



**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.

<p><b>Scope of Work:</b> MECHANICAL: one 5-ton change out</p> <p><b>Comments:</b> None</p> <p><b>Project Information</b>          Address: 4247 Cranmore Ct, Belle Isle, FL 32812          Parcel ID: 20-23-30-1661-00-790          Property Owner: Kennedy, Kathleen &amp; Brian          Phone Number: 407 575 5595          *****          Company Name: Del-Air Heating, A/C &amp; Refrigeration Inc          Contractor Name: Del Russo, Robert          License Number: CAC032448          Address: 531 Codesco Way, Sanford, FL 32771          Phone Number: 407-585-3004</p>	<p style="text-align: center;"><b>Permit Number: 2016-04-002</b></p> <p>Date of Application: 03/31/2016          Date Permit Issued: 04/01/2016</p> <p><b>WARNING TO OWNER:</b> "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.</p>
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**BUILDING FEATURES**

<p><b>IMPACT FEES</b></p> <p>School \$          Traffic \$</p> <p><b>ZONING FEES</b></p> <p>Zoning Fee \$</p> <p><b>UNIVERSAL ENG - BUILDING FEES</b></p> <p>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 \$</p> <p><b>SURCHARGE FEES</b></p> <p>Surcharge Fee \$2.00          Surcharge Fee \$2.00</p> <p><b>TOTAL FEES \$104.50</b></p> <p>Date Paid <u>4/4/16</u></p> <p>CC or Check # <u>MC 1139</u></p> <p>Amount Paid <u>\$104.50</u></p> <p>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).</p>	<p><b>BUILDING INSPECTOR USE ONLY</b></p> <p>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</p> <p><input type="checkbox"/> BUILDING</p> <p>1<sup>st</sup> _____ (Footing/Foundation)          Survey specific foundation plan must be onsite before slab pour. Approved Plan on Site? _____          2<sup>nd</sup> _____ (Slab)          3<sup>rd</sup> _____ (Lintel) Wall Reinforcing on Masonry Building          4<sup>th</sup> _____ (Exterior Framing) (Roof/Wall Sheathing)          5<sup>th</sup> _____ (Framing) (To be made after Plumbing/ Mechanical/ Electrical Rough-Ins &amp; Windows/Doors Installed)          6<sup>th</sup> _____ (Insulation to be Made After Roof Installed)          7<sup>th</sup> _____ (Drywall)          8<sup>th</sup> _____ (Sidewalk/Driveway)          9<sup>th</sup> _____ (Other)          10<sup>th</sup> _____ (Final - After MEP and Other Applicable Finals)</p> <p><input type="checkbox"/> ROOFING</p> <p>1<sup>st</sup> ROOFING Deck Nailing/Dry-in/Flashing _____          2<sup>nd</sup> ROOFING Covering In-Progress _____          3<sup>rd</sup> ROOFING Covering Final _____</p> <p><input type="checkbox"/> PLUMBING (Pool-Piping, Solar, Irrigation, Water Treatment Equip, Etc...)  <input type="checkbox"/> 1<sup>st</sup> _____ (Underground) 2<sup>nd</sup> _____ (Sewer)          3<sup>rd</sup> _____ (Rough-In/Tub Set) 4<sup>th</sup> _____ (Final)</p> <p>CHECK APPROPRIATE BOX  <input type="checkbox"/> GAS ___ Natural ___ LP <input type="checkbox"/> MECHANICAL <input type="checkbox"/> ELECTRICAL <input type="checkbox"/> LOW VOLTAGE</p> <p>1<sup>st</sup> _____ (Rough-In) 2<sup>nd</sup> _____ (Final)</p>
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Inspection requests are to be emailed to [BidScheduling@UniversalEngineering.com](mailto:BidScheduling@UniversalEngineering.com); a confirmation email will be sent back to you upon scheduling. Next-Day Inspection requests must be made by 4pm. 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.



# City of Belle Isle

Universal Engineering Sciences 3532 Maggie Blvd., Orlando, FL 32811  
Tel 407-581-8161 \* Fax 407-581-0313 \* [www.universalengineering.com](http://www.universalengineering.com)



## 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.

PERMIT NUMBER: 206-04-002

DATE OF APPLICATION: 3/31/16

PLEASE PRINT. The undersigned hereby applies for a permit to make installations as indicated below:

Project Address: 4247 Cranmore Ct Belle Isle FL 32809  
Property Owner: Kathleen & Brian Kennedy Phone: 407-581-5555  
Property Owner's Mailing Address: 4324 Cranmore Ct City: Belle Isle  
State: FL Zip Code: 32812 Parcel Id Number: 202330160100790

To obtain this information, please visit <http://www.ocnafi.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](http://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   
Heating: # of Units KWS Per Unit 1 Total KWS 4 BTU's 56000  
Oil  Electric  Boiler  Gas

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   
Refrigeration: Number of units \_\_\_\_\_ Estimated Cost \$ \_\_\_\_\_  
Piping: Air  Vacuum  Steam  Chill Water  Estimated Cost \$ \_\_\_\_\_  
Others: (Specify) no duct work Estimated Cost \$ \_\_\_\_\_

Was the space previously Air Conditioned? Yes  No   
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: [Signature] LICENSE # CA0621418  
LICENSE HOLDER NAME: Delio Russo COMPANY NAME: del-air  
Street Address: 531 Carlos way State: FL Zip Code: 32811 Phone Number: 407-581-6605  
City: Sanford Email Address: delair@del-air.com

Building Official: [Signature] Date: 4-1-16  
Verified Contractor's Licenses & Insurance are on file [Signature] Date: 4-1-16  
Permit Fee \$ \_\_\_\_\_  
Review Fee \$ \_\_\_\_\_  
3% Florida Surcharge \$ \_\_\_\_\_  
Total Permit Fee \$ \_\_\_\_\_

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.

wo 66087

ORANGE COUNTY PROPERTY APPRAISER

Searches Results Property Record Card My Favorites

Sign up for e-Notify.

4247 Cranmore Ct < 20-23-30-1661-00-790 >

Name(s)  
Kennedy Brian E  
Kennedy Kathleen A  
Mailing Address On File  
4247 Cranmore Ct  
Belle Isle, FL 32812-3627  
Incorrect Mailing Address?



Values, Exemptions and Taxes Property Features Sales Analysis Location Info Market Stats Update Information View Plat

Property Description

CONWAY GROVES UNIT 2 40/4 LOT 79

Total Land Area 12,286 sqft (+/-)

0.28 acres (+/-)

GIS Calculated

Notice

Land (includes working values)

Land Use Code	Zoning	Land Units	Land Value	Unit Price	Class Unit Price	Class Value
0100 - Single Family	R-1-AA	1 LOT(S)	\$55,000	\$55,000.00	\$0.00	\$55,000

Page 1 of 1 (1 total records)

Buildings (includes working values)

Important Information		Structure	
Model Code:	01 - Single Fam Residence	Actual Year Built:	2001
Type Code:	0103 - Single Fam Class III	Beds:	4
Building Value:	\$200,544	Baths:	3.0
Estimated New Cost:	\$222,333	Floors:	1
Page 1 of 1 (1 total records)		Gross Area:	3088 sqft
		Living Area:	2310 sqft
		Exterior Wall:	Concrete Block Stucco
		Interior Wall:	Drywall

Page 1 of 1 (1 total records)

Page 1 of 1 (1 total records)

Page 1 of 1 (1 total records)

Page 1 of 1 (1 total records)

Page 1 of 1 (1 total records)

Page 1 of 1 (1 total records)

Extra Features (includes working values)

Description	Date Built	Units	XFOB Value
There are no extra features associated with this parcel			

This Data Printed on 03/31/2016 and System Data Last Refreshed on 03/30/2016



This combination qualifies for a Federal Energy Efficiency Tax Credit when placed in service between Feb 17, 2009 and Dec 31, 2013.

# Certificate of Product Ratings

AHRI Certified Reference Number: 5187659

Date: 3/21/2013

Product: Split System: Heat Pump with Remote Outdoor Unit-Air-Source  
Outdoor Unit Model Number: 14HPX-060-230-18  
Indoor Unit Model Number: CBX27UH-060-230\*+TDR  
Manufacturer: LENNOX INDUSTRIES, INC.  
Trade/Brand name: 14HPX SERIES

Manufacturer responsible for the rating of this system combination is LENNOX INDUSTRIES, INC.

Rated as follows in accordance with AHRI Standard 210/240-2008 for Unitary Air-Conditioning and Air-Source Heat Pump Equipment and subject to verification of rating accuracy by AHRI-sponsored, independent, third party testing:

Cooling Capacity (Btuh):	59000
EER Rating (Cooling):	12.50
SEER Rating (Cooling):	15.00
Heating Capacity(Btuh) @ 47 F:	56000
Region IV HSPF Rating (Heating):	8.50
Heating Capacity(Btuh) @ 17 F:	36000



\* Ratings followed by an asterisk (\*) indicate a voluntary rerate of previously published data, unless accompanied with a WAS, which indicates an involuntary rerate

#### DISCLAIMER

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#### TERMS AND CONDITIONS

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#### CERTIFICATE VERIFICATION

The information for the model cited on this certificate can be verified at [www.ahridirectory.org](http://www.ahridirectory.org), click on "Verify Certificate" link and enter the AHRI Certified Reference Number and the date on which the certificate was issued, which is listed above, and the Certificate No., which is listed below.

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Air-Conditioning, Heating,  
and Refrigeration Institute

CERTIFICATE NO.: 130083806689670956



# DEL-AIR (888)-831-2665

24 Hours - 7 Days a Week

State Cert. CAL032448

WWW.DELAIR.COM

<b>Sales Agreement</b>			
<b>BRIAN &amp; KATHLEEN KENNEDY</b> 4247 CRANMORE CT ORLANDO FL 32812	407-575-5595 Cell	3/14/2016 Email	<b>JOHN ALDRICH</b> 407-353-6139 WWW.DELAIR.COM
<b>Description</b>		<b>Size</b>	<b>SEER RATING</b>
LENNOX 15 SEER HEAT PUMP Lennox Factory Warranty, 1 Year Labor, 10 Years Functional Parts, 10 Years Compressor		5.0 Ton	15.0
<b>Terms and Conditions</b>			<b>Total Including Permit \$</b> 6,255
<b>Credit Card</b>			

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 YOU 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

  
BRIAN & KATHLEEN KENNEDY



I have the authority to Sciences work outlined above

JOHN ALDRICH

It is understood that the title of all products and equipment covered on the work order remains solely in the seller until the entire purchase price has been paid in full and the manner of installation and/or attachment to any equipment and/or any portion of the building structure in which the installation is made shall be in accordance with the seller's title.

in the event payment is not made promptly in accordance with a fixed 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 5 days from the date of the billing of our amount due on the job in the event of collection by an attorney all attorney fee 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 assigns of the seller.

4/13/2016

This purchase is no longer valid after 4/13/2016

# BMP INTERNATIONAL, INC.

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

**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. (CFL<sub>min</sub> = 3.10 WITHIN THE HNZ, (CFL<sub>max</sub> = 1.90 OUTSIDE THE HNZ). (CFL<sub>min</sub> = 1.5 FOR ALL LOCATIONS (CONCREMENT) ALL OTHER DESIGN VARIABLES ARE IN ACCORDANCE WITH ASCE 7-10 CHAPTERS 26 & 29. THE HEIGHTS LISTED IN THE DESIGN SCHEDULES REPRESENTS 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:**

1. 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.

2. DESIGN IS BASED ON CLIENT PROVIDED PRODUCT AND DTE SHEETS FROM TEST REPORTS #TEL 01920387A, #TEL 01920387B BY TESTING EVALUATION LABORATORIES INC. NO SUBSTITUTIONS WITHOUT WRITTEN APPROVAL BY THIS ENGINEER SHALL BE PERMITTED.

3. 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.

4. FACTORS REFERRED TO HEREIN SHALL BE THE BUILDER 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.

5. ALL STEEL CLIPS SHALL BE ASTM A363 STEEL (GRADE D) WITH Fy=33 KSI OR BETTER. ALL STEEL MEMBERS SHALL BE PROTECTED AGAINST CORROSION WITH AN APPROVED COAT OF PAINT, ENAMEL OR OTHER APPROVED PROTECTION. 990-RATED COATING REQUIRED FOR ALL COASTAL INSTALLATIONS.

6. 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.

7. THE CONTRACTOR IS RESPONSIBLE TO INSULATE ALL MEMBERS FROM DISSIPAR MATERIALS TO PREVENT ELECTROLYSIS.

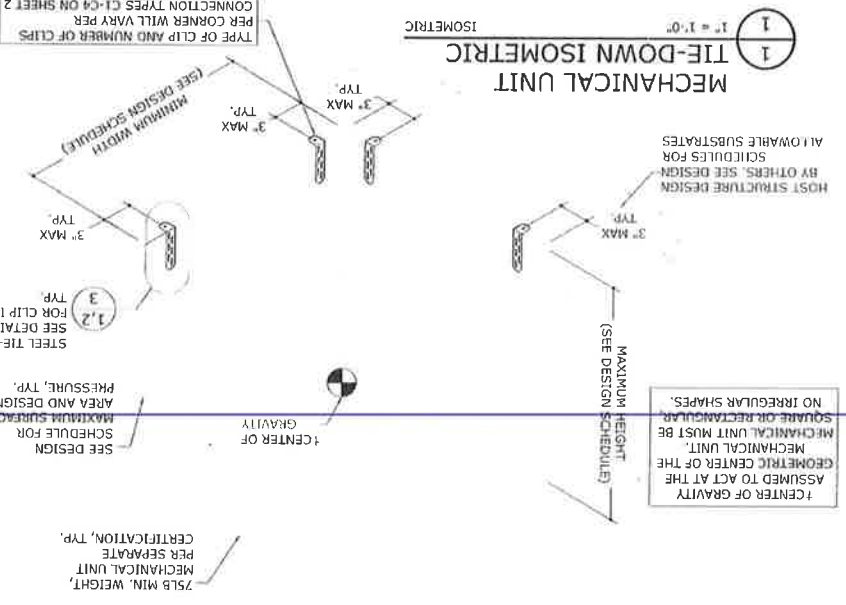
8. ELECTRICAL GROUND, WHEN REQUIRED, TO BE DESIGNED & INSTALLED BY OTHERS.

9. THE ADVANCE OF ANY EXISTING STRUCTURE TO WITHSTAND SUPERIMPOSED LOADS SHALL BE VERIFIED BY THE ON-SITE DESIGN PROFESSIONAL AND IS NOT INCLUDED IN THIS CERTIFICATION EXCEPT AS EXPRESSLY PROVIDED HEREIN, NO ADDITIONAL CERTIFICATIONS OR AFFIRMATIONS ARE INTENDED.

11. THE SYSTEM DETAIL HEREIN IS GENERAL AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC SITE. FOR SITE CONDITIONS DIFFERENT FROM THE CONDITIONS DETAILED HEREIN, A LICENSED ENGINEER ON REGISTERED ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE IN CONJUNCTION WITH THIS DOCUMENT.

12. 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.

13. FOR AN EXPLANATION OF EXPOSURE CATEGORIES THAT ACCOMPANY THE VULN SPEDS USED IN THIS APPROVAL, SEE SECTION 26.7.3 OF ASCE 7-10.



### TIE-DOWN CLIP DIRECTIVE EXAMPLE

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=

- VUL=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	CONNECTION TYPE 3	RESULT
1	DETERMINE THE CONNECTION TYPE BASED ON THE DIAGRAMS ON SHEET 2	
2	DETERMINE WHICH DESIGN SCHEDULE TABLE TO USE	
3	DETERMINE LARGEST FACE AREA OF MECHANICAL UNIT TO BE INSTALLED	48"x48"=16FT <sup>2</sup>
4	CHECK MAXIMUM UNIT HEIGHT RESTRICTION	
5	CHECK MINIMUM UNIT WIDTH RESTRICTION	
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



FRANK L. BERNARD, P.E.  
10549  
04/12/2009

WWW.ENGINEERINGEXPRESS.COM  
PH: (954) 354-0669 FAX: (954) 354-0645  
150 SW 12th Ave, Suite 200  
Deerfield Beach, FL 33442

ENGINEERING EXPRESS, INC.  
160 SW 12th Ave, Suite 200  
Deerfield Beach, FL 33442  
PH: (772) 572-1613

MECHANICAL UNIT STEEL TIE-DOWN CLIPS  
BMP INTERNATIONAL, INC.  
4710 28TH STREET NORTH  
ST. PETERSBURG, FL 33471

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4710 28TH STREET NORTH  
ST. PETERSBURG, FL 33471  
PH: (772) 572-1613

DATE: 04/12/2009

SCALE: N.T.S.

15-2378

PAGE DESCRIPTION:

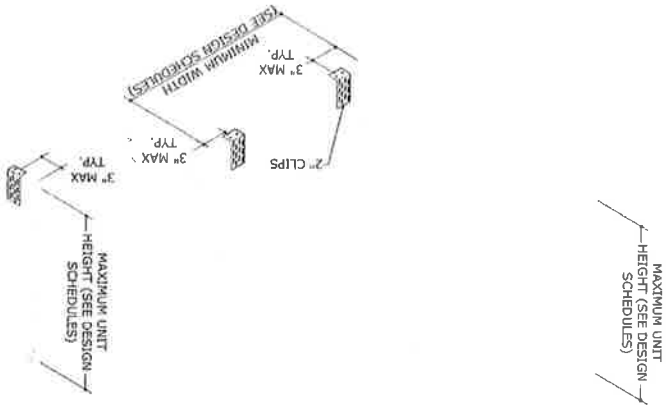
CONTINGENT FEE: \$10,000.00

REVISIONS:

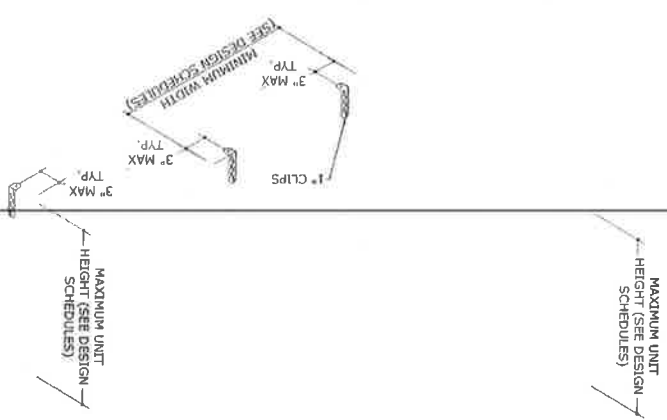
NO.	DATE	DESCRIPTION
1	04-12-09	ISSUE FOR PERMITS
2	07-15-13	REV FOR PERMITS Q14
3	04-27-15	REV FOR PERMITS Q14

UNIVERSAL ENGINEERS  
150 SW 12th Ave, Suite 200  
Deerfield Beach, FL 33442  
PH: (954) 354-0669 FAX: (954) 354-0645

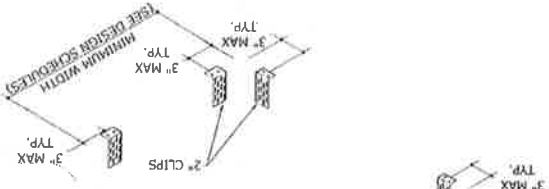
**C3** CONNECTION TYPE C3  
 2" CLIPS - UTILIZE (1) AT EACH CORNER FOR A TOTAL OF (4) PER UNIT



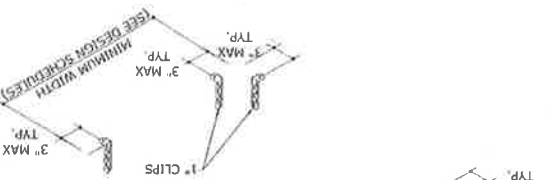
**C1** CONNECTION TYPE C1  
 1" CLIP - UTILIZE (1) AT EACH CORNER FOR A TOTAL OF (4) PER UNIT



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

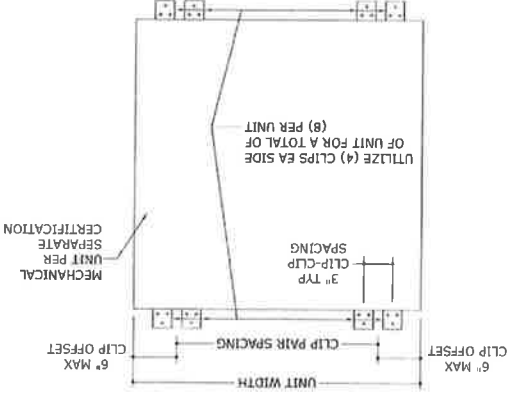


**C2** CONNECTION TYPE C2  
 1" CLIP - UTILIZE (2) AT EACH CORNER FOR A TOTAL OF (8) PER UNIT



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.

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



DESCRIPTION	SUBSTRATE	DESCRIPTION	SUBSTRATE
(1) 5/16" CARBON STEEL	(1) 5/16" CARBON STEEL	(1) 5/16" CARBON STEEL	(1) 5/16" CARBON STEEL
CONCRETE: 2 1/2" FULL EMBED TO 1TW BUILDEX TAPCON.	CONCRETE: 2 1/2" FULL EMBED TO 1TW BUILDEX TAPCON.	CONCRETE: 3/8" MIN. CONCRETE, 3/8" MIN. EDGE DISTANCE, 3/8" MIN. SPACING TO ANY ADJACENT ANCHOR.	CONCRETE: 3/8" MIN. CONCRETE, 3/8" MIN. EDGE DISTANCE, 3/8" MIN. SPACING TO ANY ADJACENT ANCHOR.
ALUMINUM: (1) #14 SAE GRADE 5 SHEET METAL SCREW TO THICK, 6061-T6 ALUMINUM, PROVIDE (5) PITCHES MIN. PAST THREAD PLANE	ALUMINUM: (2) #14 SAE GRADE 5 SHEET METAL SCREWS TO THICK, 6061-T6 ALUMINUM, PROVIDE (5) PITCHES MIN. PAST THREAD PLANE	STEEL: THICK, 33 KSI STEEL, PROVIDE (5) PITCHES MIN. PAST THREAD PLANE	STEEL: THICK, 33 KSI STEEL, PROVIDE (5) PITCHES MIN. PAST THREAD PLANE
ALUMINUM: (1) #14 SAE GRADE 5 SHEET METAL SCREW TO THICK, 6061-T6 ALUMINUM, PROVIDE (5) PITCHES MIN. PAST THREAD PLANE	ALUMINUM: (2) #14 SAE GRADE 5 SHEET METAL SCREWS TO THICK, 6061-T6 ALUMINUM, PROVIDE (5) PITCHES MIN. PAST THREAD PLANE	STEEL: (1) #14 SAE GRADE 5 SHEET METAL SCREWS TO THICK, 33 KSI STEEL, PROVIDE (5) PITCHES MIN. PAST THREAD PLANE	STEEL: (2) #14 SAE GRADE 5 SHEET METAL SCREWS TO THICK, 33 KSI STEEL, PROVIDE (5) PITCHES MIN. PAST THREAD PLANE

ANCHOR SCHEDULE:  
 1" CLIPS  
 2" CLIPS

2

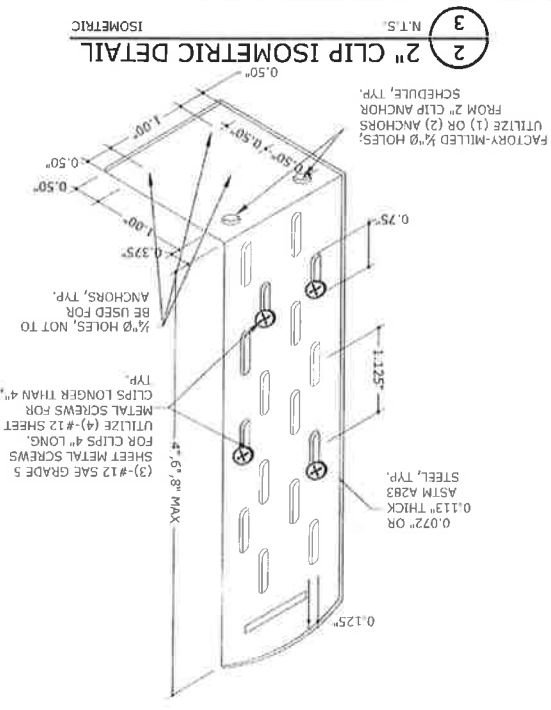
SCALE	PAGE DESCRIPTION
1/8" = 1'-0"	15-2378

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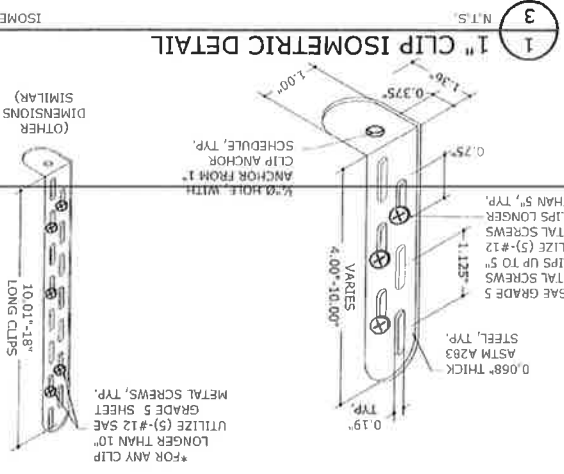
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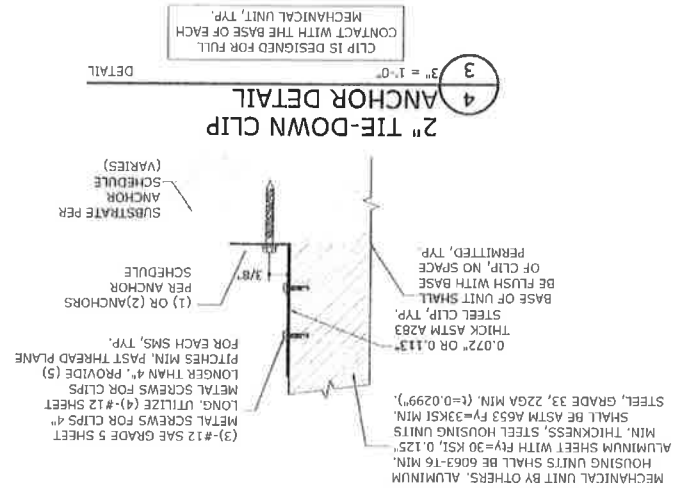
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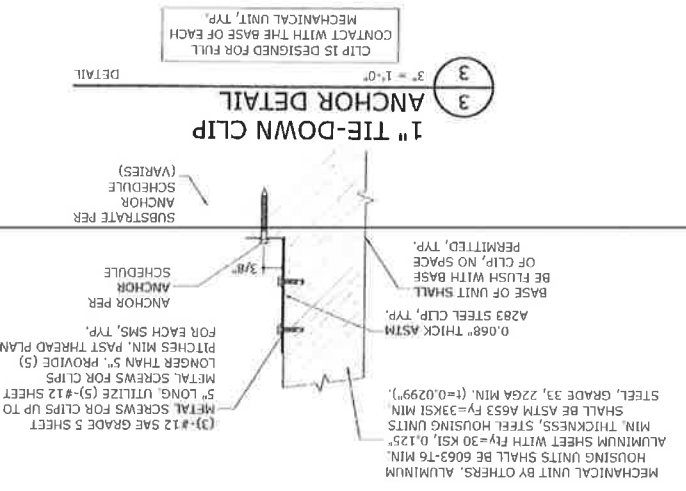
**2 2" TIE-DOWN CLIP ISOMETRIC DETAIL**  
 3 N.T.S.



**1 1" TIE-DOWN CLIP ISOMETRIC DETAIL**  
 3 N.T.S.



**4 2" TIE-DOWN CLIP ANCHOR DETAIL**  
 3 3" = 1'-0"  
 CLIP IS DESIGNED FOR FULL CONTACT WITH THE BASE OF EACH MECHANICAL UNIT, TYP.



**3 1" TIE-DOWN CLIP ANCHOR DETAIL**  
 3 3" = 1'-0"  
 CLIP IS DESIGNED FOR FULL CONTACT WITH THE BASE OF EACH MECHANICAL UNIT, TYP.

	<b>MECHANICAL UNIT STEEL TIE-DOWN CLIPS</b> PRODUCT APPROVAL FL#14239, 1
	<b>BMP INTERNATIONAL, INC.</b> 4710 28TH STREET NORTH ST. PETERSBURG, FL 33471 PH: (727) 577-1613
<b>ENGINEERING EXPRESS</b> 160 SW 12th Avenue DEERFIELD BEACH, FL 33442 PH: (954) 354-0660 FAX: (954) 354-0663 WWW.ENGINEXP.COM	<b>REVISIONS</b> NO. DATE BY 15-2378 10-15-16 JLB 15-2378 10-15-16 JLB 15-2378 10-15-16 JLB 15-2378 10-15-16 JLB 15-2378 10-15-16 JLB
<b>SCALE: N.T.S.</b> <b>15-2378</b> <b>PAGE DESCRIPTION:</b>	<b>PERMITS:</b>



17:0002315:2014 Air Handler Tension Class: 15A - Standard Florida 4423B for 2014 Edition 2000 Catalog Item 152278 - Air Handler Tension Class: CSA - Standard Florida 4423B for 2014 Edition 2000 Catalog Item 152278 - Air Handler Tension Class: 15A - Standard Florida 4423B for 2014 Edition 2000 Catalog Item 152278 - Air Handler Tension Class: 15A - Standard Florida 4423B for 2014 Edition 2000 Catalog Item 152278 - Air Handler Tension Class: 15A - Standard Florida 4423B for 2014 Edition 2000 Catalog Item 152278

**TABLE 1 : Vult=175 MPH, EXPOSURE C**

(FOR USE WITH A RISK CATEGORY II STRUCTURE IN THE HIGH VELOCITY HURRICANE ZONE\*)

ALLOWABLE ROOF-TOP HEIGHT (H)  
TIE-DOWN CONFIGURATION TYPE

MAXIMUM SURFACE AREA OF UNIT'S LARGEST FACE	UNIT HEIGHT	UNIT WIDTH	UNIT
C1	6 FT?	24" MAX	12" MIN
	9 FT?	32" MAX	15" MIN
	4 FT?	N/A	N/A
	6 FT?	N/A	N/A
	9 FT?	N/A	N/A
	AT GRADE	H ≤ 200 FT	H ≤ 200 FT
C2	6 FT?	24" MAX	12" MIN
	9 FT?	32" MAX	15" MIN
	4 FT?	N/A	N/A
	6 FT?	N/A	N/A
	9 FT?	N/A	N/A
	AT GRADE	H ≤ 200 FT	H ≤ 200 FT
C3	6 FT?	24" MAX	12" MIN
	9 FT?	32" MAX	15" MIN
	4 FT?	N/A	N/A
	6 FT?	N/A	N/A
	9 FT?	N/A	N/A
	AT GRADE	H ≤ 200 FT	H ≤ 200 FT
C4	6 FT?	24" MAX	12" MIN
	9 FT?	32" MAX	15" MIN
	4 FT?	N/A	N/A
	6 FT?	N/A	N/A
	9 FT?	N/A	N/A
	AT GRADE	H ≤ 200 FT	H ≤ 200 FT

\* 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\*)

ALLOWABLE ROOF-TOP HEIGHT (H)  
TIE-DOWN CONFIGURATION TYPE

MAXIMUM SURFACE AREA OF UNIT'S LARGEST FACE	UNIT HEIGHT	UNIT WIDTH	UNIT
C1	6 FT?	24" MAX	12" MIN
	9 FT?	32" MAX	15" MIN
	4 FT?	N/A	N/A
	6 FT?	N/A	N/A
	9 FT?	N/A	N/A
	AT GRADE	H ≤ 200 FT	H ≤ 200 FT
C2	6 FT?	24" MAX	12" MIN
	9 FT?	32" MAX	15" MIN
	4 FT?	N/A	N/A
	6 FT?	N/A	N/A
	9 FT?	N/A	N/A
	AT GRADE	H ≤ 200 FT	H ≤ 200 FT
C3	6 FT?	24" MAX	12" MIN
	9 FT?	32" MAX	15" MIN
	4 FT?	N/A	N/A
	6 FT?	N/A	N/A
	9 FT?	N/A	N/A
	AT GRADE	H ≤ 200 FT	H ≤ 200 FT
C4	6 FT?	24" MAX	12" MIN
	9 FT?	32" MAX	15" MIN
	4 FT?	N/A	N/A
	6 FT?	N/A	N/A
	9 FT?	N/A	N/A
	AT GRADE	H ≤ 200 FT	H ≤ 200 FT

\* 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.

**TABLE 2 : Vult=175 MPH, EXPOSURE D**

(FOR USE WITH A RISK CATEGORY II STRUCTURE IN THE HIGH VELOCITY HURRICANE ZONE\*)

ALLOWABLE ROOF-TOP HEIGHT (H)  
TIE-DOWN CONFIGURATION TYPE

MAXIMUM SURFACE AREA OF UNIT'S LARGEST FACE	UNIT HEIGHT	UNIT WIDTH	UNIT
C1	6 FT?	24" MAX	12" MIN
	9 FT?	32" MAX	15" MIN
	4 FT?	N/A	N/A
	6 FT?	N/A	N/A
	9 FT?	N/A	N/A
	AT GRADE	H ≤ 200 FT	H ≤ 200 FT
C2	6 FT?	24" MAX	12" MIN
	9 FT?	32" MAX	15" MIN
	4 FT?	N/A	N/A
	6 FT?	N/A	N/A
	9 FT?	N/A	N/A
	AT GRADE	H ≤ 200 FT	H ≤ 200 FT
C3	6 FT?	24" MAX	12" MIN
	9 FT?	32" MAX	15" MIN
	4 FT?	N/A	N/A
	6 FT?	N/A	N/A
	9 FT?	N/A	N/A
	AT GRADE	H ≤ 200 FT	H ≤ 200 FT
C4	6 FT?	24" MAX	12" MIN
	9 FT?	32" MAX	15" MIN
	4 FT?	N/A	N/A
	6 FT?	N/A	N/A
	9 FT?	N/A	N/A
	AT GRADE	H ≤ 200 FT	H ≤ 200 FT

\* 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 4 : Vult=170 MPH, EXPOSURE D**

(FOR USE WITH A RISK CATEGORY II STRUCTURE\*)

ALLOWABLE ROOF-TOP HEIGHT (H)  
TIE-DOWN CONFIGURATION TYPE

MAXIMUM SURFACE AREA OF UNIT'S LARGEST FACE	UNIT HEIGHT	UNIT WIDTH	UNIT
C1	6 FT?	24" MAX	12" MIN
	9 FT?	32" MAX	15" MIN
	4 FT?	N/A	N/A
	6 FT?	N/A	N/A
	9 FT?	N/A	N/A
	AT GRADE	H ≤ 200 FT	H ≤ 200 FT
C2	6 FT?	24" MAX	12" MIN
	9 FT?	32" MAX	15" MIN
	4 FT?	N/A	N/A
	6 FT?	N/A	N/A
	9 FT?	N/A	N/A
	AT GRADE	H ≤ 200 FT	H ≤ 200 FT
C3	6 FT?	24" MAX	12" MIN
	9 FT?	32" MAX	15" MIN
	4 FT?	N/A	N/A
	6 FT?	N/A	N/A
	9 FT?	N/A	N/A
	AT GRADE	H ≤ 200 FT	H ≤ 200 FT
C4	6 FT?	24" MAX	12" MIN
	9 FT?	32" MAX	15" MIN
	4 FT?	N/A	N/A
	6 FT?	N/A	N/A
	9 FT?	N/A	N/A
	AT GRADE	H ≤ 200 FT	H ≤ 200 FT

\* 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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ST. PETERSBURG, FL 33711  
PH: (727) 577-1513

MECHANICAL UNIT STEEL TIE-DOWN CLIPS

FBC 5TH EDITION (2014) PRODUCT APPROVAL P.#14239.1

**REMARKS:**

1. SEE COMMENTS ON DRAWING FOR ALL NOTES AND SPECIFICATIONS.

2. ALL DIMENSIONS ARE IN FEET AND INCHES.

3. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.

4. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.

5. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.

6. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.

**DATE:** 10-15-14

**SCALE:** AS SHOWN

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**PROJECT:** 15-2378

**PAGE DESCRIPTION:** 15

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TABLE 5 : V<sub>ult</sub>=140 MPH, EXPOSURE B

(FOR USE WITH A RISK CATEGORY II STRUCTURE\*)

MAXIMUM SURFACE AREA OF UNIT HEIGHT	UNIT HEIGHT	UNIT WIDTH	UNIT SURFACE AREA OF UNIT HEIGHT	UNIT WIDTH	UNIT HEIGHT	UNIT SURFACE AREA OF UNIT HEIGHT	UNIT WIDTH	UNIT HEIGHT	UNIT SURFACE AREA OF UNIT HEIGHT	UNIT WIDTH	UNIT HEIGHT	UNIT SURFACE AREA OF UNIT HEIGHT	UNIT WIDTH	UNIT HEIGHT	UNIT SURFACE AREA OF UNIT HEIGHT	UNIT WIDTH	UNIT HEIGHT																															
C1	12" MAX	24" MIN	60 FT < H ≤ 120 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT																															
																		C2	15" MAX	32" MAX	AT GRADE	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT															
																																		C3	48" MAX	24" MIN	AT GRADE	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT

TABLE 7 : V<sub>ult</sub>=140 MPH, EXPOSURE D

(FOR USE WITH A RISK CATEGORY II STRUCTURE\*)

TIE-DOWN CONFIGURATION TYPE

MAXIMUM SURFACE AREA OF UNIT HEIGHT	UNIT HEIGHT	UNIT WIDTH	UNIT SURFACE AREA OF UNIT HEIGHT	UNIT WIDTH	UNIT HEIGHT	UNIT SURFACE AREA OF UNIT HEIGHT	UNIT WIDTH	UNIT HEIGHT	UNIT SURFACE AREA OF UNIT HEIGHT	UNIT WIDTH	UNIT HEIGHT	UNIT SURFACE AREA OF UNIT HEIGHT	UNIT WIDTH	UNIT HEIGHT	UNIT SURFACE AREA OF UNIT HEIGHT	UNIT WIDTH	UNIT HEIGHT																															
C1	12" MAX	15" MIN	60 FT < H ≤ 200 FT	H ≤ 40 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT																															
																		C2	32" MAX	AT GRADE	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT															
																																		C3	48" MAX	24" MIN	AT GRADE	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT

TABLE 6 : V<sub>ult</sub>=140 MPH, EXPOSURE C

(FOR USE WITH A RISK CATEGORY II STRUCTURE\*)

TIE-DOWN CONFIGURATION TYPE

MAXIMUM SURFACE AREA OF UNIT HEIGHT	UNIT HEIGHT	UNIT WIDTH	UNIT SURFACE AREA OF UNIT HEIGHT	UNIT WIDTH	UNIT HEIGHT	UNIT SURFACE AREA OF UNIT HEIGHT	UNIT WIDTH	UNIT HEIGHT	UNIT SURFACE AREA OF UNIT HEIGHT	UNIT WIDTH	UNIT HEIGHT	UNIT SURFACE AREA OF UNIT HEIGHT	UNIT WIDTH	UNIT HEIGHT	UNIT SURFACE AREA OF UNIT HEIGHT	UNIT WIDTH	UNIT HEIGHT																															
C1	12" MAX	15" MIN	60 FT < H ≤ 200 FT	H ≤ 15 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT																															
																		C2	32" MAX	AT GRADE	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT															
																																		C3	48" MAX	24" MIN	AT GRADE	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT	H ≤ 200 FT

**MECHANICAL UNIT STEEL TIE-DOWN CLIPS**

FBC 5TH EDITION (2014) PRODUCT APPROVAL F.#14239.1

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**REVISIONS**

NO.	DATE	BY	DESCRIPTION
1	12-11-11	CS	ISSUE FOR PERMIT
2	06-11-12	CS	REVISED PER COMMENTS
3	09-06-12	CS	REVISED PER COMMENTS
4	09-06-12	CS	REVISED PER COMMENTS
5	09-06-12	CS	REVISED PER COMMENTS

**SCALE: N.T.S.**

**15-2378**

**PAGE DESCRIPTION:**

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