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Load Short Form
Entire House
Spann's Heating and Air INC.

Job: Rodney Wade- Ruark
Date: June 3, 2021
By:

16051 NW 30th Ave, Trenton, Fl 32693 Phone: 3524636440 Email: spann21@bellsouth.met

Project Information

For: Rodney Wade- Ruark

Design Information

	Htg	Clg
Outside db (°F)	33	92
Inside db (°F)	70	75
Design TD (°F)	37	17
Daily range	-	M
Inside humidity (%)	30	50
Moisture difference (gr/lb)	10	47

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

HEATING EQUIPMENT

Make	Comfortmaker
Trade	14 SEER N SERIES R410A HP
Model	N4H436GKG21
AHRI ref	
Efficiency	8.5 HSPF
Heating input	
Heating output	33800 Btuh @ 47°F
Temperature rise	27 °F
Actual air flow	1147 cfm
Air flow factor	0.046 cfm/Btuh
Static pressure	0.70 in H2O
Space thermostat	

Capacity balance point = 27 °F

Backup: n/a n/a
Input = 7 kW, Output = 22622 Btuh, 100 AFUE

COOLING EQUIPMENT

Make	Comfortmaker
Trade	14 SEER N SERIES R410A HP
Cond	N4H436GKG21
Coil	FXM4X3600AL
AHRI ref	
Efficiency	12.5 EER, 14 SEER
Sensible cooling	24080 Btuh
Latent cooling	10320 Btuh
Total cooling	34400 Btuh
Actual air flow	1147 cfm
Air flow factor	0.053 cfm/Btuh
Static pressure	0.70 in H2O
Load sensible heat ratio	0.83

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
Laundry	96	3005	2223	137	117
Master Bath	77	1170	1029	53	54
Master Bedroom	223	4148	3357	190	177
Closet	47	58	97	3	5
Dining	211	2470	1582	113	83
Kitchen	257	2234	3115	102	164
Bedroom 2	177	3653	2976	167	157
Bath 2	57	783	655	36	34
Bedroom 3	195	3854	3072	176	162
Great Room	289	3720	3689	170	194

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

Entire House	d	1628	25096	21795	1147	1147
Other equip loads			0	0		
Equip. @ 0.97	RSM			21119		
Latent cooling				4536		
TOTALS		1628	25096	25656	1147	1147

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Project Summary
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Notes:

Design Information

Weather: Gainesville Rgnl, FL, US

Winter Design Conditions

Outside db	33	°F
Inside db	70	°F
Design TD	37	°F

Summer Design Conditions

Outside db	92	°F
Inside db	75	°F
Design TD	17	°F
Daily range	M	
Relative humidity	50	%
Moisture difference	47	gr/lb

Heating Summary

Structure	19145	Btuh
Ducts	5951	Btuh
Central vent (0 cfm) (none)	0	Btuh
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	25096	Btuh

Sensible Cooling Equipment Load Sizing

Structure	14309	Btuh
Ducts	7486	Btuh
Central vent (0 cfm) (none)	0	Btuh
Blower	0	Btuh
Use manufacturer's data	n	
Rate/swing multiplier	0.97	
Equipment sensible load	21119	Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

	Heating	Cooling
Area (ft²)	1628	1628
Volume (ft³)	16924	16924
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	107	56

Latent Cooling Equipment Load Sizing

Structure	2989	Btuh
Ducts	1547	Btuh
Central vent (0 cfm) (none)	0	Btuh
Equipment latent load	4536	Btuh
Equipment Total Load (Sen+Lat)	25656	Btuh
Req. total capacity at 0.70 SHR	2.5	ton

Heating Equipment Summary

Make	Comfortmaker
Trade	14 SEER N SERIES R410A HP
Model	N4H436GKG21
AHRI ref	

Efficiency	8.5 HSPF	
Heating input		
Heating output	33800	Btuh @ 47°F
Temperature rise	27	°F
Actual air flow	1147	cfm
Air flow factor	0.046	cfm/Btuh
Static pressure	0.70	in H2O

Space thermostat
Capacity balance point = 27 °F

Backup: n/a n/a
Input = 7 kW, Output = 22622 Btuh, 100 AFUE

Cooling Equipment Summary

Make	Comfortmaker
Trade	14 SEER N SERIES R410A HP
Cond	N4H436GKG21
Coil	FXM4X3600AL
AHRI ref	

Efficiency	12.5 EER, 14 SEER	
Sensible cooling	24080	Btuh
Latent cooling	10320	Btuh
Total cooling	34400	Btuh
Actual air flow	1147	cfm
Air flow factor	0.053	cfm/Btuh
Static pressure	0.70	in H2O
Load sensible heat ratio	0.83	

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Right-J® Worksheet
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Spann's Heating and Air INC.

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		Entire House	Laundry
1	Room name	162.0 ft	20.0 ft
2	Exposed wall	10.4 ft d	9.0 ft heat/cool
3	Room height		8.0 x 12.0 ft
4	Room dimensions	1628.0 ft²	96.0 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	12C-0sw	0.091	n	3.33	2.22	473	407	1354	901	72	51	170	113
.	├─G	1D-c2ov	0.400	n	14.64	10.92	9	0	132	98	0	0	0	0
.	├─G	1D-c2ov	0.400	n	14.64	10.92	12	0	176	131	0	0	0	0
.	├─G	1D-c2ov	0.400	n	14.64	10.92	24	0	351	262	0	0	0	0
11	└─D	11J0	0.600	n	21.96	17.61	21	21	461	370	21	21	461	370
	W	12C-0sw	0.091	e	3.33	2.22	333	318	1059	705	0	0	0	0
	└─G	1D-c2ov	0.400	e	14.64	25.95	15	0	220	389	0	0	0	0
	W	12C-0sw	0.091	s	3.33	2.22	449	380	1264	841	0	0	0	0
	├─G	1D-c2ov	0.400	s	14.64	10.92	24	48	351	262	0	0	0	0
	├─G	1D-c2ov	0.400	s	14.64	10.92	24	48	351	262	0	0	0	0
	└─D	11J0	0.600	s	21.96	17.61	21	21	461	370	0	0	0	0
	W	12C-0sw	0.091	w	3.33	2.22	333	320	1064	708	108	108	360	239
	├─G	1D-c2ov	0.400	w	14.64	25.95	5	0	66	117	0	0	0	0
	└─G	1D-c2ov	0.400	w	14.64	25.95	9	0	132	234	0	0	0	0
	C	16B-38md	0.026	-	0.95	1.37	1628	1628	1549	2237	96	96	91	132
	F	22A-tpl	0.989	-	36.20	0.00	1628	162	5864	0	96	20	724	0

6	c) AED excursion									0				-13
	Envelope loss/gain								14855	7886			1806	841
12	a) Infiltration								4290	1043			487	118
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @	230				6			1380	0			0
		Appliances/other								4000				500
	Subtotal (lines 6 to 13)								19145	14309			2293	1460
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								19145	14309			2293	1460
15	Duct loads						31%	52%	5951	7486	31%	52%	713	764
	Total room load								25096	21795			3005	2223
	Air required (cfm)								1147	1147			137	117

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							Master Bath 8.5 ft 9.0 ft heat/cool 9.0 x 8.5 ft 76.5 ft²				Master Bedroom 30.0 ft 9.0 ft heat/cool 13.5 x 16.5 ft 222.8 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	3.33	2.22	0	0	0	0	0	0	0	0
.	├─G	1D-c2ov	0.400	n	14.64	10.92	0	0	0	0	0	0	0	0
.	├─G	1D-c2ov	0.400	n	14.64	10.92	0	0	0	0	0	0	0	0
.	├─G	1D-c2ov	0.400	n	14.64	10.92	0	0	0	0	0	0	0	0
11	└─D	11J0	0.600	n	21.96	17.61	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	e	3.33	2.22	0	0	0	0	0	0	0	0
	└─G	1D-c2ov	0.400	e	14.64	25.95	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	s	3.33	2.22	0	0	0	0	122	110	365	243
	├─G	1D-c2ov	0.400	s	14.64	10.92	0	0	0	0	12	12	176	131
	├─G	1D-c2ov	0.400	s	14.64	10.92	0	0	0	0	0	0	0	0
	└─D	11J0	0.600	s	21.96	17.61	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	w	3.33	2.22	77	72	240	160	149	140	465	309
	├─G	1D-c2ov	0.400	w	14.64	25.95	5	0	66	117	0	0	0	0
	└─G	1D-c2ov	0.400	w	14.64	25.95	0	0	0	0	9	0	132	234
	C	16B-38md	0.026	-	0.95	1.37	77	77	73	105	223	223	212	306
	F	22A-tpl	0.989	-	36.20	0.00	77	9	308	0	223	30	1086	0
6	c) AED excursion									44				44
	Envelope loss/gain								686	425			2435	1267
12	a) Infiltration								207	50			730	177
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @ 230					0			0	2			460
		Appliances/other								200				300
	Subtotal (lines 6 to 13)								893	675			3164	2204
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								893	675			3164	2204
15	Duct loads						31%	52%	278	353	31%	52%	984	1153
	Total room load								1170	1029			4148	3357
	Air required (cfm)								53	54			190	177

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1	Room name						Closet				Dining			
2	Exposed wall						0 ft				13.0 ft			
3	Room height						9.0 ft		heat/cool		12.0 ft		heat/cool	
4	Room dimensions						5.5 x 8.5 ft				1.0 x 211.3 ft			
5	Room area						46.8 ft²				211.3 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	3.33	2.22	0	0	0	0	156	132	440	292
.	G	1D-c2ov	0.400	n	14.64	10.92	0	0	0	0	0	0	0	0
.	G	1D-c2ov	0.400	n	14.64	10.92	0	0	0	0	0	0	0	0
.	G	1D-c2ov	0.400	n	14.64	10.92	0	0	0	0	24	0	351	262
11	D	11J0	0.600	n	21.96	17.61	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	e	3.33	2.22	0	0	0	0	0	0	0	0
	G	1D-c2ov	0.400	e	14.64	25.95	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	s	3.33	2.22	0	0	0	0	0	0	0	0
	G	1D-c2ov	0.400	s	14.64	10.92	0	0	0	0	0	0	0	0
	G	1D-c2ov	0.400	s	14.64	10.92	0	0	0	0	0	0	0	0
	D	11J0	0.600	s	21.96	17.61	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	w	3.33	2.22	0	0	0	0	0	0	0	0
	G	1D-c2ov	0.400	w	14.64	25.95	0	0	0	0	0	0	0	0
	G	1D-c2ov	0.400	w	14.64	25.95	0	0	0	0	0	0	0	0
	C	16B-38md	0.026	-	0.95	1.37	47	47	44	64	211	211	201	290
	F	22A-tpl	0.989	-	36.20	0.00	47	0	0	0	211	13	471	0
6	c) AED excursion									-1				-9
	Envelope loss/gain								44	64			1463	836
12	a) Infiltration								0	0			422	102
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @ 230					0			0	0			0
		Appliances/other								0				100
	Subtotal (lines 6 to 13)								44	64			1884	1038
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								44	64			1884	1038
15	Duct loads						31%	52%	14	33	31%	52%	586	543
	Total room load								58	97			2470	1582
	Air required (cfm)								3	5			113	83

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		Kitchen	Bedroom 2
1	Room name	Kitchen	Bedroom 2
2	Exposed wall	12.5 ft	26.5 ft
3	Room height	12.0 ft	9.0 ft
4	Room dimensions	heat/cool	heat/cool
		1.0 x 257.3 ft	1.0 x 176.8 ft
5	Room area	257.3 ft²	176.8 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	3.33	2.22	150	141	470	312	95	83	275	183
.	G	1D-c2ov	0.400	n	14.64	10.92	9	0	132	98	0	0	0	0
.	G	1D-c2ov	0.400	n	14.64	10.92	0	0	0	0	12	0	176	131
.	G	1D-c2ov	0.400	n	14.64	10.92	0	0	0	0	0	0	0	0
11	D	11J0	0.600	n	21.96	17.61	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	e	3.33	2.22	0	0	0	0	144	137	455	302
	G	1D-c2ov	0.400	e	14.64	25.95	0	0	0	0	8	0	110	195
	W	12C-0sw	0.091	s	3.33	2.22	0	0	0	0	0	0	0	0
	G	1D-c2ov	0.400	s	14.64	10.92	0	0	0	0	0	0	0	0
	G	1D-c2ov	0.400	s	14.64	10.92	0	0	0	0	0	0	0	0
	D	11J0	0.600	s	21.96	17.61	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	w	3.33	2.22	0	0	0	0	0	0	0	0
	G	1D-c2ov	0.400	w	14.64	25.95	0	0	0	0	0	0	0	0
	G	1D-c2ov	0.400	w	14.64	25.95	0	0	0	0	0	0	0	0
	C	16B-38md	0.026	-	0.95	1.37	257	257	245	353	177	177	168	243
	F	22A-tpl	0.989	-	36.20	0.00	257	13	452	0	177	27	959	0
6	c) AED excursion									-18				-17
	Envelope loss/gain								1299	747			2142	1037
12	a) Infiltration								405	99			645	157
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @ 230					0			0	2			460
		Appliances/other								1200				300
	Subtotal (lines 6 to 13)								1704	2045			2787	1954
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								1704	2045			2787	1954
15	Duct loads						31%	52%	530	1070	31%	52%	866	1022
	Total room load								2234	3115			3653	2976
	Air required (cfm)								102	164			167	157

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By:

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1	Room name						Bath 2				Bedroom 3				
2	Exposed wall						6.0 ft				28.0 ft				
3	Room height						9.0 ft			heat/cool	9.0 ft			heat/cool	
4	Room dimensions						9.5	x	6.0 ft		13.0	x	15.0 ft		
5	Room area						57.0 ft²				195.0 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	3.33	2.22	0	0	0	0	0	0	0	0	
.	G	1D-c2ov	0.400	n	14.64	10.92	0	0	0	0	0	0	0	0	
.	G	1D-c2ov	0.400	n	14.64	10.92	0	0	0	0	0	0	0	0	
.	G	1D-c2ov	0.400	n	14.64	10.92	0	0	0	0	0	0	0	0	
11	D	11J0	0.600	n	21.96	17.61	0	0	0	0	0	0	0	0	
	W	12C-0sw	0.091	e	3.33	2.22	54	54	180	120	135	128	425	283	
	G	1D-c2ov	0.400	e	14.64	25.95	0	0	0	0	8	0	110	195	
	W	12C-0sw	0.091	s	3.33	2.22	0	0	0	0	117	105	350	233	
	G	1D-c2ov	0.400	s	14.64	10.92	0	0	0	0	12	12	176	131	
	G	1D-c2ov	0.400	s	14.64	10.92	0	0	0	0	0	0	0	0	
	D	11J0	0.600	s	21.96	17.61	0	0	0	0	0	0	0	0	
	W	12C-0sw	0.091	w	3.33	2.22	0	0	0	0	0	0	0	0	
	G	1D-c2ov	0.400	w	14.64	25.95	0	0	0	0	0	0	0	0	
	G	1D-c2ov	0.400	w	14.64	25.95	0	0	0	0	0	0	0	0	
	C	16B-38md	0.026	-	0.95	1.37	57	57	54	78	195	195	186	268	
	F	22A-tpl	0.989	-	36.20	0.00	57	6	217	0	195	28	1014	0	
6	c) AED excursion									-4				-17	
	Envelope loss/gain								451	194			2259	1091	
12	a) Infiltration								146	35			681	166	
	b) Room ventilation								0	0			0	0	
13	Internal gains:	Occupants @ 230					0			0	2			460	
		Appliances/other								200				300	
	Subtotal (lines 6 to 13)								597	430			2940	2017	
	Less external load								0	0			0	0	
	Less transfer								0	0			0	0	
	Redistribution								0	0			0	0	
14	Subtotal								597	430			2940	2017	
15	Duct loads						31%	52%	186	225	31%	52%	914	1055	
	Total room load								783	655			3854	3072	
	Air required (cfm)								36	34			176	162	

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Right-J® Worksheet
Entire House
Spann's Heating and Air INC.

Job: Rodney Wade- Ruark
Date: June 3, 2021
By:

16051 NW 30th Ave, Trenton, Fl 32693 Phone: 3524636440 Email: spann21@bellsouth.met

1	Room name	Great Room
2	Exposed wall	17.5 ft
3	Room height	12.0 ft heat/cool
4	Room dimensions	17.5 x 16.5 ft
5	Room area	288.8 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	3.33	2.22	0	0	0	0				
.	├─G	1D-c2ov	0.400	n	14.64	10.92	0	0	0	0				
.	├─G	1D-c2ov	0.400	n	14.64	10.92	0	0	0	0				
.	├─G	1D-c2ov	0.400	n	14.64	10.92	0	0	0	0				
11	└─D	11J0	0.600	n	21.96	17.61	0	0	0	0				
	W	12C-0sw	0.091	e	3.33	2.22	0	0	0	0				
	└─G	1D-c2ov	0.400	e	14.64	25.95	0	0	0	0				
	W	12C-0sw	0.091	s	3.33	2.22	210	165	550	366				
	├─G	1D-c2ov	0.400	s	14.64	10.92	0	0	0	0				
	├─G	1D-c2ov	0.400	s	14.64	10.92	24	24	351	262				
	└─D	11J0	0.600	s	21.96	17.61	21	21	461	370				
	W	12C-0sw	0.091	w	3.33	2.22	0	0	0	0				
	├─G	1D-c2ov	0.400	w	14.64	25.95	0	0	0	0				
	└─G	1D-c2ov	0.400	w	14.64	25.95	0	0	0	0				
	C	16B-38md	0.026	-	0.95	1.37	289	289	275	397				
	F	22A-tpl	0.989	-	36.20	0.00	289	18	633	0				

6	c) AED excursion				-10	
	Envelope loss/gain			2270	1384	
12	a) Infiltration			568	138	
	b) Room ventilation			0	0	
13	Internal gains:	Occupants @ 230	0		0	
		Appliances/other			900	
	Subtotal (lines 6 to 13)			2838	2422	
	Less external load			0	0	
	Less transfer			0	0	
	Redistribution			0	0	
14	Subtotal			2838	2422	
15	Duct loads		31% 52%	882	1267	
	Total room load			3720	3689	
	Air required (cfm)			170	194	

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

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

Form RPER 1 15 Mar 09

Air Conditioning Contractors of America

Header Information

Contractor: Spann's Heating and Air INC.
Jack Spann

Mechanical license:

Building plan #:

Home address (Street or Lot#, Block, Subdivision): , Entire House

REQUIRED ATTACHMENTS	ATTACHED
Manual J1 Form (and supporting worksheets):	Yes ☐ No ☐
or MJ1AE Form* (and supporting worksheets):	Yes ☐ No ☐
OEM performance data (heating, cooling, blower):	Yes ☐ No ☐
Manual D Friction Rate Worksheet:	Yes ☐ No ☐
Duct distribution sketch:	Yes ☐ No ☐

HVAC LOAD CALCULATION (IRC M1401.3)

Design Conditions

Winter Design Conditions

Outdoor temperature:	33	°F
Indoor temperature:	70	°F
Total heat loss:	25096	Btuh

Summer Design Conditions

Outdoor temperature:	92	°F
Indoor temperature:	75	°F
Grains difference:	47 gr/lb @	50% RH
Sensible heat gain:	22492	Btuh
Latent heat gain:	4682	Btuh
Total heat gain:	27174	Btuh

Building Construction Information

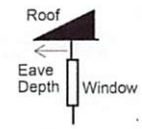
Building

Orientation: Front Door faces North
North, East, West, South, Northeast, Northwest, Southeast, Southwest

Number of bedrooms:	3	
Conditioned floor area:	1628	ft²
Number of occupants:	6	

Windows

Eave overhang depth:	1.0	ft
Internal shade: Blinds, drapes, etc.	none	
Number of skylights:	0	



HVAC EQUIPMENT SELECTION (IRC M1401.3)

Heating Equipment Data

Equipment type: Furnace, Heat pump, Boiler, etc.	Split ASHP
Model:	Comfortmaker N4H436GKG21+FXM4X3600AL
Heating output capacity: Heat pumps - capacity at winter design outdoor conditions	0 Btuh
Aux. heating output capacity:	22622 Btuh

Cooling Equipment Data

Equipment type: Air Conditioner, Heat pump, etc.	Split ASHP
Model:	Comfortmaker N4H436GKG21+FXM4X3600AL
Total cooling capacity:	0 Btuh
Sensible cooling capacity:	0 Btuh
Latent cooling capacity:	0 Btuh

Blower Data

Heating cfm:	1147
Cooling cfm:	1147
Static pressure: Fan's rated external static pressure for design airflow	0.70 in H2O

HVAC DUCT DISTRIBUTION SYSTEM DESIGN (IRC M1601.1)

Design airflow:	1147	cfm
Equipment design ESP:	0.70	in H2O
Total device pressure losses:	0	in H2O
Available static pressure (ASP):	0.70	in H2O

Longest supply duct:	384	ft
Longest return duct:	0	ft
Total effective length (TEL):	384	ft
Friction rate: Friction Rate = ASP ÷ (TEL x 100)	0.182	in/100ft

Duct Materials Used

Trunk duct:	Fiberglass board
Branch duct:	Round flex metal

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

Contractor's printed name: _____

Contractor's signature: _____ Date: _____

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

*Home qualifies for MJ1AE Form based on Abridged Edition Checklist

Duct System Summary
Entire House
Spann's Heating and Air INC.

Job: Rodney Wade- Ruark
Date: June 3, 2021
By:

16051 NW 30th Ave, Trenton, Fl 32693 Phone: 3524636440 Email: spann21@bellsouth.met

Project Information

For: Rodney Wade- Ruark

	Heating	Cooling
External static pressure	0.70 in H2O	0.70 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0.70 in H2O	0.70 in H2O
Supply / return available pressure	0.350 / 0.350 in H2O	0.350 / 0.350 in H2O
Lowest friction rate	0.182 in/100ft	0.182 in/100ft
Actual air flow	1147 cfm	1147 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 2	h 783	36	34	0.192	***5.0***	***0*** x ***0***	MtFx	38.9	325.0	st1
Bedroom 2	h 3653	167	157	0.182	***7.0***	***0*** x ***0***	MtFx	48.9	335.0	st1
Bedroom 3	h 3854	176	162	0.192	***7.0***	***0*** x ***0***	MtFx	39.7	325.0	st1
Closet	c 97	3	5	0.247	***5.0***	***0*** x ***0***	MtFx	13.4	270.0	st1
Dining	h 2470	113	83	0.250	***7.0***	***0*** x ***0***	MtFx	19.9	260.0	st1
Great Room	c 1845	85	97	0.251	***7.0***	***0*** x ***0***	MtFx	18.9	260.0	st1
Great Room-A	c 1845	85	97	0.187	***7.0***	***0*** x ***0***	MtFx	29.4	345.0	st1
Kitchen	c 3115	102	164	0.182	***7.0***	***0*** x ***0***	MtFx	29.4	355.0	st1
Laundry	h 3005	137	117	0.367	***6.0***	***0*** x ***0***	MtFx	10.7	180.0	st1
Master Bath	c 1029	53	54	0.385	***6.0***	***0*** x ***0***	MtFx	11.8	170.0	st1
Master Bedroom	h 4148	190	177	0.402	***8.0***	***0*** x ***0***	MtFx	14.1	160.0	st1

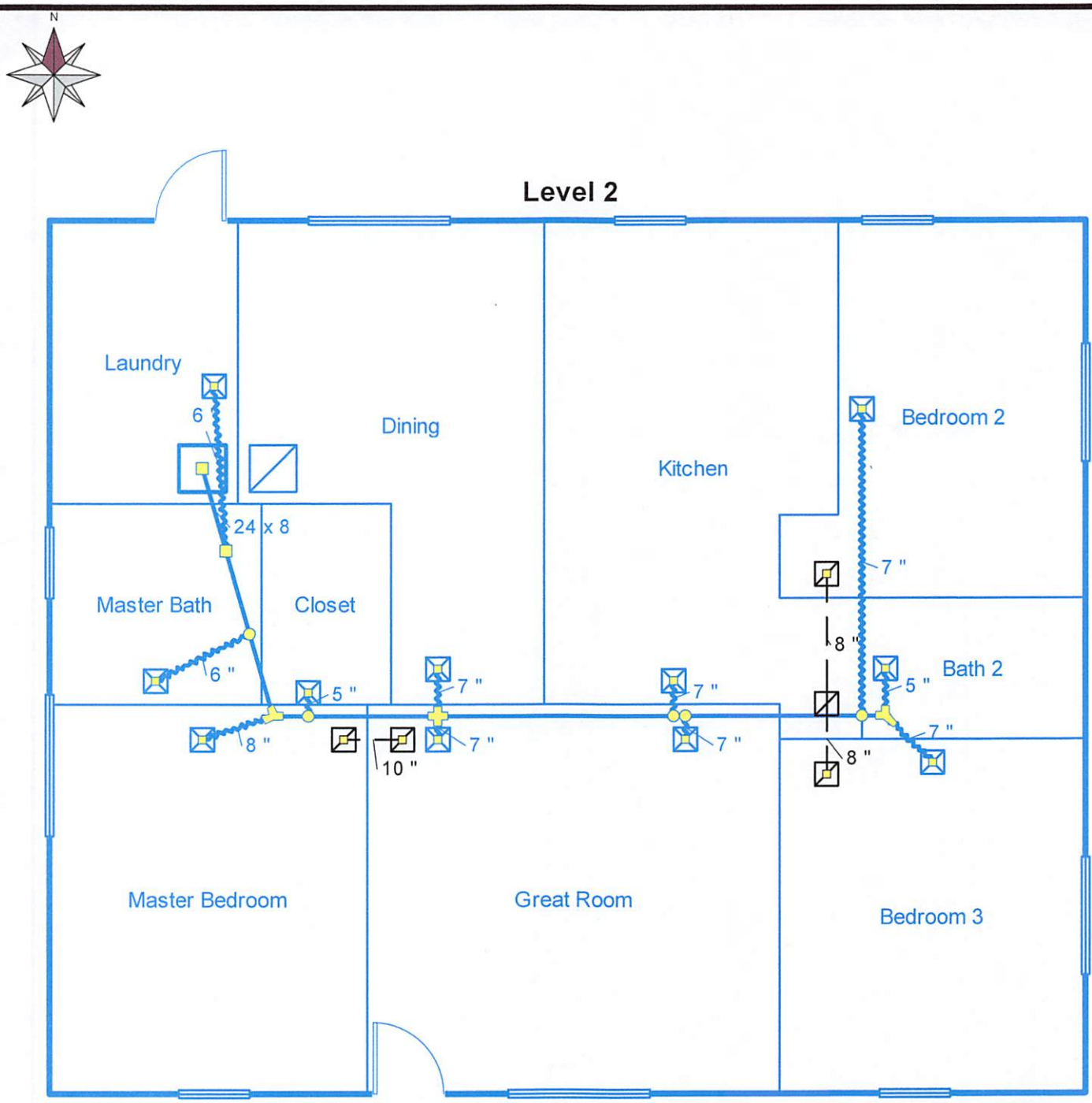
Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st1	Peak AVF	1147	1147	0.182	860	13.5	8 x 24	RectFbg	

Bold/italic values have been manually overridden

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
rb1	0x0	1147	1147	0	0	0	0	0x 0		MtFx	



A/C Register locations to be determined. Registers may be moved due to trusses, dead wood, lights, fire alarms, and etc..

Job #: Rodney Wade- Ruark **Performed for:** Rodney Wade- Ruark	**Spann's Heating and Air INC.** 16051 NW 30th Ave Trenton, Fl 32693 Phone: 3524636440 spann21@bellsouth.met	Scale: 1 : 77 Page 1 Right-Suite® Universal 2019 19.0.15 RSU08917 2021-Jun-03 17:22:11 ...soft HVAC\Rodney Wade- Ruark.rup