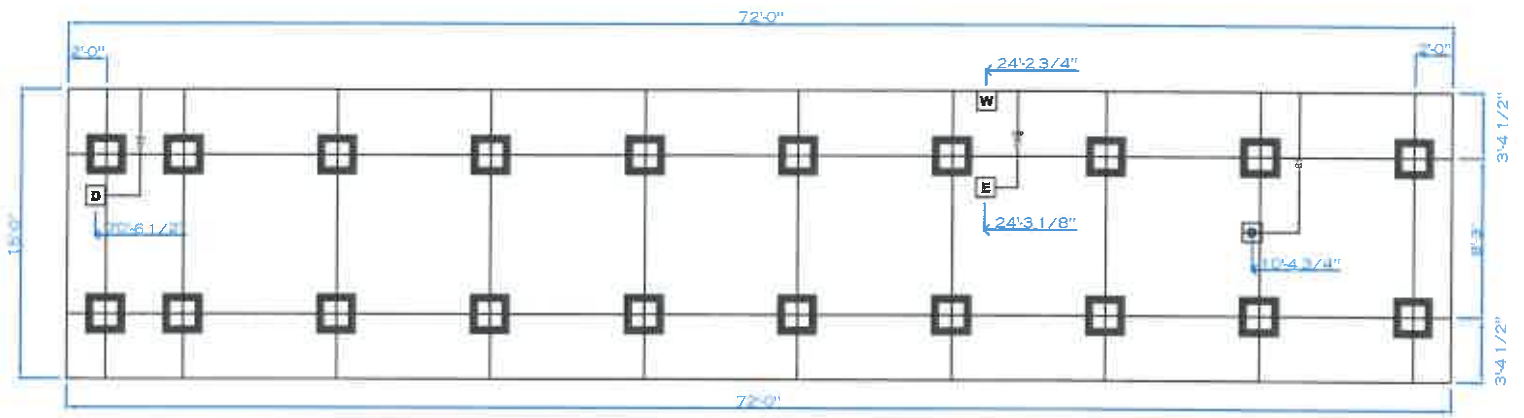


GILES HOMES 105 S. BRAD ST. NEW JERSEY, NJ 07102	Model #: S46054	Drawing #: S46054.DOE
Product Design: HARVILL, T	Design: HARVILL, T	Drawn: HARVILL, T
	Project: 16X72-MAVERICK	

ELEVATION



*THIS FOOTER DIAGRAM IS FOR STANDARD PRODUCT ONLY

*FOR PIER SPACING REFER TO SET UP MANUAL

MW MARRIAGE WALL PIER

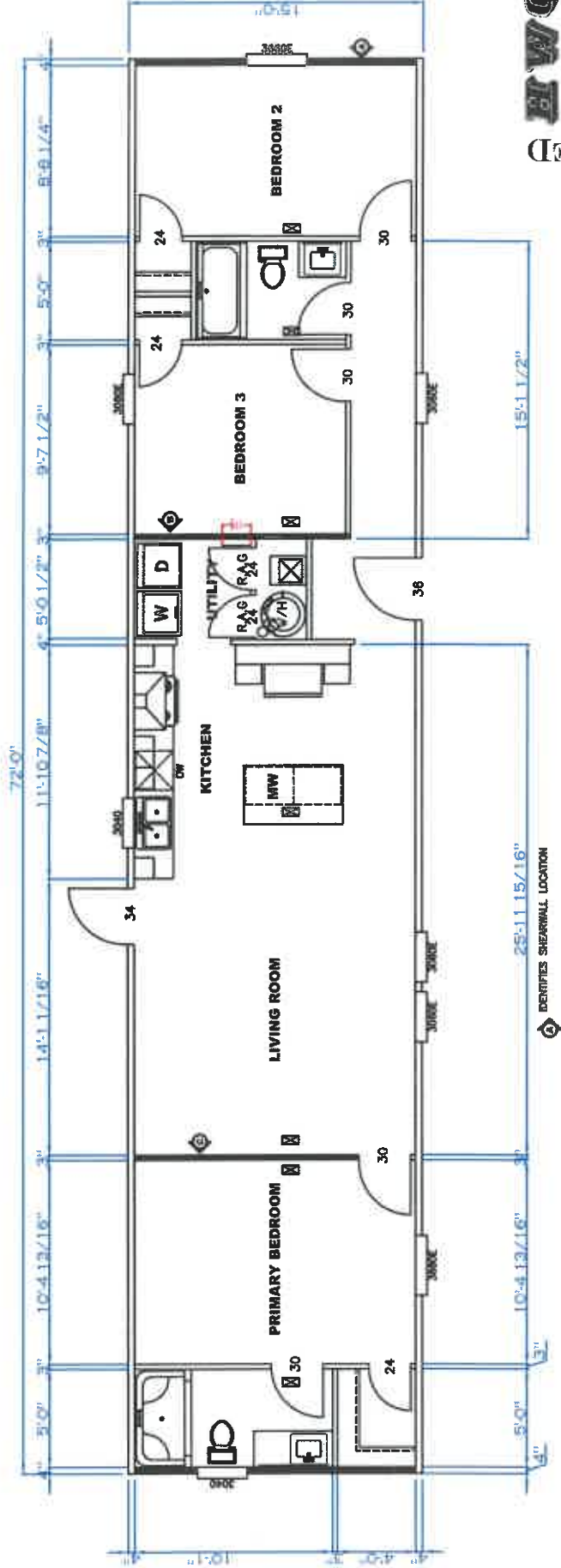
W WATER INLET

D DRAIN

E ELECTRICAL DROP

DP DOOR PIER

□ REGULAR PIER



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Home Construction
And Safety Standards

GILES HOMES

405 S. BROAD ST., NEW TAZEWELL, TN 37824

Product Designer: HARVILLE

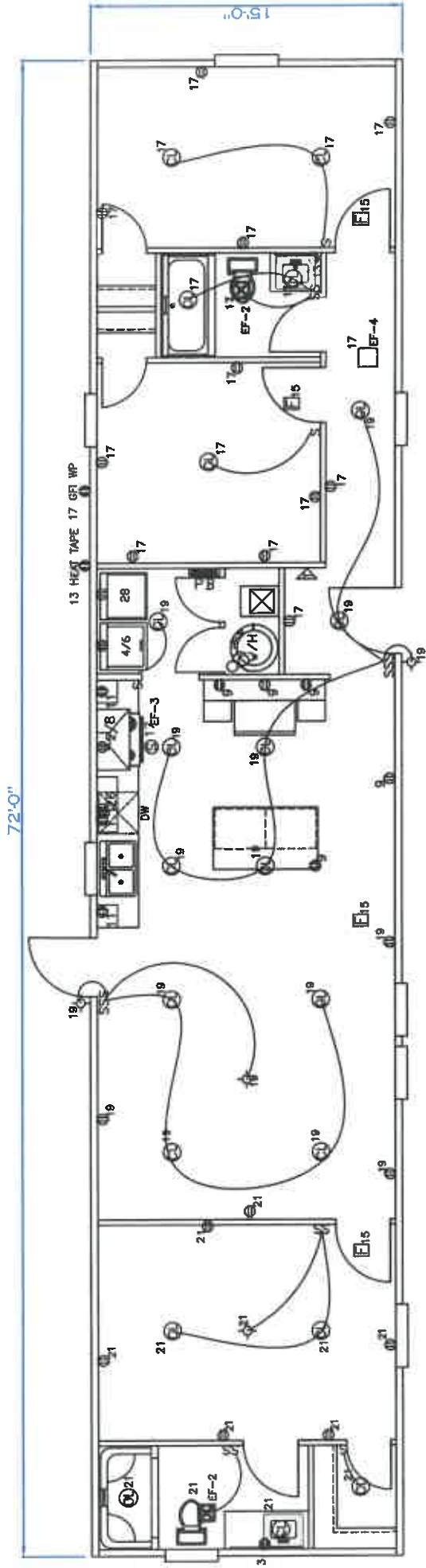
Model #: S46054

Date: 02/22/23

Scale: N/A

Drawing #: 546054.DOE

1 GX72-MAVERICK

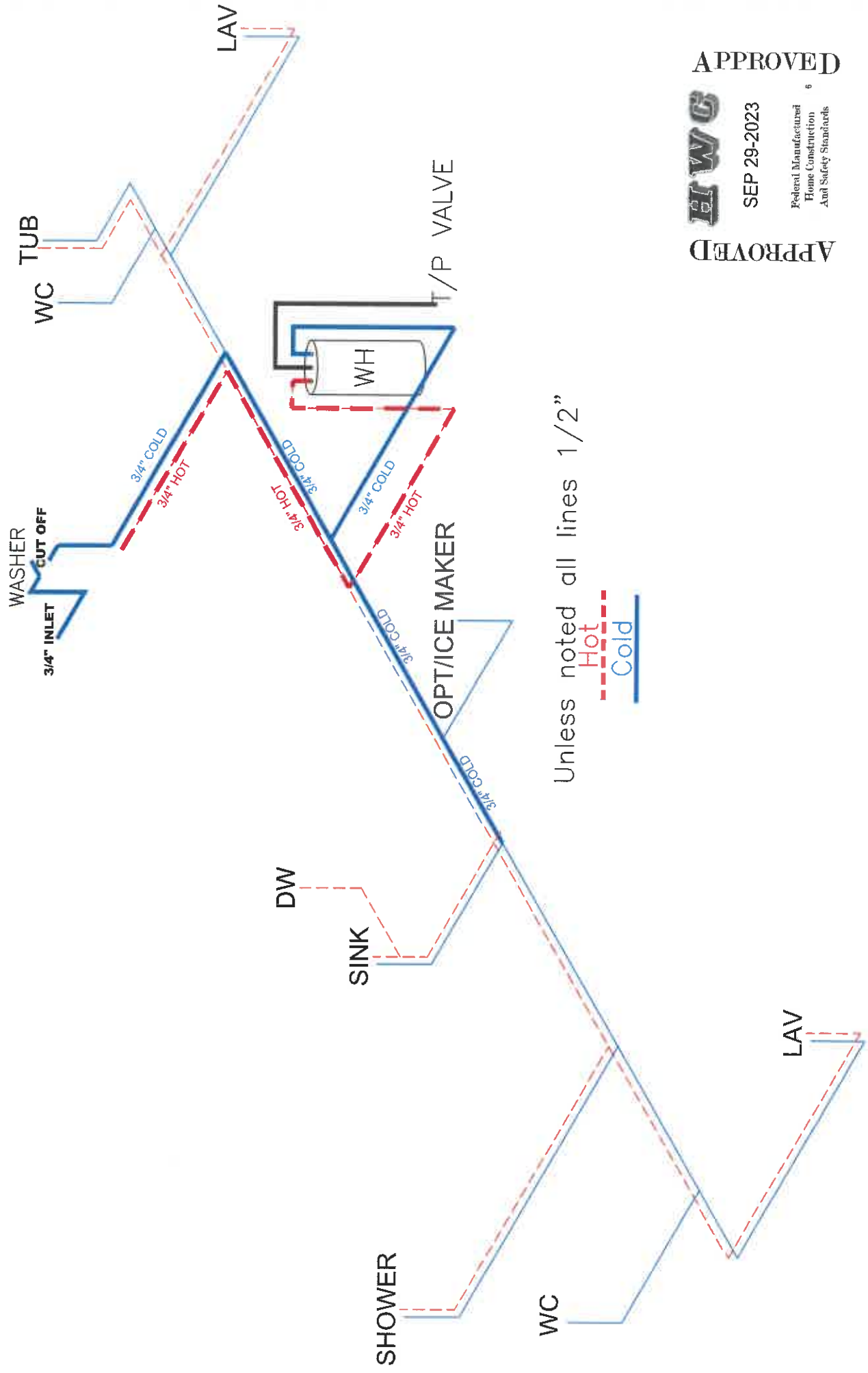


NOTES:

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 4/1.5 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.

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 Home Construction
 And Safety Standards



Unless noted all lines 1/2"



SEP 29-2023

Federal Manufactured Home Construction And Safety Standards

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GILES HOMES	Model #: 46101.e723.m10	Drawing #:
405 S. BROAD ST. NEW TAZEWELL, TN 37821	Date: 7-17-23	Scale: NA
Product Designer: HARVILLE	16X72-LTO	

5-46054.DOE

Model # S46054

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	199	3060 x2	19.8	9.95%		10.4	5.23%		36
Kitchen	171	3040	6.3	3.68%	X	3.3	1.88%	X	32
Primary-Bed	151	3660	12.2	8.08%		6.2	4.11%		28
Bedroom 2	125	3660	12.2	9.76%		6.2	4.96%		24
Bedroom 3	103	3060	9.9	9.61%		5.2	5.05%		24
P-Bath	71	3040	6.3	8.87%	X	3.3	4.65%	X	24
Bath	39	0			X			X	24
Utility	30	0			X			X	24

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

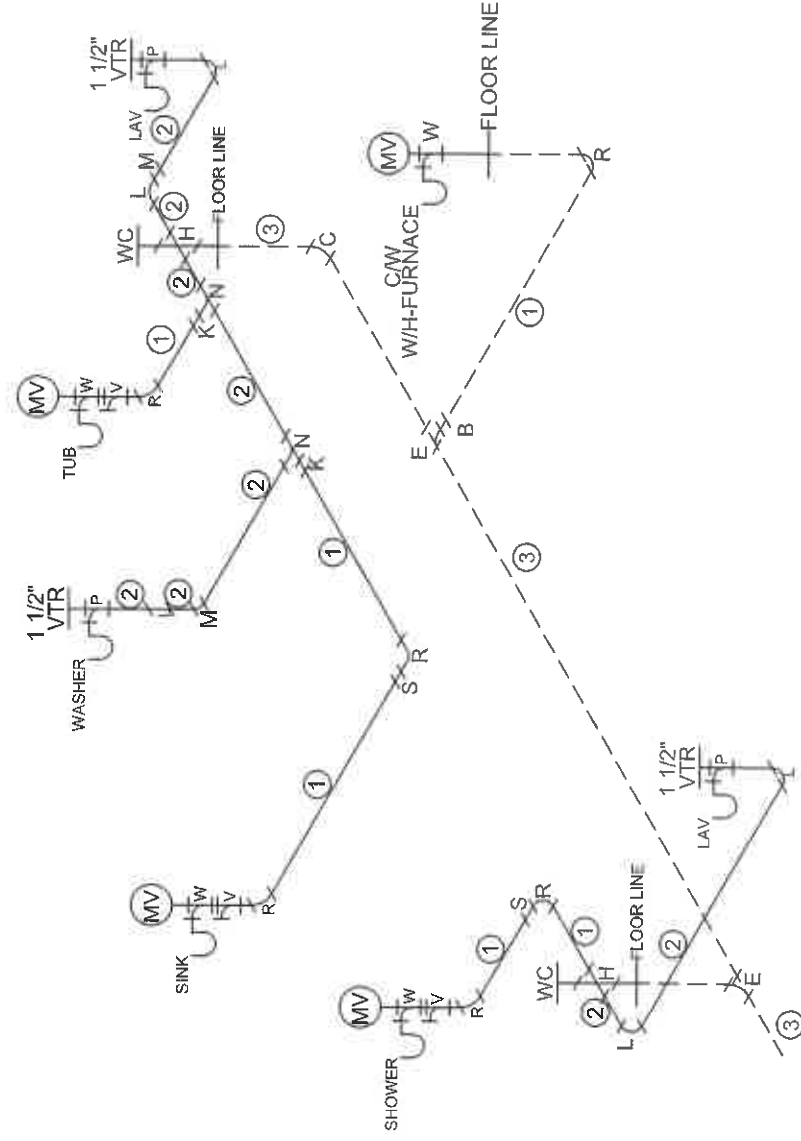
** Note: All window sizes are minimum requirements for rooms. And windows may be added as long as heat loss allows and/or is documented on the floor plan



LEGEND AND SET UP KIT.

VTR - VENT THRU ROOF
 (MV) - MECHANICAL VENT

- 60 (3) - 3" PIPE
- 0 (2) - 2" PIPE
- 20 (1) - 1 1/2" PIPE
- 0 A - 3"X2" REDUCER
- 0 B - 3"X1 1/2" REDUCER
- 1 C - 3" ELL 90°
- 0 D - 3" ELL 45°
- 1 E - 3" LTTY
- 2 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
- 0 L - 2" ELL 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" ELL 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



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 Fabricated
 Times Construction
 And Supply Standards

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

- 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 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.)

Table with 3 columns: Rooms, Wall Finish Material and Application, Ceiling Finish Material and Application. Rows include Kitchen, Bath, and 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)

Floors	Location	Material, Color, Border, Sizes, Gage, Etc.	Threshold Material	Wall Base Material	Underfloor Material
		Kitchen	Congo Liam		
	Bath	Congo Liam			
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	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 Radiators Radiant panel 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 liq. pet. gas electric other storage capacity

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

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

S46054-FDJ-TZI-DOE

Job: S46054-FDJ-TZI
 Date: APRIL 26-2023
 By:

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

Project Information

For: S46054-FDJ-TZI, GILES

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Cooling Equipment

Design Conditions

Outdoor design DB:	91.7°F	Sensible gain:	13256	Btuh	Entering coil DB:	77.7°F
Outdoor design WB:	73.9°F	Latent gain:	5526	Btuh	Entering coil WB:	64.4°F
Indoor design DB:	75.0°F	Total gain:	18782	Btuh		
Indoor RH:	50%	Estimated airflow:	580	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP	Model:	R4H5S18*K*AAA*+FEVA0024**+NAVA43601CK
Manufacturer:	Smart Comfort		
Actual airflow:	580 cfm		
Sensible capacity:	12180 Btuh	92% of load	
Latent capacity:	5220 Btuh	94% of load	
Total capacity:	17400 Btuh	93% of load	SHR: 70%

Heating Equipment

Design Conditions

Outdoor design DB:	26.4°F	Heat loss:	18276	Btuh	Entering coil DB:	63.1°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP	Model:	R4H5S18*K*AAA*+FEVA0024**+NAVA43601CK
Manufacturer:	Smart Comfort		
Actual airflow:	580 cfm		
Output capacity:	16800 Btuh	92% of load	Capacity balance: 32 °F
Supplemental heat required:	1476 Btuh		Economic balance: -99 °F

Backup equipment type:	Elec strip	Model:	
Manufacturer:	Smart Comfort		
Actual airflow:	580 cfm		
Output capacity:	5.4 kW	100% of load	Temp. rise: 50 °F

Meets all requirements of ACCA Manual S.



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

Project Information

For: S46054-FDJ-TZI, GILES



Design Conditions

Location:

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

Outdoor:

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

Heating

26
-
-
15.0

Cooling

92
17 (M)
74
7.5

Indoor:

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

Heating

70
44
30
17.0

Cooling

75
17
50
35.3

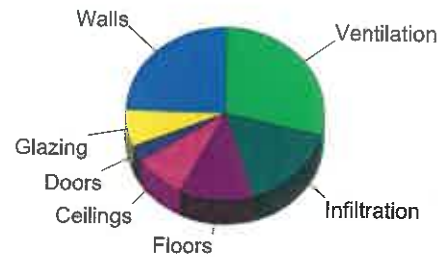
Infiltration:

Method
Construction quality
Fireplaces

Simplified
Average
0

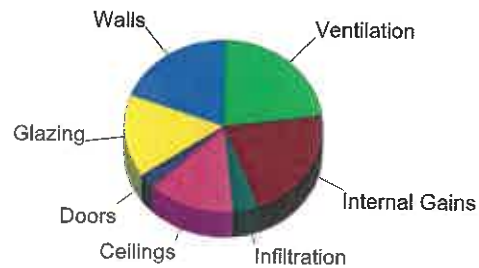
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.6	4481	24.5
Glazing	13.1	1264	6.9
Doors	13.1	549	3.0
Ceilings	1.4	1507	8.2
Floors	2.0	2213	12.1
Infiltration	2.2	2994	16.4
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		5268	28.8
Adjustments		0	0
Total		18276	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	2.0	2539	19.1
Glazing	21.4	2072	15.6
Doors	8.9	374	2.8
Ceilings	1.7	1839	13.9
Floors	0	0	0
Infiltration	0.4	586	4.4
Ducts		0	0
Ventilation		3026	22.8
Internal gains		2820	21.3
Blower		0	0
Adjustments		0	0
Total		13256	100.0



Latent Cooling Load = 5526 Btuh
Overall U-value = 0.065 Btuh/ft²·°F, Window / Floor Area = 9.0 %

Data entries checked.



Component Constructions
Entire House
Clayton Homes

Job: S46054-FDJ-TZI
Date: APRIL 26-2023
By:

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

Project Information

For: S46054-FDJ-TZI, GILES



Design Conditions

Location:		Indoor:		Heating	Cooling
Atlanta Municipal, GA, US		Indoor temperature (°F)		70	75
Elevation: 1027 ft		Design TD (°F)		44	17
Latitude: 34°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		17.0	35.3
Outdoor:	Heating	Cooling	Infiltration:		
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			

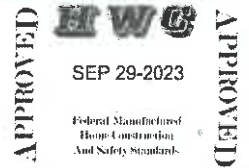
Construction descriptions

	Or	Area ft²	U-value Btu/ft²·°F	Insul R ft²·°F/Btu	Htg HTM Btu/ft²	Loss Btu/h	Clg HTM Btu/ft²	Gain Btu/h
Walls								
CMH - SW - R-13 Wall - THP502-DOE: Single Wide - R-13 Insulation	n	112	0.082	13.0	3.58	399	2.03	226
THP502 2x4 Wall-DOE	e	534	0.082	13.0	3.58	1910	2.03	1082
	s	105	0.082	13.0	3.58	375	2.03	213
	w	503	0.082	13.0	3.58	1797	2.03	1018
	all	1253	0.082	13.0	3.58	4481	2.03	2539
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	8	0.300	0	13.1	109	7.72	64
	e	21	0.300	0	13.1	273	21.8	454
	s	15	0.300	0	13.1	196	10.1	152
	w	28	0.300	0	13.1	360	21.8	599
	all	72	0.300	0	13.1	937	17.7	1269
Clayton - Thermopane Low-E: Clayton - Thermopane Low-E; 50% blinds 45°, medium; 50% outdoor insect screen; 6.67 ft head ht	w	25	0.300	0	13.1	327	21.8	544
Doors								
CMH - Standard Door: CMH - Standard Door - Solid no storm	e	21	0.300	0	13.1	275	8.91	187
	w	21	0.300	0	13.1	275	8.91	187
	all	42	0.300	0	13.1	549	8.91	374
Ceilings								
CMH-SW-180 BOX R38 - THP2002 - DOE: CMH-SW-180 BOX R38-THP2002 - DOE		1080	0.032	38.0	1.40	1507	1.70	1839
Floors								
CMH-SW-180- R22-THP176-DOE: CMH-SW-180-R22-THP176-DOE		1080	0.047	22.0	2.05	2213	0	0

Project Information

For: S46054-FDJ-TZI, GILES

Notes: duct capacity-19333



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 14118 Btuh
 Ducts 0 Btuh
 Central vent (90 cfm) 4159 Btuh
 Outside air
 Humidification 0 Btuh
 Piping 0 Btuh
 Equipment load 18276 Btuh

Sensible Cooling Equipment Load Sizing

Structure 11663 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 12819 Btuh

Infiltration

Method Simplified
 Construction quality Average
 Fireplaces 0

Latent Cooling Equipment Load Sizing

Structure 3442 Btuh
 Ducts 0 Btuh
 Central vent (90 cfm) 2084 Btuh
 Outside air
 Equipment latent load 5526 Btuh

	Heating	Cooling
Area (ft ²)	1080	1080
Volume (ft ³)	8640	8640
Air changes/hour	0.45	0.23
Equiv. AVF (cfm)	65	33

Equipment Total Load (Sen+Lat) 18345 Btuh
 Req. total capacity at 0.70 SHR 1.5 ton

Heating Equipment Summary

Make Smart Comfort
 Trade 15 SEER2 R SERIES R410A HP
 Model R4H5S18*K*AAA*
 AHRI ref 0
 Efficiency 7.5 HSPF2
 Heating input 16800 Btuh @ 47°F
 Heating output 27 °F
 Temperature rise 580 cfm
 Actual air flow 0.041 cfm/Btuh
 Air flow factor 0.30 in H2O
 Static pressure
 Space thermostat
 Capacity balance point = 32 °F

Cooling Equipment Summary

Make Smart Comfort
 Trade 15 SEER2 R SERIES R410A HP
 Cond R4H5S18*K*AAA*
 Coil FEVA0024**+NAVA43601CK
 AHRI ref 0
 Efficiency 12.0 EER2, 15 SEER2
 Sensible cooling 12180 Btuh
 Latent cooling 5220 Btuh
 Total cooling 17400 Btuh
 Actual air flow 580 cfm
 Air flow factor 0.050 cfm/Btuh
 Static pressure 0.30 in H2O
 Load sensible heat ratio 0.71

Backup: Smart Comfort
 Input = 5 kW, Output = 18354 Btuh, 100 AFUE

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



Duct System Summary
Entire House
Clayton Homes

Job: S46054-FDJ-TZI
 Date: APRIL 26-2023
 By:

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

Project Information

For: S46054-FDJ-TZI, 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	0.397 in/100ft	0.397 in/100ft
Actual air flow	580 cfm	580 cfm
Total effective length (TEL)	76 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 788	32	17	0.638	5.0	0x 0	VIFx	12.0	35.0	st1
BEDROOM 2	h 2119	87	61	0.577	5.0	0x 0	VIFx	17.0	35.0	st1
BEDROOM 3	h 1599	66	65	0.789	5.0	0x 0	VIFx	3.0	35.0	st1
KITCHEN	c 3823	160	190	0.659	5.1	5x 7	ShMt	10.5	35.0	st2
LIVING ROOM	c 2678	100	133	0.484	6.0	0x 0	VIFx	27.0	35.0	st2
P-BATH	h 1554	64	34	0.397	5.0	0x 0	VIFx	40.5	35.0	st2
PRIMARY BEDROOM	c 1608	71	80	0.462	5.0	0x 0	VIFx	30.0	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	PeakAVF	395	437	0.397	899	7.2	5 x 14	ShtMetl	
st1	PeakAVF	185	143	0.577	381	8.2	5 x 14	ShtMetl	

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	580	580	0	0	0	0	0x 0		VIFx	





Manual S Compliance Report

Entire House

Clayton Homes

Job: S46054-FDJ-TZII
Date: APRIL 26-2023
By:

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

Project Information

For: S46054-FDJ-TZII, GILES



Cooling Equipment

Design Conditions

Outdoor design DB:	90.6°F	Sensible gain:	12733 Btuh	Entering coil DB:	77.5°F
Outdoor design WB:	73.7°F	Latent gain:	5594 Btuh	Entering coil WB:	64.4°F
Indoor design DB:	75.0°F	Total gain:	18327 Btuh		
Indoor RH:	50%	Estimated airflow:	580 cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP	Model:	R4H5S18*K*AAA*+FEVA0024**+NAVA43601CK
Manufacturer:	Smart Comfort		
Actual airflow:	580 cfm		
Sensible capacity:	12180 Btuh	96% of load	
Latent capacity:	5220 Btuh	93% of load	
Total capacity:	17400 Btuh	95% of load	SHR: 70%

Heating Equipment

Design Conditions

Outdoor design DB:	20.8°F	Heat loss:	20267 Btuh	Entering coil DB:	62.2°F
Indoor design DB:	70.0°F				

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP	Model:	R4H5S18*K*AAA*+FEVA0024**+NAVA43601CK
Manufacturer:	Smart Comfort		
Actual airflow:	580 cfm		
Output capacity:	16800 Btuh	83% of load	Capacity balance: 31 °F
Supplemental heat required:	3467 Btuh		Economic balance: -99 °F

Backup equipment type:	Elec strip	Model:	
Manufacturer:	Smart Comfort		
Actual airflow:	580 cfm		
Output capacity:	5.4 kW	91% of load	Temp. rise: 50 °F

Meets all requirements of ACCA Manual S.



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

Project Information

For: S46054-FDJ-TZII, GILES



Design Conditions

Location:	TN-SG25			Indoor:	Indoor temperature (°F)	Heating	70	Cooling	75
	Elevation: 981 ft				Design TD (°F)		49		16
	Latitude: 36°N				Relative humidity (%)		30		50
					Moisture difference (gr/lb)		20.9		35.8
Outdoor:		Heating	Cooling	Infiltration:	Method		Simplified		
	Dry bulb (°F)	21	91		Construction quality		Average		
	Daily range (°F)	-	19 (M)		Fireplaces		0		
	Wet bulb (°F)	-	74						
	Wind speed (mph)	15.0	7.5						

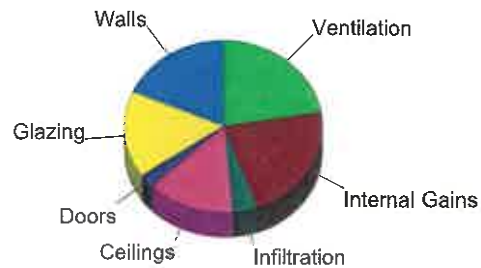
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	4.0	5056	24.9
Glazing	14.8	1427	7.0
Doors	14.8	620	3.1
Ceilings	1.6	1700	8.4
Floors	2.0	2125	10.5
Infiltration	2.4	3384	16.7
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		5954	29.4
Adjustments		0	0
Total		20267	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	1.9	2348	18.4
Glazing	21.3	2059	16.2
Doors	8.4	351	2.8
Ceilings	1.6	1775	13.9
Floors	0	0	0
Infiltration	0.4	548	4.3
Ducts		0	0
Ventilation		2832	22.2
Internal gains		2820	22.1
Blower		0	0
Adjustments		0	0
Total		12733	100.0



Latent Cooling Load = 5594 Btuh
 Overall U-value = 0.063 Btuh/ft²-°F, Window / Floor Area = 9.0 %

Data entries checked.



Component Constructions
Entire House
Clayton Homes

Job: S46054-FDJ-TZII
 Date: APRIL 26-2023
 By:

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

Project Information

For: S46054-FDJ-TZII, GILES



Design Conditions

Location:		Indoor:		Heating	Cooling
TN-SG25		Indoor temperature (°F)		70	75
Elevation:	981 ft	Design TD (°F)		49	16
Latitude:	36°N	Relative humidity (%)		30	50
Outdoor:		Moisture difference (gr/lb)		20.9	35.8
Heating		Infiltration:			
Dry bulb (°F)		Method		Simplified	
Daily range (°F)		Construction quality		Average	
Wet bulb (°F)		Fireplaces		0	
Wind speed (mph)					

Construction descriptions

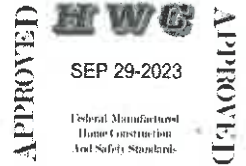
	Or	Area ft ²	U-value Btu/ft ² ·°F	Insul R ft ² ·°F/Btu	Htg HTM Btu/ft ²	Loss Btu/h	Cig HTM Btu/ft ²	Gain Btu/h
Walls								
CMH - SW - R-13 Wall - THP502-DOE: Single Wide - R-13 Insulation	n	112	0.082	13.0	4.03	451	1.87	209
THP502 2x4 Wall-DOE	e	534	0.082	13.0	4.03	2155	1.87	1001
	s	105	0.082	13.0	4.03	424	1.87	197
	w	503	0.082	13.0	4.03	2027	1.87	942
	all	1253	0.082	13.0	4.03	5056	1.87	2348
Partitions								
(none)								
Windows								
Clayton - Thermopane Low-E DOE: Clayton-Thermopane Low-E DOE;	n	8	0.300	0	14.8	123	7.37	61
50% blinds 45°, medium; 50% outdoor insect screen; 6.67 ft head ht	e	21	0.300	0	14.8	308	21.4	446
	s	15	0.300	0	14.8	221	10.3	155
	w	28	0.300	0	14.8	406	21.4	589
	all	72	0.300	0	14.8	1058	17.5	1251
Clayton - Thermopane Low-E: Clayton - Thermopane Low-E; 50% blinds	w	25	0.300	0	14.8	369	21.4	535
45°, medium; 50% outdoor insect screen; 6.67 ft head ht								
Doors								
CMH - Standard Door: CMH - Standard Door - Solid no storm	e	21	0.300	0	14.8	310	8.35	175
	w	21	0.300	0	14.8	310	8.35	175
	all	42	0.300	0	14.8	620	8.35	351
Ceilings								
CMH-SW-180 BOX R38 - THP2002 - DOE: CMH-SW-180 BOX R38-		1080	0.032	38.0	1.57	1700	1.64	1775
THP2002 - DOE								
Floors								
CMH-SW-180- R33-THP472-DOE: CMH-SW-180-R33-THP472-DOE		1080	0.040	33.0	1.97	2125	0	0

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

Project Information

For: S46054-FDJ-TZII, GILES

Notes: duct capacity-19333



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 15567 Btuh
 Ducts 0 Btuh
 Central vent (90 cfm) 4701 Btuh
 Outside air
 Humidification 0 Btuh
 Piping 0 Btuh
 Equipment load 20267 Btuh

Sensible Cooling Equipment Load Sizing

Structure 11243 Btuh
 Ducts 0 Btuh
 Central vent (90 cfm) 1490 Btuh
 Outside air
 Blower 0 Btuh
 Use manufacturer's data n
 Rate/swing multiplier 0.96
 Equipment sensible load 12173 Btuh

Infiltration

Method Simplified
 Construction quality Average
 Fireplaces 0

Latent Cooling Equipment Load Sizing

Structure 3481 Btuh
 Ducts 0 Btuh
 Central vent (90 cfm) 2114 Btuh
 Outside air
 Equipment latent load 5594 Btuh

	Heating	Cooling
Area (ft²)	1080	1080
Volume (ft³)	8640	8640
Air changes/hour	0.45	0.23
Equip. AVF (cfm)	65	33

Equipment Total Load (Sen+Lat) 17767 Btuh
 Req. total capacity at 0.70 SHR 1.4 ton

Heating Equipment Summary

Make Smart Comfort
 Trade 15 SEER2 R SERIES R410A HP
 Model R4H5S18*K*AAA*
 AHRI ref 0
 Efficiency 7.5 HSPF2
 Heating input
 Heating output 16800 Btuh @ 47°F
 Temperature rise 27 °F
 Actual air flow 580 cfm
 Air flow factor 0.037 cfm/Btuh
 Static pressure 0.30 in H2O
 Space thermostat
 Capacity balance point = 31 °F

Cooling Equipment Summary

Make Smart Comfort
 Trade 15 SEER2 R SERIES R410A HP
 Cond R4H5S18*K*AAA*
 Coil FEVA0024**+NAVA43601CK
 AHRI ref 0
 Efficiency 12.0 EER2, 15 SEER2
 Sensible cooling 12180 Btuh
 Latent cooling 5220 Btuh
 Total cooling 17400 Btuh
 Actual air flow 580 cfm
 Air flow factor 0.052 cfm/Btuh
 Static pressure 0.30 in H2O
 Load sensible heat ratio 0.69

Backup: Smart Comfort
 Input = 5 kW, Output = 18354 Btuh, 100 AFUE

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



Duct System Summary

Entire House

Clayton Homes

Job: S46054-FDJ-TZII
 Date: APRIL 26-2023
 By:

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

Project Information

For: S46054-FDJ-TZII, 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	0.397 in/100ft	0.397 in/100ft
Actual air flow	580 cfm	580 cfm
Total effective length (TEL)		76 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 861	32	17	0.638	5.0	0x0	VIFx	12.0	35.0	st1
BEDROOM 2	h 2346	87	62	0.577	5.0	0x0	VIFx	17.0	35.0	st1
BEDROOM 3	h 1756	65	65	0.789	5.0	0x0	VIFx	3.0	35.0	st1
KITCHEN	c 3656	161	189	0.659	5.0	5x7	ShMt	10.5	35.0	st2
LIVING ROOM	c 2614	100	135	0.484	6.0	0x0	VIFx	27.0	35.0	st2
P-BATH	h 1727	64	33	0.397	5.0	0x0	VIFx	40.5	35.0	st2
PRIMARY BEDROOM	c 1565	70	81	0.462	5.0	0x0	VIFx	30.0	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	PeakAVF	395	437	0.397	899	7.2	5 x 14	ShtMetl	
st1	PeakAVF	185	143	0.577	380	8.2	5 x 14	ShtMetl	

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	580	580	0	0	0	0	0x 0		VIFx	



Manual S Compliance Report
Entire House
Clayton Homes

S46054-FDJ-TZIII-DOE

Job: S46054-FDJ-TZIII

Date: APRIL 26-2023

By:

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

Project Information

For: S46054-FDJ-TZIII, GILES



Cooling Equipment

Design Conditions

Outdoor design DB:	87.6°F	Sensible gain:	10735	Btuh	Entering coil DB:	77.0°F
Outdoor design WB:	71.2°F	Latent gain:	4405	Btuh	Entering coil WB:	63.8°F
Indoor design DB:	75.0°F	Total gain:	15140	Btuh		
Indoor RH:	50%	Estimated airflow:	580	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP	Model:	R4H5S18*K*AAA*+FEVA0024**+NAVA43601CK
Manufacturer:	Smart Comfort		
Actual airflow:	580	cfm	
Sensible capacity:	12180	Btuh	113% of load
Latent capacity:	5220	Btuh	118% of load
Total capacity:	17400	Btuh	115% of load SHR: 70%

Heating Equipment

Design Conditions

Outdoor design DB:	15.8°F	Heat loss:	20069	Btuh	Entering coil DB:	61.4°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP	Model:	R4H5S18*K*AAA*+FEVA0024**+NAVA43601CK
Manufacturer:	Smart Comfort		
Actual airflow:	580	cfm	
Output capacity:	16800	Btuh	84% of load
Supplemental heat required:	3269	Btuh	Capacity balance: 28 °F
			Economic balance: -99 °F

Backup equipment type:	Elec strip	Model:	
Manufacturer:	Smart Comfort		
Actual airflow:	580	cfm	
Output capacity:	5.4	kW	91% of load Temp. rise: 52 °F

Meets all requirements of ACCA Manual S.



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

Project Information

For: S46054-FDJ-TZIII, GILES

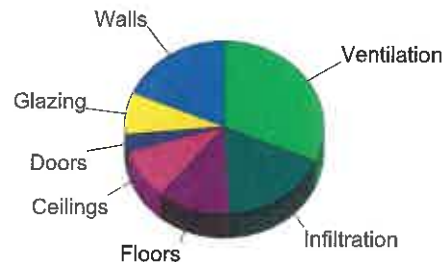


Design Conditions

Location: VA-SG22 Elevation: 2133 ft Latitude: 37°N		Indoor: Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)	Heating 70 54 30 24.8	Cooling 75 13 50 28.1
Outdoor: Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	Heating 16 - - 15.0	Cooling 88 20 (M) 71 7.5	Infiltration: Method Construction quality Fireplaces	Simplified Average 0

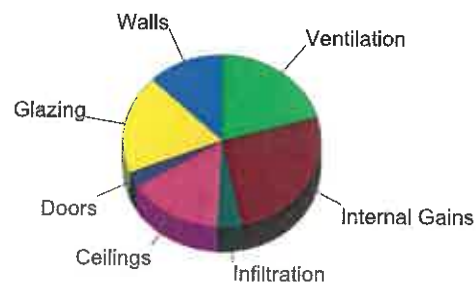
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.0	3736	18.6
Glazing	16.3	1572	7.8
Doors	16.3	683	3.4
Ceilings	1.7	1873	9.3
Floors	2.2	2341	11.7
Infiltration	2.6	3575	17.8
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		6289	31.3
Adjustments		0	0
Total		20069	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	1.1	1330	12.4
Glazing	20.8	2009	18.7
Doors	7.3	306	2.9
Ceilings	1.5	1652	15.4
Floors	0	0	0
Infiltration	0.3	425	4.0
Ducts		0	0
Ventilation		2193	20.4
Internal gains		2820	26.3
Blower		0	0
Adjustments		0	0
Total		10735	100.0



Latent Cooling Load = 4405 Btuh
Overall U-value = 0.053 Btuh/ft²·°F, Window / Floor Area = 9.0 %

Data entries checked.



Component Constructions
Entire House
Clayton Homes

Job: S46054-FDJ-TZIII
 Date: APRIL 26-2023
 By:

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

Project Information

For: S46054-FDJ-TZIII, GILES



Design Conditions

Location: VA-SG22 Elevation: 2133 ft Latitude: 37°N		Indoor: Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)	Heating 70 54 30 24.8	Cooling 75 13 50 28.1
Outdoor: Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	Heating 16 - - 15.0	Cooling 88 20 (M) 71 7.5	Infiltration: Method Construction quality Fireplaces	Simplified Average 0

Construction descriptions

	Or	Area ft²	U-value Btu/ft²·F	Insul R ft²·F/Btu	Htg HTM Btu/ft²	Loss Btu/h	Clg HTM Btu/ft²	Gain Btu/h
Walls								
CMH - SW - R-21 Wall - THP510-DOE: Single Wide - R-21Insulation	n	112	0.055	21.0	2.98	333	1.06	119
THP510 2x6 Wall-DOE	e	534	0.055	21.0	2.98	1592	1.06	567
	s	105	0.055	21.0	2.98	313	1.06	111
	w	503	0.055	21.0	2.98	1498	1.06	533
	all	1253	0.055	21.0	2.98	3736	1.06	1330
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	8	0.300	0	16.3	136	6.52	54
	e	21	0.300	0	16.3	339	20.5	428
	s	15	0.300	0	16.3	244	9.83	147
	w	28	0.300	0	16.3	447	20.5	565
	all	72	0.300	0	16.3	1165	16.7	1194
Clayton - Thermopane Low-E: Clayton - Thermopane Low-E; 50% blinds 45°, medium; 50% outdoor insect screen; 6.67 ft head ht	w	25	0.300	0	16.3	407	20.5	513
Doors								
CMH - Standard Door: CMH - Standard Door - Solid no storm	e	21	0.300	0	16.3	341	7.29	153
	w	21	0.300	0	16.3	341	7.29	153
	all	42	0.300	0	16.3	683	7.29	306
Ceilings								
CMH-SW-180 BOX R38 - THP2002 - DOE: CMH-SW-180 BOX R38- THP2002 - DOE		1080	0.032	38.0	1.73	1873	1.53	1652
Floors								
CMH-SW-180- R33-THP472-DOE: CMH-SW-180-R33-THP472-DOE		1080	0.040	33.0	2.17	2341	0	0

Project Information

For: S46054-FDJ-TZIII, GILES

Notes: duct capacity-19333



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 15104 Btuh
 Ducts 0 Btuh
 Central vent (90 cfm) 4965 Btuh
 Outside air
 Humidification 0 Btuh
 Piping 0 Btuh
 Equipment load 20069 Btuh

Sensible Cooling Equipment Load Sizing

Structure 9581 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 9940 Btuh

Infiltration

Method Simplified
 Construction quality Average
 Fireplaces 0

Latent Cooling Equipment Load Sizing

Structure 2816 Btuh
 Ducts 0 Btuh
 Central vent (90 cfm) 1590 Btuh
 Outside air
 Equipment latent load 4405 Btuh
Equipment Total Load (Sen+Lat) 14346 Btuh
 Req. total capacity at 0.70 SHR 1.2 ton

	Heating	Cooling
Area (ft ²)	1080	1080
Volume (ft ³)	8640	8640
Air changes/hour	0.45	0.23
Equiv. AVF (cfm)	65	33

Heating Equipment Summary

Make Smart Comfort
 Trade 15 SEER2 R SERIES R410A HP
 Model R4H5S18*K*AAA*
 AHRI ref 0
 Efficiency 7.5 HSPF2
 Heating input
 Heating output 16800 Btuh @ 47°F
 Temperature rise 28 °F
 Actual air flow 580 cfm
 Air flow factor 0.038 cfm/Btuh
 Static pressure 0.30 in H2O
 Space thermostat
 Capacity balance point = 28 °F
 Backup: Smart Comfort
 Input = 5 kW, Output = 18354 Btuh, 100 AFUE

Cooling Equipment Summary

Make Smart Comfort
 Trade 15 SEER2 R SERIES R410A HP
 Cond R4H5S18*K*AAA*
 Coil FEVA0024***+NAVA43601CK
 AHRI ref 0
 Efficiency 12.0 EER2, 15 SEER2
 Sensible cooling 12180 Btuh
 Latent cooling 5220 Btuh
 Total cooling 17400 Btuh
 Actual air flow 580 cfm
 Air flow factor 0.061 cfm/Btuh
 Static pressure 0.30 in H2O
 Load sensible heat ratio 0.71

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

Project Information

For: S46054-FDJ-TZIII, 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	0.462 in/100ft	0.462 in/100ft
Actual air flow	580 cfm	580 cfm
Total effective length (TEL)		65 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 810	31	14	0.638	5.0	0x0	VIFx	12.0	35.0	st1
BEDROOM 2	h 2191	84	58	0.577	5.0	0x0	VIFx	17.0	35.0	st1
BEDROOM 3	c 1105	66	67	0.789	5.0	0x0	VIFx	3.0	35.0	st1
KITCHEN	c 3069	165	186	0.659	5.0	5x6	ShMt	10.5	35.0	st2
LIVING ROOM	c 2384	103	144	0.484	6.0	0x0	VIFx	27.0	35.0	st2
P-BATH	h 440	61	27	0	0	0x0	VIFx	0	0	
PRIMARY BEDROOM	c 1390	70	84	0.462	5.0	0x0	VIFx	30.0	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	PeakAVF	337	414	0.462	852	7.2	5 x 14	ShtMetl	
st1	PeakAVF	182	139	0.577	374	8.2	5 x 14	ShtMetl	

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	580	580	0	0	0	0	0x0		VIFx	

Maverick

Model Number 46LTO16723AH23S Drawing Number S46054 - HL 2.1 Version 11

BOX SIZE: 15 ft. x 72 ft.
 AVG. SIDEWALL HEIGHT = 8 FEET
 PERCENTAGE OF CEILING THAT IS VAULTED = 0%

IN-FLOOR DUCT SYSTEM

	HEATED FLOOR	WALL	FLAT ROOF
INSULATION VALUES	R-22 FW	R-13	R-38
DAPIA PAGE	THP-176	THP-502	THP-2002
U VALUE (BTUH/SQ.FT.-F)	0.047	0.0817	0.0319

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

Energy Star v3 & ZERH	
Max Glass (sq ft)	
Th. Zone 1	285.8
Th. Zone 2	106.8
Th. Zone 3	0.0

Design Temperatures		
Furnace Heating Temp (F)	Economy Outdoor Temp (F)	
-27	2	10kW
-46	-11	12kW
-75	-32	15kW
-43	-9	40k Gas
-100	-49	60k Gas
-157	-89	80k Gas

		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	100.00	0.300	30.00
Window Glass Area:	Option	0.00	0.300	0.00
	Net:			
	Floor	1080.00	0.047	51.19
	Wall	1248.00	0.082	101.96
	Ceiling	1080.00	0.0319	34.45
Th. Zone 1:	Ext. Duct	0.00	0.000	0.00
Th. Zone 2:	Ext. Duct	0.00	0.000	0.00
Th. Zone 3:	Ext. Duct	0.00	0.000	0.00
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

	Outdoor Design Temp (F)	UA	Uo	Heatloss BTUH/F
Thermal Zone 1	11	230.81	0.065	352.60
Thermal Zone 2	0	230.81	0.065	352.60
Thermal Zone 3	-14	230.81	0.065	352.60

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



BOX SIZE: 15 ft. x 72 ft
 AVG. SIDEWALL HEIGHT = 8 FEET
 PERCENTAGE OF CEILING THAT IS VAULTED = 0%

IN-FLOOR DUCT SYSTEM

	HEATED FLOOR	WALL	FLAT ROOF
INSULATION VALUES	R-22 OR /R-33 BIB	R-13	R-38
DAPIA PAGE	THP-472	THP-502	THP-2002
U VALUE (BTUH/SQ.FT.-F)	0.040	0.0817	0.0319

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	100.00	0.300	30.00
	Option	0.00	0.300	0.00
Net:	Floor	1080.00	0.040	43.31
	Wall	1248.00	0.082	101.96
	Ceiling	1080.00	0.0319	34.45
	Ext. Duct	0.00	0.000	0.00
Th. Zone 1:	Ext. Duct	0.00	0.000	0.00
Th. Zone 2:	Ext. Duct	0.00	0.000	0.00
Th. Zone 3:	Ext. Duct	0.00	0.000	0.00
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	321.9
Th. Zone 2	143.0
Th. Zone 3	12.8

	Outdoor Design Temp (F)	UA	Uo	Heatloss BTUH/F
Thermal Zone 1	11	222.92	0.063	344.70
Thermal Zone 2	0	222.92	0.063	344.70
Thermal Zone 3	-14	222.92	0.063	344.70

Design Temperatures		
Furnace Heating Temp (F)	Economy Outdoor Temp (F)	
-29	1	10kW
-49	-13	12kW
-78	-34	15kW
-48	-11	40k Gas
-104	-52	60k Gas
-162	-92	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



Maverick

Model Number	46LTO16723AH23S	Drawing Number	S46054 - H.L. Z.M.	Version 11
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BOX SIZE: 15 ft. x 72 ft.
 AVG. SIDEWALL HEIGHT = 8 FEET
 PERCENTAGE OF CEILING THAT IS VAULTED = 0%

IN-FLOOR DUCT SYSTEM

	HEATED FLOOR	WALL	FLAT ROOF
INSULATION VALUES	R-22 OR / R-33 BIB	R-21	R-38
DAPIA PAGE	THP-472	THP-510	THP-2002
U VALUE (BTUH/SQ.FT.-F)	0.040	0.0546	0.0319

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	100.00	0.300	30.00
	Option	0.00	0.300	0.00
Net:	Floor	1080.00	0.040	43.31
	Wall	1248.00	0.055	68.14
	Ceiling	1080.00	0.0319	34.45
	Ext. Duct	0.00	0.000	0.00
Th. Zone 1:	Ext. Duct	0.00	0.000	0.00
Th. Zone 2:	Ext. Duct	0.00	0.000	0.00
Th. Zone 3:	Ext. Duct	0.00	0.000	0.00
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	435.3
Th. Zone 2	276.0
Th. Zone 3	160.2

	Outdoor Design Temp (F)	UA	Uo	Heatloss BTUH/F
Thermal Zone 1	11	189.10	0.053	310.90
Thermal Zone 2	0	189.10	0.053	310.90
Thermal Zone 3	-14	189.10	0.053	310.90

Design Temperatures		
Furnace Heating Temp (F)	Economy Outdoor Temp (F)	
-40	-7	10kW
-62	-22	12kW
-95	-45	15kW
-59	-20	40k Gas
-123	-65	60k Gas
-187	-110	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

