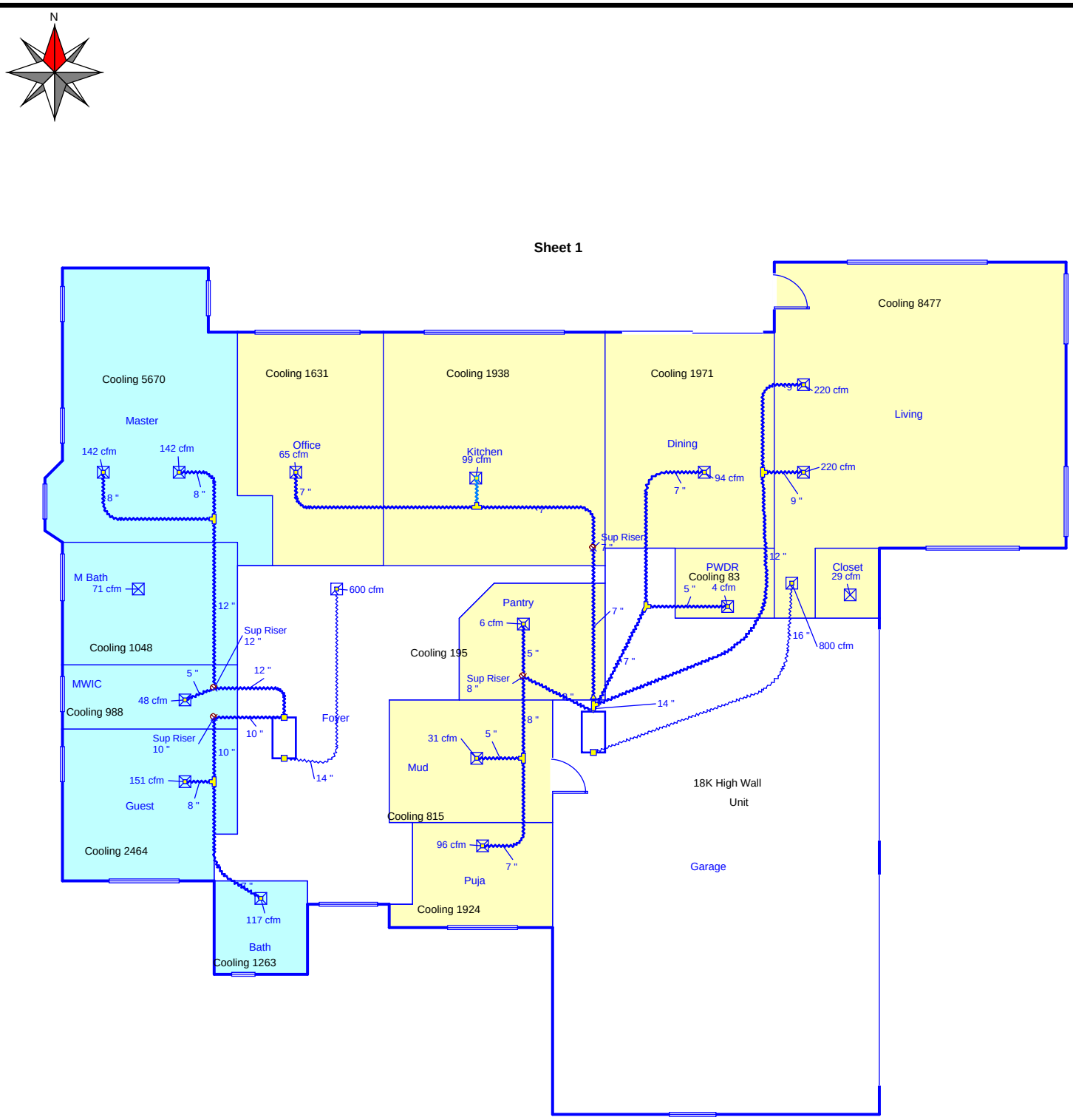

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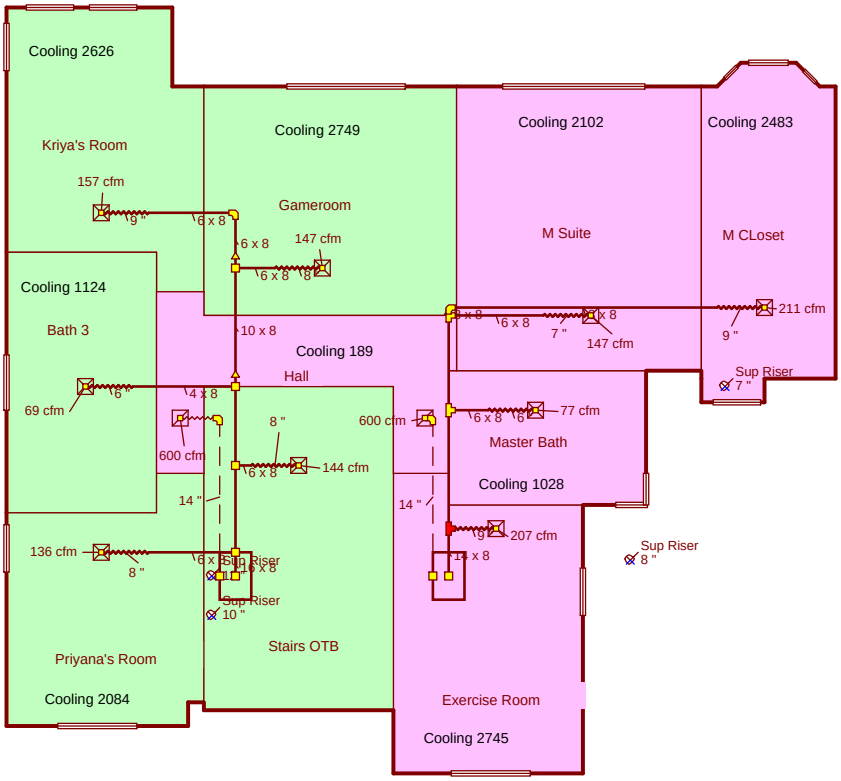
2nd Floor



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Project Information

For: Anish Patel
2314 North Clearspring, Irving, Tx 75063
Phone: 215-817-1376
Email: appatel@gmail.com

Notes: Anish Patel
2314 North Clearspring
Irving, Tx 76063
Manual J

Design Information

Weather: Dallas-Fort Worth/F, TX, US

Winter Design Conditions

Outside db	27	°F
Inside db	70	°F
Design TD	43	°F

Summer Design Conditions

Outside db	101	°F
Inside db	75	°F
Design TD	26	°F
Daily range	M	
Relative humidity	50	%
Moisture difference	24	gr/lb

Heating Summary

Structure	55045	Btuh
Ducts	7998	Btuh
Central vent (247 cfm)	11344	Btuh
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	74387	Btuh

Sensible Cooling Equipment Load Sizing

Structure	41223	Btuh
Ducts	4643	Btuh
Central vent (247 cfm)	6775	Btuh
Blower	0	Btuh
Use manufacturer's data	n	
Rate/swing multiplier	1.05	
Equipment sensible load	55536	Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	1 (Average)

	Heating	Cooling
Area (ft²)	4727	4727
Volume (ft³)	51745	51745
Air changes/hour	0.39	0.19
Equiv. AVF (cfm)	339	164

Latent Cooling Equipment Load Sizing

Structure	5247	Btuh
Ducts	1987	Btuh
Central vent (247 cfm)	3987	Btuh
Equipment latent load	7234	Btuh
Equipment Total Load (Sen+Lat)	62770	Btuh
Req. total capacity at 0.70 SHR	6.6	ton

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.

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Manual J

Design Information

Weather: Dallas-Fort Worth/F, TX, US

Winter Design Conditions

Outside db	27	°F
Inside db	70	°F
Design TD	43	°F

Summer Design Conditions

Outside db	101	°F
Inside db	75	°F
Design TD	26	°F
Daily range	M	
Relative humidity	50	%
Moisture difference	24	gr/lb

Heating Summary

Structure	20386	Btuh
Ducts	2871	Btuh
Central vent (82 cfm) Outside air	3761	Btuh
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	27017	Btuh

Sensible Cooling Equipment Load Sizing

Structure	14803	Btuh
Ducts	1712	Btuh
Central vent (82 cfm) Outside air	2246	Btuh
Blower	0	Btuh
Use manufacturer's data	n	
Rate/swing multiplier	1.05	
Equipment sensible load	19793	Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	1 (Average)

	Heating	Cooling
Area (ft²)	1977	1977
Volume (ft³)	19773	19773
Air changes/hour	0.31	0.15
Equiv. AVF (cfm)	102	49

Latent Cooling Equipment Load Sizing

Structure	1398	Btuh
Ducts	692	Btuh
Central vent (82 cfm) Outside air	1322	Btuh
Equipment latent load	3411	Btuh
Equipment Total Load (Sen+Lat)	23204	Btuh
Req. total capacity at 0.85 SHR	1.9	ton

Heating Equipment Summary

Make	LG Electronics
Trade	LG
Model	LUU240HHV
AHRI ref	205788775

Efficiency	11 HSPF	
Heating input		
Heating output	27000	Btuh @ 47°F
Temperature rise	31	°F
Actual air flow	800	cfm
Air flow factor	0.034	cfm/Btuh
Static pressure	0.50	in H2O
Space thermostat		

Capacity balance point = 29 °F

Backup:
Input = 7 kW, Output = 24313 Btuh, 100 AFUE

Cooling Equipment Summary

Make	LG Electronics
Trade	LG
Cond	LUU240HHV
Coil	LVN241HV4
AHRI ref	205788775

Efficiency	12.7 EER, 19.5 SEER	
Sensible cooling	20880	Btuh
Latent cooling	3120	Btuh
Total cooling	24000	Btuh
Actual air flow	800	cfm
Air flow factor	0.048	cfm/Btuh
Static pressure	0.50	in H2O
Load sensible heat ratio	0.85	

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Irving, Tx 76063
Manual J

Design Information

Weather: Dallas-Fort Worth/F, TX, US

Winter Design Conditions

Outside db	27	°F
Inside db	70	°F
Design TD	43	°F

Summer Design Conditions

Outside db	101	°F
Inside db	75	°F
Design TD	26	°F
Daily range	M	
Relative humidity	50	%
Moisture difference	24	gr/lb

Heating Summary

Structure	11090	Btuh
Ducts	1760	Btuh
Central vent (60 cfm)	2759	Btuh
Outside air		
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	15608	Btuh

Sensible Cooling Equipment Load Sizing

Structure	9987	Btuh
Ducts	1036	Btuh
Central vent (60 cfm)	1648	Btuh
Outside air		
Blower	0	Btuh
Use manufacturer's data	n	
Rate/swing multiplier	1.05	
Equipment sensible load	13367	Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	1 (Average)

	Heating	Cooling
Area (ft²)	1001	1001
Volume (ft³)	14487	14487
Air changes/hour	0.33	0.16
Equiv. AVF (cfm)	80	39

Latent Cooling Equipment Load Sizing

Structure	1424	Btuh
Ducts	444	Btuh
Central vent (60 cfm)	970	Btuh
Outside air		
Equipment latent load	2838	Btuh
Equipment Total Load (Sen+Lat)	16205	Btuh
Req. total capacity at 0.82 SHR	1.4	ton

Heating Equipment Summary

Make	LG Electronics
Trade	LG
Model	LUU189HV
AHRI ref	203161351

Efficiency	10.4 HSPF	
Heating input		
Heating output	20000	Btuh @ 47°F
Temperature rise	31	°F
Actual air flow	600	cfm
Air flow factor	0.047	cfm/Btuh
Static pressure	0.50	in H2O
Space thermostat		

Capacity balance point = 22 °F

Backup:
Input = 4 kW, Output = 15250 Btuh, 100 AFUE

Cooling Equipment Summary

Make	LG Electronics
Trade	LG
Cond	LUU189HV
Coil	LVN181HV4
AHRI ref	203161351

Efficiency	13.3 EER, 19.2 SEER	
Sensible cooling	15480	Btuh
Latent cooling	2520	Btuh
Total cooling	18000	Btuh
Actual air flow	600	cfm
Air flow factor	0.054	cfm/Btuh
Static pressure	0.50	in H2O
Load sensible heat ratio	0.82	

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Notes: Anish Patel
2314 North Clearspring
Irving, Tx 76063
Manual J

Design Information

Weather: Dallas-Fort Worth/F, TX, US

Winter Design Conditions

Outside db	27	°F
Inside db	70	°F
Design TD	43	°F

Summer Design Conditions

Outside db	101	°F
Inside db	75	°F
Design TD	26	°F
Daily range	M	
Relative humidity	50	%
Moisture difference	24	gr/lb

Heating Summary

Structure	13572	Btuh
Ducts	1685	Btuh
Central vent (48 cfm)	2215	Btuh
Outside air		
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	17473	Btuh

Sensible Cooling Equipment Load Sizing

Structure	9100	Btuh
Ducts	990	Btuh
Central vent (48 cfm)	1323	Btuh
Outside air		
Blower	0	Btuh
Use manufacturer's data	n	
Rate/swing multiplier	1.05	
Equipment sensible load	12041	Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	1 (Average)

	Heating	Cooling
Area (ft²)	856	856
Volume (ft³)	8564	8564
Air changes/hour	0.56	0.27
Equiv. AVF (cfm)	80	39

Latent Cooling Equipment Load Sizing

Structure	1026	Btuh
Ducts	426	Btuh
Central vent (48 cfm)	778	Btuh
Outside air		
Equipment latent load	2230	Btuh
Equipment Total Load (Sen+Lat)	14271	Btuh
Req. total capacity at 0.83 SHR	1.2	ton

Heating Equipment Summary

Make	LG Electronics
Trade	LG
Model	LUU189HV
AHRI ref	203161351

Efficiency	10.4 HSPF	
Heating input		
Heating output	20000	Btuh @ 47°F
Temperature rise	31	°F
Actual air flow	600	cfm
Air flow factor	0.039	cfm/Btuh
Static pressure	0.50	in H2O
Space thermostat		

Capacity balance point = 25 °F

Backup:
Input = 6 kW, Output = 19217 Btuh, 100 AFUE

Cooling Equipment Summary

Make	LG Electronics
Trade	LG
Cond	LUU189HV
Coil	LVN181HV4
AHRI ref	203161351

Efficiency	13.3 EER, 19.2 SEER	
Sensible cooling	15660	Btuh
Latent cooling	2340	Btuh
Total cooling	18000	Btuh
Actual air flow	600	cfm
Air flow factor	0.059	cfm/Btuh
Static pressure	0.50	in H2O
Load sensible heat ratio	0.84	

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Notes: Anish Patel
2314 North Clearspring
Irving, Tx 76063
Manual J

Design Information

Weather: Dallas-Fort Worth/F, TX, US

Winter Design Conditions

Outside db	27	°F
Inside db	70	°F
Design TD	43	°F

Summer Design Conditions

Outside db	101	°F
Inside db	75	°F
Design TD	26	°F
Daily range	M	
Relative humidity	50	%
Moisture difference	24	gr/lb

Heating Summary

Structure	9997	Btuh
Ducts	1682	Btuh
Central vent (57 cfm)	2609	Btuh
Outside air		
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	14289	Btuh

Sensible Cooling Equipment Load Sizing

Structure	8101	Btuh
Ducts	990	Btuh
Central vent (57 cfm)	1558	Btuh
Outside air		
Blower	0	Btuh
Use manufacturer's data	n	
Rate/swing multiplier	1.05	
Equipment sensible load	11235	Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	1 (Average)

	Heating	Cooling
Area (ft²)	892	892
Volume (ft³)	8923	8923
Air changes/hour	0.52	0.25
Equiv. AVF (cfm)	77	37

Latent Cooling Equipment Load Sizing

Structure	1399	Btuh
Ducts	426	Btuh
Central vent (57 cfm)	917	Btuh
Outside air		
Equipment latent load	2742	Btuh
Equipment Total Load (Sen+Lat)	13977	Btuh
Req. total capacity at 0.81 SHR	1.2	ton

Heating Equipment Summary

Make	LG Electronics
Trade	LG
Model	LUU189HV
AHRI ref	203161351

Efficiency	10.4 HSPF	
Heating input		
Heating output	20000	Btuh @ 47°F
Temperature rise	31	°F
Actual air flow	600	cfm
Air flow factor	0.051	cfm/Btuh
Static pressure	0.50	in H2O
Space thermostat		

Capacity balance point = 19 °F

Backup:
Input = 4 kW, Output = 13660 Btuh, 100 AFUE

Cooling Equipment Summary

Make	LG Electronics
Trade	LG
Cond	LUU189HV
Coil	LVN181HV4
AHRI ref	203161351

Efficiency	13.3 EER, 19.2 SEER	
Sensible cooling	15660	Btuh
Latent cooling	2340	Btuh
Total cooling	18000	Btuh
Actual air flow	600	cfm
Air flow factor	0.066	cfm/Btuh
Static pressure	0.50	in H2O
Load sensible heat ratio	0.80	

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

3441 Raffield Ct., Midlothian, TX 76065 Phone: 817.368.4848 Email: designairtexas@gmail.com Web: www.designairtexas.com

1	Room name						Entire House				Downstairs			
2	Exposed wall						459.1 ft				139.5 ft			
3	Room height						10.9 ft				10.0 ft			
4	Room dimensions													
5	Room area						4726.6 ft²				1977.3 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	12C-0sw	0.091	n	3.89	2.94	1355	954	3705	2807	710	420	1632	1236
.	G	2 glazing, clr outr,	0.200	n	8.54	10.64	306	0	2609	3250	194	0	1657	2064
.	G	2 glazing, clr outr,	0.200	n	8.54	10.64	96	0	820	1021	96	0	820	1021
.	W	12C-0sw	0.091	ne	3.89	2.94	21	16	61	47	0	0	0	0
11	G	2 glazing, clr outr,	0.200	ne	8.54	22.68	5	0	46	123	0	0	0	0
	W	12C-0sw	0.091	e	3.89	2.94	940	808	3138	2377	305	209	812	615
	G	2 glazing, clr outr,	0.200	e	8.54	30.95	133	0	1132	4101	96	0	820	2971
	W	12C-0sw	0.091	s	3.89	2.94	1105	818	3179	2408	300	202	785	595
	G	2 glazing, clr outr,	0.200	s	8.54	13.70	287	0	2451	3933	98	0	837	1343
	W	12C-0sw	0.091	sw	3.89	2.94	18	18	70	53	0	0	0	0
	W	12C-0sw	0.091	w	3.89	2.94	1147	1007	3913	2964	80	59	229	174
	G	2 glazing, clr outr,	0.200	w	8.54	30.95	119	0	1016	3683	0	0	0	0
	G	2 glazing, clr outr,	0.200	w	8.54	30.95	21	0	179	650	21	0	179	650
	W	12C-0sw	0.091	nw	3.89	2.94	42	37	144	109	0	0	0	0
	G	2 glazing, clr outr,	0.200	nw	8.54	22.68	5	0	46	123	0	0	0	0
	C	16X30-0ad	0.408	-	1.79	1.40	3342	3342	5980	4686	1132	1132	2026	1588
	F	22A-tpl	0.989	-	42.23	0.00	3340	260	10970	0	1977	140	5891	0
6	c) AED excursion									0				0
	Envelope loss/gain								39458	32335			15688	12257
12	a) Infiltration								15587	4498			4698	1356
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @	230				13			2990	3			690
		Appliances/other								1400				500
	Subtotal (lines 6 to 13)								55045	41223			20386	14803
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								55045	41223			20386	14803
15	Duct loads						15%	11%	7998	4643	14%	12%	2871	1712
	Total room load								63043	45866			23257	16515
	Air required (cfm)								2600	2600			800	800

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

1	Room name						Kids AH				Master Up AH			
2	Exposed wall						105.5 ft				104.7 ft			
3	Room height						14.5 ft				10.0 ft			
4	Room dimensions													
5	Room area						1000.8 ft²				892.3 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	12C-0sw	0.091	n	3.89	2.94	285	231	898	680	210	153	593	449
.	G	2 glazing, clr outr,	0.200	n	8.54	10.64	54	0	461	575	58	0	491	612
.	G	2 glazing, clr outr,	0.200	n	8.54	10.64	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	ne	3.89	2.94	0	0	0	0	21	16	61	47
11	G	2 glazing, clr outr,	0.200	ne	8.54	22.68	0	0	0	0	5	0	46	123
	W	12C-0sw	0.091	e	3.89	2.94	65	65	253	191	455	434	1684	1276
	G	2 glazing, clr outr,	0.200	e	8.54	30.95	0	0	0	0	22	0	184	665
	W	12C-0sw	0.091	s	3.89	2.94	315	225	874	662	280	227	882	668
	G	2 glazing, clr outr,	0.200	s	8.54	13.70	90	0	769	1233	53	0	453	726
	W	12C-0sw	0.091	sw	3.89	2.94	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	w	3.89	2.94	427	395	1533	1161	60	60	233	177
	G	2 glazing, clr outr,	0.200	w	8.54	30.95	33	0	278	1006	0	0	0	0
	G	2 glazing, clr outr,	0.200	w	8.54	30.95	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	nw	3.89	2.94	0	0	0	0	21	16	61	47
	G	2 glazing, clr outr,	0.200	nw	8.54	22.68	0	0	0	0	5	0	46	123
	C	16X30-0ad	0.408	-	1.79	1.40	1134	1134	2029	1590	892	892	1597	1251
	F	22A-tpl	0.989	-	42.23	0.00	487	8	319	0	20	3	139	0
6	c) AED excursion									7				0
	Envelope loss/gain								7412	7105			6470	6163
12	a) Infiltration								3677	1061			3527	1018
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @	230				4			920	4			920
		Appliances/other								900				0
	Subtotal (lines 6 to 13)								11090	9987			9997	8101
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								11090	9987			9997	8101
15	Duct loads						16%	10%	1760	1036	17%	12%	1682	990
	Total room load								12849	11023			11679	9091
	Air required (cfm)								600	600			600	600

Right-J® Worksheet
Entire House

1	Room name					Master Down AH								
2	Exposed wall					109.4 ft								
3	Room height					10.0 ft								
4	Room dimensions													
5	Room area					856.4 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	12C-0sw	0.091	n	3.89	2.94	150	150	583	442				
.	├─G	2 glazing, clr outr,	0.200	n	8.54	10.64	0	0	0	0				
.	└─G	2 glazing, clr outr,	0.200	n	8.54	10.64	0	0	0	0				
.	W	12C-0sw	0.091	ne	3.89	2.94	0	0	0	0				
11	└─G	2 glazing, clr outr,	0.200	ne	8.54	22.68	0	0	0	0				
	W	12C-0sw	0.091	e	3.89	2.94	115	100	389	294				
	└─G	2 glazing, clr outr,	0.200	e	8.54	30.95	15	0	128	464				
	W	12C-0sw	0.091	s	3.89	2.94	210	164	637	483				
	└─G	2 glazing, clr outr,	0.200	s	8.54	13.70	46	0	393	630				
	W	12C-0sw	0.091	sw	3.89	2.94	18	18	70	53				
	W	12C-0sw	0.091	w	3.89	2.94	580	494	1918	1453				
	├─G	2 glazing, clr outr,	0.200	w	8.54	30.95	87	0	739	2677				
	└─G	2 glazing, clr outr,	0.200	w	8.54	30.95	0	0	0	0				
	W	12C-0sw	0.091	nw	3.89	2.94	21	21	82	62				
	└─G	2 glazing, clr outr,	0.200	nw	8.54	22.68	0	0	0	0				
	C	16X30-0ad	0.408	-	1.79	1.40	184	184	329	258				
	F	22A-tpl	0.989	-	42.23	0.00	856	109	4621	0				
6	c) AED excursion									761				
	Envelope loss/gain								9888	7577				
12	a) Infiltration								3685	1063				
	b) Room ventilation								0	0				
13	Internal gains:	Occupants @	230				2			460				
		Appliances/other								0				
	Subtotal (lines 6 to 13)								13572	9100				
	Less external load								0	0				
	Less transfer								0	0				
	Redistribution								0	0				
14	Subtotal								13572	9100				
15	Duct loads						12%	11%	1685	990				
	Total room load								15257	10091				
	Air required (cfm)								600	600				

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

1	Room name					Downstairs				Closet					
2	Exposed wall					139.5 ft				6.0 ft					
3	Room height					10.0 ft				10.0 ft				heat/cool	
4	Room dimensions									5.5 x 6.0 ft					
5	Room area					1977.3 ft²				33.0 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	12C-0sw	0.091	n	3.89	2.94	710	420	1632	1236	0	0	0	0
.	G	2 glazing, clr outr,	0.200	n	8.54	10.64	194	0	1657	2064	0	0	0	0
.	G	2 glazing, clr outr,	0.200	n	8.54	10.64	96	0	820	1021	0	0	0	0
.	W	12C-0sw	0.091	ne	0.00	0.00	0	0	0	0	0	0	0	0
11	G	2 glazing, clr outr,	0.200	ne	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	e	3.89	2.94	305	209	812	615	60	60	233	177
	G	2 glazing, clr outr,	0.200	e	8.54	30.95	96	0	820	2971	0	0	0	0
	W	12C-0sw	0.091	s	3.89	2.94	300	202	785	595	0	0	0	0
	G	2 glazing, clr outr,	0.200	s	8.54	13.70	98	0	837	1343	0	0	0	0
	W	12C-0sw	0.091	sw	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	w	3.89	2.94	80	59	229	174	0	0	0	0
	G	2 glazing, clr outr,	0.200	w	0.00	0.00	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	w	8.54	30.95	21	0	179	650	0	0	0	0
	W	12C-0sw	0.091	nw	0.00	0.00	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	nw	0.00	0.00	0	0	0	0	0	0	0	0
	C	16X30-0ad	0.408	-	1.79	1.40	1132	1132	2026	1588	33	33	59	46
	F	22A-tpl	0.989	-	42.23	0.00	1977	140	5891	0	33	6	253	0
6	c) AED excursion									0				-2
	Envelope loss/gain								15688	12257			546	221
12	a) Infiltration								4698	1356			202	58
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @	230				3			690	0			0
		Appliances/other								500				0
	Subtotal (lines 6 to 13)								20386	14803			748	279
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								20386	14803			748	279
15	Duct loads						14%	12%	2871	1712	14%	12%	105	32
	Total room load								23257	16515			853	312
	Air required (cfm)								800	800			29	15

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

1	Room name					Dining						Kitchen			
2	Exposed wall					14.5 ft						19.0 ft			
3	Room height					10.0 ft			heat/cool			10.0 ft			heat/cool
4	Room dimensions					14.5 x 18.5 ft						19.0 x 20.0 ft			
5	Room area					268.3 ft²						380.0 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	12C-0sw	0.091	n	3.89	2.94	145	49	190	144	190	123	478	362
.	G	2 glazing, clr outr,	0.200	n	8.54	10.64	0	0	0	0	67	0	572	713
.	G	2 glazing, clr outr,	0.200	n	8.54	10.64	96	0	820	1021	0	0	0	0
.	W	12C-0sw	0.091	ne	0.00	0.00	0	0	0	0	0	0	0	0
11	G	2 glazing, clr outr,	0.200	ne	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	e	3.89	2.94	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	e	8.54	30.95	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	s	3.89	2.94	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	s	8.54	13.70	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	sw	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	w	3.89	2.94	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	w	0.00	0.00	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	w	8.54	30.95	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	nw	0.00	0.00	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	nw	0.00	0.00	0	0	0	0	0	0	0	0
	C	16X30-0ad	0.408	-	1.79	1.40	160	160	285	224	10	10	18	14
	F	22A-tpl	0.989	-	42.23	0.00	268	15	612	0	380	19	802	0
6	c) AED excursion									-10				-9
	Envelope loss/gain								1908	1379			1870	1080
12	a) Infiltration								488	141			640	185
	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)								2396	1520			2510	1265
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								2396	1520			2510	1265
15	Duct loads						14%	12%	337	176	14%	12%	354	146
	Total room load								2734	1696			2864	1411
	Air required (cfm)								94	82			99	68

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

1	Room name					Living						Mud			
2	Exposed wall					71.5 ft						0 ft			
3	Room height					10.0 ft			heat/cool			10.0 ft			heat/cool
4	Room dimensions					1.0	x	633.5 ft				14.0	x	10.5 ft	
5	Room area					633.5 ft²						147.0 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	12C-0sw	0.091	n	3.89	2.94	250	168	653	495	0	0	0	0
.	G	2 glazing, clr outr,	0.200	n	8.54	10.64	82	0	700	872	0	0	0	0
.	G	2 glazing, clr outr,	0.200	n	8.54	10.64	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	ne	0.00	0.00	0	0	0	0	0	0	0	0
11	G	2 glazing, clr outr,	0.200	ne	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	e	3.89	2.94	245	149	579	439	0	0	0	0
	G	2 glazing, clr outr,	0.200	e	8.54	30.95	96	0	820	2971	0	0	0	0
	W	12C-0sw	0.091	s	3.89	2.94	160	104	404	306	0	0	0	0
	G	2 glazing, clr outr,	0.200	s	8.54	13.70	56	0	478	767	0	0	0	0
	W	12C-0sw	0.091	sw	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	w	3.89	2.94	60	39	152	115	0	0	0	0
	G	2 glazing, clr outr,	0.200	w	0.00	0.00	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	w	8.54	30.95	21	0	179	650	0	0	0	0
	W	12C-0sw	0.091	nw	0.00	0.00	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	nw	0.00	0.00	0	0	0	0	0	0	0	0
	C	16X30-0ad	0.408	-	1.79	1.40	634	634	1134	888	58	58	103	81
	F	22A-tpl	0.989	-	42.23	0.00	634	72	3019	0	147	0	0	0
6	c) AED excursion									-56				-4
	Envelope loss/gain								8118	7447			103	77
12	a) Infiltration								2408	695			0	0
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @	230				0			0	0			0
		Appliances/other								0				500
	Subtotal (lines 6 to 13)								10526	8142			103	577
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								10526	8142			103	577
15	Duct loads						14%	12%	1482	942	14%	12%	15	67
	Total room load								12008	9084			118	644
	Air required (cfm)								413	440			4	31

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

1	Room name					Pantry						Puja			
2	Exposed wall					0 ft						16.0 ft			
3	Room height					10.0 ft			heat/cool			10.0 ft			heat/cool
4	Room dimensions						1.0	x	120.5 ft				1.0	x	112.0 ft
5	Room area					120.5 ft²						112.0 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	12C-0sw	0.091	n	3.89	2.94	0	0	0	0	0	0	0	0
.	G	2 glazing, clr outr,	0.200	n	8.54	10.64	0	0	0	0	0	0	0	0
.	G	2 glazing, clr outr,	0.200	n	8.54	10.64	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	ne	0.00	0.00	0	0	0	0	0	0	0	0
11	G	2 glazing, clr outr,	0.200	ne	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	e	3.89	2.94	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	e	8.54	30.95	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	s	3.89	2.94	0	0	0	0	140	98	381	288
	G	2 glazing, clr outr,	0.200	s	8.54	13.70	0	0	0	0	42	0	359	576
	W	12C-0sw	0.091	sw	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	w	3.89	2.94	0	0	0	0	20	20	78	59
	G	2 glazing, clr outr,	0.200	w	0.00	0.00	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	w	8.54	30.95	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	nw	0.00	0.00	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	nw	0.00	0.00	0	0	0	0	0	0	0	0
	C	16X30-0ad	0.408	-	1.79	1.40	82	82	147	115	106	106	189	148
	F	22A-tpl	0.989	-	42.23	0.00	121	0	0	0	112	16	676	0
6	c) AED excursion									-1				89
	Envelope loss/gain								147	114			1682	1160
12	a) Infiltration								0	0			539	155
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @	230				0			0	2			460
		Appliances/other								0				0
	Subtotal (lines 6 to 13)								147	114			2220	1776
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								147	114			2220	1776
15	Duct loads						14%	12%	21	13	14%	12%	313	205
	Total room load								167	127			2533	1981
	Air required (cfm)								6	6			87	96

1	Room name					PWDR						Office			
2	Exposed wall					0 ft						12.5 ft			
3	Room height					10.0 ft			heat/cool			10.0 ft			heat/cool
4	Room dimensions					8.5	x	6.0 ft				1.0	x	232.0 ft	
5	Room area					51.0 ft²						232.0 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	12C-0sw	0.091	n	3.89	2.94	0	0	0	0	125	80	311	236
.	G	2 glazing, clr outr,	0.200	n	8.54	10.64	0	0	0	0	45	0	384	479
.	G	2 glazing, clr outr,	0.200	n	8.54	10.64	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	ne	0.00	0.00	0	0	0	0	0	0	0	0
11	G	2 glazing, clr outr,	0.200	ne	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	e	3.89	2.94	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	e	8.54	30.95	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	s	3.89	2.94	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	s	8.54	13.70	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	sw	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	w	3.89	2.94	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	w	0.00	0.00	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	w	8.54	30.95	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	nw	0.00	0.00	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	nw	0.00	0.00	0	0	0	0	0	0	0	0
	C	16X30-0ad	0.408	-	1.79	1.40	51	51	91	72	0	0	0	0
	F	22A-tpl	0.989	-	42.23	0.00	51	0	0	0	232	13	528	0
6	c) AED excursion									0				-7
	Envelope loss/gain								91	71			1223	707
12	a) Infiltration								0	0			421	121
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @	230				0			0	1			230
		Appliances/other								0				0
	Subtotal (lines 6 to 13)								91	71			1644	1058
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								91	71			1644	1058
15	Duct loads						14%	12%	13	8	14%	12%	232	122
	Total room load								104	79			1875	1181
	Air required (cfm)								4	4			65	57

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

1	Room name					Kids AH				Kriya's Room				
2	Exposed wall					105.5 ft				33.0 ft				
3	Room height					14.5 ft				10.0 ft				heat/cool
4	Room dimensions									1.0 x 191.3 ft				
5	Room area					1000.8 ft²				191.3 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	12C-0sw	0.091	n	3.89	2.94	285	231	898	680	125	101	392	297
.	G	2 glazing, clr outr,	0.200	n	8.54	10.64	54	0	461	575	24	0	205	255
.	G	2 glazing, clr outr,	0.200	n	0.00	0.00	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	ne	0.00	0.00	0	0	0	0	0	0	0	0
11	G	2 glazing, clr outr,	0.200	ne	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	e	3.89	2.94	65	65	253	191	50	50	194	147
	G	2 glazing, clr outr,	0.200	e	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	s	3.89	2.94	315	225	874	662	0	0	0	0
	G	2 glazing, clr outr,	0.200	s	8.54	13.70	90	0	769	1233	0	0	0	0
	W	12C-0sw	0.091	sw	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	w	3.89	2.94	427	395	1533	1161	155	143	556	421
	G	2 glazing, clr outr,	0.200	w	8.54	30.95	33	0	278	1006	12	0	102	371
	G	2 glazing, clr outr,	0.200	w	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	nw	0.00	0.00	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	nw	0.00	0.00	0	0	0	0	0	0	0	0
	C	16X30-0ad	0.408	-	1.79	1.40	1134	1134	2029	1590	191	191	342	268
	F	22A-tpl	0.989	-	42.23	0.00	487	8	319	0	0	0	0	0
6	c) AED excursion									7				17
	Envelope loss/gain								7412	7105			1792	1777
12	a) Infiltration								3677	1061			1111	321
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @	230				4			920	1			230
		Appliances/other								900				0
	Subtotal (lines 6 to 13)								11090	9987			2903	2328
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								11090	9987			2903	2328
15	Duct loads						16%	10%	1760	1036	16%	10%	461	242
	Total room load								12849	11023			3364	2570
	Air required (cfm)								600	600			157	140

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

1	Room name					Priyana's Room				Gameroom				
2	Exposed wall					27.5 ft				16.0 ft				
3	Room height					10.0 ft			heat/cool	10.0 ft			heat/cool	
4	Room dimensions					1.0 x 174.8 ft				16.0 x 14.5 ft				
5	Room area					174.8 ft²				232.0 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	12C-0sw	0.091	n	3.89	2.94	0	0	0	0	160	130	505	383
.	G	2 glazing, clr outr,	0.200	n	8.54	10.64	0	0	0	0	30	0	256	319
.	G	2 glazing, clr outr,	0.200	n	0.00	0.00	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	ne	0.00	0.00	0	0	0	0	0	0	0	0
11	G	2 glazing, clr outr,	0.200	ne	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	e	3.89	2.94	15	15	58	44	0	0	0	0
	G	2 glazing, clr outr,	0.200	e	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	s	3.89	2.94	125	95	369	280	0	0	0	0
	G	2 glazing, clr outr,	0.200	s	8.54	13.70	30	0	256	411	0	0	0	0
	W	12C-0sw	0.091	sw	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	w	3.89	2.94	135	122	472	358	0	0	0	0
	G	2 glazing, clr outr,	0.200	w	8.54	30.95	14	0	115	418	0	0	0	0
	G	2 glazing, clr outr,	0.200	w	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	nw	0.00	0.00	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	nw	0.00	0.00	0	0	0	0	0	0	0	0
	C	16X30-0ad	0.408	-	1.79	1.40	175	175	313	245	232	232	415	325
	F	22A-tpl	0.989	-	42.23	0.00	0	0	0	0	8	1	23	0
6	c) AED excursion									-39				-99
	Envelope loss/gain								1584	1717			1200	928
12	a) Infiltration								926	267			539	155
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @	230				1			230	2			460
		Appliances/other								0				900
	Subtotal (lines 6 to 13)								2510	2214			1739	2444
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								2510	2214			1739	2444
15	Duct loads						16%	10%	398	230	16%	10%	276	254
	Total room load								2908	2444			2014	2697
	Air required (cfm)								136	133			94	147

1	Room name					Bath 3						Stairs OTB			
2	Exposed wall					16.5 ft						12.5 ft			
3	Room height					8.0 ft			heat/cool			29.5 ft			heat/cool
4	Room dimensions					9.5	x	16.5 ft				12.0	x	20.5 ft	
5	Room area					156.8 ft²						246.0 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	12C-0sw	0.091	n	3.89	2.94	0	0	0	0	0	0	0	0
.	G	2 glazing, clr outr,	0.200	n	8.54	10.64	0	0	0	0	0	0	0	0
.	G	2 glazing, clr outr,	0.200	n	0.00	0.00	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	ne	0.00	0.00	0	0	0	0	0	0	0	0
11	G	2 glazing, clr outr,	0.200	ne	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	e	3.89	2.94	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	e	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	s	3.89	2.94	0	0	0	0	190	130	505	383
	G	2 glazing, clr outr,	0.200	s	8.54	13.70	0	0	0	0	60	0	512	822
	W	12C-0sw	0.091	sw	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	w	3.89	2.94	132	125	486	368	5	5	19	15
	G	2 glazing, clr outr,	0.200	w	8.54	30.95	7	0	60	217	0	0	0	0
	G	2 glazing, clr outr,	0.200	w	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	nw	0.00	0.00	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	nw	0.00	0.00	0	0	0	0	0	0	0	0
	C	16X30-0ad	0.408	-	1.79	1.40	157	157	280	220	379	379	678	531
	F	22A-tpl	0.989	-	42.23	0.00	0	0	0	0	479	7	296	0
6	c) AED excursion									64				64
	Envelope loss/gain								826	868			2011	1815
12	a) Infiltration								445	128			657	189
	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)								1270	997			2667	2004
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								1270	997			2667	2004
15	Duct loads						16%	10%	202	103	16%	10%	423	208
	Total room load								1472	1100			3091	2212
	Air required (cfm)								69	60			144	120

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

1	Room name					Master Down AH				Master					
2	Exposed wall					109.4 ft				45.4 ft					
3	Room height					10.0 ft				10.0 ft				heat/cool	
4	Room dimensions									1.0 x 365.4 ft					
5	Room area					856.4 ft²				365.4 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	12C-0sw	0.091	n	3.89	2.94	150	150	583	442	150	150	583	442
.	G	2 glazing, clr outr,	0.200	n	0.00	0.00	0	0	0	0	0	0	0	0
.	G	2 glazing, clr outr,	0.200	n	0.00	0.00	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	ne	0.00	0.00	0	0	0	0	0	0	0	0
11	G	2 glazing, clr outr,	0.200	ne	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	e	3.89	2.94	115	100	389	294	55	40	155	118
	G	2 glazing, clr outr,	0.200	e	8.54	30.95	15	0	128	464	15	0	128	464
	W	12C-0sw	0.091	s	3.89	2.94	210	164	637	483	0	0	0	0
	G	2 glazing, clr outr,	0.200	s	8.54	13.70	46	0	393	630	0	0	0	0
	W	12C-0sw	0.091	sw	3.89	2.94	18	18	70	53	18	18	70	53
	W	12C-0sw	0.091	w	3.89	2.94	580	494	1918	1453	210	165	641	486
	G	2 glazing, clr outr,	0.200	w	8.54	30.95	87	0	739	2677	45	0	384	1393
	G	2 glazing, clr outr,	0.200	w	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	nw	3.89	2.94	21	21	82	62	21	21	82	62
	G	2 glazing, clr outr,	0.200	nw	0.00	0.00	0	0	0	0	0	0	0	0
	C	16X30-0ad	0.408	-	1.79	1.40	184	184	329	258	19	19	33	26
	F	22A-tpl	0.989	-	42.23	0.00	856	109	4621	0	365	45	1918	0
6	c) AED excursion									761				349
	Envelope loss/gain								9888	7577			3996	3393
12	a) Infiltration								3685	1063			1530	441
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @	230				2			460	2			460
		Appliances/other								0				0
	Subtotal (lines 6 to 13)								13572	9100			5525	4294
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								13572	9100			5525	4294
15	Duct loads						12%	11%	1685	990	12%	11%	686	467
	Total room load								15257	10091			6211	4761
	Air required (cfm)								600	600			244	283

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

1	Room name					M Bath						MWIC			
2	Exposed wall					10.5 ft						5.5 ft			
3	Room height					10.0 ft			heat/cool			10.0 ft			heat/cool
4	Room dimensions					15.0 x 10.5 ft						15.0 x 5.5 ft			
5	Room area					157.5 ft²						82.5 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	12C-0sw	0.091	n	3.89	2.94	0	0	0	0	0	0	0	0
.	G	2 glazing, clr outr,	0.200	n	0.00	0.00	0	0	0	0	0	0	0	0
.	G	2 glazing, clr outr,	0.200	n	0.00	0.00	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	ne	0.00	0.00	0	0	0	0	0	0	0	0
11	G	2 glazing, clr outr,	0.200	ne	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	e	3.89	2.94	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	e	8.54	30.95	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	s	3.89	2.94	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	s	8.54	13.70	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	sw	3.89	2.94	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	w	3.89	2.94	105	89	346	262	55	43	167	127
	G	2 glazing, clr outr,	0.200	w	8.54	30.95	16	0	137	495	12	0	102	371
	G	2 glazing, clr outr,	0.200	w	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	nw	3.89	2.94	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	nw	0.00	0.00	0	0	0	0	0	0	0	0
	C	16X30-0ad	0.408	-	1.79	1.40	0	0	0	0	0	0	0	0
	F	22A-tpl	0.989	-	42.23	0.00	158	11	443	0	83	6	232	0
6	c) AED excursion									225				170
	Envelope loss/gain								926	982			502	668
12	a) Infiltration								354	102			185	53
	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)								1279	1084			687	721
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								1279	1084			687	721
15	Duct loads						12%	11%	159	118	12%	11%	85	79
	Total room load								1438	1202			772	800
	Air required (cfm)								57	71			30	48

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

		Guest	Bath
1	Room name		
2	Exposed wall	26.0 ft	22.0 ft
3	Room height	10.0 ft	10.0 ft
4	Room dimensions	heat/cool	heat/cool
		1.0 x 187.0 ft	8.0 x 8.0 ft
5	Room area	187.0 ft²	64.0 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	12C-0sw	0.091	n	3.89	2.94	0	0	0	0	0	0	0	0
.	G	2 glazing, clr outr,	0.200	n	0.00	0.00	0	0	0	0	0	0	0	0
.	G	2 glazing, clr outr,	0.200	n	0.00	0.00	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	ne	0.00	0.00	0	0	0	0	0	0	0	0
11	G	2 glazing, clr outr,	0.200	ne	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	e	3.89	2.94	0	0	0	0	60	60	233	177
	G	2 glazing, clr outr,	0.200	e	8.54	30.95	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	s	3.89	2.94	130	88	342	259	80	76	295	224
	G	2 glazing, clr outr,	0.200	s	8.54	13.70	42	0	359	576	4	0	34	55
	W	12C-0sw	0.091	sw	3.89	2.94	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	w	3.89	2.94	130	117	453	343	80	80	311	236
	G	2 glazing, clr outr,	0.200	w	8.54	30.95	14	0	115	418	0	0	0	0
	G	2 glazing, clr outr,	0.200	w	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	nw	3.89	2.94	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	nw	0.00	0.00	0	0	0	0	0	0	0	0
	C	16X30-0ad	0.408	-	1.79	1.40	101	101	181	142	64	64	115	90
	F	22A-tpl	0.989	-	42.23	0.00	187	26	1098	0	64	22	929	0
6	c) AED excursion									19				-3
	Envelope loss/gain								2547	1756			1917	778
12	a) Infiltration								876	253			741	214
	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)								3423	2009			2658	992
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								3423	2009			2658	992
15	Duct loads						12%	11%	425	219	12%	11%	330	108
	Total room load								3848	2227			2988	1100
	Air required (cfm)								151	132			117	65

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

1	Room name					Master Up AH				Master Bath					
2	Exposed wall					104.7 ft				12.5 ft					
3	Room height					10.0 ft				10.0 ft				heat/cool	
4	Room dimensions									12.5 x 8.5 ft					
5	Room area					892.3 ft²				106.3 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	12C-0sw	0.091	n	3.89	2.94	210	153	593	449	0	0	0	0
.	G	2 glazing, clr outr,	0.200	n	8.54	10.64	58	0	491	612	0	0	0	0
.	G	2 glazing, clr outr,	0.200	n	0.00	0.00	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	ne	3.89	2.94	21	16	61	47	0	0	0	0
11	G	2 glazing, clr outr,	0.200	ne	8.54	22.68	5	0	46	123	0	0	0	0
	W	12C-0sw	0.091	e	3.89	2.94	455	434	1684	1276	85	77	299	227
	G	2 glazing, clr outr,	0.200	e	8.54	30.95	22	0	184	665	8	0	68	248
	W	12C-0sw	0.091	s	3.89	2.94	280	227	882	668	40	32	124	94
	G	2 glazing, clr outr,	0.200	s	8.54	13.70	53	0	453	726	8	0	68	110
	W	12C-0sw	0.091	sw	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	w	3.89	2.94	60	60	233	177	0	0	0	0
	G	2 glazing, clr outr,	0.200	w	0.00	0.00	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	w	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	nw	3.89	2.94	21	16	61	47	0	0	0	0
	G	2 glazing, clr outr,	0.200	nw	8.54	22.68	5	0	46	123	0	0	0	0
	C	16X30-0ad	0.408	-	1.79	1.40	892	892	1597	1251	106	106	190	149
	F	22A-tpl	0.989	-	42.23	0.00	20	3	139	0	0	0	0	0
6	c) AED excursion									0				0
	Envelope loss/gain								6470	6163			750	827
12	a) Infiltration								3527	1018			421	121
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @	230				4			920	0			0
		Appliances/other								0				0
	Subtotal (lines 6 to 13)								9997	8101			1171	949
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			112	88
14	Subtotal								9997	8101			1283	1036
15	Duct loads						17%	12%	1682	990	17%	12%	216	127
	Total room load								11679	9091			1499	1163
	Air required (cfm)								600	600			77	77

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

1	Room name					M Suite				M CLoset				
2	Exposed wall					19.0 ft				40.2 ft				
3	Room height					10.0 ft			heat/cool	10.0 ft			heat/cool	
4	Room dimensions					15.5 x 18.0 ft				1.0 x 170.8 ft				
5	Room area					279.0 ft²				170.8 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	12C-0sw	0.091	n	3.89	2.94	155	110	427	324	55	43	165	125
.	G	2 glazing, clr outr,	0.200	n	8.54	10.64	45	0	384	479	13	0	107	133
.	G	2 glazing, clr outr,	0.200	n	0.00	0.00	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	ne	3.89	2.94	0	0	0	0	21	16	61	47
11	G	2 glazing, clr outr,	0.200	ne	8.54	22.68	0	0	0	0	5	0	46	123
	W	12C-0sw	0.091	e	3.89	2.94	0	0	0	0	200	200	777	589
	G	2 glazing, clr outr,	0.200	e	8.54	30.95	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	s	3.89	2.94	35	35	136	103	85	70	272	206
	G	2 glazing, clr outr,	0.200	s	8.54	13.70	0	0	0	0	15	0	128	206
	W	12C-0sw	0.091	sw	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	w	3.89	2.94	0	0	0	0	20	20	78	59
	G	2 glazing, clr outr,	0.200	w	0.00	0.00	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	w	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	nw	3.89	2.94	0	0	0	0	21	16	61	47
	G	2 glazing, clr outr,	0.200	nw	8.54	22.68	0	0	0	0	5	0	46	123
	C	16X30-0ad	0.408	-	1.79	1.40	279	279	499	391	171	171	306	239
	F	22A-tpl	0.989	-	42.23	0.00	8	1	22	0	12	3	117	0
6	c) AED excursion									0				0
	Envelope loss/gain								1469	1297			2164	1896
12	a) Infiltration								640	185			1355	391
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @	230				2			460	0			0
		Appliances/other								0				0
	Subtotal (lines 6 to 13)								2109	1942			3520	2287
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								56	44			0	0
14	Subtotal								2165	1985			3520	2287
15	Duct loads						17%	12%	364	243	17%	12%	592	279
	Total room load								2529	2228			4112	2566
	Air required (cfm)								130	147			211	169

1	Room name					Exercise Room						Hall			
2	Exposed wall					33.0 ft						0 ft			
3	Room height					10.0 ft		heat/cool				10.0 ft		heat/cool	
4	Room dimensions					1.0 x 211.0 ft						1.0 x 125.3 ft			
5	Room area					211.0 ft²						125.3 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	12C-0sw	0.091	n	3.89	2.94	0	0	0	0	0	0	0	0
.	G	2 glazing, clr outr,	0.200	n	8.54	10.64	0	0	0	0	0	0	0	0
.	G	2 glazing, clr outr,	0.200	n	0.00	0.00	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	ne	3.89	2.94	0	0	0	0	0	0	0	0
11	G	2 glazing, clr outr,	0.200	ne	8.54	22.68	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	e	3.89	2.94	170	157	608	461	0	0	0	0
	G	2 glazing, clr outr,	0.200	e	8.54	30.95	14	0	115	418	0	0	0	0
	W	12C-0sw	0.091	s	3.89	2.94	120	90	350	265	0	0	0	0
	G	2 glazing, clr outr,	0.200	s	8.54	13.70	30	0	256	411	0	0	0	0
	W	12C-0sw	0.091	sw	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	w	3.89	2.94	40	40	155	118	0	0	0	0
	G	2 glazing, clr outr,	0.200	w	0.00	0.00	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	w	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	nw	3.89	2.94	0	0	0	0	0	0	0	0
	G	2 glazing, clr outr,	0.200	nw	8.54	22.68	0	0	0	0	0	0	0	0
	C	16X30-0ad	0.408	-	1.79	1.40	211	211	378	296	125	125	224	176
	F	22A-tpl	0.989	-	42.23	0.00	0	0	0	0	0	0	0	0
6	c) AED excursion									0				0
	Envelope loss/gain								1862	1968			224	176
12	a) Infiltration								1111	321			0	0
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @ 230					2			460	0			0
		Appliances/other								0				0
	Subtotal (lines 6 to 13)								2974	2749			224	176
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								56	44			-224	-176
14	Subtotal								3030	2793			0	0
15	Duct loads						17%	12%	510	341	17%	12%	0	0
	Total room load								3539	3134			0	0
	Air required (cfm)								182	207			0	0

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

Static Pressure and Friction Rate
Downstairs

Project Information

For: Anish Patel
2314 North Clearspring, Irving, Tx 75063
Phone: 215-817-1376
Email: appatel@gmail.com

Available Static Pressure

	Heating (in H2O)	Cooling (in H2O)
External static pressure	0.50	0.50
Pressure losses		
Coil	0.20	0.20
Heat exchanger	0	0
Supply diffusers	0.03	0.03
Return grilles	0.03	0.03
Filter	0	0
Humidifier	0	0
Balancing damper	0.03	0.03
Other device	0	0
Available static pressure	0.21	0.21

Total Effective Length

	Supply (ft)	Return (ft)
Measured length of run-out	19	26
Measured length of trunk	38	0
Equivalent length of fittings	147	65
Total length	203	91
Total effective length		294

Friction Rate

	Heating (in/100ft)		Cooling (in/100ft)	
Supply Ducts	0.071	OK	0.071	OK
Return Ducts	0.071	OK	0.071	OK

Fitting Equivalent Length Details

Supply 4I=10, 11T=25, 11G=5, 11T=25, 11H=7, 11G=5, 11T=25, 12J1=10, 1A=35: TotalEL=147

Return 6M=20, 5B=40, 11G=5: TotalEL=65

Static Pressure and Friction Rate

Kids AH

Project Information

For: Anish Patel
2314 North Clearspring, Irving, Tx 75063
Phone: 215-817-1376
Email: appatel@gmail.com

Available Static Pressure

	Heating (in H2O)	Cooling (in H2O)
External static pressure	0.50	0.50
Pressure losses		
Coil	0.20	0.20
Heat exchanger	0	0
Supply diffusers	0.03	0.03
Return grilles	0.03	0.03
Filter	0	0
Humidifier	0	0
Balancing damper	0.03	0.03
Other device	0	0
Available static pressure	0.21	0.21

Total Effective Length

	Supply (ft)	Return (ft)
Measured length of run-out	3	13
Measured length of trunk	29	0
Equivalent length of fittings	125	70
Total length	157	83
Total effective length		239

Friction Rate

	Heating (in/100ft)		Cooling (in/100ft)	
Supply Ducts	0.088	OK	0.088	OK
Return Ducts	0.088	OK	0.088	OK

Fitting Equivalent Length Details

Supply 4AD=60, 8AE=10, 12O1=10, 12O1=10, 1C=35: TotalEL=125

Return 6M=20, 8AE=10, 5D=40: TotalEL=70

Static Pressure and Friction Rate

Master Down AH

Project Information

For: Anish Patel
2314 North Clearspring, Irving, Tx 75063
Phone: 215-817-1376
Email: appatel@gmail.com

Available Static Pressure

	Heating (in H2O)	Cooling (in H2O)
External static pressure	0.50	0.50
Pressure losses		
Coil	0.20	0.20
Heat exchanger	0	0
Supply diffusers	0.03	0.03
Return grilles	0.03	0.03
Filter	0	0
Humidifier	0	0
Balancing damper	0.03	0.03
Other device	0	0
Available static pressure	0.21	0.21

Total Effective Length

	Supply (ft)	Return (ft)
Measured length of run-out	14	20
Measured length of trunk	33	0
Equivalent length of fittings	112	65
Total length	159	85
Total effective length		243

Friction Rate

	Heating (in/100ft)		Cooling (in/100ft)	
Supply Ducts	0.086	OK	0.086	OK
Return Ducts	0.086	OK	0.086	OK

Fitting Equivalent Length Details

Supply 4I=10, 11T=25, 11G=5, 11T=25, 11H=7, 1A=35, 11G=5: TotalEL=112

Return 5B=40, 6M=20, 11G=5: TotalEL=65

Static Pressure and Friction Rate

Master Up AH

Project Information

For: Anish Patel
2314 North Clearspring, Irving, Tx 75063
Phone: 215-817-1376
Email: appatel@gmail.com

Available Static Pressure

	Heating (in H2O)	Cooling (in H2O)
External static pressure	0.50	0.50
Pressure losses		
Coil	0.20	0.20
Heat exchanger	0	0
Supply diffusers	0.03	0.03
Return grilles	0.03	0.03
Filter	0	0
Humidifier	0	0
Balancing damper	0.03	0.03
Other device	0	0
Available static pressure	0.21	0.21

Total Effective Length

	Supply (ft)	Return (ft)
Measured length of run-out	3	11
Measured length of trunk	34	0
Equivalent length of fittings	70	75
Total length	107	86
Total effective length		193

Friction Rate

	Heating (in/100ft)		Cooling (in/100ft)	
Supply Ducts	0.109	OK	0.109	OK
Return Ducts	0.109	OK	0.109	OK

Fitting Equivalent Length Details

Supply 4I=10, 8AF=15, 12O1=10, 1C=35: TotalEL=70

Return 6M=20, 8AF=15, 5B=40: TotalEL=75