



TRANE®

Installation Guide

Cool, Dry, Quiet CDQ™

Roofcurb

Model Number

BAYCURB026
BAYCURB027
BAYCURB042
BAYCURB043
BAYCURB044

Used with

3-20 Ton Light Commercial Rooftop Units





Warnings, Cautions and Notices

Warnings, Cautions and Notices. Note that warnings, cautions and notices appear at appropriate intervals throughout this manual. Warnings are provided to alert installing contractors to potential hazards that could result in personal injury or death. Cautions are designed to alert personnel to hazardous situations that could result in personal injury, while notices indicate a situation that could result in equipment or property-damage-only accidents.

Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

ATTENTION: Warnings, Cautions and Notices appear at appropriate sections throughout this literature. Read these carefully.

 **WARNING:** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

 **CAUTION:** Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It could also be used to alert against unsafe practices.

NOTICE: Indicates a situation that could result in equipment or property-damage-only accidents.

Important Environmental Concerns!

Scientific research has shown that certain man-made chemicals can affect the earth's naturally occurring stratospheric ozone layer when released to the atmosphere. In particular, several of the identified chemicals that may affect the ozone layer are refrigerants that contain Chlorine, Fluorine and Carbon (CFCs) and those containing Hydrogen, Chlorine, Fluorine and Carbon (HCFCs). Not all refrigerants containing these compounds have the same potential impact to the environment. Trane advocates the responsible handling of all refrigerants-including industry replacements for CFCs such as HCFCs and HFCs.

Responsible Refrigerant Practices!

Trane believes that responsible refrigerant practices are important to the environment, our customers, and the air conditioning industry. All technicians who handle refrigerants must be certified. The Federal Clean Air Act (Section 608) sets forth the requirements for handling, reclaiming, recovering and recycling of certain refrigerants and the equipment that is used in these service procedures. In addition, some states or municipalities may have additional requirements that must also be adhered to for responsible management of refrigerants. Know the applicable laws and follow them.

WARNING **Ground Wire!**

All field-installed wiring must be completed by qualified personnel. All field-installed wiring must comply with NEC and applicable local codes. Failure to follow this instruction could result in death or serious injuries.

NOTICE: **Roof Damage!**

System contains oil and refrigerant under high pressure. Roofs should be protected from exposure to oils and refrigerant in the system. If rooftop is not protected damage to the roof may occur.

 WARNING**Personal Protective Equipment (PPE) Required!**

Installing/servicing this unit could result in exposure to electrical, mechanical and chemical hazards.

- Before installing/servicing this unit, technicians **MUST** put on all Personal Protective Equipment (PPE) recommended for the work being undertaken. **ALWAYS** refer to appropriate MSDS sheets and OSHA guidelines for proper PPE.
- When working with or around hazardous chemicals, **ALWAYS** refer to the appropriate MSDS sheets and OSHA guidelines for information on allowable personal exposure levels, proper respiratory protection and handling recommendations.
- If there is a risk of arc or flash, technicians **MUST** put on all necessary Personal Protective Equipment (PPE) in accordance with NFPA70E for arc/flash protection **PRIOR** to servicing the unit.

Failure to follow recommendations could result in death or serious injury.



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General Information

General

This manual describes the layout and installation procedures required to properly assemble and install the roof curb. Illustrations in [Figure 1, p. 9](#) and [Figure 2, p. 9](#) provide dimensional data regarding roof opening construction.

Each curb package ships unassembled, along with the required hardware and gasketing material. Roof insulation, cant strips, flashing (if desired), nails, and sheet metal screws must be furnished by the installing contractor.

Initial Inspection

Compare the order number on the shipping label with the accessory identification information on the ordering and shipping documents to verify that the correct accessory has been received.

Clearances

The recommended clearances for single-unit installations are illustrated in [Figure 1, p. 9](#) for 3 - 10 ton units or [Figure 2, p. 9](#) for 12 1/2 - 20 ton units.

These minimum requirements are not only an important consideration when determining unit placement, but they are also essential to ensure adequate serviceability, maximum capacity, and peak operation efficiency.

Any reduction of the unit clearances indicated in this illustration may result in condenser coil starvation, or the recirculation of warm condenser air. Actual clearances which appear to be inadequate should be reviewed with a local sales engineer.

Serviceability

Access doors to the desiccant wheel are located on the service side of the packaged rooftop unit. If care is not taken in routing gas services (gas heat units only), access to the desiccant wheel could be restricted. The CDQ roof curb can be ordered with access doors on the non-service side of the package rooftop unit.



Installation

⚠️ WARNING **Heavy Objects!**

Do not use cables (chains or slings) except as shown. Each of the cables (chains or slings) used to lift the unit must be capable of supporting the entire weight of the unit. Lifting cables (chains or slings) may not be of the same length. Adjust as necessary for even unit lift. Other lifting arrangements may cause equipment or property-only damage. Failure to properly lift unit could result in death or serious injury. See details below.

Read the entire manual carefully to become familiar with the roof curb installation procedures. If the roof curb will be mounted on a new building, it can be assembled at any convenient location and installed as soon as the roof support members are in place. As a general rule, the curb should be placed directly on the roof support members. Use tack welding or other suitable fastening method to secure the roof curb in place.

The curb can also be mounted on a roof deck. In this case, additional nailing plates must be provided directly below the flanges of the curb to give further support and to minimize vibration. When the installation is on an existing building, hoist the shipping container directly onto the roof.

Supply and Return Air Ductwork

All ductwork must be run and attached to the curb before the unit is set into place. See [Figure 17, p. 24](#). All ductwork must be fabricated and installed by the installing contractor. To ensure proper duct construction and installation, SMACNA recommendations should be closely followed.

Note: *All field fabricated panels used must be insulated.*

Roof Opening

For safety and sound considerations, do not cut out the entire roof deck within the curb area.

Roof Support

NOTICE

Roof Damage!

System contains oil and refrigerant under high pressure. Roofs should be protected from exposure to oils and refrigerant in the system. If rooftop is not protected damage to the roof may occur.

⚠️ WARNING **Heavy Objects!**

The roof must be capable of adequately supporting the weight of the rooftop unit as well as that of the curb. Failure to do so could result in the roof collapsing under the weight which could result in death or serious injury and property damage.

Units may be set either lateral or parallel to the roof support members. The combined weight of the unit, accessories, and curb should be evenly spaced between a minimum of two (2) supports.

Ensure that the curb's position on the roof supports does not interfere with the clearance required for the supply/return ductwork. See [Figure 1, p. 9](#) for 3 - 10 ton units or [Figure 2, p. 9](#) for 12 1/2 - 20 ton units.

For convenience, it is suggested that the starting collars for the supply and return ductwork be installed before the curb is placed into position.

Table 1. Curb weights

Trane Roofcurb	CDQ Wheel Size (in.)	Wheel Part Number	Approx. Curb Weight (lbs)
BAYCURB042	28	NAC284	487
BAYCURB043	32	NAC324	602
BAYCURB043	36	NAC364	624
BAYCURB043	42	NAC424	678
BAYCURB043	48	NAC484	823
BAYCURB044	42	NAC424	753
BAYCURB044	48	NAC484	903
BAYCURB026	48	NAC484	1498
BAYCURB027	48	NAC484	1573
BAYCURB027	54	NAC544	1668
BAYCURB027	60	NAC604	1787
BAYCURB027	66	NAC664	2007

Roof Curb Installation for BAYCURB042B, BAYCURB043B, & BAYCURB044 w/CDQ

WARNING

Hazardous Voltage w/Capacitors!

Disconnect all electric power, including remote disconnects and discharge all motor start/run capacitors before servicing. Follow proper lockout/tagout procedures to ensure the power cannot be inadvertently energized. Verify with an appropriate voltmeter that all capacitors have discharged. Failure to disconnect power and discharge capacitors before servicing could result in death or serious injury.

Note: For additional information regarding the safe discharge of capacitors, see PROD-SVB06A-EN or PROD-SVB06A-FR

WARNING

Fire Hazard!

Do not create roofcurb out of wood or other flammable material. Failure to follow proper procedures or the use of non-approved building materials could result in death or serious injury or equipment damage due to fire.

NOTICE

Roof Damage!

System contains oil and refrigerant under high pressure. Roofs should be protected from exposure to oils and refrigerant in the system. If rooftop is not protected damage to the roof may occur.

1. Disconnect electrical power supplied to the unit
2. Locate powered convenience outlet wires 401A and 400A. See [Figure 18, p. 25](#).
3. Disconnect wires 401A and 400A from the line side of the unit circuit breaker or unit disconnect switch and reconnect to the load side. See [Figure 20, p. 27](#).
4. Locate the powered convenience outlet receptacle wires 409A & 410A. ([Figure 18, p. 25](#))
5. Disconnect these wires from the receptacle. See [Figure 18, p. 25](#).
6. Connect wires 409A & 410A to CDQ T1 timer. Terminate on to terminals 4 & 6. [Figure 20, p. 27](#).

7. Locate the unit 24VAC control transformer TNS1.
8. Connect the following CDQ components to the common side of TNS1.
 - a. T1 CDQ Timer: Terminal B to Common
 - b. R1/CC1: Terminal 8 to Common
 - c. R2/CC2: Terminal 8 to Common
9. Connect R1/CC1 Terminal 1 to the unit compressor contactor coil CC1. Terminate the wire on the same side of contactor coil as wire 122A. See [Figure 20, p. 27](#).

Note: Perform Step 9 on units with two compressors.

10. Connect R2/CC2 Terminal 1 to unit compressor contactor coil CC2. Terminate the wire on the same side of contactor coil as wire 112D. See [Figure 20, p. 27](#).

Note: Perform Step 10 on units with two compressors.

11. Connect T1 CDQ timer Terminal A to unit control transformer TNS1, wire 100D. See [Figure 20, p. 27](#).

Roof Curb Installation for BAYCURB026B & BAYCURB027B w/CDQ

WARNING

Hazardous Voltage w/Capacitors!

Disconnect all electric power, including remote disconnects and discharge all motor start/run capacitors before servicing. Follow proper lockout/tagout procedures to ensure the power cannot be inadvertently energized. Verify with an appropriate voltmeter that all capacitors have discharged. Failure to disconnect power and discharge capacitors before servicing could result in death or serious injury.

Note: For additional information regarding the safe discharge of capacitors, see *PROD-SVB06A-EN* or *PROD-SVB06A-FR*

NOTICE

Roof Damage!

System contains oil and refrigerant under high pressure. Roofs should be protected from exposure to oils and refrigerant in the system. If rooftop is not protected damage to the roof may occur.

1. Disconnect electrical power supplied to the unit
2. Locate powered convenience outlet wires 401A and 400A. See [Figure 19, p. 26](#).
3. Disconnect wires 401A and 400A from the line side of the unit circuit breaker or unit disconnect switch and reconnect to the load side. See [Figure 21, p. 28](#).
4. Locate the powered convenience outlet receptacle wires 412A & 413A.
5. Disconnect these wires from the receptacle. See [Figure 21, p. 28](#).
6. Connect wires 412A & 413A to CDQ T1 timer. Terminate on to terminals 4 & 6. [Figure 21, p. 28](#).
7. Locate the unit 24VAC control transformer TNS1.
8. Connect the following CDQ components to the common side of TNS1.
 - a. Connect T1 CDQ timer: Terminal B to Common.
 - b. R1/CC1: Terminal 8 to Common
 - c. R2/CC2: Terminal 8 to Common
9. Connect R1/CC1 Terminal 1 to the unit compressor contactor coil CC1. Terminate the wire on the same side of the contactor coil as wire 87A. See [Figure 21, p. 28](#).

10. Connect R2/CC2 Terminal 1 to the unit compressor contactor coil CC2. Terminate the wire on the same side of the contactor coil as wire 90A. See [Figure 21, p. 28](#).
11. Connect T1 CDQ Timer terminal A to the unit control transformer TNS1. Wire 31A, see [Figure 21, p. 28](#).

Figure 1. 3 - 10 ton unit clearances

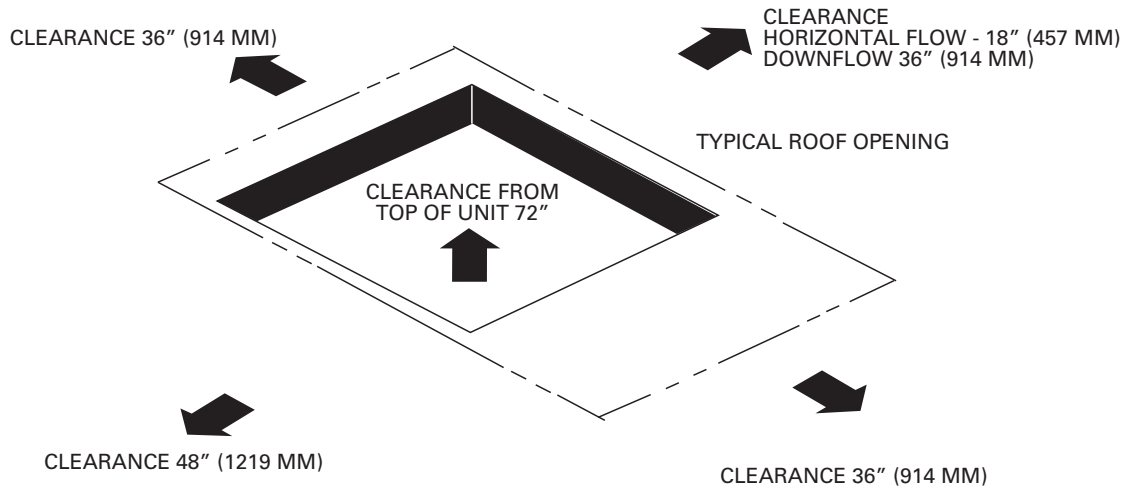
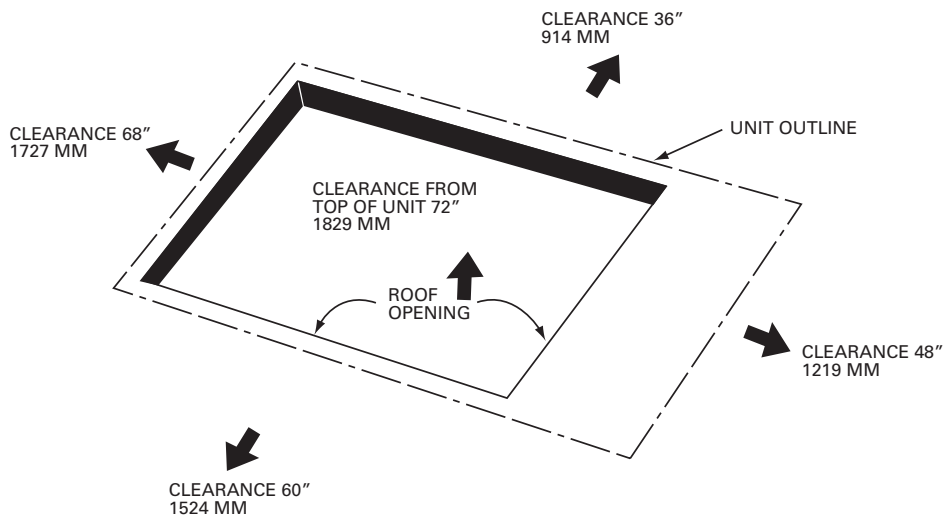


Figure 2. 12 1/2 - 20 ton unit clearances



Installation

Figure 3. BAYCURB042 with 28" CDQ wheel

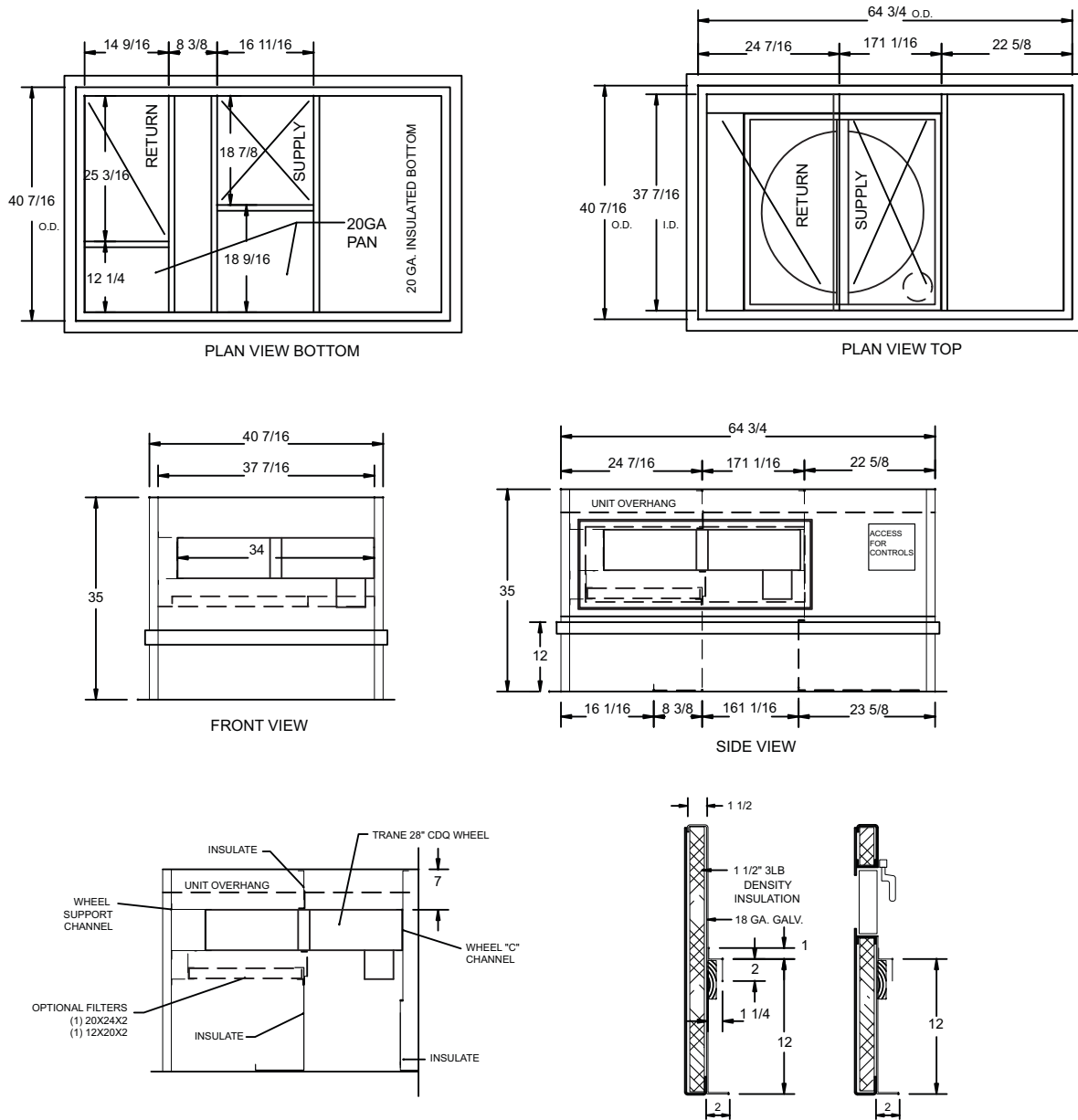
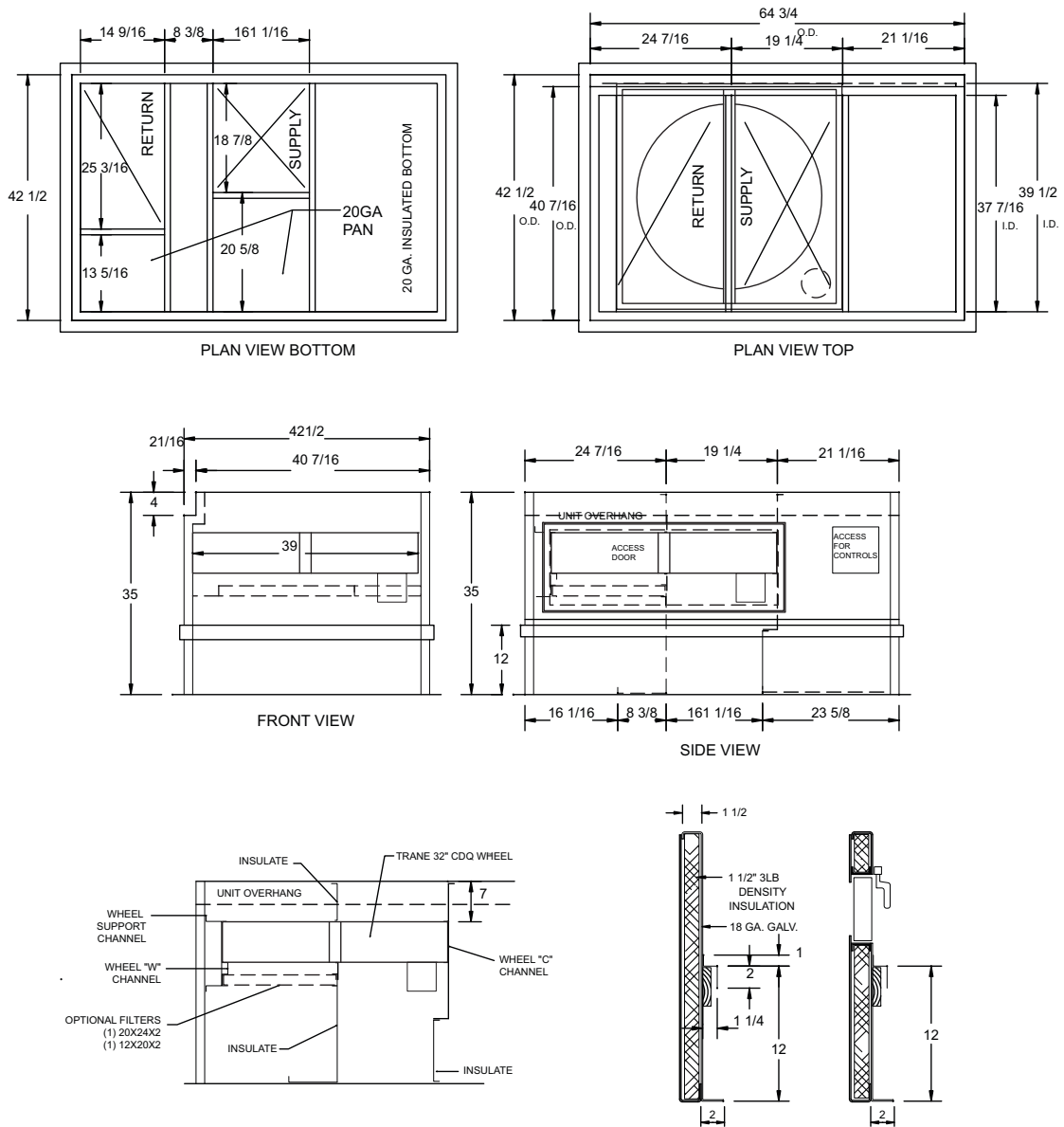


Figure 4. BAYCURB042 with 32" CDQ wheel



Installation

Figure 5. BAYCURB042 with 36" CDQ wheel

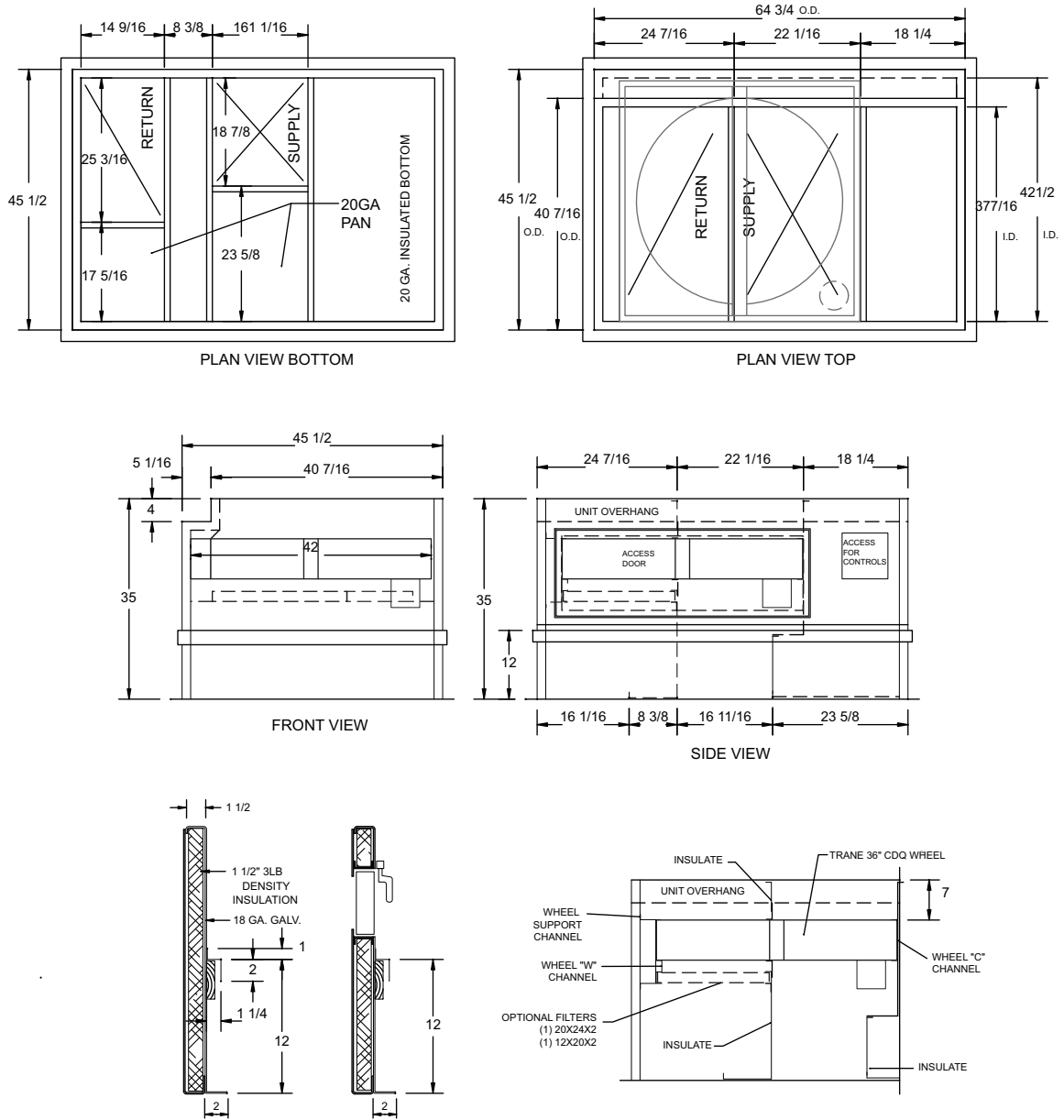
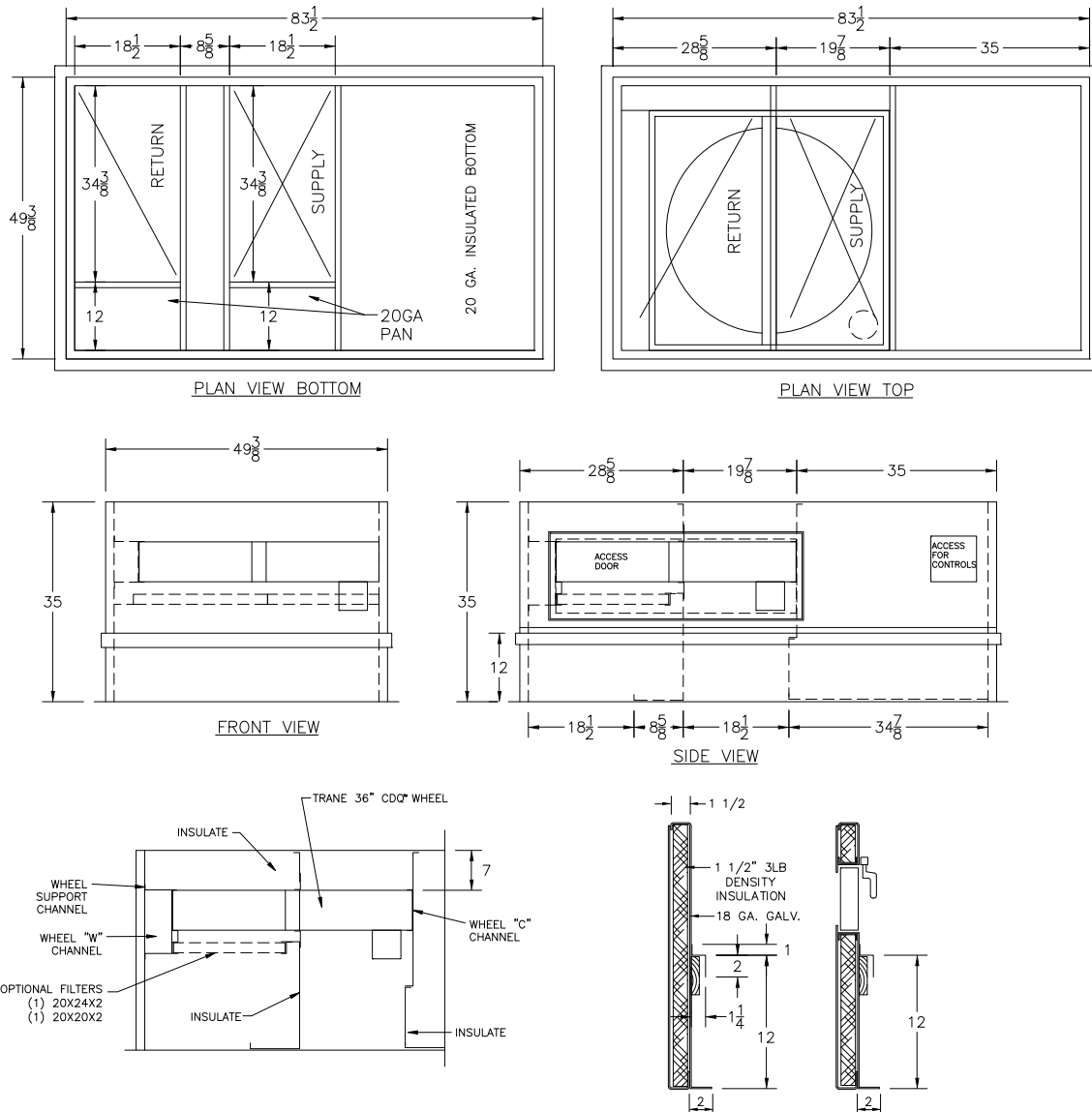


Figure 6. BAYCURB043 with 36" CDQ wheel



Installation

Figure 7. BAYCURB043 with 42" CDQ wheel

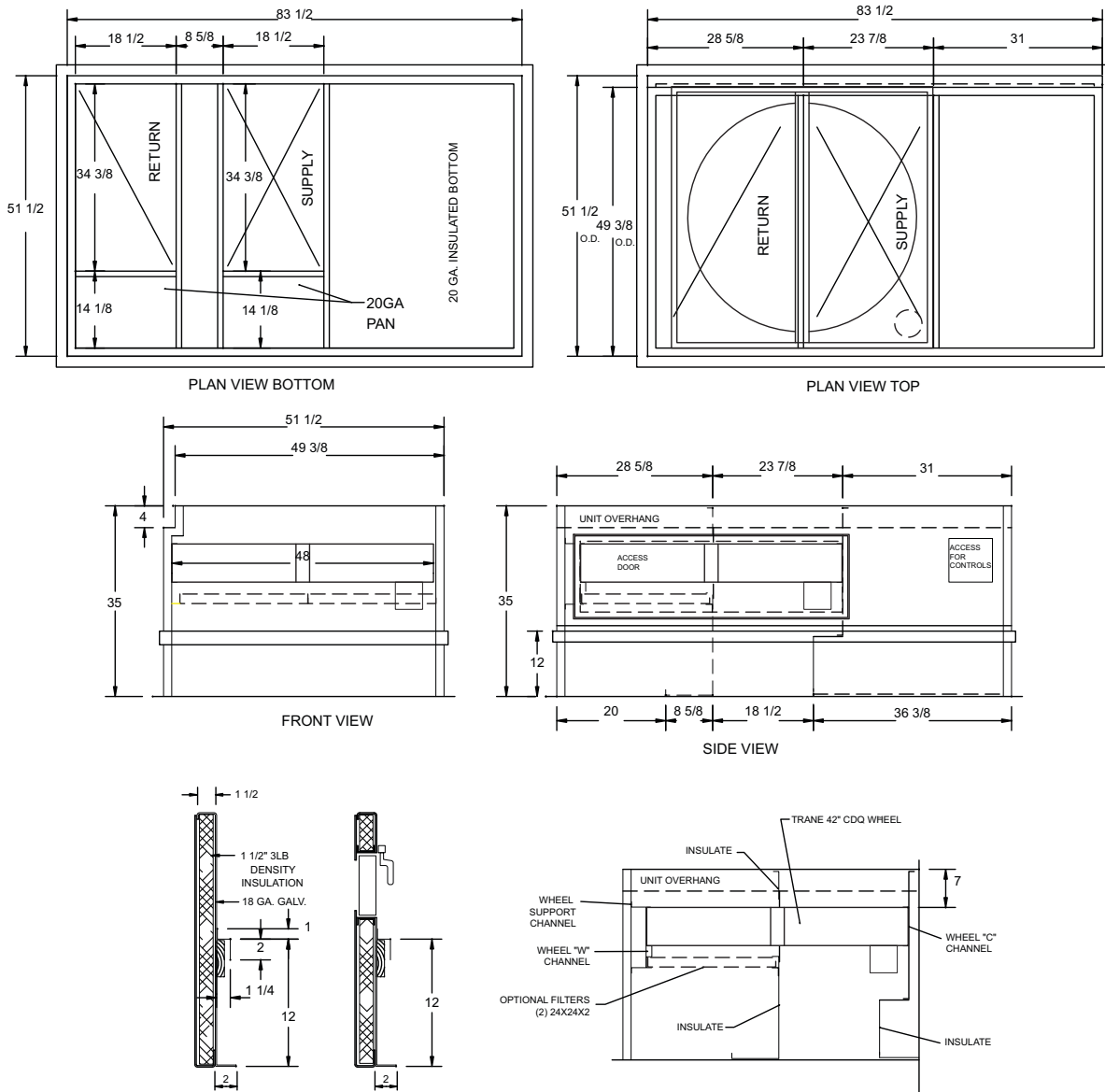
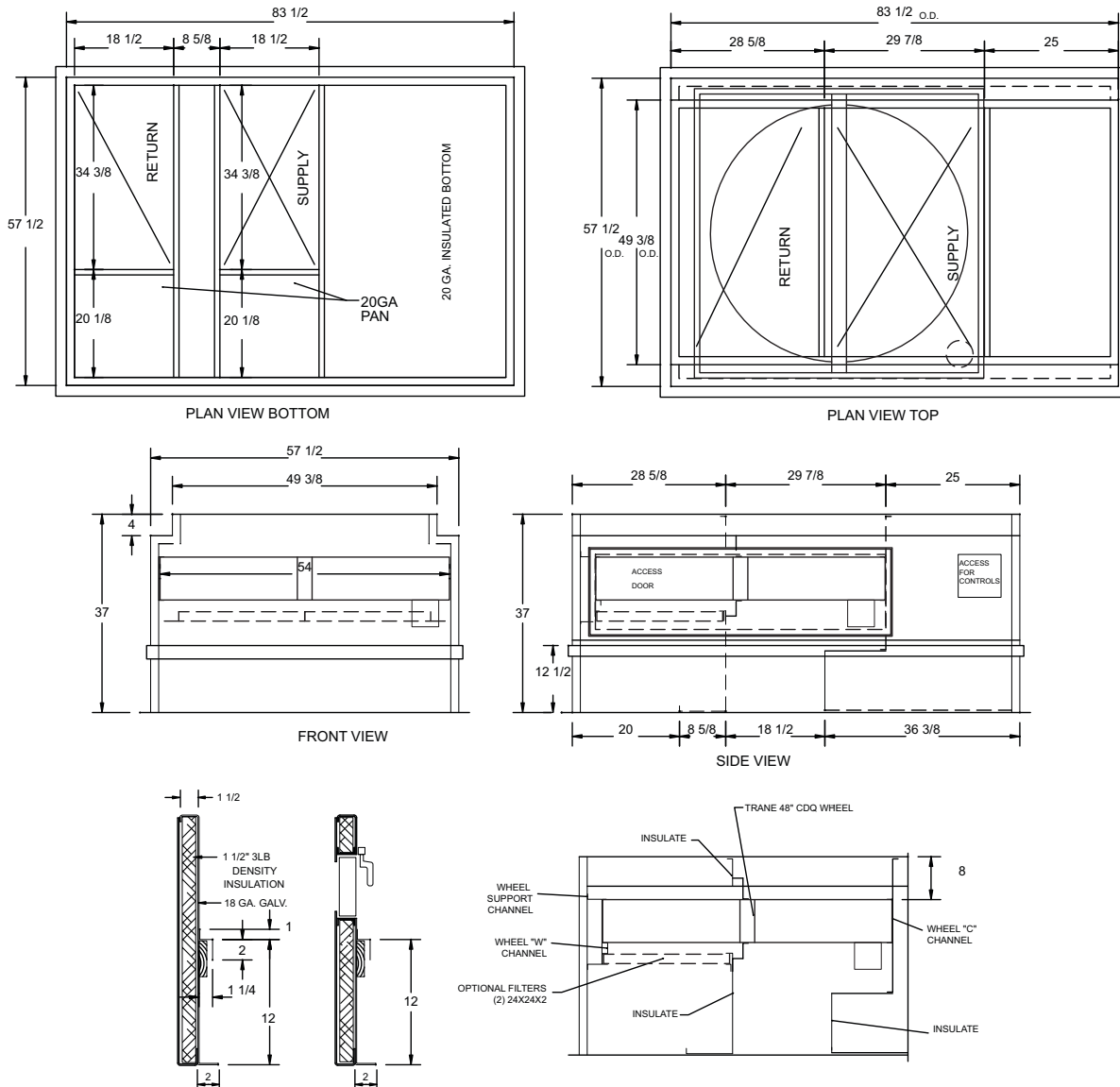


Figure 8. BAYCURB043 with 48" CDQ wheel



Installation

Figure 9. BAYCURB044 with 42" CDQ wheel

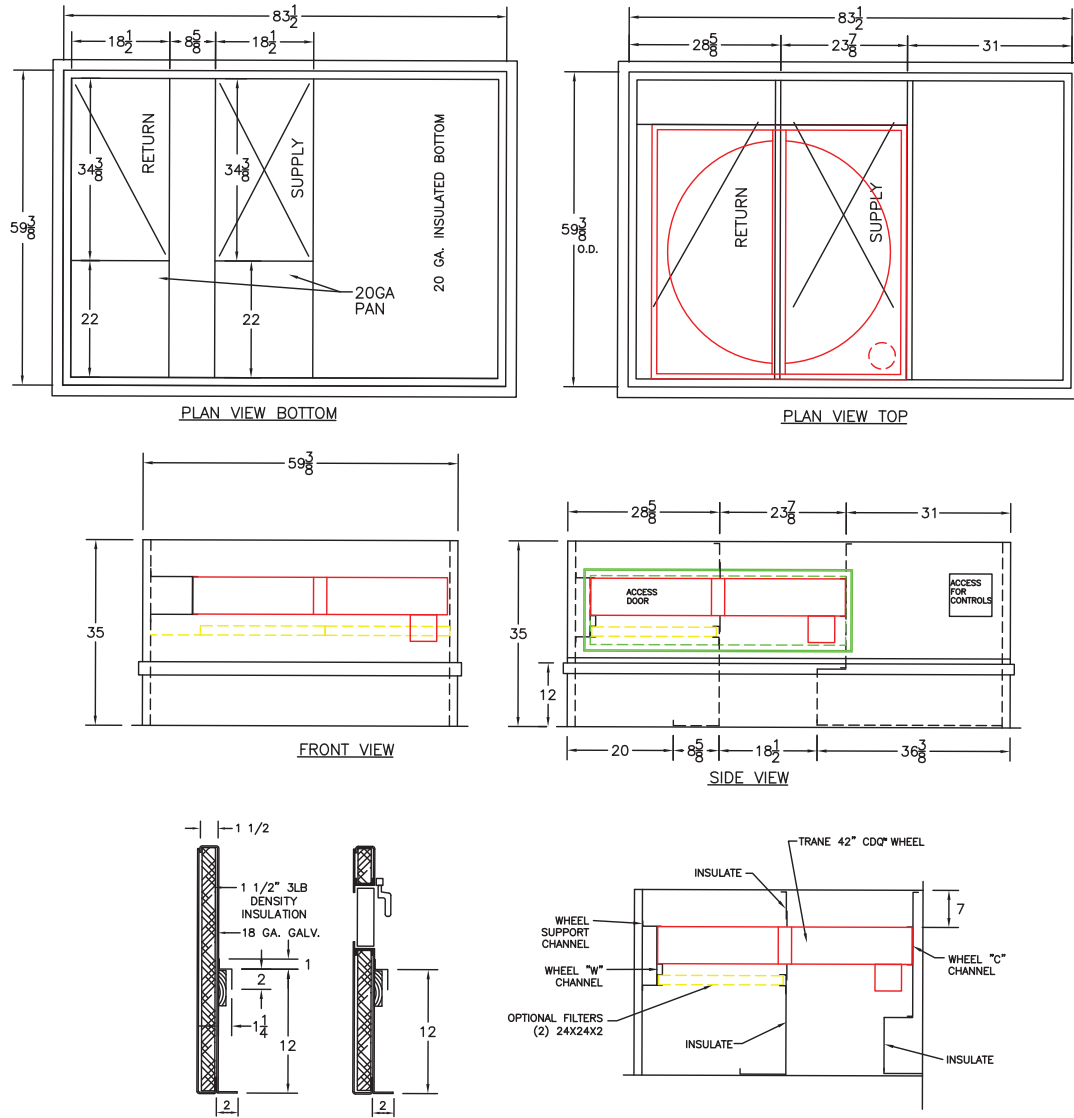
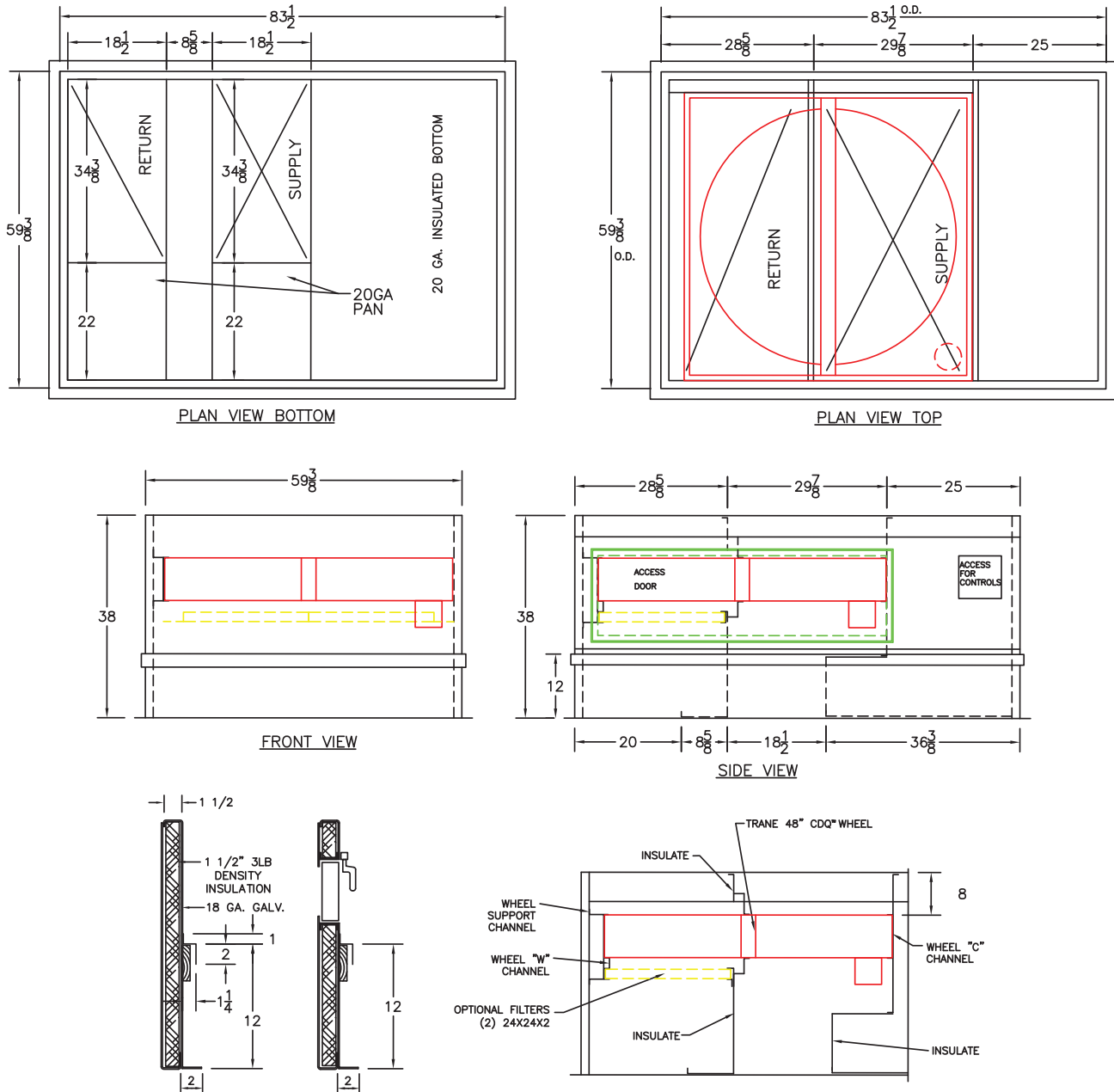


Figure 10. BAYCURB044 with 48" CDQ wheel



Installation

Figure 11. BAYCURB026 with 48" CDQ wheel

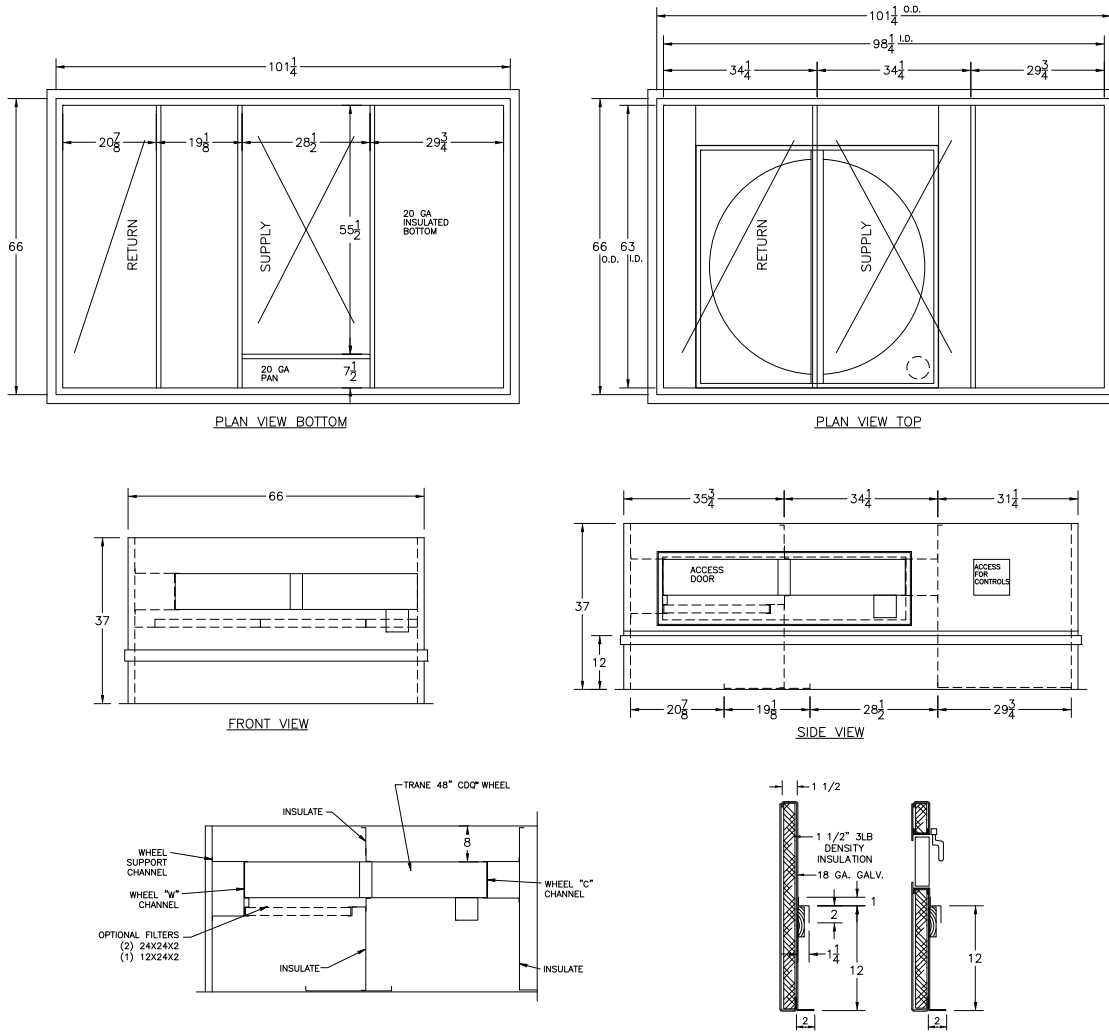
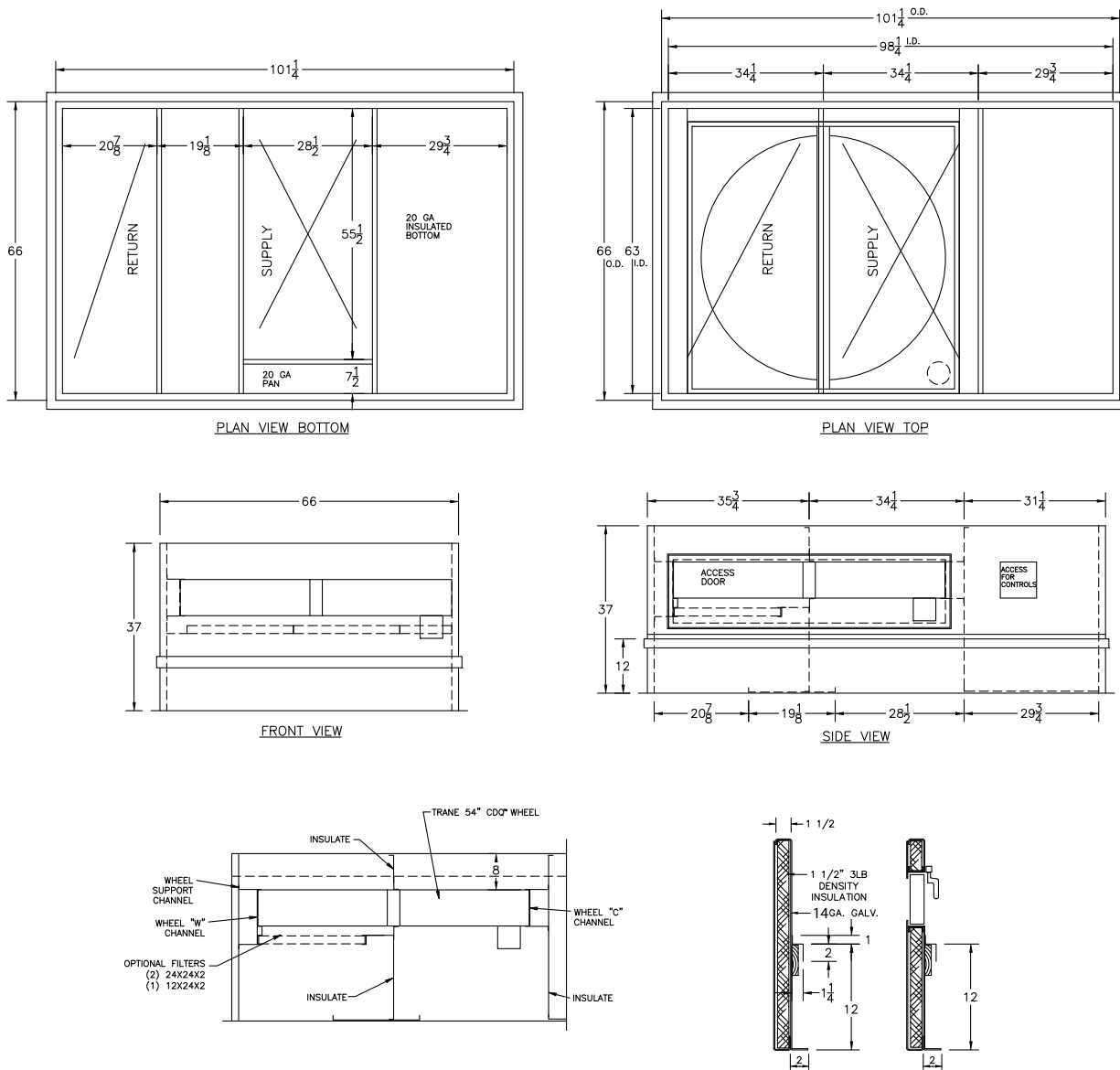


Figure 12. BAYCURB026 with 54" CDQ wheel



Installation

Figure 13. BAYCURB026 with 60" CDQ wheel

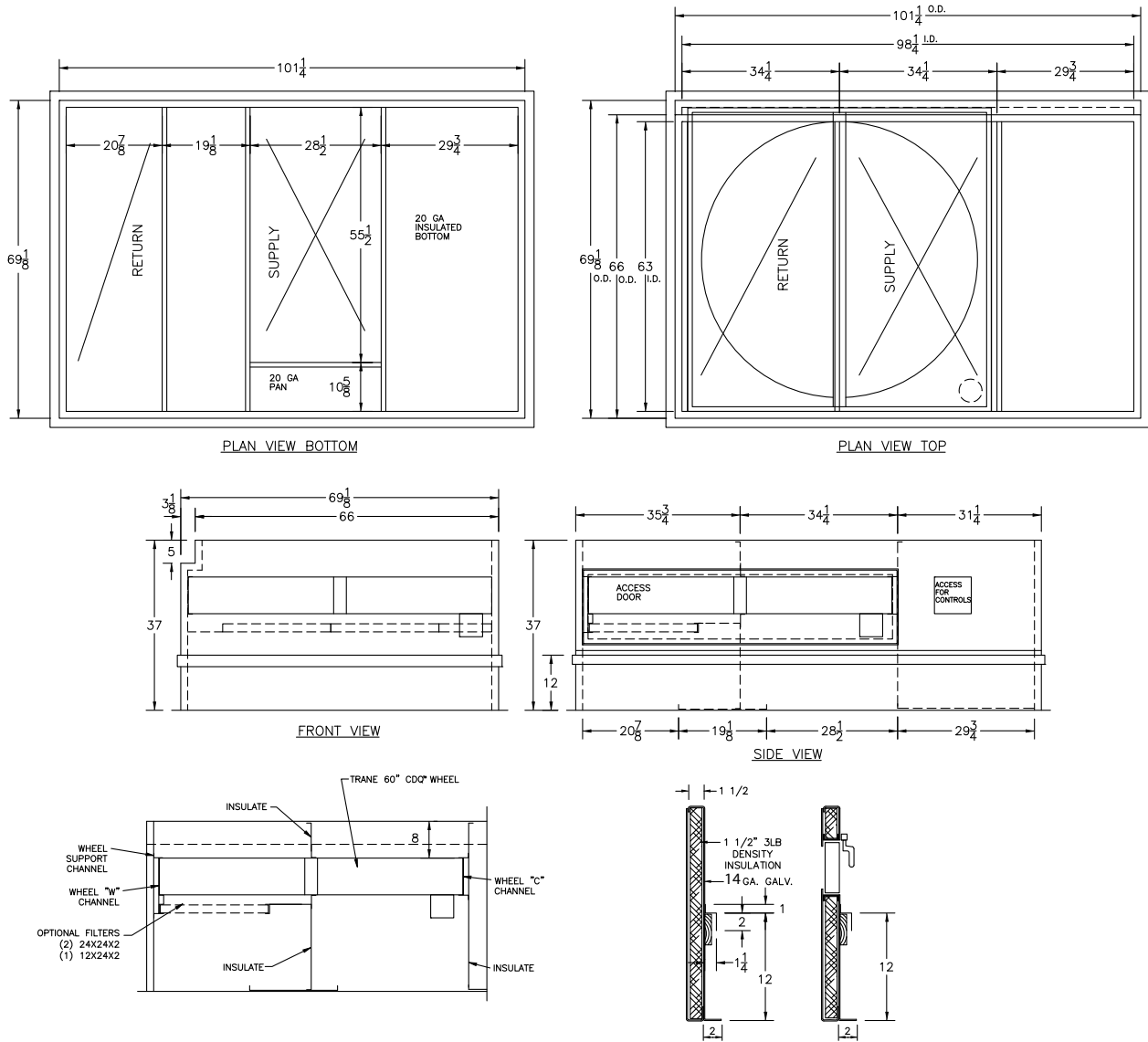
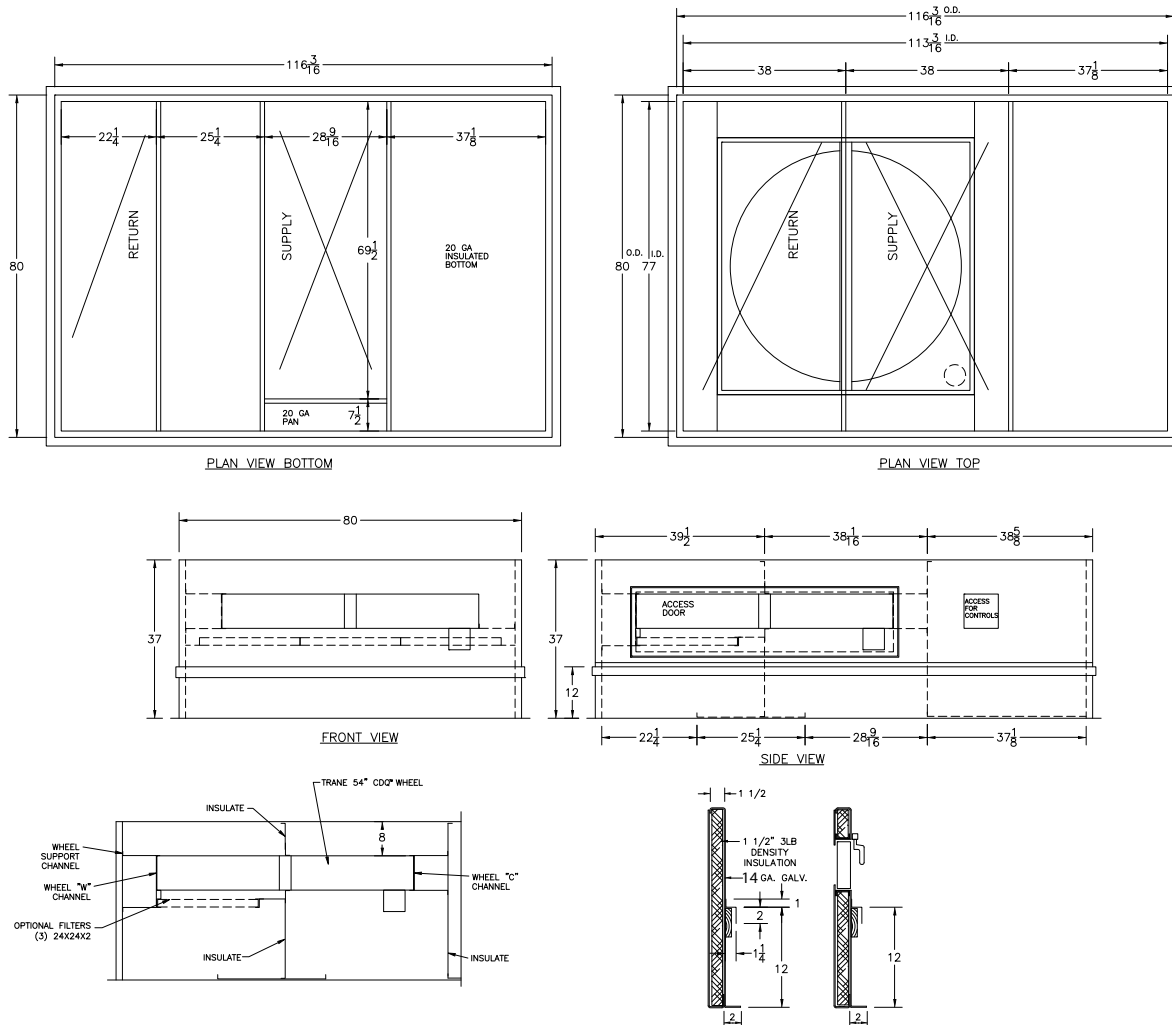


Figure 14. BAYCURB027 with 54" CDQ wheel



Installation

Figure 15. BAYCURB027 with 60" CDQ wheel

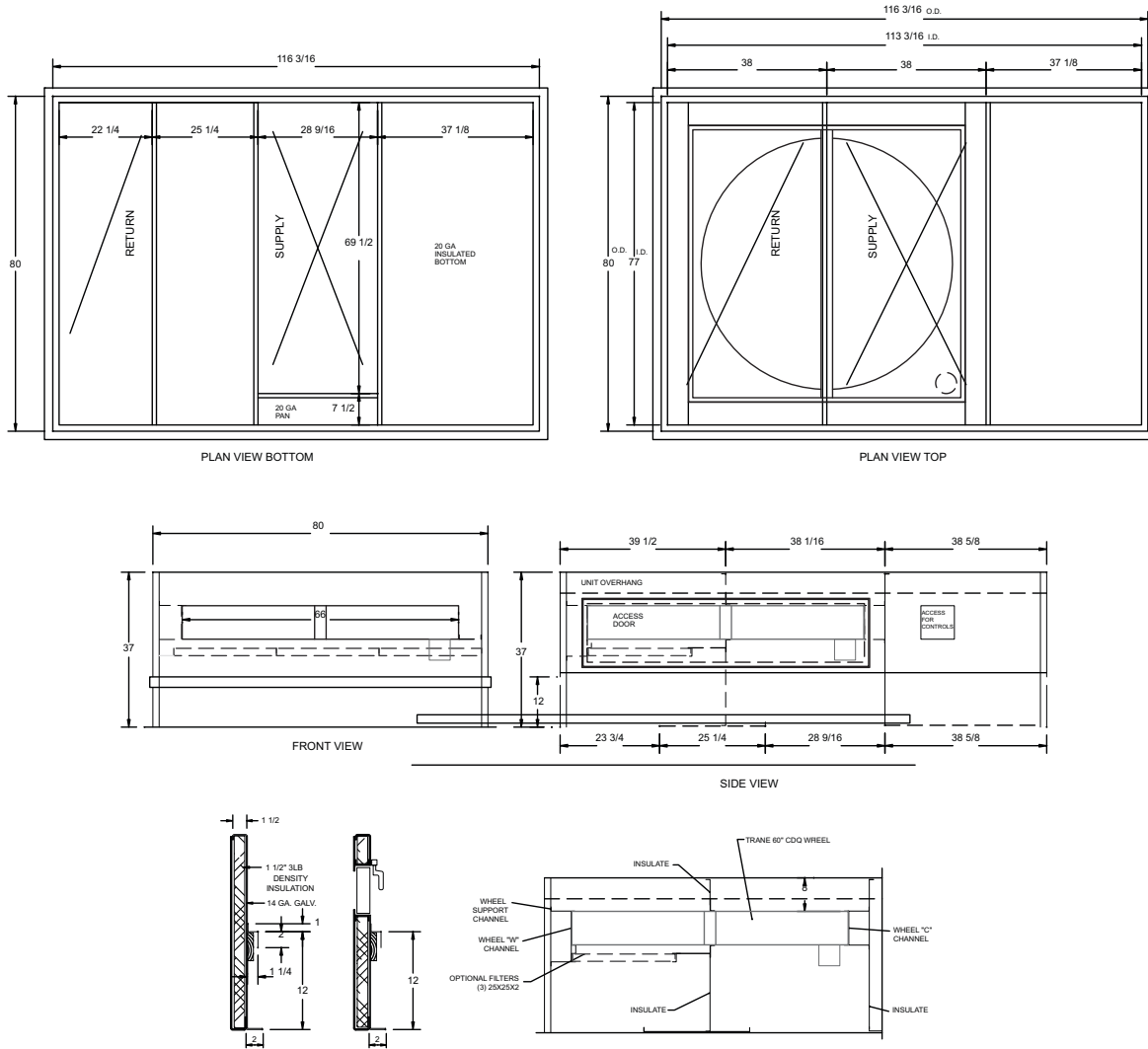
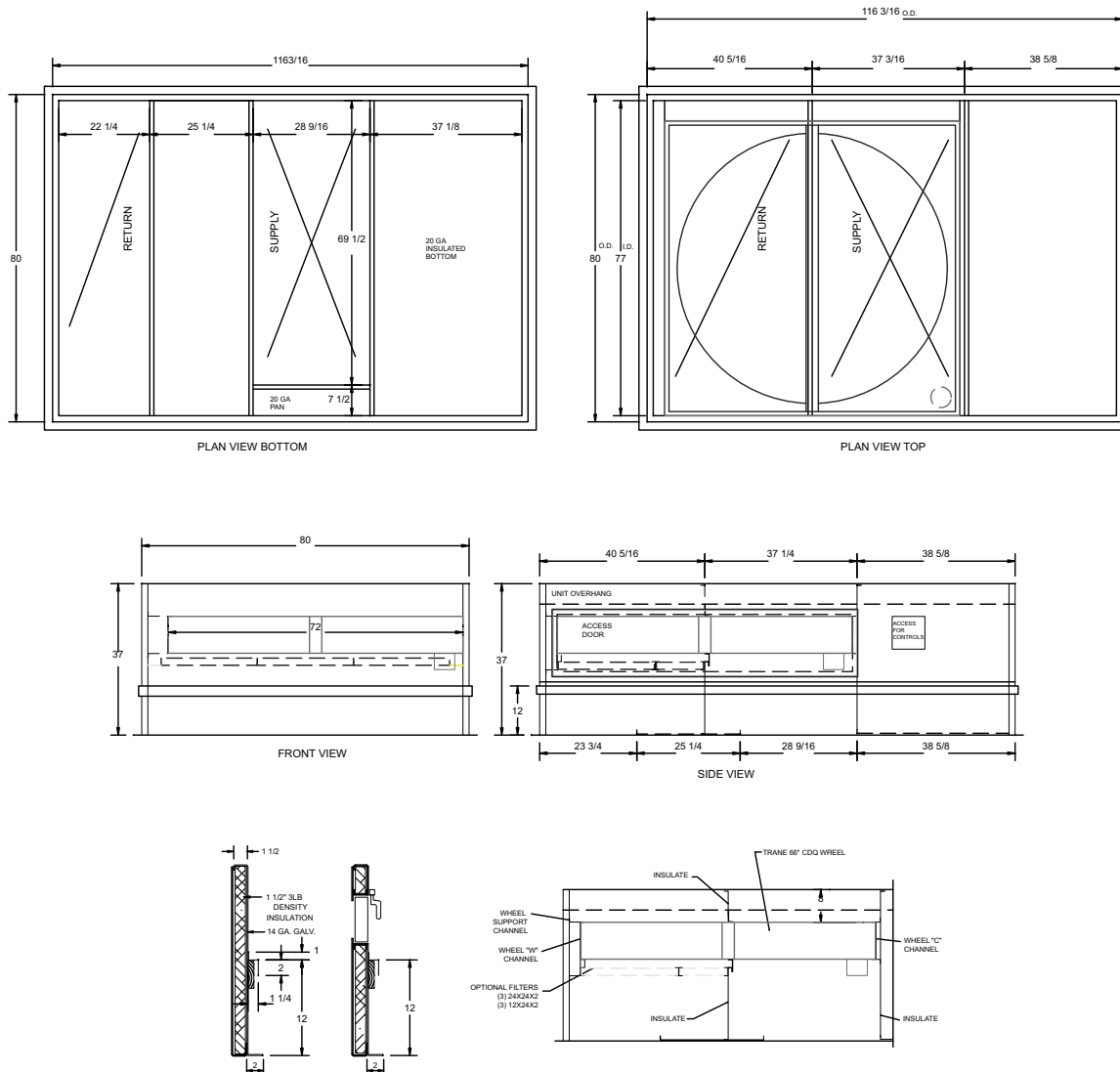
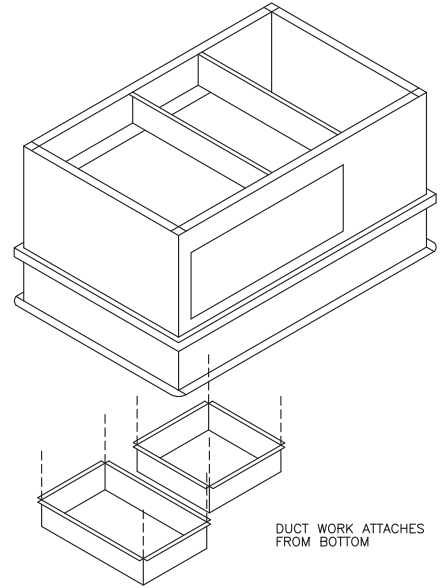
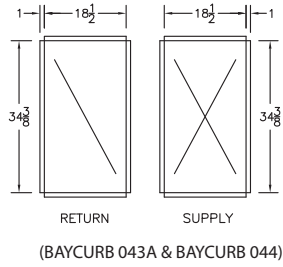
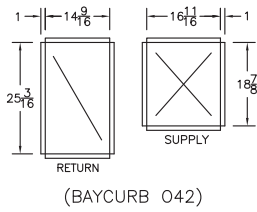
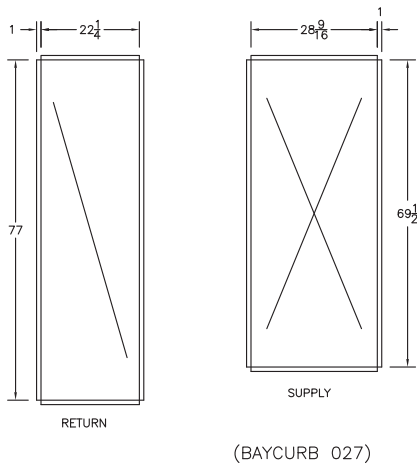
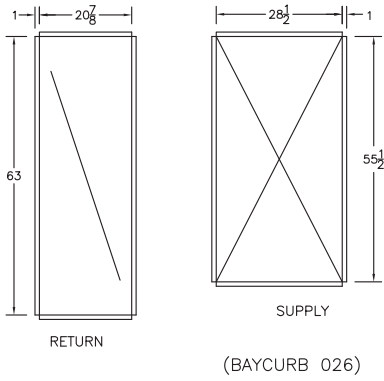


Figure 16. BAYCURB027 with 66" CDQ wheel



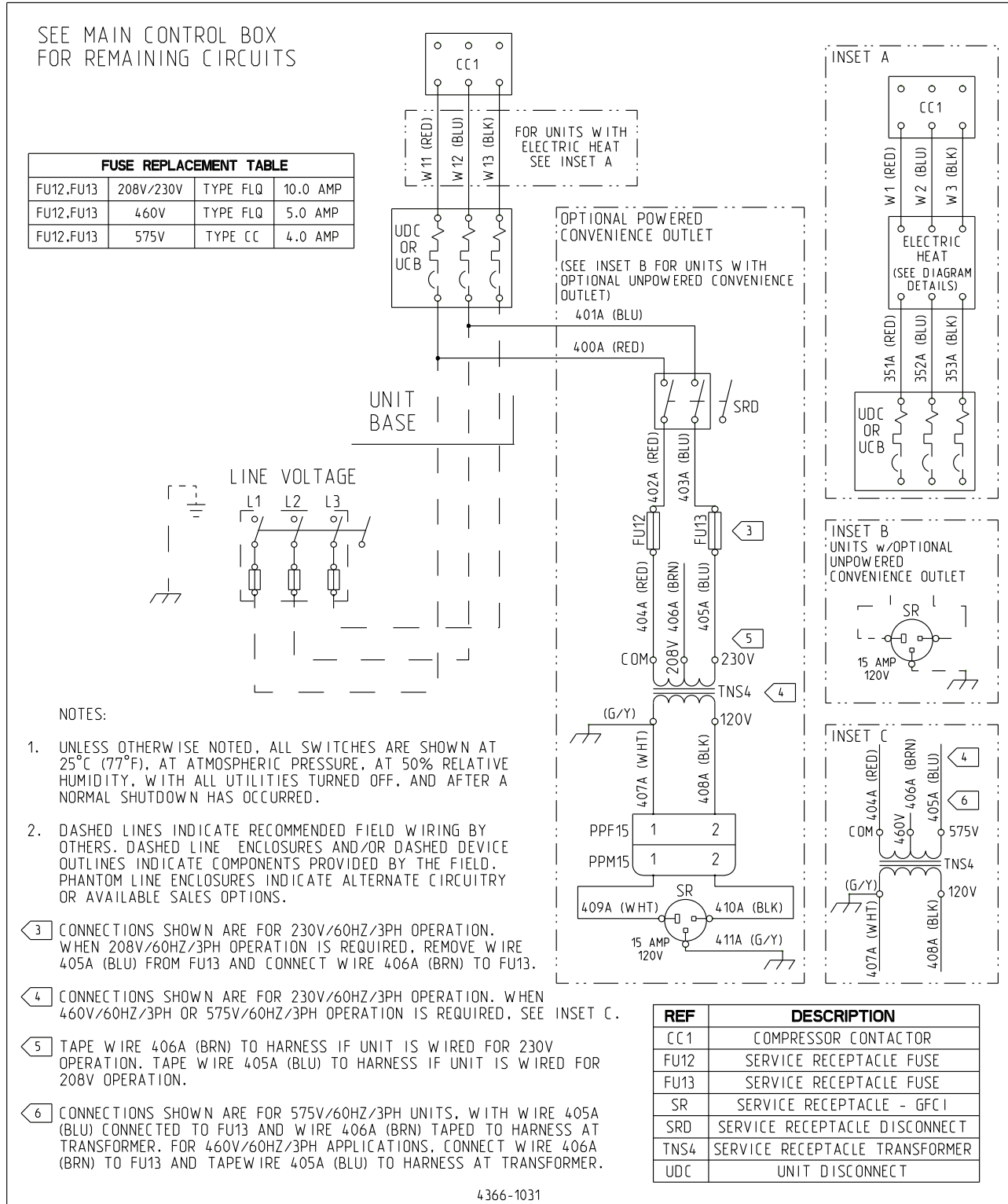
Installation

Figure 17. CDQ ducts



CDQ™ CURB RECOMENDED DUCT SIZES

Figure 18. 3-10 ton powered convenience outlet wiring



Installation

Figure 19. 12 1/2 - 20 ton powered convenience outlet

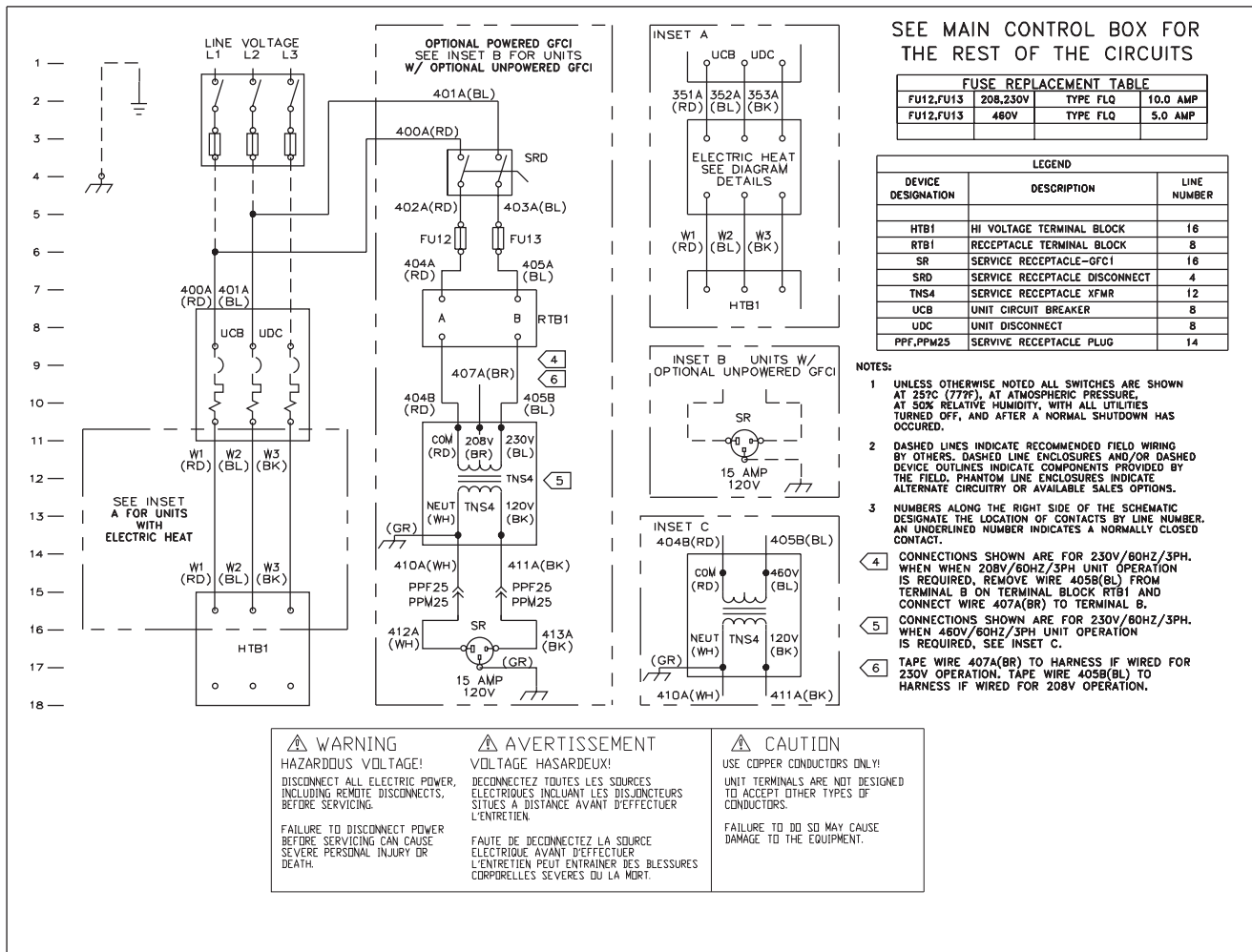
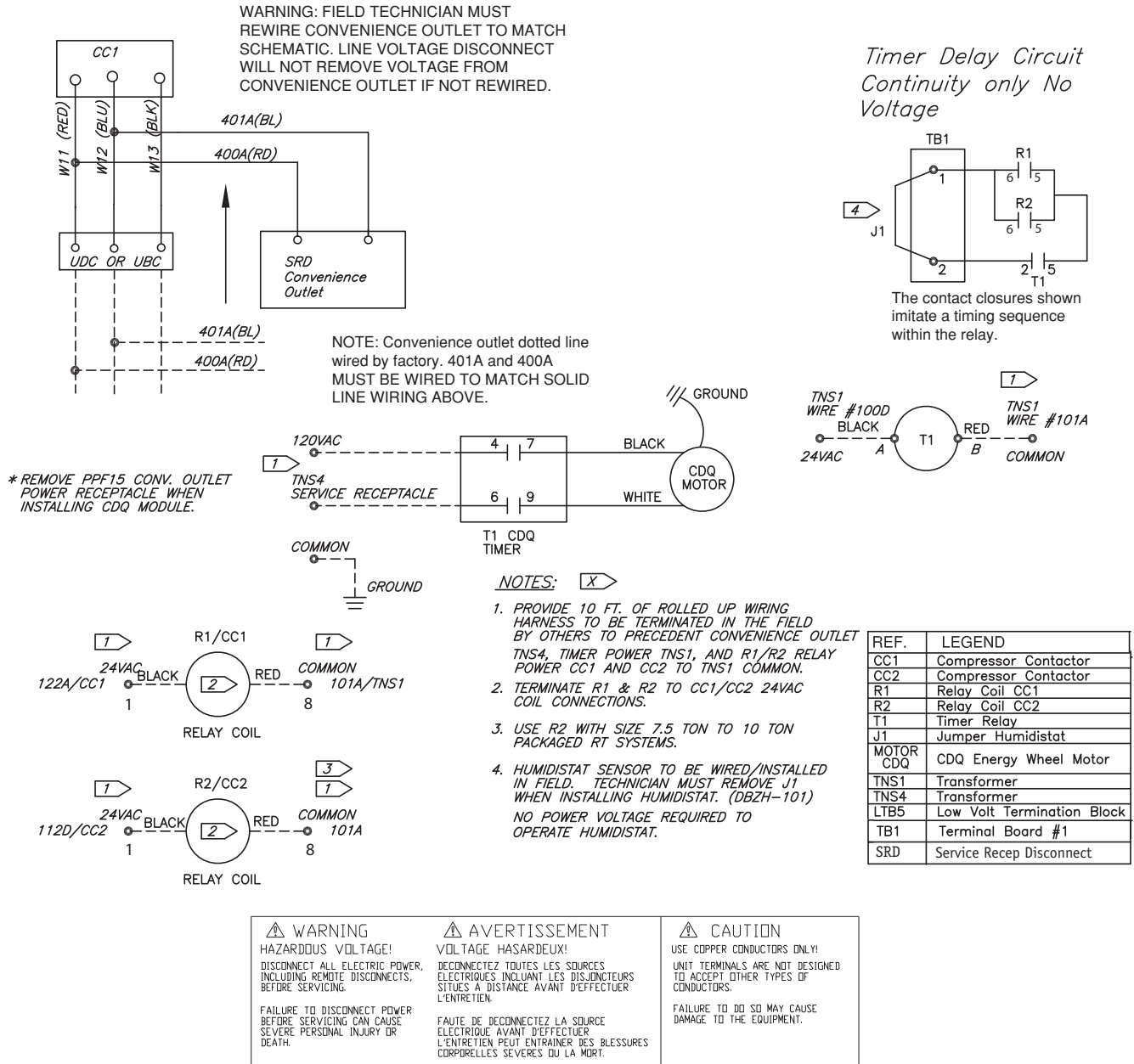
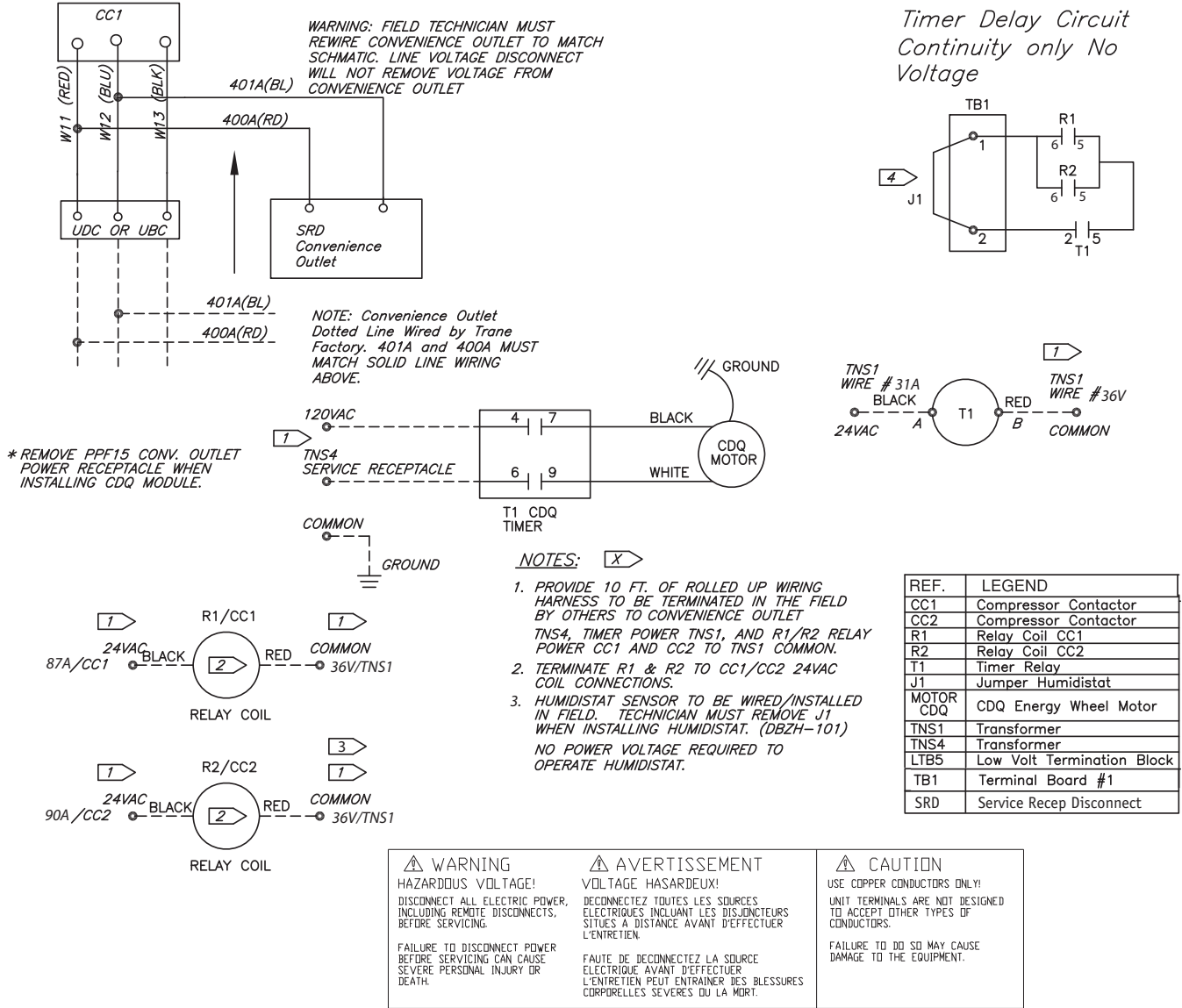


Figure 20. CDQ wiring for 3-10 ton PRTU



Installation

Figure 21. CDQ wiring for 12 1/2-20 ton PRTU



Maintenance

Cleaning the Desiccant Wheel

If routine inspection indicates there is dirt or dust buildup in the wheel, clean the wheel using the following procedure:

Vacuum the Wheel

NOTICE

Equipment Damage!

Accumulated dirt and debris may result in reduced airflow and/or increased pressure drop across the wheel. Increased pressure drop can result in permanent damage to the wheel or module.

1. Using a standard shop vacuum, vacuum any debris from both faces of the wheel. Slowly work around the entire face of the wheel to complete the procedure. Do not damage wheel face by excessive pressure of the vacuum nozzle on the wheel face.

NOTICE

Equipment Damage!

Do not use acid-based cleaners, aromatic solvents, steam, or temperatures in excess of 170oF to clean wheel. Do not use air or water with pressures in excess of 20 PSIG. If using any commercial flushing/cleaning solution, construct a temporary bypass around the unit to prevent damage to internal components of the evaporator/condenser. Trane assumes no responsibility for equipment damage caused by flushing/cleaning solutions or water-born debris.

2. Using 20 psig clean dry air, and a small air nozzle, blow air through one face of the wheel. At a similar location on the opposite side of the wheel, gently apply a shop vacuum to "receive" any remaining debris exiting the wheel.

In most instances this should adequately clean the wheel. In the event the wheel is subject to an aerosol, smoke or other material that coats the wheel, it can be washed with water and/or a mild detergent.

The desiccant wheel can be washed thoroughly without affecting the performance of the wheel. The wheel will simply dry out following a washing procedure and resume dehumidification without any deviation in performance.

If the desiccant wheel can be easily removed from the cassette or unit, it is recommended to do so to facilitate the washing process. However, in most cases, it is impractical to remove larger wheels and therefore, the washing procedure must take place within the air handling unit and provisions need to be made to collect the runoff water from the bottom of the unit.

Washing the Wheel

⚠️ WARNING

Hazardous Voltage w/Capacitors!

Disconnect all electric power, including remote disconnects and discharge all motor start/run capacitors before servicing. Follow proper lockout/tagout procedures to ensure the power cannot be inadvertently energized. Verify with an appropriate voltmeter that all capacitors have discharged. Failure to disconnect power and discharge capacitors before servicing could result in death or serious injury.

Note: For additional information regarding the safe discharge of capacitors, see PROD-SVB06A-EN or PROD-SVB06A-FR

1. Disconnect all power.

⚠️ WARNING**Live Electrical Components!**

During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

2. Shield or remove all electrical components with plastic sheeting. Shield the bearing with plastic sheeting. Precautions should be taken to ensure the motor windings and capacitor do not get wet.
3. Ensure that an adequate drainage system exists to collect runoff water from the bottom of the unit.
4. Using standard pressure water (do not use a high pressure washer) and working from the lower half of the wheel, wash the wheel with a standard "garden" nozzle to flush any debris trapped within the flutes of the wheel. Minimize water contact with the seals. Wash from one side and vacuum up water from the other side with a wet vacuum.
5. Once the entire process side is adequately washed, rotate the wheel one half turn and wash the section that was at the top.
6. After washing, there will be a temporary derate in performance as the wheel dries out. To expedite the dry out time, regeneration preheat should be activated if it was provided.

Cleaning the Motor**⚠️ WARNING****Hazardous Voltage w/Capacitors!**

Disconnect all electric power, including remote disconnects and discharge all motor start/run capacitors before servicing. Follow proper lockout/tagout procedures to ensure the power cannot be inadvertently energized. Verify with an appropriate voltmeter that all capacitors have discharged. Failure to disconnect power and discharge capacitors before servicing could result in death or serious injury.

Note: For additional information regarding the safe discharge of capacitors, see *PROD-SVB06A-EN* or *PROD-SVB06A-FR*

⚠️ WARNING**Rotating Components!**

Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/ tagout procedures to ensure the power can not be inadvertently energized. Secure drive sheaves to ensure rotor cannot freewheel. Failure to secure drive sheaves or disconnect power before servicing could result in death or serious injury.

Disconnect all electrical power, then use a vacuum cleaner and brush to remove accumulated material from the CDQ wheel motor. The use of spray aerosol cleaners is not recommended. Examine the motor monthly for debris accumulation.

Cleaning the CDQ Module

WARNING

Hazardous Voltage w/Capacitors!

Disconnect all electric power, including remote disconnects and discharge all motor start/run capacitors before servicing. Follow proper lockout/tagout procedures to ensure the power cannot be inadvertently energized. Verify with an appropriate voltmeter that all capacitors have discharged. Failure to disconnect power and discharge capacitors before servicing could result in death or serious injury.

1. Disconnect all electrical power.
2. Use a vacuum cleaner to remove dust and debris from the module surfaces.

NOTICE

Equipment Damage!

Do not use acid-based cleaners, aromatic solvents, steam, or temperatures in excess of 170oF to clean wheel. Do not use air or water with pressures in excess of 20 PSIG. If using any commercial flushing/cleaning solution, construct a temporary bypass around the unit to prevent damage to internal components of the evaporator/condenser. Trane assumes no responsibility for equipment damage caused by flushing/cleaning solutions or water-born debris.

3. If needed, use a detergent solution to remove grease, oil, or other stubborn deposits from module surfaces. Follow the manufacturer's instructions regarding use of the product.
4. Rinse any cleaning product thoroughly from the module walls. The use of a water stream from a garden hose or high pressure washer is not recommended. Saturation of the wall panel insulation could result in potential microbial growth.
5. Examine the module monthly for material build-up on the wall surfaces.

Drive Belt Tension

NOTICE

Belt Tension!

Do not over-tension belts. Excessive belt tension will reduce fan and motor bearing life, accelerate belt wear and possibly cause shaft failure. Under tensioning belts is the primary cause of premature belt failure. Belts should not squeal at startup. Recheck belt tension after 8 hours, 24 hours, and 100 hours of operation and monthly thereafter.

The drive belt is a link stretch belt designed to provide tension throughout the life of the belt.

Inspect the belt annually for proper tracking and tension. A properly tensioned belt will turn the wheel immediately with no visible slippage when power is applied.



www.trane.com

For more information, contact your local Trane office or e-mail us at comfort@trane.com

Literature Order Number	ACC-SVN71B-EN
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Date	January 2010
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Supersedes	ACC-SVN71A-EN September 2006
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Trane has a policy of continuous product and product data improvement and reserves the right to change design and specifications without notice.