



R2.1

SUBMITTAL

Project

BCF - 446-Lakewood, WA

Date

June 4, 2025

R1: Powered Convenience outlets, added burglar bars, Changed units to GE's, and RTU 2 to 8.5 tons
R2.1: All statics 1 esp

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Project: BCF - 446-Lakewood, WA-R1
Prepared By:

06/04/2025
09:26AM

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RTU 1,3

**Tag Cover Sheet
Unit Report
Certified Drawing
Performance Report**

Unit Report For RTU 1,3

Project: BCF - 446-Lakewood, WA-R1
 Prepared By:

06/04/2025
 09:26AM

Unit Parameters

Unit Model:.....**48GEFM24J2C6-3X4C0**
 Unit Size:.....**24 (20.0 Tons)**
 Volts-Phase-Hertz:.....**460-3-60**
 Heating Type:.....**Gas**
 Refrigerant:.....**R-454B**
 Heat Control:.....**High Gas Heat**
 Duct Cfg:.....**Vertical Supply / Vertical Return**
 DX Options:.....**Single Circuit, Two Stage Cooling**

Dimensions (ft. in.) & Weight (lb.) ***

Unit Length:.....**11' 9.5"**
 Unit Width:.....**7' 2.375"**
 Unit Height:.....**4' 9.375"**
Total Operating Weight:.....2832 lb

*** Weights and Dimensions are approximate. Weight does not include unit packaging. Approximate dimensions are provided primarily for shipping purposes. For exact dimensions and weights, refer to appropriate product data catalog.

Lines and Filters

Gas Line Size:.....**3/4**
 Condensate Drain Line Size:.....**3/4**
 Return Air Filter Type:.....**Throwaway**
 Return Air Filter Quantity:.....**9**
 Return Air Filter Size:.....**16 x 25 x 2**

Selection includes construction throwaway filter into the base fan curve.

Unit Configuration

High Gas Heat
 Condensate Overflow Switch (COFS)
 Standard/Medium Static - EcoBlue Vane Axial Fan
 E-coat Al/CU - Al/Cu
 SystemVu Controller
 ULL Enthalpy Econ w/ Power Exhaust
 Hinged Access Panels + NPCO
 Non-Fused Disconnect (NFDC)
 Standard Packaging

Warranty Information

1-Year parts(std.)
 5-Year compressor parts(std.)
 10-Year heat exchanger - Aluminized(std.)
 3-Year SystemVu Controller
 START-UP, EACH ADDITIONAL UNIT

NOTE: Please see Warranty Catalog 500-089 for explanation of policies and ordering methods.

Ordering Information

Part Number	Description	Quantity
48GEFM24J2C6-3X4C0	Rooftop Unit	2
Field Installed Accessories		
ZS2-H-CAR	ZS Standard	2
CRHUMDSN001B00	Outdoor or Return Air RH Sensor	2

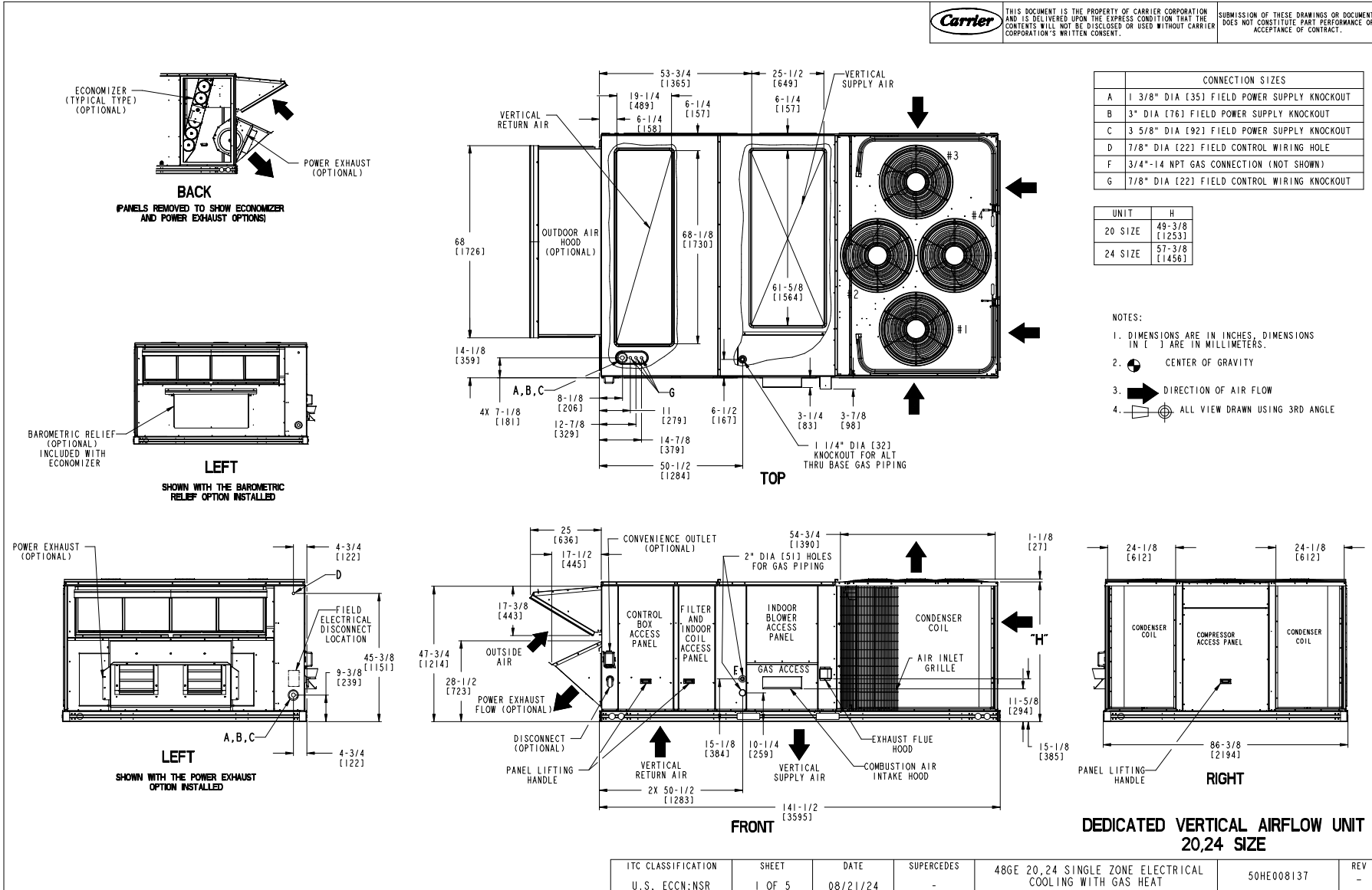
Certified Drawing for RTU 1,3

Project: BCF - 446-Lakewood, WA-R1
Prepared By:

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Certified Drawing for RTU 1,3

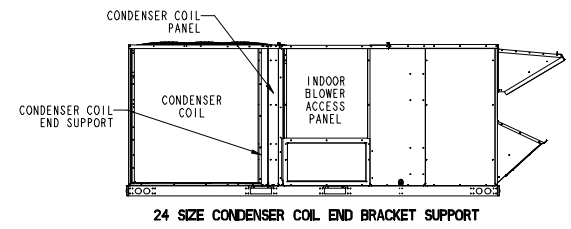
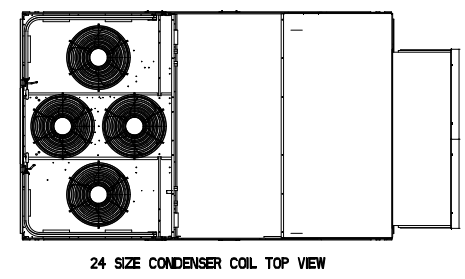
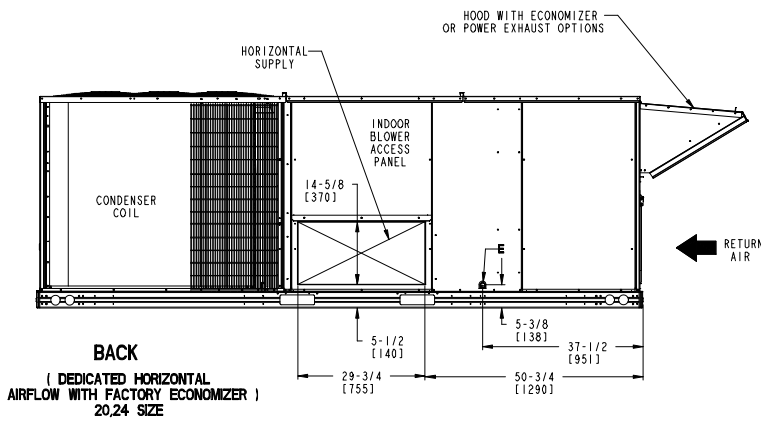
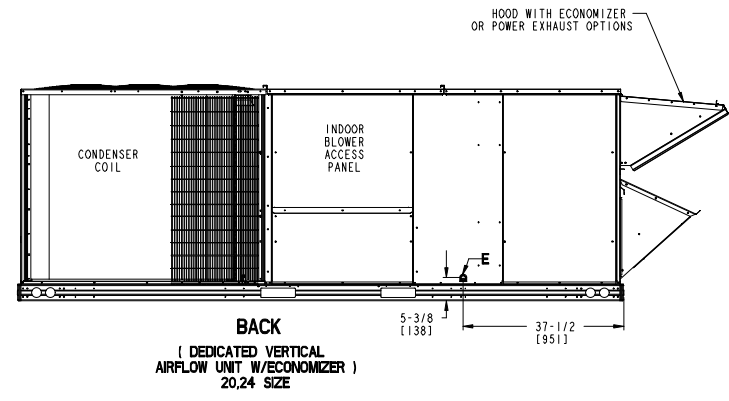
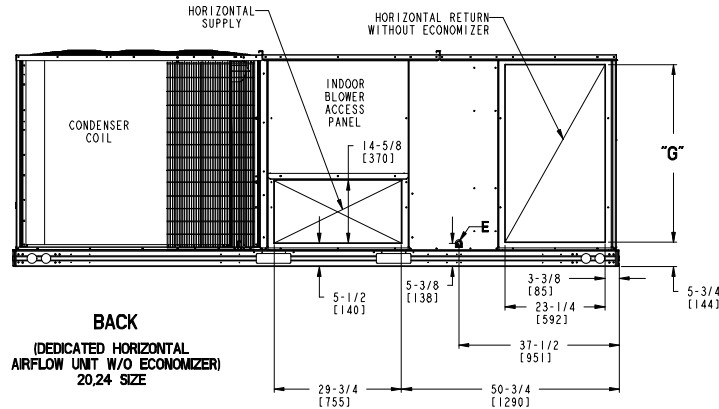
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CONNECTION SIZES	
E	3/4"-14 NPT CONDENSATE DRAIN

UNIT	G
20 SIZE	41-3/8 [1049]
24 SIZE	49-1/4 [1251]

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ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES	48GE 20,24 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE008137	REV
U.S. ECCN:NSR	3 OF 5	08/21/24	-			-

Certified Drawing for RTU 1,3

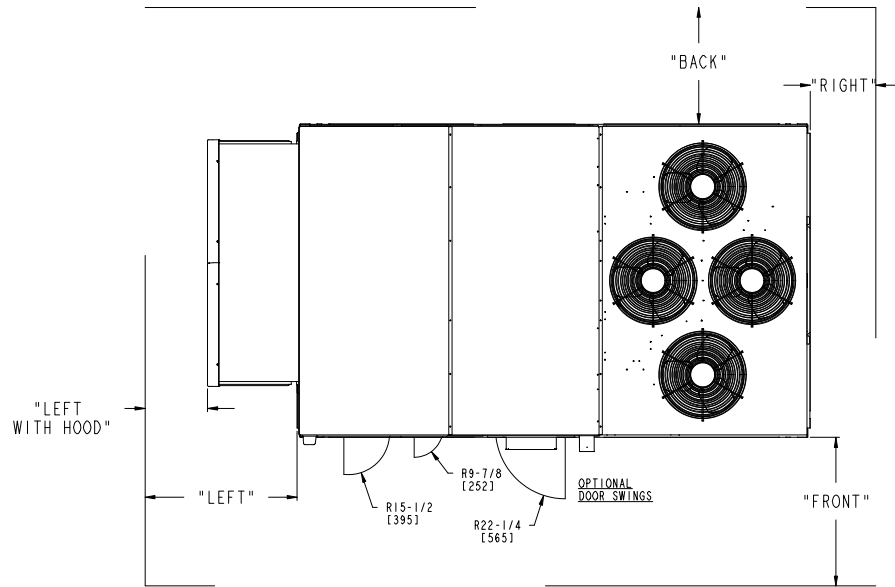
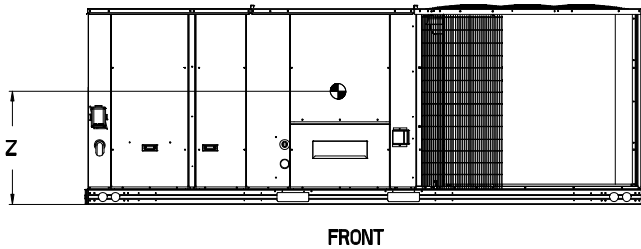
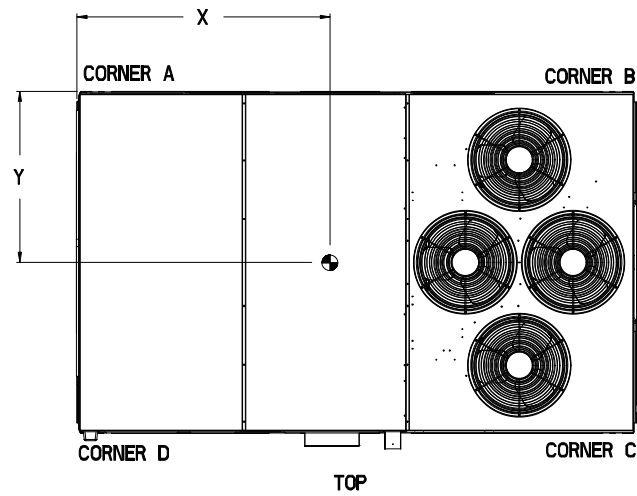
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UNIT	STD UNIT WEIGHT *		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.		
	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z
48GE 20	2008	911	449	204	536	243	557	252	466	211	77 [1956]	44 [1118]	16 1/2 [419]
48GE 24	2240	1016	530	240	530	240	590	268	590	268	70 3/4 [1797]	45 1/2 [1156]	16 1/2 [419]

* STANDARD UNIT WEIGHT IS WITH LOW GAS HEAT AND WITHOUT PACKAGING.
FOR OTHER OPTIONS AND ACCESSORIES, REFER TO THE PRODUCT DATA CATALOG.



- NOTES:
- CLEARANCE ABOVE THE UNIT TO BE 72"
 - FOR ALL MINIMUM CLEARANCES LOCAL CODES OR JURISDICTIONS MAY PREVAIL.

	CLEARANCE		
	SERVICE WITH CONDUCTIVE BARRIER	SERVICE WITH NONCONDUCTIVE BARRIER	OPERATING CLEARANCE
FRONT	48 [1219mm]	36 [914mm]	18 [457mm]
LEFT	48 [1219mm]	42 [1067mm]	18 [457mm]
BACK	42 [1067mm]	36 [914mm]	18 [457mm]
LEFT WITH HOOD	36 [914mm]	36 [914mm]	18 [457mm]
RIGHT	36 [914mm]	36 [914mm]	18 [457mm]
TOP	72 [1829mm]	72 [1829mm]	72 [1829mm]

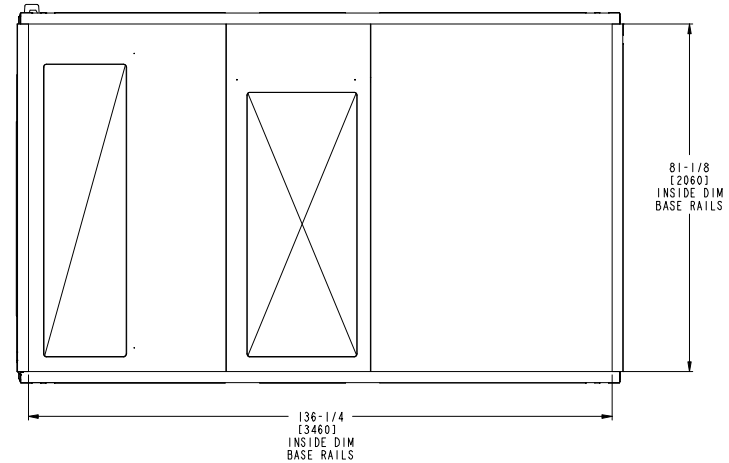
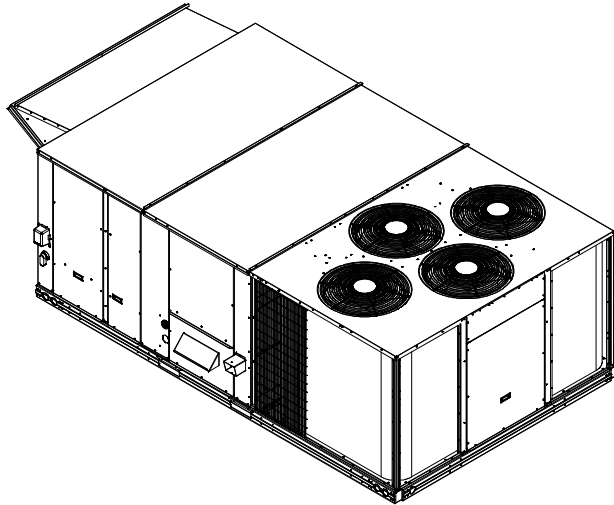
ITC CLASSIFICATION U.S. ECCN:NSR	SHEET 4 OF 5	DATE 08/21/24	SUPERCEDES -	48GE 20,24 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE008137	REV -
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Certified Drawing for RTU 1,3

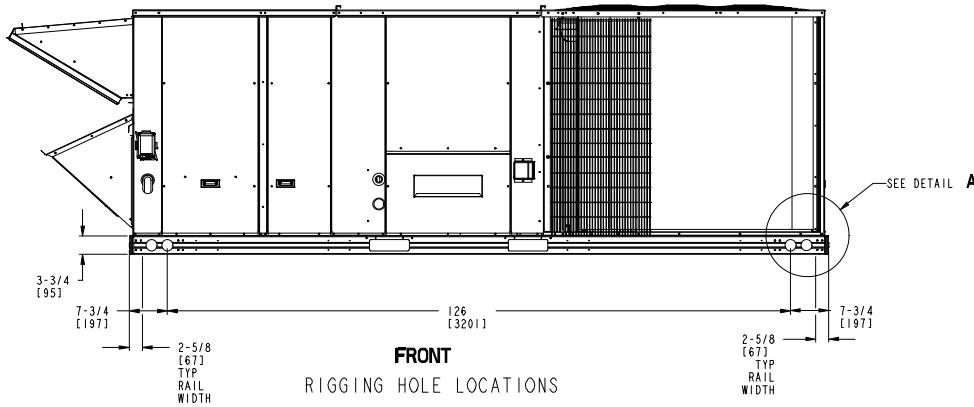
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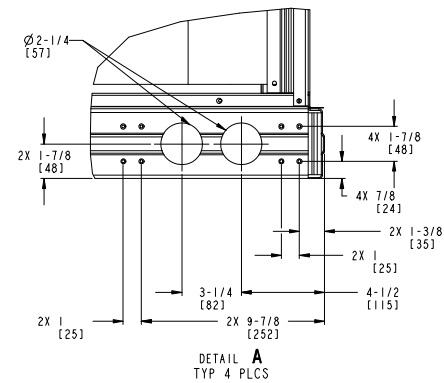
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BOTTOM
 INSIDE BASERAIL DIMENSIONS



FRONT
 RIGGING HOLE LOCATIONS



DETAIL A
 TYP 4 PLCS

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES	48GE 20,24 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE008137	REV
U.S. ECCN:NSR	5 OF 5	08/21/24	-			-

Performance Summary For RTU 1,3

Project: BCF - 446-Lakewood, WA-R1
 Prepared By:

06/04/2025
 09:26AM

Part Number:48GEFM24J2C6-3X4C0

Refrigerant:..... **R-454B**
 ARI EER:..... **11.40**
 IEER:..... **16.8**

Base Unit Dimensions

Unit Length:..... **141.5** in
 Unit Width:..... **86.4** in
 Unit Height:..... **57.4** in

Operating Weight

Base Unit Weight:..... **2240** lb
 High Gas Heat:..... **127** lb
 Condensate Overflow Switch (COFS):..... **5** lb
 SystemVu Controller:..... **2** lb
 ULL Enthalpy Econ w/ Power Exhaust:..... **443** lb
 Hinged Access Panels + NPCO:..... **10** lb
 Non-Fused Disconnect (NFDC):..... **5** lb

 Total Operating Weight:..... **2832** lb

Unit

Unit Voltage-Phase-Hertz:..... **460-3-60**
 Air Discharge:..... **Vertical**
 Fan Drive Type:..... **Vane Axial**
 Actual Airflow:..... **8000** CFM
 Site Altitude:..... **0** ft

Cooling Performance

Condenser Entering Air DB:..... **95.0** F
 Evaporator Entering Air DB:..... **80.0** F
 Evaporator Entering Air WB:..... **67.0** F
 Entering Air Enthalpy:..... **31.44** BTU/lb
 Evaporator Leaving Air DB:..... **59.5** F
 Evaporator Leaving Air WB:..... **57.5** F
 Evaporator Leaving Air Enthalpy:..... **24.69** BTU/lb
 Gross Cooling Capacity:..... **243.08** MBH
 Gross Sensible Capacity:..... **177.45** MBH
 Compressor Power Input:..... **17.35** kW
 Coil Bypass Factor:..... **0.130**

Heating Performance

Heating Airflow:..... **8000** CFM
 Entering Air Temp:..... **70.0** F
 Leaving Air Temp:..... **107.5** F
 Gas Heating Input Capacity:..... **320.0 / 400.0** MBH
 Gas Heating Output Capacity:..... **260.0 / 324.0** MBH
 Temperature Rise:..... **37.5** F
 Thermal Efficiency (%):..... **81.0**

Supply Fan

External Static Pressure:..... **1.00** in wg
 Options / Accessories Static Pressure
 Economizer:..... **0.08** in wg
 Power Exhaust:..... **(Fan Data Includes Drop)**
 Application External Static (ESP + Unit Opts/Acc.):..... **1.08** in wg
 Fan RPM:..... **1757**
 Fan Power:..... **3.86** BHP
 NOTE:..... **Selected IFM RPM Range: 1107 - 2000**

Selection includes construction throwaway filter into the base fan curve. This filter is not MERV Rated.

Performance Summary For RTU 1,3

Project: BCF - 446-Lakewood, WA-R1
 Prepared By:

06/04/2025
 09:26AM

Power Exhaust

Return Duct Static:..... **0.40** in wg
 Max. Air to Exhaust:..... **4590** CFM

Electrical Data

Voltage Range:..... **414 - 506**
 Compressor #1 RLA:..... **17.1**
 Compressor #1 LRA:..... **140**
 Compressor #2 RLA:..... **13.9**
 Compressor #2 LRA:..... **100**
 Indoor Fan Motor Type:..... **MED**
 Indoor Fan Motor FLA (Total):..... **3**
 Combustion Fan Motor FLA (ea):..... **0.3**
 Power Supply MCA:..... **51**
 Power Supply MOCP (Fuse or HACR):..... **60**
 Disconnect Size FLA:..... **54**
 Disconnect Size LRA:..... **268**
 Electrical Convenience Outlet:..... **None**
 Power Exhaust [Motor Qty / FLA(ea motor)]:..... **2 / 3.1**
 Outdoor Fan [Qty / FLA (ea)]:..... **4 / 0.9**

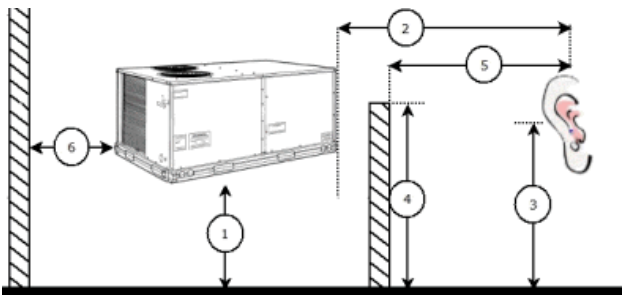
Control Panel SCCR: 5kA RMS at Rated Symmetrical Voltage

Acoustics

Sound Power Levels, db re 10E-12 Watts

	Discharge	Inlet	Outdoor
63 Hz	90.6	78.9	95.6
125 Hz	89.6	74.7	87.5
250 Hz	89.2	69.4	84.2
500 Hz	81.4	66.2	84.2
1000 Hz	80.5	66.3	81.7
2000 Hz	77.7	60.4	77.9
4000 Hz	73.1	51.4	73.2
8000 Hz	62.9	42.6	66.3
A-Weighted	86.2	70.0	86.5

Advanced Acoustics



Advanced Acoustics Parameters

1. Unit height above ground:..... **30.0** ft
 2. Horizontal distance from unit to receiver:..... **50.0** ft
 3. Receiver height above ground:..... **5.7** ft
 4. Height of obstruction:..... **0.0** ft
 5. Horizontal distance from obstruction to receiver:..... **0.0** ft
 6. Horizontal distance from unit to obstruction:..... **0.0** ft

Performance Summary For RTU 1,3

Project: BCF - 446-Lakewood, WA-R1
 Prepared By:

06/04/2025
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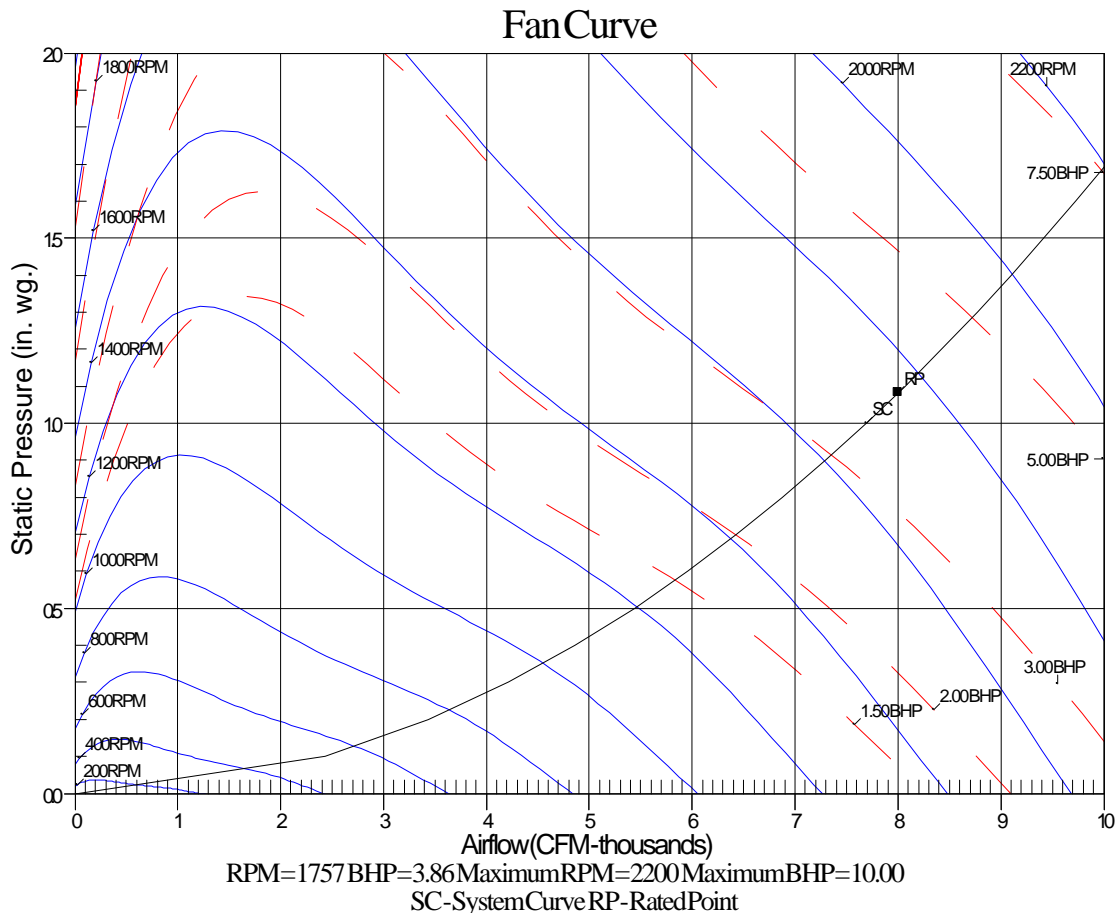
Detailed Acoustics Information

Octave Band Center Freq. Hz	63	125	250	500	1k	2k	4k	8k	Overall
A	95.6	87.5	84.2	84.2	81.7	77.9	73.2	66.3	96.9 Lw
B	69.4	71.4	75.6	81.0	81.7	79.1	74.2	65.2	86.5 LwA
C	63.2	55.1	51.8	51.8	49.3	45.5	40.8	33.9	64.5 Lp
D	37.0	39.0	43.2	48.6	49.3	46.7	41.8	32.8	54.1 LpA

Legend

- A Sound Power Levels at Unit's Acoustic Center, Lw
- B A-Weighted Sound Power Levels at Unit's Acoustic Center, LwA
- C Sound Pressure Levels at Specific Distance from Unit, Lp
- D A-Weighted Sound Pressure Levels at Specific Distance from Unit, LpA

Calculation methods used in this program are patterned after the ASHRAE Guide; other ASHRAE Publications and the AHRI Acoustical Standards. While a very significant effort has been made to insure the technical accuracy of this program, it is assumed that the user is knowledgeable in the art of system sound estimation and is aware of the tolerances involved in real world acoustical estimation. This program makes certain assumptions as to the dominant sound sources and sound paths which may not always be appropriate to the real system being estimated. Because of this, no assurances can be offered that this software will always generate an accurate sound prediction from user supplied input data. If in doubt about the estimation of expected sound levels in a space, an Acoustical Engineer or a person with sound prediction expertise should be consulted.



RTU 2

Project: BCF - 446-Lakewood, WA-R1
Prepared By:

06/04/2025
09:26AM

RTU 2

Tag Cover Sheet Unit Report Certified Drawing Performance Report

Unit Report For RTU 2

Project: BCF - 446-Lakewood, WA-R1
 Prepared By:

06/04/2025
 09:26AM

Unit Parameters

Unit Model:.....**48GEFM09J3C6-3W5F0**
 Unit Size:.....**09 (8.5 Tons)**
 Volts-Phase-Hertz:.....**460-3-60**
 Heating Type:.....**Gas**
 Refrigerant:.....**R-454B**
 Heat Control:.....**High Gas Heat**
 Duct Cfg:.....**Vertical Supply / Vertical Return**
 DX Options:.....**Two Stage Cooling, Single Circuit**

Dimensions (ft. in.) & Weight (lb.) ***

Unit Length:.....**7' 4.125"**
 Unit Width:.....**4' 11.5"**
 Unit Height:.....**4' 1.375"**
Total Operating Weight:.....1191 lb

*** Weights and Dimensions are approximate. Weight does not include unit packaging. Approximate dimensions are provided primarily for shipping purposes. For exact dimensions and weights, refer to appropriate product data catalog.

Lines and Filters

Gas Line Size:.....**3/4**
 Condensate Drain Line Size:.....**3/4**
 Return Air Filter Type:.....**Throwaway**
 Return Air Filter Quantity:.....**4**
 Return Air Filter Size:.....**20 x 20 x 2**

Selection includes construction throwaway filter into the base fan curve.

Unit Configuration

High Gas Heat
 Condensate Overflow Switch
 High Static - EcoBlue Vane Axial
 E-coat Al/Cu - Al/Cu
 SystemVu Controls
 ULL Enthalpy Economizer with Barometric Relief
 Hinged Panels + PCO
 NFDC + TTB
 Standard Packaging

Warranty Information

1-Year parts(std.)
 5-Year compressor parts(std.)
 10-Year heat exchanger - Aluminized(std.)
 3-Year SystemVu Controller
 START-UP, FIRST UNIT

NOTE: Please see Warranty Catalog 500-089 for explanation of policies and ordering methods.

Ordering Information

Part Number	Description	Quantity
48GEFM09J3C6-3W5F0	Rooftop Unit	1
Field Installed Accessories		
ZS2-H-CAR	ZS Standard	1
CRHUMDSN001B00	Outdoor or Return Air RH Sensor	1
CRPECONV004A00	Hinged Panel Sealing Angle Kit	1
CRPWREXH023A01	Power Exhaust System	1

Certified Drawing for RTU 2

Project: BCF - 446-Lakewood, WA-R1
 Prepared By:

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NOTES:

1. DIMENSIONS ARE IN INCHES. DIMENSIONS IN [] ARE IN MILLIMETERS.
2. CENTER OF GRAVITY
3. DIRECTION OF AIR FLOW
4. ALL VIEW DRAWN USING 3RD ANGLE

UNIT	OUTDOOR COIL TYPE	J	K	H
48GE-M07	RTPF	41 1/4 [1048]	33 3/4 [857]	15 7/8 [403]
48GE-M08	RTPF	49 3/8 [1253]	36 3/8 [925]	15 7/8 [403]
48GE-M09	RTPF	49 3/8 [1253]	36 3/8 [925]	15 7/8 [403]

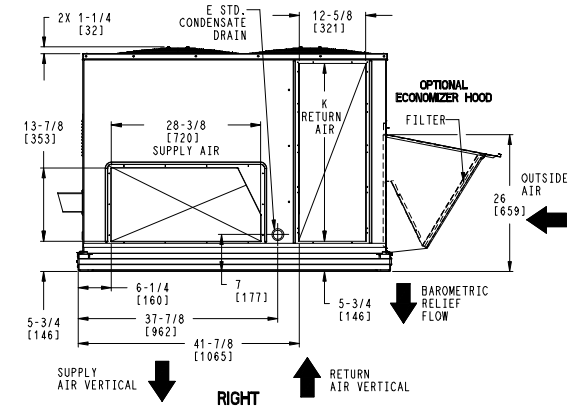
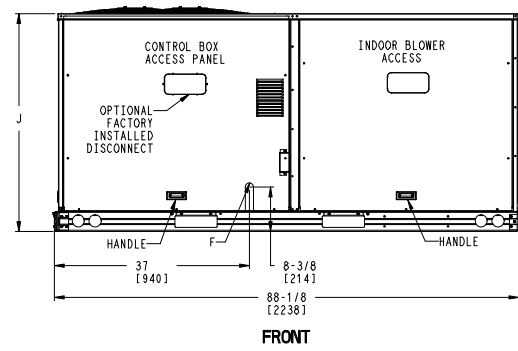
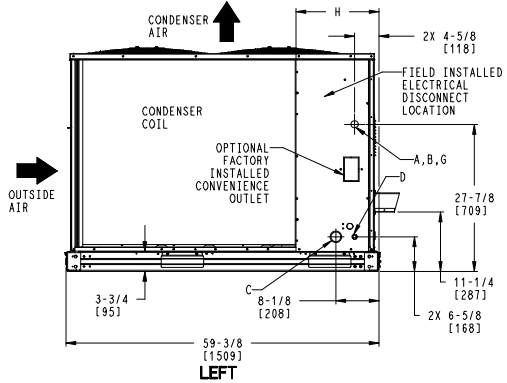
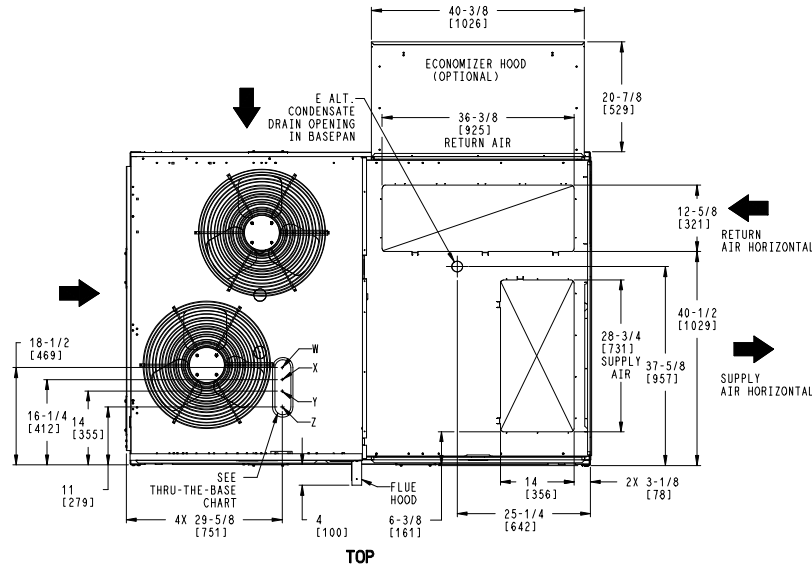
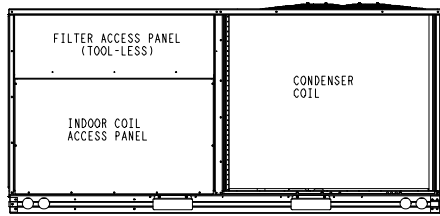
RTPF - ROUND TUBE, PLATE FIN (COPPER/ALUM)

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CONNECTION SIZES	
A	1 3/8" [35] DIA FIELD POWER SUPPLY HOLE
B	2 1/2" [64] DIA POWER SUPPLY KNOCKOUT
C	1 3/4" [51] DIA GAUGE ACCESS PLUG
D	7/8" [22] DIA FIELD CONTROL WIRING HOLE
E	3/4"-14 NPT CONDENSATE DRAIN
F	1/2"-14 NPT GAS CONNECTION 3/4"-14 NPT GAS CONNECTION
G	2" [51] DIA POWER SUPPLY KNOCK-OUT

THRU-THE-BASE CHART (FIELD INST)			
THESE HOLES REQUIRED FOR USE WITH ACCY KITS: CRBTMPR002A01: GAS THRU CURB CRBTMPR004A01: GAS THRU BASEPAN			
	THREADED CONDUIT SIZE	WIRE USE	REQ'D HOLE SIZES (MAX.)
W	1/2"	ACC.	7/8" [22.2]
X	1/2"	24V	7/8" [22.2]
Y	1 1/4" (002,004)	POWER	1 3/4" [44.4]
Z *	(004) 3/4" FPT	GAS	1 3/4" [44.4]
*	(002) PROVIDES 3/4" FPT THRU CURB FLANGE & FITTING. HOLE SIZE: 2" [50.8]		

THRU-THE-BASE CHART (FIOP)	
FOR "THRU-THE-BASEPAN" FACTORY OPTION, FITTINGS FOR ONLY X, Y, & Z ARE PROVIDED. **	
** FOR BELOW LISTED MODELS, A FIELD SUPPLIED 1/2" ADAPTER IS REQUIRED BETWEEN BASE PAN FITTING AND GAS VALVE: 48GD, S*07, 08	



ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES	DESCRIPTION	PROJECT	REV
U.S. ECCN:NSR	1 OF 3	5/20/24	-	48GE 07-09 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	48TM009899	-

Certified Drawing for RTU 2

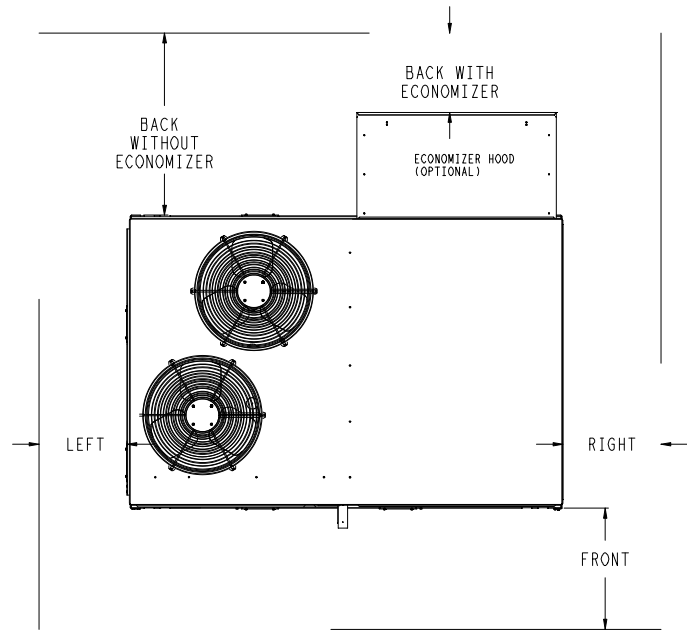
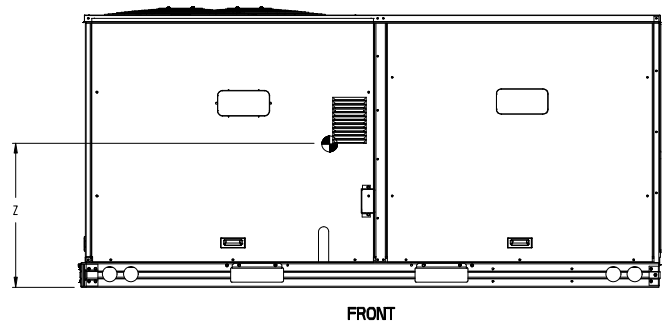
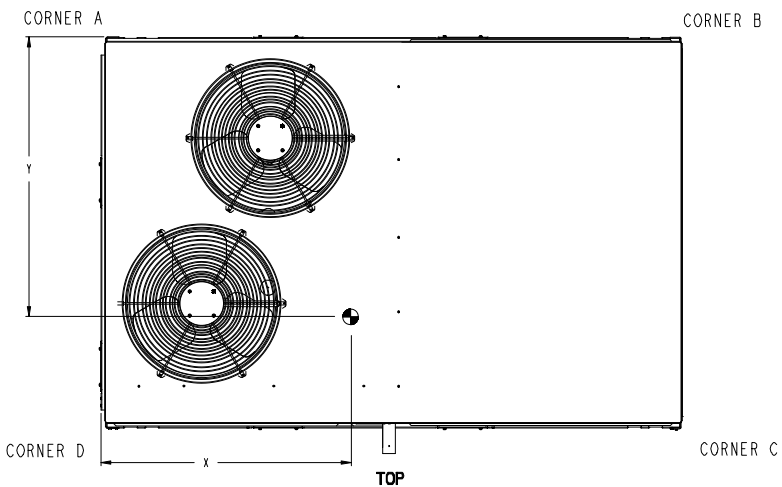
Project: BCF - 446-Lakewood, WA-R1
 Prepared By:

06/04/2025
 09:26AM

UNIT	OUTDOOR COIL TYPE	STD. UNIT WEIGHT ***		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.					
		LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z			
48GE-M07	RTPF	775	352	187	85	159	72	198	90	232	105	40 1/2	[1029]	33	[838]	19 7/8	[505]
48GE-M08	RTPF	893	405	203	92	169	76	237	107	285	129	40	[1016]	34 3/4	[883]	18 5/8	[473]
48GE-M09	RTPF	893	405	203	92	169	76	237	107	285	129	40	[1016]	34 3/4	[883]	18 5/8	[473]

RTPF - ROUND TUBE, PLATE FIN (COPPER/ALUM)

*** STANDARD UNIT WEIGHT IS WITH LOW GAS HEAT AND WITHOUT PACKAGING. FOR OTHER OPTIONS AND ACCESSORIES, REFER TO THE PRODUCT DATA CATALOG.



NOTE:
 1. FOR ALL MINIMUM CLEARANCES LOCAL CODES OR JURISDICTIONS MAY PREVAIL.

SURFACE	CLEARANCE		OPERATING CLEARANCE
	SERVICE WITH CONDUCTIVE BARRIER	SERVICE WITH NONCONDUCTIVE BARRIER	
FRONT	48 [1219mm]	36 [914mm]	18 [457mm]
LEFT	48 [1219mm]	42 [1067mm]	18 [457mm]
BACK W/O ECON	48 [1219mm]	42 [1067mm]	18 [457mm]
BACK W/ECON	36 [914mm]	36 [914mm]	18 [457mm]
RIGHT	36 [914mm]	36 [914mm]	18 [457mm]
TOP	72 [1829mm]	72 [1829mm]	72 [1829mm]

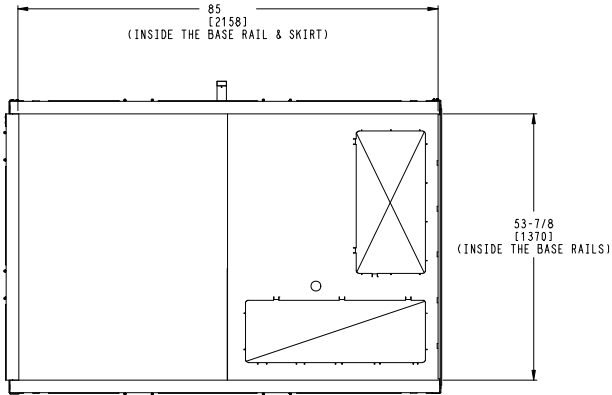
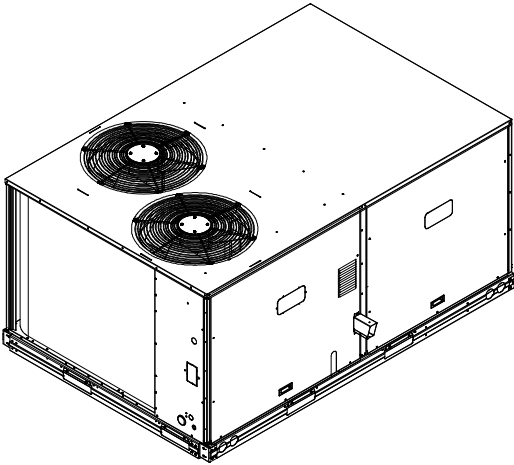
ITC CLASSIFICATION U.S. ECCN: NSR	SHEET 2 OF 3	DATE 5/20/24	SUPERCEDES -	48GE 07-09 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	48TM009899	REV -
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Certified Drawing for RTU 2

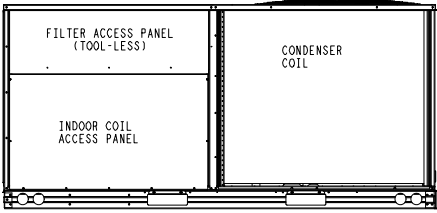
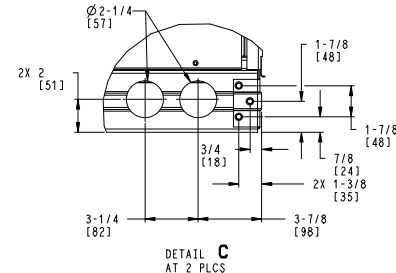
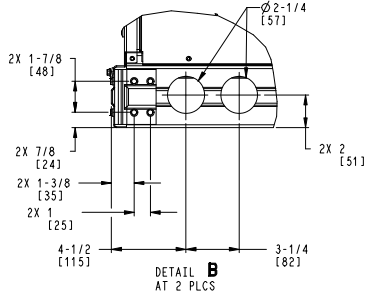
Project: BCF - 446-Lakewood, WA-R1
 Prepared By:

06/04/2025
 09:26AM

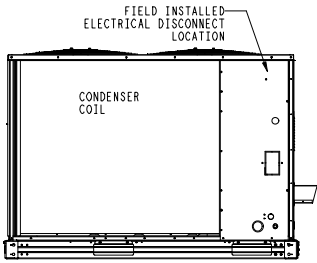
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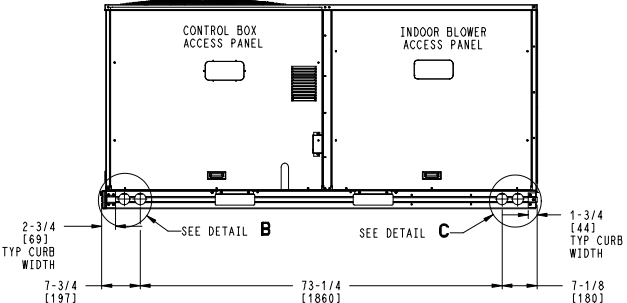
INSIDE BASERAIL DIMENSIONS
BOTTOM



BACK



LEFT



FRONT

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES	48GE 07-09 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	48TM009899	REV
U.S. ECCN: NSR	3 OF 3	5/20/24	-			-

Performance Summary For RTU 2

Project: BCF - 446-Lakewood, WA-R1
 Prepared By:

06/04/2025
 09:26AM

Part Number:48GEFM09J3C6-3W5F0

Refrigerant:..... **R-454B**
 ARI EER:..... **12.20**
 IEER:..... **17.3**

Base Unit Dimensions

Unit Length:..... **88.1** in
 Unit Width:..... **59.5** in
 Unit Height:..... **49.4** in

Operating Weight

Base Unit Weight:..... **893** lb
 High Gas Heat:..... **86** lb
 Condensate Overflow Switch:..... **5** lb
 High Static - EcoBlue Vane Axial:..... **30** lb
 SystemVu Controls:..... **2** lb
 ULL Enthalpy Economizer with Barometric Relief:..... **55** lb
 Hinged Panels + PCO:..... **40** lb
 NFDC + TTB:..... **5** lb

Accessories

Power Exhaust System:..... **75** lb

Total Operating Weight:..... **1191** lb

Unit

Unit Voltage-Phase-Hertz:..... **460-3-60**
 Air Discharge:..... **Vertical**
 Fan Drive Type:..... **Vane Axial**
 Actual Airflow:..... **4000** CFM
 Site Altitude:..... **0** ft

Cooling Performance

Condenser Entering Air DB:..... **95.0** F
 Evaporator Entering Air DB:..... **80.0** F
 Evaporator Entering Air WB:..... **67.0** F
 Entering Air Enthalpy:..... **31.44** BTU/lb
 Evaporator Leaving Air DB:..... **57.3** F
 Evaporator Leaving Air WB:..... **57.3** F
 Evaporator Leaving Air Enthalpy:..... **24.65** BTU/lb
 Gross Cooling Capacity:..... **118.62** MBH
 Gross Sensible Capacity:..... **97.87** MBH
 Compressor Power Input:..... **7.38** kW
 Coil Bypass Factor:..... **0.010**

Heating Performance

Heating Airflow:..... **4000** CFM
 Entering Air Temp:..... **70.0** F
 Leaving Air Temp:..... **111.9** F
 Gas Heating Input Capacity:..... **180.0 / 224.0** MBH
 Gas Heating Output Capacity:..... **146.0 / 181.0** MBH
 Temperature Rise:..... **41.9** F
 Thermal Efficiency (%):..... **81.0**

Supply Fan

External Static Pressure:..... **1.00** in wg
 Options / Accessories Static Pressure
 Economizer:..... **0.20** in wg
 Power Exhaust:..... **(Fan Data Includes Drop)**
 Application External Static (ESP + Unit Opts/Acc.):..... **1.20** in wg
 Fan RPM:..... **1975**

Performance Summary For RTU 2

Project: BCF - 446-Lakewood, WA-R1
 Prepared By:

06/04/2025
 09:26AM

Fan Power:.....**2.74** BHP
 NOTE:.....**Selected IFM RPM Range: 1108 - 2200**

Selection includes construction throwaway filter into the base fan curve. This filter is not MERV Rated.

Power Exhaust

Return Duct Static:.....**0.40** in wg
 Max. Air To Exhaust:.....**2850** CFM

Electrical Data

Voltage Range:.....**414 - 506**
 Compressor #1 RLA:.....**8.3**
 Compressor #1 LRA:.....**58**
 Compressor #2 RLA:.....**5.8**
 Compressor #2 LRA:.....**50**
 Indoor Fan Motor Type:.....**HIGH**
 Indoor Fan Motor FLA (Total):.....**3.5**
 Combustion Fan Motor FLA (ea):.....**0.25**
 Power Supply MCA:.....**26**
 Power Supply MOCP (Fuse or HACR):.....**30**
 Disconnect Size FLA:.....**27**
 Disconnect Size LRA:.....**123**
 Electrical Convenience Outlet FLA (based on unit line voltage):.....**2.2**
 Power Exhaust [Kit Qty / FLA(ea kit)]:.....**1 / 1.8**
 Outdoor Fan [Qty / FLA (ea)]:.....**2 / 0.8**
 NOTE: Convenience outlet must be field connected to the line/load side of the unit disconnect per local code.

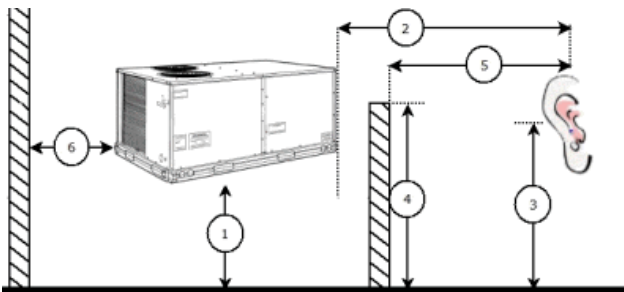
Control Panel SCCR: 5kA RMS at Rated Symmetrical Voltage

Acoustics

Sound Power Levels, db re 10E-12 Watts

	Discharge	Inlet	Outdoor
63 Hz	90.1	85.1	88.6
125 Hz	86.6	81.3	85.0
250 Hz	82.4	74.4	81.6
500 Hz	78.8	71.2	79.5
1000 Hz	80.4	72.0	77.4
2000 Hz	77.4	66.5	74.1
4000 Hz	73.5	58.2	71.0
8000 Hz	64.1	50.7	66.3
A-Weighted	84.6	75.7	82.0

Advanced Acoustics



Advanced Acoustics Parameters

1. Unit height above ground:.....**30.0** ft

Performance Summary For RTU 2

Project: BCF - 446-Lakewood, WA-R1
 Prepared By:

06/04/2025
 09:26AM

- 2. Horizontal distance from unit to receiver:.....**50.0** ft
- 3. Receiver height above ground:.....**5.7** ft
- 4. Height of obstruction:.....**0.0** ft
- 5. Horizontal distance from obstruction to receiver:.....**0.0** ft
- 6. Horizontal distance from unit to obstruction:.....**0.0** ft

Detailed Acoustics Information

Octave Band Center Freq. Hz	63	125	250	500	1k	2k	4k	8k	Overall
A	88.6	85.0	81.6	79.5	77.4	74.1	71.0	66.3	91.4 Lw
B	62.4	68.9	73.0	76.3	77.4	75.3	72.0	65.2	82.6 LwA
C	56.2	52.6	49.2	47.1	45.0	41.7	38.6	33.9	59.0 Lp
D	30.0	36.5	40.6	43.9	45.0	42.9	39.6	32.8	50.2 LpA

Legend

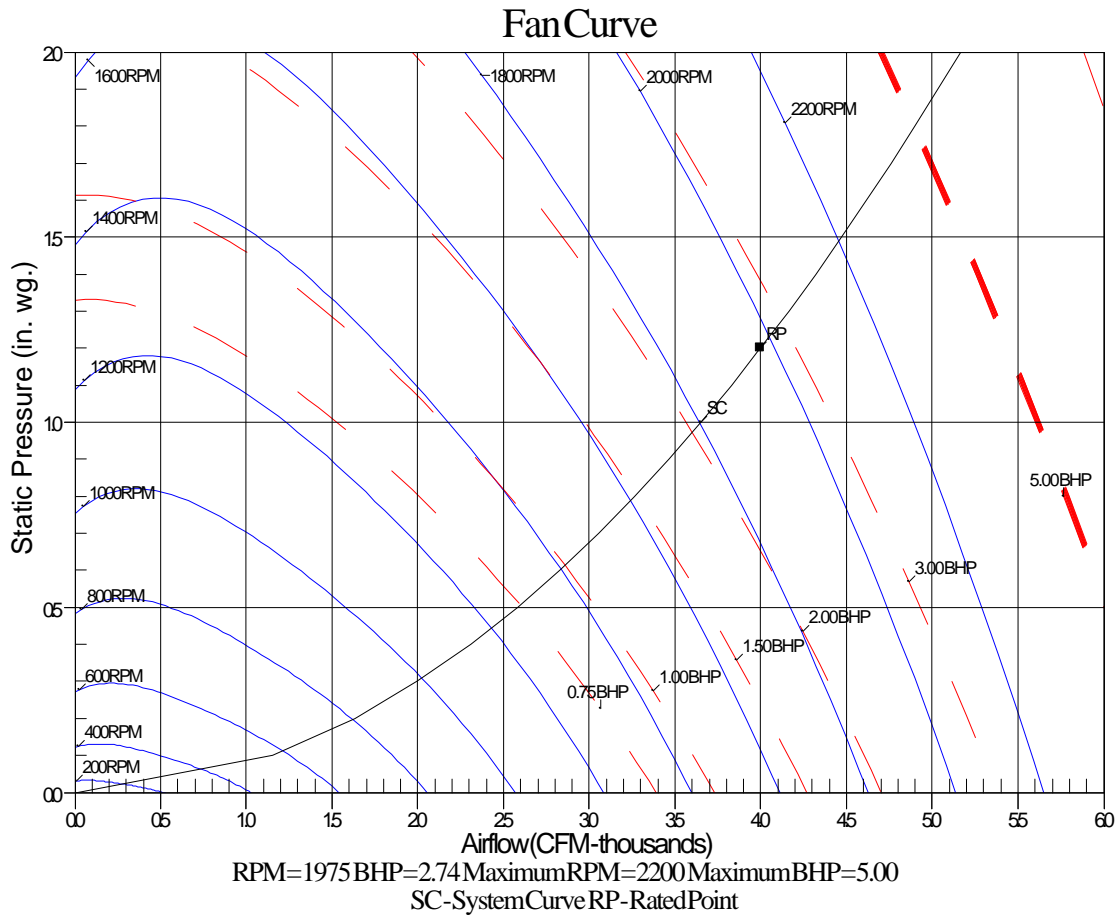
- A Sound Power Levels at Unit's Acoustic Center, Lw
- B A-Weighted Sound Power Levels at Unit's Acoustic Center, LwA
- C Sound Pressure Levels at Specific Distance from Unit, Lp
- D A-Weighted Sound Pressure Levels at Specific Distance from Unit, LpA

Calculation methods used in this program are patterned after the ASHRAE Guide; other ASHRAE Publications and the AHRI Acoustical Standards. While a very significant effort has been made to insure the technical accuracy of this program, it is assumed that the user is knowledgeable in the art of system sound estimation and is aware of the tolerances involved in real world acoustical estimation. This program makes certain assumptions as to the dominant sound sources and sound paths which may not always be appropriate to the real system being estimated. Because of this, no assurances can be offered that this software will always generate an accurate sound prediction from user supplied input data. If in doubt about the estimation of expected sound levels in a space, an Acoustical Engineer or a person with sound prediction expertise should be consulted.

Performance Summary For RTU 2

Project: BCF - 446-Lakewood, WA-R1
Prepared By:

06/04/2025
09:26AM



RTU 10

Project: BCF - 446-Lakewood, WA-R1
Prepared By:

06/04/2025
09:26AM

RTU 10

**Tag Cover Sheet
Unit Report
Certified Drawing
Performance Report**

Unit Report For RTU 10

Project: BCF - 446-Lakewood, WA-R1
 Prepared By:

06/04/2025
 09:26AM

Unit Parameters

Unit Model:.....**48GEFM17J2C6-3X5C0**
 Unit Size:.....**17 (15.0 Tons)**
 Volts-Phase-Hertz:.....**460-3-60**
 Heating Type:.....**Gas**
 Refrigerant:.....**R-454B**
 Heat Control:.....**High Gas Heat**
 Duct Cfg:.....**Vertical Supply / Vertical Return**
 DX Options:.....**Single Circuit, Two Stage Cooling**

Dimensions (ft. in.) & Weight (lb.) ***

Unit Length:.....**10' 7.875"**
 Unit Width:.....**7' 2.375"**
 Unit Height:.....**4' 1.375"**
Total Operating Weight:.....2390 lb

*** Weights and Dimensions are approximate. Weight does not include unit packaging. Approximate dimensions are provided primarily for shipping purposes. For exact dimensions and weights, refer to appropriate product data catalog.

Lines and Filters

Gas Line Size:.....**3/4**
 Condensate Drain Line Size:.....**3/4**
 Return Air Filter Type:.....**Throwaway**
 Return Air Filter Quantity:.....**6**
 Return Air Filter Size:.....**20 x 25 x 2**

Selection includes construction throwaway filter into the base fan curve.

Unit Configuration

High Gas Heat
 Condensate Overflow Switch (COFS)
 Standard/Medium Static - EcoBlue Vane Axial Fan
 E-coat Al/CU - Al/Cu
 SystemVu Controller
 ULL Enthalpy Econ w/ Power Exhaust
 Hinged Access Panels + PCO
 Non-Fused Disconnect (NFDC)
 Standard Packaging

Warranty Information

1-Year parts(std.)
 5-Year compressor parts(std.)
 10-Year heat exchanger - Aluminized(std.)
 3-Year SystemVu Controller
 START-UP, EACH ADDITIONAL UNIT

NOTE: Please see Warranty Catalog 500-089 for explanation of policies and ordering methods.

Ordering Information

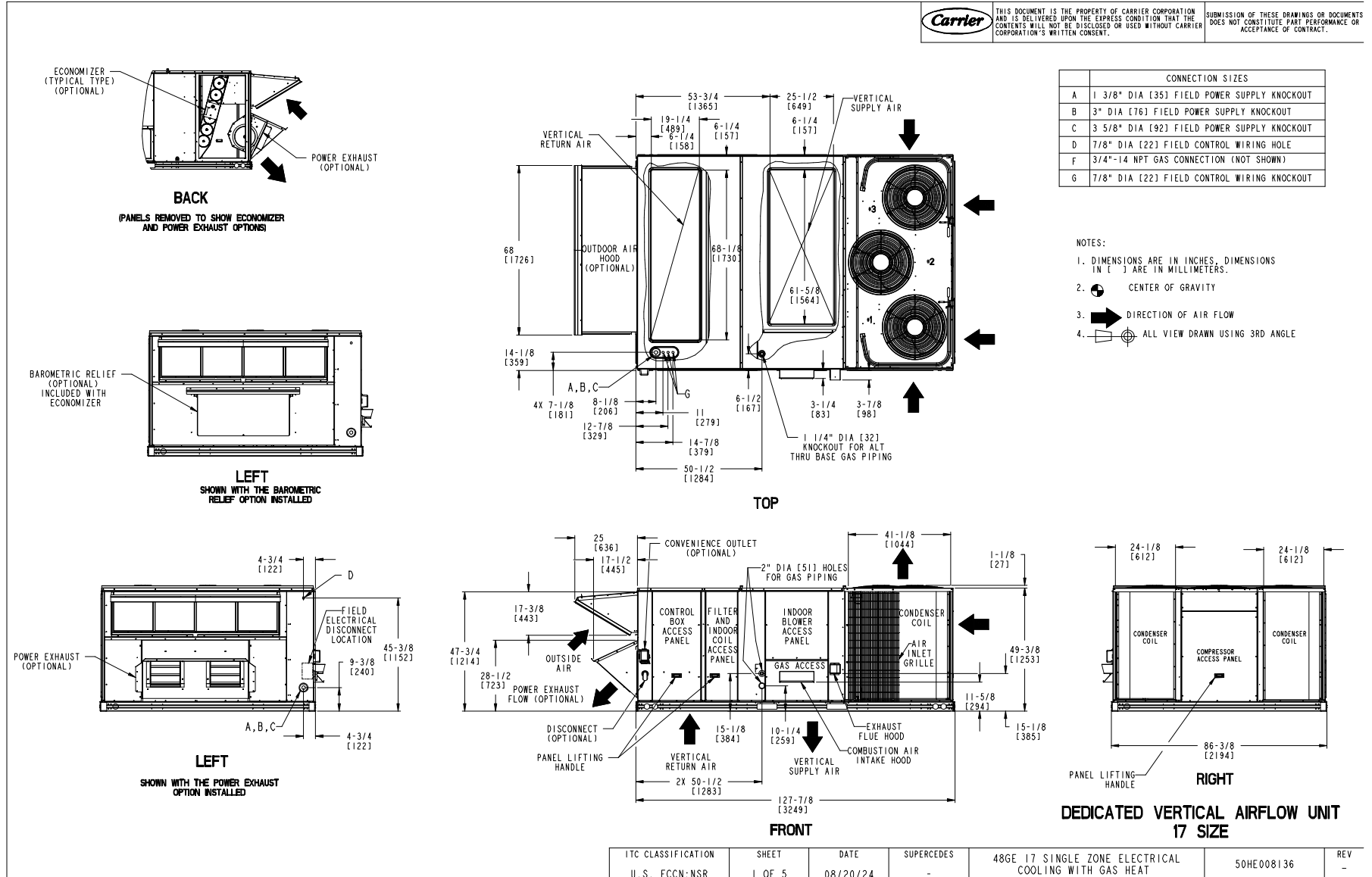
Part Number	Description	Quantity
48GEFM17J2C6-3X5C0	Rooftop Unit	1
Field Installed Accessories		
ZS2-H-CAR	ZS Standard	1
CRHUMDSN001B00	Outdoor or Return Air RH Sensor	1

Certified Drawing for RTU 10

Project: BCF - 446-Lakewood, WA-R1
 Prepared By:

06/04/2025
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ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES	48GE 17 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE008136	REV
U.S. ECCN:NSR	1 OF 5	08/20/24	-			-

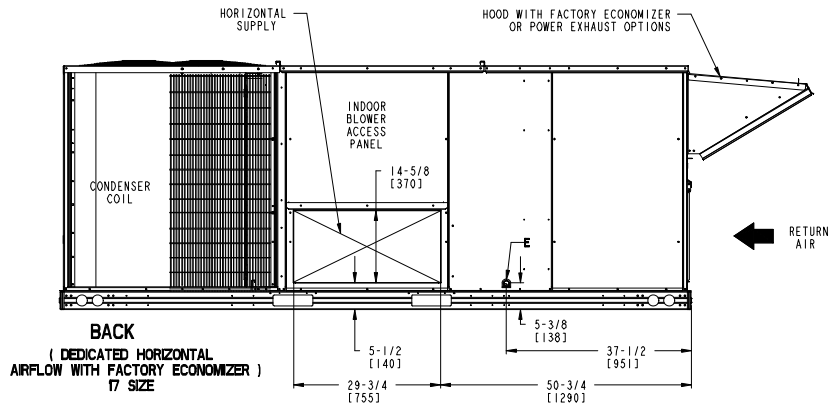
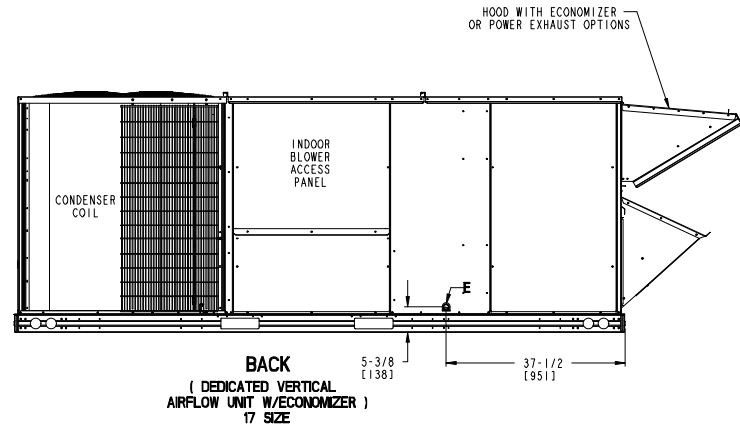
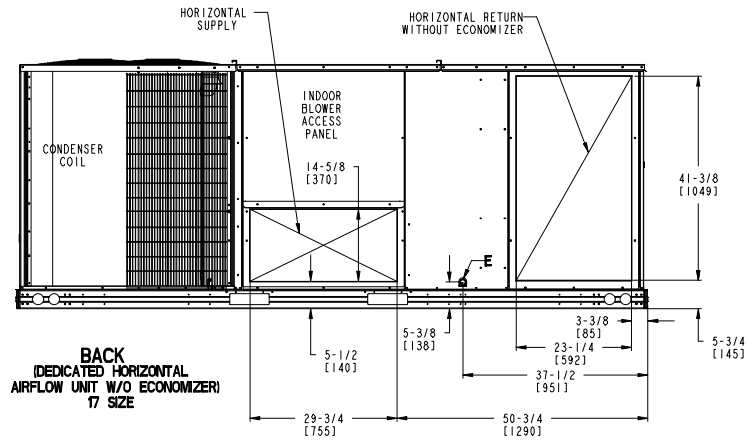
Certified Drawing for RTU 10

Project: BCF - 446-Lakewood, WA-R1
 Prepared By:

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CONNECTION SIZES	
E	3/4"-14 NPT CONDENSATE DRAIN

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ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES	48GE 17 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE008136	REV
U.S. ECCN:NSR	3 OF 5	08/20/2024	-			-

Performance Summary For RTU 10

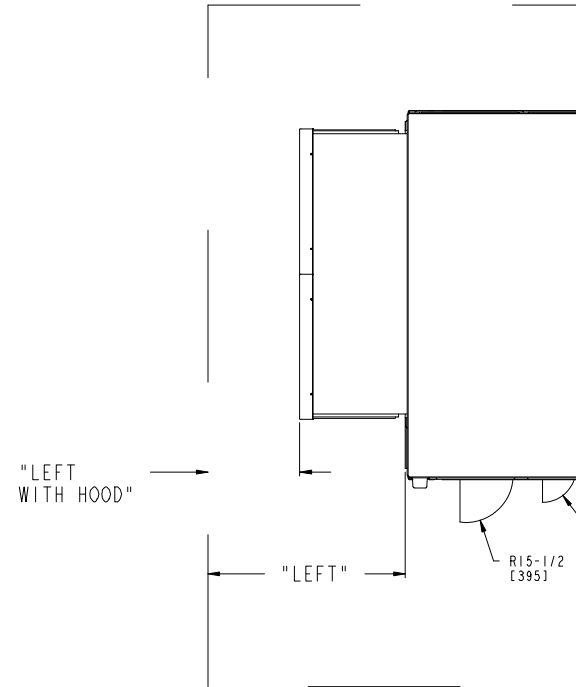
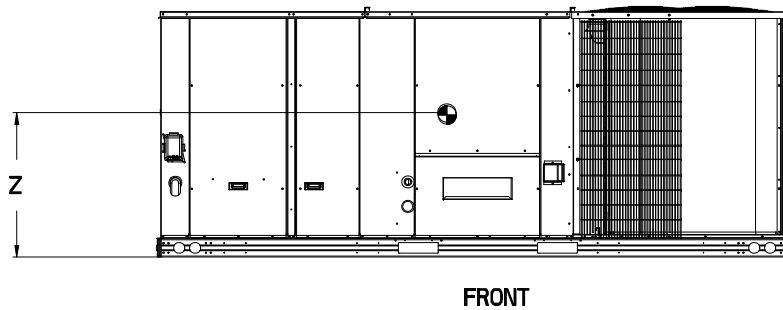
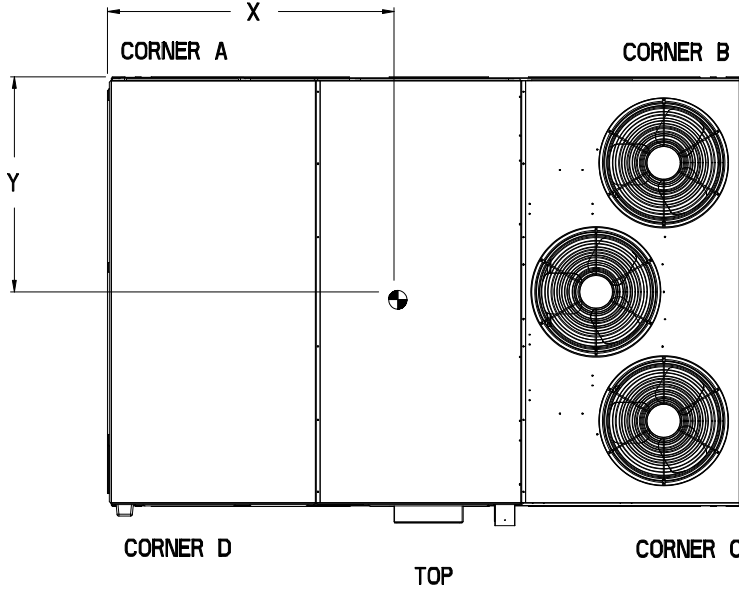
Project: BCF - 446-Lakewood, WA-R1
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06/04/2025
 09:26AM



UNIT	STD UNIT WEIGHT *		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.		
	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z
48GE17	1771	804	377	171	471	214	512	232	410	186	71 [1803]	45 [1143]	16 1/2 [419]

* STANDARD UNIT WEIGHT IS WITH LOW GAS HEAT AND WITHOUT PACKAGING.
 FOR OTHER OPTIONS AND ACCESSORIES, REFER TO THE PRODUCT DATA CATALOG.



- NOTES:
1. CLEARANCE ABOVE THE UNIT TO BE 72"
 2. FOR ALL MINIMUM CLEARANCES LOCAL CODES OR

SURFACE
FRONT
LEFT
BACK
LEFT WITH HOOD
RIGHT
TOP

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES
U.S. ECCN:NSR	4 OF 5	08/20/24	-

Part Number:48GEFM17J2C6-3X5C0

Refrigerant:..... **R-454B**
 ARI EER:..... **11.80**
 IEER:..... **16.5**

Base Unit Dimensions

Unit Length:..... **127.9** in
 Unit Width:..... **86.4** in
 Unit Height:..... **49.4** in

Performance Summary For RTU 10

Project: BCF - 446-Lakewood, WA-R1
 Prepared By:

06/04/2025
 09:26AM

Operating Weight

Base Unit Weight:	1771	lb
High Gas Heat:	127	lb
Condensate Overflow Switch (COFS):	5	lb
SystemVu Controller:	2	lb
ULL Enthalpy Econ w/ Power Exhaust:	443	lb
Hinged Access Panels + PCO:	37	lb
Non-Fused Disconnect (NFDC):	5	lb
Total Operating Weight:	2390	lb

Unit

Unit Voltage-Phase-Hertz:	460-3-60	
Air Discharge:	Vertical	
Fan Drive Type:	Vane Axial	
Actual Airflow:	6000	CFM
Site Altitude:	0	ft

Cooling Performance

Condenser Entering Air DB:	95.0	F
Evaporator Entering Air DB:	80.0	F
Evaporator Entering Air WB:	67.0	F
Entering Air Enthalpy:	31.44	BTU/lb
Evaporator Leaving Air DB:	58.9	F
Evaporator Leaving Air WB:	57.7	F
Evaporator Leaving Air Enthalpy:	24.85	BTU/lb
Gross Cooling Capacity:	177.85	MBH
Gross Sensible Capacity:	136.56	MBH
Compressor Power Input:	12.37	kW
Coil Bypass Factor:	0.035	

Heating Performance

Heating Airflow:	6000	CFM
Entering Air Temp:	70.0	F
Leaving Air Temp:	120.0	F
Gas Heating Input Capacity:	320.0 / 400.0	MBH
Gas Heating Output Capacity:	260.0 / 324.0	MBH
Temperature Rise:	50.0	F
Thermal Efficiency (%):	81.0	

Supply Fan

External Static Pressure:	1.00	in wg
Options / Accessories Static Pressure		
Economizer:	0.06	in wg
Power Exhaust:	(Fan Data Includes Drop)	
Application External Static (ESP + Unit Opts/Acc.):	1.06	in wg
Fan RPM:	1616	
Fan Power:	3.16	BHP
NOTE:	Selected IFM RPM Range: 977 - 2000	

Selection includes construction throwaway filter into the base fan curve. This filter is not MERV Rated.

Power Exhaust

Return Duct Static:	0.40	in wg
Max. Air to Exhaust:	4590	CFM

Electrical Data

Voltage Range:	414 - 506
Compressor #1 RLA:	13.9
Compressor #1 LRA:	100
Compressor #2 RLA:	10.1
Compressor #2 LRA:	75
Indoor Fan Motor Type:	MED

Performance Summary For RTU 10

Project: BCF - 446-Lakewood, WA-R1
 Prepared By:

06/04/2025
 09:26AM

Indoor Fan Motor FLA (Total):.....	3
Combustion Fan Motor FLA (ea):.....	0.3
Power Supply MCA:.....	45
Power Supply MOCP (Fuse or HACR):.....	50
Disconnect Size FLA:.....	47
Disconnect Size LRA:.....	203
Electrical Convenience Outlet FLA (based on unit line voltage):.....	2.2
Power Exhaust [Motor Qty / FLA(ea motor)]:.....	2 / 3.1
Outdoor Fan [Qty / FLA (ea)]:.....	3 / 0.9

NOTE: Convenience outlet must be field connected to the line/load side of the unit disconnect per local code.

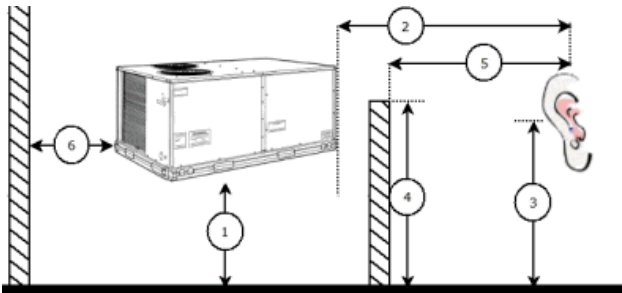
Control Panel SCCR: 5kA RMS at Rated Symmetrical Voltage

Acoustics

Sound Power Levels, db re 10E-12 Watts

	Discharge	Inlet	Outdoor
63 Hz	90.6	77.6	92.2
125 Hz	89.0	73.1	83.9
250 Hz	85.8	68.0	80.4
500 Hz	78.8	64.6	81.8
1000 Hz	77.7	65.1	78.7
2000 Hz	75.2	58.4	76.5
4000 Hz	71.2	48.8	72.2
8000 Hz	61.2	40.2	65.4
A-Weighted	83.6	68.5	84.1

Advanced Acoustics



Advanced Acoustics Parameters

- 1. Unit height above ground:..... **30.0** ft
- 2. Horizontal distance from unit to receiver:..... **50.0** ft
- 3. Receiver height above ground:..... **5.7** ft
- 4. Height of obstruction:..... **0.0** ft
- 5. Horizontal distance from obstruction to receiver:..... **0.0** ft
- 6. Horizontal distance from unit to obstruction:..... **0.0** ft

Detailed Acoustics Information

Octave Band Center Freq. Hz	63	125	250	500	1k	2k	4k	8k	Overall
A	92.2	83.9	80.4	81.8	78.7	76.5	72.2	65.4	93.6 Lw
B	66.0	67.8	71.8	78.6	78.7	77.7	73.2	64.3	84.1 LwA
C	59.8	51.5	48.0	49.4	46.3	44.1	39.8	33.0	61.2 Lp
D	33.6	35.4	39.4	46.2	46.3	45.3	40.8	31.9	51.7 LpA

Performance Summary For RTU 10

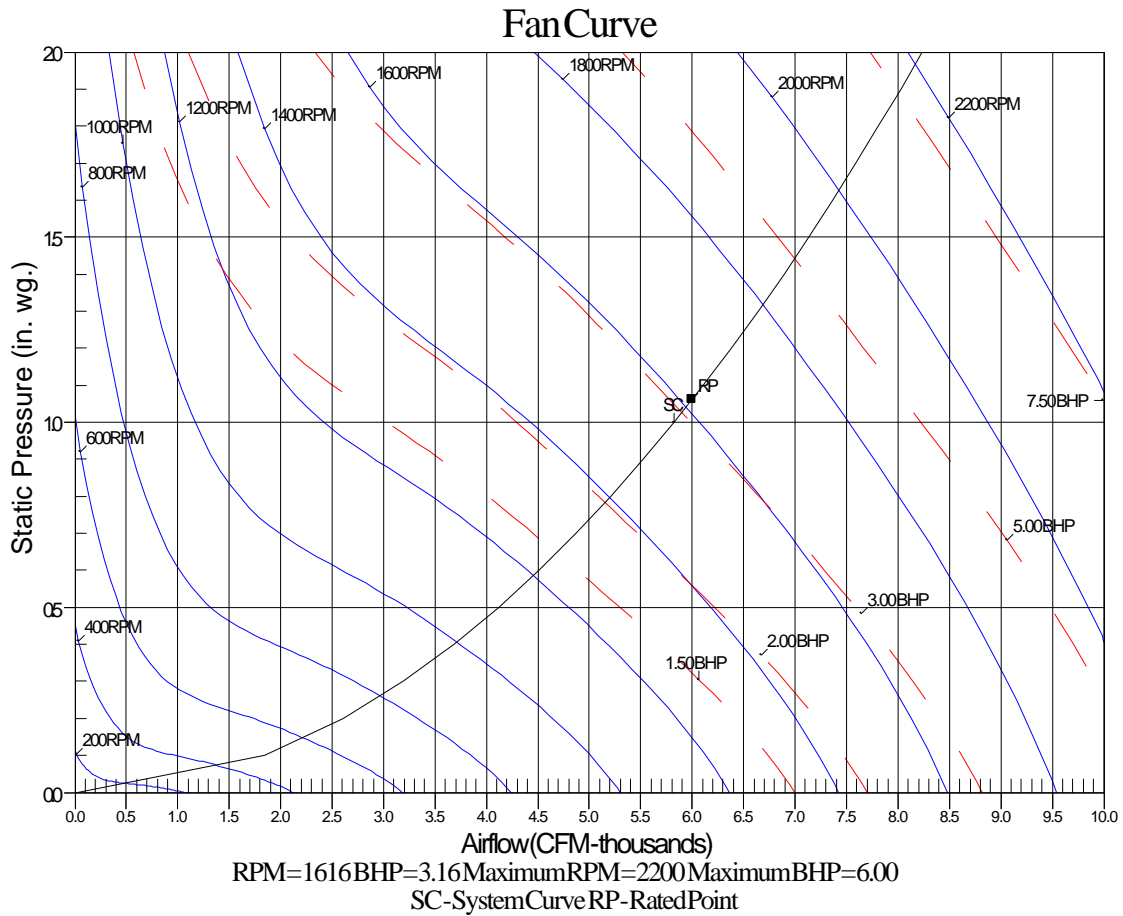
Project: BCF - 446-Lakewood, WA-R1
 Prepared By:

06/04/2025
 09:26AM

Legend

- A Sound Power Levels at Unit's Acoustic Center, Lw
- B A-Weighted Sound Power Levels at Unit's Acoustic Center, LwA
- C Sound Pressure Levels at Specific Distance from Unit, Lp
- D A-Weighted Sound Pressure Levels at Specific Distance from Unit, LpA

Calculation methods used in this program are patterned after the ASHRAE Guide; other ASHRAE Publications and the AHRI Acoustical Standards. While a very significant effort has been made to insure the technical accuracy of this program, it is assumed that the user is knowledgeable in the art of system sound estimation and is aware of the tolerances involved in real world acoustical estimation. This program makes certain assumptions as to the dominant sound sources and sound paths which may not always be appropriate to the real system being estimated. Because of this, no assurances can be offered that this software will always generate an accurate sound prediction from user supplied input data. If in doubt about the estimation of expected sound levels in a space, an Acoustical Engineer or a person with sound prediction expertise should be consulted.



RTU 11

**Tag Cover Sheet
Unit Report
Certified Drawing
Performance Report**

Unit Report For RTU 11

Project: BCF - 446-Lakewood, WA-R1
 Prepared By:

06/04/2025
 09:26AM

Unit Parameters

Unit Model:.....**48GEFM06J2C6-3W5F0**
 Unit Size:.....**06 (5 Tons)**
 Volts-Phase-Hertz:.....**460-3-60**
 Heating Type:.....**Gas**
 Refrigerant:.....**R-454B**
 Heat Control:.....**High Gas Heat**
 Duct Cfg:.....**Vertical Supply / Vertical Return**
 DX Options:.....**Two Stage Cooling, Single Circuit**

Dimensions (ft. in.) & Weight (lb.) ***

Unit Length:.....**6' 2.375"**
 Unit Width:.....**3' 10.625"**
 Unit Height:.....**3' 5.375"**
Total Operating Weight:.....746 lb

*** Weights and Dimensions are approximate. Weight does not include unit packaging. Approximate dimensions are provided primarily for shipping purposes. For exact dimensions and weights, refer to appropriate product data catalog.

Lines and Filters

Gas Line Size:.....**1/2**
 Condensate Drain Line Size:.....**3/4**
 Return Air Filter Type:.....**Throwaway**
 Return Air Filter Quantity:.....**4**
 Return Air Filter Size:.....**16 x 16 x 2**

Selection includes construction throwaway filter into the base fan curve.

Unit Configuration

High Gas Heat
 Condensate Overflow Switch
 Standard/Medium Static - EcoBlue Vane Axial Fan
 E-coat Al/Cu - Al/Cu
 SystemVu Controller
 ULL Enthalpy Economizer with Barometric Relief
 Hinged Panels, Powered Convenience Outlet
 Non-Fused Disconnect and Thru-The-Base Connections
 Standard Packaging

Warranty Information

1-Year parts(std.)
 5-Year compressor parts(std.)
 10-Year heat exchanger - Aluminized(std.)
 3-Year SystemVu
 START-UP, FIRST UNIT

NOTE: Please see Warranty Catalog 500-089 for explanation of policies and ordering methods.

Ordering Information

Part Number	Description	Quantity
48GEFM06J2C6-3W5F0	Rooftop Unit	1
Field Installed Accessories		
ZS2-H-CAR	ZS Standard	1
CRHUMDSN001B00	Outdoor or Return Air RH Sensor	1

Certified Drawing for RTU 11

Project: BCF - 446-Lakewood, WA-R1
Prepared By:

06/04/2025
09:26AM

NOTES:

1. DIMENSIONS ARE IN INCHES, DIMENSIONS IN [] ARE IN MILLIMETERS.
2. CENTER OF GRAVITY
3. DIRECTION OF AIR FLOW
4. ALL VIEW DRAWN USING 3RD ANGLE

UNIT	J	K
48GE**04	33 3/8 [847]	14 7/8 [377]
48GE**05	33 3/8 [847]	14 7/8 [377]
48GE**06	41 3/8 [1051]	18 5/8 [472]



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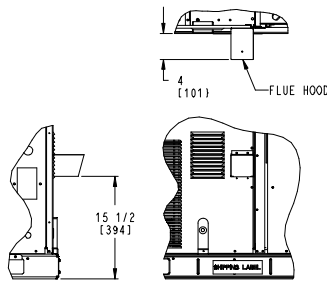
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CONNECTION SIZES	
A	1 3/8" [35] DIA FIELD POWER SUPPLY HOLE
B	2" [50] DIA POWER SUPPLY KNOCKOUT
C	1 3/4" [51] DIA GAUGE ACCESS PLUG
D	7/8" [22] DIA FIELD CONTROL WIRING HOLE
E	3/4"-14 NPT CONDENSATE DRAIN
F	1/2"-14 NPT GAS CONNECTION
G	2 1/2" [64] DIA POWER SUPPLY KNOCK-OUT

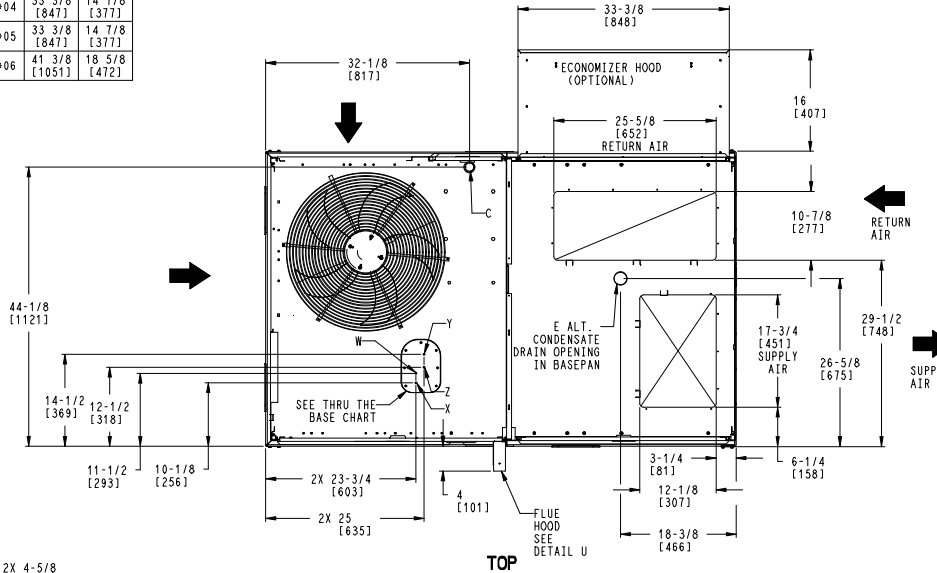
THRU-THE-BASE CHART THESE HOLES REQUIRED FOR USE CRBTMPW008A00, 009A00			
	THREADED CONDUIT SIZE	WIRE USE	REQ'D HOLE SIZES (MAX.)
W	1/2"	115V	7/8" [22.2]
X	1/2"	24V	7/8" [22.2]
Y	3/4"	POWER	1-1/8" [28.6]
Z*	(009A00) 1/2" FPT	GAS	1-1/8" [28.6]

FOR "THRU-THE-BASEPAN" FACTORY OPTION, FITTINGS FOR ONLY X, Y, & Z ARE PROVIDED

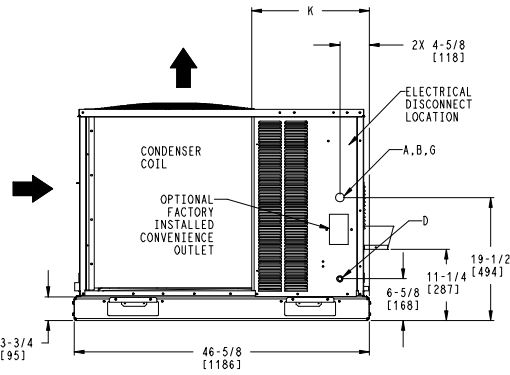
* (008A00) PROVIDES 3/4" FPT THRU CURB FLANGE & FITTING.



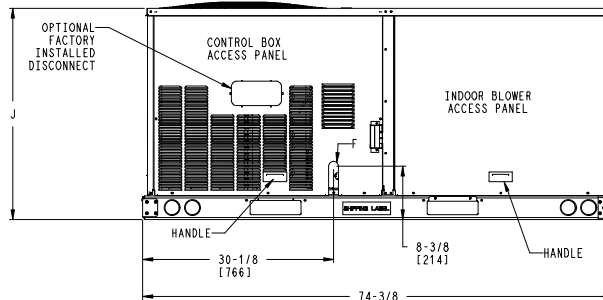
DETAIL U
FLUE HOOD OPENING FOR ULTRA LOW NOX UNITS ONLY
SCALE 1:8



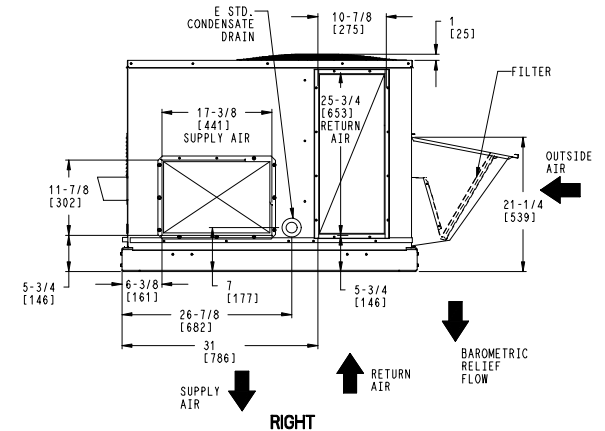
TOP



LEFT



FRONT



RIGHT

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES	48GE 04-06 SINGLE PACKAGE ELECTRICAL COOLING WITH GAS HEAT	48TC006641	REV
U.S. ECCN:NSR	1 OF 3	5/16/24	9/15/23			A

Certified Drawing for RTU 11

Project: BCF - 446-Lakewood, WA-R1
 Prepared By:

06/04/2025
 09:26AM

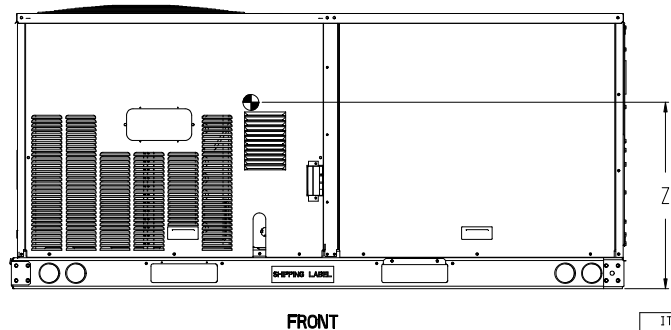
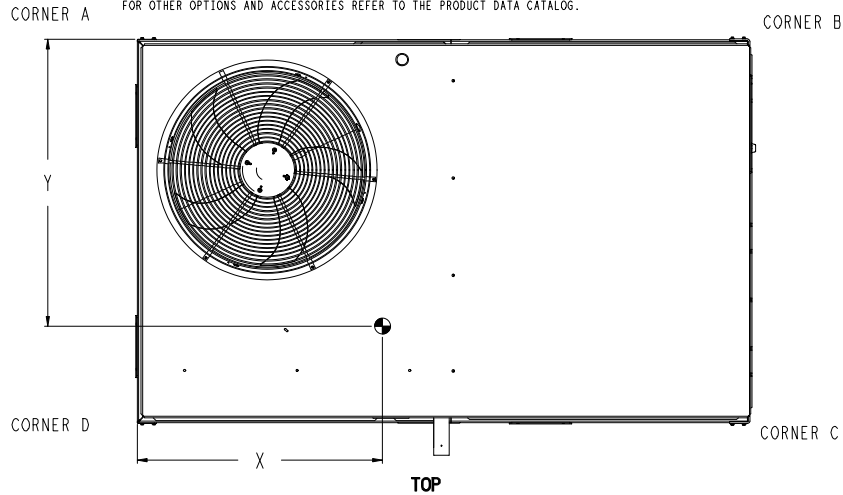
UNIT	STD. UNIT WEIGHT *		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.		HEIGHT
	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	
48GE**04	535	243	129	59	128	58	138	63	139	63	37	24 1/4 [616]	18 [457]
48GE**05	555	252	142	64	137	62	135	61	141	64	36 1/2 [927]	23 1/4 [591]	18 [457]
48GE**06	600	272	161	73	151	68	140	64	149	68	36	22 1/2 [572]	19 3/8 [492]

* - STANDARD UNIT WEIGHT IS WITH LOW GAS HEAT AND WITHOUT PACKAGING.
 FOR OTHER OPTIONS AND ACCESSORIES REFER TO THE PRODUCT DATA CATALOG.

THIS TABLE IS FOR "ULTRA LOW NOX" UNITS ONLY

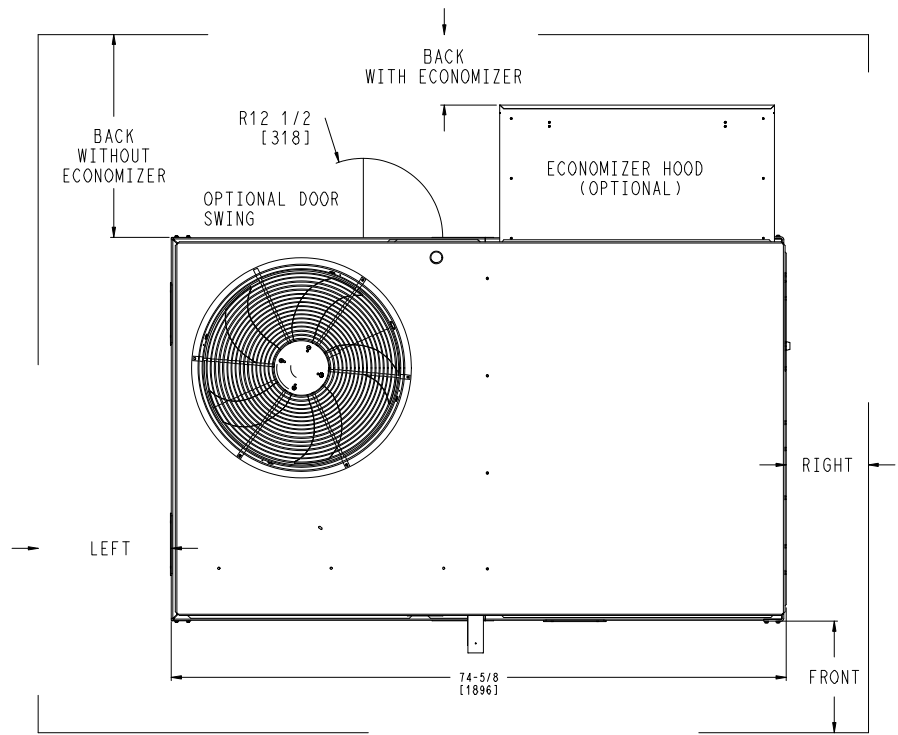
UNIT	STD. UNIT WEIGHT **		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.		HEIGHT
	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	
48GE*04	565	256	137	62	134	61	146	66	148	67	36 7/8 [937]	24 3/8 [619]	17 3/4 [451]
48GE*05	585	266	149	68	143	65	143	65	149	68	36 3/8 [924]	23 3/8 [594]	18 [457]
48GE*06	630	286	168	76	157	71	147	69	158	72	35 7/8 [911]	22 5/8 [575]	19 1/2 [489]

** - STANDARD UNIT WEIGHT IS WITHOUT PACKAGING.
 FOR OTHER OPTIONS AND ACCESSORIES REFER TO THE PRODUCT DATA CATALOG.



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NOTES:
 1. FOR ALL MINIMUM CLEARANCES LOCAL CODES OR JURISDICTIONS MAY PREVAIL.

SURFACE	CLEARANCE		OPERATING CLEARANCE
	SERVICE WITH CONDUCTIVE BARRIER	SERVICE WITH NONCONDUCTIVE BARRIER	
FRONT	48 [1219mm]	36 [914mm]	18 [457mm]
LEFT	48 [1219mm]	42 [1067mm]	18 [457mm]
BACK W/O HOOD	48 [1219mm]	42 [1067mm]	18 [457mm]
BACK W/HOOD	36 [914mm]	36 [914mm]	18 [457mm]
RIGHT	36 [914mm]	36 [914mm]	18 [457mm]
TOP	72 [1829mm]	72 [1829mm]	72 [1829mm]

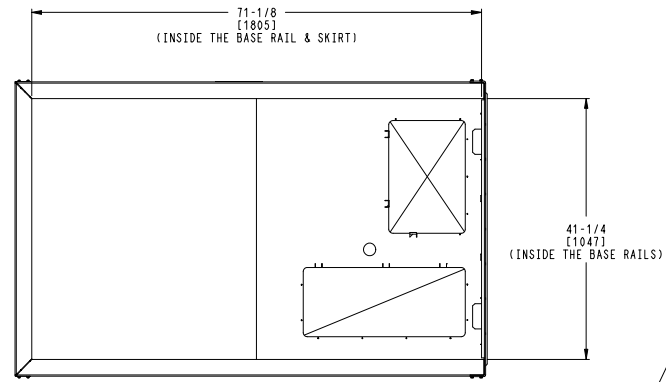
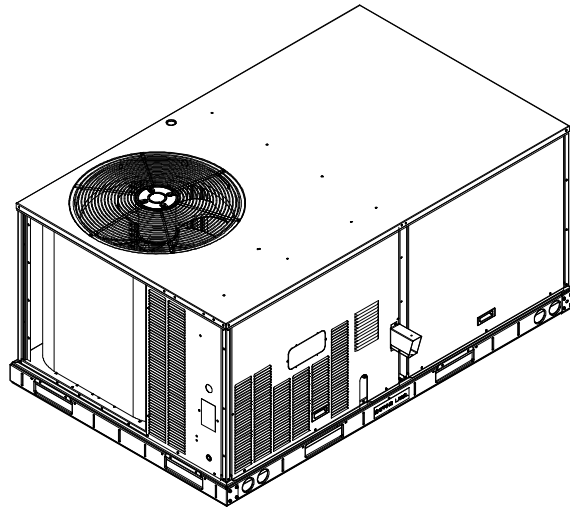
ITC CLASSIFICATION U.S. ECCN: NSR	SHEET 2 OF 3	DATE 5/16/24	SUPERCEDES 9/15/23	48GE 04-06 SINGLE PACKAGE ELECTRICAL COOLING WITH GAS HEAT	48TC006641	REV A
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Certified Drawing for RTU 11

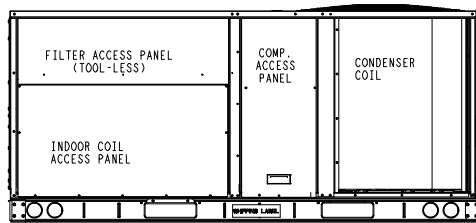
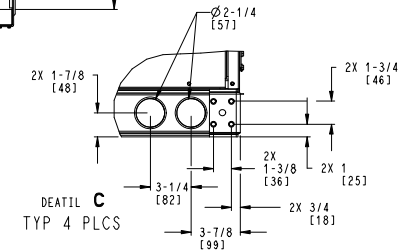
Project: BCF - 446-Lakewood, WA-R1
 Prepared By:

06/04/2025
 09:26AM

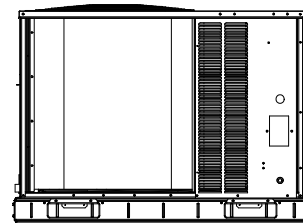
Carrier THIS DOCUMENT IS THE PROPERTY OF CARRIER CORPORATION AND IS DELIVERED UPON THE EXPRESS CONDITION THAT THE CONTENTS WILL NOT BE DISCLOSED OR USED WITHOUT CARRIER CORPORATION'S WRITTEN CONSENT. SUBMISSION OF THESE DRAWINGS OR DOCUMENTS DOES NOT CONSTITUTE PART PERFORMANCE OR ACCEPTANCE OF CONTRACT.



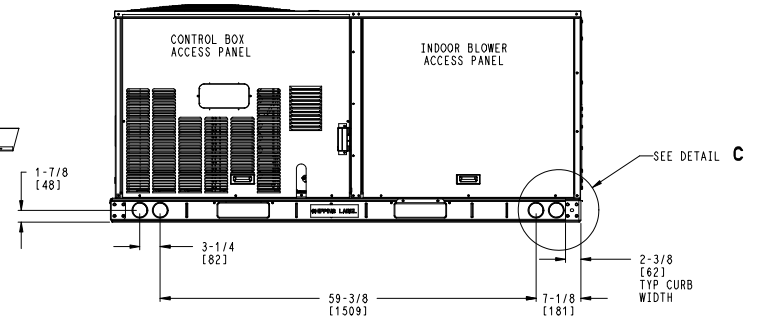
INSIDE BASERAIL DIMENSIONS
BOTTOM



BACK



LEFT



FRONT

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES	48GE 04-06 SINGLE PACKAGE ELECTRICAL COOLING WITH GAS HEAT	48TC006641	REV
U.S. ECCN: NSR	3 OF 3	5/16/24	9/15/23			A

Performance Summary For RTU 11

Project: BCF - 446-Lakewood, WA-R1
 Prepared By:

06/04/2025
 09:26AM

Part Number:48GEFM06J2C6-3W5F0

Refrigerant:..... **R-454B**
 ARI SEER:..... **17.20**
 ARI SEER2:..... **16.80**

Base Unit Dimensions

Unit Length:..... **74.4** in
 Unit Width:..... **46.6** in
 Unit Height:..... **41.4** in

Operating Weight

Base Unit Weight:..... **600** lb
 High Gas Heat:..... **63** lb
 Condensate Overflow Switch:..... **5** lb
 SystemVu Controller:..... **2** lb
 ULL Enthalpy Economizer with Barometric Relief:..... **35** lb
 Hinged Panels, Powered Convenience Outlet:..... **36** lb
 Non-Fused Disconnect and Thru-The-Base Connections:..... **5** lb

 Total Operating Weight:..... **746** lb

Unit

Unit Voltage-Phase-Hertz:..... **460-3-60**
 Air Discharge:..... **Vertical**
 Fan Drive Type:..... **Vane Axial**
 Actual Airflow:..... **1600** CFM
 Site Altitude:..... **0** ft

Cooling Performance

Condenser Entering Air DB:..... **95.0** F
 Evaporator Entering Air DB:..... **80.0** F
 Evaporator Entering Air WB:..... **67.0** F
 Entering Air Enthalpy:..... **31.44** BTU/lb
 Evaporator Leaving Air DB:..... **56.3** F
 Evaporator Leaving Air WB:..... **55.0** F
 Evaporator Leaving Air Enthalpy:..... **23.16** BTU/lb
 Gross Cooling Capacity:..... **59.58** MBH
 Gross Sensible Capacity:..... **41.03** MBH
 Compressor Power Input:..... **3.86** kW
 Coil Bypass Factor:..... **0.029**

Heating Performance

Heating Airflow:..... **1600** CFM
 Entering Air Temp:..... **70.0** F
 Leaving Air Temp:..... **139.4** F
 Gas Heating Input Capacity:..... **120.0 / 150.0** MBH
 Gas Heating Output Capacity:..... **96.0 / 120.0** MBH
 Temperature Rise:..... **69.4** F
 Thermal Efficiency (%):..... **80.0**

Supply Fan

External Static Pressure:..... **1.00** in wg
 Options / Accessories Static Pressure
 Economizer:..... **0.07** in wg
 Application External Static (ESP + Unit Opts/Acc.):..... **1.07** in wg
 Fan RPM:..... **2070**
 Fan Power:..... **0.96** BHP
 NOTE:..... **Selected IFM RPM Range: 1596 - 2530**

Selection includes construction throwaway filter into the base fan curve. This filter is not MERV Rated.

Performance Summary For RTU 11

Project: BCF - 446-Lakewood, WA-R1
 Prepared By:

06/04/2025
 09:26AM

Electrical Data

Voltage Range:	414 - 506
Compressor #1 RLA:	6.7
Compressor #1 LRA:	58
Indoor Fan Motor Type:	MED
Indoor Fan Motor FLA (Total):	2.1
Combustion Fan Motor FLA (ea):	0.25
Power Supply MCA:	15
Power Supply MOCP (Fuse or HACR):	20
Disconnect Size FLA:	14
Disconnect Size LRA:	65
Electrical Convenience Outlet FLA (based on unit line voltage):	2.2
Outdoor Fan [Qty / FLA (ea)]:	1 / 1.4

NOTE: Convenience outlet must be field connected to the line/load side of the unit disconnect per local code.

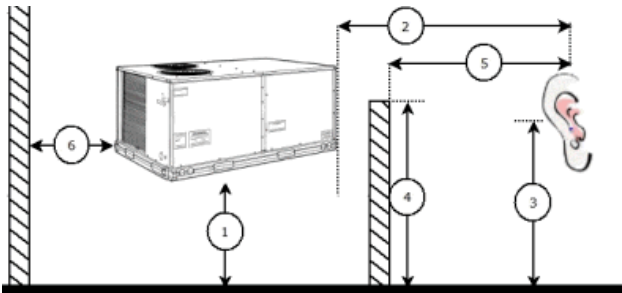
Control Panel SCCR: 5kA RMS at Rated Symmetrical Voltage

Acoustics

Sound Power Levels, db re 10E-12 Watts

	Discharge	Inlet	Outdoor
63 Hz	95.2	92.1	85.6
125 Hz	86.5	81.4	84.7
250 Hz	80.3	73.9	80.5
500 Hz	74.3	67.8	76.0
1000 Hz	71.4	69.3	72.4
2000 Hz	68.2	60.3	68.0
4000 Hz	64.8	54.4	62.8
8000 Hz	60.9	47.5	59.3
A-Weighted	78.7	73.8	79.0

Advanced Acoustics



Advanced Acoustics Parameters

1. Unit height above ground:	30.0 ft
2. Horizontal distance from unit to receiver:	50.0 ft
3. Receiver height above ground:	5.7 ft
4. Height of obstruction:	0.0 ft
5. Horizontal distance from obstruction to receiver:	0.0 ft
6. Horizontal distance from unit to obstruction:	0.0 ft

Detailed Acoustics Information

Performance Summary For RTU 11

Project: BCF - 446-Lakewood, WA-R1
 Prepared By:

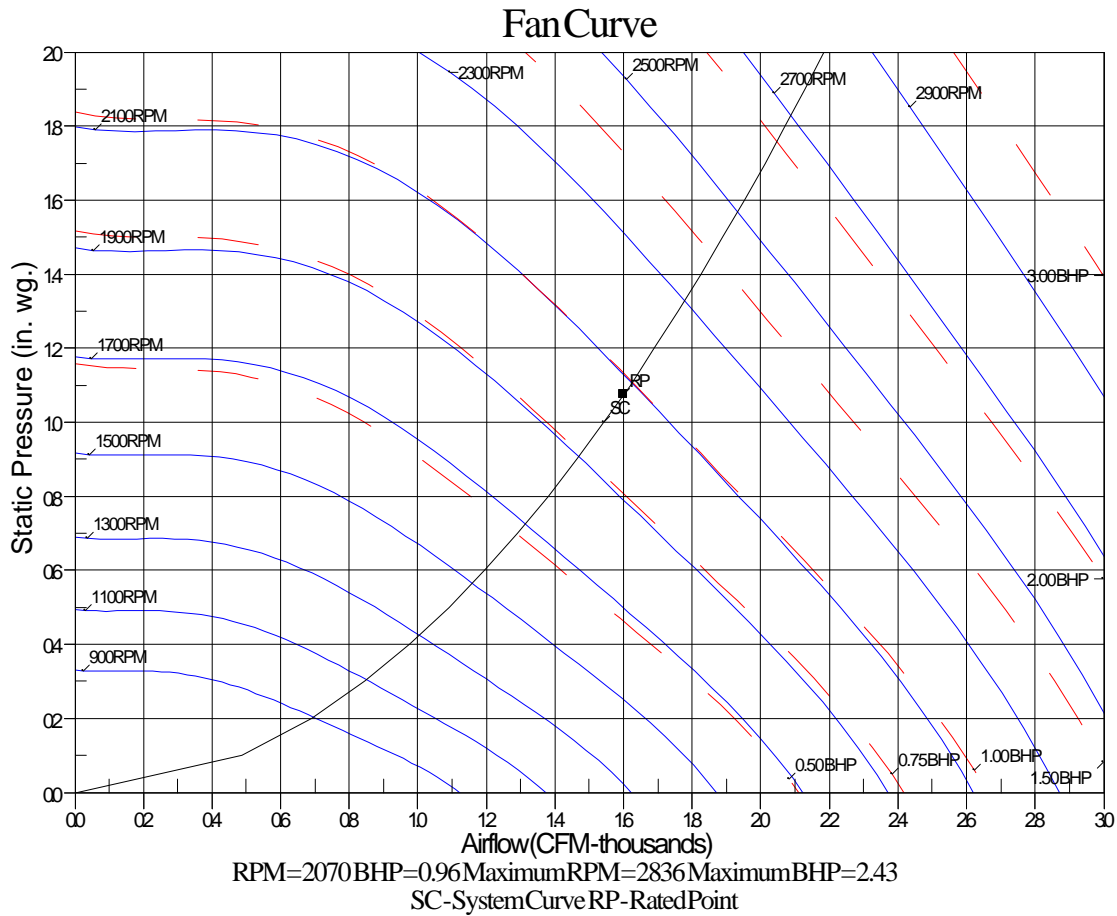
06/04/2025
 09:26AM

Octave Band Center Freq. Hz	63	125	250	500	1k	2k	4k	8k	Overall
A	85.6	84.7	80.5	76.0	72.4	68.0	62.8	59.3	89.2 Lw
B	59.4	68.6	71.9	72.8	72.4	69.2	63.8	58.2	78.5 LwA
C	53.2	52.3	48.1	43.6	40.0	35.6	30.4	26.9	56.8 Lp
D	27.0	36.2	39.5	40.4	40.0	36.8	31.4	25.8	46.1 LpA

Legend

- A Sound Power Levels at Unit's Acoustic Center, Lw
- B A-Weighted Sound Power Levels at Unit's Acoustic Center, LwA
- C Sound Pressure Levels at Specific Distance from Unit, Lp
- D A-Weighted Sound Pressure Levels at Specific Distance from Unit, LpA

Calculation methods used in this program are patterned after the ASHRAE Guide; other ASHRAE Publications and the AHRI Acoustical Standards. While a very significant effort has been made to insure the technical accuracy of this program, it is assumed that the user is knowledgeable in the art of system sound estimation and is aware of the tolerances involved in real world acoustical estimation. This program makes certain assumptions as to the dominant sound sources and sound paths which may not always be appropriate to the real system being estimated. Because of this, no assurances can be offered that this software will always generate an accurate sound prediction from user supplied input data. If in doubt about the estimation of expected sound levels in a space, an Acoustical Engineer or a person with sound prediction expertise should be consulted.





Crystal Distribution, Inc.
17560 Tyler Street NW
Elk River, MN 55330
Phone: 763.391.7790
Toll Free: 1.888.234.7001

CDI QUOTE #2859617

Date: 06/03/2025

Customer: Md Arif (CARRIER CORP)

Job Tag: BCF - 446-Lakewood, WA-R1

Purchase Order #

CURBS

Line	Quantity	CDI Part #	Description	Tag
A	1	6-0600-4009	Burglar Bar 6 in Standard, 1/2 in Standard, Sheet Metal Frame <i>New Model: 48GEFM09</i>	RTU-2
B	1	6-0600-4000	Burglar Bar 6 in Standard, 1/2 in Standard, Sheet Metal Frame <i>New Model: 48GEFM06</i>	RTU-11
C	1	6-0600-4159	Burglar Bar 6 in Standard, 1/2 in Standard, Sheet Metal Frame <i>New Model: 48GEFM17</i>	RTU-10
D	2	6-0600-4158	Burglar Bar 6 in Standard, 1/2 in Standard, Sheet Metal Frame <i>New Model: 48GEFM24</i>	RTU-1,3

*Thank you for choosing CDI,
Josh Eastman*

CDI Terms of Service:

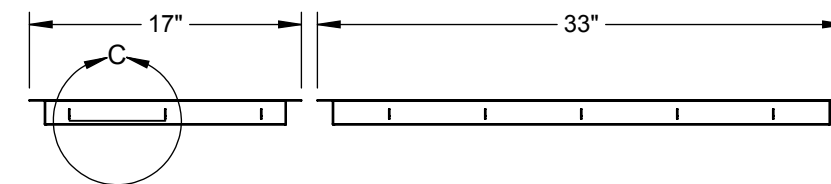
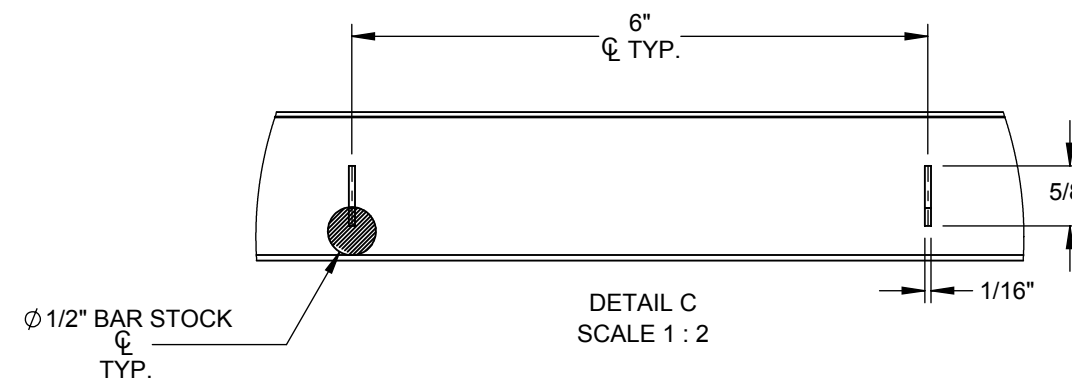
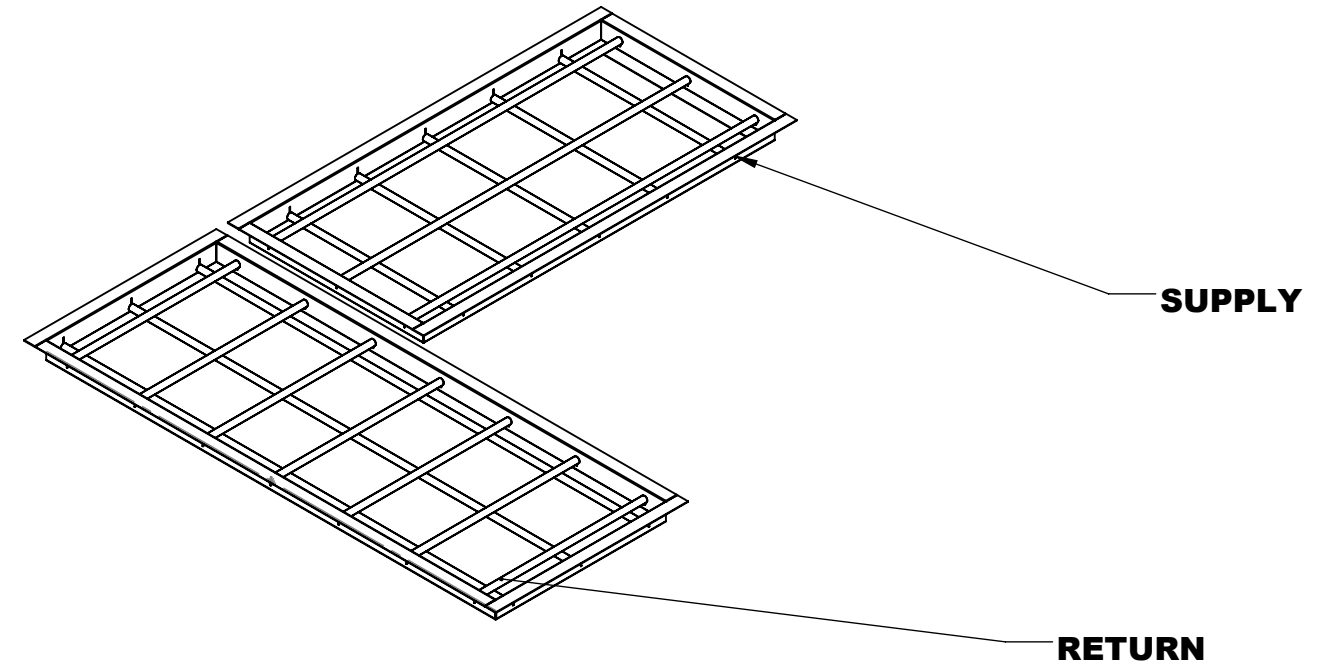
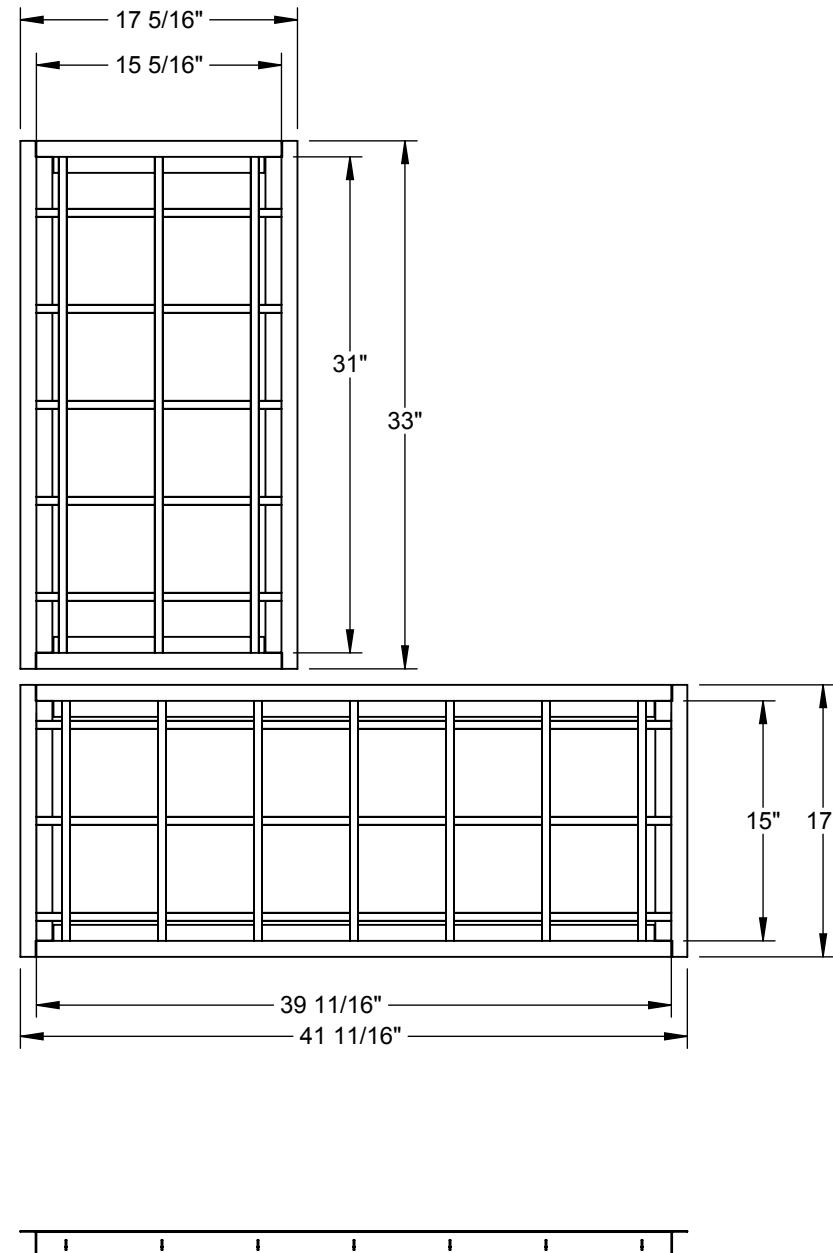


NOTES:
MATERIAL: 18ga. GALV STEEL + 1/2" BAR STOCK
1/2" SMALLER THAN OPENINGS
DROP IN BURGLAR BARS
6" CENTER TO CENTER BAR SPACING
GASKET PROVIDED WITH CURB

DIMENSIONED AND TOLERENCED PER ANSI Y14.5M-1982

REVISIONS				
REV.	ECO#	DESCRIPTION	DATE	APPROVED
1		INITIAL DRAWING	9/25/17	EH

Attn: _____
 Tag: _____
 Approval: _____



CURB SHOWN IS CDI STANDARD CONFIGURATION CDI RESERVES THE RIGHT TO CHANGE LAYOUT WITHOUT NOTIFICATION. IF CURB IS NEEDED IN A DIFFERENT CONFIGURATION CDI MUST BE NOTIFIED PRIOR TO PLACING AN ORDER.

OPERATIONAL HEIGHT OF CDI ADAPTER IS 3" LESS THAN OVERALL CURB HEIGHT SHOWN.

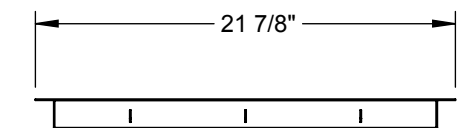
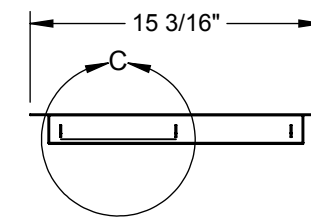
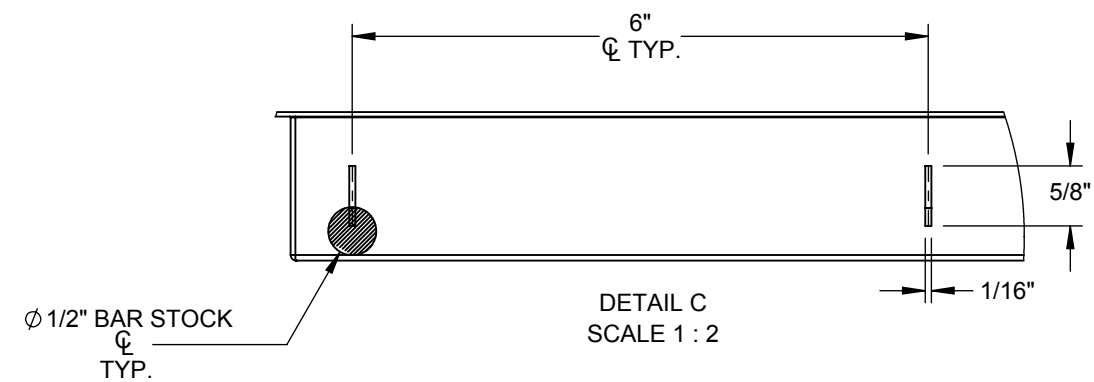
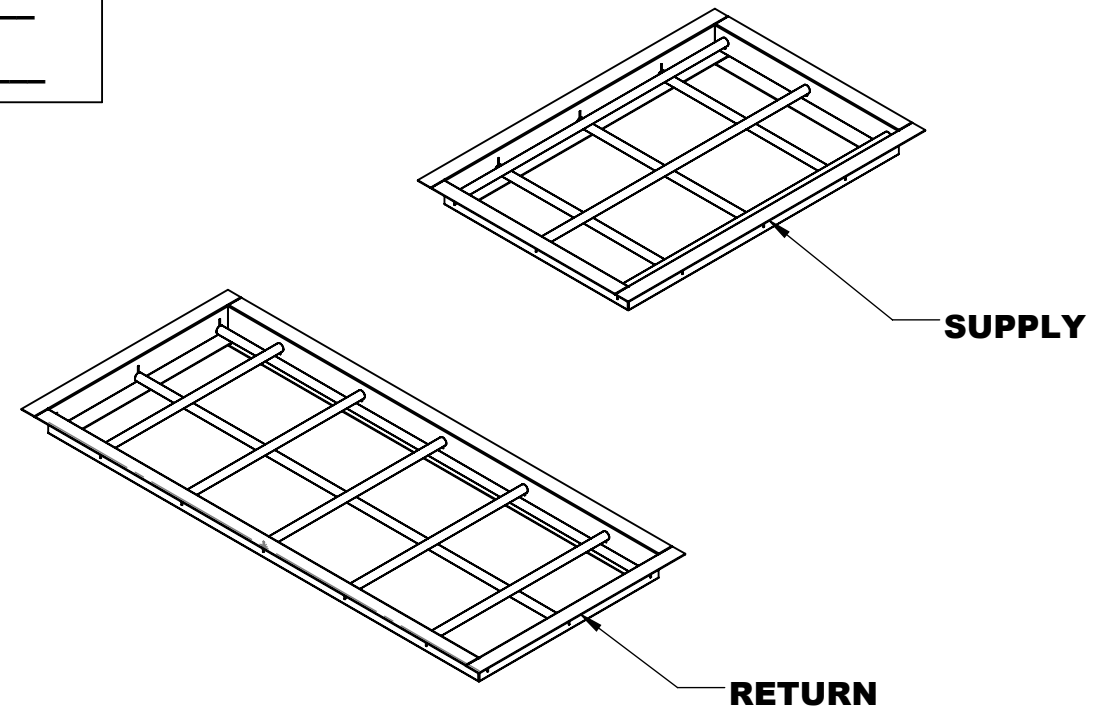
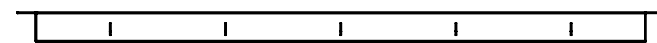
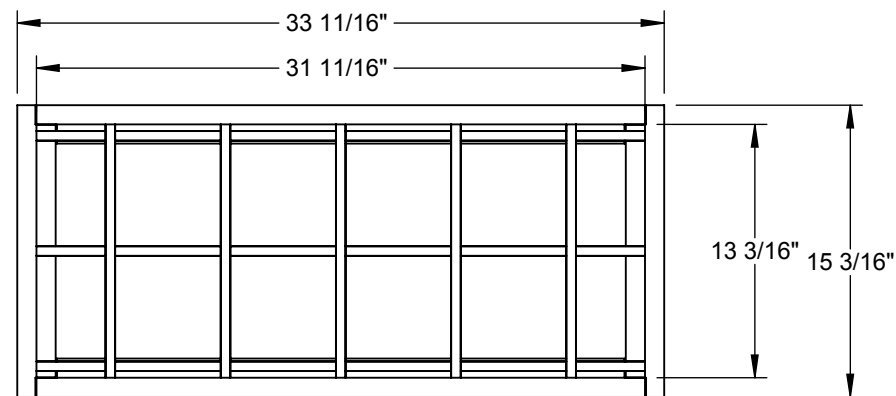
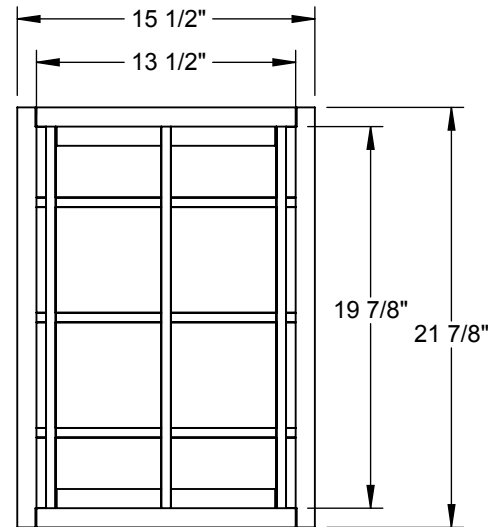
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	DIMENSIONS ARE AS FOLLOWS: 1.00 in [25.40 mm]			APPROXIMATE CURB WEIGHT (LBS.) - none -
*VERIFY EXISTING CURB OD *VERIFY SUPPLY AND RETURN OPENINGS *NOTE ANY CHANGES *CALL WITH ANY QUESTIONS *FAX BACK IF DRAWING IS OK AS IS	3RD ANGLE PROJECTION		Contact us @ www.cdicurbs.com or 1-888-234-7001	REV: 1

NOTES:
MATERIAL: 18ga. GALV STEEL + 1/2" BAR STOCK
1/2" SMALLER THAN OPENINGS
DROP IN BURGLAR BARS
6" CENTER TO CENTER BAR SPACING
GASKET PROVIDED WITH CURB

DIMENSIONED AND TOLERENCED PER ANSI Y14.5M-1982

REV.		ECO#	DESCRIPTION	DATE	APPROVED
1			INITIAL DRAWING	12/7/2017	ES

Attn: _____
 Tag: _____
 Approval: _____



CURB SHOWN IS CDI STANDARD CONFIGURATION CDI RESERVES THE RIGHT TO CHANGE LAYOUT WITHOUT NOTIFICATION. IF CURB IS NEEDED IN A DIFFERENT CONFIGURATION CDI MUST BE NOTIFIED PRIOR TO PLACING AN ORDER.

OPERATIONAL HEIGHT OF CDI ADAPTER IS 3" LESS THAN OVERALL CURB HEIGHT SHOWN.

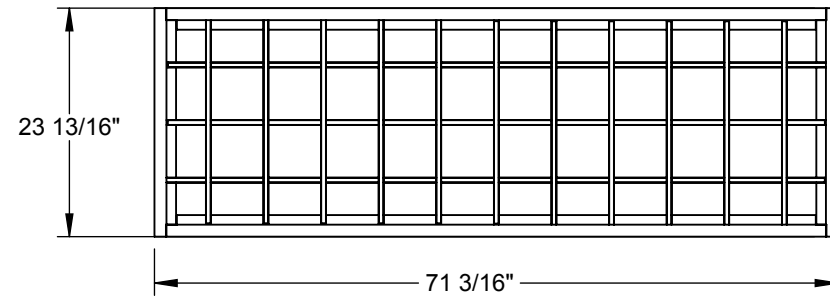
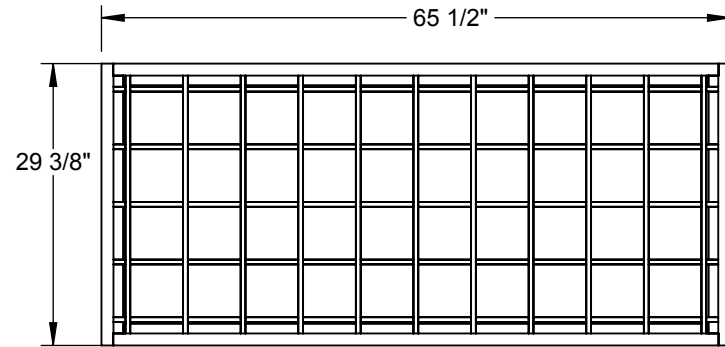
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	DIMENSIONS ARE AS FOLLOWS: 1.00 in [25.40 mm]			APPROXIMATE CURB WEIGHT (LBS.) - none -	ECO #: _____
*VERIFY EXISTING CURB OD *VERIFY SUPPLY AND RETURN OPENINGS *NOTE ANY CHANGES *CALL WITH ANY QUESTIONS *FAX BACK IF DRAWING IS OK AS IS	3RD ANGLE PROJECTION		Contact us @ www.cdicurbs.com or 1-888-234-7001	SCALE: 1:10	REV: 1 SHEET: 1 OF 2

NOTES:
MATERIAL: 18ga. GALV STEEL + 1/2" BAR STOCK
1" SMALLER THAN CURB BRACES
DROP IN BURGLAR BARS
6" CENTER TO CENTER BAR SPACING
GASKET PROVIDED WITH CURB

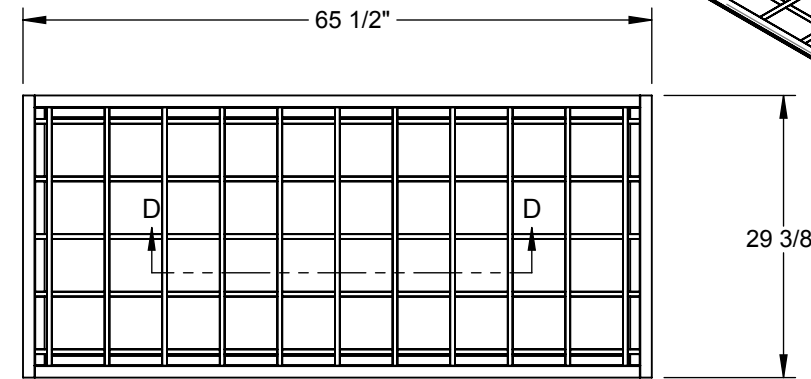
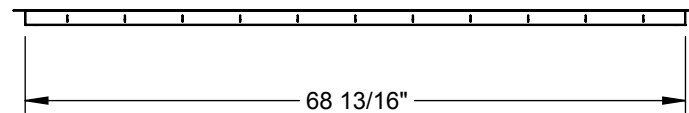
DIMENSIONED AND TOLERENCED PER ANSI Y14.5M-1982

REV.		ECO#	DESCRIPTION	DATE	APPROVED
1			INITIAL DRAWING	5/11/18	EH

Attn: _____
 Tag: _____
 Approval: _____



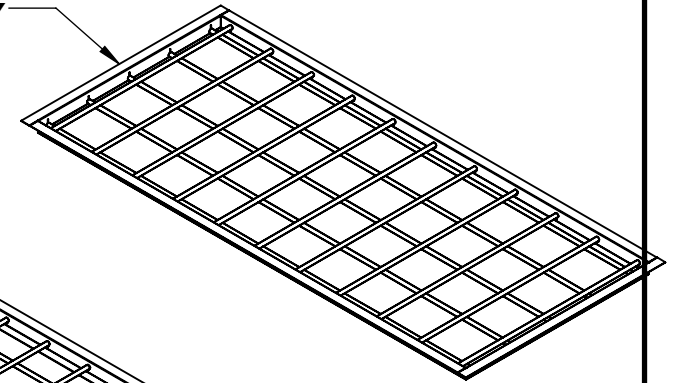
RETURN



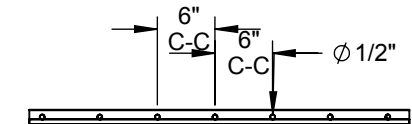
SUPPLY



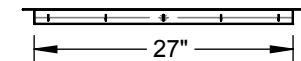
SUPPLY



RETURN



SECTION D-D



CURB SHOWN IS CDI STANDARD CONFIGURATION CDI RESERVES THE RIGHT TO CHANGE LAYOUT WITHOUT NOTIFICATION. IF CURB IS NEEDED IN A DIFFERENT CONFIGURATION CDI MUST BE NOTIFIED PRIOR TO PLACING AN ORDER.

OPERATIONAL HEIGHT OF CDI ADAPTER IS 3" LESS THAN OVERALL CURB HEIGHT SHOWN.

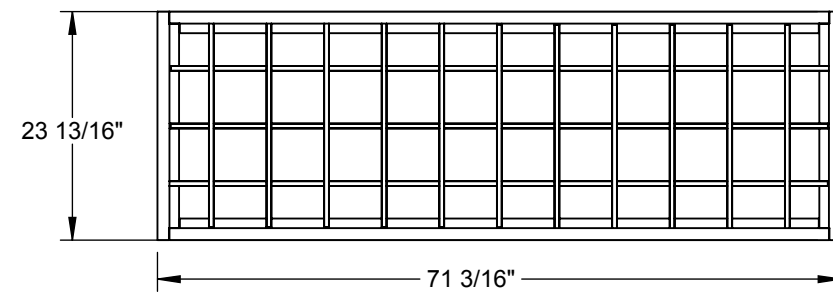
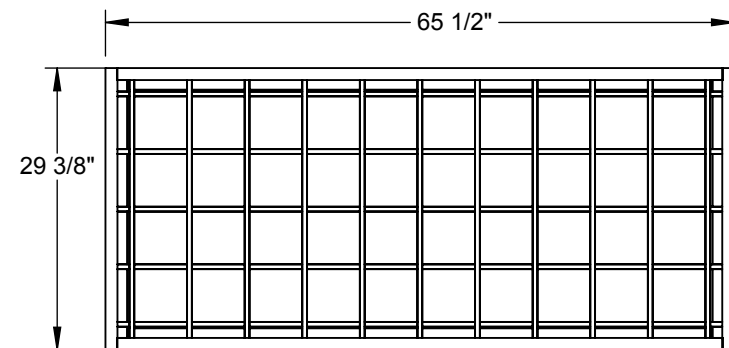
THIS DRAWING & THE INFORMATION CONTAINED THEREIN IS THE CONFIDENTIAL, PROPRIETARY INFORMATION OF CRYSTAL DISTRIBUTION INC., & MAY NOT BE USED OR REPRODUCED WITHOUT THE APPROVAL OF CRYSTAL DISTRIBUTION, INC. ALL RIGHTS RESERVED.	APPROVALS DRAWN: Ehanson CHECKED: _____	DATE 5/11/2018	TITLE/FILE NAME: 6-0600-4159	
	DIMENSIONS ARE AS FOLLOWS: 1.00 in [25.40 mm]			APPROXIMATE CURB WEIGHT (LBS.) - none -
*VERIFY EXISTING CURB OD *VERIFY SUPPLY AND RETURN OPENINGS *NOTE ANY CHANGES *CALL WITH ANY QUESTIONS *FAX BACK IF DRAWING IS OK AS IS			Contact us @ www.cdicurbs.com or 1-888-234-7001	REV: 3
			SCALE: 1:20	SHEET: 1 OF 2

NOTES:
MATERIAL: 18ga. GALV STEEL + 1/2" BAR STOCK
1" SMALLER THAN CURB BRACES
DROP IN BURGLAR BARS
6" CENTER TO CENTER BAR SPACING
GASKET PROVIDED WITH CURB

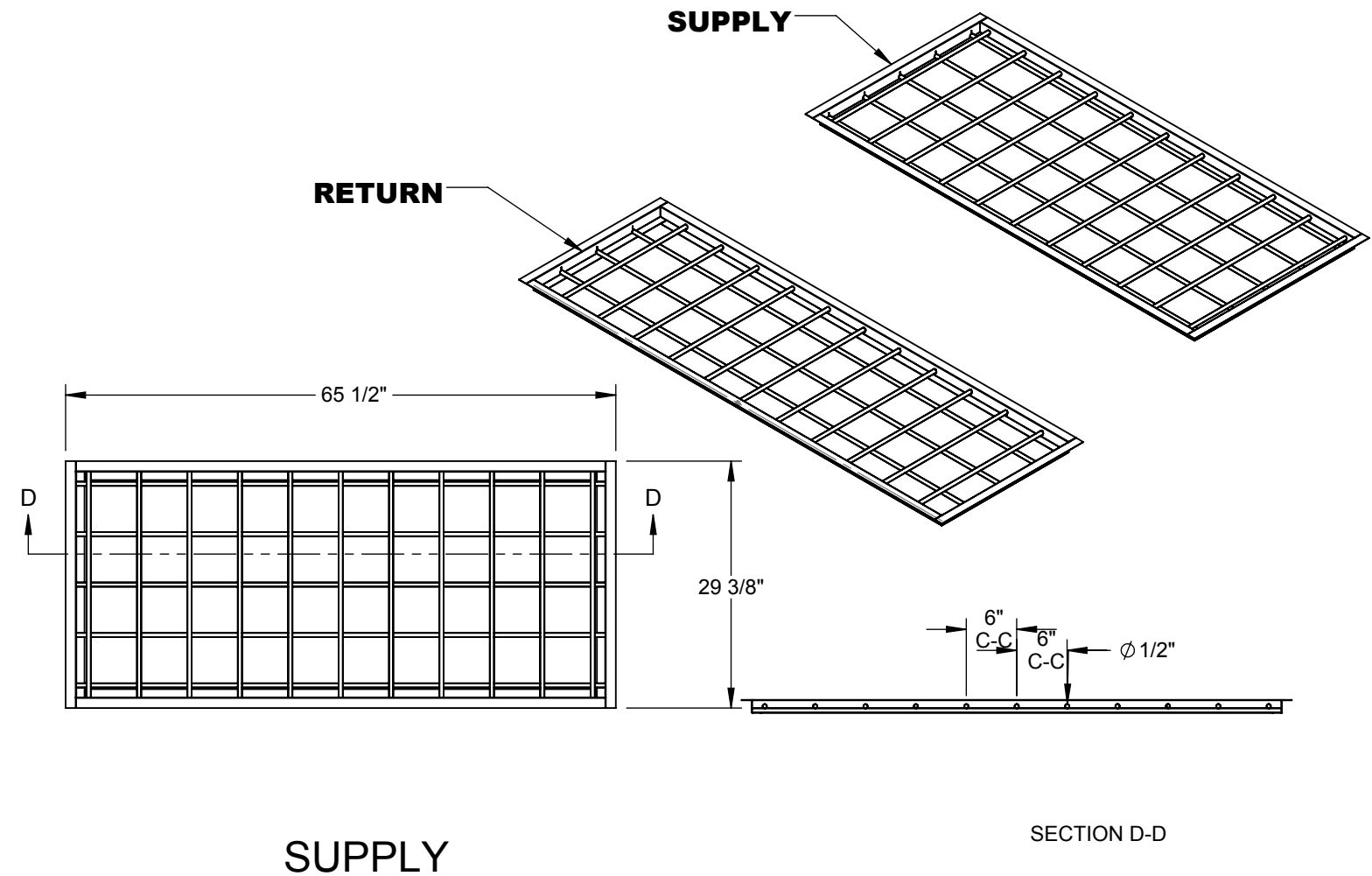
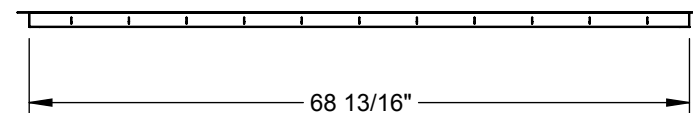
DIMENSIONED AND TOLERENCED PER ANSI Y14.5M-1982

REV.		ECO#	DESCRIPTION	DATE	APPROVED
1			INITIAL DRAWING	5/11/18	EH

Attn: _____
 Tag: _____
 Approval: _____

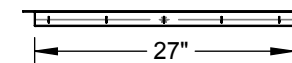
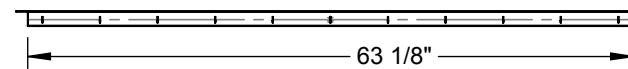


RETURN



SUPPLY

SECTION D-D



CURB SHOWN IS CDI STANDARD CONFIGURATION CDI RESERVES THE RIGHT TO CHANGE LAYOUT WITHOUT NOTIFICATION. IF CURB IS NEEDED IN A DIFFERENT CONFIGURATION CDI MUST BE NOTIFIED PRIOR TO PLACING AN ORDER.

OPERATIONAL HEIGHT OF CDI ADAPTER IS 3" LESS THAN OVERALL CURB HEIGHT SHOWN.

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	DIMENSIONS ARE AS FOLLOWS: 1.00 in [25.40 mm]			APPROXIMATE CURB WEIGHT (LBS.) - none -
*VERIFY EXISTING CURB OD *VERIFY SUPPLY AND RETURN OPENINGS *NOTE ANY CHANGES *CALL WITH ANY QUESTIONS *FAX BACK IF DRAWING IS OK AS IS	3RD ANGLE PROJECTION		Contact us @ www.cdicurbs.com or 1-888-234-7001	REV: 3 SHEET: 1 OF 2