



Quality People. Building Solutions.

Comfort Systems USA (Arkansas), Inc.

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Date: 4/19/2026

Return Request: 5/8/2026

Project: Hot Springs National Park – Rehabilitate Bathhouses – Buckstaff Bathhouse

Supplier: Harrison Energy Partners

Manufacturer: Daikin

Submittal: Scroll Water Chiller (CH-1) (Re-Submittal #1)**Submittal Number:** 236413.001

Spec Section: 236413

Drawing # and Installation Location: M3-2

ARCHITECT

Kenneth Hahn Architects, Inc.

1343 S. 75th Street

Omaha, Nebraska 68124

(402)391-2111

GENERAL CONTRACTOR

Tepa, LLC

2345 Grand Blvd, Suite 700

Kansas City, Missouri 64108

(816)708-1110

ENGINEER

Alvine Engineering

1201 Cass Street

Omaha, Nebraska 68102

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MECHANICAL SUBCONTRACTOR

Comfort Systems USA (Arkansas), Inc.

9924 Landers Road

North Little Rock, Arkansas 72117

(501)834-3320

Comments:

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CSUSA PROJECT NO.

25-7065

joe@comfortar.com

9924 Landers Road
No. LittleRock, AR 72117



Submittal

Prepared For:
Alvine Engineering

Date:
April 29, 2026

Sold To:
Comfort Systems USA

Job Name:
Buckstaff Bathhouse

Harrison Energy Partners is pleased to provide the enclosed submittal for your review and approval.

Qty. Product Summary

1 Daikin Air-Cooled Scroll Compressor Chiller

Josh Robinson
Harrison Energy Partners
1501 Westpark Drive, Suite 9
Little Rock, AR 72204-2457
Phone: (501) 661-0621
Cell: (501) 539-0633
Fax: (501) 661-9109

The attached information describes the equipment we propose to furnish for this project, and is submitted for your approval.

Submittal Revision 1 Notes (4-29-2026)

1. Selection revised to show performance at 600 ft. elevation.
 2. Added 10 step performance table.
 3. Selection revised to show actual piping lengths. Actual refrigerant piping sketch attached (see page 20).
 4. Remote evaporator inlet includes a factory-provided flow sensor. See page 13 (Remote Evaporator Specialties Kit).
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Job Information		Technical Data Sheet
Job Name	Buckstaff Bathhouse	
Date	4/27/2026	
Submitted By	Tufail Muhammad	
Software Version	17.90	
Unit Tag	CH-1	



Image may not represent ordered unit

Unit Overview

Model Number	Capacity ton	Voltage	Unit Starter Type	ASHRAE 90.1	LEED Enhanced Refrigerant Management Credit
AGZ004F	61.63	208 v / 60 Hz / 3 Ph	Across the Line	'07, '10, '13, '16, '19, '22	Indeterminate - Remote Evap
Unit Type			Platform		Unit Revision
Air-Cooled Scroll Compressor Chiller			Standard Efficiency Remote Evaporator		0B
Display			Tubing		
Door Mounted Display			EEXV, Repl FD, Liq/Disch Shutoff, Suction Shutoff, No HGBP		
Fan Type			Refrigerant Type		Refrigerant Weight
DC Fan Motors / All Fans VFD - 850 RPM - DC			R32		40 lb (per unit)
* Does not include refrigerant piping					
Compressor			Approval		
PLNNLLNN			ETL/cETL & ASHRAE 90.1		

Actual refrigerant charge depends on the final unit construction, refer to unit nameplate.

Evaporator	
Evaporator Model:	PPA240H122
Water Volume:	4.3 gal
Connection Hand:	Universal, 1-Pass, Grooved, Standard Head
Connection Size:	2.5 in
Insulation:	Single Layer Insulation to Suction at each Compressor

Entering Fluid Temperature	Leaving Fluid Temperature	Fluid Type	Fluid Flow	Fluid Flow Min / Max	Pressure Drop	Pressure Drop Min / Max	Fouling Factor
56.00 °F	44.00 °F	Water	122.9 gpm	78.0/ 312.0 gpm	6.00 ft H ₂ O	2.70 / 33.9 ft H ₂ O	0.000100 °F.ft ² .h/Btu

Note: Evaporator Pressure Drop does not include a strainer. Minimum flow is based on a Variable Flow Pumping System Type and applies to part load conditions only.

Condenser			
Coil Fins:	MicroChannel		
Guards:	Condenser Coil Wire Grilles & Base Frame Wire Grilles		
Design Ambient Air Temperature	Altitude	Fan Diameter	Minimum Design Ambient Temperature
105.0 °F	600 ft	31.5 in	10.0 °F

Unit Performance

Design										
Capacity		Input Power			Efficiency (EER)			DPLV/IP (EER)*		
61.63 ton		82.99 kW			8.911 Btu/W.h			17.44 Btu/W.h		
Performance Points rated at AHRI Ambient Relief										
Unit					Evaporator				Condenser	
Point #	% Load	Capacity ton	Input Power kW	Efficiency (EER) Btu/W.h	Fluid Flow gpm	Pressure Drop ft H ₂ O	Entering Fluid °F	Leaving Fluid °F	Ambient Air °F	Altitude ft
1	100.0	61.63	82.99	8.911	122.9	6.00	56.00	44.00	105.0	600
2	90.0	55.47	64.34	10.35	122.9	6.00	54.80	44.00	97.5	600
3	80.0	49.30	48.50	12.20	122.9	6.00	53.60	44.00	90.0	600
4	70.0	43.14	35.50	14.58	122.9	6.00	52.40	44.00	82.5	600
5	60.0	36.98	25.44	17.44	122.9	6.00	51.20	44.00	75.0	600
6	50.0	30.81	20.46	18.08	122.9	6.00	50.00	44.00	67.5	600
7	40.0	24.65	16.11	18.36	122.9	6.00	48.80	44.00	60.0	600
8	30.0	18.49	10.56	21.02	122.9	6.00	47.60	44.00	55.0	600
9	20.0	This load point is below the chiller minimum load.								
10	10.0	This load point is below the chiller minimum load.								
Performance Points rated at AHRI Standard Conditions										
Point #		% Load		Capacity ton		Input Power kW		Efficiency (EER) Btu/W.h		
1		100		65.24		74.26		10.54		
2		75		48.93		40.10		14.64		
3		50		32.62		20.25		19.33		
4		25		16.31		9.432		20.75		

*For Remote Evaporator units, DPLV is displayed in place of IPLV which does not apply. In this case, DPLV is calculated identically to IPLV at AHRI conditions with water, but does include remote piping losses.

Sound (without insulation)

Sound Pressure (at 30 feet)								
63 Hz dB	125 Hz dB	250 Hz dB	500 Hz dB	1 kHz dB	2 kHz dB	4 kHz dB	8 kHz dB	Overall dBA
48	49	52	56	60	58	52	46	64
Sound Power								
63 Hz dB	125 Hz dB	250 Hz dB	500 Hz dB	1 kHz dB	2 kHz dB	4 kHz dB	8 kHz dB	Overall dBA
75	76	79	83	87	85	79	74	91

Octave band is non 'A' weighted and overall readings are 'A' weighted. Sound data rated in accordance with AHRI Standard-370.

Physical

Unit				
Length*	Height	Width*	Shipping Weight*	Operating Weight*
85 in	99 in	88 in	3873 lb	3873 lb

* Shipping and operating weights are based on 'worst case' unit configuration variations but do not include the weights of any Options or Accessories. Contact Chiller Applications for additional information.

Remote Evaporator

Assumed Equivalent Distance to Evaporator		
Horizontal	Vertical Up	Vertical Down
77 ft	8 ft	0 ft

Assumed Piping Sizes**		
	Refrigerant Circuit #	
	1	2
Unit Refrigerant Quantity:	20 lb	20 lb
Suction Line:	2.125 in	2.125 in
Liquid Line:	1.125 in	1.125 in
Suction Riser Up*:	2.125 in	2.125 in

* Vertical suction riser must not exceed 30 actual ft. Refrigerant quantity does not include remote field piping.

**Final equivalent length and pipe size must be confirmed and approved before installing piping. Remote Evaporator Piping Design is required to be approved by the Chiller Products Technical Response Center (TRC) before installation, per Policies & Procedures- Chiller Sales and Installation Manual.

***NOTE: Unit Refrigerant Quantity does not include remote refrigerant piping charge. Total system refrigerant piping and charge must be field supplied and installed.

Electrical

Unit Electrical Data			
Voltage	Starter Type	Fan Motor Quantity	FLA Fan Motors (each)
208 V / 60 Hz / 3 Ph	Across the Line	4	3.2 A
Power Connection Type:	Single Point Disconnect Switch		
Short Circuit Current Rating:	65 kA		
Phase Voltage:	Phase & Under/Over Voltage Protection with LED		

Note: Input voltage must be within $\pm 10\%$ of nameplate voltage, and the voltage unbalance between phases must not exceed 2%.

Single Point Power Connection	
Minimum Circuit Ampacity (MCA):	364 A
Recommended Overcurrent Protection Size:	450 A
Maximum Overcurrent Protection Size(MOCP):	450 A
Lug Connection Size:	(2) #4/0 AWG - 500 MCM

Note: Wiring, fuse, and wire size must be in accordance with the National Electrical Code® (NEC).

Compressor Electrical Data		
Compressor Type	Compressor Quantity	Starter Type
Scroll	4	Across the Line

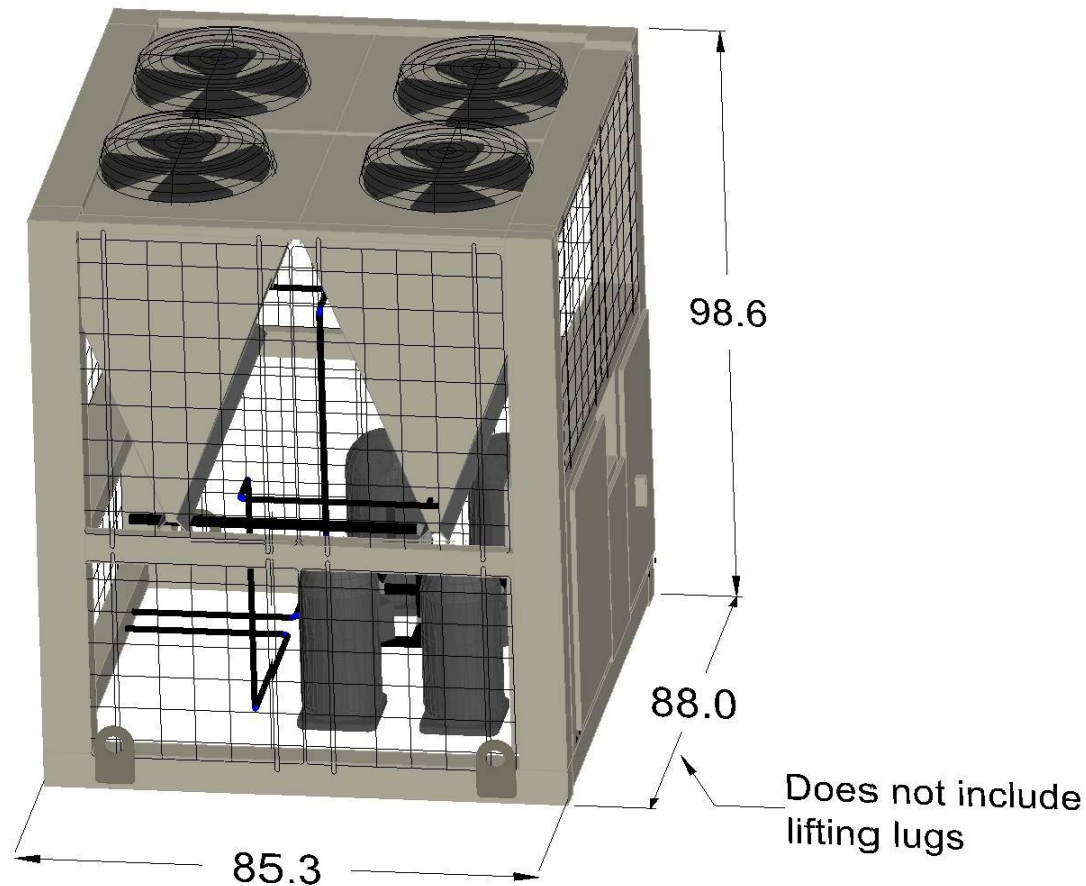
Circuit #:	1		2	
Compressor #:	1	3	2	4
Rated Load Amps (RLA):	42 A	32 A	32 A	32 A
Inrush Current:	222 A	197 A	197 A	197 A

Note RLA Shown is based on 460V power. MCA & MOCP shown are based on selected voltage.

Options	
Basic Unit	
Control Box Ambient:	High Ambient with Exhaust Fans (125°F maximum)
Suction Shut-off Valve:	Included
Control	
Communication:	Combination of Modbus, BACnet MS/TP, BACnet IP
RapidRestore®:	Included
Electrical	
Ground Fault:	Unit Ground Fault Protection
Unit Options:	115V Convenience Outlet
Warranty	
Unit Startup	By Others
Standard Warranty:	1st Year Entire Unit Parts plus Labor on Compressor
Extended Compressor Warranty:	Compressor Only; extended 4 years parts & labor (5 Years Total)

AHRI Certification
Outside the scope of AHRI Air-Cooled Water-Chilling Packages Certification Program or not optionally certified, but is rated in accordance with AHRI Standard 550/590 (I-P) and AHRI Standard 551/591 (SI).

Accessories		
Mandatory		
Part Number	Description	Quantity
332958308	CDE Kit, AGZF Remote Evap - PPA240H122 - Single	1
334767731	Ref. Specialties; AGZ-F; 4 FANS, SE, ACK240-DQ-122	1
334767503	RIS Isolator Kit; GreenRP3	2
334767505	RIS Isolator Kit; BrownRP4	2
Optional		
Part Number	Description	Quantity
334767701	Strainer Kit, Grooved, 2.5", AGZF PPA240	1

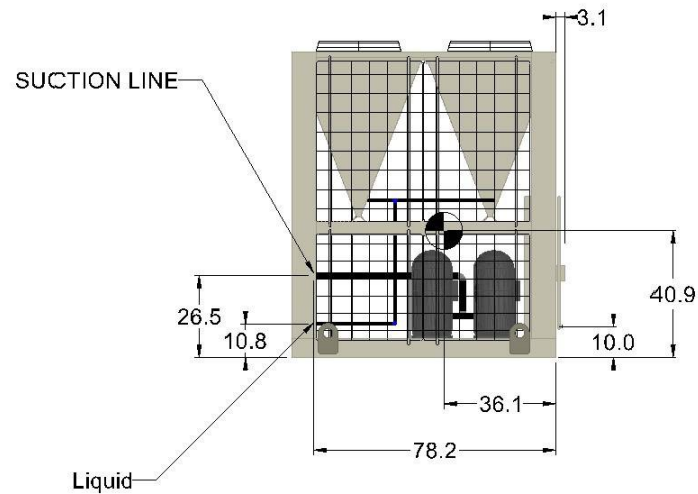
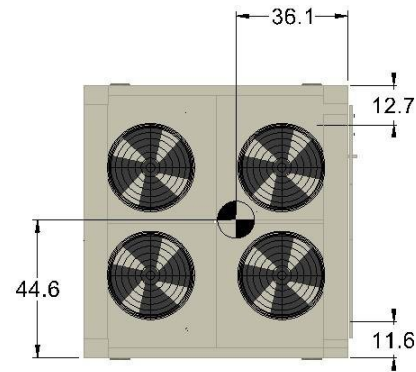


NOTE: A water strainer must be installed at the inlet of the evaporator to protect it from damage. Please refer to the IOM for additional details.

Trailblazer® Air-Cooled Scroll		Unit Tag: CH-1		Sales Office: Harrison Energy Partners			 13600 Industrial Park Blvd. Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 17.90
Product: Trailblazer® Air-Cooled Scroll		Project Name: Buckstaff Bathhouse		Sales Engineer: Tufail Muhammad			
Model: AGZ004F		Apr. 27, 2026	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/- 0.25"	

No change to this drawing may be made unless approved in writing by Daikin Applied. Purchaser must determine that the equipment is fit and sufficient for the job specifications.

TOP VIEW

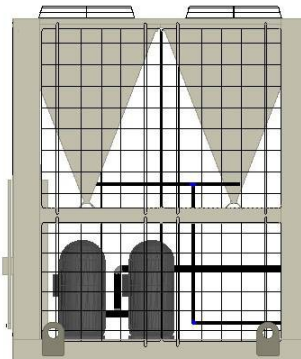
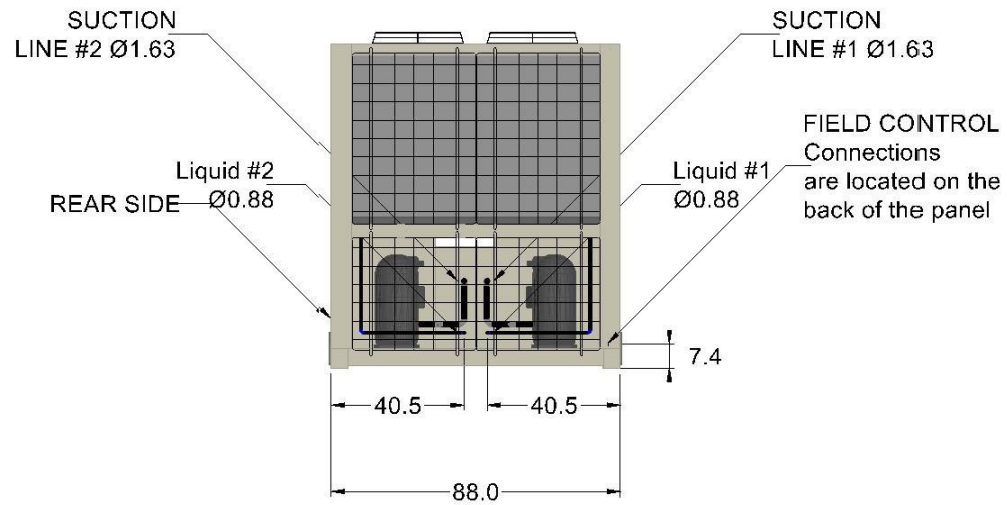


FRONT VIEW

Trailblazer® Air-Cooled Scroll		Unit Tag: CH-1			Sales Office: Harrison Energy Partners			 13600 Industrial Park Blvd. Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 17.90
Product: Trailblazer® Air-Cooled Scroll		Project Name: Buckstaff Bathhouse			Sales Engineer: Tufail Muhammad			
Model: AGZ004F		Apr. 27, 2026	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/- 0.25"	Dwg Units: (in)	

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LEFT VIEW

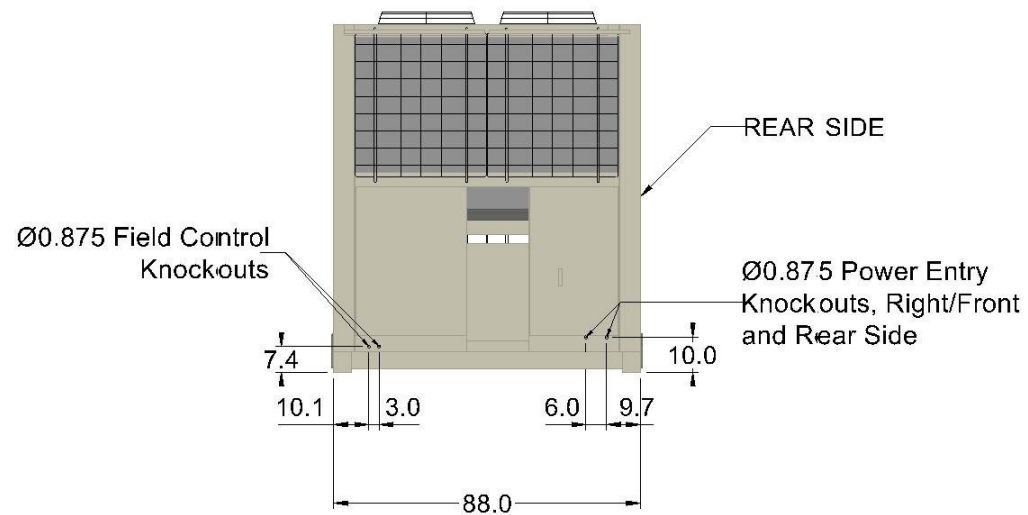


REAR VIEW

Trailblazer® Air-Cooled Scroll	Unit Tag: CH-1	Sales Office: Harrison Energy Partners	 13600 Industrial Park Blvd. Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 17.90		
Product: Trailblazer® Air-Cooled Scroll	Project Name: Buckstaff Bathhouse	Sales Engineer: Tufail Muhammad			
Model: AGZ004F	Apr. 27, 2026	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/- 0.25" Dwg Units: (in)

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Right VIEW



Trailblazer® Air-Cooled Scroll

Product: Trailblazer® Air-Cooled Scroll

Model: AGZ004F

Unit Tag: CH-1

Project Name: Buckstaff Bathhouse

Apr. 27, 2026

Ver/Rev:

Sheet: 1 of 1

Sales Office: Harrison Energy Partners

Sales Engineer: Tufail Muhammad

Scale: NTS

Tolerance: +/- 0.25"

Dwg Units: (in)

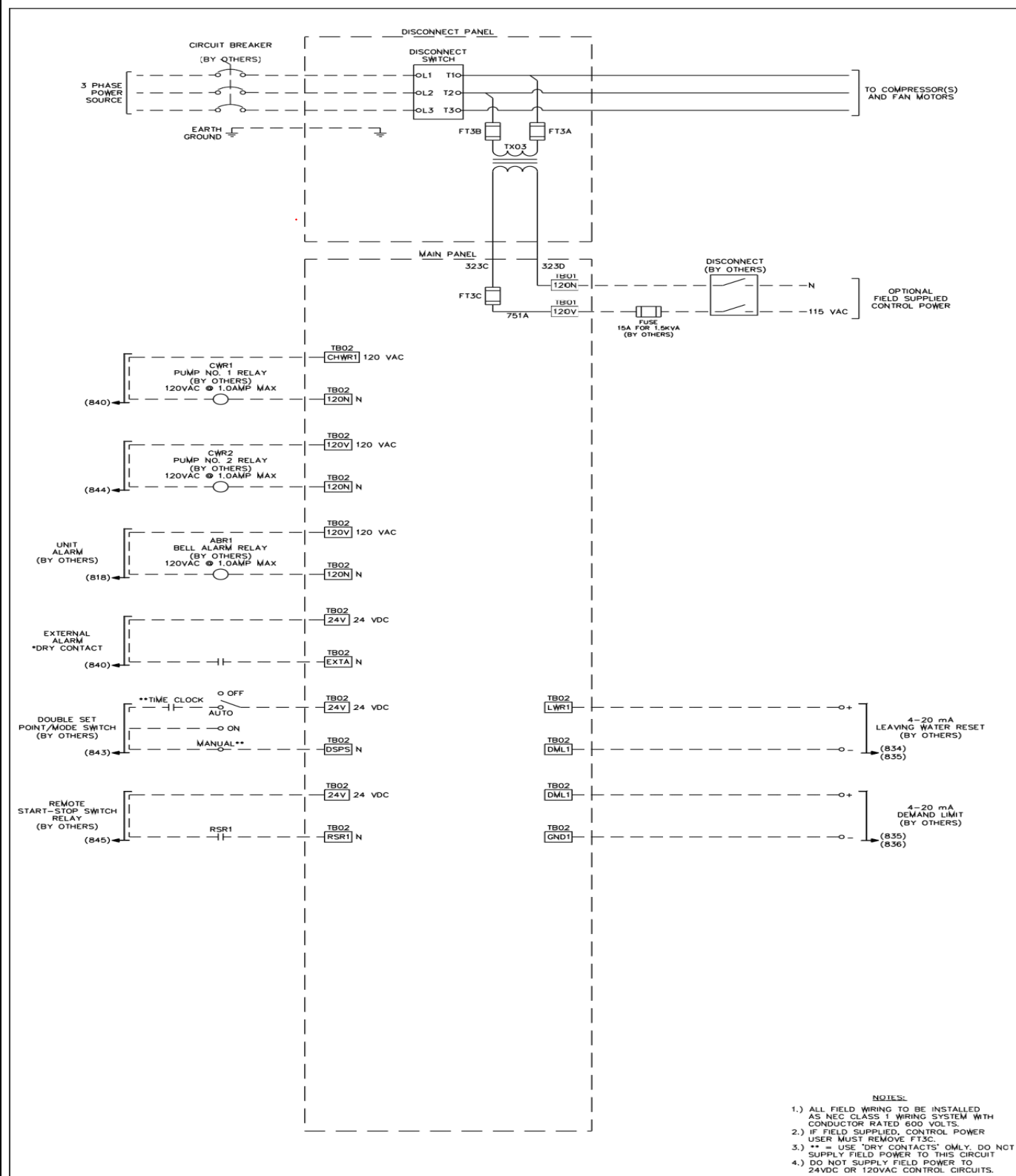


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AGZ-F Single-Point Connection Field Wiring Diagram

0B



Field Wiring Diagram

Unit Tag: CH-1

Product: Trailblazer® Air-Cooled

Project Name: Buckstaff Bathhouse

Model :AGZ004F Single-Point Connection

Sales Office: Harrison Energy Partners

Sales Engineer: Tufail Muhammad

Apr. 27, 2026

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Scale: N/A

Tolerance: N/A

Dwg Units: N/A

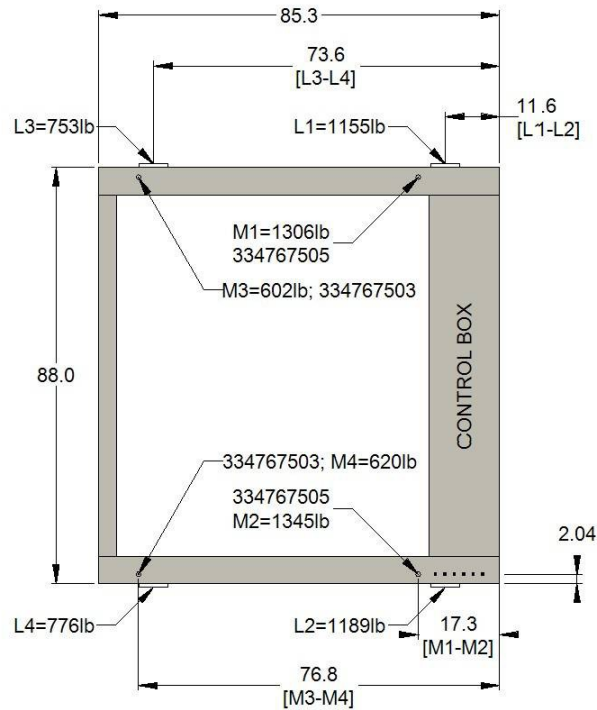
No change to this drawing may be made unless approved in writing by Daikin Applied. Purchaser must determine that the equipment is fit and sufficient for the job specifications.

Note (1): One Side for Compressor removal and the other side for Compressor/Coil removal

Opposite End	Service access is required to both ends of the unit. Safety codes require a minimum of 4 ft clearance at the control box end End opposite the control box requires clearance for access to unit components
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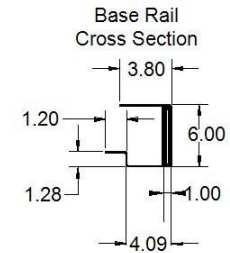
Product Drawing		Unit Tag: CH-1			 13600 Industrial Park Blvd. Minneapolis, MN 55441 www.DaikinApplied.com Software Version: 17.90		
Product: Trailblazer® Air-Cooled		Project Name: Buckstaff Bathhouse					
Model: AGZ004F		Sales Office: Harrison Energy Partners					
Sales Engineer: Tufail Muhammad		Apr. 27, 2026	Ver/Rev:	Sheet 1 of 1			
		Scale: NTS		Tolerance: +/-1.0"		Dwg Units: in [mm]	
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Mounting and Lifting
BASE FRAME TOP VIEW



NOTES:

- 1) L = LIFTING WEIGHT
- 2) M = MOUNTING LOAD
- 3) UNIT SHIPPING WEIGHT = 3873lb
- 4) UNIT OPERATING WEIGHT = 3873lb
- 5) MOUNTING HOLE SIZE = .75"
- 6) MOUNTING HOLES ONLY ON BOTTOM OF BASE
- 7) UNIT WIDTH DIMENSION DOES NOT INCLUDE 1 INCH THICKNESS OF THE LIFTING LUG ASSEMBLIES ON BOTH SIDES, WHICH MAY BE REMOVED AFTER INSTALLATION BUT MUST BE RETAINED FOR FUTURE LIFTING / UNIT REMOVAL



Trailblazer® Air-Cooled Scroll

Product: Trailblazer® Air-Cooled Scroll

Model: AGZ004F

Unit Tag: CH-1

Project Name: Buckstaff Bathhouse

Apr. 27, 2026

Ver/Rev:

Sheet: 1 of 1

Sales Office: Harrison Energy Partners

Sales Engineer: Tufail Muhammad

Scale: NTS

Tolerance: +/- 0.25"

Dwg Units: (in)



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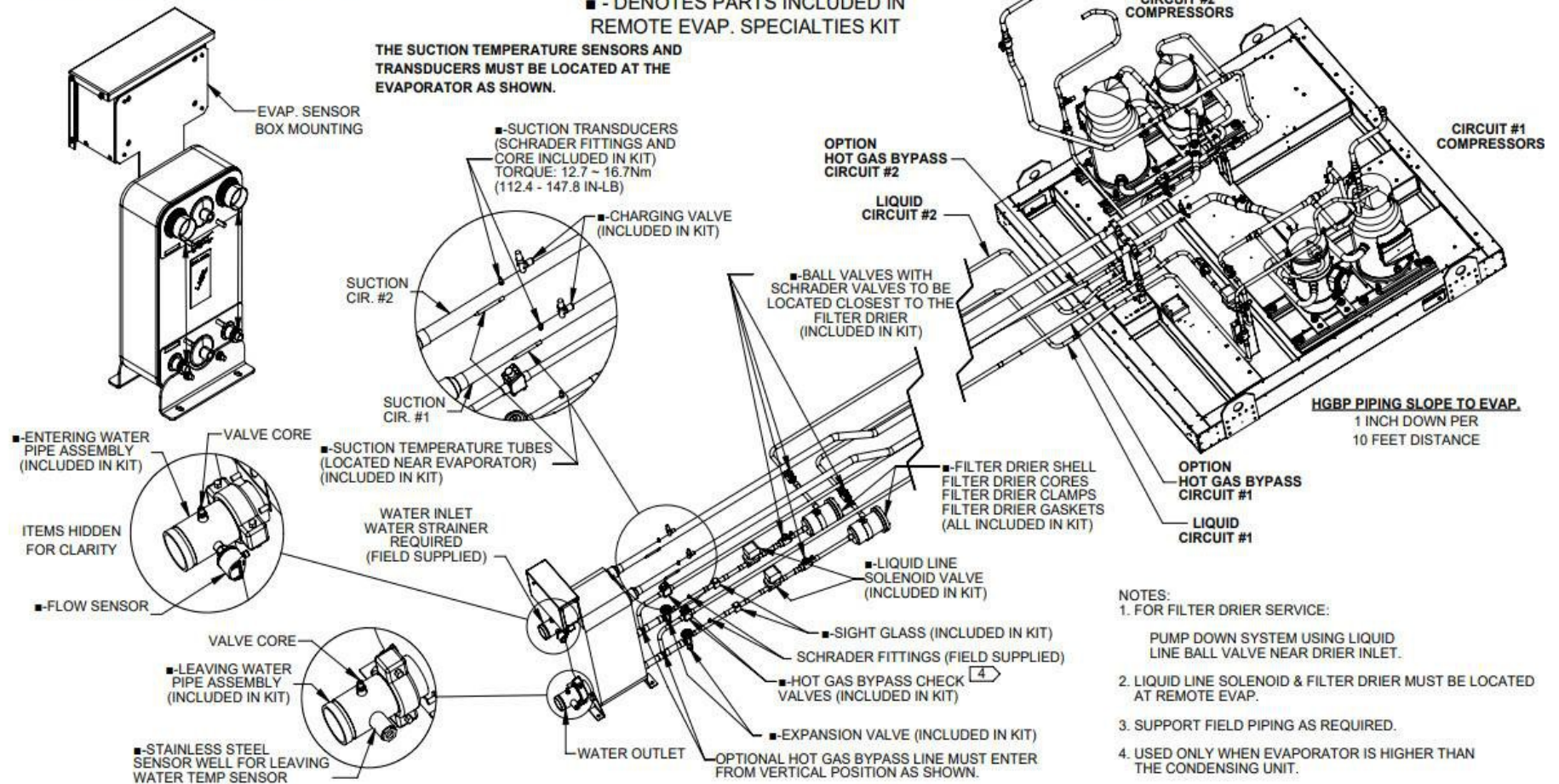
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BRAZE CONNECTIONS ON EVAP ARE STAINLESS STEEL,
SO FIELD MUST USE MIN 45% SILVER BRAZE ROD.

AGZ002-014F

■ - DENOTES PARTS INCLUDED IN
REMOTE EVAP. SPECIALTIES KIT

THE SUCTION TEMPERATURE SENSORS AND
TRANSDUCERS MUST BE LOCATED AT THE
EVAPORATOR AS SHOWN.



NOTES:

1. FOR FILTER DRIER SERVICE:

PUMP DOWN SYSTEM USING LIQUID
LINE BALL VALVE NEAR DRIER INLET.

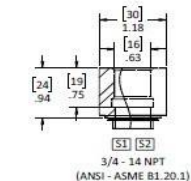
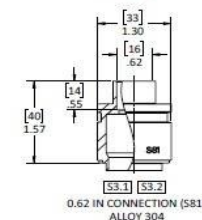
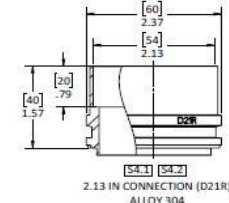
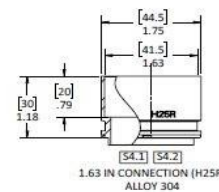
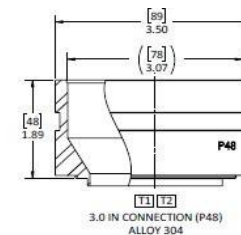
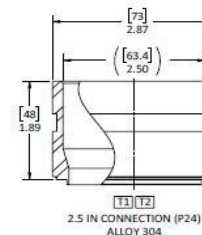
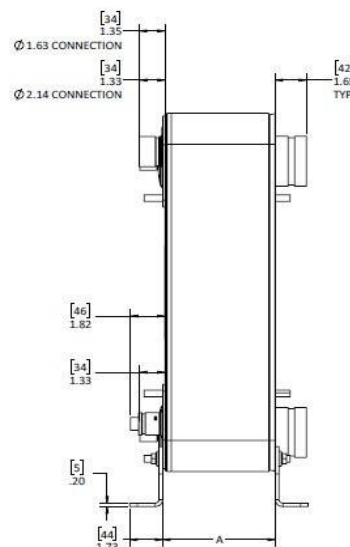
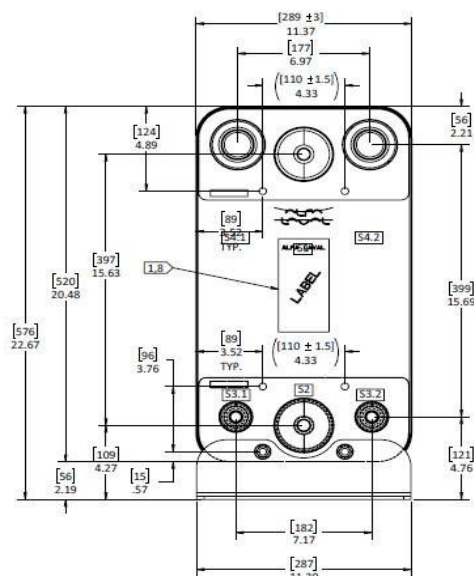
2. LIQUID LINE SOLENOID & FILTER DRIER MUST BE LOCATED
AT REMOTE EVAP.

3. SUPPORT FIELD PIPING AS REQUIRED.

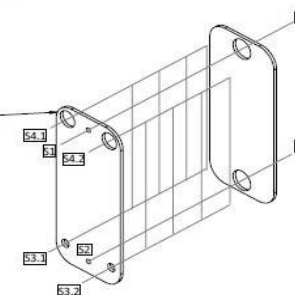
4. USED ONLY WHEN EVAPORATOR IS HIGHER THAN
THE CONDENSING UNIT.

0A

1. EVAPORATOR MUST HAVE LABEL WITH UL APPROVAL
2. 2 STUDS AT TOP OF EVAP ARE REQUIRED FOR LIFTING.
3. STRAIGHTNESS SPEC = +/- 2 DEGREES.
4. THE HEAT EXCHANGERS SHALL BE SECURELY PACKAGED IN THEIR SHIPPING CONTAINER TO PREVENT SHIFTING AND THE PACKAGING MUST PREVENT FINS FROM BEING CRUSHED OR BENT.
5. MOUNTING FEET DO NOT HAVE TO BE BOLTED TO THE HEAT EXCHANGER, BUT MUST BE SECURED TO THE HEAT EXCHANGER IN A WAY THAT DOES NOT DAMAGE THE HEAT EXCHANGER.
6. PRESSURE APPROVAL UL 650 PSI – ACK240
7. REFRIGERANT FLOW DIRECTION IS PARALLEL FOR THE DUAL CIRCUITS.
8. ALL PARTS TO HAVE A CORRESPONDING DAIKIN APPLIED PART NUMBER ON THE LABEL



NOTE: SUCTION — CONNECTION FOR EACH CIRCUIT IS LOCATED DIRECTLY ABOVE THE LIQUID CONNECTION.



Dimensions and weight ¹	
A measure (mm)	12.6 + (2.13 * n)
A measure (inches)	0.50 + (0.08 * n)
Weight (kg) ²	6 + (0.43 * n)
Weight (lb) ²	13.23 + (0.95 * n)

¹ n = number of plates
² Excluding connections

Product Drawing		Unit Tag: CH-1		Sales Office: Harrison Energy Partners			
Product: Air-Cooled Scroll Chiller		Project Name: Buckstaff Bathhouse		Sales Engineer: Tufail Muhammad			
Model: AGZ004F		Apr. 27, 2026	Ver/Rev:	Sheet: 2 of 2	Scale: NTS	Tolerance: +/- 1.0"	
No change to this drawing may be made unless approved in writing by Daikin Applied. Purchaser must determine that the equipment is fit and sufficient for the job specifications.							
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AGZ-F Close Spacing Performance

Case 1 - Wall on One Side

For 4-6 fans: Use 4 ft minimum clearance from any solid height wall taller than unit.

For 8 fans: Use 6 ft minimum clearance from any solid height wall taller than unit. Refer to Case 4 for partial open wall.

For 10-14: Use 8 ft minimum clearance from any solid height wall taller than unit. Refer to Case 4 for partial open wall.

Case 2 - Two Units Side by Side - % Capacity Reduction & Power Increase for Different Spacing between Units.

Distance Between 2 Units # of Fans	4 Feet		5 Feet		6 Feet		8 Feet	
	% -Cap. Reduct. Unit	% Power Increase Unit	% -Cap. Reduct. Unit	% Power Increase Unit	% -Cap. Reduct. Unit	% Power Increase Unit	% -Cap. Reduct. Unit	% Power Increase Unit
4	0	0	0	0	0	0	0	0
6	1.0%	1.5%	0.5%	0.7%	0	0	0	0
8	2.0%	3.0%	1.2%	1.7%	0.5%	0.7%	0	0
10	2.5%	3.6%	2.0%	3.0%	1.4%	2.0%	0.7%	1.0%
12	NR	NR	NR	NR	2.5%	3.5%	2.0%	3.0%
14	NR	NR	NR	NR	3.0%	4.0%	2.5%	3.5%

Note (1): Distance between can only be reduced if the 8Ft (2.4) clearance is on the outside of the two units for Coil removal.

Note (2): NR=Not recommended due to air recirculation and elevated condenser pressure and elevated power input.

Case 3 - Three Units Side by Side - For Outside Units on each side of the middle Unit - See Case 2 above.

% Capacity Reduction & Power Increase for Different Spacing for the middle Unit with a unit on each side.

Distance Between 2 Units # of Fans	4 Feet		5 Feet		6 Feet		8 Feet	
	% -Cap. Reduct. Unit	% Power Increase Unit	% -Cap. Reduct. Unit	% Power Increase Unit	% -Cap. Reduct. Unit	% Power Increase Unit	% -Cap. Reduct. Unit	% Power Increase Unit
4	1.0%	2.0%	0	0	0	0	0	0
6	NR	NR	1.0%	2.0%	0	0	0	0
8	NR	NR	NR	NR	2.0%	3.0%	1.4%	2.1%
10	NR	NR	NR	NR	3.0%	4.5%	2.0%	3.0%
12	NR	NR	NR	NR	4.0%	6.0%	3.0%	4.5%
14	NR	NR	NR	NR	5.0%	7.5%	4.0%	6.0%

Note (3): One Side of the middle Unit must have 8ft (2.4) clearance for Coil Removal.

Note (4): The center unit of 3 units located side by side is affected by the hot discharge from units on each side. Cool ambient air must come from the air space at unit ends.

Product Drawing

Product: Trailblazer® Air-Cooled

Model: AGZ004F

Sales Engineer: Tufail Muhammad

Unit Tag: CH-1

Project Name: Buckstaff Bathhouse

Sales Office: Harrison Energy Partners

Apr. 27,

Ver/Rev:

Sheet 1 of 3



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www.DaikinApplied.com Software Version:17.90

Scale: NTS

Tolerance: +/- 1.0"

Dwg Units: in [mm]

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AGZ-F Close Spacing Performance

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Case 4 Open Screening Walls - % open Wall area vs. Distance in Ft. from Unit

% Open Wall Area		0%	10%	20%	30%	40%	50%
# of Fans	Distance from Wall						
4	Ft	5.0	4.4	4.0	4.0	4.0	4.0
6	Ft	6.0	5.4	4.8	4.0	4.0	4.0
8	Ft	6.5	5.9	5.4	4.5	4.0	4.0
10	Ft	7.0	6.4	5.8	5.2	4.6	4.0
12	Ft	8.0	7.4	6.8	6.2	5.6	5.0
14	Ft	8.0	7.4	6.8	6.2	5.6	5.0

Note (1): One Side of the Unit must have 8ft (2.4) clearance for Coil Removal

Case 5 Pit/Solid Wall Installation - % Full Load Capacity Reduction

Height of Wall (ft)		Up to 8	10	12	13	14
# of Fans	Distance from Wall					
4	4 Ft	0.0%	1.4%	6.0%	Not Allowed	
	5 Ft	0.0%	0.8%	3.2%		
	6 Ft	0.0%	0.0%	0.8%	1.6%	3.0%
6-8	< 5 Ft	Not Allowed				
	5 Ft	0.5%	1.5%	6.0%	Not Allowed	
	6 Ft	0.0%	0.8%	3.2%		
	8 Ft	0.0%	0.0%	0.9%	1.6%	3.0%
10	< 6 Ft	Not Allowed				
	6 Ft	0.5%	1.5%	6.0%	Not Allowed	
	8 Ft	0.0%	0.8%	3.3%		
	10 Ft	0.0%	0.0%	0.8%	1.6%	3.0%
12-14	< 6 Ft	Not Allowed				
	6 Ft	0.8%	1.8%	7.2%	Not Allowed	
	8 Ft	0.0%	1.0%	4.0%		
	10 Ft	0.0%	0.0%	1.0%	1.9%	3.6%

Case 5 Pit/Solid Wall Installation - % Full Load Power Increase

Height of Wall (ft)		Up to 8	10	12	13	14
# of Fans	Distance from Wall					
4	4 Ft	0.6%	2.0%	9.0%	Not Allowed	
	5 Ft	0.3%	1.2%	4.8%	9.0%	
	6 Ft	0.0%	0.0%	1.2%	2.5%	4.5%
6-8	< 5 Ft	Not Allowed				
	5 Ft	0.7%	2.1%	9.0%		
	6 Ft	0.4%	1.2%	4.8%	9.0%	
	8 Ft	0.0%	0.0%	1.2%	2.4%	4.5%
10	< 6 Ft	Not Allowed				
	6 Ft	0.6%	2.1%	9.0%		
	8 Ft	0.4%	1.2%	4.7%	9.0%	
	10 Ft	0.0%	0.0%	1.2%	2.4%	4.6%
12-14	< 6 Ft	Not Allowed				
	6 Ft	0.7%	2.5%	10.8%		
	8 Ft	0.5%	1.4%	5.6%	10.8%	
	10 Ft	0.0%	0.0%	1.4%	2.9%	5.5%



Order Acceptance and Installation for Remote Evaporator/Condenser Chillers

Number::
SF99006-4
Effective: 10/16/2024

1. Purpose

These guidelines are provided for processing orders to ensure customer satisfaction and proper installation, and to help ensure successful startups for remote evaporator/condenser chillers.

2. Responsibility

- a. Remote evaporator/condenser chillers must be applied in accordance with all applicable codes and ASHRAE standards, in addition to the design guidelines set forth in the appropriate current product literature. In the event there is any conflict between codes or standards and the design guidelines, specific advice must be obtained from Daikin Applied. It is critical to adhere to specific design guidelines for refrigerant piping.
- b. Refrigerant piping design must be provided by a qualified architect or systems HVAC design engineer familiar with refrigerant piping design. Failing to comply with appropriate design guidelines may cause product failures that will not be covered by manufacturer's warranty.
- c. The equipment representative and installing contractor are responsible for verification of design, site conditions, and installation.
- d. Daikin Applied service startup shall be contingent upon completion of all installer responsibilities.

3. Scope

Sales Representative, Installer, and Chiller Technical Response Center (TRC), will follow these guidelines for proper order acceptance. The equipment installer must satisfy all pre-startup requirements to comply with these guidelines.

4. Procedure

a. Sales Representative

- 1) Shall submit required piping review documentation, which is listed below and on Form SF99006, to TRC (CHLTechSupport@daikinapplied.com) **no less than two (2) weeks** prior to beginning piping installation. TRC initiates its review once **all** required documentation has been received. Review must be completed by TRC prior to unit startup.
 - (a) Form SF99006 (last page of this document). A separate form is required for each unique piping layout.
 - (b) Technical Data Sheet
 - (c) Isometric drawing(s). Acceptable drawings are shown on pages 3 and 4 of this document.
 - (d) **All** files submitted to TRC **must** be in either **.doc(x)** or **.pdf** format with a white background and supplied **as an attachment**. TRC cannot open Daikin Tools files. Graphic image files will not be accepted.
- 2) Shall ensure that the installer completes all responsibilities stated below.



Order Acceptance and Installation for Remote Evaporator/Condenser Chillers

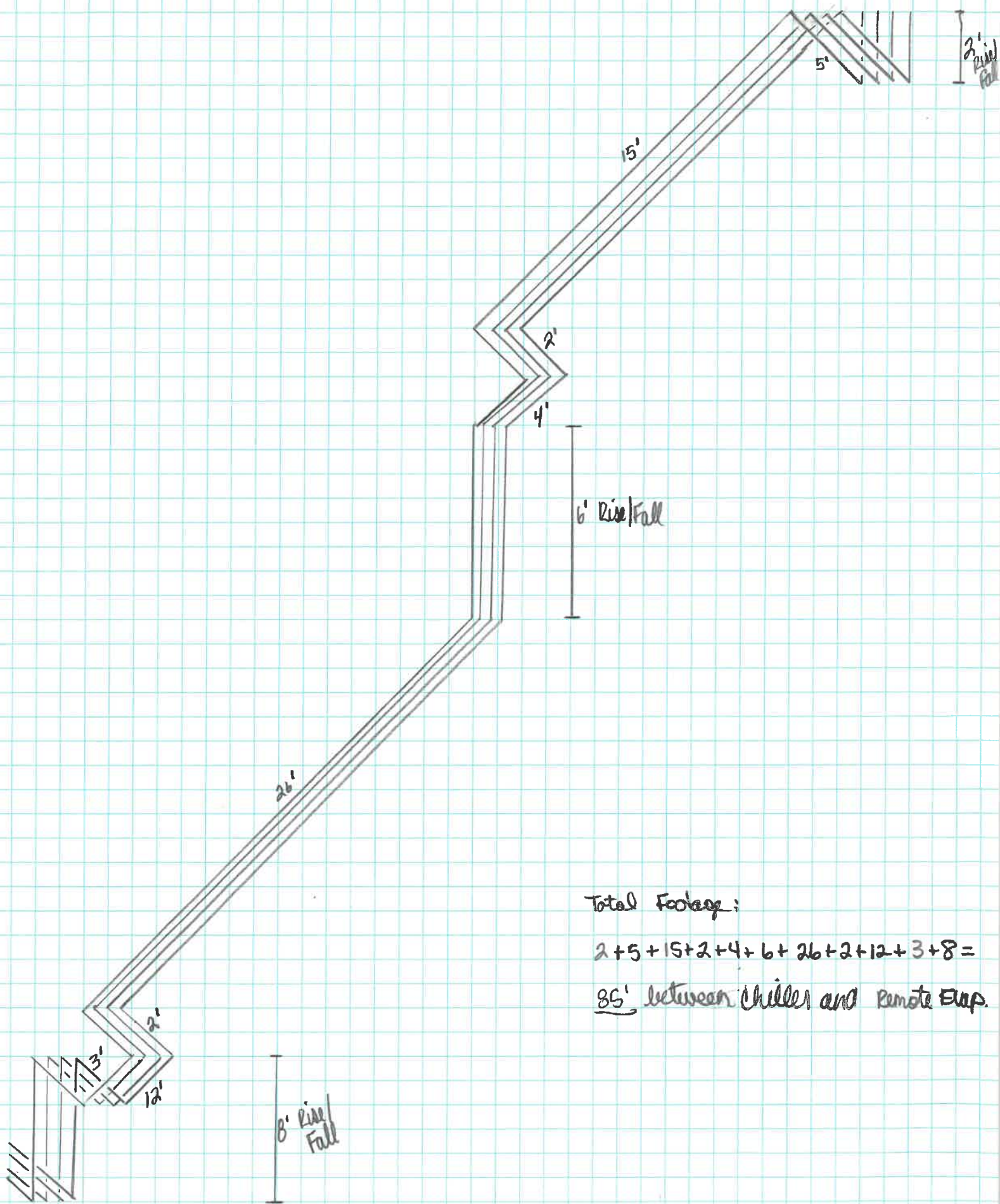
Number::
SF99006-4
Effective 10/16/2024

b. Installer

- 1) Shall provide the refrigerant piping in accordance with Daikin Applied recommendations, applicable codes and standards, and industry standard installation practices. Failing to comply with appropriate design guidelines may cause product failures that will not be covered by the manufacturer's warranty.
- 2) Shall install or relocate all sensors, including all required wiring.
- 3) Shall provide any refrigerant and oil required for the unit, including field supplied refrigerant lines. Instructions for calculating required amounts of additional working fluids can be found in the Daikin Applied Refrigerant Piping Design Guide AG-31-011.
- 4) Installation must match submitted drawings.
- 5) **IMPORTANT – Leave the condenser valve in the off position**, leak test and evacuate field piping and evaporator, and **hold vacuum** for verification by Daikin Applied service.

c. Technical Response Center

- 1) Initiate review of isometric drawing(s) of remote piping layout once all required documentation has been received.
- 2) Complete review and return to Sales Representative before unit startup.



Total Footage:

$$2 + 5 + 15 + 2 + 4 + 6 + 26 + 2 + 12 + 3 + 8 =$$

85' between Chiller and Remote Eqp.

Piping Layout for Installation of Remote Evaporator/Condenser Chillers

⚠ IMPORTANT NOTE ⚠

It is requested that this form, a Technical Data Sheet, and an isometric drawing of the remote piping layout that includes the required information listed below **be submitted to Chiller Technical Response Center (TRC) at the time of order entry.**

These **MUST** be submitted no less than two (2) weeks prior to beginning piping installation. All files must be submitted as an attachment in either .doc(x) or .pdf format with a white background. A separate SF99006 is required for each unique piping layout. TRC initiates its review once *all* required documentation has been received. Review must be completed by TRC prior to unit startup. Installation must match submitted drawing(s).

All field piping, wiring and procedures must comply with design guidelines set forth in the product literature, and must be performed in accordance with Daikin Applied recommendations, applicable codes and standards, and industry standard installation practices. Failing to comply with appropriate design guidelines may cause product failures that will not be covered by manufacturer's warranty.

Job Name:	Buckstaff Bathhouse	SO#:	_____
Job Location:	Hot Springs, AR		
Rep Company:	Harrison Energy Partners		
Rep Office:	Little Rock, AR		
Sales Person:	Josh Robinson		
Model:	AGZ004F		
Date:	4-16-26		

Attached isometric drawing layout must include:

- | | |
|-----------------------------------|---|
| 1) Pipe size | 4) Total actual length of pipe sections for each line |
| 2) Location and types of fittings | 5) Elevation changes/differences |
| 3) Components | 6) Any underground piping |

Return form to:

Chiller Technical Response Center
P.O. Box 2510
Staunton, Virginia 24402-2510

Fax: 763-509-7666
Phone: 540-248-9239
Email: techresponse@daikinapplied.com

To be completed by Chiller Technical Response Center

Reviewed by: Michael Stultz Date: 04/27/2026

Application meets published requirements: ☒ Yes ☐ No

Comments:

CKT-1 & 2 Liquid Lines = 1-1/8" | CKT-1 Horizontal Suction Lines = 2-1/8" | Vertical Suction Lines = 1-5/8" | CKT-2 Horizontal and Vertical Suction Lines 1-5/8"

See Marked Drawing for trap locations. Slope all refrigerant piping in the direction of flow.

Piping must be installed as indicated in the remote piping review submittal.

Installation & materials must be per AHSRAE, Daikin Applied IOM, industry standards, & code requirements.

The installing contractor is responsible for verification of design, site conditions, & installation.

Chiller Remote Piping Review

Technical Response Center - Chillers - Staunton, VA

Submitted by: Josh Robinson
Job Name: Buckstaff Bathhouse
SO #: 0
Product Model: AGZ004F

Originator: Michael Stultz
Date: 4/27/2026

Piping Review Recommendations

Please Note: Daikin Applied does not size or design piping. We can only review completed drawings and make recommendations based on the submitted data. Submitted data must be complete and include pipe sizing, components, elevations, tie-ins, ref, design conditions, isometric drawing, etc...

Based on the submitted data, assuming R32 & normal cooling conditions:

Circuit 1:

*Liquid lines should be 1-1/8 " on the circuit based on ~ 110 ' total Equiv. length

*Horizontal Suction lines should be 2-1/8 " based on the circuit based on ~ 130 ' total Equiv. length

*Vertical Suction lines should be 1-5/8 " based on the maximum suction riser line size for vertical upflow.

Circuit 2:

*Liquid lines should be 1-1/8 " on the circuit based on ~ 110' total Equiv. length

*Horizontal Suction lines should be 1-5/8 " based on the circuit based on ~ 124 ' total Equiv. length

*Vertical Suction lines should be 1-5/8 " based on the maximum suction riser line size for vertical upflow.

Note: Add Trap (3x 90L elbows) at the bottom of the 6.0' Vertical Rise of Circuit 1. Add Trap (3x 90L elbows) at the bottom of the 6.0' Suction Vertical Rise of Circuit 2.

Assumed 89 ' for CKT-1 of measured Liquid Line pipes with (12) Long Radius 90 ells, per circuit.

Assumed 89 ' for CKT-2 of measured Liquid Line pipes with (12) Long Radius 90 ells, per circuit.

Assumed 87 ' for CKT-2 of measured Suction Line pipes with (11) Long Radius 90 ells, (1) Trap made of (3) Long Radius 90 ell, per circuit.

Assumed 87 ' for CKT-2 of measured Suction Line pipes with (11) Long Radius 90 ells, (1) Trap made of (3) Long Radius 90 ell, per circuit.

Additional oil and refrigerant.

Additional oil circuit 1 = 11 oz, Additional oil circuit 2 = 11 oz

Additional refrigerant circuit 1 = 32 lbs. Additional refrigerant circuit 2 = 31 lbs.

Note: These are general baseline charge quantities. The final quantity should be determined by unit performance and sight glass indication.

General good/recommended piping practices are below. These may not apply to your application:

Transitions in pipe sizes (if any) should be done so as not to impede oil return.

Use only one liquid line solenoid per circuit.

Minimum run times may be required for proper oil return.

Additional oil charge may be required.

Additional refrigerant charge may be required.

Pump-down for service purposes may be exceeded.

If the liquid line is routed higher than the condenser and drain-back is an issue, a liquid line check/relief will be required.

Filter drier should be installed just before the liquid line solenoid.

Double risers should not be used.

Service taps or valves should be installed as required for service and testing purposes.

Insulation will be required on the liquid line based on ambient...

Vapor risers should be trapped at the bottom using street ells.

Traps should be comprised of 3 short radius street 90° ells.

All ells (except suction and discharge traps) should be long radius street 90° ells.

Slope Vapor lines 1 inch per 10 feet in the direction of flow.

Liquid lines should be sloped 1/8 inch per foot (10.4 mm/m) in the direction of refrigerant flow. Trapping is unnecessary.

Remote EXV wiring should use Belden cable # 83654 or equivalent. This wire cannot run in conduit with voltages over 24 volts AC~. The inner foil and the outer cable should be grounded as close as possible to the EXV module, with no whips. Splices should be soldered. Use shrink wrap on each conductor and the outer cover and electrical tape to protect against the elements. Use water-tight boxes at splice locations—reference IOM for EXV Field Wiring.

Installation and materials must be per ASHRAE, product manuals, industry standards, and local code requirements. The installing contractor is responsible for verifying the design, site conditions, and installation.

Important: The refrigerant piping design must be provided by a qualified Architect or Systems HVAC Design Engineer familiar with piping design and local codes and regulations. The manufacturer recommendations provided here are to be used as a general guide but do not replace system design by a qualified professional.