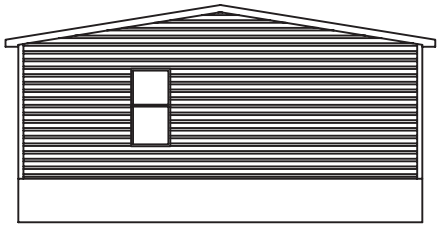
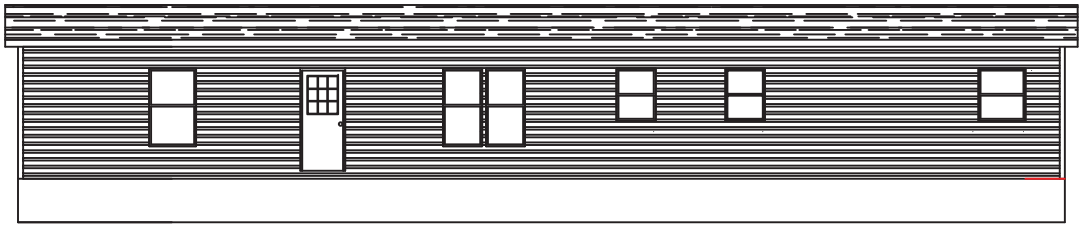
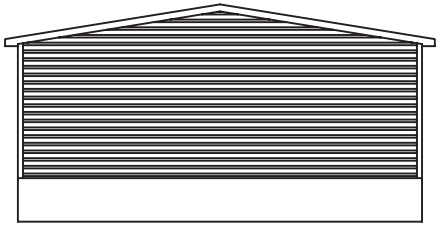
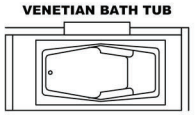




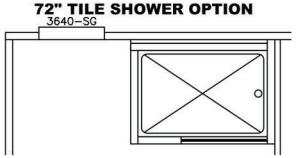


VENETIAN BATH TUB



72" TILE SHOWER OPTION

3640-SG



PEDESTAL BATH TUB

3640-SG

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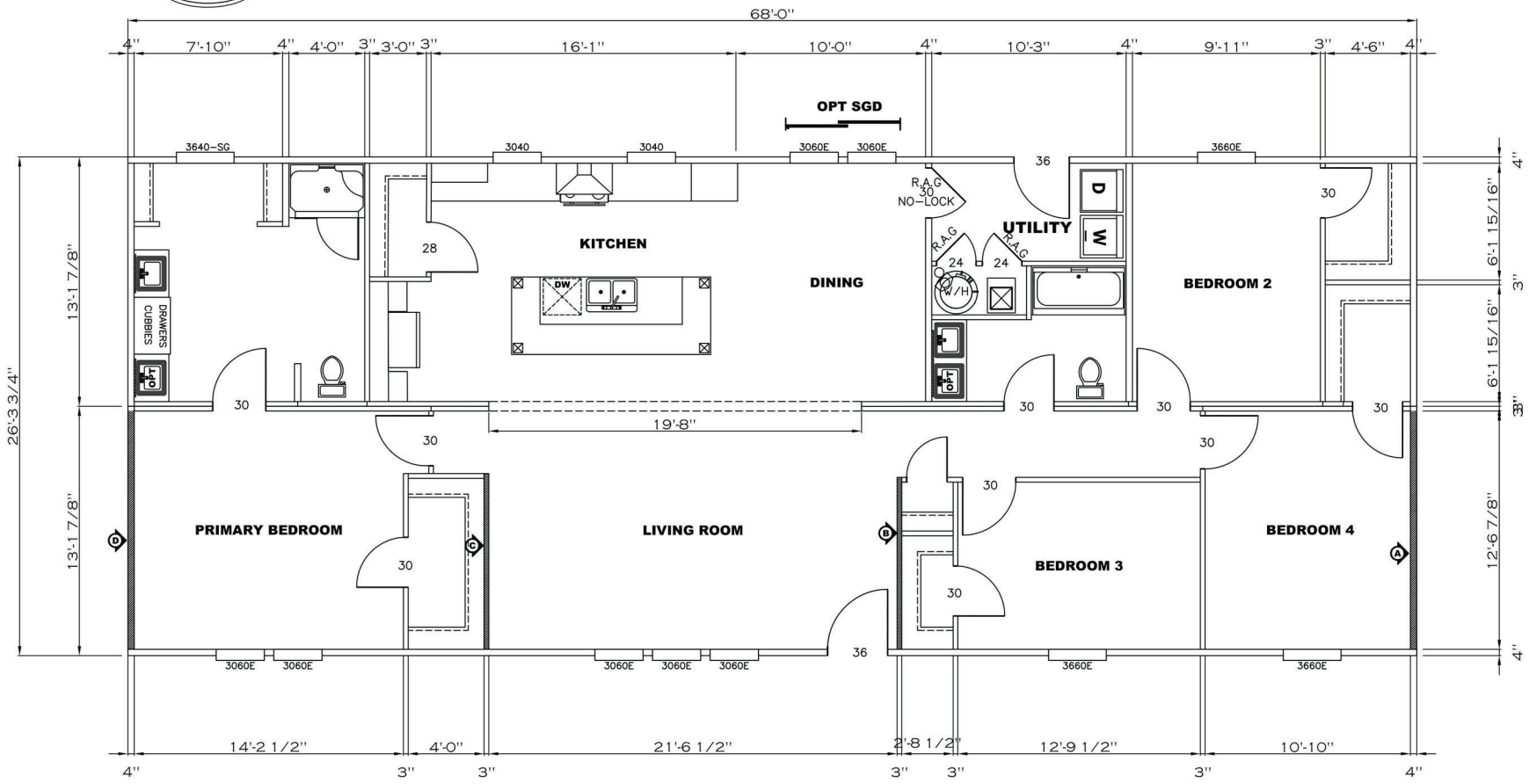
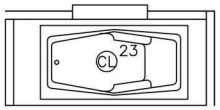
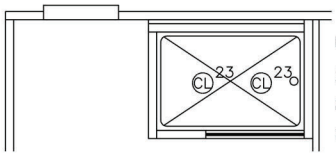
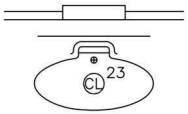


GILES HOMES 405 S. BROAD ST, NEW TAZEWELL TN 37825	Model #: M46056	Drawing #: M46056-2X4-DOE	
	Date:04/18/02	Scale: N/A	
Product Designer: HARVILLED	PEARL-M46056		
FLOOR PLAN SUB			







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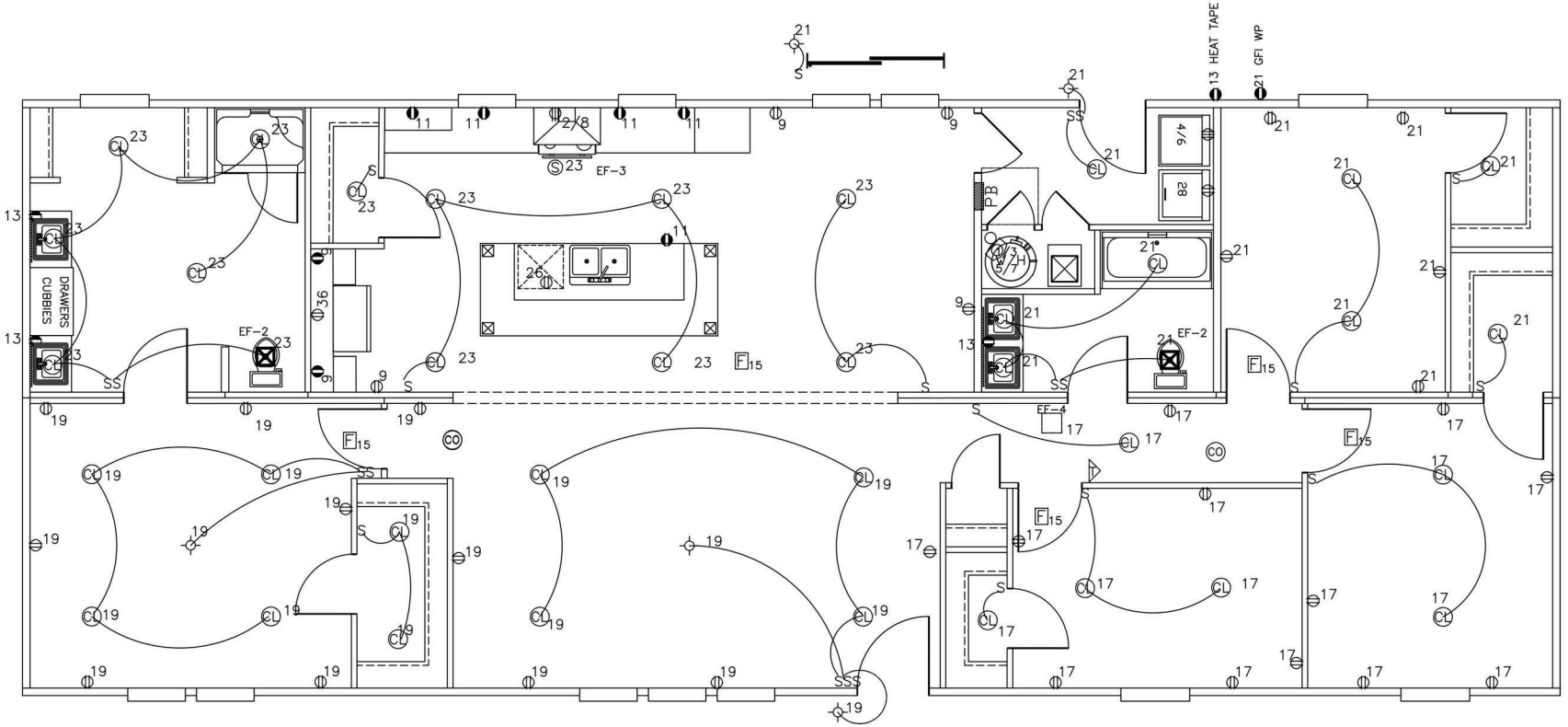
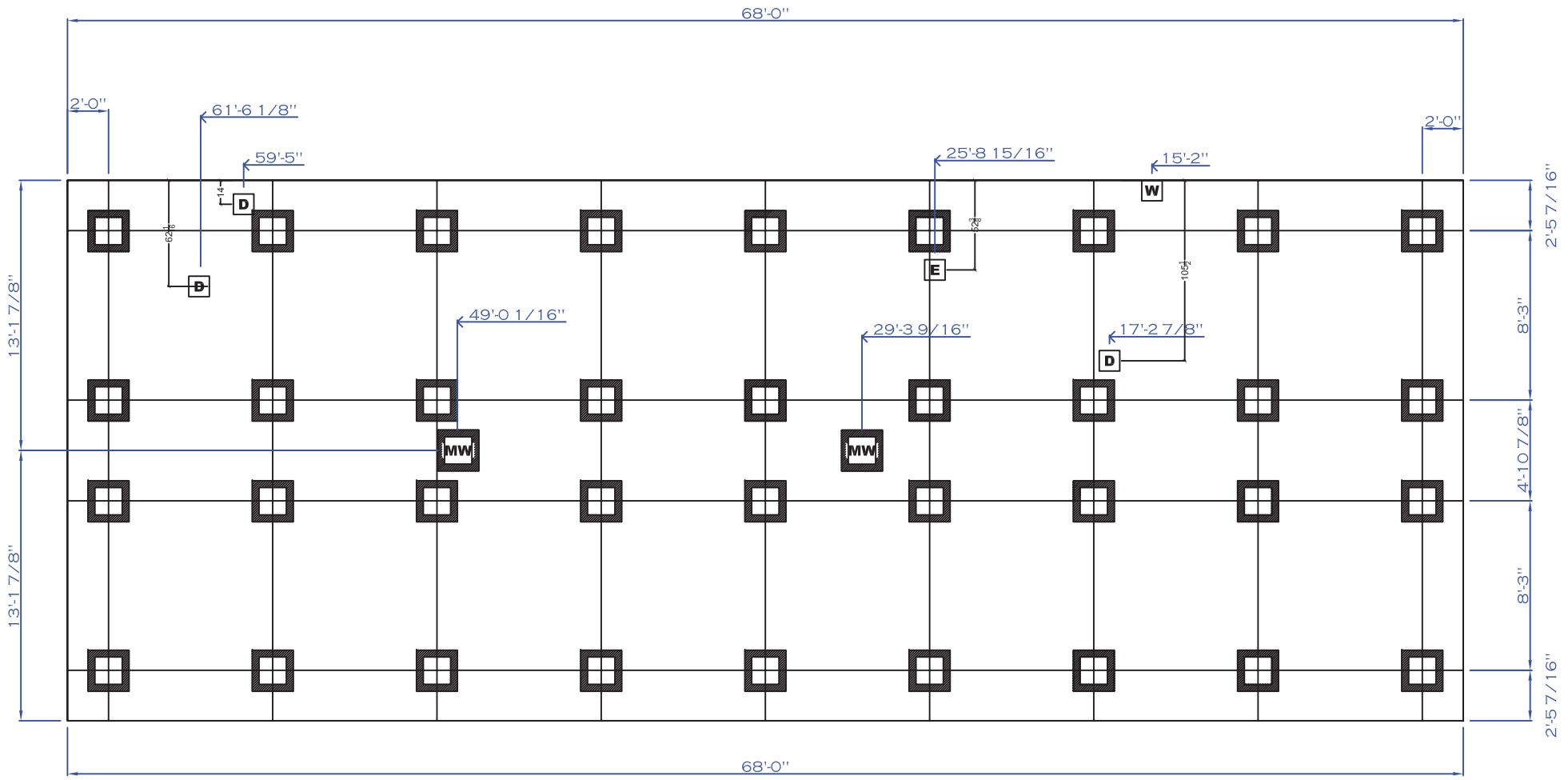
NOTES:

1. ALL CIRCUITS SHOWN ARE FOR REFERENCE AND MAY BE CHANGED BASED ON OPTIONAL COMPONENTS INSTALLED IN THE HOME.
2. REFER TO DAPIA MANUAL FOR SYMBOL CHART.
3. EITHER LIGHT OR RECEPTACLE MUST CONNECT TO SWITCH.
4. EF-1= 50 CFM EXHAUST FAN REQUIRED FOR THERMAL ZONE III THERMAL ZONES I & II MAY USE FAN OR WINDOW W/1.5 SQ. FT. OPENABLE GLASS.
5. EF-2= 50 CFM EXHAUST FAN REQUIRED THERMAL ZONE I, II, AND III.
6. EF-3= 100 CFM RANGE EXHAUST FAN, SWITCH AT HOOD.
7. EF-4= WHOLE HOUSE VENTILATION REQUIREMENTS PER DAPIA MANUAL.
8. REFER TO DAPIA MANUAL OR THE MFG. INSTALLATION INSTRUCTIONS FOR PROPER WIRE SIZE AND BREAKER SIZE FOR SPECIFIC APPLIANCE AND MODEL BEING INSTALLED.
9. ALL SMOKE ALARMS TO BE LOCATED ON THE CEILING.
10. CARBON MONOXIDE ALARMS ARE ONLY REQUIRED WHEN HOME HAS EITHER FUEL BURNING APPLIANCES, IS GARAGE READY OR IS BASEMENT READY. REFERENCE DAPIA MANUAL FOR ADDITIONAL INFORMATION.
11. DIMENSIONS SHOWN ON PRINT ARE APPROXIMATE AND TO BE USED ONLY AS A GUIDELINE.



GILES HOMES 405 S. BROAD ST, NEW TAZEWELL TN 37825	Model #: M46056		Drawing #: M46056-2X4-DOE
	Date: 04/18/02	Scale: N/A	
Product Designer: HARVILLED	PEARL-M46056		
ELECT SUB			



*THIS FOOTER DIAGRAM IS FOR STANDARD PRODUCT ONLY

*FOR PIER SPACING REFER TO SET UP MANUAL

MW **MARRIAGE WALL PIER**

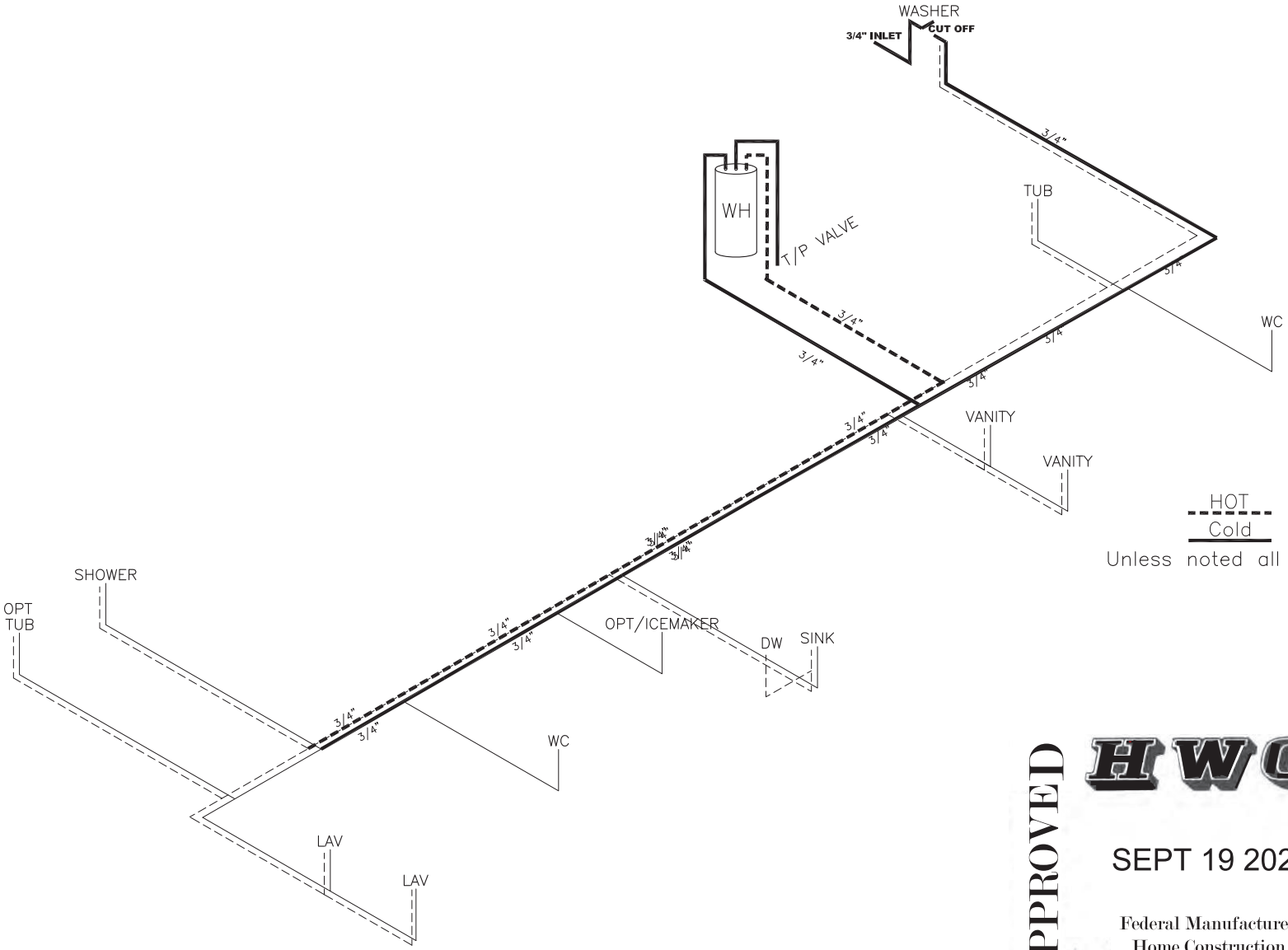
W **WATER INLET**

D **DRAIN**

E **ELECTRICAL DROP**

DP DP **DOOR PIER**

REGULAR PIER



Unless noted all lines 1/2"

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GILES HOMES 405 S. BROAD ST, NEW TAZEWELL TN 37825	Model #: M46056		Drawing #: M46056-2X4-DOE
	Date: 04/18/02	Scale: N/A	
Product Designer: HARVILLED	PEARL-M46056		
PRESSURE LINES			

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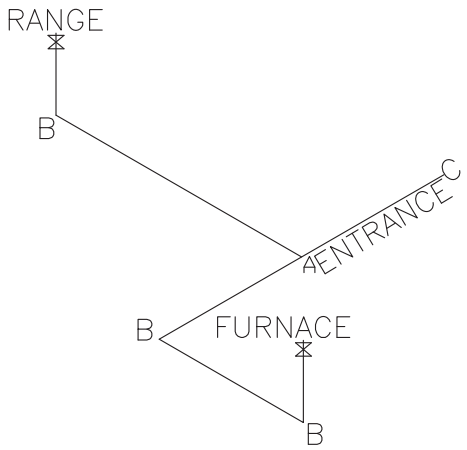
LEGEND		APPLIANCE BTU's RATINGS MAX. INPUT
SYM	FITTINGS	FURNACE 77.000 BTU'S RANGE 56,000 BTU'S
A	TEE	
B	90 ELL	
⧖	VALVE	
C	CAP	

MDL=40'



NOTES:

1) ALL PIPE IS 3/4" I.D.CAST (EXCEPT WHERE NOTED OTHERWISE)
2) MDL=MAX. DETERMINED LENGTH OF PIPE
3) FITTING MAY BE ADDED OR SUBTRACTED TO TRAVERSE VARIATIONS IN AXLE QUANTITY, PLACEMENT, AND FRAME TYPE.
4) INLET LOCATION MAY VARY TO STAY WITHIN MAX. DETERMINED LENGTH

GILES HOMES 405 S. BROAD ST, NEW TAZEWELL TN 37825	Model #: M46056 Date:04/18/02 Scale: N/A	Drawing #: M46056-2X4-DOE
Product Designer: HARVILLED	PEARL-M46056	
GAS		

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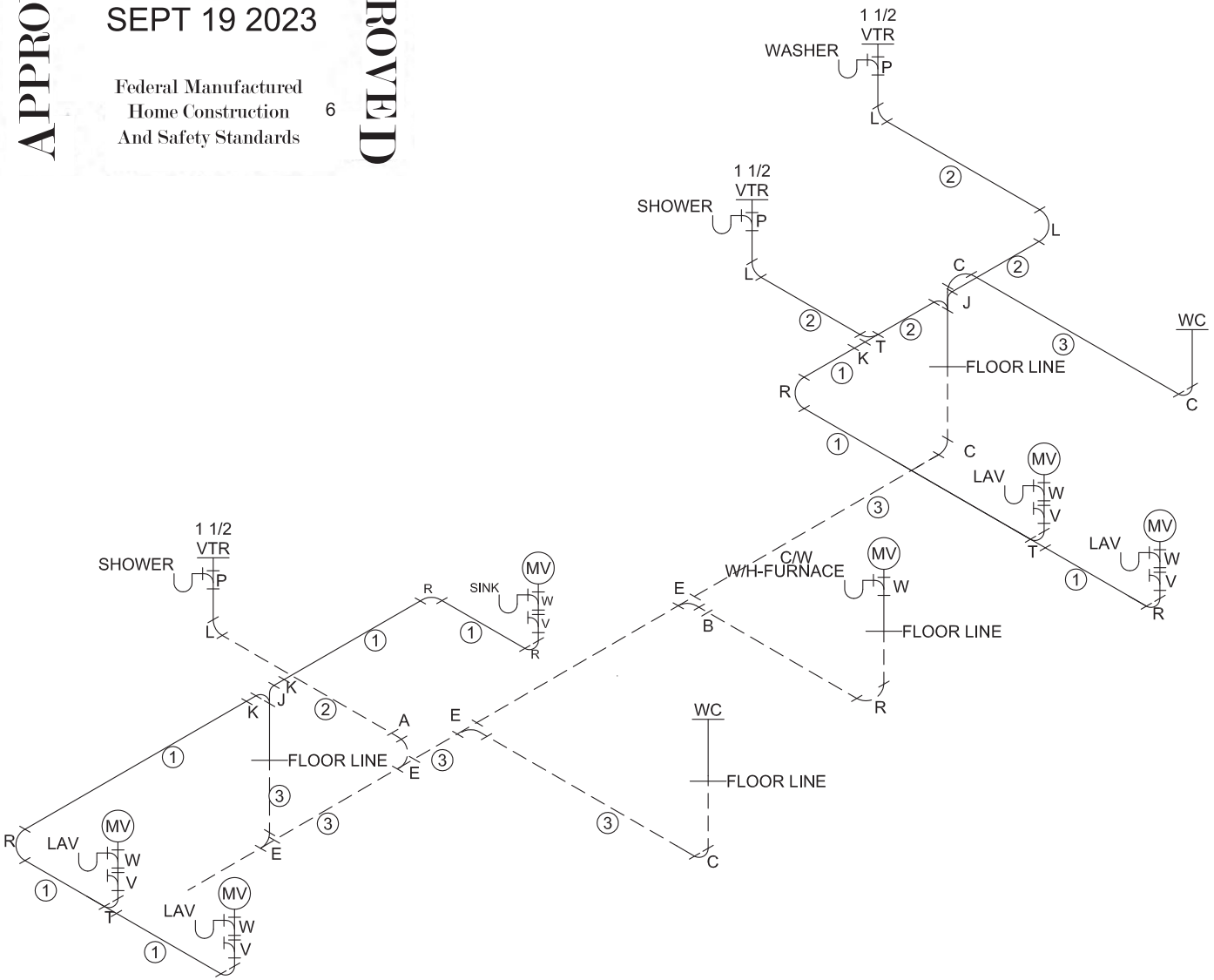

LEGEND AND SET UP KIT.

VTR - VENT THRU ROOF
(MV) - MECHANICAL VENT

60 (3) -3" PIPE
20 (2) -2" PIPE
20 (1) -1 1/2" PIPE

1 A -3"X2" REDUCER
1 B -3"X1 1/2" REDUCER
2 C -3" ELTL 90°
0 D -3" ELL 45°
4 E -3" LTTY
4 F -3" COUPLING
0 G -3" X 3" X 3" X 2" X 2" ST
0 H -3" X 3" X 2" X 2" ST
0 I -3" X 3" X 2" ST
0 J -3" 3 WAY ELL

0 K -2"X11/2" REDUCER
0 L -2" ELTL 90°
0 M -2" ELL 45°
0 N -2" LTTY
0 O -2" COUPLING
0 P -2" X 1 1/2" X 1 1/2" ST
0 Q -2" 3 WAY ELL

1 R -1 1/2" ELTL 90°
0 S -1 1/2" ELL 45°
0 T -1 1/2" LTTY
0 U -1 1/2" COUPLING
0 V -1 1/2" CLEAN OUT
0 W -1 1/2" SAN TEE

GILES HOMES 405 S. BROAD ST, NEW TAZEWELL TN 37825	Model #: M46056	Drawing #: M46056-2X4-DOE	
	Date: 04/18/02	Scale: N/A	
Product Designer: HARVILLED	PEARL-M46056		
DWV			

Manual S Compliance Report
Entire House
Clayton Homes

Job: M46056-SGD-FDJ-TZ-II
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

APPROVED HWC SEPT 19 2023 Federal Manufactured Home Construction And Safety Standards 6 APPROVED

Project Information

For: M46056-SGD-FDJ-TZ-II, GILES

Cooling Equipment

Design Conditions

Outdoor design DB:	92.6°F	Sensible gain:	12794 Btuh	Entering coil DB:	76.4°F
Outdoor design WB:	74.3°F	Latent gain:	3351 Btuh	Entering coil WB:	63.4°F
Indoor design DB:	75.0°F	Total gain:	16145 Btuh		
Indoor RH:	50%	Estimated airflow:	780 cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type: Split ASHP
Manufacturer: Smart Comfort Model: N4H5S24*K*AAA*+M46056-FDJ-TZ-I

Actual airflow:	780	cfm		
Sensible capacity:	16380	Btuh	128% of load	
Latent capacity:	7020	Btuh	209% of load	
Total capacity:	23400	Btuh	145% of load	SHR: 70%

Heating Equipment

Design Conditions

Outdoor design DB:	15.0°F	Heat loss:	24825 Btuh	Entering coil DB:	65.7°F
Indoor design DB:	70.0°F				

Manufacturer's Performance Data at Actual Design Conditions

Equipment type: Split ASHP
Manufacturer: Smart Comfort Model: N4H5S24*K*AAA*+M46056-FDJ-TZ-I

Actual airflow:	780	cfm			
Output capacity:	22800	Btuh	92% of load	Capacity balance:	24 °F
Supplemental heat required:	2025	Btuh		Economic balance:	-99 °F

Backup equipment type: Elec strip
Manufacturer: Smart Comfort Model: M46056-FDJ-TZ-I

Actual airflow:	780	cfm			
Output capacity:	10.0	kW	137% of load	Temp. rise:	41 °F

Meets all requirements of ACCA Manual S.

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Building Analysis
Entire House
Clayton Homes

Job: M46056-SGD-FDJ-TZ-II
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

APPROVED HWC APPROVED
SEPT 19 2023
Federal Manufactured Home Construction And Safety Standards 6

Project Information

For: M46056-SGD-FDJ-TZ-II, GILES

Design Conditions

Location:
Knoxville McGhee Tyson AP, TN, US
Elevation: 981 ft
Latitude: 36 °N

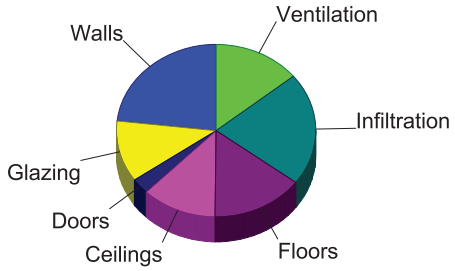
Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	15	93
Daily range (°F)	-	19 (M)
Wet bulb (°F)	-	74
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	70	75
Design TD (°F)	55	18
Relative humidity (%)	50	50
Moisture difference (gr/lb)	47.0	36.2

Infiltration:	
Method	Simplified
Construction quality	Average
Fireplaces	0

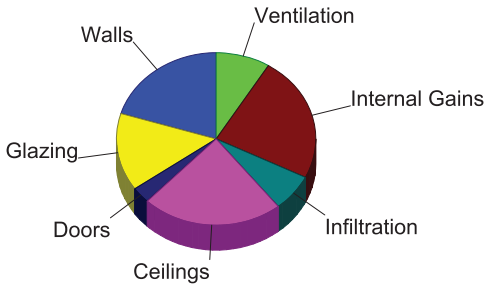
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	4.4	5754	23.2
Glazing	17.1	2868	11.6
Doors	17.1	716	2.9
Ceilings	1.7	3026	12.2
Floors	2.1	3709	14.9
Infiltration	3.5	5249	21.1
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		3503	14.1
Adjustments		0	
Total		**24825**	**100.0**



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	2.0	2589	20.2
Glazing	11.1	1863	14.6
Doors	9.2	387	3.0
Ceilings	1.7	2929	22.9
Floors	0	0	0
Infiltration	0.6	884	6.9
Ducts		0	0
Ventilation		1121	8.8
Internal gains		3020	23.6
Blower		0	0
Adjustments		0	
Total		**12794**	**100.0**



Latent Cooling Load = 3351 Btuh
Overall U-value = 0.058 Btuh/ft²-°F, Window / Floor Area = 9.5 %

Data entries checked.

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Component Constructions
Entire House
Clayton Homes

Job: M46056-SGD-FDJ-TZ-II
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

APPROVED HWC APPROVED
SEPT 19 2023
Federal Manufactured Home Construction And Safety Standards 6

Project Information

For: M46056-SGD-FDJ-TZ-II, GILES

Design Conditions

Location:
Knoxville McGhee Tyson AP, TN, US
Elevation: 981 ft
Latitude: 36°N

Outdoor:	Heating	Cooling
Dry bulb (°F)	15	93
Daily range (°F)	-	19 (M)
Wet bulb (°F)	-	74
Wind speed (mph)	15.0	7.5

Indoor:	Heating	Cooling
Indoor temperature (°F)	70	75
Design TD (°F)	55	18
Relative humidity (%)	50	50
Moisture difference (gr/lb)	47.0	36.2

Infiltration:

Method	Simplified
Construction quality	Average
Fireplaces	0

Construction descriptions	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
CMH - DW - R-13 Wall - THP502-DOE: Double Wide - R-13 Insulation THP502 2x4 Wall-DOE	n	384	0.082	13.0	4.51	1733	2.03	780
	e	208	0.082	13.0	4.51	938	2.03	422
	s	431	0.082	13.0	4.51	1942	2.03	874
	w	208	0.082	13.0	4.51	938	2.03	422
	all	1231	0.082	13.0	4.51	5551	2.03	2498
CMH - DW - R-21 Wall - THP510-DOE: Double Wide - R-22 Insulation THP510 2x6 Wall-DOE	n	67	0.055	21.0	3.03	203	1.36	91
Partitions								
(none)								
Windows								
Clayton - Thermopane Low-E: Clayton - Thermopane Low-E; 50% blinds 45°, medium; 50% outdoor insect screen; 6.67 ft head ht	n	34	0.350	0	19.3	655	9.39	319
Clayton - Thermopane Low-E DOE: Clayton-Thermopane Low-E DOE; 50% blinds 45°, medium; 50% outdoor insect screen; 6.67 ft head ht	n	42	0.300	0	16.5	688	7.91	329
	s	93	0.300	0	16.5	1526	10.9	1006
	all	134	0.300	0	16.5	2214	9.95	1336
Doors								
CMH - Standard Door: CMH - Standard Door - Solid no storm	n	21	0.320	0	17.6	370	9.52	200
	s	21	0.300	0	16.5	347	8.92	187
	all	42	0.300	0	17.0	716	9.22	387
Ceilings								
CMH-DW-158 BOX R38 - THP1244 - DOE: CMH-DW-158 BOX R38-THP1244 - DOE		1775	0.031	38.0	1.70	3026	1.65	2929
Floors								
CMH-DW-158- R33-THP469-DOE: CMH-DW-158-R33-THP469-DOE		1775	0.038	33.0	2.09	3709	0	0

wrightsoft

Project Summary
Entire House
Clayton Homes

Job: M46056-SGD-FDJ-TZ-II
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

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SEPT 19 2023
Federal Manufactured Home Construction And Safety Standards 6

Project Information

For: M46056-SGD-FDJ-TZ-II, GILES

Notes: DUCT CAPAPCITY-26000 BTUHS

Design Information

Weather: Knoxville McGhee Tyson AP, TN, US

Winter Design Conditions

Outside db	15	°F
Inside db	70	°F
Design TD	55	°F

Summer Design Conditions

Outside db	93	°F
Inside db	75	°F
Design TD	18	°F
Daily range	M	
Relative humidity	50	%
Moisture difference	36	gr/lb

Heating Summary

Structure	21322	Btuh
Ducts	0	Btuh
Central vent (60 cfm) Outside air	3503	Btuh
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	24825	Btuh

Sensible Cooling Equipment Load Sizing

Structure	11673	Btuh
Ducts	0	Btuh
Central vent (60 cfm) Outside air	1121	Btuh
Blower	0	Btuh
Use manufacturer's data	n	
Rate/swing multiplier	0.98	
Equipment sensible load	12487	Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

	Heating	Cooling
Area (ft²)	1775	1775
Volume (ft³)	14196	14196
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	90	47

Latent Cooling Equipment Load Sizing

Structure	1925	Btuh
Ducts	0	Btuh
Central vent (60 cfm) Outside air	1426	Btuh
Equipment latent load	3351	Btuh
Equipment Total Load (Sen+Lat)	15838	Btuh
Req. total capacity at 0.70 SHR	1.5	ton

Heating Equipment Summary

Make	Smart Comfort
Trade	PERFORMANCE 15 SEER2 HP
Model	N4H5S24*K*AAA*
AHRI ref	0

Efficiency	7.5 HSPF2	
Heating input		
Heating output	22800	Btuh @ 47°F
Temperature rise	28	°F
Actual air flow	780	cfm
Air flow factor	0.037	cfm/Btuh
Static pressure	0.30	in H2O

Space thermostat
Capacity balance point = 24 °F

Backup: Smart Comfort M46056-FDJ-TZ-I
Input = 10 kW, Output = 34121 Btuh, 100 AFUE

Cooling Equipment Summary

Make	Smart Comfort
Trade	PERFORMANCE 15 SEER2 HP
Cond	N4H5S24*K*AAA*
Coil	M46056-FDJ-TZ-I
AHRI ref	0

Efficiency	12.0 EER2,15.2 SEER2	
Sensible cooling	16380	Btuh
Latent cooling	7020	Btuh
Total cooling	23400	Btuh
Actual air flow	780	cfm
Air flow factor	0.067	cfm/Btuh
Static pressure	0.30	in H2O
Load sensible heat ratio	0.79	

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

Duct System Summary
Entire House
Clayton Homes

Job: M46056-SGD-FDJ-TZ-II
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

Project Information

For: M46056-SGD-FDJ-TZ-II, GILES

	Heating	Cooling
External static pressure	0.30 in H2O	0.30 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0.30 in H2O	0.30 in H2O
Supply / return available pressure	0.150 / 0.150 in H2O	0.150 / 0.150 in H2O
Lowest friction rate	0.209 in/100ft	0.209 in/100ft
Actual air flow	780 cfm	780 cfm
Total effective length (TEL)	143 ft	

Supply Branch Detail Table

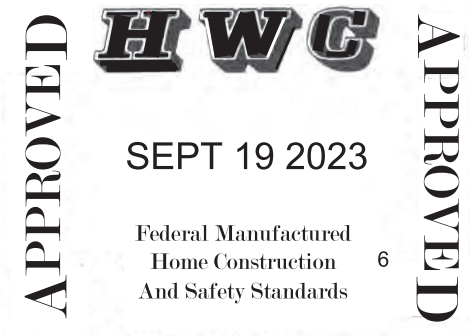
Name		Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
BEDROOM 2	h	986	99	66	0	0	0x 0	VlFx	0	0	
BEDROOM 3	h	1992	73	72	0.214	6.0	0x 0	VlFx	40.2	100.0	st6
BEDROOM 4	h	2313	85	78	0.209	6.0	0x 0	VlFx	43.2	100.0	st6
DINING	h	1634	60	45	0.769	5.0	0x 0	VlFx	4.0	35.0	st4
KITCHEN	c	2125	90	142	0.496	6.0	0x 0	VlFx	25.5	35.0	st4
LIVING ROOM	c	2395	115	160	0.241	7.0	0x 0	VlFx	24.7	100.0	st6
P-BATH	h	2367	87	57	0.438	5.0	0x 0	VlFx	33.5	35.0	st4
PRIMARY BEDROOM	c	1828	120	122	0.219	7.0	0x 0	VlFx	37.2	100.0	st5
UTILITY	h	1421	52	38	0.822	5.0	0x 0	VlFx	1.5	35.0	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
st2	Peak AVF	52	38	0.822	125	5.4	5 x 12	VinlFlx	
st4	Peak AVF	237	244	0.438	501	4.0	5 x 14	ShtMetl	
st5	Peak AVF	120	122	0.219	251	4.7	5 x 14	ShtMetl	st3
st6	Peak AVF	272	310	0.209	638	4.7	5 x 14	ShtMetl	st3
st3	Peak AVF	392	432	0.209	1037	5.4	5 x 12	VinlFlx	

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	0x 0	780	780	0	0	0	0	0x 0		VlFx	



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Manual S Compliance Report

Entire House

Clayton Homes

Job: M46056-SGD-FDJ-TZ-III
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

APPROVED HWC APPROVED
SEPT 19 2023
Federal Manufactured Home Construction And Safety Standards 6

Project Information

For: M46056-SGD-FDJ-TZ-III, GILES

Cooling Equipment

Design Conditions

Outdoor design DB:	87.6°F	Sensible gain:	10474	Btuh	Entering coil DB:	76.0°F
Outdoor design WB:	71.2°F	Latent gain:	2696	Btuh	Entering coil WB:	63.0°F
Indoor design DB:	75.0°F	Total gain:	13169	Btuh		
Indoor RH:	50%	Estimated airflow:	780	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	Smart Comfort		Model:	N4H5S24*K*AAA*+M46056-FDJ-TZ-I	
Actual airflow:	780	cfm			
Sensible capacity:	16380	Btuh	156% of load		
Latent capacity:	7020	Btuh	260% of load		
Total capacity:	23400	Btuh	178% of load	SHR:	70%

Heating Equipment

Design Conditions

Outdoor design DB:	15.8°F	Heat loss:	22307	Btuh	Entering coil DB:	65.8°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP					
Manufacturer:	Smart Comfort		Model:	N4H5S24*K*AAA*+M46056-FDJ-TZ-I		
Actual airflow:	780	cfm				
Output capacity:	22800	Btuh	102% of load		Capacity balance:	22 °F
Supplemental heat required:	0	Btuh			Economic balance:	-99 °F

Backup equipment type:	Elec strip				
Manufacturer:	Smart Comfort		Model:	M46056-FDJ-TZ-I	
Actual airflow:	780	cfm			
Output capacity:	10.0	kW	153% of load	Temp. rise:	43 °F

Meets all requirements of ACCA Manual S.

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Building Analysis
Entire House
Clayton Homes

Job: M46056-SGD-FDJ-TZ-III
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

APPROVED HWC APPROVED
SEPT 19 2023
Federal Manufactured Home Construction And Safety Standards 6

Project Information

For: M46056-SGD-FDJ-TZ-III, GILES

Design Conditions

Location:
VA-SG22
Elevation: 2133 ft
Latitude: 37°N

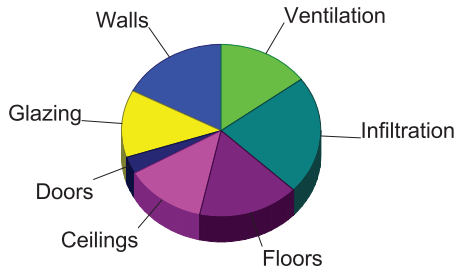
Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	16	88
Daily range (°F)	-	20 (M)
Wet bulb (°F)	-	71
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	70	75
Design TD (°F)	54	13
Relative humidity (%)	50	50
Moisture difference (gr/lb)	48.7	28.1

Infiltration:	
Method	Simplified
Construction quality	Average
Fireplaces	0

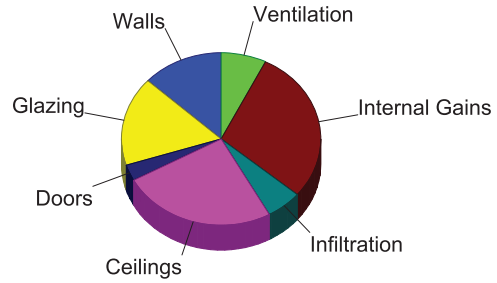
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.0	3869	17.3
Glazing	16.8	2827	12.7
Doors	16.8	706	3.2
Ceilings	1.7	2982	13.4
Floors	2.1	3655	16.4
Infiltration	3.3	4960	22.2
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		3310	14.8
Adjustments		0	
Total		**22307**	**100.0**



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	1.1	1378	13.2
Glazing	10.4	1754	16.7
Doors	7.5	316	3.0
Ceilings	1.5	2629	25.1
Floors	0	0	0
Infiltration	0.4	607	5.8
Ducts		0	0
Ventilation		769	7.3
Internal gains		3020	28.8
Blower		0	0
Adjustments		0	
Total		**10474**	**100.0**



Latent Cooling Load = 2696 Btuh
Overall U-value = 0.051 Btuh/ft²-°F, Window / Floor Area = 9.5 %

Data entries checked.

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Component Constructions
Entire House
Clayton Homes

Job: M46056-SGD-FDJ-TZ-III
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

APPROVED HWG APPROVED
SEPT 19 2023
Federal Manufactured Home Construction And Safety Standards 6

Project Information

For: M46056-SGD-FDJ-TZ-III, GILES

Design Conditions

Location:
VA-SG22
Elevation: 2133 ft
Latitude: 37°N

Outdoor:	Heating	Cooling
Dry bulb (°F)	16	88
Daily range (°F)	-	20 (M)
Wet bulb (°F)	-	71
Wind speed (mph)	15.0	7.5

Indoor:	Heating	Cooling
Indoor temperature (°F)	70	75
Design TD (°F)	54	13
Relative humidity (%)	50	50
Moisture difference (gr/lb)	48.7	28.1

Infiltration:

Method	Simplified
Construction quality	Average
Fireplaces	0

Construction descriptions	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
CMH - DW - R-21 Wall - THP510-DOE: Double Wide - R-22 Insulation THP510 2x6 Wall-DOE	n	451	0.055	21.0	2.98	1345	1.06	479
	e	208	0.055	21.0	2.98	620	1.06	221
	s	431	0.055	21.0	2.98	1283	1.06	457
	w	208	0.055	21.0	2.98	620	1.06	221
	all	1298	0.055	21.0	2.98	3869	1.06	1378
Partitions								
(none)								
Windows								
Clayton - Thermopane Low-E: Clayton - Thermopane Low-E; 50% blinds 45°, medium; 50% outdoor insect screen; 6.67 ft head ht	n	34	0.350	0	19.0	645	7.76	264
Clayton - Thermopane Low-E DOE: Clayton-Thermopane Low-E DOE; 50% blinds 45°, medium; 50% outdoor insect screen; 6.67 ft head ht	n	42	0.300	0	16.3	678	6.52	272
	s	93	0.300	0	16.3	1504	9.83	910
	all	134	0.300	0	16.3	2182	8.80	1181
Doors								
CMH - Standard Door: CMH - Standard Door - Solid no storm	n	21	0.320	0	17.3	364	7.78	163
	s	21	0.300	0	16.3	341	7.29	153
	all	42	0.300	0	16.8	706	7.53	316
Ceilings								
CMH-DW-158 BOX R38 - THP1244 - DOE: CMH-DW-158 BOX R38-THP1244 - DOE		1775	0.031	38.0	1.68	2982	1.48	2629
Floors								
CMH-DW-158- R33-THP469-DOE: CMH-DW-158-R33-THP469-DOE		1775	0.038	33.0	2.06	3655	0	0

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Project Summary
Entire House
Clayton Homes

Job: M46056-SGD-FDJ-TZ-III
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

APPROVED HWC APPROVED
SEPT 19 2023
Federal Manufactured Home Construction And Safety Standards 6

Project Information

For: M46056-SGD-FDJ-TZ-III, GILES

Notes: DUCT CAPAPCITY-26000 BTUHS

Design Information

Weather: VA-SG22

Winter Design Conditions

Outside db	16	°F
Inside db	70	°F
Design TD	54	°F

Summer Design Conditions

Outside db	88	°F
Inside db	75	°F
Design TD	13	°F
Daily range	M	
Relative humidity	50	%
Moisture difference	28	gr/lb

Heating Summary

Structure	18997	Btuh
Ducts	0	Btuh
Central vent (60 cfm) Outside air	3310	Btuh
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	22307	Btuh

Sensible Cooling Equipment Load Sizing

Structure	9704	Btuh
Ducts	0	Btuh
Central vent (60 cfm) Outside air	769	Btuh
Blower	0	Btuh
Use manufacturer's data	n	
Rate/swing multiplier	0.93	
Equipment sensible load	9699	Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

	Heating	Cooling
Area (ft²)	1775	1775
Volume (ft³)	14196	14196
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	90	47

Latent Cooling Equipment Load Sizing

Structure	1636	Btuh
Ducts	0	Btuh
Central vent (60 cfm) Outside air	1060	Btuh
Equipment latent load	2696	Btuh
Equipment Total Load (Sen+Lat)	12394	Btuh
Req. total capacity at 0.70 SHR	1.2	ton

Heating Equipment Summary

Make	Smart Comfort
Trade	PERFORMANCE 15 SEER2 HP
Model	N4H5S24*K*AAA*
AHRI ref	0

Efficiency	7.5 HSPF2	
Heating input		
Heating output	22800	Btuh @ 47°F
Temperature rise	29	°F
Actual air flow	780	cfm
Air flow factor	0.041	cfm/Btuh
Static pressure	0.30	in H2O

Space thermostat
Capacity balance point = 22 °F

Backup: Smart Comfort M46056-FDJ-TZ-I
Input = 10 kW, Output = 34121 Btuh, 100 AFUE

Cooling Equipment Summary

Make	Smart Comfort
Trade	PERFORMANCE 15 SEER2 HP
Cond	N4H5S24*K*AAA*
Coil	M46056-FDJ-TZ-I
AHRI ref	0

Efficiency	12.0 EER2,15.2 SEER2	
Sensible cooling	16380	Btuh
Latent cooling	7020	Btuh
Total cooling	23400	Btuh
Actual air flow	780	cfm
Air flow factor	0.080	cfm/Btuh
Static pressure	0.30	in H2O
Load sensible heat ratio	0.80	

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

Duct System Summary
Entire House
Clayton Homes

Job: M46056-SGD-FDJ-TZ-III
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

Project Information

For: M46056-SGD-FDJ-TZ-III, GILES

	Heating	Cooling
External static pressure	0.30 in H2O	0.30 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0.30 in H2O	0.30 in H2O
Supply / return available pressure	0.150 / 0.150 in H2O	0.150 / 0.150 in H2O
Lowest friction rate	0.209 in/100ft	0.209 in/100ft
Actual air flow	780 cfm	780 cfm
Total effective length (TEL)	143 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
BEDROOM 2	h	693	96	56	0	0	0x 0	VIFx	0	0	
BEDROOM 3	c	912	73	73	0.214	6.0	0x 0	VIFx	40.2	100.0	st6
BEDROOM 4	h	1987	82	74	0.209	6.0	0x 0	VIFx	43.2	100.0	st6
DINING	h	1531	63	43	0.769	5.0	0x 0	VIFx	4.0	35.0	st4
KITCHEN	c	1896	90	152	0.496	6.0	0x 0	VIFx	25.5	35.0	st4
LIVING ROOM	c	2165	119	174	0.241	7.0	0x 0	VIFx	24.7	100.0	st6
P-BATH	h	2020	83	47	0.438	5.0	0x 0	VIFx	33.5	35.0	st4
PRIMARY BEDROOM	c	1512	117	122	0.219	7.0	0x 0	VIFx	37.2	100.0	st5
UTILITY	h	1388	57	38	0.822	5.0	0x 0	VIFx	1.5	35.0	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
st2	Peak AVF	57	38	0.822	137	5.4	5 x 12	VinlFlx	
st4	Peak AVF	236	243	0.438	499	4.0	5 x 14	ShtMetl	
st5	Peak AVF	117	122	0.219	250	4.7	5 x 14	ShtMetl	st3
st6	Peak AVF	274	322	0.209	662	4.7	5 x 14	ShtMetl	st3
st3	Peak AVF	391	443	0.209	1064	5.4	5 x 12	VinlFlx	

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	0x 0	780	780	0	0	0	0	0x 0		VlFx	

Description of Materials

U.S. Department of Housing and Urban Development
Department of Veterans Affairs
Farmers Home Administration

OMB Control No. 2502-0313
(exp. 3/31/2024)

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. This agency may not collect this information, and you are not required to complete this form, unless it displays a currently valid OMB control number.

The National Housing Act (12 USC 1703) authorizes insuring financial institutions against default losses on single family mortgages. HUD must evaluate the acceptability and value of properties to be insured. The information collected here will be used to determine if proposed construction meets regulatory requirements and if the property is suitable for mortgage insurance. Response to this information collection is mandatory. No assurance of confidentiality is provided.

◯ Proposed Construction ◯ Under Construction No. _____ (To be inserted by HUD, VA or FmHA)

Property address (Include City and State)

Name and address of Mortgagor or Sponsor	Name and address of Contractor or Builder
	Giles Homes 405 South Broad Street New Tazewell TN 37825

Instructions

1. For additional information on how this form is to be submitted, number of copies, etc., see the instructions applicable to the HUD Application for Mortgage Insurance, VA Request for Determination of Reasonable Value, or FmHA Property Information and Appraisal Report, as the case may be.
2. Describe all materials and equipment to be used, whether or not shown on the drawings, by marking an X in each appropriate check-box and entering the information called for each space. If space is inadequate, enter "See misc." and describe under item 27 or on an attached sheet. **The use of paint containing more than the percentage of lead by weight permitted by law is prohibiited.**
3. Work not specifically described or shown will not be considered unless required, then the minimum acceptable will be assumed. Work exceeding minimum requirements cannot be considered unless specifically described.
4. Include no alternates, "or equal" phrases, or contradictory items. (Consideration of a request for acceptance of substitute materials or equipment is not thereby precluded.)
5. Include signatures required at the end of this form.
6. The construction shall be completed in compliance with the related drawings and specifications, as amended during processing. The specifications include this Description of Materials and the applicable Minimum Property Standards.

1. Excavation

Bearing soil, type _____

2. Foundations

Footings concrete mix _____ ____ strength psi _____ _ Reinforcing _____

Foundation wall material _____ Reinforcing _____

Interior foundation wall material _____ Party foundation wall _____

Columns material and sizes _____ Piers material and reinforcing _____

Girders material and sizes _____ Sills material _____

Basement entrance areaway _____ Window areaways _____

Waterproofing _____ Footing drains _____

Termite protection _____

Basementless space ground cover _____ insulation _____ foundation vents _____

Special foundations _____

Additional information

3. Chimneys

Material _____ _Prefabricated (make and size) _____

Flue lining material _____ _Heater flue size _____ _Fireplace flue size _____

Vents (material and size) gas or oil heater _____ _ water heater _____

Additional information Chimney Kit 58621

4. Fireplaces

Type ◯ solid fuel ◯ gas-burning ◯ circulator (make and size) _____ Ash dump and clean-out_____

Fireplace facing _____ __ lining _____ _ hearth 103217 _ mantel 1032918

Additional information Fireplace front 1032921

5. Exterior Walls

Wood frame wood grade, and species #3 SPF ☐ Corner bracing Building paper or felt _____

Sheathing OSB _ thickness 7/16" _ width 48" ◯ solid ◯ spaced _____ o.c. ◯ diagonal _____

Siding Horizontal _ grade Blog _ type Vinyl _ size _____ exposure _____ _ fastening Stapled

Shingles Fiberglass _ grade #235 _ type GAP _ size 36 exposure 5 1/2" _ fastening Stapled

Stucco _____ thickness _____ Lath _____ weight _____ lb.

Masonry veneer _____ Sills _____ Lintels _____ Base flashing _____

Masonry ◯ solid ◯ faced ◯ stuccoed total wall thickness _____ facing thickness _____ facing material _____

Backup material _____ thickness _____ bonding _____

Door sills _____ Window sills _____ Lintels _____ Base flashing _____

Interior surfaces dampproofing, _____ coats of _____ furring _____

Additional information

Exterior painting material _____ number of coats _____

Gable wall construction ◯ same as main walls ◯ other construction _____

6. Floor Framing

Joists wood, grade, and species #2 SPF other 16" _ bridging _____ anchors _____

Concrete slab ◯ basement floor ◯ first floor ◯ ground supported ◯ self-supporting mix _____ thickness _____

reinforcing _____ _ insulation _____ _ membrane _____

Fill under slab material _____ _ thickness _____

Additional information Double 2x6 @ @shearwalls nailed and glued

7. Subflooring (Describe underflooring for special floors under item 21)

Material grade and species 7/16" OSB size _____ type _____

Laid ◯ first floor ◯ second floor ◯ attic _____ sq. ft. ◯ diagonal ◯ right angles

Additional information T&G OSB glued and nailed, sanded @ seams, water proofing in wet areas

8. Finish Flooring (Wood only. Describe other finish flooring under item 21)

Location	Rooms	Grade	Species	Thickness	Width	Bldg. Paper	Finish
First floor							
Second floor							
Attic floor	sq. ft.						

Additional information

9. Partition Framing

Studs wood, grade, and species SPF #2 and #3 size and spacing 2x3 and 2x4 Other _____

Additional information

10. Ceiling Framing

Joists wood, grade, and species purchased truss _Other _____ _ Bridging _____

Additional information

11. Roof Framing

Rafters wood, grade, and species purchased truss Roof trusses (see detail) grade and species _____

Additional information

12. Roofing

Sheathing wood, grade, and species OSB 7/16" ◯ solid ◯ spaced _____ o.c.

Roofing _____ grade _____ size _____ type _____

Underlay _____ weight or thickness _____ size _____ fastening _____

Built-up roofing _____ number of plies _____ surfacing material _____

Flashing material _____ gage or weight _____ ☐ gravel stops ☐ snow guards

Additional information

13. Gutters and Downspouts

Gutters material _____ gage or weight 1 1/2" size _____ shape _____

Downspouts material _____ gage or weight _____ size _____ shape _____ number _____

Downspouts connected to ◯ Storm sewer ◯ sanitary sewer ◯ dry-well ◯ Splash blocks material and size _____

Additional information

14. Lath and Plaster

Lath ☐ walls ☐ ceilings material _____ weight or thickness _____ Plaster coats _____ finish _____

Dry-wall ☐ walls ☐ ceilings material _____ thickness _____ finish _____

Joint treatment

15. Decorating (Paint, wallpaper, etc.)

Rooms	Wall Finish Material and Application	Ceiling Finish Material and Application
Kitchen		
Bath		
Other		

Additional information

16. Interior Doors and Trim

Doors type Hollow core material Masonite board thickness 2"

Door trim type _____ material _____ Base type _____ material _____ size _____

Finish doors _____ trim _____

Other trim (item, type and location) _____

Additional information

17. Windows

Windows type Clayton Supply make _____ material _____ sash thickness _____

Glass grade _____ ☐ sash weights ☐ balances, type _____ head flashing _____

Trim type _____ material _____ Paint _____ number coats _____

Weatherstripping type _____ material _____ Storm sash, number _____

Screens ◯ full ◯ half type _____ number _____ screen cloth material _____

Basement windows type _____ material _____ screens, number _____ Storm sash, number _____

Special windows _____

Additional information

18. Entrances and Exterior Detail

Main entrance door material Elixir width _____ thickness _____ Frame material _____ thickness _____

Other entrance doors material _____ width _____ thickness _____ Frame material _____ thickness _____

Head flashing _____ Weatherstripping type _____ saddles _____

Screen doors thickness _____ number _____ screen cloth material _____ Storm doors thickness _____ number _____

Combination storm and screen doors thickness _____ number _____ screen cloth material _____

Shutters ◯ hinged ◯ fixed Railings _____ Attic louvers _____

Exterior millwork grade and species _____ Paint _____ number coats _____

Additional information

19. Cabinets and Interior Detail

Kitchen cabinets, wall units material 1/2" duracraft lineal feet of shelves _____ shelf width _____

Base units material _____ counter top _____ edging _____

Back and end splash _____ Finish of cabinets _____ number coats _____

Medicine cabinets make _____ model _____

Other cabinets and built-in furniture _____

Additional information

20. Stairs

Stair	Treads		Risers		Strings		Handrail		Balusters	
	Material	Thickness	Material	Thickness	Material	Size	Material	Size	Material	Size
Basement										
Main										
Attic										

Disappearing make and model number _____

Additional information

21. Special Floors and Wainscot (Describe Carpet as listed in Certified Products Directory)

	Location	Material, Color, Border, Sizes, Gage, Etc.	Threshold Material	Wall Base Material	Underfloor Material
Floors	Kitchen	Congo Liam			
	Bath	Congo Liam			

	Location	Material, Color, Border, Cap. Sizes, Gage, Etc.	Height	Height Over Tub	Height in Showers (From Floor)
Wainscot	Bath				

Additional information

22. Plumbing

Fixture	Number	Location	Make	MFR's Fixture Identification No.	Size	Color
Sink	1	Kitchen			33"x19"x6"	Steel
Lavatory	2	Bath			22"x14"	Plastic
Water closet	2	Bath			Single Bowl	
Bathtub	2	Bath			60"	Fiberglass
Shower over tub						
Stall shower						
Laundry trays						

Bathroom accessories ☐ Recessed material _____ number _____ ☐ Attached material _____ number _____

Additional information

◯ Curtain rod ◯ Door ☐ Shower pan material 1 pc fiberglass * (Show and describe individual system in complete detail in separate drawings and specifications according to requirements.)

Water supply ◯ public ◯ community system ◯ individual (private) system*

Sewage disposal ◯ public ◯ community system ◯ individual (private) system*

House drain (inside) ◯ cast iron ◯ tile ◯ other ABS House sewer (outside) ◯ cast iron ◯ tile ◯ other _____

Water piping ◯ galvanized steel ◯ copper tubing ◯ other PEX _____ Sill cocks, number _____

Domestic water heater type Heat Pump make and model Rheem heating capacity _____ gph. 100° rise.

Storage tank material _____ capacity 40 or 50 gallons

Gas service ◯ utility company ◯ liq. pet. gas ◯ other _____ ☐ Gas piping ☐ cooking ☐ house heating

Footing drains connected to ◯ storm sewer ◯ sanitary sewer ◯ dry well ◯ sump pump make and model _____

capacity _____ discharges into _____

Additional information

23. Heating

◯ Hot water ◯ Steam ◯ Vapor ◯ One-pipe system ◯ Two-pipe system
◯ Radiators ◯ Convectors ◯ Baseboard radiation Make and model Carrier Smart Comfort
☐ Radiant panel ◯ floor ◯ wall ◯ ceiling Panel coil material _____
☐ Circulator ☐ Return pump Make and model _____ capacity _____ gpm.
Boiler make and model _____ Output _____ Btuh. net rating _____ Btuh.
Additional information Down flow

Warm air ◯ Gravity ◯ Forced Type of system _____
Duct material supply _____ return _____ Insulation _____ thickness _____ ☐ Outside air intake
Furnace: make and model _____ Input _____ Btuh. output _____ Btuh.
Additional information

◯ Space heater ◯ floor furnace ◯ wall heater Input _____ Btuh. output _____ Btuh. number units _____
Make, model _____
Additional information

Controls make and types _____
Additional information

Fuel: ◯ Coal ◯ oil ◯ gas ◯ iq. pet. gas ◯ lectric ◯ ther _____ storage capacity _____
Additional information

Firing equipment furnished separately ◯ Gas burner, conversion type ◯ Stoker hopper feed ◯ in feed
Oil burner ◯ pressure atomizing ◯ vaporizing _____
Make and model _____

Control _____
Additional information

Electric heating system type _____ Input _____ watts @ _____ volts output _____ Btuh.
Additional information

Ventilating equipment ☐ attic fan, make and model _____ capacity _____ cfm.
☐ kitchen exhaust fan, make and model _____
Other heating, ventilating, or cooling equipment _____
Additional information

24. Electric Wiring

Service ◯ overhead ◯ underground Panel ◯ fuse box ◯ circuit-breaker make _____ AMP's _____ No. circuits ___
Wiring ◯ conduit ◯ armored cable ◯ nonmetallic cable ◯ nob and tube ◯ her _____
Special outlets ☐ range ☐ water heater ☐ other _____
☐ Doorbell ☐ Chimes ☐ Push-button locations _____
Additional information

25.Lighting Fixtures

Total number of fixtures _____ Total allowance for fixtures, typical installation, $ _____
Nontypical installation _____
Additional information

26. Insulation

Location	Thickness	Material, Type, and Method of Installation	Vapor Barrier
Roof	38	Blown	
Ceiling			
Wall	13 or 16	Batt	Kraft Back
Floor	22, 27 or 33	Rolled	

27. Miscellaneous: (Describe any main dwelling materials, equipment, or construction items not shown elsewhere; or use to provide additional information where the space provided was inadequate. Always reference by item number to correspond to numbering used on this form.)

Hardware (make, material, and finish.)

Special Equipment (State material or make, model and quantity. Include only equipment and appliances which are acceptable by local law, custom and applicable FHA standards. Do not include items which, by established custom, are supplied by occupant and removed when he vacates premises or chattles prohibited by law from becoming realty.)

Porches

Terraces

Garages

Walks and Driveways

Driveway width _____ base material _____ thickness _____ surfacing material _____ thickness _____

Front walk width _____ material _____ thickness _____ Service walk width _____ material _____ thickness _____

Steps material _____ treads _____ risers _____ Cheek walls _____

Other Onsite Improvements

(Specify all exterior onsite improvements not described elsewhere, including items such as unusual grading, drainage structures, retaining walls, fence, railings, and accessory structures.)

Landscaping, Planting, and Finish Grading

Topsoil _____ thick ☐ front yard ☐ side yards ☐ rear yard to _____ feet behind main building

Lawns (seeded, sodded, or sprigged) ☐ front yard _____ ☐ side yards _____ ☐ rear yard _____

Planting ◯ as specified and shown on drawings ◯ as follows:

_____Shade trees deciduous_____ caliper _____ Evergreen trees _____ to _____ B & B

_____Low flowering trees deciduous _____ to _____ _____Evergreen shrubs_____ to _____ B & B

_____High-growing shrubs deciduous _____ to _____ _____Vines, 2-year _____

_____Medium-growing shrubs deciduous _____ to _____ Other

_____Low-growing shrubs deciduous _____ to _____

Identification—This exhibit shall be identified by the signature of the builder, or sponsor, and/or the proposed mortgagor if the latter is known at the time of application.

Date (mm/dd/yyyy) 10/13/2023 Signature

Signature

Manual S Compliance Report
Entire House
Clayton Homes

Job: M46056-SGD-FDJ-TZ-I
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

APPROVED HWC APPROVED
SEPT 19 2023
Federal Manufactured Home Construction And Safety Standards 6

Project Information

For: M46056-SGD-FDJ-TZ-I, GILES

Cooling Equipment

Design Conditions

Outdoor design DB:	91.7°F	Sensible gain:	12604 Btuh	Entering coil DB:	76.3°F
Outdoor design WB:	73.9°F	Latent gain:	3285 Btuh	Entering coil WB:	63.4°F
Indoor design DB:	75.0°F	Total gain:	15889 Btuh		
Indoor RH:	50%	Estimated airflow:	780 cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type: Split ASHP
Manufacturer: Smart Comfort Model: N4H5S24*K*AAA*+M46056-FDJ-TZ-I

Actual airflow:	780	cfm		
Sensible capacity:	16380	Btuh	130% of load	
Latent capacity:	7020	Btuh	214% of load	
Total capacity:	23400	Btuh	147% of load	SHR: 70%

Heating Equipment

Design Conditions

Outdoor design DB:	26.4°F	Heat loss:	20443 Btuh	Entering coil DB:	66.6°F
Indoor design DB:	70.0°F				

Manufacturer's Performance Data at Actual Design Conditions

Equipment type: Split ASHP
Manufacturer: Smart Comfort Model: N4H5S24*K*AAA*+M46056-FDJ-TZ-I

Actual airflow:	780	cfm			
Output capacity:	22800	Btuh	112% of load	Capacity balance:	26 °F
Supplemental heat required:	0	Btuh		Economic balance:	-99 °F

Backup equipment type: Elec strip
Manufacturer: Smart Comfort Model: M46056-FDJ-TZ-I

Actual airflow:	780	cfm			
Output capacity:	10.0	kW	167% of load	Temp. rise:	41 °F

Meets all requirements of ACCA Manual S.

Building Analysis
Entire House
Clayton Homes

Job: M46056-SGD-FDJ-TZ-I
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

APPROVED HWC APPROVED
SEPT 19 2023
Federal Manufactured Home Construction And Safety Standards 6

Project Information

For: M46056-SGD-FDJ-TZ-I, GILES

Design Conditions

Location:
Atlanta Municipal, GA, US
Elevation: 1027 ft
Latitude: 34 °N

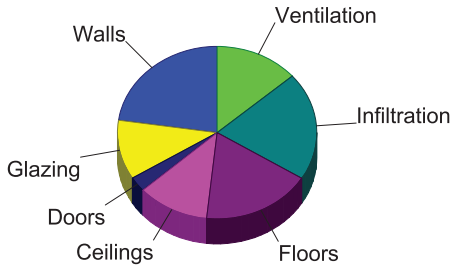
Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	26	92
Daily range (°F)	-	17 (M)
Wet bulb (°F)	-	74
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	70	75
Design TD (°F)	44	17
Relative humidity (%)	50	50
Moisture difference (gr/lb)	39.9	35.3

Infiltration:	
Method	Simplified
Construction quality	Average
Fireplaces	0

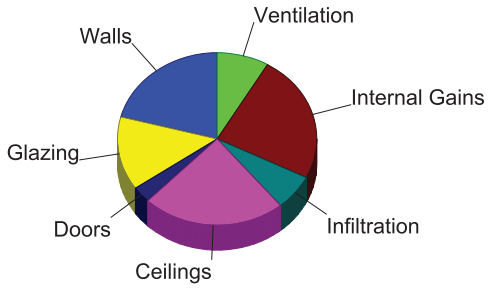
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.6	4640	22.7
Glazing	13.5	2274	11.1
Doors	13.5	568	2.8
Ceilings	1.4	2398	11.7
Floors	2.0	3636	17.8
Infiltration	2.8	4154	20.3
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		2772	13.6
Adjustments		0	
Total		**20443**	**100.0**



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	2.0	2629	20.9
Glazing	10.4	1743	13.8
Doors	9.2	387	3.1
Ceilings	1.6	2927	23.2
Floors	0	0	0
Infiltration	0.6	837	6.6
Ducts		0	0
Ventilation		1062	8.4
Internal gains		3020	24.0
Blower		0	0
Adjustments		0	
Total		**12604**	**100.0**



Latent Cooling Load = 3285 Btuh
Overall U-value = 0.061 Btuh/ft²-°F, Window / Floor Area = 9.5 %

Data entries checked.

wrightsoft

Component Constructions
Entire House
Clayton Homes

Job: M46056-SGD-FDJ-TZ-I
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

APPROVED HWG APPROVED
SEPT 19 2023
Federal Manufactured Home Construction And Safety Standards 6

Project Information

For: M46056-SGD-FDJ-TZ-I, GILES

Design Conditions

Location:
Atlanta Municipal, GA, US
Elevation: 1027 ft
Latitude: 34 °N

Outdoor:	Heating	Cooling
Dry bulb (°F)	26	92
Daily range (°F)	-	17 (M)
Wet bulb (°F)	-	74
Wind speed (mph)	15.0	7.5

Indoor:	Heating	Cooling
Indoor temperature (°F)	70	75
Design TD (°F)	44	17
Relative humidity (%)	50	50
Moisture difference (gr/lb)	39.9	35.3

Infiltration:

Method	Simplified
Construction quality	Average
Fireplaces	0

Construction descriptions	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
CMH - DW - R-13 Wall - THP502-DOE: Double Wide - R-13 Insulation THP502 2x4 Wall-DOE	n	451	0.082	13.0	3.58	1614	2.03	914
	e	208	0.082	13.0	3.58	744	2.03	421
	s	431	0.082	13.0	3.58	1539	2.03	872
	w	208	0.082	13.0	3.58	744	2.03	421
	all	1298	0.082	13.0	3.58	4640	2.03	2629
Partitions								
(none)								
Windows								
Clayton - Thermopane Low-E: Clayton - Thermopane Low-E; 50% blinds 45°, medium; 50% outdoor insect screen; 6.67 ft head ht	n	34	0.350	0	15.3	519	9.17	312
Clayton - Thermopane Low-E DOE: Clayton-Thermopane Low-E DOE; 50% blinds 45°, medium; 50% outdoor insect screen; 6.67 ft head ht	n	42	0.300	0	13.1	545	7.72	322
	s	93	0.300	0	13.1	1210	10.1	939
	all	134	0.300	0	13.1	1755	9.39	1260
Doors								
CMH - Standard Door: CMH - Standard Door - Solid no storm	n	21	0.320	0	14.0	293	9.50	200
	s	21	0.300	0	13.1	275	8.91	187
	all	42	0.300	0	13.5	568	9.21	387
Ceilings								
CMH-DW-158 BOX R38 - THP1244 - DOE: CMH-DW-158 BOX R38-THP1244 - DOE		1775	0.031	38.0	1.35	2398	1.65	2927
Floors								
CMH-DW-158- R22-THP173-DOE: CMH-DW-158-R22-THP173-DOE		1775	0.047	22.0	2.05	3636	0	0

wrightsoft

Project Summary
Entire House
Clayton Homes

Job: M46056-SGD-FDJ-TZ-I
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

APPROVED HWC APPROVED
SEPT 19 2023
Federal Manufactured Home Construction And Safety Standards 6

Project Information

For: M46056-SGD-FDJ-TZ-I, GILES

Notes: DUCT CAPAPCITY-26000 BTUHS

Design Information

Weather: Atlanta Municipal, GA, US

Winter Design Conditions

Outside db	26	°F
Inside db	70	°F
Design TD	44	°F

Summer Design Conditions

Outside db	92	°F
Inside db	75	°F
Design TD	17	°F
Daily range	M	
Relative humidity	50	%
Moisture difference	35	gr/lb

Heating Summary

Structure	17670	Btuh
Ducts	0	Btuh
Central vent (60 cfm) Outside air	2772	Btuh
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	20443	Btuh

Sensible Cooling Equipment Load Sizing

Structure	11542	Btuh
Ducts	0	Btuh
Central vent (60 cfm) Outside air	1062	Btuh
Blower	0	Btuh
Use manufacturer's data	n	
Rate/swing multiplier	0.97	
Equipment sensible load	12188	Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

	Heating	Cooling
Area (ft²)	1775	1775
Volume (ft³)	14196	14196
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	90	47

Latent Cooling Equipment Load Sizing

Structure	1896	Btuh
Ducts	0	Btuh
Central vent (60 cfm) Outside air	1389	Btuh
Equipment latent load	3285	Btuh
Equipment Total Load (Sen+Lat)	15473	Btuh
Req. total capacity at 0.70 SHR	1.5	ton

Heating Equipment Summary

Make	Smart Comfort
Trade	PERFORMANCE 15 SEER2 HP
Model	N4H5S24*K*AAA*
AHRI ref	0

Efficiency	7.5 HSPF2	
Heating input		
Heating output	22800	Btuh @ 47°F
Temperature rise	28	°F
Actual air flow	780	cfm
Air flow factor	0.044	cfm/Btuh
Static pressure	0.30	in H2O

Space thermostat
Capacity balance point = 26 °F

Backup: Smart Comfort M46056-FDJ-TZ-I
Input = 10 kW, Output = 34121 Btuh, 100 AFUE

Cooling Equipment Summary

Make	Smart Comfort
Trade	PERFORMANCE 15 SEER2 HP
Cond	N4H5S24*K*AAA*
Coil	M46056-FDJ-TZ-I
AHRI ref	0

Efficiency	12.0 EER2,15.2 SEER2	
Sensible cooling	16380	Btuh
Latent cooling	7020	Btuh
Total cooling	23400	Btuh
Actual air flow	780	cfm
Air flow factor	0.068	cfm/Btuh
Static pressure	0.30	in H2O
Load sensible heat ratio	0.79	

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

Duct System Summary
Entire House
Clayton Homes

Job: M46056-SGD-FDJ-TZ-I
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

Project Information

For: M46056-SGD-FDJ-TZ-I, GILES

	Heating	Cooling
External static pressure	0.30 in H2O	0.30 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0.30 in H2O	0.30 in H2O
Supply / return available pressure	0.150 / 0.150 in H2O	0.150 / 0.150 in H2O
Lowest friction rate	0.209 in/100ft	0.209 in/100ft
Actual air flow	780 cfm	780 cfm
Total effective length (TEL)	143 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
BEDROOM 2	h	975	98	66	0	0	0x 0	VIFx	0	0	
BEDROOM 3	h	1660	73	72	0.214	6.0	0x 0	VIFx	40.2	100.0	st6
BEDROOM 4	h	1892	84	77	0.209	6.0	0x 0	VIFx	43.2	100.0	st6
DINING	h	1346	59	44	0.769	5.0	0x 0	VIFx	4.0	35.0	st4
KITCHEN	c	2115	91	143	0.496	6.0	0x 0	VIFx	25.5	35.0	st4
LIVING ROOM	c	2347	115	159	0.241	7.0	0x 0	VIFx	24.7	100.0	st6
P-BATH	h	1939	86	57	0.438	5.0	0x 0	VIFx	33.5	35.0	st4
PRIMARY BEDROOM	c	1791	119	121	0.219	7.0	0x 0	VIFx	37.2	100.0	st5
UTILITY	h	1261	56	41	0.822	5.0	0x 0	VIFx	1.5	35.0	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
st2	Peak AVF	56	41	0.822	134	5.4	5 x 12	VinlFlx	
st4	Peak AVF	236	244	0.438	502	4.0	5 x 14	ShtMetl	
st5	Peak AVF	119	121	0.219	249	4.7	5 x 14	ShtMetl	st3
st6	Peak AVF	271	307	0.209	632	4.7	5 x 14	ShtMetl	st3
st3	Peak AVF	390	428	0.209	1028	5.4	5 x 12	VinlFlx	

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	0x 0	780	780	0	0	0	0	0x 0		VlFx	

Pearl

Model Number	46EXC28684AH23S	Drawing Number	M46056 - DOE - HLZ1	Version 11

BOX SIZE: 26.33 ft. x 68 ft.
AVG. SIDEWALL HEIGHT = 8 FEET
PERCENTAGE OF CEILING THAT IS VAULTED = 0%
12 INCH DIAMETER XOVER DUCT AREA = 78.5 SQ.FT. MAX. WITH R-8 INSULATION
IN-FLOOR DUCT SYSTEM

No S6D

	HEATED FLOOR	WALL	FLAT ROOF
INSULATION VALUES	R-22 FW	R-13	R-38
DAPIA PAGE	THP-173	THP-502	THP-1244
U VALUE (BTUH/SQ.FT.-F)	0.047	0.0817	0.0306

Overhead Duct	
Diameter	Length
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
15	0
Exterior Supply	**Length**
14	0
16	0
Exterior Return	**Length**
14	0
16	0

		Area	U Value	UA
Doors:	Front	22.00	0.300	6.60
	Rear	22.00	0.300	6.60
	Other Door	0.00	0.300	0.00
	Other Door	0.00	0.330	0.00
	OSB	0.00	0.000	0.00
	Skylights	0.00	0.330	0.00
Window Glass Area:	Standard	172.00	0.300	51.60
	Option	0.00	0.300	0.00
Net:	Floor	1790.67	0.047	83.27
	Wall	1293.33	0.082	105.67
	Ceiling	1790.67	0.0306	54.79
Th. Zone 1:	Ext. Duct	78.50	0.242	18.98
Th. Zone 2:	Ext. Duct	78.50	0.223	17.48
Th. Zone 3:	Ext. Duct	78.50	0.206	16.14
Overhead TZ 1:	Supply	0.00	0.000	0.00
Overhead TZ 2:	Supply	0.00	0.000	0.00
Overhead TZ 3:	Supply	0.00	0.00	0.00

Enery Star v3 & ZERH Max Glass (sq ft)	
Th. Zone 1	338.7
Th. Zone 2	179.9
Th. Zone 3	0.0

	Outdoor Design Temp (F)	UA	Uo	Heatloss BTUH/F
Thermal Zone 1	11	327.51	0.063	459.60
Thermal Zone 2	0	326.01	0.063	458.10
Thermal Zone 3	-14	324.66	0.063	456.70

Design Temperatures

Furnace Heating Temp (F)	Economy Outdoor Temp (F)	
-4	18	10kW
-19	8	12kW
-41	-8	15kW
-17	9	40k Gas
-61	-21	60k Gas
-104	-52	80k Gas

Thermal Zone	U-Value	Thermal Zone	U-Value	Thermal Zone	U-Value
Energy Star Version 2					
1-EHP-S	0.080	2-EHP-S	0.080	3-EHP-S	0.079
1-GAS-S	0.080	2-GAS-S	0.080	3-GAS-S	0.071
1-ENV-S	0.076	2-ENV-S	0.067	3-ENV-S	0.059
1-EHP-M	0.074	2-EHP-M	0.074	3-EHP-M	0.074
1-GAS-M	0.074	2-GAS-M	0.074	3-GAS-M	0.065
1-ENV-M	0.071	2-ENV-M	0.064	3-ENV-M	0.056
Energy Star Version 3 & ZERH					
1 Single	0.076	2 Single	0.065	3 Single	0.057
1 Double	0.070	2 Double	0.063	3 Double	0.054

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Federal Manufactured Home Construction And Safety Standards

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Pearl

Model Number	46EXC28684AH23S	Drawing Number	M46056 - DOE-HL-Z11	Version 11

BOX SIZE: 26.33 ft. x 68 ft.
AVG. SIDEWALL HEIGHT = 8 FEET
PERCENTAGE OF CEILING THAT IS VAULTED = 0%
12 INCH DIAMETER XOVER DUCT AREA = 78.5 SQ.FT. MAX. WITH R-8 INSULATION
IN-FLOOR DUCT SYSTEM

No SGD

	HEATED FLOOR	WALL	FLAT ROOF
INSULATION VALUES	R-22 OR / R-33 BIB	R-13	R-38
DAPIA PAGE	THP-469	THP-502	THP-1244
U VALUE (BTUH/SQ.FT.-F)	0.038	0.0817	0.0306

Overhead Duct	
Diameter	Length
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
15	0
Exterior Supply	**Length**
14	0
16	0
Exterior Return	**Length**
14	0
16	0

		Area	U Value	UA
Doors:	Front	22.00	0.300	6.60
	Rear	22.00	0.300	6.60
	Other Door	0.00	0.300	0.00
	Other Door	0.00	0.330	0.00
	OSB	0.00	0.000	0.00
	Skylights	0.00	0.330	0.00
Window Glass Area:	Standard	172.00	0.300	51.60
	Option	0.00	0.300	0.00
Net:	Floor	1790.67	0.038	68.22
	Wall	1293.33	0.082	105.67
	Ceiling	1790.67	0.0306	54.79
Th. Zone 1:	Ext. Duct	78.50	0.242	18.98
Th. Zone 2:	Ext. Duct	78.50	0.223	17.48
Th. Zone 3:	Ext. Duct	78.50	0.206	16.14
Overhead TZ 1:	Supply	0.00	0.000	0.00
Overhead TZ 2:	Supply	0.00	0.000	0.00
Overhead TZ 3:	Supply	0.00	0.00	0.00

Enery Star v3 & ZERH Max Glass (sq ft)	
Th. Zone 1	407.6
Th. Zone 2	248.8
Th. Zone 3	41.8

	Outdoor Design Temp (F)	UA	Uo	Heatloss BTUH/F
Thermal Zone 1	11	312.47	0.060	444.50
Thermal Zone 2	0	310.96	0.060	443.00
Thermal Zone 3	-14	309.62	0.060	441.70

Design Temperatures

Furnace Heating Temp (F)	Economy Outdoor Temp (F)	
-7	16	10kW
-22	6	12kW
-45	-11	15kW
-20	7	40k Gas
-65	-24	60k Gas
-110	-56	80k Gas

Thermal Zone	U-Value	Thermal Zone	U-Value	Thermal Zone	U-Value
Energy Star Version 2					
1-EHP-S	0.080	2-EHP-S	0.080	3-EHP-S	0.079
1-GAS-S	0.080	2-GAS-S	0.080	3-GAS-S	0.071
1-ENV-S	0.076	2-ENV-S	0.067	3-ENV-S	0.059
1-EHP-M	0.074	2-EHP-M	0.074	3-EHP-M	0.074
1-GAS-M	0.074	2-GAS-M	0.074	3-GAS-M	0.065
1-ENV-M	0.071	2-ENV-M	0.064	3-ENV-M	0.056
Energy Star Version 3 & ZERH					
1 Single	0.076	2 Single	0.065	3 Single	0.057
1 Double	0.070	2 Double	0.063	3 Double	0.054

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Federal Manufactured Home Construction And Safety Standards

APPROVED

Pearl

Model Number	46EXC28684AH23S	Drawing Number	M46056-DOE-HL-Z111	Version 11

BOX SIZE: 26.33 ft. x 68 ft.
AVG. SIDEWALL HEIGHT = 8 FEET
PERCENTAGE OF CEILING THAT IS VAULTED = 0%
12 INCH DIAMETER XOVER DUCT AREA = 78.5 SQ.FT. MAX. WITH R-8 INSULATION
IN-FLOOR DUCT SYSTEM

No SGD

	HEATED FLOOR	WALL	FLAT ROOF
INSULATION VALUES	R-22 OR / R-33 BIB	R-21	R-38
DAPIA PAGE	THP-469	THP-510	THP-1244
U VALUE (BTUH/SQ.FT.-F)	0.038	0.0546	0.0306

Overhead Duct	
Diameter	Length
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
15	0
Exterior Supply	**Length**
14	0
16	0
Exterior Return	**Length**
14	0
16	0

		Area	U Value	UA
Doors:	Front	22.00	0.300	6.60
	Rear	22.00	0.300	6.60
	Other Door	0.00	0.300	0.00
	Other Door	0.00	0.330	0.00
	OSB	0.00	0.000	0.00
	Skylights	0.00	0.330	0.00
Window Glass Area:	Standard	172.00	0.300	51.60
	Option	0.00	0.300	0.00
Net:	Floor	1790.67	0.038	68.22
	Wall	1293.33	0.055	70.62
	Ceiling	1790.67	0.0306	54.79
Th. Zone 1:	Ext. Duct	78.50	0.242	18.98
Th. Zone 2:	Ext. Duct	78.50	0.223	17.48
Th. Zone 3:	Ext. Duct	78.50	0.206	16.14
Overhead TZ 1:	Supply	0.00	0.000	0.00
Overhead TZ 2:	Supply	0.00	0.000	0.00
Overhead TZ 3:	Supply	0.00	0.00	0.00

Enery Star v3 & ZERH Max Glass (sq ft)	
Th. Zone 1	524.4
Th. Zone 2	383.1
Th. Zone 3	199.0

	Outdoor Design Temp (F)	UA	Uo	Heatloss BTUH/F
Thermal Zone 1	11	277.42	0.054	409.50
Thermal Zone 2	0	275.92	0.053	408.00
Thermal Zone 3	-14	274.57	0.053	406.60

Design Temperatures

Furnace Heating Temp (F)	Economy Outdoor Temp (F)	
-13	12	10kW
-30	0	12kW
-55	-17	15kW
-28	2	40k Gas
-77	-33	60k Gas
-125	-67	80k Gas

Thermal Zone	U-Value	Thermal Zone	U-Value	Thermal Zone	U-Value
Energy Star Version 2					
1-EHP-S	0.080	2-EHP-S	0.080	3-EHP-S	0.079
1-GAS-S	0.080	2-GAS-S	0.080	3-GAS-S	0.071
1-ENV-S	0.076	2-ENV-S	0.067	3-ENV-S	0.059
1-EHP-M	0.074	2-EHP-M	0.074	3-EHP-M	0.074
1-GAS-M	0.074	2-GAS-M	0.074	3-GAS-M	0.065
1-ENV-M	0.071	2-ENV-M	0.064	3-ENV-M	0.056
Energy Star Version 3 & ZERH					
1 Single	0.076	2 Single	0.065	3 Single	0.057
1 Double	0.070	2 Double	0.063	3 Double	0.054

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Federal Manufactured Home Construction And Safety Standards

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Pearl

Model Number	46EXC28684AH23S	Drawing Number	M46056 - DOE - ZIII	Version 11

BOX SIZE: 26.33 ft. x 68 ft.
AVG. SIDEWALL HEIGHT = 8 FEET
PERCENTAGE OF CEILING THAT IS VAULTED = 0%
12 INCH DIAMETER XOVER DUCT AREA = 78.5 SQ.FT. MAX. WITH R-8 INSULATION
IN-FLOOR DUCT SYSTEM

w/ SGD

	HEATED FLOOR	WALL	FLAT ROOF
INSULATION VALUES	R-22 OR / R-33 BIB	R-21	R-38
DAPIA PAGE	THP-469	THP-510	THP-1244
U VALUE (BTUH/SQ.FT.-F)	0.038	0.0546	0.0306

Overhead Duct	
Diameter	Length
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
15	0
Exterior Supply	Length
14	0
16	0
Exterior Return	Length
14	0
16	0

		Area	U Value	UA
Doors:	Front	22.00	0.300	6.60
	Rear	22.00	0.300	6.60
	Other Door	41.28	0.300	12.38
	Other Door	0.00	0.330	0.00
	OSB	0.00	0.000	0.00
	Skylights	0.00	0.330	0.00
Window Glass Area:	Standard	147.00	0.300	44.10
	Option	0.00	0.300	0.00
Net:	Floor	1790.67	0.038	68.22
	Wall	1277.05	0.055	69.73
	Ceiling	1790.67	0.0306	54.79
Th. Zone 1:	Ext. Duct	78.50	0.242	18.98
Th. Zone 2:	Ext. Duct	78.50	0.223	17.48
Th. Zone 3:	Ext. Duct	78.50	0.206	16.14
Overhead TZ 1:	Supply	0.00	0.000	0.00
Overhead TZ 2:	Supply	0.00	0.000	0.00
Overhead TZ 3:	Supply	0.00	0.00	0.00

Enery Star v3 & ZERH Max Glass (sq ft)	
Th. Zone 1	483.2
Th. Zone 2	341.8
Th. Zone 3	157.7

	Outdoor Design Temp (F)	UA	Uo	Heatloss BTUH/F
Thermal Zone 1	11	281.41	0.054	413.50
Thermal Zone 2	0	279.91	0.054	412.00
Thermal Zone 3	-14	278.57	0.054	410.60

Design Temperatures

Furnace Heating Temp (F)	Economy Outdoor Temp (F)	
-13	12	10kW
-29	1	12kW
-54	-17	15kW
-27	2	40k Gas
-75	-32	60k Gas
-123	-65	80k Gas

Thermal Zone	U-Value	Thermal Zone	U-Value	Thermal Zone	U-Value
Energy Star Version 2					
1-EHP-S	0.080	2-EHP-S	0.080	3-EHP-S	0.079
1-GAS-S	0.080	2-GAS-S	0.080	3-GAS-S	0.071
1-ENV-S	0.076	2-ENV-S	0.067	3-ENV-S	0.059
1-EHP-M	0.074	2-EHP-M	0.074	3-EHP-M	0.074
1-GAS-M	0.074	2-GAS-M	0.074	3-GAS-M	0.065
1-ENV-M	0.071	2-ENV-M	0.064	3-ENV-M	0.056
Energy Star Version 3 & ZERH					
1 Single	0.076	2 Single	0.065	3 Single	0.057
1 Double	0.070	2 Double	0.063	3 Double	0.054

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Federal Manufactured Home Construction And Safety Standards

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Model # **M46056-DOE**

Giles Homes Light and Vent Chart

Room	Floor Area SQFT	Window(s)	Glass Area	% of Floor	Artificial Light	Vent Area	% of Floor	Artificial Vent	Min. Door
Living Room	271	3060 X3	29.7	10.96%		15.6	5.76%		Vent
Kitchen	223	3040 X2	12.6	5.65%	X	6.6	2.96%	X	36
DINING	124	3060 X2	19.8	15.97%	X	10.4	8.39%	X	24
Primary Bedroom	181	3060 x2	19.8	10.94%		10.4	5.75%		36
Bedroom 2	124	3660	12.2	9.84%		6.2	5.00%		24
Bedroom 3	112	3060	9.9	8.84%		5.2	4.64%		24
Primary Bath	151	3040	6.3	4.17%	X	3.3	2.19%	X	28
Bath 2	58				X			X	24
Utility	52	0	0.00%		0	0.00%		24	
Bedroom 4	136	3660	12.2	8.97%		6.2	4.56%		24

* (X) Artificial Light and Vent has been provided for this room

** Note: All window sizes are minimum requirements for rooms. And windows may be added as long as heat loss allows and/or is documented on the floor plan

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Data on this submitted
By: Andy Cupp
MFG. Gilies Industries

REVISION

E. VI46056-DOI . 2

Pearl

Model Number	46EXC28684AH23S	Drawing Number	M46056 - DOE - Z	Version 11

BOX SIZE: 26.33 ft. x 68 ft.
AVG. SIDEWALL HEIGHT = 8 FEET
PERCENTAGE OF CEILING THAT IS VAULTED = 0%
12 INCH DIAMETER XOVER DUCT AREA = 78.5 SQ.FT. MAX. WITH R-8 INSULATION
IN-FLOOR DUCT SYSTEM

W/ SGD

	HEATED FLOOR	WALL	FLAT ROOF
INSULATION VALUES	R-22 FW	R-13	R-38
DAPIA PAGE	THP-173	THP-502	THP-1244
U VALUE (BTUH/SQ.FT.-F)	0.047	0.0817	0.0306

Overhead Duct	
Diameter	Length
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
15	0
Exterior Supply	Length
14	0
16	0
Exterior Return	Length
14	0
16	0

		Area	U Value	UA
Doors:	Front	22.00	0.300	6.60
	Rear	22.00	0.300	6.60
	Other Door	41.28	0.300	12.38
	Other Door	0.00	0.330	0.00
	OSB	0.00	0.000	0.00
	Skylights	0.00	0.330	0.00
Window Glass Area:	Standard	147.00	0.300	44.10
	Option	0.00	0.300	0.00
Net:	Floor	1790.67	0.047	83.27
	Wall	1277.05	0.082	104.34
	Ceiling	1790.67	0.0306	54.79
Th. Zone 1:	Ext. Duct	78.50	0.242	18.98
Th. Zone 2:	Ext. Duct	78.50	0.223	17.48
Th. Zone 3:	Ext. Duct	78.50	0.206	16.14
Overhead TZ 1:	Supply	0.00	0.000	0.00
Overhead TZ 2:	Supply	0.00	0.000	0.00
Overhead TZ 3:	Supply	0.00	0.00	0.00

Enery Star v3 & ZERH Max Glass (sq ft)	
Th. Zone 1	297.5
Th. Zone 2	138.6
Th. Zone 3	0.0

	Outdoor Design Temp (F)	UA	Uo	Heatloss BTUH/F
Thermal Zone 1	11	331.06	0.064	463.10
Thermal Zone 2	0	329.56	0.064	461.60
Thermal Zone 3	-14	328.22	0.063	460.30

Design Temperatures

Furnace Heating Temp (F)	Economy Outdoor Temp (F)	
-4	18	10kW
-18	8	12kW
-41	-7	15kW
-16	10	40k Gas
-60	-21	60k Gas
-103	-51	80k Gas

Thermal Zone	U-Value	Thermal Zone	U-Value	Thermal Zone	U-Value
Energy Star Version 2					
1-EHP-S	0.080	2-EHP-S	0.080	3-EHP-S	0.079
1-GAS-S	0.080	2-GAS-S	0.080	3-GAS-S	0.071
1-ENV-S	0.076	2-ENV-S	0.067	3-ENV-S	0.059
1-EHP-M	0.074	2-EHP-M	0.074	3-EHP-M	0.074
1-GAS-M	0.074	2-GAS-M	0.074	3-GAS-M	0.065
1-ENV-M	0.071	2-ENV-M	0.064	3-ENV-M	0.056
Energy Star Version 3 & ZERH					
1 Single	0.076	2 Single	0.065	3 Single	0.057
1 Double	0.070	2 Double	0.063	3 Double	0.054

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Federal Manufactured Home Construction And Safety Standards

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CMH Inc.
SHEARWALL DESIGN - HUD

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Federal Manufactured Home Construction And Safety Standards 6

Model # M46056-DOE Minimum Joist Spacing 16 "

Box Width =	158 "	Double wide	No Offset Box
Box Length =	68 ft.	95.5" 12" MIN.IBEAM	No Clerestory
No Skylights			No Origami Dormer
No Porches			No Sunken Floor
Joist Size =	#2 spf 2x6	Lags 9Mx3"	No Parapet Roof

Version R13.20

Wind Zone 1 Standard Roof (3/8" sheathing only with 15 gax 1.5" at 5"/10" oc. (197 plf) Chords: 2x4 SPF #3 Top Plate spliced w/ 2x4 MCP & 1x6 SPF Rail spliced w/ 12" glue block. 96 inch sidewall

Diaphragm Construction:

Shearwall	Dist./ Hitch	Length	PLF	# of Joists	Lags	Notes
A	0 '	Full	162	2	1/1	
D	68 '	Full	162	2	1/1	

Wind Zone 2 Standard Roof (3/8" sheathing only with 15 gax 1.5" at 5"/10" oc. (197 plf) Chords: 2x4 SPF #3 Top Plate spliced w/ 2.5x6 MCP & 2x4 SPF #3 Rail spliced w/ 12" glue block. 96 inch sidewall

Diaphragm Construction:

Shearwall	Dist./ Hitch	Length	PLF	# of Joists	Lags	Notes
A	0 '	Full	425	2	5/5	
B	27.29 '	104 "	515	5	4/1	
C	49.08 '	104 "	425	4	3/1	
D	68 '	112 "	162	2	2/1	

(3/8" sheathing only with 15 gax 1.5" at 5"/10" oc. (197 plf) Chords: 2x4 SPF #3 Top Plate spliced w/ 2x4 MCP & 1x6 SPF Rail spliced w/ 12" glue block.

Diaphragm Construction:

Shearwall	Dist./ Hitch	Length	PLF	# of Joists	Lags	Notes

(3/8" sheathing 8d@ 6/12 oc (308) unblocked & (347) blocked Chords: 2x4 SPF #3 Top Plate spliced w/ 3x6 MCP & 2x6 SPF #3 Rail spliced w/ 12" glue block. Block Dist. X=0'

Diaphragm Construction:

Shearwall	Dist./ Hitch	Length	PLF	# of Joists	Lags	Notes

Designed by JDN

Manual S Compliance Report

Entire House

Clayton Homes

Job: M46056-FDJ-TZ-II
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

Project Information

For: M46056-FDJ-TZ-II, GILES

Cooling Equipment

Design Conditions

Outdoor design DB:	90.6°F	Sensible gain:	12135	Btuh	Entering coil DB:	76.2°F
Outdoor design WB:	73.7°F	Latent gain:	3321	Btuh	Entering coil WB:	63.4°F
Indoor design DB:	75.0°F	Total gain:	15455	Btuh		
Indoor RH:	50%	Estimated airflow:	780	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	Smart Comfort		Model:	N4H5S24*K*AAA*+M46056-FDJ-TZ-I	
Actual airflow:	780	cfm			
Sensible capacity:	16380	Btuh	135% of load		
Latent capacity:	7020	Btuh	211% of load		
Total capacity:	23400	Btuh	151% of load	SHR:	70%

Heating Equipment

Design Conditions

Outdoor design DB:	20.8°F	Heat loss:	22116	Btuh	Entering coil DB:	66.1°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP					
Manufacturer:	Smart Comfort		Model:	N4H5S24*K*AAA*+M46056-FDJ-TZ-I		
Actual airflow:	780	cfm				
Output capacity:	22800	Btuh	103% of load		Capacity balance:	25 °F
Supplemental heat required:	0	Btuh			Economic balance:	-99 °F

Backup equipment type:	Elec strip					
Manufacturer:	Smart Comfort		Model:	M46056-FDJ-TZ-I		
Actual airflow:	780	cfm				
Output capacity:	10.0	kW	154% of load	Temp. rise:	41	°F

Meets all requirements of ACCA Manual S.

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Building Analysis
Entire House
Clayton Homes

Job: M46056-FDJ-TZ-II
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

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Project Information

For: M46056-FDJ-TZ-II, GILES

Design Conditions

Location:
TN-SG25
Elevation: 981 ft
Latitude: 36 °N

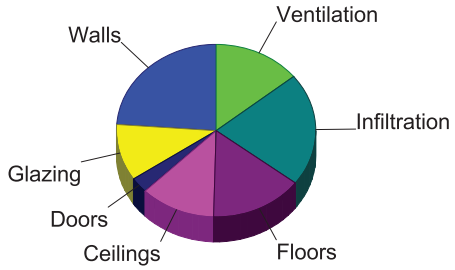
Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	21	91
Daily range (°F)	-	19 (M)
Wet bulb (°F)	-	74
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	70	75
Design TD (°F)	49	16
Relative humidity (%)	50	50
Moisture difference (gr/lb)	43.8	35.8

Infiltration:	
Method	Simplified
Construction quality	Average
Fireplaces	0

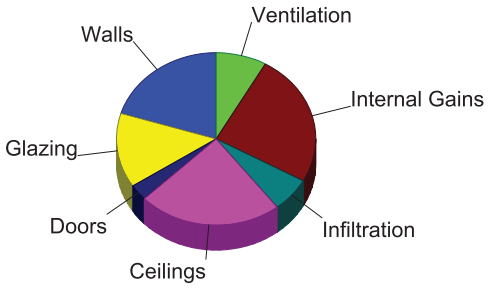
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	4.0	5272	23.8
Glazing	14.8	2349	10.6
Doors	15.3	641	2.9
Ceilings	1.5	2706	12.2
Floors	1.9	3318	15.0
Infiltration	3.1	4696	21.2
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		3134	14.2
Adjustments		0	
Total		**22116**	**100.0**



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	1.9	2449	20.2
Glazing	10.7	1701	14.0
Doors	8.6	363	3.0
Ceilings	1.6	2825	23.3
Floors	0	0	0
Infiltration	0.5	784	6.5
Ducts		0	0
Ventilation		994	8.2
Internal gains		3020	24.9
Blower		0	0
Adjustments		0	
Total		**12135**	**100.0**



Latent Cooling Load = 3321 Btuh
Overall U-value = 0.057 Btuh/ft²-°F, Window / Floor Area = 9.0 %

Data entries checked.

wrightsoft

Component Constructions
Entire House
Clayton Homes

Job: M46056-FDJ-TZ-II
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

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Federal Manufactured Home Construction And Safety Standards 6

Project Information

For: M46056-FDJ-TZ-II, GILES

Design Conditions

Location:
TN-SG25
Elevation: 981 ft
Latitude: 36°N

Outdoor:	Heating	Cooling
Dry bulb (°F)	21	91
Daily range (°F)	-	19 (M)
Wet bulb (°F)	-	74
Wind speed (mph)	15.0	7.5

Indoor:	Heating	Cooling
Indoor temperature (°F)	70	75
Design TD (°F)	49	16
Relative humidity (%)	50	50
Moisture difference (gr/lb)	43.8	35.8

Infiltration:

Method	Simplified
Construction quality	Average
Fireplaces	0

Construction descriptions	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
CMH - DW - R-13 Wall - THP502-DOE: Double Wide - R-13 Insulation THP502 2x4 Wall-DOE	n	460	0.082	13.0	4.03	1857	1.87	863
	e	208	0.082	13.0	4.03	839	1.87	390
	s	431	0.082	13.0	4.03	1737	1.87	807
	w	208	0.082	13.0	4.03	839	1.87	390
	all	1307	0.082	13.0	4.03	5272	1.87	2449
Partitions								
(none)								
Windows								
Clayton - Thermopane Low-E DOE: Clayton-Thermopane Low-E DOE; 50% blinds 45°, medium; 50% outdoor insect screen; 6.67 ft head ht	n	67	0.300	0	14.8	984	7.37	491
	s	93	0.300	0	14.8	1365	10.3	956
	all	159	0.300	0	14.8	2349	9.09	1447
Doors								
CMH - Standard Door: CMH - Standard Door - Solid no storm	n	21	0.320	0	15.7	331	8.91	187
	s	21	0.300	0	14.8	310	8.35	175
	all	42	0.300	0	15.3	641	8.63	363
Ceilings								
CMH-DW-158 BOX R38 - THP1244 - DOE: CMH-DW-158 BOX R38-THP1244 - DOE		1775	0.031	38.0	1.53	2706	1.59	2825
Floors								
CMH-DW-158- R33-THP469-DOE: CMH-DW-158-R33-THP469-DOE		1775	0.038	33.0	1.87	3318	0	0

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Project Summary
Entire House
Clayton Homes

Job: M46056-FDJ-TZ-II
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

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Federal Manufactured Home Construction And Safety Standards 6

Project Information

For: M46056-FDJ-TZ-II, GILES

Notes: DUCT CAPAPCITY-26000 BTUHS

Design Information

Weather: TN-SG25

Winter Design Conditions

Outside db	21	°F
Inside db	70	°F
Design TD	49	°F

Summer Design Conditions

Outside db	91	°F
Inside db	75	°F
Design TD	16	°F
Daily range	M	
Relative humidity	50	%
Moisture difference	36	gr/lb

Heating Summary

Structure	18982	Btuh
Ducts	0	Btuh
Central vent (60 cfm) Outside air	3134	Btuh
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	22116	Btuh

Sensible Cooling Equipment Load Sizing

Structure	11141	Btuh
Ducts	0	Btuh
Central vent (60 cfm) Outside air	994	Btuh
Blower	0	Btuh
Use manufacturer's data	n	
Rate/swing multiplier	0.96	
Equipment sensible load	11601	Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

	Heating	Cooling
Area (ft²)	1775	1775
Volume (ft³)	14196	14196
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	90	47

Latent Cooling Equipment Load Sizing

Structure	1911	Btuh
Ducts	0	Btuh
Central vent (60 cfm) Outside air	1409	Btuh
Equipment latent load	3321	Btuh
Equipment Total Load (Sen+Lat)	14922	Btuh
Req. total capacity at 0.70 SHR	1.4	ton

Heating Equipment Summary

Make	Smart Comfort
Trade	PERFORMANCE 15 SEER2 HP
Model	N4H5S24*K*AAA*
AHRI ref	0

Efficiency	7.5 HSPF2	
Heating input		
Heating output	22800	Btuh @ 47°F
Temperature rise	28	°F
Actual air flow	780	cfm
Air flow factor	0.041	cfm/Btuh
Static pressure	0.30	in H2O

Space thermostat
Capacity balance point = 25 °F

Backup: Smart Comfort M46056-FDJ-TZ-I
Input = 10 kW, Output = 34121 Btuh, 100 AFUE

Cooling Equipment Summary

Make	Smart Comfort
Trade	PERFORMANCE 15 SEER2 HP
Cond	N4H5S24*K*AAA*
Coil	M46056-FDJ-TZ-I
AHRI ref	0

Efficiency	12.0 EER2,15.2 SEER2	
Sensible cooling	16380	Btuh
Latent cooling	7020	Btuh
Total cooling	23400	Btuh
Actual air flow	780	cfm
Air flow factor	0.070	cfm/Btuh
Static pressure	0.30	in H2O
Load sensible heat ratio	0.79	

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

Duct System Summary
Entire House
Clayton Homes

Job: M46056-FDJ-TZ-II
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

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Project Information

For: M46056-FDJ-TZ-II, GILES

	Heating	Cooling
External static pressure	0.30 in H2O	0.30 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0.30 in H2O	0.30 in H2O
Supply / return available pressure	0.150 / 0.150 in H2O	0.150 / 0.150 in H2O
Lowest friction rate	0.209 in/100ft	0.209 in/100ft
Actual air flow	780 cfm	780 cfm
Total effective length (TEL)	143 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
BEDROOM 2	h 922	100	65	0	0	0x 0	VlFx	0	0	
BEDROOM 3	h 1782	73	73	0.214	6.0	0x 0	VlFx	40.2	100.0	st6
BEDROOM 4	h 2069	85	78	0.209	6.0	0x 0	VlFx	43.2	100.0	st6
DINING	h 1281	53	37	0.769	5.0	0x 0	VlFx	4.0	35.0	st4
KITCHEN	c 2073	91	145	0.496	6.0	0x 0	VlFx	25.5	35.0	st4
LIVING ROOM	c 2329	115	163	0.241	7.0	0x 0	VlFx	24.7	100.0	st6
P-BATH	h 2117	87	56	0.438	5.0	0x 0	VlFx	33.5	35.0	st4
PRIMARY BEDROOM	c 1755	121	123	0.219	7.0	0x 0	VlFx	37.2	100.0	st5
UTILITY	h 1360	56	41	0.822	5.0	0x 0	VlFx	1.5	35.0	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
st2	Peak AVF	56	41	0.822	134	5.4	5 x 12	VinlFlx	
st4	Peak AVF	230	238	0.438	490	4.0	5 x 14	ShtMetl	
st5	Peak AVF	121	123	0.219	253	4.7	5 x 14	ShtMetl	st3
st6	Peak AVF	274	314	0.209	645	4.7	5 x 14	ShtMetl	st3
st3	Peak AVF	394	437	0.209	1048	5.4	5 x 12	VinlFlx	

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	0x 0	780	780	0	0	0	0	0x 0		VlFx	

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Manual S Compliance Report

Entire House

Clayton Homes

Job: M46056-FDJ-TZ-III
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

APPROVED HWC APPROVED

SEPT 19 2023

Federal Manufactured Home Construction And Safety Standards 6

Project Information

For: M46056-FDJ-TZ-III, GILES

Cooling Equipment

Design Conditions

Outdoor design DB:	87.6°F	Sensible gain:	10397 Btuh	Entering coil DB:	76.0°F
Outdoor design WB:	71.2°F	Latent gain:	2696 Btuh	Entering coil WB:	63.0°F
Indoor design DB:	75.0°F	Total gain:	13093 Btuh		
Indoor RH:	50%	Estimated airflow:	780 cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type: Split ASHP
Manufacturer: Smart Comfort Model: N4H5S24*K*AAA*+M46056-FDJ-TZ-I

Actual airflow:	780	cfm		
Sensible capacity:	16380	Btuh	158% of load	
Latent capacity:	7020	Btuh	260% of load	
Total capacity:	23400	Btuh	179% of load	SHR: 70%

Heating Equipment

Design Conditions

Outdoor design DB:	15.8°F	Heat loss:	22095 Btuh	Entering coil DB:	65.8°F
Indoor design DB:	70.0°F				

Manufacturer's Performance Data at Actual Design Conditions

Equipment type: Split ASHP
Manufacturer: Smart Comfort Model: N4H5S24*K*AAA*+M46056-FDJ-TZ-I

Actual airflow:	780	cfm			
Output capacity:	22800	Btuh	103% of load	Capacity balance:	22 °F
Supplemental heat required:	0	Btuh		Economic balance:	-99 °F

Backup equipment type: Elec strip
Manufacturer: Smart Comfort Model: M46056-FDJ-TZ-I

Actual airflow:	780	cfm			
Output capacity:	10.0	kW	154% of load	Temp. rise:	43 °F

Meets all requirements of ACCA Manual S.

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Building Analysis
Entire House
Clayton Homes

Job: M46056-FDJ-TZ-III
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

Project Information

For: M46056-FDJ-TZ-III, GILES

Design Conditions

Location:
VA-SG22
Elevation: 2133 ft
Latitude: 37°N

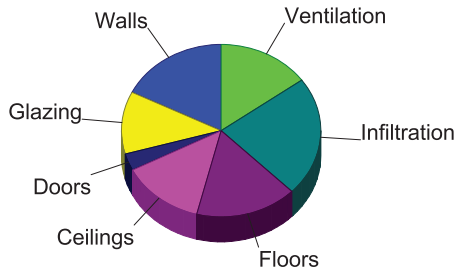
Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	16	88
Daily range (°F)	-	20 (M)
Wet bulb (°F)	-	71
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	70	75
Design TD (°F)	54	13
Relative humidity (%)	50	50
Moisture difference (gr/lb)	48.7	28.1

Infiltration:	
Method	Simplified
Construction quality	Average
Fireplaces	0

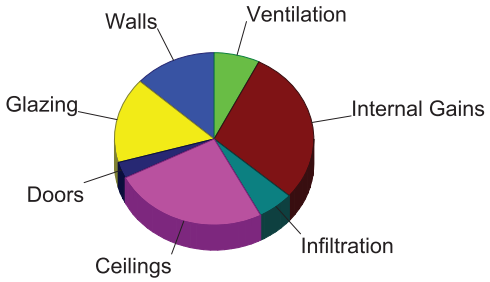
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.0	3896	17.6
Glazing	16.3	2588	11.7
Doors	16.8	706	3.2
Ceilings	1.7	2982	13.5
Floors	2.1	3655	16.5
Infiltration	3.3	4960	22.4
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		3310	15.0
Adjustments		0	
Total		**22095**	**100.0**



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	1.1	1387	13.3
Glazing	10.5	1668	16.0
Doors	7.5	316	3.0
Ceilings	1.5	2629	25.3
Floors	0	0	0
Infiltration	0.4	607	5.8
Ducts		0	0
Ventilation		769	7.4
Internal gains		3020	29.0
Blower		0	0
Adjustments		0	
Total		**10397**	**100.0**



Latent Cooling Load = 2696 Btuh
Overall U-value = 0.050 Btuh/ft²-°F, Window / Floor Area = 9.0 %

Data entries checked.

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Component Constructions
Entire House
Clayton Homes

Job: M46056-FDJ-TZ-III
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

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Federal Manufactured Home Construction And Safety Standards 6

Project Information

For: M46056-FDJ-TZ-III, GILES

Design Conditions

Location:
VA-SG22
Elevation: 2133 ft
Latitude: 37°N

Outdoor:	Heating	Cooling
Dry bulb (°F)	16	88
Daily range (°F)	-	20 (M)
Wet bulb (°F)	-	71
Wind speed (mph)	15.0	7.5

Indoor:	Heating	Cooling
Indoor temperature (°F)	70	75
Design TD (°F)	54	13
Relative humidity (%)	50	50
Moisture difference (gr/lb)	48.7	28.1

Infiltration:

Method	Simplified
Construction quality	Average
Fireplaces	0

Construction descriptions	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
CMH - DW - R-21 Wall - THP510-DOE: Double Wide - R-22 Insulation THP510 2x6 Wall-DOE	n	460	0.055	21.0	2.98	1372	1.06	489
	e	208	0.055	21.0	2.98	620	1.06	221
	s	431	0.055	21.0	2.98	1283	1.06	457
	w	208	0.055	21.0	2.98	620	1.06	221
	all	1307	0.055	21.0	2.98	3896	1.06	1387
Partitions								
(none)								
Windows								
Clayton - Thermopane Low-E DOE: Clayton-Thermopane Low-E DOE; 50% blinds 45°, medium; 50% outdoor insect screen; 6.67 ft head ht	n	67	0.300	0	16.3	1084	6.52	434
	s	93	0.300	0	16.3	1504	9.83	910
	all	159	0.300	0	16.3	2588	8.44	1344
Doors								
CMH - Standard Door: CMH - Standard Door - Solid no storm	n	21	0.320	0	17.3	364	7.78	163
	s	21	0.300	0	16.3	341	7.29	153
	all	42	0.300	0	16.8	706	7.53	316
Ceilings								
CMH-DW-158 BOX R38 - THP1244 - DOE: CMH-DW-158 BOX R38-THP1244 - DOE		1775	0.031	38.0	1.68	2982	1.48	2629
Floors								
CMH-DW-158- R33-THP469-DOE: CMH-DW-158-R33-THP469-DOE		1775	0.038	33.0	2.06	3655	0	0

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Project Summary
Entire House
Clayton Homes

Job: M46056-FDJ-TZ-III
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

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Federal Manufactured Home Construction And Safety Standards 6

Project Information

For: M46056-FDJ-TZ-III, GILES

Notes: DUCT CAPAPCITY-26000 BTUHS

Design Information

Weather: VA-SG22

Winter Design Conditions

Outside db	16	°F
Inside db	70	°F
Design TD	54	°F

Summer Design Conditions

Outside db	88	°F
Inside db	75	°F
Design TD	13	°F
Daily range	M	
Relative humidity	50	%
Moisture difference	28	gr/lb

Heating Summary

Structure	18786	Btuh
Ducts	0	Btuh
Central vent (60 cfm)	3310	Btuh
Outside air		
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	22095	Btuh

Sensible Cooling Equipment Load Sizing

Structure	9628	Btuh
Ducts	0	Btuh
Central vent (60 cfm)	769	Btuh
Outside air		
Blower	0	Btuh
Use manufacturer's data	n	
Rate/swing multiplier	0.93	
Equipment sensible load	9628	Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

	Heating	Cooling
Area (ft²)	1775	1775
Volume (ft³)	14196	14196
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	90	47

Latent Cooling Equipment Load Sizing

Structure	1636	Btuh
Ducts	0	Btuh
Central vent (60 cfm)	1060	Btuh
Outside air		
Equipment latent load	2696	Btuh
Equipment Total Load (Sen+Lat)	12323	Btuh
Req. total capacity at 0.70 SHR	1.1	ton

Heating Equipment Summary

Make	Smart Comfort
Trade	PERFORMANCE 15 SEER2 HP
Model	N4H5S24*K*AAA*
AHRI ref	0

Efficiency	7.5 HSPF2	
Heating input		
Heating output	22800	Btuh @ 47°F
Temperature rise	29	°F
Actual air flow	780	cfm
Air flow factor	0.042	cfm/Btuh
Static pressure	0.30	in H2O

Space thermostat
Capacity balance point = 22 °F

Backup: Smart Comfort M46056-FDJ-TZ-I
Input = 10 kW, Output = 34121 Btuh, 100 AFUE

Cooling Equipment Summary

Make	Smart Comfort
Trade	PERFORMANCE 15 SEER2 HP
Cond	N4H5S24*K*AAA*
Coil	M46056-FDJ-TZ-I
AHRI ref	0

Efficiency	12.0 EER2,15.2 SEER2	
Sensible cooling	16380	Btuh
Latent cooling	7020	Btuh
Total cooling	23400	Btuh
Actual air flow	780	cfm
Air flow factor	0.081	cfm/Btuh
Static pressure	0.30	in H2O
Load sensible heat ratio	0.79	

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

Duct System Summary
Entire House
Clayton Homes

Job: M46056-FDJ-TZ-III
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

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Project Information

For: M46056-FDJ-TZ-III, GILES

	Heating	Cooling
External static pressure	0.30 in H2O	0.30 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0.30 in H2O	0.30 in H2O
Supply / return available pressure	0.150 / 0.150 in H2O	0.150 / 0.150 in H2O
Lowest friction rate	0.209 in/100ft	0.209 in/100ft
Actual air flow	780 cfm	780 cfm
Total effective length (TEL)	143 ft	

Supply Branch Detail Table

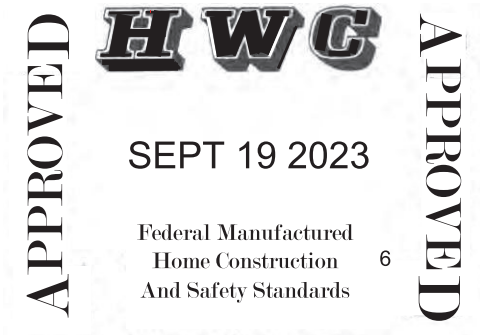
Name		Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
BEDROOM 2	h	694	97	56	0	0	0x 0	VlFx	0	0	
BEDROOM 3	c	914	74	74	0.214	6.0	0x 0	VlFx	40.2	100.0	st6
BEDROOM 4	h	1987	83	75	0.209	6.0	0x 0	VlFx	43.2	100.0	st6
DINING	h	1320	55	36	0.769	5.0	0x 0	VlFx	4.0	35.0	st4
KITCHEN	c	1898	91	154	0.496	6.0	0x 0	VlFx	25.5	35.0	st4
LIVING ROOM	c	2168	120	176	0.241	7.0	0x 0	VlFx	24.7	100.0	st6
P-BATH	h	2020	84	48	0.438	5.0	0x 0	VlFx	33.5	35.0	st4
PRIMARY BEDROOM	c	1514	119	123	0.219	7.0	0x 0	VlFx	37.2	100.0	st5
UTILITY	h	1388	58	39	0.822	5.0	0x 0	VlFx	1.5	35.0	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
st2	Peak AVF	58	39	0.822	138	5.4	5 x 12	VinlFlx	
st4	Peak AVF	230	238	0.438	489	4.0	5 x 14	ShtMetl	
st5	Peak AVF	119	123	0.219	252	4.7	5 x 14	ShtMetl	st3
st6	Peak AVF	277	325	0.209	668	4.7	5 x 14	ShtMetl	st3
st3	Peak AVF	396	447	0.209	1074	5.4	5 x 12	VinlFlx	

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	0x 0	780	780	0	0	0	0	0x 0		VlFx	



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Manual S Compliance Report

Entire House

Clayton Homes

Job: M46056-FDJ-TZ-I
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

APPROVED HWC APPROVED
SEPT 19 2023
Federal Manufactured Home Construction And Safety Standards 6

Project Information

For: M46056-FDJ-TZ-I, GILES

Cooling Equipment

Design Conditions

Outdoor design DB:	91.7°F	Sensible gain:	12527	Btuh	Entering coil DB:	76.3°F
Outdoor design WB:	73.9°F	Latent gain:	3285	Btuh	Entering coil WB:	63.4°F
Indoor design DB:	75.0°F	Total gain:	15811	Btuh		
Indoor RH:	50%	Estimated airflow:	780	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	Smart Comfort		Model:	N4H5S24*K*AAA*+M46056-FDJ-TZ-I	
Actual airflow:	780	cfm			
Sensible capacity:	16380	Btuh	131% of load		
Latent capacity:	7020	Btuh	214% of load		
Total capacity:	23400	Btuh	148% of load	SHR:	70%

Heating Equipment

Design Conditions

Outdoor design DB:	26.4°F	Heat loss:	20283	Btuh	Entering coil DB:	66.6°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP					
Manufacturer:	Smart Comfort		Model:	N4H5S24*K*AAA*+M46056-FDJ-TZ-I		
Actual airflow:	780	cfm				
Output capacity:	22800	Btuh	112% of load		Capacity balance:	26 °F
Supplemental heat required:	0	Btuh			Economic balance:	-99 °F

Backup equipment type:	Elec strip					
Manufacturer:	Smart Comfort		Model:	M46056-FDJ-TZ-I		
Actual airflow:	780	cfm				
Output capacity:	10.0	kW	168% of load		Temp. rise:	41 °F

Meets all requirements of ACCA Manual S.

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Building Analysis
Entire House
Clayton Homes

Job: M46056-FDJ-TZ-I
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

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SEPT 19 2023
Federal Manufactured Home Construction And Safety Standards 6

Project Information

For: M46056-FDJ-TZ-I, GILES

Design Conditions

Location:
Atlanta Municipal, GA, US
Elevation: 1027 ft
Latitude: 34 °N

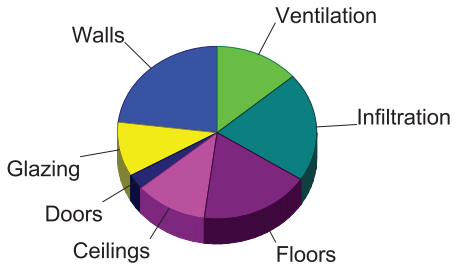
Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	26	92
Daily range (°F)	-	17 (M)
Wet bulb (°F)	-	74
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	70	75
Design TD (°F)	44	17
Relative humidity (%)	50	50
Moisture difference (gr/lb)	39.9	35.3

Infiltration:	
Method	Simplified
Construction quality	Average
Fireplaces	0

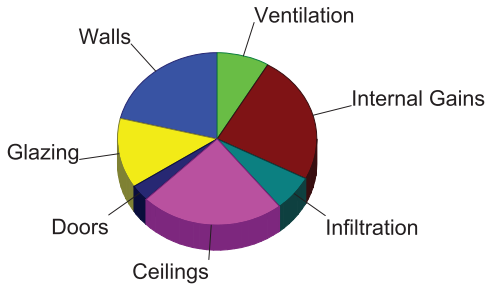
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.6	4672	23.0
Glazing	13.1	2082	10.3
Doors	13.5	568	2.8
Ceilings	1.4	2398	11.8
Floors	2.0	3636	17.9
Infiltration	2.8	4154	20.5
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		2772	13.7
Adjustments		0	
Total		**20283**	**100.0**



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	2.0	2647	21.1
Glazing	10.3	1647	13.1
Doors	9.2	387	3.1
Ceilings	1.6	2927	23.4
Floors	0	0	0
Infiltration	0.6	837	6.7
Ducts		0	0
Ventilation		1062	8.5
Internal gains		3020	24.1
Blower		0	0
Adjustments		0	
Total		**12527**	**100.0**



Latent Cooling Load = 3285 Btuh
Overall U-value = 0.061 Btuh/ft²-°F, Window / Floor Area = 9.0 %

Data entries checked.

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Component Constructions
Entire House
Clayton Homes

Job: M46056-FDJ-TZ-I
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

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Federal Manufactured Home Construction And Safety Standards 6
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Project Information

For: M46056-FDJ-TZ-I, GILES

Design Conditions

Location:
Atlanta Municipal, GA, US
Elevation: 1027 ft
Latitude: 34 °N

Outdoor:	Heating	Cooling
Dry bulb (°F)	26	92
Daily range (°F)	-	17 (M)
Wet bulb (°F)	-	74
Wind speed (mph)	15.0	7.5

Indoor:	Heating	Cooling
Indoor temperature (°F)	70	75
Design TD (°F)	44	17
Relative humidity (%)	50	50
Moisture difference (gr/lb)	39.9	35.3

Infiltration:

Method	Simplified
Construction quality	Average
Fireplaces	0

Construction descriptions	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
CMH - DW - R-13 Wall - THP502-DOE: Double Wide - R-13 Insulation THP502 2x4 Wall-DOE	n	460	0.082	13.0	3.58	1646	2.03	932
	e	208	0.082	13.0	3.58	744	2.03	421
	s	431	0.082	13.0	3.58	1539	2.03	872
	w	208	0.082	13.0	3.58	744	2.03	421
	all	1307	0.082	13.0	3.58	4672	2.03	2647
Partitions								
(none)								
Windows								
Clayton - Thermopane Low-E DOE: Clayton-Thermopane Low-E DOE; 50% blinds 45°, medium; 50% outdoor insect screen; 6.67 ft head ht	n	67	0.300	0	13.1	872	7.72	515
	s	93	0.300	0	13.1	1210	10.1	939
	all	159	0.300	0	13.1	2082	9.13	1453
Doors								
CMH - Standard Door: CMH - Standard Door - Solid no storm	n	21	0.320	0	14.0	293	9.50	200
	s	21	0.300	0	13.1	275	8.91	187
	all	42	0.300	0	13.5	568	9.21	387
Ceilings								
CMH-DW-158 BOX R38 - THP1244 - DOE: CMH-DW-158 BOX R38-THP1244 - DOE		1775	0.031	38.0	1.35	2398	1.65	2927
Floors								
CMH-DW-158- R22-THP173-DOE: CMH-DW-158-R22-THP173-DOE		1775	0.047	22.0	2.05	3636	0	0

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Project Summary
Entire House
Clayton Homes

Job: M46056-FDJ-TZ-I
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

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SEPT 19 2023
Federal Manufactured Home Construction And Safety Standards 6

Project Information

For: M46056-FDJ-TZ-I, GILES

Notes: DUCT CAPAPCITY-26000 BTUHS

Design Information

Weather: Atlanta Municipal, GA, US

Winter Design Conditions

Outside db	26	°F
Inside db	70	°F
Design TD	44	°F

Summer Design Conditions

Outside db	92	°F
Inside db	75	°F
Design TD	17	°F
Daily range	M	
Relative humidity	50	%
Moisture difference	35	gr/lb

Heating Summary

Structure	17511	Btuh
Ducts	0	Btuh
Central vent (60 cfm)	2772	Btuh
Outside air		
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	20283	Btuh

Sensible Cooling Equipment Load Sizing

Structure	11465	Btuh
Ducts	0	Btuh
Central vent (60 cfm)	1062	Btuh
Outside air		
Blower	0	Btuh
Use manufacturer's data	n	
Rate/swing multiplier	0.97	
Equipment sensible load	12113	Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

	Heating	Cooling
Area (ft²)	1775	1775
Volume (ft³)	14196	14196
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	90	47

Latent Cooling Equipment Load Sizing

Structure	1896	Btuh
Ducts	0	Btuh
Central vent (60 cfm)	1389	Btuh
Outside air		
Equipment latent load	3285	Btuh
Equipment Total Load (Sen+Lat)	15398	Btuh
Req. total capacity at 0.70 SHR	1.4	ton

Heating Equipment Summary

Make	Smart Comfort
Trade	PERFORMANCE 15 SEER2 HP
Model	N4H5S24*K*AAA*
AHRI ref	0

Efficiency	7.5 HSPF2	
Heating input		
Heating output	22800	Btuh @ 47°F
Temperature rise	28	°F
Actual air flow	780	cfm
Air flow factor	0.045	cfm/Btuh
Static pressure	0.30	in H2O

Space thermostat
Capacity balance point = 26 °F

Backup: Smart Comfort M46056-FDJ-TZ-I
Input = 10 kW, Output = 34121 Btuh, 100 AFUE

Cooling Equipment Summary

Make	Smart Comfort
Trade	PERFORMANCE 15 SEER2 HP
Cond	N4H5S24*K*AAA*
Coil	M46056-FDJ-TZ-I
AHRI ref	0

Efficiency	12.0 EER2,15.2 SEER2	
Sensible cooling	16380	Btuh
Latent cooling	7020	Btuh
Total cooling	23400	Btuh
Actual air flow	780	cfm
Air flow factor	0.068	cfm/Btuh
Static pressure	0.30	in H2O
Load sensible heat ratio	0.79	

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

Duct System Summary
Entire House
Clayton Homes

Job: M46056-FDJ-TZ-I
Date: Sep 05, 2023
By:

5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

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Federal Manufactured Home Construction And Safety Standards 6

Project Information

For: M46056-FDJ-TZ-I, GILES

	Heating	Cooling
External static pressure	0.30 in H2O	0.30 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0.30 in H2O	0.30 in H2O
Supply / return available pressure	0.150 / 0.150 in H2O	0.150 / 0.150 in H2O
Lowest friction rate	0.209 in/100ft	0.209 in/100ft
Actual air flow	780 cfm	780 cfm
Total effective length (TEL)	143 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
BEDROOM 2	h 977	99	66	0	0	0x 0	VIFx	0	0	
BEDROOM 3	h 1660	74	72	0.214	6.0	0x 0	VIFx	40.2	100.0	st6
BEDROOM 4	h 1892	84	78	0.209	6.0	0x 0	VIFx	43.2	100.0	st6
DINING	h 1186	53	38	0.769	5.0	0x 0	VIFx	4.0	35.0	st4
KITCHEN	c 2119	92	144	0.496	6.0	0x 0	VIFx	25.5	35.0	st4
LIVING ROOM	c 2352	116	160	0.241	7.0	0x 0	VIFx	24.7	100.0	st6
P-BATH	h 1939	86	57	0.438	5.0	0x 0	VIFx	33.5	35.0	st4
PRIMARY BEDROOM	c 1794	120	122	0.219	7.0	0x 0	VIFx	37.2	100.0	st5
UTILITY	h 1261	56	42	0.822	5.0	0x 0	VIFx	1.5	35.0	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
st2	Peak AVF	56	42	0.822	135	5.4	5 x 12	VinlFlx	
st4	Peak AVF	231	240	0.438	493	4.0	5 x 14	ShtMetl	
st5	Peak AVF	120	122	0.219	251	4.7	5 x 14	ShtMetl	st3
st6	Peak AVF	274	310	0.209	638	4.7	5 x 14	ShtMetl	st3
st3	Peak AVF	394	432	0.209	1037	5.4	5 x 12	VinlFlx	

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	0x 0	780	780	0	0	0	0	0x 0		VlFx