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CARRIER Chassis 1 & 2:

2

ptional Mounting

Models: 48/50TC and 50TCQ - size 04 (min) through 07 (max) 48/50KC, 50KCQ, 48/50HC, 50HCQ and 48/50LC - size 04 (min) through 06 (max)

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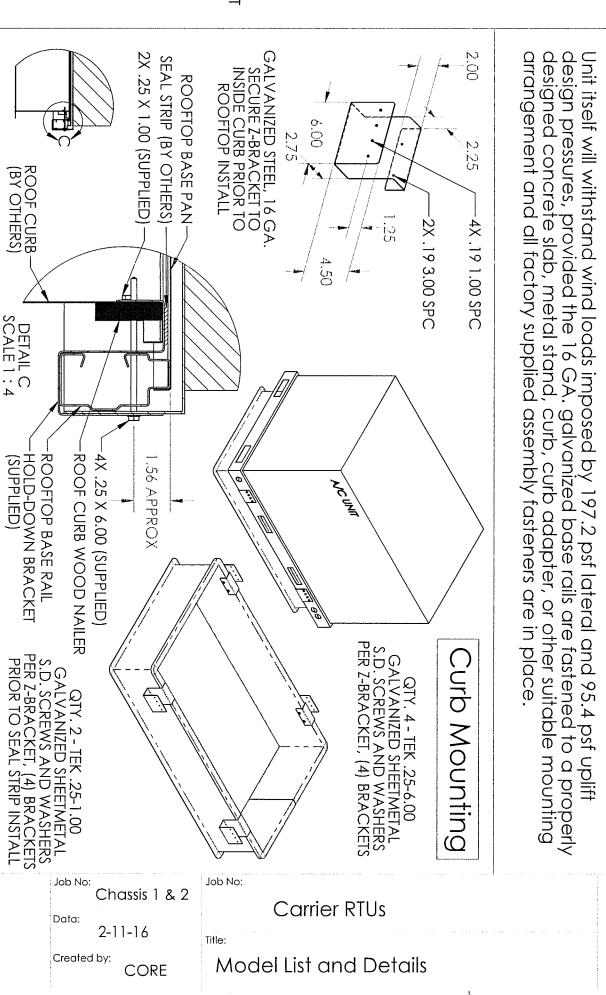
Each condenser unit listed above conforms to the Florida Building Code 5th Edition (2014) requirements for installation including High Velocity Hurricane Zone (HVHZ), Risk Category III/IV (V =186 MPH), exposure category "D", and installation height up to and including 65 feet above grade.

Worst Case is -07 (Chassis 2) 74-3/8" x 46-3/4" x 41-3/8"

ALLOWABLE DESIGN PRESSURES FOR THE UNIT ITSELF:

Design Lateral Pressure = 197.2 psf Design Uplift Pressure = 95.4 psf

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Design Lateral Pressure = WL(0.6) = 197.18 lb/ft2Design Uplift Pressure = UL(0.6) = 95.41 lb/ft2

windward surface is recognized to be a combination of the pressures acting on the windward and leeward surfaces. Wall pressure coefficients from ASCE7-10, Chapter 27, Figure 27.4-1 may be used to distribute the Design Lateral Pressure into positive and negative componenets acting on the windward and leeward surfaces, respectively. pressure will remove a panel acts toward the surface being considered and negative pressure acts away, only the uplift panel from the machine. The design lateral pressure which is considered to act toward the

L/B = 46.75/74.375 = 0.63 for wind on long (74-3/8") side L/B = 74.375/46.75 = 1.59 for wind on short (46-3/4") side

Worst case positive pressure coefficient is 0.8 for windward wall which has a corresponding negative pressure coefficient of 0.5 on the leeward wall. The worst case negative pressure coefficient is 0.7 for the sidewall (side to wind). Since the windward and leeward wall pressures act in the same direction, the distibuted pressures are computed as follows: parallel

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Lateral Positive Design Pressure = 197.18 (0.8) / (0.8 + 0.5) = 121.34 lb/ft2 (Worst Case Positve) Lateral Negative Design Pressure = 197.18 (0.5) / (0.8 + 0.5) = 75.84 lb/ft2 Sidewall Negative Design Pressure = 197.18 (0.7) / (0.8 + 0.5) = 106.17 lb/ft2 (Worst Case Negative)

22 ga. panels and columns are fastened together and to 16 ga. base rails using #10 serrated washer head self piercing screws having 0.425" head diameter, 0.19" nominal diameter, and 0.14 minor diameter. These screws are expected to exhibit the following properties based upon ICC-ES Report ESR-2196: б

Pullout Strength in 22 ga. = 306 lbs (ultimate) Pullover strength of 22 ga. = 828 lbs (ultimate) Shear Strength in 22 ga. = 684 lbs (ultimate)

Pullout Strength in 16 ga. = 450 lbs (ultimate – based upon Shear Strength in 16 ga. = 927 lbs (ultimate – based upon 18

B

73.6" x 45" draw formed panel anchored at edges and through top to center panel and control box. Worst case portion is over air handler section since condenser section has a large hole in the top causing internal and external pressure to be equal. For portion tributary to air handling section:

For inside edge (8 screws, 4 in tension), screw Safety Factor = 306/71.9 = 4.3For outside edge (7 screws, all in shear), screw load = 1150.9/2(7) = 82.2 lbs Safety Factor = 684/82.2 = 8.3 OK A = 45(38.6)/12(12) = 12.06 ft2 Load = 12.06 (95.41) = 1150.9 lbs load = 1150.9/2(8) = 71.9OK Sheet 5

For Inside Panel (50HJ540465):
44.84" x 37.53" draw formed panel anchored at edges with 5 screws through face at top and bottom and vertical edge through flange perpendicular to face (10 screws in tension, 10 screws in shear).

A = 44.84(37.53)/12(12) = 11.69 sqft Load = 11.69(106.17) = 1240.7 lbs Screw Load = 1240.7/20 = 62.04 lbs

Safety Factor = 306/62.04 = 4.9

For Access Door (48TM500284):

edge and top edge fits inside top panel 33.5" x 36.5" draw formed panel anchored with 2 screws through face each vertical side, (trapped) 3 screws through face at bottom

A = 33.5(36.5)/12(12) = 8.49 sqft Load = 8.49(106.17) = 901.5 lbs Screw Load = 901.5/2(5) = 90.15 Safety Factor = 306/90.15 = 3.4

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OK for Components and Cladding

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For Access Panel (48TM500345): 12.13" x 37.3" draw formed panel ar

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top edge fits inside top panel panel anchored with 1 screw (trapped) through face each vertical side, 1 screw through face at

A = 12.13(37.3)/12(12) = 3.14 sqft Load = 3.14(106.17) = 333.6 lbs Screw Load = 333.6/2(3) = 55.60 lbs Safety Factor = 306/55.60 = 5.5 OK

for Components and l Cladding

Remaining panels are trivial cases of the above due to greater fastener quantity or having openings that limit

For connection of upper frame and panels to base rails:

12 screws each long side fasten frame columns and panels to the long base rail short base rail at air handler end. Opposite end is louvered and has a large ope cooling coils. Screws fasten 22 ga. panels and columns to 16 ga. base rails. base rails. 5 screws fasten inside panel to large opening in the top and mesh over

Overturning Moment = 3782(37.53)/2 = 70975 in-lb Lateral Wind Area = AL = 73.6(37.53)/12(12) = 19.18 sqft Lateral Design Load = 19.18(197.18) = 3782 lbs

Uplift Wind Area = AU = 73.6(45)/12(12) = 2 Uplift Design Load = 23.0(95.41) = 2194 lbs Uplift Moment = 2194(45)/2 = 49375 in-lb

Screw Load = (70975 + 49375)/12(45) = 222.9 lbs (shear) Safety Factor = 927/222.9 = 4.2 OK

Unit itself will withstand wind loads imposed by 197.18 psf lateral and 95.41 the 16 gage galvanized base rails are properly fastened to a suitable slab, stan mounting arrangement and all factory supplied assembly fasteners are in plac place. , stand psf uplift design pressures provided d, curb, curb adapter, or other suitable

For connection of unit base rails to properly designed curb, metal stand, Lateral Wind Area = AL = 74.375(41.375)/12(12) = 21.37 sqftor structural concrete (by others):

Lateral Design Load = 21.37(197.18) = 4214 lbs
Overturning Moment = 4214(41.375)/2 = 87,172 in-lb
Uplift Wind Area = AU = 74.375(46.75)/12(12) = 24.15 sqft
Uplift Design Load = 24.15(95.41) - 0.6(607) = 1940 lbs
Uplift Moment = 1940(46.75)/2 = 45,348 in-lb

For connection of 16 ga. (min) straps, clips, or brackets spaced 48" using 1/4" (#14) self-drilling screws: part to unit base rails on long sides

These screws are expected to exhibit the following properties based upon ICC Pullout Strength in 16 ga. = 573 lbs (ultimate) Shear Strength in 16 ga. = 1389 lbs (ultimate) - ES Report ESR - 1976

Using (3) screws per strap, clip, or bracket, with (3) straps, clips, or brackets each long side: Screw Load = (87,172+45,348)/3(3)(46.75) = 315.0 lbs (shear) at base rail outer surface Safety Factor = 1389/315.0 = 4.4 OK for Components and Cladding

For Z-brackets similar to Micrometl design but modified to eliminate hidd ga. (min) curb (by others): en structural fasteners anchored

Shear Strength in 18 ga. = 1218 lbs (ultimate) Screw Load = (87172 + 45348)/2(4)(42.69) = 388.0 lbs (shear) at curb Safety Factor = 1218/388.0 = 3.1 OK for Components and Cladding surface

For Brackets 3.25-4.13" wide x 2" x 2-1/2", 16 Using (3) screws per bracket, (3) brackets each long side: ga. (min), spaced 24.0" Œ. n) on-center into base rails,

Anchor Load = Anchor Load = (87172 + 45348)/3(47.5) = 930.0 lbs (tension) Anchor Load = 4214/6 = 702.3 lbs (shear) at 3/4" beyond base lbs (shear) at 3/4" beyond baserail outer surfac

For 3/8" SAE Gr. 5 bolts with nuts and washers to steel (by others): Safety Factor = 3720/930.0 = 4.0 (tension) OK Safety Factor = 3720/930.0 = 4.0 (tension) Safety Factor = 1937/702.3 = 2.8 (shear)

For 3/8" Powers Wedge-Bolt + anchors with others), 4" (min) thick, 2-3/4" (min) edge dist Safety Factor = 3000/930.0 = 3.2 (tension) Safety Factor = 3100/702.3 = 4.4 (shear) " (min) edge distance, a = 3.2 (tension) = 4.4 (shear) 2-1/8" (min) embedment into stance, and 2-1/2" (min) spaci 2000 psi (min) concrete (by 1g:

> Job No Chassis 1 & 2 Data:

1-08-16

Job No:

Carrier RTUs

Model List and Details

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Created by:

CORE

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QTY. 1 - 3/8" POWERS WEDGE-BOLT+ ANCHOR PER BRACKET INTO MINIMUM 2000 PSI CONCRETE (BY OTHERS), AS FOLLOWS:
2-1/8" MIN EMBED
2-3/4" EDGE DISTANCE
2-1/2" MIN SPACING STAND (BY OTHERS) PER BRACKET INTO PROPERLY DESIGNED METAL 3.25 3.25 ф 32.0 M 32.0 M N 3% ∅.26 I E r(-) 쿧 \emptyset .39 QTY. 3 - 1/4" SDSM SCREWS AND WASHERS PER BRACKET, (6) BRACKETS GALVANIZED STEEL 16 GA., 90 DEG. BRACKET DETAIL A SCALE 1:8 2.00 0 2.50

CARRIER Chassis 3 & 4:

N

Models:

Optional Mounting

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48/50TC - size 08 (min) through 14 (max), 50TCQ - size 08 (min) through 12 (max) 48/50HC - size 07 (min) through 12 (max), 50HCQ - size 07 (min) through 09 (max) 48/50LC - size 07

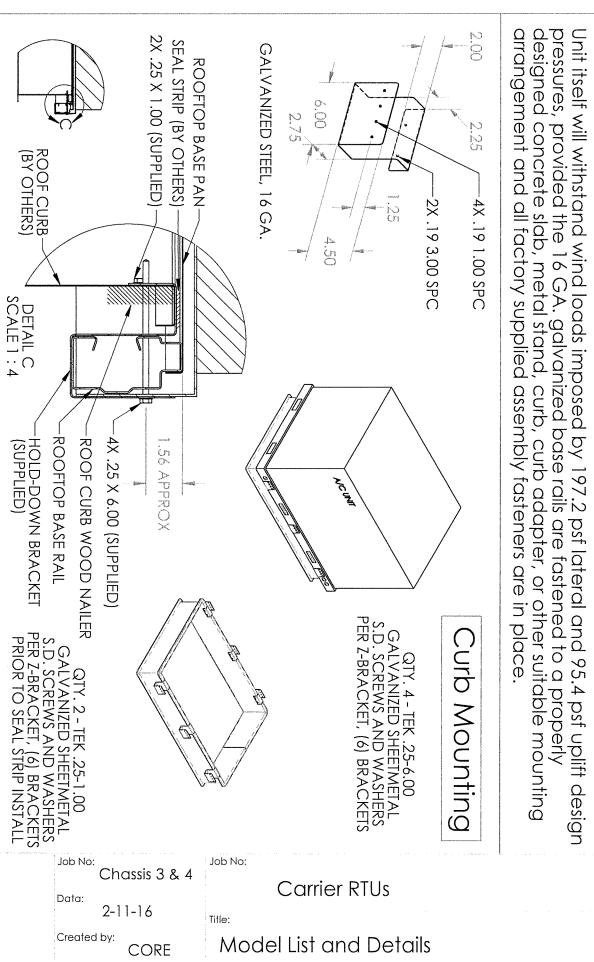
Each condenser unit listed above conforms to the Florida Building Code 5th Edition (2014) requirements for installation including High Velocity Hurricane Zone (HVHZ), Risk Category III/IV (V = 186 MPH), exposure category "D", and installation height up to and including 65 feet above grade.

Worst Case is -09 (Chassis 4a) 88-1/8" x 59-1/2" x 49-3/4"

ALLOWABLE DESIGN PRESSURES FOR THE UNIT ITSELF:

Design Lateral Pressure = 197.2 psf Design Uplift Pressure = 95.4 psf

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Kz = 1.33, Kzt = 1.0,

Factoring in the required Load Combination factor (0.6):

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Since positive pressure acts toward the surface being considered and negative pressure acts away, only the uplift pressure will remove a panel from the machine. The design lateral pressure which is considered to act toward the windward surface is recognized to be a combination of the pressures acting on the windward and leeward surfaces. Wall pressure coefficients from ASCE7-10, Chapter 27, Figure 27.4-1 may be used to distribute the Design Lateral Pressure into positive and negative componenets acting on the windward and leeward surfaces, respectively.

L/B = 59.5/88.125 = 0.68 for wind on long (88-1/8") side L/B = 88.125/59.5 = 1.48 for wind on short (59-1/2") side

Worst case positive pressure coefficient is 0.8 for windward wall which has a corresponding negative pressure coefficient of 0.5 on the leeward wall. The worst case negative pressure coefficient is 0.7 for the sidewall (side parallel to wind). Since the windward and leeward wall pressures act in the same direction, the distibuted pressures are computed as follows:

Lateral Positive Design Pressure = 197.18 (0.8) / (0.8 + 0.5) = 121.3 psf (Worst Case Positive) Lateral Negative Design Pressure = 197.18 (0.5) / (0.8 + 0.5) = 75.8 psf Sidewall Negative Design Pressure = 197.18 (0.7) / (0.8 + 0.5) = 106.2 psf (Worst Case Negative)

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22, 20, and 18 ga. panels and columns are fastened together and to 16 ga. base rails using #10 serrated washer head self tapping screws having 0.425" head diameter, 0.19" nominal diameter, and 0.14 minor diameter. These screws are expect to exhibit the following properties based upon ICC-ES Report ESR-2196: These screws are expected

Pullout Strength in 22 ga. = 306 lbs (ultimate) Pullout Strength in 20 ga. = 351 lbs (ultimate) Pullover Strength of 22 ga. = 828 lbs (ultimate) Pullover Strength of 20 ga. = 993 lbs (ultimate) Shear Strength in 22 ga. = 684 lbs (ultimate) Shear Strength in 20 ga. = 684 lbs (ultimate) Pullout Strength in 18 ga. = 450 lbs (ultimate) Shear Strength in 16 ga. = 927 lbs (ultimate)

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For Top Panel (50HJ501228):
87.32" x 57.68" draw formed 20 ga. panel anchored at edges and through top to 18 ga. center panel and 20 ga. control box. Worst case portion is over air handler section since condenser section has two large holes in the top causing internal and external pressure to be equal. For portion tributary to air handling section:

A = 42.86(57.68)/12(12) = 17.17 sqft
Load = 17.17 (95.41) = 1638.0 lbs

panel into 22 ga. center posts: Screw Load = 1638.0/2(9) = 91.0 lbs Safety Factor = 684/91.0 = 7.5For outside edge (8) screws, all in shear through 20 ga. top panel into 22 ga. indoor panel and corner posts: Screw Load = 1638.0/2(8) = 102.4 lbs
Safety Factor = 684/102.4 = 6.7
OK for Components and Cladding For inside edge (5) screws in tension through 20 OK for Components and Cladding ga. top panel into 18 ga. center panel and 4 screws in shear

OK for Components and Cladding

For Inside Panel (50DK500689): 57.56" x 45.49" draw formed 22 ga. panel anchored at edges with 6 screws through top panel into face at top, 5 screws evertical edge through flange perpendicular to face, and 6 screws at one inch above bottom edge through panel into base and 4 screws between supply and return openings into stiffener (50DK502637) fastened to condensing coil. , 5 screws each el into base rail,

A = 57.56(45.49)/ 12(12) = 18.18 ft2 Load = 18.18(106.17) = 1930.5 lbs Screw Load = 1930.5/2(5+6) = 87.75 lbs Safety Factor = 450/87.75 = 5.1

OK for Components and Cladding

screws through face at

or Access Panel (48TM500388):
.33" x 42.95" draw formed 22 ga. panel anchored with 2 screws through face each vertical side, 3 through edge into 16 ga. base rail, and top edge fits inside top panel (trapped).

A = 45.33(42.95)/12(12) = 13.52 sqft Load = 13.52(106.17) = 1435.4 lbs Screw Load = 1435.4/2(2 + 3) = 143.5 Safety Factor = 684/143.54 = 4.8 143.54 lbs

OK for Components and Cladding

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For Filter Panel (50DK506970):

.62" draw formed 20 ga. panel anchored with 3 screws through face at bottom edge and top edge fits inside

A = 40.40(21.62)/12(12) = 6.12 sqft Load = 6.12(106.17) = 649.8 lbs $Screw\ Load = 649.8/2(3) = 108.32 \text{ lbs}$ $Safety\ Factor = 684/108.32 = 6.3$

OK for Components ıd Cladding

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Remaining panels are trivial cases of the above due to greater fastener quantity or having openings that limit negative

For connection of upper frame and panels to base rails: 12 screws each long side fasten frame columns and panels to the long base rails. base rail at air handler end. Opposite end is louvered and has a large opening in Screws fasten 22 ga. (min) panels and columns to 16 ga. base rails. 6 screws fasten inside panel to short the top and mesh over cooling coils.

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Lateral Wind Area = AL = 87.32(45.63)/12(12) = 27.67 sqft Lateral Design Load = 27.67(197.18) = 5455 lbs Overturning Moment = 5455(45.63)/2 = 124443 in-lb Uplift Wind Area = AU = 87.32(57.68)/12(12) = 34.98 sqft Uplift Design Load = 34.98(95.41) = 3337 lbs Uplift Moment = 3337(57.68)/2 = 96242 in-lb

Screw Load = (124443 + 96242)/12(57.68) = 318.8 lbs (shear) Safety Factor = 927/318.8 = 2.9

OK for Compo onents and Cladding

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Unit itself will withstand wind loads imposed by 197.18 psf lateral and 95.41 psf up gage galvanized base rails are properly fastened to a suitable slab, stand, curb, curb arrangement and all factory supplied assembly fasteners are in place. plift design pressures provided the 16 adapter, or other suitable mounting

For connection of unit base rails to properly designed curb, metal stand, or structural concrete (by others):

Lateral Wind Area = AL = 88.125(49.375)/12(12) = 30.22 ft2

Lateral Design Load = 30.22(197.18) = 5958 lbs

Overturning Moment = 5958(49.375)/2 = 147090 in-lb

Uplift Wind Area = AU = 88.125(59.5)/12(12) = 36.41 ft2

Uplift Design Load = 36.41(95.41) - 0.6(845) = 2697 lbs For connection of 16 ga. (min) straps, clips, or brackets spaced 32" min apart Uplift Moment = 2697(59.5)/2 = 88272 in-lb

using 1/4" (#14) self-drilling screws: Pullout Strength in 16 ga. = 573 lbs (ultimate) to unit base rails on long sides

Shear Strength in 16 ga. = 1389 lbs (ultimate)

Using (3) screws per strap, clip, or bracket, with Screw Load = (147090 + 88272)/3(3)(59.5) = 2Safety Factor = 1389/439.5 = 3.21(3) straps, clips, or brackets each 439.5lbs (shear) at base rail outer long side (see sheet 4): surface

For Z-brackets similar to Micrometl design but modified to eliminate hidden to 18 ga. (min) curb (by others): structural fasteners anchored

Shear Strength in 18 ga. = 1218 lbs (ultimate)

Screw Load = (147090 + 88272)/3(4)(49.75) = 394.2 lbs (shear) at curb inside Safety Factor = 1218/394.2 = 3.1 OK OK for Components and Cladding

For Brackets 3.25-4.13" wide x 2" x 2-1/2", 16 ga. (min), spaced Usin σ (3) screws per bracket, (3) brackets each side: (min) on -center each long side,

Anchor Load = (147090 + 88272)/3(60.25) = 1302.2 lbs (tension) Anchor Load = 5958/6 = 993.0 lbs (shear) at 3/4" beyond base rail outer surface

For 3/8" SAE Gr. 5 bolts with nuts and washers to steel (by others): Safety Factor = 3720/1302.2 = 2.9 (tension) Safety Factor = 1937/993.0 = 2.0 (shear)

For 3/8" Powers Wedge-Bolt + anchors with 2-1/8" (min) embedment into 20 others), 4" (min) thick, 2-3/4" (min) edge distance, and 2-1/2" (min) spacing:

2 = 2.3 (tension) = 3.1 (shear)

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00 psi (min) concrete (by

Chassis 3 & 4 Data: 1-08-16

CORE

Created by:

Job No:

Carrier RTUs

Model List and Details

QTY. 1 - 3/8" POWERS WEDGE-BOLT+ ANCHOR PER BRACKET INTO MINIMUM 2000 PSI CONCRETE (BY OTHERS), AS FOLLOWS:
2-1/8" MIN EMBED
2-3/4" EDGE DISTANCE
2-1/2" MIN SPACING QTY. 1 - 3/8" SAE GR5 BOLT, NUT AND WASHER PER BRACKET INTO PROPERLY DESIGNED METAL STAND (BY OTHERS) 75 Ф. r -8 I R $3X \ \emptyset .26$ 물론 Ø.39 QTY. 3 - 1/4" SDSM SCREWS AND WASHERS PER BRACKET, (8) BRACKETS GALVANIZED STEEL 16 GA., 90 DEG. BRACKET 2.00 DETAIL A SCALE 1:8 2.50

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ptional Mounting Models: **CARRIER Chassis 5:**

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48/50TC - size 16, 50TCQ and 48/50HC - size 14, 50HCQ - size 12, 48/50LC - size 08(min) through 12 (max)

(2014) requirements for installation including High Velocity Hurricane Zone Category III/IV (V = 186 MPH), exposure category "D", and installation heigh including 65 feet above grade. Each condenser unit listed above conforms to the Florida Building tion height up to and Code sth Edition ne (HVHZ), Ri

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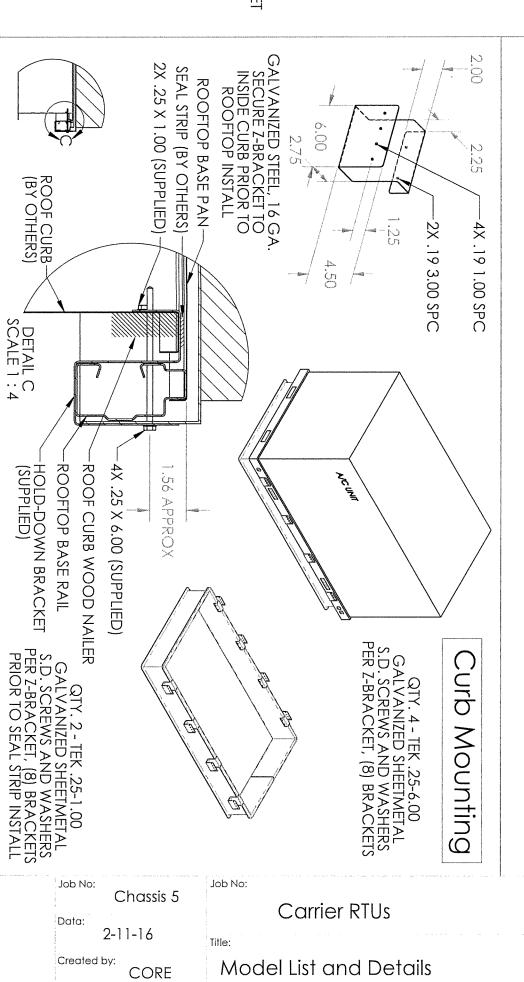
Worst Case is -16 (Chassis 5) 115-7/8" x 63-3/8" x 57-3/8"

ALLOWABLE DESIGN PRESSURES FOR THE UNIT ITSELF:

Design Lateral Pressure = 197.2 psf Design Uplift Pressure = 95.4 psf

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pressures, provided the 16 GA. galvanized base rails are fastened to a properly designed concrete slab, metal stand, curb, curb adapter, or other suitable mounting arrangement and all factory supplied arrangement and all factory supplied arrangement.



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Lateral Wind Pressure = WL = Qz(3.1) = 328.64 psfUplift Wind Pressure = UL = Qz(1.5) = 159.02 psf186 mph (Risk Cat. III/IV), For Exp.Cat. "D" and Z = 65 ft, Kz = 1.33, Kzt = 1.0, Kd = 0.90

Design Design Uplift Pressure = UL(0.6) = 95.4 psfLateral Pressure = WL(0.6) = 197.2 psf

Factoring in the required Load Combination factor (0.6):

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is recognized to be a combination of the pressures acting on the windward and leeward surfaces. Wall pressure coefficients from ASCE7-10, Chapter 27, Figure 27.4-1 may be used to distribute the Design Lateral Pressure into positive and negative componenets acting on the windward and leeward surfaces, respectively. Since positive pressure acts toward the surface being considered and negative pressure acts away, only the uplift pressure will remove a panel from the machine. The design lateral pressure which is considered to act toward the windward surface.

L/B = 63.375/115.875 = 0.55 for wind on long (115-7/8") side L/B = 115.875/63.375 = 1.83 for wind on short (63-3/8") side

Worst case positive pressure coefficient is 0.8 for windward wall which has a corresponding negative pressure coefficient 0.5 on the leeward wall. The worst case negative pressure coefficient is 0.7 for the sidewall (side parallel to wind). Since the windward and leeward wall pressures act in the same direction, the distibuted pressures are computed as follows:

Lateral Positive Design Pressure = 197.18 (0.8) / (0.8 + 0.5) = 121.34 lb/ft2 (Worst Case Positve) Lateral Negative Design Pressure = 197.18 (0.5) / (0.8 + 0.5) = 75.84 lb/ft2 (Worst Case Negative) Sidewall Negative Design Pressure = 197.18 (0.7) / (0.8 + 0.5) = 106.17 lb/ft2 (Worst Case Negative)

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22, 20, and 18 ga. panels and columns are fastened together and to 16 ga. base rails using #10 serrated washer head self tapping screws having 0.425" head diameter, 0.19" nominal diameter, and 0.14 minor diameter. These screws are expected to exhibit the following properties based upon ICC-ES Report ESR-2196:

Pullout Strength in 22 ga. = 306 lbs (ultimate) Pullout Strength in 20 ga. = 351 lbs (ultimate)

Pullover Strength of 22 ga. = 828 lbs (ultimate) Pullover Strength of 20 ga. = 993 lbs (ultimate)

Shear Strength in 22 ga. = 684 lbs (ultimate) Shear Strength in 20 ga. = 684 lbs (ultimate)

Shear Strength in 18 ga. = 450 lbs (ultimate)

Shear Strength in 16 ga. = 927 lbs (ultimate)

For Top Panel Assembly (50TM500066 and 50TM500065 joined using 50TM500359 and 12 screws):

in the top causing internal and external pressure to be equal. For portion tributary to air handling section: A = 61.61(55.41)/12(12) = 23.70 sqft14.4" x 61.6" draw formed 20 ga. assembly, anchored at edges and through top, to 16 ga. center panel and ga. control box. Worst case portion is over air handler section since condenser section has (3) large holes Load = 23.70 (95.41) = 2261.9 lbs

For outside edge (9 screws, all in shear through 20 ga. top panel into 22 ga. indoor panel and corner posts): Screw Load = 2261.9/2(9) = 125.7 lbs Safety Factor = 684/125.7 = 5.4 OK

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for inside edge (8 screws in tension through 20 ga. top panel into 16 ga. center panel and 4 screws in shear

through top panel into 22 ga. center posts): Screw Load = 2261.9/2(12) = 94.2 lbs Safety Factor = 684/94.2 = 7.3

OK for Components and Cladding

For Inside Panel (50TM500063):

edge through panel into base rail, and 5 screws between supply and return openings into stiffener 61.5" x 53.42" draw formed 22 ga. panel anchored at edges with 7 screws through top panel into face at top, 6 screws each vertical edge through flange perpendicular to face, and 6 screws at 7/16 inch above bottom (50TM500058) fastened to condensing coil. A = 61.5(53.42)/12(12) = 22.81 sqft

oad = 22.81(106.17) = 2422.2 lbsScrew Load = 2422.2/2(6+6) = 100.93Safety Factor = 450/100.93 = 4.5

OK for Components and Cladding

53.30" x 25.61" draw formed 22 ga. panel anchored with 3 screws through face each vertical side, through face at bottom edge into 16 ga. base rail, and top edge fits inside top panel (trapped). = 53.30(25.61)/12(12) = 9.48 sqft

Load = 9.48(106.17) = 1006.4 lbs

Screw Load = 1006.4/2(2+3) = 100.64 lbs Safety Factor = 306/100.64 = 3.0

for Components and Cladding

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For Access Panel Assembly (50TM500086 and 50TM500061): 53.0" x 53.30" assembly of draw formed 20 ga. panels anchored with side, (5) screws through face at bottom edge intp 16 ga. base rail, and . top 3 screws through face each vertical edge fits inside top panel (trapped).

A = 53.0(53.30)/12(12) = 19.62 sqft Load = 19.62(106.17) = 2082.8 lbs Screw Load = 2082.8/2(5+3) = 130.17 lbs Safety Factor = 306/130.17 = 2.4

OK for Components and Cladding

Remaining panels are trivial cases of the above due to greater fastener quantity or having openings that limit

over cooling coils. For connection of upper frame and panels to base rails: 16 screws each long side fasten frame posts and 22 ga. (min) panels to the inside panel to short base rail at air handler end. Opposite end is louvered. long 16 ga. base rails. 6 screws fasten and has a large opening in the top and mesh

Lateral Wind Area = AL = 114.35(53.625)/12(12) = 42.58 sqft Lateral Design Load = 42.58(197.18) = 8296.6 lbs Overturning Moment = 8396.6(53.625)/2 = 225134 in-lb

Uplift Wind Area = AU = 114.35(61.61)/12(12) = Uplift Design Load = 48.92(95.41) = 4667.9 lbs Uplift Moment = 4667.9(61.61)/2 = 143794 in-lb

Screw Load = (225134 + 143794)/16(61.61) = 374.3 lbs (shear) 927/374.3 = 2.5 OK for Components and Cladding

Unit itself will withstand wind loads imposed by 197.18 psf lateral and 95.41 psf 16 ga. galvanized base rails are properly fastened to a suitable slab, stand, curb, c mounting arrangement and all factory supplied assembly fasteners are in place. f uplift design pressures provided the curb adapter, or other suitable

structural concrete (by others):

For connection of unit base rails to properly designed curb, metal stand, or Lateral Wind Area = AL = 115.875(57.375)/12(12) = 46.17 sqft Lateral Design Load = 346.17(197.18) = 9103.6 lbs

Overturning Moment = 9103.6(57.375)/2 = 261159 in-lb

Uplift Wind Area = AU = 115.875(63.375)/12(12) = 51.00 sqft

Uplift Design Load = 51.00(95.41) - 0.6(1305) = 4082.6 lbs

Uplift Moment = 4082.6(63.375)/2 = 129369 in-lb

For connection of 16 ga. (min) straps, clips, or brackets spaced 28" Using 1/4" (#14) self-drilling screws:
Pullout Strength in 16 ga. = 573 lbs (ultimate) min apa rt to unit base rails on long sides

Pullout Strength in 16 ga. = 573 lbs (ultimate) Shear Strength in 16 ga. = 1389 lbs (ultimate)

Using (3) screws per strap, clip, or bracket, with (4) straps, clips, or brackets eac Screw Load = (261159 + 129369)/3(4)(63.375) = 513.5 lbs (shear) at base rail Safety Factor = 1389/513.5 = 2.7 OK for Components ϵ ach long side: il outer surface s and Cladding

For (4) Z-Brackets each long side similar to Micrometl design but modified to eliminate hidden structural

fasteners anchored to 18 ga. (min) curb (by others):

Shear Strength in 18 ga. = 1218 lbs (ultimate)

Screw Load = (261159 + 129369)/3(4)(53.81) = 604.8 lbs (shear) at curb inside surface

Safety Factor = 1218/604.8 = 2.0

OK for Components and Cladding

for Brackets 3.25-4.13" wide x 2" x 2-1/2", 16 ga. (min), spaced 28" (min) on-center each long side

Using (3) screws per bracket, (4) brackets per side: Anchor Load = (261159 + 129369)/4(64.125) = 1522.6 lbs (tension) Anchor Load = 9103.6/8 = 1138.0 lbs (shear) at 3/4" beyond base rail outer surface

For 3/8" SAE Gr. 5 bolts with nuts and washers to steel (by others): Safety Factor = 3720/1522.6 = 2.4 (tension) OK Safety Factor = 3720/1522.6 = 2.4 (tension) Safety Factor = 1937/1138.0 = 1.7 (shear)

For 3/8" Powers Wedge-Bolt + anchors with 4" (min) thick, 2-3/4" (min) edge distance, an Safety Factor = 3000/1522.6 = 2.0 (tension) 3000/1522.6 = 2.0 (tension) 3100/1138.0 = 2.7 (shear) min) embedment into (min) spacing: OK 000 psi (min) concrete (by others),

> Job No: Data:

Chassis 5

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Carrier RTUs

Model List and Details

Job No:

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Created by:

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Florida P.E. 0050867 750 E. Sample Rd.

Blag. 3, Suite 220

Pompano Beach, Fl 33064 954-633-4692

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Optional Mounting

CARRIER Chassis 6, 7, 8 & Models:

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48/50TC - size 17 (min) through size 30 (max), 48/50HC - size 17 (min) through size 28 (max) 45/50LC - size 14 (min) through size 26 (max) 50TCQ - size 17 (min) through size 24 (max)

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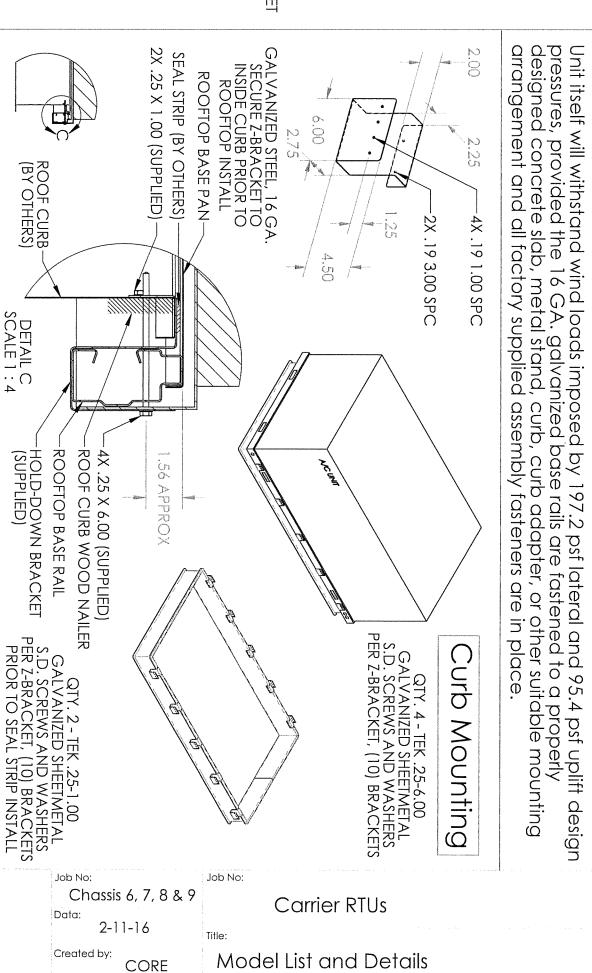
Each condenser unit listed above conforms to the Florida Building Code 5th Edition (2014) requirements for installation including High Velocity Hurricane Zone (HVHZ), Risk Category III/IV (V = 186 MPH), exposure category "D", and installation height up to and including 65 feet above grade.

Worst Case is -26 (Chassis 9) 157-3/4" x 86-3/8" x 57-3/8"

ALLOWABLE DESIGN PRESSURES FOR THE UNIT ITSELF:

Design Lateral Pressure = 197.2 psf Design Uplift Pressure = 95.4 psf

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Lateral Wind Pressure = WL = qz(3.1) = 328.6 psfUplift Wind Pressure = UL = qz(1.5) = 159.0 psfFactoring in the required Load Combination factor (0.6):

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Design Uplift Pressure = UL(0.6) = 95.4 psfDesign Lateral Pressure = WL(0.6) = 197.2

Since positive pressure acts toward the surface being considered and negative pressure acts away, only the uplift pressure will remove a panel from the machine. The design lateral pressure which is considered to act toward the windward surface is recognized to be a combination of the pressures acting on the windward and leeward surfaces. Wall pressure coefficients from ASCE7-10, Chapter 27, Figure 27.4-1 may be used to distribute the Design Lateral Pressure into positive and negative componenets acting on the windward and leeward surfaces, respectively.

86.375/157.75 = 0.55 for wind on long (157-3/4") side 157.75/86.375 = 1.83 for wind on short (86-3/8") side

Worst case positive pressure coefficient is 0.8 for windward wall which has a corresponding negative pressure coefficient of 0.5 on the leeward wall. The worst case negative pressure coefficient is 0.7 for the sidewall (side parallel to wind). Since the windward and leeward wall pressures act in the same direction, the distibuted pressures are computed as follows:

Lateral Positive Design Pressure = 197.18 (0.8) / (0.8 + 0.5) = 121.34 lb/ft2 (Worst Case Positive) Lateral Negative Design Pressure = 197.18 (0.5) / (0.8 + 0.5) = 75.84 lb/ft2 (Worst Case Negative) Sidewall Negative Design Pressure = 197.18 (0.7) / (0.8 + 0.5) = 106.17 lb/ft2 (Worst Case Negative)

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22, 20, and 18 ga. panels and columns are fastened together and to 16 ga. base rails using #10 serrated washer head self tapping screws having 0.425" head diameter, 0.19" nominal diameter, and 0.14 minor diameter. These screws are expect to exhibit the following properties based upon ICC-ES Report ESR-2196:

Pullout Strength in 22 ga. = 306 lbs (ultimate) Pullout Strength in 20 ga. = 351 lbs (ultimate) Pullover Strength of 22 ga. = 828 lbs (ultimate) Pullover Strength of 20 ga. = 993 lbs (ultimate) Shear Strength in 22 ga. = 684 lbs (ultimate) Shear Strength in 20 ga. = 684 lbs (ultimate) Pullout Strength in 18 ga. = 450 lbs (ultimate) Shear Strength in 16 ga. = 927 lbs (ultimate)

For Top Panel Assembly (50HE500275 and 50HE500276 joined using 6 screws): 85.0" x 82.5" draw formed 20 ga. assembly anchored at edges and through top to 16 ga. center panel, 18 ga, end panel assembly, 20 ga. side panels, and 18 ga. control box. This portion is over air handler section and is worst case since condenser section has three large holes in the top causing internal and external pressure to be equal.

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A = 85.0(82.5)/12(12) = 48.70 sqft

Load = 48.70 (95.41) = 4646.3 lbs

For 8 (min) screws each 85.0" side into 18 ga. (min) panels and 12 screws each 82.5" side into 20 ga. (min) side panels:

Screw Load = 4646.3/2(8 + 12) = 116.2 lbs

Safety Factor = 684/116.2 = 5.9

OK for Components and Cladding

For End Panel Assembly (50HE500719 and 50HE500762 joined together using 7 screws): 73.0" x 53.5" draw formed 18 ga. panel anchored at edges with 5 screws through top panel into face at top, 5 vertical edge face into 22 ga. (min) corner posts, and 5 screws at 3/8" inch above bottom edge through panel 5 screws each into base rail

A = 73.0(53.5)/12(12) = 27.12 sqft Load = 27.12(106.17) = 2879.5 lbs Screw Load = 2879.5/2(5+5) = 143.97 lbs Safety Factor = 306/143.97 = 2.1

OK for Components and Cladding

For Access Panel (50HE500423): 53.30" x 25.61" draw formed 22 ga. panel anchored with 3 s at bottom edge into 16 ga. base rail, and top edge fits inside screws through face each vertical side, , 2 screws through

Load = 9.81(106.17) = 1041.4 lbs Screw Load = 1041.4/2(3+3) = 86.78 lbs Safety Factor = 306/86.78 = 3.5A = 53.5(26.4)/12(12) = 9.81 sqft

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Remaining panels are trivial cases of the above due to greater fastener quantity or having openings that limit negative

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for Components and Cladding

For connection of upper frame and panels to base rails: 12 screws each long side fasten frame posts and 20 ga. (mir

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the top and mesh over cooling coils. 12 screws each long side fasten frame posts and 20 ga. (min) panels to fasten inside panel to short base rail at air handler end. Opposite end is he long 16 ga. base rails. 8 screws louvered and has a large opening in

Lateral Wind Area = AL = 156.0(53.625)/12(12) = 58.09 sqft Lateral Design Load = 58.09(197.18) = 11454.9 lbs Overturning Moment = 11454.9(53.625)/2 = 307135 in-lb

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Uplift Wind Area = AU = 156.0(85.0)/12(12) = 92.08 sqft Uplift Design Load = 92.08(95.41) = 8785.7 lbs

Uplift Moment = 8785.7(85.0)/2 = 373391 in-lb Screw Load = (307135 + 373391)/(16 + 8)(85.0) = 333.6 lbs (shear) Safety Factor = 927/333.6 = 2.8 OK for

Unit itself will withstand wind loads imposed by 197.18 psf lateral and 95.41 psf uplift design pressures provided the 16 gage galvanized base rails are properly fastened to a suitable slab, stand, curb, curb adapter, or other suitable mounting arrangement and all factory supplied assembly fasteners are in place.

Components and Cladding

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Florida/P.E. 0050867

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For connection of unit base rails to properly designed curb, metal stand, or structural concrete (by

Lateral Wind Area = AL = 157.75(57.375)/12(12) = 62.85 sqft Lateral Design Load = 62.85(197.18) = 12393.5 lbs Overturning Moment = 12393.5(57.375)/2 = 355537 in-lb Uplift Wind Area = AU = 157.75(86.375)/12(12) = 94.6 sqft Uplift Design Load = 94.6(95.41) - 0.6(2248) = 7679.1 lbs

Uplift Moment = 7679.1(76.875)/2 = 295167 in-lb

For connection of 16 ga. (min) straps, clips, or brackets spaced Using 1/4" (#14) self-drilling screws: (min) apart to unit base rails

Pullout Strength in 16 ga. = 573 lbs (ultimate) Shear Strength in 16 ga. = 1389 lbs (ultimate)

Using (3) screws per strap, clip, or bracket, with 5 straps, clips, or brack Screw Load = (355537 + 295167)/3(5)(86.375) = 502.3 lbs (shear) at Safety Factor = 1389/502.3 = 2.8 OK for (kets each long side:
base rail outer surface
Components and Cladding

For (5) Z-Brackets each long side similar to Micrometl design but modified to eliminate hidden structural fasteners anchored to 18 ga. (min) curb (by others):

Shear Strength in 18 ga. = 1218 lbs (ultimate)

Screw Load = (355537 + 295167)/3(5)(76.875) = 564.3 lbs (shear) at Safety Factor = 1218/564.3 = 2.2 OK for 1 curb inside surface Components and Cladding

For brackets 3.25-4.13" wide x 2" x 2-1/2", 16 ga. (min), spaced Using (3) screws per bracket, (5) brackets per side: (min), on-center each long side:

Anchor Load = (355537 + 295167)/5(87.125) = 1493.8 lbs (tension) Anchor Load = 12393.5/10 = 1239.4 lbs (shear) at 3/4" beyond base rail outer surface

For 3/8" SAE Gr. 5 bolts with nuts and washers to steel (by others)
Safety Factor = 3720/1493.8 = 2.5 (tension)
OK
Safety Factor = 1937/1239.4 = 1.6 (shear)
OK

Job No:

Title:

For 3/8" Powers Wedge-Bolt + anchors with 2-1/8" (min) embedment into 2000 psi (min) concrete (by others), 4" (min) thick, 2-3/4" (min) edge distance, and 2-1/2" (min) spacing:

Safety Factor = 3000/1493.8 = 2.0 (tension)

OK

Safety Factor = 3100/1239.4 = 2.5 (shear)

OK

Job No: Chassis 6, 7, 8 & 9 Data:

1-08-16

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