



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: 4234 Kezar Ct, Belle Isle, FL 32809 Parcel ID: 20-23-30-1661-00-910 Property Owner: Downs, Charles Phone Number: 407 240 9444 ***** Company Name: Greens Energy Services, Inc. Contractor Name: Green, John T License Number: CAC1813726 Address: 186 N Goldenrod Rd, Orlando, FL 32807 Phone Number: 407-282-5000	Permit Number: 2016-03-066 Date of Application: 03/29/2016 Date Permit Issued: 03/29/2016 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.
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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 <u>4-4-16</u> CC or Check # <u>MC 0776</u> Amount Paid <u>104.50</u> 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).	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 <input type="checkbox"/> BUILDING 1 st _____ (Footing/Foundation) Survey specific foundation plan must be onsite before slab pour. Approved Plan on Site? ____ 2 nd _____ (Slab) 3 rd _____ (Lintel)(Wall Reinforcing on Masonry Building) 4 th _____ (Exterior Framing)(Roof/Wall Sheathing) 5 th _____ (Framing) (To be made after Plumbing/ Mechanical/ Electrical Rough-Ins & Windows/Doors Installed) 6 th _____ (Insulation to be Made After Roof Installed) 7 th _____ (Drywall) 8 th _____ (Sidewalk/Driveway) 9 th _____ (Other) 10 th _____ (Final – After MEP and Other Applicable Finals) <input type="checkbox"/> ROOFING 1 ST ROOFING Deck Nailing/Dry-in/Flashing _____ 2 nd ROOFING Covering In-Progress _____ 3 rd ROOFING Covering Final _____ <input type="checkbox"/> PLUMBING (Pool-Piping, Solar, Irrigation, Water Treatment Equip, Etc...) <input type="checkbox"/> 1 ST _____ (Underground) 2 nd _____ (Sewer) 3 rd _____ (Rough-In/Tub Set) 4 th _____ (Final) CHECK APPROPRIATE BOX <input type="checkbox"/> GAS ___ Natural ___ LP <input type="checkbox"/> MECHANICAL <input type="checkbox"/> ELECTRICAL <input type="checkbox"/> LOW VOLTAGE 1 st _____ (Rough-In) 2 nd _____ (Final)
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Inspection requests are to be emailed to IDScheduling@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.

For a copy of your permit, or to check inspection results, please visit <https://universalengineering.sharefile.com>
login ID = cobi@universalengineering.com password = universal13



City of Belle Isle

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RECEIVED
MAR 29 2016

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: 3/29/16

PERMIT NUMBER 2016-03-066

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

Project Address 4234 Kezar Ct. 4234 Kezar Ct. Belle Isle FL 32809 X 32812
Property Owner Charles Downs Charles Downs Phone 407-240-9444
Property Owner's Mailing Address 4234 Kezar Ct. City Orlando
State FL Zip Code 32812 Parcel Id Number: 20-23-30-1661-00-910 20-23-30-1661-00-910

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 Changeout

- REQUIRED: Tie Down Engineering
- 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 Total Tons 5
Type of System: Water to Air Chiller Split System X Package Heat Pump X Estimated Cost \$

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

(A) Estimated Cost Fee \$ 10,495.00

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 \$ 10,495.00

Refrigeration: Number of units Estimated Cost \$

Piping: Air Vacuum Steam Chill Water Estimated Cost \$

Others: (Specify) Estimated Cost \$

Was the space previously Air Conditioned? Yes X 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 John Green LICENSE # CAC1813726 CAC1813726

LICENSE HOLDER NAME John Green COMPANY NAME Greens Energy Services, Inc

Street Address 186 N. Goldenrod Rd

City Orlando State FL Zip Code 32807 Phone Number 407-282-5000

Email Address cdurham@greensenergy.com cdurham@greensenergy.com 407 282 5000

Building Official: [Signature]	Date: 3-29-16	Permit Fee	\$ 67.-
Verified Contractor's Licenses & Insurance are on file [Signature]	Date: 4-4-16	Review Fee	\$ 33.50
		3% Florida Surcharge	\$ 4.-
		Total Permit Fee	\$ 104.50

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.

base 37
Stms x 6 30
67 + 2
33.50
100.50
WO: 65975

Permit Number: _____
 Folio/Parcel ID #: 20-23-30-1641-00-910
 Prepared by: Greens Energy Services
186 N. Goldenrod Rd
Orlando, FL 32807
 Return to: _____
Same as above

DOC# 20160164926
 04/01/2016 01:22:12 PM Page 1 of 1
 Rec Fee: \$10.00
 Martha O. Haynie, Comptroller
 Orange County, FL
 MB - Ret To: GREENS ENERGY SERVICES



NOTICE OF COMMENCEMENT

State of Florida, County of Orange

The undersigned hereby gives notice that improvement will be made to certain real property, and in accordance with Chapter 713, Florida Statutes, the following information is provided in this Notice of Commencement.

1. Description of property (legal description of the property, and street address if available)
4234 Kezar Ct Orlando, FL 32812
2. General description of improvement
A/C Changeout
3. Owner information or Lessee information if the Lessee contracted for the improvement
 Name Charles Downs
 Address 4234 Kezar Ct Orlando, FL 32812
 Interest in Property Owner
 Name and address of fee simple titleholder (if different from Owner listed above)
 Name _____
 Address _____
4. Contractor
 Name Greens Energy Services Telephone Number 407-282-5000
 Address 186 N. Goldenrod Rd Orlando, FL 32807
5. Surety (if applicable, a copy of the payment bond is attached)
 Name _____ Telephone Number _____
 Address _____ Amount of Bond \$ _____
6. Lender
 Name _____ Telephone Number _____
 Address _____
7. Persons within the State of Florida designated by Owner upon whom notices or other documents may be served as provided by §713.13(1)(a)7, Florida Statutes.
 Name _____ Telephone Number _____
 Address _____
8. In addition to himself or herself, Owner designates the following to receive a copy of the Lienor's Notice as provided in §713.13(1)(b), Florida Statutes.
 Name _____ Telephone Number _____
 Address _____
9. Expiration date of notice of commencement (the expiration date may not be before the completion of construction and final payment to the contractor, but will be 1 year from the date of recording unless a different date is specified) _____

WARNING TO OWNER: ANY PAYMENTS MADE BY THE OWNER AFTER THE EXPIRATION OF THE NOTICE OF COMMENCEMENT ARE CONSIDERED IMPROPER PAYMENTS UNDER CHAPTER 713, PART I, SECTION 713.13, FLORIDA STATUTES, AND CAN 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 COMMENCING WORK OR RECORDING YOUR NOTICE OF COMMENCEMENT.

Charles J. Downs
 Signature of Owner or Lessee, or Owner's or Lessee's Authorized Officer/Director/Partner/Manager _____ Signatory's Title/Office _____

The foregoing instrument was acknowledged before me this 28th day of 3/16 by Charles Downs
 as owner for Charles Downs
Type of authority, e.g., officer, trustee, attorney in fact month/year name of person
Name of party on behalf of whom instrument was executed

Russell Lee
 Signature of Notary Public - State of Florida _____ Print, type, or stamp commissioned name of Notary Public _____

Personally Known _____ OR Produced ID
 Type of ID Produced DL

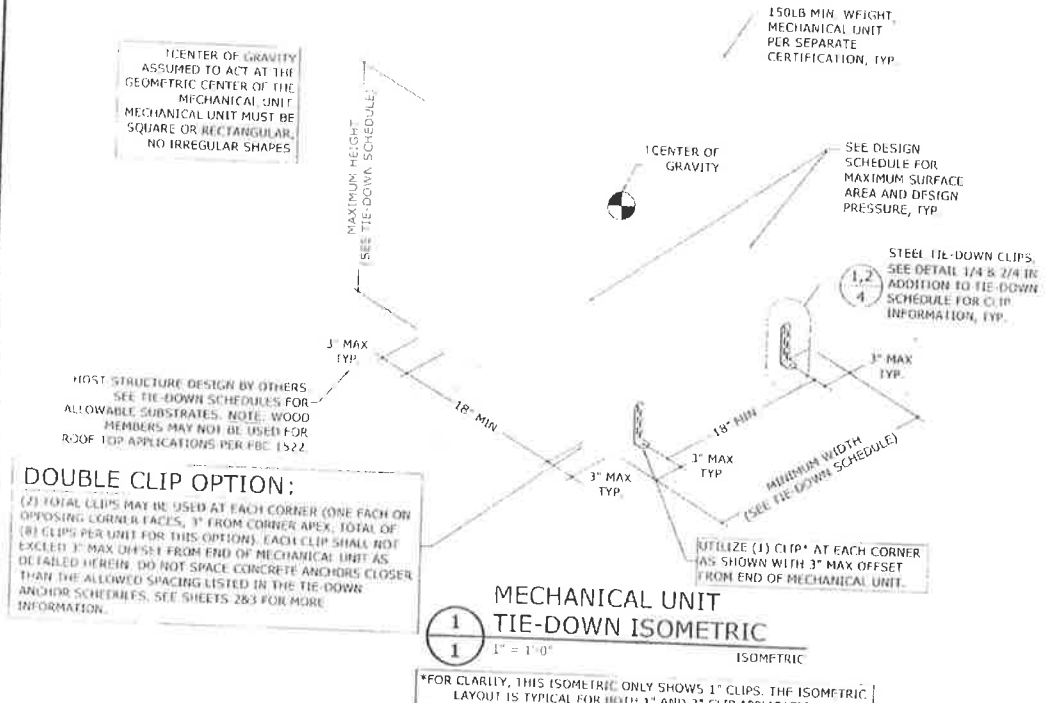


State of Florida, County of Orange
 I hereby certify that this is a true copy of the document as reflected in the Official Records.
 MARTHA O. HAYNIE, COUNTY COMPTROLLER
 Deputy Comptroller
 04-01-16



BMP INTERNATIONAL, INC.

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



DOUBLE CLIP OPTION:
 (2) TOTAL CLIPS MAY BE USED AT EACH CORNER (ONE EACH ON OPPOSING CORNER FACES, 3" FROM CORNER APEX, 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
 1" = 1'-0"
 ISOMETRIC

*FOR CLARITY, THIS ISOMETRIC ONLY SHOWS 1" CLIPS. THE ISOMETRIC LAYOUT IS TYPICAL FOR BOTH 1" AND 2" CLIP APPLICATIONS.

TIE-DOWN CLIP DIRECTIVE EXAMPLE

(THE FOLLOWING EXAMPLE ILLUSTRATES THE 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: 16" TALL x 36" DEEP x 24" WIDE, 150 LB WEIGHT AS VERIFIED BY OTHERS, INSTALLED TO 3192 PSI MIN. CONCRETE AT GRADE AS VERIFIED BY OTHERS.	
PROCEDURE	
PROCEDURE STEP	RESULT
1. LOCATE THE AT GRADE TIE-DOWN SCHEDULE ON SHEET 2 AND SELECT CLIP TYPE	CONSIDER 1" STEEL CLIP
2. DETERMINE LARGEST FACE AREA OF MECHANICAL UNIT TO BE INSTALLED	36" x 36" = 9FT ²
3. CHECK MAXIMUM UNIT HEIGHT RESTRICTION	UNIT HEIGHT IS 36" WHICH IS LESS THAN THE MAXIMUM ALLOWABLE HEIGHT OF 48"
4. CHECK MINIMUM UNIT WIDTH RESTRICTION	UNIT WIDTH IS 24" WHICH IS EQUIVALENT TO THE MINIMUM ALLOWABLE WIDTH OF 24"
5. DETERMINE THE NUMBER OF CLIPS TO BE USED AT EACH CORNER OF THE MECHANICAL UNIT	CONSIDER (1) CLIP AT EACH CORNER, INSTALLED TO CONCRETE SUBSTRATE
CONCLUSION: MAXIMUM ALLOWABLE LATERAL DESIGN PRESSURE = 40PSF	
(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)	

GENERAL NOTES:

- THIS PRODUCT HAS BEEN DESIGNED AND SHALL BE FABRICATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE 2010 FLORIDA BUILDING CODE FOR USE WITH ASCE 7-10. THIS PRODUCT MAY BE USED WITHIN AND OUTSIDE THE HIGH VELOCITY HURRICANE ZONE.
- NO 33-12% INCREASE IN ALLOWABLE STRESS HAS BEEN USED IN THE DESIGN OF THIS SYSTEM.
- DESIGN IS BASED ON CLIENT PROVIDED PRODUCT AND DET SHEETS FROM TEST REPORTS #TEL 01970302A, #TEL 01970302B 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 TEST PERFORMED.
- REQUIRED LATERAL AND/OR UPLIFT DESIGN PRESSURES CALCULATED FOR USE WITH THIS SYSTEM SHALL BE DETERMINED BY OTHERS ON A SITE-SPECIFIC BASIS IN ACCORDANCE WITH THE GOVERNING CODE.
- 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 12" OR GREATER SAE GRADE 5 UNLESS NOTED OTHERWISE. FASTENERS REFERRED TO HEREIN SHALL BE ITW BOLTLOK BRAND, CARBON STEEL ONLY, 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 IN ACCORDANCE WITH THE 2010 FBC SECTIONS 2201.2 AND 2202. CONCRETE COATING REQUIRED FOR ALL CONCRETE 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_c = 0.55 OR GREATER. DIRECT CONTACT TO WOOD MEMBERS/FASTENERS IS NOT PERMITTED FOR ROOF-TOP APPLICATIONS PER FBC SECTION 1522.
- THE CONTRACTOR IS RESPONSIBLE TO INSULATE ALL MEMBERS FROM DISSIMILAR MATERIALS TO PREVENT ELECTROLYSIS, I.E. ALUMINUM PER F.B.C. 2003 B-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 ENGINEER 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.

DESIGN PRESSURE EXAMPLE

SEE SHEET 4 FOR A SITE-SPECIFIC DESIGN PRESSURE EXAMPLE & ALLOWABLE CONFIGURATIONS WITH TIE-DOWN CLIP REQUIREMENTS.



ENGINEERING EXPRESS
 160 SW 12TH AVENUE, SUITE 100
 DEERFIELD BEACH, FL 33442
 PH: (561) 394-0560 FAX: (561) 394-0561
 WWW.ENGEEXP.COM
 CERT. OF AUTH. NO. 0000000000
 A. FRANK L. BENNETT, P.E., INC. INNOVATION

BMP INTERNATIONAL, INC.
 4710 28TH STREET NORTH
 ST. PETERSBURG, FL 33477
 PH: (727) 577-1613
 MECHANICAL UNIT STEEL TIE-DOWN CLIPS
 FLORIDA STATEWIDE APPROVAL

NO.	DESCRIPTION	DATE
1	ISSUED FOR PERMIT	02/21/2013
2	REVISED	02/15/13
3	REVISED	02/15/13
4	REVISED	02/15/13
5	REVISED	02/15/13

11-BMP-0001
 SCALE: 1/4" = 1'-0"
 PAGE DESCRIPTION

1" STEEL CLIP TIE-DOWN SCHEDULE - AT GRADE INSTALLATIONS:

MAXIMUM SURFACE AREA OF UNITS LARGEST FACE	UNIT HEIGHT	UNIT WIDTH	1" CLIP AT EACH CORNER (TOTAL OF 4 CLIPS PER UNIT)				MAXIMUM ALLOWABLE LATERAL WIND PRESSURE (ANCHOR TO HOST STRUCTURE)				1" CLIPS AT EACH SIDE (TOTAL OF 8 CLIPS PER UNIT)			
			TAPCON TO CONCRETE	SHEET METAL SCREW TO ALUMINUM	SHEET METAL SCREW TO STEEL	WOOD SCREW TO WOOD	TAPCON TO CONCRETE	SHEET METAL SCREW TO ALUMINUM	SHEET METAL SCREW TO STEEL	WOOD SCREW TO WOOD	TAPCON TO CONCRETE	SHEET METAL SCREW TO ALUMINUM	SHEET METAL SCREW TO STEEL	WOOD SCREW TO WOOD
3' x 3'	24" MAX	32" MIN	43 PSF	43 PSF	43 PSF	43 PSF	81 PSF	81 PSF	81 PSF	81 PSF	123 PSF	123 PSF	123 PSF	123 PSF
4' x 3'	32" MAX	35" MIN	51 PSF	51 PSF	51 PSF	51 PSF	99 PSF	99 PSF	99 PSF	99 PSF	149 PSF	149 PSF	149 PSF	149 PSF
4' x 4'	32" MAX	35" MIN	51 PSF	51 PSF	51 PSF	51 PSF	99 PSF	99 PSF	99 PSF	99 PSF	149 PSF	149 PSF	149 PSF	149 PSF
6' x 4'	40" MAX	38" MIN	60 PSF	60 PSF	60 PSF	60 PSF	117 PSF	117 PSF	117 PSF	117 PSF	177 PSF	177 PSF	177 PSF	177 PSF
12' x 4'	80" MAX	76" MIN	107 PSF	107 PSF	107 PSF	107 PSF	213 PSF	213 PSF	213 PSF	213 PSF	323 PSF	323 PSF	323 PSF	323 PSF
20' x 4'	136" MAX	132" MIN	187 PSF	187 PSF	187 PSF	187 PSF	373 PSF	373 PSF	373 PSF	373 PSF	563 PSF	563 PSF	563 PSF	563 PSF
25' x 4'	236" MAX	232" MIN	237 PSF	237 PSF	237 PSF	237 PSF	463 PSF	463 PSF	463 PSF	463 PSF	713 PSF	713 PSF	713 PSF	713 PSF
32' x 4'	336" MAX	332" MIN	287 PSF	287 PSF	287 PSF	287 PSF	553 PSF	553 PSF	553 PSF	553 PSF	843 PSF	843 PSF	843 PSF	843 PSF
35' x 4'	356" MAX	352" MIN	307 PSF	307 PSF	307 PSF	307 PSF	593 PSF	593 PSF	593 PSF	593 PSF	903 PSF	903 PSF	903 PSF	903 PSF
35' x 4'	356" MAX	352" MIN	307 PSF	307 PSF	307 PSF	307 PSF	593 PSF	593 PSF	593 PSF	593 PSF	903 PSF	903 PSF	903 PSF	903 PSF

- 1. TIE-DOWN CLIPS SHALL BE FASTENED TO MECHANICAL HOUSING UNIT WITH (3)-#12 SAC GRADE 5 SHEET METAL SCREWS OR (2)-#10 SAE GRADE 5 SHEET METAL SCREWS. [NOTE: FOR LONGER CLIPS UTILIZE (5)-#12]
- 2. MECHANICAL HOUSING UNIT SHALL CONFORM TO THE FOLLOWING:
 - 2.1. ALUMINUM HOUSING UNITS SHALL BE 6063-T6 MIN. ALUMINUM SHEET WITH F_y=30 KSI, 0.125" MIN. THICKNESS.
 - 2.2. STEEL HOUSING UNITS SHALL BE 33KSI MIN. STEEL, GRADE 33, 22GA MIN. (C=0.0299")
- 3. MAXIMUM ALLOWABLE WIND PRESSURES FOR EACH INDIVIDUAL SUBSTRATE MAY BE EQUIVALENT DUE TO THE LIMITING CAPACITY OF THE 1" CLIP.
- 4. A MAXIMUM ALLOWABLE VALUE OF 200 PSF HAS BEEN UTILIZED, FOR HIGHER DEMAND CAPACITIES CONTACT THIS ENGINEER FOR SITE-SPECIFIC ENGINEERING.

ANCHOR SCHEDULE:

SUBSTRATE	ANCHOR
CONCRETE: (4" THICK MIN., 3192KSI MIN.)	(1)-3/8" CARBON STEEL 1/2" W/ BULB X TAPCON, 1 3/4" FULL ENDED TO CONCRETE, 2 1/2" MIN. EDGE DISTANCE, 3" 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) PINCHES MIN. PAST THREAD PLANE FOR SHEET METAL SCREW.
STEEL: (0.125" MIN. THICK, 33 KSI MIN. STEEL)	(1)-#14 SAE GRADE 5 SHEET METAL SCREW TO STEEL, PROVIDE (5) PINCHES MIN. PAST THREAD PLANE FOR SHEET METAL SCREW.
SEALED WOOD: (SOUTHERN YELLOW PINE, G=0.55 OR BETTER)	(1)-#14 SAE GRADE 5 WOOD SCREW TO WOOD MEMBER, PROVIDE 1 3/4" MIN. THREAD PENETRATION, 1" MIN. EDGE DISTANCE, 1" MIN. END DISTANCE.

ANCHOR SCHEDULE NOTES:
 1. EMBEDMENT AND EDGE DISTANCE EXCLUDES FINISHES, IF APPLICABLE.
 2. ENSURE MINIMUM EDGE DISTANCE AS NOTED IN ANCHOR SCHEDULE.

TABLE LEGEND:
 - DENOTES EXAMPLE VALUE FOR USE WITH COVER PAGE DIRECTIVE
 - DENOTES VALUES NOT APPROVED FOR USE
 †† SEE ALTERNATE CLIP DETAIL 5/4 ON SHEET 4

2" STEEL CLIP TIE-DOWN SCHEDULE - AT GRADE INSTALLATIONS:

MAXIMUM SURFACE AREA OF UNITS LARGEST FACE	UNIT HEIGHT	UNIT WIDTH	2" CLIP AT EACH CORNER (TOTAL OF 4 CLIPS PER UNIT)				MAXIMUM ALLOWABLE LATERAL WIND PRESSURE (ANCHOR TO HOST STRUCTURE)				2" CLIPS AT EACH SIDE (TOTAL OF 8 CLIPS PER UNIT)			
			TAPCON TO CONCRETE	SHEET METAL SCREW TO ALUMINUM	SHEET METAL SCREW TO STEEL	WOOD SCREW TO WOOD	TAPCON TO CONCRETE	SHEET METAL SCREW TO ALUMINUM	SHEET METAL SCREW TO STEEL	WOOD SCREW TO WOOD	TAPCON TO CONCRETE	SHEET METAL SCREW TO ALUMINUM	SHEET METAL SCREW TO STEEL	WOOD SCREW TO WOOD
3' x 3'	24" MAX	32" MIN	81 PSF	81 PSF	81 PSF	81 PSF	161 PSF	161 PSF	161 PSF	161 PSF	241 PSF	241 PSF	241 PSF	241 PSF
4' x 3'	32" MAX	35" MIN	99 PSF	99 PSF	99 PSF	99 PSF	199 PSF	199 PSF	199 PSF	199 PSF	299 PSF	299 PSF	299 PSF	299 PSF
4' x 4'	32" MAX	35" MIN	99 PSF	99 PSF	99 PSF	99 PSF	199 PSF	199 PSF	199 PSF	199 PSF	299 PSF	299 PSF	299 PSF	299 PSF
6' x 4'	40" MAX	38" MIN	117 PSF	117 PSF	117 PSF	117 PSF	237 PSF	237 PSF	237 PSF	237 PSF	357 PSF	357 PSF	357 PSF	357 PSF
12' x 4'	80" MAX	76" MIN	213 PSF	213 PSF	213 PSF	213 PSF	423 PSF	423 PSF	423 PSF	423 PSF	643 PSF	643 PSF	643 PSF	643 PSF
20' x 4'	136" MAX	132" MIN	373 PSF	373 PSF	373 PSF	373 PSF	743 PSF	743 PSF	743 PSF	743 PSF	1113 PSF	1113 PSF	1113 PSF	1113 PSF
25' x 4'	236" MAX	232" MIN	463 PSF	463 PSF	463 PSF	463 PSF	923 PSF	923 PSF	923 PSF	923 PSF	1393 PSF	1393 PSF	1393 PSF	1393 PSF
30' x 4'	336" MAX	332" MIN	553 PSF	553 PSF	553 PSF	553 PSF	1103 PSF	1103 PSF	1103 PSF	1103 PSF	1673 PSF	1673 PSF	1673 PSF	1673 PSF
35' x 4'	356" MAX	352" MIN	593 PSF	593 PSF	593 PSF	593 PSF	1183 PSF	1183 PSF	1183 PSF	1183 PSF	1803 PSF	1803 PSF	1803 PSF	1803 PSF
35' x 4'	356" MAX	352" MIN	593 PSF	593 PSF	593 PSF	593 PSF	1183 PSF	1183 PSF	1183 PSF	1183 PSF	1803 PSF	1803 PSF	1803 PSF	1803 PSF

- 1. TIE-DOWN CLIPS SHALL BE FASTENED TO MECHANICAL HOUSING UNIT WITH (1)-#12 SAE GRADE 5 SHEET METAL SCREWS OR (2)-#10 SAE GRADE 5 SHEET METAL SCREWS. [NOTE: FOR LONGER CLIPS UTILIZE (5)-#12 SAE GRADE 5 SHEET METAL SCREWS]
- 2. MECHANICAL HOUSING UNIT SHALL CONFORM TO THE FOLLOWING:
 - 2.1. ALUMINUM HOUSING UNITS SHALL BE 6063-T6 MIN. ALUMINUM SHEET WITH F_y=30 KSI, 0.125" MIN. THICKNESS.
 - 2.2. STEEL HOUSING UNITS SHALL BE 33KSI MIN. STEEL, GRADE 33, 22GA MIN. (C=0.0299")
- 3. A MAXIMUM ALLOWABLE VALUE OF 200 PSF HAS BEEN UTILIZED, FOR HIGHER DEMAND CAPACITIES CONTACT THIS ENGINEER FOR SITE-SPECIFIC ENGINEERING.

ANCHOR SCHEDULE:

SUBSTRATE	ANCHOR
CONCRETE: (4" THICK MIN., 3192KSI MIN.)	(1)-3/8" CARBON STEEL 1/2" W/ BULB X TAPCON, 1 3/4" FULL ENDED TO CONCRETE, 2 1/2" MIN. EDGE DISTANCE, 3" MIN. SPACING TO ANY ADJACENT ANCHOR.
ALUMINUM: (0.125" MIN. THICK, 6061-T6 MIN. ALUMINUM)	(2)-#14 SAE GRADE 5 SHEET METAL SCREW TO ALUMINUM, PROVIDE (5) PINCHES MIN. PAST THREAD PLANE FOR SHEET METAL SCREW.
STEEL: (0.125" MIN. THICK, 33 KSI MIN. STEEL)	(2)-#14 SAE GRADE 5 SHEET METAL SCREW TO STEEL, PROVIDE (5) PINCHES MIN. PAST THREAD PLANE FOR SHEET METAL SCREW.
SEALED WOOD, 1" MIN. THICKNESS: (SOUTHERN YELLOW PINE, G=0.55 OR BETTER)	(2)-#14 SAE GRADE 5 WOOD SCREW TO WOOD MEMBER, PROVIDE 1 3/4" MIN. THREAD PENETRATION, 1" MIN. EDGE DISTANCE, 1" MIN. END DISTANCE.

ANCHOR SCHEDULE NOTES:
 1. EMBEDMENT AND EDGE DISTANCE EXCLUDES FINISHES, IF APPLICABLE.
 2. ENSURE MINIMUM EDGE DISTANCE AS NOTED IN ANCHOR SCHEDULE.

TABLE LEGEND:
 - DENOTES VALUES NOT APPROVED FOR USE
 †† SEE ALTERNATE CLIP DETAIL 5/4 ON SHEET 4

FRANK L. BROWN, P.E. REGISTERED PROFESSIONAL ENGINEER IN FLORIDA LICENSE NO. 11524
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 MECHANICAL UNIT STEEL TIE-DOWN CLIPS
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1" STEEL CLIP TIE-DOWN SCHEDULE: ROOF-TOP MOUNTED INSTALLATIONS:

MAXIMUM SURFACE AREA OF UNITS (LARGEST PANEL)	UNIT HEIGHT	UNIT WIDTH	MAXIMUM ALLOWABLE LATERAL WIND PRESSURE (ANCHOR TO HOST STRUCTURE)								
			(1) CLIP AT EACH CORNER (TOTAL OF 4 CLIPS PER UNIT)			(2) CLIPS AT EACH CORNER (TOTAL OF 8 CLIPS PER UNIT)			(3) CLIPS AT EACH SIDE (TOTAL OF 8 CLIPS PER UNIT)		
			TAPCON TO CONCRETE	SHEET METAL SCREW TO ALUMINUM	SHEET METAL SCREW TO STEEL	TAPCON TO CONCRETE	SHEET METAL SCREW TO ALUMINUM	SHEET METAL SCREW TO STEEL	TAPCON TO CONCRETE	SHEET METAL SCREW TO ALUMINUM	SHEET METAL SCREW TO STEEL
5'x7'	24" MAX	12" MIN	30 PSF	33 PSF	33 PSF	54 PSF	54 PSF	54 PSF	81 PSF	81 PSF	81 PSF
8'x7'	24" MAX	15" MIN	30 PSF	33 PSF	33 PSF	54 PSF	54 PSF	54 PSF	81 PSF	81 PSF	81 PSF
8'x7'	48" MAX	24" MAX	30 PSF	33 PSF	33 PSF	54 PSF	54 PSF	54 PSF	81 PSF	81 PSF	81 PSF
12'x12'	48" MAX	24" MAX	30 PSF	33 PSF	33 PSF	54 PSF	54 PSF	54 PSF	81 PSF	81 PSF	81 PSF
16'x12'	60" MAX	48" MAX	30 PSF	33 PSF	33 PSF	54 PSF	54 PSF	54 PSF	81 PSF	81 PSF	81 PSF
20'x12'	60" MAX	48" MAX	30 PSF	33 PSF	33 PSF	54 PSF	54 PSF	54 PSF	81 PSF	81 PSF	81 PSF
24'x12'	60" MAX	48" MAX	30 PSF	33 PSF	33 PSF	54 PSF	54 PSF	54 PSF	81 PSF	81 PSF	81 PSF
30'x12'	60" MAX	48" MAX	30 PSF	33 PSF	33 PSF	54 PSF	54 PSF	54 PSF	81 PSF	81 PSF	81 PSF
36'x12'	60" MAX	48" MAX	30 PSF	33 PSF	33 PSF	54 PSF	54 PSF	54 PSF	81 PSF	81 PSF	81 PSF

NOTE: ROOF TOP INSTALLATIONS SHALL CONFORM TO FOLLOWING BUILDING CODE SECTION 608.1 (AND 612 FOR WIND) WHICH REQUIRES THAT ROOF MOUNTED MECHANICAL UNITS BE MOUNTED ON CURBS RAISED A MINIMUM OF 8 INCHES ABOVE THE ROOF SURFACE. ON WIND EXPOSURE MATERIALS EXTEND BEHIND THE UNIT, OR RAISED EQUIPMENT SUPPORTS PROVIDING A MINIMUM CLEARANCE HEIGHT IN ACCORDANCE WITH SECTION 610.1 AND ANCHOR 25.2 OF THE BUILDING CODE TO PREVENT REMOVAL. REPAIRABLE AND/OR MAINTENANCE OF THE ROOFING SYSTEM, ANY CURB OR SUPPORT UTILIZED WITH THIS DESIGN SHALL HAVE SEPARATE DOCUMENTATION SHOWING INTEGRITY AND BE OUTSIDE THE SCOPE OF THIS CERTIFICATION.

- TIE-DOWN CLIPS SHALL BE FASTENED TO MECHANICAL HOUSING UNIT WITH (3) #12 SAE GRADE 5 SHEET METAL SCREWS OR (2) 3/8" SAE GRADE 5 SHEET METAL SCREWS. (NOTE FOR LONGER CLIPS UTILIZE (5) #12 SMS OR (4) 3/8" SMS).
- MECHANICAL HOUSING UNIT SHALL CONFORM TO THE FOLLOWING:
 - ALUMINUM HOUSING UNITS SHALL BE 6063-T6 MIN. ALUMINUM SHEET WITH MIN. 30 KSI, 0.125" MIN. THICKNESS.
 - STEEL HOUSING UNITS SHALL BE 11KSI MIN. STEEL, GRADE 33, 27GA MIN. (E=0.009").
- A MAXIMUM ALLOWABLE VALUE OF 200 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 90LBS/CLIP AS ADDITIONAL UPLIFT IN COMBINATION WITH UPLIFT CAUSED BY OVERTURNING FROM LATERAL FORCES. SEE ASCE 7-10 SECTION 29.5 FOR MORE INFORMATION.)

ALLOWABLE UPLIFT PER UNIT IS BASED ON THE NUMBER OF CLIPS UTILIZED x 90LBS/CLIP

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

REQUIRED UPLIFT DEMAND SHALL BE DETERMINED ON A SITE SPECIFIC BASIS BY LICENSED ENGINEER OR REGISTERED ARCHITECT, NOT INCLUDED IN THIS CERTIFICATION.

TABLE LEGEND:
 DENOTES VALUES NOT APPROVED FOR USE
 SEE ALTERNATE CLIP DETAIL 5/4 ON SHEET 4

ANCHOR SCHEDULE:

SUBSTRATE	ANCHOR
CONCRETE: (4" THICK MIN., 3192KSI MIN.)	(1) 3/8" CARBON STEEL ITW BUILDEX TAPCON, 1 1/2" FULL EMBED TO CONCRETE, 2 1/2" MIN. EDGE DISTANCE, 3" 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) FINCHES MIN. PAST THREAD PLANE FOR SHEET METAL SCREW.
STEEL: (0.125" MIN. THICK, 33 KSI MIN. STEEL)	(1) #14 SAE GRADE 5 SHEET METAL SCREW TO STEEL, PROVIDE (5) FINCHES MIN. PAST THREAD PLANE FOR SHEET METAL SCREW.

1. EMBEDMENT AND EDGE DISTANCE EXCLUDES FINISHES, IF APPLICABLE.
 2. FINCHES: MINIMUM EDGE DISTANCE AS NOTED IN ANCHOR SCHEDULE.

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

MAXIMUM SURFACE AREA OF UNITS (LARGEST PANEL)	UNIT HEIGHT	UNIT WIDTH	MAXIMUM ALLOWABLE LATERAL WIND PRESSURE (ANCHOR TO HOST STRUCTURE)								
			(1) CLIP AT EACH CORNER (TOTAL OF 4 CLIPS PER UNIT)			(2) CLIPS AT EACH CORNER (TOTAL OF 8 CLIPS PER UNIT)			(3) CLIPS AT EACH SIDE (TOTAL OF 8 CLIPS PER UNIT)		
			TAPCON TO CONCRETE	SHEET METAL SCREW TO ALUMINUM	SHEET METAL SCREW TO STEEL	TAPCON TO CONCRETE	SHEET METAL SCREW TO ALUMINUM	SHEET METAL SCREW TO STEEL	TAPCON TO CONCRETE	SHEET METAL SCREW TO ALUMINUM	SHEET METAL SCREW TO STEEL
5'x7'	12" MAX	12" MIN	30 PSF	41 PSF	41 PSF	54 PSF	112 PSF	112 PSF	81 PSF	122 PSF	122 PSF
8'x7'	24" MAX	15" MIN	30 PSF	41 PSF	41 PSF	54 PSF	112 PSF	112 PSF	81 PSF	122 PSF	122 PSF
8'x7'	48" MAX	24" MAX	30 PSF	41 PSF	41 PSF	54 PSF	112 PSF	112 PSF	81 PSF	122 PSF	122 PSF
12'x12'	48" MAX	24" MAX	30 PSF	41 PSF	41 PSF	54 PSF	112 PSF	112 PSF	81 PSF	122 PSF	122 PSF
16'x12'	60" MAX	48" MAX	30 PSF	41 PSF	41 PSF	54 PSF	112 PSF	112 PSF	81 PSF	122 PSF	122 PSF
20'x12'	60" MAX	48" MAX	30 PSF	41 PSF	41 PSF	54 PSF	112 PSF	112 PSF	81 PSF	122 PSF	122 PSF
24'x12'	60" MAX	48" MAX	30 PSF	41 PSF	41 PSF	54 PSF	112 PSF	112 PSF	81 PSF	122 PSF	122 PSF
30'x12'	60" MAX	48" MAX	30 PSF	41 PSF	41 PSF	54 PSF	112 PSF	112 PSF	81 PSF	122 PSF	122 PSF
36'x12'	60" MAX	48" MAX	30 PSF	41 PSF	41 PSF	54 PSF	112 PSF	112 PSF	81 PSF	122 PSF	122 PSF

NOTE: ROOF TOP INSTALLATIONS SHALL CONFORM TO FOLLOWING BUILDING CODE SECTION 608.1 (AND 612 FOR WIND) WHICH REQUIRES THAT ROOF MOUNTED MECHANICAL UNITS BE MOUNTED ON CURBS RAISED A MINIMUM OF 8 INCHES ABOVE THE ROOF SURFACE. ON WIND EXPOSURE MATERIALS EXTEND BEHIND THE UNIT, OR RAISED EQUIPMENT SUPPORTS PROVIDING A MINIMUM CLEARANCE HEIGHT IN ACCORDANCE WITH SECTION 610.1 AND ANCHOR 25.2 OF THE BUILDING CODE TO PREVENT REMOVAL. REPAIRABLE AND/OR MAINTENANCE OF THE ROOFING SYSTEM, ANY CURB OR SUPPORT UTILIZED WITH THIS DESIGN SHALL HAVE SEPARATE DOCUMENTATION SHOWING INTEGRITY AND BE OUTSIDE THE SCOPE OF THIS CERTIFICATION.

- TIE-DOWN CLIPS SHALL BE FASTENED TO MECHANICAL HOUSING UNIT WITH (3) #12 SAE GRADE 5 SHEET METAL SCREWS OR (2) 3/8" SAE GRADE 5 SHEET METAL SCREWS. (NOTE FOR LONGER CLIPS UTILIZE (5) #12 SMS OR (4) 3/8" SMS).
- MECHANICAL HOUSING UNIT SHALL CONFORM TO THE FOLLOWING:
 - ALUMINUM HOUSING UNITS SHALL BE 6061-T6 MIN. ALUMINUM SHEET WITH MIN. 30 KSI, 0.125" MIN. THICKNESS.
 - STEEL HOUSING UNITS SHALL BE 11KSI MIN. STEEL, GRADE 33, 27GA MIN. (E=0.009").
- A MAXIMUM ALLOWABLE VALUE OF 200 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 90LBS/CLIP AS ADDITIONAL UPLIFT IN COMBINATION WITH UPLIFT CAUSED BY OVERTURNING FROM LATERAL FORCES. SEE ASCE 7-10 SECTION 29.5 FOR MORE INFORMATION.)

ALLOWABLE UPLIFT PER UNIT IS BASED ON THE NUMBER OF CLIPS UTILIZED x 90LBS/CLIP

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

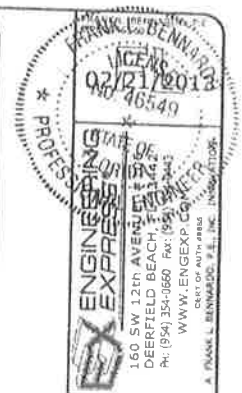
REQUIRED UPLIFT DEMAND SHALL BE DETERMINED ON A SITE SPECIFIC BASIS BY LICENSED ENGINEER OR REGISTERED ARCHITECT, NOT INCLUDED IN THIS CERTIFICATION.

TABLE LEGEND:
 DENOTES VALUES NOT APPROVED FOR USE
 SEE ALTERNATE CLIP DETAIL 5/4 ON SHEET 4

ANCHOR SCHEDULE:

SUBSTRATE	ANCHOR
CONCRETE: (4" THICK MIN., 3192KSI MIN.)	(1) 3/8" CARBON STEEL ITW BUILDEX TAPCON, 1 1/2" FULL EMBED TO CONCRETE, 2 1/2" MIN. EDGE DISTANCE, 3" MIN. SPACING TO ANY ADJACENT ANCHOR.
ALUMINUM: (0.125" MIN. THICK, 6061-T6 MIN. ALUMINUM)	(2) #14 SAE GRADE 5 SHEET METAL SCREW TO ALUMINUM, PROVIDE (5) FINCHES MIN. PAST THREAD PLANE FOR SHEET METAL SCREW.
STEEL: (0.125" MIN. THICK, 33 KSI MIN. STEEL)	(2) #14 SAE GRADE 5 SHEET METAL SCREW TO STEEL, PROVIDE (5) FINCHES MIN. PAST THREAD PLANE FOR SHEET METAL SCREW.

1. EMBEDMENT AND EDGE DISTANCE EXCLUDES FINISHES, IF APPLICABLE.
 2. FINCHES: MINIMUM EDGE DISTANCE AS NOTED IN ANCHOR SCHEDULE.



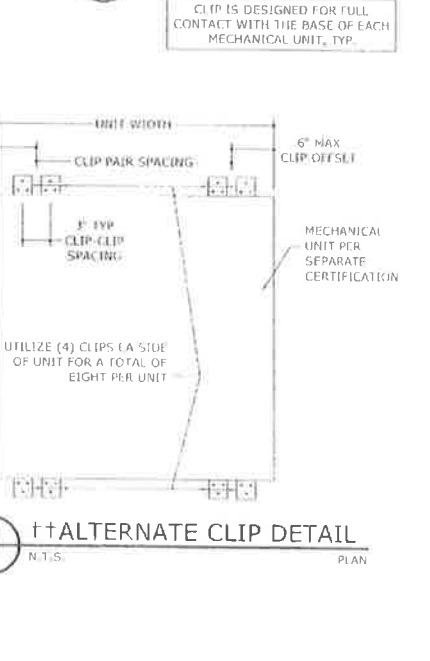
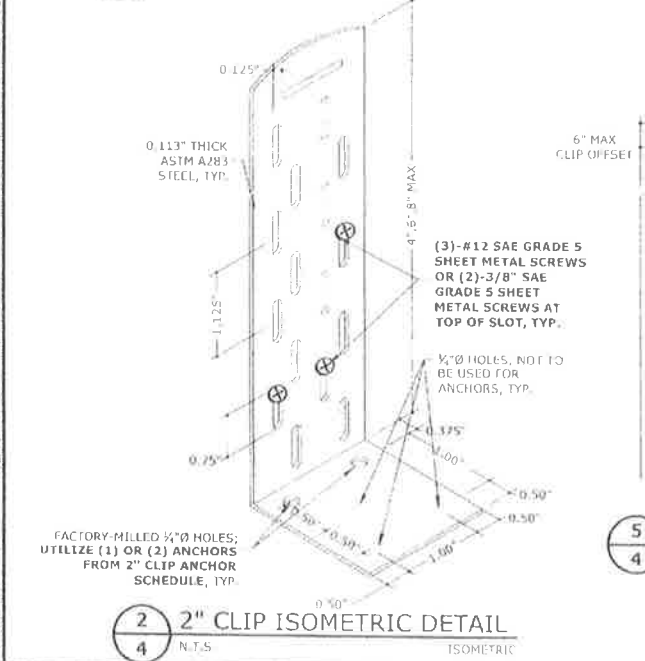
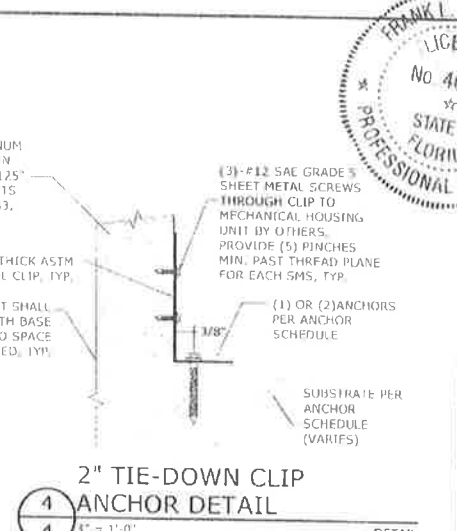
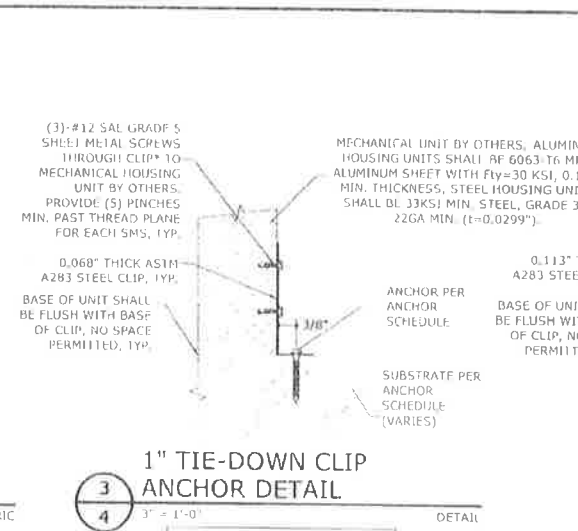
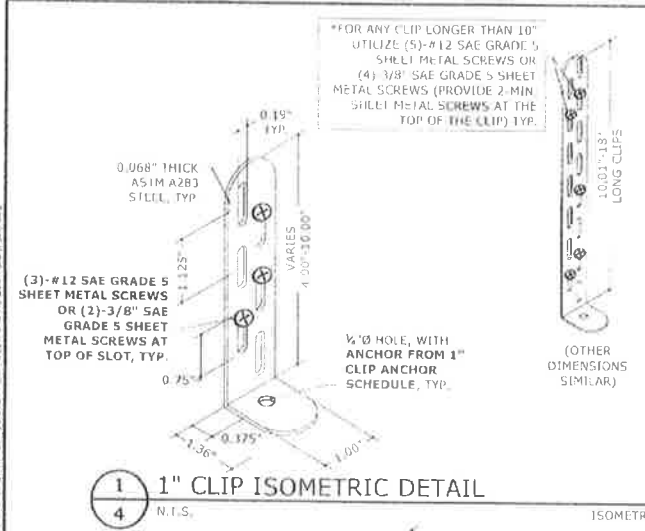
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BMP INTERNATIONAL, INC. 4710 26TH STREET NORTH ST. PETERSBURG, FL 33771 TEL: (727) 577-1613 FAX: (727) 577-1613 WWW.BMPINTL.COM



DESIGN PRESSURE EXAMPLE SCENARIO
THE FOLLOWING EXAMPLE ILLUSTRATES THE PROCEDURE USED TO DETERMINE THE SITE SPECIFIC DESIGN PRESSURE FOR 175 MPH EXPOSURE D. THE DESIGN PARAMETERS USED HEREIN SHALL BE VERIFIED BY A LICENSED ENGINEER, REGISTERED ARCHITECT OR BUILDING OFFICIAL FOR APPLICABILITY TO THE SITE SPECIFIC ADDRESS AT WHICH THE MOUNTING SYSTEM ILLUSTRATED HEREIN IS BEING INSTALLED. THIS CALCULATION ASSUMES NO WIND SPEED-UP EFFECTS, BUFFERING OR CHANNELING FROM OTHER STRUCTURES)

SITE SPECIFIC PARAMETERS:
BASIC WIND SPEED: 175 MPH
EXPOSURE CATEGORY: D
MEAN ROOF HEIGHT: 76 FT
MAX HEIGHT OF UNIT CENTROID (ABOVE ROOF): 5.00 FT
TOTAL HEIGHT OF UNIT CENTROID: 70 FT + 5.00 FT = 75.00 FT

DESIGN VARIABLES:
 $F_{\text{net}} = 0.90, q = 70.28 \text{ PSI}, G \text{ (LATERAL)} = 3.10, G \text{ (UP/LIFT)} = 1.50$
CASE 1: WIND LOAD = $0.6 \times (q_z \times G \times C_{pe}) = 0.6 \times (96.17 \text{ PSF} \times 3.10 \times -0.78 \text{ PSF}) = -14.56 \text{ PSF}$
CASE 2: WIND LOAD = $0.6 \times (q_z \times G \times C_{pe}) = 0.6 \times (96.17 \text{ PSF} \times 3.10 \times 0.56 \text{ PSF}) = 9.86 \text{ PSF}$

10'x30'x80' UNIT INSTALLATIONS MUST MEET/TUTILIZE THE FOLLOWING CRITERIA:
• HEIGHT FROM GRADE TO CENTROID OF UNIT SHALL BE ≤ 75.00 FEET.
• UTILIZE (2) 2\" TIE-DOWN CLIPS PER CORNER. SEE ALTERNATE SPACING DETAIL 5/4\" FOR CLIP CONFIGURATION.
• UTILIZE (3) #12 SMS TO HOUSING UNIT PER EACH CLIP.
• UTILIZE (2) #14 SMS INTO 1/8\" 6063-T6 ALUMINUM RAIL/SUBSTRATE PER THIS APPROVAL.
• UTILIZE (2) #14 SMS INTO 1/8\" 33KSI STEEL RAIL/SUBSTRATE PER THIS APPROVAL.

48\"x48\"x80' UNIT INSTALLATIONS MUST MEET/TUTILIZE THE FOLLOWING CRITERIA:
• HEIGHT FROM GRADE TO CENTROID OF UNIT SHALL BE ≤ 25.00 FEET.
• UTILIZE (2) 2\" TIE-DOWN CLIPS PER CORNER. SEE ALTERNATE SPACING DETAIL 5/4\" FOR CLIP CONFIGURATION.
• UTILIZE (5) #12 SMS TO HOUSING UNIT PER EACH CLIP.
• UTILIZE (2) #14 SMS INTO 1/8\" 6063-T6 ALUMINUM RAIL/SUBSTRATE PER THIS APPROVAL.
• UTILIZE (2) #14 SMS INTO 1/8\" 33KSI STEEL RAIL/SUBSTRATE PER THIS APPROVAL.

**SEE 2\" STEEL CLIP TIE-DOWN SCHEDULE: ROOFTOP MOUNTED INSTALLATION NOTES & ACCOMPANYING ANCHOR SCHEDULE FOR ADDITIONAL ANCHOR/SUBSTRATE INFORMATION. INSTALLATION TO CONCRETE MAY NOT BE UTILIZED FOR THE DESIGN CRITERIA NOTED IN THIS EXAMPLE.



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A. FRANK L. BENNARDO, P.E., INC.

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MECHANICAL UNIT STEEL TIE-DOWN CLIPS
FLORIDA STATEWIDE APPROVAL

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RICK SCOTT, GOVERNOR

KEN LAWSON, SECRETARY

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
CONSTRUCTION INDUSTRY LICENSING BOARD

LICENSE NUMBER	
CAC1813726	

The CLASS B AIR CONDITIONING CONTRACTOR
Named below IS CERTIFIED
Under the provisions of Chapter 489 FS.
Expiration date: AUG 31, 2016



GREEN, JOHN T JR
GREENS ENERGY SERVICES INC
186 N. GOLDENROD RD
ORLANDO FL 32807



ISSUED 08/17/2014

DISPLAY AS REQUIRED BY LAW

SEQ # L1408170002010