wc-8	0.069	e	4.20	0.30	0	0	0	0	0	0	0	0
	W	Frm wall, spl't log e	0.610	e	47.52	12.11	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.160	e	12.46	36.32	0	0	0	0	0	0	0	0
	W	Frm wall, spl't log e	0.610	s	47.52	12.11	0	0	0	0	112	112	5344	1362
	G	2 glazing, clr low-e	0.160	s	12.46	18.52	0	0	0	0	0	0	0	0
	D	Door, wd sc type	0.340	s	26.49	8.45	0	0	0	0	0	0	0	0
	W	Frm wall, spl't log e	0.610	w	47.52	12.11	56	36	1706	435	71	59	2811	716
	G	2 glazing, clr low-e	0.160	w	12.46	36.32	20	0	245	714	12	0	150	436
	G	2 glazing, clr low-e	0.160	w	0.00	0.00	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.160	w	12.46	36.32	0	0	0	0	0	0	0	0
	P	12C-0sw	0.091	-	0.00	0.00	0	0	0	0	0	0	0	0
	D	Door, wd sc type	0.340	n	0.00	0.00	0	0	0	0	0	0	0	0
	C	Rf/clg ceiling, asph	0.022	-	1.71	0.45	0	0	1	0	0	0	1	0
	F	Bg floor, light dry	0.380	-	14.80	0.00	139	139	2055	0	100	100	1483	0
	F	Bg floor, light dry	0.380	-	0.00	0.00	0	0	0	0	0	0	0	0
	F	Bq floor, light drv	0.380	-	0.00	0.00	0	0	0	0	0	0	0	0
6	c) AED excursion									258				-2
	Envelope loss/gain								4006	1407			9788	2512
12	a) Infiltration								141	21			467	68
	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)								4148	1428			10255	2580
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								4148	1428			10255	2580
15	Duct loads								0	0			0	0
	Total room load								4148	1428			10255	2580
	Air required (cfm)								71	76			175	137

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



**Right-J® Worksheet**  
**LOWER**  
**Outfitters HVAC**

**Job:**  
**Date:** Nov 2019  
**By:**

		Room name		L-FAM		L-KITCHEN								
		Exposed wall		59.6 ft		27.8 ft								
		Room height		9.0 ft		19.7 ft								
		Room dimensions		1.0 x 549.8 ft		1.0 x 276.1 ft								
		Room area		549.8 ft²		276.1 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	15B19-0wc-8	0.069	n	3.51	0.11	0	0	0	0	59	59	261	21
	W	Frm wall, split log e	0.610	n	47.52	12.11	0	0	0	0	47	26	1247	318
	D	Door, wd sc type	0.340	n	26.49	8.45	0	0	0	0	21	21	556	177
	W	Frm wall, split log e	0.610	ne	0.00	0.00	0	0	0	0	0	0	0	0
11	W	15B19-0wc-8	0.069	e	4.20	0.30	0	0	0	0	128	128	572	47
	W	Frm wall, split log e	0.610	e	47.52	12.11	61	61	2887	736	315	238	11310	2882
	G	2 glazing, clr low-e	0.160	e	12.46	36.32	0	0	0	0	77	0	960	2797
	W	Frm wall, split log e	0.610	s	47.52	12.11	440	206	9805	2499	176	87	4133	1053
	G	2 glazing, clr low-e	0.160	s	12.46	18.52	213	0	2649	3935	90	0	1116	1657
	D	Door, wd sc type	0.340	s	26.49	8.45	21	21	556	177	0	0	0	0
	W	Frm wall, split log e	0.610	w	47.52	12.11	36	14	674	172	0	0	0	0
	G	2 glazing, clr low-e	0.160	w	12.46	36.32	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.160	w	0.00	0.00	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.160	w	12.46	36.32	22	0	276	805	0	0	0	0
	P	12C-0sw	0.091	-	0.00	0.00	0	0	0	0	0	0	0	0
	D	Door, wd sc type	0.340	n	0.00	0.00	0	0	0	0	0	0	0	0
	C	Rf/clg ceiling, asph	0.022	-	1.71	0.45	0	0	0	0	0	0	0	0
	F	Bg floor, light dry	0.380	-	14.80	0.00	550	550	8137	0	276	276	4087	0
	F	Bg floor, light dry	0.380	-	0.00	0.00	0	0	0	0	0	0	0	0
	F	Bq floor, light drv	0.380	-	0.00	0.00	0	0	0	0	0	0	0	0
6	c) AED excursion									16				-886
	Envelope loss/gain								24984	8339			24241	8067
12	a) Infiltration								1365	198			1653	240
	b) Room ventilation								0	0			0	0
13	Internal gains:		Occupants @	230	4				920	0			0	0
			Appliances/other						900				1200	
	Subtotal (lines 6 to 13)								26349	10357			25894	9507
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			98	1
14	Subtotal								26349	10357			25991	9508
15	Duct loads								0	0			0	0
	Total room load								26349	10357			25991	9508
	Air required (cfm)								449	551			443	506

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



		L-BATH2		L-MECH										
		0 ft		16.5 ft										
		9.0 ft x 8.0 ft		9.0 ft x 9.0 ft										
		heat/cool		heat/cool										
		66.0 ft²		91.0 ft²										
1	Room name													
2	Exposed wall													
3	Room height													
4	Room dimensions													
5	Room area													
	Ty	Construction number	U-value (Btuh/ft²-°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	15B19-0wc-8	0.069	n	3.51	0.11	0	0	0	0	108	108	364	7
	W	Frm wall, splt log e	0.610	n	47.52	12.11	0	0	0	0	0	0	0	0
	D	Door, wd sc type	0.340	n	26.49	8.45	0	0	0	0	0	0	0	0
	W	Frm wall, splt log e	0.610	ne	0.00	0.00	0	0	0	0	0	0	0	0
11	W	15B19-0wc-8	0.069	e	4.20	0.30	0	0	0	0	41	41	136	3
	W	Frm wall, splt log e	0.610	e	47.52	12.11	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.160	e	12.46	36.32	0	0	0	0	0	0	0	0
	W	Frm wall, splt log e	0.610	s	47.52	12.11	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.160	s	12.46	18.52	0	0	0	0	0	0	0	0
	D	Door, wd sc type	0.340	s	26.49	8.45	0	0	0	0	0	0	0	0
	W	Frm wall, splt log e	0.610	w	47.52	12.11	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.160	w	12.46	36.32	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.160	w	0.00	0.00	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.160	w	12.46	36.32	0	0	0	0	0	0	0	0
	P	12C-0sw	0.091	-	0.00	0.00	0	0	0	0	0	0	0	0
	D	Door, wd sc type	0.340	n	0.00	0.00	0	0	0	0	0	0	0	0
	C	Rf/clg ceiling, asph	0.022	-	1.71	0.45	0	0	0	0	0	0	0	0
	F	Bg floor, light dry	0.380	-	14.80	0.00	66	66	977	0	91	91	1347	0
	F	Bg floor, light dry	0.380	-	0.00	0.00	0	0	0	0	0	0	0	0
	F	Bq floor, light drv	0.380	-	0.00	0.00	0	0	0	0	0	0	0	0
6	c) AED excursion									0				-1
	Envelope loss/gain								977	0			1847	9
12	a) Infiltration								0	0			42	6
	b) Room ventilation								0	0			0	0
13	Internal gains:		Occupants @	230			0		0	0			0	0
			Appliances/other						0	0			0	0
	Subtotal (lines 6 to 13)								977	0			1889	15
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								830	7			-1889	-15
14	Subtotal								1807	7			0	0
15	Duct loads						-0%	0%	0	0	-0%	0%	0	0
	Total room load								1807	7			0	0
	Air required (cfm)								31	0			0	0

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



**Right-J® Worksheet**  
**LOWER**  
**Outfitters HVAC**

**Job:**  
**Date:** Nov 2019  
**By:**

1 Room name		L-BATH						L-HALL						
2 Exposed wall		11.8 ft						0 ft						
3 Room height		9.0 ft						9.0 ft						
4 Room dimensions		11.8 x 10.8 ft						1.0 x 190.3 ft						
5 Room area		126.3 ft²						190.3 ft²						
	Ty	Construction number	U-value (Btuh/ft²-°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	15B19-0wc-8	0.069	n	3.51	0.11	106	106	356	7	0	0	0	0
	W	Frm wall, spl't log e	0.610	n	47.52	12.11	0	0	0	0	0	0	0	0
	D	Door, wd sc type	0.340	n	26.49	8.45	0	0	0	0	0	0	0	0
	W	Frm wall, spl't log e	0.610	ne	0.00	0.00	0	0	0	0	0	0	0	0
11	W	15B19-0wc-8	0.069	e	4.20	0.30	0	0	0	0	0	0	0	0
	W	Frm wall, spl't log e	0.610	e	47.52	12.11	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.160	e	12.46	36.32	0	0	0	0	0	0	0	0
	W	Frm wall, spl't log e	0.610	s	47.52	12.11	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.160	s	12.46	18.52	0	0	0	0	0	0	0	0
	D	Door, wd sc type	0.340	s	26.49	8.45	0	0	0	0	0	0	0	0
	W	Frm wall, spl't log e	0.610	w	47.52	12.11	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.160	w	12.46	36.32	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.160	w	0.00	0.00	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.160	w	12.46	36.32	0	0	0	0	0	0	0	0
	P	12C-0sw	0.091	-	0.00	0.00	0	0	0	0	0	0	0	0
	D	Door, wd sc type	0.340	n	0.00	0.00	0	0	0	0	0	0	0	0
	C	Rf/clg ceiling, asph	0.022	-	1.71	0.45	0	0	0	0	0	0	0	0
	F	Bg floor, light dry	0.380	-	14.80	0.00	126	126	1870	0	190	190	2816	0
	F	Bg floor, light dry	0.380	-	0.00	0.00	0	0	0	0	0	0	0	0
	F	Bq floor, light drv	0.380	-	0.00	0.00	0	0	0	0	0	0	0	0
6	c) AED excursion									-1				0
	Envelope loss/gain								2226	6			2816	0
12	a) Infiltration								30	4			0	0
	b) Room ventilation								0	0			0	0
13	Internal gains:		Occupants @		230		0			0	0			0
			Appliances/other							0				0
	Subtotal (lines 6 to 13)								2255	11			2816	0
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								700	6			261	2
14	Subtotal								2956	16			3076	2
15	Duct loads								0	0	-0%	0%	0	0
	Total room load								2956	16			3076	2
	Air required (cfm)								50	1			52	0

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



1 Room name		MAIN						M-LAUND/HALL						
2 Exposed wall		132.7 ft						34.8 ft						
3 Room height		9.0 ft						9.0 ft						
4 Room dimensions		d						1.0 x 572.1 ft						
5 Room area		1698.0 ft²						572.1 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	15B19-0wc-8	0.069	n	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, split log e	0.610	n	47.52	12.11	403	403	19138	4877	106	106	5025	1280
	D	Door, wd sc type	0.340	n	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, split log e	0.610	ne	47.52	12.11	17	17	814	207	17	17	814	207
11	W	15B19-0wc-8	0.069	e	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, split log e	0.610	e	47.52	12.11	41	41	1925	490	0	0	0	0
	G	2 glazing, clr low-e	0.160	e	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, split log e	0.610	s	47.52	12.11	384	220	10441	2661	191	105	5001	1274
	G	2 glazing, clr low-e	0.160	s	12.46	18.52	164	0	2042	3034	86	0	1066	1583
	D	Door, wd sc type	0.340	s	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, split log e	0.610	w	47.52	12.11	351	219	10383	2646	0	0	0	0
	G	2 glazing, clr low-e	0.160	w	12.46	36.32	132	0	1649	4807	0	0	0	0
	G	2 glazing, clr low-e	0.160	w	0.00	0.00	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.160	w	0.00	0.00	0	0	0	0	0	0	0	0
	R	12C-0sw	0.091	-	0.00	0.00	0	0	0	0	0	0	0	0
	D	Door, wd sc type	0.340	n	0.00	0.00	0	0	0	0	0	0	0	0
	C	Rf/clg ceiling, asph	0.022	-	1.71	0.45	803	803	1376	360	140	140	241	63
	F	Bg floor, light dry	0.380	-	0.00	0.00	0	0	0	0	0	0	0	0
	F	Bg floor, light dry	0.380	-	14.80	0.00	106	106	1565	0	31	31	463	0
	F	Bq floor, light drv	0.380	-	0.00	0.00	0	0	0	0	0	0	0	0
6	c) AED excursion									1212				153
	Envelope loss/gain								49335	20293			12610	4561
12	a) Infiltration								3038	441			798	116
	b) Room ventilation								0	0			0	0
13	Internal gains:		Occupants @	230			0			0	0			0
			Appliances/other							1100				500
	Subtotal (lines 6 to 13)								52373	21835			13407	5177
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								52373	21835			13407	5177
15	Duct loads						0%	0%	0	0	-0%	0%	0	0
	Total room load								52373	21835			13407	5177
	Air required (cfm)								1500	1500			384	356

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



1 Room name				M-BATH 20.7 ft 9.0 ft 1.0 x 107.3 ft heat/cool 107.3 ft <sup>2</sup>				M-PWD 7.0 ft 9.0 ft 7.0 x 8.0 ft heat/cool 56.0 ft <sup>2</sup>									
2 Exposed wall	3 Room height	4 Room dimensions	5 Room area	Ty	Construction number	U-value (Btuh/ft <sup>2</sup> -°F)	Or	HTM (Btuh/ft <sup>2</sup> )		Area (ft <sup>2</sup> ) or perimeter (ft)		Load (Btuh)		Area (ft <sup>2</sup> ) or perimeter (ft)		Load (Btuh)	
								Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	15B19-0wc-8	0.069	n	0.00	0.00		0	0	0	0	0	0	0	0	0	0
	W	Frm wall, splt log e	0.610	n	47.52	12.11		119	119	5667	1444	63	63	2994	763		
	D	Door, wd sc type	0.340	n	0.00	0.00		0	0	0	0	0	0	0	0	0	0
	W	Frm wall, splt log e	0.610	ne	47.52	12.11		0	0	0	0	0	0	0	0	0	0
11	W	15B19-0wc-8	0.069	e	0.00	0.00		0	0	0	0	0	0	0	0	0	0
	W	Frm wall, splt log e	0.610	e	47.52	12.11		0	0	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.160	e	0.00	0.00		0	0	0	0	0	0	0	0	0	0
	W	Frm wall, splt log e	0.610	s	47.52	12.11		0	0	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.160	s	12.46	18.52		0	0	0	0	0	0	0	0	0	0
	D	Door, wd sc type	0.340	s	0.00	0.00		0	0	0	0	0	0	0	0	0	0
	W	Frm wall, splt log e	0.610	w	47.52	12.11		67	56	2640	673	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.160	w	12.46	36.32		11	0	141	412	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.160	w	0.00	0.00		0	0	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.160	w	0.00	0.00		0	0	0	0	0	0	0	0	0	0
	P	12C-0sw	0.091	-	0.00	0.00		0	0	0	0	0	0	0	0	0	0
	D	Door, wd sc type	0.340	n	0.00	0.00		0	0	0	0	0	0	0	0	0	0
	C	Rf/clg ceiling, asph	0.022	-	1.71	0.45		9	9	15	4	0	0	0	0	0	0
	F	Bg floor, light dry	0.380	-	0.00	0.00		0	0	0	0	0	0	0	0	0	0
	F	Bg floor, light dry	0.380	-	14.80	0.00		0	0	0	0	0	0	0	0	0	0
	F	Bq floor, light drv	0.380	-	0.00	0.00		0	0	0	0	0	0	0	0	0	0
6	c) AED excursion										66						-44
	Envelope loss/gain									8464	2598			2994		718	
12	a) Infiltration									473	69			160		23	
	b) Room ventilation									0	0			0		0	
13	Internal gains:		Occupants @	230			0			0	0			0		0	
			Appliances/other							0	0			0		0	
	Subtotal (lines 6 to 13)									8937	2667			3154		742	
	Less external load									0	0			0		0	
	Less transfer									0	0			0		0	
	Redistribution									0	0			0		0	
14	Subtotal									8937	2667			3154		742	
15	Duct loads									-0%	0%			0		0	
	Total room load									8937	2667			3154		742	
	Air required (cfm)									256	183			90		51	

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





1 Room name				M-BED3 10.8 ft heat/cool				M-BED2 21.0 ft heat/cool						
2 Exposed wall				9.0 ft 1.0 x 252.1 ft				9.0 ft 1.0 x 287.9 ft						
3 Room height				252.1 ft²				287.9 ft²						
4 Room dimensions														
5 Room area														
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	15B19-0wc-8	0.069	n	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, spl't log e	0.610	n	47.52	12.11	56	56	2673	681	59	59	2780	708
	D	Door, wd sc type	0.340	n	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, spl't log e	0.610	ne	47.52	12.11	0	0	0	0	0	0	0	0
11	W	15B19-0wc-8	0.069	e	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, spl't log e	0.610	e	47.52	12.11	41	41	1925	490	0	0	0	0
	G	2 glazing, clr low-e	0.160	e	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, spl't log e	0.610	s	47.52	12.11	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.160	s	12.46	18.52	0	0	0	0	0	0	0	0
	D	Door, wd sc type	0.340	s	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, spl't log e	0.610	w	47.52	12.11	0	0	0	0	131	70	3347	853
	G	2 glazing, clr low-e	0.160	w	12.46	36.32	0	0	0	0	61	0	754	2198
	G	2 glazing, clr low-e	0.160	w	0.00	0.00	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.160	w	0.00	0.00	0	0	0	0	0	0	0	0
	P	12C-0sw	0.091	-	0.00	0.00	0	0	0	0	0	0	0	0
	D	Door, wd sc type	0.340	n	0.00	0.00	0	0	0	0	0	0	0	0
	C	Rf/clg ceiling, asph	0.022	-	1.71	0.45	0	0	0	0	236	236	404	106
	F	Bg floor, light dry	0.380	-	0.00	0.00	0	0	0	0	0	0	0	0
	F	Bg floor, light dry	0.380	-	14.80	0.00	6	6	83	0	0	0	6	0
	F	Bq floor, light drv	0.380	-	0.00	0.00	0	0	0	0	0	0	0	0
6	c) AED excursion													901
	Envelope loss/gain								4681	1092			7290	4766
12	a) Infiltration								246	36			482	70
	b) Room ventilation								0	0			0	0
13	Internal gains:		Occupants @		230		0			0	0			0
			Appliances/other							200				200
	Subtotal (lines 6 to 13)								4927	1328			7772	5036
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								4927	1328			7772	5036
15	Duct loads								0	0			0	0
	Total room load								4927	1328			7772	5036
	Air required (cfm)								141	91			223	346

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



1 Room name				M-BED1 32.3 ft				M-BATH2 6.1 ft						
2 Exposed wall				9.0 ft heat/cool				9.0 ft heat/cool						
3 Room height				1.0 x 330.2 ft				1.0 x 92.4 ft						
4 Room dimensions				330.2 ft²				92.4 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	15B19-0wc-8	0.069	n	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, split log e	0.610	n	47.52	12.11	0	0	0	0	0	0	0	0
	D	Door, wd sc type	0.340	n	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, split log e	0.610	ne	47.52	12.11	0	0	0	0	0	0	0	0
11	W	15B19-0wc-8	0.069	e	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, split log e	0.610	e	47.52	12.11	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.160	e	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, split log e	0.610	s	47.52	12.11	138	67	3186	812	55	47	2255	575
	G	2 glazing, clr low-e	0.160	s	12.46	18.52	71	0	885	1315	7	0	91	136
	D	Door, wd sc type	0.340	s	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, split log e	0.610	w	47.52	12.11	153	93	4396	1120	0	0	0	0
	G	2 glazing, clr low-e	0.160	w	12.46	36.32	61	0	754	2198	0	0	0	0
	G	2 glazing, clr low-e	0.160	w	0.00	0.00	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.160	w	0.00	0.00	0	0	0	0	0	0	0	0
	P	12C-0sw	0.091	-	0.00	0.00	0	0	0	0	0	0	0	0
	D	Door, wd sc type	0.340	n	0.00	0.00	0	0	0	0	0	0	0	0
	C	Rf/clg ceiling, asph	0.022	-	1.71	0.45	325	325	557	146	92	92	158	41
	F	Bg floor, light dry	0.380	-	0.00	0.00	0	0	0	0	0	0	0	0
	F	Bg floor, light dry	0.380	-	14.80	0.00	64	64	951	0	4	4	62	0
	F	Bq floor, light drv	0.380	-	0.00	0.00	0	0	0	0	0	0	0	0
6	c) AED excursion									222				-6
	Envelope loss/gain								10730	5812			2567	746
12	a) Infiltration								740	108			139	20
	b) Room ventilation								0	0			0	0
13	Internal gains:		Occupants @	230			0			0	0			0
			Appliances/other							200				0
	Subtotal (lines 6 to 13)								11470	6120			2706	766
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								11470	6120			2706	766
15	Duct loads								-0%	0%			0	0
	Total room load								11470	6120			2706	766
	Air required (cfm)								328	420			78	53

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



**Right-J® Worksheet**  
**UPPER**  
**Outfitters HVAC**

**Job:**  
**Date:** Nov 2019  
**By:**

		UPPER		U-KITCHEN										
1	Room name	UPPER		U-KITCHEN										
2	Exposed wall	115.9 ft		36.9 ft										
3	Room height	9.0 ft		9.0 ft										
4	Room dimensions	d		1.0 x 568.0 ft										
5	Room area	1248.7 ft²		568.0 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	15B19-0wc-8	0.069	n	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, split log e	0.610	n	47.52	12.11	86	44	2067	527	86	44	2067	527
	D	Door, wd sc type	0.340	n	26.49	8.45	42	42	1112	355	42	42	1112	355
	W	Frm wall, split log e	0.610	ne	0.00	0.00	0	0	0	0	0	0	0	0
11	W	15B19-0wc-8	0.069	e	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, split log e	0.610	e	47.52	12.11	293	191	9052	2307	144	84	3992	1017
	G	2 glazing, clr low-e	0.160	e	12.46	36.32	102	0	1271	3705	60	0	748	2179
	W	Frm wall, split log e	0.610	s	47.52	12.11	272	146	6950	1771	36	36	1711	436
	G	2 glazing, clr low-e	0.160	s	12.46	18.52	126	0	1570	2333	0	0	0	0
	D	Door, wd sc type	0.340	s	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, split log e	0.610	w	47.52	12.11	394	255	12139	3093	67	55	2625	669
	G	2 glazing, clr low-e	0.160	w	12.46	36.32	64	0	800	2331	12	0	145	424
	G	2 glazing, clr low-e	0.160	w	12.46	36.32	75	0	931	2712	0	0	0	0
	G	2 glazing, clr low-e	0.160	w	0.00	0.00	0	0	0	0	0	0	0	0
	R	12C-0sw	0.091	-	7.09	0.91	306	285	2020	258	306	285	2020	258
	D	Door, wd sc type	0.340	n	26.49	8.45	21	21	556	177	21	21	556	177
	C	Rf/clg ceiling, asph	0.022	-	1.71	0.45	1249	1249	2140	559	568	568	973	254
	F	Bg floor, light dry	0.380	-	0.00	0.00	0	0	0	0	0	0	0	0
	F	Bg floor, light dry	0.380	-	0.00	0.00	0	0	0	0	0	0	0	0
	F	Bq floor, light drv	0.380	-	14.80	0.00	24	24	350	0	24	24	350	0
6	c) AED excursion									0				-104
	Envelope loss/gain								40960	20128			16299	6192
12	a) Infiltration								2656	386			845	123
	b) Room ventilation								0	0			0	0
13	Internal gains:		Occupants @		230		2			460	0			0
			Appliances/other							2100				1200
	Subtotal (lines 6 to 13)								43616	23074			17144	7515
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								43616	23074			17144	7515
15	Duct loads						26%	37%	11512	8641	26%	37%	4525	2814
	Total room load								55129	31715			21670	10329
	Air required (cfm)								1500	1500			590	489

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



**Right-J® Worksheet**  
**UPPER**  
**Outfitters HVAC**

**Job:**  
**Date:** Nov 2019  
**By:**

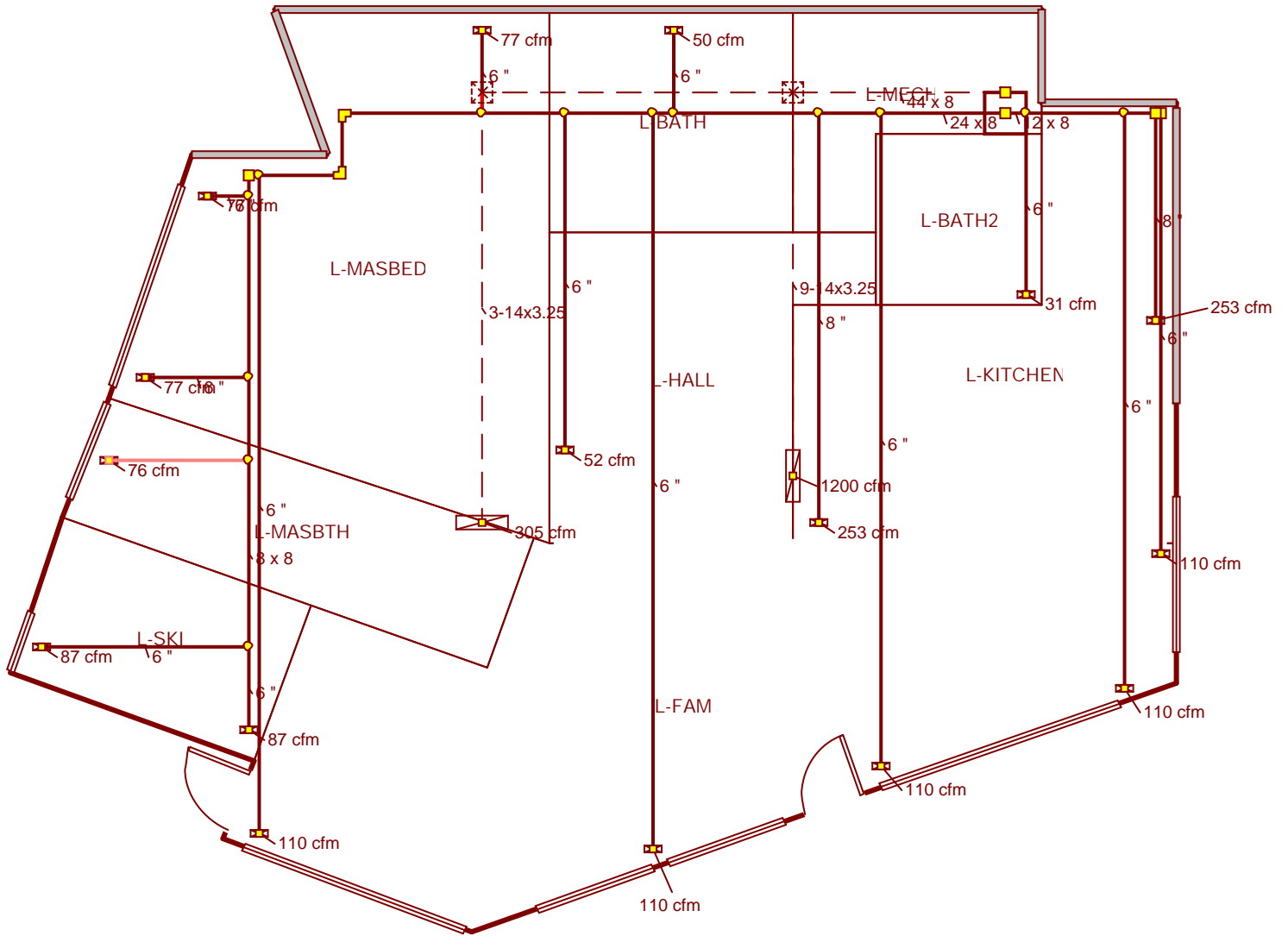
1 Room name				U-LIVING				U-PWD						
2 Exposed wall				69.6 ft				9.4 ft						
3 Room height				9.0 ft				9.0 ft						
4 Room dimensions				1.0 x 633.4 ft				1.0 x 47.3 ft						
5 Room area				633.4 ft²				47.3 ft²						
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	15B19-0wc-8	0.069	n	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, split log e	0.610	n	47.52	12.11	0	0	0	0	0	0	0	0
	D	Door, wd sc type	0.340	n	26.49	8.45	0	0	0	0	0	0	0	0
	W	Frm wall, split log e	0.610	ne	0.00	0.00	0	0	0	0	0	0	0	0
11	W	15B19-0wc-8	0.069	e	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, split log e	0.610	e	47.52	12.11	149	107	5061	1290	0	0	0	0
	G	2 glazing, clr low-e	0.160	e	12.46	36.32	42	0	523	1526	0	0	0	0
	W	Frm wall, split log e	0.610	s	47.52	12.11	236	110	5239	1335	0	0	0	0
	G	2 glazing, clr low-e	0.160	s	12.46	18.52	126	0	1570	2333	0	0	0	0
	D	Door, wd sc type	0.340	s	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, split log e	0.610	w	47.52	12.11	242	115	5458	1391	85	85	4057	1034
	G	2 glazing, clr low-e	0.160	w	12.46	36.32	53	0	654	1907	0	0	0	0
	G	2 glazing, clr low-e	0.160	w	12.46	36.32	75	0	931	2712	0	0	0	0
	G	2 glazing, clr low-e	0.160	w	0.00	0.00	0	0	0	0	0	0	0	0
	P	12C-0sw	0.091	-	7.09	0.91	0	0	0	0	0	0	0	0
	D	Door, wd sc type	0.340	n	26.49	8.45	0	0	0	0	0	0	0	0
	C	Rf/clg ceiling, asph	0.022	-	1.71	0.45	633	633	1086	284	47	47	81	21
	F	Bg floor, light dry	0.380	-	0.00	0.00	0	0	0	0	0	0	0	0
	F	Bg floor, light dry	0.380	-	0.00	0.00	0	0	0	0	0	0	0	0
	F	Bq floor, light drv	0.380	-	14.80	0.00	0	0	0	0	0	0	0	0
6	c) AED excursion									132				-28
	Envelope loss/gain								20522	12909			4138	1027
12	a) Infiltration								1594	232			217	32
	b) Room ventilation								0	0			0	0
13	Internal gains:		Occupants @	230			2			460	0			0
			Appliances/other							900				0
	Subtotal (lines 6 to 13)								22116	14501			4355	1058
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								22116	14501			4355	1058
15	Duct loads						26%	37%	5838	5430	26%	37%	1150	396
	Total room load								27954	19931			5505	1455
	Air required (cfm)								761	943			150	69

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





Lower



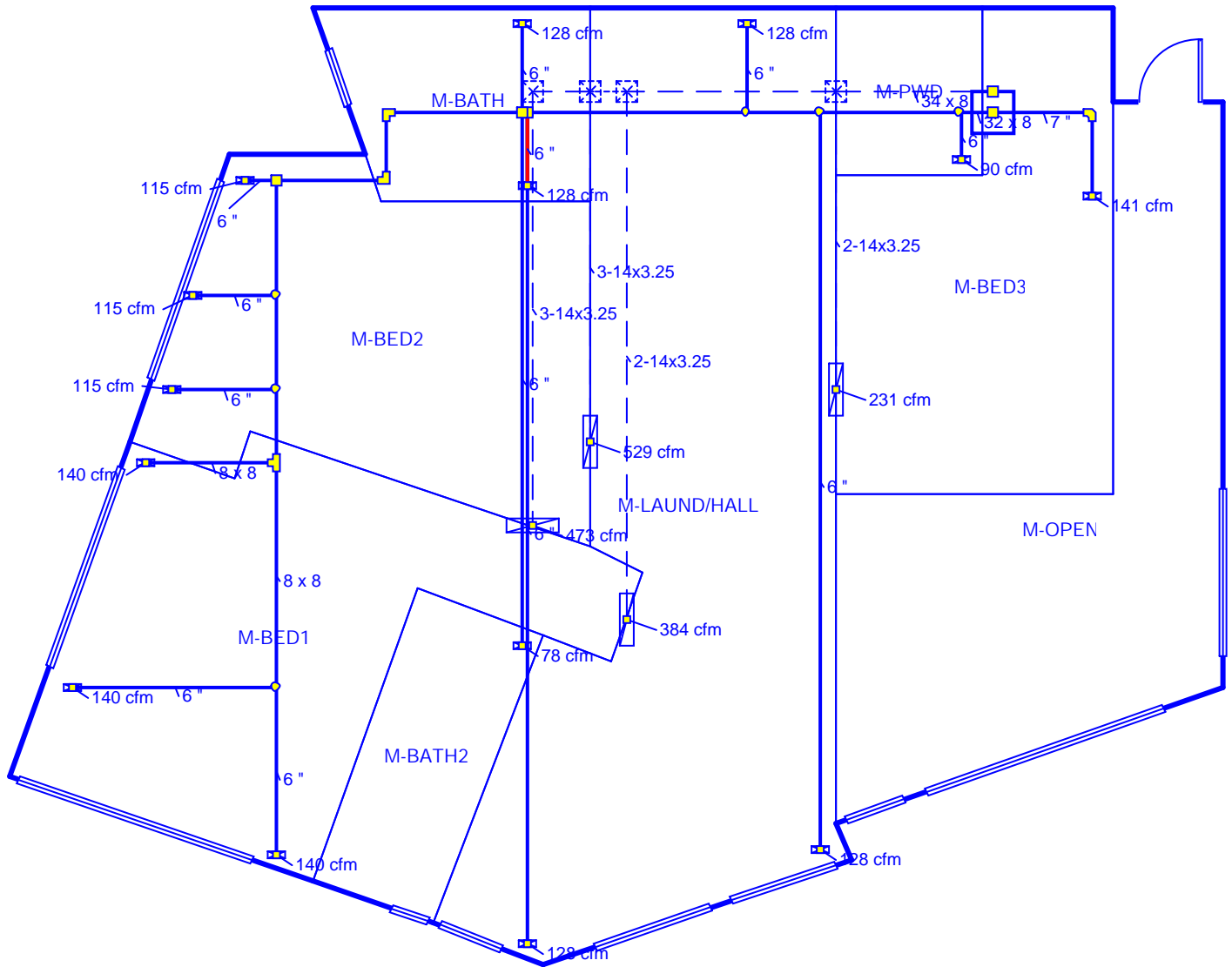
**Job #:**  
**Performed for:**  
Kingsbury  
8549 E Spring Park  
Eden, UT 84310

**Outfitters HVAC**

**Scale:** 1 : 96  
Page 1  
Right-Suite© Universal 2019  
19.0.12 RSU01198  
2019-Nov-12 20:51:44  
...lcs\Outfitters\lot 86\Lot 86.rup



### Main



**Job #:**  
**Performed for:**  
Kingsbury  
8549 E Spring Park  
Eden, UT 84310

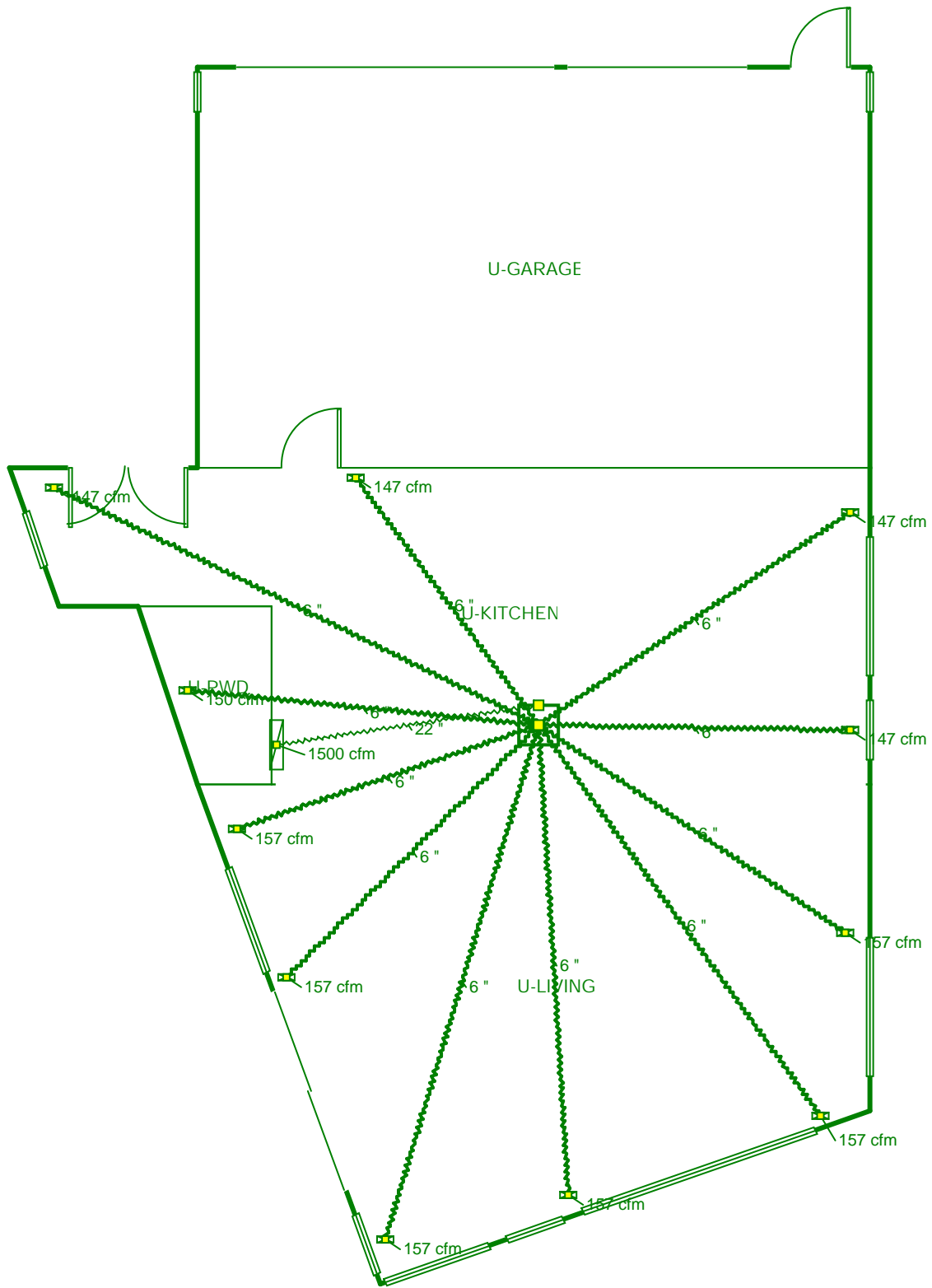
### Outfitters HVAC

Scale: 1 : 96  
Page 2  
Right-Suite© Universal 2019  
19.0.12 RSU01198  
2019-Nov-12 20:51:44  
...lcs\Outfitters\lot 86\Lot 86.rup



Upper

3'-0"



**Job #:**  
**Performed for:**  
Kingsbury  
8549 E Spring Park  
Eden, UT 84310

**Outfitters HVAC**

Scale: 1 : 96  
Page 3  
Right-Suite@ Universal 2019  
19.0.12 RSU01198  
2019-Nov-12 20:51:44  
...lcs\Outfitters\lot 86\Lot 86.rup

Project Information

For: Kingsbury  
8549 E Spring Park, Eden, UT 84310

	Heating	Cooling
External static pressure	0.60 in H2O	0.60 in H2O
Pressure losses	0.38 in H2O	0.38 in H2O
Available static pressure	0.22 in H2O	0.22 in H2O
Supply / return available pressure	0.126 / 0.094 in H2O	0.126 / 0.094 in H2O
Lowest friction rate	0.040 in/100ft	0.040 in/100ft
Actual air flow	1500 cfm	1500 cfm
Total effective length (TEL)		548 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
L-BATH	h 2956	50	1	0.060	6.0	0x0	ShMt	20.0	190.0	st4
L-BATH2	h 1807	31	0	0.065	6.0	0x0	ShMt	9.8	185.0	st3
L-FAM	c 2071	90	110	0.061	6.0	0x0	ShMt	33.5	175.0	st3
L-FAM-A	c 2071	90	110	0.053	6.0	0x0	ShMt	37.5	200.0	st4
L-FAM-B	c 2071	90	110	0.053	6.0	0x0	ShMt	52.5	185.0	st4
L-FAM-C	c 2071	90	110	0.049	6.0	0x0	ShMt	70.8	185.0	st4
L-FAM-FAN	c 2071	90	110	0.091	6.0	0x0	ShMt	28.8	110.0	st3
L-HALL	h 3076	52	0	0.059	6.0	0x0	ShMt	37.5	175.0	st4
L-KITCHEN	c 4754	221	253	0.069	8.0	0x0	ShMt	17.3	165.0	st3
L-KITCHEN-A	c 4754	221	253	0.055	8.0	0x0	ShMt	28.8	200.0	st4
L-MASBED	h 4495	77	76	0.040	6.0	0x0	ShMt	54.3	260.0	st4
L-MASBED-A	h 4495	77	76	0.065	6.0	0x0	ShMt	29.3	165.0	st4
L-MASBED-MASBEE	h 4495	77	76	0.040	6.0	0x0	ShMt	42.5	270.0	st4
L-MASBTH	c 1428	71	76	0	0	0x0	ShMt	0	0	
L-SKI	h 5128	87	69	0.040	6.0	0x0	ShMt	72.3	240.0	st7
L-SKI-A	h 5128	87	69	0.041	6.0	0x0	ShMt	66.3	240.0	st7

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st7	Peak AVF	175	137	0.040	393	9.1	8 x 8	RectFbg	st4
st4	Peak AVF	998	951	0.040	748	17.4	8 x 24	RectFbg	
st3	Peak AVF	432	474	0.061	710	12.1	8 x 12	RectFbg	



## 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
rb13	0x0	1200	1195	233.8	0.040	422	17.7	9-3.25x14	9-10x82	SJSp	rt2
rb14	0x0	300	305	151.0	0.062	322	9.7	3-3.25x14	3-10x27	SJSp	rt2

## Return Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
rt2	Peak AVF	1500	1500	0.040	614	20.3	8 x 44	RectFbg	



Project Information

For: Kingsbury  
8549 E Spring Park, Eden, UT 84310

	Heating	Cooling
External static pressure	0.60 in H2O	0.60 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0.60 in H2O	0.60 in H2O
Supply / return available pressure	0.414 / 0.186 in H2O	0.414 / 0.186 in H2O
Lowest friction rate	0.097 in/100ft	0.097 in/100ft
Actual air flow	1500 cfm	1500 cfm
Total effective length (TEL)	618 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
M-BATH-A	h 4469	128	92	0.206	6.0	0x0	ShMt	25.8	175.0	st2
M-BATH-B	h 4469	128	92	0.150	6.0	0x0	ShMt	26.8	250.0	st2
M-BATH2	h 2706	78	53	0.139	6.0	0x0	ShMt	48.0	250.0	st2
M-BED1	c 2040	109	140	0.097	6.0	0x0	ShMt	71.5	355.0	st5
M-BED1-A	c 2040	109	140	0.119	6.0	0x0	ShMt	57.3	290.0	st6
M-BED1-B	c 2040	109	140	0.098	6.0	0x0	ShMt	69.8	355.0	st5
M-BED2	c 1679	74	115	0.102	6.0	0x0	ShMt	52.5	355.0	st2
M-BED2-A	c 1679	74	115	0.111	6.0	0x0	ShMt	39.0	335.0	st2
M-BED2-B	c 1679	74	115	0.101	6.0	0x0	ShMt	47.0	365.0	st2
M-BED3	h 4927	141	91	0.349	7.0	0x0	ShMt	8.8	110.0	
M-LAUND/HALL	h 4469	128	119	0.177	6.0	0x0	ShMt	43.5	190.0	st2
M-LAUND/HALL-A	h 4469	128	119	0.175	6.0	0x0	ShMt	62.0	175.0	st2
M-LAUND/HALL-B	h 4469	128	119	0.206	6.0	0x0	ShMt	16.0	185.0	st2
M-PWD	h 3154	90	51	0.203	6.0	0x0	ShMt	3.8	200.0	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
st2	Peak AVF	1359	1409	0.097	792	16.6	8 x 32	RectFbg	
st5	Peak AVF	219	280	0.097	631	9.1	8 x 8	RectFbg	st2
st6	Peak AVF	109	140	0.119	315	6.7	8 x 8	RectFbg	st2

## 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
rb12	0x0	231	142	111.8	0.166	366	7.2	2-3.25x14	2-10x18	SJSp	rt1
rb16	0x0	479	529	191.0	0.097	558	10.9	3-3.25x14	3-10x27	SJSp	rt1
rb17	0x0	406	473	167.8	0.111	499	10.2	3-3.25x14	3-10x27	SJSp	rt1
rb18	0x0	384	356	142.8	0.130	608	9.1	2-3.25x14	2-10x18	SJSp	rt1

## Return Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
rt1	Peak AVF	1500	1500	0.097	794	17.0	8 x 34	RectFbg	

Project Information

For: Kingsbury  
8549 E Spring Park, Eden, UT 84310

	Heating	Cooling
External static pressure	0.60 in H2O	0.60 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0.60 in H2O	0.60 in H2O
Supply / return available pressure	0.378 / 0.222 in H2O	0.378 / 0.222 in H2O
Lowest friction rate	0.266 in/100ft	0.266 in/100ft
Actual air flow	1500 cfm	1500 cfm
Total effective length (TEL)		226 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
U-KITCHEN	h 5417	147	122	0.266	6.0	0x0	VIFx	27.3	115.0	
U-KITCHEN-A	h 5417	147	122	0.289	6.0	0x0	VIFx	15.8	115.0	
U-KITCHEN-B	h 5417	147	122	0.282	6.0	0x0	VIFx	19.1	115.0	
U-KITCHEN-C	h 5417	147	122	0.290	6.0	0x0	VIFx	15.6	115.0	
U-LIVING	c 3322	127	157	0.288	6.0	0x0	VIFx	16.1	115.0	
U-LIVING-A	c 3322	127	157	0.284	6.0	0x0	VIFx	18.0	115.0	
U-LIVING-B	c 3322	127	157	0.266	6.0	0x0	VIFx	27.1	115.0	
U-LIVING-C	c 3322	127	157	0.273	6.0	0x0	VIFx	23.8	115.0	
U-LIVING-D	c 3322	127	157	0.271	6.0	0x0	VIFx	24.4	115.0	
U-LIVING-LIVINH	c 3322	127	157	0.283	6.0	0x0	VIFx	18.7	115.0	
U-PWD	h 5505	150	69	0.285	6.0	0x0	VIFx	17.8	115.0	

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
rb11	0x0	1500	1500	83.4	0.266	568	22.0	0x 0		VIFx	