

Project Information

For: Anyone, Heating and Cooling
Any, Anywhere, NY

Notes: 68 Grapal Street Rye, NY 10580

Design Information

Weather: Westchester County AP, NY, US

Winter Design Conditions

Outside db 13 °F
Inside db 70 °F
Design TD 57 °F

Ventilation Method ASHRAE 62.2-2019

Summer Design Conditions

Outside db 86 °F
Inside db 75 °F
Design TD 11 °F
Daily range M
Relative humidity 50 %
Moisture difference 30 gr/lb

Heating Summary

Structure 17330 Btuh
Ducts (R-6.0) 500 Btuh
Central vent (72 cfm) 4448 Btuh
Outside air
Humidification 4461 Btuh
Piping 0 Btuh
Equipment load 26738 Btuh

Infiltration

Method Simplified
Construction quality Tight
Fireplaces 0

	Heating	Cooling
Area (ft²)	2142	2142
Volume (ft³)	12001	12001
Air changes/hour	0.13	0.07
Equiv. AVF (cfm)	26	14

Heating Equipment Summary

Make Goodman Mfg.
Trade GOODMAN
Model GM9C960303ANA
AHRI ref 207349256

Efficiency 96.1 AFUE
Heating input 30000 Btuh
Heating output 29000 Btuh
Temperature rise 35 °F
Actual air flow 753 cfm
Air flow factor 0.042 cfm/Btuh
Static pressure 0.60 in H2O
Space thermostat

Sensible Cooling Equipment Load Sizing

Structure 13639 Btuh
Ducts (R-6.0) 191 Btuh
Central vent (72 cfm) 888 Btuh
Outside air
Blower 1706 Btuh
Use manufacturer's data y
Rate/swing multiplier 1.00
Equipment sensible load 16425 Btuh

Latent Cooling Equipment Load Sizing

Structure 4382 Btuh
Ducts 228 Btuh
Central vent (72 cfm) 1463 Btuh
Outside air
Equipment latent load 6073 Btuh

Equipment Total Load (Sen+Lat) 22497 Btuh
Req. total capacity at 0.73 SHR 1.9 ton

Cooling Equipment Summary

Make Goodman Mfg.
Trade GOODMAN
Cond GLXS4BA2410A*
Coil D(A,C,E)36D3D+GM9C960303ANA*+TDR
AHRI ref 215846905
Efficiency 11.7 EER2, 14.3 SEER2
Sensible cooling 16498 Btuh
Latent cooling 6102 Btuh
Total cooling 22600 Btuh
Actual air flow 753 cfm
Air flow factor 0.054 cfm/Btuh
Static pressure 0.60 in H2O
Load sensible heat ratio 0.73

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

Project Information

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Design Information

Weather: Westchester County AP, NY, US

Winter Design Conditions

Outside db	13 °F
Inside db	70 °F
Design TD	57 °F

Ventilation Method ASHRAE 62.2-2019

Summer Design Conditions

Outside db	86 °F
Inside db	75 °F
Design TD	11 °F
Daily range	M
Relative humidity	50 %
Moisture difference	30 gr/lb

Heating Summary

Structure	9282 Btuh
Ducts (R-6.0)	2877 Btuh
Central vent (75 cfm)	4667 Btuh
Outside air	
Humidification	4502 Btuh
Piping	0 Btuh
Equipment load	21328 Btuh

Infiltration

Method	Simplified
Construction quality	Tight
Fireplaces	0

	Heating	Cooling
Area (ft²)	1260	1260
Volume (ft³)	9701	9701
Air changes/hour	0.13	0.07
Equiv. AVF (cfm)	21	11

Heating Equipment Summary

Make	Goodman Mfg.
Trade	GOODMAN
Model	GM9C960303ANA
AHRI ref	207349256
Efficiency	96.1 AFUE
Heating input	30000 Btuh
Heating output	29000 Btuh
Temperature rise	50 °F
Actual air flow	533 cfm
Air flow factor	0.044 cfm/Btuh
Static pressure	0.60 in H2O
Space thermostat	

Sensible Cooling Equipment Load Sizing

Structure	7718 Btuh
Ducts (R-6.0)	1264 Btuh
Central vent (75 cfm)	932 Btuh
Outside air	
Blower	1706 Btuh
Use manufacturer's data	y
Rate/swing multiplier	1.00
Equipment sensible load	11620 Btuh

Latent Cooling Equipment Load Sizing

Structure	2234 Btuh
Ducts	451 Btuh
Central vent (75 cfm)	1535 Btuh
Outside air	
Equipment latent load	4219 Btuh

Equipment Total Load (Sen+Lat)	15839 Btuh
Req. total capacity at 0.73 SHR	1.3 ton

Cooling Equipment Summary

Make	Goodman Mfg.
Trade	GOODMAN
Cond	GLXS5BA1810A*
Coil	CH24B3D+GM9C960303ANA*+TDR
AHRI ref	217448666
Efficiency	12.0 EER2, 14.8 SEER2
Sensible cooling	11680 Btuh
Latent cooling	4320 Btuh
Total cooling	16000 Btuh
Actual air flow	533 cfm
Air flow factor	0.059 cfm/Btuh
Static pressure	0.60 in H2O
Load sensible heat ratio	0.73

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Load Short Form

1ST FL, BSMT

WebREPS

Job: 68 Grapal Street
Date:
By: Jason Zacharek
Plan: 68 Grapal Street

1880 82nd Ave., Vero Beach, FL 32966 Phone: 800-810-3280 Email: manualj@webrepsusa.com

Project Information

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Design Information

	Htg	Clg	Infiltration	
Outside db (°F)	13	86	Method	Simplified
Inside db (°F)	70	75	Construction quality	Tight
Design TD (°F)	57	11	Fireplaces	0
Daily range	-	M		
Inside humidity (%)	50	50		
Moisture difference (gr/lb)	47	30		

HEATING EQUIPMENT

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Trade GOODMAN
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AHRI ref 207349256

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Space thermostat

COOLING EQUIPMENT

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Trade GOODMAN
Cond GLXS4BA2410A*
Coil D(A,C,E)36D3D+GM9C960303ANA*+TDR
AHRI ref 215846905

Efficiency 11.7 EER2, 14.3 SEER2
Sensible cooling 16498 Btuh
Latent cooling 6102 Btuh
Total cooling 22600 Btuh
Actual air flow 753 cfm
Air flow factor 0.054 cfm/Btuh
Static pressure 0.60 in H2O
Load sensible heat ratio 0.73

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
FAMILY RM	303	2577	2830	109	154
KITCHEN	245	696	1419	29	77
DINING RM	177	1065	2207	45	120
LIVING RM	188	1994	2611	84	142
MUD RM	87	1206	560	51	31
PANTRY	15	0	0	0	0
PWDR	30	368	252	16	14
FOYER	168	2424	956	102	52
CCL	13	0	0	0	0
STRS	41	0	0	0	0
BED 5	188	1508	770	64	42
CL5	37	0	0	0	0
STRG	45	0	0	0	0
REC RM	402	3037	1757	128	96

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B HALL	91	1852	311	78	17
BATH 4	54	1103	156	47	9
CLO	16	0	0	0	0
UP	41	0	0	0	0
1ST FL, BSMT	2142	17829	13830	753	753
Other equip loads		8909	2595		
Equip. @ 1.00 RSM			16425		
Latent cooling			6073		
TOTALS	2142	26738	22497	753	753

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Design Information

	Htg	Clg	Infiltration	Simplified
Outside db (°F)	13	86	Method	Tight
Inside db (°F)	70	75	Construction quality	0
Design TD (°F)	57	11	Fireplaces	
Daily range	-	M		
Inside humidity (%)	50	50		
Moisture difference (gr/lb)	47	30		

HEATING EQUIPMENT

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Trade GOODMAN
Model GM9C960303ANA
AHRI ref 207349256

Efficiency 96.1 AFUE
Heating input 30000 Btuh
Heating output 29000 Btuh
Temperature rise 50 °F
Actual air flow 533 cfm
Air flow factor 0.044 cfm/Btuh
Static pressure 0.60 in H2O
Space thermostat

COOLING EQUIPMENT

Make Goodman Mfg.
Trade GOODMAN
Cond GLXS5BA1810A*
Coil CH24B3D+GM9C960303ANA*+TDR
AHRI ref 217448666

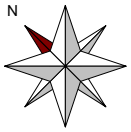
Efficiency 12.0 EER2, 14.8 SEER2
Sensible cooling 11680 Btuh
Latent cooling 4320 Btuh
Total cooling 16000 Btuh
Actual air flow 533 cfm
Air flow factor 0.059 cfm/Btuh
Static pressure 0.60 in H2O
Load sensible heat ratio 0.73

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
BED 4	112	1874	1298	82	77
P BED	323	3422	2554	150	152
P CL	70	1131	392	50	23
P BATH	88	595	314	26	19
CL	16	0	0	0	0
BATH 2	54	631	318	28	19
WD	45	175	584	8	35
BATH	62	958	446	42	26
HALL	116	0	0	0	0
DN	37	0	0	0	0
LC	14	0	0	0	0
BED 2	134	1379	1552	60	92
CL 2	10	0	0	0	0
CL 3	8	0	0	0	0

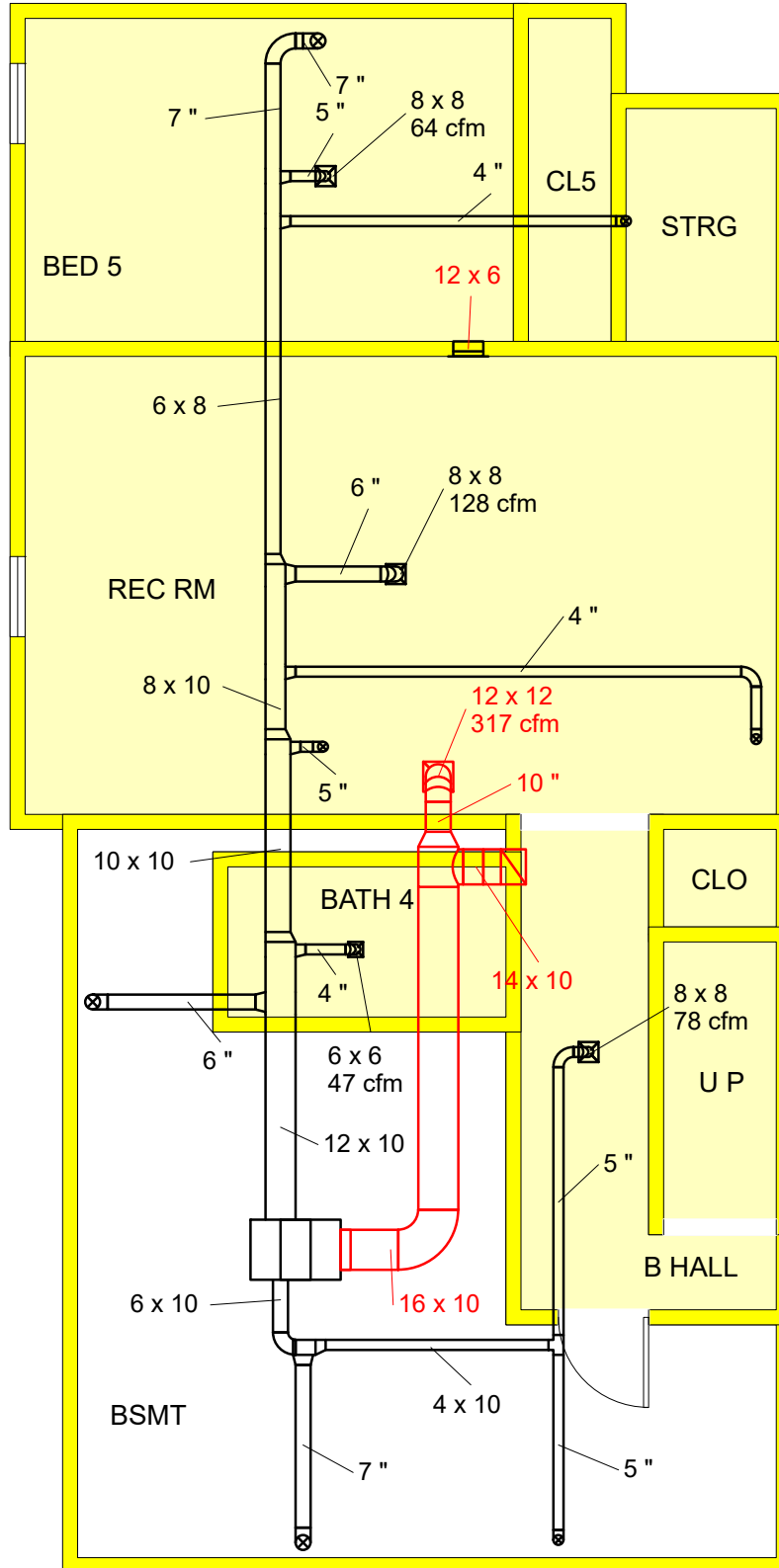
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BED 3	157	1995	1523	87	90
CL 4	15	0	0	0	0
2ND FL	1260	12159	8981	533	533
Other equip loads		9169	2638		
Equip. @ 1.00 RSM			11620		
Latent cooling			4219		
TOTALS	1260	21328	15839	533	533

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BSMT



Job #: 68 Grapal Street
Performed by Jason Zacharek for:

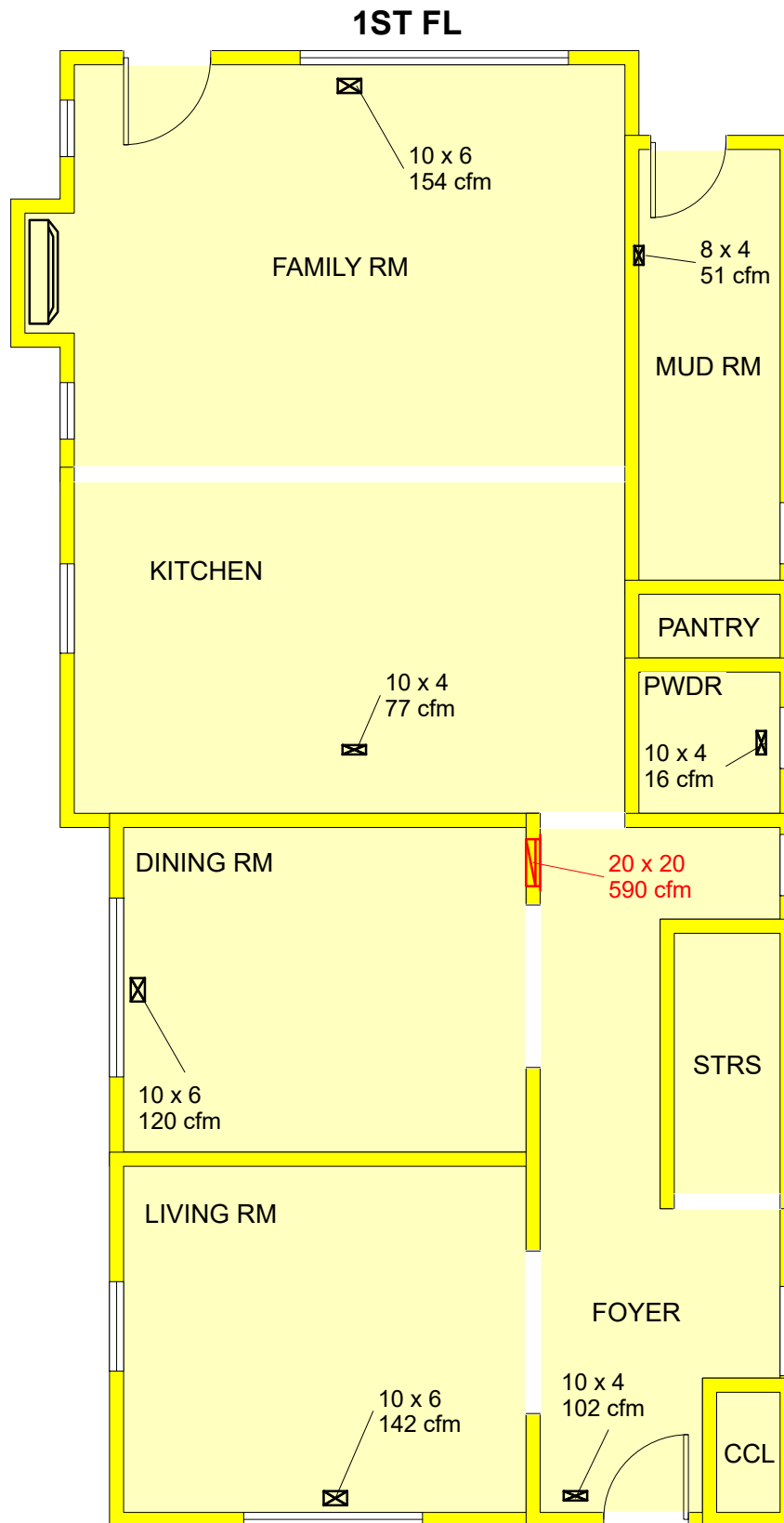
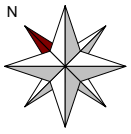
Anyone
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Anywhere, NY

WebREPS

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Vero Beach, FL 32966
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Duct System Summary

1ST FL, BSMT

WebREPS

Job: 68 Grapal Street
Date:
By: Jason Zacharek
Plan: 68 Grapal Street

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	Heating	Cooling
External static pressure	0.60 in H2O	0.60 in H2O
Pressure losses	0.23 in H2O	0.23 in H2O
Available static pressure	0.37 in H2O	0.37 in H2O
Supply / return available pressure	0.236 / 0.134 in H2O	0.236 / 0.134 in H2O
Lowest friction rate	0.117 in/100ft	0.117 in/100ft
Actual air flow	753 cfm	753 cfm
Total effective length (TEL)	315 ft	

Supply Branch Detail Table

Name	Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
B HALL	h 1852	78	17	0.132	5.0	0x0	ShMt	23.2	155.0	st3A
BATH 4	h 1103	47	9	0.185	4.0	0x0	ShMt	12.5	115.0	st2
BED 5	h 1508	64	42	0.129	5.0	0x0	ShMt	37.5	145.0	st2C
DINING RM	c 2207	45	120	0.169	6.0	0x0	ShMt	14.5	125.0	st2
FAMILY RM	c 2830	109	154	0.126	7.0	0x0	ShMt	41.8	145.0	st2D
FOYER	h 2424	102	52	0.144	5.0	0x0	ShMt	19.0	145.0	st3A
KITCHEN	c 1419	29	77	0.165	5.0	0x0	ShMt	18.2	125.0	st2A
LIVING RM	c 2611	84	142	0.162	7.0	0x0	ShMt	10.5	135.0	st3
MUD RM	h 1206	51	31	0.117	4.0	0x0	ShMt	46.0	155.0	st2C
PWDR	h 368	16	14	0.123	4.0	0x0	ShMt	37.5	155.0	st2B
REC RM	h 3037	128	96	0.146	6.0	0x0	ShMt	26.5	135.0	st2B

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st3	PeakAVF	265	211	0.132	635	7.9	10 x 6	ShtMetl	
st3A	PeakAVF	181	69	0.132	650	6.9	10 x 4	ShtMetl	st3
st2B	PeakAVF	367	336	0.117	661	9.2	10 x 8	ShtMetl	st2A
st2D	PeakAVF	109	154	0.126	577	7.0	0 x 0	ShtMetl	st2C
st2C	PeakAVF	223	227	0.117	680	7.7	8 x 6	ShtMetl	st2B
st2A	PeakAVF	397	413	0.117	595	9.6	10 x 10	ShtMetl	st2
st2	PeakAVF	488	542	0.117	650	10.6	10 x 12	ShtMetl	

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
rb6	0x 0	317	163	114.0	0.117	581	10.0	0x 0		ShMt	rt2
rb1	0x 0	436	590	113.5	0.118	607	14.0	10x 14		ShMt	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	PeakAVF	753	753	0.117	678	12.0	10 x 16	ShtMetl	

Duct System Summary

2ND FL

WebREPS

Job: 68 Grapal Street
Date:
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Plan: 68 Grapal Street

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Project Information

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	Heating	Cooling
External static pressure	0.60 in H ₂ O	0.60 in H ₂ O
Pressure losses	0.23 in H ₂ O	0.23 in H ₂ O
Available static pressure	0.37 in H ₂ O	0.37 in H ₂ O
Supply / return available pressure	0.221 / 0.149 in H ₂ O	0.221 / 0.149 in H ₂ O
Lowest friction rate	0.096 in/100ft	0.096 in/100ft
Actual air flow	533 cfm	533 cfm
Total effective length (TEL)	384 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
BATH	h 958	42	26	0.111	4.0	0x0	ShMt	24.2	175.0	st6
BATH 2	h 631	28	19	0.141	4.0	0x0	ShMt	11.2	145.0	st6
BED 2	c 1552	60	92	0.132	5.0	0x0	ShMt	12.8	155.0	st7
BED 3	c 1523	87	90	0.116	5.0	0x0	ShMt	26.0	165.0	st7A
BED 4	h 1874	82	77	0.100	5.0	0x0	ShMt	36.5	185.0	st7A
P BATH	h 595	26	19	0.123	4.0	0x0	ShMt	14.2	165.0	st6
P BED	c 2554	150	152	0.096	7.0	0x0	ShMt	24.5	205.0	st6A
P CL	h 1131	50	23	0.098	4.0	0x0	ShMt	30.5	195.0	st6A
WD	c 584	8	35	0.146	4.0	0x0	ShMt	5.8	145.0	st6

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	230	260	0.100	623	8.3	10 x 6	ShtMetl	st1
st7A	Peak AVF	170	167	0.100	610	7.1	10 x 4	ShtMetl	st7
st1	Peak AVF	533	533	0.096	640	11.0	10 x 12	ShtMetl	
st6	Peak AVF	303	273	0.096	727	8.9	10 x 6	ShtMetl	st1
st6A	Peak AVF	200	175	0.096	719	8.9	10 x 4	ShtMetl	st6

Return Branch Detail Table

Name	Grille Size (in)	Htg (cfm)	Clg (cfm)	TEL (ft)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Stud/Joist Opening (in)	Duct Matl	Trunk
rb2	0x0	226	193	111.8	0.133	646	8.0	0x 0		ShMt	rt1
rb3	0x0	124	103	155.0	0.096	632	6.0	0x 0		ShMt	rt1B
rb4	0x0	87	90	148.2	0.101	663	5.0	0x 0		ShMt	rt1A
rb5	0x0	96	146	94.0	0.159	545	7.0	0x 0		ShMt	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	PeakAVF	533	533	0.096	640	11.0	10 x 12	ShtMetl	
rt1B	PeakAVF	124	103	0.096	632	6.0	0 x 0	ShtMetl	rt1A
rt1A	PeakAVF	212	194	0.096	635	7.7	8 x 6	ShtMetl	rt1