



Load Short Form
Entire House
High Springs Electric



Job:
Date: Jun 19, 2024
By: Donna Brackeen

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Project Information

For: Steedley Residence
22854 S Hwy 441, High Springs, FL

Design Information

	Htg	Clg	Infiltration	
Outside db (°F)	33	92	Method	Simplified
Inside db (°F)	68	75	Construction quality	Average
Design TD (°F)	35	17	Fireplaces	1 (Average)
Daily range	-	M		
Inside humidity (%)	50	50		
Moisture difference (gr/lb)	29	43		

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)
AH 2	1252	16562	14600	0	643
Main	2303	36509	35479	0	1550
Entire House	3555	53071	48315	0	2193
Other equip loads		0	0		
Equip. @ 0.97 RSM			47059		
Latent cooling			9114		
TOTALS	3555	53071	56172	0	2193

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



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Load Short Form
AH 2
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Project Information

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22854 S Hwy 441, High Springs, FL

Design Information

	Htg	Clg	Infiltration	
Outside db (°F)	33	92	Method	Simplified
Inside db (°F)	68	75	Construction quality	Average
Design TD (°F)	35	17	Fireplaces	1 (Average)
Daily range	-	M		
Inside humidity (%)	50	50		
Moisture difference (gr/lb)	29	43		

HEATING EQUIPMENT

Make Trane
Trade TRANE
Model 4TWR5018H1
AHRI ref 210854987

Efficiency 7.5 HSPF2
Heating input
Heating output 16700 Btuh @ 47°F
Temperature rise 0 °F
Actual air flow 0 cfm
Air flow factor 0 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 33 °F

COOLING EQUIPMENT

Make Trane
Trade TRANE
Cond 4TWR5018H1
Coil TEM4A0B31M31++TDR
AHRI ref 210854987

Efficiency 12.0 EER2,14.3 SEER2
Sensible cooling 13510 Btuh
Latent cooling 5790 Btuh
Total cooling 19300 Btuh
Actual air flow 643 cfm
Air flow factor 0.044 cfm/Btuh
Static pressure 0.50 in H2O
Load sensible heat ratio 0.84

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
butler	57	1289	1645	0	72
entry hall	164	2893	1676	0	74
laundry	164	1664	1254	0	55
m bath	209	2344	1162	0	51
m bd	365	6727	6209	0	273
pantry	42	93	508	0	22
pwdr	28	426	381	0	17
storage	79	175	588	0	26
wc	23	685	596	0	26
wic	121	266	581	0	26

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AH 2	1252	16562	14600	0	643
Other equip loads		0	0		
Equip. @ 0.97 RSM			14221		
Latent cooling			2767		
TOTALS	1252	16562	16988	0	643

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Load Short Form
Main
High Springs Electric

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Project Information

For: Steedley Residence
22854 S Hwy 441, High Springs, FL

Design Information

	Htg	Clg	Infiltration	
Outside db (°F)	33	92	Method	Simplified
Inside db (°F)	68	75	Construction quality	Average
Design TD (°F)	35	17	Fireplaces	1 (Average)
Daily range	-	M		
Inside humidity (%)	50	50		
Moisture difference (gr/lb)	29	43		

HEATING EQUIPMENT

Make Trane
Trade TRANE
Model 4TWR4048N1
AHRI ref 209842238

Efficiency 7.5 HSPF2
Heating input
Heating output 44000 Btuh @ 47°F
Temperature rise 0 °F
Actual air flow 0 cfm
Air flow factor 0 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 29 °F

COOLING EQUIPMENT

Make Trane
Trade TRANE
Cond 4TWR4048N1
Coil TEM4B0C60S51++TDR
AHRI ref 209842238
Efficiency 11.7 EER2,14.3 SEER2
Sensible cooling 32550 Btuh
Latent cooling 13950 Btuh
Total cooling 46500 Btuh
Actual air flow 1550 cfm
Air flow factor 0.044 cfm/Btuh
Static pressure 0.50 in H2O
Load sensible heat ratio 0.85

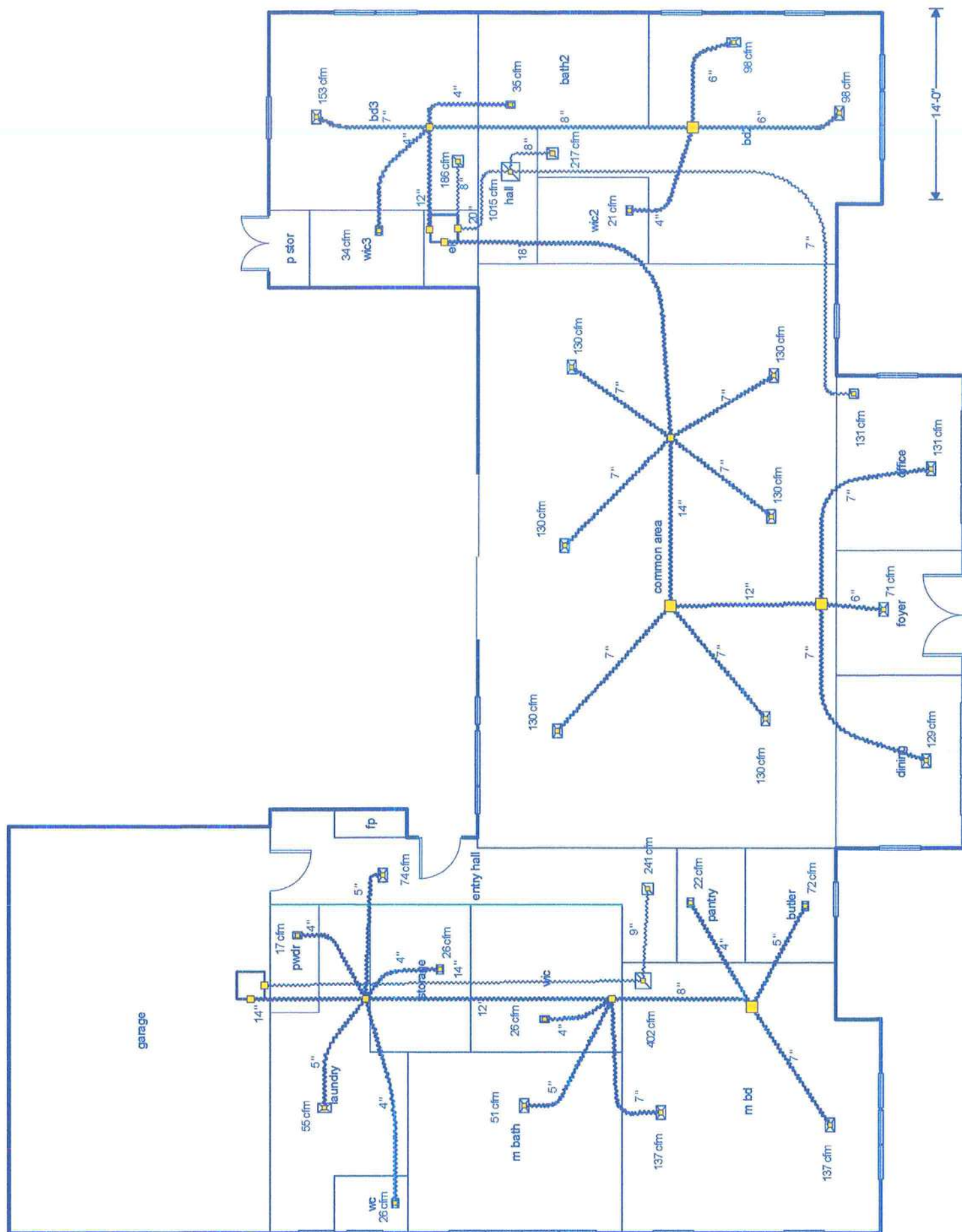
ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
bath2	106	1725	800	0	35
bd2	332	6229	4497	0	196
bd3	224	5270	3491	0	153
common area	1135	11487	17853	0	780
dining	118	3693	2961	0	129
el	23	0	0	0	0
foyer	86	2074	1629	0	71
hall	44	0	0	0	0
office	120	3715	3001	0	131
p stor	17	0	0	0	0
wic2	52	145	476	0	21
wic3	48	2170	772	0	34

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Main	2303	36509	35479	0	1550
Other equip loads		0	0		
Equip. @ 0.97 RSM			34557		
Latent cooling			6346		
TOTALS	2303	36509	40903	0	1550

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Manual S Compliance Report AH 2 High Springs Electric

Job:
Date: Jun 19, 2024
By: Donna Brackeen

Project Information

For: Steedley Residence
22854 S Hwy 441, High Springs, FL

Cooling Equipment

Design Conditions

Outdoor design DB:	92.4°F	Sensible gain:	14600	Btuh	Entering coil DB:	77.3°F
Outdoor design WB:	75.8°F	Latent gain:	2767	Btuh	Entering coil WB:	63.6°F
Indoor design DB:	75.0°F	Total gain:	17367	Btuh		
Indoor RH:	50%	Estimated airflow:	643	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Trane	Model:	4TWR5018H1+TEM4A0B31M31++TDR
Actual airflow:	643	cfm	
Sensible capacity:	13510	Btuh	93% of load
Latent capacity:	5790	Btuh	209% of load
Total capacity:	19300	Btuh	111% of load SHR: 70%

Heating Equipment

Design Conditions

Outdoor design DB:	33.3°F	Heat loss:	16562	Btuh	Entering coil DB:	68.0°F
Indoor design DB:	68.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Trane	Model:	4TWR5018H1+TEM4A0B31M31++TDR
Actual airflow:	0	cfm	
Output capacity:	16700	Btuh	101% of load
Supplemental heat required:	0	Btuh	
Capacity balance:	33	°F	
Economic balance:	-99	°F	

Meets all requirements of ACCA Manual S.



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Manual S Compliance Report

Main

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Project Information

For: Steedley Residence
22854 S Hwy 441, High Springs, FL

Cooling Equipment

Design Conditions

Outdoor design DB:	92.4°F	Sensible gain:	35479	Btuh	Entering coil DB:	76.4°F
Outdoor design WB:	75.8°F	Latent gain:	6346	Btuh	Entering coil WB:	63.3°F
Indoor design DB:	75.0°F	Total gain:	41826	Btuh		
Indoor RH:	50%	Estimated airflow:	1550	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Trane	Model:	4TWR4048N1+TEM4B0C60S51++TDR
Actual airflow:	1550	cfm	
Sensible capacity:	32550	Btuh	92% of load
Latent capacity:	13950	Btuh	220% of load
Total capacity:	46500	Btuh	111% of load SHR: 70%

Heating Equipment

Design Conditions

Outdoor design DB:	33.3°F	Heat loss:	36509	Btuh	Entering coil DB:	68.0°F
Indoor design DB:	68.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Trane	Model:	4TWR4048N1+TEM4B0C60S51++TDR
Actual airflow:	0	cfm	
Output capacity:	44000	Btuh	121% of load
Supplemental heat required:	0	Btuh	
Capacity balance:	29	°F	
Economic balance:	-99	°F	

Meets all requirements of ACCA Manual S.



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Duct System Summary

AH 2

High Springs Electric

Job:
Date: Jun 19, 2024
By: Donna Brackeen

Project Information

For: Steedley Residence
22854 S Hwy 441, High Springs, FL

	Heating	Cooling
External static pressure	0.50 in H ₂ O	0.50 in H ₂ O
Pressure losses	0.18 in H ₂ O	0.18 in H ₂ O
Available static pressure	0.32 in H ₂ O	0.32 in H ₂ O
Supply / return available pressure	0.233 / 0.087 in H ₂ O	0.233 / 0.087 in H ₂ O
Lowest friction rate	0.128 in/100ft	0.128 in/100ft
Actual air flow	0 cfm	643 cfm
Total effective length (TEL)	251 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
butler	c 1645	0	72	0.129	5.0	0x 0	VIFx	45.6	135.0	st5
entry hall	c 1676	0	74	0.205	5.0	0x 0	VIFx	18.5	95.0	st1
laundry	c 1254	0	55	0.207	5.0	0x 0	VIFx	17.6	95.0	st1
m bath	c 1162	0	51	0.153	5.0	0x 0	VIFx	37.8	115.0	st4
m bd	c 3104	0	137	0.128	7.0	0x 0	VIFx	47.6	135.0	st5
m bdA	c 3104	0	137	0.152	7.0	0x 0	VIFx	38.3	115.0	st4
pantry	c 508	0	22	0.129	4.0	0x 0	VIFx	46.0	135.0	st5
pwr	c 381	0	17	0.210	4.0	0x 0	VIFx	16.3	95.0	st1
storage	c 588	0	26	0.212	4.0	0x 0	VIFx	14.9	95.0	st1
wc	c 596	0	26	0.196	4.0	0x 0	VIFx	23.8	95.0	st1
wic	c 581	0	26	0.159	4.0	0x 0	VIFx	31.9	115.0	st4

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st5	Peak AVF	0	232	0.128	663	8.0	0 x 0	VinIFx	st4
st4	Peak AVF	0	445	0.128	567	12.0	0 x 0	VinIFx	st1
st1	Peak AVF	0	643	0.128	601	14.0	0 x 0	VinIFx	



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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
rb5	8x 14	0	241	64.7	0.134	545	9.0	0x 0		VIFx	rt1
rb2	14x 13	0	402	67.9	0.128	512	12.0	0x 0		VIFx	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	0	643	0.128	601	14.0	0 x 0	VinIFx	



Duct System Summary

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	Heating	Cooling
External static pressure	0.50 in H ₂ O	0.50 in H ₂ O
Pressure losses	0.18 in H ₂ O	0.18 in H ₂ O
Available static pressure	0.32 in H ₂ O	0.32 in H ₂ O
Supply / return available pressure	0.217 / 0.103 in H ₂ O	0.217 / 0.103 in H ₂ O
Lowest friction rate	0.103 in/100ft	0.103 in/100ft
Actual air flow	0 cfm	1550 cfm
Total effective length (TEL)	310 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
bath2	c 800	0	35	0.197	4.0	0x 0	VIFx	15.2	95.0	st2
bd2	c 2249	0	98	0.142	6.0	0x 0	VIFx	38.2	115.0	st6
bd2-A	c 2249	0	98	0.144	6.0	0x 0	VIFx	35.4	115.0	st6
bd3	c 3491	0	153	0.196	7.0	0x 0	VIFx	16.0	95.0	st2
common area	c 2975	0	130	0.128	7.0	0x 0	VIFx	54.8	115.0	st7
common area-A	c 2975	0	130	0.162	7.0	0x 0	VIFx	38.9	95.0	st3
common area-B	c 2975	0	130	0.129	7.0	0x 0	VIFx	53.2	115.0	st7
common area-C	c 2975	0	130	0.162	7.0	0x 0	VIFx	39.0	95.0	st3
common area-D	c 2975	0	130	0.159	7.0	0x 0	VIFx	41.2	95.0	st3
common area-E	c 2975	0	130	0.162	7.0	0x 0	VIFx	39.4	95.0	st3
dining	c 2961	0	129	0.103	7.0	0x 0	VIFx	70.5	140.0	st8
foyer	c 1629	0	71	0.113	6.0	0x 0	VIFx	58.1	135.0	st8
office	c 3001	0	131	0.103	7.0	0x 0	VIFx	70.4	140.0	st8
wic2	c 476	0	21	0.144	4.0	0x 0	VIFx	36.0	115.0	st6
wic3	c 772	0	34	0.194	4.0	0x 0	VIFx	16.7	95.0	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
st8	Peak AVF	0	332	0.103	422	12.0	0 x 0	VinIFx	st7
st7	Peak AVF	0	592	0.103	553	14.0	0 x 0	VinIFx	st3
st3	Peak AVF	0	1112	0.103	629	18.0	0 x 0	VinIFx	
st6	Peak AVF	0	217	0.142	622	8.0	0 x 0	VinIFx	st2
st2	Peak AVF	0	438	0.142	558	12.0	0 x 0	VinIFx	

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
rb4	10x 9	0	186	34.9	0.294	533	8.0	0x 0		VIFx	
rb6	8x 8	0	131	99.7	0.103	491	7.0	0x 0		VIFx	rt2
rb3	10x 10	0	217	57.5	0.179	622	8.0	0x 0		VIFx	rt2
rb1	0x 0	0	1015	58.1	0.177	575	18.0	0x 0		VIFx	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	0	1364	0.103	625	20.0	0 x 0	VinIFx	