



**50FP034, 044, 054, 064
SINGLE-PACKAGE COOLING UNITS
CONSTANT VARIABLE VOLUME
PRODUCT INTEGRATED CONTROLS
CARRIER COMFORT NETWORK COMPATIBLE
FACTORY-INSTALLED OPTIONAL
ELECTRIC HEAT
50 Hz**

- PERFORMANCE DATA**
- TYPICAL FIELD WIRING**
- CERTIFIED DIMENSION PRINTS**
- CERTIFIED ROOF CURB
DIMENSION PRINTS**



Date:	Supersedes:	50FP034, 044, 054, 064 SINGLE-PACKAGE COOLING UNITS, WITH PRODUCT INTEGRATED CONTROLS	50FP	Rev:
JOB NAME:		LOCATION:		
BUYER:		BUYER P.O. #	CARRIER #	
UNIT NUMBER:		MODEL NUMBER:		
PERFORMANCE DATA CERTIFIED BY:			DATE:	

DESCRIPTION

50FP units are completely packaged, prewired, and precharged electric cooling/heating or cooling only units with PRODUCT INTEGRATED CONTROLS.

50FP units are built for bottom supply and return applications. Their waterproof construction makes them ideally suited for installation on the accessory roof curb.

Units are either CONSTANT VOLUME or VARIABLE AIR VOLUME depending on the factory-installed options selected.

PRODUCT INTEGRATED CONTROL FEATURES STANDARD CONTROL FUNCTIONS

Unit compatible with CARRIER COMFORT NETWORK or stand-alone operation.

Constant Volume or Variable Air Volume control.

Four to six stages of compressor unloading possible.

Supply fan control based on occupancy schedule using 365-day electronic time clock with holiday scheduling.

Time schedule override through the space temperature sensor provided with the unit.

Compatible with 37H and 45 Series PIC terminals to form a Digital Air Volume system (DAV).

Building pressurization control in conjunction with modulating power exhaust option.

Supply duct static pressure controlled through inlet guide vanes or factory supplied inverter.

Head pressure control to -29° C (-20° F). Head pressure controlled by saturated condensing temperature; low ambient control utilizes Motormaster® II fan cycling.

Lead-lag compressor control to even out run time.

Self-diagnostic run test confirms control and component operation at unit commissioning. Self-diagnostic troubleshooting codes indicate the reason unit tripped to expedite unit repair. Codes expand to English text.

Control of a two-speed supply fan motor on CV applications. (Two-speed motor available on Special Order.)

Building Purge Mode flushes building interior with outdoor air to remove contaminants before occupancy.

Optimal Start minimizes the amount of time and energy required before entering the Occupied mode.

Unoccupied Mode Free Cooling – units with optional economizer will utilize free cooling whenever possible to maintain the unoccupied set point.

Input/Output of data and monitoring of alarms can be done remotely using Building Supervisor, or at the unit using the accessory HSIO module.

Delayed Mechanical Cooling – units with optional economizer will utilize cooling to cool the space 3 degrees below the occupied set point to delay the need for mechanical cooling.

ADDITIONAL CONTROL FUNCTIONS AVAILABLE THROUGH FACTORY INSTALLED “OPTIONS MODULE”

Provides a discrete output with occupancy control for use as specified by the customer.

Controls a field installed humidifier using a 4 to 20 mA or 2-stage output. Requires accessory humidity sensor.

Smoke Control functions (Pressurization, Evacuation, Smoke Purge and Fire Shutdown) are provided through software. Terminals are provided to interface with field supplied smoke/fire panel.

Provides a 4 to 20 mA output to direct or reverse proportional hot water control valve for field supplied hydronic heating coil. Requires a field supplied freeze-stat to protect coil.

Factory installed suction and discharge pressure transducers and suction temperature thermistors allow remote monitoring of these parameters and superheat to provide enhanced remote diagnostics.

Differential enthalpy control can be provided using field installed accessory humidity sensors.

Economizer control field configurable to:

– Maintain a minimum economizer set point position,

OR

– Maintain the minimum economizer position based on input from an IAQ sensor (field supplied 0 to 10 volt),

OR

– Maintain a constant CFM of outdoor air intake (Requires accessory Outdoor Air CFM package),

OR

– Look at all three above and maintain minimum economizer position based on the dominant parameter.

UNIT FEATURES

Large hinged access doors.
Units are rated in accordance with ARI Standard 360 (U.S.A. Standard).
115-volt and 24-volt control circuit.
Semi-hermetic Carrier compressors.
Dual refrigeration circuits.
Crankcase heaters.
Compressor protection includes high and low pressure cutouts.
Manual adjustable outside air intake for up to 25% outside air.
Single low rpm supply fan with 51 mm (2 in.) deflection springs under fan sled.

High efficiency indoor motors. (supply and exhaust)
Tuf-Skin Rx anti-microbial insulation.
Sloped condensate pan.
Cabinet made of prepainted galvanized steel.
Evaporator-fan motors are protected by circuit breakers.
Condenser-fan motors are internally protected.
Single-point electric service entry.
Circuit breaker protection for all power components.
Lifting lugs.
51 mm (2 in.) disposable-type return air filters.

PERFORMANCE DATA

Unit Operating Weight _____
Indoor Entering Air db _____ wb _____

Airflow _____ External Static Pressure _____
Curb Weight _____

COOLING

Gross Total Cap. _____ @ Condenser Air Temp _____
Gross Sensible Capacity _____
Compressor Power Input _____
Indoor Fan Motor Size _____
Exhaust Fan Motor Size _____
Return Fan Motor Size _____

HEATING

Heating Capacity Total _____
Stage 1 _____
Stage 2 _____

ELECTRICAL DATA

Power Supply to Unit _____ Volts _____ Phase _____ Hertz
Minimum Circuit Amps _____ Maximum Fuse Amps _____

OPTIONS AND ACCESSORIES

FACTORY-INSTALLED OPTIONS

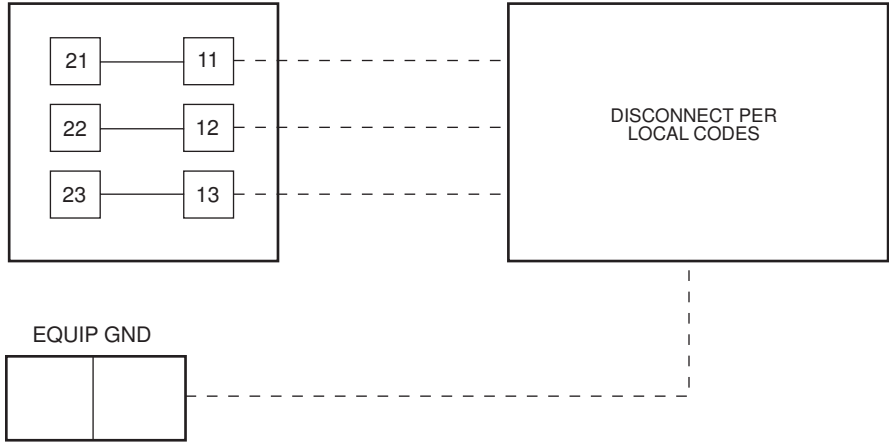
- ☐ Control Options Module (PSIO2) with Transducers and Thermistors
- ☐ 51 mm (2-in.) Pleated Filters (30%)
- ☐ Bag Filters with Prefilters (90%)
- ☐ Inlet Guide Vanes or Variable Frequency Drive
- ☐ Economizer with Low Leak Dampers and Spring Return Motor
- ☐ Precoated Al Condenser Coils
- ☐ Copper Condenser Coil
- ☐ Hot Gas Bypass
- ☐ Barometric Relief
- ☐ Modulating Power Exhaust
- ☐ Electric Heat _____ kW
- ☐ Non-Fused Factory Mounted Disconnect

FIELD-INSTALLED ACCESSORIES

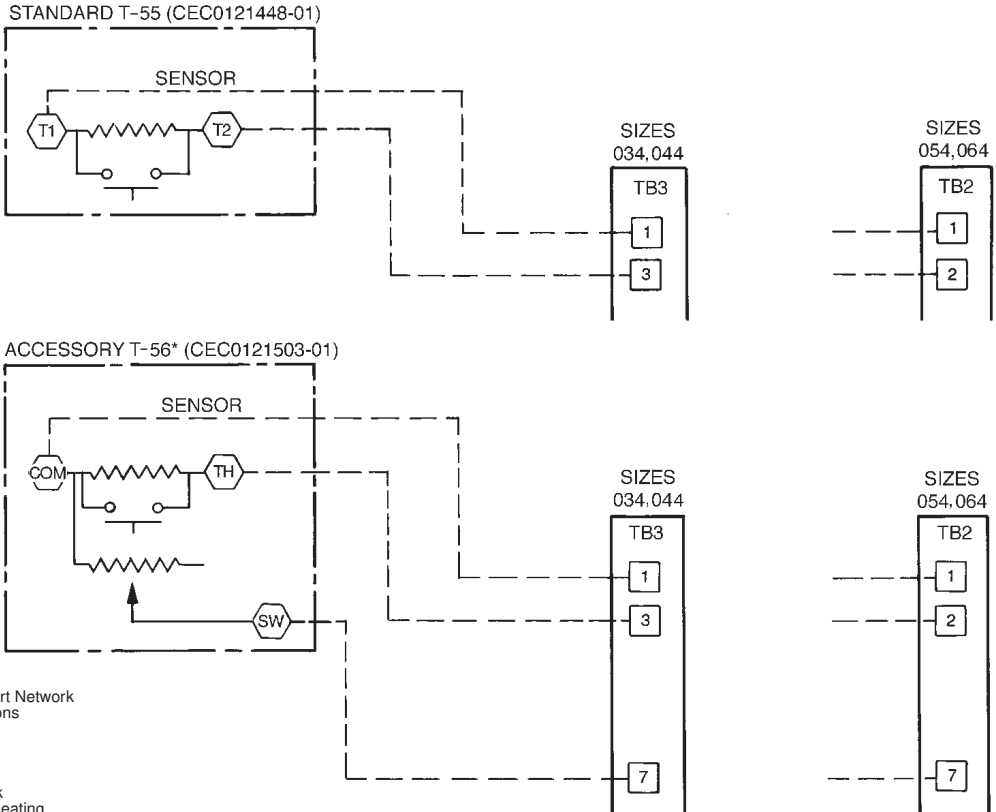
- ☐ Roof Curb with Full Perimeter Support (30, 40 ton)
- ☐ Roof Curb with Condenser End Support (50, 60 ton)
- ☐ Roof Curb to Enclose the Condenser Section (50, 60 ton)
- ☐ Outdoor Air CFM Package
- ☐ Condenser Coil Guard
- ☐ Space Sensor with Set Point Adjustment (T-56)
- ☐ Differential Enthalpy Control Sensor
- ☒ HSIO Keypad and Display Module (required for initial start-up)
- ☐ Barometric Relief
- ☐ Control Options Module (PSIO2)
- ☐ Pressure Transducers and Suction Thermistor
- ☐ IAQ Sensor
- ☐ Relative Humidity Sensor
- ☐ Electric Heater – kW

TYPICAL FIELD WIRING

FIELD POWER WIRING CONNECTIONS



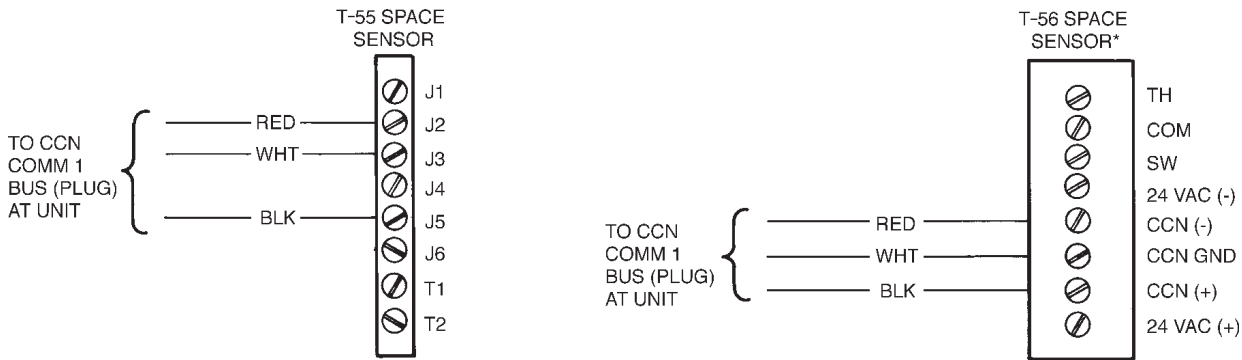
FIELD CONTROL WIRING TYPICAL SPACE TEMPERATURE SENSOR WIRING



- LEGEND**
- CCN - Carrier Comfort Network
 - COM - Communications
 - EQUIP - Equipment
 - GND - Ground
 - SW - Switch
 - T - Terminal
 - TB - Terminal Block
 - TH - Thermostat, Heating
 - - Field Wiring

* Constant Volume Applications Only.

CCN COMMUNICATIONS BUS WIRING TO OPTIONAL SPACE SENSOR RJ11 CONNECTOR



CUT ALONG DOTTED LINE

CUT ALONG DOTTED LINE

CERTIFIED DIMENSION PRINT



UNITED
TECHNOLOGIES
CARRIER

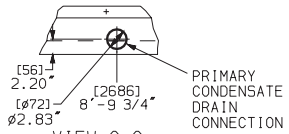
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SYRACUSE N. Y.
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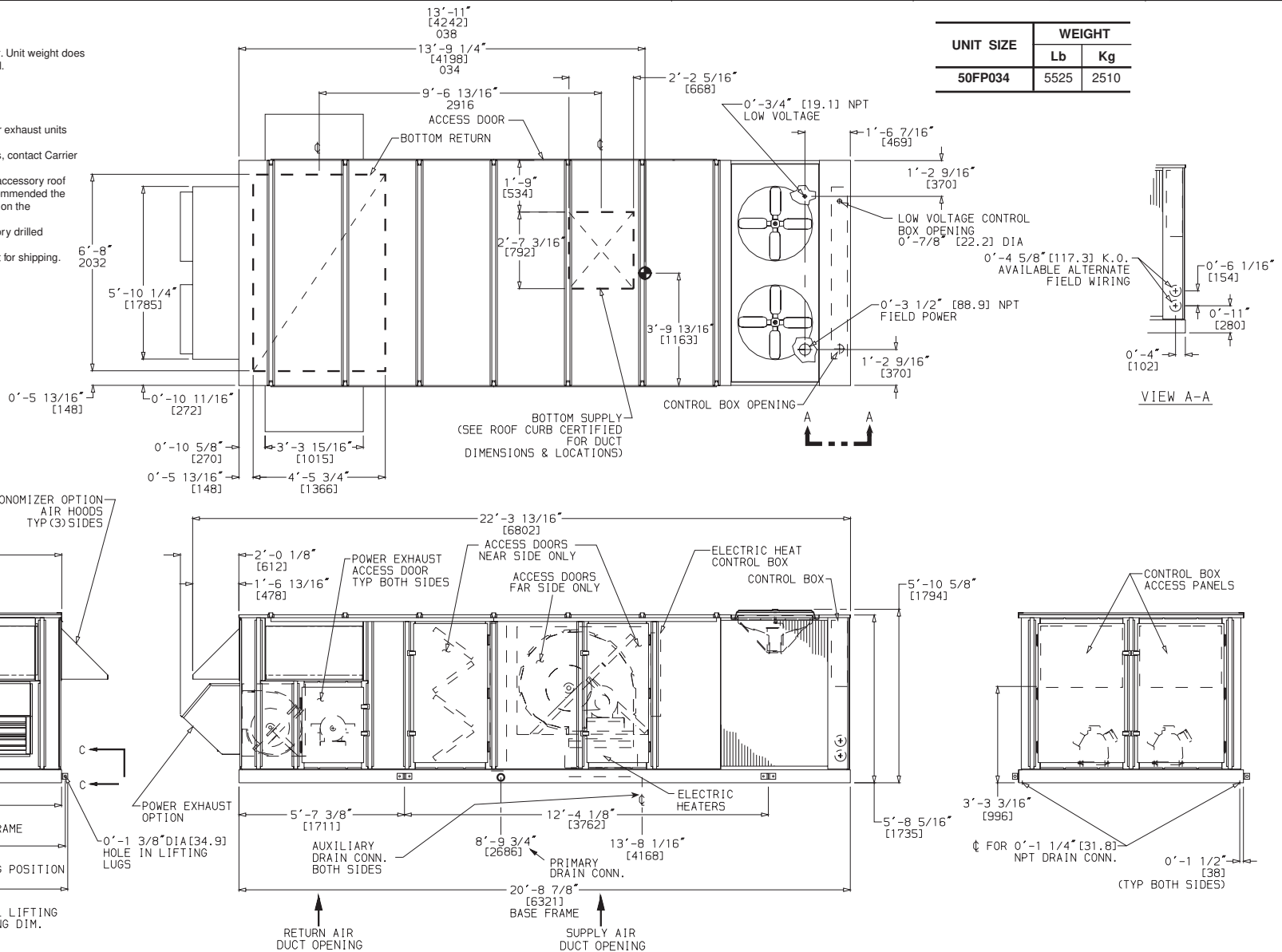
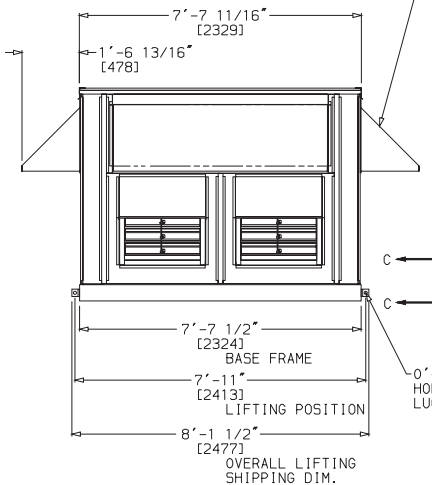
NOTES

- Dimensions in [] are in millimeters.
- Center of gravity includes economizer. Unit weight does not include economizer or heating coil.
- Unit clearances:
Top - Do not restrict condenser fans
Control Box End - 6'-0" [1830]
Sides - 6'-0" [1830]
Economizer End - 6'-0" [1830] (except power exhaust units 10'-0" [3050])
For smaller service and operating clearances, contact Carrier Application Engineering Department.
- Downshot ducts designed to be attached to accessory roof curb. If unit is mounted on dunnage, it is recommended the ducts be supported by cross braces as done on the accessory roof curb.
- When the unit is slab mounted, plug the factory drilled auxiliary condensate drain holes.
- Economizer side hoods are folded inside unit for shipping.

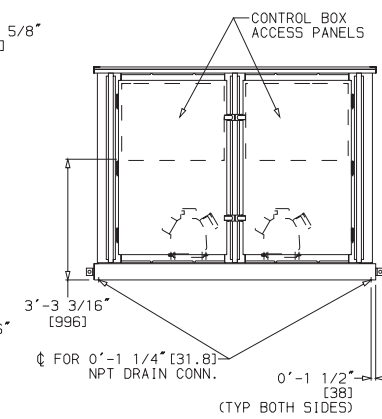


VIEW C-C
(BASE RAIL SECT)
SCALE 2:1

ECONOMIZER OPTION
AIR HOODS
TYP (3) SIDES



VIEW A-A



UNIT SIZE	WEIGHT	
	Lb	Kg
50FP034	5525	2510

50FP034, (PAC)

CERTIFIED DIMENSION PRINT



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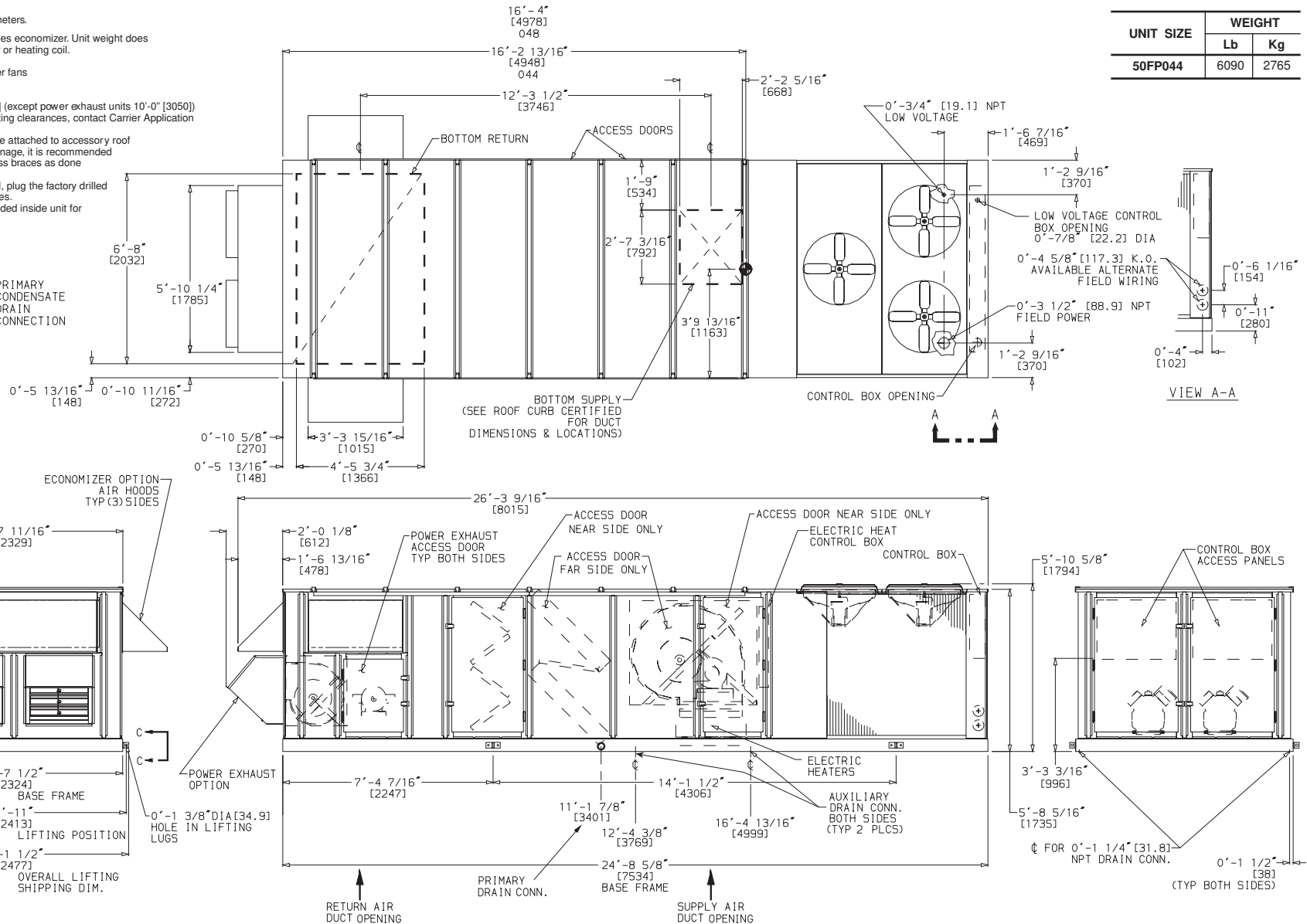
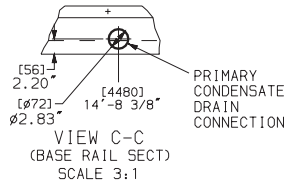
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- When the unit is slab mounted, plug the factory drilled auxiliary condensate drain holes.
- Economizer side hoods are folded inside unit for shipping.



50FP044 (PAC)

DATE

SUPPLEMENT

REV

CUT ALONG DOTTED LINE

CUT ALONG DOTTED LINE

CERTIFIED DIMENSION PRINT



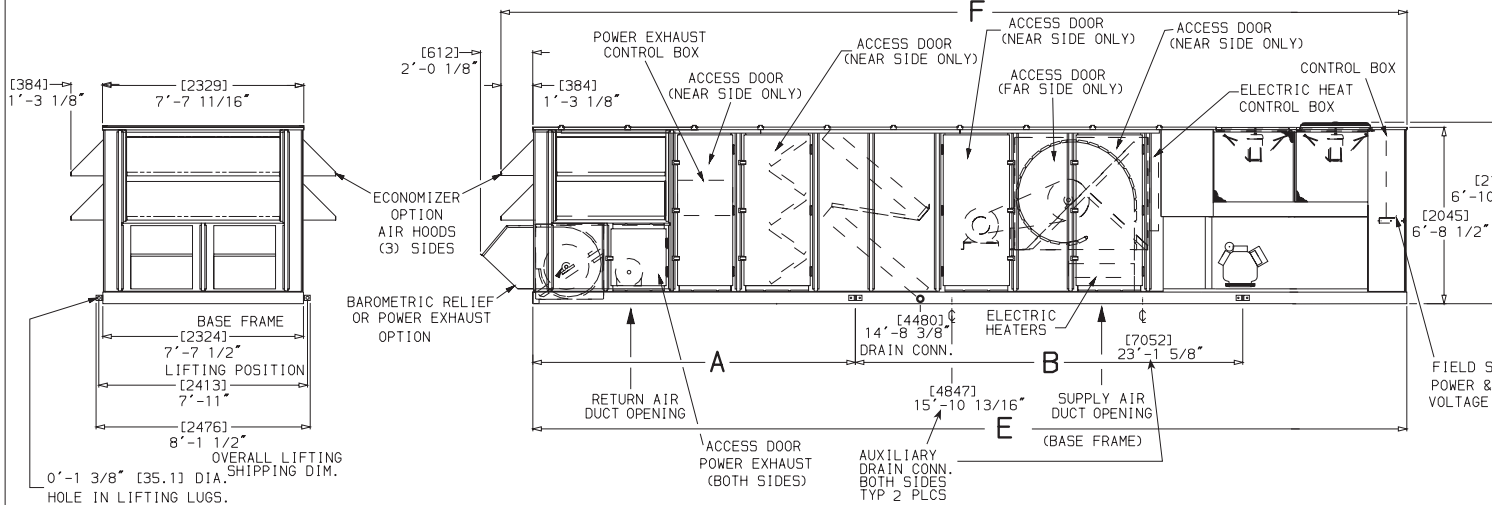
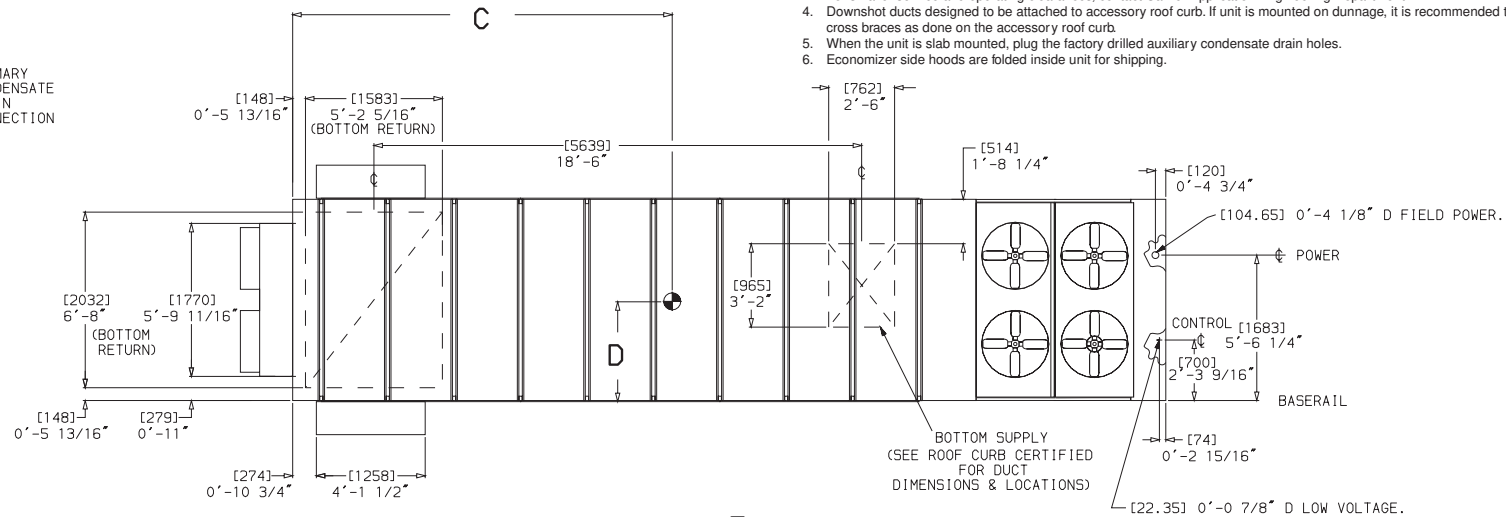
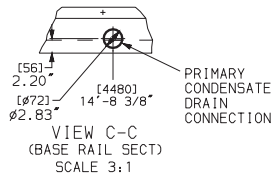
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UNIT SIZE	WEIGHT		A		B		C		D		E		F	
	Lb	Kg	mm	ft.-in.	mm	ft.-in.	mm	ft.-in.	mm	ft.-in.	mm	ft.-in.	mm	ft.-in.
50FP054	7805	3540	2864	9-4 ³ / ₄	5347	17-6 ¹ / ₂	5537	18-2	1163	3-9 ³ / ₁₆	10092	33-1 ⁵ / ₁₆	10476	34-4 ⁷ / ₁₆
50FP064	8100	3675	2864	9-4 ³ / ₄	5347	17-6 ¹ / ₂	5537	18-2	1163	3-9 ³ / ₁₆	10092	33-1 ⁵ / ₁₆	10476	34-4 ⁷ / ₁₆



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DATE

SUBPAGES

50FP054, 064 (PAC)

REV

CERTIFIED ROOF CURB DIMENSION PRINT



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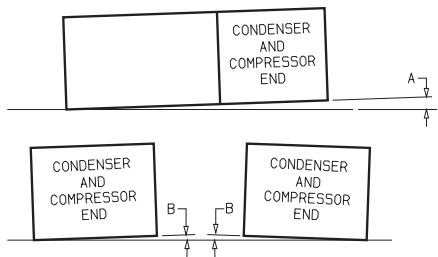
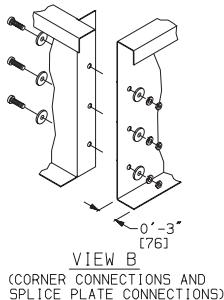
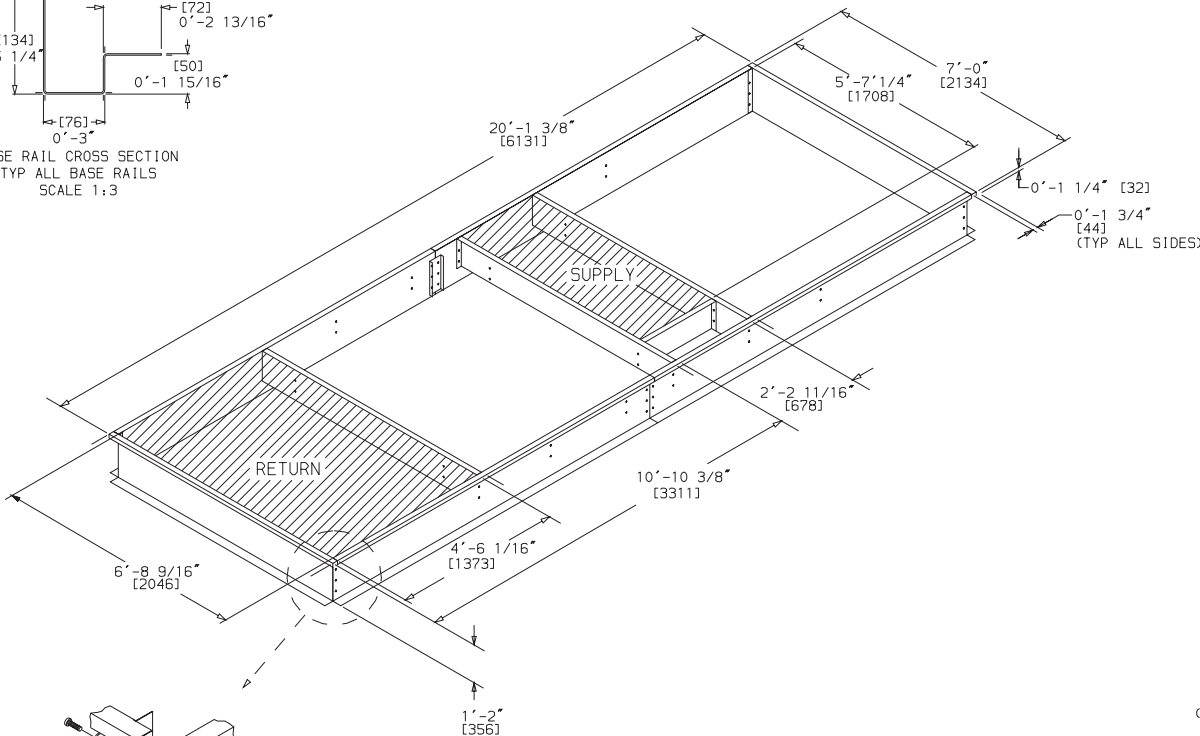
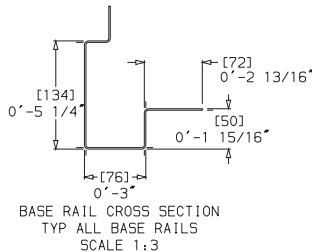
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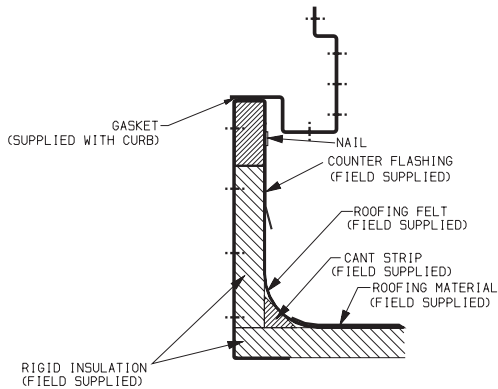
1. ROOF CURB IS SHIPPED DISASSEMBLED.
2. ROOF CURB: 14 GA. [VA03-56] STL.
3. DIMENSIONS IN [] ARE MILLIMETERS.



DIMENSIONS*
(degrees and inches)

A			B		
DEG.	MM	IN.	DEG.	MM	IN.
1.0	51	2.0	.50	19	.75

UNIT LEVELING TOLERANCES
*From edge of unit to horizontal.



DATE

SURFACES

ROOF CURB - 50FP034 (PAC)

REV

CUT ALONG DOTTED LINE

CUT ALONG DOTTED LINE

CERTIFIED ROOF CURB DIMENSION PRINT



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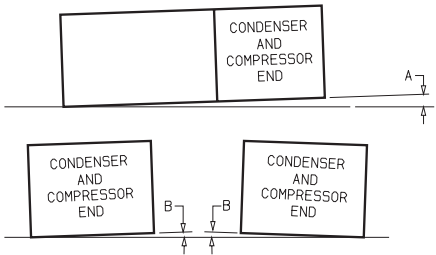
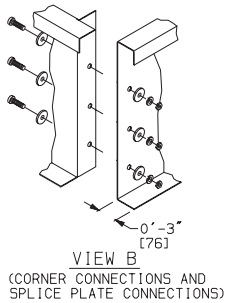
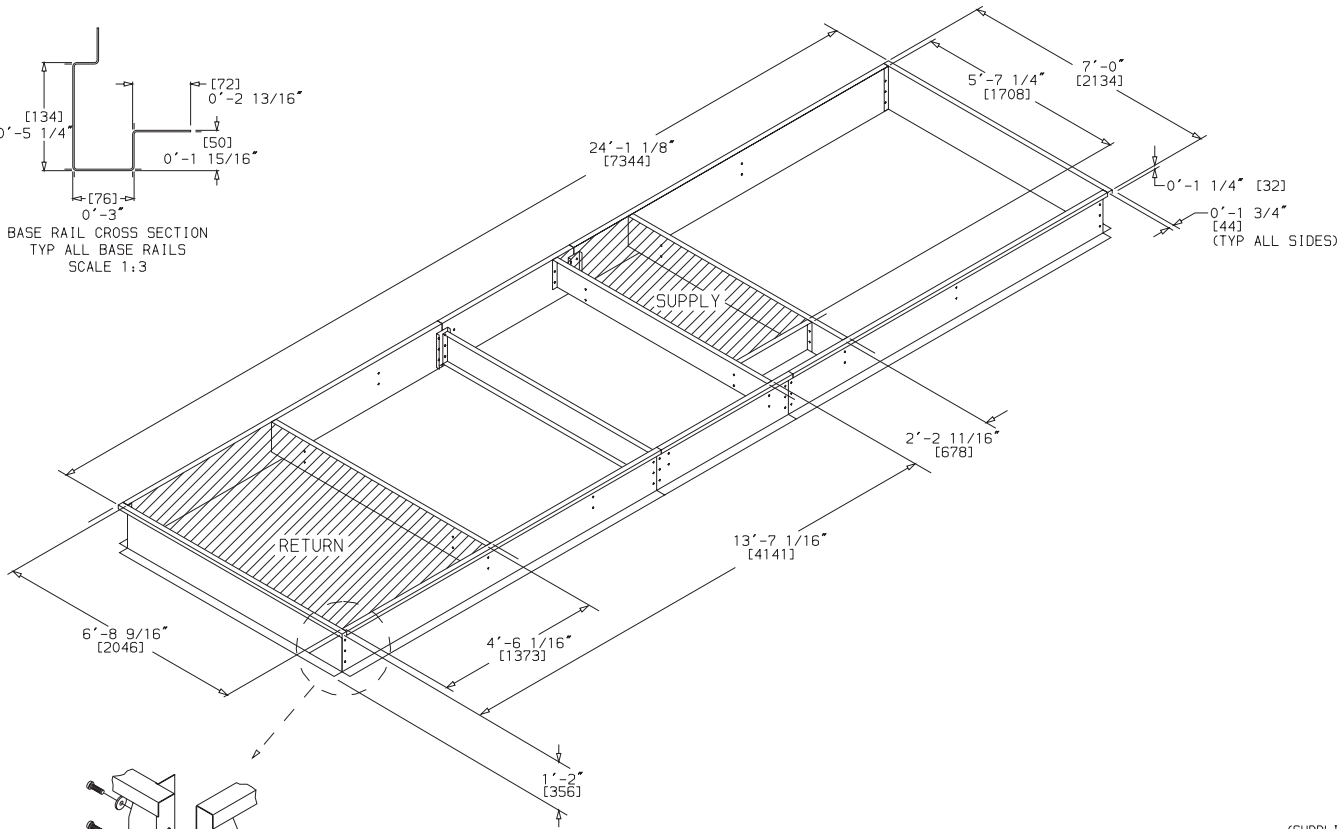
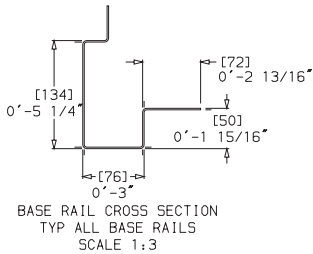
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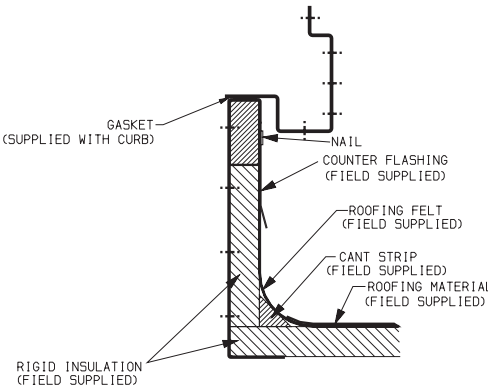
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2. ROOF CURB: 14 GA. [VA03-56] STL.
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DIMENSIONS* (degrees and inches)

A			B		
DEG.	MM	IN.	DEG.	MM	IN.
1.0	51	2.0	.50	19	.75

UNIT LEVELING TOLERANCES *From edge of unit to horizontal.



DATE
REVISIONS
ROOF CURB - 50FP044 (PAC)
REV

CERTIFIED ROOF CURB DIMENSION PRINT



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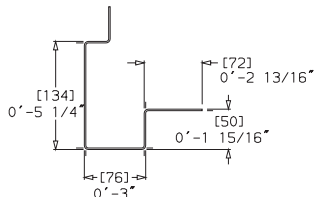
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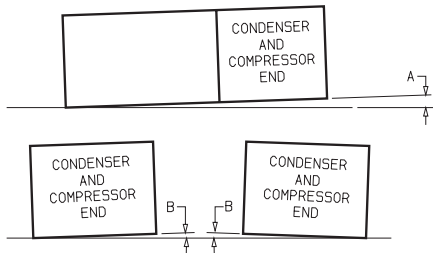
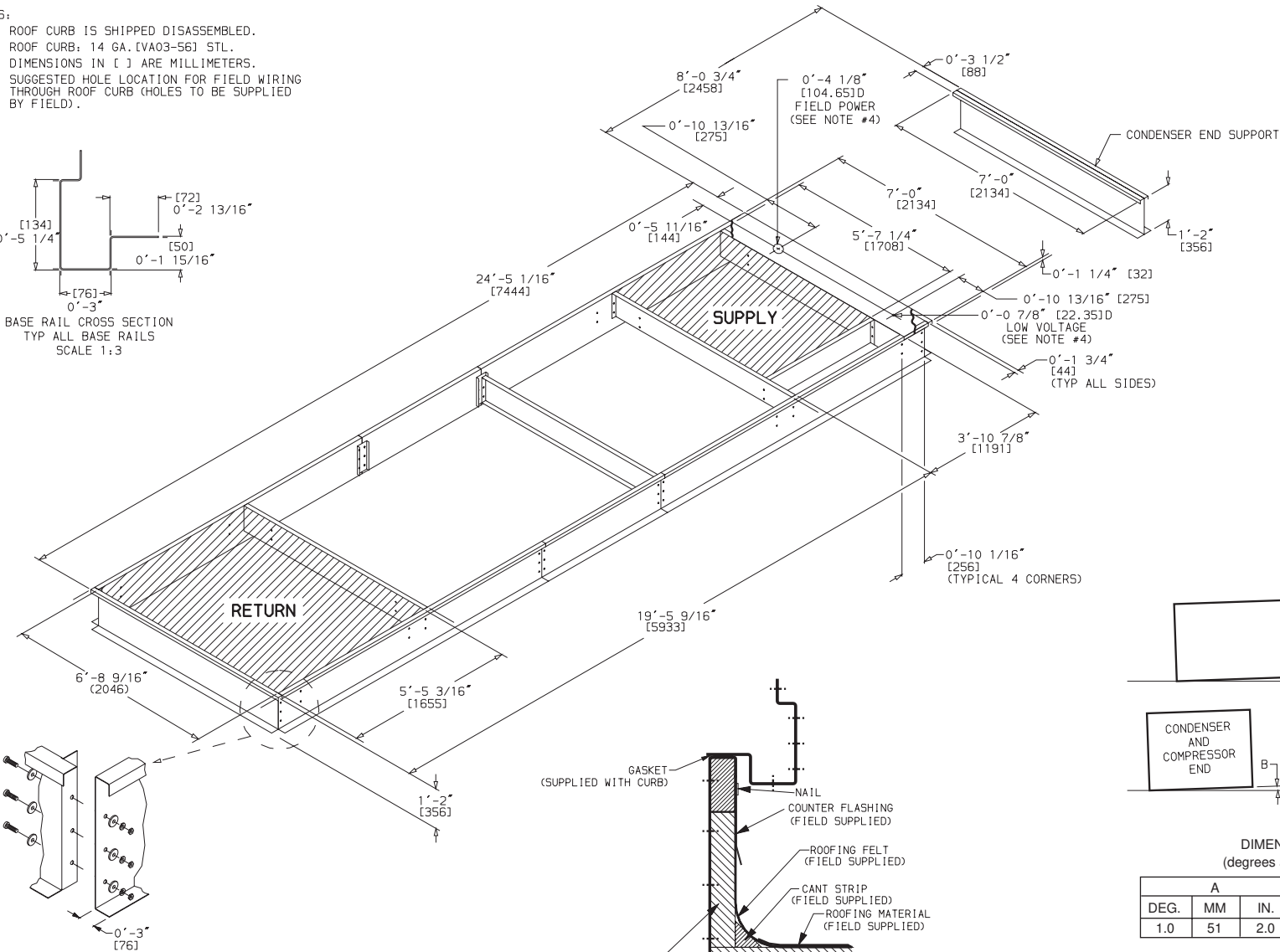
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2. ROOF CURB: 14 GA. [VA03-56] STL.
3. DIMENSIONS IN [] ARE MILLIMETERS.
4. SUGGESTED HOLE LOCATION FOR FIELD WIRING
THROUGH ROOF CURB (HOLES TO BE SUPPLIED
BY FIELD).



BASE RAIL CROSS SECTION
TYP ALL BASE RAILS
SCALE 1:3



DIMENSIONS*
(degrees and inches)

A			B		
DEG.	MM	IN.	DEG.	MM	IN.
1.0	51	2.0	.50	19	.75

UNIT LEVELING TOLERANCES

*From edge of unit to horizontal.

VIEW B
(CORNER CONNECTIONS AND
SPLICE PLATE CONNECTIONS)

DATE
SUBMITTALS
ROOF CURB - 50FP054, 064 (PAC)
REV

CUT ALONG DOTTED LINE

CUT ALONG DOTTED LINE

CERTIFIED ROOF CURB DIMENSION PRINT



UNITED
TECHNOLOGIES
CARRIER

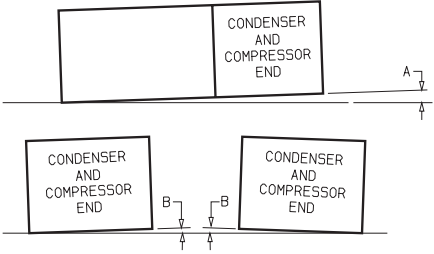
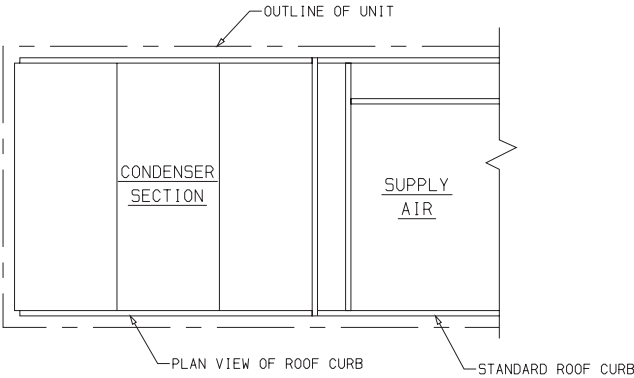
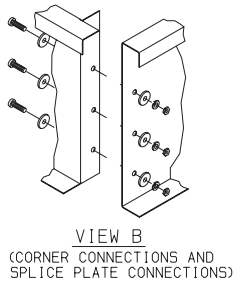
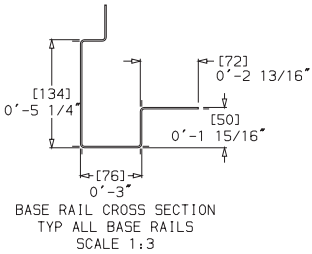
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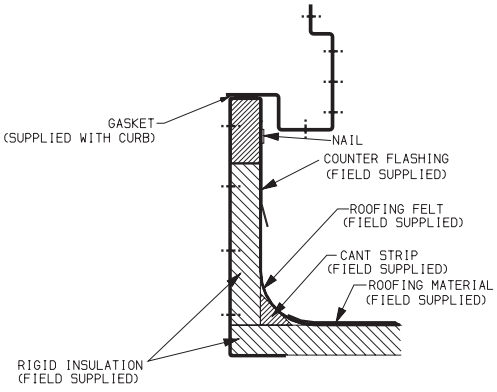
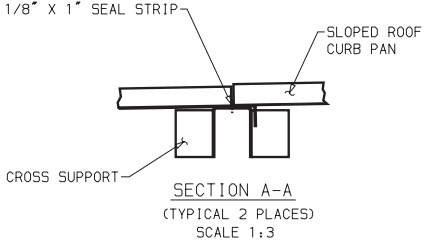
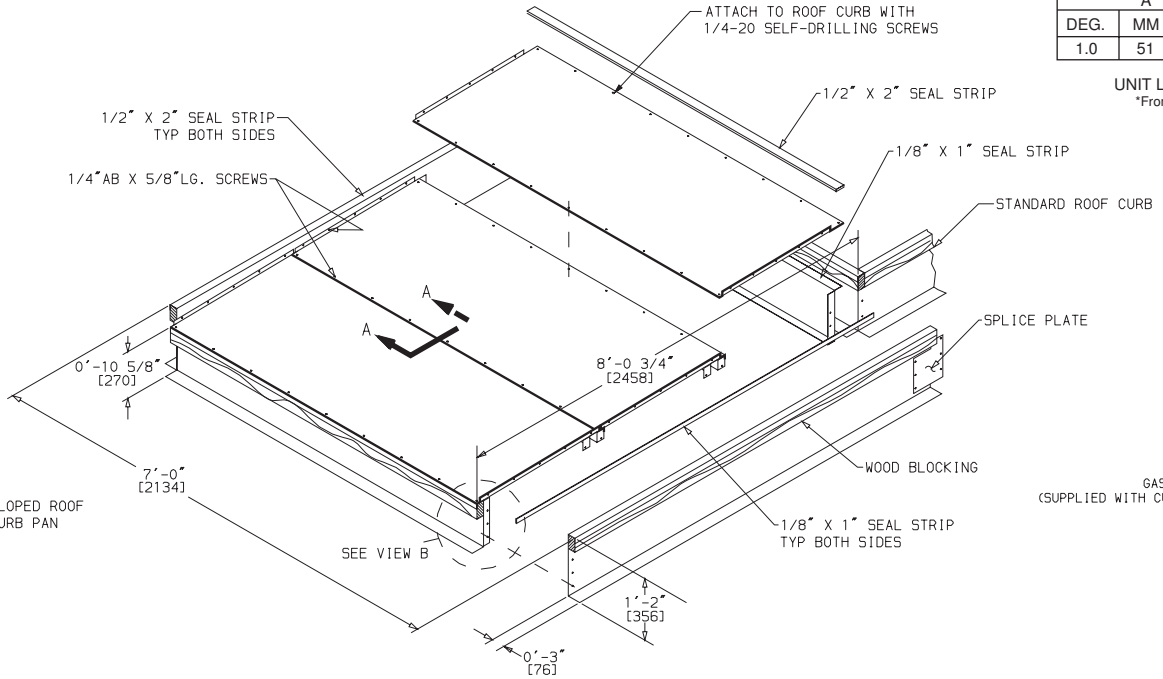
1. ROOF CURB ACCESSORY IS SHIPPED DISASSEMBLED.
2. DIMENSIONS IN [] ARE MILLIMETERS.
3. ROOF CURB: 14 GA. [VA03-56] STL.
ROOF CURB PANS: 16 GA. [VA03-56] STL.



DIMENSIONS*
(degrees and inches)

	A			B		
DEG.	MM	IN.		DEG.	MM	IN.
1.0	51	2.0		.50	19	.75

UNIT LEVELING TOLERANCES
*From edge of unit to horizontal.



ACCESSORY ROOF CURB - 50FP054, 064