CARRIER AND BRYANT CHASSIS 1 & 2 MODELS:

Chassis Size 1 & 2											
Carrier 48FC / 48FE & 50FC / 50FE		Carrier 50FCQ & 50FEQ		Carrier 48GC / 48GE & 50GC / 50GE		Carrier 50GCQ & 50GEQ		Carrier 48JC / 48JE & 50JC / 50JE		Carrier 48LC / 48LE & 50LC / 50LE	
Bryant 582K / 582L & 559K / 559L		Bryant 547K & 547L		Bryant 581K / 581L & 551K / 551L		Bryant 549K & 549L					
Model Size	Rated Tons	Model Size	Rated Tons	Model Size	Rated Tons	Model Size	Rated Tons	Model Size	Rated Tons	Model Size	Rated Tons
04	3	04	3	04	3	04	3	04	3	04	3
05	4	05	4	05	4	05	4	05	4	05	4
06	5	06	5	06	5	06	5	05	5	06	5
07	6	07	6								

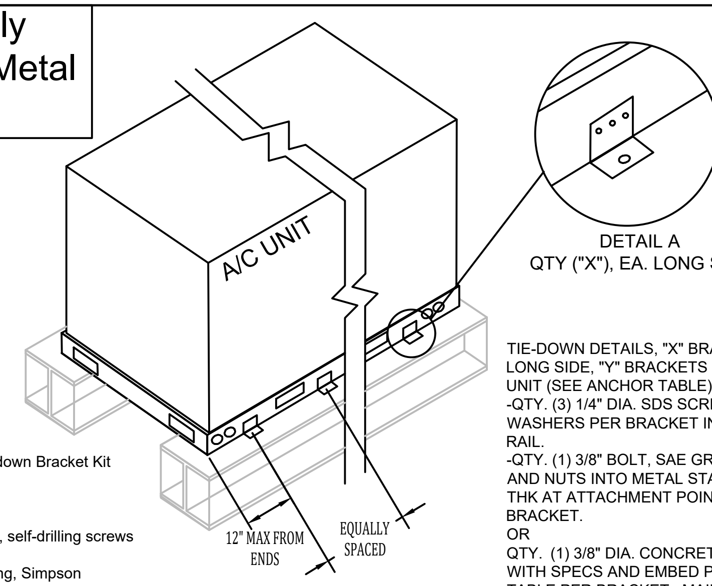
Each package unit air conditioner listed above conforms to the Florida Building Code 8th Edition (2023) requirements for installation including High Velocity Hurricane Zone (HVHZ), Risk Category III (V = 186 MPH), exposure category "D", and installation on a roof height of up to and including 60 feet above grade (i.e., 65' to mid-height of unit). Worst case is -07 (chassis 2) 74-3/8" x 46-3/4" x 41-3/8" tall.

ALLOWABLE DESIGN PRESSURES (ASD) FOR THE UNIT ITSELF:

Design Lateral Pressure = 114.1 lb/ft^2
Design Uplift Pressure = 90.1 lb/ft^2

Unit itself will withstand wind loads imposed by 114.1 PSF lateral and 90.1 PSF uplift design pressures provided the 16 gage galvanized base rails are properly fastened to a suitable slab, curb (18 Ga min.), curb adapter (18 Ga min.), or other suitable mounting arrangement and all factory supplied assembly fasteners are in place. See Drawing 24007-1A for Miami-Dade BORA 2018 equipment analysis details.

Mounting Directly to Concrete or Metal Stand/Framing



DETAIL A
QTY ("X"), EA. LONG SIDE

Part Number CBTDC-KGR: Tie-down Bracket Kit (concrete or stand)
One Kit Contains:
- Qty. (2) - Tie-Down Brackets
- Qty. (6) - 1/4" Dia. x 3/4" long, self-drilling screws (SDS) with washers
- Qty. (2) - 3/8" Dia. x 2-1/4" long, Simpson Wedge-All concrete anchors
- Qty. (1) - Instructions
- Qty. (2) - 3/8" Dia. x 1" Bolts, washers, and nuts (stand)

Qty. ("X") Kits required per unit

TIE-DOWN DETAILS, "X" BRACKETS PER LONG SIDE, "Y" BRACKETS TOTAL PER UNIT (SEE ANCHOR TABLE):
-QTY. (3) 1/4" DIA. SDS SCREWS AND WASHERS PER BRACKET INTO UNIT RAIL.
-QTY. (1) 3/8" BOLT, SAE GR5, WASHERS, AND NUTS INTO METAL STAND (MIN 1/8" THK AT ATTACHMENT POINT) PER BRACKET.
OR
QTY. (1) 3/8" DIA. CONCRETE ANCHOR WITH SPECS AND EMBED PER ANCHOR TABLE PER BRACKET. MAINTAIN EDGE DISTANCES FOR FULL CAPACITY OF ANCHORS. CONCRETE TO BE 4" THICK MIN. INSTALL PER ANCHOR MANUFACTURER'S INSTRUCTIONS.

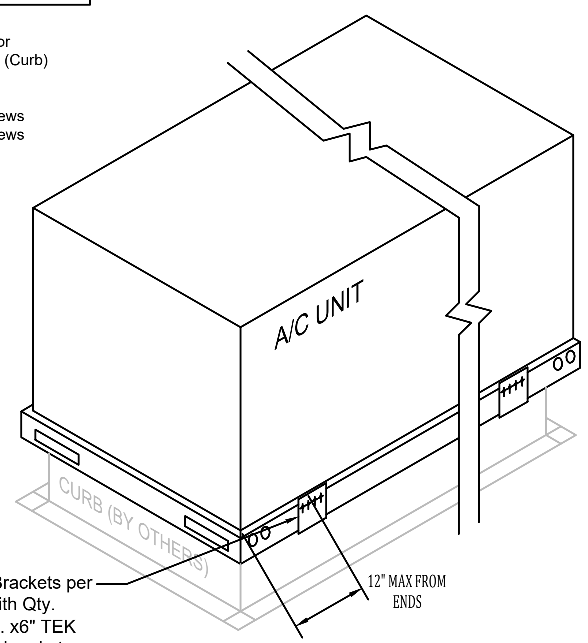
ANCHOR TABLE:

Anchor Specs	X, # ANCHORS PER LONG SIDE	Y, # TOTAL ANCHORS
KIT ANCHOR, 3/8" DIA. SIMPSON WEDGE-ALL ANCHOR, 2.25" LONG WITH MIN EMBED OF 1.75" IN 2500PSI MIN. CONCRETE	5	10
KIT ANCHOR, 3/8" DIA. SIMPSON WEDGE-ALL ANCHOR, 2.25" LONG WITH MIN EMBED OF 1.75" IN 2500PSI MIN. CONCRETE, **FOR GROUND LEVEL MOUNT ONLY**	3	6
KIT ANCHOR, 3/8" DIA. BOLT SAE GR5 MIN., WASHERS, AND NUT	3	6
NON-KIT ANCHOR, 3/8" DIA. SIMPSON WEDGE-ALL ANCHOR, 3.5" LONG WITH MIN EMBED OF 2.625" IN 2500PSI MIN. CONCRETE	3	6

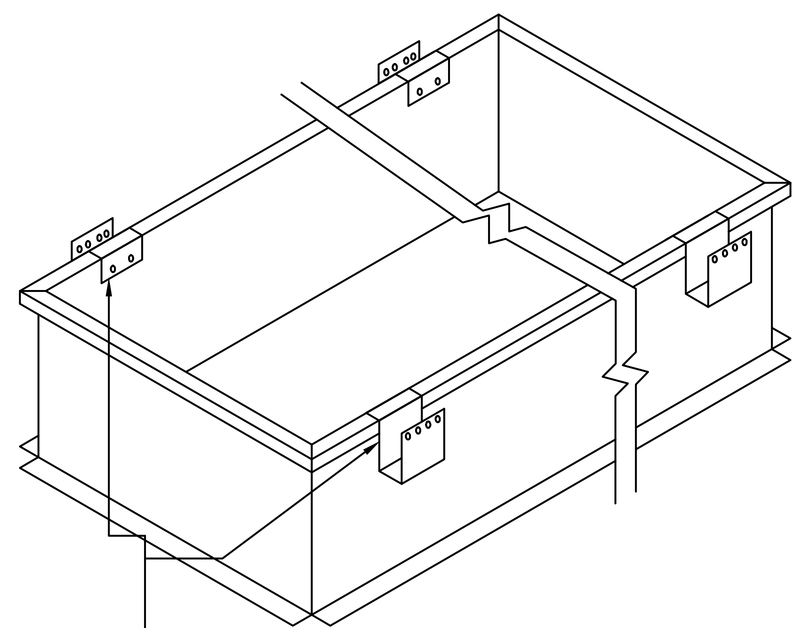
Curb Mounting

Part Number BRK-CRBHOLD-01 or BRK-CRBHOLD-P1: Z-Bracket Kit (Curb)
One Kit Contains:
- Qty.4 - Z-Brackets
- Qty.16 - 1/4" x 6" TEK Screws
- Qty.8 - 1/4" x 1" TEK Screws
- Qty.1 - Instructions

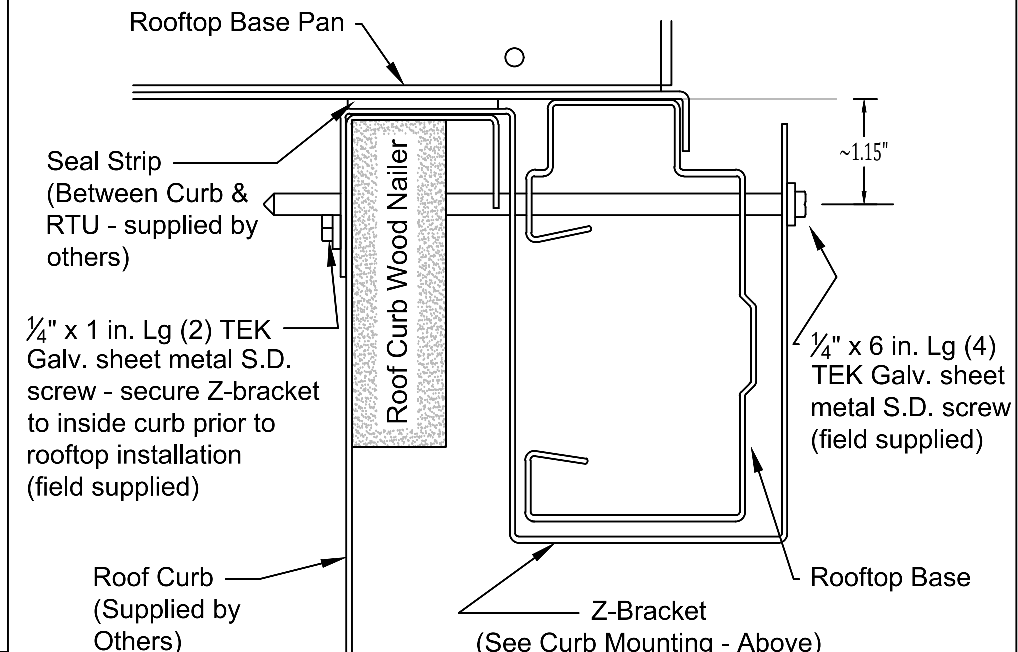
Three Kits Required per Unit



Qty. (2) Z-Brackets per long side with Qty. (4)-1/4" Dia. x6" TEK Screws per bracket.
Qty. (4) Total Z-Brackets



Z-Bracket Installed on Roof Curb prior to installation of seal strip & RTU



Z-Bracket Wind Load Fastening to RTU Curb

Tie-down Calculations (Direction A is normal to length of unit):

Wind Direction A, equipment (excluding curb)

		F_h=q_h*(GC_r)*A_f	
H	41.375 in	GC_r =	1.9 Eq 29.4-2
L	74.375 in	A_f	21.4 SQ FT
W	46.75 in		
		F_h=q_h*(GC_r)	190.2 lb/sq ft
Weight	607 lbs	F min (lb/sq ft)	16 ASCE7, section 29.8
		F_h=q_h*(GC_r)*A_f =	4065 lb
V_ult	186 mph	F_v=q_h*(GC_r)*A_r	
V_ASD	144.1 mph	GC_r =	1.5 Eq 29.4-3
Risk Category	III	A_f	24.1 SQ FT
Exposure	D		
		F_v=q_h*(GC_r)	150.2 lb/sq ft
K_z	1.33 Table 29.3-1 (65 ft elev.)	F min (lb/sq ft)	16 ASCE7, section 29.8
K_d	0.85 ASCE7, table 26.6-1	F_v=q_h*(GC_r)*A_f =	3626.4 lb
K_zt	1		

q_z=0.00256*K_z*K_zt*K_d*V^2 (lb/sq ft)
q_z= 100.1 psf

Calculation Results
Totals at Base of Equip:

Z-clips:
screws on upwind side 8
screws per short side 0

0.6W+0.6D
264.3 LB uplift/screw

1/4" SMS, w 18ga steel against head and not against

ANCHOR ALLOWABLE TENSION 153 LBS
ANCHOR ALLOWABLE SHEAR 331 LBS

Anchor installed horizontally (uplift loads hardware in shear)
Anchor Combined loading value
0.64 must be less than or = to 1
Anchor is OK

Totals at Base of clip into concrete:

Concrete anchor:
anchors on upwind side 5
anchors per short side 0

0.6W+0.6D
394 LB uplift/anchor

Shear at base
anchors 10
243.9 LB shear/anchor

Simpson Wedge-all Anchor, 2500psi
3/8" anchors, 1.75" embed
ANCHOR ALLOWABLE TENSION 472.5 LBS
ANCHOR ALLOWABLE SHEAR 570 LBS

Anchor installed vertically (uplift loads hardware in tension)
Anchor Combined loading value
0.98 must be less than or = to 1
Anchor is OK

Totals at Base of clip into concrete:

Concrete anchor:
anchors on upwind side 3
anchors per short side 0

0.6W+0.6D
656 LB uplift/anchor

Shear at base
anchors 6
406.5 LB shear/anchor

Simpson Wedge-all Anchor, 2500 psi
3/8" anchors, 2.625" embed
ANCHOR ALLOWABLE TENSION 970 LBS
ANCHOR ALLOWABLE SHEAR 1055 LBS

Anchor installed vertically (uplift loads hardware in tension)
Anchor Combined loading value
0.73 must be less than or = to 1
Anchor is OK

ENGINEER:

THIS SEAL ONLY VALID FOR-
S/N: #########
Order#: #########

Samuel Martin, PE, State of Florida, Professional Engineer, License No. 69293.

This item has been digitally signed by Samuel Martin, PE on date as shown on timestamp above.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

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REVISION HISTORY:

REV	DATE	DESCRIPTION
-	-	-

PROJECT NAME:
CARRIER AND BRYANT ROOFTOP UNITS - CHASSIS 1&2

DRAWING TITLE
MODEL LIST AND TIE-DOWN DETAILS

DATE	ORDER #
4/07/2024	-

DRAWING SCALE	REF
NTS	22020-1

DRAWING NUMBER	SHEET #	DWG SIZE	REVISION
24007-1	1 OF 1	B	A