



SAMPLE REPORT

HVAC DESIGN PACKAGE

Manual J · Manual S · Manual D · ENERGY STAR HVAC Design Report

PROJECT	Sample Two-Story Residence
LOCATION	Coppell, TX (Dallas-Fort Worth)
SYSTEMS	2 split systems · 4,628 sq ft conditioned
METHOD	ACCA Manual J 8th Ed., room by room

Prepared by AG3 Home & Commercial Services LLC · ACCA aligned · Permit-ready

This sample shows selected pages, not the full report.

Want to see a complete one? Email office@ag3services.com or call (940) 252-4917.

Sample only. Client name, address and contact details are fictional.

PROJECT OVERVIEW

Two-story single-family home designed with two systems: System A serves the first floor and System B serves the second floor. Loads were calculated room by room in Wrightsoft Right-Suite Universal, and the equipment was checked against Lennox expanded performance data.

DESIGN LOCATION	Dallas-Fort Worth, TX
OUTDOOR DESIGN	101 °F cooling · 27 °F heating
INDOOR DESIGN	75 °F / 50% RH cooling · 70 °F heating
VENTILATION	ASHRAE 62.2-2019, 127 cfm

RESULT	SYSTEM A · FIRST FLOOR	SYSTEM B · SECOND FLOOR
Conditioned area	3,246 sq ft	1,382 sq ft
Heating load	49,287 Btuh	19,040 Btuh
Cooling load (sens + lat)	45,583 Btuh	22,107 Btuh
Required capacity	4.6 tons	2.3 tons
Cooling equipment	Lennox ML14KC1, 5 tons	Lennox ML14KC1, 2.5 tons
Furnace	Lennox ML196, 96% AFUE	Lennox ML196, 96% AFUE
Design airflow	1,850 cfm	973 cfm
Manual S	Meets all requirements	Meets all requirements

WHAT'S INSIDE

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This sample shows selected pages. A complete report also includes the room-by-room worksheets, construction details and infiltration. To see a full report, email office@ag3services.com or call (940) 252-4917.



Load Short Form
SYSTEM A
AG3 Home & Commercial Services

Job: SAMPLE-001
Date: 07/27/2026
By: Rafael P.
Plan: N/A

12650 N Beach St, Ste 114 #7127, Fort Worth, TX 76244 Phone: 940-252-4917 Email: office@ag3services.com Web: https://ag3services.com

Project Information

For: Sample Two-Story Residence, Sample Builder LLC
1234 Example Lane, Coppell, TX 75019
Phone: (555) 555-0100
Email: sample@example.com

Design Information

	Htg	Clg	Infiltration	
Outside db (°F)	27	101	Method	Simplified
Inside db (°F)	70	75	Construction quality	Semi-tight
Design TD (°F)	43	26	Fireplaces	1 (Semi-tight)
Daily range	-	M		
Inside humidity (%)	30	50		
Moisture difference (gr/lb)	16	23		

HEATING EQUIPMENT

COOLING EQUIPMENT

Make	Lennox	Make	Lennox
Trade	LENNOX	Trade	LENNOX
Model	ML196UH110XE60C*	Cond	ML14KC1-059-230A**
AHRI ref	215582235	Coil	CK40HT-51/61C-***+EL196UH110XE60C*+TDR
		AHRI ref	215582235
Efficiency	96 AFUE	Efficiency	12.2 EER2,14.7 SEER2
Heating input	110000 Btuh	Sensible cooling	41625 Btuh
Heating output	105600 Btuh	Latent cooling	13875 Btuh
Temperature rise	53 °F	Total cooling	55500 Btuh
Actual air flow	1850 cfm	Actual air flow	1850 cfm
Air flow factor	0.043 cfm/Btuh	Air flow factor	0.052 cfm/Btuh
Static pressure	0.16 in H2O	Static pressure	0.16 in H2O
Space thermostat		Load sensible heat ratio	0.91

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
STUDY	178	1520	529	65	27
MEDIA R.	256	5081	3809	216	197
GAME ROOM	264	3162	3163	135	164
KITCHEN/DINING	385	4362	3574	186	185
GREAT ROOM	587	4974	7102	212	368
ST1	63	0	0	0	0
STR	23	0	0	0	0
UTLTY	84	1632	1068	70	55
HALL1	50	0	0	0	0
M. BED	348	8273	6922	352	359
M. BATH	230	2151	1080	92	56
M. WIC	147	1070	367	46	19
BED2	201	4117	3098	175	161
WIC2	50	0	0	0	0

Bold/italic values have been manually overridden

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



ENTRY	112	1904	2761	81	143
BATH2	55	1019	304	43	16
HALL3	23	0	0	0	0
PC	20	274	134	12	7
POOL BATH	63	1790	501	76	26
P. KITCHEN	107	2101	1296	90	67
SYSTEM A	3246	43431	35708	1850	1850
Other equip loads		5856	3600		
Equip. @ 1.06 RSM			41666		
Latent cooling			3917		
TOTALS	3246	49287	45583	1850	1850

Bold/italic values have been manually overridden

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Load Short Form
SYSTEM B
AG3 Home & Commercial Services

Job: SAMPLE-001
Date: 07/27/2026
By: Rafael P.
Plan: N/A

12650 N Beach St, Ste 114 #7127, Fort Worth, TX 76244 Phone: 940-252-4917 Email: office@ag3services.com Web: https://ag3services.com

Project Information

For: Sample Two-Story Residence, Sample Builder LLC
1234 Example Lane, Coppell, TX 75019
Phone: (555) 555-0100
Email: sample@example.com

Design Information

	Htg	Clg	Infiltration	
Outside db (°F)	27	101	Method	Simplified
Inside db (°F)	70	75	Construction quality	Semi-tight
Design TD (°F)	43	26	Fireplaces	1 (Semi-tight)
Daily range	-	M		
Inside humidity (%)	30	50		
Moisture difference (gr/lb)	16	23		

HEATING EQUIPMENT

COOLING EQUIPMENT

Make	Lennox	Make	Lennox
Trade	LENNOX	Trade	LENNOX
Model	ML196UH070XE36B*	Cond	ML14KC1-030-230A**
AHRI ref	215581898	Coil	CK40HT-30B-**+ML196UH070XE36B*+TDR
		AHRI ref	215581898
Efficiency	96 AFUE	Efficiency	13.6 EER2, 16 SEER2
Heating input	70000 Btuh	Sensible cooling	20440 Btuh
Heating output	67200 Btuh	Latent cooling	8760 Btuh
Temperature rise	64 °F	Total cooling	29200 Btuh
Actual air flow	973 cfm	Actual air flow	973 cfm
Air flow factor	0.060 cfm/Btuh	Air flow factor	0.059 cfm/Btuh
Static pressure	0.39 in H2O	Static pressure	0.39 in H2O
Space thermostat		Load sensible heat ratio	0.88

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
LOF	310	4351	5415	263	317
BED5	248	3413	4253	206	249
HALL2	60	0	0	0	0
BED4	182	2841	3272	172	192
BED3	169	1819	1684	110	99
STRG	22	0	0	0	0
BATH3	42	1104	585	67	34
WIC4	38	0	0	0	0
BATH4	47	553	398	33	23
WIC3	25	0	0	0	0
st2	111	0	0	0	0
BATH5	60	1061	590	64	35
PRAYER	68	956	398	58	23

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SYSTEM B	1382	16100	16594	973	973
Other equip loads		2940	1824		
Equip. @ 1.06 RSM			19524		
Latent cooling			2584		
TOTALS	1382	19040	22107	973	973

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





Project Summary

SYSTEM A

AG3 Home & Commercial Services

Job: SAMPLE-001
Date: 07/27/2026
By: Rafael P.
Plan: N/A

12650 N Beach St, Ste 114 #7127, Fort Worth, TX 76244 Phone: 940-252-4917 Email: office@ag3services.com Web: https://ag3services.com

Project Information

For: Sample Two-Story Residence, Sample Builder LLC
1234 Example Lane, Coppell, TX 75019
Phone: (555) 555-0100
Email: sample@example.com

Notes:

Design Information

Weather: Dallas-Fort Worth/F, TX, US

Winter Design Conditions

Outside db	27 °F
Inside db	70 °F
Design TD	43 °F

Ventilation Method ASHRAE 62.2-2019

Heating Summary

Structure	38460 Btuh
Ducts (R-6.0)	4972 Btuh
Central vent (127 cfm)	5856 Btuh
Outside air	
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	49287 Btuh

Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	1 (Semi-tight)

	Heating	Cooling
Area (ft ²)	3246	3246
Volume (ft ³)	37450	37450
Air changes/hour	0.22	0.11
Equiv. AVF (cfm)	137	67

Heating Equipment Summary

Make	Lennox
Trade	LENNOX
Model	ML196UH110XE60C*
AHRI ref	215582235

Efficiency	96 AFUE
Heating input	110000 Btuh
Heating output	105600 Btuh
Temperature rise	53 °F
Actual air flow	1850 cfm
Air flow factor	0.043 cfm/Btuh
Static pressure	0.16 in H2O
Space thermostat	

Summer Design Conditions

Outside db	101 °F
Inside db	75 °F
Design TD	26 °F
Daily range	M
Relative humidity	50 %
Moisture difference	23 gr/lb

Sensible Cooling Equipment Load Sizing

Structure	31933 Btuh
Ducts (R-6.0)	3775 Btuh
Central vent (127 cfm)	3566 Btuh
Outside air	
Blower	34 Btuh
Use manufacturer's data	n
Rate/swing multiplier	1.06
Equipment sensible load	41666 Btuh

Latent Cooling Equipment Load Sizing

Structure	1847 Btuh
Ducts	81 Btuh
Central vent (127 cfm)	1989 Btuh
Outside air	
Equipment latent load	3917 Btuh

Equipment Total Load (Sen+Lat)	45583 Btuh
Req. total capacity at 0.75 SHR	4.6 ton

Cooling Equipment Summary

Make	Lennox
Trade	LENNOX
Cond	ML14KC1-059-230A**
Coil	CK40HT-51/61C-**+EL196UH110XE60C*+TDR
AHRI ref	215582235

Efficiency	12.2 EER2,14.7 SEER2
Sensible cooling	41625 Btuh
Latent cooling	13875 Btuh
Total cooling	55500 Btuh
Actual air flow	1850 cfm
Air flow factor	0.052 cfm/Btuh
Static pressure	0.16 in H2O
Load sensible heat ratio	0.91

Bold/italic values have been manually overridden

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



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Project Summary

SYSTEM B

AG3 Home & Commercial Services

Job: SAMPLE-001
Date: 07/27/2026
By: Rafael P.
Plan: N/A

12650 N Beach St, Ste 114 #7127, Fort Worth, TX 76244 Phone: 940-252-4917 Email: office@ag3services.com Web: https://ag3services.com

Project Information

For: Sample Two-Story Residence, Sample Builder LLC
1234 Example Lane, Coppell, TX 75019
Phone: (555) 555-0100
Email: sample@example.com

Notes:

Design Information

Weather: Dallas-Fort Worth/F, TX, US

Winter Design Conditions

Outside db	27 °F
Inside db	70 °F
Design TD	43 °F

Ventilation Method ASHRAE 62.2-2019

Heating Summary

Structure	13506 Btuh
Ducts (R-6.0)	2594 Btuh
Central vent (64 cfm)	2940 Btuh
Outside air	
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	19040 Btuh

Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	1 (Semi-tight)

	Heating	Cooling
Area (ft ²)	1382	1382
Volume (ft ³)	13821	13821
Air changes/hour	0.39	0.19
Equiv. AVF (cfm)	90	44

Heating Equipment Summary

Make	Lennox
Trade	LENNOX
Model	ML196UH070XE36B*
AHRI ref	215581898

Efficiency	96 AFUE
Heating input	70000 Btuh
Heating output	67200 Btuh
Temperature rise	64 °F
Actual air flow	973 cfm
Air flow factor	0.060 cfm/Btuh
Static pressure	0.39 in H2O
Space thermostat	

Summer Design Conditions

Outside db	101 °F
Inside db	75 °F
Design TD	26 °F
Daily range	M
Relative humidity	50 %
Moisture difference	23 gr/lb

Sensible Cooling Equipment Load Sizing

Structure	14589 Btuh
Ducts (R-6.0)	2005 Btuh
Central vent (64 cfm)	1790 Btuh
Outside air	
Blower	34 Btuh
Use manufacturer's data	n
Rate/swing multiplier	1.06
Equipment sensible load	19524 Btuh

Latent Cooling Equipment Load Sizing

Structure	1288 Btuh
Ducts	297 Btuh
Central vent (64 cfm)	999 Btuh
Outside air	
Equipment latent load	2584 Btuh

Equipment Total Load (Sen+Lat)	22107 Btuh
Req. total capacity at 0.70 SHR	2.3 ton

Cooling Equipment Summary

Make	Lennox
Trade	LENNOX
Cond	ML14KC1-030-230A**
Coil	CK40HT-30B-***ML196UH070XE36B*+TDR
AHRI ref	215581898
Efficiency	13.6 EER2, 16 SEER2
Sensible cooling	20440 Btuh
Latent cooling	8760 Btuh
Total cooling	29200 Btuh
Actual air flow	973 cfm
Air flow factor	0.059 cfm/Btuh
Static pressure	0.39 in H2O
Load sensible heat ratio	0.88

Bold/italic values have been manually overridden

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



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Manual S Compliance Report
SYSTEM A
AG3 Home & Commercial Services

Job: SAMPLE-001
Date: 07/27/2026
By: Rafael P.
Plan: N/A

12650 N Beach St, Ste 114 #7127, Fort Worth, TX 76244 Phone: 940-252-4917 Email: office@ag3services.com Web: https://ag3services.com

Project Information

For: Sample Two-Story Residence, Sample Builder LLC
1234 Example Lane, Coppell, TX 75019
Phone: (555) 555-0100
Email: sample@example.com

Cooling Equipment

Design Conditions

Outdoor design DB:	101°F	Sensible gain:	39308	Btuh	Entering coil DB:	77.0°F
Outdoor design WB:	74.6°F	Latent gain:	3917	Btuh	Entering coil WB:	63.5°F
Indoor design DB:	75.0°F	Total gain:	43224	Btuh		
Indoor RH:	50%	Estimated airflow:	1850	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split AC			
Manufacturer:	Lennox	Model:	ML14KC1-059-230A**	
Actual airflow:	1850	cfm		
Sensible capacity:	43540	Btuh	111% of load	
Latent capacity:	10890	Btuh	278% of load	
Total capacity:	54430	Btuh	126% of load	SHR: 80%

Heating Equipment

Design Conditions

Outdoor design DB:	27.3°F	Heat loss:	49287	Btuh	Entering coil DB:	66.8°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Gas furnace			
Manufacturer:	Lennox	Model:	ML196UH110XE60C*	
Actual airflow:	1850	cfm		
Output capacity:	105600	Btuh	214% of load	Temp. rise: 53 °F

Meets all requirements of ACCA Manual S.





Manual S Compliance Report

SYSTEM B

AG3 Home & Commercial Services

Job: SAMPLE-001
Date: 07/27/2026
By: Rafael P.
Plan: N/A

12650 N Beach St, Ste 114 #7127, Fort Worth, TX 76244 Phone: 940-252-4917 Email: office@ag3services.com Web: https://ag3services.com

Project Information

For: Sample Two-Story Residence, Sample Builder LLC
1234 Example Lane, Coppell, TX 75019
Phone: (555) 555-0100
Email: sample@example.com

Cooling Equipment

Design Conditions

Outdoor design DB:	101°F	Sensible gain:	18419	Btuh	Entering coil DB:	77.0°F
Outdoor design WB:	74.6°F	Latent gain:	2584	Btuh	Entering coil WB:	63.5°F
Indoor design DB:	75.0°F	Total gain:	21002	Btuh		
Indoor RH:	50%	Estimated airflow:	973	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split AC		
Manufacturer:	Lennox	Model:	ML14KC1-030-230A**
Actual airflow:	973	cfm	
Sensible capacity:	23780	Btuh	129% of load
Latent capacity:	4530	Btuh	175% of load
Total capacity:	28310	Btuh	135% of load SHR: 84%

Heating Equipment

Design Conditions

Outdoor design DB:	27.3°F	Heat loss:	19040	Btuh	Entering coil DB:	67.0°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Gas furnace		
Manufacturer:	Lennox	Model:	ML196UH070XE36B*
Actual airflow:	973	cfm	
Output capacity:	67200	Btuh	353% of load
			Temp. rise: 78 °F

Meets all requirements of ACCA Manual S.



ENERGY STAR Single-Family New Homes National HVAC Design Report, Version 3 / 3.1 /3.2 (Rev. 13)

HVAC Designer Responsibilities:

- Complete one National HVAC Design Report for each system design for a house plan, created for either the specific plan configuration (i.e., elevation, option, orientation, & county) of the home to be certified or for a plan that is intended to be built with different configurations (i.e., different elevations, options, and/or orientations). Visit www.energystar.gov/newhomeshvacdesign and see Footnote 2 for more information.
- Obtain efficiency features (e.g., window performance, insulation levels, and infiltration rate) from the builder or Rater. ³
- Provide the completed National HVAC Design Report to the builder or credentialed HVAC contractor and to the Rater.

1. Design Overview

1.1 Designer name: Rafael Pereira Designer company: AG3 Home & Commercial Services Date: 07/27/2026
1.2 Select which party you are providing these design services to: ☒ Builder or ☐ Credentialed HVAC contractor
1.3 Name of company you are providing these design services to (if different than Item 1.1): Sample Builder LLC
1.4 Area that system serves: ☐ Whole-house ☐ Upper-level ☒ Lower-level ☐ Other
1.5 Is cooling system for a temporary occupant load? ☒ Yes ☐ No
1.6 House plan: N/A Check box to indicate whether the system design is site-specific or part of a group:
☒ Site-specific design. Option(s) & elevation(s) modeled: 1234 Example
☐ Group design. Group #: 0 out of 0 total groups for this house plan. Configuration modeled:

2. Dwelling Unit Mechanical Ventilation System Design ("Vent System") & Inlets in Return Duct

Designer
Verified

Airflow:

2.1 Ventilation airflow design rate & run-time meet the requirements of ASHRAE 62.2-2010 or later ☒
2.2 Ventilation airflow rate required by 62.2 for a continuous system: 127 CFM -
2.3 Design for this system: Vent. airflow rate: 127 CFM Run-time per cycle: 45 minutes Cycle time: 60 minutes -

System Type & Controls:

2.4 Specified system type: ☐ Supply ☐ Exhaust ☒ Balanced -
2.5 Specified control location: GREAT ROOM (e.g., Master bath, utility room) -
2.6 Specified controls allow the system to operate automatically, without occupant intervention. ☒
2.7 Specified controls include a readily-accessible ventilation override and a label has also been specified if its function is not obvious (e.g., a label is required for a toggle wall switch, but not for a switch that's on the ventilation equipment). ☒
2.8 For any outdoor air inlet designed to connect to a ducted return of the HVAC system, specified controls automatically restrict airflow using a motorized damper during ventilation off-cycle and occupant override. ☒

Sound: 2.9 The fan of the specified system is rated ≤ 3 sones if intermittent and ≤ 1 sone if continuous, or exempted ☒

Efficiency:

2.10 If Vent System controller operates the HVAC fan, then HVAC fan operation is intermittent and either the fan type in Item 4.7 is ECM / ICM or the controls will reduce the run-time by accounting for HVAC system heating or cooling hours. ☒
2.11 If bathroom fans are specified as part of the system, then they are ENERGY STAR certified ☒

Air Inlet Location: (Complete this section if system has a specified air inlet location; otherwise check "N/A") ☐ N/A

2.12 Inlet pulls ventilation air directly from outdoors and not from attic, crawlspace, garage, or adjacent dwelling unit ☐
2.13 Inlet is ≥ 2 ft. above grade or roof deck; ≥ 10 ft. of stretched-string distance from known contamination sources (e.g., stack, vent, exhaust, vehicles) not exiting the roof, and ≥ 3 ft. from known sources exiting the roof ☒

3. Room-by-Room Heating & Cooling Loads

3.1 Room-by-room loads calculated using: ☒ Unabridged ACCA Manual J v8 ☐ 2013 ASHRAE Fundamentals ☐ Other per AHJ -

3.2 Indoor design temperatures used in loads are 70°F for heating and 75°F for cooling ☒

3.3 Outdoor design temperatures used in loads: (See Footnote 18 and www.energystar.gov/hvacdesigntemps)
County & State, or US Territory, selected: Denton, TX Cooling season: 101 °F Heating season: 27 °F -

3.4 Number of occupants used in loads: 4 -

3.5 Conditioned floor area used in loads: 3246 Sq. Ft. -

3.6 Window area used in loads: 597 Sq. Ft. -

3.7 Predominant window SHGC used in loads: 0.25 -

3.8 Infiltration rate used in loads: Summer: 0.11 Winter: 0.22 -

3.9 Mechanical ventilation rate used in loads: 127 CFM -

Loads At Design Conditions (kBtuh)

	N	NE	E	SE	S	SW	W	NW	
--	---	----	---	----	---	----	---	----	--

Cooling	3.10 Sensible heat gain (By orientation)	41.7	41.0	37.6	41.2	42.7	41.2	37.1	40.5	-
	3.11 Latent heat gain (Not by orientation)	3.9								-
	3.12 Total heat gain (By orientation)	45.6	44.9	41.5	45.1	46.6	45.1	41.1	44.4	-
	3.13 Maximum – minimum total heat gain (Item 3.12) across orientations =	5.6 kBtuh								Variation is ≤ 6 kBtuh ☒
Heating	3.14 Total heat loss (Not by orientation)	49.3								-

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ENERGY STAR Single-Family New Homes National HVAC Design Report, Version 3 / 3.1 / 3.2 (Rev. 13)

4. Heating & Cooling Equipment Selection						Designer Verified	
4.1 Equipment selected per ACCA Manual S (see Footnote 26 & 27).						☒	
Air Conditioner / Heat Pump (Complete if air conditioner or heat pump will be installed; otherwise check "N/A")						☐ N/A	
4.2 Equipment type: ☒ Cooling-only air conditioner or ☐ Cooling & heating heat pump						-	
4.3 Condenser manufacturer & model: Lennox ML14KC1-059-230A**						-	
4.4 Evaporator / fan coil manufacturer & model: Lennox CK40HT-51/61C-**+EL196UH110XE60C*+TDR						-	
4.5 AHRI reference #: 215582235						-	
4.6 Rated cooling efficiency: 12.2 EER2/14.7 SEER2 Rated heating efficiency:							
4.7 Evaporator fan type: ☐ PSC ☒ ECM / ICM ☐ Other:						-	
4.8 Compressor type: ☒ Single-speed ☐ Two-speed ☐ Variable-speed						-	
4.9 Latent capacity at design conditions, from OEM expanded performance data: 10.9 kBtuh						-	
4.10 Sensible capacity at design conditions, from OEM expanded performance data: 43.5 kBtuh						-	
4.11 Total capacity at design conditions, from OEM expanded performance data: 54.4 kBtuh						-	
4.12 Air-source heat pump capacity: At 17°F: 0 kBtuh At 47°F: 0 kBtuh ☒ N/A						-	
4.13 Cooling sizing % = Total capacity (Item 4.11) divided by maximum total heat gain (Item 3.12): 117 %						-	
4.14 Complete this item if Condition B Climate will be used to select sizing limit in Item 4.15. Otherwise, check "N/A": ☒ N/A						-	
4.14.1 Load sensible heat ratio = Max. sensible heat gain (Item 3.10) / Max. total heat gain (Item 3.12) = 92%						-	
4.14.2 HDD / CDD ratio (Visit www.energystar.gov/hvacdesign temps to determine this value for the design location)= 0.5						-	
4.15 Check box of applicable cooling sizing limit from chart below:						-	
Equipment Type (Per Item 4.2) & Climate Condition (Per Item 4.14)		Compressor Type (Per Item 4.8)					
		Single-Speed		Two-Speed		Variable-Speed	
For Cooling-Only Equipment or For Cooling Mode of Heat Pump in Condition A Climate		☒ Recommended: 90 – 115% Allowed: 90 – 130%		☐ Recommended: 90 – 120% Allowed: 90 – 140%		☐ Recommended: 90 – 130% Allowed: 90 – 160%	
For Cooling Mode of Heat Pump in Condition B Climate		☐ 90% - 100%, plus 15 kBtuh		☐ 90% - 100%, plus 15 kBtuh		☐ 90% - 100%, plus 15 kBtuh	
4.16 Cooling sizing % (4.13) is within cooling sizing limit (4.15)						☒	
Furnace (Complete if furnace will be installed; otherwise check "N/A")						☐ N/A	
4.17 Furnace manufacturer & model: Lennox ML196UH110XE60C*						-	
4.18 Rated heating efficiency: 96 AFUE						-	
4.19 Total capacity: 105.6 kBtuh						-	
4.20 Heating sizing % = Total capacity (Item 4.19) divided by total heat loss (Item 3.14): 214%						-	
4.21 Check box of applicable heating sizing limit from chart below:						-	
When Used for Heating Only		When Paired With Cooling					
☐ 100 - 140%		☒ Recommended: 100 – 140% Allowed: 100 – 400%					
4.22 Heating sizing % (4.20) is within heating sizing limit (4.21)						☒	
5. Duct Design (Complete if heating or cooling equipment will be installed with ducts; otherwise check "N/A")						☐ N/A	
5.1 Duct system designed for the equipment selected in Section 4, per ACCA Manual D						☒	
5.2 Design HVAC fan airflow: Cooling mode 1850 CFM Heating mode 1850 CFM						-	
5.3 Design HVAC fan speed setting (e.g., low, medium, high): Cooling mode High Heating mode High						-	
5.4 Design total external static pressure (corresponding to the mode with the higher airflow in Item 5.2): 0.16 iW/C						-	
5.5 Room-by-room design airflows documented below (which must sum to the mode with the higher airflow in Item 5.2)						-	
Room Name		Design Airflow (CFM)		Room Name		Design Airflow (CFM)	
1	BATH2	16	12	MEDIA R.	197	23	
2	BED2	161	13	P. KITCHEN	67	24	
3	ENTRY	143	14	PC	7	25	
4	GAME ROOM	164	15	POOL BATH	26	26	
5	GREAT ROOM	368	16	ST1	0	27	
6	HALL1	0	17	STR	0	28	
7	HALL3	0	18	STUDY	27	29	
8	KITCHEN/DINING	185	19	UTLTY	55	30	
9	M. BATH	56	20	WIC2	0	31	
10	M. BED	359	21			32	
11	M. WIC	19	22			Total for all rooms 1850	





ENERGY STAR Single-Family New Homes National HVAC Design Report, Version 3 / 3.1 /3.2 (Rev. 13)

HVAC Designer Responsibilities:

- Complete one National HVAC Design Report for each system design for a house plan, created for either the specific plan configuration (i.e., elevation, option, orientation, & county) of the home to be certified or for a plan that is intended to be built with different configurations (i.e., different elevations, options, and/or orientations). Visit www.energystar.gov/newhomeshvacdesign and see Footnote 2 for more information.
- Obtain efficiency features (e.g., window performance, insulation levels, and infiltration rate) from the builder or Rater. ³
- Provide the completed National HVAC Design Report to the builder or credentialed HVAC contractor and to the Rater.

1. Design Overview

1.1 Designer name: Rafael Pereira Designer company: AG3 Home & Commercial Services Date: 07/27/2026
1.2 Select which party you are providing these design services to: ☒ Builder or ☐ Credentialed HVAC contractor
1.3 Name of company you are providing these design services to (if different than Item 1.1): Sample Builder LLC
1.4 Area that system serves: ☐ Whole-house ☒ Upper-level ☐ Lower-level ☐ Other
1.5 Is cooling system for a temporary occupant load? ☒ Yes ☐ No
1.6 House plan: N/A Check box to indicate whether the system design is site-specific or part of a group:
☒ Site-specific design. Option(s) & elevation(s) modeled: 1234 Example
☐ Group design. Group #: 0 out of 0 total groups for this house plan. Configuration modeled:

2. Dwelling Unit Mechanical Ventilation System Design ("Vent System") & Inlets in Return Duct

Designer
Verified

Airflow:

2.1 Ventilation airflow design rate & run-time meet the requirements of ASHRAE 62.2-2010 or later ☒
2.2 Ventilation airflow rate required by 62.2 for a continuous system: 64 CFM -
2.3 Design for this system: Vent. airflow rate: 64 CFM Run-time per cycle: 30 minutes Cycle time: 60 minutes -

System Type & Controls:

2.4 Specified system type: ☐ Supply ☐ Exhaust ☒ Balanced -
2.5 Specified control location: HALL (e.g., Master bath, utility room) -
2.6 Specified controls allow the system to operate automatically, without occupant intervention. ☒
2.7 Specified controls include a readily-accessible ventilation override and a label has also been specified if its function is not obvious (e.g., a label is required for a toggle wall switch, but not for a switch that's on the ventilation equipment). ☒
2.8 For any outdoor air inlet designed to connect to a ducted return of the HVAC system, specified controls automatically restrict airflow using a motorized damper during ventilation off-cycle and occupant override. ☒

Sound: 2.9 The fan of the specified system is rated ≤ 3 sones if intermittent and ≤ 1 sone if continuous, or exempted ☒

Efficiency:

2.10 If Vent System controller operates the HVAC fan, then HVAC fan operation is intermittent and either the fan type in Item 4.7 is ECM / ICM or the controls will reduce the run-time by accounting for HVAC system heating or cooling hours. ☒
2.11 If bathroom fans are specified as part of the system, then they are ENERGY STAR certified ☐

Air Inlet Location: (Complete this section if system has a specified air inlet location; otherwise check "N/A") ☐ N/A

2.12 Inlet pulls ventilation air directly from outdoors and not from attic, crawlspace, garage, or adjacent dwelling unit ☒
2.13 Inlet is ≥ 2 ft. above grade or roof deck; ≥ 10 ft. of stretched-string distance from known contamination sources (e.g., stack, vent, exhaust, vehicles) not exiting the roof, and ≥ 3 ft. from known sources exiting the roof ☒

3. Room-by-Room Heating & Cooling Loads

3.1 Room-by-room loads calculated using: ☒ Unabridged ACCA Manual J v8 ☐ 2013 ASHRAE Fundamentals ☐ Other per AHJ -

3.2 Indoor design temperatures used in loads are 70°F for heating and 75°F for cooling ☒

3.3 Outdoor design temperatures used in loads: (See Footnote 18 and www.energystar.gov/hvacdesigntemps)
County & State, or US Territory, selected: Denton, TX Cooling season: 101 °F Heating season: 27 °F -

3.4 Number of occupants used in loads: 3 -

3.5 Conditioned floor area used in loads: 1382 Sq. Ft. -

3.6 Window area used in loads: 177 Sq. Ft. -

3.7 Predominant window SHGC used in loads: 0.25 -

3.8 Infiltration rate used in loads: Summer: 0.19 Winter: 0.39 -

3.9 Mechanical ventilation rate used in loads: 64 CFM -

Loads At Design Conditions (kBtuh)

	N	NE	E	SE	S	SW	W	NW	
--	---	----	---	----	---	----	---	----	--

Cooling	3.10 Sensible heat gain (By orientation)	19.5	18.4	16.6	17.7	18.1	18.0	16.9	19.0	-
	3.11 Latent heat gain (Not by orientation)	2.6								-
	3.12 Total heat gain (By orientation)	22.1	21.0	19.2	20.3	20.6	20.6	19.5	21.6	-
	3.13 Maximum – minimum total heat gain (Item 3.12) across orientations =	2.9 kBtuh								Variation is ≤ 6 kBtuh
Heating	3.14 Total heat loss (Not by orientation)	19.0								-



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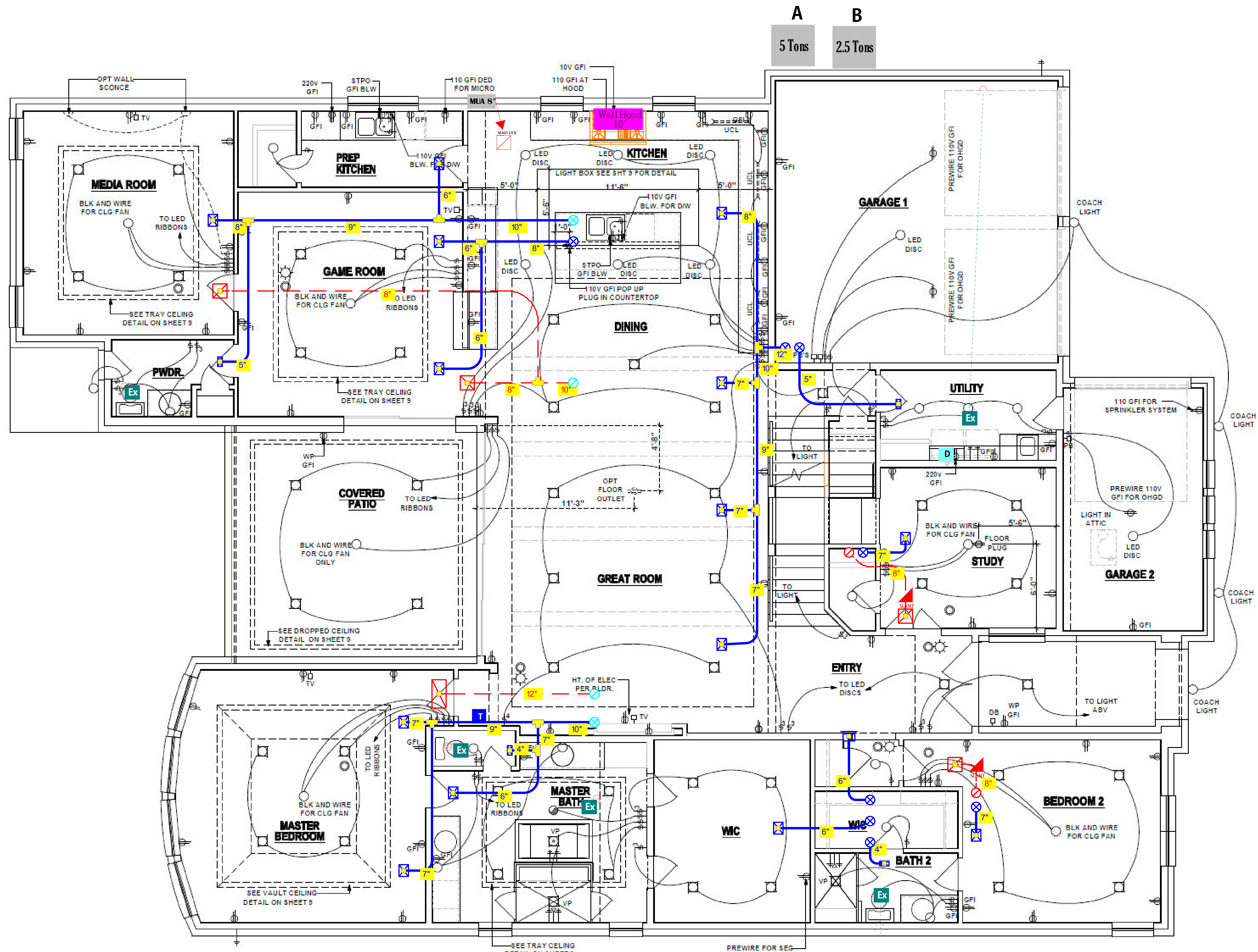
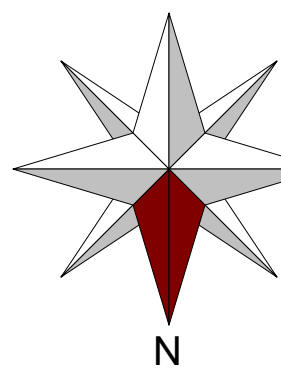
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ENERGY STAR Single-Family New Homes National HVAC Design Report, Version 3 / 3.1 / 3.2 (Rev. 13)

4. Heating & Cooling Equipment Selection										Designer Verified	
4.1 Equipment selected per ACCA Manual S (see Footnote 26 & 27).										☒	
Air Conditioner / Heat Pump (Complete if air conditioner or heat pump will be installed; otherwise check "N/A")										☐ N/A	
4.2 Equipment type: ☒ Cooling-only air conditioner or ☐ Cooling & heating heat pump										-	
4.3 Condenser manufacturer & model: Lennox ML14KC1-030-230A**										-	
4.4 Evaporator / fan coil manufacturer & model: Lennox CK40HT-30B-**+ML196UH070XE36B*+TDR										-	
4.5 AHRI reference #: 215581898										-	
4.6 Rated cooling efficiency: 13.6 EER2/16 SEER2 Rated heating efficiency:											
4.7 Evaporator fan type: ☐ PSC ☒ ECM / ICM ☐ Other:										-	
4.8 Compressor type: ☒ Single-speed ☐ Two-speed ☐ Variable-speed										-	
4.9 Latent capacity at design conditions, from OEM expanded performance data: 4.5 kBtuh										-	
4.10 Sensible capacity at design conditions, from OEM expanded performance data: 23.8 kBtuh										-	
4.11 Total capacity at design conditions, from OEM expanded performance data: 28.3 kBtuh										-	
4.12 Air-source heat pump capacity: At 17°F: 0 kBtuh At 47°F: 0 kBtuh ☒ N/A										-	
4.13 Cooling sizing % = Total capacity (Item 4.11) divided by maximum total heat gain (Item 3.12): 128 %										-	
4.14 Complete this item if Condition B Climate will be used to select sizing limit in Item 4.15. Otherwise, check "N/A": ☒ N/A										-	
4.14.1 Load sensible heat ratio = Max. sensible heat gain (Item 3.10) / Max. total heat gain (Item 3.12) = 88%										-	
4.14.2 HDD / CDD ratio (Visit www.energystar.gov/hvacdesign temps to determine this value for the design location)= 0.5										-	
4.15 Check box of applicable cooling sizing limit from chart below:										-	
Equipment Type (Per Item 4.2) & Climate Condition (Per Item 4.14)		Compressor Type (Per Item 4.8)									
		Single-Speed		Two-Speed		Variable-Speed					
For Cooling-Only Equipment or For Cooling Mode of Heat Pump in Condition A Climate		☒ Recommended: 90 – 115% Allowed: 90 – 130%		☐ Recommended: 90 – 120% Allowed: 90 – 140%		☐ Recommended: 90 – 130% Allowed: 90 – 160%					
For Cooling Mode of Heat Pump in Condition B Climate		☐ 90% - 100%, plus 15 kBtuh		☐ 90% - 100%, plus 15 kBtuh		☐ 90% - 100%, plus 15 kBtuh					
4.16 Cooling sizing % (4.13) is within cooling sizing limit (4.15)										☒	
Furnace (Complete if furnace will be installed; otherwise check "N/A")										☐ N/A	
4.17 Furnace manufacturer & model: Lennox ML196UH070XE36B*										-	
4.18 Rated heating efficiency: 96 AFUE										-	
4.19 Total capacity: 67.2 kBtuh										-	
4.20 Heating sizing % = Total capacity (Item 4.19) divided by total heat loss (Item 3.14): 353%										-	
4.21 Check box of applicable heating sizing limit from chart below:										-	
When Used for Heating Only					When Paired With Cooling						
☐ 100 - 140%					☒ Recommended: 100 – 140% Allowed: 100 – 400%						
4.22 Heating sizing % (4.20) is within heating sizing limit (4.21)										☒	
5. Duct Design (Complete if heating or cooling equipment will be installed with ducts; otherwise check "N/A")										☐ N/A	
5.1 Duct system designed for the equipment selected in Section 4, per ACCA Manual D										☒	
5.2 Design HVAC fan airflow: Cooling mode 973 CFM Heating mode 973 CFM										-	
5.3 Design HVAC fan speed setting (e.g., low, medium, high): Cooling mode High Heating mode High										-	
5.4 Design total external static pressure (corresponding to the mode with the higher airflow in Item 5.2): 0.39 IWC										-	
5.5 Room-by-room design airflows documented below (which must sum to the mode with the higher airflow in Item 5.2)										-	
Room Name		Design Airflow (CFM)		Room Name		Design Airflow (CFM)		Room Name		Design Airflow (CFM)	
1	BATH3	34		12	WIC3	0		23			
2	BATH4	23		13	WIC4	0		24			
3	BATH5	35		14				25			
4	BED3	99		15				26			
5	BED4	192		16				27			
6	BED5	249		17				28			
7	HALL2	0		18				29			
8	LOF	317		19				30			
9	PRAYER	23		20				31			
10	st2	0		21				32			
11	STRG	0		22				Total for all rooms		973	

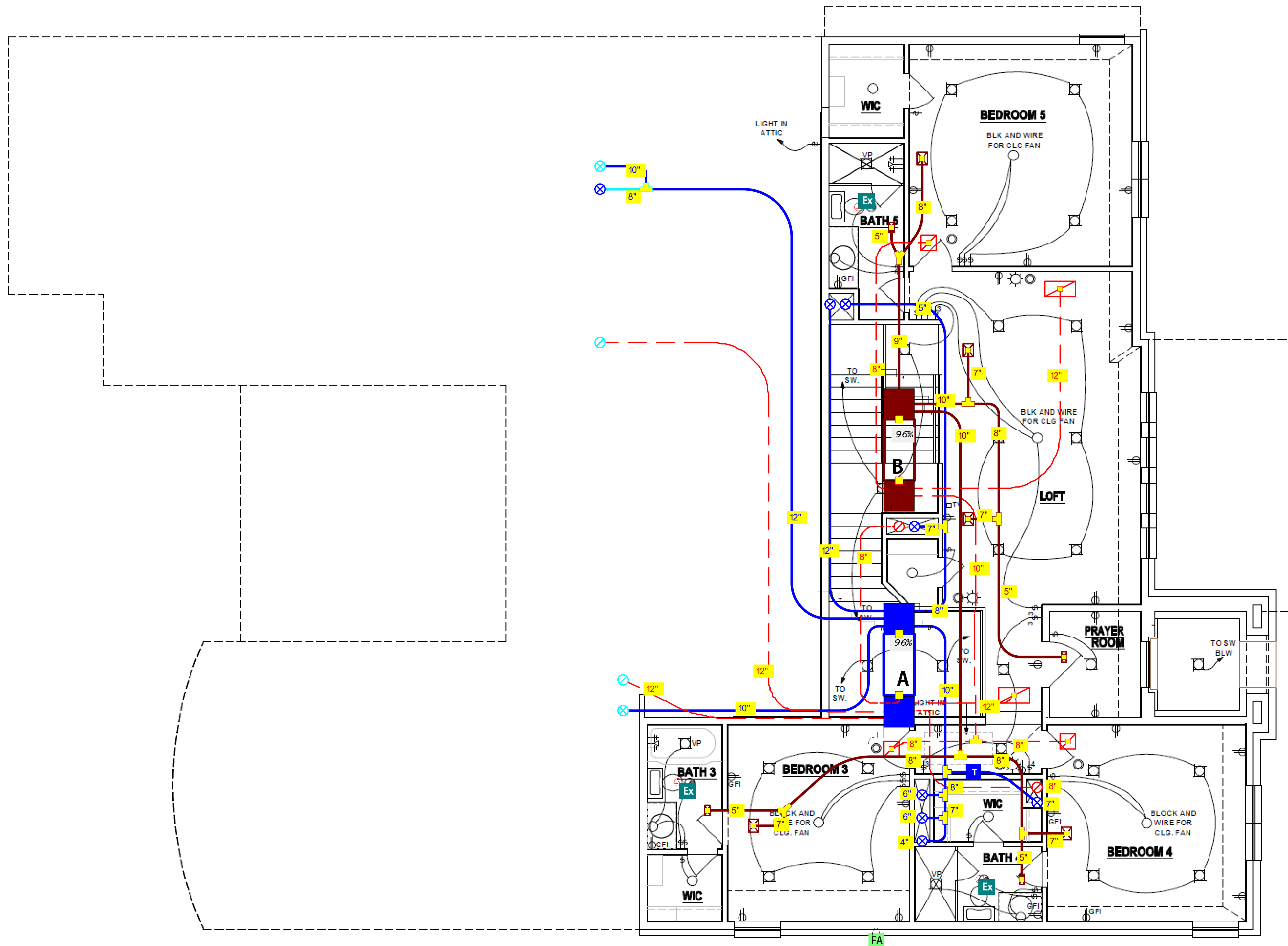
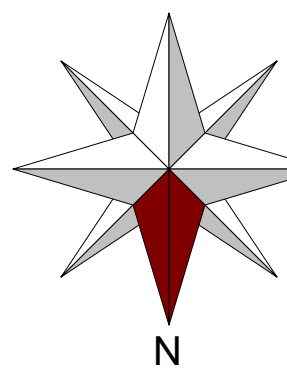




Job #: SAMPLE-001
Performed by Rafael P. for:
Sample Two-Story Residence
1234 Example Lane
Coppell, TX 75019
Phone: (555) 555-0100
sample@example.com

AG3 Home & Commercial Services
12650 N Beach St, Ste 114 #7127
Fort Worth, TX 76244
Phone: 940-252-4917
<https://ag3services.com> office@ag3services.com

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