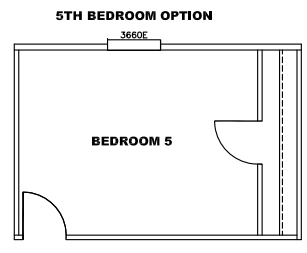
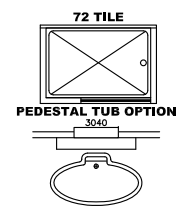
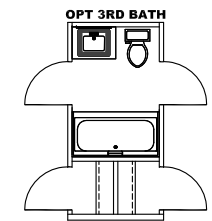
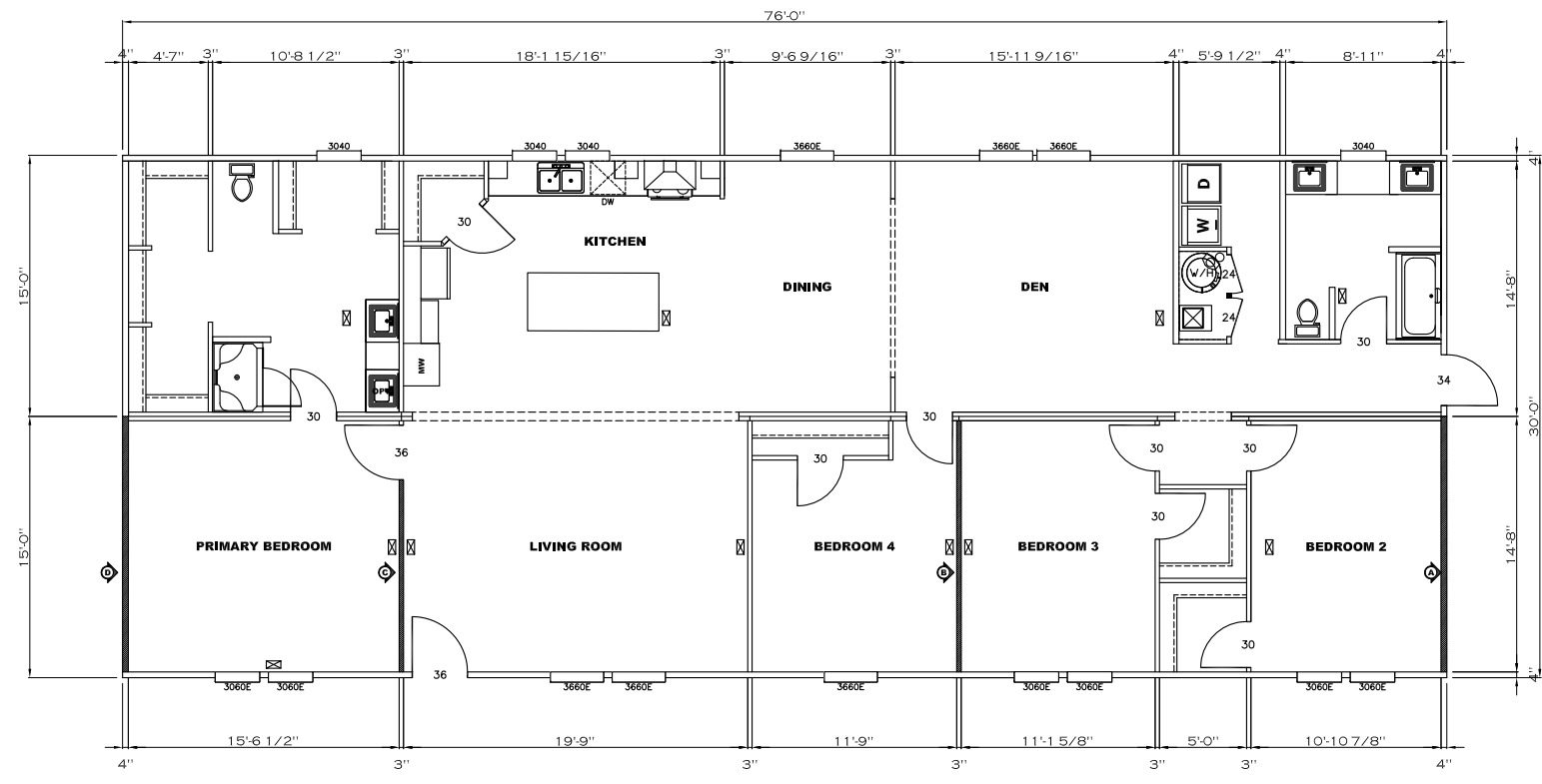


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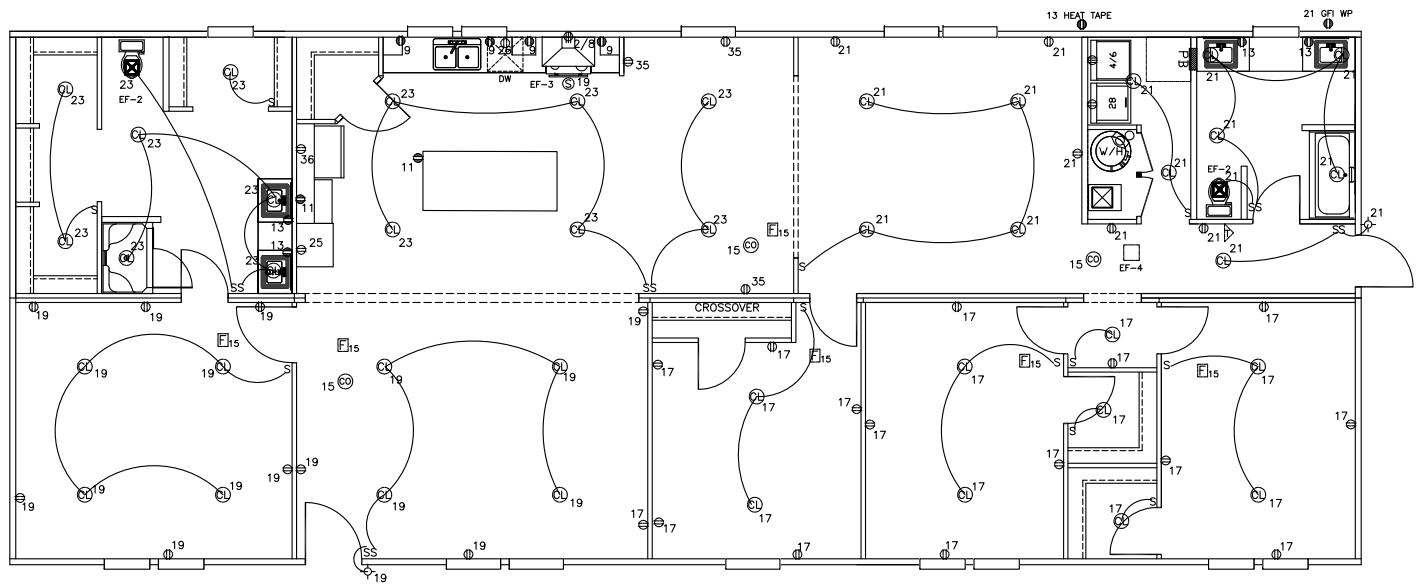
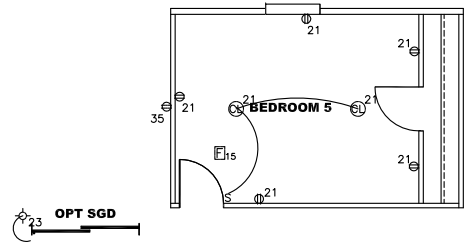
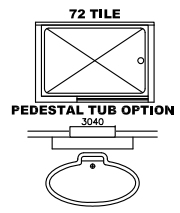
OPT SGD



IDENTIFIES SHEARWALL LOCATION

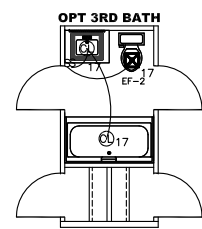
M46006-DOE-FP

GILES HOMES		Model #: MODEL#	Drawing #:
405 S. BROAD ST. NEW TAZEWELL TN 37825		Date: 7-21-23	Scale: N/A
Product Designer: HARVILLE		M46006	
FLOOR PLAN SUB			M46006



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.

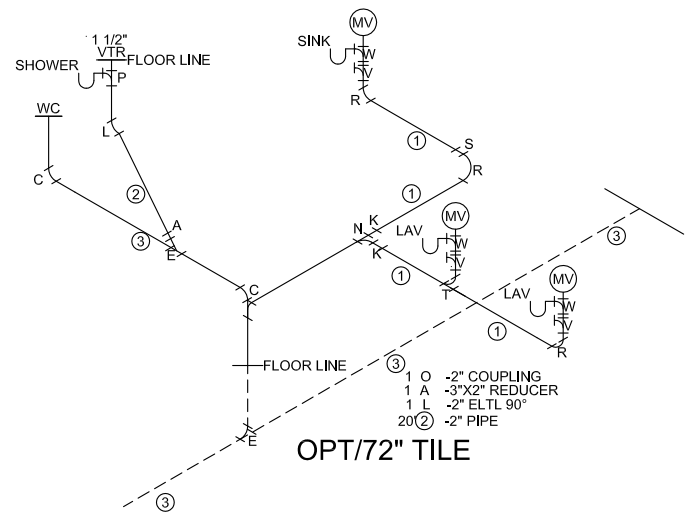


M46006-DOE-EL

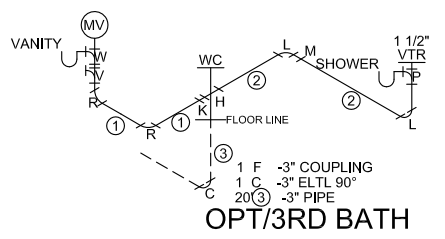
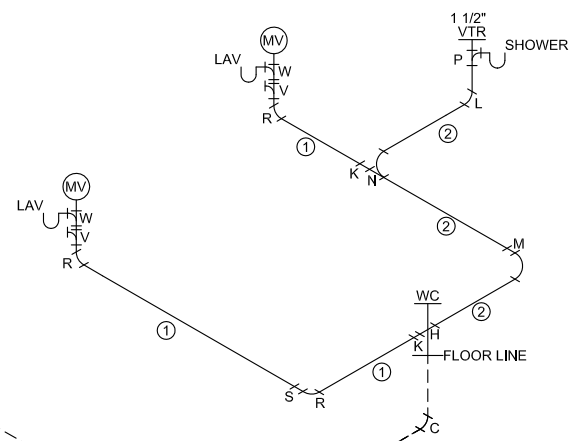
GILES HOMES 405 S. BROAD ST, NEW TAZEWELL TN 37825	Model #: MODEL#	Drawing #:
	Date: 7-21-23	Scale: N/A
Product Designer: HARVILLE	M46006	M46006 DOE
ELEC SUB		M46006

LEGEND AND SET UP KIT.

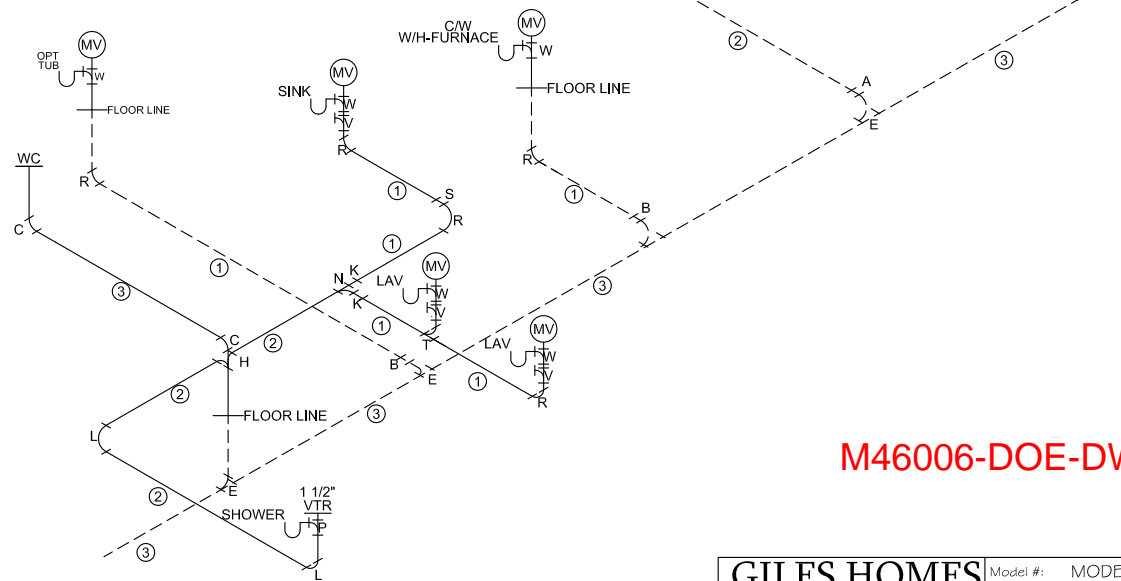
- VTR - VENT THRU ROOF
- (MV) - MECHANICAL VENT
- 70(3) -3" PIPE
- 20(2) -2" PIPE
- 40(1) -1 1/2" PIPE
- 0 A -3"x2" REDUCER
- 2 B -3"x1 1/2" REDUCER
- 1 C -3" ELLT 90°
- 0 D -3" ELL 45°
- 3 E -3" LTTY
- 3 F -3" COUPLING
- 0 G -3" X 3" X 3" X 2" X 2" ST
- 0 H -3" X 3" X 2" X 2" ST
- 0 I -3" X 3" X 2" ST
- 0 J -3" 3 WAY ELL
- 0 K -2"x11/2" REDUCER
- 0 L -2" ELLT 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
- 2 R -1 1/2" ELLT 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



OPT/72" TILE



OPT/3RD BATH



M46006-DOE-DWV

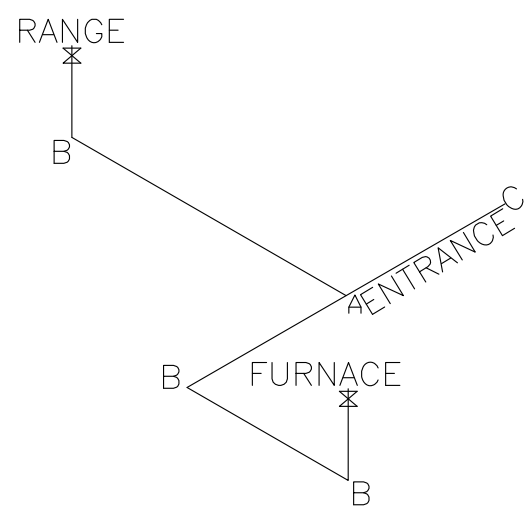
GILES HOMES 405 S. BROAD ST, NEW TAZEWELL TN 37825	Model #: MODEL#	Drawing #:
	Date: 7-21-23	Scale: N/A
Product Designer: HARVILLE	M46006	M46006 DOE
DWV		M46006



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



M46006-DOE-GL

GILES HOMES 405 S. BROAD ST. NEW TAZEWELL TN 37825	Model #:	MODEL#	Drawing #:
	Date: 7-21-23	Scale: N/A	M46006 DOE
Product Designer: HARVILLED	M46006		
GAS			M46006

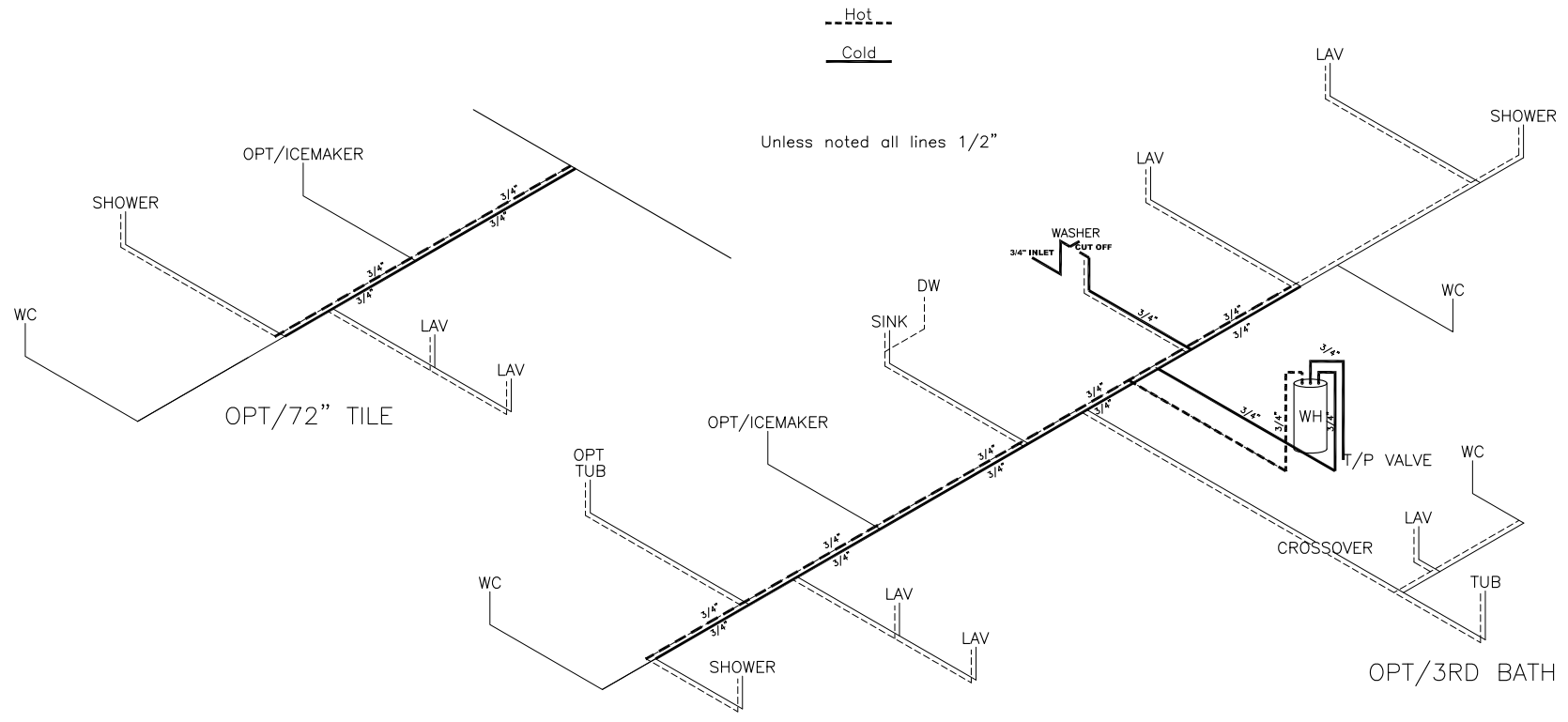
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M46006-DOE-PP

GILES HOMES <small>405 S. BROAD ST. NEW TAZEWELL TN 37825</small>	Model #:	MODEL#	Drawing #: M46006 DOE
	Date:	7-21-23	
Product Designer: HARVILLED	M46006		
PRESSURE PLUMB			M46006

Model # **M46006-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	282	3660 x2	24.4	8.65%		12.4	4.40%		Vent
Kitchen	242	3040 X2	12.6	5.21%	X	6.6	2.73%	X	Vent
DINING	138	3660	12.2	8.84%	X	6.2	4.49%	X	24
Primary Bedroom	162	3060 x2	19.8	12.22%		10.4	6.42%		28
Bedroom 2	158	3060 x2	19.8	12.53%		10.4	6.58%		28
Bedroom 3	159	3060 x2	19.8	12.45%		10.4	6.54%		28
Primary Bath	150	3040	6.3	4.20%	X	3.3	2.20%	X	28
Bath 2	91	0			X			X	24
Utility	43	0	0.00%		X			24	
DEN	230	3660 x2	24.4	10.61%		12.4	5.39%		Vent
Bedroom 4	150	3660	12.2	8.13%		6.2	4.13%		28
Bedroom 5	145	3660	12.2	8.41%		6.2	4.28%		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

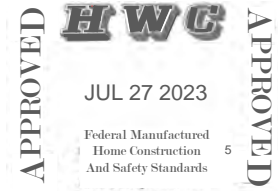
MFG. Giles Industries

REVISION

E. M46006-DOE . 2

M46006-DOE-LV

CMH Inc.
SHEARWALL DESIGN - HUD



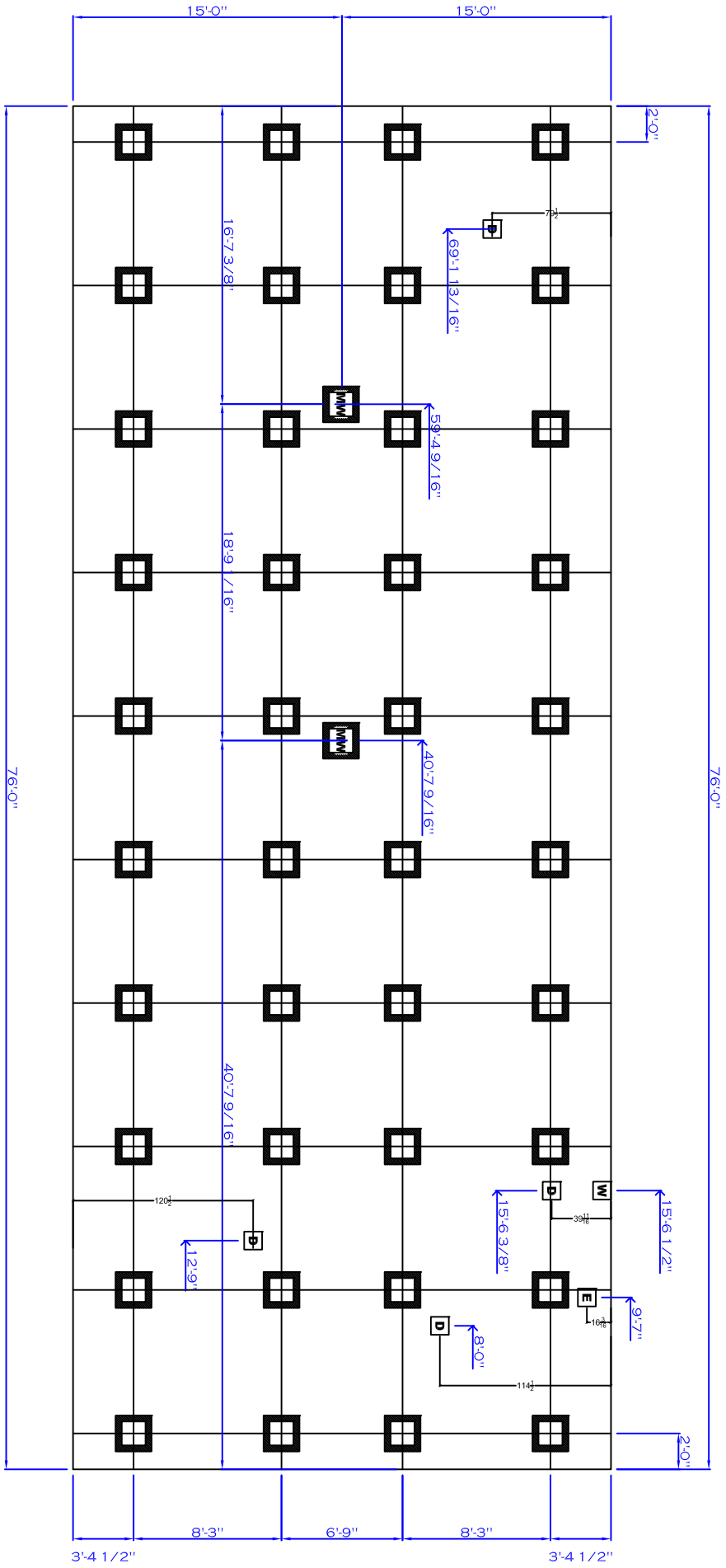
Model # M46006

Box Width =	180 "	Double wide	Minimum Joist Spacing 16 "
Box Length =	76 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

Wind Zone 1 Standard Roof		(3/8" sheathing only with 15 gax 1.5" at 5/10" oc. (197 plf) Chords: 2x4 SPF #3 Top Plate spliced w/ 2x4 MCP & 1x6 SPF Rail spliced w/ 12" glue block.				96 inch sidewall
Diaphragm Construction:						
Shearwall	Dist./ Hitch	Length	PLF	# of Joists	Lags	Notes
A	0'	Full	162	2	2/2	
D	76'	Full	162	2	2/2	
Wind Zone 2 Standard Roof		(3/8" sheathing only with 15 gax 1.5" at 5/10" oc. (197 plf) Chords: 2x4 SPF #3 Top Plate spliced w/ 2.5x6 MCP & 2x4 SPF #3 Rail spliced w/ 12" glue block.				96 inch sidewall
Diaphragm Construction:						
Shearwall	Dist./ Hitch	Length	PLF	# of Joists	Lags	Notes
A	0'	164"	162	2	2/1	
B	27.99'	136"	425	2	4/2	
C	59.98'	120"	425	3	4/1	
D	76'	96"	162	2	1/1	
		(3/8" sheathing only with 15 gax 1.5" at 5/10" oc. (197 plf) Chords: 2x4 SPF #3 Top Plate spliced w/ 2x4 MCP & 1x6 SPF Rail spliced w/ 12" glue block.				
Diaphragm Construction:						
Shearwall	Dist./ Hitch	Length	PLF	# of Joists	Lags	Notes
		(3/8" sheathing 8d@ 6/12 oc (308) unblocked & (347) blocked Chords: 2x4 SPF #3 Top Plate spliced w/ 3x6 MCP & 2x6 SPF #3 Rail spliced w/ 12" glue block.				Block Dist. X=0'
Diaphragm Construction:						
Shearwall	Dist./ Hitch	Length	PLF	# of Joists	Lags	Notes

Designed by JDN



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

-  MARRIAGE WALL PIER
-  WATER INLET
-  DRAIN
-  ELECTRICAL DROP
-  DOOR PIER
-  REGULAR PIER

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: M46006-FDJ-SGD-TZ-I, GILES



Cooling Equipment

Design Conditions

Outdoor design DB:	91.7°F	Sensible gain:	19586 Btuh	Entering coil DB:	76.7°F
Outdoor design WB:	73.9°F	Latent gain:	5961 Btuh	Entering coil WB:	63.7°F
Indoor design DB:	75.0°F	Total gain:	25547 Btuh		
Indoor RH:	50%	Estimated airflow:	920 cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP	Model:	N4H5S30*K*AAA*+EA*4X36L21A*+*80ES(N,L)0902116A*		
Manufacturer:	Smart Comfort				
Actual airflow:	920 cfm				
Sensible capacity:	19320 Btuh	99% of load			
Latent capacity:	8280 Btuh	139% of load			
Total capacity:	27600 Btuh	108% of load	SHR:	70%	

Heating Equipment

Design Conditions

Outdoor design DB:	26.4°F	Heat loss:	26331 Btuh	Entering coil DB:	65.7°F
Indoor design DB:	70.0°F				

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP	Model:	N4H5S30*K*AAA*+EA*4X36L21A*+*80ES(N,L)0902116A*		
Manufacturer:	Smart Comfort				
Actual airflow:	920 cfm				
Output capacity:	28000 Btuh	106% of load		Capacity balance:	28 °F
Supplemental heat required:	0 Btuh			Economic balance:	-99 °F

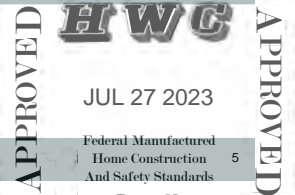
Backup equipment type:	Elec strip	Model:	N4H5S30*K*AAA*		
Manufacturer:	Smart Comfort				
Actual airflow:	920 cfm				
Output capacity:	10.0 kW	130% of load	Temp. rise:	35 °F	

Meets all requirements of ACCA Manual S.

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

Project Information

For: M46006-FDJ-SGD-TZ-I, 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
50
39.9

Cooling

75
17
50
35.3

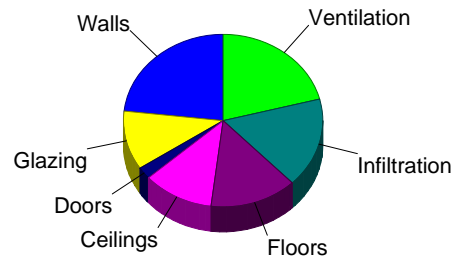
Infiltration:

Method
Construction quality
Fireplaces

Simplified
Average
0

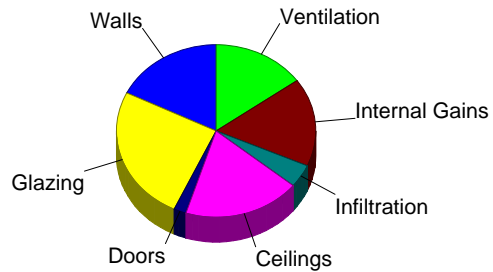
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.6	6109	23.2
Glazing	13.4	2917	11.1
Doors	14.0	586	2.2
Ceilings	1.4	3039	11.5
Floors	1.7	3725	14.1
Infiltration	2.3	4433	16.8
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		5522	21.0
Adjustments		0	0
Total		26331	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	2.0	3461	17.7
Glazing	22.9	4976	25.4
Doors	9.5	399	2.0
Ceilings	1.6	3708	18.9
Floors	0	0	0
Infiltration	0.4	849	4.3
Ducts		0	0
Ventilation		2943	15.0
Internal gains		3250	16.6
Blower		0	0
Adjustments		0	0
Total		19586	100.0



Latent Cooling Load = 5961 Btuh
Overall U-value = 0.058 Btuh/ft²·°F, Window / Floor Area = 9.7 %

Data entries checked.

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

Project Information

For: M46006-FDJ-SGD-TZ-I, 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 (%)		50	50
		Moisture difference (gr/lb)		39.9	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 Btuh/ft²·F	Insul R ft²·F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
CMH - DW - R-13 Wall - THP502-DOE: Double Wide - R-13 Insulation	n	360	0.082	13.0	3.58	1287	2.03	729
THP502 2x4 Wall-DOE	e	527	0.082	13.0	3.58	1883	2.03	1067
	s	339	0.082	13.0	3.58	1212	2.03	687
	w	483	0.082	13.0	3.58	1727	2.03	978
	all	1709	0.082	13.0	3.58	6109	2.03	3461

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	34	0.350	0	15.3	519	26.3	894
Clayton - Thermopane Low-E DOE: Clayton-Thermopane Low-E DOE; 50% blinds 45°, medium; 50% outdoor insect screen; 6.67 ft head ht	e	63	0.300	0	13.1	828	21.8	1379
	w	120	0.300	0	13.1	1570	21.8	2613
	all	183	0.300	0	13.1	2398	21.8	3992

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		2249	0.031	38.0	1.35	3039	1.65	3708
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Floors

CMH-DW-158- R33-THP469-DOE: CMH-DW-180-R33-THP472-DOE		2249	0.038	33.0	1.66	3725	0	0
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Project Information

For: M46006-FDJ-SGD-TZ-I, GILES

Notes: DUCT CAPACITY 30666



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 22172 Btuh
 Ducts 0 Btuh
 Central vent (90 cfm) 4159 Btuh
 Outside air
 Humidification 0 Btuh
 Piping 0 Btuh
 Equipment load 26331 Btuh

Sensible Cooling Equipment Load Sizing

Structure 17993 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 18940 Btuh

Infiltration

Method Simplified
 Construction quality Average
 Fireplaces 0

Latent Cooling Equipment Load Sizing

Structure 3877 Btuh
 Ducts 0 Btuh
 Central vent (90 cfm) 2084 Btuh
 Outside air
 Equipment latent load 5961 Btuh

	Heating	Cooling
Area (ft ²)	2249	2249
Volume (ft ³)	17988	17988
Air changes/hour	0.32	0.16
Equiv. AVF (cfm)	96	48

Equipment Total Load (Sen+Lat) 24901 Btuh
 Req. total capacity at 0.70 SHR 2.3 ton

Heating Equipment Summary

Make Smart Comfort
 Trade PERFORMANCE 15 SEER2 HP
 Model N4H5S30*K*AAA*
 AHRI ref 210306423

Efficiency 7.8 HSPF2
 Heating input
 Heating output 28000 Btuh @ 47°F
 Temperature rise 29 °F
 Actual air flow 920 cfm
 Air flow factor 0.041 cfm/Btuh
 Static pressure 0.30 in H2O
 Space thermostat
 Capacity balance point = 28 °F

Cooling Equipment Summary

Make Smart Comfort
 Trade PERFORMANCE 15 SEER2 HP
 Cond N4H5S30*K*AAA*
 Coil EA*4X36L21A*+*80ES(N,L)0902116A*
 AHRI ref 210306423

Efficiency 12.0 EER2, 14.3 SEER2
 Sensible cooling 19320 Btuh
 Latent cooling 8280 Btuh
 Total cooling 27600 Btuh
 Actual air flow 920 cfm
 Air flow factor 0.051 cfm/Btuh
 Static pressure 0.30 in H2O
 Load sensible heat ratio 0.77

Backup: Smart Comfort N4H5S30*K*AAA*
 Input = 10 kW, Output = 34121 Btuh, 100 AFUE

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



Duct System Summary

Entire House

Clayton Homes

Job: M46006-FDJ-SGD-TZ-I
 Date: Jul 21, 2023
 By:

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

Project Information

For: M46006-FDJ-SGD-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	0.193 in/100ft	0.193 in/100ft
Actual air flow	920 cfm	920 cfm
Total effective length (TEL)	156 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 3805	158	124	0.706	6.0	0x0	VIFx	7.5	35.0	st1
BED 2	h 2518	104	95	0.193	6.0	0x0	VIFx	55.6	100.0	st5
BED 3	c 1366	53	70	0.216	5.0	0x0	VIFx	39.1	100.0	st5
BED 4	c 1109	52	57	0.220	5.0	0x0	VIFx	36.1	100.0	st5
DEN	h 1844	77	72	0.822	5.0	0x0	VIFx	1.5	35.0	st3
DINING	c 1419	54	73	0.561	5.0	0x0	VIFx	18.5	35.0	st3
KITCHEN	c 2192	76	112	0.469	6.0	0x0	VIFx	29.0	35.0	st3
LIVING ROOM	c 2871	128	147	0	0	0x0	VIFx	0	0	
P-BATH	h 2222	92	56	0.361	5.0	0x0	VIFx	48.0	35.0	st3
P-BEDROOM	h 3058	127	116	0.199	7.0	0x0	VIFx	50.6	100.0	st4

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st1	Peak AVF	158	124	0.706	325	4.1	5 x 14	ShtMetl	
st3	Peak AVF	299	312	0.361	899	6.9	5 x 10	ShtMetl	
st4	Peak AVF	127	116	0.199	261	5.5	5 x 14	ShtMetl	st2
st5	Peak AVF	209	222	0.193	456	5.5	5 x 14	ShtMetl	st2
st2	Peak AVF	336	337	0.193	809	8.0	5 x 12	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	920	920	0	0	0	0	0x 0		VIFx	



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

Project Information

For: M46006-FDJ-SGD-TZ-II, GILES



Cooling Equipment

Design Conditions

Outdoor design DB:	95.0°F	Sensible gain:	21130 Btuh	Entering coil DB:	77.0°F
Outdoor design WB:	76.5°F	Latent gain:	7375 Btuh	Entering coil WB:	64.1°F
Indoor design DB:	75.0°F	Total gain:	28505 Btuh		
Indoor RH:	50%	Estimated airflow:	920 cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	Smart Comfort	Model:	N4H5S30*K*AAA*+EA*4X36L21A*+*80ES(N,L)0902116A*		
Actual airflow:	920 cfm				
Sensible capacity:	19320 Btuh	91% of load			
Latent capacity:	8280 Btuh	112% of load			
Total capacity:	27600 Btuh	97% of load	SHR:	70%	

Heating Equipment

Design Conditions

Outdoor design DB:	19.6°F	Heat loss:	30736 Btuh	Entering coil DB:	65.0°F
Indoor design DB:	70.0°F				

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	Smart Comfort	Model:	N4H5S30*K*AAA*+EA*4X36L21A*+*80ES(N,L)0902116A*		
Actual airflow:	920 cfm				
Output capacity:	28000 Btuh	91% of load		Capacity balance:	28 °F
Supplemental heat required:	2736 Btuh			Economic balance:	-99 °F

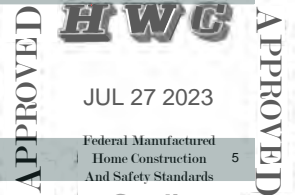
Backup equipment type:	Elec strip				
Manufacturer:	Smart Comfort	Model:	N4H5S30*K*AAA*		
Actual airflow:	920 cfm				
Output capacity:	10.0 kW	111% of load	Temp. rise:	34 °F	

Meets all requirements of ACCA Manual S.

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

Project Information

For: M46006-FDJ-SGD-TZ-II, GILES

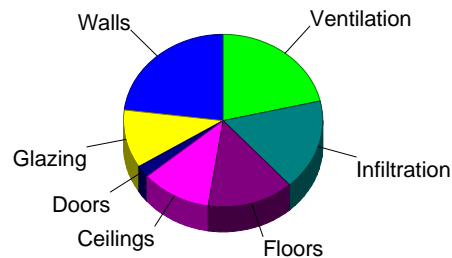


Design Conditions

Location: Millington Muni Arp, TN, US Elevation: 322 ft Latitude: 35°N	Indoor: Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)	Heating 70 50 50 43.5	Cooling 75 20 50 44.3
Outdoor: Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	Heating 20 - - 15.0	Cooling 95 19 (M) 77 7.5	Infiltration: Method: Simplified Construction quality: Average Fireplaces: 0

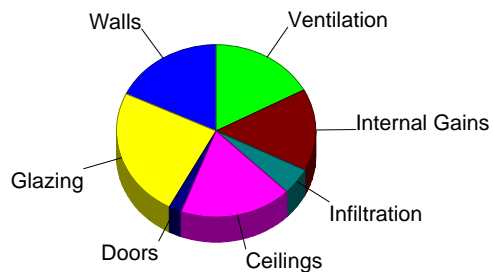
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	4.1	7062	23.0
Glazing	15.5	3372	11.0
Doors	16.1	677	2.2
Ceilings	1.6	3513	11.4
Floors	1.9	4306	14.0
Infiltration	2.7	5257	17.1
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		6548	21.3
Adjustments		0	0
Total		30736	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	2.2	3783	17.9
Glazing	23.6	5139	24.3
Doors	10.2	430	2.0
Ceilings	1.7	3869	18.3
Floors	0	0	0
Infiltration	0.5	1043	4.9
Ducts		0	0
Ventilation		3616	17.1
Internal gains		3250	15.4
Blower		0	0
Adjustments		0	0
Total		21130	100.0



Latent Cooling Load = 7375 Btuh
 Overall U-value = 0.058 Btuh/ft²·°F, Window / Floor Area = 9.7 %

Data entries checked.

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

Project Information

For: M46006-FDJ-SGD-TZ-II, GILES



Design Conditions

Location:		Indoor:		Heating	Cooling
Millington Muni Arp, TN, US		Indoor temperature (°F)		70	75
Elevation: 322 ft		Design TD (°F)		50	20
Latitude: 35°N		Relative humidity (%)		50	50
		Moisture difference (gr/lb)		43.5	44.3
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°F)	20	95	Method	Simplified	
Daily range (°F)	-	19 (M)	Construction quality	Average	
Wet bulb (°F)	-	77	Fireplaces	0	
Wind speed (mph)	15.0	7.5			

Construction descriptions

	Or	Area ft²	U-value Btu/h/ft²·°F	Insul R ft²·°F/Btu/h	Htg HTM Btu/h/ft²	Loss Btu/h	Clg HTM Btu/h/ft²	Gain Btu/h
Walls								
CMH - DW - R-13 Wall - THP502-DOE: Double Wide - R-13 Insulation	n	360	0.082	13.0	4.13	1488	2.21	797
THP502 2x4 Wall-DOE	e	527	0.082	13.0	4.13	2177	2.21	1166
	s	339	0.082	13.0	4.13	1401	2.21	751
	w	483	0.082	13.0	4.13	1996	2.21	1069
	all	1709	0.082	13.0	4.13	7062	2.21	3783

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	34	0.350	0	17.6	600	27.2	926
Clayton - Thermopane Low-E DOE: Clayton-Thermopane Low-E DOE; 50% blinds 45°, medium; 50% outdoor insect screen; 6.67 ft head ht	e	63	0.300	0	15.1	958	22.6	1432
	w	120	0.300	0	15.1	1814	22.6	2713
	all	183	0.300	0	15.1	2772	22.6	4145

Doors

CMH - Standard Door: CMH - Standard Door - Solid no storm	s	21	0.320	0	16.1	339	10.2	215
	w	21	0.320	0	16.1	339	10.2	215
	all	42	0.320	0	16.1	677	10.2	430

Ceilings

CMH-DW-158 BOX R38 - THP1244 - DOE: CMH-DW-158 BOX R38-THP1244 - DOE		2249	0.031	38.0	1.56	3513	1.72	3869
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Floors

CMH-DW-158- R33-THP469-DOE: CMH-DW-180-R33-THP472-DOE		2249	0.038	33.0	1.92	4306	0	0
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5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

Project Information

For: M46006-FDJ-SGD-TZ-II, GILES

Notes: DUCT CAPACITY 30666



Design Information

Weather: Millington Muni Arp, TN, US

Winter Design Conditions

Outside db 20 °F
 Inside db 70 °F
 Design TD 50 °F

Summer Design Conditions

Outside db 95 °F
 Inside db 75 °F
 Design TD 20 °F
 Daily range M
 Relative humidity 50 %
 Moisture difference 44 gr/lb

Heating Summary

Structure 25804 Btuh
 Ducts 0 Btuh
 Central vent (90 cfm) 4932 Btuh
 Outside air
 Humidification 0 Btuh
 Piping 0 Btuh
 Equipment load 30736 Btuh

Sensible Cooling Equipment Load Sizing

Structure 19173 Btuh
 Ducts 0 Btuh
 Central vent (90 cfm) 1957 Btuh
 Outside air
 Blower 0 Btuh
 Use manufacturer's data n
 Rate/swing multiplier 1.00
 Equipment sensible load 21130 Btuh

Infiltration

Method Simplified
 Construction quality Average
 Fireplaces 0

Latent Cooling Equipment Load Sizing

Structure 4697 Btuh
 Ducts 0 Btuh
 Central vent (90 cfm) 2678 Btuh
 Outside air
 Equipment latent load 7375 Btuh

	Heating	Cooling
Area (ft ²)	2249	2249
Volume (ft ³)	17988	17988
Air changes/hour	0.32	0.16
Equiv. AVF (cfm)	96	48

Equipment Total Load (Sen+Lat) 28505 Btuh
 Req. total capacity at 0.70 SHR 2.5 ton

Heating Equipment Summary

Make Smart Comfort
 Trade PERFORMANCE 15 SEER2 HP
 Model N4H5S30*K*AAA*
 AHRI ref 210306423

Efficiency 7.8 HSPF2
 Heating input
 Heating output 28000 Btuh @ 47°F
 Temperature rise 28 °F
 Actual air flow 920 cfm
 Air flow factor 0.036 cfm/Btuh
 Static pressure 0.30 in H2O
 Space thermostat
 Capacity balance point = 28 °F

Cooling Equipment Summary

Make Smart Comfort
 Trade PERFORMANCE 15 SEER2 HP
 Cond N4H5S30*K*AAA*
 Coil EA*4X36L21A*+*80ES(N,L)0902116A*
 AHRI ref 210306423

Efficiency 12.0 EER2, 14.3 SEER2
 Sensible cooling 19320 Btuh
 Latent cooling 8280 Btuh
 Total cooling 27600 Btuh
 Actual air flow 920 cfm
 Air flow factor 0.048 cfm/Btuh
 Static pressure 0.30 in H2O
 Load sensible heat ratio 0.74

Backup: Smart Comfort N4H5S30*K*AAA*
 Input = 10 kW, Output = 34121 Btuh, 100 AFUE

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



Duct System Summary

Entire House

Clayton Homes

Job: M46006-FDJ-SGD-TZ-II
 Date: Jul 21, 2023
 By:

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

Project Information

For: M46006-FDJ-SGD-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	0.193 in/100ft	0.193 in/100ft
Actual air flow	920 cfm	920 cfm
Total effective length (TEL)	156 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 4456	159	135	0.706	6.0	0x0	VIFx	7.5	35.0	st1
BED 2	h 2928	104	95	0.193	6.0	0x0	VIFx	55.6	100.0	st5
BED 3	c 1423	53	68	0.216	5.0	0x0	VIFx	39.1	100.0	st5
BED 4	c 1161	51	56	0.220	5.0	0x0	VIFx	36.1	100.0	st5
DEN	h 2141	76	71	0.822	5.0	0x0	VIFx	1.5	35.0	st3
DINING	c 1469	54	71	0.561	5.0	0x0	VIFx	18.5	35.0	st3
KITCHEN	c 2270	76	109	0.469	6.0	0x0	VIFx	29.0	35.0	st3
LIVING ROOM	c 3013	128	145	0	0	0x0	VIFx	0	0	
P-BATH	h 2586	92	56	0.361	5.0	0x0	VIFx	48.0	35.0	st3
P-BEDROOM	h 3560	127	115	0.199	7.0	0x0	VIFx	50.6	100.0	st4

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st1	Peak AVF	159	135	0.706	327	4.1	5 x 14	ShtMetl	
st3	Peak AVF	298	307	0.361	883	6.8	5 x 10	ShtMetl	
st4	Peak AVF	127	115	0.199	261	5.5	5 x 14	ShtMetl	st2
st5	Peak AVF	208	219	0.193	450	5.5	5 x 14	ShtMetl	st2
st2	Peak AVF	335	334	0.193	878	8.0	5 x 11	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	920	920	0	0	0	0	0x 0		VIFx	



Project Information

For: M46006-FDJ-SGD-TZ-III, GILES



Cooling Equipment

Design Conditions

Outdoor design DB:	87.6°F	Sensible gain:	16292 Btuh	Entering coil DB:	76.3°F
Outdoor design WB:	71.2°F	Latent gain:	4784 Btuh	Entering coil WB:	63.2°F
Indoor design DB:	75.0°F	Total gain:	21076 Btuh		
Indoor RH:	50%	Estimated airflow:	920 cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	Smart Comfort	Model:	N4H5S30*K*AAA*+EA*4X36L21A*+*80ES(N,L)0902116A*		
Actual airflow:	920 cfm				
Sensible capacity:	19320 Btuh	119% of load			
Latent capacity:	8280 Btuh	173% of load			
Total capacity:	27600 Btuh	131% of load	SHR:	70%	

Heating Equipment

Design Conditions

Outdoor design DB:	15.8°F	Heat loss:	29742 Btuh	Entering coil DB:	64.6°F
Indoor design DB:	70.0°F				

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	Smart Comfort	Model:	N4H5S30*K*AAA*+EA*4X36L21A*+*80ES(N,L)0902116A*		
Actual airflow:	920 cfm				
Output capacity:	28000 Btuh	94% of load		Capacity balance:	25 °F
Supplemental heat required:	1742 Btuh			Economic balance:	-99 °F

Backup equipment type:	Elec strip				
Manufacturer:	Smart Comfort	Model:	N4H5S30*K*AAA*		
Actual airflow:	920 cfm				
Output capacity:	10.0 kW	115% of load	Temp. rise:	36 °F	

Meets all requirements of ACCA Manual S.

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

Project Information

For: M46006-FDJ-SGD-TZ-III, GILES

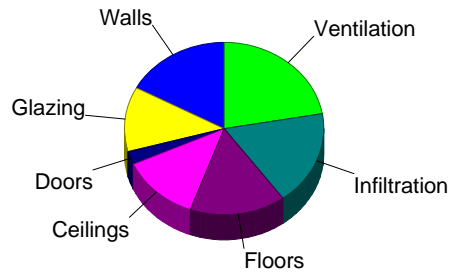


Design Conditions

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 50 48.7	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	

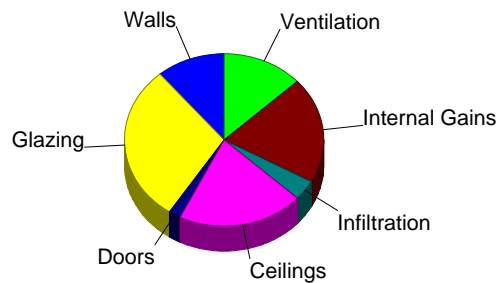
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.0	5094	17.1
Glazing	16.7	3626	12.2
Doors	17.3	728	2.4
Ceilings	1.7	3778	12.7
Floors	2.1	4631	15.6
Infiltration	2.7	5292	17.8
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		6592	22.2
Adjustments		0	0
Total		29742	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	1.1	1814	11.1
Glazing	22.2	4822	29.6
Doors	7.8	327	2.0
Ceilings	1.5	3332	20.5
Floors	0	0	0
Infiltration	0.3	615	3.8
Ducts		0	0
Ventilation		2133	13.1
Internal gains		3250	19.9
Blower		0	0
Adjustments		0	0
Total		16292	100.0



Latent Cooling Load = 4784 Btuh
Overall U-value = 0.051 Btuh/ft²·°F, Window / Floor Area = 9.7 %

Data entries checked.



Component Constructions
Entire House
Clayton Homes

Job: M46006-FDJ-SGD-TZ-III
Date: Jul 21, 2023
By:

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

Project Information

For: M46006-FDJ-SGD-TZ-III, 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 50 48.7	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 Btuh/ft²·F	Insul R ft²·F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls CMH - DW - R-21 Wall - THP510-DOE: Double Wide - R-22 Insulation THP510 2x6 Wall-DOE	n e s w all	360 527 339 483 1709	0.055 0.055 0.055 0.055 0.055	21.0 21.0 21.0 21.0 21.0	2.98 2.98 2.98 2.98 2.98	1073 1570 1011 1440 5094	1.06 1.06 1.06 1.06 1.06	382 559 360 513 1814

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	34	0.350	0	19.0	645	24.8	844
Clayton - Thermopane Low-E DOE: Clayton-Thermopane Low-E DOE; 50% blinds 45°, medium; 50% outdoor insect screen; 6.67 ft head ht	e w all	63 120 183	0.300 0.300 0.300	0 0 0	16.3 16.3 16.3	1030 1951 2981	20.5 20.5 20.5	1301 2464 3765

Doors

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

CMH-DW-158 BOX R38 - THP1244 - DOE: CMH-DW-158 BOX R38-THP1244 - DOE		2249	0.031	38.0	1.68	3778	1.48	3332
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Floors

CMH-DW-158- R33-THP469-DOE: CMH-DW-180-R33-THP472-DOE		2249	0.038	33.0	2.06	4631	0	0
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5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

Project Information

For: M46006-FDJ-SGD-TZ-III, GILES

Notes: DUCT CAPACITY 30666



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 24777 Btuh
 Ducts 0 Btuh
 Central vent (90 cfm) 4965 Btuh
 Outside air
 Humidification 0 Btuh
 Piping 0 Btuh
 Equipment load 29742 Btuh

Sensible Cooling Equipment Load Sizing

Structure 15137 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 15086 Btuh

Infiltration

Method Simplified
 Construction quality Average
 Fireplaces 0

Latent Cooling Equipment Load Sizing

Structure 3195 Btuh
 Ducts 0 Btuh
 Central vent (90 cfm) 1590 Btuh
 Outside air
 Equipment latent load 4784 Btuh

	Heating	Cooling
Area (ft ²)	2249	2249
Volume (ft ³)	17988	17988
Air changes/hour	0.32	0.16
Equiv. AVF (cfm)	96	48

Equipment Total Load (Sen+Lat) 19870 Btuh
 Req. total capacity at 0.70 SHR 1.8 ton

Heating Equipment Summary

Make Smart Comfort
 Trade PERFORMANCE 15 SEER2 HP
 Model N4H5S30*K*AAA*
 AHRI ref 210306423

Efficiency 7.8 HSPF2
 Heating input
 Heating output 28000 Btuh @ 47°F
 Temperature rise 30 °F
 Actual air flow 920 cfm
 Air flow factor 0.037 cfm/Btuh
 Static pressure 0.30 in H2O
 Space thermostat
 Capacity balance point = 25 °F

Cooling Equipment Summary

Make Smart Comfort
 Trade PERFORMANCE 15 SEER2 HP
 Cond N4H5S30*K*AAA*
 Coil EA*4X36L21A*+*80ES(N,L)0902116A*
 AHRI ref 210306423

Efficiency 12.0 EER2, 14.3 SEER2
 Sensible cooling 19320 Btuh
 Latent cooling 8280 Btuh
 Total cooling 27600 Btuh
 Actual air flow 920 cfm
 Air flow factor 0.061 cfm/Btuh
 Static pressure 0.30 in H2O
 Load sensible heat ratio 0.77

Backup: Smart Comfort N4H5S30*K*AAA*
 Input = 10 kW, Output = 34121 Btuh, 100 AFUE

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



Duct System Summary

Entire House

Clayton Homes

Job: M46006-FDJ-SGD-TZ-III
 Date: Jul 21, 2023
 By:

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

Project Information

For: M46006-FDJ-SGD-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	0.193 in/100ft	0.193 in/100ft
Actual air flow	920 cfm	920 cfm
Total effective length (TEL)	156 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 4315	160	108	0.706	6.0	0x0	VIFx	7.5	35.0	st1
BED 2	h 2751	102	94	0.193	6.0	0x0	VIFx	55.6	100.0	st5
BED 3	c 1235	55	75	0.216	6.0	0x0	VIFx	39.1	100.0	st5
BED 4	c 975	53	59	0.220	5.0	0x0	VIFx	36.1	100.0	st5
DEN	h 2110	78	73	0.822	5.0	0x0	VIFx	1.5	35.0	st3
DINING	c 1285	57	78	0.561	5.0	0x0	VIFx	18.5	35.0	st3
KITCHEN	c 1972	77	120	0.469	6.0	0x0	VIFx	29.0	35.0	st3
LIVING ROOM	c 2498	128	152	0	0	0x0	VIFx	0	0	
P-BATH	h 2385	89	48	0.361	5.0	0x0	VIFx	48.0	35.0	st3
P-BEDROOM	h 3265	121	112	0.199	7.0	0x0	VIFx	50.6	100.0	st4

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st1	Peak AVF	160	108	0.706	330	4.1	5 x 14	ShtMetl	
st3	Peak AVF	301	320	0.361	837	6.9	5 x 11	ShtMetl	
st4	Peak AVF	121	112	0.199	249	5.5	5 x 14	ShtMetl	st2
st5	Peak AVF	209	228	0.193	470	5.5	5 x 14	ShtMetl	st2
st2	Peak AVF	331	341	0.193	817	8.1	5 x 12	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	920	920	0	0	0	0	0x 0		VIFx	



KING AIR

BOX SIZE: 26.33 ft. x 76 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	190.00	0.300	57.00
	Option	0.00	0.300	0.00
Net:	Floor	2001.33	0.047	93.06
	Wall	1403.33	0.082	114.65
	Ceiling	2001.33	0.0306	61.24
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	393.6
Th. Zone 2	217.1
Th. Zone 3	0.0

	Outdoor Design Temp (F)	UA	Uo	Heatloss BTUH/F
Thermal Zone 1	11	358.14	0.063	501.40
Thermal Zone 2	0	356.64	0.062	499.90
Thermal Zone 3	-14	355.29	0.062	498.60

Design Temperatures

Furnace Heating Temp (F)	Economy Outdoor Temp (F)	
2	22	10kW
-12	13	12kW
-32	-1	15kW
-10	14	40k Gas
-50	-14	60k Gas
-90	-42	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

King Air

Model Number 46XCL32764AH23S Drawing Number M46006H-L-TZ 2 Version 11

BOX SIZE: 26.33 ft. x 76 ft.
 AVG. SIDEWALL HEIGHT = 8 FEET
 PERCENTAGE OF CEILING THAT IS VAULTED = 0%
 12 INCH DIAMETER XOVER DUCT AREA = 78.5 SQ.FT. MAX. WITH R-8 INSULATION
 IN-FLOOR DUCT SYSTEM

No SGD

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

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

		Area	U Value	UA
Doors:	Front	22.00	0.300	6.60
	Rear	22.00	0.300	6.60
	Other Door	0.00	0.300	0.00
	Other Door	0.00	0.330	0.00
	OSB	0.00	0.000	0.00
	Skylights	0.00	0.330	0.00
	Window Glass Area:	Standard	205.00	0.300
Option		0.00	0.300	0.00
Net:	Floor	2001.33	0.038	76.25
	Wall	1388.33	0.082	113.43
	Ceiling	2001.33	0.0306	61.24
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	470.6
Th. Zone 2	294.1
Th. Zone 3	64.5

	Outdoor Design Temp (F)	UA	Uo	Heatloss BTUH/F
Thermal Zone 1	11	344.60	0.060	487.90
Thermal Zone 2	0	343.10	0.060	486.40
Thermal Zone 3	-14	341.75	0.060	485.00

Design Temperatures

Furnace Heating Temp (F)	Economy Outdoor Temp (F)	
0	21	10kW
-14	11	12kW
-35	-3	15kW
-12	13	40k Gas
-53	-16	60k Gas
-94	-45	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

APPROVED

HWC

JUL 27 2023

Federal Manufactured Home Construction And Safety Standards 5

APPROVED

BOX SIZE: 26.33 ft. x 76 ft.

AVG. SIDEWALL HEIGHT = 8 FEET

PERCENTAGE OF CEILING THAT IS VAULTED = 0%

12 INCH DIAMETER XOVER DUCT AREA = 78.5 SQ.FT. MAX. WITH R-8 INSULATION

IN-FLOOR DUCT SYSTEM

No SGD

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

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

Energy Star v3 & ZERH Max Glass (sq ft)	
Th. Zone 1	594.6
Th. Zone 2	437.6
Th. Zone 3	233.3

Design Temperatures	
Furnace Heating Temp (F)	Economy Outdoor Temp (F)
-6	17
-21	6
-44	-10
-19	8
-63	-23
-108	-54

10kW
12kW
15kW
40k Gas
60k Gas
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
Window Glass Area:	Standard	205.00	0.300	61.50
	Option	0.00	0.300	0.00
Net:	Floor	2001.33	0.038	76.25
	Wall	1388.33	0.055	75.80
	Ceiling	2001.33	0.0306	61.24
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

	Outdoor Design Temp (F)	UA	Uo	Heatloss BTUH/F
Thermal Zone 1	11	306.98	0.054	450.20
Thermal Zone 2	0	305.47	0.053	448.70
Thermal Zone 3	-14	304.13	0.053	447.40

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
	0.070	2 Double	0.063	3 Double	0.054

KING AIR

Model Number **46EXC32764AH23S**

Drawing Number

M46006-SGD-HL-TZ-I Version 11

W/ SGD

BOX SIZE: 26.33 ft. x 76 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

	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

Energy Star v3 & ZERH Max Glass (sq ft)	
Th. Zone 1	352.3
Th. Zone 2	175.8
Th. Zone 3	0.0

Design Temperatures		
Furnace Heating Temp (F)	Economy Outdoor Temp (F)	
3	23	10kW
-10	14	12kW
-30	0	15kW
-8	15	40k Gas
-48	-12	60k Gas
-87	-40	80k Gas

		Area	U Value	UA
Doors:	Front	22.00	0.300	6.60
	Rear	22.00	0.300	6.60
	Other Door	41.28	0.300	12.38
	Other Door	0.00	0.330	0.00
	OSB	0.00	0.000	0.00
	Skylights	0.00	0.330	0.00
	Window Glass Area:	Standard	190.00	0.300
Option		0.00	0.300	0.00
Net:	Floor	2001.33	0.047	93.06
	Wall	1362.05	0.082	111.28
	Ceiling	2001.33	0.0306	61.24
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

	Outdoor Design Temp (F)	UA	Uo	Heatloss BTUH/F
Thermal Zone 1	11	367.15	0.064	510.40
Thermal Zone 2	0	365.65	0.064	508.90
Thermal Zone 3	-14	364.30	0.064	507.60

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

King Air

Model Number **46EXC32764AH23S**

Drawing Number

M46006SGD -HL -TZ 2 Version 11

BOX SIZE: 26.33 ft. x 76 ft.

AVG. SIDEWALL HEIGHT = 8 FEET

PERCENTAGE OF CEILING THAT IS VAULTED = 0%

12 INCH DIAMETER XOVER DUCT AREA = 78.5 SQ.FT. MAX. WITH R-8 INSULATION

IN-FLOOR DUCT SYSTEM

W/SGD

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

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

		Area	U Value	UA
Doors:	Front	22.00	0.300	6.60
	Rear	22.00	0.300	6.60
	Other Door	41.28	0.300	12.38
	Other Door	0.00	0.330	0.00
	OSB	0.00	0.000	0.00
	Skylights	0.00	0.330	0.00
	Standard	190.00	0.300	57.00
Window Glass Area:	Option	0.00	0.300	0.00
	Net:			
	Floor	2001.33	0.038	76.25
	Wall	1362.05	0.082	111.28
	Ceiling	2001.33	0.0306	61.24
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	429.3
Th. Zone 2	252.8
Th. Zone 3	23.2

	Outdoor Design Temp (F)	UA	Uo	Heatloss BTUH/F
Thermal Zone 1	11	350.34	0.061	493.60
Thermal Zone 2	0	348.84	0.061	492.10
Thermal Zone 3	-14	347.49	0.061	490.80

Design Temperatures

Furnace Heating Temp (F)	Economy Outdoor Temp (F)	
1	22	10kW
-13	12	12kW
-34	-3	15kW
-11	13	40k Gas
-52	-15	60k Gas
-92	-43	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
2 Single	0.070	2 Double	0.063	3 Double	0.054



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King Air

Model Number **46EXC32764AH23S** Drawing Number **M46006.SGD-HL-T2.3** Version 11

BOX SIZE: 26.33 ft. x 76 ft.
 AVG. SIDEWALL HEIGHT = 8 FEET
 PERCENTAGE OF CEILING THAT IS VAULTED = 0%
 12 INCH DIAMETER XOVER DUCT AREA = 78.5 SQ.FT. MAX. WITH R-8 INSULATION
 IN-FLOOR DUCT SYSTEM

w/SGD

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

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

	Area	U Value	UA	
Doors:	Front	22.00	0.300	6.60
	Rear	22.00	0.300	6.60
	Other Door	41.28	0.300	12.38
	Other Door	0.00	0.330	0.00
	OSB	0.00	0.000	0.00
	Skylights	0.00	0.330	0.00
	Window Glass Area:	Standard	190.00	0.300
Option		0.00	0.300	0.00
Net:	Floor	2001.33	0.038	76.25
	Wall	1362.05	0.055	74.37
	Ceiling	2001.33	0.0306	61.24
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	553.3
Th. Zone 2	396.3
Th. Zone 3	192.1

	Outdoor Design Temp (F)	UA	Uo	Heatloss BTUH/F
Thermal Zone 1	11	313.43	0.055	456.70
Thermal Zone 2	0	311.92	0.055	455.20
Thermal Zone 3	-14	310.58	0.054	453.80

Design Temperatures		
Furnace Heating Temp (F)	Economy Outdoor Temp (F)	
-5	18	10kW
-20	7	12kW
-42	-8	15kW
-18	9	40k Gas
-61	-22	60k Gas
-105	-53	80k Gas

Thermal Zone	U-Value	Thermal Zone	U-Value	Thermal Zone	U-Value
Energy Star Version 2					
1-EHP-S	0.080	2-EHP-S	0.080	3-EHP-S	0.079
1-GAS-S	0.080	2-GAS-S	0.080	3-GAS-S	0.071
1-ENV-S	0.076	2-ENV-S	0.067	3-ENV-S	0.059
1-EHP-M	0.074	2-EHP-M	0.074	3-EHP-M	0.074
1-GAS-M	0.074	2-GAS-M	0.074	3-GAS-M	0.065
1-ENV-M	0.071	2-ENV-M	0.064	3-ENV-M	0.056

Energy Star Version 3 & ZERH					
1 Single	0.076	2 Single	0.065	3 Single	0.057
1 Double	0.070	2 Double	0.063	3 Double	0.054

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