

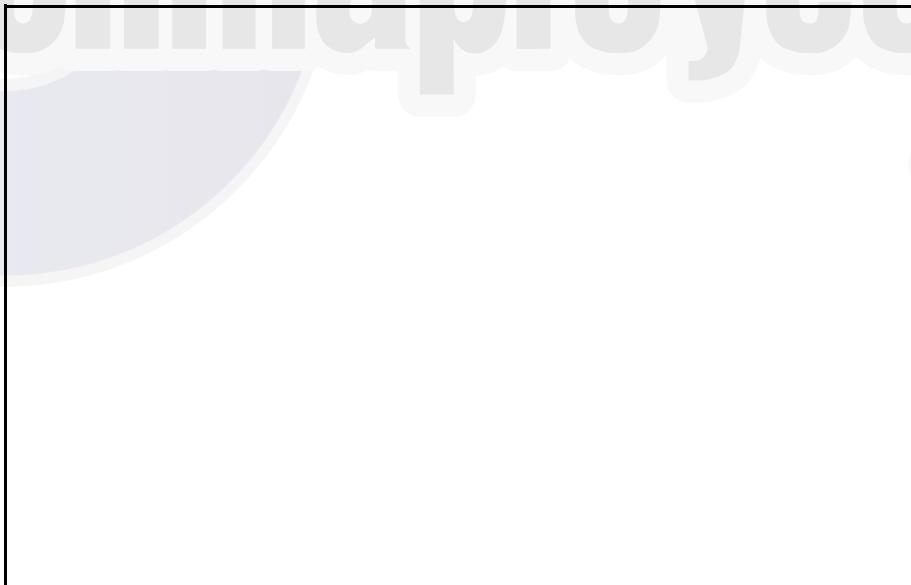


48TC 18,21,25,29 WEATHERMAKER® SERIES SINGLE PACKAGE ROOFTOP GAS HEATING/ELECTRIC COOLING HORIZONTAL AIR FLOW UNITS TWO-STAGE COOLING CAPACITY CONTROL

— PERFORMANCE DATA

— CERTIFIED DIMENSION PRINTS

— CERTIFIED ROOF CURB DETAILS



JOB NAME:	LOCATION:			
BUYER:	BUYER PO #:	CARRIER#:		
UNIT NUMBER:	MODEL NUMBER:			
PERFORMANCE DATA CERTIFIED BY:				
DESCRIPTION				
<p>48TC (model sizes 18, 21, 25, 29) units are single-packaged dedicated horizontal air flow electric cooling, gas heating units that are pre-wired and pre-charged with Puron® (R-410A) HFC refrigerant. The units are factory tested in both heating and cooling modes. These units meet the ASHRAE (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) 90.1-2016, DOE-2018 (Department of Energy), and IECC-2015 (International Energy Conservation Code) minimum efficiency requirements when equipped with the SAV™ (Staged Air Volume) option.</p>				
FEATURES				
<p>Standard Base Unit (United States Models)</p> <ul style="list-style-type: none"> • Puron (R-410A) HFC refrigerant • Two-stage cooling capacity control on all models • EERs up to 10.8 • IEERs up to 12.7 (includes SAV) • Staged Air Volume (SAV™) fan speed system • Designed in accordance with Underwriters Laboratories Standard 1995 • Listed by ETL and ETL-Canada • DOE-2018, ASHRAE 90.1-2016 and IECC-2015 energy compliant • Rated in accordance with AHRI Standard 340/360 • Non-corrosive composite sloping design; side or center drain condensate pan. Meets ASHRAE Standard 62 • Standard cooling operating range from 35°F up to 115°F (2°C up to 46°C) • Dedicated horizontal airflow models. No special field kits required • Two-inch disposable return air filters on slide out track • Provisions for thru-the-bottom power entry capability as standard in an environmentally protected area • Single point gas and electric connections • 24-volt control circuit protected with resettable circuit breaker and 75-VA transformer • Permanently lubricated evaporator-fan motor • Blower bearing extend lubrication line on all sizes • Totally enclosed condenser motors with permanently lubricated bearings • Low-pressure and high-pressure switch protection • Full perimeter base rail with built-in rigging adapters and fork truck slots • Central terminal board facilitating simple safety circuit troubleshooting and simplified control box arrangement • High performance belt drive motor with variable pitch pulleys, quick adjust belt system and fan belt protection <p>Standard Base Unit (Non-United States Models)</p> <ul style="list-style-type: none"> • All features listed above and: <ul style="list-style-type: none"> — EERs up to 10.8 — IEERs up to 10.8 (without SAV) — IEERs up to 12.7 (with SAV) <p>Cabinet (All)</p> <ul style="list-style-type: none"> • Access panels with easy grip handles • Innovative, easy starting, no-strip screw feature on unit access panels • Pre-painted exterior panels and primer-coated interior panels tested to 500 hours salt spray protection • Fully insulated cabinet 				

PERFORMANCE DATA

Unit Operating Weight _____ lb Curb Weight _____ lb

COOLING (ELECTRIC)

Gross Total Capacity _____ Btuh Heating Capacity:

at Condenser Air Temperature _____ °F Stage 1 _____ Btuh

Gross Sensible Capacity _____ Btuh Stage 2 _____ Btuh

Compressor Power Input _____ kW Heating Capacity Total _____ Btuh

Indoor Entering: db _____ °F / wb _____ °F Stage 1 _____ kW

Airflow ____ CFM External Static Pressure ____ in. wg Stage 2 _____ kW

Indoor Fan Motor Size _____ HP Heating Capacity Total _____ Btuh

Exhaust Fan Motor Size _____ HP

ELECTRICAL DATA

Power Supply to Unit _____
Volts _____
Phase _____ Hz
Maximum Circuit Amps _____
Maximum Overcurrent Protection _____

SUBMITTAL DATA

Job Name _____
Architect _____
Engineer _____
Contractor _____
Unit Designation _____



Use of the AHRI Certified TM Mark indicates a manufacturer's participation in the program. For verification of certification for individual products, go to www.ahridirectory.org.

FACTORY-INSTALLED OPTIONS

Economizer with DRY BULB Sensing and Barometric Relief

Low Leak Air Dampers —

- Models with W7212 controller provide standard non-diagnostic control (EconoMi\$er® IV system).
- Models with W7220 controller meet California Title 24 (Section 120.2) for Fault Detection and Diagnostic (FDD) requirements (EconoMi\$er X system).
- Models with RTU Open controller meet California Title 24 (Section 120.2) Fault Detection and Diagnostic (FDD) requirements (EconoMi\$er 2 system).
- Models with PremierLink™ controller. PremierLink controller does not meet California Title 24 (Section 120.2) Fault Detection and Diagnostic (FDD) requirement (EconoMi\$er 2 system).

Economizer with ENTHALPY Sensing and Barometric Relief

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Economizer with DRY BULB Sensing and Barometric Relief

ULTRA LOW LEAK Air Dampers —

- Models with W7220 controller meet California Energy Commission Title 24-2016 perspective section 140.4 (damper leakage, etc.), and mandatory section 120.2.i for Fault Detection and Diagnostic controls. Economizers meet ASHRAE 90.1-2016 damper leakage requirements as stated in section 6.5.1.1.4 and Table 6.4.3.4.3, and meet 2016 Fault Detection and Diagnosis requirements in section 6.4.3.12. For outside air, return, and relief air damper leakage requirements economizers meet IECC 2012 section C402.4.5.2 and, IECC 2015 sections C403.2.4.3 and C403.3.3.5 and IECC 2015 section C403.2.4.7 for Fault Detection and Diagnostic requirements.

NOTE: IECC 2015 section C403.2.4.7.1 requires differential return air sensor, which must be ordered separately.

Outside air, return air, and relief air (volume) dampers are AMCA rated — plus 5 year limited parts warranty (EconoMi\$er X system).

- Models with RTU Open meet California Energy Commission Title 24-2016 perspective section 140.4 (damper leakage, etc.) and mandatory section 120.2.i for Fault Detection and Diagnostic requirements. Economizers meet ASHRAE 90.1-2016 damper leakage requirements as stated in section 6.5.1.1.4 and Table 6.4.3.4.3, and meet 2016 Fault Detection and Diagnosis requirements in section 6.4.3.12. Economizers meet IECC 2012 section C402.4.5.2 and, IECC 2015 sections C403.2.4.3 and C403.3.3.5 for outside air, return air, and relief air damper leakage requirements and IECC 2015 section C403.2.4.7 for Fault Detection and Diagnostic requirements.

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Outside air, return air, and relief air (volume) dampers are AMCA rated — plus 5 year limited parts warranty (EconoMi\$er 2 system).

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Outside air, return air, and relief air (volume) dampers are AMCA rated — plus 5 year limited parts warranty (EconoMi\$er 2 system).

FACTORY-INSTALLED OPTIONS (CONT)

Standard Base Unit (United States Models)

- RTU Open multi-protocol controller communicates to BACnet*, Modbus††, LonWorks**, and Johnson N2 protocols.
- CCN Direct Digital Control (DDC) - Premier-Link™ controller††
- Stainless steel gas heat exchanger (includes tubes, vestibule plate and collector box)
- Humidi-MiZer® adaptive dehumidification system (RTPF condenser coil units only)
- Two-position motorized outdoor air damper††
- 25% manual outdoor air damper††
- Non-fused disconnect
- Powered 115-volt convenience outlet
- Non-powered 115-volt convenience outlet
- Medium and high static evaporator fan motor. Medium static indoor fan motor is standard on size 29 models.
- Return air smoke detector
- Supply air smoke detector

- CO₂ sensor
- Condenser hail guard-louvered style
- Special coating protection for evaporator and condenser coils
- Hinged access panels
- Condensate overflow switch

Standard Base Unit (Non-United States Models)

- Staged Air Volume (SAV™) system utilizes a Variable Frequency Drive (VFD) to automatically adjust the indoor fan motor for 2 speed indoor fan motor control. Conforms to ASHRAE 90.1-2016 Standard – section 6.4.3.10.b and IECC-2015.

Optional Warranties

- Complete unit parts only, up to 5 years
- Complete unit parts and labor, up to 5 years

Many other optional warranties are available. See the Commercial Start-Up and Optional Extended Warranty Price pages for further information.

* BACnet is a registered trademark of ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers).

† Modbus is a registered trademark of Schneider Electric.

** LonWorks is a registered trademark of Echelon Corporation.

†† Not available with SAV 2-speed fan motor.

FIELD-INSTALLED ACCESSORIES

Economizer with DRY BULB Sensing and Barometric Relief

Standard Air Leak Dampers —

- Models with W7212 controller provide standard non-diagnostic control (EconoMi\$er® IV system).
- Models with W7220 controller meet California Title 24-2016 Section 120.2.i for Fault Detection and Diagnostic (FDD) requirements (EconoMi\$er X system).
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Economizer with DRY BULB Sensing and Barometric Relief

ULTRA LOW LEAK Air Dampers —

- Models with W7220 controller meet California Energy Commission Title 24-2016 perspective section 140.4 (damper leakage, etc.), and mandatory section 120.2.i for Fault Detection and Diagnostic controls. Economizers meet ASHRAE 90.1-2016 damper leakage requirements as stated in section 6.5.1.1.4 and Table 6.4.3.4.3, and meet 2016 Fault Detection and Diagnosis requirements in section 6.4.3.12. For outside air, return, and relief air damper leakage requirements economizers meet IECC 2012 section C402.4.5.2 and, IECC 2015 sections C403.2.4.3 and C403.3.3.5 and IECC 2015 section C403.2.4.7 for Fault Detection and Diagnostic requirements.

NOTE: IECC 2015 section C403.2.4.7.1 requires differential return air sensor, which must be ordered separately.

Outside air, return air, and relief air (volume) dampers are AMCA rated (EconoMi\$er X system).

- Models with RTU Open meet California Energy Commission Title 24-2016 perspective section 140.4 (damper leakage, etc.) and mandatory section 120.2.i for Fault Detection and Diagnostic requirements. Economizers meet ASHRAE 90.1-2016 damper leakage requirements as stated in section 6.5.1.1.4 and Table 6.4.3.4.3, and meet 2016 Fault Detection and Diagnosis requirements in section 6.4.3.12. Economizers meet IECC 2012 section C402.4.5.2 and, IECC 2015 sections C403.2.4.3 and C403.3.3.5 for outside air, return air, and relief air damper leakage requirements and IECC 2015 section C403.2.4.7 for Fault Detection and Diagnostic requirements.

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Outside air, return air, and relief air (volume) dampers are AMCA rated.

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NOTE: IECC 2015 section C403.2.4.7.1 requires differential return air sensor, which must be ordered separately.

Outside air, return air, and relief air (volume) dampers are AMCA rated.

FIELD-INSTALLED ACCESSORIES (CONT)

- Display Kit for Variable Frequency Drive (VFD), Staged Air Volume System. Allows additional set up and diagnostics of the unit VFD controller. Can be unit mounted or used with any other compatible VFD model as a reusable device.
- Power exhaust — centrifugal fan design
- Two-position motorized outdoor air damper*
- Manual outside air damper 25%*
- Roof curb — 14 inch (356 mm) tall
- Roof curb — 24 inch (610 mm) tall
- Condenser hail guard — louvered style)
- Flue discharge deflector
- Liquid propane (LP) conversion kit
- High altitude conversion kit
- Phase monitor (loss of phase/phase reversal)
- Winter start kit, down to 25°F (-4°C)
- Low ambient head pressure controller, down to -20°F (-29°C)
- Time Guard II compressor anti-cycle protection
- Thermostats and sensors
- Non-powered 115-volt (20 amp) convenience outlet
- Horn/Strobe annunciator
- Return air smoke detector
- Supply air smoke detector

Economizer Sensors

- Single Dry bulb control
- Differential Dry bulb control
- Single enthalpy control
- Differential enthalpy control
- CO₂ — wall mounted
- CO₂ — duct mounted
- CO₂ — unit mounted

* Not available with SAV 2-speed fan motor.

CERTIFIED DIMENSION PRINT

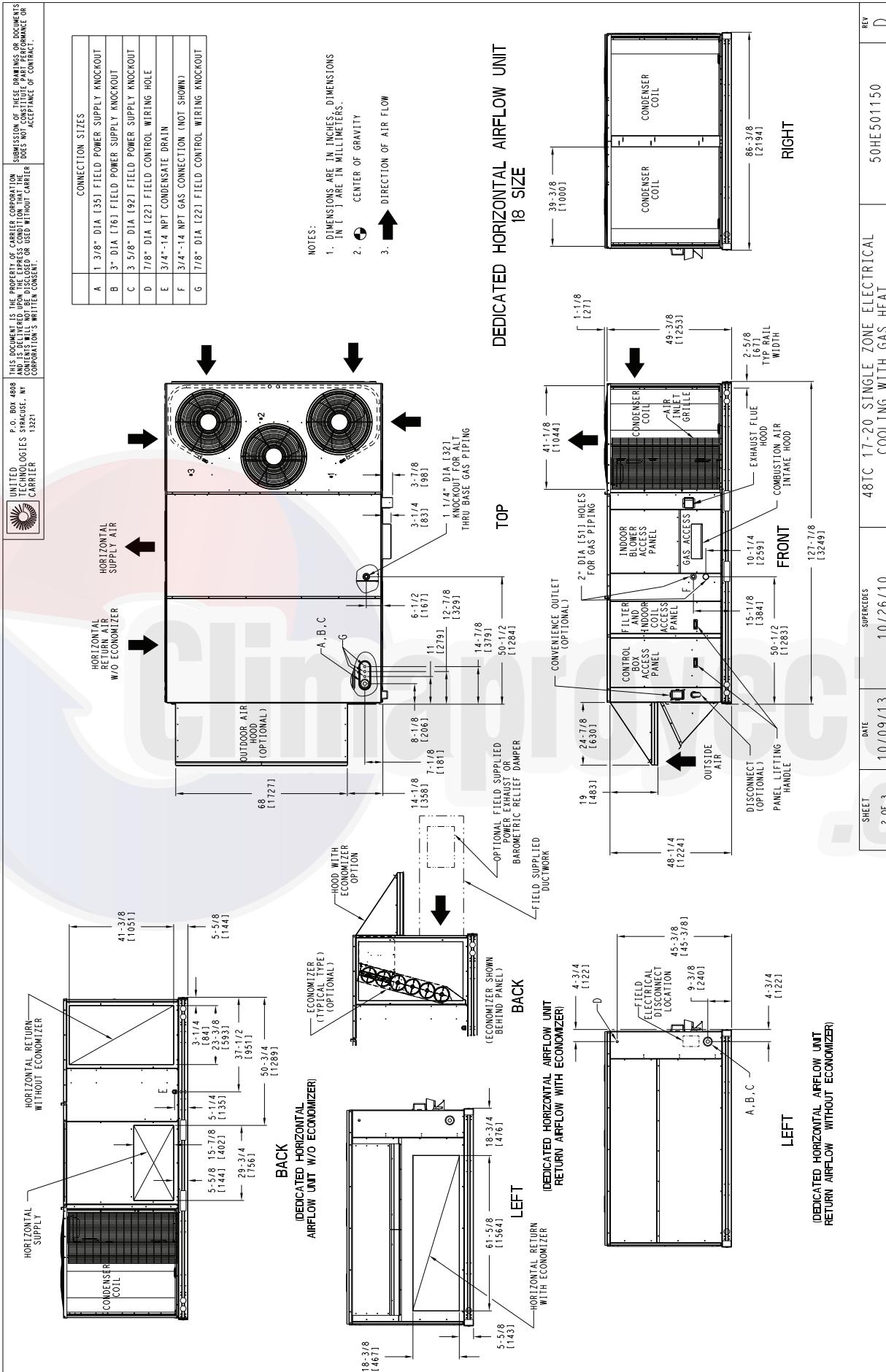


Fig. 1 — 48TC18 Dimensional Drawing**

SHEET	DATE	SUPERSEDES	ELECTRICAL	HEAT	REV
2 of 3	10/09/13	10/26/10	48TC 17-20 SINGLE ZONE COOLING WITH GAS HEAT	50HES01150	D

CERTIFIED DIMENSION PRINT

UNITED TECHNOLOGIES CORP. P.O. BOX 4808 Syracuse, NY 13221										THIS DOCUMENT IS THE PROPERTY OF CARRIER CORPORATION AND IS DELIVERED UPON THE EXPRESS CONDITION THAT THE RECIPIENT WILL NOT CONSTITUTE PART PERFORMANCE OR SUBMISSION OF THESE DRAWINGS OR DOCUMENTS TO A THIRD PARTY. THIS DOCUMENT IS THE PROPERTY OF CARRIER CORPORATION AND IS DELIVERED UPON THE EXPRESS CONDITION THAT THE RECIPIENT WILL NOT CONSTITUTE PART PERFORMANCE OR SUBMISSION OF THESE DRAWINGS OR DOCUMENTS TO A THIRD PARTY. THIS DOCUMENT IS THE PROPERTY OF CARRIER CORPORATION AND IS DELIVERED UPON THE EXPRESS CONDITION THAT THE RECIPIENT WILL NOT CONSTITUTE PART PERFORMANCE OR SUBMISSION OF THESE DRAWINGS OR DOCUMENTS TO A THIRD PARTY.	
UNIT	OUTDOOR COIL TYPE	STD UNIT WEIGHT *	WEIGHT (A)	WEIGHT (B)	WEIGHT (C)	WEIGHT (D)	WEIGHT (E)	WEIGHT (F)	WEIGHT (G)		
LBS.	KG	LBS.	KG	LBS.	KG	LBS.	KG	LBS.	KG		
48C7	MCHX	1824	823	434	191	443	210	479	218	469	213
											44 3/4 [1137]
											64 3/4 [1645]
											16 1/2 [419]
48C20	MCHX	1839	836	431	199	447	203	483	219	472	215
											44 3/4 [1137]
											64 3/4 [1645]
											16 1/2 [419]
48C7	RTPF	1907	867	438	199	519	236	515	234	435	198
											42 29 3/2 [1090]
											69 1/4 [1759]
											16 1/2 [419]
48C8	RTPF	1892	860	401	182	449	204	565	257	505	230
											48 [129]
											67 3/8 [1715]
											16 1/2 [419]
48C20	RTPF	1922	874	441	201	523	238	519	236	438	199
											42 29 3/2 [1090]
											69 1/4 [1759]
											16 1/2 [419]
RTPF - ROUND TUBE, PLATE FIN (COPPER/ALUM) MCHX - NOVATION (ALUM/ALUM)											

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

UNITED TECHNOLOGIES CORP.
P.O. BOX 4808
Syracuse, NY
13221

48TC18 SINGLE ZONE ELECTRICAL
COOLING WITH GAS HEAT

SHEET 3 OF 3 DATE 10/09/13 SUPERSEDES 10/26/10

50HE501150 REV D

Fig. 2 — 48TC**18 Corner Weights

CERTIFIED DIMENSION PRINT

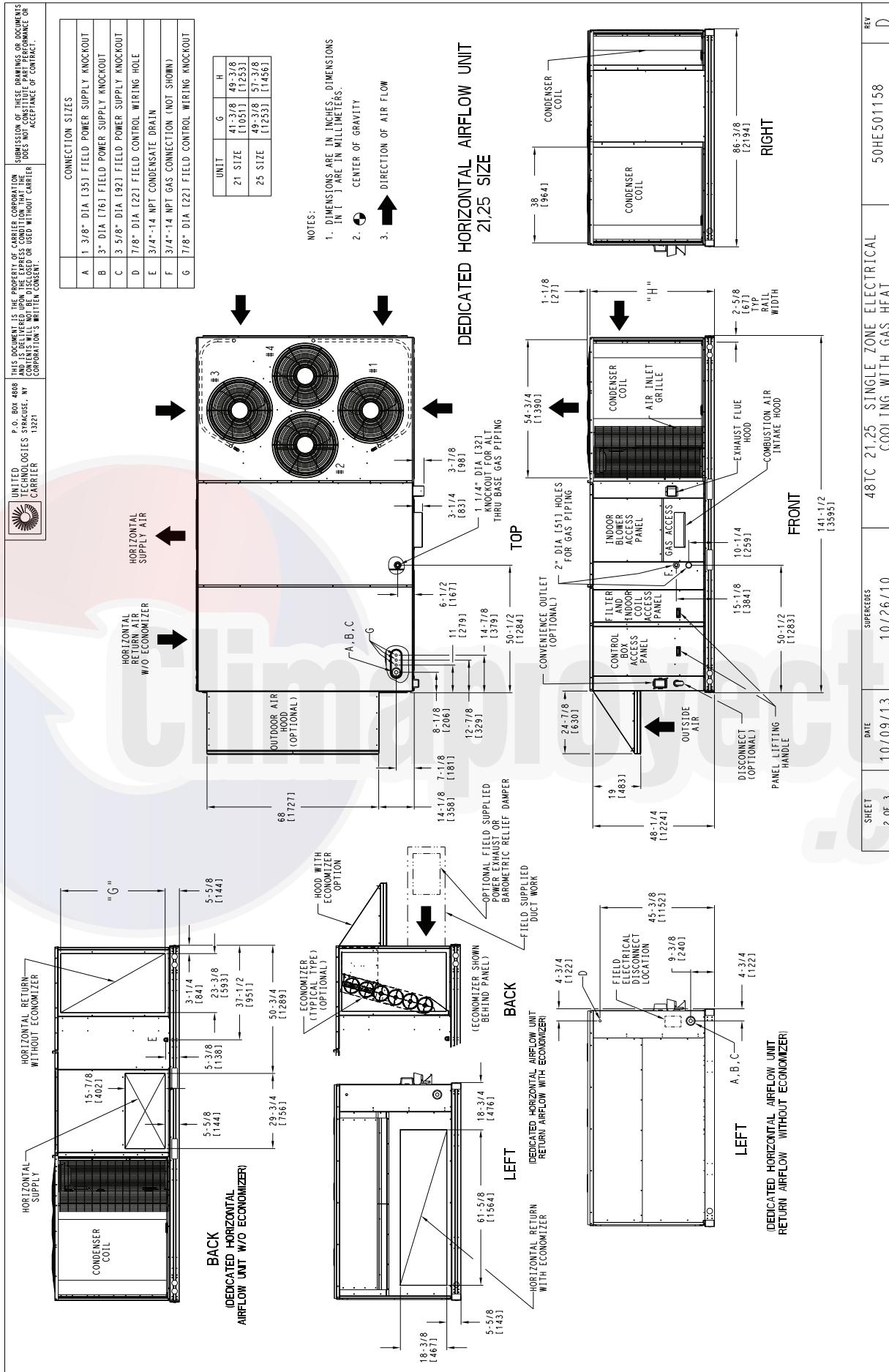


Fig. 3 — 48TC**21 and 25 Dimensional Drawing

CERTIFIED DIMENSION PRINT

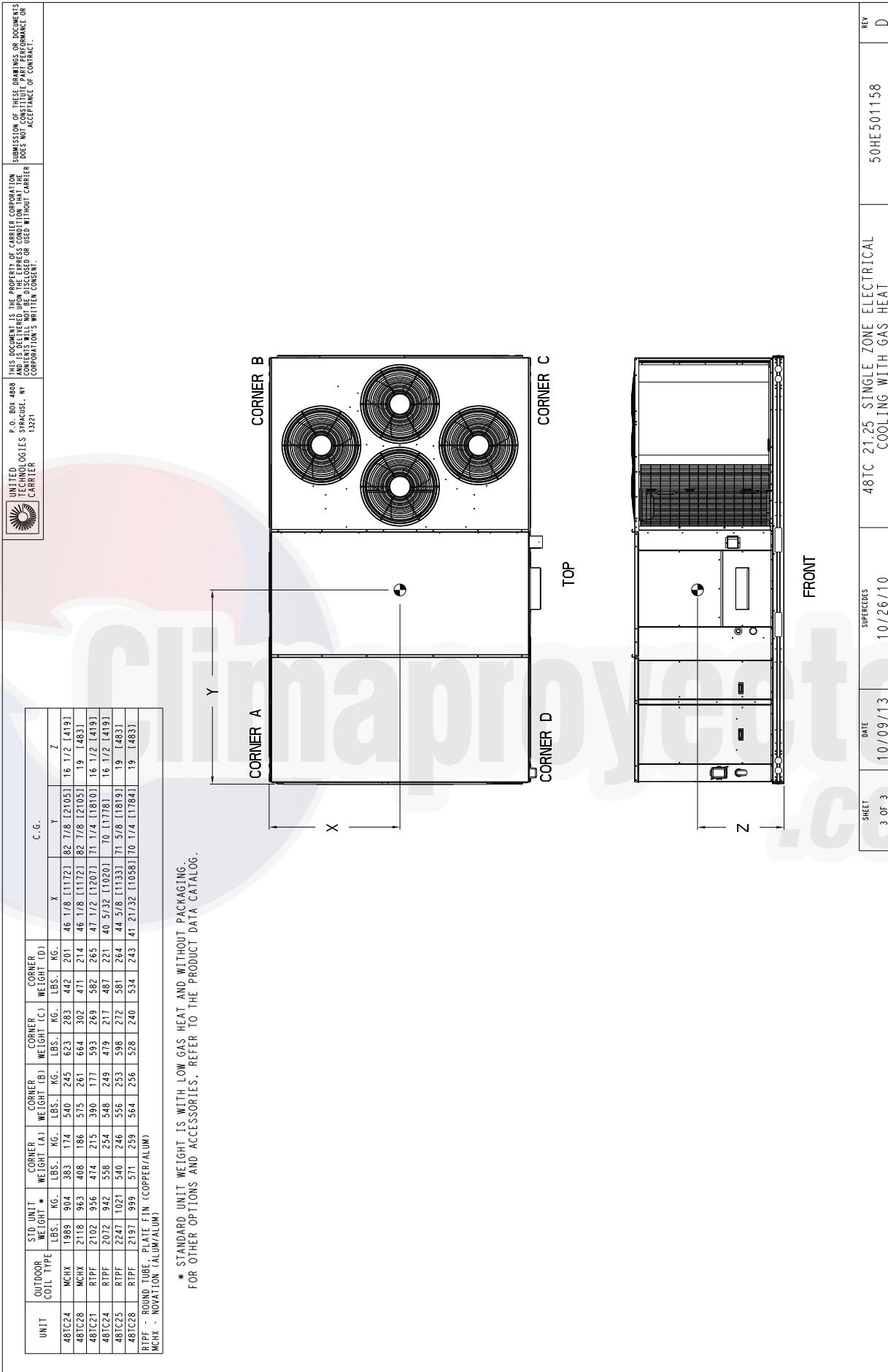


Fig. 4 — 48TC21 and 25 Corner Weights**

CERTIFIED DIMENSION PRINT

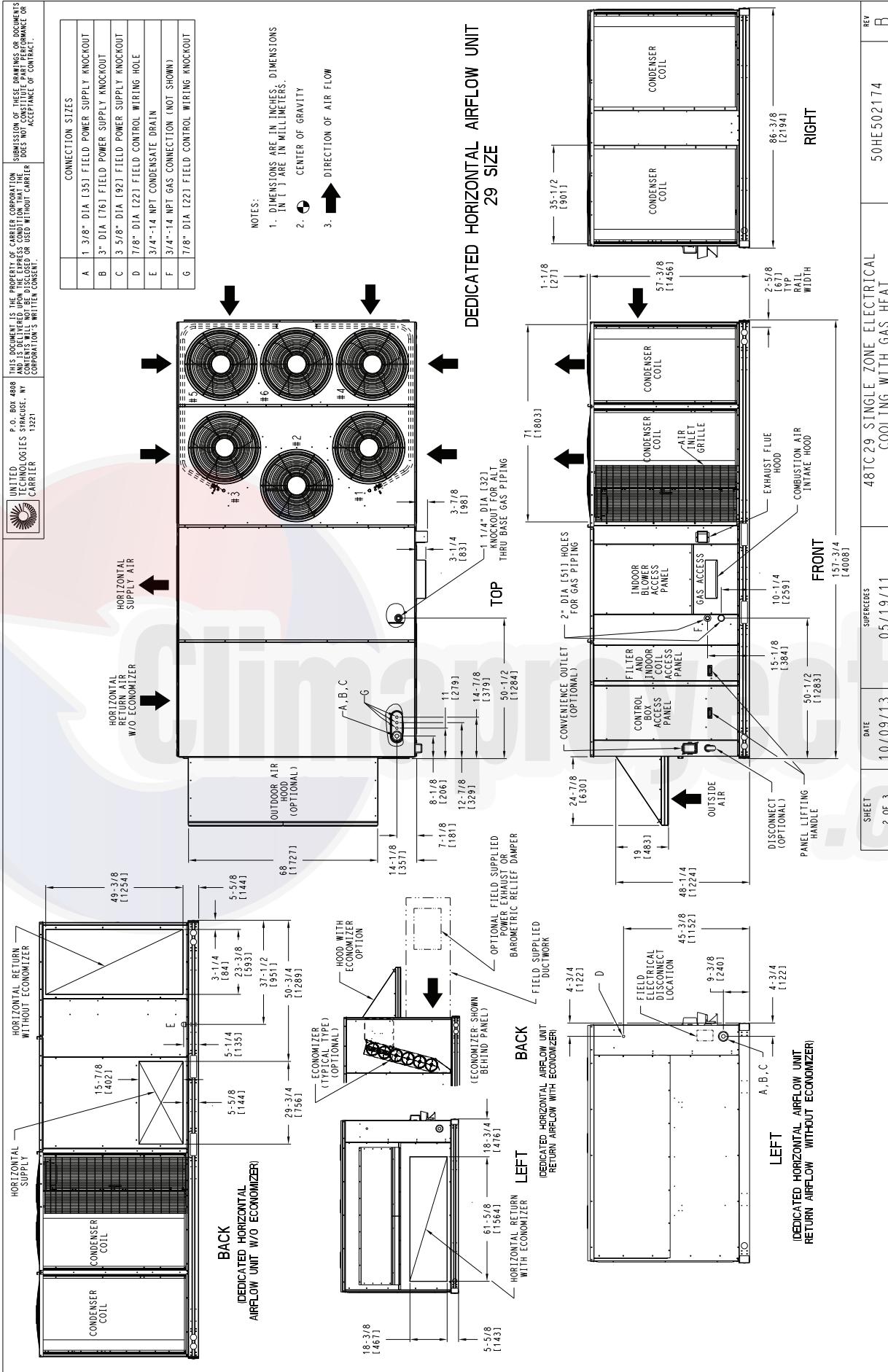


Fig. 5 — 48TC29 Dimensional Drawing**

CERTIFIED DIMENSION PRINT

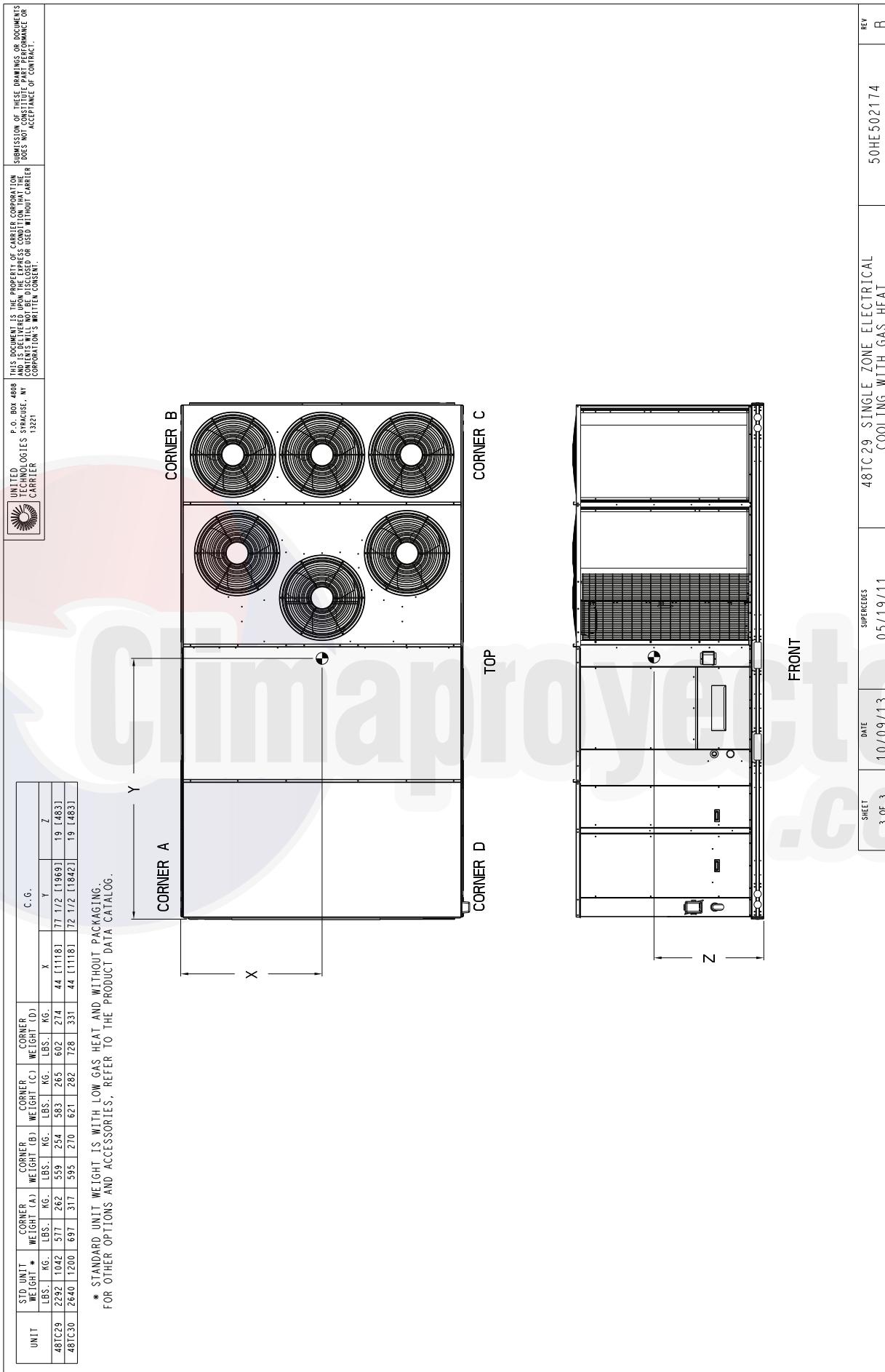
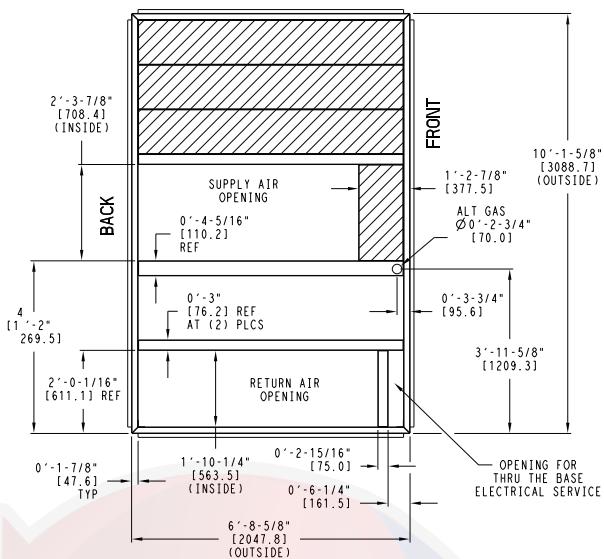


Fig. 6 — 48TC29 Corner Weights**

CERTIFIED ROOF CURB DETAILS

UNIT SIZE	"A"	ROOF CURB ACCESSORY
18	1'-2" [356.0] 2'-0" [610.0]	CRRECURBO45A00 CRRFCURBO46A00



NOTES:

- 1 ROOF CURB ACCESSORY IS SHIPPED UNASSEMBLED.
- 2 DIMENSIONS IN [] ARE IN MILLIMETERS.
- 3 ROOF CURB GALVANIZED STEEL.
- 4 ATTACH DUCTWORK TO CURB (FLANGES ON DUCT REST ON CURB)
- 5 SERVICE CLEARANCE 4 ft ON EACH SIDE

→ DIRECTION OF AIR FLOW

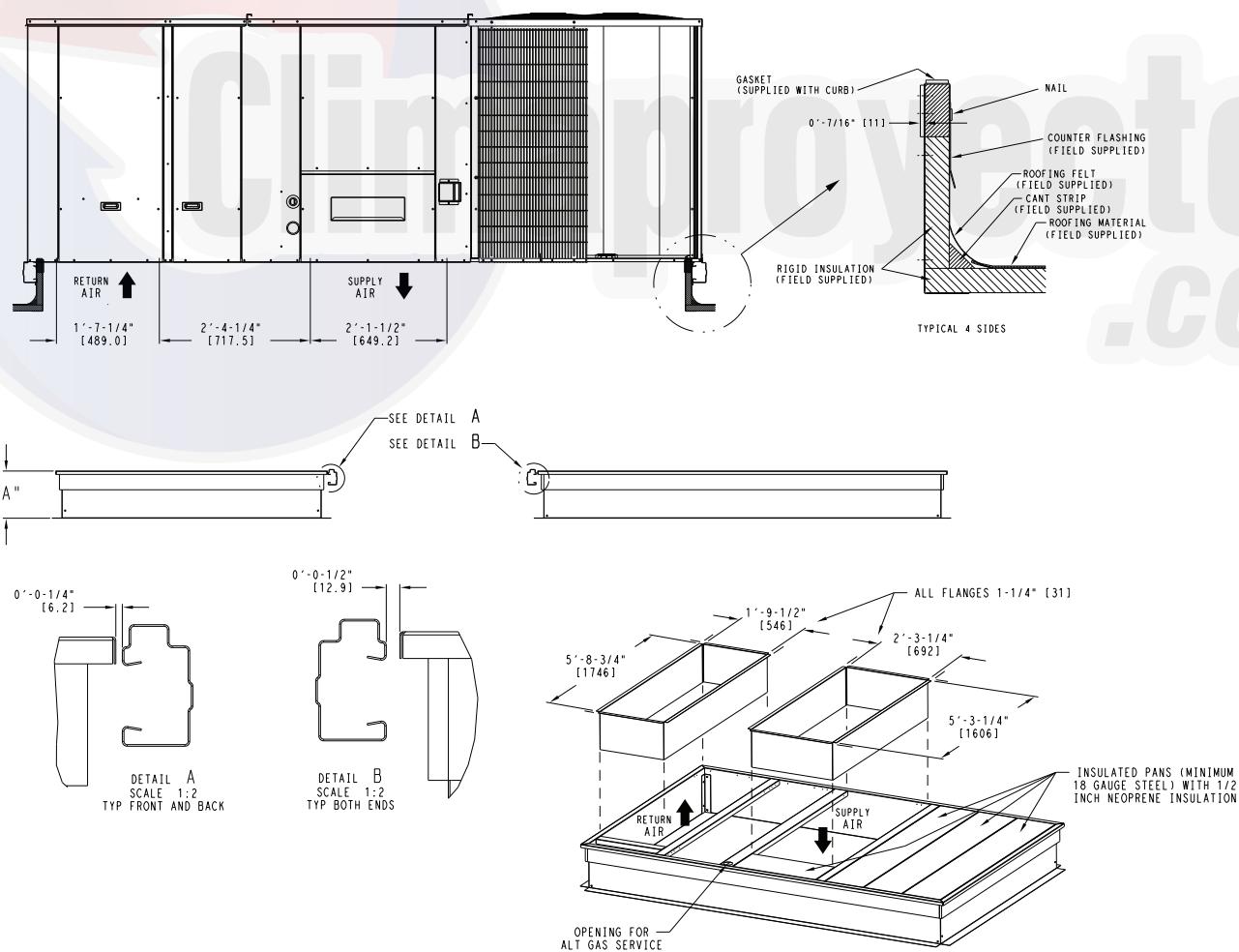
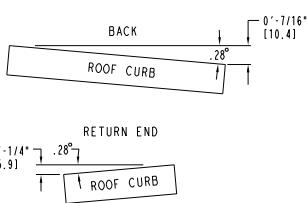
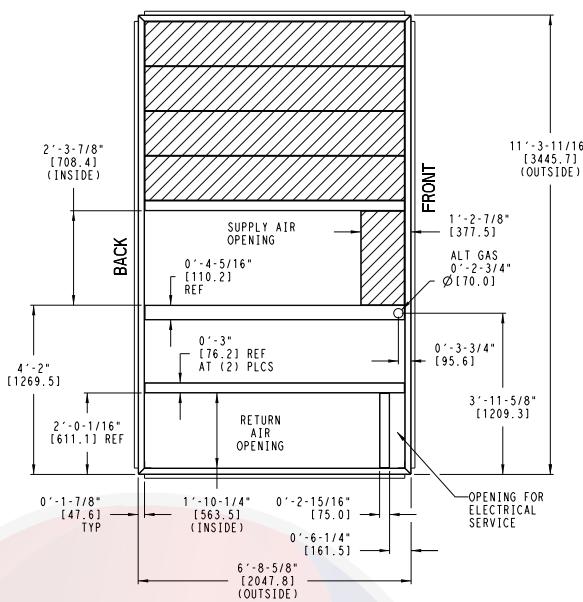


Fig. 7 — 48TC**18 Roof Curb Details

CERTIFIED ROOF CURB DETAILS

UNIT SIZE	"A"	ROOF CURB ACCESSORY
21, 25	1'-2" [356.0] 2'-0" [610.0]	CRRFCURB047A00 CRRFCURB048A00



NOTES:

1. ROOF CURB ACCESSORY IS SHIPPED UNASSEMBLED.
2. DIMENSIONS IN [] ARE IN MILLIMETERS.
3. ROOF CURB GALVANIZED STEEL.
4. ATTACH DUCTWORK TO CURB (FLANGES ON DUCT REST ON CURB)
5. SERVICE CLEARANCE 4 ft ON EACH SIDE

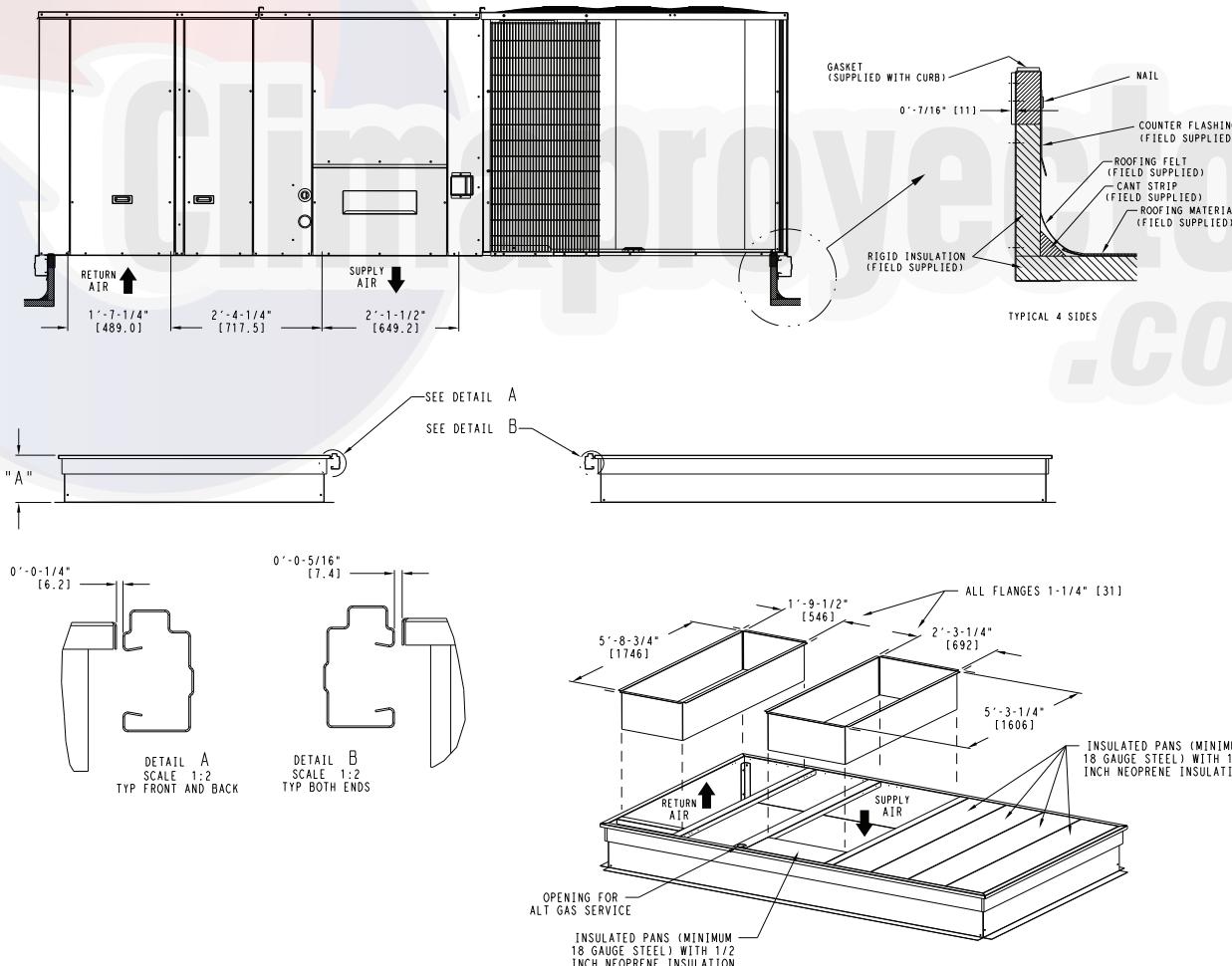
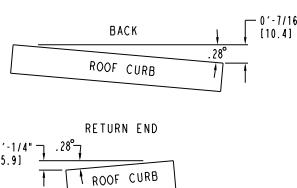


Fig. 8 — 48TC**21 and 25 Roof Curb Details

CERTIFIED ROOF CURB DETAILS

