



City of Belle Isle

Universal Engineering Sciences 3532 Maggie Blvd., Orlando, FL 32811
Tel 407-581-8161 * Fax 407-581-0313 * www.universalengineering.com

PERMIT CARD - PLEASE POST AT JOB SITE

THIS DOCUMENT BECOMES YOUR PERMIT WHEN PROPERLY VALIDATED

Per FBC 105.3.3: An enforcing authority may not issue a building permit for any building construction, erection, alteration, modification, repair or addition unless the permit either includes on its face or there is attached to the permit the following statement: "NOTICE: In addition to the requirements of this permit, there may be additional restrictions applicable to this property that may be found in the public records of this county, and there may be additional permits required from other governmental entities such as water management districts, state agencies, or federal agencies." The issuance of this permit does not grant permission to violate any applicable City, Orange County, State of Florida and/or Federal codes and/or ordinances. Separate permits are required for Signs, Roofing, Electrical, Gas, Plumbing and Mechanical services. This permit becomes VOID if the work authorized is not commenced within 6 months, or is suspended or abandoned for a period of 6 months after commencement. WORK SHALL BE CONSIDERED SUSPENDED IF AN APPROVED INSPECTION HAS NOT BEEN MADE WITHIN A 6 MONTH PERIOD. PERMISSION IS GRANTED TO DO THE FOLLOWING WORK ACCORDING TO THE CONDITIONS HEREON AND THE APPROVED PLANS AND SPECIFICATIONS, SUBJECT TO COMPLIANCE WITH THE ORDINANCES OF THE CITY OF BELLE ISLE, FLORIDA.

Scope of Work: MECHANICAL: one 5-ton change out

Comments: None

Project Information
 Address: 1401 Conway Isle Circle, Belle Isle, FL 32809
 Parcel ID: 24-23-29-3490-00-340
 Property Owner: Pace, Anthony & Rosanne
 Phone Number: none

Company Name: Del-Air Heating, A/C & Refrigeration Inc
 Contractor Name: Del Russo, Robert
 License Number: CAC032448
 Address: 531 Codisco Way, Sanford, FL 32771
 Phone Number: 407-333-2662

Permit Number: 2015-08-056
Date of Application: 08/25/2015
Date Permit Issued: 08/27/2015

WARNING TO OWNER: "YOUR FAILURE TO RECORD A NOTICE OF COMMENCEMENT MAY RESULT IN YOU PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR AN ATTORNEY BEFORE RECORDING YOUR NOTICE OF COMMENCEMENT." ON THE JOB INSPECTION(S) MUST BE MADE BEFORE PROCEEDING WITH SUBSEQUENT WORK. THIS CARD MUST BE DISPLAYED OUTSIDE AND BE PROTECTED FROM THE WEATHER WHILE BEING VISIBLE FROM THE STREET UNTIL THE FINAL INSPECTIONS HAVE BEEN APPROVED.

BUILDING FEATURES

IMPACT FEES	
School	\$
Traffic	\$
ZONING FEES	
Zoning Fee	\$
UNIVERSAL ENG - BUILDING FEES	
Cert of Occ	\$
Demo	\$
Building	\$
Fence	\$
Driveway	\$
Shed	\$
Window(s)	\$
Door(s)	\$
PrePower	\$
Electrical	\$
Temp Pole	\$
Plumbing	\$
Mechanical	\$100.50
Gas	\$
Roofing	\$
Boat Dock	\$
Screen Encl	\$
Swimming Pool	\$
Sign	\$
SURCHARGE FEES	
Surcharge Fee	\$2.00
Surcharge Fee	\$2.00
TOTAL FEES \$104.50	
Date Paid	8-31-15
CC or Check #	VISA 5294
Amount Paid	104.50

BUILDING INSPECTOR USE ONLY

IF APPLICABLE:
 Have Zoning Approval Conditions Been Met? YES NO Have Stormwater Approval Conditions Been Met? YES NO Silt fencing in place? YES NO Turbidity Barrier in place? YES NO

BUILDING

1st _____ (Footing/Foundation)
 Survey specific foundation plan must be onsite before slab pour. Approved Plan on Site? ____

2nd _____ (Slab)

3rd _____ (Lintel)(Wall Reinforcing on Masonry Building)

4th _____ (Exterior Framing)(Roof/Wall Sheathing)

5th _____ (Framing) (To be made after Plumbing/ Mechanical/ Electrical Rough-Ins & Windows/Doors Installed)

6th _____ (Insulation to be Made After Roof Installed)

7th _____ (Drywall)

8th _____ (Sidewalk/Driveway)

9th _____ (Other)

10th _____ (Final - After MEP and Other Applicable Finals)

ROOFING

1ST ROOFING Deck Nailing/Dry-in/Flashing _____

2nd ROOFING Covering In-Progress _____

3rd ROOFING Covering Final _____

PLUMBING (Pool-Piping, Solar, Irrigation, Water Treatment Equip, Etc...)

1ST _____ (Underground) 2nd _____ (Sewer)

3rd _____ (Rough-In/Tub Set) 4th _____ (Final)

The person accepting this permit shall conform to the terms of the application on file and construction shall conform to the requirements of the Florida Building Code (FS 553).

CHECK APPROPRIATE BOX

GAS Natural LP MECHANICAL ELECTRICAL LOW VOLTAGE

1st _____ (Rough-In) 2nd _____ (Final)

Inspection requests are to be emailed to BIDScheduling@UniversalEngineering.com; a confirmation email will be sent back to you upon scheduling. **Next-Day Inspection requests must be made by 1pm.** Please include the following in your request: Permit #, project address, type of inspection, date of the requested inspection, a contact name & a contact phone number. AM or PM may be requested but cannot be guaranteed.

PROJECT NUMBER 0115.1501139.0000

TASK NUMBER 01

CITY OF BELLE ISLE
Permit Application Review Sheet

Permit Number	2015-08-056
Property Owner	PACE, ANTHONY
Address	1401 CONWAY ISLE CIR. (32809)
Nature of Improvement	MECHANICAL: DNE, 5-ton changeout, NO ductwork
Received Application	8/25/15
Sent for Stormwater Review	
Stormwater Approved	/
Sent for Zoning Review	
Zoning Approved	/
Applied for Variance	
Variance Approved	/
Sent to BO for Review	8/25/15 (J. Connell)
Building Official Approved	

Comments	
1.	JCA. 8/25/15 Logged in, Created Proj. #, J. Connell
2.	to Review/ WO # 56324
3.	
4.	
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City of Belle Isle

Universal Engineering Sciences 3532 Maggie Blvd., Orlando FL 32811
Tel 407-581-8161 * Fax 407-581-0313 * www.universaengineering.com

RECEIVED
AUG 25 2015

APPLICATION FOR MECHANICAL PERMIT

WARNING TO OWNER: YOUR FAILURE TO RECORD A NOTICE OF COMMENCEMENT MAY RESULT IN YOUR PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. A NOTICE OF COMMENCEMENT MUST BE RECORDED AND POSTED ON THE JOB SITE BEFORE THE FIRST INSPECTION. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR AN ATTORNEY BEFORE RECORDING YOUR NOTICE OF COMMENCEMENT.

DATE OF APPLICATION: 8/25/15 PERMIT NUMBER 2015-08-056
PLEASE PRINT The undersigned hereby applies for a permit to make installations as indicated below:

Project Address 1401 Conway Isle Circle Belle Isle FL 32809 32812
Property Owner Anthony Pazel Phone _____
Property Owner's Mailing Address 1401 Conway Isle City Belle Isle
State FL Zip Code 32809 Parcel Id Number: 24-23-29-3490-00-340
To obtain this information, please visit <http://www.ocpatl.org/Searches/ParcelSearch.aspx>

Class of Building: Old New Type of Building: Residential Commercial Other
Type of Work: New Alteration Addition Repair

- REQUIRED certified Tie Down Engineering documentation (can be found at www.floridabuilding.org)
- REQUIRED: if adding A/C to new space, provide Energy Calculations & Equipment Sizing Calculations
- REQUIRED: if replacing unit with no duct work, Duct Certification as per FB 101.4.7.1, must be posted on unit

Please indicate the nature of work by completing the information below:
Air Conditioning: # of Units 1 Tons Per Unit 5.0 Total Tons 5.0
Type of System: Water to Air Chiller Split System Package Heat Pump Estimated Cost \$ _____
Heating: # of Units KWS Per Unit 1 Total KWS 51W BTU's 35400 Estimated Cost \$ _____
Oil Electric Boiler Gas (A) Estimated Cost Fee \$ _____

Fees for items below are based on valuation of all units, equipment, materials and labor supplied by owner or contractor.

Ventilation: (Number of) Grease _____ Heat _____ Hoods, Air Intakes _____ Exhaust Fans _____ Dryer Vents _____ Estimated Cost \$ 6472.00

Refrigeration: Number of units _____ Estimated Cost \$ _____

Piping: Air _____ Vacuum _____ Steam _____ Chill Water _____ Estimated Cost \$ _____

Others: (Specify) Hvac change out network Estimated Cost \$ _____

Was the space previously Air Conditioned? Yes No (B) Estimated Cost Fee \$ _____

I hereby certify that the above is true and correct to the best of my knowledge and make Application for Permit as outlined above, and if same is granted I agree to conform to all Florida Building Code Regulations and City Ordinances regulating same and in accordance with plans submitted. The issuance of this permit does not grant permission to violate any applicable Town and/or State of Florida codes and/or ordinances.

LICENSE HOLDER SIGNATURE _____ LICENSE # CAC032488
LICENSE HOLDER NAME Robert Co Delo Ruse COMPANY NAME Del Air Heating & AC
Street Address 531 Codisco way
City Sanford State FL Zip Code 32771 Phone Number 407-935-9904
Email Address Sales.jobsc@delair.com

Building Official: <u>J. Lee</u> <u>UA EMAIL</u> Date <u>8-26-15</u>	Permit Fee	\$ <u>62.-</u>
Verified Contractor's Licenses & Insurance are on file <u>JPH</u> Date <u>8/25/15</u>	Review Fee	\$ <u>33.50</u>
	3% Florida Surcharge	\$ <u>4.00</u>
	Total Permit Fee	\$ <u>104.50</u>

NOTE: The Building Permit Number is required if the Mechanical Installation is associated with any construction or alteration where a Building Permit has been issued. Building Permit Number _____



DEL-AIR

(888)-831-2665

Heating · Air Conditioning
Appliances · Electrical

24 Hours - 7 Days a Week

State Cert CAC032448

WWW.DELAIR.COM

Sales Agreement

Tony Pace	407-761-2619	2/6/2015	Anthony Strada
1401 Conway Isle Cir	Cell	Email	321 377 2524
Orlando	FL	32809	WWW.DELAIR.COM

Description	Size	SEER RATING
Carrier Comfort 15 Puron® HP	5TON	15.0

For the sum set forth we agree to install and service the following Del-Air comfort system as per the specifications outlined including the equipment and materials listed on proposal. Materials not listed are not included.

Total Including Permit \$ 6,472

Terms and Conditions

Check or Cash

Homeowners are responsible to stay home for one (1) full day for the Building Department Inspection.
Del-Air gives no guarantee for any existing conditions such as, but not limited to, pre-existing Electrical, Ductwork, Mechanical Equipment & House Structure

Florida's Lien Law

ACCORDING TO FLORIDA'S CONSTRUCTION LIEN LAW (SECTIONS 713.001 – 713.37, FLORIDA STATUTES), THOSE WHO WORK ON YOUR PROPERTY OR PROVIDE MATERIALS AND ARE NOT PAID IN FULL HAVE THE RIGHT TO ENFORCE THEIR CLAIM FOR PAYMENT AGAINST YOUR PROPERTY. IF YOUR CONTRACTOR OR A SUBCONTRACTOR FAILS TO PAY SUBCONTRACTORS, SUB-SUBCONTRACTORS, OR MATERIAL SUPPLIERS, THE PEOPLE WHO ARE OWED MONEY MAY LOOK TO YOUR PROPERTY FOR PAYMENT, EVEN IF YOU ALREADY PAID YOUR CONTRACTOR IN FULL. IF YOU FAIL TO PAY YOUR CONTRACTOR, YOUR CONTRACTOR MAY ALSO HAVE A LIEN ON YOUR PROPERTY. THIS MEANS IF A LIEN IS FILED, YOUR PROPERTY COULD BE SOLD AGAINST YOUR WILL TO PAY FOR LABOR, MATERIALS, OR OTHER SERVICES THAT YOUR CONTRACTOR OR A SUBCONTRACTOR MAY HAVE FAILED TO PAY. TO PROTECT YOURSELF, YOU SHOULD STIPULATE IN THIS CONTRACT THAT BEFORE ANY PAYMENT IS MADE, YOUR CONTRACTOR IS REQUIRED TO PROVIDE YOU WITH A WRITTEN RELEASE OF LIEN FROM ANY PERSON OR COMPANY THAT HAS PROVIDED TO YOU A "NOTICE TO OWNER." FLORIDA'S CONSTRUCTION LIEN LAW IS COMPLEX, AND IT IS RECOMMENDED THAT YOU CONSULT AN ATTORNEY.

Add Additional Notes Here

X

Signature
Tony Pace

5/5/2015

I have the authority to order the work outlined above.

Anthony Strada

5/5/2015

In the event payment is not made promptly in accordance with agreed terms, it shall be seller's option to charge a service charge not exceeding two (2) percent per month. The first service charge will be due 15 days from the date of the billing of our amount due on the job. In the event of collection by an attorney, all attorney fees, court costs, and other legal fees shall be borne by the buyer; in the event of non-payment, purchaser agrees to allow seller on premises to remove equipment installed. This sales agreement shall be binding upon the heirs, successors, and/or assigns of the party hereto.

It is understood that the title of all products and equipment covered by the contract remains solely in the seller until the entire purchase price has been paid in full and the manner of installation an/or attachment to any equipment and/or any portion of the building structure in which the installation is made shall not in any manner jeopardize the seller's title.

Proposal is no longer valid after; 6/4/2015

- Searches
- Sales Search
- Results
- Property Record Card**
- My Favorites

1401 Conway Isle Cir < 24-23-29-3490-00-340 >

Name(s)	Physical Street Address
Pace Anthony S	1401 Conway Isle Cir
Pace Rosanne M	Postal City and Zipcode
Mailing Address On File	Orlando, FL 32809
1401 Conway Isle Cir	Property Use
Belle Isle, FL 32809-3301	0103 - Single Fam Class III
Incorrect Mailing Address?	Municipality
	Belle Isle

- Values, Exemptions and Taxes**
- Property Features
- Sales Analysis**
- Location Info**
- M**

Property Description

HIGHLANDS AT LAKE CONWAY 45/11 LOT 34

Total Land Area 13,501 sqft (+/-) | 0.31 acres (+/-) GIS Calculated Notice

Land (includes working values)

Land Use Code	Zoning	Land Units	Unit Price	Land Value
0100 - Single Family	R-1-AA	1 LOT(S)	\$140,000.00	\$140,000

Page 1 of 1 (1 total records)

Buildings (includes working values)

Important Information		Structure	
	Model Code:	01 - Single Fam Residence	Actual Year Built: 2003
	Type Code:	0103 - Single Fam Class III	Beds: 4
	Building Value:	\$291,115	Baths: 3.0
	Estimated New Cost:	\$315,401	Floors: 2

Page 1 of 1 (1 total records)

Extra Features (includes working values)

Description	Date Built	Unit
FPL3 - Good Fireplace	10/29/2003	1 Un
PL2 - Above Average Pool	10/29/2003	1 Un
FNT1 - Decorative Fountain	01/01/2003	1 Un

Lisette T. Holt

Subject: FW: 1401 Conway Isle Circle, REVIEW MEC app. 2015-08-056

From: John Connell
Sent: Wednesday, August 26, 2015 7:20 AM
To: Lisette T. Holt
Cc: BIDReviews
Subject: RE: 1401 Conway Isle Circle, REVIEW MEC app. 2015-08-056

Approved

From: Lisette T. Holt
Sent: Tuesday, August 25, 2015 3:52 PM
To: John Connell
Subject: 1401 Conway Isle Circle, REVIEW MEC app. 2015-08-056

...and another small one.

Regards,

Lisa T. Holt, Executive Asst.
Building Inspections Dept.
Universal Engineering Sciences, Inc.
3532 Maggie Blvd.,
Orlando, Florida 32811
Phone: (407) 423-0504 Ext. 23102

5 tons

ORLANDO BUSINESS JOURNAL

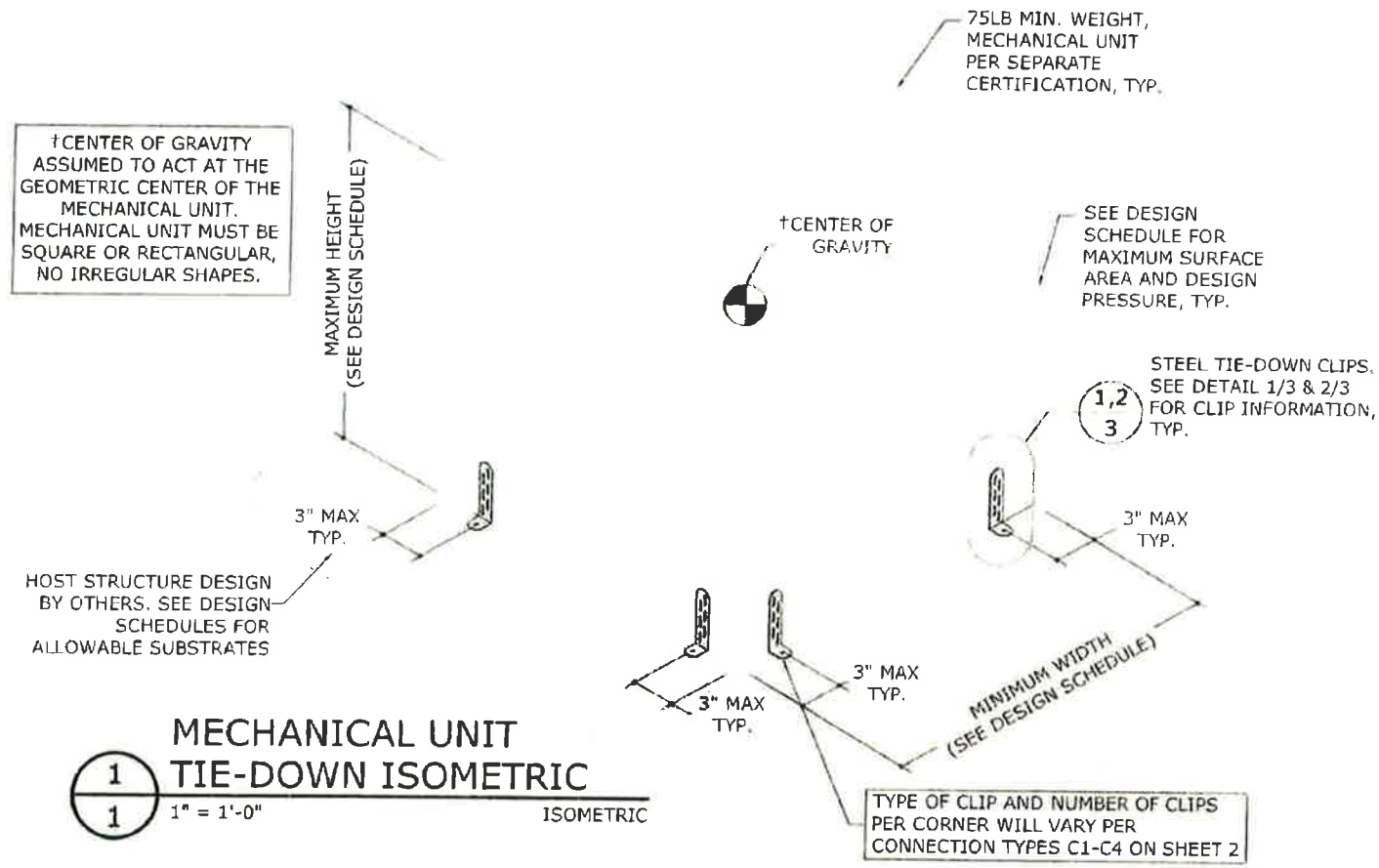


2015 BEST PLACES TO WORK

$$\begin{array}{r} \$6 \times 5 = 30. \\ \underline{37. \text{ base}} \\ 67 \div 2 = \\ 33.50 \\ \hline 100.50 \end{array}$$

BMP INTERNATIONAL, INC.

MECHANICAL UNIT STEEL TIE-DOWN CLIP: AT GRADE & ROOF-TOP MOUNTED APPLICATIONS



1
1 MECHANICAL UNIT TIE-DOWN ISOMETRIC
1" = 1'-0" ISOMETRIC

TIE-DOWN CLIP DIRECTIVE EXAMPLE

(THE FOLLOWING EXAMPLE ILLUSTRATES THE PROCEDURE USED TO DETERMINE THE MAXIMUM ALLOWABLE ROOF-TOP INSTALLATION HEIGHT, H, FOR ANY GIVEN MECHANICAL UNIT THAT CONFORMS TO THE DIMENSION RESTRICTIONS AND DESIGN CRITERIA LISTED HEREIN. SEE SHEETS 4-5 FOR DESIGN SCHEDULES.)

MECHANICAL UNIT CRITERIA:

- CONSIDER THE INSTALLATION OF (1) MECHANICAL UNIT WITH THE FOLLOWING CRITERIA=
- Vult=170 MPH, EXPOSURE 'B'
 - 48" TALL x 48" DEEP x 48" WIDE, 100 LB (WEIGHT AS VERIFIED BY OTHERS)
 - INSTALLED TO 3000 PSI MIN CONCRETE WITH (1)-2" CLIP AT EACH CORNER OF UNIT (TOTAL OF (4) CLIPS)

PROCEDURE:

PROCEDURE STEP	RESULT
1 DETERMINE THE CONNECTION TYPE BASED ON THE DIAGRAMS ON SHEET 2	CONNECTION TYPE 3
2 DETERMINE WHICH DESIGN SCHEDULE TABLE TO USE	THIS INSTALLATION IS INTENDED FOR A Vult=170 MPH, EXPOSURE 'B'. THIS DESIGN CRITERIA CORRESPONDS TO TABLE 5
3 DETERMINE LARGEST FACE AREA OF MECHANICAL UNIT TO BE INSTALLED	48"x48"=16FT ²
4 CHECK MAXIMUM UNIT HEIGHT RESTRICTION	THIS UNIT HEIGHT OF 48" IS EQUAL TO THE MAXIMUM ALLOWABLE HEIGHT OF 48". NOTE: THIS PRODUCT APPROVAL ALLOWS THE UNIT TO BE INSTALLED ON TOP OF AN A/C STAND THAT IS A MAXIMUM 30" TALL. IF AN A/C STAND IS UTILIZED, CHECK TO SEE THAT THE STAND DOES NOT EXCEED 30" IN HEIGHT
5 CHECK MINIMUM UNIT WIDTH RESTRICTION	UNIT WIDTH IS 48" WHICH IS GREATER THAN THE MINIMUM ALLOWABLE WIDTH OF 24"
6 DETERMINE THE ALLOWABLE ROOF-TOP HEIGHT OF THE INSTALLATION	THIS UNIT MAY BE INSTALLED AT ROOF HEIGHTS LESS THAN OR EQUAL TO 15 FT. ADDITIONALLY, THIS UNIT MAY BE INSTALLED ON ROOF-TOP HEIGHTS GREATER THAN 60FT AND LESS THAN 100 FT. SEE (*) ON TABLE 5 FOR THE NUMERICAL VALUES OF THIS DESIGN EXAMPLE

DESIGN NOTES:

THIS PRODUCT HAS BEEN DESIGNED IN ACCORDANCE WITH ASCE 7-10 AND THE FLORIDA BUILDING CODE FOR USE WITHIN AND OUTSIDE THE HIGH VELOCITY HURRICANE ZONE INDICATED IN THE ACCOMPANYING DESIGN SCHEDULES. THE DESIGN CRITERIA USED TO CALCULATE THE ALLOWABLE ROOF-TOP HEIGHTS CONSIDERS ASCE 7-10 SECTION 29.5.1 FOR ROOF TOP HEIGHTS (H) ≤60 FT AND SECTION 29.5 FOR ROOF TOP HEIGHTS (H)>60 FT & SECTION 29.4.1 FOR INSTALLATIONS AT GRADE. (G_C)_{lateral}=3.10 WITHIN THE HVHZ, (G_C)_{lateral}=1.90 OUTSIDE THE HVHZ, (G_C)_{lateral}=1.5 FOR ALL LOCATIONS (CONCURRENT). ALL OTHER DESIGN VARIABLES ARE IN ACCORDANCE WITH ASCE 7-10 CHAPTERS 26 & 29. THE HEIGHTS LISTED IN THE DESIGN SCHEDULES REPRESENT THE ALLOWABLE HEIGHT OF THE BUILDING. THIS PRODUCT APPROVAL ALLOWS FOR EACH UNIT TO BE INSTALLED ON A MAXIMUM 30" TALL A/C STAND (CERTIFICATION BY OTHERS) ON TOP OF THE HEIGHTS LISTED IN THE DESIGN SCHEDULES.

GENERAL NOTES:

- THIS PRODUCT HAS BEEN DESIGNED AND SHALL BE FABRICATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE & ASCE 7-10. THIS PRODUCT MAY BE USED WITHIN AND OUTSIDE THE HIGH VELOCITY HURRICANE ZONE.
- NO 33-1/3% INCREASE IN ALLOWABLE STRESS HAS BEEN USED IN THE DESIGN OF THIS SYSTEM.
- DESIGN IS BASED ON CLIENT PROVIDED PRODUCT AND DIE SHEETS FROM TEST REPORTS #TEL 01970387A, #TEL 01970387B BY TESTING EVALUATION LABORATORIES, INC.. NO SUBSTITUTIONS WITHOUT WRITTEN APPROVAL BY THIS ENGINEER SHALL BE PERMITTED.
- MAXIMUM & MINIMUM DIMENSIONS AND MINIMUM WEIGHT OF MECHANICAL UNIT SHALL CONFORM TO SPECIFICATIONS STATED HEREIN. ALL MECHANICAL SPECIFICATIONS (CLEAR SPACE, TONNAGE, ETC.) SHALL BE AS PER MANUFACTURER RECOMMENDATIONS AND ARE THE EXPRESS RESPONSIBILITY OF THE CONTRACTOR.
- FASTENERS TO BE #12 X 3/4" OR GREATER SAE GRADE 5 UNLESS NOTED OTHERWISE. TAPCONS REFERRED TO HEREIN SHALL BE ITW BUILDEX BRAND, CARBON STEEL ONLY, INSTALLED TO 3000 PSI MIN CONCRETE. SEE ANCHOR SCHEDULE FOR ANCHOR REQUIREMENTS. ALL FASTENERS SHALL HAVE APPROPRIATE CORROSION PROTECTION TO PREVENT ELECTROLYSIS.
- ALL STEEL CLIPS SHALL BE ASTM A283 STEEL (GRADE D) WITH F_y=33 KSI OR BETTER. ALL STEEL MEMBERS SHALL BE PROTECTED AGAINST CORROSION WITH AN APPROVED COAT OF PAINT, ENAMEL OR OTHER APPROVED PROTECTION. G90-RATED COATING REQUIRED FOR ALL COASTAL INSTALLATIONS.
- ALL CONCRETE SPECIFIED HEREIN IS NOT PART OF THIS CERTIFICATION. AS A MINIMUM, ALL CONCRETE SHALL BE STRUCTURAL CONCRETE 4" MIN. THICK AND SHALL HAVE MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI, UNLESS NOTED OTHERWISE.
- THE CONTRACTOR IS RESPONSIBLE TO INSULATE ALL MEMBERS FROM DISSIMILAR MATERIALS TO PREVENT ELECTROLYSIS.
- ELECTRICAL GROUND, WHEN REQUIRED, TO BE DESIGNED & INSTALLED BY OTHERS.
- THE ADEQUACY OF ANY EXISTING STRUCTURE TO WITHSTAND SUPERIMPOSED LOADS SHALL BE VERIFIED BY THE ONSITE DESIGN PROFESSIONAL AND IS NOT INCLUDED IN THIS CERTIFICATION. EXCEPT AS EXPRESSLY PROVIDED HEREIN, NO ADDITIONAL CERTIFICATIONS OR AFFIRMATIONS ARE INTENDED.
- THE SYSTEM DETAILED HEREIN IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC SITE. FOR SITE CONDITIONS DIFFERENT FROM THE CONDITIONS DETAILED HEREIN, A LICENSED ENGINEER OR REGISTERED ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE IN CONJUNCTION WITH THIS DOCUMENT.
- WATER-TIGHTNESS OF EXISTING HOST SUBSTRATE SHALL BE THE FULL RESPONSIBILITY OF THE INSTALLING CONTRACTOR. CONTRACTOR SHALL ENSURE THAT ANY REMOVED OR ALTERED WATERPROOFING MEMBRANE IS RESTORED AFTER FABRICATION AND INSTALLATION OF STRUCTURE PROPOSED HEREIN. THIS ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY WATERPROOFING OR LEAKAGE ISSUES WHICH MAY OCCUR AS WATER-TIGHTNESS SHALL BE THE FULL RESPONSIBILITY OF THE INSTALLING CONTRACTOR.
- FOR AN EXPLANATION OF EXPOSURE CATEGORIES THAT ACCOMPANY THE Vult WIND SPEEDS USED IN THIS APPROVAL, SEE SECTION 26.7.3 OF ASCE 7-10.

FRANK L. BENNARDO, P.E.
PE0046549

FRANK L. BENNARDO
LICENSED PROFESSIONAL ENGINEER
04/17/2015

ENGINEERING EXPRESS
No. 46549
160 SW 12th Avenue, Suite 106
Deerfield Beach, FL 33442
Ph: (954) 354-0660 Fax: (954) 354-0443
WWW.ENGINEEREXPRESS.COM

CERT. OF AUTH. AND REGISTRATION
A FRANK L. BENNARDO, P.E., INC.

BMP INTERNATIONAL, INC.

4710 28TH STREET NORTH
ST. PETERSBURG, FL 33471
PH: (727) 577-1613

MECHANICAL UNIT STEEL TIE-DOWN CLIPS

FBC 5TH EDITION (2014) PRODUCT APPROVAL FL#14239.1

REVISIONS	DATE	BY	CHKD
INIT ISSUE (14-BMP-0001)	12-11-11	FLB	TSB
REV FOR UNITS	02-15-13	CSL	TSB
REV FOR FBC 5TH (2014)	04-06-15	RWN	CSL

PERFORMED BY: FRANK L. BENNARDO, P.E. AND SHALL NOT BE RESPONSIBLE FOR ANY WATERPROOFING OR LEAKAGE ISSUES WHICH MAY OCCUR AS WATER-TIGHTNESS SHALL BE THE FULL RESPONSIBILITY OF THE INSTALLING CONTRACTOR.

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15-2378

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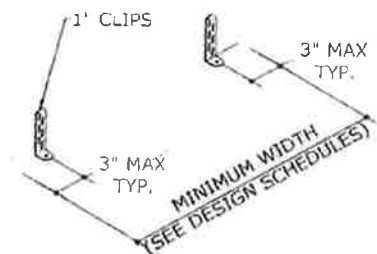
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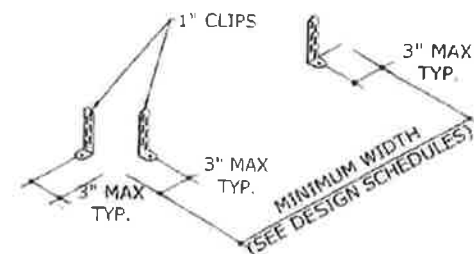
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MAXIMUM UNIT HEIGHT (SEE DESIGN SCHEDULES)

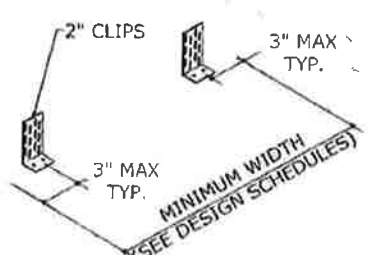


C1 CONNECTION TYPE C1
 1" CLIP - UTILIZE (1) AT EACH CORNER FOR A TOTAL OF (4) PER UNIT

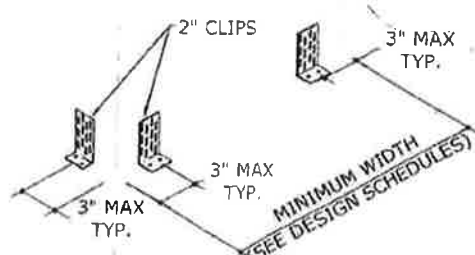


C2 CONNECTION TYPE C2
 1" CLIP - UTILIZE (2) AT EACH CORNER FOR A TOTAL OF (8) PER UNIT

MAXIMUM UNIT HEIGHT (SEE DESIGN SCHEDULES)



C3 CONNECTION TYPE C3
 2" CLIPS - UTILIZE (1) AT EACH CORNER FOR A TOTAL OF (4) PER UNIT



C4 CONNECTION TYPE C4
 2" CLIPS - UTILIZE (2) AT EACH CORNER FOR A TOTAL OF (8) PER UNIT

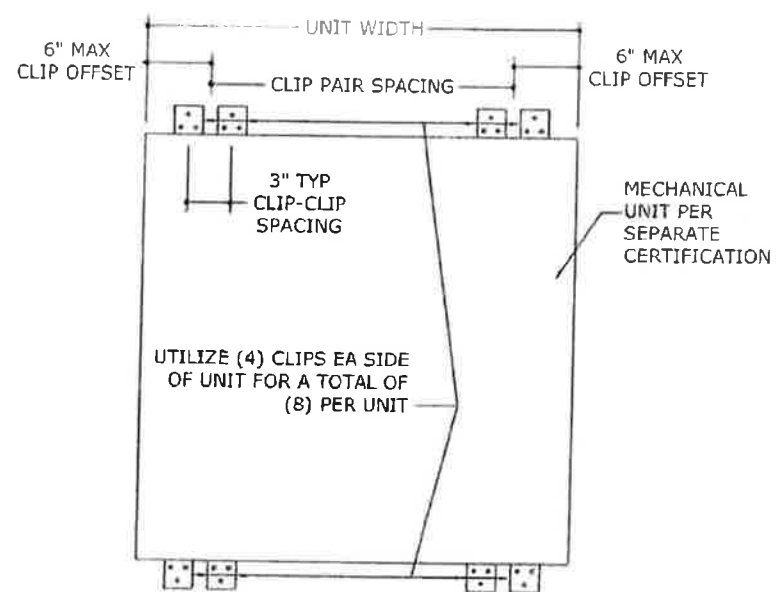
ANCHOR SCHEDULE:
 1" CLIPS

SUBSTRATE	DESCRIPTION
CONCRETE: (4" THICK MIN, 3000 PSI MIN.)	(1)-5/16"Ø CARBON STEEL ITW BUILDEX TAPCON, 2 1/4" FULL EMBED TO CONCRETE, 3 1/2" MIN. EDGE DISTANCE, 3 1/4" MIN. SPACING TO ANY ADJACENT ANCHOR.
ALUMINUM: (0.125" MIN. THICK, 6061-T6 MIN. ALUMINUM)	(1)-#14 SAE GRADE 5 SHEET METAL SCREW TO ALUMINUM, PROVIDE (5) PITCHES MIN. PAST THREAD PLANE
STEEL: (0.125" MIN. THICK, 33 KSI MIN. STEEL)	(1)-#14 SAE GRADE 5 SHEET METAL SCREW TO STEEL, PROVIDE (5) PITCHES MIN. PAST THREAD PLANE

2" CLIPS

SUBSTRATE	DESCRIPTION
CONCRETE: (4" THICK MIN, 3000 PSI MIN.)	(1)-5/16"Ø CARBON STEEL ITW BUILDEX TAPCON, 2 1/4" FULL EMBED TO CONCRETE, 3 1/2" MIN. EDGE DISTANCE, 3 1/4" MIN. SPACING TO ANY ADJACENT ANCHOR.
ALUMINUM: (0.125" MIN. THICK, 6061-T6 MIN. ALUMINUM)	(2)-#14 SAE GRADE 5 SHEET METAL SCREWS TO ALUMINUM, PROVIDE (5) PITCHES MIN. PAST THREAD PLANE
STEEL: (0.125" MIN. THICK, 33 KSI MIN. STEEL)	(2)-#14 SAE GRADE 5 SHEET METAL SCREWS TO STEEL, PROVIDE (5) PITCHES MIN. PAST THREAD PLANE

1. EMBEDMENT AND EDGE DISTANCE EXCLUDES FINISHES, IF APPLICABLE.
2. ENSURE MINIMUM EDGE DISTANCE AS NOTED IN ANCHOR SCHEDULE.
3. SEE DETAILS ON SHEET 3 FOR ANCHORS ATTACHING TO MECHANICAL UNIT.



5 ALTERNATE (8) CLIP DETAIL
 3 N.T.S. PLAN VIEW

THIS DETAIL MAY BE USED AS AN ALTERNATE GEOMETRIC PATTERN FOR ALL CONNECTION TYPES THAT UTILIZE (2) CLIPS AT EACH CORNER FOR A TOTAL OF (8) CLIPS PER UNIT.

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REMARKS	DRWN	CHKD	DATE
INIT ISSUE (11-BMP-0001)	TSB	FLB	12-11-11
REV FOR UNITS	CSL	TSB	02-15-13
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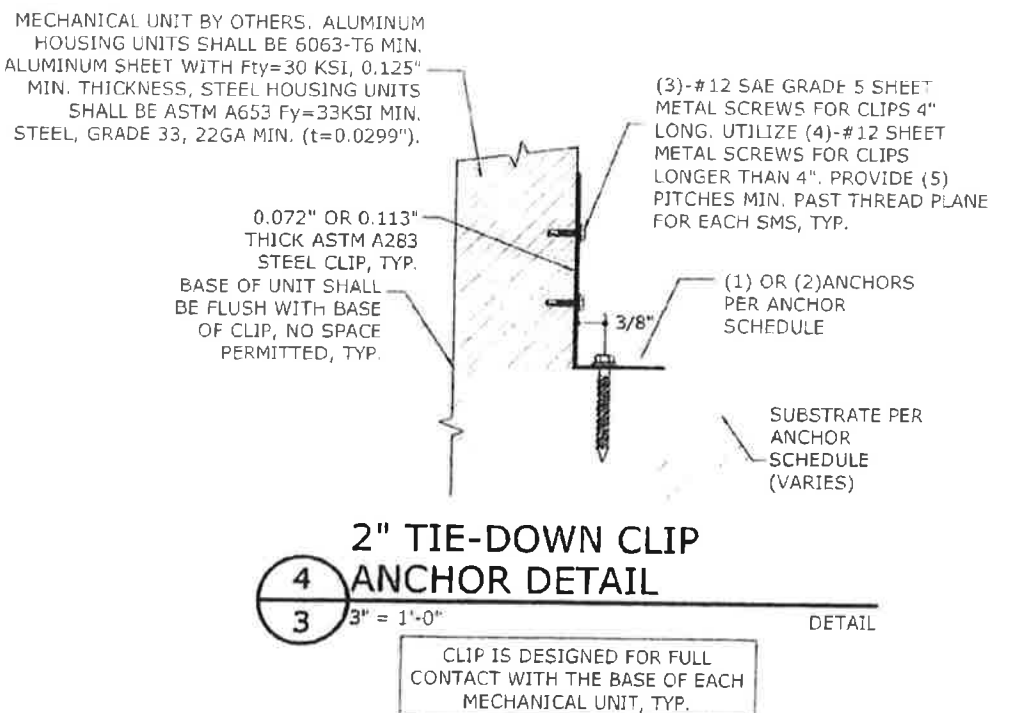
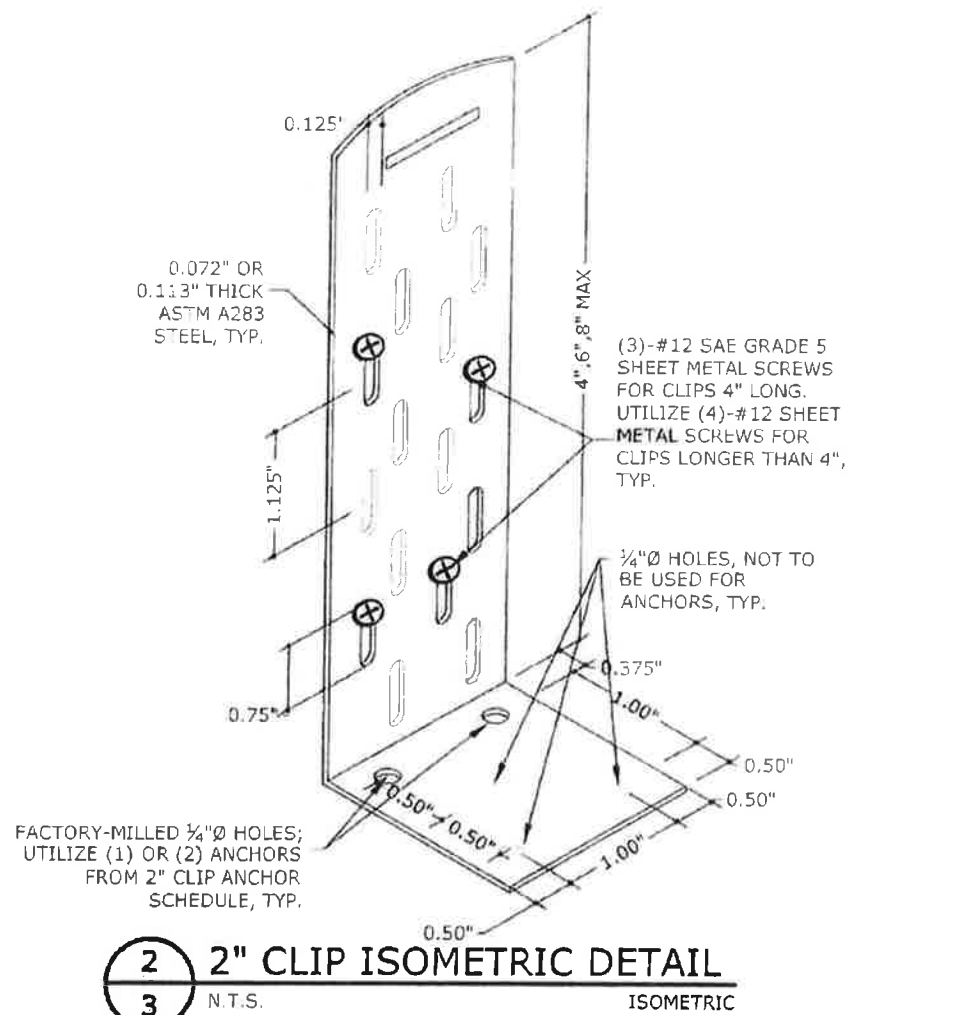
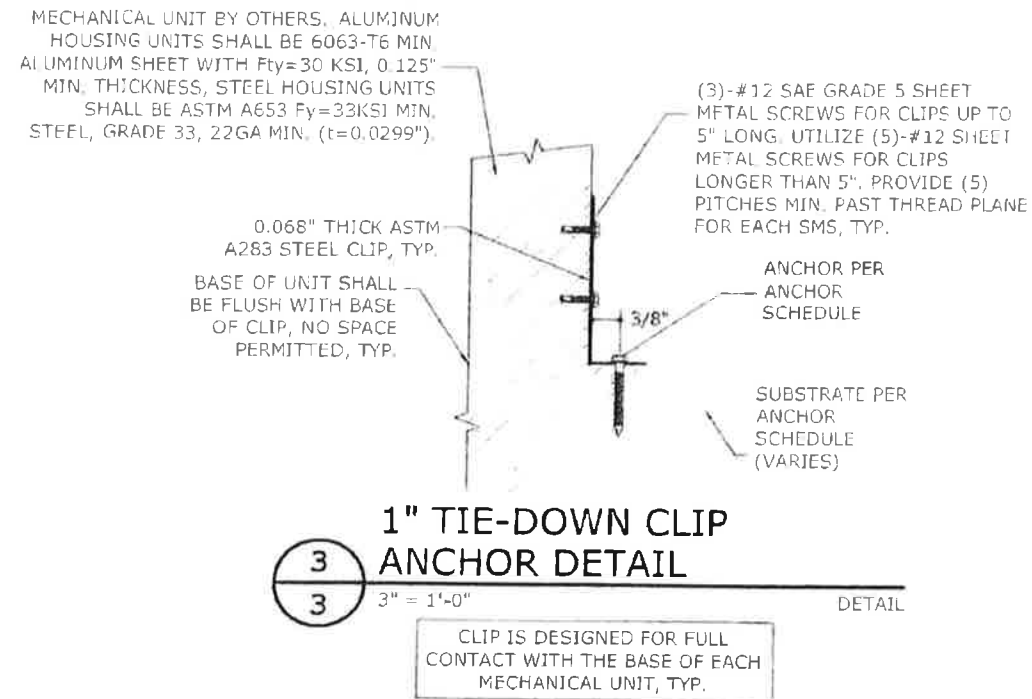
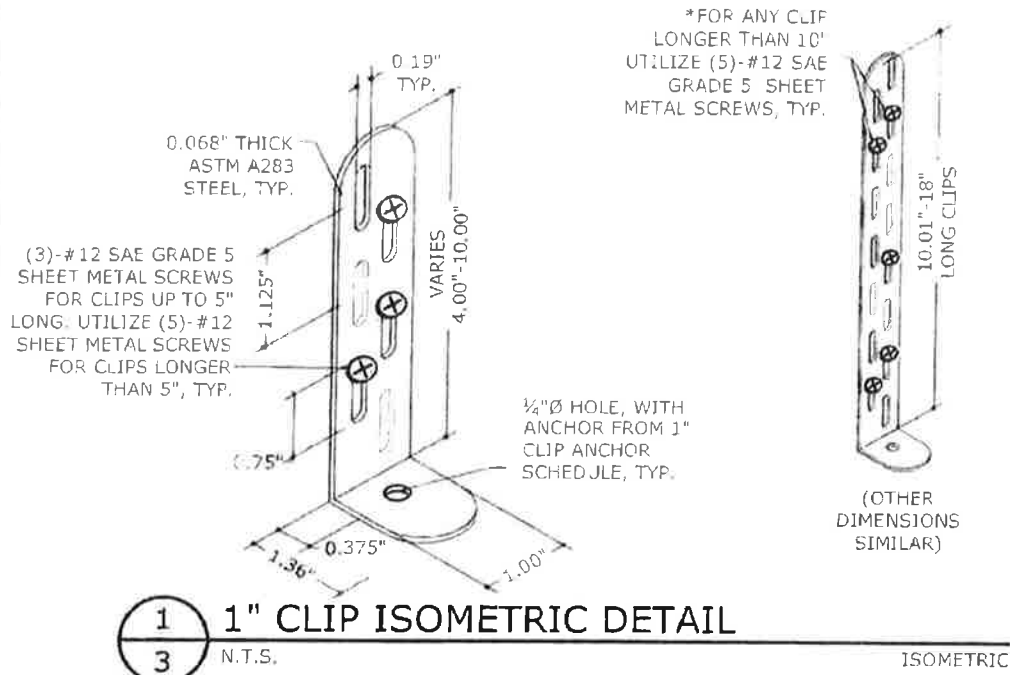
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REV FOR UNITS	CSL	TSB	02-15-13
REV FOR FBG 5TH (2014)	RWN	CSL	04-06-15

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TABLE 1: Vult=175 MPH, EXPOSURE C
(FOR USE WITH A RISK CATEGORY II STRUCTURE IN THE HIGH VELOCITY HURRICANE ZONE*)

MAXIMUM SURFACE AREA OF UNIT'S LARGEST FACE	UNIT HEIGHT	UNIT WIDTH	ALLOWABLE ROOF-TOP HEIGHT (H) TIE-DOWN CONFIGURATION TYPE			
			C1	C2	C3	C4
6 FT ²	24" MAX	12" MIN	N/A	AT GRADE	AT GRADE	H ≤ 200 FT
9 FT ²	32" MAX	15" MIN	N/A	AT GRADE	AT GRADE	H ≤ 60 FT
4 FT ²	48" MAX	24" MIN	AT GRADE	H ≤ 200 FT	H ≤ 30 FT	H ≤ 200 FT
6 FT ²			AT GRADE	H ≤ 40 FT	AT GRADE	H ≤ 200 FT
9 FT ²			N/A	AT GRADE	AT GRADE	H ≤ 160 FT
12 FT ²			N/A	AT GRADE	AT GRADE	H ≤ 40 FT
16 FT ²	60" MAX	48" MIN	N/A	AT GRADE	N/A	AT GRADE
20 FT ²			N/A	AT GRADE	N/A	AT GRADE
25 FT ²			N/A	AT GRADE	N/A	AT GRADE
30 FT ²			N/A	N/A	N/A	AT GRADE
36 FT ²			N/A	N/A	N/A	AT GRADE

*THIS TABLE IS PERMISSIBLE TO BE USED WITHIN THE HVHZ WHICH CONTAINS BROWARD AND MIAMI-DADE COUNTIES. CHECK WITH LOCAL AUTHORITY HAVING JURISDICTION FOR THE APPLICABILITY OF THIS TABLE WITHIN CERTAIN FLORIDA COUNTIES.

TABLE 2 : Vult=175 MPH, EXPOSURE D
(FOR USE WITH A RISK CATEGORY II STRUCTURE IN THE HIGH VELOCITY HURRICANE ZONE*)

MAXIMUM SURFACE AREA OF UNIT'S LARGEST FACE	UNIT HEIGHT	UNIT WIDTH	ALLOWABLE ROOF-TOP HEIGHT (H) TIE-DOWN CONFIGURATION TYPE			
			C1	C2	C3	C4
6 FT ²	24" MAX	12" MIN	N/A	AT GRADE	AT GRADE	H ≤ 200 FT
9 FT ²	32" MAX	15" MIN	N/A	AT GRADE	N/A	H ≤ 30 FT
4 FT ²	48" MAX	24" MIN	AT GRADE	H ≤ 200 FT	AT GRADE	H ≤ 200 FT
6 FT ²			N/A	H ≤ 15 FT	AT GRADE	H ≤ 200 FT
9 FT ²			N/A	AT GRADE	AT GRADE	H ≤ 80 FT
12 FT ²			N/A	AT GRADE	N/A	AT GRADE
16 FT ²	60" MAX	48" MIN	N/A	AT GRADE	N/A	AT GRADE
20 FT ²			N/A	AT GRADE	N/A	AT GRADE
25 FT ²			N/A	N/A	N/A	AT GRADE
30 FT ²			N/A	N/A	N/A	AT GRADE
36 FT ²			N/A	N/A	N/A	AT GRADE

*THIS TABLE IS PERMISSIBLE TO BE USED WITHIN THE HVHZ WHICH CONTAINS BROWARD AND MIAMI-DADE COUNTIES. CHECK WITH LOCAL AUTHORITY HAVING JURISDICTION FOR THE APPLICABILITY OF THIS TABLE WITHIN CERTAIN FLORIDA COUNTIES.

TABLE 3 : Vult=170 MPH, EXPOSURE C
(FOR USE WITH A RISK CATEGORY II STRUCTURE*)

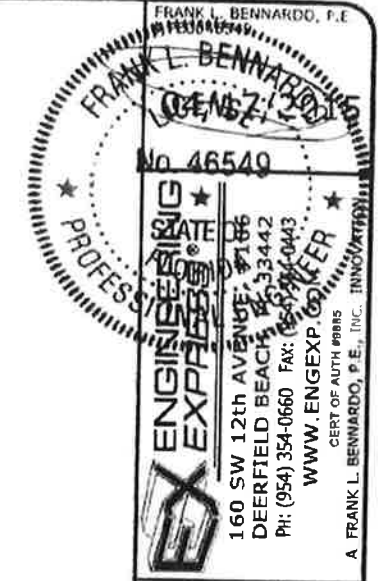
MAXIMUM SURFACE AREA OF UNIT'S LARGEST FACE	UNIT HEIGHT	UNIT WIDTH	ALLOWABLE ROOF-TOP HEIGHT (H) TIE-DOWN CONFIGURATION TYPE			
			C1	C2	C3	C4
6 FT ²	24" MAX	12" MIN	N/A	H ≤ 200 FT	AT GRADE 60 FT < H ≤ 160 FT	H ≤ 200 FT
9 FT ²	32" MAX	15" MIN	N/A	H ≤ 15 FT 60 FT < H ≤ 200 FT	AT GRADE	H ≤ 200 FT
4 FT ²	48" MAX	24" MIN	AT GRADE 60 FT < H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT
6 FT ²			AT GRADE	H ≤ 200 FT	H ≤ 40 FT 60 FT < H ≤ 200 FT	H ≤ 200 FT
9 FT ²			N/A	H ≤ 200 FT	AT GRADE 60 FT < H ≤ 80 FT	H ≤ 200 FT
12 FT ²			N/A	AT GRADE 60 FT < H ≤ 200 FT	N/A	H ≤ 200 FT
16 FT ²	60" MAX	48" MIN	N/A	AT GRADE	N/A	H ≤ 200 FT
20 FT ²			N/A	AT GRADE	N/A	H ≤ 200 FT
25 FT ²			N/A	N/A	N/A	H ≤ 30 FT 60 FT < H ≤ 200 FT
30 FT ²			N/A	N/A	N/A	AT GRADE 60 FT < H ≤ 180 FT
36 FT ²			N/A	N/A	N/A	AT GRADE

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TABLE 4 : Vult=170 MPH, EXPOSURE D
(FOR USE WITH A RISK CATEGORY II STRUCTURE*)

MAXIMUM SURFACE AREA OF UNIT'S LARGEST FACE	UNIT HEIGHT	UNIT WIDTH	ALLOWABLE ROOF-TOP HEIGHT (H) TIE-DOWN CONFIGURATION TYPE			
			C1	C2	C3	C4
6 FT ²	24" MAX	12" MIN	N/A	H ≤ 200 FT	AT GRADE 60 FT < H ≤ 80 FT	H ≤ 200 FT
9 FT ²	32" MAX	15" MIN	N/A	AT GRADE 60 FT < H ≤ 200 FT	N/A	H ≤ 200 FT
4 FT ²	48" MAX	24" MIN	AT GRADE 60 FT < H ≤ 100 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT
6 FT ²			N/A	H ≤ 200 FT	H ≤ 15 FT 60 FT < H ≤ 200 FT	H ≤ 200 FT
9 FT ²			N/A	H ≤ 15 FT 60 FT < H ≤ 200 FT	AT GRADE	H ≤ 200 FT
12 FT ²			N/A	AT GRADE 60 FT < H ≤ 120 FT	N/A	H ≤ 200 FT
16 FT ²	60" MAX	48" MIN	N/A	N/A	N/A	H ≤ 40 FT 60 FT < H ≤ 200 FT
20 FT ²			N/A	AT GRADE	N/A	H ≤ 40 FT 60 FT < H ≤ 200 FT
25 FT ²			N/A	N/A	N/A	AT GRADE 60 FT < H ≤ 200 FT
30 FT ²			N/A	N/A	N/A	AT GRADE 60 FT < H ≤ 100 FT
36 FT ²			N/A	N/A	N/A	AT GRADE

*AS AN EXAMPLE, THIS TABLE IS PERMISSIBLE TO BE USED WITHIN PALM BEACH COUNTY. CHECK WITH LOCAL AUTHORITY HAVING JURISDICTION FOR THE APPLICABILITY OF THIS TABLE WITHIN CERTAIN FLORIDA COUNTIES.



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REVISIONS	DATE	BY	CHKD
1	12-11-11	TSB	FLB
2	02-15-13	CSL	TSB
3	04-06-15	RWN	CSL

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TABLE 5 : Vult=140 MPH, EXPOSURE B

(FOR USE WITH A RISK CATEGORY II STRUCTURE*)

MAXIMUM SURFACE AREA OF UNIT'S LARGEST FACE	UNIT HEIGHT	UNIT WIDTH	ALLOWABLE ROOF-TOP HEIGHT (H) TIE-DOWN CONFIGURATION TYPE					
			C1	C2	C3	C4		
6 FT ²	24" MAX	12" MIN	H ≤ 15 FT 60 FT < H ≤ 120 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT		
9 FT ²	32" MAX	15" MIN	AT GRADE	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT		
4 FT ²	48" MAX	24" MIN	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT		
6 FT ²			H ≤ 40 FT 60 FT < H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT		
9 FT ²			AT GRADE 60 FT < H ≤ 80 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT		
12 FT ²			AT GRADE	H ≤ 200 FT	H ≤ 40 FT 60 FT < H ≤ 200 FT	H ≤ 200 FT		
16 FT ²			N/A	H ≤ 200 FT	H ≤ 15 FT 60 FT < H ≤ 100 FT	H ≤ 200 FT		
20 FT ²			N/A	H ≤ 200 FT	H ≤ 15 FT 60 FT < H ≤ 150 FT	H ≤ 200 FT		
25 FT ²			60" MAX	48" MIN	N/A	H ≤ 40 FT 60 FT < H ≤ 200 FT	AT GRADE 60 FT < H ≤ 80 FT	H ≤ 200 FT
30 FT ²					N/A	H ≤ 15 FT 60 FT < H ≤ 160 FT	AT GRADE	H ≤ 200 FT
36 FT ²	N/A	AT GRADE 60 FT < H ≤ 80 FT			AT GRADE	H ≤ 200 FT		

TABLE 6 : Vult=140 MPH, EXPOSURE C

(FOR USE WITH A RISK CATEGORY II STRUCTURE*)

MAXIMUM SURFACE AREA OF UNIT'S LARGEST FACE	UNIT HEIGHT	UNIT WIDTH	ALLOWABLE ROOF-TOP HEIGHT (H) TIE-DOWN CONFIGURATION TYPE					
			C1	C2	C3	C4		
6 FT ²	24" MAX	12" MIN	AT GRADE	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT		
9 FT ²	32" MAX	15" MIN	N/A	H ≤ 200 FT	H ≤ 15 FT 60 FT < H ≤ 200 FT	H ≤ 200 FT		
4 FT ²	48" MAX	24" MIN	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT		
6 FT ²			AT GRADE 60 FT < H ≤ 80 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT		
9 FT ²			AT GRADE	H ≤ 200 FT	H ≤ 40 FT 60 FT < H ≤ 200 FT	H ≤ 200 FT		
12 FT ²			N/A	H ≤ 200 FT	AT GRADE 60 FT < H ≤ 140 FT	H ≤ 200 FT		
16 FT ²			N/A	H ≤ 15 FT 60 FT < H ≤ 200 FT	AT GRADE	H ≤ 200 FT		
20 FT ²			N/A	H ≤ 30 FT 60 FT < H ≤ 200 FT	AT GRADE	H ≤ 200 FT		
25 FT ²			60" MAX	48" MIN	N/A	AT GRADE 60 FT < H ≤ 140 FT	AT GRADE	H ≤ 200 FT
30 FT ²					N/A	AT GRADE	N/A	H ≤ 200 FT
36 FT ²	N/A	AT GRADE			N/A	H ≤ 30 FT 60 FT < H ≤ 200 FT		

TABLE 7 : Vult=140 MPH, EXPOSURE D

(FOR USE WITH A RISK CATEGORY II STRUCTURE*)

MAXIMUM SURFACE AREA OF UNIT'S LARGEST FACE	UNIT HEIGHT	UNIT WIDTH	ALLOWABLE ROOF-TOP HEIGHT (H) TIE-DOWN CONFIGURATION TYPE					
			C1	C2	C3	C4		
6 FT ²	24" MAX	12" MIN	N/A	H ≤ 200 FT	H ≤ 30 FT 60 FT < H ≤ 200 FT	H ≤ 200 FT		
9 FT ²	32" MAX	15" MIN	N/A	H ≤ 200 FT	AT GRADE 60 FT < H ≤ 140 FT	H ≤ 200 FT		
4 FT ²	48" MAX	24" MIN	H ≤ 40 FT 60 FT < H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT		
6 FT ²			AT GRADE 60 FT < H ≤ 100 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT		
9 FT ²			N/A	H ≤ 200 FT	H ≤ 15 FT 60 FT < H ≤ 200 FT	H ≤ 200 FT		
12 FT ²			N/A	H ≤ 40 FT 60 FT < H ≤ 200 FT	AT GRADE 60 FT < H ≤ 80 FT	H ≤ 200 FT		
16 FT ²			N/A	AT GRADE 60 FT < H ≤ 200 FT	N/A	H ≤ 200 FT		
20 FT ²			N/A	AT GRADE 60 FT < H ≤ 200 FT	AT GRADE	H ≤ 200 FT		
25 FT ²			60" MAX	48" MIN	N/A	AT GRADE 60 FT < H ≤ 80 FT	N/A	H ≤ 200 FT
30 FT ²					N/A	N/A	N/A	H ≤ 40 FT 60 FT < H ≤ 200 FT
36 FT ²	N/A	N/A			N/A	AT GRADE 60 FT < H ≤ 200 FT		

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