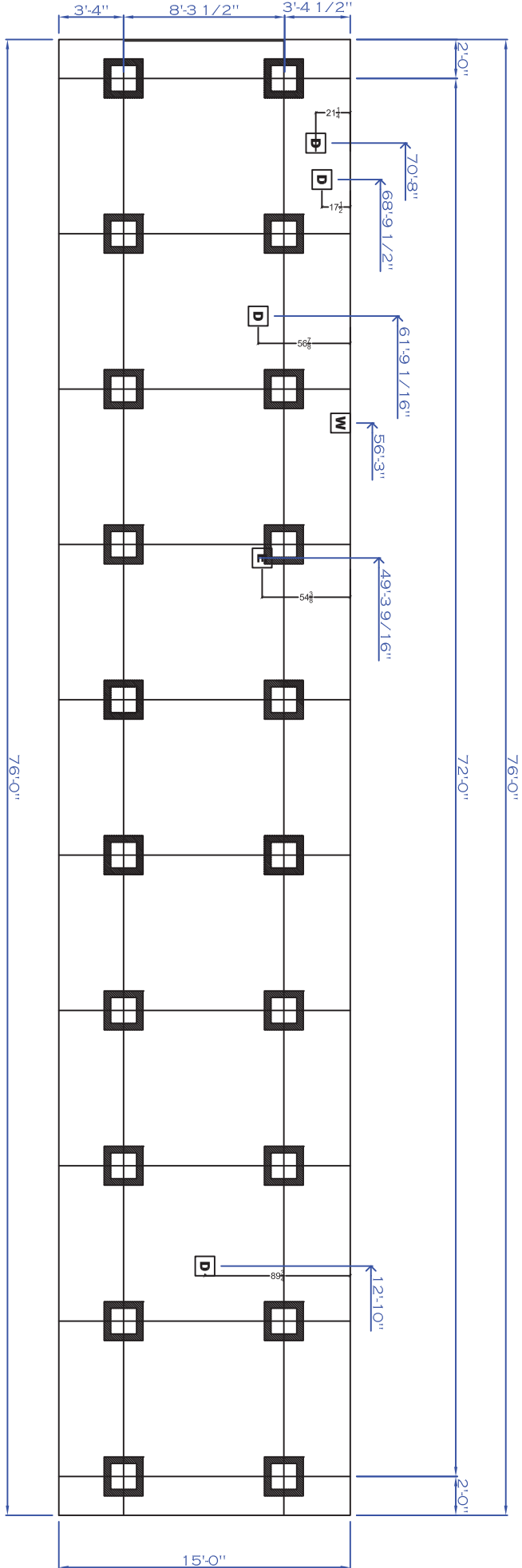






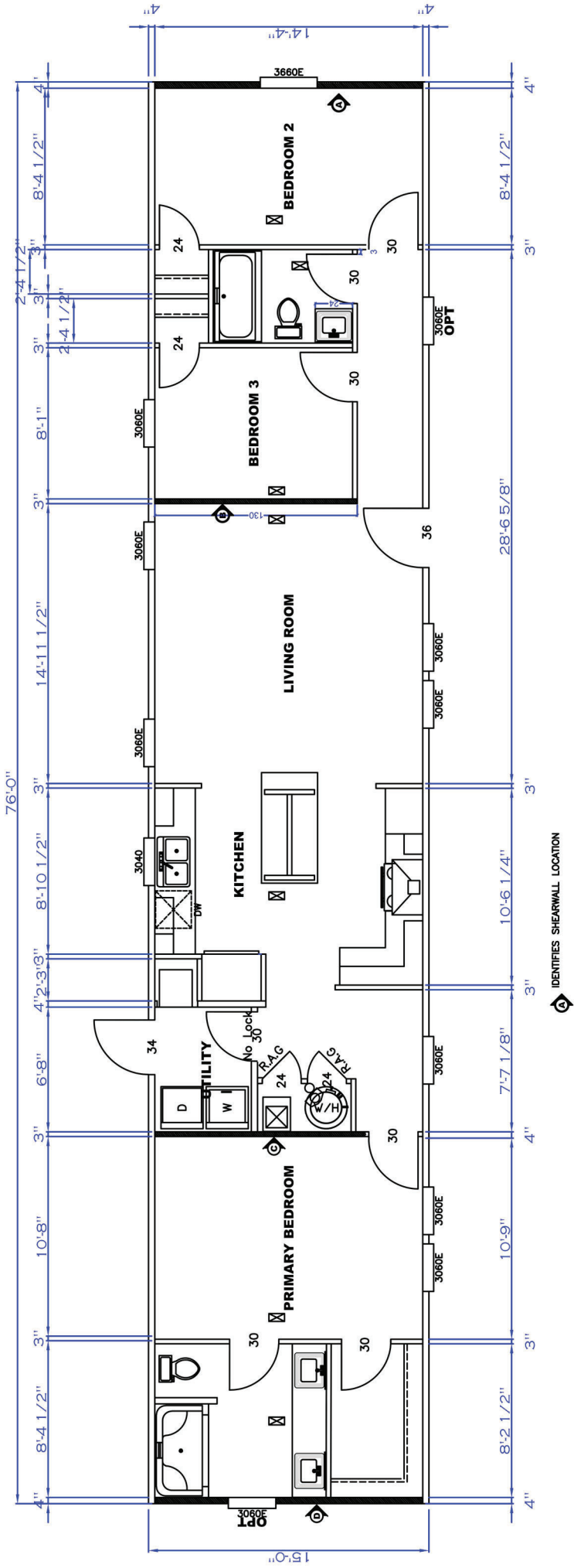


GILES HOMES	Model # 40501 (546053)	Printed #
105 S. BRADY ST. NEW HAVEN, CT 06510	Product Designer: C/PPA	546053-DOE-2X4
EMERALD		
		546053



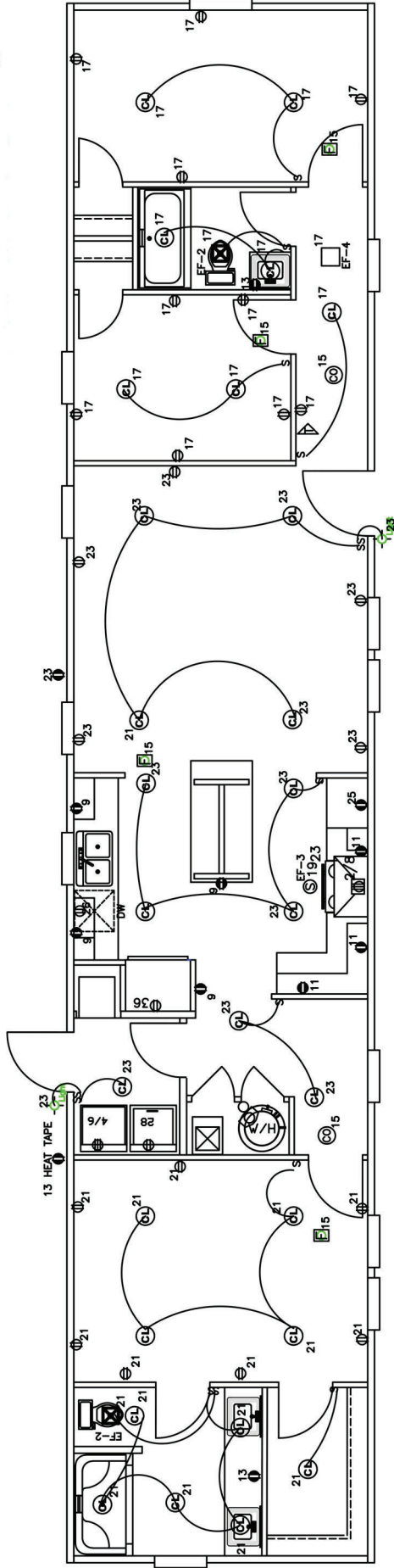
*THIS FOOTER DIAGRAM IS FOR STANDARD PRODUCT ONLY
 *FOR PIER SPACING REFER TO SET UP MANUAL

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



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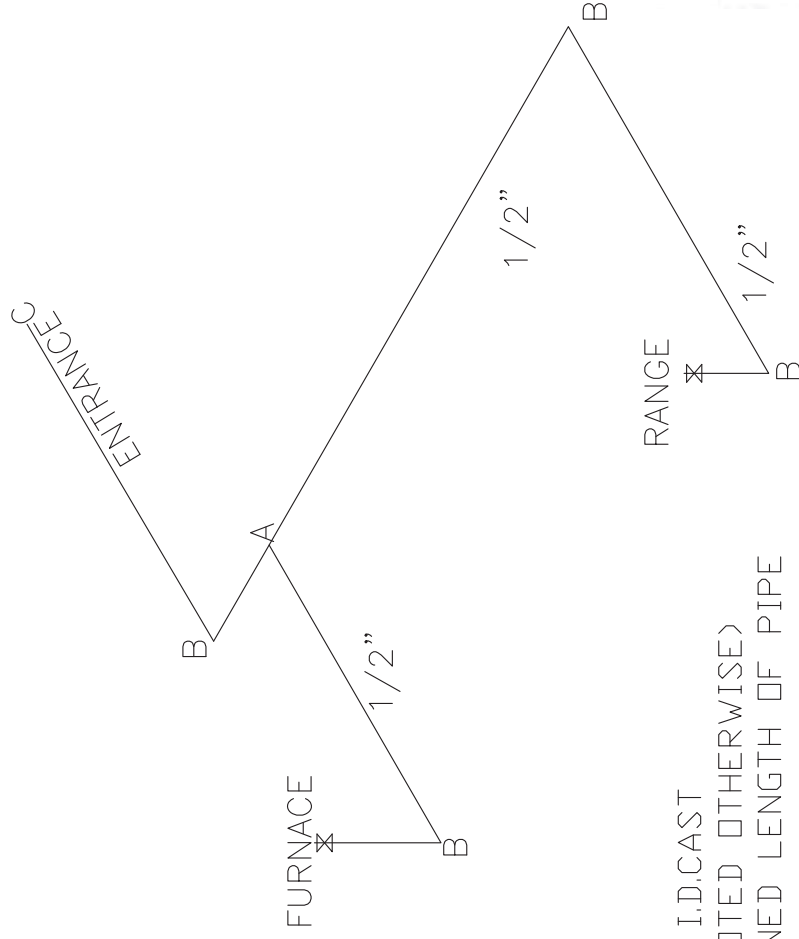


NOTES:

1. ALL CIRCUITS SHOWN ARE FOR REFERENCE AND MAY BE CHANGED BASED ON OPTIONAL COMPONENTS INSTALLED IN THE HOME.
2. REFER TO DAPIA MANUAL FOR SYMBOL CHART.
3. EITHER LIGHT OR RECEPTACLE MUST CONNECT TO SWITCH.
4. EF-1= 50 CFM EXHAUST FAN REQUIRED FOR THERMAL ZONE III THERMAL ZONES I & II MAY USE FAN OR WINDOW V/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.

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

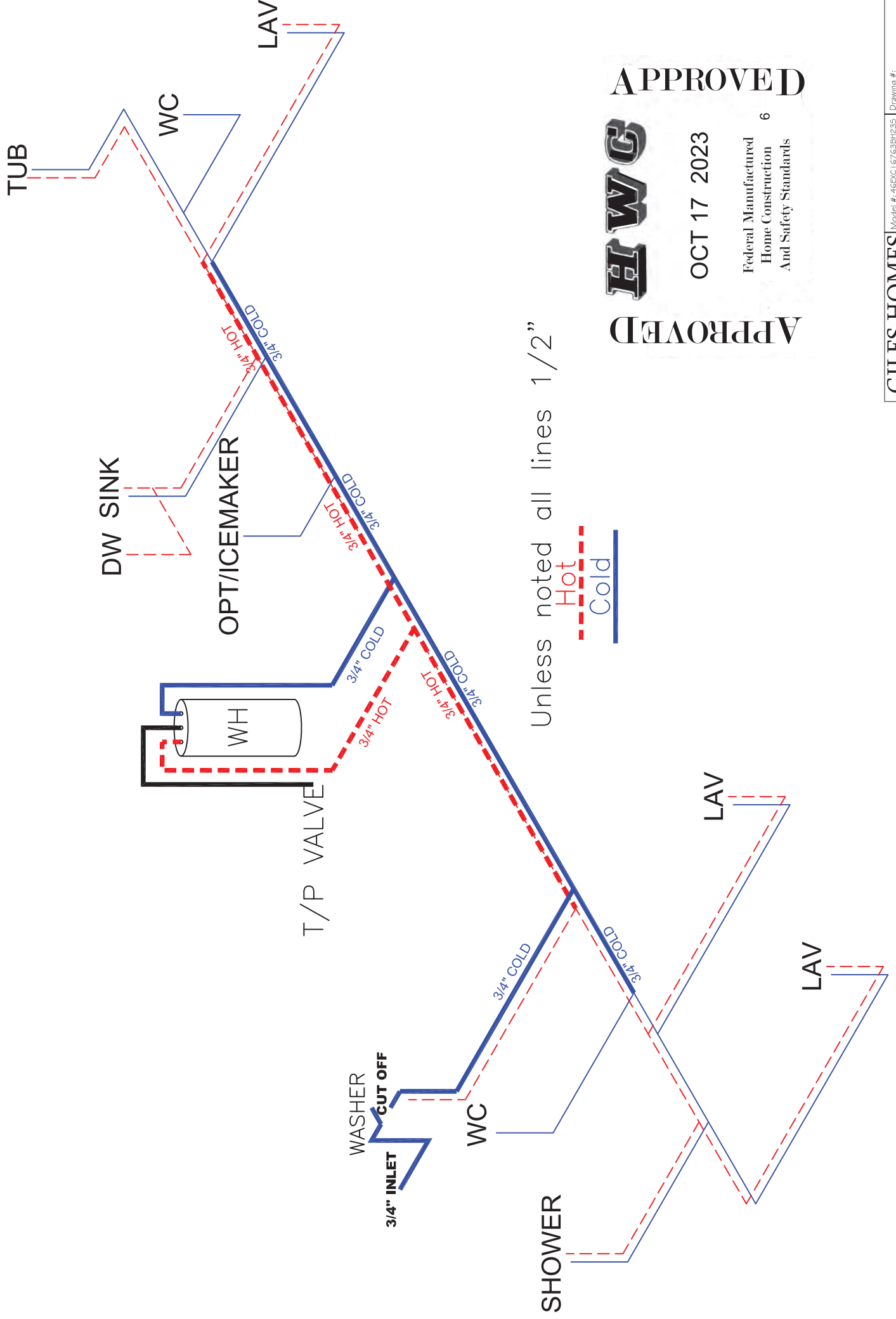
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Unless noted all lines 1/2"

Hot
Cold

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H W G

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GILES HOMES		Model #: 46EJC16763BH235	Drawing #:
405 S. BROAD ST. NEW TAZEWELL, TN 37825		Date: 04/19/02	Scale: N/A
Product Designer: CUPPA		EMERALD	
PRESSURE LINES			S46053

LEGEND AND SET UP KIT.

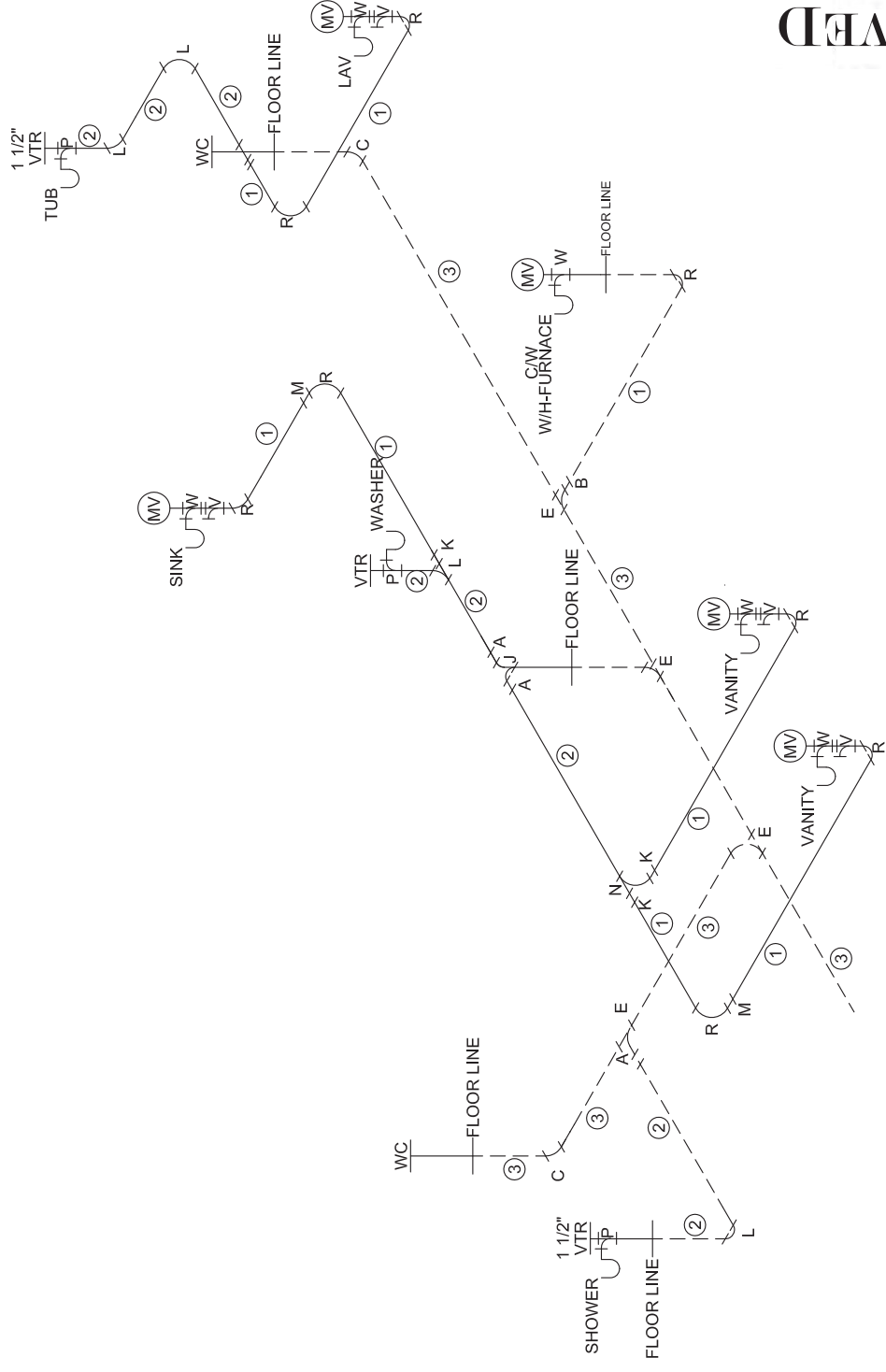
- VTR - VENT THRU ROOF
- (MV) - MECHANICAL VENT

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

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

- 0 K - 2"X1 1/2" REDUCER
- 1 L - 2" ELTL 90°
- 0 M - 2" ELL 45°
- 0 N - 2" LTYY
- 0 O - 2" COUPLING
- 0 P - 2" X 1 1/2" X 1 1/2" ST
- 0 Q - 2" 3 WAY ELL

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



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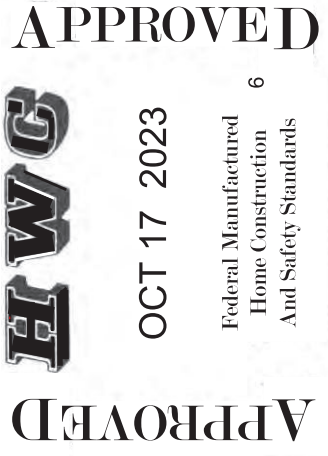
Model # S46053-DOE

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	213	3060 X4	39.6	18.59%		20.8	9.77%		36
Kitchen	141	3040	6.3	4.47%	X	3.3	2.34%	X	24
Primary Bedroom	155	3060 x2	19.8	12.77%	X	10.4	6.71%	X	
Bedroom 2	119	3660	12.2	10.25%		6.2	5.21%		28
Bedroom 3	86	3060	9.9	11.51%		5.2	6.05%		24
Primary Bath	90	3060	9.9	11.00%	X	5.2	5.78%	X	24
Bath 2	37				X			X	24
Utility	34								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. S46053-DOE. 2

CMH Inc.
SHEARWALL DESIGN - HUD



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Home Construction
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6

Model # S46053-DOE

Box Width = 180 " Single wide
Box Length = 76 ft. 95.5" 12" MIN.IBEAM
No Skylights
No Porches
Joist Size = #2 spf 2x6 Lags 9Mx3"

Minimum Joist Spacing 16 "
No Offset Box
No Clerestory
No Origami Dormer
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/ 12" glue block & 1x6 SPF Rail spliced w/ 2x4 MCP.	96 inch sidewall
Diaphragm Construction:								
Shearwall	Dist./ Hitch	Length	PLF	# of Joists	Lags	Notes	SW1/SW2	
A	0'	135.5"	425	6	4/4	Split Shearwall	67.75/67.75	
D	76'	141.5"	425	6	4/4	Split Shearwall	94.25/47.25	
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/ 12" glue block & 1x6 SPF Rail spliced w/ 2x4 MCP.	96 inch sidewall
Diaphragm Construction:								
Shearwall	Dist./ Hitch	Length	PLF	# of Joists	Lags	Notes	SW1/SW2	
A	0'	135.5"	162	2	2/2	Split Shearwall	67.75/67.75	
B	22.42'	124"	425	3	4/1			
C	56.25'	120"	425	4	4/3			
D	76'	137"	162	2	2/2	Split Shearwall	92/45	
Diaphragm Construction:								
Shearwall	Dist./ Hitch	Length	PLF	# of Joists	Lags	Notes	SW1/SW2	
					0/0	Split Shearwall	40/98	
					0/0			
					0/0			
					0/0			
Wind Zone 1 Standard Roof							(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'	96 inch sidewall
Diaphragm Construction:								
Shearwall	Dist./ Hitch	Length	PLF	# of Joists	Lags	Notes	SW1/SW2	
A	0'	138"	425	6	4/4	Split Shearwall	40/98	
D	76'	120"	425	4	4/3			

Designed by JDN

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.)

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

Additional information _____

16. Interior Doors and Trim

Doors type Hollow core material Masonite board thickness 2"
Door trim type _____ material _____ Base type _____ material _____ size _____
Finish doors _____ trim _____
Other trim (item, type and location) _____
Additional information _____

17. Windows

Windows type Clayton Supply make _____ material _____ sash thickness _____
Glass grade _____ sash weights balances, type _____ head flashing _____
Trim type _____ material _____ Paint _____ number coats _____
Weatherstripping type _____ material _____ Storm sash, number _____
Screens full half type _____ number _____ screen cloth material _____
Basement windows type _____ material _____ screens, number _____ Storm sash, number _____
Special windows _____
Additional information _____

18. Entrances and Exterior Detail

Main entrance door material Elixir width _____ thickness _____ Frame material _____ thickness _____
Other entrance doors material _____ width _____ thickness _____ Frame material _____ thickness _____
Head flashing _____ Weatherstripping type _____ saddles _____
Screen doors thickness _____ number _____ screen cloth material _____ Storm doors thickness _____ number _____
Combination storm and screen doors thickness _____ number _____ screen cloth material _____
Shutters hinged fixed Railings _____ Attic louvers _____
Exterior millwork grade and species _____ Paint _____ number coats _____
Additional information _____

19. Cabinets and Interior Detail

Kitchen cabinets, wall units material 1/2" duracraft lineal feet of shelves _____ shelf width _____
Base units material _____ counter top _____ edging _____
Back and end splash _____ Finish of cabinets _____ number coats _____
Medicine cabinets make _____ model _____
Other cabinets and built-in furniture _____
Additional information _____

20. Stairs

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

Disappearing make and model number _____
 Additional information _____

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

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

Additional information Down flow

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

Additional information

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

Additional information

Controls make and types _____

Additional information

Fuel: Coal oil gas 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	38	Blown	
Ceiling			
Wall	13 or 16	Batt	Kraft Back
Floor	22, 27 or 33	Rolled	

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

Hardware (make, material, and finish.)

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

Porches

Terraces

Garages

Walks and Driveways

Driveway width _____ base material _____ thickness _____ surfacing material _____ thickness _____
 Front walk width _____ material _____ thickness _____ Service walk width _____ material _____ thickness _____
 Steps material _____ treads _____ risers _____ Cheek walls _____

Other Onsite Improvements

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

Landscaping, Planting, and Finish Grading

Topsoil _____ thick front yard side yards rear yard to _____ feet behind main building
 Lawns (seeded, sodded, or sprigged) front yard _____ side yards _____ rear yard _____
 Planting as specified and shown on drawings as follows:
 _____ Shade trees deciduous _____ caliper _____ Evergreen trees _____ to _____ B & B
 _____ Low flowering trees deciduous _____ to _____ _____ Evergreen shrubs _____ to _____ B & B
 _____ High-growing shrubs deciduous _____ to _____ _____ Vines, 2-year _____
 _____ Medium-growing shrubs deciduous _____ to _____ Other _____
 _____ Low-growing shrubs deciduous _____ to _____

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

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

Signature _____



Manual S Compliance Report

Entire House

Clayton Homes

Job: S46053-FDJ-TZII
Date: Jul 28, 2023
By:

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

Project Information

For: S46053-FDJ-TZII, GILES

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Cooling Equipment

Design Conditions

Outdoor design DB:	90.4°F	Sensible gain:	12743	Btuh	Entering coil DB:	77.7°F
Outdoor design WB:	73.3°F	Latent gain:	3554	Btuh	Entering coil WB:	64.5°F
Indoor design DB:	75.0°F	Total gain:	16297	Btuh		
Indoor RH:	50%	Estimated airflow:	530	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split AC					
Manufacturer:		Model:				
Actual airflow:	530	cfm				
Sensible capacity:	0	Btuh	0%	of load		
Latent capacity:	0	Btuh	0%	of load		
Total capacity:	0	Btuh	0%	of load	SHR:	0%

Heating Equipment

Design Conditions

Outdoor design DB:	21.0°F	Heat loss:	20130	Btuh	Entering coil DB:	61.5°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Gas furnace					
Manufacturer:		Model:				
Actual airflow:	530	cfm				
Output capacity:	0	Btuh	0%	of load	Temp. rise:	0 °F

Meets all requirements of ACCA Manual S.

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

Project Information

For: S46053-FDJ-TZII, GILES

OCT 17 2023

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Home Construction 6
And Safety Standards

Design Conditions

Location:

TN 25
Elevation: 962 ft
Latitude: 36°N

Outdoor:

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

Heating

21
-
-
15.0

Cooling

90
18 (M)
73
7.5

Indoor:

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

Heating

70
49
30
20.8

Cooling

75
15
50
33.6

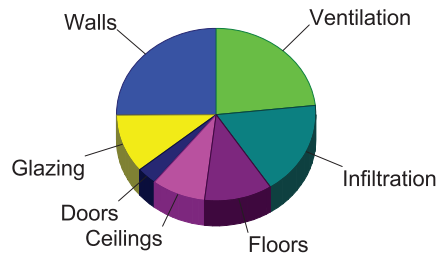
Infiltration:

Method
Construction quality
Fireplaces

Simplified
Average
0

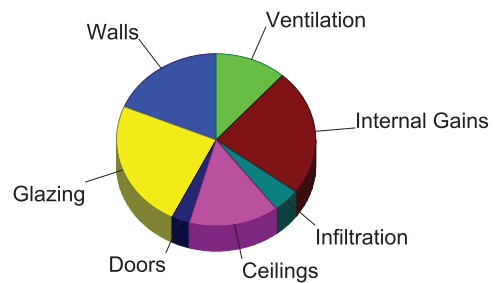
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	4.0	5053	25.1
Glazing	14.8	2201	10.9
Doors	15.7	659	3.3
Ceilings	1.6	1776	8.8
Floors	2.0	2220	11.0
Infiltration	2.4	3537	17.6
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		4685	23.3
Adjustments		0	0
Total		20130	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	1.9	2377	18.7
Glazing	20.6	3060	24.0
Doors	9.0	377	3.0
Ceilings	1.6	1868	14.7
Floors	0	0	0
Infiltration	0.4	568	4.5
Ducts		0	0
Ventilation		1472	11.6
Internal gains		3020	23.7
Blower		0	0
Adjustments		0	0
Total		12743	100.0



Latent Cooling Load = 3554 Btuh
Overall U-value = 0.065 Btuh/ft²-°F, Window / Floor Area = 13.1 %

Data entries checked.



Component Constructions
Entire House
Clayton Homes

Job: S46053-FDJ-TZII
 Date: Jul 28, 2023
 By:

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

Project Information

For: S46053-FDJ-TZII, GILES

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Federal Manufactured
 Home Construction 6
 And Safety Standards

Design Conditions

Location: TN 25 Elevation: 962 ft Latitude: 36°N			Indoor: Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)	Heating 70 49 30 20.8	Cooling 75 15 50 33.6
Outdoor: Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	Heating 21 - - 15.0	Cooling 90 18 (M) 73 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-13 Wall - THP502-DOE: Double Wide - R-13 Insulation	n	108	0.082	13.0	4.02	432	1.89	203
THP502 2x4 Wall-DOE	e	537	0.082	13.0	4.02	2158	1.89	1015
	s	105	0.082	13.0	4.02	422	1.89	198
	w	508	0.082	13.0	4.02	2041	1.89	960
	all	1258	0.082	13.0	4.02	5053	1.89	2377

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	13	0.300	0	14.7	184	7.31	91
	e	38	0.300	0	14.7	551	21.3	801
	s	15	0.300	0	14.7	221	10.3	154
	w	75	0.300	0	14.7	1103	21.3	1601
	all	140	0.300	0	14.7	2058	18.9	2647
Clayton - Thermopane Low-E: Clayton - Thermopane Low-E; 50% blinds 45°, medium; 50% outdoor insect screen; 6.67 ft head ht	e	8	0.350	0	17.1	143	25.8	215

Doors

CMH - Standard Door: CMH - Standard Door - Solid no storm	e	21	0.320	0	15.7	329	8.98	188
	w	21	0.320	0	15.7	329	8.98	188
	all	42	0.320	0	15.7	659	8.98	377

Ceilings

CMH-SW-180 BOX R38 - THP2002 - DOE: CMH-SW-180 BOX R38-THP2002 - DOE		1133	0.032	38.0	1.57	1776	1.65	1868
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Floors

CMH-SW-180- R33-THP472-DOE: CMH-SW-180-R33-THP472-DOE		1133	0.040	33.0	1.96	2220	0	0
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Project Summary
Entire House
Clayton Homes

Job: S46053-FDJ-TZII
 Date: Jul 28, 2023
 By:

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

Project Information

For: S46053-FDJ-TZII, GILES

Notes: DUCT CAPACITY -27100 BTUHS

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 Home Construction 6
 And Safety Standards

Design Information

Weather: TN 25

Winter Design Conditions

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

Summer Design Conditions

Outside db 90 °F
 Inside db 75 °F
 Design TD 15 °F
 Daily range M
 Relative humidity 50 %
 Moisture difference 34 gr/lb

Heating Summary

Structure 15445 Btuh
 Ducts 0 Btuh
 Central vent (90 cfm) 4685 Btuh
 Outside air
 Humidification 0 Btuh
 Piping 0 Btuh
 Equipment load 20130 Btuh

Sensible Cooling Equipment Load Sizing

Structure 11271 Btuh
 Ducts 0 Btuh
 Central vent (90 cfm) 1472 Btuh
 Outside air
 Blower 0 Btuh
 Use manufacturer's data n
 Rate/swing multiplier 0.95
 Equipment sensible load 12157 Btuh

Infiltration

Method Simplified
 Construction quality Average
 Fireplaces 0

Latent Cooling Equipment Load Sizing

Structure 1567 Btuh
 Ducts 0 Btuh
 Central vent (90 cfm) 1987 Btuh
 Outside air
 Equipment latent load 3554 Btuh

	Heating	Cooling
Area (ft ²)	1133	1133
Volume (ft ³)	9060	9060
Air changes/hour	0.45	0.23
Equiv. AVF (cfm)	68	35

Equipment Total Load (Sen+Lat) 15711 Btuh
 Req. total capacity at 0.70 SHR 1.4 ton

Heating Equipment Summary

Make
 Trade
 Model
 AHRI ref

Efficiency 80 AFUE
 Heating input 0 Btuh
 Heating output 0 Btuh
 Temperature rise 0 °F
 Actual air flow 530 cfm
 Air flow factor 0.034 cfm/Btuh
 Static pressure 0 in H2O
 Space thermostat

Cooling Equipment Summary

Make
 Trade
 Cond
 Coil
 AHRI ref
 Efficiency 0 SEER
 Sensible cooling 0 Btuh
 Latent cooling 0 Btuh
 Total cooling 0 Btuh
 Actual air flow 530 cfm
 Air flow factor 0.047 cfm/Btuh
 Static pressure 0 in H2O
 Load sensible heat ratio 0.78

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





Duct System Summary
Entire House
Clayton Homes

Job: S46053-FDJ-TZII
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Project Information

For: S46053-FDJ-TZII, GILES

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 Home Construction 6
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	Heating	Cooling
External static pressure	0 in H2O	0 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0 in H2O	0 in H2O
Supply / return available pressure	0.000 / 0.000 in H2O	0.000 / 0.000 in H2O
Lowest friction rate	0 in/100ft	0 in/100ft
Actual air flow	530 cfm	530 cfm
Total effective length (TEL)	82 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 711	34	33	0	0	0x0	VIFx	44.0	35.0	st1
BED 2	h 1157	78	54	0	0	0x0	VIFx	46.5	35.0	st1
BED 3	h 1052	50	50	0	0	0x0	VIFx	33.0	35.0	st1
KITCHEN	c 2832	116	133	0	0	0x0	VIFx	10.5	35.0	st1
LIVING ROOM	c 2826	107	133	0	0	0x0	VIFx	30.0	35.0	st1
P-BATH	h 829	77	39	0	0	0x0	VIFx	14.0	35.0	st2
P-BED	c 1864	68	88	0	0	0x0	VIFx	10.0	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
st1	PeakAVF	385	404	0	831	4.2	5 x 14	ShtMetl	
st2	PeakAVF	145	127	0	298	4.0	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	530	530	0	0	0	0	0x 0		VIFx	



Manual S Compliance Report
Entire House
Clayton Homes

S46053-DOE-FDJ-TZ-III

Job: S46053-FDJ-TZIII
 Date: Jul 28, 2023
 By:

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



Project Information

For: S46053-FDJ-TZIII, GILES

Cooling Equipment

Design Conditions

Outdoor design DB:	87.6°F	Sensible gain:	11012 Btuh	Entering coil DB:	76.4°F
Outdoor design WB:	71.2°F	Latent gain:	3003 Btuh	Entering coil WB:	63.3°F
Indoor design DB:	75.0°F	Total gain:	14015 Btuh		
Indoor RH:	50%	Estimated airflow:	813 cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP			
Manufacturer:	Smart Comfort	Model:	R4H5S24*K*AAA*+FEVA0036**+NAVA43601CK	
Actual airflow:	813 cfm			
Sensible capacity:	17080 Btuh		155% of load	
Latent capacity:	7320 Btuh		244% of load	
Total capacity:	24400 Btuh		174% of load	SHR: 70%

Heating Equipment

Design Conditions

Outdoor design DB:	15.8°F	Heat loss:	20045 Btuh	Entering coil DB:	63.9°F
Indoor design DB:	70.0°F				

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP			
Manufacturer:	Smart Comfort	Model:	R4H5S24*K*AAA*+FEVA0036**+NAVA43601CK	
Actual airflow:	813 cfm			
Output capacity:	23000 Btuh		115% of load	Capacity balance: 18 °F
Supplemental heat required:	0 Btuh			Economic balance: -99 °F

Backup equipment type:	Elec strip			
Manufacturer:	Smart Comfort	Model:	FEVA0036**+NAVA43601C	
Actual airflow:	813 cfm			
Output capacity:	10.0 kW		170% of load	Temp. rise: 41 °F

Meets all requirements of ACCA Manual S.





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Project Information

For: S46053-FDJ-TZIII, GILES

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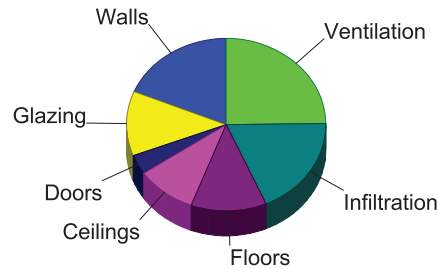
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 Home Construction 6
 And Safety Standards

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	

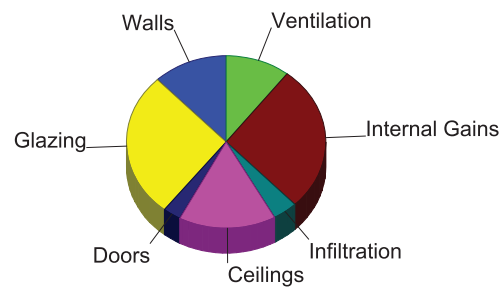
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.0	3749	18.7
Glazing	16.4	2434	12.1
Doors	17.3	728	3.6
Ceilings	1.7	1964	9.8
Floors	2.2	2455	12.2
Infiltration	2.6	3749	18.7
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		4965	24.8
Adjustments		0	0
Total		20045	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	1.1	1335	12.1
Glazing	20.2	2998	27.2
Doors	7.8	327	3.0
Ceilings	1.5	1732	15.7
Floors	0	0	0
Infiltration	0.3	445	4.0
Ducts		0	0
Ventilation		1154	10.5
Internal gains		3020	27.4
Blower		0	0
Adjustments		0	0
Total		11012	100.0



Latent Cooling Load = 3003 Btuh
 Overall U-value = 0.056 Btuh/ft²-°F, Window / Floor Area = 13.1 %

Data entries checked.



Component Constructions
Entire House
Clayton Homes

Job: S46053-FDJ-TZIII
Date: Jul 28, 2023
By:

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Project Information

For: S46053-FDJ-TZIII, GILES

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Design Conditions

Location:

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

Outdoor:

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

Heating

16
-
-
15.0

Cooling

88
20 (M)
71
7.5

Indoor:

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

Infiltration:

Method
Construction quality
Fireplaces

Heating

70
54
30
24.8

Cooling

75
13
50
28.1

Simplified
Average
0

Construction descriptions

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 - SW - R-21 Wall - THP510-DOE: Single Wide - R-21Insulation	n	108	0.055	21.0	2.98	320	1.06	114
THP510 2x6 Wall-DOE	e	537	0.055	21.0	2.98	1601	1.06	570
	s	105	0.055	21.0	2.98	313	1.06	111
	w	508	0.055	21.0	2.98	1514	1.06	539
	all	1258	0.055	21.0	2.98	3749	1.06	1335

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	13	0.300	0	16.3	203	6.52	81
	e	38	0.300	0	16.3	610	20.5	770
	s	15	0.300	0	16.3	244	9.83	147
	w	75	0.300	0	16.3	1220	20.5	1540
	all	140	0.300	0	16.3	2276	18.1	2539
Clayton - Thermopane Low-E: Clayton - Thermopane Low-E; 50% blinds 45°, medium; 50% outdoor insect screen; 6.67 ft head ht	e	8	0.350	0	19.0	158	24.8	207

Doors

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

Ceilings

CMH-SW-180 BOX R38 - THP2002 - DOE: CMH-SW-180 BOX R38- THP2002 - DOE		1133	0.032	38.0	1.73	1964	1.53	1732
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Floors

CMH-SW-180- R33-THP472-DOE: CMH-SW-180-R33-THP472-DOE		1133	0.040	33.0	2.17	2455	0	0
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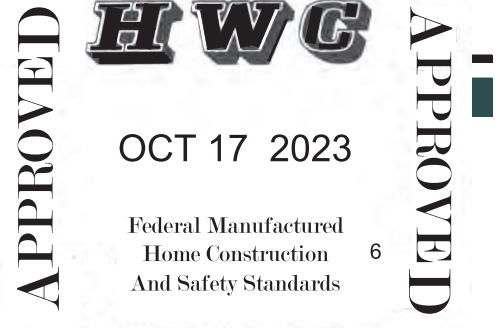


5000 Clayton Road, Maryville, TN 37804 Phone: 865-380-3000

Project Information

For: S46053-FDJ-TZIII, GILES

Notes: DUCT CAPACITY -27100 BTUHS



Design Information

Weather: VA-SG22

Winter Design Conditions

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

Summer Design Conditions

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

Heating Summary

Structure	15080 Btuh
Ducts	0 Btuh
Central vent (90 cfm)	4965 Btuh
Outside air	
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	20045 Btuh

Sensible Cooling Equipment Load Sizing

Structure	9858 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	10197 Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

Latent Cooling Equipment Load Sizing

Structure	1413 Btuh
Ducts	0 Btuh
Central vent (90 cfm)	1590 Btuh
Outside air	
Equipment latent load	3003 Btuh
Equipment Total Load (Sen+Lat)	13200 Btuh
Req. total capacity at 0.70 SHR	1.2 ton

	Heating	Cooling
Area (ft²)	1133	1133
Volume (ft³)	9060	9060
Air changes/hour	0.45	0.23
Equiv. AVF (cfm)	68	35

Heating Equipment Summary

Make	Smart Comfort
Trade	15 SEER2 R SERIES R410A HP
Model	R4H5S24*K*AAA*
AHRI ref	0
Efficiency	7.5 HSPF2
Heating input	
Heating output	23000 Btuh @ 47°F
Temperature rise	28 °F
Actual air flow	813 cfm
Air flow factor	0.054 cfm/Btuh
Static pressure	0.30 in H2O
Space thermostat	
Capacity balance point = 18 °F	

Cooling Equipment Summary

Make	Smart Comfort
Trade	15 SEER2 R SERIES R410A HP
Cond	R4H5S24*K*AAA*
Coil	FEVA0036**+NAVA43601CK
AHRI ref	0
Efficiency	12.0 EER2, 15.2 SEER2
Sensible cooling	17080 Btuh
Latent cooling	7320 Btuh
Total cooling	24400 Btuh
Actual air flow	813 cfm
Air flow factor	0.083 cfm/Btuh
Static pressure	0.30 in H2O
Load sensible heat ratio	0.79

Backup: Smart Comfort FEVA0036**+NAVA43601C
 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: S46053-FDJ-TZIII
 Date: Jul 28, 2023
 By:

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

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OCT 17 2023

For: S46053-FDJ-TZIII, GILES

Federal Manufactured
 Home Construction 6
 And Safety Standards

	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	0.368 in/100ft	0.368 in/100ft
Actual air flow	813 cfm	813 cfm
Total effective length (TEL)	82 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 978	53	52	0.380	5.0	0x0	VIFx	44.0	35.0	st1
BED 2	h 2123	114	77	0.368	6.0	0x0	VIFx	46.5	35.0	st1
BED 3	h 1421	77	76	0.441	5.0	0x0	VIFx	33.0	35.0	st1
KITCHEN	c 2530	180	209	0.659	7.0	0x0	VIFx	10.5	35.0	st1
LIVING ROOM	c 2580	172	213	0.462	7.0	0x0	VIFx	30.0	35.0	st1
P-BATH	h 2089	113	48	0.612	5.0	0x0	VIFx	14.0	35.0	st2
P-BED	c 1692	106	140	0.667	6.0	0x0	VIFx	10.0	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
st1	PeakAVF	595	625	0.368	1286	4.2	5 x 14	ShtMetl	
st2	PeakAVF	218	188	0.612	449	4.0	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	813	813	0	0	0	0	0x 0		VIFx	



Manual S Compliance Report

Entire House

Clayton Homes

Job: S46053-FDJ-TZI
Date: Jul 28, 2023
By:

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

Project Information

For: S46053-FDJ-TZI, GILES

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Federal Manufactured
Home Construction 6
And Safety Standards

Cooling Equipment

Design Conditions

Outdoor design DB:	89.9°F	Sensible gain:	12960 Btuh	Entering coil DB:	77.6°F
Outdoor design WB:	77.7°F	Latent gain:	5857 Btuh	Entering coil WB:	65.6°F
Indoor design DB:	75.0°F	Total gain:	18817 Btuh		
Indoor RH:	50%	Estimated airflow:	523 cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split AC				
Manufacturer:		Model:			
Actual airflow:	523 cfm				
Sensible capacity:	0 Btuh	0% of load			
Latent capacity:	0 Btuh	0% of load			
Total capacity:	0 Btuh	0% of load	SHR:	0%	

Heating Equipment

Design Conditions

Outdoor design DB:	34.5°F	Heat loss:	15071 Btuh	Entering coil DB:	63.8°F
Indoor design DB:	70.0°F				

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Gas furnace				
Manufacturer:		Model:			
Actual airflow:	523 cfm				
Output capacity:	0 Btuh	0% of load	Temp. rise:	0 °F	

Meets all requirements of ACCA Manual S.

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Project Information

For: S46053-FDJ-TZI, GILES

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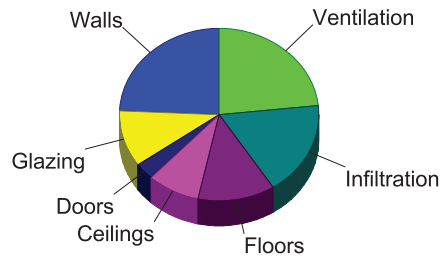
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Home Construction 6
And Safety Standards

Design Conditions

Location: GA 46 Elevation: 25 ft Latitude: 31°N			Indoor: Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)	Heating 70 36 30 9.2	Cooling 75 15 50 59.7
Outdoor: Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	Heating 35 - - 15.0	Cooling 90 13 (L) 78 7.5	Infiltration: Method Construction quality Fireplaces	Simplified Average 0	

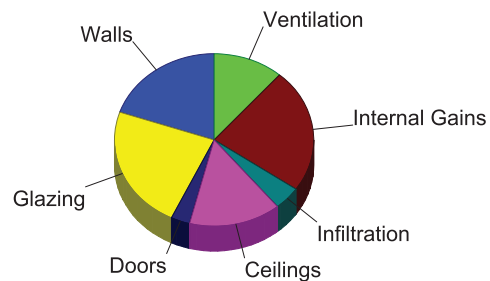
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	2.9	3661	24.3
Glazing	10.7	1595	10.6
Doors	11.4	477	3.2
Ceilings	1.1	1287	8.5
Floors	1.7	1890	12.5
Infiltration	1.8	2651	17.6
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		3511	23.3
Adjustments		0	0
Total		15071	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	2.0	2563	19.8
Glazing	20.2	3000	23.2
Doors	9.6	401	3.1
Ceilings	1.7	1933	14.9
Floors	0	0	0
Infiltration	0.4	569	4.4
Ducts		0	0
Ventilation		1474	11.4
Internal gains		3020	23.3
Blower		0	0
Adjustments		0	0
Total		12960	100.0



Latent Cooling Load = 5857 Btuh
Overall U-value = 0.068 Btuh/ft²·°F, Window / Floor Area = 13.1 %

Data entries checked.



Component Constructions
Entire House
 Clayton Homes

Job: S46053-FDJ-TZI
 Date: Jul 28, 2023
 By:

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

Project Information

For: S46053-FDJ-TZI, GILES

OCT 17 2023

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 Home Construction 6
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Design Conditions

Location: GA 46 Elevation: 25 ft Latitude: 31°N			Indoor: Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)	Heating 70 36 30 9.2	Cooling 75 15 50 59.7
Outdoor: Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	Heating 35 - - 15.0	Cooling 90 13 (L) 78 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-13 Wall - THP502-DOE: Double Wide - R-13 Insulation	n	108	0.082	13.0	2.91	313	2.04	219
THP502 2x4 Wall-DOE	e	537	0.082	13.0	2.91	1564	2.04	1095
	s	105	0.082	13.0	2.91	306	2.04	214
	w	508	0.082	13.0	2.91	1479	2.04	1035
	all	1258	0.082	13.0	2.91	3661	2.04	2563
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	13	0.300	0	10.6	133	7.28	91
	e	38	0.300	0	10.7	399	21.3	800
	s	15	0.300	0	10.7	160	8.99	135
	w	75	0.300	0	10.7	799	21.3	1599
	all	140	0.300	0	10.6	1491	18.8	2625
Clayton - Thermopane Low-E: Clayton - Thermopane Low-E; 50% blinds 45°, medium; 50% outdoor insect screen; 6.67 ft head ht	e	8	0.350	0	12.4	104	25.8	215
Doors								
CMH - Standard Door: CMH - Standard Door - Solid no storm	e	21	0.320	0	11.4	239	9.55	201
	w	21	0.320	0	11.4	239	9.55	201
	all	42	0.320	0	11.4	477	9.55	401
Ceilings								
CMH-SW-180 BOX R38 - THP2002 - DOE: CMH-SW-180 BOX R38- THP2002 - DOE		1133	0.032	38.0	1.14	1287	1.71	1933
Floors								
CMH-SW-180- R22-THP176-DOE: CMH-SW-180-R22-THP176-DOE		1133	0.047	22.0	1.67	1890	0	0

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

Project Information

For: S46053-FDJ-TZI, GILES

Notes: DUCT CAPACITY -27100 BTUHS



Design Information

Weather: GA 46

Winter Design Conditions

Outside db 35 °F
 Inside db 70 °F
 Design TD 36 °F

Summer Design Conditions

Outside db 90 °F
 Inside db 75 °F
 Design TD 15 °F
 Daily range L
 Relative humidity 50 %
 Moisture difference 60 gr/lb

Heating Summary

Structure 11560 Btuh
 Ducts 0 Btuh
 Central vent (90 cfm) 3511 Btuh
 Outside air
 Humidification 0 Btuh
 Piping 0 Btuh
 Equipment load 15071 Btuh

Sensible Cooling Equipment Load Sizing

Structure 11487 Btuh
 Ducts 0 Btuh
 Central vent (90 cfm) 1474 Btuh
 Outside air
 Blower 0 Btuh
 Use manufacturer's data n
 Rate/swing multiplier 0.95
 Equipment sensible load 12299 Btuh

Infiltration

Method Simplified
 Construction quality Average
 Fireplaces 0

Latent Cooling Equipment Load Sizing

Structure 2208 Btuh
 Ducts 0 Btuh
 Central vent (90 cfm) 3649 Btuh
 Outside air
 Equipment latent load 5857 Btuh

	Heating	Cooling
Area (ft ²)	1133	1133
Volume (ft ³)	9060	9060
Air changes/hour	0.45	0.23
Equiv. AVF (cfm)	68	35

Equipment Total Load (Sen+Lat) 18156 Btuh
 Req. total capacity at 0.70 SHR 1.5 ton

Heating Equipment Summary

Make
 Trade
 Model
 AHRI ref

Efficiency 80 AFUE
 Heating input 0 Btuh
 Heating output 0 Btuh
 Temperature rise 0 °F
 Actual air flow 523 cfm
 Air flow factor 0.045 cfm/Btuh
 Static pressure 0 in H2O
 Space thermostat

Cooling Equipment Summary

Make
 Trade
 Cond
 Coil
 AHRI ref
 Efficiency 0 SEER
 Sensible cooling 0 Btuh
 Latent cooling 0 Btuh
 Total cooling 0 Btuh
 Actual air flow 523 cfm
 Air flow factor 0.045 cfm/Btuh
 Static pressure 0 in H2O
 Load sensible heat ratio 0.69

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



Duct System Summary
Entire House
Clayton Homes

Job: S46053-FDJ-TZI
 Date: Jul 28, 2023
 By:

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

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Project Information

OCT 17 2023

For: S46053-FDJ-TZI, GILES

Federal Manufactured
 Home Construction 6
 And Safety Standards

	Heating	Cooling
External static pressure	0 in H2O	0 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0 in H2O	0 in H2O
Supply / return available pressure	0.000 / 0.000 in H2O	0.000 / 0.000 in H2O
Lowest friction rate	0 in/100ft	0 in/100ft
Actual air flow	523 cfm	523 cfm
Total effective length (TEL)	82 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 723	34	33	0	0	0x0	VIFx	44.0	35.0	st1
BED 2	h 1165	76	53	0	0	0x0	VIFx	46.5	35.0	st1
BED 3	h 1082	50	49	0	0	0x0	VIFx	33.0	35.0	st1
KITCHEN	c 2886	115	131	0	0	0x0	VIFx	10.5	35.0	st1
LIVING ROOM	c 2872	105	131	0	0	0x0	VIFx	30.0	35.0	st1
P-BATH	h 870	75	40	0	0	0x0	VIFx	14.0	35.0	st2
P-BED	c 1889	67	86	0	0	0x0	VIFx	10.0	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
st1	PeakAVF	380	397	0	817	4.2	5 x 14	ShtMetl	
st2	PeakAVF	143	125	0	294	4.0	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	523	523	0	0	0	0	0x 0		VIFx	

BOX SIZE: 15 ft. x 76 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



Doors:	Area	U Value	UA
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	148.00	0.300	44.40
Option	0.00	0.300	0.00
Net:			
Floor	1140.00	0.040	45.71
Wall	1264.00	0.082	103.27
Ceiling	1140.00	0.0319	36.37
Ext. Duct	0.00	0.000	0.00
Th. Zone 1:			
Th. Zone 2:			
Th. Zone 3:			
Ext. Duct	0.00	0.000	0.00
Ext. Duct	0.00	0.000	0.00
Ext. Duct	0.00	0.000	0.00
Supply	0.00	0.000	0.00
Supply	0.00	0.000	0.00
Supply	0.00	0.000	0.00

Window Glass Area:

Th. Zone 1:
 Th. Zone 2:
 Th. Zone 3:
 Overhead TZ 1:
 Overhead TZ 2:
 Overhead TZ 3:

Energy Star v3 & ZERH Max Glass (sq ft)	
Th. Zone 1	342.6
Th. Zone 2	154.3
Th. Zone 3	17.4

Outdoor Design Temp (F)

	UA	Uo	Heatloss BTUH/F	
Thermal Zone 1	11	242.95	0.065	370.30
Thermal Zone 2	0	242.95	0.065	370.30
Thermal Zone 3	-14	242.95	0.065	370.30

Design Temperatures

Furnace Heating Temp (F)	Economy Outdoor Temp (F)	
-22	6	10kW
-41	-7	12kW
-68	-27	15kW
-38	-6	40k Gas
-92	-43	60k Gas
-146	-81	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