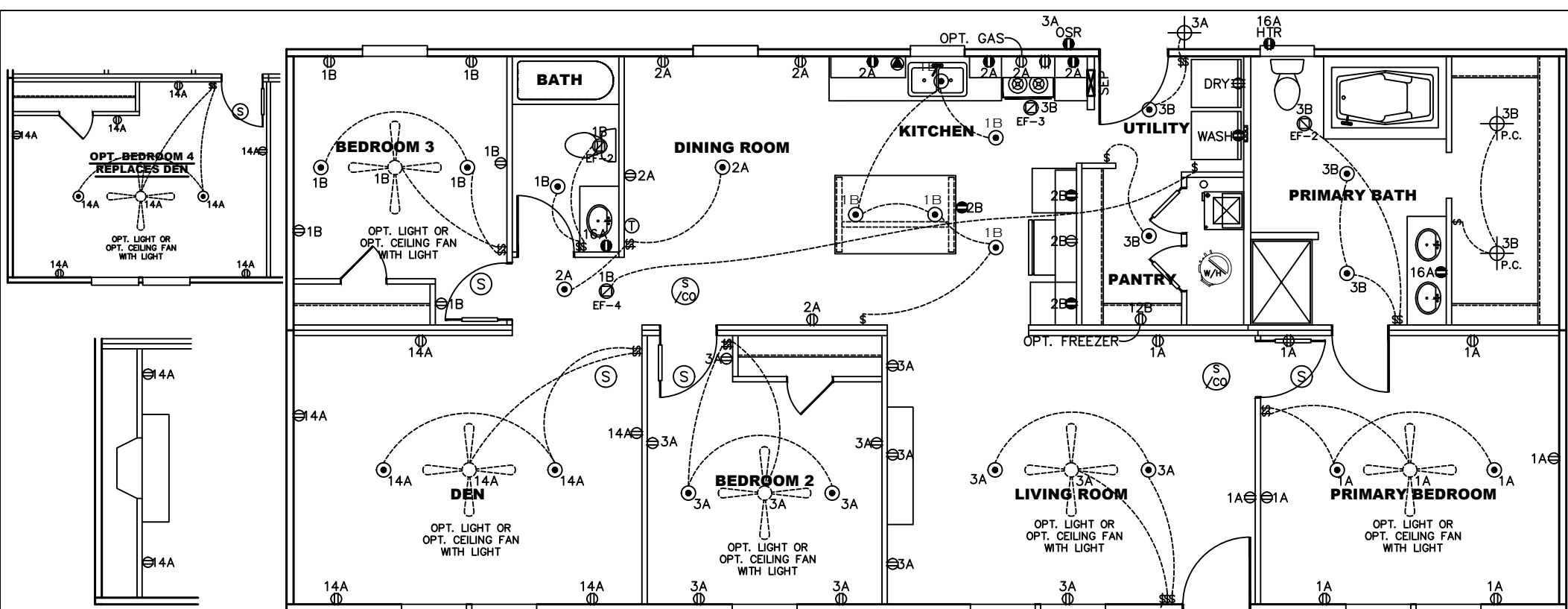
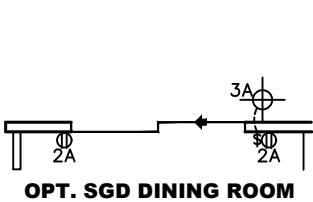




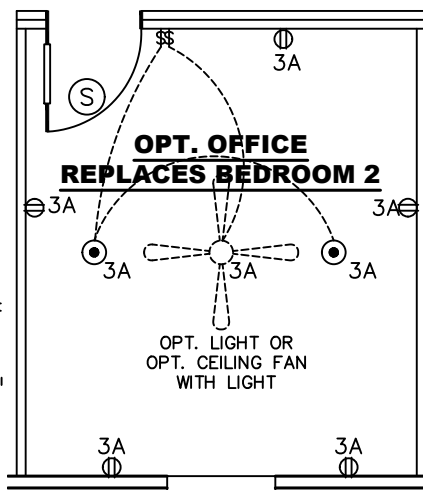
OPT. DEN FIREPLACE



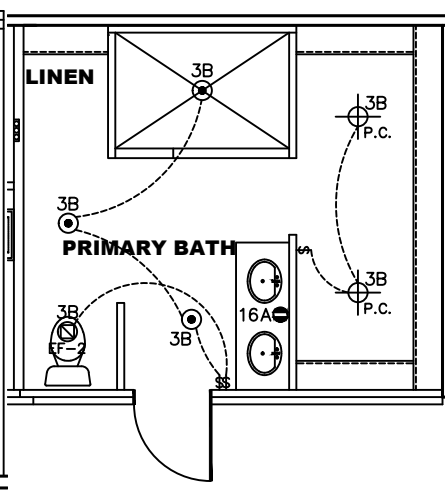
OPT. SGD DINING ROOM

NOTES:

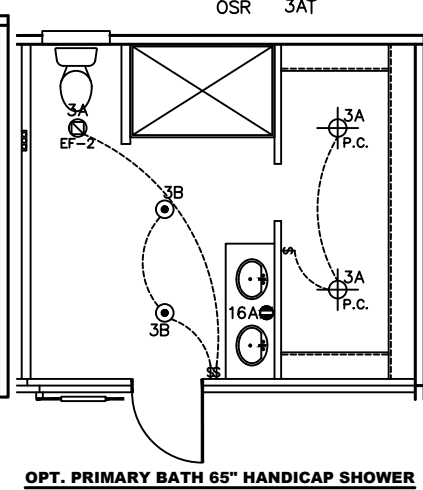
- ALL CIRCUITS SHOWN ARE FOR REFERENCE AND MAY BE CHANGED BASED ON OPTIONAL COMPONENTS INSTALLED IN THE HOME.
- REFER TO DAPIA MANUAL FOR SYMBOL CHART.
- EITHER LIGHT OR RECEPTACLE MUST CONNECT TO SWITCH.
- EF-1= 50 CFM EXHAUST FAN REQUIRED FOR THERMAL ZONE III. THERMAL ZONES I & II MAY USE FAN OR WINDOW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



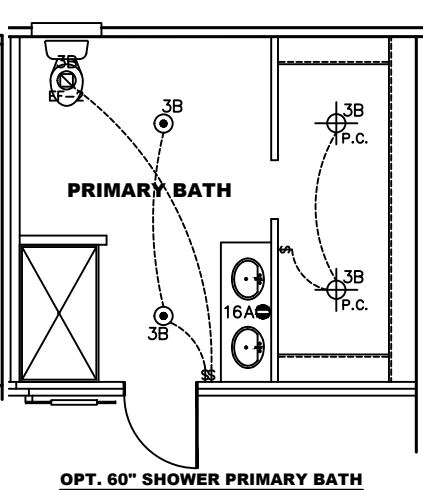
**OPT. OFFICE
REPLACES BEDROOM 2**



PRIMARY BATH 72" SHOWER ONLY



OPT. PRIMARY BATH 65" HANDICAP SHOWER



OPT. 60" SHOWER PRIMARY BATH

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Home Construction
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CIRCUIT	CIRCUIT #	WIRE	BREAKER
LIGHT/RECEP	1A,1B,3A,3B,14A	14-2	15-SP
KITCHEN/DINING	2A, 2B	12-2	20-SP
WASHER	12A	12-2	20-SP
DRYER	5A,7B	SEE NOTE #8	

CIRCUIT	CIRCUIT #	WIRE	BREAKER
WATER HEATER	4A,6B	SEE NOTE #8	
RANGE	5B,7A	SEE NOTE #8	
FURNACE	6A,8A,B,10A,B	SEE NOTE #8	
OPT D/WASH	9A	SEE NOTE #8	
SMOKE ALARM	4B	SEE NOTE #8	

CIRCUIT	CIRCUIT #	WIRE	BREAKER
BATHROOM	16A	12-2	20-SP
OPT G/DISP	9B	SEE NOTE #8	
OPT SPA/ WP/JAC	11A,B	SEE NOTE #8	
FREEZER	12B	SEE NOTE #8	

SHEET:

EL

ELECTRICAL
PLAN

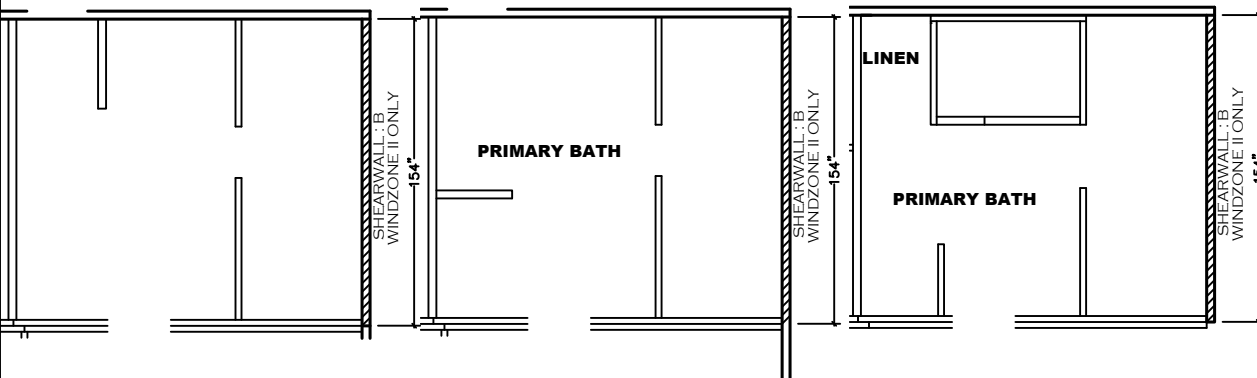
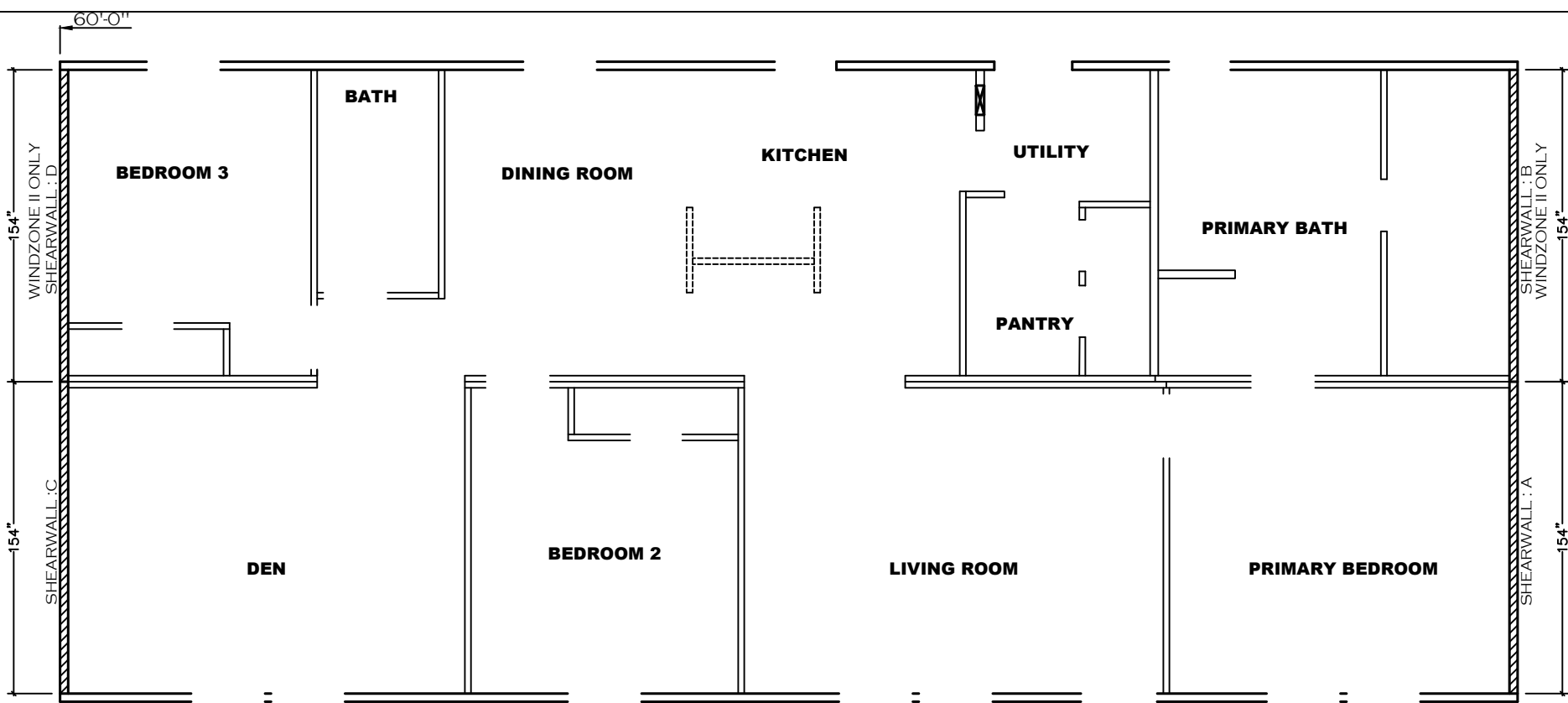
Clayton Clayton - 934
1420 Mountain Rd, Andersonville, TN 37705
PH: 865.494.7800 FAX: 865.494.0243

HILBORN, WERNER, CARTER,
AND ASSOCIATES, INC.
1627 SOUTH MYRTLE AVE.
CLEARWATER, FL. 33756

DRAWING #: 34M403
MODEL #: MTN28603A
DATE: 05/20/2026 SCALE: N.T.S.

MODEL: MOUNTAINEER (28'x60')
SERIES: MOUNTAINEER
PRODUCT DESIGNER: DAMONTE M. FOSTER

STD. PLAN "CONDITIONED": 1,580 FT²
REV. BY:
REV. DATE:



OPT. PRIMARY BATH 65" HANDICAP SHOWER

**OPT. 60" SHOWER
PRIMARY BATH**

PRIMARY BATH 72" SHOWER ONLY

Model # 34M403
 Box Width = 158" Double wide
 Box Length = 60 ft. 99.5" 12" MIN. IBEAM
 No Skylights
 No Porches
 Joist Size = #2 sp 2x6 Lags 9Mx3"
 Minimum Joist Spacing 16"
 No Offset Box
 No Clerestory
 No Origami Dormer
 No Sunken Floor
 No Parapet Roof

Version R14.01

Wind Zone 1 Standard Roof		7/16" Rated Sheathing and Ceiling Board with 15 ga staple @ 6/12 (286,315) Chords: 2x4 SPF Stud Top Plate & 1x4 SPF Rail. Each spliced w/2x4 MCP.				96 inch sidewall
Diaphragm Construction:		Block Dist. X=0'				
Shearwall	Dist./ Hitch	Length	PLF	# of Joists	Lags	Notes
A	0'	136"	162	2	2/1	
C	60'	136"	162	2	2/1	
Wind Zone 2 Standard Roof		7/16" Rated Sheathing and Ceiling Board with 15 ga staple @ 6/12 (286,315) Chords: 2x4 SPF #3 Top Plate & 2x3 Rail. Each spliced w/ 12" glue block.				96 inch sidewall
Diaphragm Construction:		Block Dist. X=0'				
Shearwall	Dist./ Hitch	Length	PLF	# of Joists	Lags	Notes
A	0'	116"	250	2	3/1	
B	0'	116"	250	2	3/1	
C	60'	116"	250	2	3/1	
D	60'	116"	250	2	3/1	

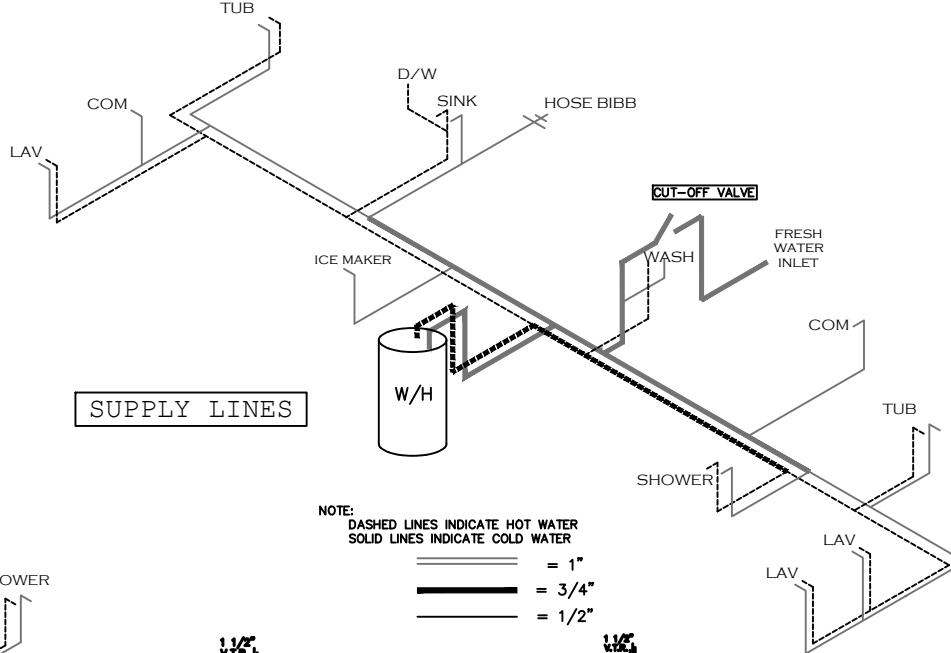
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 FEDERAL MANUFACTURED HOME CONSTRUCTION
 AND SAFETY STANDARDS
 JUNE 15 2026
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SHEET: SW	SHEARWALL PLAN	Clayton 1420 Mountain Rd, Andersonville, TN 37705 PH: 865.494.7800 FAX: 865.494.0243	HILBORN, WERNER, CARTER, AND ASSOCIATES, INC. 1627 SOUTH MYRTLE AVE. CLEARWATER, FL. 33756	DRAWING #: 34M403 MODEL #: MTN28603A DATE: 05/20/2026	MODEL: MOUNTAINEER (28'x60') SERIES: MOUNTAINEER PRODUCT DESIGNER: BRIAN RIFFEY	STD PLAN "CONDITIONED": 1,580 FT² REV. BY: REV. DATE:
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SHIP LOOSE CHART

PARTS SHIPPED LOOSE W/HOME
(TO BE INSTALLED IN FIELD)

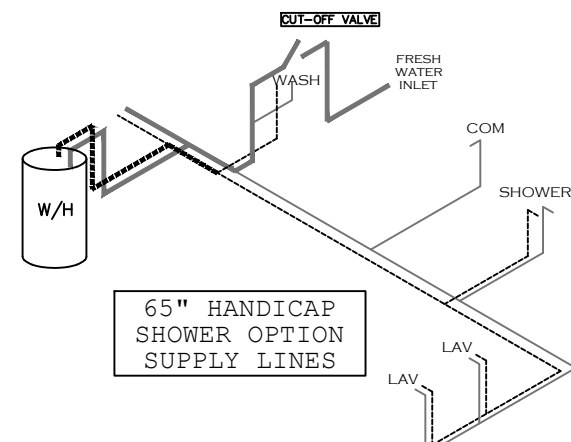
QUANTITY	DESCRIPTION
1	① 3" LONG SWEEP 1/4 BEND
1	② 3"x3"x3" LONG TURN T-Y/CLEANOUT
1	③ 3" DBL ELL
2	3" COUPLING
1	APPROVED CEMENT
3	3" ABS PIPE 20'
varies	SUPPORT STRAPS



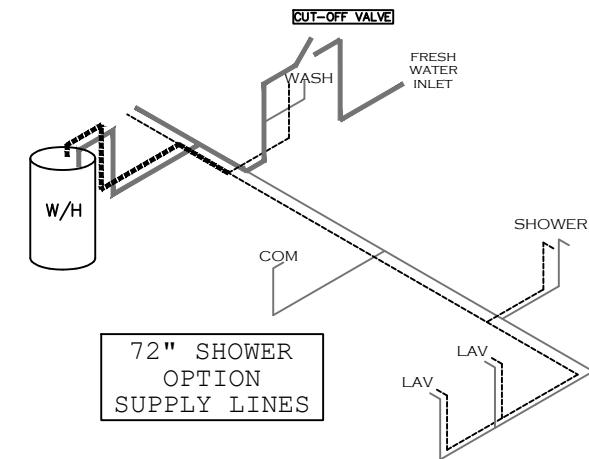
SUPPLY LINES

NOTE:
DASHED LINES INDICATE HOT WATER
SOLID LINES INDICATE COLD WATER

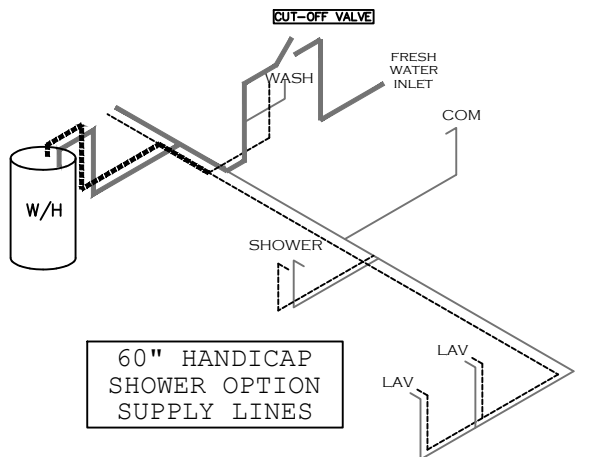
— = 1"
— = 3/4"
— = 1/2"



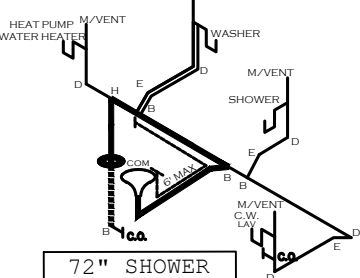
65" HANDICAP
SHOWER OPTION
SUPPLY LINES



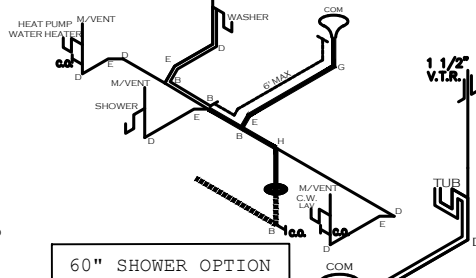
72" SHOWER
OPTION
SUPPLY LINES



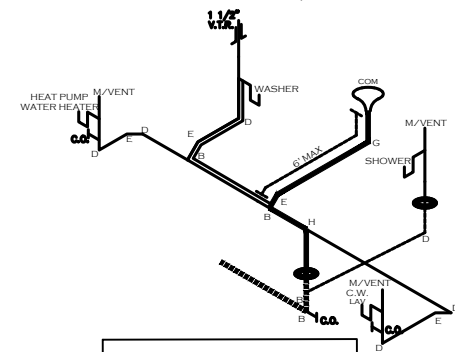
60" HANDICAP
SHOWER OPTION
SUPPLY LINES



72" SHOWER
OPTION D.W.V
LINES



60" SHOWER OPTION
D.W.V LINES



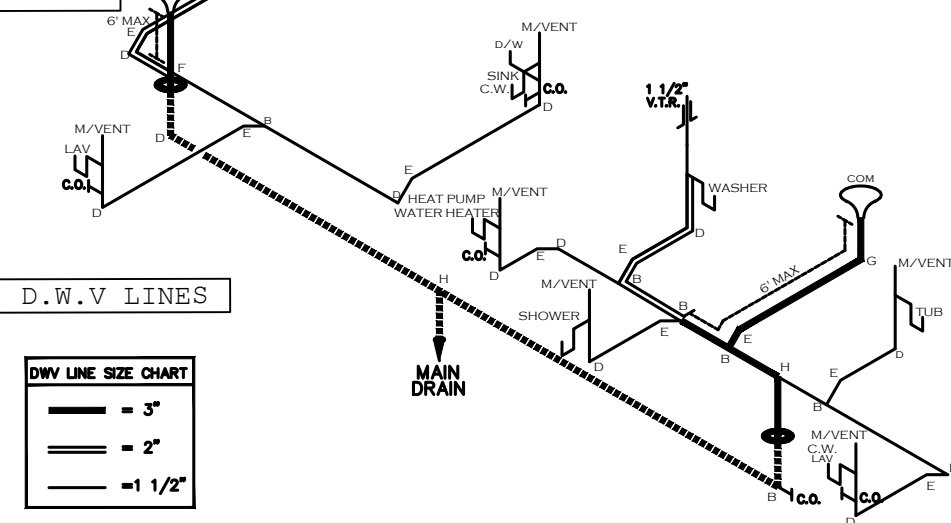
65" HANDICAP SHOWER
OPTION D.W.V LINES

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JUNE 15 2026
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And Safety Standards

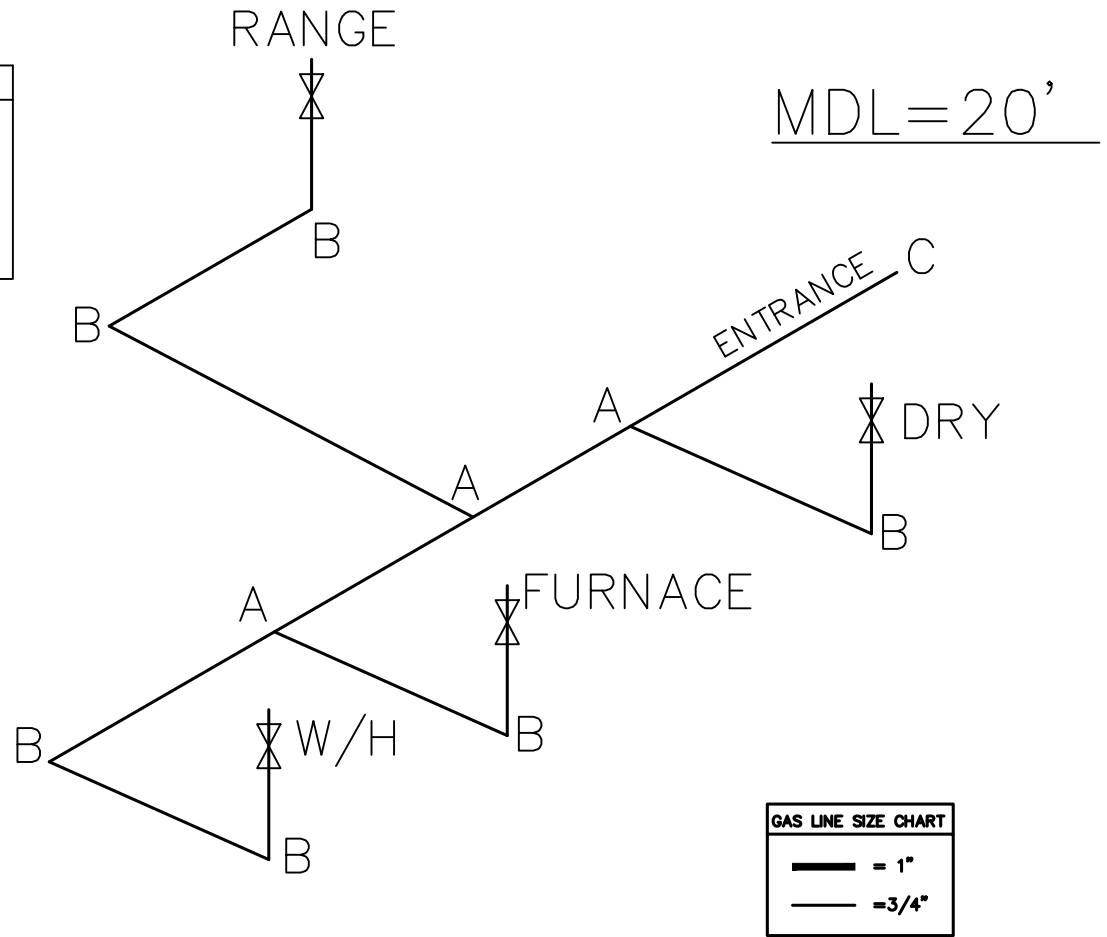
LEGEND	
A	SHORT TURN T-Y
B	LONG TURN T-Y
C	1/4 BEND
D	LONG SWEEP 1/4 BEND
E	45 ELL
F	DBL. SANITARY TEE
G	4x3 CLOSET ELL
H	DOUBLE ELL
I	22 1/2" ELL
J	45° Y
K	LONG TURN STREET ELBOW
L	45 FTG ELL

D.W.V LINES

DWV LINE SIZE CHART	
—	= 3"
—	= 2"
—	= 1 1/2"



LEGEND		APPLIANCE BTU's RATINGS MAX. INPUT	
SYM	FITTINGS		
A	TEE	FURNACE	77,000 BTU'S
B	90 ELL	W/H	36000 BTU'S
X	VALVE	RANGE	54,000 BTU'S
C	CAP	DRYER	22,000 BTU'S



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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SHEET:					DRAWING #:	34M403	MODEL:	MOUNTAINEER (28'x60')	STD. PLAN "CONDITIONED":	1,580 FT²	
GL	GAS LINE DETAIL	 Clayton - 934 1420 Mountain Rd, Andersonville, TN 37705 PH: 865.494.7800 FAX: 865.494.0243	HILBORN, WERNER, CARTER, AND ASSOCIATES, INC. 1627 SOUTH MYRTLE AVE. CLEARWATER, FL. 33756	MODEL #:	MTN28603A	SERIES:	MOUNTAINEER	REV. BY:			
				DATE:	05/20/2026	SCALE:	N.T.S.	PRODUCT DESIGNER:	DAMONTE M. FOSTER	REV. DATE:	

CLAYTON HOME BUILDING GROUP

Model Number	MTN28603A	Drawing Number	34M403-HEATLOSS-TZ1	Version 29
Serial Number	X	Model Name	MOUNTAINEER	

BOX SIZE: 26.33 ft. x 60 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

	UNHEATED FLOOR	WALL	FLAT ROOF
INSULATION VALUES	R-22 FW	R-13	R-38
DAPIA PAGE	THP-161	THP-502	THP-1255
U VALUE (BTUH/SQ.FT.-F)	0.0445	0.0817	0.0297

THIS INSULATION COMBINATION COMPLIES WITH
ZONE 1 PRESCRIPTIVE ZERH REQUIREMENTS

Overhead Duct	
Diameter	Length
4	0
5	0
6	0
7	0
8	0
9	0
10	0
12	0
14	0
Exterior Supply	Length
14	0
16	0
Exterior Return	Length
14	0
16	0

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Window Glass Area:

Doors:

Net:

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

	Area	U Value	UA
Front	21.63	0.300	6.49
Rear	19.37	0.300	5.81
Other Door	40.00	0.300	12.00
Other Door	0.00	0.330	0.00
OSB	0.00	0.000	0.00
Skylights	0.00	0.330	0.00
Standard	140.00	0.300	42.00
Option	0.00	0.300	0.00
Floor	1580.00	0.045	70.31
Wall	1160.33	0.082	94.80
Ceiling	1580.00	0.0297	46.93
Ext. Duct	78.50	0.242	18.98
Ext. Duct	78.50	0.223	17.48
Ext. Duct	78.50	0.206	16.14
Supply	0.00	0.000	0.00
Supply	0.00	0.000	0.00
Supply	0.00	0.00	0.00

Energy Star v3 & ZERH Max Glass (sq ft)	
Th. Zone 1	268.7
Th. Zone 2	127.5
Th. Zone 3	0.0

Thermal Zone	Outdoor Design Temp (F)	UA	Uo	ZERH / EStar 3.0 Compliant	Heatloss BTUH/F
1	11	297.32	0.064	OK	418.20
2	0	295.82	0.064	NG	416.70
3	-14	294.47	0.064	NG	415.30

Design Temperatures		
Furnace Heating Temp (F)	Economy Outdoor Temp (F)	
-12	13	10kW
-28	1	12kW
-52	-16	15kW
-26	3	40k Gas
-73	-30	60k Gas
-121	-64	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



Building Analysis
Entire House
Clayton Homes Appalachia

Job: 34M403 - FDJ-TZ1
Date: June 11, 2026
By: Brian Riffey
Plan: 34M274 -FDJ-TZ1

1420 Mountain Rd, Andersonville, TN 37705 Phone: 865-494-7800 ext 257

Project Information

For: 34M403 - FDJ-TZ1



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Design Conditions

Location:

GA 36
Elevation: 1010 ft
Latitude: 34°N

Outdoor:

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

Heating

26
-
-
15.0

Cooling

92
16 (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
33.6

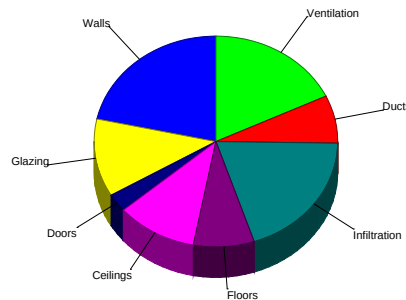
Infiltration:

Method
Construction quality
Fireplaces

Simplified
Average
0

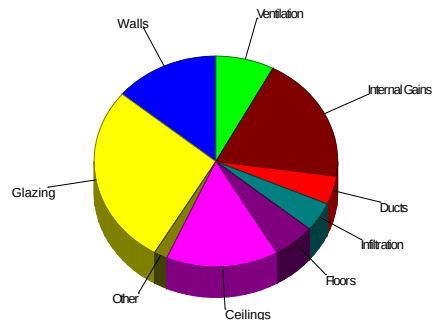
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.6	4171	21.6
Glazing	13.1	2309	11.9
Doors	13.1	534	2.8
Ceilings	1.3	2080	10.8
Floors	1.0	1560	8.1
Infiltration	2.7	3804	19.7
Ducts		1416	7.3
Piping		0	0
Humidification		0	0
Ventilation		3468	17.9
Adjustments		0	0
Total		19341	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	2.0	2377	14.0
Glazing	26.7	4710	27.6
Doors	7.5	304	1.8
Ceilings	1.6	2545	14.9
Floors	0.6	955	5.6
Infiltration	0.5	759	4.5
Ducts		744	4.4
Ventilation		1320	7.8
Internal gains		3320	19.5
Blower		0	0
Adjustments		0	0
Total		17035	100.0



Latent Cooling Load = 3589 Btuh

Overall U-value = 0.061 Btuh/ft²-°F, Window / Floor Area = 11.1 %

Data entries checked.



Component Constructions
Entire House
Clayton Homes Appalachia

Job: 34M403 - FDJ-TZ1
Date: June 11, 2026
By: Brian Riffey
Plan: 34M274 -FDJ-TZ1

1420 Mountain Rd, Andersonville, TN 37705 Phone: 865-494-7800 ext 257

Project Information

For: 34M403 - FDJ-TZ1

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JUNE 15 2026

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Home Construction 6
And Safety Standards

Design Conditions

Location:

GA 36
Elevation: 1010 ft
Latitude: 34°N

Outdoor:

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

Heating

26
-
-
15.0

Cooling

92
16 (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
33.6

Infiltration:

Method
Construction quality
Fireplaces

Simplified
Average
0

Construction descriptions

Or	Area ft ²	U-value Btuh/ft ² -°F	Insul R ft ² -°F/Btuh	Htg HTM Btuh/ft ²	Loss Btuh	Clg HTM Btuh/ft ²	Gain Btuh
n	212	0.082	13.0	3.58	758	2.04	432
e	389	0.082	13.0	3.58	1389	2.04	792
s	212	0.082	13.0	3.58	758	2.04	432
w	354	0.082	13.0	3.58	1266	2.04	721
all	1167	0.082	13.0	3.58	4171	2.04	2377

Walls

CMH - DW - R-13 Wall - THP-502 DOE: Frm wall, vnl ext, 3/8" wood
shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c.
stud

Partitions
(none)

Windows

Clayton - Theropanel Low-E DOE: Clayton - Therompane Low-E DOE;
50% blinds 45°, medium; 50% outdoor insect screen; 6.67 ft head ht
Clayton - Theropanel Low-E DOE: 1 glazing, clr glz, mtl no brk frm mat,
1/4" thk; 50% blinds 45°, medium; 50% outdoor insect screen; 6.67 ft
head ht

e	16	0.300	0	13.1	216	21.7	359
e	15	0.300	0	13.1	196	21.7	326
e	40	0.300	0	13.1	523	21.7	870
w	75	0.300	0	13.1	981	21.7	1631
w	15	0.300	0	13.1	196	42.2	633
all	162	0.300	0	13.1	2113	23.6	3819
w	15	0.300	0	13.1	196	21.7	326

Doors

CMH - Standard Door DOE: CMH - Standard Door -Solid no strom DOE

e	20	0.300	0	13.1	259	7.45	148
w	21	0.300	0	13.1	275	7.45	157
all	41	0.300	0	13.1	534	7.45	304

Ceilings

CMH - DW - 158 box R-38 - THP1255: Attic ceiling, asphalt shingles roof
mat, r-38 ceil ins, 1/2" gypsum board int fnsh

	1590	0.030	38.0	1.31	2080	1.60	2545
--	------	-------	------	------	------	------	------

Floors

CHM-DW-R-22-THP-161: Flr floor, frm flr, 6" thkns, vinyl flr fnsh, r-21 ext
ins, amb ovr

	1590	0.045	22.0	0.98	1560	0.60	955
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Right-Suite® Universal 2025 25.0.05 RSU55710

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Page 1

W:\ZERO ENERGY STANDARDS\34M403-FDJ-TZ1.rup Calc = MJ8 Front Door faces: E



Project Summary

Entire House

Clayton Homes Appalachia

Job: 34M403 - FDJ-TZ1
Date: June 11, 2026
By: Brian Riffey
Plan: 34M274 -FDJ-TZ1

1420 Mountain Rd, Andersonville, TN 37705 Phone: 865-494-7800 ext 257

Project Information

For: 34M403 - FDJ-TZ1

Notes: Duct Capacity: 27100 BTUH

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Home Construction 6
And Safety Standards

Design Information

Weather: GA 36

Winter Design Conditions

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

Ventilation Method MJ8

Heating Summary

Structure 14457 Btuh
Ducts (R-8.0) 1416 Btuh
Central vent (75 cfm) 3468 Btuh
Outside air
Humidification 0 Btuh
Piping 0 Btuh
Equipment load 19341 Btuh

Infiltration

Method Simplified
Construction quality Average
Fireplaces 0

	Heating	Cooling
Area (ft ²)	1590	1590
Volume (ft ³)	12720	12720
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	82	43

Heating Equipment Summary

Make Smart Comfort
Trade 15 SEER2 HP
Model R5H5S24*K*AAA*
AHRI ref 214277579

Efficiency 7.8 HSPF2
Heating input
Heating output 23200 Btuh @ 47°F
Temperature rise 28 °F
Actual air flow 787 cfm
Air flow factor 0.050 cfm/Btuh
Static pressure 0.30 in H2O
Space thermostat
Capacity balance point = 24 °F

Backup: Smart Comfort
Input = 10 kW, Output = 34121 Btuh, 100 AFUE

Summer Design Conditions

Outside db 92 °F
Inside db 75 °F
Design TD 17 °F
Daily range M
Relative humidity 50 %
Moisture difference 34 gr/lb

Sensible Cooling Equipment Load Sizing

Structure 14970 Btuh
Ducts (R-8.0) 744 Btuh
Central vent (75 cfm) 1320 Btuh
Outside air
Blower 0 Btuh
Use manufacturer's data n
Rate/swing multiplier 0.97
Equipment sensible load 16455 Btuh

Latent Cooling Equipment Load Sizing

Structure 1750 Btuh
Ducts 187 Btuh
Central vent (75 cfm) 1653 Btuh
Outside air
Equipment latent load 3589 Btuh

Equipment Total Load (Sen+Lat) 20045 Btuh
Req. total capacity at 0.70 SHR 2.0 ton

Cooling Equipment Summary

Make Smart Comfort
Trade 15 SEER2 HP
Cond R5H5S24*K*AAA*
Coil FEVB0036***+NAVA53601CK
AHRI ref 214277579
Efficiency 12.0 EER2,15.5 SEER2
Sensible cooling 16520 Btuh
Latent cooling 7080 Btuh
Total cooling 23600 Btuh
Actual air flow 787 cfm
Air flow factor 0.050 cfm/Btuh
Static pressure 0.30 in H2O
Load sensible heat ratio 0.83

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



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Duct System Summary

Entire House

Clayton Homes Appalachia

Job: 34M403 - FDJ-TZ1
Date: June 11, 2026
By: Brian Riffey
Plan: 34M274 -FDJ-TZ1

1420 Mountain Rd, Andersonville, TN 37705 Phone: 865-494-7800 ext 257

Project Information

For: 34M403 - FDJ-TZ1

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	Heating	Cooling
External static pressure	0.30 in H ₂ O	0.30 in H ₂ O
Pressure losses	0 in H ₂ O	0 in H ₂ O
Available static pressure	0.30 in H ₂ O	0.30 in H ₂ O
Supply / return available pressure	0.150 / 0.150 in H ₂ O	0.150 / 0.150 in H ₂ O
Lowest friction rate	0.176 in/100ft	0.176 in/100ft
Actual air flow	787 cfm	787 cfm
Total effective length (TEL)	171 ft	

Supply Branch Detail Table

Name	Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
BEDROOM 2	c 1719	57	86	0.203	6.0	0x0	VIFx	23.1	125.0	st5
BEDROOM 3	h 1893	94	71	0.392	5.0	0x0	VIFx	41.5	35.0	st3
DEN	h 1292	64	50	0.176	5.0	0x0	VIFx	45.6	125.0	st5
DEN-A	h 1292	64	50	0.188	5.0	0x0	VIFx	34.6	125.0	st5
DINING/KITCHEN	c 1773	66	89	0.500	5.0	0x0	VIFx	25.0	35.0	st3
DINING/KITCHEN-A	c 1773	66	89	0.659	5.0	0x0	VIFx	10.5	35.0	st3
H BATH	h 485	24	13	0.458	5.0	0x0	VIFx	30.5	35.0	st3
LIVING ROOM	c 1465	57	73	0.205	5.0	0x0	VIFx	21.1	125.0	st5
LIVING ROOM-A	c 1465	57	73	0.201	5.0	0x0	VIFx	24.1	125.0	st4
PRIMARY BATH	h 2469	122	77	0.750	5.0	0x0	VIFx	5.0	35.0	st1
PRIMARY BEDROOM	h 1180	59	58	0.184	5.0	0x0	VIFx	37.6	125.0	st4
PRIMARY BEDROOM-A	h 1180	59	58	0.198	5.0	0x0	VIFx	26.1	125.0	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
st4	Peak AVF	174	189	0.184	390	5.7	5 x 14	ShtMetl	st2
st5	Peak AVF	241	260	0.176	534	7.9	5 x 14	ShtMetl	st2
st2	Peak AVF	415	449	0.176	924	10.4	5 x 14	VinIFlx	
st3	Peak AVF	249	261	0.392	537	6.6	5 x 14	ShtMetl	
st1	Peak AVF	122	77	0.750	252	4.6	5 x 14	ShtMetl	

Return Branch Detail Table

Name	Grille Size (in)	Htg (cfm)	Clg (cfm)	TEL (ft)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Stud/Joist Opening (in)	Duct Matl	Trunk
rb1	0x 0	787	787	0	0	0	0	0x 0		VIFx	





Manual S Compliance Report

Entire House

Clayton Homes Appalachia

Job: 34M403 - FDJ-TZ1
Date: June 11, 2026
By: Brian Riffey
Plan: 34M274 -FDJ-TZ1

1420 Mountain Rd, Andersonville, TN 37705 Phone: 865-494-7800 ext 257

Project Information

For: 34M403 - FDJ-TZ1

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Cooling Equipment

Design Conditions

Outdoor design DB:	91.6°F	Sensible gain:	17035 Btuh	Entering coil DB:	76.6°F
Outdoor design WB:	73.6°F	Latent gain:	3589 Btuh	Entering coil WB:	63.6°F
Indoor design DB:	75.0°F	Total gain:	20624 Btuh		
Indoor RH:	50%	Estimated airflow:	787 cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Smart Comfort	Model:	R5H5S24*K*AAA*+FEVB0036**++NAVA53601CK
Actual airflow:	787 cfm		
Sensible capacity:	19331 Btuh	113% of load	
Latent capacity:	3917 Btuh	109% of load	
Total capacity:	23248 Btuh	113% of load	SHR: 83%

Heating Equipment

Design Conditions

Outdoor design DB:	26.4°F	Heat loss:	19341 Btuh	Entering coil DB:	65.8°F
Indoor design DB:	70.0°F				

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Smart Comfort	Model:	R5H5S24*K*AAA*+FEVB0036**++NAVA53601CK
Actual airflow:	787 cfm		
Output capacity:	16709 Btuh	86% of load	Capacity balance: 24 °F
Supplemental heat required:	2633 Btuh		Economic balance: -99 °F

Backup equipment type:	Elec strip		
Manufacturer:	Smart Comfort	Model:	
Actual airflow:	787 cfm		
Output capacity:	10.0 kW	176% of load	Temp. rise: 41 °F

Meets all requirements of ACCA Manual S.



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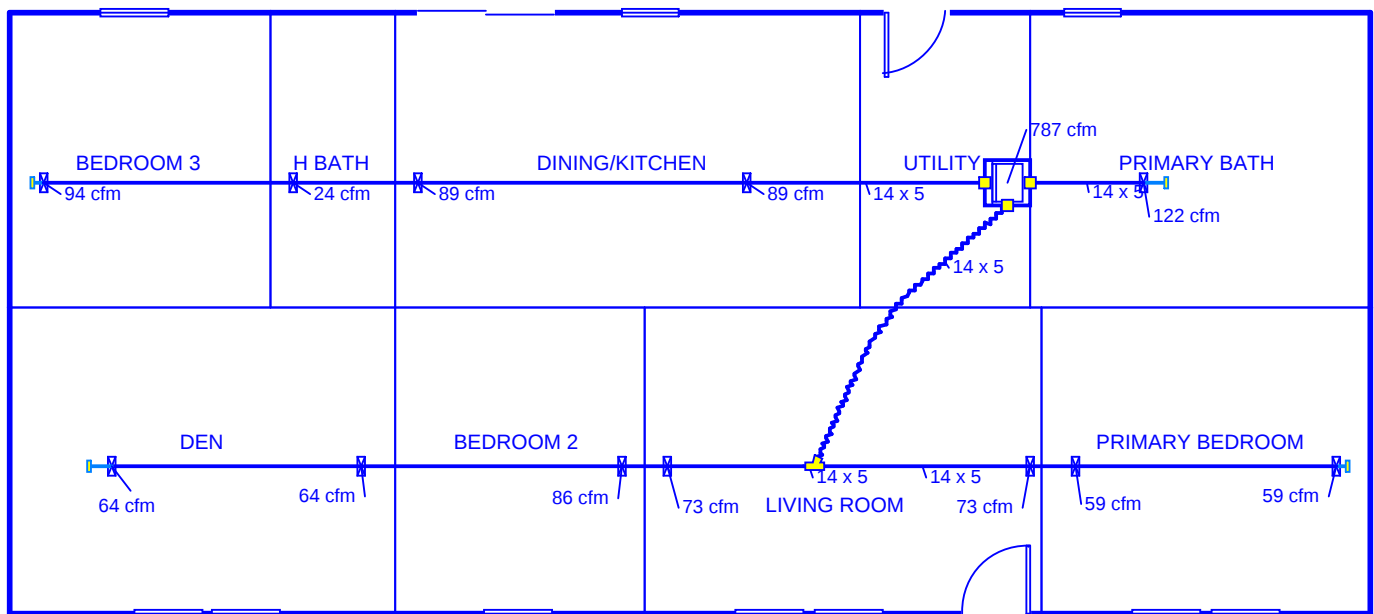
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Federal Manufactured
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Level 1



Job #: 34M403 - FDJ-TZ1
Performed by Brian Riffey for:
34M403 - FDJ-TZ1

Clayton Homes Appalachia

1420 Mountain Rd
Andersonville, TN 37705
Phone: 865-494-7800 ext 257

Scale: 1 : 102

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Model:

34M403

Serial Number:

TZ1

Cooling Equipment Summary

Duct Capacity: 27,100 btuh

Economy Outdoor Temp (°F) = -12 = (70 - Furnace Output / Estimated Heatloss)
(Outdoor Certification Temp.)

Furnace Heating Temp (°F) = 13 = If $0.3 * \text{Design TD} > 20$ then
(Operating Econ. Cert. Temp.) $0.3 * (70 - \text{Cert. Temp.}) + \text{Cert. Temp}$
else Cert. Temp. + 20

Air Ducts in Floor: 121 sq ft

Air Ducts Outside of Home: 78.5 sq ft

v-2.0

CLAYTON HOME BUILDING GROUP

Model Number	MTN28603A	Drawing Number	34M403-HEATLOSS-TZ2	Version 29
Serial Number	X	Model Name	MOUNTAINEER	

BOX SIZE: 26.33 ft. x 60 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

	UNHEATED FLOOR	WALL	FLAT ROOF
INSULATION VALUES	R-33 FW	R-13	R-38
DAPIA PAGE	THP-221	THP-502	THP-1255
U VALUE (BTUH/SQ.FT.-F)	0.0320	0.0817	0.0297



Overhead Duct	
Diameter	Length
4	0
5	0
6	0
7	0
8	0
9	0
10	0
12	0
14	0
Exterior Supply	Length
14	0
16	0
Exterior Return	Length
14	0
16	0

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Window Glass Area:

Doors:

	Area	U Value	UA
Front	21.63	0.300	6.49
Rear	19.37	0.300	5.81
Other Door	40.00	0.300	12.00
Other Door	0.00	0.330	0.00
OSB	0.00	0.000	0.00
Skylights	0.00	0.330	0.00
Standard	140.00	0.300	42.00
Option	0.00	0.300	0.00
Net: Floor	1580.00	0.032	50.56
Wall	1160.33	0.082	94.80
Ceiling	1580.00	0.0297	46.93
Ext. Duct	78.50	0.242	18.98
Ext. Duct	78.50	0.223	17.48
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	359.2
Th. Zone 2	218.0
Th. Zone 3	24.3

Thermal Zone	Outdoor Design Temp (F)	UA	Uo	ZERH / EStar 3.0 Compliant	Heatloss BTUH/F
1	11	277.57	0.060	OK	398.40
2	0	276.07	0.060	OK	396.90
3	-14	274.72	0.059	NG	395.60

Design Temperatures	
Furnace Heating Temp (F)	Economy Outdoor Temp (F)
-16	10
-33	-2
-58	-20
-30	0
-81	-35
-131	-71

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



Building Analysis

Entire House

Clayton Homes Appalachia

Job: 34M403 - FDJ-TZ2
Date: June 11, 2026
By: Brian Riffey
Plan: 34M403 -FDJ-TZ2

1420 Mountain Rd, Andersonville, TN 37705 Phone: 865-494-7800 ext 257

Project Information

For: 34M403 - FDJ-TZ2

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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
50
43.6

Cooling

75
15
50
33.6

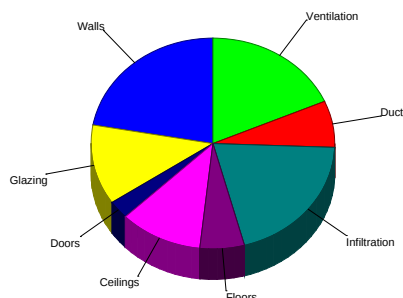
Infiltration:

Method
Construction quality
Fireplaces

Simplified
Average
0

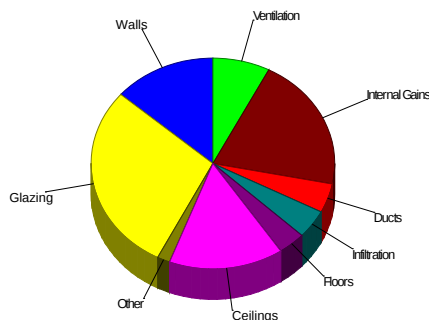
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	4.0	4692	22.2
Glazing	14.7	2595	12.3
Doors	14.7	586	2.8
Ceilings	1.5	2337	11.1
Floors	0.8	1247	5.9
Infiltration	3.1	4282	20.3
Ducts		1505	7.1
Piping		0	0
Humidification		0	0
Ventilation		3904	18.5
Adjustments		0	
Total		21147	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	1.9	2207	13.6
Glazing	26.4	4666	28.9
Doors	6.9	276	1.7
Ceilings	1.5	2459	15.2
Floors	0.4	588	3.6
Infiltration	0.5	705	4.4
Ducts		725	4.5
Ventilation		1227	7.6
Internal gains		3320	20.5
Blower		0	0
Adjustments		0	
Total		16173	100.0



Latent Cooling Load = 3593 Btuh

Overall U-value = 0.057 Btuh/ft²-°F, Window / Floor Area = 11.1 %

Data entries checked.



Component Constructions
Entire House
Clayton Homes Appalachia

Job: 34M403 - FDJ-TZ2
Date: June 11, 2026
By: Brian Riffey
Plan: 34M403 -FDJ-TZ2

1420 Mountain Rd, Andersonville, TN 37705 Phone: 865-494-7800 ext 257

Project Information

For: 34M403 - FDJ-TZ2



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Design Conditions

Location:

TN 25
Elevation: 962 ft
Latitude: 36°N

Outdoor:

	Heating	Cooling
Dry bulb (°F)	21	90
Daily range (°F)	-	18 (M)
Wet bulb (°F)	-	73
Wind speed (mph)	15.0	7.5

Indoor:

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

Heating

70
49
50
43.6

Cooling

75
15
50
33.6

Infiltration:

Method
Construction quality
Fireplaces

Simplified
Average
0

Construction descriptions

Walls

Construction descriptions	Or	Area ft ²	U-value Btuh/ft ² -°F	Insul R ft ² -°F/Btuh	Htg HTM Btuh/ft ²	Loss Btuh	Clg HTM Btuh/ft ²	Gain Btuh
CMH - DW - R-13 Wall - THP-502 DOE: Frm wall, vnl ext, 3/8" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud	n	212	0.082	13.0	4.02	852	1.89	401
	e	389	0.082	13.0	4.02	1564	1.89	735
	s	212	0.082	13.0	4.02	852	1.89	401
	w	355	0.082	13.0	4.02	1424	1.89	670
	all	1168	0.082	13.0	4.02	4692	1.89	2207

Partitions

(none)

Windows

Clayton - Theropanel Low-E DOE: Clayton - Therompane Low-E DOE; 50% blinds 45°, medium; 50% outdoor insect screen; 6.67 ft head ht	e	16	0.300	0	14.7	243	21.3	352
	e	15	0.300	0	14.7	221	21.3	320
	e	40	0.300	0	14.7	588	21.3	854
	w	75	0.300	0	14.7	1102	21.3	1601
	w	15	0.300	0	14.7	221	41.7	625
	all	162	0.300	0	14.7	2374	23.2	3753
Clayton - Theropanel Low-E DOE: 1 glazing, clr glz, mtl no brk frm mat, 1/4" thk; 50% blinds 45°, medium; 50% outdoor insect screen; 6.67 ft head ht	w	15	0.300	0	14.7	221	21.3	320

Doors

CMH - Standard Door DOE: CMH - Standard Door -Solid no strom DOE	e	19	0.300	0	14.7	284	6.91	134
	w	20	0.300	0	14.7	301	6.92	142
	all	40	0.300	0	14.7	586	6.91	276

Ceilings

CMH - DW - 158 box R-38 - THP1255: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh		1590	0.030	38.0	1.47	2337	1.55	2459
--	--	------	-------	------	------	------	------	------

Floors

CHM-DW-R-33-THP-221: Flr floor, frm flr, 6" thkns, vinyl flr fnsh, r-21 ext ins, amb ovr		1590	0.032	33.0	0.78	1247	0.37	588
--	--	------	-------	------	------	------	------	-----



Project Summary

Entire House

Clayton Homes Appalachia

Job: 34M403 - FDJ-TZ2
Date: June 11, 2026
By: Brian Riffey
Plan: 34M403 -FDJ-TZ2

1420 Mountain Rd, Andersonville, TN 37705 Phone: 865-494-7800 ext 257

Project Information

For: 34M403 - FDJ-TZ2

Notes: Duct Capacity: 27100 BTUH

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Home Construction
And Safety Standards

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Design Information

Weather: TN 25

Winter Design Conditions

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

Ventilation Method MJ8

Heating Summary

Structure	15738 Btuh
Ducts (R-8.0)	1505 Btuh
Central vent (75 cfm)	3904 Btuh
Outside air	
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	21147 Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

	Heating	Cooling
Area (ft ²)	1590	1590
Volume (ft ³)	12720	12720
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	82	43

Heating Equipment Summary

Make Smart Comfort
Trade 15 SEER2 HP
Model R5H5S24*K*AAA*
AHRI ref 214277579

Efficiency	7.8 HSPF2
Heating input	
Heating output	23200 Btuh @ 47°F
Temperature rise	28 °F
Actual air flow	787 cfm
Air flow factor	0.046 cfm/Btuh
Static pressure	0.30 in H2O
Space thermostat	
Capacity balance point = 23 °F	

Backup: Smart Comfort
Input = 10 kW, Output = 34121 Btuh, 100 AFUE

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

Sensible Cooling Equipment Load Sizing

Structure	14221 Btuh
Ducts (R-8.0)	725 Btuh
Central vent (75 cfm)	1227 Btuh
Outside air	
Blower	0 Btuh

Use manufacturer's data	n
Rate/swing multiplier	0.95
Equipment sensible load	15429 Btuh

Latent Cooling Equipment Load Sizing

Structure	1751 Btuh
Ducts	186 Btuh
Central vent (75 cfm)	1656 Btuh
Outside air	
Equipment latent load	3593 Btuh

Equipment Total Load (Sen+Lat)	19022 Btuh
Req. total capacity at 0.70 SHR	1.8 ton

Cooling Equipment Summary

Make	Smart Comfort
Trade	15 SEER2 HP
Cond	R5H5S24*K*AAA*
Coil	FEVB0036***+NAVA53601CK
AHRI ref	214277579
Efficiency	12.0 EER2, 15.5 SEER2
Sensible cooling	16520 Btuh
Latent cooling	7080 Btuh
Total cooling	23600 Btuh
Actual air flow	787 cfm
Air flow factor	0.053 cfm/Btuh
Static pressure	0.30 in H2O
Load sensible heat ratio	0.82

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



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Duct System Summary

Entire House

Clayton Homes Appalachia

Job: 34M403 - FDJ-TZ2
Date: June 11, 2026
By: Brian Riffey
Plan: 34M403 -FDJ-TZ2

1420 Mountain Rd, Andersonville, TN 37705 Phone: 865-494-7800 ext 257

Project Information

For: 34M403 - FDJ-TZ2

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	Heating	Cooling
External static pressure	0.30 in H ₂ O	0.30 in H ₂ O
Pressure losses	0 in H ₂ O	0 in H ₂ O
Available static pressure	0.30 in H ₂ O	0.30 in H ₂ O
Supply / return available pressure	0.150 / 0.150 in H ₂ O	0.150 / 0.150 in H ₂ O
Lowest friction rate	0.176 in/100ft	0.176 in/100ft
Actual air flow	787 cfm	787 cfm
Total effective length (TEL)	171 ft	

Supply Branch Detail Table

Name	Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
BEDROOM 2	c 1655	56	87	0.203	6.0	0x0	VIFx	23.1	125.0	st5
BEDROOM 3	h 2072	95	70	0.392	5.0	0x0	VIFx	41.5	35.0	st3
DEN	h 1410	64	50	0.176	5.0	0x0	VIFx	45.6	125.0	st5
DEN-A	h 1410	64	50	0.188	5.0	0x0	VIFx	34.6	125.0	st5
DINING/KITCHEN	c 1702	65	90	0.500	5.0	0x0	VIFx	25.0	35.0	st3
DINING/KITCHEN-A	c 1702	65	90	0.659	5.0	0x0	VIFx	10.5	35.0	st3
H BATH	h 519	24	12	0.458	5.0	0x0	VIFx	30.5	35.0	st3
LIVING ROOM	c 1405	56	74	0.205	5.0	0x0	VIFx	21.1	125.0	st5
LIVING ROOM-A	c 1405	56	74	0.201	5.0	0x0	VIFx	24.1	125.0	st4
PRIMARY BATH	h 2686	123	75	0.750	5.0	0x0	VIFx	5.0	35.0	st1
PRIMARY BEDROOM	h 1290	59	58	0.184	5.0	0x0	VIFx	37.6	125.0	st4
PRIMARY BEDROOM-A	h 1290	59	58	0.198	5.0	0x0	VIFx	26.1	125.0	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
st4	Peak AVF	174	191	0.184	392	5.7	5 x 14	ShtMetl	st2
st5	Peak AVF	241	260	0.176	536	7.9	5 x 14	ShtMetl	st2
st2	Peak AVF	415	451	0.176	928	10.4	5 x 14	VinIFlx	
st3	Peak AVF	249	261	0.392	537	6.6	5 x 14	ShtMetl	
st1	Peak AVF	123	75	0.750	252	4.6	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	787	787	0	0	0	0	0x0		VIFx	





Manual S Compliance Report

Entire House

Clayton Homes Appalachia

Job: 34M403 - FDJ-TZ2
Date: June 11, 2026
By: Brian Riffey
Plan: 34M403 -FDJ-TZ2

1420 Mountain Rd, Andersonville, TN 37705 Phone: 865-494-7800 ext 257

Project Information

For: 34M403 - FDJ-TZ2

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Cooling Equipment

Design Conditions

Outdoor design DB:	90.4°F	Sensible gain:	16173	Btuh	Entering coil DB:	76.5°F
Outdoor design WB:	73.3°F	Latent gain:	3593	Btuh	Entering coil WB:	63.6°F
Indoor design DB:	75.0°F	Total gain:	19766	Btuh		
Indoor RH:	50%	Estimated airflow:	787	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP			
Manufacturer:	Smart Comfort	Model:	R5H5S24*K*AAA*+FEVB0036**++NAVA53601CK	
Actual airflow:	787	cfm		
Sensible capacity:	19331	Btuh	120% of load	
Latent capacity:	3917	Btuh	109% of load	
Total capacity:	23248	Btuh	118% of load	SHR: 83%

Heating Equipment

Design Conditions

Outdoor design DB:	21.0°F	Heat loss:	21147	Btuh	Entering coil DB:	65.2°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP			
Manufacturer:	Smart Comfort	Model:	R5H5S24*K*AAA*+FEVB0036**++NAVA53601CK	
Actual airflow:	787	cfm		
Output capacity:	16709	Btuh	79% of load	Capacity balance: 23 °F
Supplemental heat required:	4439	Btuh		Economic balance: -99 °F

Backup equipment type:	Elec strip			
Manufacturer:	Smart Comfort	Model:		
Actual airflow:	787	cfm		
Output capacity:	10.0	kW	161% of load	Temp. rise: 41 °F

Meets all requirements of ACCA Manual S.



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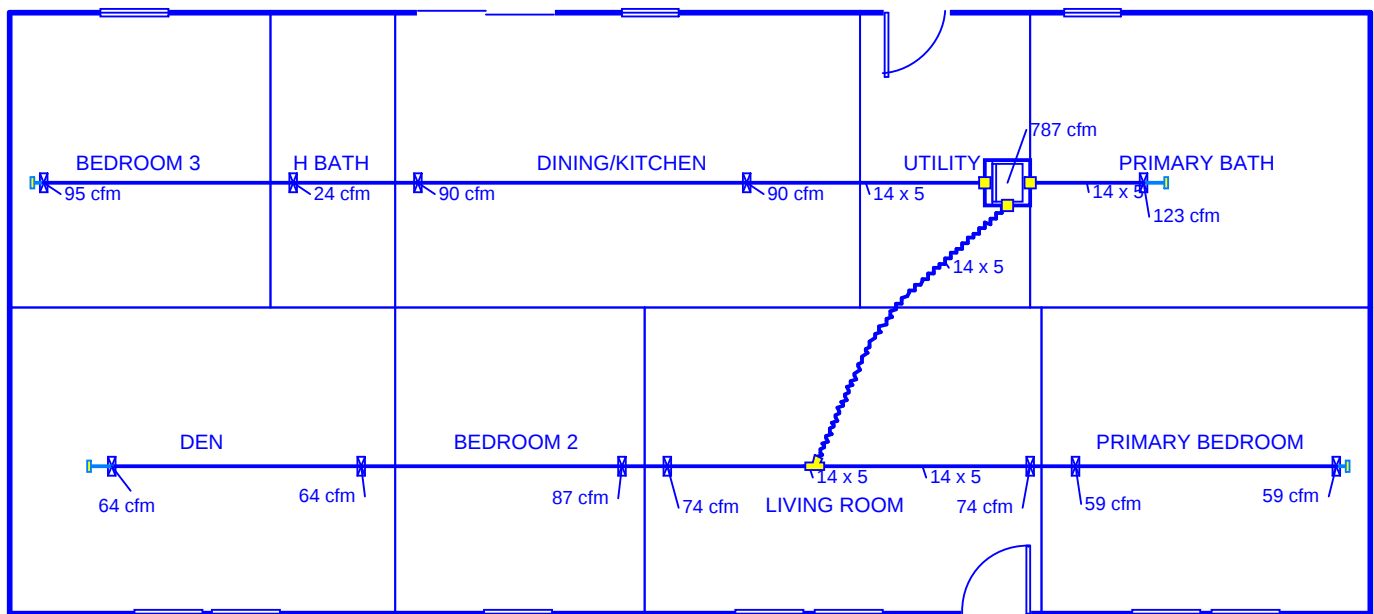
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Level 1



Job #: 34M403 - FDJ-TZ2
Performed by Brian Riffey for:
34M403 - FDJ-TZ2

Clayton Homes Appalachia

1420 Mountain Rd
Andersonville, TN 37705
Phone: 865-494-7800 ext 257

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Model:

34M403

Serial Number:

TZ2

Cooling Equipment Summary

Duct Capacity: 27,100 btuh

Economy Outdoor Temp (°F) = -16 = (70 - Furnace Output / Estimated Heatloss)
(Outdoor Certification Temp.)

Furnace Heating Temp (°F) = 10 = If $0.3 * \text{Design TD} > 20$ then
(Operating Econ. Cert. Temp.) $0.3 * (70 - \text{Cert. Temp.}) + \text{Cert. Temp}$
else Cert. Temp. + 20

Air Ducts in Floor: 121 sq ft

Air Ducts Outside of Home: 78.5 sq ft

v-2.0

CLAYTON HOME BUILDING GROUP

Model Number	MTN28603A	Drawing Number	34M403-HEATLOSS-TZ3	Version 29
Serial Number	X	Model Name	MOUNTAINEER	

BOX SIZE: 26.33 ft. x 60 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

	UNHEATED FLOOR	WALL	FLAT ROOF
INSULATION VALUES	R-33 FW	R-21	R-38
DAPIA PAGE	THP-221	THP-510	THP-1255
U VALUE (BTUH/SQ.FT.-F)	0.0320	0.0546	0.0297

THIS INSULATION COMBINATION COMPLIES WITH
ZONE 3 PRESCRIPTIVE ZERH REQUIREMENTS

Overhead Duct	
Diameter	Length
4	0
5	0
6	0
7	0
8	0
9	0
10	0
12	0
14	0
Exterior Supply	Length
14	0
16	0
Exterior Return	Length
14	0
16	0

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Window Glass Area:

Doors:

	Area	U Value	UA
Front	21.63	0.300	6.49
Rear	19.37	0.300	5.81
Other Door	40.00	0.300	12.00
Other Door	0.00	0.330	0.00
OSB	0.00	0.000	0.00
Skylights	0.00	0.330	0.00
Standard	140.00	0.300	42.00
Option	0.00	0.300	0.00
Net:			
Floor	1580.00	0.032	50.56
Wall	1160.33	0.055	63.35
Ceiling	1580.00	0.0297	46.93
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	463.1
Th. Zone 2	337.5
Th. Zone 3	165.2

Thermal Zone	Outdoor Design Temp (F)	UA	Uo	ZERH / EStar 3.0 Compliant	Heatloss BTUH/F
1	11	246.12	0.053	OK	367.00
2	0	244.62	0.053	OK	365.50
3	-14	243.28	0.053	OK	364.10

Design Temperatures		
Furnace Heating Temp (F)	Economy Outdoor Temp (F)	
-23	5	10kW
-42	-8	12kW
-69	-28	15kW
-39	-6	40k Gas
-93	-44	60k Gas
-148	-83	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



Building Analysis

Entire House

Clayton Homes Appalachia

Job: 34M403 - FDJ-TZ3
Date: June 11, 2026
By: Brian Riffey
Plan: 34M274 -FDJ-TZ3

1420 Mountain Rd, Andersonville, TN 37705 Phone: 865-494-7800 ext 257

Project Information

For: 34M403 - FDJ-TZ3



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Design Conditions

Location:

OH 22
Elevation: 744 ft
Latitude: 40°N

Outdoor:

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

Heating

10
-
-
15.0

Cooling

90
19 (M)
73
7.5

Indoor:

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

Heating

70
60
50
48.7

Cooling

75
15
50
33.4

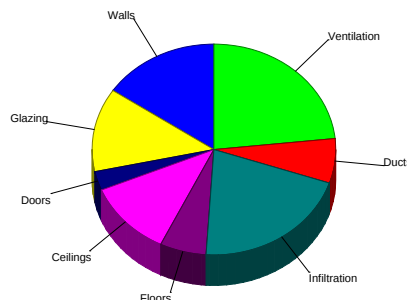
Infiltration:

Method
Construction quality
Fireplaces

Simplified
Average
0

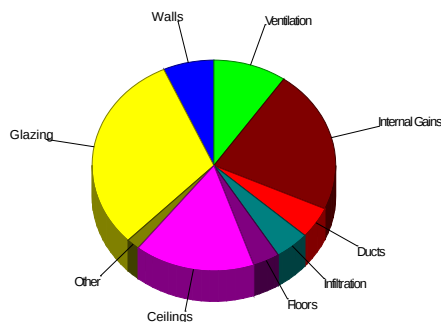
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.3	3847	15.5
Glazing	18.0	3172	12.8
Doors	18.0	716	2.9
Ceilings	1.8	2857	11.5
Floors	1.0	1524	6.2
Infiltration	3.7	5167	20.9
Ducts		1686	6.8
Piping		0	0
Humidification		0	0
Ventilation		5772	23.3
Adjustments		0	
Total		24742	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	0.9	1018	6.8
Glazing	26.3	4643	30.8
Doors	6.6	264	1.7
Ceilings	1.5	2411	16.0
Floors	0.3	537	3.6
Infiltration	0.5	690	4.6
Ducts		725	4.8
Ventilation		1465	9.7
Internal gains		3320	22.0
Blower		0	0
Adjustments		0	
Total		15072	100.0



Latent Cooling Load = 3914 Btuh

Overall U-value = 0.050 Btuh/ft²-°F, Window / Floor Area = 11.1 %

Data entries checked.



Component Constructions
Entire House
Clayton Homes Appalachia

Job: 34M403 - FDJ-TZ3
Date: June 11, 2026
By: Brian Riffey
Plan: 34M274 -FDJ-TZ3

1420 Mountain Rd, Andersonville, TN 37705 Phone: 865-494-7800 ext 257

Project Information

For: 34M403 - FDJ-TZ3

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Design Conditions

Location:

OH 22
Elevation: 744 ft
Latitude: 40°N

Outdoor:

	Heating	Cooling
Dry bulb (°F)	10	90
Daily range (°F)	-	19 (M)
Wet bulb (°F)	-	73
Wind speed (mph)	15.0	7.5

Indoor:

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

Heating

70
60
50
48.7

Cooling

75
15
50
33.4

Infiltration:

Method	Simplified
Construction quality	Average
Fireplaces	0

Construction descriptions

Walls

CMH - DW - R-21 Wall - THP-510: Frm wall, vnl ext, 5/8" wood shth, r-21 cav ins, 5/8" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud

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
n	212	0.055	21.0	3.29	698	0.87	185
e	389	0.055	21.0	3.29	1282	0.87	339
s	212	0.055	21.0	3.29	698	0.87	185
w	355	0.055	21.0	3.29	1168	0.87	309
all	1168	0.055	21.0	3.29	3847	0.87	1018

Partitions

(none)

Windows

Clayton - Theropanel Low-E DOE: Clayton - Therompane Low-E DOE; 50% blinds 45°, medium; 50% outdoor insect screen; 6.67 ft head ht

e	16	0.300	0	18.0	297	21.1	349
e	15	0.300	0	18.0	270	21.1	317
e	40	0.300	0	18.0	719	21.1	846
w	75	0.300	0	18.0	1348	21.1	1585
w	15	0.300	0	18.0	270	41.3	619
all	162	0.300	0	18.0	2903	23.0	3716
w	15	0.300	0	18.0	270	21.1	317

Clayton - Theropanel Low-E DOE: 1 glazing, clr glz, mtl no brk frm mat, 1/4" thk; 50% blinds 45°, medium; 50% outdoor insect screen; 6.67 ft head ht

Doors

CMH - Standard Door DOE: CMH - Standard Door -Solid no strom DOE

e	19	0.300	0	18.0	348	6.61	128
w	20	0.300	0	18.0	368	6.61	136
all	40	0.300	0	18.0	716	6.61	264

Ceilings

CMH - DW - 158 box R-38 - THP1255: Attic ceiling, asphalt shingles roof mat, r-38 ceil ins, 1/2" gypsum board int fnsh

	1590	0.030	38.0	1.80	2857	1.52	2411
--	------	-------	------	------	------	------	------

Floors

CHM-DW-R-33-THP-221: Flr floor, frm flr, 6" thkns, vinyl flr fnsh, r-21 ext ins, amb ovr

	1590	0.032	33.0	0.96	1524	0.34	537
--	------	-------	------	------	------	------	-----



Project Summary

Entire House

Clayton Homes Appalachia

Job: 34M403 - FDJ-TZ3
Date: June 11, 2026
By: Brian Riffey
Plan: 34M274 -FDJ-TZ3

1420 Mountain Rd, Andersonville, TN 37705 Phone: 865-494-7800 ext 257

Project Information

For: 34M403 - FDJ-TZ3

Notes: Duct Capacity: 27100 BTUH

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Design Information

Weather: OH 22

Winter Design Conditions

Outside db 10 °F
Inside db 70 °F
Design TD 60 °F

Ventilation Method MJ8

Heating Summary

Structure 17283 Btuh
Ducts (R-8.0) 1686 Btuh
Central vent (90 cfm) 5772 Btuh
Outside air
Humidification 0 Btuh
Piping 0 Btuh
Equipment load 24742 Btuh

Infiltration

Method Simplified
Construction quality Average
Fireplaces 0

	Heating	Cooling
Area (ft ²)	1590	1590
Volume (ft ³)	12720	12720
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	81	42

Heating Equipment Summary

Make Smart Comfort
Trade 15 SEER2 HP
Model R5H5S24*K*AAA*
AHRI ref 214277579

Efficiency 7.8 HSPF2
Heating input
Heating output 23200 Btuh @ 47°F
Temperature rise 28 °F
Actual air flow 787 cfm
Air flow factor 0.041 cfm/Btuh
Static pressure 0.30 in H2O
Space thermostat
Capacity balance point = 21 °F

Backup: Smart Comfort
Input = 10 kW, Output = 34121 Btuh, 100 AFUE

Summer Design Conditions

Outside db 90 °F
Inside db 75 °F
Design TD 15 °F
Daily range M
Relative humidity 50 %
Moisture difference 33 gr/lb

Sensible Cooling Equipment Load Sizing

Structure 12882 Btuh
Ducts (R-8.0) 725 Btuh
Central vent (90 cfm) 1465 Btuh
Outside air
Blower 0 Btuh
Use manufacturer's data n
Rate/swing multiplier 0.95
Equipment sensible load 14348 Btuh

Latent Cooling Equipment Load Sizing

Structure 1739 Btuh
Ducts 183 Btuh
Central vent (90 cfm) 1992 Btuh
Outside air
Equipment latent load 3914 Btuh

Equipment Total Load (Sen+Lat) 18262 Btuh
Req. total capacity at 0.70 SHR 1.7 ton

Cooling Equipment Summary

Make Smart Comfort
Trade 15 SEER2 HP
Cond R5H5S24*K*AAA*
Coil FEVB0036***+NAVA53601CK
AHRI ref 214277579
Efficiency 12.0 EER2,15.5 SEER2
Sensible cooling 16520 Btuh
Latent cooling 7080 Btuh
Total cooling 23600 Btuh
Actual air flow 787 cfm
Air flow factor 0.058 cfm/Btuh
Static pressure 0.30 in H2O
Load sensible heat ratio 0.79

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



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Duct System Summary

Entire House

Clayton Homes Appalachia

Job: 34M403 - FDJ-TZ3
Date: June 11, 2026
By: Brian Riffey
Plan: 34M274 -FDJ-TZ3

1420 Mountain Rd, Andersonville, TN 37705 Phone: 865-494-7800 ext 257

Project Information

For: 34M403 - FDJ-TZ3

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	Heating	Cooling
External static pressure	0.30 in H ₂ O	0.30 in H ₂ O
Pressure losses	0 in H ₂ O	0 in H ₂ O
Available static pressure	0.30 in H ₂ O	0.30 in H ₂ O
Supply / return available pressure	0.150 / 0.150 in H ₂ O	0.150 / 0.150 in H ₂ O
Lowest friction rate	0.176 in/100ft	0.176 in/100ft
Actual air flow	787 cfm	787 cfm
Total effective length (TEL)	171 ft	

Supply Branch Detail Table

Name	Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
BEDROOM 2	c 1562	57	90	0.203	6.0	0x0	VIFx	23.1	125.0	st5
BEDROOM 3	h 2206	92	65	0.392	5.0	0x0	VIFx	41.5	35.0	st3
DEN	h 1530	63	48	0.176	5.0	0x0	VIFx	45.6	125.0	st5
DEN-A	h 1530	63	48	0.188	5.0	0x0	VIFx	34.6	125.0	st5
DINING/KITCHEN	c 1613	68	93	0.500	5.0	0x0	VIFx	25.0	35.0	st3
DINING/KITCHEN-A	c 1613	68	93	0.659	5.0	0x0	VIFx	10.5	35.0	st3
H BATH	h 556	23	11	0.458	5.0	0x0	VIFx	30.5	35.0	st3
LIVING ROOM	c 1338	59	77	0.205	6.0	0x0	VIFx	21.1	125.0	st5
LIVING ROOM-A	c 1338	59	77	0.201	6.0	0x0	VIFx	24.1	125.0	st4
PRIMARY BATH	h 2865	119	68	0.750	5.0	0x0	VIFx	5.0	35.0	st1
PRIMARY BEDROOM	h 1402	58	58	0.184	5.0	0x0	VIFx	37.6	125.0	st4
PRIMARY BEDROOM-A	h 1402	58	58	0.198	5.0	0x0	VIFx	26.1	125.0	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
st4	Peak AVF	175	193	0.184	398	5.7	5 x 14	ShtMetl	st2
st5	Peak AVF	243	263	0.176	542	7.9	5 x 14	ShtMetl	st2
st2	Peak AVF	418	457	0.176	940	10.4	5 x 14	VinIFlx	
st3	Peak AVF	250	263	0.392	540	6.6	5 x 14	ShtMetl	
st1	Peak AVF	119	68	0.750	245	4.6	5 x 14	ShtMetl	

Return Branch Detail Table

Name	Grille Size (in)	Htg (cfm)	Clg (cfm)	TEL (ft)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Stud/Joist Opening (in)	Duct Matl	Trunk
rb1	0x 0	787	787	0	0	0	0	0x 0		VIFx	





Manual S Compliance Report

Entire House

Clayton Homes Appalachia

Job: 34M403 - FDJ-TZ3
Date: June 11, 2026
By: Brian Riffey
Plan: 34M274 -FDJ-TZ3

1420 Mountain Rd, Andersonville, TN 37705 Phone: 865-494-7800 ext 257

Project Information

For: 34M403 - FDJ-TZ3

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Cooling Equipment

Design Conditions

Outdoor design DB:	90.2°F	Sensible gain:	15072 Btuh	Entering coil DB:	76.8°F
Outdoor design WB:	73.3°F	Latent gain:	3914 Btuh	Entering coil WB:	63.9°F
Indoor design DB:	75.0°F	Total gain:	18985 Btuh		
Indoor RH:	50%	Estimated airflow:	787 cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type: Split ASHP
Manufacturer: Smart Comfort Model: R5H5S24*K*AAA*+FEVB0036**++NAVA53601CK
Actual airflow: 787 cfm
Sensible capacity: 19331 Btuh 128% of load
Latent capacity: 3917 Btuh 100% of load
Total capacity: 23248 Btuh 122% of load SHR: 83%

Heating Equipment

Design Conditions

Outdoor design DB:	10.1°F	Heat loss:	24742 Btuh	Entering coil DB:	63.0°F
Indoor design DB:	70.0°F				

Manufacturer's Performance Data at Actual Design Conditions

Equipment type: Split ASHP
Manufacturer: Smart Comfort Model: R5H5S24*K*AAA*+FEVB0036**++NAVA53601CK
Actual airflow: 787 cfm
Output capacity: 16709 Btuh 68% of load Capacity balance: 21 °F
Supplemental heat required: 8033 Btuh Economic balance: -99 °F

Backup equipment type: Elec strip
Manufacturer: Smart Comfort Model:
Actual airflow: 787 cfm
Output capacity: 10.0 kW 138% of load Temp. rise: 40 °F

Meets all requirements of ACCA Manual S.



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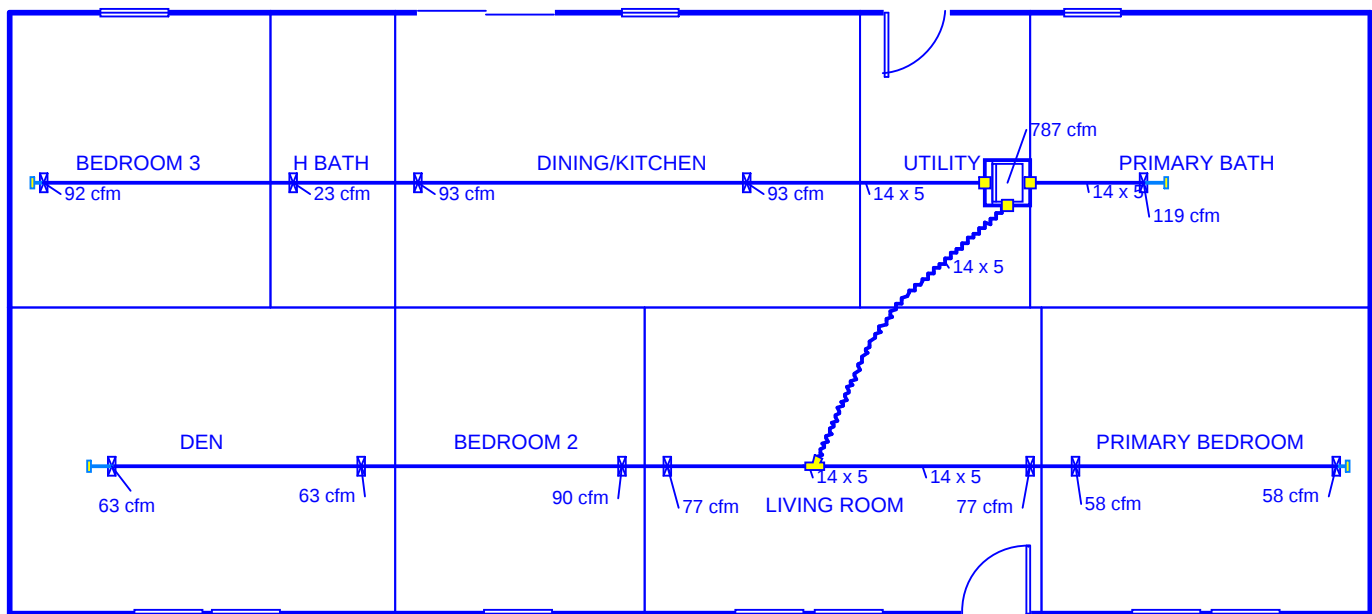
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Level 1



Job #: 34M403 - FDJ-TZ3
Performed by Brian Riffey for:
34M403 - FDJ-TZ3

Clayton Homes Appalachia

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Home Construction 6
And Safety Standards

Model:

34M403

Serial Number:

TZ3

Cooling Equipment Summary

Duct Capacity: 27,100 btuh

Economy Outdoor Temp (°F) = -23 = (70 - Furnace Output / Estimated Heatloss)
(Outdoor Certification Temp.)

Furnace Heating Temp (°F) = 5 = If $0.3 * \text{Design TD} > 20$ then
(Operating Econ. Cert. Temp.) $0.3 * (70 - \text{Cert. Temp.}) + \text{Cert. Temp}$
else Cert. Temp. + 20

Air Ducts in Floor: 121 sq ft

Air Ducts Outside of Home: 78.5 sq ft

v-2.0