

Scanned to VES



City of Belle Isle

1600 Nela Avenue, Belle Isle, FL 32809 * Tel 407-851-7730 * Fax 407-240-2222 * www.cityofbelleislefl.org

PERMIT – 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 Town, Orange County, State of Florida and/or Federal codes and/or ordinances. Separate permits are required for Signs, 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.

Project Information:
Scope of Work MECHANICAL: (1) unit 4 ton split system
NEEDS SEER, RATING OF UNIT, DUCT SEAL CERTIFICATE
***** NO DUCT WORK*****

Address 5106 ST MARIE AVENUE. , Belle Isle
Parcel ID 17-23-30-4378-02-090
Property Owner DOUGLAS CONNER
Phone N/A

Contractor DEL-AIR HEATING, AC & REFRIG INC
Name R. Dello Russo
License Number CAC032448
Address 531 Codisco Way, Sanford
Phone Number 407-333-2665

Permit Number: 2013-09-028
Date of Application 09/11/2013
Date Permit Issued 09/11/2013

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 _____

CITY OF BELLE ISLE - ZONING FEES
Zoning Fee _____
Tree Removal _____
Fence _____
Driveway _____
Pavers _____

UNIVERSAL ENG - BUILDING FEES
Pre-Demo _____
Building Fee _____
Cert of Occupancy _____
Prepwork _____
Electrical Fee _____
Temp Pole _____
Plumbing Fee _____
Mechanical Fee _____ 74.00
Gas Fee _____
Revision Fee _____
Roofing _____

SURCHARGE FEES
Surcharge Fee _____ 4.00

TOTAL FEES _____ 78.00

Date Paid _____
Check # *Approved 9/10/13*

(VES to create permit card)

[Signature] **PERIMETER CONTROL:**

BUILDING INSPECTOR USE ONLY

IF APPLICABLE: Silt fencing in place? YES NO Turbidity Barrier in place? YES NO

BUILDING/ROOFING
ROOFING Dry-in/Flashing _____
ROOFING Other /FINAL _____
1st _____ (Footing/Foundation)
Survey specific foundation plan must be submitted and approved by the City 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 _____ (Sidewalk/Driveway)
8th _____ (Other)
9th _____ (Final to be Made After Plumb/ Mech/Elect Finals)

PLUMBING (INCL–Pool-Piping, Solar, Irrigation and Water Treatment Equip.)
1st _____ (Underground) 2nd _____ (Sewer)
3rd _____ (Rough-In/Tub Set) 4th _____ (Final)

CHECK APPROPRIATE BOX
 GAS ___ Natural ___ LP **HOOD VENTILATION** **REFRIGERATION**
 MECHANICAL **ELECTRICAL** **LOW VOLTAGE**
1st _____ (Rough-In) 2nd _____ (Final)

If work is being performed on a lakefront property, you are required to call 407-851-7730 for inspection of your silt fencing and/or turbidity barrier PRIOR TO COMMENCING WORK. If this is not done, a Stop Work Order will be issued.

The person accepting the listed permit shall conform to the terms of the applications on file in the City Office and construction shall conform to the requirements of the FI Building Codes. To schedule an inspection please email your request to: BDSDScheduling@UniversalEngineering.com a confirmation email reply will follow. **INSPECTION REQUESTS can be made from 8:00am-1:00pm Monday-Friday.** It is requested that inspections be scheduled 24 hours in advance via email. Please include the following in your request: Permit #, current date, project address & lot number, the builder name, the date of the inspection, a contact name & phone number for someone on site should our inspector need to reach them, requested time frame of inspection – A.M. or P.M.
Updated: 07/2012 - FORM #PERMIT001

City of Belle Isle
Building Permit Application Review Sheet

Permit #	2013-09-028
Property Owner	DOUGLAS CONNER
Address	5106 ST MARIE AVENUE
Nature of Improvement	MECHANICAL 4-TON, SPLIT, HEAT
Received Application	9/9/2013
Zoning Clerk Review	KEITH SEVERNS
Zoning Complete Date	
Zoning Passed	
Variance Approved	N/A
Universal Eng Notified	
Universal Eng Pickup	
Universal Eng Approved	9-10-2013
Comments	
✓ 1.	needs SEER RATING OF UNIT. duct seal certificate, Unit Calcs (size)
2.	9/25/13 msg for pickup.
3.	11/22/13 Debbie will pick up on Monday
4.	11/25/2013
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	
14.	

Jouise



City of Belle Isle

1600 Nela Avenue, Belle Isle, FL 32809

Tel 407-851-7730 * Fax 407-240-2222 * www.cityofbelleislefl.org

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: 09/05/13 PERMIT NUMBER 2013 09 028

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

Project Address 5106 St. Marie Ave, Belle Isle FL 32809 32812
Property Owner Douglas Canner Phone _____
Property Owner's Mailing Address 5106 Saint Marie Ave City Belle Isle
State FL Zip Code 32812 Parcel Id Number: 17-23-30-4378-02-040

To obtain this information, please visit <http://www.ocpafl.org/Searches/ParcelSearch.aspx>

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

- REQUIRED Tie Down Engineering and Equipment Sizing Calculation
- REQUIRED, adding A/C to new space – provide Energy Calculations
- REQUIRED, if replacing unit with no duct work, provide a Duct Certification as per FB 101.4.7.1 (form can be found on website)

Please indicate the nature of work by completing the information below:

Air Conditioning: # of Units 1 Tons Per Unit 4 Total Tons 4
Type of System: Water to Air _____ Chiller _____ Split System Package _____ Heat Pump Estimated Cost \$ _____

Heating: # of Units KWS Per Unit 5 Total KWS 5 BTU's 46000
Oil _____ Electric 1 Boiler _____ Gas _____ Estimated Cost \$ _____

(A) Estimated Cost Fee \$4970

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 \$ _____

Refrigeration: Number of units _____ Estimated Cost \$ _____

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

Others: (Specify) (No Ductwork) Estimated Cost \$ _____

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

Building Official: [Signature] DN1557 Date 9-10-2013

Review & Permit Fee	\$ <u>74.⁰⁰</u>
3% Florida Surcharge	\$ <u>4.00</u>
Total Permit Fee	\$ <u>78.00</u>

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 # CAC032448
LICENSE HOLDER NAME Robert Dello Russo COMPANY NAME DelAir Heating & A/C
Street Address 531 Cordisco Way
City Sanford State FL Zip Code 32771 Phone Number 4073332065

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 _____



CITY OF BELLE ISLE, FLORIDA

1600 Nela Avenue
Belle Isle, Florida 32809
(407) 851-7730 • FAX (407) 240-2222
www.cityofbelleislefl.org

DUCT INSPECTION AND SEALING CERTIFICATION

As required by the 2010 Florida Building Code Energy Conservation, Section 101.4.7.1
(TO BE ATTACHED TO THE AIR HANDLER UNIT BY FINAL INSPECTION)

Permit Number: _____ Date Inspected: _____

Address of Install: 5106 Saint Marie Ave., Belle Isle, FL 32809 32812

Contractor Name: Robert Dello Russo Company Name: Del Air Heating & A/C

License Number: CAC 032448 Phone Number: 407 333 2665

I hereby certify that the ductwork at the above address associated with an HVAC equipment change-out has been inspected and sealed in accordance with the 2010 Florida Building Code Energy Conservation, Section 101.4.7.1 by the following allowable method(s):

- Where needed, all existing and accessible ducts (minimum of 30 inches clearance) in the distribution system have been sealed using reinforced mastic or a code-approved equivalent.
- Ductwork was found to be located within conditioned space where further inspection and sealing is not required. (Exception 1, Section 101.4.7.1.1)
- Ductwork was inspected at time of install and we found that joints and/or seams were already sealed with an approved fabric or mastic. (Exception 2, Section 101.4.7.1.1)
- The duct system was tested and repairs were made, as necessary. (Exception 3, Section 101.4.7.1.1)

Duct system tested on (date) _____

Duct system tested by (company and individual) _____

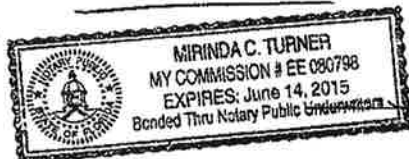
Signature of Qualifier

Robert Dello Russo
Printed Name of Qualifier

State of Florida
County of Seaside

The foregoing instrument was acknowledged before me this 5 day of Sept, 2013

by ROBERT G. DELLO RUSSO who is personally known by me or who produced the following as identification



Signature of Notary

**DEL-AIR
HEATING - AIR CONDITIONING
REFRIGERATION, INC.**

Date

City Of Belle Isle
Building Division

Dear Sir:

This letter is written to give authorization for Ernie Dalrymple to pull the mechanical permit for Del-Air Heating, Air Conditioning & Refrigeration, Inc. for 5100 Saint Marie Ave.

Thank You,

Robert G. Dello Russo, President

DEL-AIR HEATING, AIR CONDITIONING &
REFRIGERATION, INC.

RGDR/jd

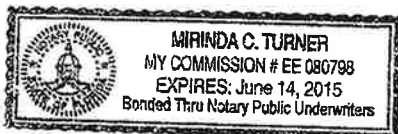
Sworn to before me by Robert G. Dello Russo
on this 5 day of Sept 2009

2013

NOTARY PUBLIC

MY COMMISSION EXPIRES

6/14/15



P.O. Box 520522
Longwood, FL 32752-0522
Phone (407)333-COOL (2665)
(407)831-COOL (2665)

SALES
SERVICE
INSTALLATION



[BCIS Home](#) | [Log In](#) | [User Registration](#) | [Hot Topics](#) | [Submit Surcharge](#) | [Stats & Facts](#) | [Publications](#) | [FBC Staff](#) | [BCIS Site Map](#) | [Links](#) | [Search](#)

Product Approval
 USER: Public User

[Product Approval Menu](#) > [Product Approval Search](#) > [Application List](#) > [Application Detail](#)

FL # FL14239-R1
Application Type Revision
Code Version 2010
Application Status Approved
Comments
Archived

Product Manufacturer BMP International Inc.
Address/Phone/Email 4710 28th Street N
 St. Petersburg, FL 33714
 (727) 458-0544
 benmeng@yahoo.com

Authorized Signature Xianbin Meng
 benmeng@yahoo.com

Technical Representative
Address/Phone/Email

Quality Assurance Representative
Address/Phone/Email

Category Structural Components:
Subcategory Anchors

Compliance Method Evaluation Report from a Florida Registered Architect or a Licensed Florida Professional Engineer
 Evaluation Report - Hardcopy Received

Florida Engineer or Architect Name who developed the Frank L. Bennardo, P.E.

Evaluation Report
Florida License PE-0046549
Quality Assurance Entity National Accreditation & Management Institute,
Quality Assurance Contract Expiration Date 12/31/2013
Validated By Ryan J. King, P.E.
 Validation Checklist - Hardcopy Received

Certificate of Independence FL14239_R1_COI_COI.pdf

Referenced Standard and Year (of Standard)	Standard	Year
	ASTM: D1761-06	2006
	ASTM: D1761-98	2000

Equivalence of Product Standards Certified By Florida Licensed Professional Engineer or Architect
 FL14239_R1_Equv_Equv.pdf

Sections from the Code

Product Approval Method Method 1 Option D

Date Submitted 09/29/2011
Date Validated 12/13/2011
Date Pending FBC Approval 12/13/2011
Date Approved 01/31/2012

Summary of Products:

FL #	Model, Number or Name	Description
14239.1	Slotted Steel Tie-Down Clips, 1" and 2" Models	Steel Tie-Down Clip System (For Use with Mechanical Units at Roof or Grade)
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: N/A Design Pressure: N/A Other: This design provides allowable capacities for the system. The required site-specific design pressure (demand) shall be calculated by others for use with this design.		Installation Instructions FL14239_R1_II_Dwg.pdf Verified By: Frank L. Bennardo, P.E. 0046549 Created by Independent Third Party: Yes Evaluation Reports FL14239_R1_AE_Eval.pdf Created by Independent Third Party: Yes



Product Evaluation Report

November 4, 2011

Application Number: **FL #14239**
 FLB Project Number: **11-BMP-0001-01**

Product Manufacturer: **BMP International**

Manufacturer Address: **4710 28th Street North
 St. Petersburg, FL 33714**

Product Name: **Slotted Steel Tie-Down Clips, 1" and 2" Models**
 Product Description: **Steel Tie-Down Clip System (For Use with Mechanical Units at Roof or Grade)**

Scope of Evaluation:

This Product Evaluation Report is being issued in accordance with the requirements of the Florida Department of Community Affairs (Florida Building Commission) Rule Chapter 9N-3.005, F.A.C., for statewide acceptance per Method 1(d). The product noted above has been tested and/or evaluated as summarized herein to show compliance with the 2010 Florida Building Code and is, for the purpose intended, at least equivalent to that required by the Code. Re-evaluation of this product shall be required following pertinent Florida Building Code modifications or revisions.

Substantiating Data:

- **PRODUCT EVALUATION DOCUMENTS**

FLB drawing #11-BMP-0001-01 titled "Mechanical Unit Steel Tie-Down Clip Capacities: At-Grade and Roof-Top Mounted Applications", sheets 1-4, prepared by Engineering Express, signed & sealed by Frank L. Bennardo, P.E. is an integral part of this Evaluation Report.

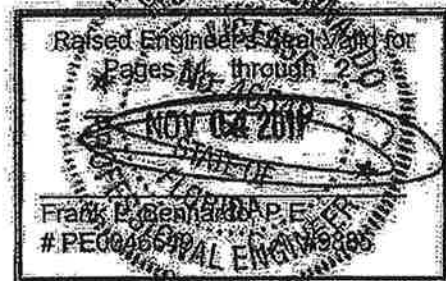
- **TEST REPORTS**

Ultimate test loading structural performance has been tested in accordance with ASTM D1761-88 test standards per test report(s) #TEL 01970387A and #TEL 01970387B by Testing Evaluation Laboratories, Inc.

- **STRUCTURAL ENGINEERING CALCULATIONS**

Structural engineering calculations have been prepared which evaluate the product based on comparative and/or rational analysis to qualify the following design criteria:

1. Maximum Allowable Unit Wind Pressures
2. Minimum Allowable Unit Width
3. Maximum Allowable Unit Height
4. Minimum Unit Weight
5. Maximum Allowable Unit Surface Area
6. Clip Configuration and Anchor Spacing
7. Anchor Capacity for Various Substrates





November 4, 2011

BMP INTERNATIONAL – SLOTTED STEEL TIEDOWN CLIPS 1 1/2"

Page 2 of 2

8. Maximum Allowable Additional Uplift per Clip in Combination with Lateral Forces (For Use with Rooftop Applications)

No 33% increase in allowable stress has been used in the design of this product.

Impact Resistance:

Not applicable to this product.

Wind Load Resistance

This product has been designed to resist wind loads as indicated in the design schedule(s) on the Product Evaluation Document (i.e. engineering drawing).

Installation

The product listed above shall be installed in strict compliance with the Product Evaluation Document (i.e. engineering drawing), along with all components noted therein.

The product components shall be of the material specified in the Product Evaluation Document (i.e. engineering drawing).

Limitations & Conditions of Use:

Use of this product shall be in strict accordance with the Product Evaluation Document (i.e. engineering drawing) as noted herein.

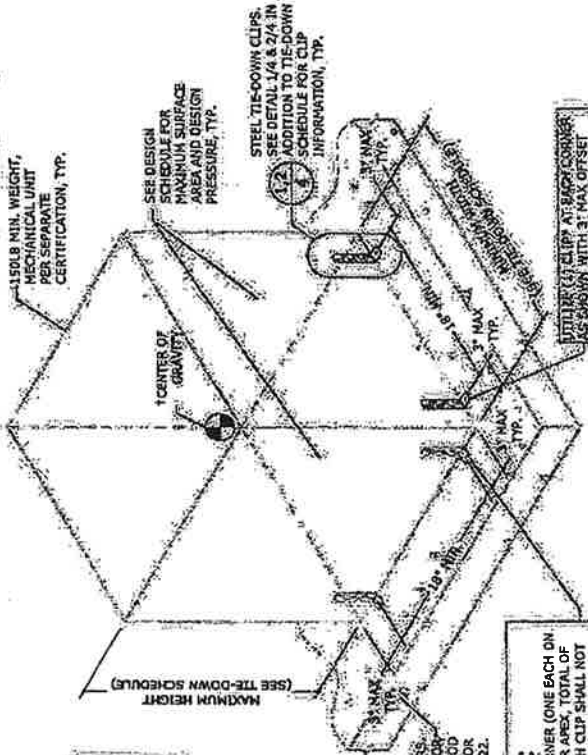
All supporting host structures shall be designed to resist all superimposed loads and shall be of a material listed in this product's respective anchor schedule. Host structure conditions which are not accounted for in this product's respective anchor schedule shall be designed for on a site-specific basis by a registered professional engineer.

All components which are permanently installed shall be protected against corrosion, contamination, and other such damage at all times.

This product has been designed for use within the High Velocity Hurricane Zone (HVHZ).

BMP INTERNATIONAL, INC.

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



- GENERAL NOTES:**
- THIS PRODUCT HAS BEEN DESIGNED AND SHALL BE FABRICATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE 2010 FLORIDA BUILDING CODE, FOR USE 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 ETL 01970387A, ETL 01970387B BY TESTING EVALUATION LABORATORIES, INC., NO SUBSTITUTIONS WITHOUT WRITTEN APPROVAL BY THIS ENGINEER SHALL BE PERMITTED.
 - ALLOWABLE DESIGN PRESSURES TO QUALIFY CAPACITY OF CLIPS AS LISTED HEREIN ARE DETERMINED THROUGH TESTING REPORT DATA AND RATIONALLY CHECKED FOR CONSISTENCY WITH EACH OTHER. DESIGN PRESSURES REQUIRED FOR INTERNAL ANCHOR FASTENERS ARE CALCULATED FOR USE WITH THE CONDITIONS SET FORTH BY CODES ON A SITE-SPECIFIC BASIS IN CONFORMANCE WITH THE COVERING CODE.
 - UNIT SHALL CONFORM TO SPECIFICATIONS 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 BURDEX BRAND, CARBON STEEL ONLY, INSTALLED TO 3192 KSI MIN CONCRETE. SEE ANCHOR SCHEDULE FOR ANCHOR REQUIREMENTS. ALL FASTENERS SHALL HAVE APPROPRIATE CORROSION PROTECTION TO PREVENT ELECTROLYSIS.
 - 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 IN ACCORDANCE WITH THE 2010 FBC SECTIONS 2203.2 AND 2220. 090-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 3192 PSI, UNLESS NOTED OTHERWISE.
 - ALL WOOD MEMBERS SHALL BE PRESSURE TREATED SOUTHERN YELLOW PINE GRADE #2 WITH SPECIFIC GRAVITY G = 0.35 OR GREATER. DIRECT CONNECTION TO WOOD MEMBERS/SLEEPERS IS NOT PERMITTED FOR ROOF-TOP APPLICATIONS PER FBC SECTION 1922.
 - THE CONTRACTOR IS RESPONSIBLE TO INSULATE ALL MEMBERS FROM DISJUNCTIVE MATERIALS TO PREVENT ELECTROLYSIS, I.E. ALUMINUM PER F.B.C. 2203.8.4.
 - ELECTRICAL GROUNDING, WHEN REQUIRED, TO BE DESIGNED & INSTALLED BY OTHERS.
 - THE ADEQUACY 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.
 - 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.

DOUBLE CLIP OPTION:

(7) TOTAL CLIPS MAY BE USED AT EACH CORNER (ONE EACH ON OPPOSING CORNER FACES); 3" FROM CORNER AREA; TOTAL OF (8) CLIPS PER UNIT FOR THIS OPTION). EACH CLIP SHALL NOT EXCEED 3" MAX OFFSET FROM END OF MECHANICAL UNIT AS DETAILED HEREIN. DO NOT SPACE CONCRETE ANCHORS CLOSER THAN THE ALLOWED SPACING LISTED IN THE TIE-DOWN ANCHOR SCHEDULES; SEE SHEETS 283 FOR MORE INFORMATION.

MECHANICAL UNIT TIE-DOWN ISOMETRIC

FOR CLARITY, THIS ISOMETRIC UNIT SHOWS 1" CLIPS. THE ISOMETRIC LAYOUT IS TYPICAL FOR BOTH 1" AND 2" CLIP APPLICATIONS. 2" CLIPS ARE NOT CERTIFIED FOR ANCHORAGE TO CONCRETE.

TIE-DOWN CLIP DIRECTIVE EXAMPLE

THE FOLLOWING EXAMPLE ILLUSTRATES THIS PROCEDURE USED TO DETERMINE THE MAXIMUM ALLOWABLE WIND PRESSURE FOR ANY GIVEN MECHANICAL UNIT THAT CONFORMS TO THE DIMENSION RESTRICTIONS LISTED HEREIN. SEE SHEETS 283 FOR TIE-DOWN SCHEDULES.

MECHANICAL UNIT CRITERIA:

CONSIDER THE INSTALLATION OF (1) MECHANICAL UNIT WITH THE FOLLOWING CRITERIA: 36" TALL X 36" DEEP X 24" WIDE, 150 LB WEIGHT AS VERIFIED BY OTHERS, INSTALLED TO 3192 KSI MIN. CONCRETE AT GRADE AS REQUIRED BY OTHERS.

PROCEDURE:

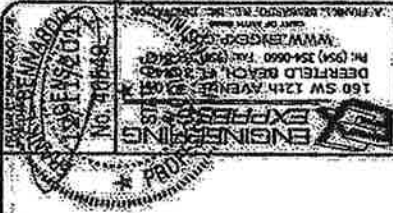
PROCEDURE STEP	RESULT
1. LOCATE THE AT GRADE TIE-DOWN SCHEDULE ON SHEET 283 AND SELECT CLIP TYPE.	CONSIDERS 1.75 STEEL CLIP
2. DETERMINE LARGEST FACE AREA OF MECHANICAL UNIT TO BE INSTALLED.	25.5 SQ. FT.
3. CHECK MAXIMUM UNIT WEIGHT RESTRICTION.	UNIT WEIGHT IS 35, WHICH IS LESS THAN THE MAXIMUM ALLOWANCE PER UNIT WEIGHT RESTRICTION. THE UNIT WEIGHT IS 31, WHICH IS LESS THAN THE UNIT WEIGHT RESTRICTION.
4. DETERMINE THE NUMBER OF CLIPS TO BE USED AT EACH CORNER OF THE MECHANICAL UNIT.	CONSISTENT CLIP AT EACH CORNER, INSTALLED TO CONCRETE SUBSTRATE.

CONCLUSION: MAXIMUM ALLOWABLE LATERAL DESIGN PRESSURE = 10.5PSF (COMPARE THIS VALUE TO THE SEPARATE SITE SPECIFIC REQUIRED DESIGN WIND PRESSURE PROVIDED BY A LICENSED ENGINEER OR REGISTERED ARCHITECT; NOT INCLUDED IN THIS CERTIFICATION)

BMP INTERNATIONAL, INC.
 4710 28TH STREET NORTH
 ST. PETERSBURG, FL 33711
 PH: (727) 577-1613
 WWW.BMP-INTL.COM
 1500 SW 23RD AVENUE
 DEERFIELD BEACH, FL 33442
 PH: (954) 354-0669
 OFFICE OF THE REGISTERED PROFESSIONAL ENGINEER
 STATE OF FLORIDA
 LICENSE NO. 12019
 EXPIRES 09/30/2014

BMP INTERNATIONAL, INC.
 4710 28TH STREET NORTH
 ST. PETERSBURG, FL 33711
 PH: (727) 577-1613
 MECHANICAL UNIT STEEL TIE-DOWN CLIPS
 FLORIDA STATEWIDE APPROVAL

11-BMP-0001
 SCALE: 1/8" = 1'-0"
 DATE: 09/06/13
 DRAWING NO. 101



BMP INTERNATIONAL, INC.
 4710 28TH STREET NORTH
 ST. PETERSBURG, FL 33471
 PH: (727) 577-1613
 MECHANICAL UNIT STEEL TIE-DOWN CLIPS
 FLORIDA STATEWIDE APPROVAL

SCALE: 1/8" = 1'-0"	11-BMP-0001
DATE: 08/28/13	TABLE DESCRIPTION
PROJECT: DEL AIR	
OWNER: DEL AIR	
DESIGNER: BMP INTERNATIONAL, INC.	
DATE: 08/28/13	

3

1" STEEL CLIP TIE-DOWN SCHEDULE: ROOF-TOP MOUNTED INSTALLATIONS

MAXIMUM ALLOWABLE LATERAL WIND PRESSURE (ANCHOR TO ROOF STRUCTURE)

MAXIMUM SURFACE AREA OF UNITS LARGEST FACE	1" CLIP AT EACH CORNER (TOTAL OF 4 CLIPS PER UNIT)		1" CLIP AT EACH CORNER (TOTAL OF 5 CLIPS PER UNIT)	
	TAPCON TO CONCRETE	SHEET METAL SCREW TO ALUMINUM	TAPCON TO CONCRETE	SHEET METAL SCREW TO ALUMINUM
4 FT ²	62 PSF	42 PSF	100 PSF	100 PSF
8 FT ²	41 PSF	27 PSF	67 PSF	67 PSF
12 FT ²	27 PSF	17 PSF	45 PSF	45 PSF
16 FT ²	20 PSF	13 PSF	34 PSF	34 PSF
20 FT ²	16 PSF	10 PSF	26 PSF	26 PSF
25 FT ²	13 PSF	8 PSF	20 PSF	20 PSF
30 FT ²	11 PSF	7 PSF	16 PSF	16 PSF
36 FT ²	9 PSF	6 PSF	13 PSF	13 PSF

UNIT HEIGHT: 48" MAX, 24" MIN; 60" MAX, 48" MIN

UNIT WIDTH: 24" MIN

ANCHOR SCHEDULE:

SUBSTRATE	ANCHOR
CONCRETE	(1)-#4 CARBON STEEL IYU BULLDOG TAPCON, 18" FULL EMBED TO CONCRETE, 24" MIN. EDGE DISTANCE, 3" MIN. SPACING TO ANY ADJACENT ANCHOR.
ALUMINUM	(1)-#4 SAE GRADE 5 SHEET METAL SCREW TO ALUMINUM, PROVIDE (5) PINCHES MIN. PAST THREAD PLANE FOR SHEET METAL SCREW.
STEEL	(1)-#4 SAE GRADE 5 SHEET METAL SCREW TO STEEL, PROVIDE (5) PINCHES MIN. PAST THREAD PLANE FOR SHEET METAL SCREW.

1. TIE-DOWN CLIPS SHALL BE FASTENED TO MECHANICAL HOUSING UNIT WITH (3)-#12 SAE GRADE 5 SHEET METAL SCREWS. (5)-SHEET METAL SCREWS REQUIRED FOR LONG CLIPS. SEE DETAIL 1/A.

2. MECHANICAL HOUSING UNIT SHALL BE FASTENED TO THE FOLLOWING:

- ALUMINUM HOUSING UNITS SHALL BE 3/16" MIN. THICK, GRADE 30, 2024 MIN. (0-0.0299).
- STEEL HOUSING UNITS SHALL BE 3/16" MIN. THICK, GRADE 33, 2024 MIN. (0-0.0299).
- MAXIMUM ALLOWABLE WIND PRESSURES FOR EACH INDIVIDUAL SUBSTRATE MAY BE EQUIVALENT DUE TO THE LIMITING CAPACITY OF THE 1" CLIP. A MAXIMUM ALLOWABLE VALUE OF 100 PSF HAS BEEN UTILIZED, FOR HIGHER DEMAND CAPACITIES CONTACT THIS ENGINEER FOR SITE-SPECIFIC ENGINEERING.

ANCHOR SCHEDULE:

1. TIE-DOWN CLIPS SHALL BE FASTENED TO MECHANICAL HOUSING UNIT WITH (3)-#12 SAE GRADE 5 SHEET METAL SCREWS. (5)-SHEET METAL SCREWS REQUIRED FOR LONG CLIPS. SEE DETAIL 1/A.

2. MECHANICAL HOUSING UNIT SHALL BE FASTENED TO THE FOLLOWING:

- ALUMINUM HOUSING UNITS SHALL BE 3/16" MIN. THICK, GRADE 30, 2024 MIN. (0-0.0299).
- STEEL HOUSING UNITS SHALL BE 3/16" MIN. THICK, GRADE 33, 2024 MIN. (0-0.0299).
- MAXIMUM ALLOWABLE WIND PRESSURES FOR EACH INDIVIDUAL SUBSTRATE MAY BE EQUIVALENT DUE TO THE LIMITING CAPACITY OF THE 1" CLIP. A MAXIMUM ALLOWABLE VALUE OF 100 PSF HAS BEEN UTILIZED, FOR HIGHER DEMAND CAPACITIES CONTACT THIS ENGINEER FOR SITE-SPECIFIC ENGINEERING.

ADDITIONAL ALLOWABLE UPLIFT: 90 LBS/CLIP

DESIGN TABLE ACCOMMODATES MAX ALLOWABLE UPLIFT AS ADDITIONAL UPLIFT IN COMBINATION WITH UPLIFT CAUSED BY OVERTURNING FROM LATERAL FORCES. SEE ASCE 7-10 SECTION 28.5 FOR MORE INFORMATION.

ALL UPLIFT DEMANDS SHALL BE DETERMINED ON A SITE SPECIFIC BASIS BY LICENSED ENGINEER OR REGISTERED ARCHITECT, NOT INCLUDED IN THIS SCHEDULE.

EXAMPLE: 4 CLIPS x 90 LB/CLIP = 360 LB

TABLE LEGEND: - DENOTES VALUES NOT APPROVED FOR USE

2" STEEL CLIP TIE-DOWN SCHEDULE: ROOF-TOP MOUNTED INSTALLATIONS

MAXIMUM ALLOWABLE LATERAL WIND PRESSURE (ANCHOR TO ROOF STRUCTURE)

MAXIMUM SURFACE AREA OF UNITS LARGEST FACE	2" CLIP AT EACH CORNER (TOTAL OF 4 CLIPS PER UNIT)		2" CLIP AT EACH CORNER (TOTAL OF 5 CLIPS PER UNIT)	
	SHEET METAL SCREW TO ALUMINUM	SHEET METAL SCREW TO STEEL	SHEET METAL SCREW TO ALUMINUM	SHEET METAL SCREW TO STEEL
4 FT ²	100 PSF	100 PSF	100 PSF	100 PSF
8 FT ²	67 PSF	67 PSF	67 PSF	67 PSF
12 FT ²	50 PSF	50 PSF	50 PSF	50 PSF
16 FT ²	40 PSF	40 PSF	40 PSF	40 PSF
20 FT ²	33 PSF	33 PSF	33 PSF	33 PSF
25 FT ²	28 PSF	28 PSF	28 PSF	28 PSF
30 FT ²	24 PSF	24 PSF	24 PSF	24 PSF
36 FT ²	21 PSF	21 PSF	21 PSF	21 PSF

UNIT HEIGHT: 48" MAX, 24" MIN; 60" MAX, 48" MIN

UNIT WIDTH: 24" MIN

ANCHOR SCHEDULE:

SUBSTRATE	ANCHOR
ALUMINUM	(2)-#14 SAE GRADE 5 SHEET METAL SCREW TO ALUMINUM, PROVIDE (5) PINCHES MIN. PAST THREAD PLANE FOR SHEET METAL SCREW.
STEEL	(2)-#14 SAE GRADE 5 SHEET METAL SCREW TO STEEL, PROVIDE (5) PINCHES MIN. PAST THREAD PLANE FOR SHEET METAL SCREW.

1. TIE-DOWN CLIPS SHALL BE FASTENED TO MECHANICAL HOUSING UNIT WITH (3)-#12 SAE GRADE 5 SHEET METAL SCREWS. (5)-SHEET METAL SCREWS REQUIRED FOR LONG CLIPS. SEE DETAIL 1/A.

2. MECHANICAL HOUSING UNIT SHALL BE FASTENED TO THE FOLLOWING:

- ALUMINUM HOUSING UNITS SHALL BE 6/16" MIN. THICK, GRADE 30, 2024 MIN. (0-0.0299).
- STEEL HOUSING UNITS SHALL BE 3/16" MIN. THICK, GRADE 33, 2024 MIN. (0-0.0299).
- MAXIMUM ALLOWABLE WIND PRESSURES FOR EACH INDIVIDUAL SUBSTRATE MAY BE EQUIVALENT DUE TO THE LIMITING CAPACITY OF THE 2" CLIP. A MAXIMUM ALLOWABLE VALUE OF 100 PSF HAS BEEN UTILIZED, FOR HIGHER DEMAND CAPACITIES CONTACT THIS ENGINEER FOR SITE-SPECIFIC ENGINEERING.

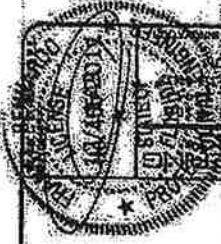
ADDITIONAL ALLOWABLE UPLIFT: 90 LBS/CLIP

DESIGN TABLE ACCOMMODATES MAX ALLOWABLE UPLIFT AS ADDITIONAL UPLIFT IN COMBINATION WITH UPLIFT CAUSED BY OVERTURNING FROM LATERAL FORCES. SEE ASCE 7-10 SECTION 28.5 FOR MORE INFORMATION.

ALL UPLIFT DEMANDS SHALL BE DETERMINED ON A SITE SPECIFIC BASIS BY LICENSED ENGINEER OR REGISTERED ARCHITECT, NOT INCLUDED IN THIS SCHEDULE.

EXAMPLE: 4 CLIPS x 90 LB/CLIP = 360 LB

TABLE LEGEND: - DENOTES VALUES NOT APPROVED FOR USE

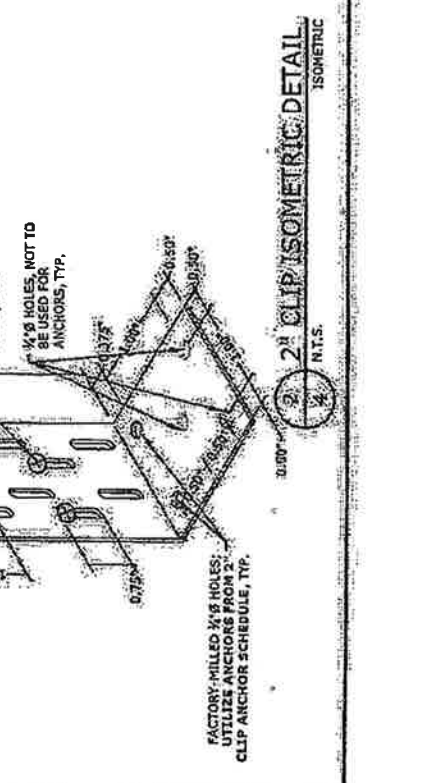
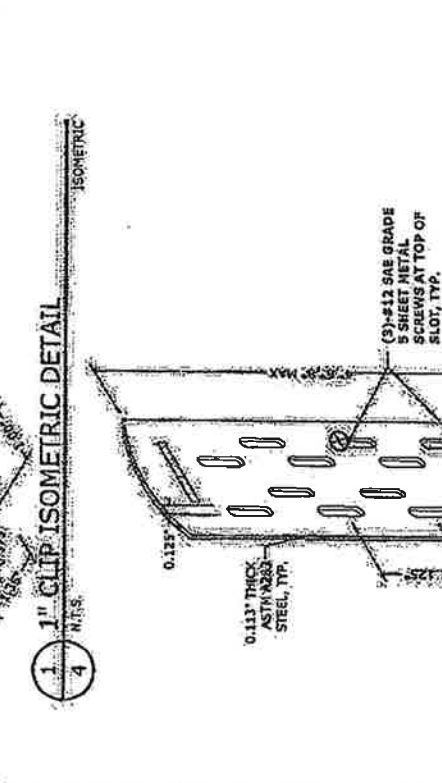
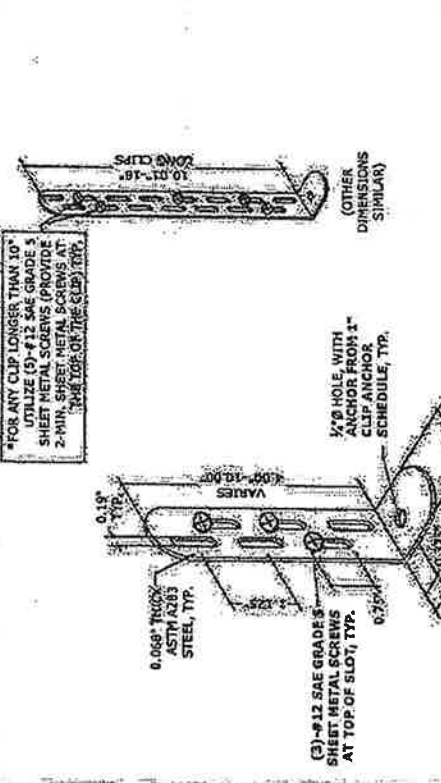
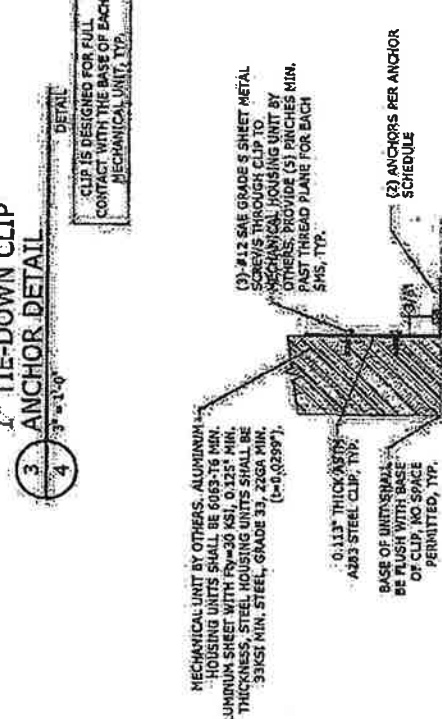
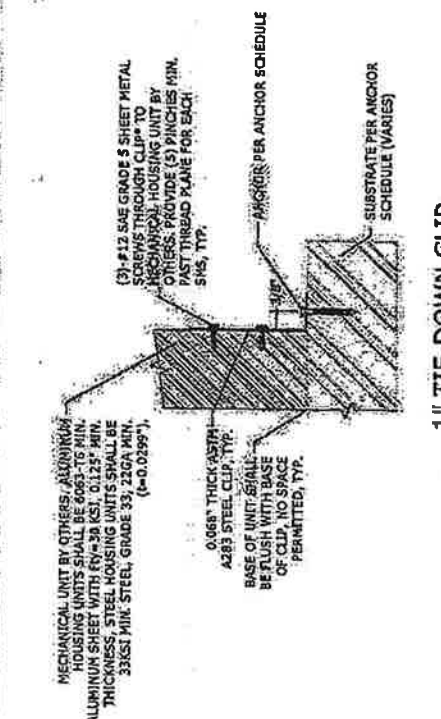


BMP INTERNATIONAL, INC.
 160 SW 12th Avenue
 Deerfield Beach, FL 33441
 PH: (561) 577-1813
 FAX: (561) 577-1813
 WWW.BMP-ENGINEER.COM
 MECHANICAL ENGINEER
 STATE NO. 10117
 EXPIRES 08/2012

BMP INTERNATIONAL, INC.
 4710 38th Street North
 St. Petersburg, FL 34714
 PH: (727) 577-1813
 MECHANICAL UNIT STEEL TIE-DOWN CLIPS
 FLORIDA STATEWIDE APPROVAL

NO.	DESCRIPTION	DATE
1	ISSUED FOR PERMIT	08/2012
2	REVISED PER COMMENTS	08/2012
3	REVISED PER COMMENTS	08/2012
4	REVISED PER COMMENTS	08/2012

11-BMP-0001
 MECHANICAL UNIT STEEL TIE-DOWN CLIPS
 6



BMP INTERNATIONAL, INC
4710 28th St N, St Petersburg, FL 33714
Phone: 727-458- 0544

State Approved Equipment Tie Down - FL14239

On March 23rd 2012 the governor signed HB 704 amending SECTION 16 of the 2010 FBC to the 2007 FBC. See the copy below.

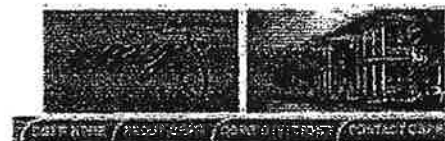
HB 704 – Relating to the Florida Building Commission and the Florida Building Code

**Chapter Law Number: Chapter No. 2012-1
Approved by the Governor 3/23/2012**

Section 16

4) Notwithstanding the provisions of this section, exposed mechanical equipment or appliances fastened to a roof or installed on the ground in compliance with the code using rated stands, platforms, curbs, slabs, or other means are deemed to comply with the wind resistance requirements of the 2007 Florida Building Code, as amended. Further support or enclosure of such mechanical equipment or appliances is not required by a state or local official having authority to enforce the Florida Building Code. This subsection expires on the effective date of the 2013 ~~2010~~ Florida Building Code.

The following files from www.floridabuilding.org Code Version 2007, number FL 14239, contain the necessary compliance information for tie down clip approval. The specific information required by building departments may vary. Consult with the individual building department for what portion of the following information is needed for permit approval.



[BCIS Home](#) |
 [Log In](#) |
 [User Registration](#) |
 [Hot Topics](#)

[Submit Surcharge](#) |
 [Stats & Facts](#) |
 [Publications](#) |
 [FBC Staff](#) |
 [BCIS Site Map](#) |
 [Links](#) |
 [Search](#)



Product Approval
USER: Public User

EMERGENCY MANAGEMENT

OFFICE OF THE SECRETARY

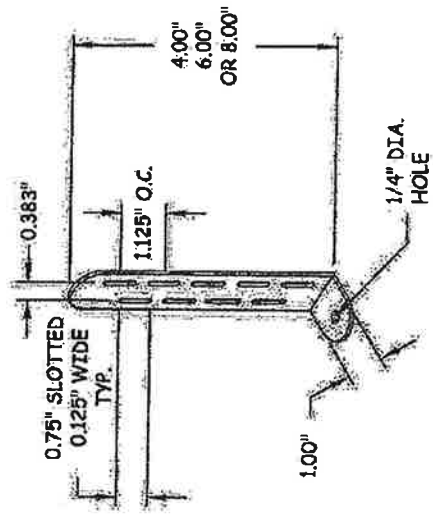
[Product Approval Menu](#) >
 [Product or Application Search](#) >
 [Application List](#) >
 [Application Detail](#)

FL #	FL14239-R0
Application Type	New
Code Version	2007
Application Status	Approved
Comments	
Archived	<input type="checkbox"/>
Product Manufacturer	BMP International Inc.
Address/Phone/Email	4710 28th Street N St. Petersburg, FL 33714 (727) 458-0544 benmeng8@yahoo.com
Authorized Signature	Xianbin Meng benmeng8@yahoo.com
Technical Representative	
Address/Phone/Email	
Quality Assurance Representative	
Address/Phone/Email	
Category	Structural Components
Subcategory	Anchors
Compliance Method	Evaluation Report from a Florida Registered Architect or a Licensed Florida Professional Engineer <input checked="" type="checkbox"/> Evaluation Report - Hardcopy Received
Florida Engineer or Architect Name who developed the Evaluation Report	Kristina S. Daugherty, P.E.
Florida License	PE-68455
Quality Assurance Entity	National Accreditation & Management Institute,
Quality Assurance Contract Expiration Date	12/31/2013
Validated By	Steven M. Ulrich, PE <input checked="" type="checkbox"/> Validation Checklist - Hardcopy Received
Certificate of Independence	FL14239_R0_COI_COI_BMP.pdf
Referenced Standard and Year (of Standard)	
Equivalence of Product Standards Certified By	
Sections from the Code	Chapter 22

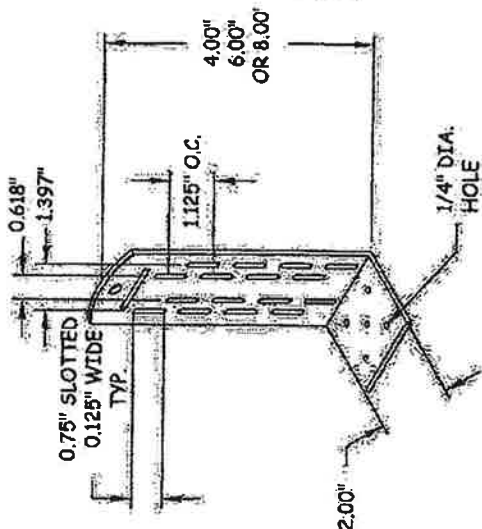
BMP INTERNATIONAL, INC.

A/C HOLD DOWN CLIP

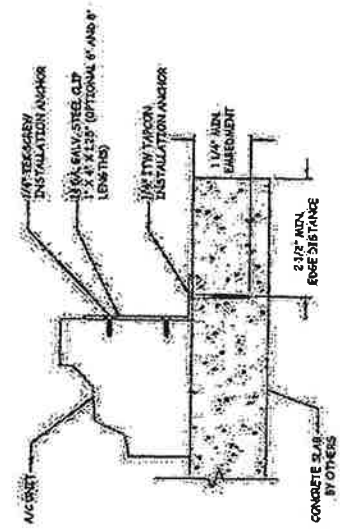
BMP INTERNATIONAL, INC. 127 W. FAIRBANKS AVE., STE. 438 WINTER PARK, FL 32789 TEL: (407) 944-4597 FAX: (407) 944-4597		PREPARED BY: CERTWORKS, LLC 127 W. FAIRBANKS AVE., STE. 438 WINTER PARK, FL 32789 TEL: (407) 944-4597 FAX: (407) 944-4597		DATE		DESCRIPTION		BY	
TITLE: A/C HOLD DOWN CLIP INSTALLATION & GENERAL NOTES		NO.		REVISIONS		DATE		BY	
DWG # BMPO03		SCALE N.T.S.		CHK BY KSD		DATE 06.30.10		BY	
SHEET 1 OF 2		DATE 06.30.10		DESCRIPTION		BY		DATE	



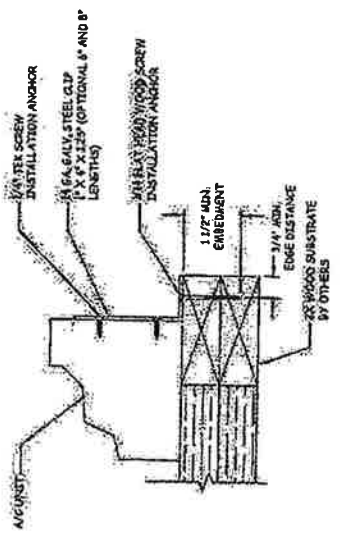
1" CLIP



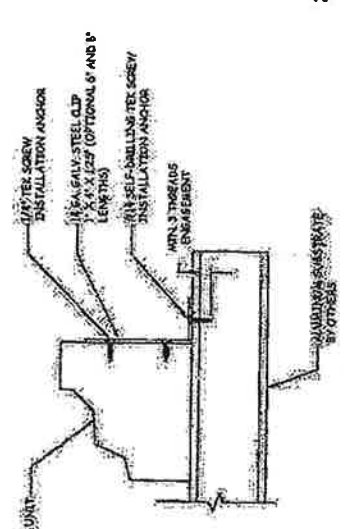
2" CLIP



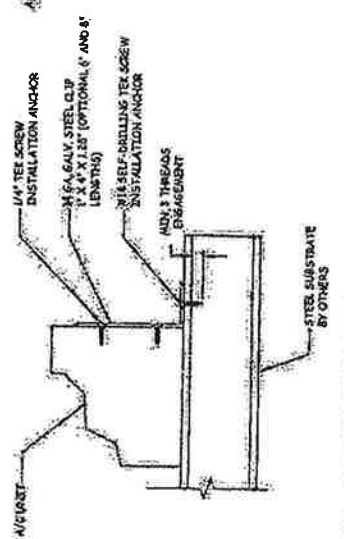
A
INSTALLATION DETAIL
2" WOOD BACK SUBSTRATE



B
INSTALLATION DETAIL
CONCRETE SUBSTRATE



C
INSTALLATION DETAIL
STEEL SUBSTRATE



D
INSTALLATION DETAIL
ALUMINUM SUBSTRATE

REVISIONS

NO.	DESCRIPTION	BY	DATE

TITLE
A/C HOLD DOWN CLIP INSTALLATION & GENERAL NOTES

PREPARED BY: CERTWORKS, LLC
127 W. FAIRBANKS AVE., STE. 438
WINTER PARK, FL 32789
PH: (407) 644-2546

DATE: 06.30.10

CHK BY: KSD

SCALE: NTS


DWG. #: BMP003

SHEET: 2 OF 2

- GENERAL NOTES:**
- DESIGN CALCULATIONS WERE BASED ON THE FLORIDA BUILDING CODE 2007 WITH 2009 AMENDMENTS. WIND SPEED 74.5 CH. 16 FOR WIND LOADS AND VELOCITIES OF 146 MPH AND 155 MPH. AN IMPORTANCE FACTOR OF 1.1 AND EXPOSURE C AS CRITICAL WERE USED IN THE DESIGN.
 - A/C UNIT MAXIMUM SIZE: 4 FT x 4 FT x 4 FT. MINIMUM WEIGHT OF 150 LBS.
 - ALL SCREWS USED TO ATTACH CLIP SHALL BE GALVANIZED A307, SELF DRILLING WITH A MINIMUM HEAD DIAMETER OF 0.3125 IN. SCREWS SHALL BE DRILLED TIGHT, NOT OVER TIGHTENED.
 - TAPCONS USED TO ATTACH CLIP TO CONCRETE SHALL BE APPROVED WITH A TENSILE STRENGTH OF 480 LBS WITH A MINIMUM EMBEDMENT OF 1.3/4 IN, MINIMUM EDGE DISTANCE OF 2.5", AND MINIMUM CENTER TO CENTER DISTANCE OF 3".
 - WHEN UNIT IS SUPPORTED BY WOOD USE #10 WOOD SCREWS WITH A MINIMUM 1.3/2 IN EMBEDMENT.
 - SCREWS AT THE BOTTOM OF CLIP ATTACHMENT TO SUPPORTING STRUCTURE REQUIRE WASHERS OF 1/4 IN. STEEL MINIMUM WITH A YIELD STRENGTH OF 36 KSI.
 - CLIPS SHALL BE MANUFACTURED OUT OF MINIMUM 36 KSI STEEL THAT IS 680 GALVANIZED OR STAINLESS STEEL.
 - UNIT SIZE MAY INCREASE TO 6 FT x 6 FT x 6 FT AND REQUIRE TWO (2) CLIPS AT CORNERS AND MAY NOT BE HIGHER THAN 15 FT FROM GRADE.
 - R12 GALV. SELF DRILLING SCREWS MAY BE USED ON UNITS WHICH ARE INSTALLED NO HIGHER THAN 40 FT FROM GRADE FOR WIND VELOCITY ZONES ARE 146 MPH OR LESS.
 - INSTALLATION ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH ANCHOR MANUFACTURER'S INSTALLATION INSTRUCTIONS, AND ANCHORS SHALL NOT BE USED IN SUBSTRATES WITH STRENGTHS LESS THAN THE MINIMUM STRENGTH SPECIFIED BY THE ANCHOR MANUFACTURER.
 - INSTALLATION ANCHOR CAPACITIES FOR PRODUCTS HEREIN ARE BASED ON SUBSTRATE MATERIALS WITH THE FOLLOWING PROPERTIES:
A. WOOD - MINIMUM SPECIFIC GRAVITY OF 0.55
B. CONCRETE - MINIMUM COMPRESSIVE STRENGTH OF 2700 PSI
C. ALUMINUM - MINIMUM 6061-T6 ALLOY (MINIMUM WALL THICKNESS OF 0.125")
D. STEEL - MINIMUM YIELD STRENGTH OF 36 KSI, MINIMUM WALL THICKNESS OF 38 MILS.
 - CLIPS CAN ALSO BE SUPPLIED IN A POWDER-COATED FINISH
 - INSTALLATION ANCHORS AND ASSOCIATED HARDWARE MUST BE MADE OF CORROSION RESISTANT MATERIAL OR HAVE A CORROSION RESISTANT COATING. SIMILAR MATERIALS MUST BE SEPARATED OR COATED IN ACCORDANCE WITH FBC SECTION 2005.6.4.

TABLE OF CLIP ATTACHMENT TO SUPPORTING STRUCTURE OR A/C UNIT (146 MPH) - 4 CLIPS PER UNIT			
HEIGHT ABOVE GROUND (FT)	NUMBER OF SCREWS PER CLIP TO HOLDING OF A/C UNIT (146 MPH)	NUMBER OF SCREWS PER CLIP INTO CONCRETE (146 MPH)	NUMBER OF SCREWS PER CLIP INTO ALUM. (146 MPH)
0-15	3	3	3
15-20	3	3	3
20-25	3	3	3
25-30	3	3	3
30-35	3	3	3
35-40	3	3	3
40-45	3	3	3
45-50	3	3	3
50-55	3	3	3
55-60	3	3	3
60-65	3	3	3
65-70	3	3	3
70-75	3	3	3
75-80	3	3	3
80-85	3	3	3
85-90	3	3	3
90-95	3	3	3
95-100	3	3	3
100-105	3	3	3
105-110	3	3	3
110-115	3	3	3
115-120	3	3	3
120-125	3	3	3
125-130	3	3	3
130-135	3	3	3
135-140	3	3	3
140-145	3	3	3
145-150	3	3	3
150-155	3	3	3
155-160	3	3	3
160-165	3	3	3
165-170	3	3	3
170-175	3	3	3
175-180	3	3	3
180-185	3	3	3
185-190	3	3	3
190-195	3	3	3
195-200	3	3	3
200-205	3	3	3
205-210	3	3	3
210-215	3	3	3
215-220	3	3	3
220-225	3	3	3
225-230	3	3	3
230-235	3	3	3
235-240	3	3	3
240-245	3	3	3
245-250	3	3	3
250-255	3	3	3
255-260	3	3	3
260-265	3	3	3
265-270	3	3	3
270-275	3	3	3
275-280	3	3	3
280-285	3	3	3
285-290	3	3	3
290-295	3	3	3
295-300	3	3	3
300-305	3	3	3
305-310	3	3	3
310-315	3	3	3
315-320	3	3	3
320-325	3	3	3
325-330	3	3	3
330-335	3	3	3
335-340	3	3	3
340-345	3	3	3
345-350	3	3	3
350-355	3	3	3
355-360	3	3	3
360-365	3	3	3
365-370	3	3	3
370-375	3	3	3
375-380	3	3	3
380-385	3	3	3
385-390	3	3	3
390-395	3	3	3
395-400	3	3	3
400-405	3	3	3
405-410	3	3	3
410-415	3	3	3
415-420	3	3	3
420-425	3	3	3
425-430	3	3	3
430-435	3	3	3
435-440	3	3	3
440-445	3	3	3
445-450	3	3	3
450-455	3	3	3
455-460	3	3	3
460-465	3	3	3
465-470	3	3	3
470-475	3	3	3
475-480	3	3	3
480-485	3	3	3
485-490	3	3	3
490-495	3	3	3
495-500	3	3	3
500-505	3	3	3
505-510	3	3	3
510-515	3	3	3
515-520	3	3	3
520-525	3	3	3
525-530	3	3	3
530-535	3	3	3
535-540	3	3	3
540-545	3	3	3
545-550	3	3	3
550-555	3	3	3
555-560	3	3	3
560-565	3	3	3
565-570	3	3	3
570-575	3	3	3
575-580	3	3	3
580-585	3	3	3
585-590	3	3	3
590-595	3	3	3
595-600	3	3	3
600-605	3	3	3
605-610	3	3	3
610-615	3	3	3
615-620	3	3	3
620-625	3	3	3
625-630	3	3	3
630-635	3	3	3
635-640	3	3	3
640-645	3	3	3
645-650	3	3	3
650-655	3	3	3
655-660	3	3	3
660-665	3	3	3
665-670	3	3	3
670-675	3	3	3
675-680	3	3	3
680-685	3	3	3
685-690	3	3	3
690-695	3	3	3
695-700	3	3	3
700-705	3	3	3
705-710	3	3	3
710-715	3	3	3
715-720	3	3	3
720-725	3	3	3
725-730	3	3	3
730-735	3	3	3
735-740	3	3	3
740-745	3	3	3
745-750	3	3	3
750-755	3	3	3
755-760	3	3	3
760-765	3	3	3
765-770	3	3	3
770-775	3	3	3
775-780	3	3	3
780-785	3	3	3
785-790	3	3	3
790-795	3	3	3
795-800	3	3	3
800-805	3	3	3
805-810	3	3	3
810-815	3	3	3
815-820	3	3	3
820-825	3	3	3
825-830	3	3	3
830-835	3	3	3
835-840	3	3	3
840-845	3	3	3
845-850	3	3	3
850-855	3	3	3
855-860	3	3	3
860-865	3	3	3
865-870	3	3	3
870-875	3	3	3
875-880	3	3	3
880-885	3	3	3
885-890	3	3	3
890-895	3	3	3
895-900	3	3	3
900-905	3	3	3
905-910	3	3	3
910-915	3	3	3
915-920	3	3	3
920-925	3	3	3
925-930	3	3	3
930-935	3	3	3
935-940	3	3	3
940-945	3	3	3
945-950	3	3	3
950-955	3	3	3
955-960	3	3	3
960-965	3	3	3
965-970	3	3	3
970-975	3	3	3
975-980	3	3	3
980-985	3	3	3
985-990	3	3	3
990-995	3	3	3
995-1000	3	3	3

- NOTES:**
- ABOVE CHART OF NOTES NUMBER OF SCREWS PER CLIP, ANCHORS & CLIPS PER UNIT, EXCEPT WHERE INDICATED ABOVE, WHERE MORE THAN 3 SCREWS PER CLIP IS REQUIRED INTO THE SUBSTRATE USE ADDITIONAL CLIPS OR USE THE CHART.
 - FOR STEEL SUPPORTING STRUCTURES USE SELF DRILLING GALV. 3/4" x 1 1/4" SCREWS AND QUANTITIES REQUIRED ABOVE NOTED FOR ALUMINUM BACK SCREWS.
 - SPACING OF SCREWS IN A/C HOUSING SHALL BE A MINIMUM OF 1 IN.
 - STAINLESS STEEL SCREWS MAY BE USED WHERE REQUIRED BY GOVERNING AGENCY.

 Searches Sales Search Results **Property Record Card** My Favorites**5106 St Marie Ave** < 17-23-30-4378-02-040 >

Name(s)	Physical Street Address
Connor Douglas W	5106 St Marie Ave
Mailing Address On File	Postal City and Zipcode
5106 Saint Marie Ave	Orlando, FL 32812
Belle Isle, FL 32812-1067	Property Use
Incorrect Mailing Address?	0100 - Single Family
	Municipality
	Belle Isle

Values, Exemptions and Taxes

Property Features

Sales Analysis**Location Info****Property Description**


LAKE CONWAY ESTATES SECTION ONE X/37 LOT 4 BLK B

Total Land Area 10,625 sqft (+/-) | 0.24 acres (+/-) GIS Calculated Notice**Land**

Land Use Code	Zoning	Land Units	Unit Price	Land Value
0100 - Single Family	R-1-AA	1 LOT(S)	\$80,000.00	\$80,000

Page 1 of 1 (1 total records)

Buildings

Important Information		Structure	
	Model Code:	01 - Single Fam Residence	Actual Year Built: 1962
	Type Code:	0101 - Single Family	Beds: 3
	Building Value:	\$69,997	Baths: 2.0
	Estimated New Cost:	\$132,070	Floors: 1

Page 1 of 1 (1 total records)

Extra Features

Description	Date Built	Units
AB1 - Accessory Building 1	01/01/1990	96 Square Feet

Page 1 of 1 (1 total records)

This Data Printed on 09/04/2013 and System Data Last Refreshed on 09



Certificate of Product Ratings

AHRI Certified Reference Number: 3699318

Date: 9/4/2013

Product: Split System: Heat Pump with Remote Outdoor Unit-Air-Source

Outdoor Unit Model Number: 25HBC348(A,W)**30

Indoor Unit Model Number: FX4DN(B,F)049

Manufacturer: CARRIER AIR CONDITIONING

Trade/Brand name: COMFORT 13 PURON HP

Manufacturer responsible for the rating of this system combination is CARRIER AIR CONDITIONING

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):	47000
EER Rating (Cooling):	11.50
SEER Rating (Cooling):	14.00
Heating Capacity (Btuh) @ 47 F:	46000
Region IV HSPF Rating (Heating):	8.00
Heating Capacity (Btuh) @ 17 F:	29600

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

DISCLAIMER

AHRI does not endorse the product(s) listed on this Certificate and makes no representations, warranties or guarantees as to, and assumes no responsibility for, the product(s) listed on this Certificate. AHRI expressly disclaims all liability for damages of any kind arising out of the use or performance of the product(s), or the unauthorized alteration of data listed on this Certificate. Certified ratings are valid only for models and configurations listed in the directory at www.ahridirectory.org.

TERMS AND CONDITIONS

This Certificate and its contents are proprietary products of AHRI. This Certificate shall only be used for individual, personal and confidential reference purposes. The contents of this Certificate may not, in whole or in part, be reproduced; copied; disseminated; entered into a computer database; or otherwise utilized, in any form or manner or by any means, except for the user's individual, personal and confidential reference.

CERTIFICATE VERIFICATION

The information for the model cited on this certificate can be verified at 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.




Air-Conditioning, Heating,
and Refrigeration Institute

©2013 Air-Conditioning, Heating, and Refrigeration Institute

CERTIFICATE NO.: 130227901640165580

FORM J1_{AE} • ABRIDGED VERSION of MANUAL J, 8TH EDITION

Project		Doug Connor		Design State & City		Florida		Orlando AP				
Indoor Design Heating db		70		Outdoor 99% db		42		HTD			28	
Indoor Design Cooling db		75		Outdoor 1% db		93		CTD			18	
Indoor Design Cooling RH		50%		Grains Difference		46		Daily Range			Medium	
Latitude		28		Elevation		100		ACF			1.000	
Glass Direction		Construction Detail				Heating HTM	Cooling HTM	Net Area	Heating BTUH	Cooling BTUH		
6A	Windows & Glass Doors	N		1A-c10m, Clear, Single Pane, Operable, Metal no Break				35.56	31.50	67	2383	2111
		E/W		1A-c10m, Clear, Single Pane, Operable, Metal no Break				35.56	81.90	85	3023	6962
		S		1A-c10m, Clear, Single Pane, Operable, Metal no Break				35.56	36.68	55	1956	2017
6B	Skylights											
7	Wood & Metal Doors	a	11D0, Wood Solid Core				10.92	12.09	20	218	242	
		b										
		c										
8	Above Grade Walls	a	13AB-0cs, Block, R0 Board, Stucco				7.22	4.72	2155	15568	10175	
		b										
		c										
		d										
		e										
8	Partition Walls	f										
		g										
9	Below Grade Walls	a										
		b										
10	Ceilings	a	16B-19ad, Vented, R-19, Asphalt Shingles, Dark				1.37	2.70	2206	3027	5945	
		b										
		c										
		d										
		e										
11	Passive Floors	a										
		b										
		c										
		d	22A-tpl, Slab on Grade, R0						147			
		e										
11	Exposed Floors	f										
		g										
12	Infiltration	Envelope Leakage	Semi-Tight		Heated & Cooled Floor Area = Sq. Ft.		2206	Above Grade = Cu. Ft.		15000	1694	545
		No. of Fireplaces										
13	Internal Gains			Number of Bedrooms		3	Occupants		4		920	
				Appliance - 0 BTUH								
14 Sub Totals											27868	28915
15	Duct Loss & Gain	7E-T&B SA in Attic, RA Riser in Floor to Ceiling Chase, Perimeter Supply Outlets										
		R-Value = 6	Leakage Class .12/.24			0.192	<input checked="" type="checkbox"/>	0.325	<input checked="" type="checkbox"/>		5354	9393
		Installed Square Feet of Surface or Default = 1				Supply	1		Return	1		
16	Ventilation	Combustion Air From Conditioned Space <input type="checkbox"/> Furnace <input type="checkbox"/> Water Heater				None						
19	Blower Heat Gain	Manufacturer's performance data has no blower heat discount									1707	
20 Total Sensible Loss or Gain											33221	40015
Del-Air Heating, Cooling & Refrigeration 531 Condisco Way Sanford Fl. 32771 1-888-831-2665 www.delair.com						21	Latent Infiltration load for cooling			860		
							Latent load for occupants			800		
							Latent load for plants	Small	Medium	Large		
							Latent load for duct in unconditioned space			1063		
							Latent ventilation load for cooling					
						Total Latent Gain			2723			

