# CP-MRD-FC-9 **HVAC Load Calculations** for Maronda Homes Prepared By: Ken Fonorow Florida H.E.R.O., Inc. 15220 NW 5th Ave Newberry, FI 32669 (352) 472-5661 Thursday, January 23, 2025

Rhvac is an ACCA approved Manual J, D and S computer program.

Calculations are performed per ACCA Manual J 8th Edition, Version 2.50, and ACCA Manual D.

#### Rhvac - Residential & Light Commercial HVAC Loads

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### Project Report

#### General Project Information

Project Title: CP-MRD-FC-9 Designed By: Ken Fonorow Project Date: 1/23/2025 **Project Comment:** Livorno Model Client Name: Maronda Homes Florida H.E.R.O., Inc. Company Name: Company Representative: Ken Fonorow Company Address: 15220 NW 5th Ave Company City: Newberry, FI 32669 Company Phone: (352) 472-5661 Company E-Mail Address: ken@floridahero.com Company Website: www.floridahero.com

#### **Design Data**

Reference City: Gainesville, Florida Front door faces North **Building Orientation:** 

Daily Temperature Range: Medium Latitude: 29 Degrees Elevation: 152 ft.

Outdoor Outdoor Outdoor Indoor Indoor Grains Drv Bulb Wet Bulb Rel.Hum Rel.Hum Drv Bulb **Difference** 

0.995

Winter: 33 30.8 n/a n/a 72 n/a 92 51% 50% 75 52 Summer: 77

#### **Check Figures**

Altitude Factor:

Total Building Supply CFM: 1.600 CFM Per Square ft.: 0.488 Square ft. of Room Area: 3,282 Square ft. Per Ton: 894 Volume (ft3): 32,348

#### **Building Loads**

Total Heating Required Including Ventilation Air: 51,396 Btuh 51.396 MBH 78 % Total Sensible Gain: 34,229 Btuh 9,822 Btuh 22 % **Total Latent Gain:** 

Total Cooling Required Including Ventilation Air: 44,051 Btuh 3.67 Tons (Based On Sensible + Latent)

#### **Notes**

Rhvac is an ACCA approved Manual J, D and S computer program.

Calculations are performed per ACCA Manual J 8th Edition, Version 2.50, and ACCA Manual D.

All computed results are estimates as building use and weather may vary.

Be sure to select a unit that meets both sensible and latent loads according to the manufacturer's performance data at your design conditions.

#### Rhvac - Residential & Light Commercial HVAC Loads Elite Software Development, Inc. Florida H.E.R.O. CP-MRD-FC-9 Newberry, FL 32669 Page 3 Miscellaneous Report System 1 Whole House Outdoor Outdoor Outdoor Indoor Indoor Grains Difference Input Data Dry Bulb Wet Bulb Rel.Hum Rel.Hum Dry Bulb Winter: 33 30.8 80% n/a 72 n/a 92 50% 75 Summer: 77 51% 51.69 **Duct Sizing Inputs** Main Trunk Runouts Calculate: Yes Yes Use Schedule: Yes Yes Roughness Factor: 0.15000 0.15000 Pressure Drop: 0.1000 in.wg./100 ft. 0.1000 in.wg./100 ft. 450 ft./min Minimum Velocity: 650 ft./min Maximum Velocity: 900 ft./min 750 ft./min 0 in. Minimum Height: 0 in. Maximum Height: 0 in. 0 in. **Outside Air Data** Winter Summer Infiltration Specified: 0.190 AC/hr 0.100 AC/hr 102 CFM 54 CFM Infiltration Actual: 0.204 AC/hr 0.067 AC/hr Above Grade Volume: X 32,348 Cu.ft. X 32,348 Cu.ft. 6,598 Cu.ft./hr 2,169 Cu.ft./hr X 0.0167 X 0.0167 Total Building Infiltration: 110 CFM 36 CFM Total Building Ventilation: 45 CFM 85 CFM ---System 1---Infiltration & Ventilation Sensible Gain Multiplier: $18.60 = (1.10 \times 0.995 \times 17.00 \text{ Summer Temp. Difference})$ Infiltration & Ventilation Latent Gain Multiplier: 34.96 = (0.68 X 0.995 X 51.69 Grains Difference) Infiltration & Ventilation Sensible Loss Multiplier: 42.66 = (1.10 X 0.995 X 39.00 Winter Temp. Difference) Winter Infiltration Specified: 0.190 AC/hr (102 CFM), Construction: Semi-Tight Summer Infiltration Specified: 0.100 AC/hr (54 CFM), Construction: Semi-Tight **Duct Load Factor Scenarios for System 1**

No.	Type	Description	Location	Attic Ceiling	Duct Leakage	Duct Insulation	Surface Area	From [T]MDD
1	Supply	Main	Attic	16B	0.12	6	886	No
1	Return	Main	Attic	16B	0.24	6	328	No

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Duct Size Preview

Room or Duct Name	Source	Minimum Velocity	Maximum Velocity	Rough. Factor	Design L/100	SP Loss	Duct Velocity	Duct Length	Htg Flow	Clg Flow	Act. Flow	Duct Size	Reg Siz
System 1													
Supply Runouts													
Zone 1													
1-MSTR Sitting	Built-In	450	750	0.15	0.1		492.4		192	132	132	17	
2-Master Bedroom	Built-In	450	750	0.15	0.1		508.1		131	200	200	26	
3-Master WIC 1	Built-In	450	750	0.15	0.1		208.2		31	18	18	14	
4-Master WIC 2	Built-In	450	750	0.15	0.1		63		2	6	6	14	
5-Master Bath	Built-In	450	750	0.15	0.1		611.2		129	120	120	16	
6-Great Room	Built-In	450	750	0.15	0.1		559.1		214	299	299	27	
7-Kitchen	Built-In	450	750	0.15	0.1		683.9		43	183	183	17	
8-Laundry	Built-In	450	750	0.15	0.1		392.5		14	34	34	14	
9-Bath 3	Built-In	450	750	0.15	0.1		115.6		10	10	10	14	
10-Bedroom 4	Built-In	450	750	0.15	0.1		452.5		150	89	89	16	
11-Hall	Built-In	450	750	0.15	0.1		0		1	3	3	00	
12-Foyer	Built-In	450	750	0.15	0.1		404.9		43	35	35	14	
13-Den	Built-In	450	750	0.15	0.1		522.9		180	103	103	16	
14-Dining Room	Built-In	450	750	0.15	0.1		533.1		90	105	105	16	
15-Bedroom 3	Built-In	450	750	0.15	0.1		570.5		109	112	112	16	
16-Bedroom 2	Built-In	450	750	0.15	0.1		539.5		175	106	106	16	
17-Bath 2	Built-In	450	750	0.15	0.1		538.6		85	47	47	14	
Other Ducts in System 1													
Supply Main Trunk	Built-In	650	900	0.15	0.1		711.1		1,600	1,600	1,600	18x18	

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Su	m	m	а	r٧

System 1

Heating Flow:

1600

Cooling Flow:

1600

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## Tabular Manual D Ductsize Grid

Newberry, FL 32669

D	Oucts	Room(s)	Feeds Zones	Flow	Diam	Wid	Hei	Vel
CP-M	RD-FC-9							
□ C	P-MRD-FC-9							
Ξ	System 2							
	Supply							
	Return							
	System 4							
	Supply							
	Return							
	System 6							
	Supply							
	Return							
	System 8							
	Supply							
	Return							
	System 10							
	Supply							
	Return							
	System 12							
	Supply							
	Return							
	System 14							
	Supply							
	Return							

Rhvac - Residential & Light Commercial HVAC Loads Florida H.E.R.O. Newberry, FL 32669				Elite	Software Deve	lopment, Inc. P-MRD-FC-9 Page 6
Total Building Summary Loads						
Component		Area	Sen	Lat	Sen	Total
Description		Quan	Loss	Gain	Gain	Gain
VYN 34 23: Glazing-Dbl Pn Vyn Fr U .34 SHGC .23,		115	1,525	0	1,569	1,569
ground reflectance = 0.23, outdoor insect screen with 50% coverage, medium color blinds at 45° with 25% coverage, U-value 0.34, SHGC 0.23						
VYN 34 23: Glazing-Dbl Pn Vyn Fr U .34 SHGC .23, ground reflectance = 0.23, U-value 0.34, SHGC 0.23	}	6.3	84	0	131	131
VYN 34 23: Glazing-Dbl Pn Vyn Fr U .34 SHGC .23, ground reflectance = 0.32, outdoor insect screen with 50% coverage, medium color blinds at 45° with 25%		40	530	0	304	304
coverage, U-value 0.34, SHGC 0.23  10C-f: Glazing-French door, double pane low-e glass (e = 0.40), insulated fiberglass frame, ground reflectance = 0.32, medium color blinds at 45° with 25%		64	1,124	0	836	836
coverage, U-value 0.45, SHGC 0.43  VYN 34 23: Glazing-Dbl Pn Vyn Fr U .34 SHGC .23, ground reflectance = 0.32, outdoor insect screen with	h	30	398	0	1,052	1,052
50% coverage, U-value 0.34, SHGC 0.23 VYN 34 23: Glazing-Dbl Pn Vyn Fr U .34 SHGC .23, ground reflectance = 0.32, outdoor insect screen with 50% coverage, medium color blinds at 45° with 50%		15	199	0	134	134
coverage, U-value 0.34, SHGC 0.23		44.0	470	0	0.40	0.40
11P: Door-Metal - Polyurethane Core, U-value 0.29 13A-4ocs: Wall-Block, board insulation only, R-4 board	20	41.8 005.3	472 11,182	0	340 4,962	340 4,962
insulation, open core, siding finish, U-value 0.143 12C-0sw: Wall-Frame, R-13 insulation in 2 x 4 stud cavity, no board insulation, siding finish, wood studs, U-value 0.091		334.9	1,188	0	717	717
16B-38: Roof/Ceiling-Under Attic with Insulation on Attic Floor (also use for Knee Walls and Partition Ceilings), Vented Attic, No Radiant Barrier, Dark Asphalt Shingles or Dark Metal, Tar and Gravel or Membrane, R-38 insulation, U-value 0.026	3.	218.9	3,263	0	4,351	4,351
22A-pl: Floor-Slab on grade, No edge insulation, no insulation below floor, any floor cover, passive, light dry soil, U-value 0.989		282	10,877	0	0	0
Subtotals for structure:			30,842	0	14,396	14,396
People:		6	,	1,200	1,380	2,580
Equipment:				1,200	2,750	3,950
Lighting:		0		,	0	0
Ductwork:		_	13,944	3,187	13,449	16,637
Infiltration: Winter CFM: 110, Summer CFM: 36			4,691	1,263	673	1,936
Ventilation: Winter CFM: 45, Summer CFM: 85 Exhaust: Winter CFM: 85, Summer CFM: 45			1,920	2,971	1,581	4,552
Total Building Load Totals:			51,396	9,822	34,229	44,051
Check Figures						
Total Building Supply CFM: 1,600 Square ft. of Room Area: 3,282			Per Square ft. e ft. Per Ton:			0.488 894
Volume (ft³): 32,348						
Building Loads Total Heating Required Including Ventilation Air: Total Sensible Gain:	51,396 34,229		51.396 78			
Total Corline Cain: Total Latent Gain: Total Cooling Required Including Ventilation Air:	9,822 44,051	Btuh	22	%	On Sensible	+ Latent)
Notes Rhvac is an ACCA approved Manual J, D and S comput	ter progra	m.		·		

Revieter, P. L. 33689 Page 7  Total Building Summary Loads (cont'd)  Notes  Calculations are performed per ACCA Manual J 8th Edition, Version 2.50, and ACCA Manual D. All computed results are estimates as building use and weather may vary.  Be sure to select a unit that meets both sensible and latent loads according to the manufacturer's performance data at your design conditions.	Rhvac - Residential & Light Commercial HVAC Loads	Elite Software Development, Inc.
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No Name	Run Duct Size 1-7 2-6 1-4 1-6 2-7 1-7 1-4 1-6 0-0 1-4 1-6 1-6	Run Duct Vel 492 508 208 63 611 559 684 393 116 452 0 405 523 533 570	Clg Sens Btuh 2,262 3,430 312 95 2,063 5,138 3,142 589 173 1,527 49 608 1,765 1,800	Clg Lat Btuh  157 498 27 0 374 731 574 361 259 132 0 29 151	Min Clg CFM 103 157 14 4 94 235 144 27 8 70 2 28	Act Sys CFM 132 200 18 6 120 299 183 34 10 89 3
Room   Area   Sens   Htg	1-7 2-6 1-4 1-6 2-7 1-7 1-4 1-6 0-0 1-4 1-6	Duct Vel 492 508 208 63 611 559 684 393 116 452 0 405 523 533	Sens Btuh  2,262 3,430 312 95 2,063 5,138 3,142 589 173 1,527 49 608 1,765	Lat Btuh  157 498 27 0 374 731 574 361 259 132 0 29	Clg CFM 103 157 14 4 94 235 144 27 8 70 2	Sys CFM 132 200 18 6 120 299 183 34 10 89
Room   Area   Sens   Htg	1-7 2-6 1-4 1-6 2-7 1-7 1-4 1-6 0-0 1-4 1-6	Duct Vel 492 508 208 63 611 559 684 393 116 452 0 405 523 533	Sens Btuh  2,262 3,430 312 95 2,063 5,138 3,142 589 173 1,527 49 608 1,765	Lat Btuh  157 498 27 0 374 731 574 361 259 132 0 29	Clg CFM 103 157 14 4 94 235 144 27 8 70 2	Sys CFM 132 200 18 6 120 299 183 34 10 89
No Name	1-7 2-6 1-4 1-6 2-7 1-7 1-4 1-6 0-0 1-4 1-6	Vel  492 508 208 63 611 559 684 393 116 452 0 405 523 533	2,262 3,430 312 95 2,063 5,138 3,142 589 173 1,527 49 608 1,765	157 498 27 0 374 731 574 361 259 132 0 29	103 157 14 4 94 235 144 27 8 70 2	132 200 18 6 120 299 183 34 10
Zone 1  1 MSTR Sitting 153 5,621 103 2 Master Bedroom 308 3,814 70 3 Master WIC 1 49 911 17 4 Master WIC 2 49 66 1 5 Master Bath 180 3,772 69 6 Great Room 675 6,239 114 7 Kitchen 360 1,262 23 8 Laundry 78 420 8 9 Bath 3 56 307 6 10 Bedroom 4 177 4,388 80 11 Hall 88 33 1 12 Foyer 91 1,242 23 13 Den 196 5,254 96 14 Dining Room 202 2,630 48 15 Bedroom 3 276 3,197 58 16 Bedroom 2 257 5,100 93 17 Bath 2 88 2,497 46  Ventilation 1,920 Duct Latent Return Duct 2,723 System 1 total 3,282 51,396 855  System 1 Main Trunk Size: Velocity: 711 ft./min	1-7 2-6 1-4 1-6 2-7 1-7 1-4 1-6 0-0 1-4 1-6	492 508 208 63 611 559 684 393 116 452 0 405 523 533	2,262 3,430 312 95 2,063 5,138 3,142 589 173 1,527 49 608 1,765	157 498 27 0 374 731 574 361 259 132 0 29	103 157 14 4 94 235 144 27 8 70 2	132 200 18 6 120 299 183 34 10
2 Master Bedroom       308       3,814       70         3 Master WIC 1       49       911       17         4 Master WIC 2       49       66       1         5 Master Bath       180       3,772       69         6 Great Room       675       6,239       114         7 Kitchen       360       1,262       23         8 Laundry       78       420       8         9 Bath 3       56       307       6         10 Bedroom 4       177       4,388       80         11 Hall       88       33       1         12 Foyer       91       1,242       23         13 Den       196       5,254       96         14 Dining Room       202       2,630       48         15 Bedroom 3       276       3,197       58         16 Bedroom 2       257       5,100       93         17 Bath 2       88       2,497       46         Ventilation       1,920         Duct Latent       2,723       85         System 1 total       3,282       51,396       855         System 1 Main Trunk Size:       18x18 in.       711 ft./min <td< td=""><td>2-6 1-4 1-6 2-7 1-7 1-4 1-6 0-0 1-4 1-6</td><td>508 208 63 611 559 684 393 116 452 0 405 523 533</td><td>3,430 312 95 2,063 5,138 3,142 589 173 1,527 49 608 1,765</td><td>498 27 0 374 731 574 361 259 132 0 29</td><td>157 14 4 94 235 144 27 8 70 2</td><td>200 18 6 120 299 183 34 10</td></td<>	2-6 1-4 1-6 2-7 1-7 1-4 1-6 0-0 1-4 1-6	508 208 63 611 559 684 393 116 452 0 405 523 533	3,430 312 95 2,063 5,138 3,142 589 173 1,527 49 608 1,765	498 27 0 374 731 574 361 259 132 0 29	157 14 4 94 235 144 27 8 70 2	200 18 6 120 299 183 34 10
3 Master WIC 1 49 911 17 4 Master WIC 2 49 66 1 5 Master Bath 180 3,772 69 6 Great Room 675 6,239 114 7 Kitchen 360 1,262 23 8 Laundry 78 420 8 9 Bath 3 56 307 6 10 Bedroom 4 177 4,388 80 11 Hall 88 33 1 12 Foyer 91 1,242 23 13 Den 196 5,254 96 14 Dining Room 202 2,630 48 15 Bedroom 3 276 3,197 58 16 Bedroom 2 257 5,100 93 17 Bath 2 88 2,497 46  Ventilation Duct Latent Return Duct 2,723  System 1 Main Trunk Size: Velocity: 711 ft./min 0.219 in.wg  Cooling System Summary  Cooling System Summary  Cooling Sensible/Laten Tons Spli Net Required: 3.67 78% / 22% Actual: 3.83 77% / 23%  Equipment Data  Heating System Type: Air Source Heat I TEM6A0D48H41 Indoor Model: Indoor Model: Brand: TRANE	1-4 1-6 2-7 1-7 1-4 1-6 0-0 1-4 1-6	208 63 611 559 684 393 116 452 0 405 523 533	312 95 2,063 5,138 3,142 589 173 1,527 49 608 1,765	27 0 374 731 574 361 259 132 0 29	14 94 235 144 27 8 70 2	18 6 120 299 183 34 10
4 Master WIC 2 49 66 1 5 Master Bath 180 3,772 69 6 Great Room 675 6,239 114 7 Kitchen 360 1,262 23 8 Laundry 78 420 8 9 Bath 3 56 307 6 10 Bedroom 4 177 4,388 80 11 Hall 88 33 1 12 Foyer 91 1,242 23 13 Den 196 5,254 96 14 Dining Room 202 2,630 48 15 Bedroom 3 276 3,197 58 16 Bedroom 2 257 5,100 93 17 Bath 2 88 2,497 46  Ventilation Duct Latent Return Duct 2,723  System 1 total 3,282 51,396 855  System 1 Main Trunk Size: Velocity: 711 ft./min 0.219 in.wg  Cooling System Summary  Cooling System Summary  Cooling Sensible/Laten Tons Spli  Net Required: 3.67 78% / 22% Actual: 3.83 77% / 23%  Equipment Data  Heating System  Type: Air Source Heat Model: TEM6A0D48H41 Indoor Model: Brand: TRANE	1-4 1-6 2-7 1-7 1-4 1-6 0-0 1-4 1-6	63 611 559 684 393 116 452 0 405 523 533	95 2,063 5,138 3,142 589 173 1,527 49 608 1,765	0 374 731 574 361 259 132 0 29	4 94 235 144 27 8 70 2	6 120 299 183 34 10 89
5 Master Bath       180       3,772       69         6 Great Room       675       6,239       114         7 Kitchen       360       1,262       23         8 Laundry       78       420       8         9 Bath 3       56       307       6         10 Bedroom 4       177       4,388       80         11 Hall       88       33       1         12 Foyer       91       1,242       23         13 Den       196       5,254       96         14 Dining Room       202       2,630       48         15 Bedroom 3       276       3,197       58         16 Bedroom 2       257       5,100       93         17 Bath 2       88       2,497       46         Ventilation       1,920         Duct Latent       2,723       855         System 1 total       3,282       51,396       855         System 1 Main Trunk Size:       18x18 in.       711 ft./min         Cooling System Summary         Cooling System Summary         Cooling System Summary         Heating System Air Source Heat Indoor Model: <td>1-6 2-7 1-7 1-4 1-6 0-0 1-4 1-6</td> <td>611 559 684 393 116 452 0 405 523 533</td> <td>2,063 5,138 3,142 589 173 1,527 49 608 1,765</td> <td>374 731 574 361 259 132 0 29</td> <td>94 235 144 27 8 70 2</td> <td>120 299 183 34 10 89</td>	1-6 2-7 1-7 1-4 1-6 0-0 1-4 1-6	611 559 684 393 116 452 0 405 523 533	2,063 5,138 3,142 589 173 1,527 49 608 1,765	374 731 574 361 259 132 0 29	94 235 144 27 8 70 2	120 299 183 34 10 89
6 Great Room 675 6,239 114 7 Kitchen 360 1,262 23 8 Laundry 78 420 8 9 Bath 3 56 307 6 10 Bedroom 4 177 4,388 80 11 Hall 88 33 1 12 Foyer 91 1,242 23 13 Den 196 5,254 96 14 Dining Room 202 2,630 48 15 Bedroom 3 276 3,197 58 16 Bedroom 2 257 5,100 93 17 Bath 2 88 2,497 46  Ventilation 1,920 Duct Latent Return Duct 2,723  System 1 total 3,282 51,396 855  System 1 Main Trunk Size: 18x18 in.  Velocity: 711 ft./min 0.219 in.wg  Cooling System Summary  Cooling System Summary  Cooling System Summary  Type: Air Source Heat Model: TEM6A0D48H41 Indoor Model: Brand: TRANE	2-7 1-7 1-4 1-6 0-0 1-4 1-6	559 684 393 116 452 0 405 523 533	5,138 3,142 589 173 1,527 49 608 1,765	731 574 361 259 132 0 29	235 144 27 8 70 2	299 183 34 10 89
7 Kitchen         360         1,262         23           8 Laundry         78         420         8           9 Bath 3         56         307         6           10 Bedroom 4         177         4,388         80           11 Hall         88         33         1           12 Foyer         91         1,242         23           13 Den         196         5,254         96           14 Dining Room         202         2,630         48           15 Bedroom 3         276         3,197         58           16 Bedroom 2         257         5,100         93           17 Bath 2         88         2,497         46           Ventilation         1,920         Duct Latent Return Duct         2,723         System 1 total         3,282         51,396         855           System 1 Main Trunk Size:         18x18 in.         711 ft./min         0.219 in.wg           Cooling System Summary           Cooling Sensible/Laten Tons         Spli           Net Required:         3.67         78% / 22%           Actual:         3.83         77% / 23%           Equipment Data           Hea	1-7 1-4 1-6 0-0 1-4 1-6	684 393 116 452 0 405 523 533	3,142 589 173 1,527 49 608 1,765	574 361 259 132 0 29	144 27 8 70 2	183 34 10 89
8 Laundry       78       420       8         9 Bath 3       56       307       6         10 Bedroom 4       177       4,388       80         11 Hall       88       33       1         12 Foyer       91       1,242       23         13 Den       196       5,254       96         14 Dining Room       202       2,630       48         15 Bedroom 3       276       3,197       58         16 Bedroom 2       257       5,100       93         17 Bath 2       88       2,497       46         Ventilation       1,920       Duct Latent Return Duct       2,723         System 1 Main Trunk Size:       18x18 in.       18x18 in.         Velocity:       711 ft./min       0.219 in.wg         Cooling System Summary         Cooling System Summary         Cooling Sensible/Laten Tons         Net Required:       3.67       78% / 22%         Actual:       3.83       77% / 23%         Equipment Data         Heating System Air Source Heat Indoor Model:         Brand:       TRANE	1-4 1-6 0-0 1-4 1-6	393 116 452 0 405 523 533	589 173 1,527 49 608 1,765	361 259 132 0 29	27 8 70 2	34 10 89
9 Bath 3 56 307 6 10 Bedroom 4 177 4,388 80 11 Hall 88 33 1 12 Foyer 91 1,242 23 13 Den 196 5,254 96 14 Dining Room 202 2,630 48 15 Bedroom 3 276 3,197 58 16 Bedroom 2 257 5,100 93 17 Bath 2 88 2,497 46  Ventilation 1,920 Duct Latent Return Duct 2,723  System 1 total 3,282 51,396 855  System 1 Main Trunk Size: 18x18 in. Velocity: 711 ft./min Loss per 100 ft.: 0.219 in.wg  Cooling System Summary  Cooling System Summary  Cooling Sensible/Laten Tons Spli Net Required: 3.67 78% / 22% Actual: 3.83 77% / 23%  Equipment Data  Heating System Type: Air Source Heat Indoor Model: TEM6A0D48H41 Indoor Model: Brand: TRANE	1-4 1-6 0-0 1-4 1-6 1-6	116 452 0 405 523 533	173 1,527 49 608 1,765	259 132 0 29	8 70 2	10 89
10       Bedroom 4       177       4,388       80         11       Hall       88       33       1         12       Foyer       91       1,242       23         13       Den       196       5,254       96         14       Dining Room       202       2,630       48         15       Bedroom 3       276       3,197       58         16       Bedroom 2       257       5,100       93         17       Bath 2       88       2,497       46         Ventilation       1,920         Duct Latent       2,723       855         System 1 total       3,282       51,396       855         System 1 Main Trunk Size:       18x18       in.         Velocity:       711       ft./min         Loss per 100 ft.:       0.219       in.wg         Cooling System Summary         Cooling System Summary         Cooling Sensible/Laten         Tons       Spli         Net Required:       3.67       78% / 22%         Actual:       3.83       77% / 23%         Equi	1-6 0-0 1-4 1-6 1-6	452 0 405 523 533	1,527 49 608 1,765	132 0 29	70 2	89
11 Hall       88       33       1         12 Foyer       91       1,242       23         13 Den       196       5,254       96         14 Dining Room       202       2,630       48         15 Bedroom 3       276       3,197       58         16 Bedroom 2       257       5,100       93         17 Bath 2       88       2,497       46         Ventilation       1,920         Duct Latent       2,723       85         System 1 total       3,282       51,396       855         System 1 Main Trunk Size:       18x18 in.       18x18 in.         Velocity:       711 ft./min         Loss per 100 ft.:       0.219 in.wg         Cooling System Summary         Cooling System Summary         Sensible/Laten         Tons       Spli         Net Required:       3.67       78% / 22%         Actual:       3.83       77% / 23%         Equipment Data         Heating System         Type:       Air Source Heat Indoor Model:         Brand:       TRANE <td>0-0 1-4 1-6 1-6</td> <td>0 405 523 533</td> <td>49 608 1,765</td> <td>0 29</td> <td>2</td> <td></td>	0-0 1-4 1-6 1-6	0 405 523 533	49 608 1,765	0 29	2	
12 Foyer       91       1,242       23         13 Den       196       5,254       96         14 Dining Room       202       2,630       48         15 Bedroom 3       276       3,197       58         16 Bedroom 2       257       5,100       93         17 Bath 2       88       2,497       46         Ventilation       1,920         Duct Latent       2,723       85         System 1 total       3,282       51,396       855         System 1 Main Trunk Size:       18x18 in.         Velocity:       711 ft./min         Loss per 100 ft.:       0.219 in.wg         Cooling System Summary         Cooling System Summary         Sensible/Laten         Tons       Spli         Net Required:       3.67       78% / 22%         Actual:       3.83       77% / 23%         Equipment Data         Heating System         Type:       Air Source Heat Indoor Model:         TRANE	1-4 1-6 1-6	405 523 533	608 1,765	29		- 2
13 Den         196         5,254         96           14 Dining Room         202         2,630         48           15 Bedroom 3         276         3,197         58           16 Bedroom 2         257         5,100         93           17 Bath 2         88         2,497         46           Ventilation         1,920           Duct Latent         2,723         2,723           System 1 total         3,282         51,396         855           System 1 Main Trunk Size:         18x18 in.         711 ft./min           Loss per 100 ft.:         0.219 in.wg         0.219 in.wg           Cooling System Summary           Cooling System Summary         Sensible/Laten Spli           Net Required:         3.67         78% / 22%           Actual:         3.83         77% / 23%           Equipment Data           Heating System           Type:         Air Source Heat Indoor Model:           Brand:         TRANE	1-6 1-6	523 533	1,765		7)0	
14 Dining Room       202       2,630       48         15 Bedroom 3       276       3,197       58         16 Bedroom 2       257       5,100       93         17 Bath 2       88       2,497       46         Ventilation Duct Latent Return Duct 2,723         System 1 total 3,282       51,396       855         System 1 Main Trunk Size: Velocity: 711 ft./min 0.219 in.wg         Loss per 100 ft.: 0.219 in.wg       0.219 in.wg         Cooling System Summary         Cooling System Summary         Cooling Sensible/Laten Spli         Actual: 3.67 78% / 22%         Actual: 3.83 77% / 23%         Equipment Data         Heating System Air Source Heat Indoor Model: TEM6A0D48H41         Indoor Model: Brand: TRANE	1-6	533	,	151		35
15 Bedroom 3       276       3,197       58         16 Bedroom 2       257       5,100       93         17 Bath 2       88       2,497       46         Ventilation Duct Latent Return Duct       2,723         System 1 total       3,282       51,396       855         System 1 Main Trunk Size: Velocity: This in Loss per 100 ft.: This in Do.219 in.wg         Cooling System Summary         Cooling Tons       Sensible/Laten Spli         Net Required: 3.67 78% / 22% Actual: 3.83 77% / 23%         Equipment Data         Heating System Air Source Heat Indoor Model: TEM6A0D48H41         Indoor Model: Brand: TRANE			1,800		81	103
16 Bedroom 2       257       5,100       93         17 Bath 2       88       2,497       46         Ventilation Duct Latent Return Duct       1,920         System 1 total       3,282       51,396       855         System 1 Main Trunk Size: Velocity: This in Loss per 100 ft.: This in Double in Loss per 100 ft.: This in Loss per 100 ft.: This in Double in Loss per 100 ft.: This in Loss per 100 ft.: Thi	1-6	5/0	4 000	69	82	105
17 Bath 2         88         2,497         46           Ventilation         1,920           Duct Latent         2,723         2,723           System 1 total         3,282         51,396         855           System 1 Main Trunk Size:         18x18 in.         711 ft./min           Cooling System Summary           Cooling System Summary           Cooling Sensible/Laten Tons         Spli           Net Required:         3.67         78% / 22%           Actual:         3.83         77% / 23%           Equipment Data           Heating System           Type:         Air Source Heat Indoor Model:           Brand:         TRANE			1,926	84	88	112
Ventilation         1,920           Duct Latent         2,723           Return Duct         2,723           System 1 total         3,282         51,396         855           System 1 Main Trunk Size:         18x18 in.         711 ft./min           Loss per 100 ft.:         0.219 in.wg           Cooling System Summary           Cooling Sensible/Laten Tons           Spli           Net Required:         3.67         78% / 22%           Actual:         3.83         77% / 23%           Equipment Data         Heating System           Type:         Air Source Heat Indoor Model:           Brand:         TRANE	1-6	539	1,821	144	83	106
Duct Latent Return Duct         2,723           System 1 total         3,282         51,396         855           System 1 Main Trunk Size: Velocity: Loss per 100 ft.:         18x18 in. 711 ft./min 0.219 in.wg           Cooling System Summary         Sensible/Laten Tons         Spli           Net Required: Actual:         3.67 3.83         78% / 22% 77% / 23%           Equipment Data         Heating System Air Source Heat Indoor Model: Indoor Model: Brand:         TRANE	1-4	539	808	73	37	47
Return Duct         2,723           System 1 total         3,282         51,396         855           System 1 Main Trunk Size:         18x18 in.         711 ft./min           Velocity:         711 ft./min         0.219 in.wg           Cooling System Summary         Sensible/Laten           Tons         Spli           Net Required:         3.67         78% / 22%           Actual:         3.83         77% / 23%           Equipment Data         Heating System           Type:         Air Source Heat           Model:         TEM6A0D48H41           Indoor Model:         Brand:         TRANE			1,581	2,971		
System 1 total         3,282         51,396         855           System 1 Main Trunk Size:         18x18 in.         711 ft./min           Velocity:         711 ft./min         0.219 in.wg           Cooling System Summary           Cooling Tons         Sensible/Laten           Tons         Spli           Net Required:         3.67         78% / 22%           Actual:         3.83         77% / 23%           Equipment Data         Heating System           Type:         Air Source Heat Indoor Model:           Indoor Model:         TRANE				977		
System 1 Main Trunk Size:         18x18 in.           Velocity:         711 ft./min           Loss per 100 ft.:         0.219 in.wg           Cooling System Summary           Cooling Tons Spli           Net Required:         3.67 78% / 22%           Actual:         3.83 77% / 23%           Equipment Data           Heating System           Type:         Air Source Heat Indoor Model:           Indoor Model:         TRANE			5,140	2,210		
Velocity:         711 ft./min           Loss per 100 ft.:         0.219 in.wg           Cooling System Summary           Cooling Tons         Sensible/Laten Spling           Net Required:         3.67         78% / 22%           Actual:         3.83         77% / 23%           Equipment Data         Heating System           Type:         Air Source Heat Indoor Model:           Indoor Model:         TRANE			34,229	9,822	1,257	1,600
Velocity:         711 ft./min           Loss per 100 ft.:         0.219 in.wg           Cooling System Summary           Cooling Tons         Sensible/Laten Spling           Net Required:         3.67         78% / 22%           Actual:         3.83         77% / 23%           Equipment Data         Heating System           Type:         Air Source Heat Indoor Model:           Indoor Model:         TRANE						
Cooling System Summary         Cooling Tons         Sensible/Laten Spli           Net Required:         3.67         78% / 22%           Actual:         3.83         77% / 23%           Equipment Data         Heating System Air Source Heat Indoor Model:         TEM6A0D48H41           Indoor Model:         Brand:         TRANE						
Cooling System Summary           Cooling Tons         Sensible/Laten Spli           Net Required:         3.67         78% / 22%           Actual:         3.83         77% / 23%           Equipment Data         Heating System           Type:         Air Source Heat Indoor Model:           Indoor Model:         TRANE						
Cooling Tons Sensible/Laten Tons Spli Net Required: 3.67 78% / 22% Actual: 3.83 77% / 23%  Equipment Data  Heating System Type: Air Source Heat I Model: TEM6A0D48H41 Indoor Model: Brand: TRANE						
Net Required:		Sensible		Lotont		Total
Net Required:       3.67       78% / 22%         Actual:       3.83       77% / 23%         Equipment Data         Heating System         Type:       Air Source Heat Indoor Model:         Indoor Model:       TRANE				Latent Btuh		Total Btuh
Actual: 3.83 77% / 23%  Equipment Data  Heating System Type: Air Source Heat I Model: TEM6A0D48H41 Indoor Model: Brand: TRANE		Btuh 34,229		9,822		44,051
Equipment Data  Heating System Type: Air Source Heat I Model: TEM6A0D48H41 Indoor Model: Brand: TRANE		35,400		10,600		46,000
Type: Air Source Heat Indoor Model: TRANE  Heating System Air Source Heat In TEM6A0D48H41  TEM6A0D48H41  TRANE	'	33,400		10,000		
Type: Air Source Heat I Model: TEM6A0D48H41 Indoor Model: Brand: TRANE			Caaling C	'v rata m		
Model: TEM6A0D48H41 Indoor Model: Brand: TRANE	Dumn		Cooling S	<u>ysterri</u> e Heat Pumi	2	
Indoor Model: Brand: TRANE			TWR5048		J	
Brand: TRANE	Ċ.		TEM6A0			
	S		TRANE	74011413		
Posonipriori. All Obulbe Heat I	S			e Heat Pum	1	
Efficiency: 7.5 HSPF2			14.3 SEE		,	
Sound: 7.5116112			0			
Capacity: 45,000 Btuh			46,000 Bt	uh		
Sensible Capacity: n/a			35,400 Bt			
Latent Capacity: n/a			10,600 Bt			
AHRI Reference No.: n/a			20932353			
.,,						
This system's equipment was selected in accordance with						

Manual S equipment sizing data: SODB: 92F, SOWB: 77F, WODB: 33F, SIDB: 75F, SIRH: 50%, WIDB: 72F, Sen. gain: 34,229 Btuh, Lat. gain: 9,822 Btuh, Sen. loss: 51,396 Btuh, Entering clg. coil DB: 78.8F, Entering clg. coil WB: 64.4F, Entering htg. coil DB: 69.4F, Clg. coil TD: 20F, Htg. coil TD: 50F, Req. clg. airflow: 1257 CFM, Req. htg. airflow: 855 CFM