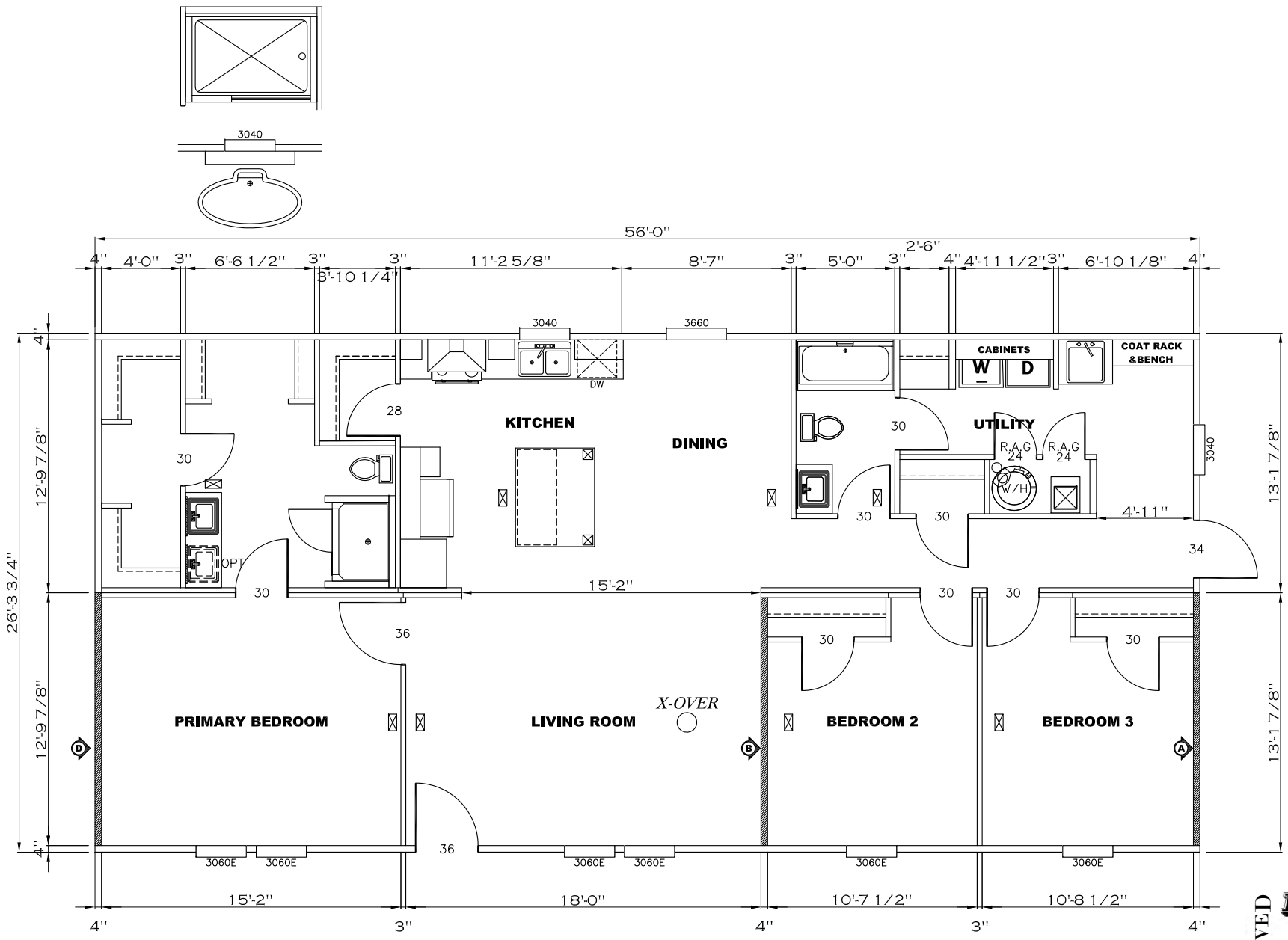


**GILES HOMES** Model #: 46EKC205CAH21 Drawing #: M46059-LEO-2X4-2X3  
409 S. BROAD ST., NEW HAVEN, TN 37863 Date: 30.22 | Scale: N/A  
Product Designer: HARVILLFD LEO\_28X56

ELEVATION REV\_A-7-1-22



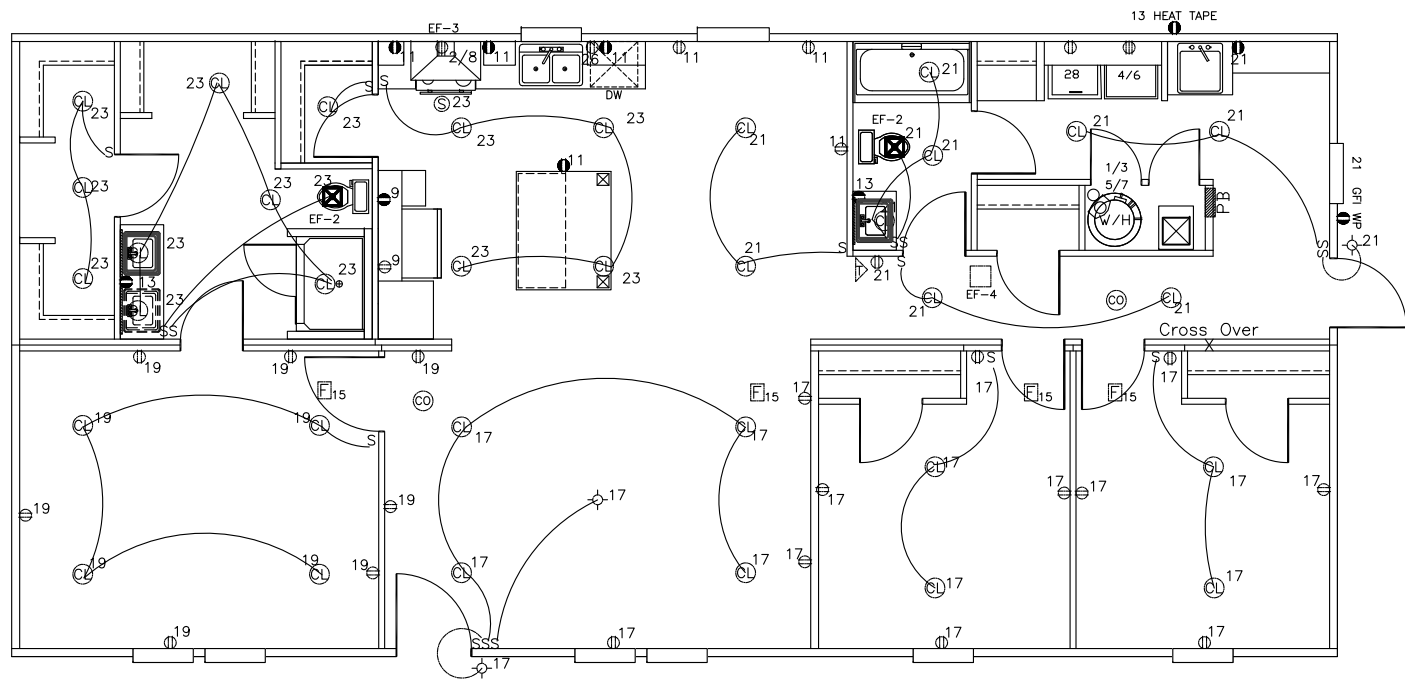
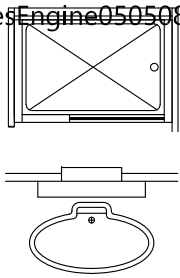
Wind Zone 1 Standard Roof							Wind Zone 2 Standard Roof						
(3/8" sheathing only with 15 gax 1.5" at 5'10" oc. (197 pfl) Chords: 2x4 SPF #3 Top Plate spliced w/ 2x4 MCP & 1x6 SPF Rail spliced w/ 12" glue block.							(3/8" sheathing only with 15 gax 1.5" at 5'10" oc. (197 pfl) Chords: 2x4 SPF #3 Top Plate spliced w/ 2.5x6 MCP & 2x4 SPF #3 Rail spliced w/ 12" glue block.						
Diaphragm Construction:	Shearwall Dist/ Hitch	Length	PLF	# of Joists	Lags	Notes	Diaphragm Construction:	Shearwall Dist/ Hitch	Length	PLF	# of Joists	Lags	Notes
	A	0'	128"	162	2	2/1		A	0'	128"	162	2	2/1
	B	56'	128"	162	2	2/1		B	22.1'	124"	425	2	4/1
	B	56'	128"	162	2	2/1		D	56'	Full	425	2	5/5

**APPROVED** **HWC** **APPROVED**  
 JUL 13 2023  
 Federal Manufactured Home Construction And Safety Standards

**A** IDENTIFIES SHEARWALL LOCATION

M46059-DOE-FP

<b>GILES HOMES</b> 405 S. BROAD ST, NEW TAZEWELL TN 37825 Product Designer: HARVILLEL	Model #: 46EXC28563AH21	Drawing #:
	Date: 6-30-22	Scale: N/A
LEO_28X56		M46059-LEO-2X4-2X3
FLOOR PLAN		REV_A-7-1-22



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.

**HWC**

JUL 13 2023

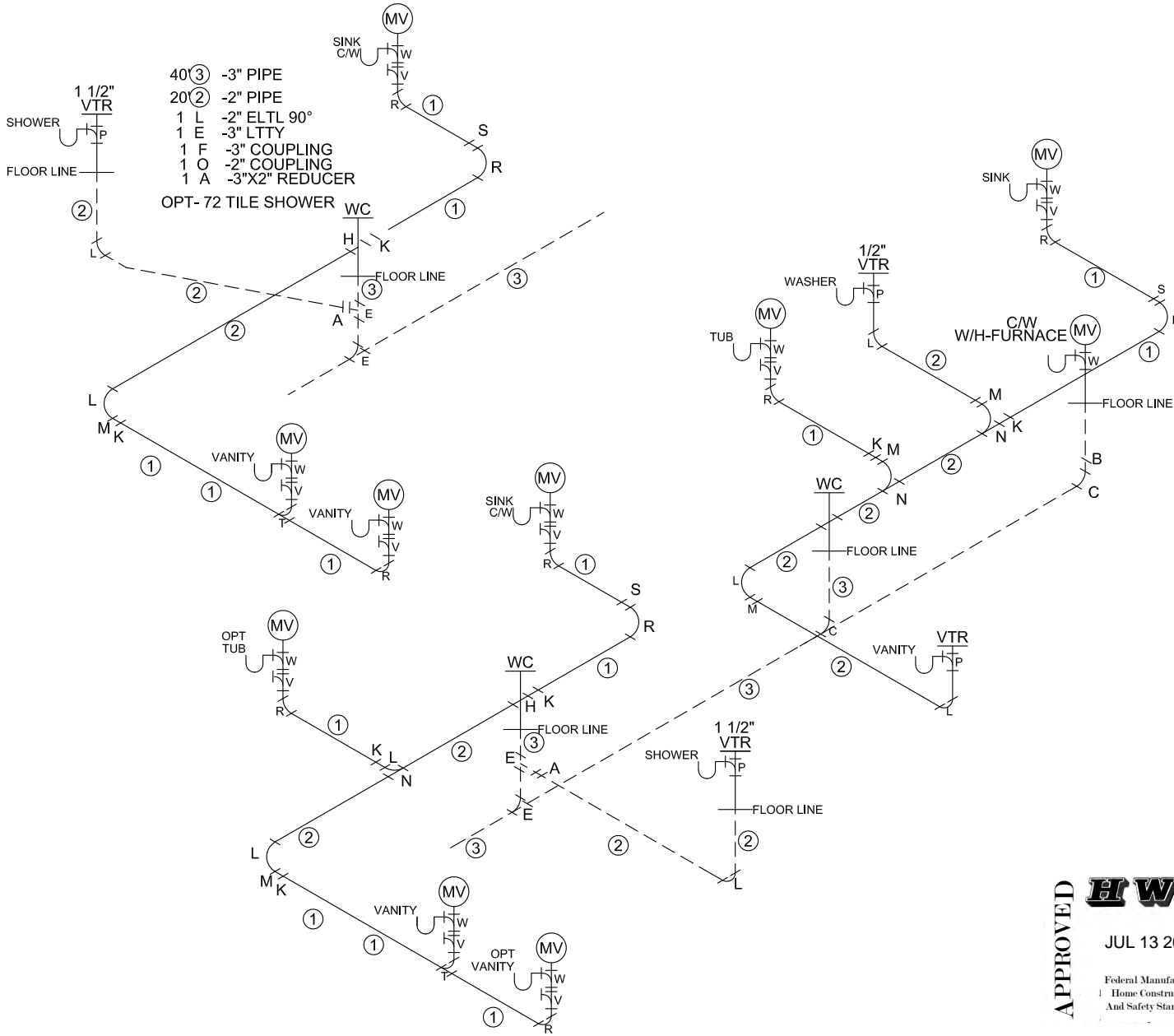
Federal Manufactured  
Home Construction  
And Safety Standards

APPROVED

APPROVED

M46059-DOE-EL

<b>GILES HOMES</b>		Model #: 46EXC28563AH21	Drawing #:
405 S. BROAD ST. NEW TAZEWELL TN 37828		Date: 6-30-22	Scale: N/A
Product Designer: HARVILLED		LEO_28X56	
ELECT		REV_A-7-1-22	



- 40(3) -3" PIPE
  - 20(2) -2" PIPE
  - 1 L -2" ELTL 90°
  - 1 E -3" LTTY
  - 1 F -3" COUPLING
  - 1 O -2" COUPLING
  - 1 A -3"X2" REDUCER
- OPT- 72 TILE SHOWER

LEGEND AND SET UP KIT.

- VTR - VENT THRU ROOF
- (MV) - MECHANICAL VENT
- 40(3) -3" PIPE
- 10(2) -2" PIPE
- 0(1) -1 1/2" PIPE
- 1 A -3"X2" REDUCER
- 0 B -3"X1 1/2" REDUCER
- 1 C -3" ELTL 90°
- 0 D -3" ELL 45°
- 2 E -3" LTTY
- 0 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"X1 1/2" REDUCER
- 1 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
- 0 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

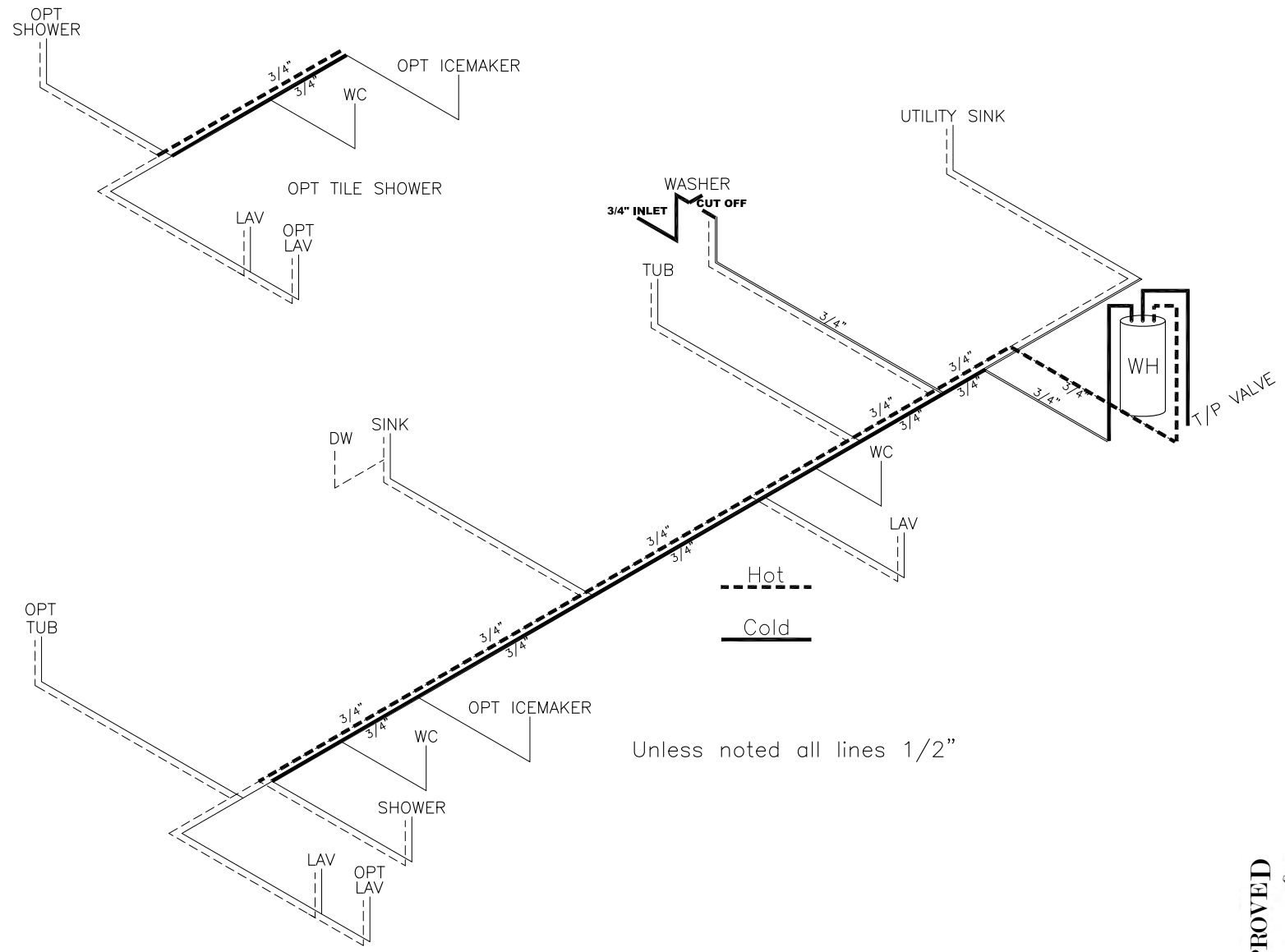
**APPROVED** **HWC** **APPROVED**

JUL 13 2023

Federal Manufactured  
Home Construction  
And Safety Standards

M46059-DOE-DWV

<b>GILES HOMES</b>		Model #: 46EXC28563AH21	Drawing #:
405 S. BROAD ST. NEW TAZEWELL TN 37828		Date: 6-30-22	Scale: N/A
Product Designer: HARVILLED		LEO_28X56	
DWV		REV_A-7-1-22	



Unless noted all lines 1/2"

**HWC**

JUL 13 2023

Federal Manufactured  
Home Construction  
And Safety Standards

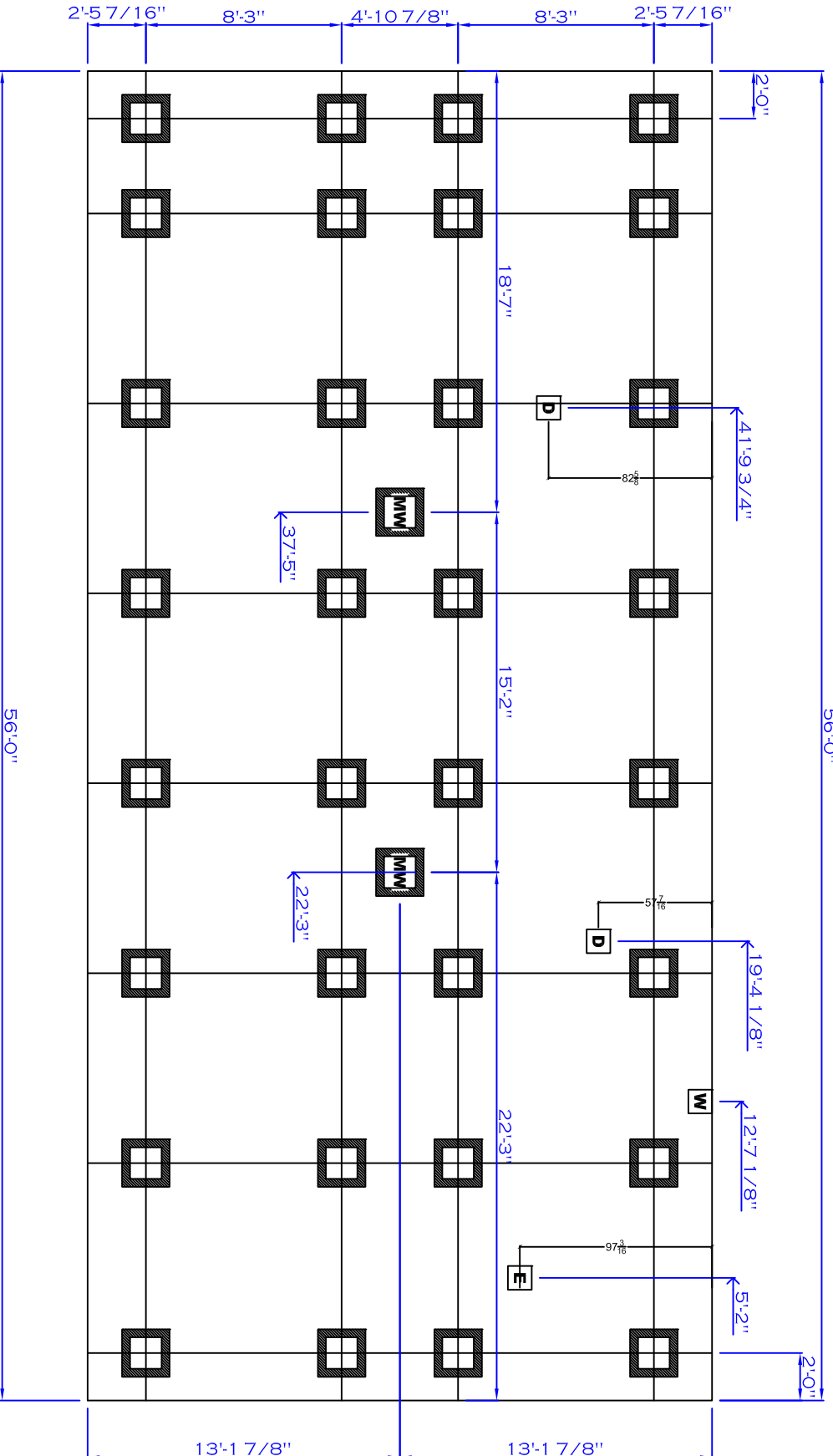
5

APPROVED

APPROVED

M46059-DOE-WL

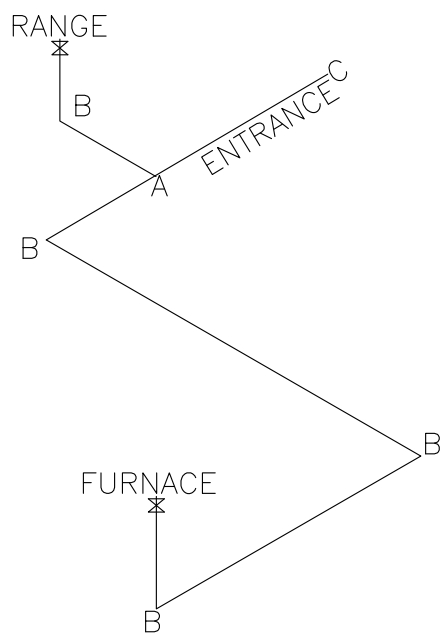
<b>GILES HOMES</b> 405 S. BROAD ST., NEW TAZEWELL TN 37828	Model #: 46EXC28563AH21	Drawing #:
	Date: 6-30-22	Scale: N/A
Product Designer: HARVILLED	LEO_28X5G	
WATER LINES		REV_A-7-1-22



\*THIS FOOTER DIAGRAM IS FOR STANDARD PRODUCT ONLY  
 \*FOR PIER SPACING REFER TO SET UP MANUAL

- MWM** MARRIAGE WALL PIER
- W** WATER INLET
- D** DRAIN
- E** ELECTRICAL DROP
- DP** DOOR PIER
- REGULAR PIER**

LEGEND		APPLIANCE	BTU'S	RATINGS	MAX. INPUT
SYM	FITTINGS	FURNACE	77,000		BTU'S
A	TEE				
B	90 ELL	RANGE	56,000		BTU'S
X	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



M46059-DOE-GL

<b>GILES HOMES</b> 405 S. BROAD ST., NEW TAZEWELL TN 37828	Model #: 46EXC28563AH21	Drawing #:
	Date: 6-30-22	Scale: N/A
Product Designer: HARVILLE	LEO_28X5G	M46059-LEO-2X4-2X3
GAS LINES		REV_A-7-1-22

**CMH Inc.**  
**SHEARWALL DESIGN - HUD**

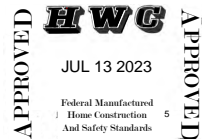
**Model # M46059-DOE**

Box Width =	158 "	Double wide	Minimum Joist Spacing 16 "
Box Length =	56 ft.	95.5" 12" MIN.IBEAM	No Offset Box
No Skylights			No Clerestory
No Porches			No Origami Dormer
Joist Size =	#2 spf 2x6	Lags 9Mx3"	No Sunken Floor
			No Parapet Roof

**Version R13.20**

<b>Wind Zone 1 Standard Roof</b>		(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'	128"	162	2	2/1	
B	56'	128"	162	2	2/1	
<b>Wind Zone 2 Standard Roof</b>		(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'	128"	162	2	2/1	
B	22.1'	124"	425	2	4/1	
D	56'	Full	425	2	5/5	
		(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





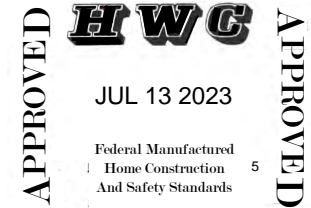
Model # **M46059-DOE**

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	226	3060 X3	29.7	13.14%		15.6	6.90%		Vent
Kitchen	141	3060 X2 3040	26.1	18.51%	X	13.7	9.72%	X	24
DINING	107	3660	12.2	11.40%	X	6.2	5.79%	X	24
Primary Bedroom	190	3060 x2	19.8	10.42%		10.4	5.47%		36
Bedroom 2	119	3060	9.9	8.32%		5.2	4.37%		24
Bedroom 3	120	3060	9.9	8.25%		5.2	4.33%		24
Primary Bath	90	3040	6.3	7.00%	X	3.3	3.67%	X	24
Bath 2	44				X			X	24
Utility	94	3040	6.3	6.70%		3.3	3.51%		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



Data on this submitted

By: Andy Cupp

MFG. Giles Industries

**REVISION**

**E. M46059-DOE . 2**

M46059-DOE-LV

# 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
--	---

### Instructions

- 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.
- 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 prohibited.**
- 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.
- Include no alternates, "or equal" phrases, or contradictory items. (Consideration of a request for acceptance of substitute materials or equipment is not thereby precluded.)
- Include signatures required at the end of this form.
- 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

### 4. Fireplaces

Type  solid fuel  gas-burning  circulator (make and size) \_\_\_\_\_ Ash dump and clean-out \_\_\_\_\_

Fireplace facing \_\_\_\_\_ lining \_\_\_\_\_ hearth \_\_\_\_\_ mantel \_\_\_\_\_

Additional information

**5. Exterior Walls**

Wood frame wood grade, and species \_\_\_\_\_  Corner bracing Building paper or felt \_\_\_\_\_

Sheathing \_\_\_\_\_ thickness \_\_\_\_\_ width \_\_\_\_\_  solid  spaced \_\_\_\_\_ o.c.  diagonal \_\_\_\_\_

Siding \_\_\_\_\_ grade \_\_\_\_\_ type \_\_\_\_\_ size \_\_\_\_\_ exposure \_\_\_\_\_ fastening \_\_\_\_\_

Shingles \_\_\_\_\_ grade \_\_\_\_\_ type \_\_\_\_\_ size \_\_\_\_\_ exposure \_\_\_\_\_ fastening \_\_\_\_\_

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 \_\_\_\_\_ other \_\_\_\_\_ bridging \_\_\_\_\_ anchors \_\_\_\_\_

Concrete slab  basement floor  first floor  ground supported  self-supporting mix \_\_\_\_\_ thickness \_\_\_\_\_

reinforcing \_\_\_\_\_ insulation \_\_\_\_\_ membrane \_\_\_\_\_

Fill under slab material \_\_\_\_\_ thickness \_\_\_\_\_

Additional information \_\_\_\_\_

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

Material grade and species \_\_\_\_\_ size \_\_\_\_\_ type \_\_\_\_\_

Laid  first floor  second floor  attic \_\_\_\_\_ sq. ft.  diagonal  right angles

Additional information \_\_\_\_\_

**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 \_\_\_\_\_ size and spacing \_\_\_\_\_ Other \_\_\_\_\_

Additional information \_\_\_\_\_

**10. Ceiling Framing**

Joists wood, grade, and species \_\_\_\_\_ Other \_\_\_\_\_ Bridging \_\_\_\_\_

Additional information \_\_\_\_\_

**11. Roof Framing**

Rafters wood, grade, and species \_\_\_\_\_ Roof trusses (see detail) grade and species \_\_\_\_\_

Additional information \_\_\_\_\_

**12. Roofing**

Sheathing wood, grade, and species \_\_\_\_\_  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 \_\_\_\_\_ 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 \_\_\_\_\_ material \_\_\_\_\_ thickness \_\_\_\_\_  
Door trim type \_\_\_\_\_ material \_\_\_\_\_ Base type \_\_\_\_\_ material \_\_\_\_\_ size \_\_\_\_\_  
Finish doors \_\_\_\_\_ trim \_\_\_\_\_  
Other trim (item, type and location) \_\_\_\_\_  
Additional information \_\_\_\_\_

**17. Windows**

Windows type \_\_\_\_\_ 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 \_\_\_\_\_ 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 \_\_\_\_\_ 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)**

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

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

Additional information \_\_\_\_\_

**22. Plumbing**

Fixture	Number	Location	Make	MFR's Fixture Identification No.	Size	Color
Sink						
Lavatory						
Water closet						
Bathtub						
Shower over tub						
Stall shower						
Laundry trays						

Bathroom accessories  Recessed material \_\_\_\_\_ number \_\_\_\_\_  Attached material \_\_\_\_\_ number \_\_\_\_\_

Additional information \_\_\_\_\_

Curtain rod  Door  Shower pan material \_\_\_\_\_ \* (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 \_\_\_\_\_ House sewer (outside)  cast iron  tile  other \_\_\_\_\_

Water piping  galvanized steel  copper tubing  other \_\_\_\_\_ Sill cocks, number \_\_\_\_\_

Domestic water heater type \_\_\_\_\_ make and model \_\_\_\_\_ heating capacity \_\_\_\_\_ gph. 100° rise.

Storage tank material \_\_\_\_\_ capacity \_\_\_\_\_ 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 \_\_\_\_\_  
 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 \_\_\_\_\_

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  liq. pet. gas  electric  other \_\_\_\_\_ storage capacity \_\_\_\_\_

Additional information \_\_\_\_\_

Firing equipment furnished separately  Gas burner, conversion type  Stoker hopper feed  bin 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  knob and tube  other \_\_\_\_\_  
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			
Ceiling			
Wall			
Floor			

**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) \_\_\_\_\_ Signature \_\_\_\_\_

Signature \_\_\_\_\_

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

## Project Information

For: M46059-FDJ-TZ-I, GILES



## Cooling Equipment

### Design Conditions

Outdoor design DB:	91.7°F	Sensible gain:	15306 Btuh	Entering coil DB:	77.6°F
Outdoor design WB:	73.9°F	Latent gain:	5675 Btuh	Entering coil WB:	64.4°F
Indoor design DB:	75.0°F	Total gain:	20981 Btuh		
Indoor RH:	50%	Estimated airflow:	593 cfm		

### Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split AC				
Manufacturer:	Smart Comfort	Model:	R4A518GKB+FED002410++NADA43601CK		
Actual airflow:	593 cfm				
Sensible capacity:	18676 Btuh		122% of load		
Latent capacity:	4732 Btuh		83% of load		
Total capacity:	23409 Btuh		112% of load	SHR:	80%

## Heating Equipment

### Design Conditions

Outdoor design DB:	26.4°F	Heat loss:	20871 Btuh	Entering coil DB:	63.3°F
Indoor design DB:	70.0°F				

### Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Elec furnace				
Manufacturer:	Smart Comfort	Model:	FED002410++NADA43601		
Actual airflow:	593 cfm				
Output capacity:	0 Btuh		0% of load	Temp. rise:	0 °F

Meets all requirements of ACCA Manual S.



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

**Project Information**

For: M46059-FDJ-TZ-I, GILES

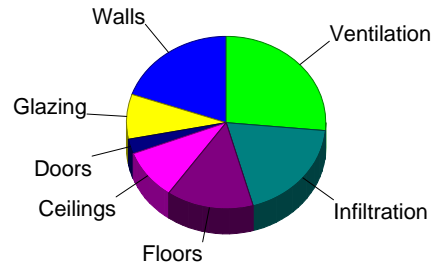


**Design Conditions**

<b>Location:</b>		<b>Indoor:</b>		<b>Heating</b>	<b>Cooling</b>
Atlanta Municipal, GA, US		Indoor temperature (°F)		70	75
Elevation: 1027 ft		Design TD (°F)		44	17
Latitude: 34°N		Relative humidity (%)		50	50
		Moisture difference (gr/lb)		39.9	35.3
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>	<b>Infiltration:</b>		
Dry bulb (°F)	26	92	Method	Simplified	
Daily range (°F)	-	17 ( M )	Construction quality	Average	
Wet bulb (°F)	-	74	Fireplaces	0	
Wind speed (mph)	15.0	7.5			

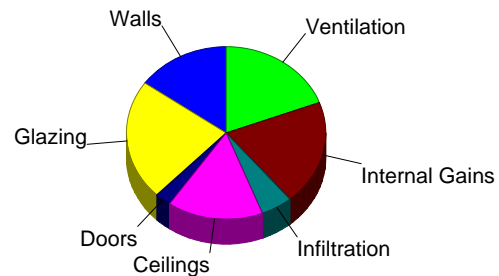
**Heating**

Component	Btuh/ft²	Btuh	% of load
Walls	3.6	4101	19.6
Glazing	15.3	1755	8.4
Doors	14.0	586	2.8
Ceilings	1.4	1950	9.3
Floors	2.0	2957	14.2
Infiltration	3.1	4001	19.2
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		5522	26.5
Adjustments		0	0
<b>Total</b>		<b>20871</b>	<b>100.0</b>



**Cooling**

Component	Btuh/ft²	Btuh	% of load
Walls	2.0	2323	15.2
Glazing	30.1	3458	22.6
Doors	9.5	399	2.6
Ceilings	1.6	2380	15.5
Floors	0	0	0
Infiltration	0.6	783	5.1
Ducts		0	0
Ventilation		2943	19.2
Internal gains		3020	19.7
Blower		0	0
Adjustments		0	0
<b>Total</b>		<b>15306</b>	<b>100.0</b>



Latent Cooling Load = 5675 Btuh  
Overall U-value = 0.062 Btuh/ft²·°F, Window / Floor Area = 8.0 %

Data entries checked.



**Component Constructions**  
**Entire House**  
**Clayton Homes**

Job: M46059-FDJ-TZ-I  
Date: Jul 12, 2023  
By:

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

**Project Information**

For: M46059-FDJ-TZ-I, GILES



**Design Conditions**

<b>Location:</b> Atlanta Municipal, GA, US Elevation: 1027 ft Latitude: 34°N			<b>Indoor:</b> Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)	<b>Heating</b> 70 44 50 39.9	<b>Cooling</b> 75 17 50 35.3
<b>Outdoor:</b> Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	<b>Heating</b> 26 - - 15.0	<b>Cooling</b> 92 17 ( M ) 74 7.5	<b>Infiltration:</b> Method Construction quality Fireplaces	Simplified Average 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
<b>Walls</b>								
CMH - SW - R-13 Wall - THP502-DOE: Single Wide - R-13 Insulation	n	208	0.082	13.0	3.58	744	2.03	421
THP502 2x4 Wall-DOE	e	412	0.082	13.0	3.58	1474	2.03	835
	s	179	0.082	13.0	3.58	639	2.03	362
	w	348	0.082	13.0	3.58	1244	2.03	705
	all	1147	0.082	13.0	3.58	4101	2.03	2323

**Partitions**  
(none)

**Windows**

Clayton - Thermopane Low-E: Clayton - Thermopane Low-E; 50% blinds 45°, medium; 50% outdoor insect screen; 6.67 ft head ht	e	32	0.350	0	15.3	483	26.3	832
	s	8	0.350	0	15.3	127	12.1	101
	w	75	0.350	0	15.3	1145	26.3	1971
	all	115	0.350	0	15.3	1755	25.3	2904

**Doors**

CMH - Standard Door: CMH - Standard Door - Solid no storm	s	21	0.320	0	14.0	293	9.50	200
	w	21	0.320	0	14.0	293	9.50	200
	all	42	0.320	0	14.0	586	9.50	399

**Ceilings**

CMH-DW-158 BOX R38 - THP1244 - DOE: CMH-DW-158 BOX R38-THP1244 - DOE		1443	0.031	38.0	1.35	1950	1.65	2380
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**Floors**

CMH-DW-158- R22-THP173-DOE: CMH-DW-158-R22-THP173-DOE		1443	0.047	22.0	2.05	2957	0	0
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5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

## Project Information

For: M46059-FDJ-TZ-I, GILES

Notes: DUCT CAPACITY 25566 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	16713 Btuh
Ducts	0 Btuh
Central vent (90 cfm)	4159 Btuh
Outside air	
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	20871 Btuh

### Sensible Cooling Equipment Load Sizing

Structure	13713 Btuh
Ducts	0 Btuh
Central vent (90 cfm)	1593 Btuh
Outside air	
Blower	0 Btuh
Use manufacturer's data	n
Rate/swing multiplier	0.97
Equipment sensible load	14801 Btuh

### Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

### Latent Cooling Equipment Load Sizing

Structure	3591 Btuh
Ducts	0 Btuh
Central vent (90 cfm)	2084 Btuh
Outside air	
Equipment latent load	5675 Btuh
<b>Equipment Total Load (Sen+Lat)</b>	<b>20476 Btuh</b>
Req. total capacity at 0.70 SHR	1.8 ton

	Heating	Cooling
Area (ft <sup>2</sup> )	1443	1443
Volume (ft <sup>3</sup> )	11544	11544
Air changes/hour	0.45	0.23
Equiv. AVF (cfm)	87	44

### Heating Equipment Summary

Make	Smart Comfort
Trade	
Model	FED002410++NADA43601
AHRI ref	
Efficiency	100 AFUE
Heating input	10.0 kW
Heating output	0 Btuh
Temperature rise	0 °F
Actual air flow	593 cfm
Air flow factor	0.036 cfm/Btuh
Static pressure	0.30 in H2O
Space thermostat	

### Cooling Equipment Summary

Make	Smart Comfort
Trade	SMART COMFORT
Cond	R4A518GKB
Coil	FED002410++NADA43601CK
AHRI ref	203358045
Efficiency	12.2 EER, 14 SEER
Sensible cooling	12460 Btuh
Latent cooling	5340 Btuh
Total cooling	17800 Btuh
Actual air flow	593 cfm
Air flow factor	0.043 cfm/Btuh
Static pressure	0.30 in H2O
Load sensible heat ratio	0.73

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



# Duct System Summary

## Entire House

### Clayton Homes

Job: M46059-FDJ-TZ-I  
 Date: Jul 12, 2023  
 By:

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

### Project Information

For: M46059-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	0.217 in/100ft	0.217 in/100ft
Actual air flow	593 cfm	593 cfm
Total effective length (TEL)	138 ft	

### Supply Branch Detail Table

Name	Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
BATH	h 4365	155	112	0.690	6.0	0x0	VIFx	8.5	35.0	st2
BED 2	c 1116	43	48	0.237	5.0	0x0	VIFx	26.7	100.0	st4
BED 3	h 1908	68	59	0.217	5.0	0x0	VIFx	38.2	100.0	st4
DINING	h 1051	37	36	0.619	5.0	0x0	VIFx	13.5	35.0	st2
KITCHEN	c 1825	41	79	0.480	5.0	0x0	VIFx	27.5	35.0	st2
LIVING ROOM	c 2651	82	115	0.224	6.0	0x0	VIFx	33.7	100.0	st3
P-BATH	h 2249	80	48	0.390	5.0	0x0	VIFx	42.0	35.0	st2
P-BED	c 2209	87	96	0.217	6.0	0x0	VIFx	38.2	100.0	st3

### Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st3	Peak AVF	169	210	0.217	433	4.2	5 x 14	ShtMetl	st1
st4	Peak AVF	111	108	0.217	228	4.2	5 x 14	ShtMetl	st1
st2	Peak AVF	314	275	0.390	645	4.4	5 x 14	ShtMetl	
st1	Peak AVF	280	318	0.217	763	4.8	5 x 12	VinIFlx	

## Return Branch Detail Table

Name	Grille Size (in)	Htg (cfm)	Clg (cfm)	TEL (ft)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Stud/Joist Opening (in)	Duct Matl	Trunk
rb1	0x0	593	593	0	0	0	0	0x 0		VIFx	





**Manual S Compliance Report**  
**Entire House**  
**Clayton Homes**

Job: M46059-FDJ-TZ-II  
 Date: Jul 12, 2023  
 By:

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

**Project Information**

For: M46059-FDJ-TZ-II, GILES



**Cooling Equipment**

**Design Conditions**

Outdoor design DB:	92.6°F	Sensible gain:	15546 Btuh	Entering coil DB:	77.7°F
Outdoor design WB:	74.3°F	Latent gain:	5805 Btuh	Entering coil WB:	64.5°F
Indoor design DB:	75.0°F	Total gain:	21351 Btuh		
Indoor RH:	50%	Estimated airflow:	593 cfm		

**Manufacturer's Performance Data at Actual Design Conditions**

Equipment type:	Split AC			
Manufacturer:	Smart Comfort	Model:	R4A518GKB+FED002410++NADA43601CK	
Actual airflow:	593 cfm			
Sensible capacity:	18676 Btuh		120% of load	
Latent capacity:	4732 Btuh		82% of load	
Total capacity:	23409 Btuh		110% of load	SHR: 80%

**Heating Equipment**

**Design Conditions**

Outdoor design DB:	15.0°F	Heat loss:	25634 Btuh	Entering coil DB:	61.5°F
Indoor design DB:	70.0°F				

**Manufacturer's Performance Data at Actual Design Conditions**

Equipment type:	Elec furnace			
Manufacturer:	Smart Comfort	Model:	FED002410++NADA43601	
Actual airflow:	593 cfm			
Output capacity:	0 Btuh		0% of load	Temp. rise: 0 °F

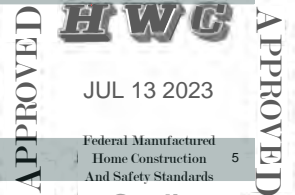
Meets all requirements of ACCA Manual S.



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

**Project Information**

For: M46059-FDJ-TZ-II, GILES



**Design Conditions**

**Location:**

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

**Outdoor:**

Dry bulb (°F)  
Daily range (°F)  
Wet bulb (°F)  
Wind speed (mph)

**Heating**

15  
-  
-  
15.0

**Cooling**

93  
19 ( M )  
74  
7.5

**Indoor:**

Indoor temperature (°F)  
Design TD (°F)  
Relative humidity (%)  
Moisture difference (gr/lb)

**Heating**

70  
55  
50  
47.0

**Cooling**

75  
18  
50  
36.2

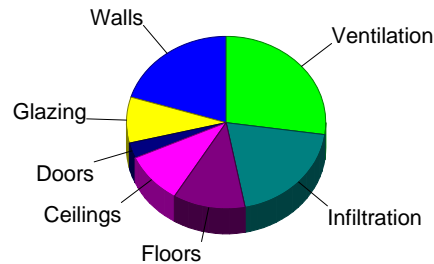
**Infiltration:**

Method  
Construction quality  
Fireplaces

Simplified  
Average  
0

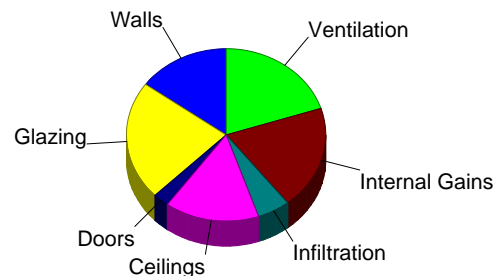
**Heating**

Component	Btuh/ft²	Btuh	% of load
Walls	4.5	5173	20.2
Glazing	19.3	2214	8.6
Doors	17.6	739	2.9
Ceilings	1.7	2460	9.6
Floors	2.1	3016	11.8
Infiltration	3.9	5055	19.7
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		6977	27.2
Adjustments		0	0
<b>Total</b>		<b>25634</b>	<b>100.0</b>



**Cooling**

Component	Btuh/ft²	Btuh	% of load
Walls	2.0	2328	15.0
Glazing	30.3	3482	22.4
Doors	9.5	400	2.6
Ceilings	1.7	2382	15.3
Floors	0	0	0
Infiltration	0.6	827	5.3
Ducts		0	0
Ventilation		3107	20.0
Internal gains		3020	19.4
Blower		0	0
Adjustments		0	0
<b>Total</b>		<b>15546</b>	<b>100.0</b>



Latent Cooling Load = 5805 Btuh  
Overall U-value = 0.059 Btuh/ft²·°F, Window / Floor Area = 8.0 %

Data entries checked.



**Component Constructions**  
**Entire House**  
**Clayton Homes**

Job: M46059-FDJ-TZ-II  
 Date: Jul 12, 2023  
 By:

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

**Project Information**

For: M46059-FDJ-TZ-II, GILES



**Design Conditions**

<b>Location:</b> Knoxville McGhee Tyson AP, TN, US Elevation: 981 ft Latitude: 36°N			<b>Indoor:</b> Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)	<b>Heating</b> 70 55 50 47.0	<b>Cooling</b> 75 18 50 36.2
<b>Outdoor:</b> Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	<b>Heating</b> 15 - - 15.0	<b>Cooling</b> 93 19 ( M ) 74 7.5	<b>Infiltration:</b> Method Construction quality Fireplaces	Simplified Average 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
<b>Walls</b>								
CMH - SW - R-13 Wall - THP502-DOE: Single Wide - R-13 Insulation	n	208	0.082	13.0	4.51	938	2.03	422
THP502 2x4 Wall-DOE	e	412	0.082	13.0	4.51	1860	2.03	837
	s	179	0.082	13.0	4.51	806	2.03	363
	w	348	0.082	13.0	4.51	1569	2.03	706
	all	1147	0.082	13.0	4.51	5173	2.03	2328

**Partitions**  
(none)

		Area ft²	U-value Btuh/ft²·F	Insul R ft²·F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
<b>Windows</b>								
Clayton - Thermopane Low-E: Clayton - Thermopane Low-E; 50% blinds	e	32	0.350	0	19.3	610	26.5	838
45°, medium; 50% outdoor insect screen; 6.67 ft head ht	s	8	0.350	0	19.3	160	13.0	108
	w	75	0.350	0	19.3	1444	26.5	1985
	all	115	0.350	0	19.3	2214	25.5	2932

		Area ft²	U-value Btuh/ft²·F	Insul R ft²·F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
<b>Doors</b>								
CMH - Standard Door: CMH - Standard Door - Solid no storm	s	21	0.320	0	17.6	370	9.52	200
	w	21	0.320	0	17.6	370	9.52	200
	all	42	0.320	0	17.6	739	9.52	400

		Area ft²	U-value Btuh/ft²·F	Insul R ft²·F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
<b>Ceilings</b>								
CMH-DW-158 BOX R38 - THP1244 - DOE: CMH-DW-158 BOX R38-THP1244 - DOE		1443	0.031	38.0	1.70	2460	1.65	2382

		Area ft²	U-value Btuh/ft²·F	Insul R ft²·F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
<b>Floors</b>								
CMH-DW-158- R33-THP469-DOE: CMH-DW-180-R33-THP472-DOE		1443	0.038	33.0	2.09	3016	0	0





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

## Project Information

For: M46059-FDJ-TZ-II, GILES

Notes: DUCT CAPACITY 25566 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 20380 Btuh  
 Ducts 0 Btuh  
 Central vent (90 cfm) 5255 Btuh  
 Outside air  
 Humidification 0 Btuh  
 Piping 0 Btuh  
 Equipment load 25634 Btuh

### Sensible Cooling Equipment Load Sizing

Structure 13864 Btuh  
 Ducts 0 Btuh  
 Central vent (90 cfm) 1682 Btuh  
 Outside air  
 Blower 0 Btuh  
 Use manufacturer's data n  
 Rate/swing multiplier 0.98  
 Equipment sensible load 15173 Btuh

### Infiltration

Method Simplified  
 Construction quality Average  
 Fireplaces 0

### Latent Cooling Equipment Load Sizing

Structure 3666 Btuh  
 Ducts 0 Btuh  
 Central vent (90 cfm) 2139 Btuh  
 Outside air  
 Equipment latent load 5805 Btuh  
**Equipment Total Load (Sen+Lat)** 20978 Btuh  
 Req. total capacity at 0.70 SHR 1.8 ton

	Heating	Cooling
Area (ft <sup>2</sup> )	1443	1443
Volume (ft <sup>3</sup> )	11544	11544
Air changes/hour	0.45	0.23
Equiv. AVF (cfm)	87	44

### Heating Equipment Summary

Make Smart Comfort  
 Trade  
 Model FED002410++NADA43601  
 AHRI ref

Efficiency 100 AFUE  
 Heating input 10.0 kW  
 Heating output 0 Btuh  
 Temperature rise 0 °F  
 Actual air flow 593 cfm  
 Air flow factor 0.029 cfm/Btuh  
 Static pressure 0.30 in H2O  
 Space thermostat

### Cooling Equipment Summary

Make Smart Comfort  
 Trade SMART COMFORT  
 Cond R4A518GKB  
 Coil FED002410++NADA43601CK  
 AHRI ref 203358045

Efficiency 12.2 EER, 14 SEER  
 Sensible cooling 12460 Btuh  
 Latent cooling 5340 Btuh  
 Total cooling 17800 Btuh  
 Actual air flow 593 cfm  
 Air flow factor 0.043 cfm/Btuh  
 Static pressure 0.30 in H2O  
 Load sensible heat ratio 0.73

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



# Duct System Summary

## Entire House

### Clayton Homes

Job: M46059-FDJ-TZ-II  
 Date: Jul 12, 2023  
 By:

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

### Project Information

For: M46059-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	0.217 in/100ft	0.217 in/100ft
Actual air flow	593 cfm	593 cfm
Total effective length (TEL)	138 ft	

### Supply Branch Detail Table

Name	Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
BATH	h 5379	157	115	0.690	6.0	0x0	VIFx	8.5	35.0	st2
BED 2	c 1122	43	48	0.237	5.0	0x0	VIFx	26.7	100.0	st4
BED 3	h 2337	68	59	0.217	5.0	0x0	VIFx	38.2	100.0	st4
DINING	h 1269	37	36	0.619	5.0	0x0	VIFx	13.5	35.0	st2
KITCHEN	c 1829	41	78	0.480	5.0	0x0	VIFx	27.5	35.0	st2
LIVING ROOM	c 2663	81	114	0.224	6.0	0x0	VIFx	33.7	100.0	st3
P-BATH	h 2741	80	48	0.390	5.0	0x0	VIFx	42.0	35.0	st2
P-BED	c 2223	87	95	0.217	6.0	0x0	VIFx	38.2	100.0	st3

### Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st3	Peak AVF	168	209	0.217	430	4.2	5 x 14	ShtMetl	st1
st4	Peak AVF	111	107	0.217	228	4.2	5 x 14	ShtMetl	st1
st2	Peak AVF	314	277	0.390	646	4.4	5 x 14	ShtMetl	
st1	Peak AVF	279	316	0.217	759	4.8	5 x 12	VinIFlx	

## Return Branch Detail Table

Name	Grille Size (in)	Htg (cfm)	Clg (cfm)	TEL (ft)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Stud/Joist Opening (in)	Duct Matl	Trunk
rb1	0x0	593	593	0	0	0	0	0x 0		VIFx	





**Manual S Compliance Report**  
**Entire House**  
**Clayton Homes**

Job: M46059-FDJ-TZ-III  
 Date: Jul 12, 2023  
 By:

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

**Project Information**

For: M46059-FDJ-TZ-III, GILES



**Cooling Equipment**

**Design Conditions**

Outdoor design DB:	87.6°F	Sensible gain:	12757 Btuh	Entering coil DB:	77.0°F
Outdoor design WB:	71.2°F	Latent gain:	4519 Btuh	Entering coil WB:	63.7°F
Indoor design DB:	75.0°F	Total gain:	17276 Btuh		
Indoor RH:	50%	Estimated airflow:	593 cfm		

**Manufacturer's Performance Data at Actual Design Conditions**

Equipment type:	Split AC		
Manufacturer:	Smart Comfort	Model:	R4A518GKB+FED002410++NADA43601CK
Actual airflow:	593 cfm		
Sensible capacity:	18676 Btuh	146% of load	
Latent capacity:	4732 Btuh	105% of load	
Total capacity:	23409 Btuh	136% of load	SHR: 80%

**Heating Equipment**

**Design Conditions**

Outdoor design DB:	15.8°F	Heat loss:	23094 Btuh	Entering coil DB:	61.6°F
Indoor design DB:	70.0°F				

**Manufacturer's Performance Data at Actual Design Conditions**

Equipment type:	Elec furnace			
Manufacturer:	Smart Comfort	Model:	FED002410++NADA43601	
Actual airflow:	593 cfm			
Output capacity:	0 Btuh	0% of load		Temp. rise: 0 °F

Meets all requirements of ACCA Manual S.



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

**Project Information**

For: M46059-FDJ-TZ-III, GILES

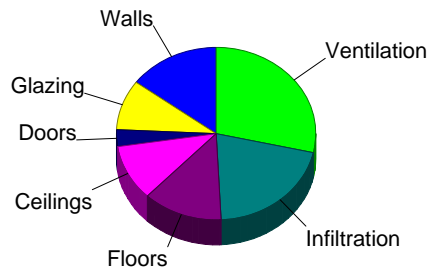


**Design Conditions**

<b>Location:</b> VA-SG22 Elevation: 2133 ft Latitude: 37°N			<b>Indoor:</b> Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)	<b>Heating</b> 70 54 50 48.7	<b>Cooling</b> 75 13 50 28.1
<b>Outdoor:</b> Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	<b>Heating</b> 16 - - 15.0	<b>Cooling</b> 88 20 ( M ) 71 7.5	<b>Infiltration:</b> Method Construction quality Fireplaces	Simplified Average 0	

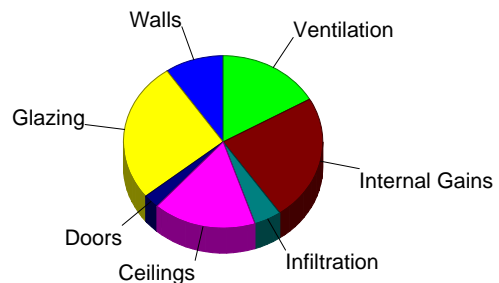
**Heating**

Component	Btuh/ft²	Btuh	% of load
Walls	3.0	3419	14.8
Glazing	19.0	2182	9.4
Doors	17.3	728	3.2
Ceilings	1.7	2425	10.5
Floors	2.1	2972	12.9
Infiltration	3.7	4776	20.7
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		6592	28.5
Adjustments		0	0
<b>Total</b>		<b>23094</b>	<b>100.0</b>



**Cooling**

Component	Btuh/ft²	Btuh	% of load
Walls	1.1	1218	9.5
Glazing	29.2	3354	26.3
Doors	7.8	327	2.6
Ceilings	1.5	2138	16.8
Floors	0	0	0
Infiltration	0.4	568	4.4
Ducts		0	0
Ventilation		2133	16.7
Internal gains		3020	23.7
Blower		0	0
Adjustments		0	0
<b>Total</b>		<b>12757</b>	<b>100.0</b>



Latent Cooling Load = 4519 Btuh  
Overall U-value = 0.052 Btuh/ft²·°F, Window / Floor Area = 8.0 %

Data entries checked.



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

**Project Information**

For: M46059-FDJ-TZ-III, GILES



**Design Conditions**

<b>Location:</b>				<b>Indoor:</b>	<b>Heating</b>	<b>Cooling</b>
VA-SG22				Indoor temperature (°F)	70	75
Elevation: 2133 ft				Design TD (°F)	54	13
Latitude: 37°N				Relative humidity (%)	50	50
				Moisture difference (gr/lb)	48.7	28.1
<b>Outdoor:</b>	<b>Heating</b>	<b>Cooling</b>		<b>Infiltration:</b>		
Dry bulb (°F)	16	88		Method	Simplified	
Daily range (°F)	-	20 ( M )		Construction quality	Average	
Wet bulb (°F)	-	71		Fireplaces	0	
Wind speed (mph)	15.0	7.5				

**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
<b>Walls</b>								
CMH - SW - R-21 Wall - THP510-DOE: Single Wide - R-21Insulation	n	208	0.055	21.0	2.98	620	1.06	221
THP510 2x6 Wall-DOE	e	412	0.055	21.0	2.98	1229	1.06	438
	s	179	0.055	21.0	2.98	533	1.06	190
	w	348	0.055	21.0	2.98	1037	1.06	369
	all	1147	0.055	21.0	2.98	3419	1.06	1218

**Partitions**  
(none)

**Windows**

Clayton - Thermopane Low-E: Clayton - Thermopane Low-E; 50% blinds	e	32	0.350	0	19.0	601	24.8	786
45°, medium; 50% outdoor insect screen; 6.67 ft head ht	s	8	0.350	0	19.0	158	11.8	98
	w	75	0.350	0	19.0	1423	24.8	1862
	all	115	0.350	0	19.0	2182	23.9	2747

**Doors**

CMH - Standard Door: CMH - Standard Door - Solid no storm	s	21	0.320	0	17.3	364	7.78	163
	w	21	0.320	0	17.3	364	7.78	163
	all	42	0.320	0	17.3	728	7.78	327

**Ceilings**

CMH-DW-158 BOX R38 - THP1244 - DOE: CMH-DW-158 BOX R38-THP1244 - DOE		1443	0.031	38.0	1.68	2425	1.48	2138
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**Floors**

CMH-DW-158- R33-THP469-DOE: CMH-DW-180-R33-THP472-DOE		1443	0.038	33.0	2.06	2972	0	0
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5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

## Project Information

For: M46059-FDJ-TZ-III, GILES

Notes: DUCT CAPACITY 25566 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	18129 Btuh
Ducts	0 Btuh
Central vent (90 cfm)	4965 Btuh
Outside air	
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	23094 Btuh

### Sensible Cooling Equipment Load Sizing

Structure	11603 Btuh
Ducts	0 Btuh
Central vent (90 cfm)	1154 Btuh
Outside air	
Blower	0 Btuh
Use manufacturer's data	n
Rate/swing multiplier	0.93
Equipment sensible load	11813 Btuh

### Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

### Latent Cooling Equipment Load Sizing

Structure	2929 Btuh
Ducts	0 Btuh
Central vent (90 cfm)	1590 Btuh
Outside air	
Equipment latent load	4519 Btuh

	Heating	Cooling
Area (ft <sup>2</sup> )	1443	1443
Volume (ft <sup>3</sup> )	11544	11544
Air changes/hour	0.45	0.23
Equiv. AVF (cfm)	87	44

<b>Equipment Total Load (Sen+Lat)</b>	16332 Btuh
Req. total capacity at 0.70 SHR	1.4 ton

### Heating Equipment Summary

Make	Smart Comfort
Trade	
Model	FED002410++NADA43601
AHRI ref	
Efficiency	100 AFUE
Heating input	10.0 kW
Heating output	0 Btuh
Temperature rise	0 °F
Actual air flow	593 cfm
Air flow factor	0.033 cfm/Btuh
Static pressure	0.30 in H2O
Space thermostat	

### Cooling Equipment Summary

Make	Smart Comfort
Trade	SMART COMFORT
Cond	R4A518GKB
Coil	FED002410++NADA43601CK
AHRI ref	203358045
Efficiency	12.2 EER, 14 SEER
Sensible cooling	12460 Btuh
Latent cooling	5340 Btuh
Total cooling	17800 Btuh
Actual air flow	593 cfm
Air flow factor	0.051 cfm/Btuh
Static pressure	0.30 in H2O
Load sensible heat ratio	0.74

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



# Duct System Summary

## Entire House

### Clayton Homes

Job: M46059-FDJ-TZ-III  
 Date: Jul 12, 2023  
 By:

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

### Project Information

For: M46059-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	0.217 in/100ft	0.217 in/100ft
Actual air flow	593 cfm	593 cfm
Total effective length (TEL)	138 ft	

### Supply Branch Detail Table

Name	Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
BATH	h 4839	158	97	0.690	6.0	0x0	VIFx	8.5	35.0	st2
BED 2	c 989	43	51	0.237	5.0	0x0	VIFx	26.7	100.0	st4
BED 3	h 2010	66	58	0.217	5.0	0x0	VIFx	38.2	100.0	st4
DINING	h 1156	38	37	0.619	5.0	0x0	VIFx	13.5	35.0	st2
KITCHEN	c 1687	41	86	0.480	5.0	0x0	VIFx	27.5	35.0	st2
LIVING ROOM	c 2414	85	123	0.224	7.0	0x0	VIFx	33.7	100.0	st3
P-BATH	h 2351	77	43	0.390	5.0	0x0	VIFx	42.0	35.0	st2
P-BED	c 1920	86	98	0.217	6.0	0x0	VIFx	38.2	100.0	st3

### Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st3	Peak AVF	170	222	0.217	456	4.2	5 x 14	ShtMetl	st1
st4	Peak AVF	109	109	0.217	224	4.2	5 x 14	ShtMetl	st1
st2	Peak AVF	314	263	0.390	646	4.4	5 x 14	ShtMetl	
st1	Peak AVF	279	330	0.217	792	4.8	5 x 12	VinIFlx	



## Return Branch Detail Table

Name	Grille Size (in)	Htg (cfm)	Clg (cfm)	TEL (ft)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Stud/Joist Opening (in)	Duct Matl	Trunk
rb1	0x0	593	593	0	0	0	0	0x 0		VIFx	



BOX SIZE: 26.33 ft. x 56 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 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	123.00	0.300	36.90
	Option	0.00	0.300	0.00
Net:	Floor	1474.67	0.047	68.57
	Wall	1150.33	0.082	93.98
	Ceiling	1474.67	0.0306	45.12
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

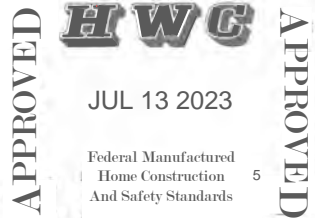
Energy Star v3 & ZERH Max Glass (sq ft)	
Th. Zone 1	256.5
Th. Zone 2	124.0
Th. Zone 3	0.0

	Outdoor Design Temp (F)	UA	Uo	Heatloss BTUH/F
Thermal Zone 1	11	276.76	0.064*	392.00
Thermal Zone 2	0	275.26	0.063	390.50
Thermal Zone 3	-14	273.91	0.063	389.20

Design Temperatures

Furnace Heating Temp (F)	Economy Outdoor Temp (F)	
-17	9	10kW
-34	-3	12kW
-61	-21	15kW
-32	-1	40k Gas
-83	-37	60k Gas
-134	-73	80k Gas

Thermal Zone	U-Value	Thermal Zone	U-Value	Thermal Zone	U-Value
<b>Energy Star Version 2</b>					
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
<b>Energy Star Version 3 &amp; ZERH</b>					
1 Single	0.076	2 Single	0.065	3 Single	0.057
1 Double	0.070	2 Double	0.063	3 Double	0.054



BOX SIZE: 26.33 ft. x 56 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

INSULATION VALUES	HEATED FLOOR	WALL	FLAT ROOF
DAPIA PAGE	R-22 OR / R-33 BIB	R-21	R-38
U VALUE (BTUH/SQ.FT.-F)	THP-469	THP-510	THP-1244
	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	123.00	0.300	36.90
Option	0.00	0.300	0.00
Net:			
Floor	1474.67	0.038	56.18
Wall	1150.33	0.055	62.81
Ceiling	1474.67	0.0306	45.12
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

Energy Star v3 & ZERH	
Max Glass (sq ft)	
Th. Zone 1	419.2
Th. Zone 2	301.4
Th. Zone 3	147.5

	Outdoor Design Temp (F)	UA	Uo	Heatloss BTUH/F
Thermal Zone 1	11	233.20	0.054	348.50
Thermal Zone 2	0	231.70	0.053	347.00
Thermal Zone 3	-14	230.35	0.053	345.60

Design Temperatures	
Furnace Heating Temp (F)	Economy Outdoor Temp (F)
-28	1
-47	-12
-77	-33
-45	-10
-102	-51
-160	-91

10kW  
12kW  
15kW  
40k Gas  
60k Gas  
80k Gas

Thermal Zone	U-Value	Thermal Zone	U-Value	Thermal Zone	U-Value
<b>Energy Star Version 2</b>					
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
<b>Energy Star Version 3 &amp; ZERH</b>					
1 Single	0.076	2 Single	0.065	3 Single	0.057
1 Double	0.070	2 Double	0.063	3 Double	0.054



BOX SIZE: 26.33 ft. x 56 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

INSULATION VALUES	HEATED FLOOR	WALL	FLAT ROOF
DAPIA PAGE	R-22 OR / R-33 BiB	R-13	R-38
U VALUE (BTUH/SQ.FT.-F)	THP-469	THP-502	THP-1244
	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
Standard	123.00	0.300	36.90
Option	0.00	0.300	0.00
Net:			
Floor	1474.67	0.038	56.18
Wall	1150.33	0.082	93.98
Ceiling	1474.67	0.0306	45.12
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

Energy Star v3 & ZERH	
Max Glass (sq ft)	
Th. Zone 1	313.2
Th. Zone 2	180.8
Th. Zone 3	7.8

	Outdoor Design Temp (F)	UA	Uo	Heatloss BTUH/F
Thermal Zone 1	11	264.38	0.061	379.60
Thermal Zone 2	0	262.87	0.060	378.10
Thermal Zone 3	-14	261.53	0.060	376.80

Design Temperatures		
Furnace Heating Temp (F)	Economy Outdoor Temp (F)	
-20	7	10kW
-38	-6	12kW
-65	-24	15kW
-35	-4	40k Gas
-88	-41	60k Gas
-141	-78	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

