

Project Information

For: Richard Fetter
 1928 Sweet Creek Road, Bakersville, NC 28705
 Email: rmfetter56@gmail.com

Design Information

	Htg	Clg	Method	Infiltration
Outside db (°F)	15	88		Simplified
Inside db (°F)	70	75	Construction quality	Tight
Design TD (°F)	55	13	Fireplaces	1 (Average)
Daily range	-	M		
Inside humidity (%)	30	50		
Moisture difference (gr/lb)	25	27		

HEATING EQUIPMENT

Make Fujitsu
 Trade FUJITSU
 Model AOU18RLFC
 AHRI ref 5839957

Efficiency 11.3 HSPF
 Heating input
 Heating output 21600 Btuh @ 47°F
 Temperature rise 35 °F
 Actual air flow 600 cfm
 Air flow factor 0.028 cfm/Btuh
 Static pressure 0.51 in H2O
 Space thermostat
 Capacity balance point = 22 °F

COOLING EQUIPMENT

Make Fujitsu
 Trade FUJITSU
 Cond AOU18RLFC
 Coil ARU18RLF
 AHRI ref 5839957

Efficiency 12.0 EER, 19.7 SEER
 Sensible cooling 12960 Btuh
 Latent cooling 5040 Btuh
 Total cooling 18000 Btuh
 Actual air flow 600 cfm
 Air flow factor 0.048 cfm/Btuh
 Static pressure 0.51 in H2O
 Load sensible heat ratio 0.72

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
Great	389	4742	2893	131	140
Bed2	196	3222	1320	89	64
Bth	90	933	940	26	45
Bed3	119	2575	1443	71	70
Master	210	3892	1482	107	72
M.bth	125	1124	572	31	28
M.wic	41	929	242	26	12
Lndry	38	1001	742	28	36
Ktchn/Dine	452	3315	2785	92	135
Crawl	1659	0	0	0	0

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

Entire House	3318	21734	12418	600	600
Other equip loads		0	0		
Equip. @ 0.93 RSM			11586		
Latent cooling			4828		
TOTALS	3318	21734	16413	600	600

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Design Conditions

Location:

Bakersville, NC, US
 Elevation: 2169 ft
 Latitude: 35°N

Outdoor:

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

Heating

15
 -
 -
 15.0

Cooling

88
 19 (M)
 71
 7.5

Indoor:

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

Heating

70
 55
 30
 25.3

Cooling

75
 13
 50
 27.0

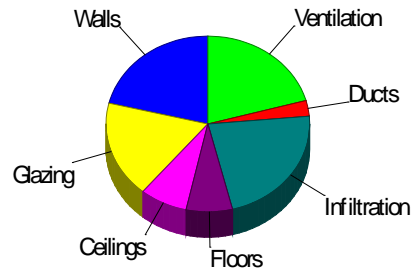
Infiltration:

Method
 Construction quality
 Fireplaces

Simplified
 Tight
 1 (Average)

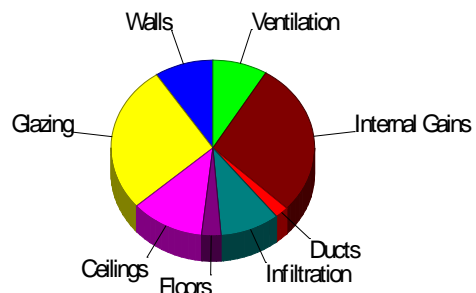
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	2.2	4601	21.2
Glazing	14.9	3867	17.8
Doors	0	0	0
Ceilings	1.0	1651	7.6
Floors	0.5	1595	7.3
Infiltration	2.0	4896	22.5
Ducts		627	2.9
Piping		0	0
Humidification		0	0
Ventilation		4497	20.7
Adjustments		0	0
Total		21734	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	0.5	1161	9.3
Glazing	13.0	3373	27.2
Doors	0	0	0
Ceilings	0.9	1453	11.7
Floors	0.1	384	3.1
Infiltration	0.5	1177	9.5
Ducts		269	2.2
Ventilation		1082	8.7
Internal gains		3520	28.3
Blower		0	0
Adjustments		0	0
Total		12418	100.0



Latent Cooling Load = 4828 Btuh
 Overall U-value = 0.122 Btuh/ft²-°F

Data entries checked.

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Design Conditions

Location: Bakersville, NC, US Elevation: 2169 ft Latitude: 35°N		Indoor: Indoor temperature (°F) 70 Design TD (°F) 55 Relative humidity (%) 30 Moisture difference (gr/lb) 25.3	Heating 70	Cooling 75 13 50 27.0
Outdoor: Drybulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	Heating 15 - - 15.0	Cooling 88 19 (M) 71 7.5		
		Infiltration: Method Construction quality Fireplaces	Simplified Tight 1 (Average)	

Construction descriptions

Construction descriptions	Or	Area ft ²	U-value Btuh/ft ² -°F	Insul R ft ² -°F/Btuh	Htg HTM Btuh/ft ²	Loss Btuh	Clg HTM Btuh/ft ²	Gain Btuh
Walls								
Bg wall, light dry soil, concrete wall, r-17 blknt ins, 8" thk	n	250	0.088	17.0	0	0	0	0
	e	178	0.088	17.0	0	0	0	0
	s	250	0.088	17.0	0	0	0	0
	w	178	0.088	17.0	0	0	0	0
	all	855	0.088	17.0	0	0	0	0
Frm wall, wd ext, 3/8" wood shth, r-40 cav ins, 1/2" gypsum board int fnsh, 2"x6" wood frm, 16" o.c. stud	n	282	0.065	40.0	3.59	1014	0.91	256
	e	312	0.065	40.0	3.59	1121	0.91	283
	s	395	0.065	40.0	3.59	1418	0.91	358
	w	292	0.065	40.0	3.59	1048	0.91	264
	all	1280	0.065	40.0	3.59	4601	0.91	1161
Partitions (none)								
Windows								
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk;	n	168	0.270	0	14.9	2508	9.23	1551
2 glazing, clr low-e outr, air gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk;	e	8	0.270	0	14.9	112	30.3	227
6.67 ft head ht	s	56	0.270	0	14.9	829	13.5	747
	w	28	0.270	0	14.9	418	30.3	848
	all	259	0.270	0	14.9	3867	13.0	3373
Doors (none)								
Ceilings								
Attic ceiling, mtl roof mat, r-60 ceil ins, 1/2" gypsum board int fnsh		1659	0.018	60.0	1.00	1651	0.88	1453
Floors								
21A-32c: Bg floor, light dry soil, 4' depth, carpet flr fnsh		1659	0.020	0	0	0	0	0
Flr floor, frm flr, 12" thkns, carpet flr fnsh, tight cowl ovr, r-17 wall insul		954	0.368	17.0	0.96	918	0.23	221
Flr floor, frm flr, 12" thkns, tile flr fnsh, tight cowl ovr, r-17 wall insul		705	0.368	17.0	0.96	678	0.23	163

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Weather: Bakersville, NC, US

Winter Design Conditions

Outside db	15 °F
Inside db	70 °F
Design TD	55 °F

Summer Design Conditions

Outside db	88 °F
Inside db	75 °F
Design TD	13 °F
Daily range	M
Relative humidity	50 %
Moisture difference	27 gr/lb

Heating Summary

Structure	21107 Btuh
Ducts	627 Btuh
Central vent (0 cfm) (none)	0 Btuh
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	21734 Btuh

Sensible Cooling Equipment Load Sizing

Structure	12149 Btuh
Ducts	269 Btuh
Central vent (0 cfm) (none)	0 Btuh
Blower	0 Btuh
Use manufacturer's data	n
Rate/swing multiplier	0.93
Equipment sensible load	11586 Btuh

Infiltration

Method	Simplified
Construction quality	Tight
Fireplaces	1 (Average)

Latent Cooling Equipment Load Sizing

Structure	3636 Btuh
Ducts	1192 Btuh
Central vent (0 cfm) (none)	0 Btuh
Equipment latent load	4828 Btuh

	Heating	Cooling
Area (ft ²)	1659	1659
Volume (ft ³)	14931	14931
Air changes/hour	0.35	0.35
Equiv. AVF (cfm)	87	87

Equipment Total Load (Sen+Lat)	16413 Btuh
Req. total capacity at 0.72 SHR	1.3 ton

Heating Equipment Summary

Make	Fujitsu
Trade	FUJITSU
Model	AOU18RLFC
AHRI ref	5839957
Efficiency	11.3 HSPF
Heating input	
Heating output	21600 Btuh @ 47°F
Temperature rise	35 °F
Actual air flow	600 cfm
Air flow factor	0.028 cfm/Btuh
Static pressure	0.51 in H2O
Space thermostat	
Capacity balance point = 22 °F	

Cooling Equipment Summary

Make	Fujitsu
Trade	FUJITSU
Cond	AOU18RLFC
Coil	ARU18RLF
AHRI ref	5839957
Efficiency	12.0 EER, 19.7 SEER
Sensible cooling	12960 Btuh
Latent cooling	5040 Btuh
Total cooling	18000 Btuh
Actual air flow	600 cfm
Air flow factor	0.048 cfm/Btuh
Static pressure	0.51 in H2O
Load sensible heat ratio	0.72

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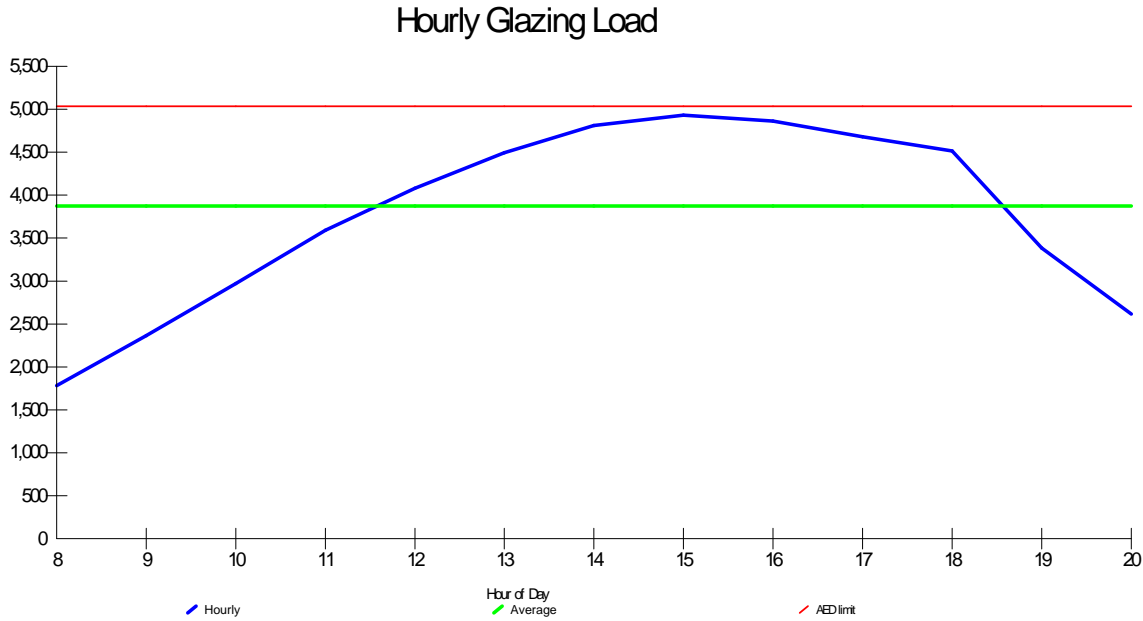
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Location:		Indoor:		Heating	Cooling
Barkersville, NC, US		Indoor temperature (°F)		70	75
Elevation: 2169 ft		Design TD (°F)		55	13
Latitude: 35°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		25.3	27.0
Outdoor:	Heating	Cooling	Infiltration:		
Drybulb (°F)	15	88			
Daily range (°F)	-	19 (M)			
Wet bulb (°F)	-	71			
Wind speed (mph)	15.0	7.5			

Test for Adequate Exposure Diversity



Maximum hourly glazing load exceeds average by 27.4%.

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

AED excursion: 0 Btuh

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1		Room name		Entire House				Great						
2		Exposed wall		342.0 ft				29.0 ft						
3		Room height		7.0 ft				9.0 ft						
4		Room dimensions		3318.0 ft²				21.0 x 18.5 ft						
5		Room area		3318.0 ft²				388.5 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	Bg wall, light dry s	0.088	n	0.00	0.00	250	250	0	0	0	0	0	0
	W	Frm wall, wd ext, 3/	0.065	n	3.59	0.91	450	282	1014	256	189	105	377	95
	G	2 glazing, clr low-e	0.270	n	14.93	9.23	168	0	2508	1551	84	0	1254	776
	W	Bg wall, light dry s	0.088	e	0.00	0.00	178	178	0	0	0	0	0	0
11	W	Frm wall, wd ext, 3/	0.065	e	3.59	0.91	320	312	1121	283	36	36	129	33
	G	2 glazing, clr low-e	0.270	e	14.93	30.29	8	0	112	227	0	0	0	0
	W	Bg wall, light dry s	0.088	s	0.00	0.00	250	250	0	0	0	0	0	0
	W	Frm wall, wd ext, 3/	0.065	s	3.59	0.91	450	395	1418	358	0	0	0	0
	G	2 glazing, clr low-e	0.270	s	14.93	13.45	56	0	829	747	0	0	0	0
	W	Bg wall, light dry s	0.088	w	0.00	0.00	178	178	0	0	0	0	0	0
	W	Frm wall, wd ext, 3/	0.065	w	3.59	0.91	320	292	1048	264	36	36	129	33
	G	2 glazing, clr low-e	0.270	w	14.93	30.29	28	0	418	848	0	0	0	0
	C	Attic ceiling, mtl r	0.018	-	1.00	0.88	1659	1659	1651	1453	389	389	387	340
	F	21A-32c	0.020	-	0.00	0.00	1659	1659	0	0	0	0	0	0
	F	Fir floor, frm flr,	0.368	-	0.96	0.23	954	954	918	221	389	389	374	90
	F	Fir floor, frm flr,	0.368	-	0.96	0.23	705	705	678	163	0	0	0	0
6	c) AED excursion													-136
	Envelope loss/gain								11715	6370			2651	1231
12	a) Infiltration								4896	1177			830	200
	b) Room ventilation								4497	1082			1124	270
13	Internal gains:		Occupants @	230		4				920	1			230
			Appliances/other							2600				900
	Subtotal (lines 6 to 13)								21107	12149			4605	2831
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								21107	12149			4605	2831
15	Duct loads								627	269			137	63
	Total room load								21734	12418			4742	2893
	Air required (cfm)								600	600			131	140

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1		Room name				Bed2				Bth				
2		Exposed wall				28.0 ft				9.0 ft				
3		Room height				9.0 ft		heat/cool		9.0 ft		heat/cool		
4		Room dimensions				14.5 x 13.5 ft				10.0 x 9.0 ft				
5		Room area				195.8 ft²				90.0 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	Bg wall, light dry s	0.088	n	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, wd ext, 3/	0.065	n	3.59	0.91	131	89	318	80	0	0	0	0
	G	2 glazing, clr low-e	0.270	n	14.93	9.23	42	0	627	388	0	0	0	0
	W	Bg wall, light dry s	0.088	e	0.00	0.00	0	0	0	0	0	0	0	0
11	W	Frm wall, wd ext, 3/	0.065	e	3.59	0.91	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.270	e	14.93	30.29	0	0	0	0	0	0	0	0
	W	Bg wall, light dry s	0.088	s	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, wd ext, 3/	0.065	s	3.59	0.91	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.270	s	14.93	13.45	0	0	0	0	0	0	0	0
	W	Bg wall, light dry s	0.088	w	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, wd ext, 3/	0.065	w	3.59	0.91	122	122	437	110	81	65	234	59
	G	2 glazing, clr low-e	0.270	w	14.93	30.29	0	0	0	0	16	0	239	485
	C	Attic ceiling, mtl r	0.018	-	1.00	0.88	196	196	195	171	90	90	90	79
	F	21A-32c	0.020	-	0.00	0.00	0	0	0	0	0	0	0	0
	F	Fir floor, frm flr,	0.368	-	0.96	0.23	196	196	188	45	0	0	0	0
	F	Fir floor, frm flr,	0.368	-	0.96	0.23	0	0	0	0	90	90	87	21
6	c) AED excursion													214
	Envelope loss/gain								1765	733			649	858
12	a) Infiltration								802	193			258	62
	b) Room ventilation								562	135			0	0
13	Internal gains:		Occupants @		230		1			230	0			0
			Appliances/other							0				0
	Subtotal (lines 6 to 13)								3129	1291			906	919
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								3129	1291			906	919
15	Duct loads								93	29	3%	2%	27	20
	Total room load								3222	1320			933	940
	Air required (cfm)								89	64			26	45

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1 Room name		Bed3 23.5 ft 9.0 ft heat/cool 1.0 x 119.3 ft 119.3 ft²						Master 29.0 ft 9.0 ft heat/cool 14.5 x 14.5 ft 210.3 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	Bg wall, light dry s	0.088	n	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, wd ext, 3/	0.065	n	3.59	0.91	0	0	0	0	131	89	318	80
	G	2 glazing, clr low-e	0.270	n	14.93	9.23	0	0	0	0	42	0	627	388
	W	Bg wall, light dry s	0.088	e	0.00	0.00	0	0	0	0	0	0	0	0
11	W	Frm wall, wd ext, 3/	0.065	e	3.59	0.91	0	0	0	0	131	131	469	118
	G	2 glazing, clr low-e	0.270	e	14.93	30.29	0	0	0	0	0	0	0	0
	W	Bg wall, light dry s	0.088	s	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, wd ext, 3/	0.065	s	3.59	0.91	131	119	426	107	0	0	0	0
	G	2 glazing, clr low-e	0.270	s	14.93	13.45	12	0	179	161	0	0	0	0
	W	Bg wall, light dry s	0.088	w	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, wd ext, 3/	0.065	w	3.59	0.91	81	69	248	63	0	0	0	0
	G	2 glazing, clr low-e	0.270	w	14.93	30.29	12	0	179	363	0	0	0	0
	C	Attic ceiling, mtl r	0.018	-	1.00	0.88	119	119	119	104	210	210	209	184
	F	21A-32c	0.020	-	0.00	0.00	0	0	0	0	0	0	0	0
	F	Fir floor, frm flr,	0.368	-	0.96	0.23	119	119	115	28	210	210	202	49
	F	Fir floor, frm flr,	0.368	-	0.96	0.23	0	0	0	0	0	0	0	0
6	c) AED excursion													-69
	Envelope loss/gain								1266	885			1826	750
12	a) Infiltration								673	162			830	200
	b) Room ventilation								562	135			1124	270
13	Internal gains:		Occupants @		230		1			230	1			230
			Appliances/other							0				0
	Subtotal (lines 6 to 13)								2501	1412			3780	1450
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								2501	1412			3780	1450
15	Duct loads						3%	2%	74	31	3%	2%	112	32
	Total room load								2575	1443			3892	1482
	Air required (cfm)								71	70			107	72

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1 Room name				M.bth 12.5 ft 9.0 ft heat/cool 10.0 x 12.5 ft 125.0 ft²				M.wic 13.5 ft 9.0 ft heat/cool 9.0 x 4.5 ft 40.5 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	Bg wall, light dry s	0.088	n	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, wd ext, 3/	0.065	n	3.59	0.91	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.270	n	14.93	9.23	0	0	0	0	0	0	0	0
	W	Bg wall, light dry s	0.088	e	0.00	0.00	0	0	0	0	0	0	0	0
11	W	Frm wall, wd ext, 3/	0.065	e	3.59	0.91	113	105	377	95	41	41	146	37
	G	2 glazing, clr low-e	0.270	e	14.93	30.29	8	0	112	227	0	0	0	0
	W	Bg wall, light dry s	0.088	s	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, wd ext, 3/	0.065	s	3.59	0.91	0	0	0	0	81	81	291	73
	G	2 glazing, clr low-e	0.270	s	14.93	13.45	0	0	0	0	0	0	0	0
	W	Bg wall, light dry s	0.088	w	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, wd ext, 3/	0.065	w	3.59	0.91	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.270	w	14.93	30.29	0	0	0	0	0	0	0	0
	C	Attic ceiling, mtl r	0.018	-	1.00	0.88	125	125	124	109	41	41	40	35
	F	21A-32c	0.020	-	0.00	0.00	0	0	0	0	0	0	0	0
	F	Flr floor, frm flr,	0.368	-	0.96	0.23	0	0	0	0	41	41	39	9
	F	Flr floor, frm flr,	0.368	-	0.96	0.23	125	125	120	29	0	0	0	0
6	c) AED excursion									13				-11
	Envelope loss/gain								734	473			516	144
12	a) Infiltration								358	86			387	93
	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)								1092	559			903	237
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								1092	559			903	237
15	Duct loads						3%	2%	32	12	3%	2%	27	5
	Total room load								1124	572			929	242
	Air required (cfm)								31	28			26	12

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

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1 Room name				Lndry 5.5 ft				Ktchn/Dine 21.0 ft						
2 Exposed wall				9.0 ft heat/cool				9.0 ft heat/cool						
3 Room height				1.0 x 38.3 ft				1.0 x 451.5 ft						
4 Room dimensions				38.3 ft²				451.5 ft²						
5 Room area														
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	Bg wall, light dry s	0.088	n	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, wd ext, 3/	0.065	n	3.59	0.91	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.270	n	14.93	9.23	0	0	0	0	0	0	0	0
	W	Bg wall, light dry s	0.088	e	0.00	0.00	0	0	0	0	0	0	0	0
11	W	Frm wall, wd ext, 3/	0.065	e	3.59	0.91	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.270	e	14.93	30.29	0	0	0	0	0	0	0	0
	W	Bg wall, light dry s	0.088	s	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, wd ext, 3/	0.065	s	3.59	0.91	50	50	178	45	189	146	523	132
	G	2 glazing, clr low-e	0.270	s	14.93	13.45	0	0	0	0	44	0	649	585
	W	Bg wall, light dry s	0.088	w	0.00	0.00	0	0	0	0	0	0	0	0
	W	Frm wall, wd ext, 3/	0.065	w	3.59	0.91	0	0	0	0	0	0	0	0
	G	2 glazing, clr low-e	0.270	w	14.93	30.29	0	0	0	0	0	0	0	0
	C	Attic ceiling, mtl r	0.018	-	1.00	0.88	38	38	38	33	452	452	449	395
	F	21A-32c	0.020	-	0.00	0.00	0	0	0	0	0	0	0	0
	F	Flr floor, frm flr,	0.368	-	0.96	0.23	0	0	0	0	0	0	0	0
	F	Flr floor, frm flr,	0.368	-	0.96	0.23	38	38	37	9	452	452	434	104
6	c) AED excursion													28
	Envelope loss/gain								253	52			2056	1245
12	a) Infiltration								157	38			601	145
	b) Room ventilation								562	135			562	135
13	Internal gains:		Occupants @		230		0			0	0			0
			Appliances/other							500				1200
	Subtotal (lines 6 to 13)								972	726			3219	2725
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								972	726			3219	2725
15	Duct loads						3%	2%	29	16	3%	2%	96	60
	Total room load								1001	742			3315	2785
	Air required (cfm)								28	36			92	135

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1	Room name				Crawl									
	Exposed wall				171.0 ft									
	Room height				5.0 ft uncondit.									
Room dimensions				1.0 x 1659.0 ft										
Room area				1659.0 ft²										
	Ty	Construction number	U-value (Btuh/ft²-°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area or perimeter		Load	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	Bg wall, light dry s	0.088	n	0.00	0.00	250	250	0	0				
	W	Frm wall, wd ext, 3/	0.065	n	3.59	0.91	0	0	0	0				
	G	2 glazing, clr low-e	0.270	n	14.93	9.23	0	0	0	0				
	W	Bg wall, light dry s	0.088	e	0.00	0.00	178	178	0	0				
11	W	Frm wall, wd ext, 3/	0.065	e	3.59	0.91	0	0	0	0				
	G	2 glazing, clr low-e	0.270	e	14.93	30.29	0	0	0	0				
	W	Bg wall, light dry s	0.088	s	0.00	0.00	250	250	0	0				
	W	Frm wall, wd ext, 3/	0.065	s	3.59	0.91	0	0	0	0				
	G	2 glazing, clr low-e	0.270	s	14.93	13.45	0	0	0	0				
	W	Bg wall, light dry s	0.088	w	0.00	0.00	178	178	0	0				
	W	Frm wall, wd ext, 3/	0.065	w	3.59	0.91	0	0	0	0				
	G	2 glazing, clr low-e	0.270	w	14.93	30.29	0	0	0	0				
	C	Attic ceiling, mtl r	0.018	-	1.00	0.88	0	0	0	0				
	F	21A-32c	0.020	-	0.00	0.00	1659	1659	0	0				
	F	Flr floor, frm flr,	0.368	-	0.96	0.23	0	0	0	0				
	F	Flr floor, frm flr,	0.368	-	0.96	0.23	0	0	0	0				
6	c) AED excursion									0				
	Envelope loss/gain								0	0				
12	a) Infiltration								0	0				
	b) Room ventilation								0	0				
13	Internal gains:		Occupants @	230			0			0				
			Appliances/other							0				
	Subtotal (lines 6 to 13)								0	0				
	Less external load								0	0				
	Less transfer								0	0				
	Redistribution								0	0				
14	Subtotal								0	0				
15	Duct loads						0%	0%	0	0				
	Total room load								0	0				
	Air required (cfm)								0	0				

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Project Information

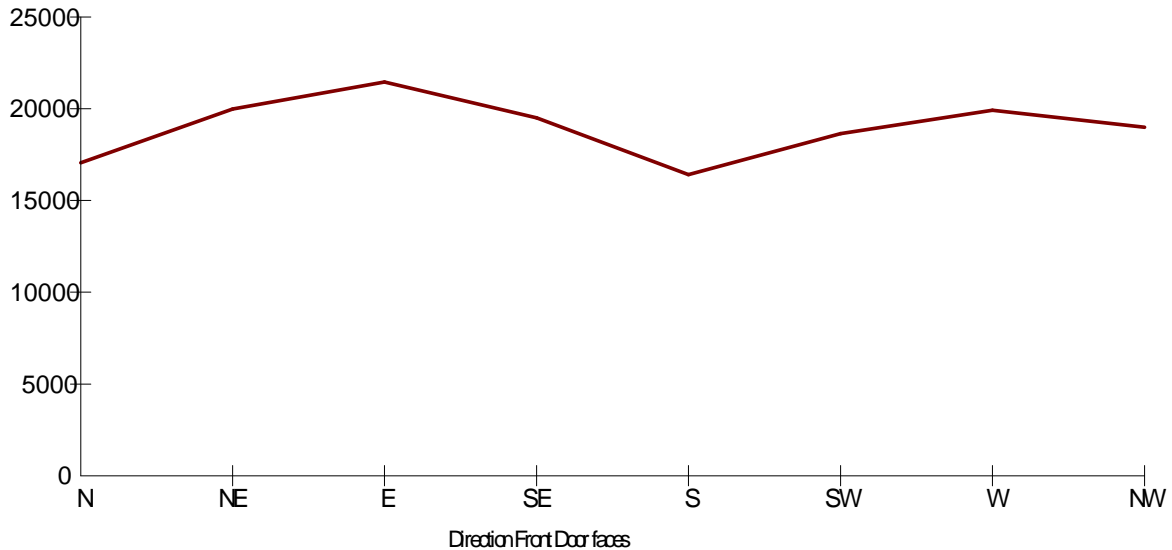
For: Richard Fetter
 1928 Sweet Creek Road, Bakersville, NC 28705
 Email: rmfetter56@gmail.com

Design Conditions

Location:		Indoor:	Heating	Cooling
Barkersville, NC, US		Indoor temperature (°F)	70	75
Elevation: 2169 ft		Design TD (°F)	55	13
Latitude: 35°N		Relative humidity (%)	30	50
		Moisture difference (gr/lb)	25.3	27.0
Outdoor:	Heating	Cooling	Infiltration:	
Dry bulb (°F)	15	88		
Daily range (°F)	-	19 (M)		
Wet bulb (°F)	-	71		
Wind speed (mph)	15.0	7.5		

Front Door	North	Northeast	East	Southeast	South	Southwest	West	Northwest
Sensible Load (Btuh)	12228	15147	16619	14670	11586	13817	15090	14159
Latent Load (Btuh)	4828	4828	4828	4828	4828	4828	4828	4828
Total Load (Btuh)	17056	19974	21447	19497	16413	18644	19917	18987
Heating AVF (cfm)	600	600	600	600	600	600	600	600
Cooling AVF (cfm)	600	600	600	600	600	600	600	600

Building Orientation Cooling Load



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

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J1 Form - Worksheet A
Entire House
Perfect Home Hvac Design

Job: 3631
 Date: 09/25/2019
 By: Dana Morley

890 North Main Street, Bountiful, UT 84010 Phone: 801-300-5118 Web: www.perfect-home-hvac-design.com

Supporting Detail	
Project Name: Fetter, Richard	Date: 09/25/2019
Address: 1928 Sweet Creek Road, Bakersville, NC 28705	
Phone:	Job ID: 3631

Worksheet A Location and Design Conditions			
Weather Location: Bakersville, NC, US	Elevation = 2169	Latitude = 35	
Indoor Conditions, Heating: DB = 70 °F RH = 30 %	Indoor Conditions, Cooling: DB = 75 °F RH = 50 %		
Table 1 Conditions 99% DB = 15 °F 1% DB = 88 °F	Grains Difference = 27 gr/lb	Daily Range = M	
Design Temperature Differences	HTD = 55 °F	CTD = 13 °F	

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