Load Short Form
Entire House
WebREPS

Job:	**738 Lockwood Road**
Date:	**October 31, 2023**
By:	**Kenneth D. Puzinas**
Plan:	**738 Lockwood Road**

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

Project Information

For: Eric Umbarger, MUSE
738 Lockwood Road, Marathon, NY 13803
Phone: 540.645.3635
Email: ETUmbarger@gmail.com

Design Information

	Htg	Clg
Outside db (°F)	6	86
Inside db (°F)	70	75
Design TD (°F)	64	11
Daily range	-	M
Inside humidity (%)	50	50
Moisture difference (gr/lb)	51	28

Infiltration

Method	Simplified
Construction quality	Tight
Fireplaces	0

HEATING EQUIPMENT

Make	ACIQ
Trade	ACIQ Series
Model	ACIQ-48-HPB
AHRI ref	208106637

Efficiency	9.4 HSPF2	
Heating input		
Heating output	50000	Btuh @ 47°F
Temperature rise	36	°F
Actual air flow	1312	cfm
Air flow factor	0.023	cfm/Btuh
Static pressure	0.60	in H2O
Space thermostat		

Capacity balance point = 0 °F

Backup:
Input = 15 kW, Output = 51182 Btuh, 100 AFUE

COOLING EQUIPMENT

Make	ACIQ
Trade	ACIQ Series
Cond	ACIQ-48-HPB
Coil	ACIQ-48-AHB
AHRI ref	208106637

Efficiency	8.2 EER2,15.6 SEER2	
Sensible cooling	34310	Btuh
Latent cooling	12690	Btuh
Total cooling	47000	Btuh
Actual air flow	1312	cfm
Air flow factor	0.047	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)
LNDRY	88	1777	1904	41	90
C L 1	17	0	0	0	0
BEDRM 1	138	4020	1986	93	94
HALL	160	1853	2282	43	108
BATH	81	977	688	23	33
BEDROOM 2	121	2989	1586	69	75
CL 2	30	0	0	0	0
UTILITY	35	0	0	0	0
M CL	35	0	0	0	0
M BEDROOM	821	10956	4614	253	218
M BATH	120	1907	682	44	32
PNTY	29	3817	48	88	2
CL	10	0	0	0	0
UP	29	0	0	0	0

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

CLO	14	0	0	0	0
LIVING ROOM	333	7238	4352	167	206
DINING	135	2791	4960	64	235
KITCHEN	147	742	2523	17	119
PDR	30	0	0	0	0
TACK RM	124	17821	2118	411	100
Entire House	2496	56889	27742	1312	1312
Other equip loads		8526	2311		
Equip. @ 1.00 RSM			30053		
Latent cooling			11209		
TOTALS	2496	65414	41262	1312	1312

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Notes: 738 Lockwood Road Marathon, NY 13803

Design Information

Weather: Ithaca Tompkins Regional, NY, US

Winter Design Conditions

Outside db	6	°F
Inside db	70	°F
Design TD	64	°F

Summer Design Conditions

Outside db	86	°F
Inside db	75	°F
Design TD	11	°F
Daily range	M	
Relative humidity	50	%
Moisture difference	28	gr/lb

Heating Summary

Structure	56889	Btuh
Ducts	0	Btuh
Central vent (SER=50% 105 cfm)	3542	Btuh
Energy recovery		
Humidification	4984	Btuh
Piping	0	Btuh
Equipment load	65414	Btuh

Sensible Cooling Equipment Load Sizing

Structure	27742	Btuh
Ducts	0	Btuh
Central vent (SER=50% 105 cfm)	604	Btuh
Energy recovery		
Blower	1707	Btuh
Use manufacturer's data	y	
Rate/swing multiplier	1.00	
Equipment sensible load	30053	Btuh

Infiltration

Method	Simplified
Construction quality	Tight
Fireplaces	0

	Heating	Cooling
Area (ft²)	2496	2496
Volume (ft³)	26215	26215
Air changes/hour	0.15	0.08
Equiv. AVF (cfm)	66	35

Latent Cooling Equipment Load Sizing

Structure	10244	Btuh
Ducts	0	Btuh
Central vent (LER=50% 105 cfm)	965	Btuh
Energy recovery		
Equipment latent load	11209	Btuh
Equipment Total Load (Sen+Lat)	41262	Btuh
Req. total capacity at 0.73 SHR	3.4	ton

Heating Equipment Summary

Make	ACIQ
Trade	ACIQ Series
Model	ACIQ-48-HPB
AHRI ref	208106637

Efficiency	9.4 HSPF2	
Heating input		
Heating output	50000	Btuh @ 47°F
Temperature rise	36	°F
Actual air flow	1312	cfm
Air flow factor	0.023	cfm/Btuh
Static pressure	0.60	in H2O

Space thermostat
Capacity balance point = 0 °F

Backup:
Input = 15 kW, Output = 51182 Btuh, 100 AFUE

Cooling Equipment Summary

Make	ACIQ
Trade	ACIQ Series
Cond	ACIQ-48-HPB
Coil	ACIQ-48-AHB
AHRI ref	208106637

Efficiency	8.2 EER2,15.6 SEER2	
Sensible cooling	34310	Btuh
Latent cooling	12690	Btuh
Total cooling	47000	Btuh
Actual air flow	1312	cfm
Air flow factor	0.047	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.

Manual S Compliance Report
Entire House
WebREPS

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Cooling Equipment

Design Conditions

Outdoor design DB:	85.9°F	Sensible gain:	30053	Btuh	Entering coil DB:	76.7°F
Outdoor design WB:	71.1°F	Latent gain:	11209	Btuh	Entering coil WB:	63.2°F
Indoor design DB:	75.0°F	Total gain:	41262	Btuh		
Indoor RH:	50%	Estimated airflow:	1312	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	ACIQ		Model:	ACIQ-48-HPB+ACIQ-48-AHB	
Actual airflow:	1312	cfm			
Sensible capacity:	34310	Btuh	114% of load		
Latent capacity:	12690	Btuh	113% of load		
Total capacity:	47000	Btuh	114% of load	SHR:	73%

Heating Equipment

Design Conditions

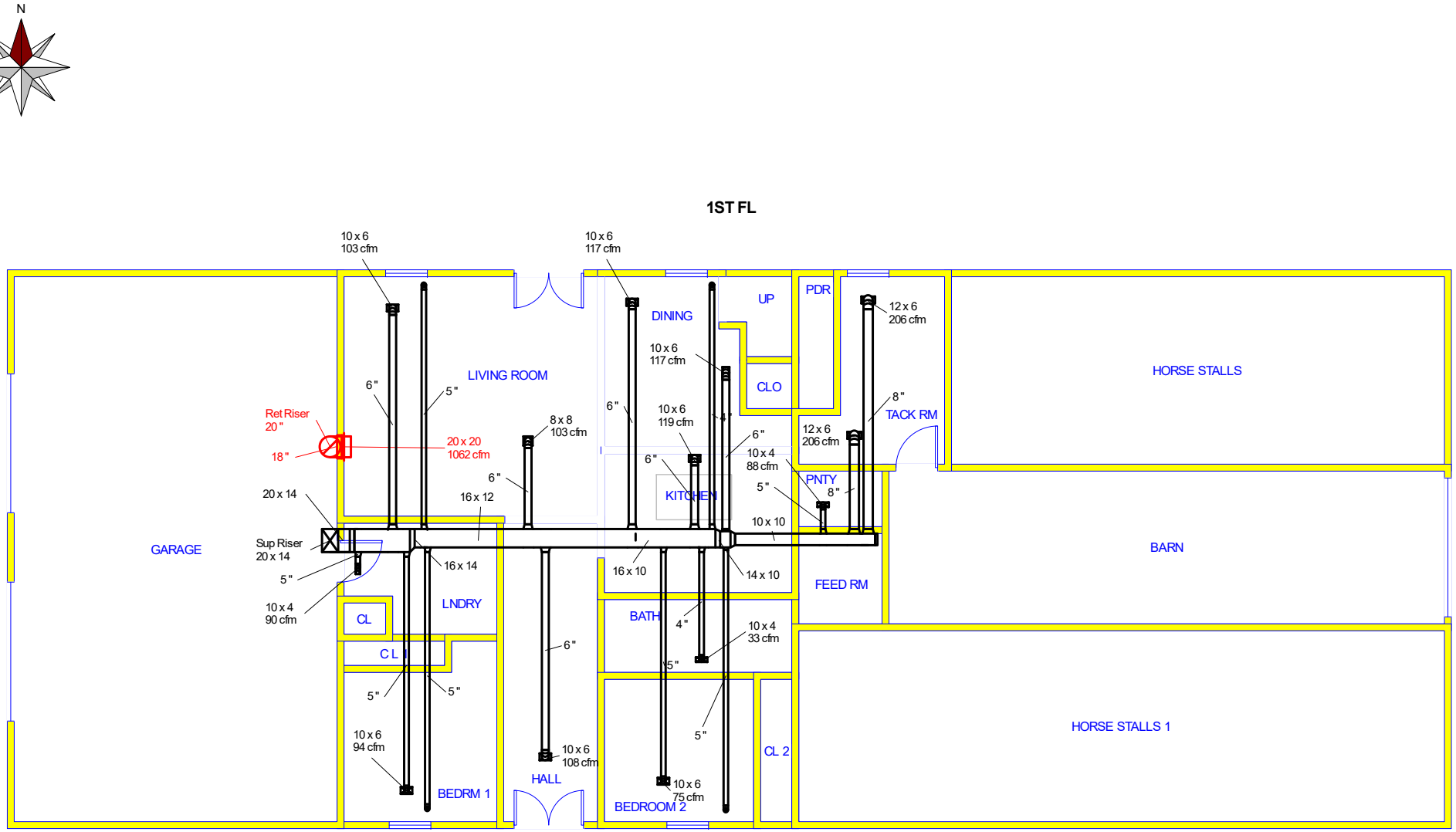
Outdoor design DB:	6.1°F	Heat loss:	65414	Btuh	Entering coil DB:	67.4°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP					
Manufacturer:	ACIQ		Model:	ACIQ-48-HPB+ACIQ-48-AHB		
Actual airflow:	1312	cfm				
Output capacity:	50000	Btuh	76% of load		Capacity balance:	0 °F
Supplemental heat required:	15414	Btuh			Economic balance:	0 °F

Backup equipment type:	Elec strip				
Manufacturer:		Model:			
Actual airflow:	1312	cfm			
Output capacity:	15.0	kW	78% of load	Temp. rise:	0 °F

Meets all requirements of ACCA Manual S.



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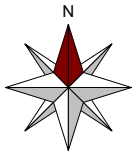

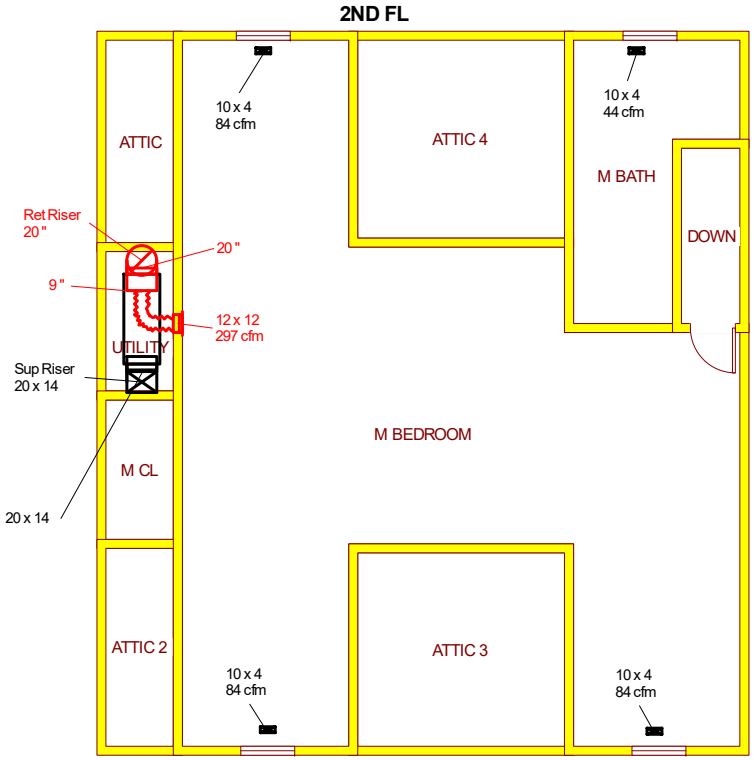

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Duct System Summary
Entire House
WebREPS

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By: Kenneth D. Puzinas
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For: Eric Umbarger, MUSE
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Phone: 540.645.3635
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	Heating	Cooling
External static pressure	0.60 in H2O	0.60 in H2O
Pressure losses	0.24 in H2O	0.24 in H2O
Available static pressure	0.36 in H2O	0.36 in H2O
Supply / return available pressure	0.264 / 0.096 in H2O	0.264 / 0.096 in H2O
Lowest friction rate	0.093 in/100ft	0.093 in/100ft
Actual air flow	1312 cfm	1312 cfm
Total effective length (TEL)	386 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-A	c	688	23	33	0.114	4.0	0x 0	ShMt	37.8	195.0	st1C
BEDRM 1	c	1986	93	94	0.146	5.0	0x 0	ShMt	25.8	155.0	st1
BEDROOM 2	c	1586	69	75	0.106	5.0	0x 0	ShMt	43.8	205.0	st1C
DINING	c	2480	32	117	0.111	6.0	0x 0	ShMt	42.8	195.0	st1D
DINING-A	c	2480	32	117	0.122	6.0	0x 0	ShMt	41.0	175.0	st1B
HALL	c	2282	43	108	0.121	6.0	0x 0	ShMt	33.5	185.0	st1B
KITCHEN	c	2523	17	119	0.113	6.0	0x 0	ShMt	34.3	200.0	st1C
LIVING ROOM	c	2176	83	103	0.140	6.0	0x 0	ShMt	23.5	165.0	st1
LIVING ROOM-A	c	2176	83	103	0.124	6.0	0x 0	ShMt	23.5	190.0	st1B
LNDRY	c	1904	41	90	0.150	5.0	0x 0	ShMt	6.3	170.0	st1
M BATH-A	h	1907	44	32	0.113	4.0	0x 0	ShMt	48.0	185.0	st1C
M BEDROOM	h	3652	84	73	0.131	5.0	0x 0	ShMt	27.3	175.0	st1A
M BEDROOM-A	h	3652	84	73	0.136	5.0	0x 0	ShMt	28.8	165.0	st1A
M BEDROOM-B	h	3652	84	73	0.108	5.0	0x 0	ShMt	50.3	195.0	st1D
PNTY-A	h	3817	88	2	0.094	5.0	0x 0	ShMt	40.3	240.0	st1E
TACK RM	h	8911	206	50	0.093	8.0	0x 0	ShMt	58.3	225.0	st1E
TACK RM-A	h	8911	206	50	0.094	8.0	0x 0	ShMt	47.5	235.0	st1E

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st1E	Peak AVF	499	102	0.093	719	10.8	10 x 10	ShtMetl	st1D
st1B	Peak AVF	927	880	0.093	695	13.6	12 x 16	ShtMetl	st1A
st1D	Peak AVF	616	293	0.093	633	11.6	10 x 14	ShtMetl	st1C
st1C	Peak AVF	768	552	0.093	691	12.6	10 x 16	ShtMetl	st1B
st1	Peak AVF	1312	1312	0.093	675	15.5	14 x 20	ShtMetl	
st1A	Peak AVF	1095	1025	0.093	704	14.4	14 x 16	ShtMetl	st1

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
rb3	0x 0	297	251	102.6	0.093	672	9.0	0x 0		VIFx	rt1
rb1	0x 0	1016	1062	92.8	0.103	601	18.0	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	Peak AVF	1312	1312	0.093	602	20.0	0 x 0	ShtMetl	