MIAMIBEACH

BUILDING DEPARTMENT
1700 Convention Center Drive, 2nd Floor
Miami Beach, Florida 33139
Phone: (305) 673-7610
Fax: (305) 673-7857

NEW CONSTRUCTION & ALTERATIONS AND REPAIRS

ARCHITECTURAL/ENGINEERING AFFIDAVIT FOR JOB VALUE AND TOTAL GROSS SQUARE FOOTAGE

Date: _____

Permit Number: _____

Project Description: _____

Owner: _____

Architect and/or Engineering Firm: _____

Name of Architect or Engineer of Record: _____

Address of Architect / Engineering Firm: _____

Contact Number: _____

Part One: Architect / Engineer Affidavit: To be Submitted Prior to Permit Issuance.

I _____ as the **Architect / Engineer of Record** for the project covered under the permit listed above, certify the following:

Total Gross Floor Area of New Construction: _____

Total Gross Floor Area of Alteration / Repair:

- ☐ **Single Family Homes, Duplexes, and Areas within Residential Condo unit.** _____
- ☐ **Multi-Family, Commercial, and Industrial** _____

Total Estimated Construction Cost * for New Construction: _____

Total Estimated Construction Cost* for Alteration / Repair: _____

Definitions:
Total Gross Floor Area: The floor area within the inside perimeter of the exterior walls of the building under consideration, exclusive of vent shafts and courts, without deduction for corridors, stairways, closets, the thickness of interior walls, columns or other features. The floor area of a building or portion thereof not provided with surrounding exterior walls shall be the usable area under the horizontal projection of the roof or floor above. The gross floor area shall not include shafts with no openings or interior courts.

_____
Signature of Architect/Engineer

STATE OF FLORIDA **COUNTY OF DADE**

Sworn to and subscribed _____ day of _____

20__, by: _____

[ ] Personally known to me: [ ] or Procured Identification

Type of Identification: _____

[ ] DID TAKE OATH [ ] DID NOT TAKE OATH

_____
Signature of Notary Public

***Note:** It is the intention of the City of Miami Beach to use the Architect's Estimate of Construction Cost as a "Good Faith" estimate for the purpose of calculating the initial permit fee. The City agrees to hold the Architect and/or Owner harmless from any liability, professional or otherwise due to any difference in the Architect's estimate of construction cost and the construction cost as submitted by the Owner and/or Contractor at the time of Completion. The Owner will be* responsible to pay the City of Miami Beach any difference between the permit fee based on the construction cost and/or square footage submitted with the original permit application and the permit fee based on the final construction cost including general conditions and/or square footage as certified by the Owner, Architect and Contractor on the most current "AIA Document G702" Application for Payment approved at the time the application for the Certificate of Occupancy (CO) or Certificate of Completion (CC) is submitted to the Building Department.

Part Two: Owner Affidavit: To be Submitted Prior to Permit Issuance.

I _____am the Owner of the property undergoing an improvement as described in the permit above. I understand that at the time the Contractor submits the application for a Certificate of Occupancy (CO) or Certificate of Completion (CC), I will be required to submit to the City of Miami Beach Building Department verification of construction cost. The City will accept the most current "AIA Document G702" Application for Payment approved at the time the application for the Certificate of Occupancy (CO) or Certificate of Completion (CC) is submitted to the Building Department as verification of construction cost.

I understand that as the Owner of said property and improvement, I am responsible to pay the City of Miami Beach any difference between the permit fee based on the construction cost and/ or square footage submitted with the original permit application and the permit fee based on the final construction cost including general conditions and/or final square footage as certified by the Owner, Architect and Contractor on the most current "AIA Document G702" Application for Payment approved at the time the application for the Certificate of Occupancy (CO) or Certificate of Completion (CC) is submitted to the Building Department.

_____

Signature of Owner

STATE OF FLORIDA **COUNTY OF DADE**

Sworn to and subscribed _____ day of_____

20__, by: _____

[ ] Personally known to me: [ ] or Procured Identification

Type of Identification: _____

[ ] DID TAKE OATH [ ] DID NOT TAKE OATH

_____

Signature of Notary Public

Part Three: Contractor Affidavit: To be Submitted at the Time of CO / CC:

I_____ am the Qualifier / General Contractor under contract with _____Owner of the property undergoing an improvement as described in permit above.

I certify that the total contract value, including all change orders and all permit revisions under PERMIT NUMBER _____is $_____.

I understand that at the time _____ (Qualifier / Contractor) submits the application for a Certificate of Occupancy (CO) or Certificate of Completion (CC), I will be required to submit to the City of Miami Beach Building Department verification of construction cost. The City will accept the most current "AIA Document G702" Application for Payment approved at the time the application for the Certificate of Occupancy (CO) or Certificate of Completion (CC) is submitted to the Building Department as verification of construction cost.

At that time, the Owner is responsible to pay the City of Miami Beach any difference between the permit fee based on the construction cost and/ or square footage submitted with the original permit application and the permit fee based on the final construction cost including general conditions and/or final square footage as certified by the Owner, Architect and Contractor on the most current "AIA Document G702" Application for Payment approved at the time the application for the Certificate of Occupancy (CO) or Certificate of Completion (CC) is submitted to the Building Department.

Notes:

The City of Miami Beach reserves the right to request G706 Contractor's Affidavit of Debts and Claims after the issuance of CO.

If a G702 has not been used for construction draws by the parties, then the City of Miami Beach will accept alternate evidence of the final construction cost (for example final statement, final invoice etc..) which evidence must be satisfactory to the Building Director and /or Assistant Director, in his/her sole discretion.

_____

Signature of Qualifier / Contractor

STATE OF FLORIDA **COUNTY OF DADE**

Sworn to and subscribed _____ day of_____

20__, by: _____

[ ] Personally known to me: [ ] or Procured Identification

Type of Identification: _____

[ ] DID TAKE OATH [ ] DID NOT TAKE OATH

_____

Signature of Notary Public

2008 FOR PROFIT CORPORATION ANNUAL REPORT

FILED
Jan 04, 2008
Secretary of State

DOCUMENT# P04000077798

Entity Name: VENTURA WAY, INC

Current Principal Place of Business:

7430 OCEAN TERR
MIAMI BEACH, FL 33141

New Principal Place of Business:

Current Mailing Address:

5631 BISCAYNE BLVD
MIAMI, FL 33137

New Mailing Address:

FEI Number: 20-1129506 **FEI Number Applied For ( )** **FEI Number Not Applicable ( )** **Certificate of Status Desired ( )**

Name and Address of Current Registered Agent:

VALDES, ORLANDO J
9551 SW 56 CT
MIAMI, FL 33156 US

Name and Address of New Registered Agent:

The above named entity submits this statement for the purpose of changing its registered office or registered agent, or both, in the State of Florida.

SIGNATURE: _____
Electronic Signature of Registered Agent — Date

Election Campaign Financing Trust Fund Contribution ( ).

OFFICERS AND DIRECTORS:

Title: PD ( ) Delete
Name: VALDES, ORLANDO J
Address: 9551 SW 56 CT
City-St-Zip: MIAMI, FL 33156

Title: VD ( ) Delete
Name: VALDES, GLADYS
Address: 9551 SW 56 CT
City-St-Zip: MIAMI, FL 33156

ADDITIONS/CHANGES TO OFFICERS AND DIRECTORS:

Title: ( ) Change ( ) Addition
Name:
Address:
City-St-Zip:

Title: ( ) Change ( ) Addition
Name:
Address:
City-St-Zip:

I hereby certify that the information supplied with this filing does not qualify for the exemption stated in Chapter 119, Florida Statutes. I further certify that the information indicated on this report or supplemental report is true and accurate and that my electronic signature shall have the same legal effect as if made under oath; that I am an officer or director of the corporation or the receiver or trustee empowered to execute this report as required by Chapter 607, Florida Statutes; and that my name appears above, or on an attachment with an address, with all other like empowered.

SIGNATURE: ORLANDO J VALDES PD 01/04/2008
Electronic Signature of Signing Officer or Director — Date

1506 Collins Avenue
Miami Beach, FL

OFFICE COPY
CITY OF MIAMI BEACH
APPROVED FOR PERMIT BY
THE FOLLOWING:
rm 11/17/08
ELECTRICAL:
MECHANICAL:
FIRE PREVENTION:
11/17/08

Cuban Tropical Tile Co.

www.cubantropicaltile.com
Manufacturer & Contractor of:
Traditional Cuban- Artistic Mosaic
3632 NW 37th Ave. *Miami, Fl 33142
Ph: (305) 633-8941 * Fax: (305) 633-5774
E-Mail: Engmoreno@yahoo.com

The Material: Hydraulic Pressed Concrete Tile

This is a natural product (not a ceramic tile) made with natural sands, and Portland Cement Type I-II, pressed with a hydraulic machine at 2,800 p.s.i. It is special for outdoor purposes, non slippery, easy to maintain. This tile is made completely in Miami and the components are 100% local all of U.S origin, which makes it more attractive as far as production and delivery, is concerned. In other words we don't have to depend on foreign strikes, material discontinuity or transport delays, etc. Our Tile has been tested in the Pittsburgh Testing Laboratory, and these are the results of the coefficient of friction tests.

AS RECIEVED

Test Condition: **DRY: fc = 0.84 ; S.C.O.F = 0.81** **WET : fc = 0.88 ; S.C.O.F = 0.83**

AFTER CLEANING (ASTM 1028 Standard Cleaner)

Test Condition: **DRY : fc = 0.88 ; S.C.O.F = 0.85** **WET : fc = 0.82 ; S.C.O.F = 0.77**

Cuban Tropical Tile Co. is a fully licensed, insured company, authorized to produce and install tiles under Miami-Dade County Certificate of Competency # 04BS01061

SPECIFICATIONS FOR THE INSTALLATION OF CEMENT TILES

1) THESE TILES, WHICH WEIGH 10 POUNDS EACH, ARE RECOMMENDED TO BE INSTALLED OVER A MUD BED MADE OUT OF A MIX OF SAND, CEMENT, AND WATER TO CREATE A THICK PASTE. OR EASIER BUT A LITTLE BIT MORE EXPENSIVE, AN ALREADY PREPARED MORTAR MIX. AS THESE TILES ARE HEAVY AND ALSO MAY HAVE A VERY SMALL IRREGULARITY IN THE THICKNESS OF SOME TILES A MUD BED OF ¼" IS RECOMMENDED TO LEVEL THE TILE AND ALSO LEVEL THE IRREGULARITIES OF THE FLOOR.

2) WE RECOMMEND THAT BEFORE INSTALLING EACH TILE TO WET THE BACK OF THE TILE OR APPLY A COAT OF WHITE THIN SET AS A BONDING AGENT.

3) IF THE INSTALLATION IS GOING TO BE "BUTT JOINT" WE RECOMMEND FILLING THE THIN GAP BETWEEN EACH TILE WITH EITHER REGULAR CEMENT AND WATER OR UNSANDED GROUT WITH WATER.

4) IF INSTALLATION IS TO BE WITH A WIDER GROUT JOINT (OVER 1/8") THEN REGULAR SANDED GROUT IS RECOMMENDED.

SPECIFICATIONS FOR THE MAINTENANCE OF THE TILE:

WE NORMALLY DO THE SEALING THROUGH EXPERIENCED CREWS WE HIRE FOR THIS PURPOSE. BUT IN ESSENCE:

1) FLOOR IS PREVIOUSLY WASHED WITH REGULAR LIQUID SOAP AND WATER. STRIP OVER THE SOAPY WATER WITH **3M BLACK PAD.**

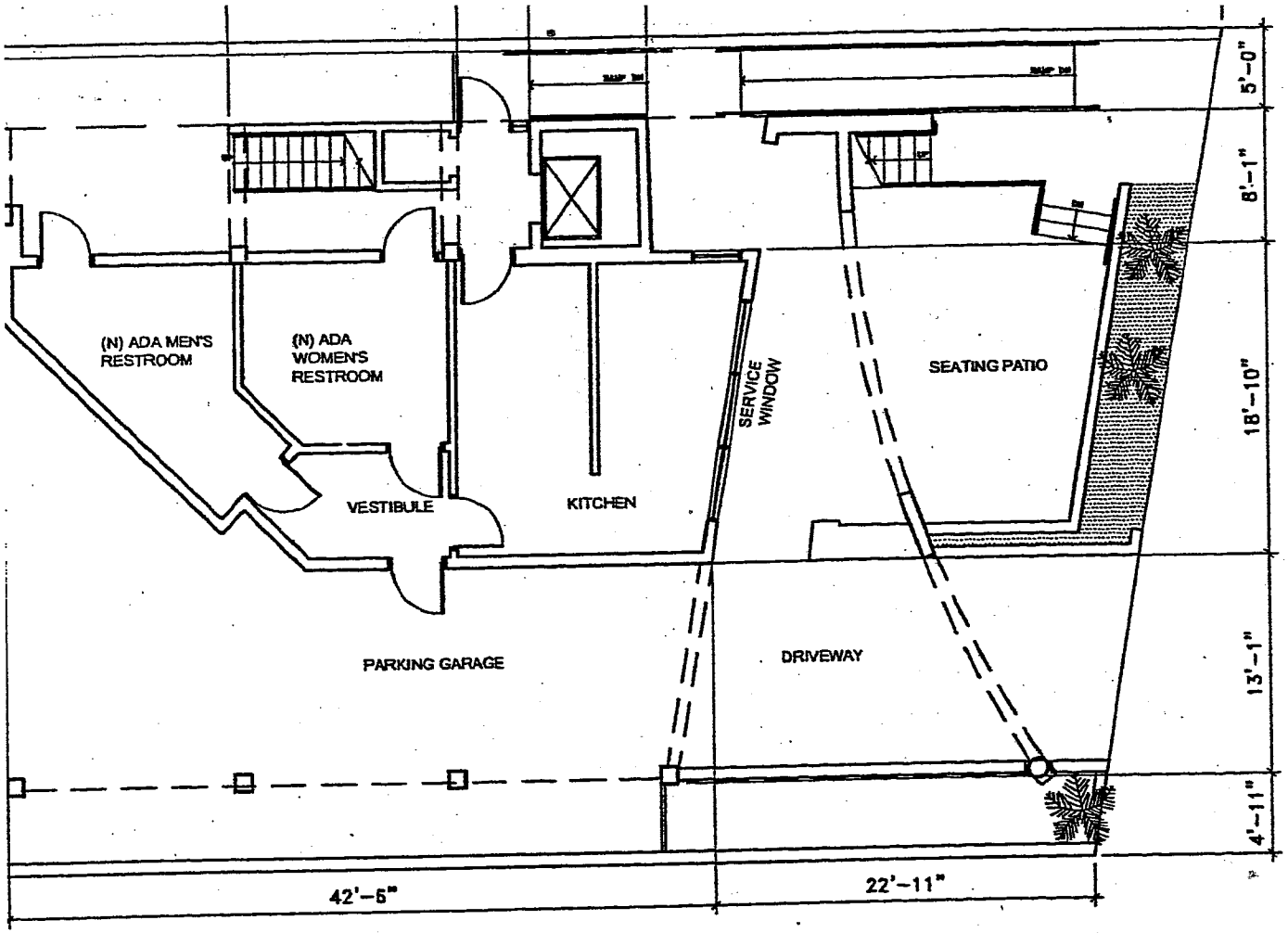
2) IF NECESSARY TO APPLY A SECOND HAND OF SOAPY WATER AND STRIP IT WITH **3M BLUE PAD.**

3) IF DESIRED A LOW SHINING FINISH APPLY WITH A MOP ONE COAT OF "**ZEPTONE**" SEALER LET IT DRY AND APPLY "**SEAL OUT**" AND FINISH IT WITH A **3M WHITE PAD** UNTIL YOU GET THE DESIRED SHINE.

4) AT LEAST 24 HOURS SHOULD BE ALLOWERD TO DRY PROPERLY.

5) FOR MAINTENANCE IT IS RECOMMENDED TO CLEAN IT WITH SOAP AND WATER. FROM TIME TO TIME AND DEPENDING ON THE USE OF TRAFFIC AREAS YOU CAN APPLY **SEAL OUT** WITH A **3M RED** BUFFING PAD.

6) ONE SPECIAL CHARACTERISTICS OF THIS TILE IS DUE TO ITS NATURAL COMPOSITION OF MANUFACTURING, IT GIVES THE TILE THE PROPERTY TO GET ITS NATURAL POLISH WITH TIME AND TRAFFIC.



1 GROUND FLOOR – PROPOSED
SCALE: 1/8" = 1'-0"

EVA HOTEL

1506 COLLINS AVE.

EXISTING DOCUMENTATION
PROJECT NO: #0817

DEMO + PROPOSED FLOOR PLANS

A-1.1

11.13.08

B080636
1506 Collins Ave
Office Copy

OFFICE COPY
CITY OF MIAMI
APPROVED FOR ...
THE FOLLOWING:

BUILDING:	rm 11/17/08
ZONING:	
DRB/HPB:	
CONCURRENCY:	
PLUMBING:	
ELECTRICAL:	
MECHANICAL:	
FIRE PREVENTION:	11/17/08
ENGINEERING:	
PUBLIC WORKS:	
STRUCTURAL:	
ELEVATOR:	

B1204923
1506 COLLINS AVE.

EST. 1982

AL-FAROOQ CORPORATION

CONSULTING ENGINEERS & PRODUCT DEVELOPMENT

SITE SPECIFIC: WIND LOADS
WIND STANDARD: ASCE 7-10, FBC 2010 EDITION

8/3/12
AFC 12-1120
dlm/DP.

(Based on data supplied by client)

1. Client : HOTEL EVA - ORLANDO J. VALDES
2. Project Name : HOTEL EVA.
3. Project Address : 1506 COLLINS AVE. MIAMI BEACH
   CITY FL STATE 331 ZIP
4. County : MIAMI-DADE
5. Building Height : 45 FT.
6. Building Dimensions : Length ____ FT. Width ____ FT.
7. Building Roof Slope : ☐ Flat ☐ Slope (See Figure 1 below)
8. Risk Category : ☐ I ☒ II ☐ III & IV

Risk category 'I' applies for non essential buildings. e.g. storage facilities etc.
Risk category 'II' applies for all commercial and residential buildings. e.g. homes, appt., offices etc.
Risk category 'III & IV' applies for essential buildings. e.g. schools, hospitals, police stations, fire stations etc.

9. Attach floor plan with shutter/ window, sizes and types.
   (Note: If maximum load used for all openings, floor plan is not required)

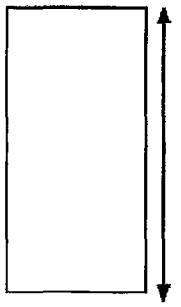
8/8/12

305-725.3096 Raul Carril

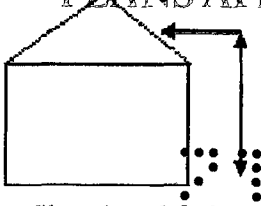
Carril Design

Client Representative

Figure 1:



Flat roof



Sloped roof

City of Miami Beach
Fire Prevention Division
PLANS APPROVED
954 727 9229.

AUG 06 2012

JAVAD AHMAD, P.E. - FL # 70592
EB C.A.N. #3538

NOTICE: In addition to the requirement 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's districts, state agencies, or federal agencies. The City of Miami Beach assumes no responsibility for accuracy of results from these plans which are approved subject to compliance with all Federal, State, and Local laws, Rules, and Regulations

AL-FAROOQ CORPORATION 08-03-2012
CAN (EB) #3538
1235 S.W. 87th. AVENUE MIAMI, FL. 33174
PH. 305-264-8100

CUSTOMER :HOTEL EVA, ORLANDO J. VALDEZ
PROJECT : HOTEL EVA.

WIND LOAD ANALYSIS FOR COMPONENTS AND CLADDING
AS PER SPECIFICATION ASCE 7-10
BUILDINGS WITH IMPACT PROTECTION

BASIC WIND SPEED V : 175 MPH
RISK CATEGORY FCT. I : 2 (Table 1.5-1, p2)
EXPOSURE CATEGORY : D (Sct. 26.7.3, p251)
MEAN ROOF ELEVATION H : 40 FT.
ROOF SLOPE EQUAL OR LESS THAN 10 deg.
TRIBUTARY LOAD AREA A : 20 FT^2

Kh = 1.22 (TABLE 30.3-1, p317)
Kd = 0.85 (TABLE 26.6-1, p250)
Kzt= 1.0 (TOPOGRAPHIC FACTOR - FIGURE 26.8-1, p252)

VELOCITY PRESSURE Qh=.00256 Kh Kzt Kd V^2 = 81.30 PSF

GCp COEFFICIENTS (FIGURE 30.4-1, P335)

ZONE 4 = +0.85 -0.94

ZONE 5 = +0.85 -1.16

GCpi COEFFICIENTS = + .18 - .18 (TABLE 26.11-1, P258)

DESIGN PRESSURE P = Qh(GCp - GCpi)x.6 (AS PER FBC 1609.1.5)

ZONE 4 = + 50.3 PSF - 54.7 PSF

ZONE 5 = + 50.3 PSF - 65.6 PSF

21.20.90

SHD

AUG 06 2012

MIAMI-DADE COUNTY
DEPARTMENT OF PERMITTING, ENVIRONMENT, AND REGULATORY AFFAIRS (PERA)
BOARD AND CODE ADMINISTRATION DIVISION

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
11805 SW 26 Street, Room 208
Miami, Florida 33175-2474
T (786) 315-2590 F (786) 315-2599
www.miamidade.gov/pera/

NOTICE OF ACCEPTANCE (NOA)

B1204923

Gensteel Doors Inc.
4950 Hickmore Street
Ville St. Laurent, Quebec, Canada H4T1K6

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed by Miami-Dade County Product Control Section and accepted by the Board of Rules and Appeals (BORA) to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. BORA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code, including the High Velocity Hurricane Zone.

DESCRIPTION: Series "GenStorm" Inswing Opaque Steel Doors

APPROVAL DOCUMENT: Drawing No. **AD11-04**, titled "Genstorm Opaque Inswing Door - LMI", sheet 1 through 8 of 8, dated FEB 21, 2012, prepared by MCY Engineering, Inc, signed and sealed by Yiping Wang, P.E., bearing the Miami-Dade County Product Control approval stamp with the Notice of Acceptance number and approval date by the Miami-Dade County Product Control Section.

MISSILE IMPACT RATING: Large Missile Impact Resistant

Limitation:

1. See Design Pressures & corresponding Hardware in sheets 1 & 6. Max. Exterior (positive) DP= +33 (double), +65 (Single) w/ PEMKO-177 AT threshold, where water infiltration requirement is needed.
2. Options #1 , 2 & #3 require total two (2) flush bolts (top/bottom) on in-active panel.

LABELING: Each unit shall bear one of the following permanent labels:

Gensteel Doors Inc.	Gensteel Doors Inc.	North American Doors Corp.
4950 Hickmore Street	2330 Industrial Park Drive	1471 Military Turnpike
Ville St. Laurent, Quebec, Canada H4T1K6	Cornwall, Ontario, Canada K6H7M4	Plattsburgh, NY 12901-1911

and series/model and the statement: "Miami-Dade County Product Control Approved".

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA consists of this page 1 and evidence pages E-1, as well as approval document mentioned above.
The submitted documentation was reviewed by **Ishaq I. Chanda, P.E.**

MIAMI-DADE COUNTY APPROVED

12/28/12

NOA No 11-0907.01
Expiration Date: February 23, 2017
Approval Date: March 08, 2012

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

A. DRAWINGS

1. Manufacturer's die drawings and sections.
2. Drawing No. **AD11-04**, titled "Genstorm Opaque Inswing Door - LMI", sheet 1 through 8 of 8, dated FEB 21, 2012, prepared by MCY Engineering, Inc, signed and sealed by Yiping Wang, P.E.

B. TESTS

1. Test reports on 1) Air Infiltration Test, per FBC, TAS 202-94
   2) Uniform Static Air Pressure Test, Loading per FBC, TAS 202-94
   3) Water Resistance Test, per FBC, TAS 202-94 (w/ PEMO 177 AT)
   4) Large Missile Impact Test per FBC, TAS 201-94
   5) Cyclic Wind Pressure Loading per FBC, TAS 203-94
   6) Forced Entry Test, per FBC 2411 3.2.1 and TAS 202-94
   7) Tensile Test, per ASTM A370-05

Along with marked-up drawings and installation diagram of Genstorm Opaque Double & Single Swinging Doors, prepared by Fenestration Testing Laboratory, Inc., Test Reports No(s). **6491**, dated 05/31/11, signed and sealed by Martin D. Brinson, P.E.
Note: This test report has addendum letter dated Nov 11, 2011 issued by Fenestration Testing lab, signed and sealed by Martin D. Brinson, P.E.

C. CALCULATIONS

1. Anchor verification calculations and structural analysis, complying with FBC-2007 & FBC 2010, prepared by MCY Engineering, Inc, dated 08/31/11 and last revised on 12/03/12, signed and sealed by Yiping Wang, P.E.

D. QUALITY ASSURANCE

1. Miami Dade Department of Permitting, Environment, and Regulatory Affairs (PERA).

E. MATERIAL CERTIFICATIONS

1. Tensile Test, per ASTM A370-05 item B (1) (7)
2. Tensile test report N0. FTL 6745 per ASTM A370-05 dated 12/01/11, issued by Fenestration Testing Lab, signed and sealed by Martin D. Brinson, P.E.

F. STATEMENTS

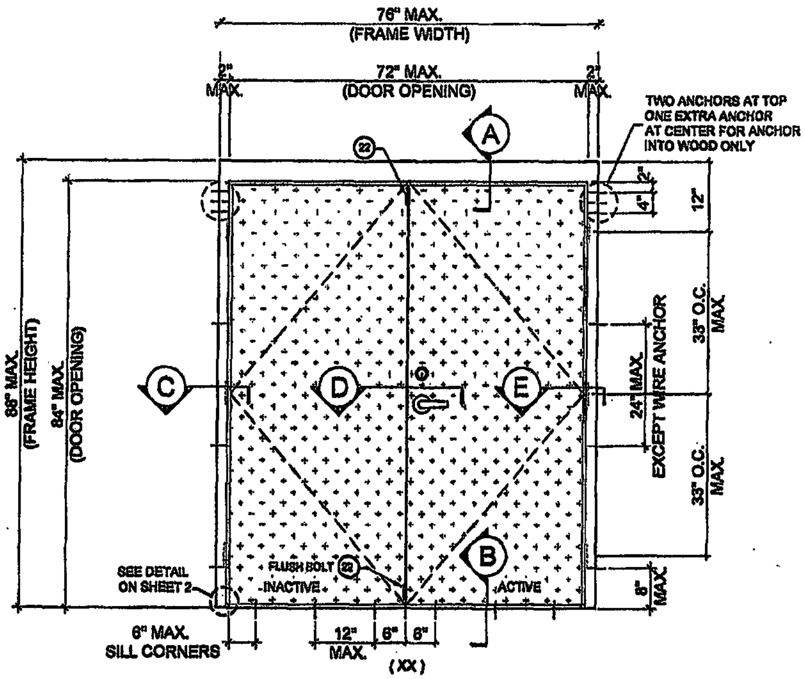
1. Statement letter of conformance dated 12/04/11, prepared by MCY Engineering, Inc, signed and sealed by Yiping Wang, P.E.
2. Statement letter of no financial interest dated 08/04/11, prepared by MCY Engineering, Inc, signed and sealed by Yiping Wang, P.E.
3. Statement letter of Lab. Compliance, as a part of above test reports.
4. Addendum letter dated 11/11/11 issued by FTL, signed & sealed by Martin D. Brinson, P.E.

G. OTHER

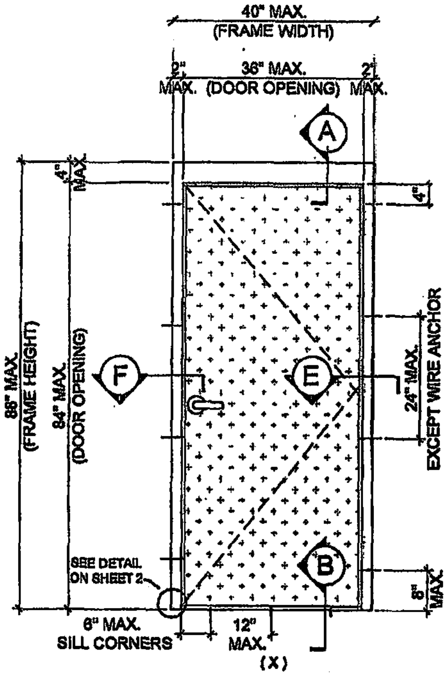
1. Test proposals # **10-0769R** dated 11/27/11 and e-mail 11/01/10 approved by PERA.
2. Distribution agreement between GenSteel Door, Canada & North American Door Corp, N.Y. dated 10/22/10, signed by Bruno Gervasi and Antonio Gervasi, respectively.

Ishaq I. Chanda

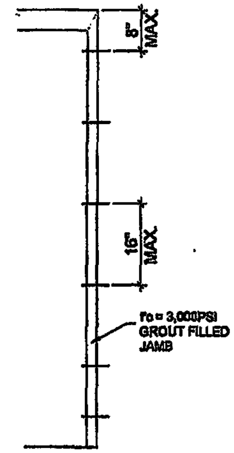
Ishaq I. Chanda, P.E.
Product Control Examiner
NOA No 11-0907.01
Expiration Date: February 23, 2017
Approval Date: March 08, 2012



TYPICAL EXTERIOR ELEVATION
(DOUBLE PANEL INSWING DOOR)



TYPICAL EXTERIOR ELEVATION
(SINGLE PANEL INSWING DOOR)



WIRE ANCHOR LAYOUT

SERIES GENSTORM OPAQUE INSWING STEEL DOOR (LMI)

- THIS PRODUCT HAS BEEN DESIGNED AND TESTED TO COMPLY WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE 2007/2010 EDITION INCLUDING *HIGH VELOCITY HURRICANE ZONE (HVHZ).*
- DOORS RATED FOR LARGE MISSILE IMPACT AND DO NOT REQUIRE SHUTTERS.
- SEE DOOR DESIGN LOAD CHART FOR APPLICABLE WATER RATING WITH SILL PEMKO 177-AT OR PEMKO 2005 AT
- ANCHORS SHALL BE AS LISTED, SPACED AS SHOWN ON DETAILS. ANCHORS EMBEDMENT TO BASE MATERIAL SHALL BE BEYOND WALL DRESSING OR STUCCO.
- ANCHORING OR LOADING CONDITIONS NOT SHOWN IN THESE DETAILS ARE NOT PART OF THIS APPROVAL.
- MATERIALS INCLUDING BUT NOT LIMITED TO STEEL/METAL SCREWS THAT COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL MEET THE REQUIREMENTS.
- METAL STRUCTURES NOT BY GENSTEEL DOOR CO. MUST SUPPORT LOADS IMPOSED BY DOOR SYSTEM AND TRANSFER THEM TO THE BUILDING STRUCTURE.
- WOOD BUCKS BY OTHERS MUST BE ANCHORED PROPERLY TO TRANSFER LOADS TO THE STRUCTURE.
- A LOAD DURATION FACTOR IN ALLOWABLE STRESS IS USED IN DESIGN OF ANCHORS INTO WOOD ONLY.
- DOOR PANEL: MIN. 20 GA. STEEL MIN. Fy = 47.3 KSI MIN. DOOR FRAME: MIN. 18 GA. STEEL MIN. Fy = 47.3 KSI MIN
- DOOR PANEL STAINLESS OPTION: 20 GA STAINLESS STEEL DOOR PANEL MEETING MIN. Fy = 47.3 ksi OR BETTER MAY QUALIFY HAVING "MIL-CERTIFICATE" AS A VERIFICATION OF THE AVAILABLE MIN. YIELD STRENGTH.
- DOOR FRAME STAINLESS OPTION: 18 GA STAINLESS STEEL DOOR FRAME MEETING MIN. Fy = 47.3 ksi OR BETTER MAY QUALIFY HAVING "MIL-CERTIFICATE" AS A VERIFICATION OF THE AVAILABLE MIN. YIELD STRENGTH.

NOTES:
EGRESS REQUIREMENTS TO BE REVIEWED BY BUILDING OFFICIAL.

DOOR DESIGN LOAD

FOR SIZES SHOWN ABOVE OR SMALLER AS PERMITTED BY FBC	DOUBLE DOOR		SINGLE DOOR	
	WITH SILL PMK 177-AT	WITH SILL PMK 2005AT	WITH SILL PMK 177-AT	WITH SILL PMK 2005AT
NOT APPROVED FOR WATER INFILTRATION	+65.0 PSF	+65.0 PSF	+65.0 PSF	+65.0 PSF
	-65.0PSF	-65.0PSF	-65.0PSF	-65.0PSF
APPROVED FOR WATER INFILTRATION	+33.0 PSF	+33.0 PSF	+65.0 PSF	+33.0 PSF
	-65.0PSF	-65.0PSF	-65.0PSF	-65.0PSF

Approved as complying with the Florida Building Code
Date MAY 08, 2012
NOA# 11-0907.01
Miami Dade Product Control
By Ishaq I. Chanda

MIAMI DADE COUNTY

YIPING WANG
FLORIDA REGISTRATION
PE 58983
C.A.N. 28877
STATE OF FLORIDA
PROFESSIONAL ENGINEER

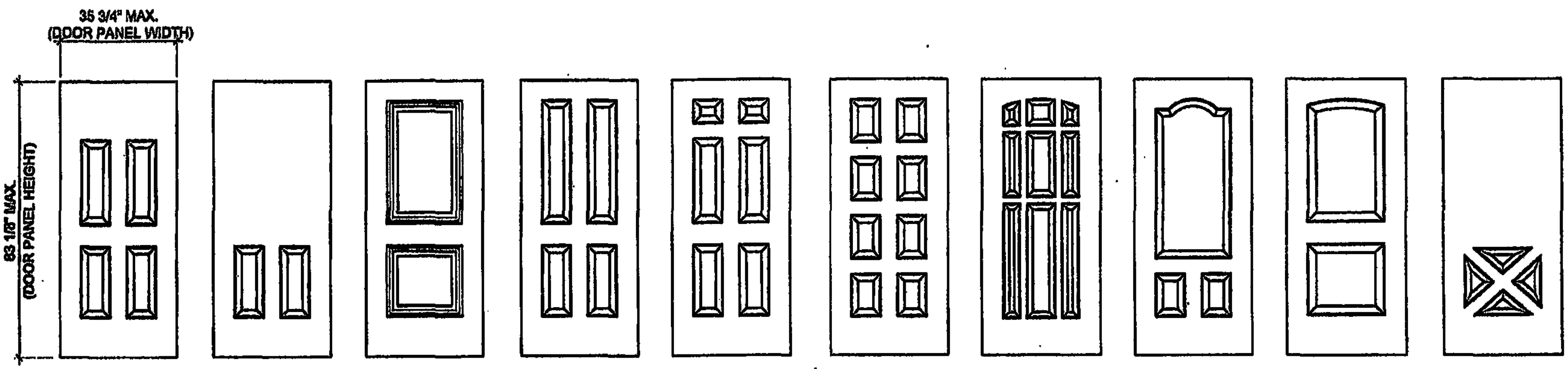
MCY ENGINEERING, INC.
GLAZING CONSULTANTS
8501 SW 124 AVE. STE. 205A
MIAMI, FL. 33183
P: 305.271.0117
F: 786.573.6083
www.MCYUS.com
MCY.Engineering@att.net

GENSTORM OPAQUE INSWING STEEL DOOR (LMI)

gensteeldoors
www.gensteeldoors.com
4950 Hickmore, St. Laurent, Quebec, Canada, H4T1K6
Tel: (514) 733-3562 Fax: (514) 733-1932

DATE	02-02-12
SCALE	N.T.S.
DRAWN	S.L.
PROJECT	11-007
DRAWING NO.	AD11-04

SHEET 1 OF 8



OPTIONAL EMBOSSED DOOR LEAF PATTERNS (MIN Fy = 47.3 KSI)

Approved as complying with the Florida Building Code
Date 03/08/12
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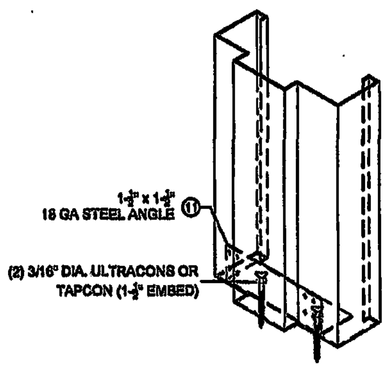
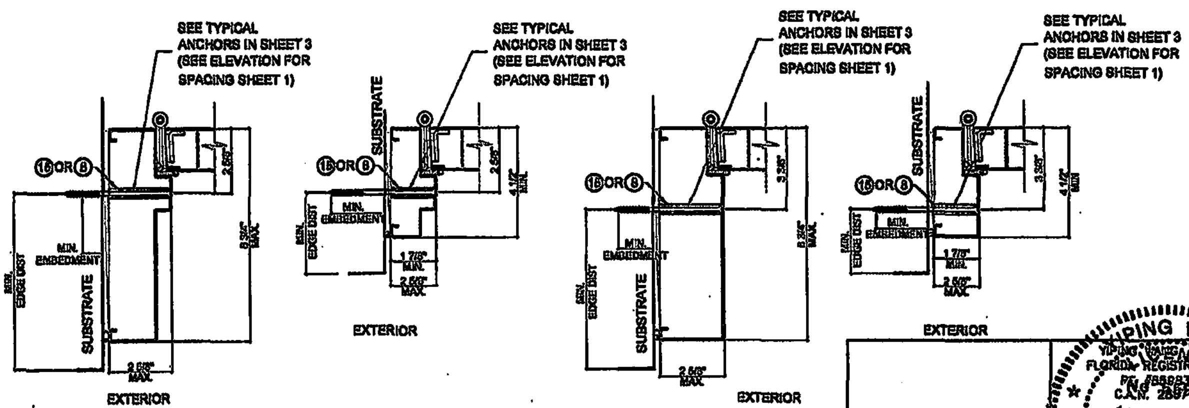


BOTTOM CORNER ANCHOR DETAIL
(OPTIONAL)



DOUBLE RABBET ANCHOR LOCATION

SINGLE RABBET ANCHOR LOCATION

MIAMI DADE COUNTY

YIPING WANG
FLORIDA REGISTRATION
PE 55983
C.A.N. 28975
STATE OF FLORIDA
PROFESSIONAL ENGINEER

REVISIONS
NO	DATE	DESCRIPTION

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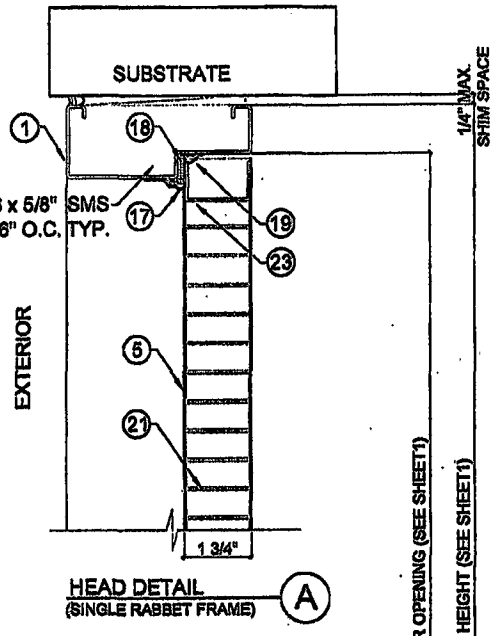
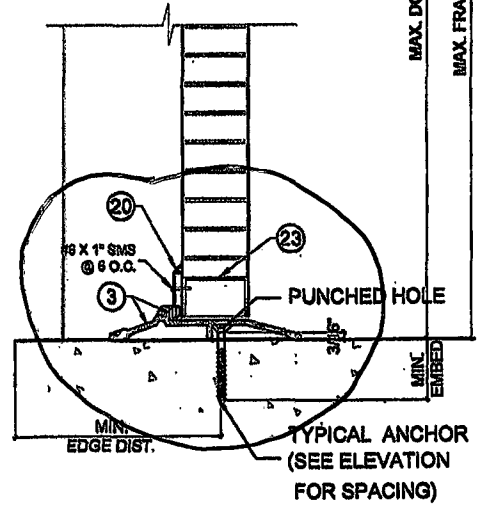
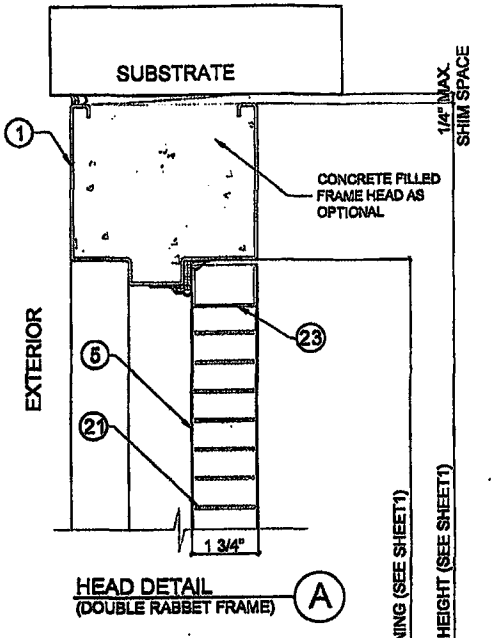
SHEET 2 OF 8



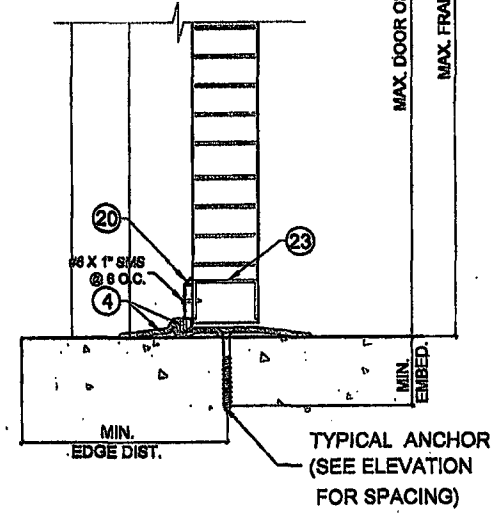
HEAD DETAIL (SINGLE RABBET FRAME) (A)



TYPICAL PEMKO 177-AT THRESHOLD (B)
WATER RATED THRESHOLD
(SEE Dp TABLE ON SHEET 1)



HEAD DETAIL (DOUBLE RABBET FRAME) (A)



TYPICAL PEMKO 2005AT THRESHOLD (B)
NON-WATER RATED THRESHOLD
(SEE Dp TABLE ON SHEET 1)

TYPICAL ANCHORS @ JAMB: (REFER TO ELEVATION FOR SPACING)

TYPE A. 5/16" DIA. TAPCONS BY 'ITW' Fy=90 KSI Fu = 120 KSI
DIRECTLY INTO 2BY WOOD BUCK
DIRECTLY INTO CONCRETE BLOCK f'c=2000 PSI
DIRECTLY INTO f'c=3000 PSI CONCRETE
1-1/2" MIN. EMBED
2-1/2" MIN. EDGE DISTANCE

TYPE B. 3/8" DIA. HLC SLEEVE ANCHOR BY 'HILTI'
DIRECTLY INTO f'c=3000 PSI CONCRETE, 3" MIN. EDGE DIST.
DIRECTLY INTO f'c=2000 PSI CONCRETE BLOCK, 3-1/2" MIN. EDGE DIST.
1-1/4" MIN. EMBED & 3-3/4" MIN. SPACING

TYPE C. 3/8" DIA. SLEEVE ANCHOR BY 'WEJ-IT'
DIRECTLY INTO f'c=4000 PSI CONCRETE, 2-3/8" MIN. EMBED
DIRECTLY INTO f'c=2000 PSI CONCRETE BLOCK, 1-1/4" MIN. EMBED
3-1/2" MIN. EDGE DISTANCE & 4" MIN. O.C. SPACING

TYPE D. 3/8" DIA. POWER BOLT BY 'POWERS'
DIRECTLY INTO f'c=3000 PSI CONCRETE
2-1/2" MIN. EMBED
3" MIN. EDGE DISTANCE & MIN. 4" O.C. SPACING

TYPE E. 5/16" DIA. SMS OR MACHINE BOLTS (MIN. GRADE 2 CRS) OR ST/ST
STEEL : Fy = 36 KSI MIN.
INTO METAL STRUCTURES (STEEL OR ALUMINUM 1/8" MIN. THICK.)
ALUMINUM : 6063-T6 MIN.
(STEEL IN CONTACT WITH ALUMINUM TO BE PLATED OR PAINTED)

TYPE G. WIRE ANCHOR (Fy = 60 ksi.)
0.173 DIA. STEEL WIRE ANCHORS EMBED INTO FILLED CONCRETE BLOCK

TYPICAL ANCHORS @ THRESHOLD:

TYPE F. 1/4" OR 5/16" DIA. ULTRACONS BY 'ELCO' Fy = 168 KSI Fu = 177 KSI
DIRECTLY INTO f'c=3000 PSI MIN. CONCRETE
1-1/2" MIN. EMBED
2-1/2" MIN. EDGE DISTANCE

1/4" TAPCON BY ITW Fy = 90 KSI Fu = 120 KSI
DIRECTLY INTO f'c=3000 PSI MIN. CONCRETE
1-1/2" MIN. EMBED
2-1/2" MIN. EDGE DISTANCE

SEALANT:
ALL FRAME JOINTS AND CORNERS TO BE SEALED WITH SILICONE AT PERIMETER

Approved as complying with the Florida Building Code
Date 02/09/12
NOA# 11-0202.07
Miami-Dade Product Control
By Yiping T. Chang

MIAMI DADE COUNTY

YIPING WANG LICENSE
YIPING WANG, P.E.
FLORIDA REGISTRATION
PE #55983
C.A.N. 28677
STATE OF FLORIDA
PROFESSIONAL ENGINEER
FEB 21 2012

REVISIONS		
NO	DATE	DESCRIPTION

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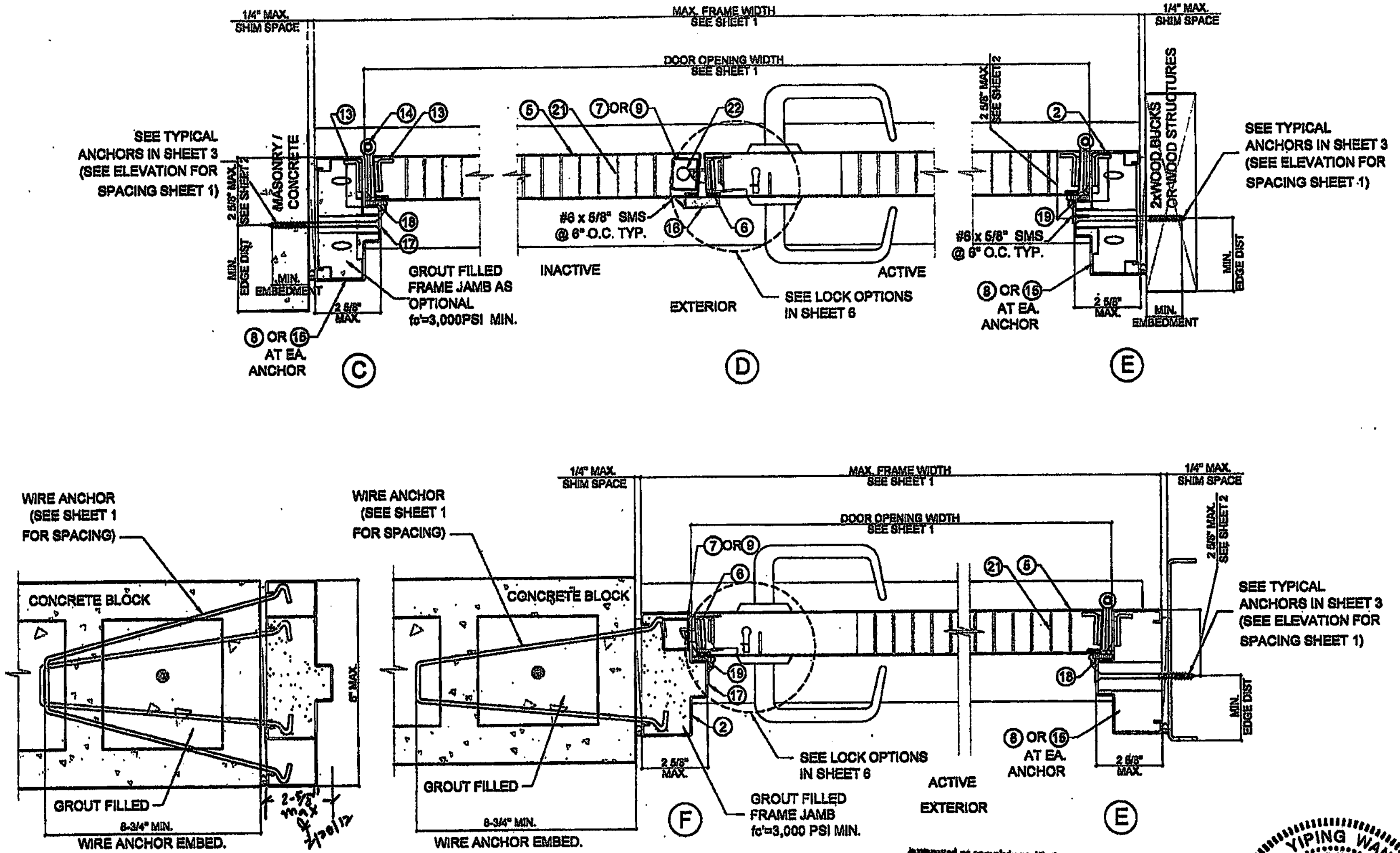
Tel: (514) 733-3592 Fax: (514) 733-1832

DATE	02-02-12
DRAWN	MTL
CHECKED	S.L.
PROJECT	11-037
DRAWING NO.	AD11-04
SHEET	SHEET 3 OF 8



NOTE: JAMB MUST FULL BEARING ON SUBSTRATE.

DOOR SECTION DETAILS FOR DOUBLE RABBET DOOR FRAMES

Approved as complying with the Florida Building Code
Date 03/29/12
NOA# 12-0302.01
Miami Dade Product Control
By [signature]

MIAMI DADE COUNTY

YIPING WANG, P.E.
FLORIDA REGISTRATION PE 59983
C.A.N. 28677
STATE OF FLORIDA
PROFESSIONAL ENGINEER

REVISIONS
NO. | DATE | DESCRIPTION

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MCY.Engineering@Att.net

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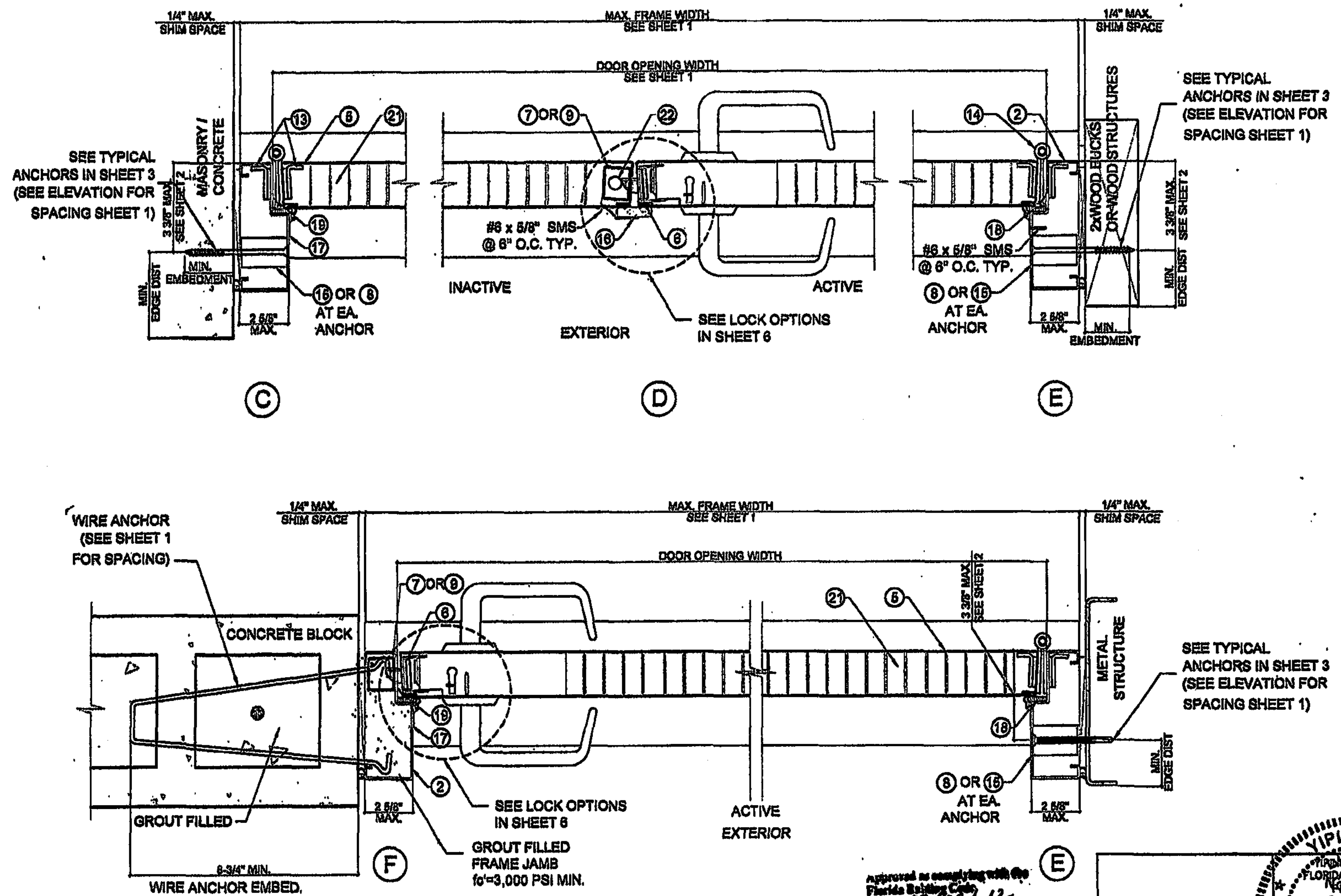
gensteeldoors
4950 Hickmore, St. Laurent, Quebec, Canada. H4T1K6
www.gensteeldoors.com
Tel: (514) 733-3562 Fax: (514) 733-1932

DATE	02-02-12
DRAWN	
DESIGN	
PROJECT	11-007
DRAWING NO.	AD11-04
SHEET	4 OF 8



NOTE: JAMB MUST FULL BEARING ON SUBSTRATE.

DOOR SECTION DETAILS
FOR SINGLE RABBET DOOR FRAMES

Approved as complying with the Florida Building Code
Date 03/09/12
NOA# 11-0907.01
Miami Dade Product Control
By [signature]

MIAMI DADE COUNTY

YIPING WANG, P.E. FLORIDA REGISTRATION NO. 65583 C.A.N. 28577 STATE OF FLORIDA PROFESSIONAL ENGINEER
FEB 21 2012

NO	DATE	REVISIONS DESCRIPTION

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GLAZING CONSULTANTS
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P: 305.271.0117 F: 786.573.6063
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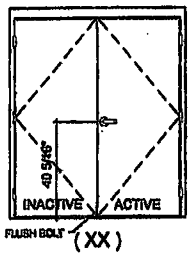
DRAWN	S.L.
PROJECT	11-037
DRAWING NO.	AD11-04
SHEET 5 OF 8	

LOCK OPTIONS

LOCK OPTIONS FOR DOUBLE DOORS ACTIVE PANEL CAN APPLY TO SINGLE DOORS

(EXTERIOR ELEVATIONS - INSWING DOORS)

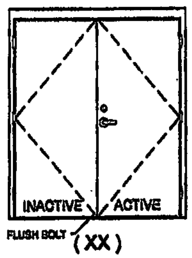


(XX)

OPTION 1

ACTIVE LEAF:
DOREX 12 SERIES LOCK SET
40 5/16" FROM BOTTOM

INACTIVE LEAF:
STRIKE FOR LOCKSET.
IVES FB 458 MANUAL FLUSH BOLT
(TOP & BOTTOM)

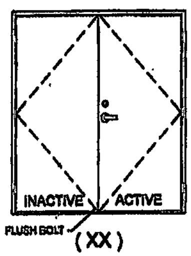


(XX)

OPTION 2

ACTIVE LEAF:
SCHLAGE AL SERIES LOCK SET,
40 5/16" FROM BOTTOM.
& SCHLAGE B SERIES DEADLOCK,
46 5/16" FROM BOTTOM.

INACTIVE LEAF:
STRIKE FOR LOCKSET.
STRIKES FOR DEADLOCK.
IVES FB 458 MANUAL FLUSH BOLT
TOP & BOTTOM

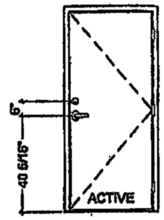


(XX)

OPTION 3

ACTIVE LEAF:
DOREX FH SERIES LOCKSET,
40 5/16" FROM BOTTOM.
DOREX TLA SERIES DEADLOCK,
46 5/16" FROM BOTTOM.

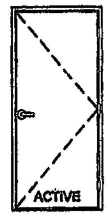
INACTIVE LEAF:
STRIKE FOR LOCKSET.
STRIKES FOR DEADLOCK.
IVES FB 458 MANUAL FLUSH BOLT
TOP & BOTTOM



(X)

OPTION 4

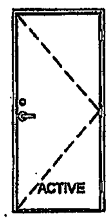
ACTIVE LEAF:
SCHLAGE AL SERIES LOCK SET,
40 5/16" FROM BOTTOM.
& SCHLAGE B SERIES DEADLOCK,
46 5/16" FROM BOTTOM



(X)

OPTION 5

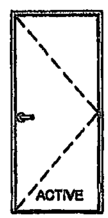
ACTIVE LEAF:
DOREX FHA SERIES LOCKSET,
40 5/16" FROM BOTTOM.



(X)

OPTION 6

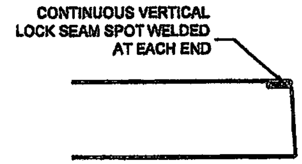
ACTIVE LEAF:
DOREX FH SERIES LOCKSET,
40 5/16" FROM BOTTOM.
DOREX TLA SERIES DEADLOCK,
46 5/16" FROM BOTTOM.



(X)

OPTION 7

ACTIVE LEAF:
SCHLAGE AL SERIES LOCKSET,
40 5/16" FROM BOTTOM.



DOOR EDGE CONSTRUCTION

HINGES: STEEL BUTT HINGES 3 PER LEAF. LOCATED AT 12" MAX. FROM TOP OF THE DOOR TO CENTER LINE OF 1ST HINGE AND TO BE SPACED OUT NOT TO EXCEED 33" FROM CL TO CL OF HINGE. TO BE FASTENED BY (4) #12-24 x ½" FLATHEAD MACHINE SCREWS.

HARDWARE LOCATIONS: ALL THESE DOORS WERE MANUFACTURED WITH THE CYLINDRICAL, LEVER, OR KNOBS AT 40-5/16" C.L. FROM THE BOTTOM OF THE FRAME. ALL THE DEADLOCKS WERE POSITIONED 46-5/16" FROM THE BOTTOM OF THE FRAME.

Approved as complying with the Florida Building Code
Date 03/08/12
NOA# 11-0502.01
Miami Dade Product Control
By [signature]

MIAMI DADE COUNTY

YIPING WANG, P.E.
FLORIDA REGISTRATION
PE #55883
C.A.N. 28977
LICENSE No. 55883
STATE OF FLORIDA
PROFESSIONAL ENGINEER

FEB 21 2012

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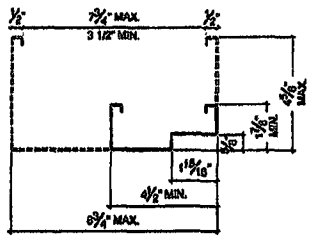
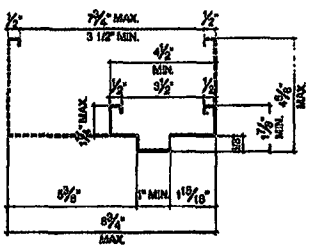
CHECKED BY
11-007
DRAWING NO. AD11-04

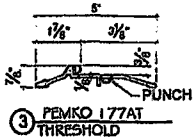
SHEET 6 OF 8



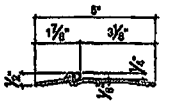
1 FRAME HEAD 18 GA (0.048") STEEL (SINGLE RABBET)



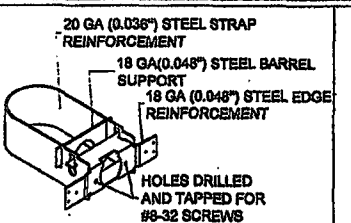
1 FRAME HEAD OPTION 18 GA (0.048") STEEL (DOUBLE RABBET)



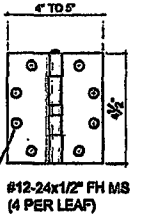
3 PEMKO 177AT THRESHOLD



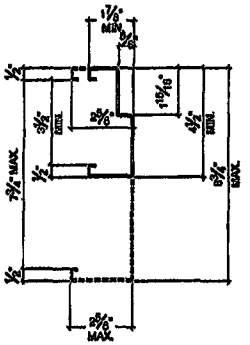
4 PEMKO 2005AT THRESHOLD OPTION



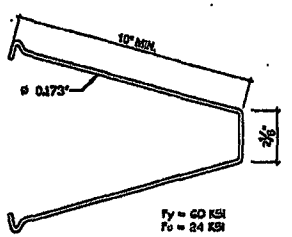
6 DR1600 CYLINDRICAL LOCK REINFORCEMENT ASSEMBLY ALSO FOR DEAD BOLT)



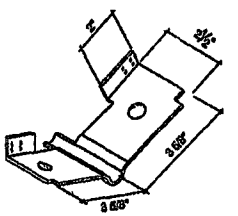
14 0.134" THK STEEL HINGE



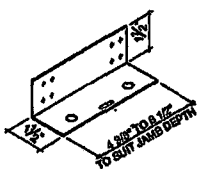
2 FRAME JAMB 18 GA (.048") STEEL (SINGLE RABBET)



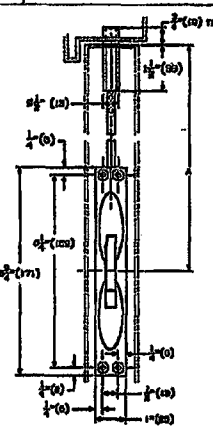
10 FA3030 STEEL MASONRY WIRE ANCHOR



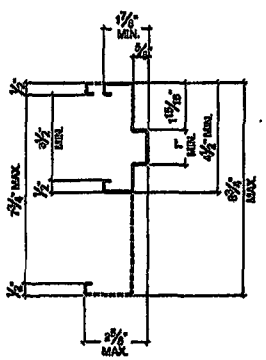
8 FA3010 18GA (0.048") STEEL EMA BUTTERFLY MASONRY ANCHOR



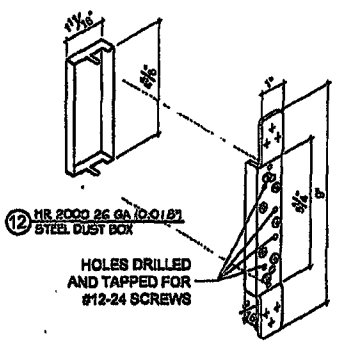
11 FA 1040 18GA (0.048") STEEL FLOOR ANCHOR AS OPTION



22 IVES FB 456 FLUSH BOLT

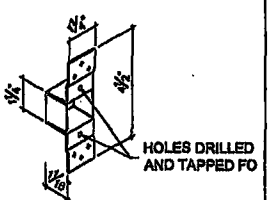


2 FRAME JAMB OPTION 18 GA (.048") STEEL (DOUBLE RABBET)

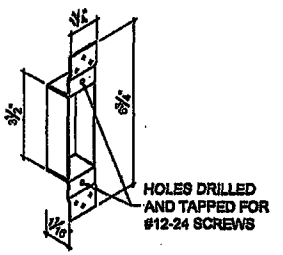


12 HR 2000 26 GA (0.018") STEEL DUST BOX

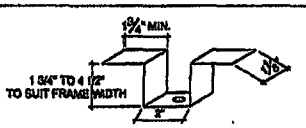
13 HR 1090 10 GA (0.1345") STEEL HINGE REINFORCEMENT



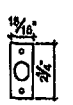
7 FR 1000 18 GA (0.048") STEEL DEAD BOLT STRIKE REINFORCEMENT



9 FR 1100 18 GA (0.048") STEEL ASA STRIKE BOX REINFORCEMENT



15 FA3012 18GA ANCHOR CLIP OPTION



22 IVES FB 456 TOP & BOTTOM BOLT (STRIKE)

23 18 GA CHANNEL (FULL LENGTH OF PANEL WIDTH)

Approved as complying with the Florida Building Code
Date 03/09/12
NOA# 11-0907.04
Miami-Dade Product Control
By

YIPING WANG
LICENSE
YIPING WANG, P.E.
FLORIDA REGISTRATION NO. 65983
C.A.N. 28677
STATE OF FLORIDA
PROFESSIONAL ENGINEER
FEB 21 2012

MIAMI DADE COUNTY

REVISIONS	
NO.	DATE / DESCRIPTION

MCY ENGINEERING, INC.
GLAZING CONSULTANTS
8501 SW 124 AVE. STE. 205A
MIAMI, FL. 33183
P: 305.271.0117
F: 786.573.5083
www.MCYUS.com
MCY.Engineering@Att.net

GENSTORM OPAQUE INSWING STEEL DOOR (LMI)

gensteeldoors
www.gensteeldoors.com
4950 Hickmans, St. Laurent, Quebec, Canada, H4T1K8
Tel: (514) 733-3562 Fax: (514) 733-1932

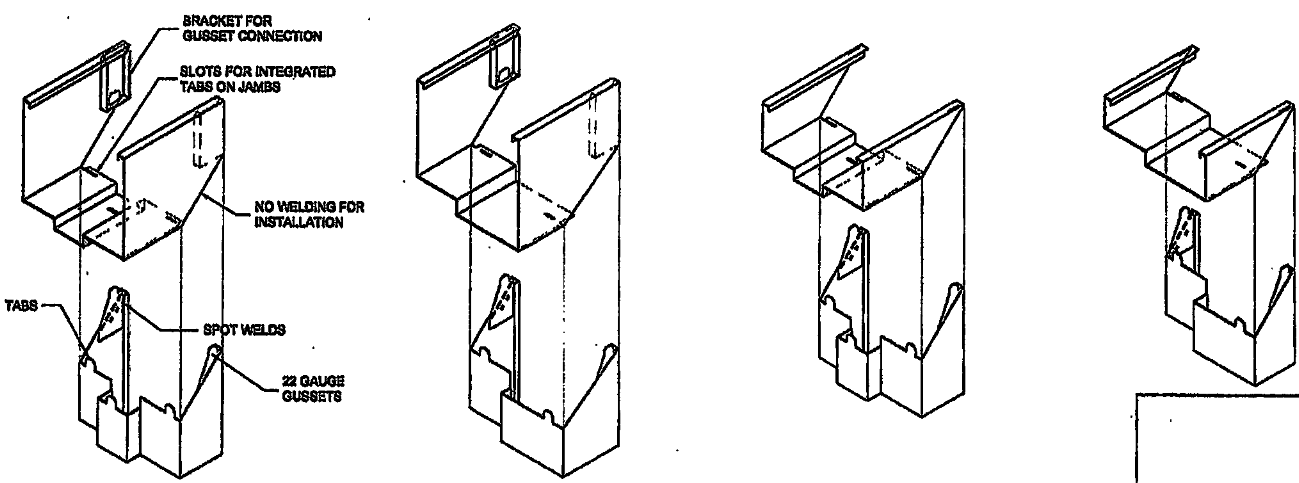
DATE	02-02-12
DRAWN	MTS
CHECKED	RL
PROJECT	11-037

DRAWING NO.
AD11-04

SHEET 7 OF 8

BILL OF MATERIALS

ITEM	PART No.	MATERIAL	QTY.	DESCRIPTION	MANUFACTURER/SUPPLIER/ REMARKS
1	-	STEEL OR ST/ST	AS REQD.	FRAME HEAD	18 GA. (0.048MIN.) Fy= 47.3 KSI MIN.
2	-	STEEL OR ST/ST	AS REQD.	FRAME JAMB	18 GA. (0.048MIN.) Fy= 47.3 KSI MIN.
3	PMK177-AT	ALUM.	1	THRESHOLD WITH THERMO SEAL INSERT	PEMKO 177AT
4	PMK 2005AT	ALUMINUM	1	OPTIONAL THRESHOLD WITH THERMO SEAL INSERT	PEMKO 2005AT
5	-	STEEL OR ST/ST	AS REQD.	DOOR PANEL 1 3/4" THK.	20 GA. (0.036MIN) Fy= 47.3 KSI MIN.
6	DR1600	STEEL	AS REQD.	CYLINDRICAL LOCK REINFORCEMENT	GENSTEEL PROGRESSION WELDED TO THE PANEL
7	FR1000	STEEL	AS REQD.	DEAD BOLT STRIKE REINFORCEMENT	GENSTEEL PROGRESSION WELDED TO THE PANEL
8	FA3010	STEEL	AS REQD.	BUTTERFLY MASONRY ANCHOR	GENSTEEL
9	FR1100	STEEL	AS REQD.	ASA STRIKE BOX	GENSTEEL PROGRESSION WELDED TO THE FRAME AND/OR THE DOOR
10	FA3030	STEEL	AS REQD.	MASONRY WIRE ANCHOR 0.173 DIA.	GENSTEEL Fy=60 KSI Fv=24 KSI MIN.
11	FA1040	STEEL	2	FLOOR ANCHOR 18 GA. (1-1/8" x 1-1/8") (OPTION)	GENSTEEL
12	HR2000	STEEL	3 PER LEAF	HINGE DUSTBOX	GENSTEEL
13	HR1030	STEEL	3 PER LEAF	HINGE REINFORCEMENT WELDED TO FRAME & DOOR	GENSTEEL PROGRESSION WELDED TO THE FRAME AND/OR THE DOOR
14	HINGE	STEEL	3 PER LEAF	4 1/2" LONG HINGE	HAGER USA OR EQUAL
15	FA3012	STEEL	AS REQD.	ANCHOR CLIP (OPTION)	GENSTEEL PROGRESSION WELDED TO THE FRAME
16	PEMKO P375R	-	AS REQD.	PEMKO 375R ASTRAGAL WITH SPONGE NEOPRENE	PEMKO (WITH #6x5/8" ST/ST SMS @ 6" O.C.)
17	PEMKO 303_S	STEEL	AS REQD.	PERIMETER GASKETING WEATHERSTRIP ADAPTER	PEMKO (WITH #6x5/8" ST/ST SMS @ 6" O.C.)
18	PEMKO 387	-	AS REQD.	ADHESIVE CLOSED CELL SPONGE WEATHERSTRIP	PEMKO
19	PEMKO 88	SILICONSEAL TM	AS REQD.	ADHESIVE GASKETING WEATHERSTRIP	PEMKO
20	PEMKO 315_N	-	1 PER LEAF.	DOOR SWEEP WEATHERSTRIP AT BOTTOM OF PANEL	PEMKO (WITH #6x1" ST/ST SMS @ 6" O.C.).
21	HONEYCOMB CORE	-	AS REQD.	INSIDE OF DOOR PANEL	GENSTEEL
22	IVES FB 458	STEEL	AS REQD.	IVES TOP & BOTTOM FLUSH BOLTS	IVES
23	CH3601	STEEL	AS REQD.	1" X 1-5/8" X 1" X 18GA DOOR END CHANNEL	GENSTEEL



CORNER FRAME CONSTRUCTION

THE JAMB AND HEAD MEETING CORNERS ARE NOT REQUIRED TO BE WELDED TO EACH OTHER. ALL THE FRAMES WERE TESTED AS "KNOCK-DOWN" UNITS.

Approved as complying with the Florida Building Code
Date 03/08/12
NOA# 11-0907.01
Miami Dade Product Control
By Ishaq I. Chanda

MIAMI DADE COUNTY

YING WANG, P.E.
FLORIDA REGISTRATION PE #58983
CAN. 28677
STATE OF FLORIDA PROFESSIONAL ENGINEER

FEB 21 2012

REVISIONS
NO. DATE DESCRIPTION

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Tel: (514) 733-3562 Fax: (514) 733-1932

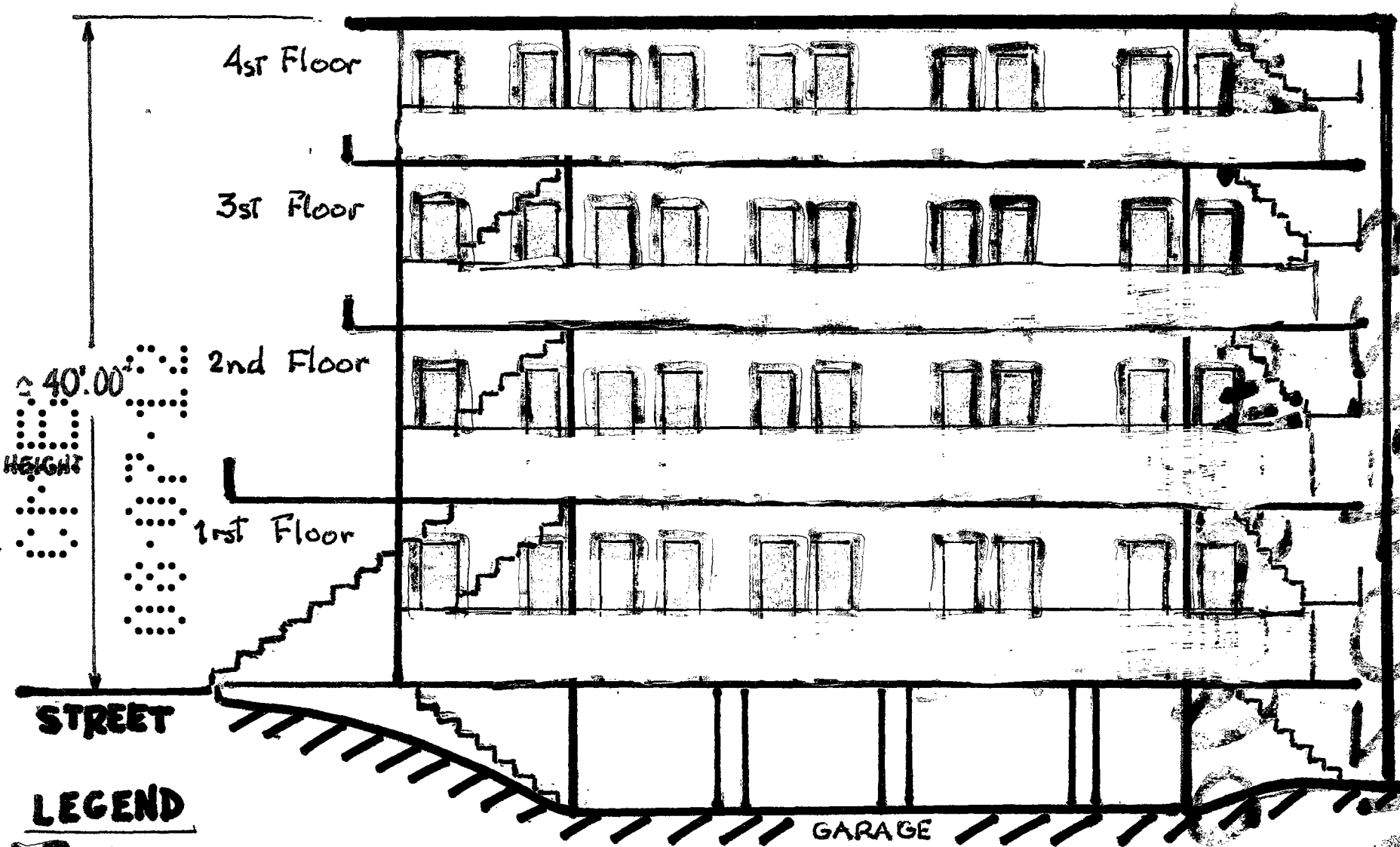
DATE: 03-02-12
SCALE: NTS
DRAWN: S.L.
PROJECT: 11-007

DRAWING NO.
AD11-04

SHEET 8 OF 8

B1204923

1506 COLLINS AVE.



LEGEND

Place where doors (NOA N° 11-0907.01) will be replaced.

ELEVATION VIEW

REQ'D DESIGN LOADS FOR ALL 36"x80" DOORS.

Z5: +50.3PSF / -65.6PSF

ELEVATION VIEW OF FIRE RATED DOORS INSTALLATION (30 UNITS)

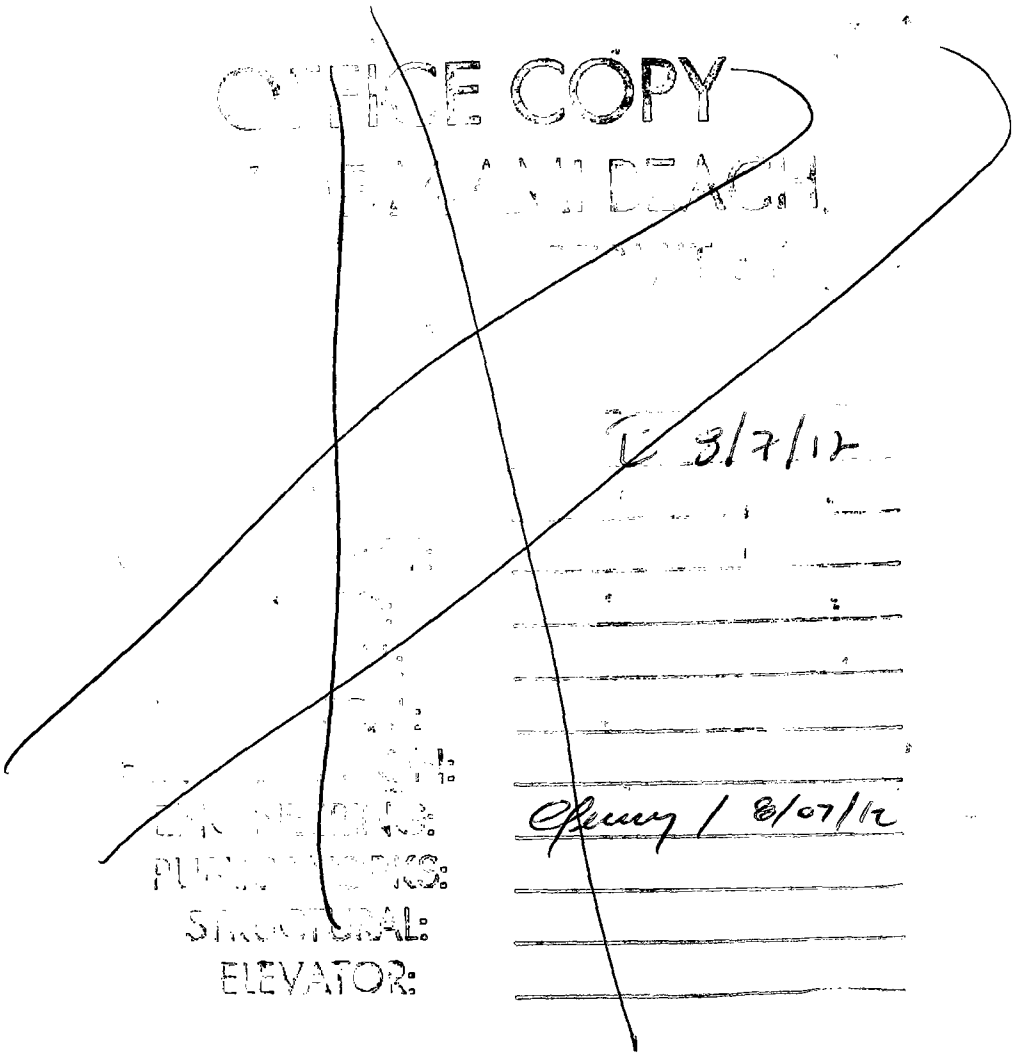
08.01.12

HOTEL EVA
1506 COLLINS AVE.
MIAMI BEACH FL. 33139

AUG 06 2012

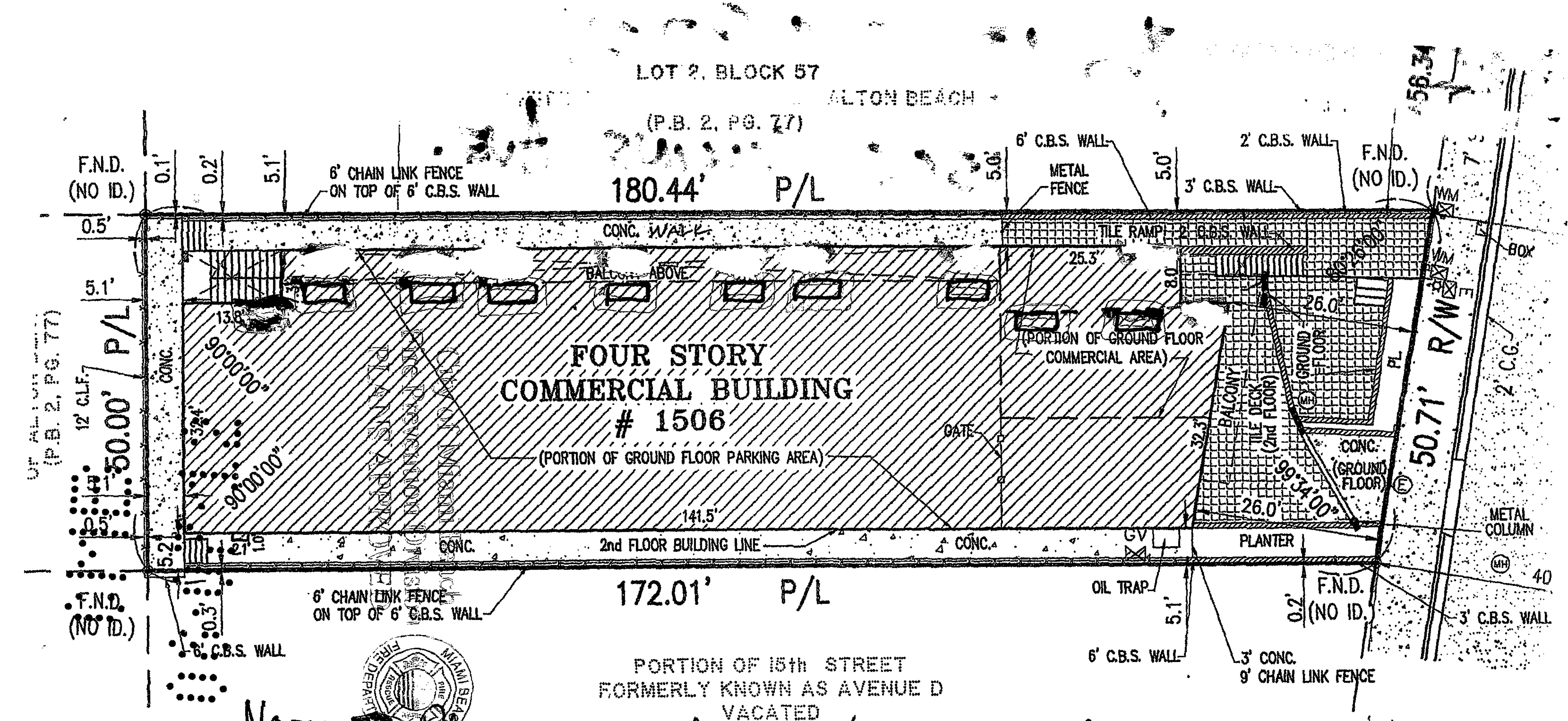
B1204923

1506 Collins Ave.



09.05.13

CNB



NOTE: ▯ Place where doors will be replaced.

- Doors will be installed on floors: 2, 3, and 4.
- Doors will be installed 10 doors by floor.

REQUIRED DESIGN LOADS
FOR ALL 36" x 80" DOORS
ZS: +50.3 PSF / -65.6 PSF

AUG 06 2012

08.08.12

(1-0)

B1204923

1506 COLLINS AVE.

OFFICE COPY

CITY OF MIAMI BEACH

APPROVED FOR PERMIT BY

THE FOLLOWING:

BUILDING	8/8/12
ZONING	8/8/12
...	
CONCURRENCY	
PLUMBING	
ELECTRICAL	
MECHANICAL	
FIRE PREVENTION	TArnsron 8/8/12
ENGINEERING	8/8/12
PUBLIC WORKS	
STRUCTURAL	AV 8/8/12
ELEVATOR	

08.08.12 CMB

08.08.12 CMB

FERNANDO GOMEZ-PINA, P.E.
LICENSED ENGINEER #:PE14710
250 CATALONIA AVE SUITE #404
FL. 33134
TEL (305) 461-2188 FAX (305) 461-2238

PROJECT: HOTEL EVA
ADDRESS: 1506 COLLINS AVE.
MIAMI BEACH, FL. 33139

BUILDING

1-Light Transmitting plastic cover on solar collectors having non combustible sides and bottoms shall be permitted on buildings not over three stories above grade plane, provided that light -transmitting plastic covers does not exceed 33.33 percent of the total area for CC1 materials or 25% of the total roof area for CC2 materials. FBC 2000.12

PLEASE SEE ENGINEERING PLANS D-1 & SOLAR PANEL DATA SHEET

NOTE: THIS SYSTEM IS DESIGNED WITHOUT USING ANY TYPE OF LIGHT TRANSMITTING PLASTIC COVERS ON THE SOLAR COLLECTORS.

NOTE: THE SOLAR COLLECTORS ARE MADE WITH HIGH TRANSMISSION, LOW IRON, TEMPERED GLASS 0.13IN, THEN MULTICRYSTALLINE SILICON, WITH A ANODIZED ALUMINUM FRAME.

2-Equipment within 10ft of the roof edge; guardrail is required for equipment maintenance. FBC 1509.6

PLEASE SEE REVISED ENGINEERING PLANS D-1

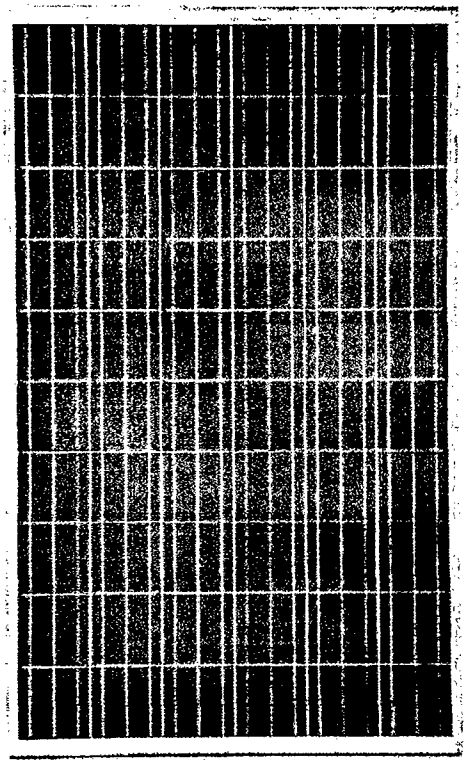
NOTE: THE SYSTEM IS OFFSET FROM THE SOUTH EDGE OF THE ROOF BY 12'-3" ON THE NORTH SIDE OF THE BUILDING GUARDRAILS WITH HAVE TO BE INSTALLED

FERNANDO R. GOMEZ-PINA LICENSE No. 14710 STATE OF FLORIDA PROFESSIONAL ENGINEER

MULTI

TSM-PA05

The Universal Solution



- Easy installation and handling for various applications
- Module can bear snow loads (5400PA) and wind loads (2400PA)
- Guaranteed power output (0~+3%)
- High performance under low light conditions (Cloudy days, mornings and evenings)
- Independently certified by international certification body*
- Manufactured according to International Quality and Environment Management System (ISO9001, ISO14001)

Currently the most popular panel produced by Trina Solar. Versatile and adaptable, with power output ranging from 220 to 240Wp, the TSM-PA05 panel is perfect for large-scale installations, particularly ground-mounted and commercial rooftop systems. Using reliable and carefully selected components that are tested at the Trina Solar Center of Excellence, this panel comes with a 25-year performance guarantee of 80% power production.

Trina Solar, **the best $/kWh** value under the sun

Trina Solar (U.S.), Inc.
100 Century Center,
Suite 340, San Jose CA 95112,
USA

T +1 800 696 7114
F +1 800 696 0166
E usa@trinasolar.com

Founded in 1997, Trina Solar is a vertically integrated PV manufacturer, producing everything from ingots to modules, using both mono and multicrystalline technologies. At the end of 2010, the company will have a nameplate module capacity of 950MW. Trina Solar's wide range of products are used in residential, commercial, industrial and public utility applications throughout the world.

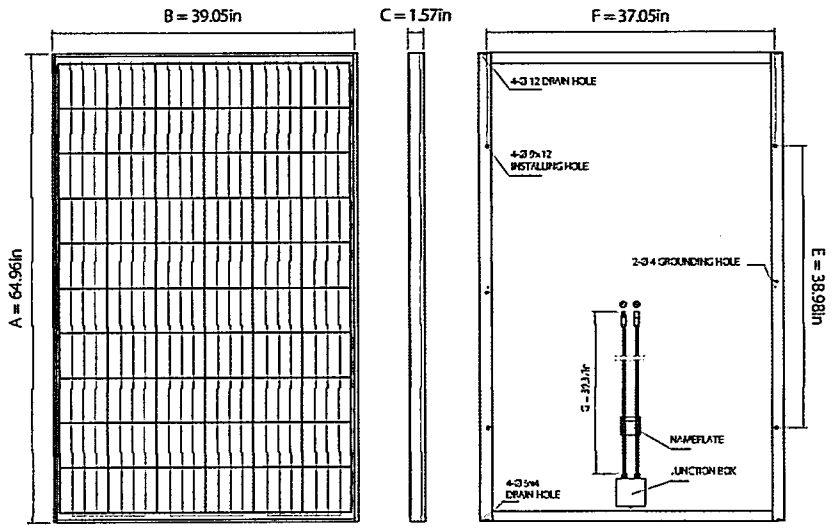
Only by matching an efficient cost-structure with proven performance will we, as an industry, achieve grid parity. And at Trina Solar, we have both.

Trinasolar
The power behind the panel

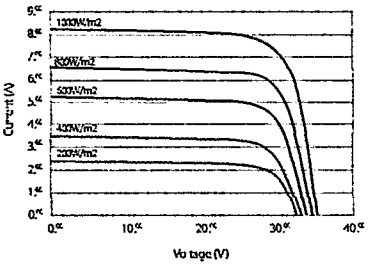
* IEC61215, IEC61730, UL1703, TUV Safety Class II, CE

TSM-PA05 The Universal Solution

Dimensions of PV module TSM-PA05



I-V Curves of PV module TSM-230PA05



Efficiency	up to 14.7
Wattage	up to 240
Years warranty	25

Certification

Electrical Data @ STC	TSM-220PA05	TSM-225PA05	TSM-230PA05	TSM-235PA05	TSM-240PA05
Peak Power Watts-P_{MAX} (WP)	220	225	230	235	240
Power Output Tolerance-P_{MAX} (%)	0/+3	0/+3	0/+3	0/+3	0/+3
Maximum Power Voltage-V_{MAX} (V)	29.0	29.4	29.8	30.1	30.4
Maximum Power Current-I_{MPP} (A)	7.60	7.66	7.78	7.81	7.89
Open Circuit Voltage-V_{OC} (V)	36.8	36.9	37.0	37.1	37.2
Short Circuit Current-I_{SC} (A)	8.15	8.20	8.26	8.31	8.37
Encapsulated Cell Efficiency η_c (%)	15.1	15.4	15.8	16.1	16.4
Module Efficiency η_m (%)	13.4	13.7	14.1	14.4	14.7

Values at Standard Test Conditions STC (Air Mass AM1.5, Irradiance 1000W/m², Cell Temperature 25°C)

General Data

Cell Type	6 x 6in Multicrystalline silicon, 60pcs (6×10)
Glass	High Transmission, Low Iron, Tempered Glass 0.13in
Frame	Anodized Aluminum
J-Box / Connector	1. Tyco / Tyco, IP65 2. Renhe / MC4, IP65

Temperature Ratings

Nominal Operating Cell Temperature (NOCT)	46°C (±2°C)
Temperature Coefficient of P_{MPP}	- 0.45%/°C
Temperature Coefficient of V_{OC}	- 0.35%/°C
Temperature Coefficient of I_{SC}	0.05%/°C

Mechanical and Packing Configuration

Dimensions (A x B X C)	64.96 x 39.05 x 1.57in
Installation Hole Dimensions (E x F)	38.98 x 37.05in
Cable length (G)	39.37in
Weight	43.0lb
Packing Configuration	25pcs/carton
Quantity/Pallet	1carton/pallet
Loading Capacity	650pcs/40ft(H)

Maximum Ratings

Operating Temperature	-40 ~ +85°C
Storage Temperature	-40 ~ +85°C
Maximum System Voltage	600VDC
Maximum Series Fuse	15A

Warranty

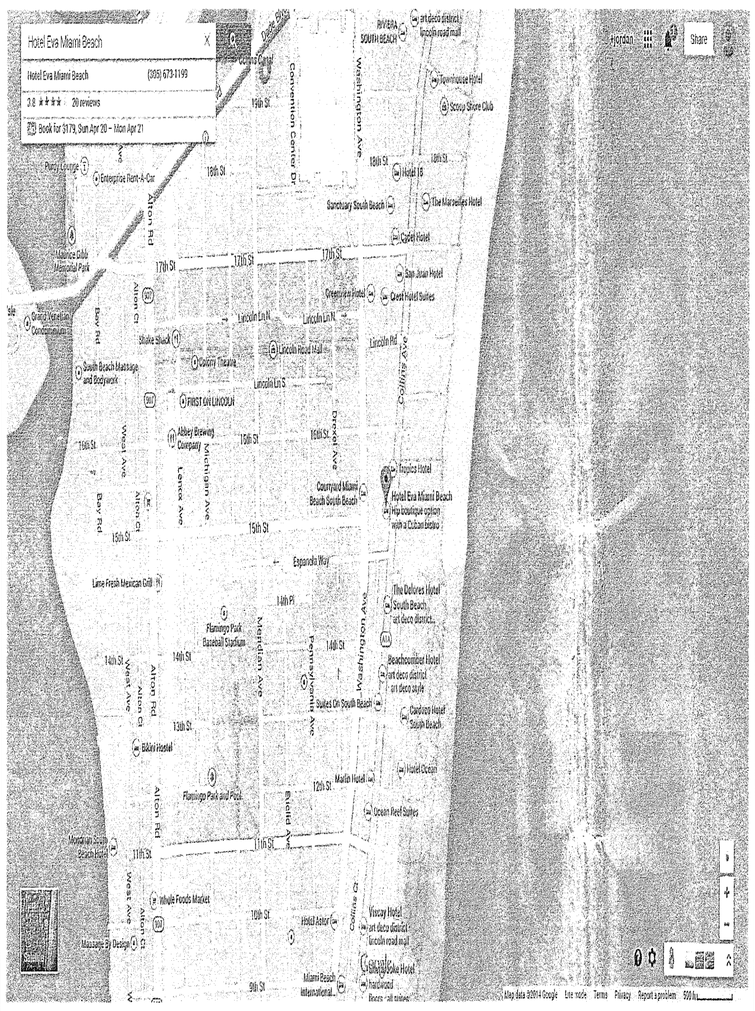
5 years manufacturing warranty
10 years warranty, 90% power output
25 years warranty, 80% power output

CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.

Trinasolar
www.trinasolar.com

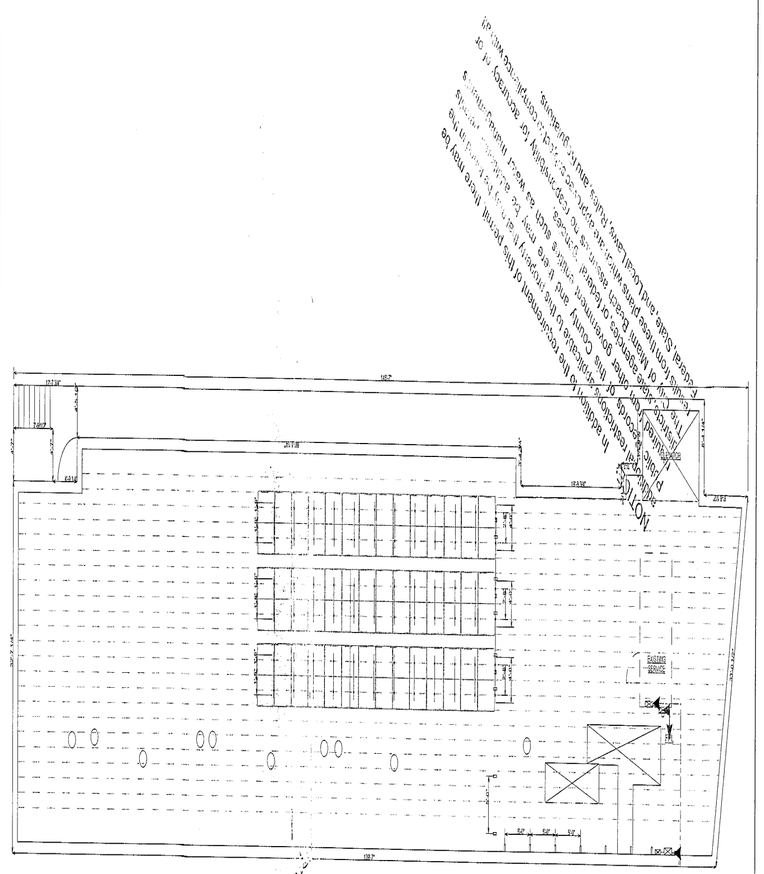
B14036

Location Map:



Aerial View:

Plan View:



Index:

Permitting/Planning Notes:

SCOPE OF WORK:
INSTALLATION OF CLOSED LOOP HYBRID SOLAR THERMAL WATER HEATING SYSTEM

City of Miami Beach
Fire Prevention Division
PLANS APPROVED

OFFICE COPY
CITY OF MIAMI BEACH
APPROVED FOR PERMIT BY
THE FOLLOWING:

BUILDING:	04/29/14 05/13/14
ZONING:	5/2/14 5/13/14
PLUMBING:	05/13/14
ELECTRICAL:	5/1/14 NA
MECHANICAL:	
FIRE PREVENTION:	5/10/14 5/16/14
FLOOD:	
PUBLIC WORKS:	
STRUCTURAL:	4/30/14
ELEVATOR:	

REVISIONS:

Project: Hotel EVA
1506 Collins Ave
Miami Beach, FL 33139

COVER

Coronado Solar
www.CoronadoSolar.net
3001 Cedora terrace Sebring, Fl. 33870
863-381-6083 fax 863-385-2406
State Certified Solar Contractor CVC 56809

SEAL: FERNANDO GOMEZ-PINA LICENSE 14710 STATE OF FLORIDA PROFESSIONAL ENGINEER

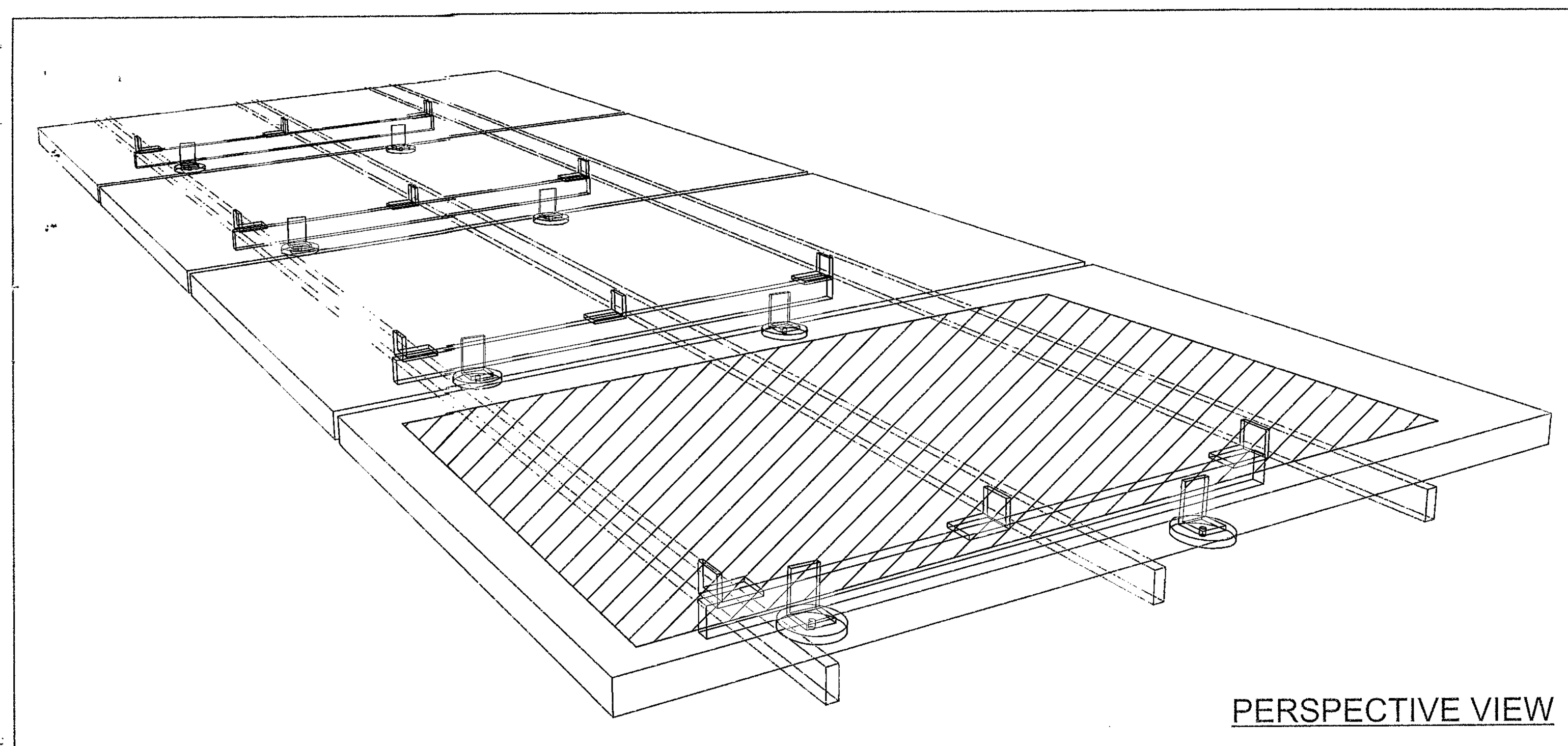
FERNANDO GOMEZ-PINA, P.E.
LICENSED ENGINEER #:PE14710
250 CATALONIA AVE SUITE #404
CORAL GABLES, FL. 33134
TEL(305) 461-2188 FAX(305) 461-2238
I CERTIFY THAT THIS PV SYSTEM
FULLY COMPLIES WITH THE
REQUIREMENTS OF NEC 690.

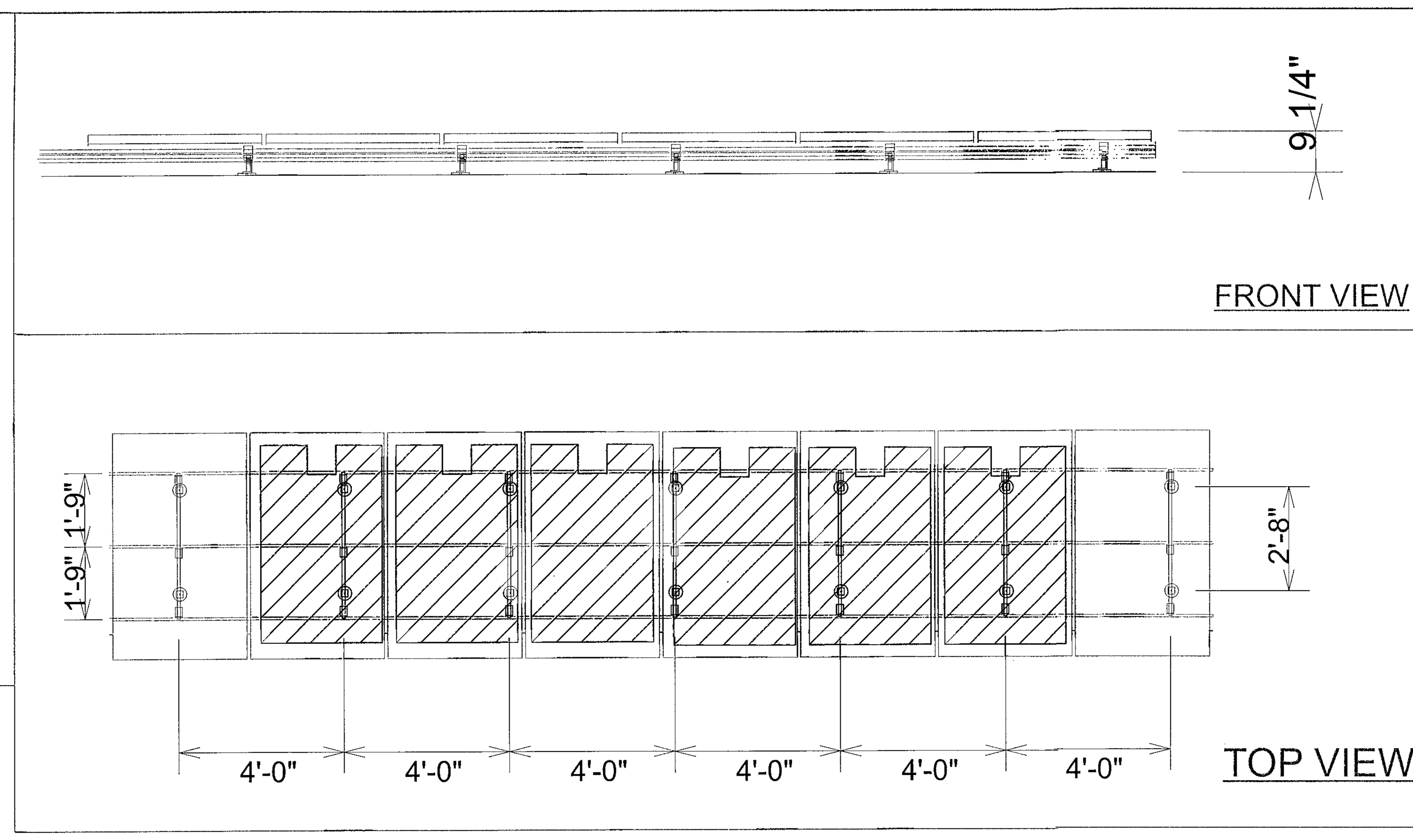
DATE: 4/15/2014

SCALE: NTS

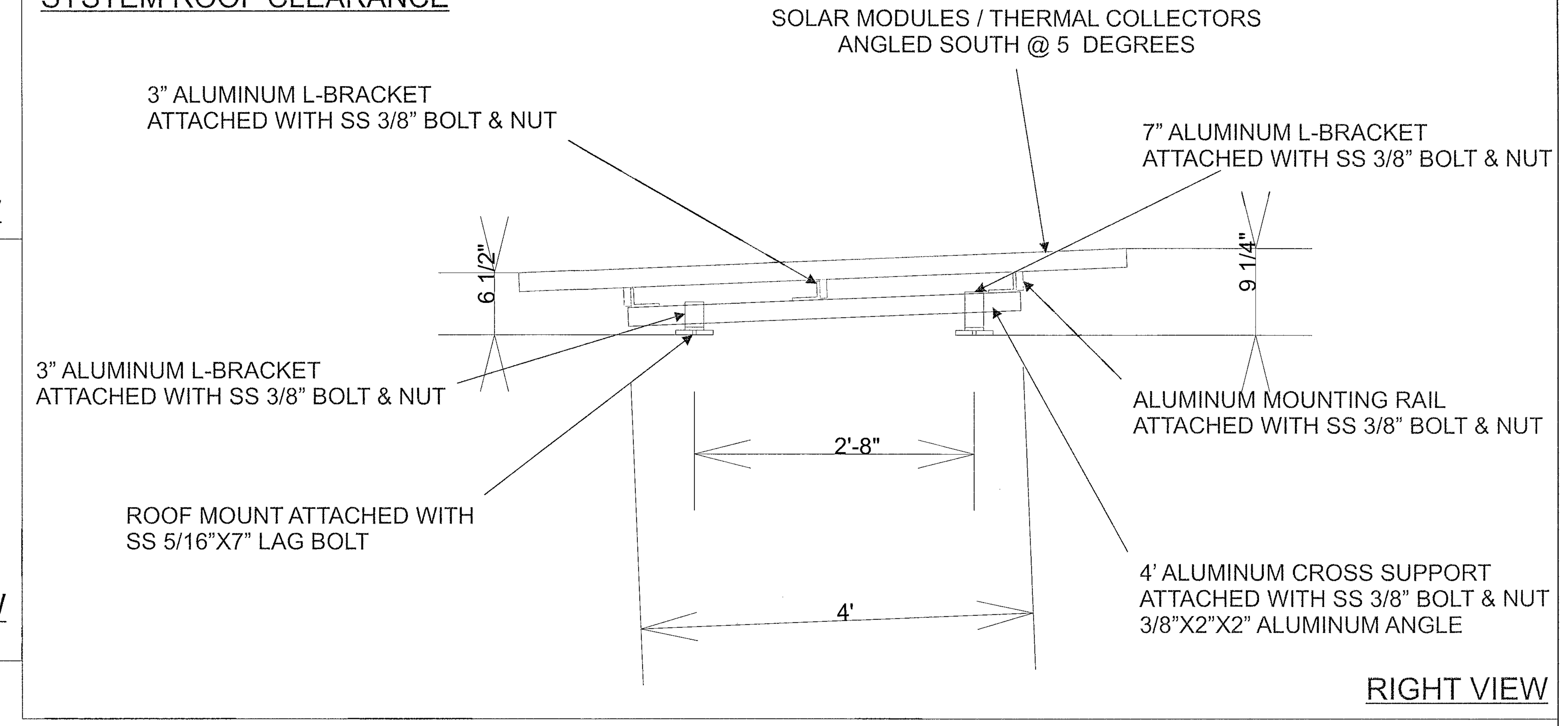
DRAWN BY: J.B

PAGE: C-1





SYSTEM ROOF CLEARANCE



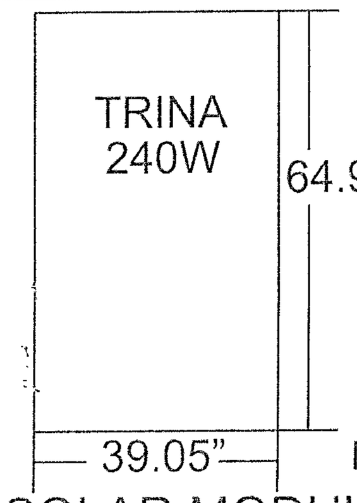
ROOF PLAN

THE LEAST HORIZONTAL DIMENSION IS 41'
10% OF THE LEAST HORIZONTAL DIMENSION
41' x .10 = 4.1'

BUILDINGS MEAN ROOF HEIGHT 40'
40% OF THE HEIGHT OF BUILDING
.4 x 40' = 16'

Note: No pipes, conduit or lines penetrate the stairs enclosure. 5-13-14

City of Miami Beach Fire Prevention Division PLANS APPROVED



Maximum Test Load: (5400Pa) 113 psf

NOTE: Install mid clamps between modules and end clamps at the end of each row of modules.

SOLAR MODULE

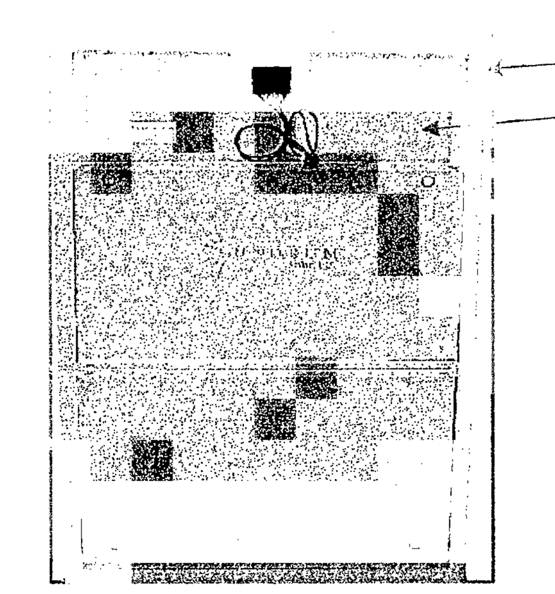
NOTE:
ALUMINUM RAILS SHOULD ALWAYS BE SUPPORTED BY MORE THAN ONE FOOTING ON BOTH SIDES OF THE SPLICE."

ROOF DETAILS
FLAT ASPHALT ROOF
ROOF AREA: 5,787 sq.-ft
PERIMETER WIDTH: 4.1'
PRESSURE ZONE: 1 & 2
ROOF HEIGHT: 40'
LOW SLOPE ROOF
11 BANKS OF 3 COLLECTORS

TOTAL THERMAL COLLECTORS: 33
TOTAL THERMAL COLLECTOR AREA: 462 sq.-ft
TOTAL ROOF MOUNTS: 78
TOTAL POINT OF CONNECTIONS PER MODULE: 6
TOTAL CONDUIT ROOF STANDOFFS: 14

The SunDrum Collector

- Exterior is Anodized Aluminum
- SDM 100-30 rated at 480W
  - Gross Area 11.28 sq ft.
  - Aperture Area 9.3 sq. ft.
  - Dry Weight 17 lbs.
- SDM100-300 rated at 650W
  - Gross Area 14sq ft.
  - Aperture Area 11.8 sq. ft.
  - Dry Weight 23 lbs.
- Weight per square ft ~1.75 lbs.
- Flow rate .5 GPM
- Max pressure 6 PSI
- Recommended Tubing Pex w/Oxy barrier



Sizing Rule of Thumb
(Potable Water)
480 Watt Collector
Southern US = 1.5 per person
Northern US = 2 per person
650 Watt Collector
Southern US = 1 per person
Northern US = 1.5 per person

MIAMI BEACH FIRE DEPARTMENT

REVISIONS:

Project: Hotel EVA
1506 Collins Ave
Miami Beach, FL 33139
SYSTEM LAYOUT

Coronado Solar
www.CoronadoSolar.net
3001 Cedora terrace Sebring, Fl. 33870
863-381-6083 fax 863-385-2406
State Certified Solar Contractor CVC 56809

SEAL: FERNANDO R. GOMEZ-PINA, LICENSE No. 14710, STATE OF FLORIDA, PROFESSIONAL ENGINEER

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TEL(305) 461-2188 FAX(305) 461-2238
I CERTIFY THAT THIS PV SYSTEM FULLY COMPLIES WITH THE REQUIREMENTS OF NEC 690.

DATE: 5/12/2014
SCALE: NTS
DRAWN BY: J.B
PAGE: D-1

FERNANDO GOMEZ-PINA, P.E.
LICENSED ENGINEER #:PE14710
250 CATALONIA AVE SUITE #404
FL. 33134

TEL (305) 461-2188 FAX (305) 461-2238

PROJECT: HOTEL EVA
ADDRESS: 1506 COLLINS AVE.
MIAMI BEACH, FL. 33139

ELECTRICAL

I- PROVIDE COMPLETE ELECTRICAL INFORMATION REGARDING THE ELECTRIC BACKUP SYSTEM

PLEASE SEE REVISED ENGINEERING PLANS P-2

NOTE: THIS SYSTEM IS DESIGNED USING THE EXISTING GAS BOILER FOR THE WATER HEATING BACKUP.
THE SOLAR WATER HEATING SYSTEM IS JUST A PRE HEATING SYSTEM TO THE EXISTING BOILER.

PLUMBING

-Provide approved FSEC system and certification number. FBC E.C. 403.4.3.2.3.

PLEASE SEE REVISED ENGINEERING PLANS P-1

FSEC SYSTEM AND CERTIFICATION NUMBER: 00304i

-Correct hanger spacing for PEX tubing as per FBC Plb 308.5

PLEASE SEE REVISED ENGINEERING PLANS D-1

PEX hangar maximum spacing per 308.5 is 32" horizontal and 10' vertical.

-Verify backflow prevention compliance for this system as per FBC Plb 608.16.3.

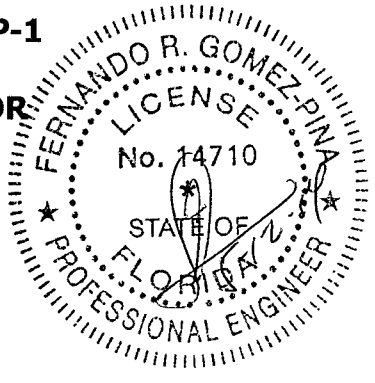
PLEASE SEE REVISED ENGINEERING PLANS P-2 & ATTACHMENT

NOTE: USING back flow protection device FOR COMPLIANCE FOR BACKFLOW PREVENTION

-P-1 -Information on this sheet is not completely legible: provide legible plan. FBC 107.2.1

PLEASE SEE REVISED ENGINEERING PLANS P-1

LEGIBLE SRCC CERTIFIED SOLAR COLLECTOR CERTIFICATION #: 2007044A



System Overview

The SunDrum Solar SDM300 Series Hybrid Solar Water Heating and Energy System uses from four to ten SDM100 collector panels, connected in series of two to five panels that are then connected in parallel rows to form a collector array of adequate size to transfer sufficient solar (thermal) energy to a Heat Transfer Fluid (HTF). The HTF used in the SunDrum SDM300 Series systems is Cryotek-100AL. The use of a HTF allows the system to operate at higher temperatures and provides greater freeze protection than water. The HTF is pumped through a closed solar loop, it does not come in direct contact with the potable water supply. The HTF in the closed solar loop is pumped up through the collector array, then down to the double-walled heat exchanger that is wrapped around the solar water heating tank. This results in the heating of the tank and water in the tank, while the HTF itself is cooled before being cycled back to the collector array. The pump operations are controlled by a Differential Temperature Controller that uses the temperature difference between two sensors, one located in the solar tank and a second sensor at the collector array return port to turn the pump on or off as needed. During this process the HTF is cooling the Photo Voltaic panels mounted under the SDM100 Collectors. SunDrum® Solar SDM300 Series Hybrid Solar Water Heating and Energy Systems provide the unique capability of capturing both electrical and thermal energy in a single system. Photovoltaic (PV) panels are very good at converting solar radiation into thermal and electrical energy. An example would be 1000 watts of solar radiation striking the PV panel would be converted into approximately 150 watts of electrical energy and 750 watts of thermal energy while 100 watts is reflected away. By capturing a majority of this thermal energy and transporting it to storage the PV panel will be cooled. Cooling the PV (photovoltaic) panels allow them to operate more efficiently – capturing more electrical power from the sun than a traditional PV-only installation. Under standard test conditions the electrical output can increase to 165watts of electrical energy plus 480watts of thermal energy for 645 watts of total energy without increasing roof space. Thus by implementing a SunDrum Solar SDM300 hybrid system one dramatically improves the efficiency of converting the suns energy into useful energy.

This manual describes how to install a SDM300 system along with maintenance and troubleshooting guidelines..

Since the sun is not always out due to planetary rotation or weather patterns, solar energy is a dependent source of energy. Thus solar thermal systems should be considered a pre-heat system and requires a back up water heater of adequate capacity to fully meet the home's thermal energy needs. This is also true for SunDrum Solar SDM300 systems where our goal is to always cool the PV panel. Thus back up water heating is required with SDM300 systems. This water heater must be listed and labeled by and accredited listing organization.

The solar energy system described by this manual, when properly installed and maintained, meets the minimum standards established by the Solar Rating & Certification Corporation (SRCC). This certification does not imply endorsement or warranty of this product by SRCC.

A copy of this Solar System Manual along with SDM100 technical data sheet will be kept at the system installation site.

SunEarth Inc. HE SolarHeatExchanger,SolarTank,orElectricStorageWaterHeater

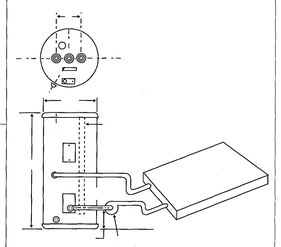
Availablein80and120Gallon Models

- Brassdrainvalve
- Singleelementwaterheaterspecifically engineeredforinstallationwithresidential indirectsolarsystems
- Temperatureandpressurereliefvalve included
- Collectorfeedandreturnfittingslocated atfrontoftankforconvenientinstallation
- Isolatedtankdesignforbetterheat retention
- Highefficiencystainlesssteelheating element
- Tankliningresistscorrosionandprolongs tanklife
- Heatexchanger:coppertubingwrapped aroundandsecuredtothetank.
- Doublewall,ventdesignforpositive leakdetection
- Coldwaterdiptubebringscoldwater totankbottomtopreventmixingwith heatedwater
- Anoderodequalizesaggressivewater actionforprolongedtanklife
- Coldwaterinlet,hotwateroutlet,relief valveandanoderodattopoftankfor easyaccessandfast,economical installation
- Automatictemperaturecontrol
- Overtemperatureprotector

DESCRIPTION			ROUGHINGINDIMENSIONS(SHOWNINNCHES)			ENERGYINFORMATION
TYPE	GAL. CAP.	MODELNUMBER	ELEMENT WATTAGE UPPER	HEIGHT A	DIAMETER B	APPROX. SHIPWT. (LBS.)	APPROX. R FACTOR
	80	SU80HE-1	4500W	58-3/4	24-1/2	222	R-17.3
	120	SU120HE-1	4500W	62	28-1/4	380	R-17.3

- Heatersfurnishedwithstandard240voltAC,singlephasenon-simultaneouswiringand4500wattheatingelement.
- Topreventcorrosion,properpHlevelsintransferfluidmustbemaintained.
- SunEarthmodelsmeetallcurrentstatorequirementsforsolarstoragetanks.
- Thetanksaredesignedtooperateupto150PSI.

Aspecial1/2" NPT opening isprovided forinstallationofa "probetype" thermostatorsensor.



COPPERCOILDATA(TypeLCopper)
Maximumpressure=150PSI
Maximumtemperature=185°F
Tubel.D.=5/8"

SolaraideHE TankCapacity	Coil Capacity Gallons	Length ofTubing AroundTank(Ft)
80Gallons	2.2	120
120Gallons	2.6	143

PRESSUREDROPTHROUGHCOIL(FeetofH ₂0)		
	HeadLoss (Feet)	
Flow Rate	80Gallon	120Gallon
1GPM	1.3	1.6
2GPM	4.8	5.7
3GPM	10.0	12.0

SunEarth Inc.•8425AlmeriaAvenue,Fontana,California92335•www.sunearthinc.com

01/08 WP FORM NO. SEHE-02 Rev. 1

SUNDRUM® SOLAR

SDM100-300 Technical Data Sheet

General Specifications:

	Metric (mm)	English (inches)
Housing Length	1372	54
Housing Width	914	36
Housing Fin Cut out	152x203	6x8
Housing Thickness	6	0.240
Insulation Dimensions	914x572 2X	36x22.5 2X
Compatible PV panels	SunPower commercial; Schott 220-235; Schuco 225; Suntech 260-280Vd; Trina 230; Perlight Solar 235	
Operating Temp	-40 - 90 C	-40 - 194 F
Connections	1/2 NPT 4X	

INTERTEK WHI RECOGNIZED COMPONENT

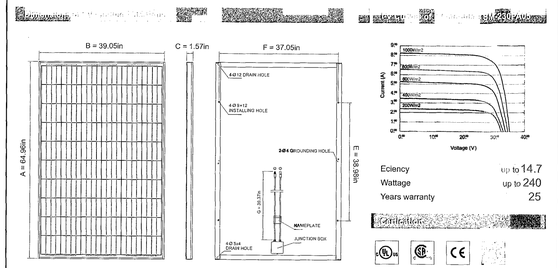
SOLAR SRCC SOLAR RATING & CERTIFICATION CORPORATION

Class C Fire Rating

SunPower			Schott			Schuco			
Bracket Length	1040	40.93	Bracket Length	987	38.85	Bracket Length	987	38.85	
Bracket Depth	35	1.36	Bracket Depth	38	1.50	Bracket Depth	35	1.37	
Bracket Weight 4x	3.50	lb		3.50	lb		3.50	lb	

	Metric		English			Metric		English	
Gross Area:	1.30	m^2	14.00	ft^2	Net Aperture area	1.09	m^2	11.8	ft^2
Dry Weight:	11.04	kg	23	lb	Min Fluid Capacity	2.90	Litres	0.8	gal
Max pressure	41.34	KPa	6	psi	Max Fluid Capacity	4.15	Litres	1.1	gal

TSM-PA05 The Universal Solution



	220	225	230	235	240
Peak Power Watts$_{P}$ (WP)	220	225	230	235	240
Power Output Tolerance$_{P}$ (%)	0/+3	0/+3	0/+3	0/+3	0/+3
Maximum Power Voltage$_{PV}$ (V)	29.0	29.4	29.8	30.1	30.4
Maximum Power Current$_{PI}$ (A)	7.60	7.66	7.78	7.81	7.89
Open Circuit Voltage$_{V}$ (V)	36.8	36.9	37.0	37.1	37.2
Short Circuit Current$_{I}$ (A)	8.15	8.20	8.26	8.31	8.37
Encapsulated Cell Efficiency (%)	15.1	15.4	15.8	16.1	16.4
Module Efficiency$_{M}$ (%)	13.4	13.7	14.1	14.4	14.7

Values at Standard Test Conditions STC (Air Mass AM1.5, Irradiance 1000W/m², Cell Temperature 25°C)

Cell Type	6 x 6in Multicrystalline silicon, 60pcs (6•10)	Nominal Operating Cell Temperature (NOCT)	46°C (±2°C)
Glass	High Transmission, Low Iron, Tempered Glass 0.13in	Temperature Coefficient of P	- 0.45%/°C
Frame	Anodized Aluminum	Temperature Coefficient of V	- 0.35%/°C
J-Box / Connector	Tyco / Tyco, IP65 2. Renhe / MC4, IP65	Temperature Coefficient of I	0.05%/°C

Dimensions (A x B x C)	64.96 x 39.05 x 1.57in	Operating Temperature	-40 ~ +85°C
Installation Hole Dimensions (E x F)	38.98 x 37.05in	Storage Temperature	-40 ~ +85°C
Cable length (G)	39.37in	Maximum System Voltage	600VDC
Weight	43.0lb	Maximum Series Fuse	15A
Packing Configuration	25pcs/carton		
Quantity/Pallet	1carton/pallet		
Loading Capacity	650pcs/40ft(H)		

5 years manufacturing warranty
10 years warranty, 90% power output
25 years warranty, 80% power output

The WEEB Grounding clips are designed to bond solar PV modules to mounting structures and create an electrical path to ground. WEEB Washers eliminate the need for older, more costly grounding methods and greatly reduce the amount of labor and materials used in installations.

- Bonds PV modules to mounting structures
- Specialized teeth on washer embeds into anodized aluminum to establish gas-tight electrical connection
- 304 Stainless Steel washer
- Stock parts for most popular mounting systems
- Custom WEEB Washer designs also available
- ETL Listed to UL 467
- WEEB Washers are recognized to UL2703

trinasolar
www.trinasolar.com

REVISIONS:

Project: Hotel EVA
1506 Collins Ave
Miami Beach, FL 33139
SOLAR WATER HEATING SYSTEM DATA SHEETS

Coronado Solar
www.CoronadoSolar.net
3001 Cedora terrace Sebring, Fl. 33870
863-381-6083 fax 863-385-2406
State Certified Solar Contractor CVC 56809

EVERHOT

Everhot, Inc.
tel: 800-832-0460 fax: 800-669-8260
www.everhotinc.com

Technical Specifications & Submittal Data
PEX Tubing with Oxygen Barrier

Sizes: 3/8"(BPx38xx), 1/2"(BPx12xx), 5/8"(BPx58xx), 3/4"(BPx34xx) & 1"(BPx10xx) where x is the color (R-red), and xx is the first two numbers of the coil's length. Ex.: 1000' coil of 1/2" Red Barrier PEX is BPR1210 (12 is 1/2", 58 is 5/8", 34 is 3/4", etc.)

PRESSURE RATINGS

Operating pressure	Maximum working temp.
79psi	200°F
100psi	180°F
160psi	73°F

DIMENSIONAL DATA

Tubing size	OD	Wall thickness	ID	Voulme gal/100'	Weight lbs/100'
3/8"	0.500±0.03	0.070±0.01	0.350	0.50	4.50
1/2"	0.625±0.04	0.070±0.01	0.475	0.92	5.80
5/8"	0.750±0.04	0.083±0.01	0.574	1.34	8.38
3/4"	0.875±0.04	0.097±0.01	0.677	1.83	11.00
1"	1.125±0.05	0.125±0.01	0.863	3.03	16.94

All Everhot PEX tubing has CTS size dimensions and wall thickness per SDR 9.

MINIMUM BENDING RADIUS
Minimum bending radius R_{min} for Everhot PEX tubing is 8 times the outside diameter (OD): R_{min} = 8xOD
For example, minimum bending radius for 1/2" PEX tubing with 5/8" outside diameter is 8 x 5/8" = 5"

PRESSURE DROP TABLE (psi per 100ft)

Flow rate, GPM	3/8"	1/2"	5/8"	3/4"	1"
0.5	2.50	0.51	0.21	0.05	0.02
1.0	7.50	1.70	0.71	0.34	0.10
2.0	26.1	5.30	2.12	1.02	0.35
3.0	54.1	11.0	4.36	2.10	0.63
4.0		18.4	7.36	3.53	1.06
5.0		27.4	11.0	5.26	1.58
6.0		38.1	15.3	7.30	2.19
7.0			20.1	9.63	2.89
8.0			25.6	12.3	3.68
9.0			31.7	15.1	4.55
10.0				18.3	5.50
11.0				21.7	6.52
12.0				25.4	7.63
13.0					8.81
14.0					10.1
15.0					11.4
16.0					12.8
17.0					14.3
18.0					15.8
19.0					17.5

MARKINGS
All Everhot PEX tubing is marked with nominal and OD sizes, applicable ASTM standards, third party certifications (NSF-rfh), temperature & pressure ratings, material designation code, manufacturing date / time / codes and footage every 5ft of tubing.

APPLICATIONS
· Radiant heating systems
· Snow & ice melting systems.
· Baseboard & cast radiator heating.
· Other hydronic heating applications.

SPECIFICATIONS
Everhot PEX tubing with oxygen barrier is manufactured from HDPE using a silane method of cross-linking. Oxygen Diffusion Barrier (EVOH) is per DIN 4726 standard. Tubing complies with ANSI/NSF standard 14 for plumbing system components, NSF certified for radiant floor heating applications (NSF-rfh) and UPC listed by IAPMO.

STANDARDS
ASTM F876: Standard Specification for Crosslinked Polyethylene (PEX) Tubing
ASTM F877: Standard Specification for Crosslinked Polyethylene (PEX) Plastic Hot- and Cold- Water Distribution Systems
CSA B137.5: Crosslinked Polyethylene (PEX) Tubing Systems for Pressure Applications

DESCRIPTION
Everhot Inc. currently offers two types of PEX: Barrier and Non-barrier. Oxygen Barrier tubing is most commonly used in radiant heating or hydronic heating systems, which contain ferrous (cast iron) components, such as circulator pumps, cast radiators, boiler heating elements and others.

STORAGE
Everhot PEX Tubing shall not be exposed to direct sunlight for more than 60 days. Failure to comply with the above will void the warranty.

WARRANTY
25 year limited warranty. For details, see the complete document.

UT Solaflex Tube and Roll Insulation

Physical Properties

Specifications	Values	Test Method
Thermal Conductivity, Btu · in./h · ft² · °F (W/mK) 75° F (24° C) mean temperature	0.28 (0.040)	ASTM C 177 or ASTM C 518
Water Vapor Permeability, Perm-inch. [Kg/(s·m·Pa)]	0.08 (1.16 x 10⁻¹⁰)	ASTM E 96, Procedure A
Flame spread and smoke developed index through 1" (25mm)	25/50	ASTM E 84
Mold Growth **Fungi Resistance** **Bacterial Resistance**	UL181 ASTM G21/C1338 ASTM G22	Meets requirements Meets requirements Meets requirements
Water Absorption, % by Volume	0.2%	
UV weather resistance	EXCELLENT	QUV Chamber Test ASTM G90
Upper Use Limit	300°F (150°C)	
Lower Use Limit	-297°F (-183°C)	
Ozone Resistance	Excellent	ASTM D 1149
Sizes: Tubes **Wall thickness (nominal)** **Inside diameter, tubular** **Length of sections, tubular**	1/2", 3/4", 1" (13, 19, 25mm) 1/2" through 2-1/2" IPS 6' (1.83m)	
Sizes: Rolls **Thickness x Length** **Width**	1/2" x 70' (13mm) x 21.3 m) 3/4" x 50' (19mm) x 15.2 m) 1" x 35' (25mm x 10.7m) 48" (1.22m)	
Density, typical range, lbs/ft³	3.0 ~ 6.0	ASTM D 1622 or ASTM D 1667

Notes
Reference Only

Suitable for systems with occasional or intermittent temperatures to 350° F (175° C), with a recommended exposure limit of one 30 minute period at 350° F (175° C) over 24 hours of operation.

At temperatures below -20° F (-29° C), elastomeric insulation starts to become less flexible. However, this characteristic does not affect thermal efficiency or water vapor permeability of UT Solaflex insulation.

No painting is necessary for performance of ths product. However, all elastomeric-based cellular insulation will show surface defects after prolonged exposure to UV radiation. Painting will minimize these defects if installed outdoors

City of Miami Beach
Fire Prevention
PLANS APPROVED

MIAMI BEACH FIRE DEPARTMENT

Field Inspector's Signed / See Attached Insert for Sealed Approved FSEC System dtd 05/13/14

SUNDRUM® SOLAR

EMAIL:
trichardson@sundrumsolar.com
Phone: 508 740 6256
WEB: www.sundrumsolar.com

UT Solaflex Tube and Roll Insulation
www.armacell.us
For the latest document, please refer to our website.

SEAL: FERNANDO R. GOMEZ-PINA LICENSE NO. 47710 STATE OF FLORIDA REGISTERED PROFESSIONAL ENGINEER

FERNANDO GOMEZ-PINA, P.E.
LICENSED ENGINEER #:PE14710
250 CATALONIA AVE SUITE #404
CORAL GABLES, FL. 33134
TEL(305) 461-2188 FAX(305) 461-2238
I CERTIFY THAT THIS PV SYSTEM
FULLY COMPLIES WITH THE
REQUIREMENTS OF NEC 690.

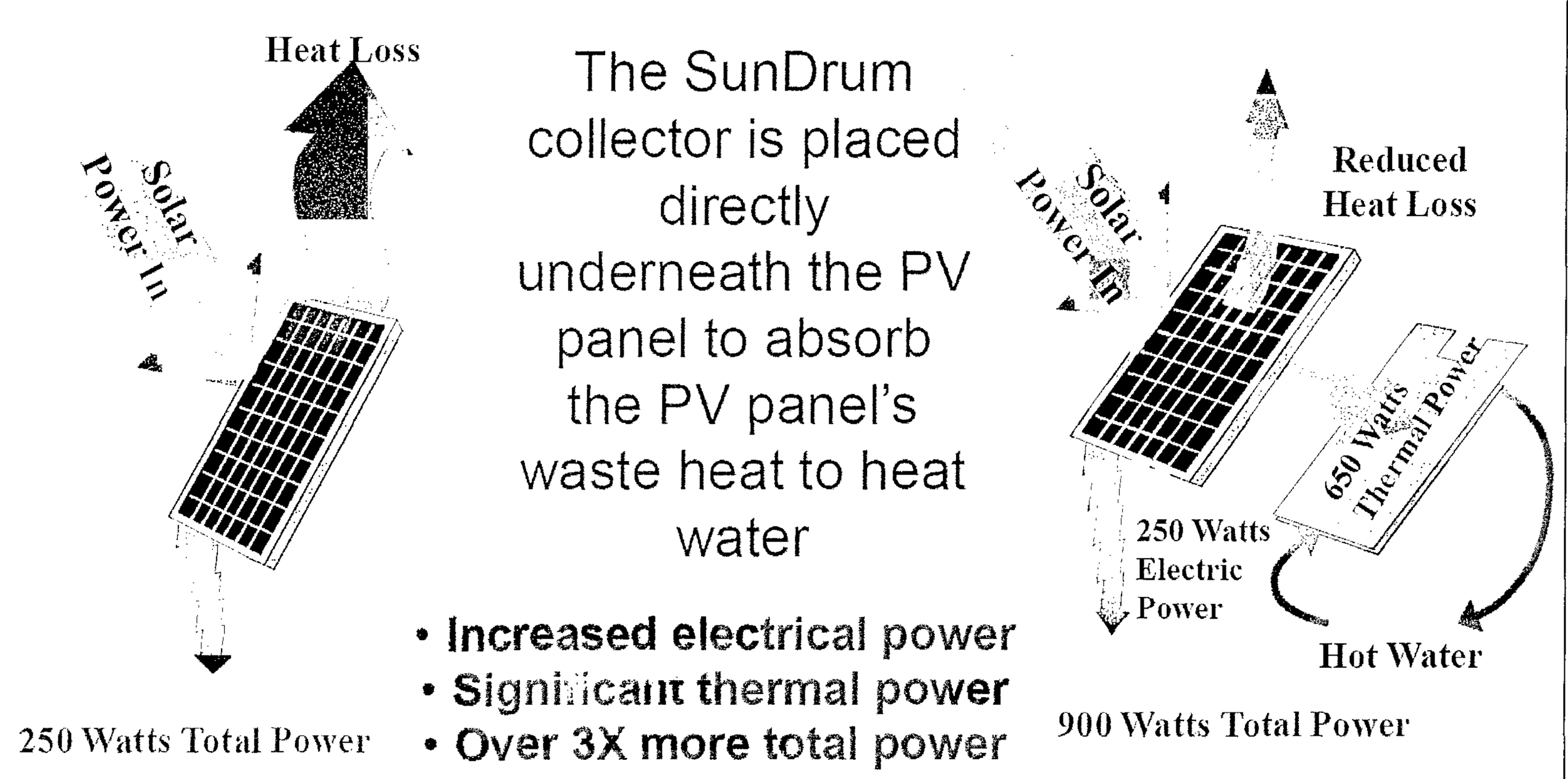
DATE: 5/12/2014

SCALE: NTS

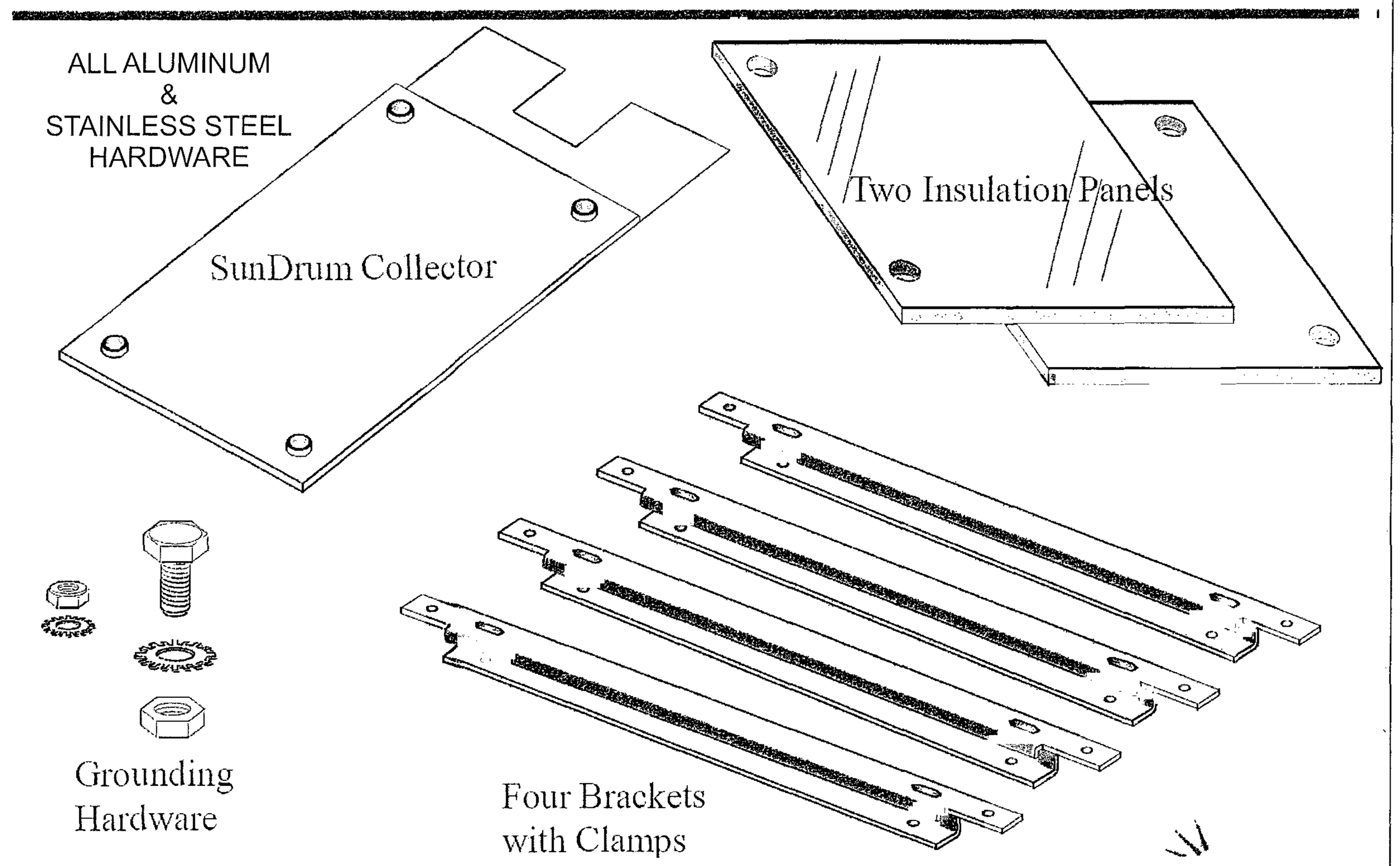
DRAWN BY: J.B

PAGE:
P-1

SunDrum® Solar's Proprietary Advantage



The SunDrum Collector



NOTE:
SYSTEM ENGINEERED WITH 3 RAIL RACKING SYSTEM

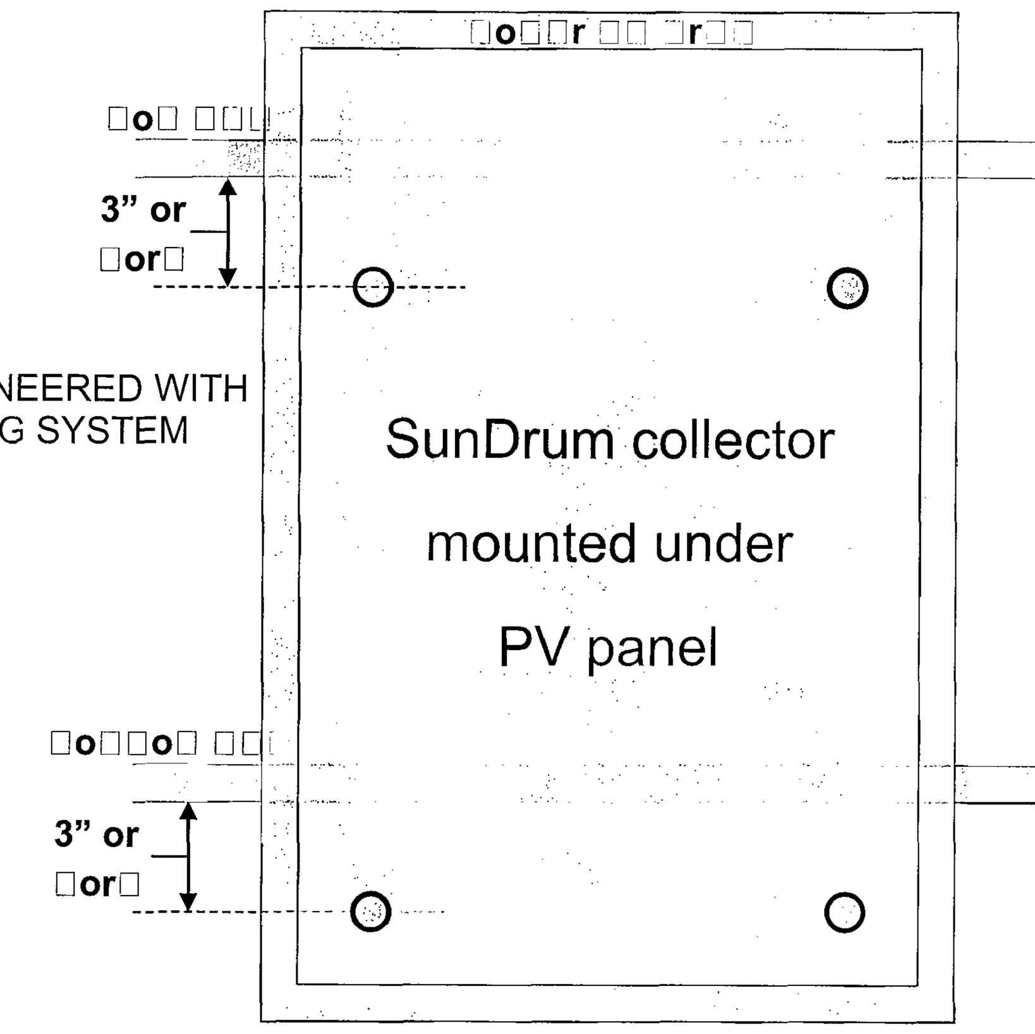
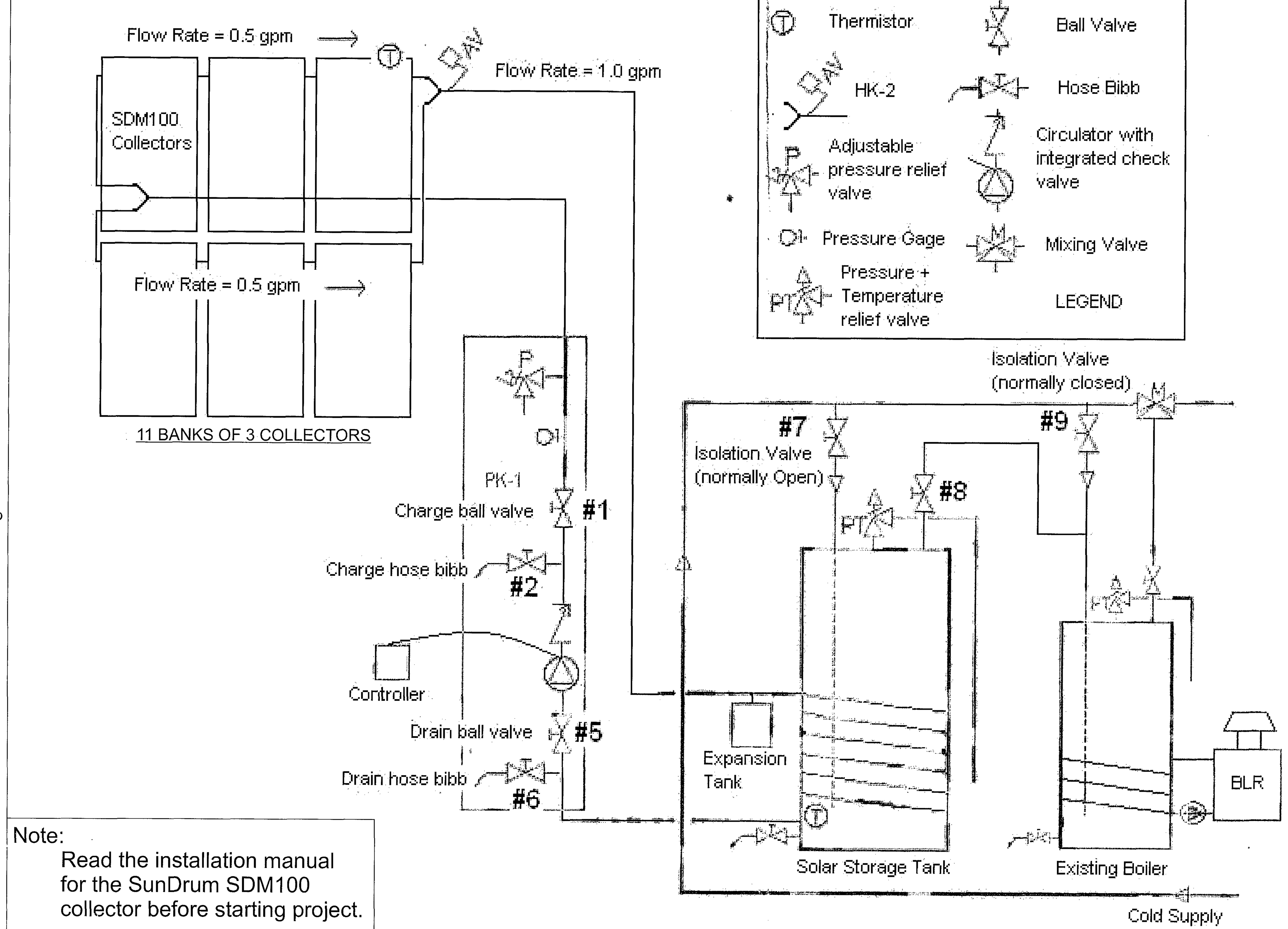


Figure 10: inlet- and outlet-port clearance to rails

Note that edge rack systems will not obstruct the inlets, and therefore only require clearance above roof to make final plumbing connections. Minimum clearance of 3" distance off roof is recommended, for access to inlet / outlet ports.

Double check dimensions of rack components, SunDrum collector input/output connections, and header locations for adequate clearance before installing racks on roof. Consult PV rack installation guide, and install racks according to directions.

Rails must not be located adjacent to the SDM100 bracket and fluid connections. Assemble a module to determine accurate locations for railing before mounting the rails to the roof.



Note:
Read the installation manual for the SunDrum SDM100 collector before starting project.

SUNDRUM SOLAR

Frequently Asked Questions

How much do the panels weigh dry?
SDM100-xxx 650 watt 36" panel: 23lbs
How much do the panels weigh wet?
SDM100-xxx 650 watt 36" panel: 31lbs
What is the added weight per square for added to the roof system approximately?
About 1.75lbs.
What is the flow per array string?
0.5 gpm
What is the system pressure?
This is dependent on height of system. The max pressure spec of the SDM100 is 6 psi.

What kind of tubing do you recommend?
Pex w/Oxy barrier. Is also acceptable to use stainless steel or copper line sets.

What pump and expansion tanks are recommended?
This varies with array size our pump stations include pumps and expansion tanks correctly sized to the various systems.

This system works with both exterior and interior heat exchanges which one do you prefer?
This is dependent on system design and space constraints. Generally a residential system is small with limited space and will use an interior heat exchanger. Commercial systems are larger and need to use the higher performance external heat exchanger.

What is the operational temper range of your system?
-40 to 194F
At what temperature would require the use of copper tubing instead of PEX w/oxygen barrier?

The use of copper would be limited to only the most extreme high temp areas of the country where ambient temperature might exceed 120 degrees. The southwestern desert areas of the United States are the most likely location. (There may be installations situations where high temperatures would be present that may necessitate using copper.)

System Startup and Shutdown

Solar Thermal

WARNING: Before initial system start up, the system should be checked for leaks by pressurizing the system to 5 PSI with air. **DO NOT PRESSURIZE WITH GREATER THAN 5psi** to avoid voiding warranty.

Charging the System

Typically the circulator pump in a closed loop system is not powerful enough to charge a system (raise fluid to highest point in the system). Therefore, an external pump must be used to charge the system.

WARNING: The traditional solar thermal charging process of forcing air out system by running the heat transfer fluid at a high flow rate for an extended period time **will not work**. The SunDrum collector design doesn't allow for the purging of air by simply cycling fluid through the system. **The steps below must be followed closely to guarantee a successful system charge.**

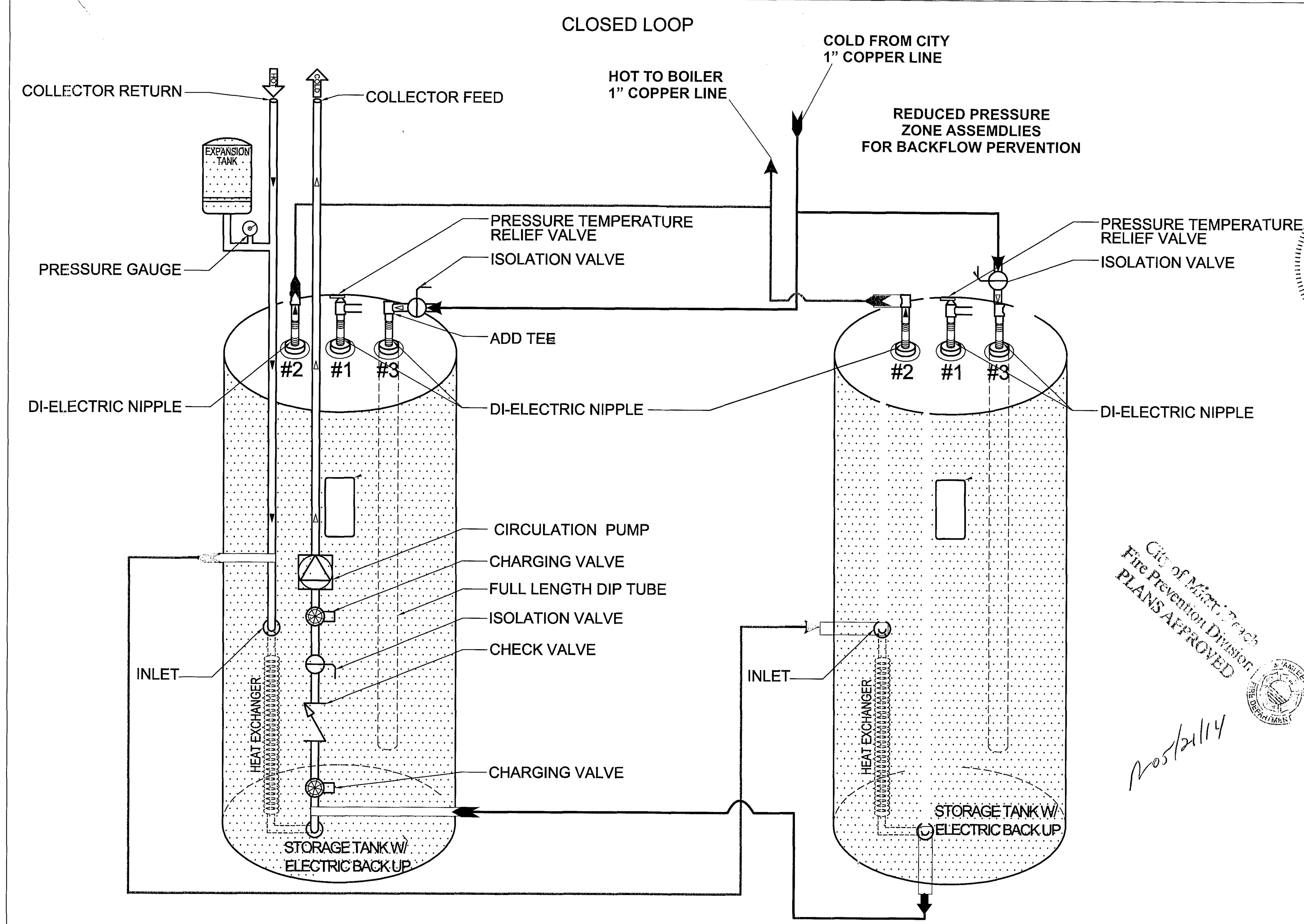
WARNING: Closed-loop systems need to slowly purge the air from the system through the air auto vent placed at the highest point in the system. This can be done with a positive-displacement pump at low flow rate or with an impeller-based pump gated to a low flow rate.

The charging procedure has four steps. In all steps, it is important to monitor pressure closely and control flow rate using the specified valves in each step, so that the maximum pressure limits are not exceeded. Familiarize yourself with the labeled valves and hose bibs before you begin.

1. *System cleaning:* It is recommended that any system, whether new or existing, be thoroughly cleaned prior to being charged with Cryo-tek products. This can be done by following the instructions in "charge the source side" with clean distilled water.
2. *Charge the source side:* This step fills the pipes, hoses, and collectors from the normal pumped side of the circulator pump – i.e. the fluid fills the system, moving in the normal direction of flow;
3. *Prime the circulator pump:* This step removes all the air from the circulator pump so that it is ready to take over and pump fluid after the charging steps are completed;
4. *Charge the drain side:* This step fills the pipes, hoses, and collectors by pumping fluid in the direction opposite to "normal" flow when the circulator pump is operating. Note this step must bypass the check valve.

When all three steps are completed correctly, the system will be filled with water/glycol mix, all of the air will be vented from the system, and the circulator pump will be moving fluid through the collectors, pipes, and hoses in the normal direction.

CLOSED LOOP



City of Miami Beach Fire Prevention Division PLANS APPROVED

REVISIONS:

Project: Hotel EVA
1506 Collins Ave
Miami Beach, FL 33139
SOLAR WATER HEATING SYSTEMS DIAGRAM

Coronado Solar
www.CoronadoSolar.net
3001 Cedora terrace Sebring, Fl. 33870
863-381-6083 fax 863-385-2406
State Certified Solar Contractor CVC 56809

SEAL:

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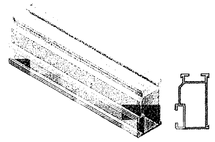
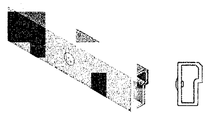


VS Rail

3-Module Length	123.00"
4-Module Length	163.50"
5-Module Length	202"
6-Module Length	242"
7-Module Length	282.5"
Height	2.36"
Width	1.45"
Weight	0.660 lbs/ft
Alloy	6063-T6
Area Moment of Inertia (I_x)	0.388 in^4
Area Moment of Inertia (I_y)	0.138 in^4



VS Splice Connector

Length	7.68"
Height	1.88"
Width	1.07"
Weight	0.606 lbs
Alloy	6063-T6
Area Moment of Inertia (I_x)	0.297 in^4
Area Moment of Inertia (I_y)	0.107 in^4

VS L-Foot

Length	2.00"
Height	3.35"
Width	2.00"
Weight	0.267 lbs
Alloy	6063-T6
Area Moment of Inertia (I_x)	1.775 in^4
Area Moment of Inertia (I_y)	0.284 in^4

VS End Clamp

Length	1.38"
Width	1.54"
Weight	0.128 lbs
Alloy	6063-T6

VS Mid Clamp

Length	1.50"
Width	0.75"
Weight	0.090 lbs
Alloy	6063-T6

Table 14. L-Foot / Rail Span

Span (ft)	Distributed Load (pounds/linear foot) 20	25	30	40	50	60	80	100	120	140	160	180	200	220	240	260
2	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM
2.5	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM			
3	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM					
3.5	SM	SM	SM	SM	SM	SM	SM	SM	SM	SM						
4	SM	SM	SM	SM	SM	SM	SM	SM	SM							
4.5	SM	SM	SM	SM	SM	SM	SM	SM								
5	SM	SM	SM	SM	SM	SM	SM	SM								
5.5	SM	SM	SM	SM	SM	SM	SM									
6	SM	SM	SM	SM	SM	SM	SM									
6.5	SM	SM	SM	SM	SM	SM	SM									
7	SM	SM	SM	SM	SM	SM										
7.5	SM	SM	SM	SM	SM	SM										
8	SM	SM	SM	SM	SM	SM										
8.5	SM	SM	SM	SM	SM											
9	SM	SM	SM	SM												
9.5	SM	SM	SM	SM												
10	SM	SM	SM													
10.5	SM	SM	SM													
11	SM	SM														
11.5	SM															
12	SM															

Determine the *Distributed Load, w (plf)*, by multiplying the module length, B (ft), by the *Total Design Load, P (psf)* and dividing by three. Use the maximum absolute value of the three downforce cases and the Uplift Case. We assume each module is supported by three rails.

w = PB/3

w = Distributed Load (pounds per linear foot, plf)

B = Module Length Perpendicular to Rails (ft)

P = Total Design Pressure (pounds per square foot, psf)

Yield Strength (ksi)		120	130	150	180	220	260
Ultimate Strength (ksi)		75	91	93	108	132	156
Grade	Typical Material	Med Carbon Steel	Med Carbon Alloy Steel	A286 CRES	A286 CRES	Inconel 718	MP35n Super Alloy
1/4	Tension Capability (lb)	1468	1833	1937	2202	2691	3181
	Shear Capability (lb)	1584	1922	2007	2281	2788	3295
5/16	Tension Capability (lb)	2149	2711	2892	3253	3976	4699
	Shear Capability (lb)	2126	2390	2494	3042	3742	4420
3/8	Tension Capability (lb)	4007	3099	3249	4010	7347	6682
	Shear Capability (lb)	3682	4470	4660	5300	6480	7660
7/16	Tension Capability (lb)	6440	8090	8395	9660	11807	13953
	Shear Capability (lb)	5730	6980	7280	8260	10120	11970
1/2	Tension Capability (lb)	9899	12360	13180	14820	18137	21422
	Shear Capability (lb)	8260	10030	10490	11930	14580	17230
9/16	Tension Capability (lb)	13338	16673				
	Shear Capability (lb)	11270	13690				
5/8	Tension Capability (lb)	16139	22674				
	Shear Capability (lb)	14730	17870				
3/4	Tension Capability (lb)	23028	28785				
	Shear Capability (lb)	18640	22610				
7/8	Tension Capability (lb)	29218	36324				
	Shear Capability (lb)	23010	27920				
1	Tension Capability (lb)	42726	53408				
	Shear Capability (lb)	33130	40200				

Bolt Tension And Shear Strength Chart

1/4" Stainless Steel Bolt
Tension Strength(lb): 6,010
Shear Strength(lb): 5,300

3/8" Stainless Steel Bolt
Tension Strength(lb): 14,830
Shear Strength(lb): 11,930

Wind Load Calculations

TRINA SOLAR 240W (18.05'sq.) 1OF3	14
Total Area (SF)	252.7
Wind Load (PSF)	-93.84
Total Wind Load (lbs.)	-23713.368
Total Roof Mounts (#)	26
Tension Force per Mount (lbs.)	-912.0526154

Renusol VS — Installation Guide

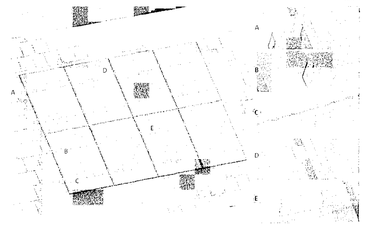
OVERVIEW

The Renusol VS racking system has been developed for easy installation of solar pv system on pitched roofs. It includes proprietary "one size fits all" clamps for all module thicknesses ranging between 30-50 mm.

Please refer to VS Design Guide for system layout and grounding instructions.

Please read this guide carefully before starting the installation. Always follow proper safety precautions. Be sure to check local building codes to ensure compliance.

Please check for the latest version of the installation guide at www.renusolamerica.com.



REQUIREMENTS

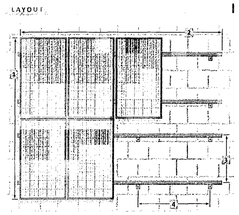
SYSTEM COMPONENTS LIST

Renusol Solar Mounting Systems

NOTE:
SYSTEM ENGINEERED WITH
3 RAIL RACKING SYSTEM

Renusol VS — Installation Guide

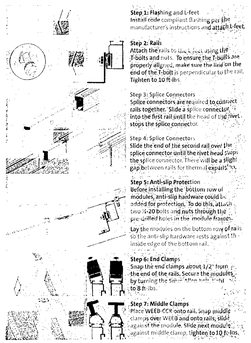
LAYOUT



Plan the layout of the components per the dimensions below:

1. Quantity of modules in the vertical direction x (module length + 0.75")
2. Quantity of modules in the horizontal direction x (module width + 0.75") + 2.50"
3. Approximately 2/3 to 3/4 of the module length (please refer to module manufacturer's specifications)
4. For spacing of mounting brackets, please refer to the Renusol VS Design Guide. Note that one mounting bracket should be used near each splice connection.

ASSEMBLY



Step 1: Flashing and L-feet
Install code compliant flashing per the manufacturer's instructions and attach L-feet.

Step 2: Rails
Attach the rails to the L-feet along the T-bolts and nuts. To ensure the T-bolts are properly aligned, make sure the lead on the end of the T-bolt is perpendicular to the rail. Tighten to 10 ft-lbs.

Step 3: Splice Connectors
Splice connectors are required to connect rails together. Slide a splice connector into the first rail until the head of the rivet stops the splice connector.

Step 4: Splice Connectors
Slide the end of the second rail over the splice connector until the rivet head stops the splice connector. There will be a slight gap between rails for thermal expansion.

Step 5: Anti-slip Protection
Before installing the bottom row of modules, anti-slip hardware could be added for protection. To do this, attach two T-bolt and nuts through the pre-drilled holes in the module frames.

Lay the modules on the bottom row of rails so the anti-slip hardware rests against the inside edge of the bottom rail.

Step 6: End Clamps
Snap the end clamps about 1/2" from the end of the rails. Secure the modules by tightening the bolts with a 13 mm socket to 8 ft-lbs.

Step 7: Middle Clamps
Place WEEB-CCR onto rail. Snap middle clamps over WEEB and onto rails, side by side of the module. Slide next module against middle clamp. Tighten to 10 ft-lbs.

Renusol America
1292 Hoga Circle NW, Atlanta, GA 30318
www.renusolamerica.com
+1 877 847-8919

Joists Load Calculations

Joists DOUBLE 2"x10"	
Max. Bending Strength (psf)	141,174
Max. Bearing Strength (psf)	48,240
Max. Shear Strength (psf)	19,440
Max. Bending Strength Required (lbs)	11,856
Max. Shear Strength Required (lbs)	11,856
Allowable Pull Out Strength per Lag Bolt (lbs)	1,596
Max. Pull Out Strength Required per Lag Bolt (lbs)	912.05

(1 psi = 144 psf)

Lag Bolt Pull Out Calculations

Spruce, Pine,	per inch Thread Depth	266 lbs.
SS Lag Bolt 5/16"x7"	Min. Thread Depth	6"
Wood Strength x Thread Depth = Pull Out Strength		
266 lbs. x 6 in = 1,596 lbs.		
Allowable Pull Out Strength per Lag Bolt		1,596 lbs.
Max. Pull Out Strength Required per Lag Bolt		912.05
Lag Bolt Pull Out Strength Safety Factor		1.74

Maximum Span Calculator for Wood Joists & Rafters

www.awc.org

Species	Spruce-Pine-Fir (South)
Size	2x10
Grade	No. 2
Member Type	Ceiling Joists
Deflection Limit	L/180
Spacing (in)	16
Exterior Exposure	Wet service conditions? No
	Incised lumber? No
Live Load (psf)	30
Dead Load (psf)	15

Property	Value
Species	Spruce-Pine-Fir (South)
Grade	No. 2
Size	2x10
Modulus of Elasticity (E)	1100000 psi
Bending Strength (F_b)	980.38 psi
Bearing Strength (F_{cp})	335 psi
Shear Strength (F_v)	135 psi

Sources: American Wood Council www.awc.org

RENUSOL SOLAR MOUNTING SYSTEM

Project Name: Hotel EVA
Module Manufacturer: Trina
Module Model Number: TSM-240

Wind Speed: 175 mph
Exp Cat: C
Roof Height: 40 ft
Roof Zone: 2
Grnd Snow Load: 0 psf

Description	Symbol	Downforce	Uplift	Unit
Dead Load	D	5	5	psf
Total Design Wind Load	Pnet	33.94	-93.84	psf
Snow Load	S	0.0	0.0	psf
Total Load Combination 1	P	5.0		psf
Total Load Combination 2	P	29.0912		psf
Total Load Combination 3		23.0684		psf
Total Load Combination 4			-49.87	psf
Max Absolute Value Load		49.9		psf
Module Length Perpendicular to Rails	B	6.42	6.42	ft
# of Rails per Module		3.00	3.00	ea
Distributed Load	w	106.66	-106.66	plf

Description	Symbol	Downforce	Uplift	Unit
SM Installed Span	L	4	4	ft
SM Downforce Point Load Force	R	248.9	-426.6	lbs
SM Max Span	L	5	5	ft
SM Downforce Point Load Force	R	311.1	-533.3	lbs

INPUT
OUTPUT

NOTE: Lag bolt depth of embedment to meet or exceed this withdrawal strength

ASCE 7-10

Site Information for Wind Loading of PV Array

Owner: HOTEL EVA

Address: 1506 Collins Ave

City: Miami Beach, FL 33139

For wind analysis, obtain information from Building Department, Florida Building Code(Edition in force) or ASCE 7-10 (Edition in force)

Basic Wind Speed: 175 MPH

Building Category: Commercial (per definition in ASCE 7-10)

Regular Building Shape? Yes (per definition in ASCE 7-10)

Exposure Category: D

Mean Roof Height: 40'

Exposure Category D Multiplier: 0.85

Height Adjustment Factor (roofs higher than 30 ft): N/A

Topographic Factor (hilly terrain): N/A

Module Area (square feet): 18.05

Roof Zone (per ASCE 7-10) definitions: interior (zone 1) | end (zone 2)

Roof Slope: 0.00 degrees

Design Pressure: 33.94/-61.89 psf in roof zone 1 | 33.94/-93.84 psf in roof zone 2

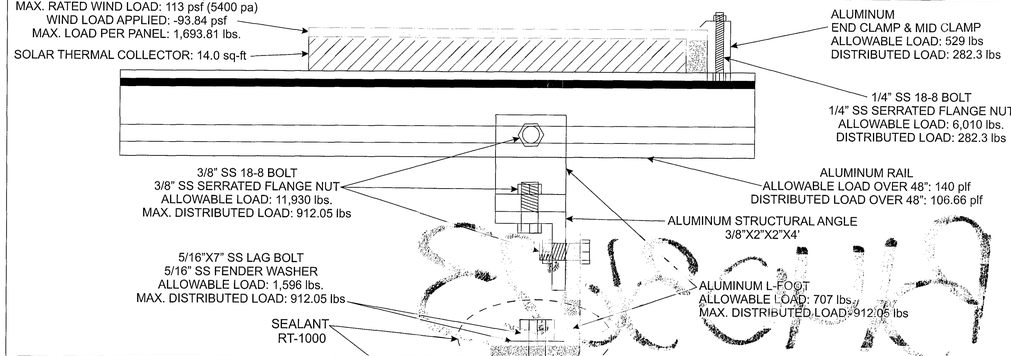
Design pressure obtained from: Florida Building Code | ASCE 7-10

Is roof supported by engineered JOISTS? yes

Will the roof support an additional 3 psf dead load from the PV array? yes

Solar Module Max. Pressure Load (5,400 Pa.) 113psf.

ATTACHMENT DIAGRAM



LAG BOLT WITHDRAWAL LOADS (lbs)

Spruce, Pine, Fir	
Specific gravity	Lag screw specifications 5/16" shaft,* per inch thread depth
0.50	266

* Rails, L-Foot, Mid-clamps & End-clamps are extruded using one of the following aluminum alloys: 6005-T5, 6105-T5, 6061-T6

Sources: American Wood Council, NDS 2005, Table 11.2A, 11.3.2A.

Lag pull-out (withdrawal) capacities (lbs) in typical roof lumber (ASD)

	STAINLESS STEEL Lag screw specifications	
	Specific gravity	5/16" shaft,* per inch thread depth
Douglas Fir, Larch	0.50	266
Douglas Fir, South	0.46	235
Engelmann Spruce, Lodgepole Pine (MSR 1650 f & higher)	0.46	235
Hem, Fir, Redwood (close grain)	0.43	212
Hem, Fir (North)	0.46	235
Southern Pine	0.55	307
Spruce, Pine, Fir	0.42	205
Spruce, Pine, Fir (E of 2 million psi and higher grades of MSR and MEL)	0.50	266

Thread depth

Sources: American Wood Council, NDS 2005, Table 11.2A, 11.3.2A.

Notes: (1) Thread must be embedded in the side grain of a Joists or other structural member integral with the building structure.
(2) Lag bolts must be located in the middle third of the structural member.
(3) These values are not valid for wet service.
(4) This table does not include shear capacities. If necessary, contact a local engineer to specify lag bolt size with regard to shear forces.
(5) Install lag bolts with head and washer flush to surface (no gap). Do not over-torque.
(6) Withdrawal design values for lag screw connections shall be multiplied by applicable adjustment factors if necessary. See Table 10.3.1 in the American Wood Council NDS for Wood Construction.

ASCE 7-10 Velocity Pressure

$qz10 = 0.00256Kz \times Kzt \times Kd \times V2$

where:
$qz10$ = *ASCE 7-10* velocity pressure evaluated at mean roof height (psf)
Kz = velocity pressure exposure coefficient
Kzt = topographic factor
Kd = wind directionality factor
V = basic wind speed (mph) from *ASCE 7-10* maps referred to as ultimate wind speed maps in *2012 IBC*.

As an example, for an array having an area of 158.04 sq.-ft., the total uplifting (resultant) force acting on the array would be -39.1 psf x 158.04 sq. ft. = -6,179.364 lb. Knowing this resultant force, the design engineer can now determine the number of attachment points and the size of the mounting hardware necessary to safely carry this load.

Live Loads:

Live loads associated with photovoltaic systems are usually assumed to be distributed uniformly and are small, on the order of 4 psf or less.

Lag Screw Installation Guidelines

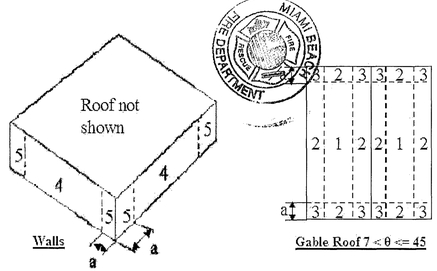
1. Determine location for the L-Bracket on roof by drilling through the center of truss from bottom with 5/32" drill bit.
2. Mark mounting holes for L-Bracket on underlayment. Mounting holes should be centered on the JOISTS.
3. Drill 15/64" pilot hole.
4. Apply sealant to bottom of L-Bracket.
5. Place L-Bracket over roof underlayment with holes in roof.
6. Apply sealant to bottom of L-Bracket, apply sealant to lag screws, and fasten L-Bracket securely to JOISTS.
7. Apply additional sealant to top assembly to be sure all penetrations are sealed.

MECAWind Version 2.1.0.6 ASCE 7-10

Developed by MECA Enterprises, Inc. Copyright 2013 www.mecaenterprises.com

Company Name : HYCE
Address : 12151 SW 128 Ct
City : Miami
State : FL 33186

Designed By :
Description : SOLAR PANEL INSTALLATION
Customer Name :
Proj Location : 1506 collins ave miami beach fl



Wind Pressure on Components and Cladding (Ch 30 Part 1)

All pressures shown are based upon ASD Design, with a Load Factor of .6

Width of Pressure Coefficient Zone "a" = 4.10 ft

Description	Width ft	Span ft	Area ft^2	Zone	Max GCp	Min GCp	Max P psf	Min P psf
Zone 1	1.00	1.00	1.0	1	0.30	-1.00	33.94	-61.89
Zone 2	1.00	1.00	1.0	2	0.30	-1.80	33.94	-93.84
Zone 3	1.00	1.00	1.0	3	0.30	-2.80	33.94	-133.77
Zone 4	1.00	1.00	1.0	4	0.90	-0.99	57.90	-61.49
Zone 5	1.00	1.00	1.0	5	0.90	-1.26	57.90	-72.28

REVISIONS:

Project: Hotel EVA
1506 Collins Ave
Miami Beach, FL 33139

STRUCTURAL DIAGRAM & CALCULATION

Coronado Solar
www.CoronadoSolar.net
3001 Cedora terrace Sebring, Fl. 33870
863-381-6083 fax 863-385-2406
State Certified Solar Contractor CVC 56809

FERNANDO GOMEZ-PINA, P.E.
LICENSED ENGINEER #:PE14710
250 CATALONIA AVE SUITE #404
CORAL GABLES, FL. 33134
TEL(305) 461-2188 FAX(305) 461-2238
I CERTIFY THAT THIS PV SYSTEM
FULLY COMPLIES WITH THE
REQUIREMENTS OF NEC 690.

SEAL: FERNANDO GOMEZ-PINA LICENSE NO. 14710 STATE OF FLORIDA PROFESSIONAL ENGINEER

APPROVED

DATE: 4/15/2014

SCALE: NTS

DRAWN BY: J.B

PAGE:

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B1403623

1506 Collins

Ave

Office Copy

Gamewell FCI FIRE CONTROL INSTRUMENTS

by Honeywell

S3 Series Control Panel

Description

The Gamewell-FCI, S3 Series Intelligent Fire Alarm Control Panel provides the latest innovative high-end processing power. It offers a simple, intuitive solution for the small to mid-sized fire alarm applications.

In standalone or network configurations, the S3 Series complies with most fire alarm application requirements. It supports either of the following types of networks.

- Up to 64 nodes using the 7100 Series panel.
- Up to 122 nodes using the S3 Series or E3 Series® panels.

Use either twisted-pair wire or fiber-optic to network panels at a high-speed 625K baud ARCNET network bus.

With flexible Boolean logic, intelligent detection, and Ethernet connectivity, this system provides power and versatility that surpasses comparable, small addressable fire alarm systems.

The basic S3 Series consists of an SLP (Smart Loop Panel) main board, LCD-SLP touchscreen display, strobes, loop personality modules, and 7 amp power supply. The SLP provides either one or two SLC loops in Class A or B configuration that supports either of the following protocols:

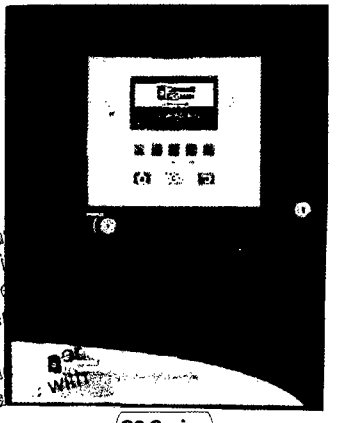
- Up to 318 devices per loop using the System Sensor® protocol. If you add a second loop module, it increases the maximum device count to 636 devices.
- Up to 126 devices per loop using the Apollo protocol. If you add a second loop module, it increases the maximum device count to 252 devices.

Four Class B or two Class A NACs can be wired and synchronized using the System Sensor, Cooper-Wheelock, or Gentex strobes. To retrofit the SLP on the existing audible/visual appliances, the on-board Electronic EOL (EEOL) automatically adjusts to the EOL resistor in the field.

A 4.3" (10.92 cm) color touchscreen display screen shows the following:

- Events on the system
- Status of analog addressable devices
- Complete diagnostic fault codes/messages
- Five programmable function buttons with LED status for accessibility to the following functions:
  - Disable/Enable
  - Bypass Output
  - Lamp Test
  - Trouble Acknowledge
  - Alarm Acknowledge
  - Custom-defined

Small Analog Addressable Fire Alarm Control Panel



S3 Series

Features

- Listed per ANSI/UL® Standard 864 9th Edition.
- IBC Seismic Certified.
- Allows one SLC loop (expandable to two loops) that supports either System Sensor or Apollo devices in Class A or Class B (Style 4, 6 or 7).
- System Sensor supports up to 318 intelligent devices and each SLC loop supports the following.
  - up to 159 detectors.
  - up to 159 modules (expandable to 636 maximum per panel).
- Apollo supports up to 126 intelligent detectors and modules per SLC. (Expandable to 252 maximum per panel).
- Includes a high resolution (4.3") (10.92 cm) color touchscreen display.
- Supports a network system of up to 122 nodes (includes E3 Series® panels) or up to 64 nodes (includes 7100 Series).
- Provides 7.0 amp power supply (120VAC or 240VAC).
- Includes four Class B or two Class A built-in Notification Appliance Circuits (NAC). Provides selectable System Sensor, Cooper-Wheelock, or Gentex strobe synchronization.
- Supports up to 32 serial annunciators (LCD, LED-only, LED Switch).

SIGNALING UL LISTED S1869 7165-1703:0176

THE VMC GROUP Reference Certificate of Compliance VMA-45894-02C (Revision 1)

ISO 9001 CERTIFIED QUALITY SYSTEMS

GAMEWELL-FCI
12 Clintonville Road, Northford, CT 06472-1610 USA • Tel: (203) 484-7161 • Fax: (203) 484-7118

Application

The S3 Series Fire Alarm and Life Safety System is an easy-to-use intelligent fire alarm solution designed for the small to mid-sized buildings. Analog technology delivers the benefits of a simple system installation, while a user-friendly interface makes panel operation and system maintenance quick and intuitive.

Smart Panel Programming

Using Boolean logic programming, the installer may customize the system to precisely suit the needs of the building owner. Auto-programming allows the installer to instantly locate all the devices on the SLC loop.

Simple, Intuitive Display

The front panel display provides a user-friendly interface for the operator's control. A 4.3" (10.922 cm) color touch-screen displays system status, event details and service modes. On the front of the panel, six LEDs show the following conditions.

- Fire
- Silenced
- Hazard (Gas or CO)
- AC Power
- Supervisory
- Trouble

Five custom programmable switches allow the user quick access to common functions specific to the building like device disable, output bypass and device status.

Perfect for Retrofits

The S3 Series is well-suited for retrofit applications. The SLP provides a simple way to upgrade your fire protection system. It is designed to be an upgrade solution for the legacy FCI 7100 and Gamewell 602 Series panels. An added feature is the SLP's EEOL. Using EEOL, the installers can automatically identify the EOL for existing audible/visual appliances.

Flexibility for Future Growth

The S3 Series can be expanded to add a second SLC loop without replacing the entire system. Using the RPT-E3-UTP Network Repeater, you can network up to 64 nodes (122 nodes with the ANX node expander) using either twisted-pair or fiber-optic. The built-in Ethernet port allows the connection to the Gamewell-FCI's FocalPoint Graphical Workstation.

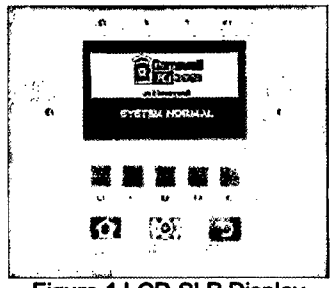


Figure 1 LCD-SLP Display

Features (Continued)

- Offers an Ethernet port for programming, a variety of system reports, and a FocalPoint® Graphic Workstation connectivity.
- Provides two fully-programmable Form-C contacts for Fire, Trouble, and Supervisory.
- TimeCap - Saves time and date up to 48 hours without any power or battery.
- Automatically adjusts to any NAC End-of-Line Resistor (EOL) value (1k-55k ohm) for legacy audible/visual appliances.
- Removable display can be used as a remote annunciator.
- Suitable for pre-action deluge applications.

Optional Accessories

DACT-E3 - Dialer

The Digital Alarm Communication Transmitter sends digital signals over telephone lines to the central station. It connects to the SLP through an RS-485 bus. Using the Contact ID format, the DACT-E3 provides a four-digit account code followed by the code/numbers listed below:

- Three-digit Event Code
- Two-digit Group Number
- Three-digit Contact Number

All codes are used to provide specific point identification. The DACT-E3 is compatible with digital alarm communicator receivers (DACRs) that receive the following signaling formats:

- Contact ID
- SIA
- 3+1
- 4+2

For more information, refer to the following data sheets:
DACT-E3 Data Sheet, P/N: 9020-0610
FML-E3/FSL-E3 Data Sheet, P/N: 9021-60783

RPT-E3-UTP - Network Repeater Card

The Network Repeater allows the SLP fire control panels to connect to the broadband network from remote locations. It connects to other networked units using unshielded, twisted-pair wiring. The RPT-E3-UTP is available with two add-on fiber modules:

- **FML-E3** connects to the network using either 62.5/125 micron multi-mode fiber.
- **FSL-E3** connects to the network using 9/125 micron single-mode fiber.

Refer to the RPT-E3-UTP Data Sheet, P/N: 9020-0609.

LCD-7100 - Remote Annunciator

The Remote serial display features an 80-character display. The LCD-7100 can be surface or flush-mounted on a standard 4-gang electrical box. You can use up to five LCD-7100 remote annunciators per SLP panel. For more information, refer to the LCD-7100 Data Sheet, P/N: 9020-0486.

ASM-16 - Addressable Switch/LED Module

There are 16 programmable switches available to perform any function the application requires. Each ASM-16 switch has 3 LEDs fully programmable in red, yellow, and green. These LEDs can be programmed to operate with a certain button press or operate independently as a status signal (e.g. ON, OFF, Activated, etc).
Up to 16 ASM-16 modules can be connected to the SLP panel. For more information, refer to the ASM-16 Data Sheet, P/N: 9020-0554.

ANU-48 - 48 LED Driver Unit

The ANU-48 provides output for eight remote panel switches and 48 remote LEDs for use in a remotely located UL® Listed annunciator enclosure. Up to 16 ANU-48 modules can be connected to the SLP panel. For more information, refer to the ANU-48 Data Sheet, P/N: 9020-0596.

Figure 2 illustrates the SLP-BB Cabinet Enclosure.

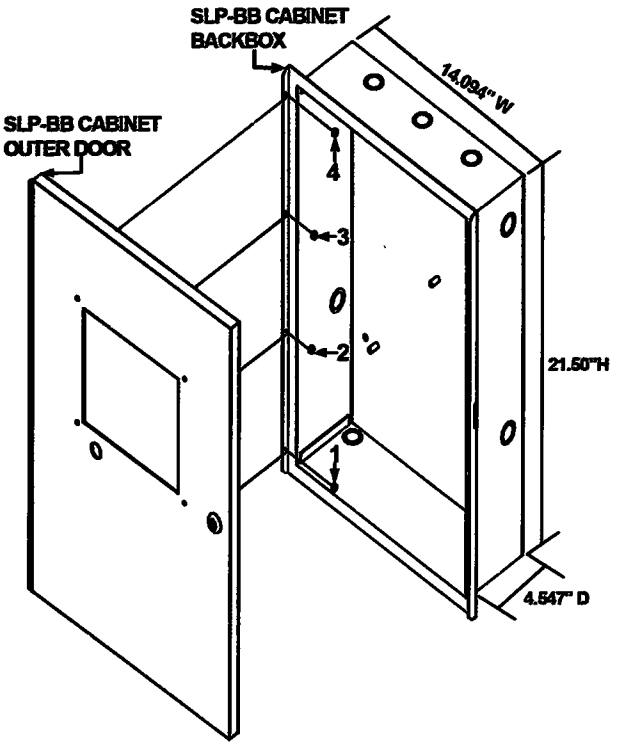


Figure 2 SLP Enclosure

Specifications

Device Loops	Up to two Class A or B, System Sensor units, each loop supporting up to 318 device addresses. Or- Apollo units, each loop supporting up to 126 device addresses per loop.
NAC circuits	4 Class B or 2 Class A (2.0 A each circuit), 6.0 A total
NAC Operating Voltage	24 VDC
NAC Minimum Voltage	19.5 VDC @ 20.4 V battery voltage
SLC Loop Circuit Operating Voltage	24 V peak-to-peak
Input Voltage	120 VAC, 60 Hz 240 VAC 50-60 Hz
Input Current	120 VAC, 2.75 amps max. 240 VAC, 1.4 amps max.
Aux Power 1 (Continuous)	24 VDC nominal at 1.0A
Aux Power 2 (Resettable)	24 VDC nominal at 1.0A
Base Panel Current draw	Standby: 0.111 amps Alarm: 0.243 amps
Operating Temperature	32°-120° F (0°-49° C)
Relative Humidity	93% (non-condensing)
Battery Charger Voltage	+24 VDC
Battery Charger Capacity	55 A/H batteries (cabinet accommodates 12 A/H batteries)
Alarm, Trouble & Supervisory Relay Contacts	Form-C, 2 amps @ 24VDC (resistive)

Cabinet Dimensions:

SLP-BB Dimensions	14.094" W x 21.5" H x 4.547" D (35.79 W x 54.61 H x 11.54 cm)
S3BB-RB Dimensions	19 3/8" W x 19 3/8" H x 4.5" D (49.22 W x 49.22 H x 11.43 D)

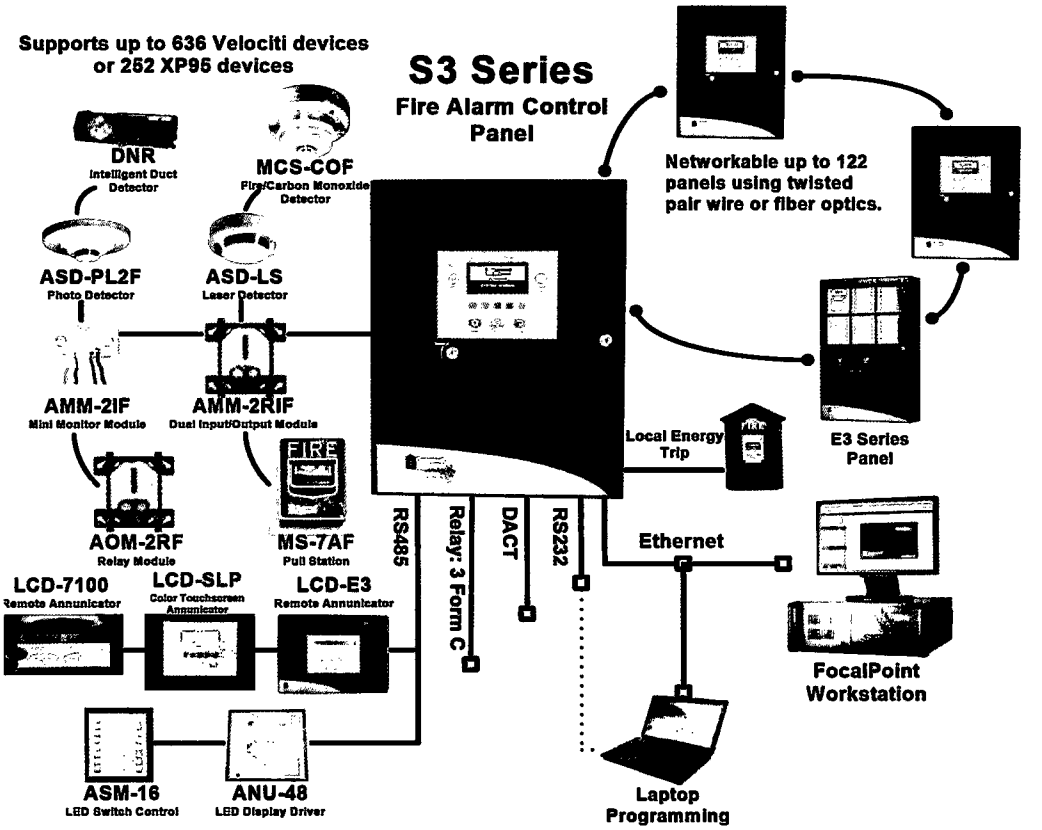


Figure 3 SLP Panel Configuration

Ordering Information

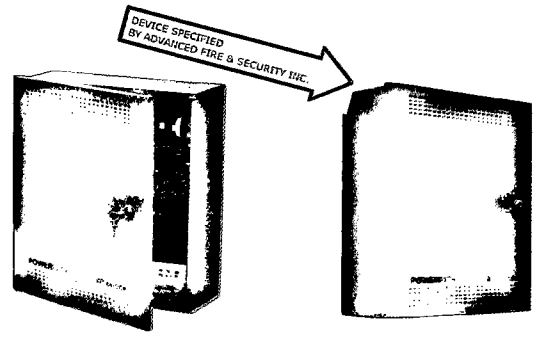
Part Number	Description
SLP-BLK	SLP addressable FACP in black SLP-BB enclosure. Requires either an SLC-PM or an SLC95-PM for SLC loops.
SLP-RED	SLP addressable FACP with red door and black SLP-BB backbox. Requires either an SLC-PM or an SLC95-PM for SLC loops.
SLP-RED-G	SLP addressable FACP 240VAC power supply with red door and black SLP-BB backbox. Requires either an SLC-PM or an SLC95-PM for SLC loops.
SLC-PM	System Sensor Loop Card - 1 loop used for 159 sensors and 159 modules. For use with the SLP-E3 panels only.
SLC95-PM	Apollo Loop Card-1 loop used for 126 sensors and modules. For use with the SLP-E3 panels only.

Ordering Information (Continued)

Part Number	Description
Accessories	
DACT-E3	Digital Dialer Communicator Transmitter for the S3 or E3 Series.
LCD-SLP	LCD Color Touchscreen display with five programmable switches. For use with the S3 Series panels. Remote annunciation requires the E3 Series A2 cabinet. (E3BB-BA2, E3BB-RA2)
RPT-E3-UTP	Network repeater card with twisted-pair fiber connections require either an FML-E3 or an FSL-E3 card.
FML-E3	Multi-mode fiber-optic card for one channel on the RPT-E3-UTP.
FSL-E3	Single-mode fiber-optic card for one channel on the RPT-E3-UTP.
SLP-RB	SLP motherboard For use with the replacement or the retrofit solutions.
FLPS-7-RB	SLP 120VAC 7A power supply. For use with the replacement or the retrofit solutions.
SLP-RETROFIT	SLP Retrofit Kit for the 7100 B-Slim and IF602 panels. Includes the new door and the mounting plate. Requires the following: • SLP-RB • LCD-SLP • SLC-PM/ SLC95-PM • FLPS-7-RB
S3BB-RB	SLP red cabinet with an inner door for the mounting display behind the plexiglass. Requires the following: • SLP-RB • LCD-SLP • SLC-PM/ SLC95-PM • FLPS-7-RB
LCD-7100	Remote Serial LCD Annunciator
ASM-16	Remote Programmable Addressable Switch/LED Module
ANU-48	Remote LED Driver Module

COOPER Notification

POWERPATH™ NAC POWER SUPPLIES



PS-6 PS-8

Description

The Wheelock Series PS-6 and PS-8 are 24VDC, filtered and regulated, supervised remote power supply/battery chargers are used for supervision and expanded power driving capability of Fire Alarm Notification Appliance Circuits. The PS-6 provides 6 amps of power distributed across 4 outputs, while the PS-8 provides 8 Amps across 4 output. In addition the PS-8 provides additional room in the chassis for accessories like an Addressable Control Module, with mounting studs.

The Power Supplies may be connected to any 12V or 24V (FWR or DC) Fire Alarm Control Panel (FACP) by using a Notification Appliance Circuit (NAC) or a "Dry Contact". Primary applications include NAC expansion (supports ADA requirements) and auxiliary power to support system accessories. This unit provides filtered and regulated 24VDC, up to four (4) Class "B", two (2) Class "A", or two (2) Class "B" and one (1) Class "A" Notification Appliance Circuits. With the optional plug-in PS-EXP module the unit supports (8) Class "B" or (4) Class "A" Notification Appliance Circuits. Additionally, an auxiliary power output of 2.5 Amps (disconnected upon AC power loss or an alarm condition) or up to 0.240 A of constant power on the PS-8 and 0.075 A of constant power on the PS-6.

The Wheelock Power Supplies can accommodate 7 or 12 AH batteries inside its lockable chassis. Using an external battery cabinet it can charge up to 33 AH batteries (pending UL testing). Two FACP NAC circuits or two "Dry" contact initiating circuits can be connected to the inputs. These inputs can then be directed to control supervision and power delivery to any combination of the four (4) outputs. Each output is rated at 3.0 Amps (Class "B") or (Class "A") and can be programmed to generate a steady or Code 3 Temporal Horn sound and a strobe output under alarm condition. Total load for the PS-6 and PS-8 NAC circuits must not exceed the power supplies rated output.

The Power Suppliesunder non-alarm condition provides independent supervision for Class "A" and Class "B" FACP NAC circuits. In the event of circuit trouble, the FACP will be notified via the POWERPATH steered input (IN1 or IN2). In addition there are two sets of trouble reporting terminals, one used for AC power loss reporting and the other for all troubles. The AC power loss reporting, on the common trouble terminals and on IN1 or IN2, can be delayed for either 30 seconds or 170 minutes. The AC power loss terminals will always report the trouble within 1 second after loss of AC power.

The PS-6 and PS-8 Power Supplies are UL Listed under UL Standard 864, 9th Edition to be used with any 24 volt Listed Regulated notification appliances. They include the capability to synchronize Wheelock strobes and horns and to silence the horn signal when horn/strobes are operating on two wires.

Features

Approvals

- Approvals Include: UL Standard 864, 1481
- Pending: California State Fire Marshal (CSFM), New York City (MEA), Factory Mutual (FM), Chicago (BFP) See Approvals by model in Specification and Ordering Information
- Compliant with NFPA 72

Inputs

- 120VAC, 50/60Hz, 4.25 Amps (PS-6/8) and 5.32 Amps (PS-8) Operating Power in Alarm
- 240VAC, 60Hz, 2.42 Amps (PS-6E and 3.22 Amps (PS-8E) ' Operating Power in Alarm
- 24VDC Battery Backup Connection
- Two (2), 12V or 24V NAC Initiating Circuits (8-33V at 5mA) FWR or DC
- Two (2) "Dry" Contact initiating Circuits
- Accepts two (2) Class "A" or two (2) Class "B" circuit inputs
- Built in battery charger for sealed lead acid or gel type batteries

...Features continued on next page

Outputs

- NAC outputs are 24VDC, 3.0 Amps each, power limited
- 8 Amps on PS-8 and 6 Amps on the PS-6 total alarm current
- Capable of four (4), Class "B" circuits
- Capable of two (2) Class "A" circuits
- Capable of one (1) Class "A" circuit and two (2) Class "B" circuits
- Capable of (8) Class "B" or four (4) Class "A" circuits with optional PS-EXP module
- Temporal (Code 3), constant voltage output, Wheelock Sync output or True input to output follower mode
- Built-in Wheelock synchronization mode that can be fed to any or all of the output circuits
- Input and output can be synchronized with "IN>OUT SYNC" mode (SM, DSM, 2nd POWERPATH™ or FACP with synchronization protocol is required)
- Audible silence capability
- Filtered and electronically regulated output
- 2.5 Amp auxiliary power limited output with reset capability. (Removed upon AC loss or alarm. Automatic reset 30 seconds after AC power returns or the alarm condition is over) or 0.075 Amps (PS-6) or 0.240 Amps (PS-8) of auxiliary power limited output which remains on during AC loss or an alarm condition when configured for 24 hour battery backup

Supervision

- Compatible with 12V or 24V (FWR or DC) FACP
- Signaling appliance circuits are supervised and steered to either IN1 or IN2
- 10K Ohm, 1 Watt (Wheelock Model #MPEOL) End of Line Resistor (EOLR) for supervision of all outputs
- 37 distinguishable trouble diagnostics
- AC loss trouble reported over a separate set of contacts (delay of 1 second)
- All troubles are reported over the common trouble contacts (AC loss can have a delay of 30 seconds or 170 minutes)
- Automatic switchover to standby battery when AC fails
- Thermal and short circuit protection with auto reset
- Input and output status LED indicators
- AC fail supervision
- Battery presence and low battery supervision
- Ground Fault Detection, with diagnostics to indicate which circuit fault is on
- Latching LED's for NAC trouble annunciation and Diagnostic trouble LED's (latching can be disabled)

Power

- Not Battery Dependent
- Automatic switch over to standby batteries when AC fails
- Supports sealed lead acid or gel type batteries
- Fused battery protection
- Thermal and short circuit protection with auto reset
- Supports both 7AH or 12AH batteries in the same cabinet

POWERPATH™ Operating Modes (refer to Installation Manual):

Normal Mode: Provides constant 24 VDC output upon initiation by a voltage to input IN1 or IN2 or by a contact opening on DRY1 or DRY2. The unit returns to standby mode when the input is deactivated.

Wheelock Sync Mode: Provides signals for synchronization of patented Wheelock audible and strobe notification appliances. Audibles can also be silenced in this mode while the strobes continue to flash.

In>Out Sync Mode: Accepts a synchronization signal on the input to provide a coded output or synchronized output. This signal may come from a FACP, another POWERPATH or a Wheelock SM or DSM synchronization module. Caution: Do not use strobes on coded output circuits.

True Input Follower Mode: Accepts a coded signal on the input to provide a coded output with the same timing as the input. The signal may come from a FACP, another POWERPATH or other coded source. Caution: Do not use strobes on coded output circuits.

Temporal Mode: Codes the output voltage in a code-3 temporal pattern to drive audible appliances such as horns, bells or chimes. Caution: Do not use strobes on coded output circuits.

Specifications and Ordering Information

Model Number	Order Code	Input Voltage/Current	Approvals				
			UL	MEA	CSFM	FM	BFP
PS-6	105530	6 amp, red enclosure	X	*	*	*	*
PS-6B	100257	6 amp, black enclosure	X	*	*	*	*
PS-8	105531	8 amp, red enclosure	X	*	*	*	*
PS-8B	105830	8 amp, black enclosure	X	*	*	*	*
PS-EXP	105334	4 class B or 2 class A expansion module	*	*	*	*	*

X= Approved
*= Pending

Input Circuit		**Input Voltage and Current**
Input voltage Range		8 to 33 VDC
Input Current @ 12 VDC		0.005 amps
Input Current @ 24 VDC		0.005 amps
Output Circuit		**Output Voltage and Current**
Four (4) Class B or		24 VDC @ up to 3 amps per curcuit
Two (2) Class A or		
One (1) Class A and Two (2) Class "B" or		
8 Class B or 4 Class A (optional PS-EXP module necessary)		
Continuous duty up to 3 Amps per circuit, up to 4 Amps maximum per panel		
Standby Current		**0.129 Amps**
Alarm Current		**0.129 Amps**
Primary PS-6 (120 VAC models)		105 to 130 VAC, 50/60 Hz @ 4.25 Amps
Primary PS-8 (120VAC models)		105 to 130 VAC 50/60 Hz @ 5.32 Amps
Primary PS-6E (240 VAC models)		210 to 260 VAC, 50/60 Hz @ 2.42 Amps
Primary PS-8E (240 VAC models)		210 to 260 VAC 50/60 Hz @ 3.22 Amps
Secondary Power Charging Capacity		32 Amp hours @ 0.750 Amps per hour
Enclosure can house up to two 12 AH batteries		
Aux Output		
CP Mode	PS-6 up to 75 mA	PS-8 up to 250 mA
MP Mode	2.5A during non alarm	
Dimensions		**Comments**
PS-6/PS-6B	17"H x 13"W x 3.5"D	Small profile
PS-8/PS-8B	17"H x 15"W x 5.5"D	Additional room for modules
PS-EXP	4.3"H x 3.7"W x 1"D	Plugs into main pcb on all models

Architects and Engineers Specifications

The power supply shall be **Wheelock POWERPATH™ Series PS-8**, or equivalent. The unit shall be stand alone power supply intended for powering fire alarm notification appliances via its own Notification Appliance Circuit(s) (NAC). The unit shall be UL 864 Listed for power limited operation of outputs and comply with NFPA 70 (NEC), article 760.
The power supply shall support a full 8A of notification power even if the battery is in a degraded mode and only AC power is connected.
The power supply shall be activated by a standard Notification Appliance Circuit (NAC) from any Fire Alarm Control Panel (FACP) or a "Dry contact" opening. The units shall be 8 ampere, 24 VDC, regulated and filtered, supervised remote power supply/charger. It shall operate over the voltage range of 8 to 33 VDC or FWR. The primary application of the unit shall be able to expand fire alarm system capabilities for additional NAC circuits to support ADA requirements and to provide auxiliary power to support system accessories or functions. The power supply shall provide four Class "B", two Class "A", or two Class "B" and one Class "A" NAC circuit(s). Eight Class "B" or Four Class "A" circuits shall be available with an optional PS-EXP module. The PS-8 unit shall supply up to 240 mA of auxiliary power that is available during both non-alarm and alarm or auxiliary power of not less than 2.5A at 24 VDC during non-alarm. The power supply shall be capable of charging batteries of up to 33 ampere hours per NFPA 72 at maximum rate of 0.750 Amps per hour.
Input activation options shall be from not less than two NAC circuits or Dry Contact closures. These inputs shall have the capability of being directed to any combination of the four NAC circuit outputs. Each NAC circuit output shall be rated at 3 amperes for Class "B" applications or 3 amperes each for Class "A". The outputs shall be programmable to generate a steady or Temporal (Code 3) output and or a synchronized strobe or horn output. The power supply shall provide independent loop supervision for either Class "A" or Class "B" FACP NAC circuits and shall have the capability to "steer" all alarm or trouble conditions to either incoming NAC circuit. The units shall have common trouble terminals. The power supply shall be powered from a 120 VAC source with a current consumption of xx amperes max. The unit shall incorporate short circuit protection with auto reset. The power supply shall incorporate a built in battery charger for lead acid or gel type batteries with automatic switchover to battery back up in the event of AC power failure. The charger shall incorporate fused protection for the batteries and have the ability to report low battery and/or no battery condition(s). Standby current for battery back up shall be 0.129 Amps max. The power supply shall have the ability to latch trouble LED's so the circuit in trouble can be identified. The cabinet dimensions shall be 17" H x 15" W x 5.5" D.

The power supply shall be **Wheelock POWERPATH™ Series PS-6**, or equivalent. The unit shall be stand alone power supply intended for powering fire alarm notification appliances via its own Notification Appliance Circuit(s) (NAC). The unit shall be UL 864 Listed for power limited operation of outputs and comply with NFPA 70 (NEC), article 760.
The power supply shall support a full 6A of notification power even if the battery is in a degraded mode and only AC power is connected.
The power supply shall be activated by a standard Notification Appliance Circuit (NAC) from any Fire Alarm Control Panel (FACP) or a "Dry contact" opening. The units shall be 6 ampere, 24 VDC, regulated and filtered, supervised remote power supply/charger. It shall operate over the voltage range of 8 to 33 VDC or FWR. The primary application of the unit shall be able to expand fire alarm system capabilities for additional NAC circuits to support ADA requirements and to provide auxiliary power to support system accessories or functions. The power supply shall provide four Class "B", two Class "A", or two Class "B" and one Class "A" NAC circuit(s). Eight Class "B" or Four Class "A" circuits shall be available with an optional PS-EXP module. The PS-6 unit shall supply up to 200 mA of auxiliary power that is available during both non-alarm and alarm or auxiliary power of not less than 2.5A at 24 VDC during non-alarm. The power supply shall be capable of charging batteries of up to 33 ampere hours per NFPA 72 at a maximum rate of 0.750 Amps per hour.
Input activation options shall be from not less than two NAC circuits or Dry Contact closures. These inputs shall have the capability of being directed to any combination of the four NAC circuit outputs. Each NAC circuit output shall be rated at 3 amperes for Class "B" applications or 3 amperes each for Class "A". The outputs shall be programmable to generate a steady or Temporal (Code 3) output and or a synchronized strobe or horn output. The power supply shall provide independent loop supervision for either Class "A" or Class "B" FACP NAC circuits and shall have the capability to "steer" all alarm or trouble conditions to either incoming NAC circuit. The units shall have common trouble terminals. The power supply shall be powered from a 120 VAC source with a current consumption of xx amperes max. The unit shall incorporate short circuit protection with auto reset. The power supply shall incorporate a built in battery charger for lead acid or gel type batteries with automatic switchover to battery back up in the event of AC power failure. The charger shall incorporate fused protection for the batteries and have the ability to report low battery and/or no battery condition(s). Standby current for battery back up shall be 0.130 Amps max. The power supply shall have the ability to latch trouble LED's so the circuit in trouble can be identified. The cabinet dimensions shall be 17" H x 13" W x 3.5" D.

⚠ WARNING: PLEASE READ THESE SPECIFICATIONS AND INSTALLATION INSTRUCTIONS CAREFULLY BEFORE USING, SPECIFYING OR APPLYING THIS PRODUCT. FAILURE TO COMPLY WITH ANY OF THESE INSTRUCTIONS, CAUTIONS AND WARNINGS COULD RESULT IN IMPROPER APPLICATION, INSTALLATION AND/OR OPERATION OF THESE PRODUCTS IN AN EMERGENCY SITUATION, WHICH COULD RESULT IN PROPERTY DAMAGE, AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

NOTE: Due to continuous development of our products, specifications and offerings are subject to change without notice in accordance with Wheelock Inc. standard terms and conditions.

NEMA Member

WE ENCOURAGE AND SUPPORT NICET CERTIFICATION
1 YEAR WARRANTY
Made in USA
S9100 PS-6 & 8 06/08

NJ Location
273 Branchport Ave.
Long Branch, NJ 07740
P: 800-631-2148
F: 732-222-8707
www.coopernotification.com

FL Location
7565 Commerce Ct.
Sarasota, FL 34243
P: 941-487-2300
F: 941-487-2389

VA Location
P: 877-459-7726
F: 703-294-6560

7744F/7788F

UL Listed

AES IntelliNet
CORPORATION | For Alarm Monitoring

RF Subscriber Unit

UL Fire, AA Burglary and NFPA-72 Compliant

UL Listed

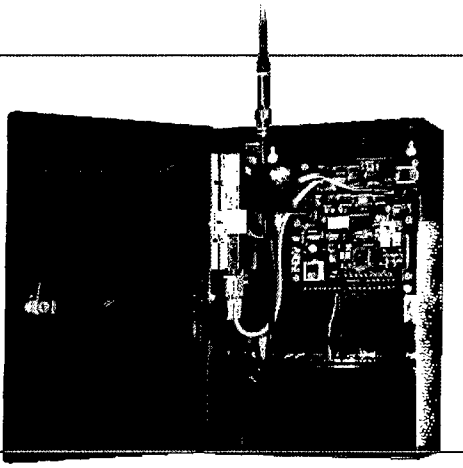
UL Listed Central Station

Remote Station

864 Ed. 9, 827, 1610, 365, 681

CSFM

NFPA RF Section 8.6.3.5



- **Options for Full Data for Fire and Burglary**
- **Available in 7744F & 7788F Zone Configurations**
- **Built-in Power Supply and Battery Charger**
- **Local Annunciation Options on Board**

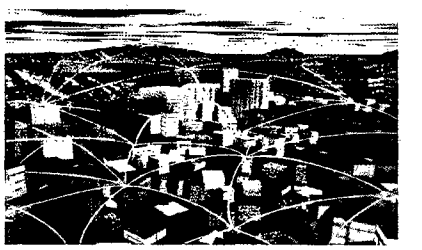
Advanced Wireless Alarm Monitoring

The 7744F/7788F smart subscriber unit links an alarm panel to an alarm monitoring central station. This 2-way transceiver and repeater in one is housed in a full size locking steel cabinet for superior performance. The 7744F/7788F supports a wide range of inputs such as NO/NC/EOL and direct voltage. It automatically senses wire and antenna cuts, and monitors battery and AC power status. Advanced status reporting, self-diagnostics and a built-in power supply make the 7744F/7788F the first choice for all wireless alarm communication needs.

Full Data for Fire and Burglary

Use with the optional Firetap for full fire data or the IntelliTap for full fire and burglary data.

Available Configurations	Available Options
7744F – 4 reversing polarity inputs plus 4 programmable EOL inputs	FireTap 7770
7788F – Programmable EOL inputs with 8 zones	IntelliTap 7067
	NEMA 4 Enclosure
	High Gain Antenna
	Additional Back Up Battery
	Available in Burglary Beige or Fire Red



Wireless mesh networking is an innovative technology adopted by many industries with applications that need to communicate data over a large geographic area with a high level of reliability at a low total cost of ownership.

The advanced design and 2-way communications capability provides easy installation, expansion, and management when compared to alternative communication methods, both wired and wireless.

7744F/7788F
RF Subscriber Unit

Technical Specifications

Radio
Standard CSAA frequency ranges: 450-470 MHz and 130-174 MHz, VHF and UHF. Others available

Standard Output Power
2 watts (requires FCC license)

Power Input
16.5 VAC, 40VA UL listed
Class II transformer required

Voltage
12 VDC nominal

Current
175mA standby; 800mA transmit

Alarm Signal Inputs
- 4 individually programmable Zones: NO/NC/EOL, trouble restore
- RS-232
- Reversing voltage (7744F only) 12 or 24 VDC

Operating Temperature Range
0° to 50°C, 32° to 122°F

Storage Temperature Range
-10° to 60°C, 14° to 140°F

Relative Humidity Range
0-85% RHC non-condensing

Back up Battery
12V, 7.5 AHr

Low Battery Reporting
22.5-minute test cycle

AC Status
Reports to central station after approximately 60 minutes without AC power, reports power restored after approximately 60 minutes of restored power. programmable from 60 to 180 minutes

Antenna Cut (local reporting)
Form 'C' Contact 1 AMP

Size
13.25"H x 8.5"W x 4.3"D
34cm x 21.5cm x 11cm

Weight
6.4 lbs, 2.9 Kilograms (excluding battery)

Colors
Available in standard Burglary Beige or Fire Red
Please specify when ordering

Available Options
- 7788F RF subscriber unit with 8 EOL inputs
- 7744F RF subscriber unit with 4 EOL inputs and 4 reverse polarity inputs
- 7770 - FireTap
- 7067 - IntelliTap
- NEMA 4 Enclosure

Please specify when ordering

AES-*IntelliNet*™ is the industry leader in delivering high quality wireless mesh networks to the fire and security industry in commercial, corporate, government, and educational applications with its broad line of products and advanced network management tools. Users of AES-*IntelliNet* networks have gained significant revenue, communications, and cost advantages while meeting the high standards of reliability required for the fire and security industry. AES-*IntelliNet* alarm monitoring systems are deployed at hundreds of thousands of locations in over 130 countries.

AES CORPORATION | *IntelliNet* For Alarm Monitoring

For more information
Call 800-AES-NETS (800-237-6387)

AES Corporation | 285 Newbury Street | Peabody, MA 01960 USA
Tel. +1 978-535-7310 | Fax +1 978-535-7313 | Email info@aes-intellinet.com
Web www.aes-intellinet.com

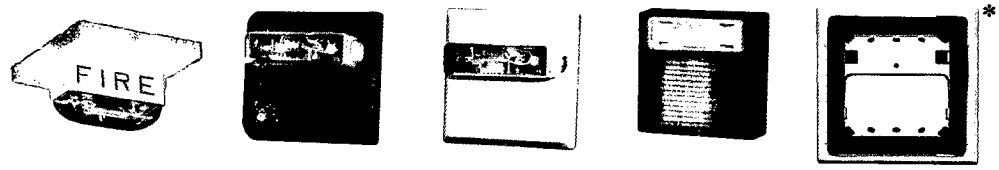
Available configurations

- 7788F, 8 EOL inputs
- 7744F, 4 EOL inputs w/4 reverse polarity inputs

7744F/7788F/08/09

COOPER Notification

Weatherproof Appliances - Series AH Audibles, AS Audible Strobes, MT Multitone Strobes, RSS Strobes and ET70 Speaker Strobes and Weatherproof Mounting Accessories



Description:

Designed for life safety, performance and reliability, Cooper Notification's Wheelock cost effective weatherpoof notification appliances include:

Weatherproof Appliances	Series
Strobes	RSSWP
Horn Strobes	ASWP
Horns	AH-24WP, AH-12WP
Multitone Horn Strobes	MTWP
Multitone Horns	MT
Speaker Strobes	ET70WP
Speakers	ET-1010

All strobe models are UL dual listed - meeting both UL1638 and UL1971 requirements. As dual listed appliances, these weatherproof strobes, horn strobes and speaker strobes are listed for outdoor applications under UL 1638 as well as under UL 1971, the Standard for Safety Signaling Devices for Hearing Impaired. With an extended temperature range of –31°F to 150°F (-35°C to 66°C), Wheelock weatherproof appliances meet or exceed UL outdoor test requirements for rain, humidity and corrosion resistance while providing multiple strobe intensity options, including the highest strobe ratings available for area coverage per NFPA 72 strobe spacing tables (up to 185 candela for wall mounting and 177 candela for ceiling mounting).

To enable weatherproof mounting, Cooper Notification provides the industry's widest choice of mounting options for surface or unique semi-flush installation. Models are available for surface mounting to Wheelock weatherproof backboxes on walls or ceilings. The optional WP-KIT allows the weatherproof backboxes (IOB, WPBB or WPSBB) to be mounted to a recessed electrical box for concealed conduit installation. For semi-flush installation, the WPA* and WFPA* kits allow a customer to mount the weatherproof appliances to a recessed electrical box without the need for an external weatherproof backbox. See the Backboxes, Plates and Gaskets Table on page three of this document for a summarization of these mounting options and the required accessories.

All models may be synchronized using the Wheelock DSM Sync Modules, Wheelock Power Supplies or other manufacturers panels incorporating the Wheelock Patented Sync Protocol. The horn output of horn strobes can be independently controlled on 2-wire circuits using the Wheelock patented sync protocol. MTWP horn strobe models are 4-wire appliances; the strobes can be synchronized while the audible can be connected to a coded fire alarm system or can be set to produce any of eight selectable tones.

Features:

- Approvals include: UL Standards 1971, 1638, 464 and 1480 California State Fire Marshal (CSFM), New York City (MEA), Factory Mutual (FM), Chicago (BFP) and ULC . See agency approvals by model number on page two of this document
- Compliance with the following requirements: NFPA, UFC, ANSI 117.1, OSHA Part 29, 1910.165, ADA
- Weatherproof with extended temperature range of –40°F to 150°F (-40°C to 66°C)*
- Dual Listed strobe models (UL 1638 and UL 1971)
- Industry's highest strobe candela options
- Synchronize using the Wheelock Sync Modules or panels with built-in Wheelock Patented Sync Protocol
- Models with field selectable tone, dBA and candela settings
- Wall or ceiling mounting options
- Surface of semi-flush mounting
- IN/OUT wiring termination accepting two #12-18 AWG wires at each terminal

The series RSSWP, ASWP, AH-24WP, MTWP-2475W, and MT-12/24 have UL / ULC approval down to -40°F. The ET-1010 and ET70WP have UL approval down to -40°F. The AH-12WP has UL approval down to -31°F.

E5946
S5391
S2652

151-92-E

7125-0785:131 (ASWP)
7125-0785:146 (ET70WP)
7125-0785:156 (MTWP)
7300-0785:154 (RSSWP)

NOTE: All CAUTIONS and WARNINGS are identified by the symbol ⚠. All warnings are printed in bold capital letters.

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General Notes:

- Strobes are designed to flash at 1 flash per second minimum over their UL Listed Regulated Voltage Range.
- All candela ratings represent minimum effective Strobe intensity based on UL Standards 1971 and 1638 as indicated in candela ratings table.

Wall Mount

RSSWP


MTWP


ASWP


ET70WP

Strobe		Order Code
RSSWP-2475W-FR	Red	9013
RSSWP-2475W-FW	White	3034
RSSWP-24MCWH-FR	Red	5161
RSSWP-24MCWH-FW	White	5165
Audible Strobe		
ASWP-2475W-FR	Red	9012
ASWP-24MCWH-FR	Red	5137
ASWP-24MCWH-FW	White	5140
Multi-tone Strobe		
MTWP-2475W-FR	Red	8420
MTWP-2475W-FW	White	3112
MTWP-24MCWH-FR	Red	5132
MTWP-24MCWH-FW	White	5134
Speaker Strobe		
ET70WP-2475W-FR	Red	9077
ET70WP-2475W-FW	White	3179
ET70WP-24185W-FR	Red	4885
ET70WP-24185W-FW	White	4891
ET70WP-24135W-FR	Red	4872
ET70WP-24135W-FW	White	4875

Ceiling Mount

RSSWP

MTWP

ASWP


ET70WP

Strobe		Order Code
RSSWP-2475C-FR	Red	4338
RSSWP-2475C-FW	White	4446
RSSWP-24MCCH-FR	Red	5167
RSSWP-24MCCH-FW	White	5187
Audible Strobe		
ASWP-2475C-FR	Red	4251
ASWP-2475C-FW	White	4502
ASWP-24MCCH-FR	Red	5149
ASWP-24MCCH-FW	White	5157
Multi-tone Strobe		
MTWP-2475C-FR	Red	4457
MTWP-2475C-FW	White	4478
MTWP-24MCCH-FR	Red	5102
MTWP-24MCCH-FW	White	5122
Speaker Strobe		
ET70WP-2475C-FR	Red	4452
ET70WP-2475C-FW	White	4454
ET70WP-24177C-FR	Red	4845
ET70WP-24177C-FW	White	4859
ET70WP-24115C-FR	Red	4550
ET70WP-24115C-FW	White	4732

Wall or Ceiling Mount


MT


AH


ET-1010

Audible		Order Code
AH-24WP-R	Red	7416
AH-12WP-R	Red	7415
Horn		
MT-12/24-R	Red	5023
Speaker		
ET-1010-R	Red	3135
ET-1010-W	White	3137

UL Max. Current	AH	
	24 VDC	12 VDC
High (99) dBA	0.080	0.192
Med (95) dBA	0.043	0.108
Low (90) dBA	0.021	0.058

UL Reverberant dBA @ 10 Feet							
Watts	1/8	1/4	1/2	1	2	4	8
ET-1010	77	80	83	86	87	92	94
ET70WP	78	81	84	87	90	93	95

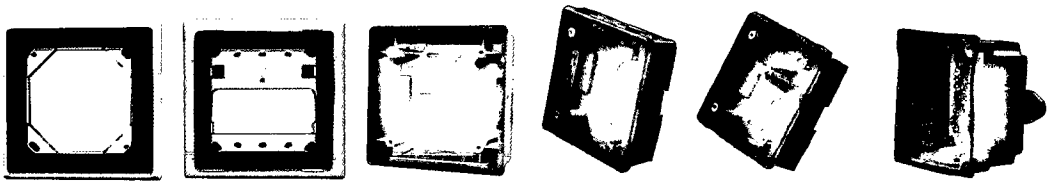
	Candela Ratings						
Series	UL 1971	UL 1638 @ 77°F	UL 1638 @ -40°F	RSS, ET70WP and MTWP UL Max Current (Strobe Only)	ASWP		
					High	Med	Low
2475	30**	180	115	0.138	0.168	0.155	0.150
MCWH	135	135	56	0.300	0.355	0.340	0.335
	185	185	77	0.420	0.480	0.465	0.460
MCCH	115	115	47	0.300	0.355	0.340	0.335
	177	177	73	0.420	0.480	0.465	0.460
24185	185	185	77	0.420			
24177	177	177	73	0.420			

**Wall mount rating only

UL Max. Current (Audible)	MTWP/MT 24 VDC		MT 12 VDC	
dBA	HI	STD	HI	STD
Horn	0.108	0.044	0.177	0.034
Bell	0.053	0.024	0.095	0.020
March Time	0.104	0.038	0.142	0.034
Code 3 Horn	0.091	0.035	0.142	0.034
Code 3 Tone	0.075	0.035	0.105	0.021
Slow Whoop	0.098	0.037	0.142	0.035
Siren	0.104	0.036	0.152	0.030
Hi/Lo	0.057	0.025	0.114	0.026

Model Number	Agency Approvals				
Strobe	**UL**	**MEA**	**CSFM**	**FM**	**BFP**
RSSWP-2475	X	X	X	X	-
RSSWP-24MCWH	X	-	X	-	-
RSSWP-24MCCH	X	-	X	-	-
Audible Strobe					
ASWP-2475	X	X	X	X	X
ASWP-MCWH	X	-	X	-	-
ASWP-MCCH	X	-	X	-	-
Multitone Strobe					
MTWP-2475	X	X	X	X	-
MTWP-MCWH	X	-	X	-	-
MTWP-MCCH	X	-	X	-	-
Horns/Audibles					
AH-24WP	X	X	X	X	X
AH-12WP	X	X	X	X	X
MT-12/24	X	X	X	X	X
Speaker Strobe					
ET70WP-2475	X	-	X	X	-
ET70WP-185	X	-	X	X	-
ET70WP-177	X	-	X	X	-
ET70WP-115	X	-	X	X	-
ET70WP-135	X	-	X	X	-

Mounting Accessories



WFP WFPA IOB WPSBB WPBB WBB

Gasket Kit		Order Code
WP-KIT		4486
Flush Plates		
WFPA-R	Red	4698
WFPA-W	White	4701
WFP-R	Red	4696
WFP-W	White	4697
Backboxes		
IOB-R*	Red	5046
IOB-W*	White	5047
WPSBB-R*	Red	9751
WPSBB-W*	White	3033
WPBB-R*	Red	9014
WPBB-W*	White	4692
WBB-R	Red	2959
WBB-W	White	2960

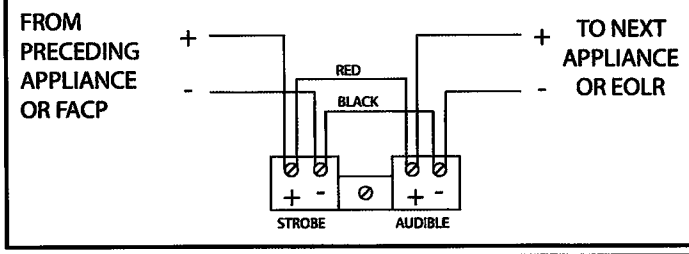
Mounting Options:

	Backboxes, Plates, Gasket Kits		
	Surface Mount		Flush Mount
	Exposed Conduit	Concealed Conduit	
RSSWP Strobes	WPSBB	WPSBB + WP-KIT	WFP
ET70WP Speaker Strobes	IOB	IOB + WP-KIT	WFP
ASWP Horn Strobes	WPBB	WPBB + WP-KIT	WFPA
AHWP Horns	WBB	-	WFP
ET-1010 Speakers	WBB	-	WFP
MTWP Multitone Horn Strobes	IOB	IOB + WP-KIT	WFP
Multitone Horn	IOB	IOB + WP-KIT	WFP

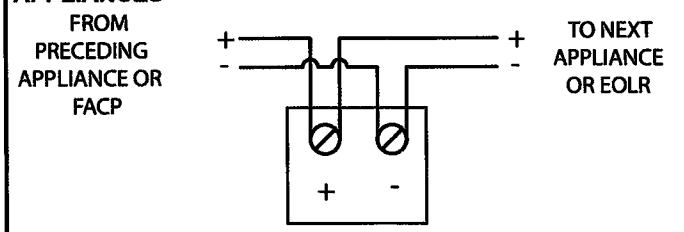
*IOB, WPSBB and WPBB models include weep holes and plug in the event that moisture may have entered the appliance

Wiring Diagrams

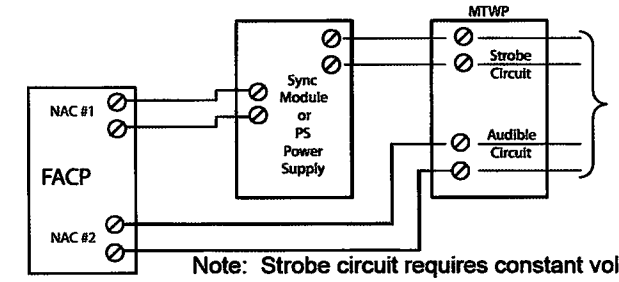
SERIES MTWP AUDIBLE APPLIANCE AND STROBE OPERATE IN UNISON. RED AND BLACK SHUNT-WIRES ARE SUPPLIED.



SERIES RSSWP, ASWP, AHWP, MTWP AND MT-12/24 APPLIANCES

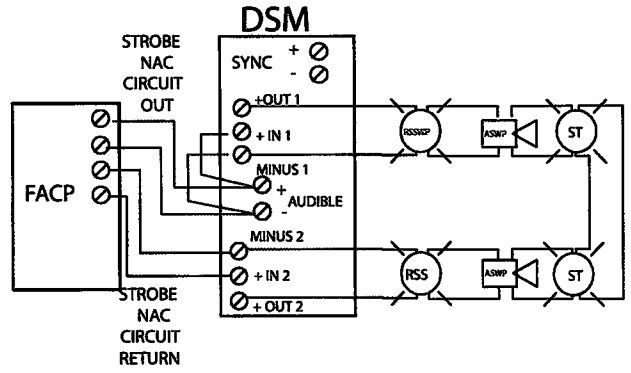


SERIES MTWP APPLIANCES SYNCHRONIZED STROBE OPERATION WITH CODED FACP



Note: Strobe circuit requires constant voltage.

SERIES RSSWP/ASWP APPLIANCES SYNCHRONIZED W/ DSM MODULE SINGLE CLASS "A" NAC CIRCUIT



Note: Models are available in Red or White. Contact Customer Service for Order Code and Delivery.
#Refer to Data Sheet S7000 for Mounting Options

NOTE: Due to continuous development of our products, specifications and offerings are subject to change without notice in accordance with Cooper Wheelock Inc. dba Cooper Notification standard terms and conditions.

ARCHITECTS AND ENGINEERS SPECIFICATIONS

General
Weatherproof notification appliances shall be UL listed for outdoor use. Weatherproof Strobe appliances shall be listed under UL Standard 1638 (Standard for Visual Signaling Appliances) for Indoor/Outdoor use and UL Standard 1971 (Standard for Safety Signaling Devices for Hearing Impaired). The appliances shall be available for optional wall mounting or ceiling mounting to weatherproof backboxes using either exposed conduit or concealed conduit, or semi-flush mounting to a recessed electrical box in walls or ceilings using Wheelock mounting accessories.

Weatherproof Strobes
Weatherproof Strobe appliances shall produce a minimum flash rate of 60 flashes per minute over the UL Regulated Voltage Range of 16 to 33 VDC and shall incorporate a Xenon flashtube. The weatherproof strobes shall be available with UL 1971 candela ratings up to 185 cd for wall mounting and 177 cd for ceiling mounting. UL 1638 candela ratings up to 180 cd at 77°F shall be available. The strobes shall operate over an extended temperature range of –40°F to 150°F (-40°C to 66°C) and be listed for maximum humidity of 95% RH. Strobe inputs shall be polarized for compatibility with standard reverse polarity supervision of circuit wiring by a Fire Alarm Control Panel (FACP).

Weatherproof Audibles and Audible/Strobe Combinations Weatherproof horns and multitone audibles shall be listed for Indoor/Outdoor use under UL Standard 464. The horns shall be able to produce a continuous output or a temporal code-3 output that can be synchronized. The horns shall have at least 3 sound level settings. Horn/Strobe combinations shall be able to be synchronized on a single NAC.

Multitone audibles shall be able to produce 8 distinct tones selectable by dip switch and shall have at least 2 sound level settings. Multitone Audible/Strobe combinations shall have independent inputs for the audible and strobe. The strobes shall be able to be synchronized. The audibles shall be able to be coded when operated on a separate NAC.

Weatherproof Speakers and Speaker/Strobes
Weatherproof speakers and speaker/strobes shall be listed for Indoor/Outdoor use under UL Standard 1480. All speakers shall provide field selectable taps for 1/8W to 8W operation for either 25 VRMS or 70 VRMS audio systems and shall incorporate a sealed back construction for extra protection and improved audibility. Speakers without strobes shall be Wheelock Series ET-1010. They shall be listed to produce up to 94 dBA and shall incorporate a vandal resistant grille design. Speaker with strobes shall be Wheelock Series ET70WP. They shall be available for surface or semi-flush mounting to walls or ceilings and shall be listed to produce up to 93 dBA.

Synchronization Modules
When synchronization of strobes or temporal code-3 audibles is required, the appliances shall be compatible with the Wheelock Series DSM Sync Modules, Wheelock Power Supplies or other manufacturers panels with built-in Wheelock Patented Sync Protocol. The strobes and audibles shall not drift out of synchronization at any time during operation.

Series ASWP audibles and strobes shall be able to be synchronized on a 2-wire circuit with the ability to silence the audible if required. The strobes on Series MT multitone audible/strobe appliances shall be able to be synchronized and shall be able to be operated on a separate circuit from the audibles while the audible circuit is connected to a coded or continuous NAC.

Weatherproof Mounting Accessories
Weatherproof mounting options shall include surface mounting or semi-flush mounting to walls or ceilings. Surface mounted appliances shall mount to Wheelock IOB, WBB, WPBB or WPSBB weatherproof backboxes using either exposed conduit or concealed conduit. For concealed conduit the weatherproof backbox shall be mounted to a recessed electrical box with Wheelock's WP-KIT to provide a weatherproof seal for the electrical box. Semi-flush mounted appliances shall mount to a recessed electrical box using Wheelock WFP or WFPA flush plates to provide a weatherproof seal between the electrical box and the appliance.

NEMA Member

WE ENCOURAGE AND SUPPORT NICET CERTIFICATION
3 YEAR WARRANTY

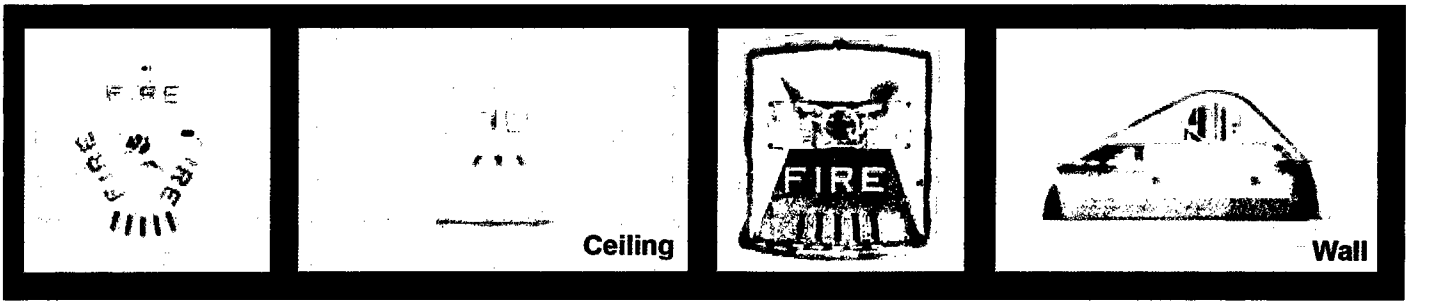
S9004 WP 06/11

NJ Location
273 Branchport Ave.
Long Branch, NJ 07740
P: 800-631-2148
F: 732-222-8707
www.coopernotification.com

COOPER Notification

EXCEDER™

Strobe, Horn Strobe, and Horn Notification Appliances



Description:

The Wheelock® Exceder™ Series of notification appliances feature a sleek modern design that will please building owners with reduced total cost of ownership. Installers will benefit from its comprehensive feature list, including the most candela options in one appliance, low current draw, no tools needed for setting changes, voltage test points, 12/24 VDC operation, universal mounting base and multiple mounting options for both new and retrofit construction.

The Wheelock® Exceder™ Series incorporates high reliability and high efficiency optics to minimize current draw allowing for a greater number of appliances on the notification appliance circuit. All strobe models feature an industry first of 8 candela settings on a single appliance. Models with an audible feature 3 sound settings (90, 95, 99 dB). All switches to change settings, can be set without the use of a tool and are located behind the appliance to prevent tampering. Wall models feature voltage test points to take readings with a voltage meter for troubleshooting and AHJ inspection.

The Wheelock® Exceder™ Series of wall and ceiling notification appliances feature a Universal Mounting Base (UMB) designed to simplify the installation and testing of horns, strobes, and combination horn strobes. The separate universal mounting base can be pre-wired to allow full testing of circuit wiring before the appliance is installed and the surface is finished. It comes complete with a Contact Cover for protection against dirt, dust, paint and damage to the contacts. The Contact Cover also acts as a shunting device to allow pre-wire testing for common wiring issues. The Contact Cover is polarized to prevent it from being installed incorrectly and prevents the appliance from being installed while it is on the UMB. When the Contact Cover is removed the circuit will show an open until the appliance is installed. The UMB allows for consistent installation and easy replacement of appliances if required. Wall models provide an optional locking screw for extra secure installation, while the ceiling models provide a captivated screw to prevent the screw from falling during installation.

Compliance
- UL 1971, UL 464, ULC, CSFM, FM
- ADA/NFPA/ANSI/OSHA
- RoHS

- **Save up to 48% in current draw***
- **Up to 9 models now in 1 appliance**
- **Save up to 14% cost of installation****

Sleek Modern Aesthetics

Finger Slide Switches

Voltage Test Points

Multiple Voltages

3 Audible Settings
90, 95, 99 dB

8 Candela Settings ***
Wall - 15/1575/30/75/95/110/135/185
Ceiling - 15/30/60/75/95/115/150/177

Universal Mounting Base ***
Ceiling and Wall
Mounts to 5 Backbox Types

Environmentally Friendly
Low Current Draw

Compatibility and Requirements
- Synchronize using the Wheelock® Sync Modules or panels with built-in Wheelock® Patented Sync Protocol
- Compatible with UL "Regulated Voltage" using filtered VDC or unfiltered VRMS input voltage
- Strobes produce 1 flash per second over the "Regulated Voltage" range

* Compared to competitive models
** Compared to previous models
*** Patented

NOTE: All CAUTIONS and WARNINGS are identified by the symbol ⚠. All warnings are printed in bold capital letters.

⚠ WARNING: PLEASE READ THESE SPECIFICATIONS AND ASSOCIATED INSTALLATION INSTRUCTIONS CAREFULLY BEFORE USING, SPECIFYING OR APPLYING THIS PRODUCT. VISIT WWW.COOPERNOTIFICATION.COM OR CONTACT COOPER NOTIFICATION FOR THE CURRENT INSTALLATION INSTRUCTIONS. FAILURE TO COMPLY WITH ANY OF THESE INSTRUCTIONS, CAUTIONS OR WARNINGS COULD RESULT IN IMPROPER APPLICATION, INSTALLATION AND/OR OPERATION OF THESE PRODUCTS IN AN EMERGENCY SITUATION, WHICH COULD RESULT IN PROPERTY DAMAGE, AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

General Notes:

General Notes:

- Strobes are designed to flash at 1 flash per second minimum over their "Regulated Voltage Range".
- All candela ratings represent minimum effective strobe intensity based on UL Standard 1971.
- Series Exceder Strobe products are Listed under UL Standards 1971 and 464 for indoor use with a temperature range of 32°F to 120°F (0°C to 49°C) and maximum humidity of 93% (± 2%) UL 464 (85% UL 1971).
- Series Exceder horns are under UL Standard 464 for audible signal appliances (Indoor use only).

Low Current Draw = Fewer Power Supplies

Strobe Ratings per UL Standard 1971

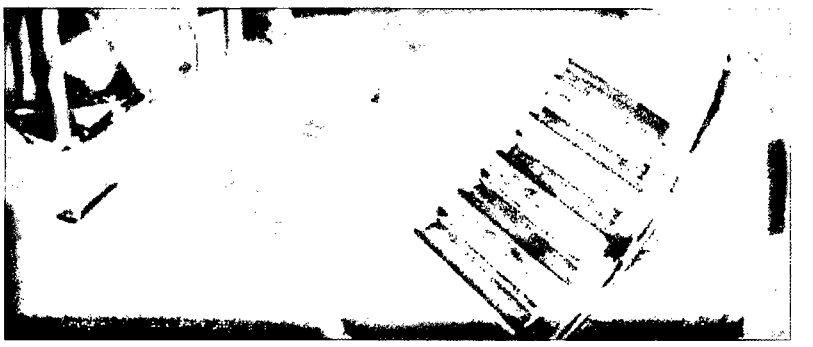
		UL Max Current*													
		24 VDC / 24 FWR												12 VDC	
Model	Regulated Voltage Range VDC	(15)	15/75	(30)	60	75	95	(110)	115	135	150	177	185	15	15/75
ST	8.0-33.0	(0.057)	0.070	(0.085)		0.135	0.163	(0.182)		0.205			0.253	0.110	0.140
STC	8.0-33.0	0.061		0.085	0.103	0.135	0.163		0.182		0.205	0.253		0.110	

Horn Strobe Ratings per UL 1971 & Anechoic at 24 VDC

		UL Max Current* at Anechoic 99 dBA													
		24 VDC												12 VDC	
Model	Regulated Voltage Range VDC	(15)	15/75	30	60	(75)	95	110	115	135	150	177	185	15	15/75
HS	8.0-33.0	(0.082)	0.095	0.102		(0.148)	0.176	0.197		0.242			0.282	0.125	0.159
HSC	8.0-33.0	0.082		0.102	0.141	0.148	0.176		0.197		0.242	0.282		0.125	
		UL Max Current* at Anechoic 95 dBA													
		24 VDC												12 VDC	
Model	Regulated Voltage Range VDC	15	15/75	30	60	75	95	110	115	135	150	177	185	15	15/75
HS	8.0-33.0	0.073	0.083	0.087		0.139	0.163	0.186		0.230			0.272	0.122	0.153
HSC	8.0-33.0	0.073		0.087	0.128	0.139	0.163		0.186		0.230	0.272		0.122	
		UL Max Current* at Anechoic 90 dBA													
		24 VDC												12 VDC	
Model	Regulated Voltage Range VDC	15	15/75	30	60	75	95	110	115	135	150	177	185	15	15/75
HS	8.0-33.0	0.065	0.075	0.084		0.136	0.157	0.184		0.226			0.267	0.120	0.148
HSC	8.0-33.0	0.065		0.084	0.120	0.136	0.157		0.184		0.226	0.267		0.120	

Horn Ratings per UL Anechoic

Model	Regulated Voltage Range VDC	99 dB	95 dB	90 dB
HN	16-33.0	0.064	0.044	0.022
HNC	16-33.0	0.084	0.044	0.022
HN	8.0-17.5	0.047	0.026	0.017
HNC	8.0-17.5	0.047	0.026	0.017



* UL max current rating is the maximum RMS current within the listed voltage range (16-33 VDC for 24 VDC units). For strobes the UL max current is usually at the minimum listed voltage (16 VDC for 24 VDC units). For audibles the max current is usually at the maximum listed voltage (33 VDC for 24 VDC units). For unfiltered ratings, see installation instructions.

Specification & Ordering Information

Easy to remember model codes

8 candelas on 1 device

1 gang, 2 gang, 4" sq, 3.5" octal & 4" octal boxes

Model	Strobe Candela	Sync w/ DSM or Wheelock Power Supplies	12/24 VDC*	Mounting Options
Horn Strobes				
HSR	15/1575/30/75/95/110/135/185	X	X	UMB**
HSW	15/1575/30/75/95/110/135/185	X	X	UMB**
HSRC	15/30/60/75/95/115/150/177	X	X	UMB**
HSWC	15/30/60/75/95/115/150/177	X	X	UMB**
Strobes				
STR	15/1575/30/75/95/110/135/185	X	X	UMB**
STW	15/1575/30/75/95/110/135/185	X	X	UMB**
STRC	15/30/60/75/95/115/150/177	X	X	UMB**
STWC	15/30/60/75/95/115/150/177	X	X	UMB**
Horn				
HNR		X	X	UMB**
HNW		X	X	UMB**
HNRC		X	X	UMB**
HNWC		X	X	UMB**

*12 VDC models feature 15 & 15/75 settings

**UMB = Universal Mounting Base

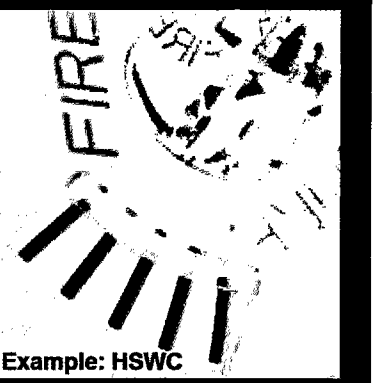
Model Legend

HN = Horn
ST = Strobe
HS = Horn Strobe
C = Ceiling Mount
W = White
R = Red

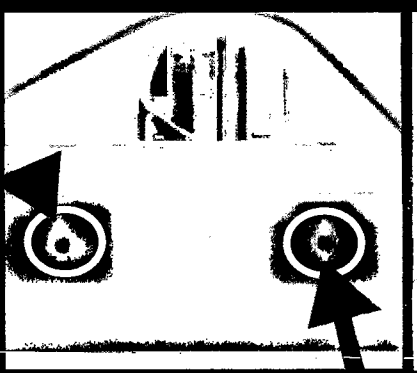
A = Agent Lettering (Strobes only)
AL = Alert Lettering (Strobes only)
N = No Lettering (Strobes only)

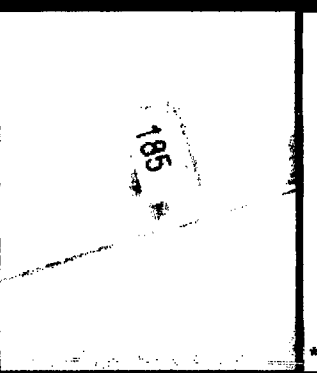
Example 1: STRC = Strobe, Red, Ceiling Mount
Example 2: HSR = Horn Strobe, Red, Wall Mount
Example 3: HSW = Horn Strobe, White, Wall Mount
Example 4: STW-AL = Strobe, White, Wall Mount, Alert Lettering


Example: HSR

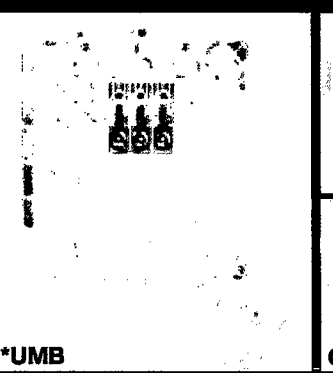


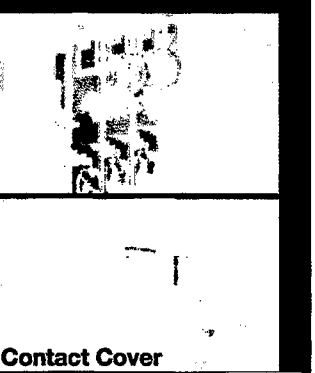
Example: HSWC


Voltage test points for quick troubleshooting and easy spot checking (wall models only)



8 candela settings


*UMB


Contact Cover

Common base for wall and ceiling with 5 mounting options

NOTE: Due to continuous development of our products, specifications and offerings are subject to change without notice in accordance with Cooper Wheelock Inc., dba Cooper Notification standard terms and conditions.

Architects and Engineers Specifications

The notification appliances shall be Wheelock® Exceder™ Series HS Audible Strobe appliances, Series ST Visual Strobe appliances and Series HN Audible appliances or approved equals. The Series HS and ST Strobes shall be listed for UL Standard 1971 (Emergency Devices for the Hearing-Impaired) for Indoor Fire Protection Service. The Series HS and HN Audibles shall be UL Listed under Standard 464 (Fire Protective Signaling). All Series shall meet the requirements of FCC Part 15 Class B. All inputs shall be compatible with standard reverse polarity supervision of circuit wiring by a Fire Alarm Control Panel (FACP) with the ability to operate from 8 to 33 VDC. Indoor wall models shall incorporate voltage test points for easy voltage inspection.

The Series HS Audible Strobe and ST Strobe appliances shall produce a flash rate of one (1) flash per second over the Regulated Voltage Range and shall incorporate a Xenon flashtube enclosed in a rugged Lexan® lens. The Series shall be of low current design. Where Multi-Candela appliances are specified, the strobe intensity shall have 8 field selectable settings at 15, 15/75, 30, 75, 95, 110, 135, 185 candela for wall mount and 15, 30, 60, 75, 95, 115, 150, 177 candela for ceiling mount. The selector switch for selecting the candela shall be tamper resistant. The 15/75 candela strobe shall be specified when 15 candela UL Standard 1971 Listing with 75 candela on-axis is required (e.g. ADA compliance). Appliances with candela settings shall show the candela selection in a visible location at all times when installed.

The audible shall have a minimum of three (3) field selectable settings for dBA levels and shall have a choice of continuous or temporal (Code 3) audible outputs.

The Series HS Audible Strobe, ST Strobe and Series HN Audible shall incorporate a patented Universal Mounting Base that shall allow mounting to a single-gang, double-gang, 4-inch square, 3.5-inch octal, 4-inch octal or 100mm European type back boxes. Two wire appliance wiring shall be capable of directly connecting to the mounting base. Continuity checking of the entire NAC circuit prior to attaching any notification appliances shall be allowed. Product shall come with Contact Cover to protect contact springs. Removal of an appliance shall result in a supervision fault condition by the Fire Alarm Control Panel (FACP). The mounting base shall be the same base among all horn, strobe, horn strobe, wall and ceiling models. All notification appliances shall be backwards compatible.

The Series HS and ST wall models shall have a low profile measuring 5.24" H x 4.58" W x 2.19" D. Series HN wall shall measure 5.24" H x 4.58" W x 1.6" D. The Series HSC and STC shall been round and have a low profile with a diameter of 6.68" x 2.63" D. Series HNC ceiling shall have a diameter of 6.68" x 1.50" D.

When synchronization is required, the appliance shall be compatible with Wheelock®'s DSM Sync Modules, Wheelock® Power Supplies or other manufacturer's panels with built-in Wheelock® Patented Sync Protocol. The strobes shall not drift out of synchronization at any time during operation. If the sync protocol fails to operate, the strobe shall revert to a non-synchronized flash-rate and still maintain (1) flash per second over its Regulated Voltage Range. The appliance shall also be designed so that the audible signal may be silenced while maintaining strobe activation when used with Wheelock® synchronization protocol.

Wall Appliances – UL Standard 1971, UL Standard 464, California State Fire Marshal (CSFM), ULC, FM, RoHS
Ceiling Appliances – UL Standard 1971, UL Standard 464, California State Fire Marshal (CSFM), ULC, FM, RoHS

NEMA Member

WE ENCOURAGE AND SUPPORT NICET CERTIFICATION
3 YEAR WARRANTY

Exceder - Spec Sheet 5/13

NJ Location
273 Branchport Ave.
Long Branch, NJ 07740
P: 800-631-2148
F: 732-222-8707
www.coopernotification.com

Gamewell FCI FIRE CONTROL INSTRUMENTS

by Honeywell

MS-7AF, MS-7 and MS-7S

DEVICE SPECIFIED BY ADVANCED FIRE & SECURITY INC.

Non-Coded, Manual Fire Alarm Stations

MS-7

Description

The Gamewell-FCI MS-7 Style manual fire alarm stations are available in a wide variety of configurations. The Stations comply with the Americans with Disabilities Act (ADA) 5-lb. maximum pull force requirement. Operating instructions and Braille text are engraved in the handle. All stations have a key lock/reset which is keyed alike with Gamewell-FCI fire alarm control panels and other manual fire alarm stations.

MS-7AF Velociti Addressable Station

The MS-7AF Velociti® Series addressable station is a double action station designed for installation in the signaling line circuit of Gamewell-FCI analog addressable control panels. Activation of the station causes its assigned address to register at the control panel. The door contains an LED which flashes green in normal condition and lights steady red when the station has been activated.* The station features screw terminals.

MS-7ASF Velociti Addressable Station

The MS-7ASF Velociti® Series addressable station is a single action station designed for installation in the signaling line circuit of Gamewell-FCI analog addressable control panels. Activation of the station causes its assigned address to register at the control panel. The door contains an LED which flashes green in normal condition and lights steady red when the station has been activated.* The station features screw terminals.

The Velociti® Series stations use a communication protocol that substantially increases the speed of communication between the sensors and certain Gamewell-FCI analog addressable fire alarm controls. These devices operate in a grouped fashion. If one of the devices in the group has a status change, the panel's microprocessor stops the group poll and focuses on the single device. The net effect is response speed up to five times greater than earlier designs.

MS-7 Double Action Station

The MS-7 double action station is used with conventional-fire alarm control panels. It features a set of single pole contacts and screw terminals for connection to an initiating circuit.

Features

- Addressable stations compatible with all Gamewell-FCI analog addressable fire alarm controls
- Conventional stations suitable for use with any UL® Listed control panel
- Both single and double action stations available
- Tumbler lock for test and reset keyed alike with Gamewell-FCI controls
- Surface or semi-flush mounting
- Shock and vibration resistant
- Stations (MS-7LOB) Listed for outdoor applications
- Complies with ADA pull force requirements

Only the red LED is operative in panels that do not operate in Velociti mode.

An ISO 9001-2000 Company

SIGNALING UL LISTED S2465 FM APPROVED 3023394 MEA Approved 67-02-E Vol.VIII 07150-0694:261

GAMEWELL-FCI
12 Clintonville Road, Northford, CT 06472-1610 USA • Tel: (203) 484-7161 • Fax: (203) 484-7118

MS-7S Single Action Station
The MS-7S single action station is used with conventional fire alarm control panels. It features a set of single pole contacts and wire leads for connection to an initiating circuit.

MS-7SP Double Action Station
The MS-7SP is a double action station similar to the MS-7 station, with the additional feature of both English and Spanish instructions molded into the unit.

MS-7LOB Double Action Station (Listed for Outdoor Applications)
The MS-7LOB station must be mounted on a Model SB-I/O backbox. In retrofit applications, the station is UL Listed for use with the WP-10 backbox. It is intended for use with conventional control panels and has a set of single pole contacts and screw terminals.

Mounting
The MS-7 interior stations may be surface mounted (use backbox SB-I/0) or semi-flush mounted on a standard double-gang, or 4-inch (10.2 cm) square electrical box. An optional trim ring (BG-TR) may also be used for semi-flush mounting.

NYC-Plate
The NYC-Plate provides the backplate for the manual pull station. (See Figure 1).

Figure 1 NYC-Plate

Specifications

Material:	Lexan®
Contact Ratings:	0.25 amps. @ 30 VAC/VDC (resistive)
Dimensions:	5 5/8" H x 4 1/4" W x 1 1/4" D (14 x 10.1 x 3.2 cm)
Operating Temperature (MS-7AF):	32° to 120° F (0° to 49° C)
Relative Humidity (MS-7AF):	10 to 93% (non-condensing)
Alarm Current:	.0030 amp. 0.007 for LED
Supervisory Current (MS-7AF):	.00030 amps.

Ordering Information

Model	Description
MS-7	Double action station.
MS-7AF**	Velociti addressable double action station.
MS-7ASF	Velociti addressable single action station
MS-7S	Single action station, wire leads.
MS-7SP	Double action station, English and Spanish instructions.
MS-7LOB	Double action station, outdoor use. (Must use SB-I/O - Indoor/ outdoor use backbox).
SB-I/O	Indoor/outdoor use backback-box.
SB-10	Surface backbox.
BG-TR.	Trim ring for semi-flush mount
NYC-Plate	NYC backplate for manual pull station

**For use with Gamewell-FCI analog addressable control panels only.

Gamewell FCI FIRE CONTROL INSTRUMENTS

by Honeywell

Velociti® Series

DEVICE SPECIFIED BY ADVANCED FIRE & SECURITY INC.

AMM-2F

Addressable Monitor Module

Description

The Gamewell-FCI Velociti® Series, addressable monitor module AMM-2F is a single Style B, Class B initiating device circuit (IDC) with a 47KW end-of-line resistor. This module provides an address for any device or group of devices connected to this circuit on the signaling line circuit (SLC) of the Gamewell-FCI addressable series fire alarm control panel. Any initiating device with normally open (N.O.) dry contacts may be made addressable when connected to the AMM-2F module.

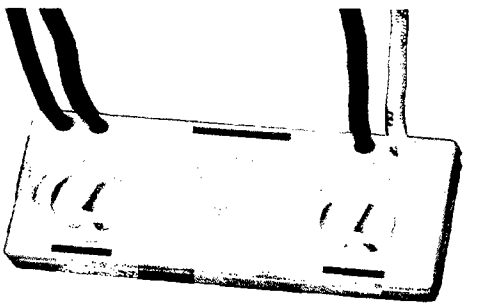
The Velociti® Series use a communication protocol that substantially increases the speed of communication between the sensors and certain Gamewell-FCI analog addressable fire alarm controls. These devices operate in a grouped fashion. If one of the devices in the group has a status change, the panel's microprocessor stops the group poll and concentrates on the single device. The net effect is response speed up to five times greater than earlier designs.

The AMM-2F module can be programmed to provide a wide variety of input functions to the Gamewell-FCI addressable series fire alarm control panels. It can be identified as a manual station, heat detector, plenum detector, waterflow switch, tamper switch, N.O. contact, smoke detector, projected beam smoke detector, sub loop, remote zone, etc. It can also serve as a remote system silence, system reset, system acknowledge or drill switch. It is even possible to customize its device type to meet specific job requirements.

The initiating device circuit of the AMM-2F can support a maximum line resistance of up to 40 ohms allowing the use of linear heat detection devices. The compact size facilitates the installation of the module inside manual stations, or mounting boxes of various types of alarm initiating devices.

Ordering Information

Model	Description
AMM-2F	Addressable monitor module, single circuit, Style B, Class B



AMM-2F

Features

- Compact size allows easy installation
- Class B, Style B, initiating circuit
- 40 Ohm line resistance for each initiating device circuit
- Connects to any normally open dry contact device
- Bicolor LEDs flash green whenever the module is addressed, and light steady red on alarm*

*Note: Only the red LED is operative in panels that do not operate in Velociti® mode.

Specifications

Supervisory current:	.000375 amps.
Alarm current:	.00060 amps.
Operating temperature:	32° to 120° F (0° to 49° C)
Relative humidity:	10 to 93% (non-condensing)
End-of-line Resistance:	47K ohms
Dimensions:	1.3" L x 2.5" W x 0.5" D (3.3 x 6.4 x 1.3 cm)

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SIGNALING UL LISTED S1949 FM APPROVED 3023594 MEA Approved 227-03-E Vol.IV 07300-0894:178

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Gamewell FCI FIRE CONTROL INSTRUMENTS

by Honeywell

Velociti® Series

DEVICE SPECIFIED BY ADVANCED FIRE & SECURITY INC.

AOM-2RF

Description

The Gamewell-FCI Velociti® Series, addressable output relay control module (AOM-2RF) allows an Gamewell-FCI analog addressable fire alarm control to switch discrete relay contacts by code command. The relay provides two (2), isolated sets of Form-C contacts which transfer simultaneously. Circuit connections to the relay contacts are not supervised by the module.

The Velociti® Series use a communication protocol that substantially increases the speed of communication between the sensors and certain Gamewell-FCI analog addressable fire alarm controls. These devices operate in a grouped fashion. If one of the devices in the group has a status change, the panel's microprocessor stops the group poll and concentrates on the single device. The net effect is response speed up to five times greater than earlier designs.

The AOM-2RF Module is designed for installation in the signaling line circuit of any Gamewell-FCI analog addressable fire control panel. The module contains a panel controlled LED. The AOM-2RF is designed to mount in a 4" square junction box 2 1/8" deep.

Relay Contact Ratings			
Current Rating	**Maximum Voltage**	**Load Description**	**Application**
3A	30 VDC	Resistive	Non-Coded
2A	30 VDC	Resistive	Coded
0.9A	110 VDC	Resistive	Non-Coded
0.5A	125 VAC	Resistive	Non-Coded
0.5A	30 VDC	Inductive (L/R=5ms)	Coded
1A	30 VDC	Inductive (L/R=2ms)	Coded
0.5A	125 VAC	Inductive (PF=.35)	Non-Coded
0.7A	75 VAC	Inductive	Non-Coded

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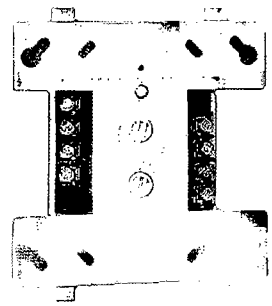
Addressable Output Relay Control Module



AOM-2RF

Features

- Two (2) sets of Form "C" contacts
- Visual rotary, decimal switch addressing (01-159)
- Bicolor LEDs flash green whenever the sensor is addressed, and light steady red on alarm*
- Compact size allows easy installation

Note: Only the red LED is operative in panels that do not operate in Velociti® mode.

Specifications

Supervisory current:	.000375 amps.
Alarm current:	.0065 amps.
Operating temperature:	32° to 120° F (0° to 49° C)
Relative humidity:	10 to 93% relative humidity (non-condensing)
Dimensions:	4 1/2" H x 4" W x 1 1/4" (11.4 x 10.2 x 3.2 cm)

Ordering Information

Model	Description
AOM-2RF	Addressable output relay control module

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Gamewell FCI FIRE CONTROL INSTRUMENTS

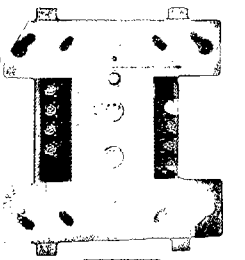
by Honeywell

Velociti® Series

AOM-2SF

DEVICE SPECIFIED BY ADVANCED FIRE & SECURITY INC.

Addressable Output Relay Supervised Control Module



AOM-2SF

Description

The Gamewell-FCI Velociti® Series addressable output supervised control module (AOM-2SF) allows an Gamewell-FCI analog addressable fire alarm control to switch an external power supply, such as a DC supply or audio amplifier (up to 80 VRMS) to notification appliances. The AOM-2SF notification appliance circuit can be wired either Class A (Style Z) or Class B (Style Y). It also supervises the wiring to the connected loads and reports their status to the panel as NORMAL, OPEN or SHORT CIRCUIT. The module contains a panel controlled LED.

The Velociti® Series use a communication protocol that substantially increases the speed of communication between the sensors and certain Gamewell-FCI analog addressable fire alarm controls. These devices operate in a grouped fashion. If one of the devices in the group has a status change, the panel's microprocessor stops the group poll and concentrates on the single device. The net effect is response speed up to five times greater than earlier designs.

The module is UL Listed as suitable for releasing device service and FM Approved for deluge and preaction service. Refer to the Gamewell-FCI Compatibility Addendum, P/N 9000-0427, for a list of approved, compatible solenoids. The AOM-2SF module is designed for installation in the signaling line circuit of any Gamewell-FCI analog addressable control panel. The signaling line circuits of Gamewell-FCI analog addressable control panels are designed to accommodate up to 159 modules per circuit. The AOM-2SF is designed to mount in a 4" (10.16 cm) square junction box 2 1/8" (5.5 cm) deep.

Relay Contact Ratings

Current Rating	Maximum Voltage	Load Description	Application
3A	30 VDC	Resistive	Non-Coded
2A	30 VDC	Resistive	Coded
0.9A	110 VDC	Resistive	Non-Coded
0.5A	125 VAC	Resistive	Non-Coded
0.5A	30 VDC	Inductive (L/R=5ms)	Coded
1A	30 VDC	Inductive (L/R=2ms)	Coded
0.5A	125 VAC	Inductive (PF=.35)	Non-Coded
0.7A	75 VAC	Inductive	Non-Coded

Features

- Compact Size allows easy installation
- Class A, Style Z, or Class B, Style Y notification appliance circuit
- Will accommodate audio amplifiers up to 80 V_{RMS}
- Listed as suitable for releasing device service
- Bicolor LEDS flash green whenever the module is addressed, and lights steady red on alarm*

*Note: Only the red LED is operative in panels that do not operate in Velociti® mode.

Specifications

Supervisory Current:	.000375 amps.
Alarm Current:	.0065 amps.
Operating Temperature:	32° to 120° F (0° to 49° C)
Relative Humidity:	10 to 93% relative humidity (non-condensing)
Dimensions:	4 1/2" H x 4" W x 1 1/4" D (11.4 H x 10.2 W x 3.2 D cm)

Ordering Information

Model	Description
AOM-2SF	Addressable output supervised control module

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Gamewell FCI FIRE CONTROL INSTRUMENTS

by Honeywell

Velociti® Series

ATD-L2F, ATD-RL2F

Addressable Thermal Sensor

DEVICE SPECIFIED BY ADVANCED FIRE & SECURITY INC.

Description

The Gamewell-FCI Velociti® Series, addressable plug-in thermal sensors with integral communication provide features that surpass conventional sensors. Point ID capability allows each sensor's address to be set, providing exact locations for pinpointing alarm locations and for selective maintenance. ATD thermal sensors use an innovative thermistor sensing circuit to produce 135°F/57°C fixed-temperature (ATD-L2F). The ATD-RL2F provides a combination 15°/minute rate-of-rise with 135° fixed thermal detection that is included in a low-profile package. The ATD-HL2F provides fixed high-temperature detection at 190°F/88°C. These thermal sensors provide cost-effective, addressable property protection in a variety of applications.

The Velociti® Series uses a communication protocol that substantially increases the speed of communication between the sensors and Gamewell-FCI analog addressable fire alarm controls. These devices operate in a grouped fashion. If one of the devices in the group has a status change, the panel's microprocessor stops the group poll and concentrates on the single device. The net effect is response speed up to five times greater than earlier designs.

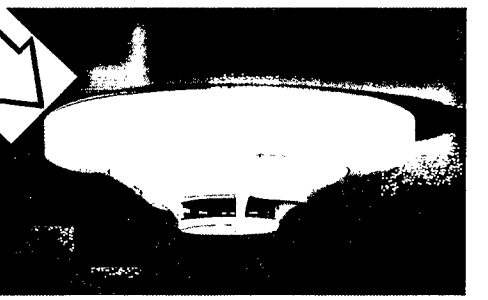
Installation

ATD plug-in sensors use a separate base to simplify installation, service, and maintenance. A special tool allows maintenance personnel to plug-in and remove sensors without using a ladder.

Mount the base on a box which is at least 1.5" (3.8 cm) deep. Suitable mounting base boxes include:

- 4.0" (10.2 cm) square box.
- 3.5" (8.9 cm) or 4.0" (10.2 cm) octagonal box.
- Single-gang box (except relay or isolator base).
- With B501BH or B501BHT base, use a 4.0" (10.2 cm) square box.
- With B224RB or B224BI base, use a 3.5" (8.9 cm) octagonal box, or a 4.0" (10.2 cm) octagonal or square box.

NOTE: Because of the inherent supervision provided by the SLC, end-of-line resistors are not required. Wiring "T-taps" or branches are permitted for Style 4 (Class "B") wiring.



ATD-L2F

Features

- Sleek, low-profile design
- Visual rotary switch addressing
- Built-in functional test switch activated by an external magnet
- Bicolor LEDs flash green whenever the sensor is addressed, and light steadily red on alarm*
- Optional relay, isolator, or sounder bases
- Low standby current
- Addressable communication
- Stable communication technique with noise immunity
- Optional remote, single-gang LED accessory (RA-400Z)
- Suitable for installation in ducts

Note: *Only the red LED is operative in panels that do not operate in Velociti® mode.

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SIGNALING UL LISTED S2332 FM APPROVED 3023594 MEA Approved 219-02-E Vol.VI 07270-0694:256

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Specifications

Size:	2.1" (5.3 cm) high x 4.1" (10.4 cm) diameter installed in B501 base, 6.1" (15.5 cm) diameter installed in ADB-FLF base
Shipping Weight:	4.8 oz. (137 g)
Operating Temperature:	
ATD-L2F or	
ATD-RL2F	–4° F to 100° F (–20° C to 38°C)
ATD-HL2	–4° F to 150°F (–20 C to 66°C)
Sensor Spacing:	UL® approved for 50 ft. (15.2 m) center to center FM approved for 25 x 25 ft. (7.6 x 7.6 m) spacing
Relative Humidity:	10 – 93% (non-condensing)
ATD-L2F	Fixed-temperature setpoint 135°F (57°C)
ATD-RL2F	Combination 135° F fixed temperature and 15° (8.3°c) per minute rate-of-rise°
ATD-HL2F	Fixed-temperature setpoint 190°F (88°C)

Electrical Specifications

Voltage Range:	15 - 32 volts DC peak
Standby Current:	200 mA @ 24 VDC (without communication)
(max. avg.)	.0003 A @ 24 VDC (one communication every 5 seconds with LED enabled)
LED Current (max.)	.0065 A @ 24 VDC (LED lit)
Voltage Range	15 –32 volts DC peak

Specifications

Bases and Options

ADB-FLF	6.1" (15.5 cm) diameter standard base
B501	4.1" (10.4 cm) diameter flangeless base
B501BH or B501BHT	Sounder base assembly (B501BHT produces a Temporal Pattern) includes B501 base
B224RB Relay Base	Up to 14 AWG (2.0 mm2) Relay type: Form-C Rating: 2.0A @ 30 VDC resistive 0.3 A @ 110 VDC inductive 1.0 A @ 30 VDC inductive
B224RB Relay Base Dimensions:	6.2": (15.7 cm) x 1.2" (3.0 cm)
B224BI Isolator Base Dimensions:	6.2" (15.7 cm) x 1.2" (3.0 cm) Maximum 25 devices between isolator bases
RA-400Z	Remote alarm indicator, LED
BCK-200	Black detector covers (box of 10)

Ordering Information

Model	Description
ATD-L2F	Addressable thermal sensor, fixed, 135° F
ATD-RL2F	Addressable thermal sensor, combination fixed,135° F and 15°/minute rate-of-rise.
ATD-HL2F	Addressable thermal sensor, fixed, 190° F

Gamewell FCI FIRE CONTROL INSTRUMENTS

by Honeywell

Velociti® Series ASD-PL2F and ASD-PTL2F

DEVICE SPECIFIED BY ADVANCED FIRE & SECURITY INC.

Description

The Gamewell-FCI Velociti® Series, analog addressable plug-in smoke sensors with integral communication provide features that surpass conventional sensors. Sensitivity can be programmed in the control panel software, and is continuously monitored and reported to the panel. Point ID capability allows each sensor's address to be set, providing exact locations for selective maintenance when the chamber contamination reaches an unacceptable level. The ASD-PL2F photoelectric sensor's unique optical sensing chamber is engineered to sense smoke produced by a wide range of combustion sources. Dual electronic thermistors add 135°F (57°C) fixed-temperature thermal sensing on the ASD-PTL2F model.

The Velociti® Series use a communication protocol that substantially increases the speed of communication between the sensors and certain Gamewell-FCI analog addressable fire alarm controls. These devices operate in a grouped fashion. If one of the devices in the group has a status change, the panel's microprocessor stops the group poll and concentrates on the single device. The net effect is a response speed up to five times greater than earlier designs.

Ordering Information

Model	Description
ASD-PL2F	Analog, addressable photoelectronic smoke sensor
ASD-PTL2F	Analog, addressable photoelectronic smoke sensor with thermal sensing

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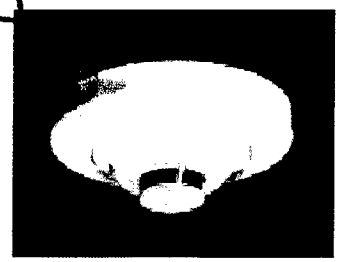
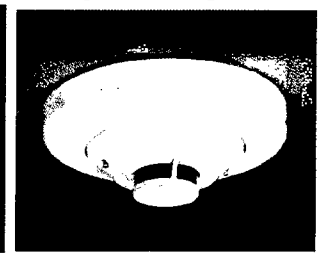
Analog, Addressable Photoelectronic Smoke Sensor



ASD-PL2F



ASD-PTL2F

Features

- Sleek, low-profile design
- Visual rotary, decimal switch addressing (01-159)
- Built-in functional test switch activated by an external magnet
- Bicolor LEDs flash green whenever the sensor is addressed, and light steady red on alarm*
- Optional relay, isolator, or sounder bases
- Low standby current
- Analog addressable communication
- Stable communication technique with noise immunity
- Optional remote, single-gang LED Indicator (RA400Z)
- Suitable for installation in ducts
- Compatible with Gamewell-FCI analog addressable panels

Note: *Only the red LED is operative in panels that do not operate in Velociti® mode.

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Installation

ASD-PL2F plug-in sensors use a separate base to simplify installation, service, and maintenance. A special tool allows maintenance personnel to plug-in and remove sensors without using a ladder.

Mount the base on a box which is at least 1.5" (3.8 cm) deep. Suitable mounting base boxes include:

- 4.0" (10.2 cm) square box
- 3.5" (8.9 cm) or 4.0" (10.2 cm) octagonal box
- Single-gang box (except relay or isolator bases)
- With B501BH or B501BHT base, use a 4.0" (10.2 cm) square box
- With B224RB or B224BI base, use a 3.5" (8.9 cm) octagonal box, or a 4.0" (10.2 cm) octagonal or square box

NOTE: Because of the inherent supervision provided by the SLC, end-of-line resistors are not required. Wiring "T-taps" or branches are permitted for Style 4 (Class "B") wiring.

Sensor Spacing
Gamewell-FCI recommends spacing sensors in compliance with NFPA 72. In low airflow applications with smooth ceilings, space sensors 30 feet (9.1 m). For specific information regarding sensor spacing, placement and special applications, refer to NFPA 72.

Specifications

Size:	2.1" (5.1 cm) high x 4.1" (10.4 cm) diameter installed in B501 base, 6.1" (15.5 cm) diameter installed in ADB-FL base.
Shipping Weight:	5.2 oz. (147 g)
Operating Temperature:	ASD-PL2F: 32° F to 120° F (0° C to 49° C) ASD-PTL2F: 32° F to 100° F (0° C to 38° C)
UL®-Listed Velocity Range:	0-4000 ft./min. (1,219.2 m/min.), suitable for installation in ducts.
Relative Humidity:	10-93% (non-condensing)
Thermal Ratings:	Fixed-temperature setpoint 135° F (57° C)

Electrical Specifications

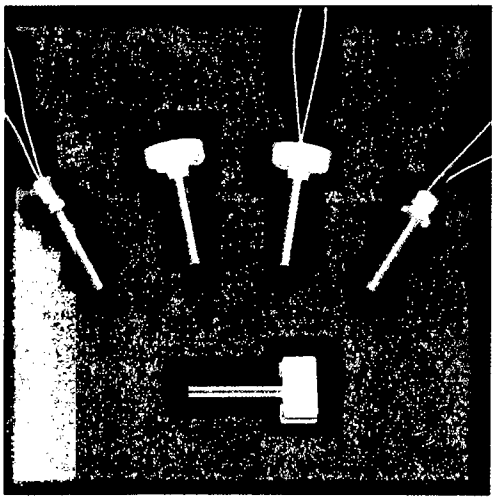
VoltageRange:	15 – 32 volts DC peak
Standby Current:	(max. avg.): .0003 A @ 24 VDC (one communication every 5 seconds with LED enabled)
Maximum Alarm Current:	.0065 A @ 24 VDC (LED) lit).

Bases and Options

ADB-FL	6.1" (15.5 cm) diameter
B501	4.1" (10.4 cm) diameter
B501BH or B501BHT	Sounder base assembly (B501BHT produces a temporal pattern). Includes B501 base
B224RB Relay Base	Screw terminals: Up to 14 AWG (2.0 mm^2) Relay type: Form-C Rating: 2.0A @ 30 VDC resistive; 0.3 A @ 110 VDC inductive; 1.0 A @ 30 VDC inductive. Dimensions: 6.2" x 1.2" (15.7 x 3.0 cm) **Maximum:** 25 devices between isolator bases.
RA400Z	Remote alarm indicator, LED.
BCK-200	Black detector covers (box of 10)

302 Series

Rate-Compensation Heat Detectors



Description

The **Thermotech 302 Series** rate-compensation heat detectors operate within a conrolled range of two to three degrees of their set points, regardless of the speed or rate of temperature rise. These detectors are available in either 135° F or 194° F ratings.

The 302 Series are normally-open devices designed especially for fire detection and alarm systems.

Principles of Operation

The 302 Series rate-compensation heat detectors respond and activate the fire alarm immediately whenever the ambient temperature reaches the preset temperature setting. Under rapid heat rise conditions, the rate-compensation feature enables the detector to respond one to three degrees ahead of the setting. At the same time, however, it does not respond to momentary temperature flucuations below the selected protection level, thus eliminating false alarms. When temperature drops back down below the protection level, the detector automatically resets itself.

Application Information

302 Series detectors have a smooth-ceiling UL rating of 50' x 50' (15.24 x 15.24 meters) and are the only type of heat detectors having such a rating on both fixed temperature and rate compensation.

Features

- Immediate response. The 302 Series activates whenever ambient air temperature reaches a detector's setting,eliminating the thermal time lag inherent in conventional heat detectors.
- Eliminates false alarms. The 302 Series do not respond to momentary temperature fluctuations below the selected temperature.
- Universal application. The 302 Series can be used in all areas for any type of occupancy.
- Self-restoring.
- Hermetically sealed, shock resistant, corrosion resistant, and tamper-proff.

Listings

Listings and approvals below apply to the 302 Series M Rate-Compensation Heat Detectors. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- UL Listed: file S539 & E35018A.
- CSFM approved: file 7270-0021:001.
- FM approved: file

Gamewell FCI FIRE CONTROL INSTRUMENTS
by Honeywell

Product Line Information

302-135: 135°F Interior Vertical Mounting, FM and UL (See Note 1).

302-194: 194°F Interior Vertical Mounting, FM and UL (See Note 1).

302-AW-135:135°F All-Weather Vertical Mounting, FM and UL (See Note 2).

302-AW-194: 194°F All-Weather Vertical Mounting, FM and UL (See Note 2).

302-ET-135:135°F All-Weather Vertical Mounting, FM and UL (See Note 3).

302-ET-194: 194°F All-Weather Vertical Mounting, FM and UL (See Note 3).

302-EPM-135: 135°F Explosion-Proof Mounting, UL (See Note 4).

302-EPM-194: 194°F Explosion Proof Mounting, UL (See Note 4).

AP-P: Decorative white plastic adaptor plate for mounting 302 and 302-AM to 4" outlet box.

Note 1: For interior mounting in any atmosphere that is compatible with terminal screw type connections. UL rating 50' x 50' (15.24 x 15.24 meters).

Note 2: Humitically sealed for moisture-proof or dust-proof installations. Requires no special backbox when the all-weather leads are properly spliced to 'THW' or equivalent type wire.

Note 3: Humitically sealed for moisture-proof or dust-proof installations. Requires no special backbox. Has plastic hexagonal wrench grip bushing with 1/2" (1.27 cm) conduit threads for attachment to threaded hub cover, or any special outlet box.

Note 4: Explosion-proof for installation in hazardous locations. Has hexagonal wrench grip bushing with 1/2" (1.27 cm) conduit threads for attachment to threaded hub cover of Series JL fixture fitting as manufactured by Killark Electric Co., or equal.

Specifications

Dimensions

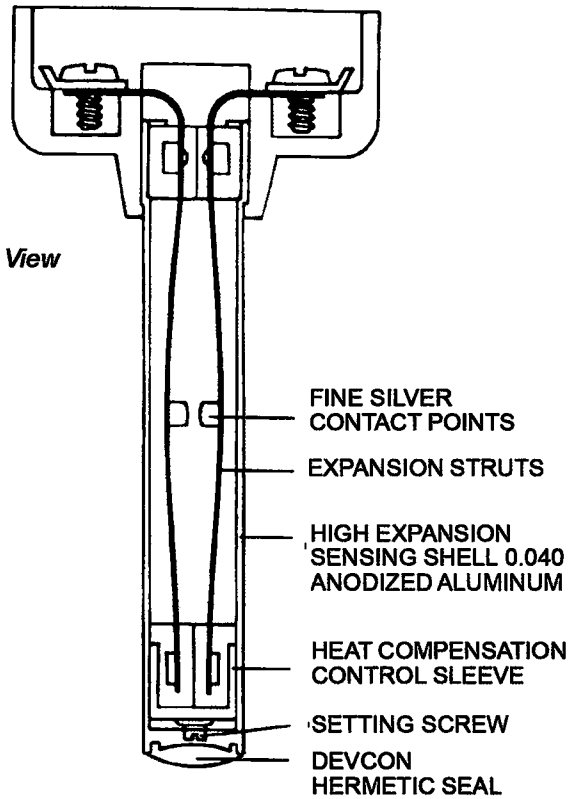
Total overall length: 4-1/8"

Base diameter: 2"

Electrical Ratings

Voltage	*Current*
6-125 VAC	5 amps
6-25 VDC	1 amp
125 VDC	0.5 amp

Cut-Away View



Gamewell FCI FIRE CONTROL INSTRUMENTS
by Honeywell

Gamewell-FCI
12 Clintonville Road
Northford, CT 06472-1610
Phone: 203-484-7161
Fax: 203-484-7118
www.gamewell-fci.com

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Specifications and wiring information are provided for information only and are believed to be accurate. Gamewell-FCI assumes no responsibility for their use. Data and design are subject to change without notice. Installation and wiring instructions shipped with the product shall always be used for actual installation. For more information, contact Gamewell-FCI.

Gamewell FCI FIRE CONTROL INSTRUMENTS

by Honeywell

Velociti® Series ASD-PL2F, ASD-PTL2F and ASD-PL2FR

Description

The Gamewell-FCI Velociti® Series, analog addressable plug-in smoke sensors with integral communication provide features that surpass conventional sensors. Sensitivity can be programmed in the control panel software, and is continuously monitored and reported to the panel. Point ID capability allows each sensor's address to be set, providing exact locations for selective maintenance when the chamber contamination reaches an unacceptable level. The ASD-PL2F photoelectric sensor's unique optical sensing chamber is engineered to sense smoke produced by a wide range of combustion sources. Dual electronic thermistors add 135°F (57°C) fixed-temperature thermal sensing on the ASD-PTL2F model.

The Velociti® Series use a communication protocol that substantially increases the speed of communication between the sensors and certain Gamewell-FCI analog addressable fire alarm controls. These devices operate in a grouped fashion. If one of the devices in the group has a status change, the panel's microprocessor stops the group poll and concentrates on the single device. The net effect is a response speed up to five times greater than earlier designs.

Ordering Information

Model	Description
ASD-PL2F	Analog, addressable photoelectronic smoke sensor
ASD-PTL2F	Analog, addressable photoelectronic smoke sensor with thermal sensing
ASD-PL2FR	Analog, addressable photoelectronic smoke sensor used with the DNR duct base when the remote test is required.

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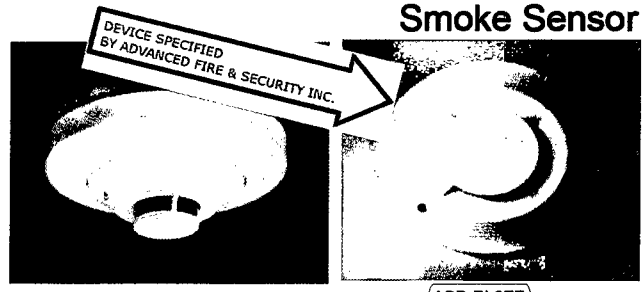
UL® is a registered trademark of Underwriters Laboratories Inc.

Analog, Addressable Photoelectronic Smoke Sensor



ASD-PL2F/ASD-PTL2F ASD-PL2FR

Features

- Sleek, low-profile design
- Visual rotary, decimal switch addressing (01-159)
- Built-in functional test switch activated by an external magnet
- Bicolor LEDs flash green whenever the sensor is addressed, and light steady red on alarm*
- Optional relay, isolator, or sounder bases
- Low standby current
- Analog addressable communication
- Stable communication technique with noise immunity
- Optional remote, single-gang LED Indicator (RA400Z)
- Compatible with Gamewell-FCI analog addressable panels

Note: *Only the red LED is operative in panels that do not operate in Velociti® mode.

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SIGNALING UL® LISTED S1913 FM APPROVED 3023594 MEA Approved 219-02-E Vol.VI 7272-1703:121

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Installation

ASD-PL2F plug-in sensors use a separate base to simplify installation, service, and maintenance. A special tool allows maintenance personnel to plug-in and remove sensors without using a ladder.

Mount the base on a box which is at least 1.5" (3.8 cm) deep. Suitable mounting base boxes include:

- 4.0" (10.2 cm) square box
- 3.5" (8.9 cm) or 4.0" (10.2 cm) octagonal box
- Single-gang box (except relay or isolator bases)
- With B200SR base, mounted on a 4.0" (10.2 cm) square box
- With B224RB or B224BI base, mounted on a 3.5" (8.9 cm) octagonal box, or a 4.0" (10.2 cm) octagonal or square box

NOTE: Because of the inherent supervision provided by the SLC, end-of-line resistors are not required. Wiring "T-taps" or branches are permitted for Style 4 (Class "B") wiring.

Sensor Spacing
Gamewell-FCI recommends spacing sensors in compliance with NFPA 72. In low airflow applications with smooth ceilings, space sensors 30 feet (9.1 m). For specific information regarding sensor spacing, placement and special applications, refer to NFPA 72.

Specifications

Size:	2.1" (5.1 cm) high x 4.1" (10.4 cm) diameter installed in the B501 base, 6.1" (15.5 cm) diameter installed in the ADB-FL base.
Shipping Weight:	5.2 oz. (147 g)
Operating Temperature:	ASD-PL2F: 32° F to 120° F (0° C to 49° C) ASD-PTL2F: 32° F to 100° F (0° C to 38° C)
UL®-Listed Velocity Range:	0-4000 ft./min. (1,219.2 m/min.), suitable for installation in ducts.
Relative Humidity:	10-93% (non-condensing)
Thermal Ratings:	Fixed-temperature setpoint 135° F (57° C)

Electrical Specifications

VoltageRange:	15 – 32 volts DC peak
Standby Current:	(max. avg.): .0003 A @ 24 VDC (one communication every 5 seconds with LED enabled)
Maximum Alarm Current:	.0065 A @ 24 VDC (LED) lit).

Bases and Options

ADB-FL	6.1" (15.5 cm) diameter
B200SR	6.875" (17.46 cm) Base Diameter 2.0" (5.08 cm) Base Height
B224RB Relay Base	Screw terminals: Up to 14 AWG (2.0 mm^2) Relay type: Form-C Rating: 2.0A @ 30 VDC resistive; 0.3 A @ 110 VDC inductive; 1.0 A @ 30 VDC inductive. Dimensions: 6.2" x 1.2" (15.7 x 3.0 cm) **Maximum:** 25 devices between isolator bases.
RA400Z	Remote alarm indicator, LED.
BCK-200	Black detector covers (box of 10)
DNR	Duct smoke housing

Gamewell FCI FIRE CONTROL INSTRUMENTS

by Honeywell

InnovairFlex™ Series DNR/DNRW Duct Smoke Housing

DEVICE SPECIFIED BY ADVANCED FIRE & SECURITY INC.

Description

The InnovairFlex™ Series, DNR intelligent, non-relay photoelectric duct smoke detector, and the DNRW watertight, non-relay photoelectric duct smoke detector feature a pivoting housing that fits both square and rectangular footprints. These detectors are capable of mounting to a round or rectangular duct. The DNR/DNRW detectors can be used with the E3 Series® and 7100 Series Systems.

Note: The InnovairFlex™ Series, DNR requires the Veloci-iti® Series, ASD-PL2FR Sensor and AOM-2RF, if relays are required for the fan control.

The DNRW duct smoke detector, with its NEMA 4 rating, is Listed as a watertight enclosure providing protection against falling dirt, rain, and windblown dust, splashing and hose directed water. These features allow operators to use the detector in the most extreme environments.

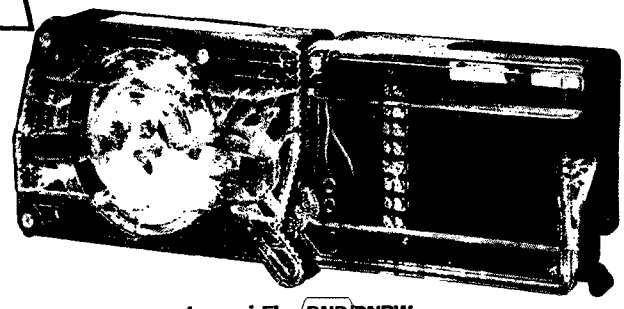
The units sense smoke in the most challenging conditions, operating in airflow speeds of 100 to 4,000 feet per minute, temperatures of -4°F to 158°F, and a humidity range of 0 to 95 percent (non-condensing).

An improved cover design isolates the sensor head from the low-flow feature for simple maintenance. A cover tamper feature was added to indicate a trouble signal for a removed or improperly installed sensor cover. The InnovairFlex housing provides a 3/4-inch conduit knockout and ample space to facilitate easy wiring and mounting of the relay module.

The InnovairFlex duct smoke detector can be customized to meet local codes and specifications without additional wiring. The new InnovairFlex product line is compatible with all previous Innovair models, including remote test accessories.

WARNING: Duct smoke detectors have specific limitations.
DUCT SMOKE DETECTORS ARE:
NOT a substitute for an open area smoke detector,
NOT a substitute for early warning detection, and NOT a replacement for a building's regular fire detection system.
Refer to NFPA 72 and 90A for additional duct smoke detector 2911 application information.

Intelligent Non-Relay Photoelectric Duct Smoke Housing



InnovairFlex-DNR/DNRW

Features

- Photoelectric, integrated low-flow technology
- Air velocity rating from 100 ft/min to 4,000ft/min (0.5m/s to 20.32m/sec)
- Versatile mounting options: square or rectangular configuration
- Broad ranges for operating temperature (-4°F to 158°F) and humidity (0% to 95% non-condensing)
- Patented sampling tube installs from front or back of the detector with no tools required
- New Cover tamper signal
- Increased wiring space with a newly added 3/4-inch conduit knockout
- Available space within housing to accommodate the mounting of the relay module
- Easily accessible code wheels on sensor head (sold separately)
- Clear cover for convenient visual inspection
- UL® 268A Listed
- Remote testing capability
- Requires SLC line power only
- NEMA Type 4 UL Listed for non-hazardous indoor and outdoor applications (DNRW only)
- UV Resistant, UL® Listed housing and cover material (DNRW only)

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Architectural/Engineering Specifications

The air duct smoke detector shall be a System Sensor InnovairFlex™ DNR Intelligent Non-Relay Photoelectric Duct Smoke Detector and DNRW Watertight NEMA4 Duct Smoke Detector. The detector housing shall be UL Listed per UL 268A specifically for use in air handling systems. The flexible housing of the duct smoke detector fits both square and rectangular footprints. The detector shall operate at air velocities of 100 ft/min to 4,000 ft/min (0.5 m/sec to 20.32 m/sec). The unit shall be capable of providing a trouble signal in the event that the sensor cover is removed or improperly installed. It shall be capable of local testing via magnetic switch or remote testing using the RTS151KEY remote test station. Terminal connections shall be of the strip and clamp method suitable for 12–18 AWG wiring.

Physical Specifications

Size:	
Rectangular Dimensions:	14.38 in (37 cm) Length; 5 in (12.7 cm) Width; 2.5 in (6.6 cm) Depth
Square Dimensions:	7.75 in (19.7 cm) Length; 9 in (22.9 cm) Width; 2.5 in (6.35 cm) Depth
Weight:	1.6 lb (0.73 kg)
Environmental Rating:	NEMA4 (DNRW only)
Operating Temperature Range:	–4° to 158°F (–20° to 70°C)
Storage Temperature Range:	–22° to 158°F (–30° to 70°C)
Operating Humidity Range:	0% to 95% relative humidity non-condensing
Air Duct Velocity:	100 to 4000 ft/min (0.5 to 20.32 m/sec)
DCOIL - (if included)	17.5 - 26.4 VDC .95mA max.

Electrical Ratings

For information on the electrical specifications, refer to the InnovairFlex DNR Duct Smoke Detector Installation Instructions, P/N I56-3051-001R.

Accessory Current Loads at 24 VDC

Device	Standby	Trouble
RA100Z	0 mA	12 mA Max.
RTS151/RTS151KEY	0 mA	12 mA Max.

Installing the InnovairFlex Sampling Tube

The InnovairFlex sampling tube may be installed from the front or back of the detector. The tube locks securely into place and can be removed by releasing the front or rear locking tab. (Figure 3 illustrates the front locking tab).

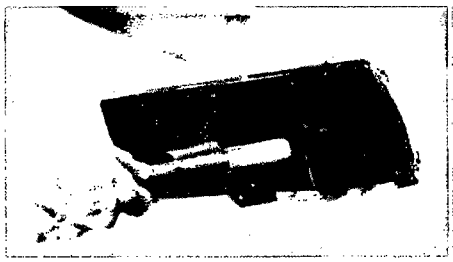

Figure 1

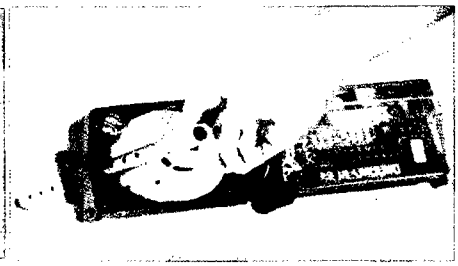

Figure 2

Figure 3

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Wiring for Intelligent Non-Relay Duct Smoke Detector

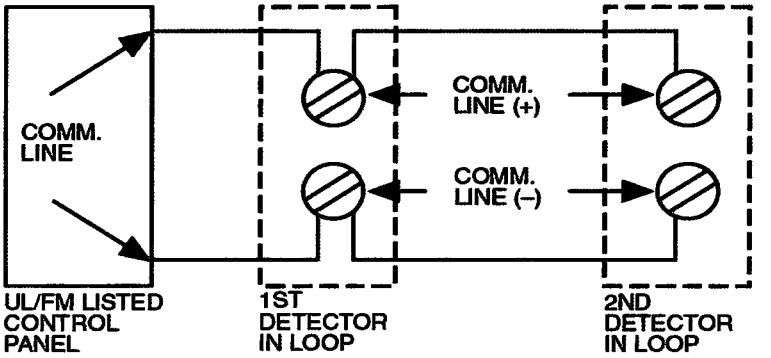


Figure 4 System Wiring Diagram for DNR

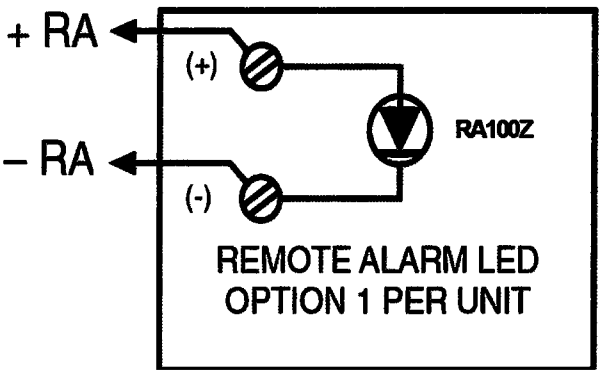


Figure 5 DNR to RA100Z

DNR TO RTS451/RTS451KEY/RTS151/
RTS151KEY WITH "R" REMOTE TEST
CAPABLE DETECTOR HEAD OPTION:

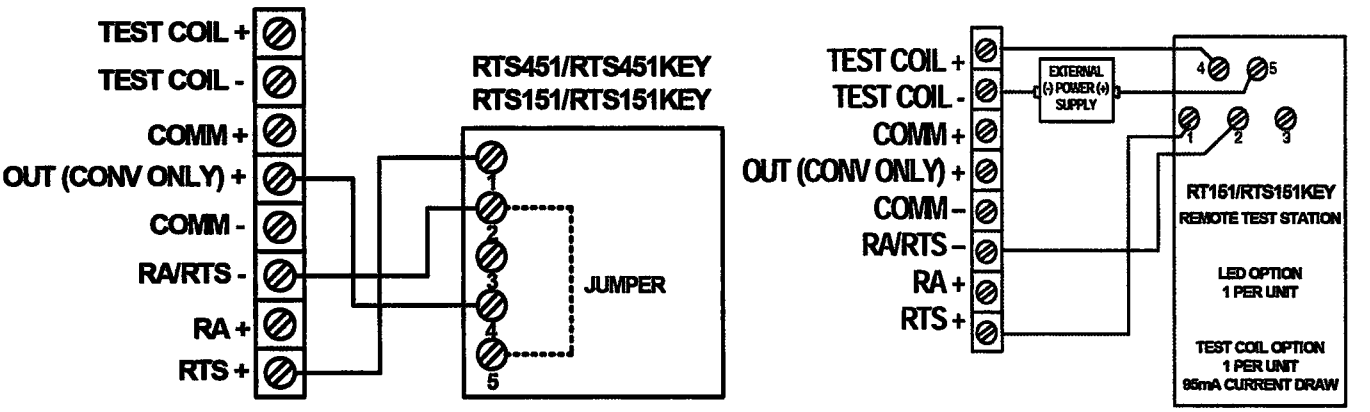


Figure 6 DNR to RTS151/RTS151 Key

Important Notes:

- The use of either RTS151 or RTS151KEY requires the installation of an accessory coil, DCOIL, sold separately. For additional information, refer to the DNR or DNRW Duct Smoke Detector Installation Instructions, P/N I56-3051-001R and the Duct Application Smoke Detectors Application Guide.
- The RTS151/RTS151KEY test coil circuit requires an external 24 VDC power supply which must be UL Listed.

Accessories

System Sensor provides system flexibility with a variety of accessories, including two remote test stations and different means of visible and audible system annunciation. As with our duct smoke detectors, all duct smoke detector accessories are UL Listed.

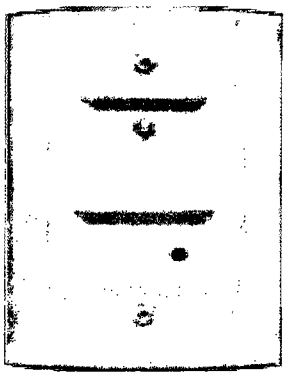


Figure 7 RTS151 UL S2522

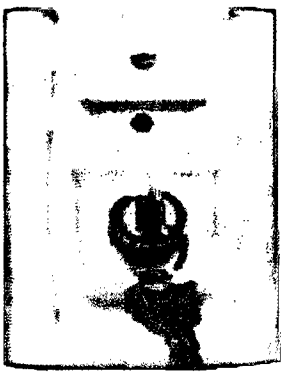


Figure 8 RTS151KEY UL S2522

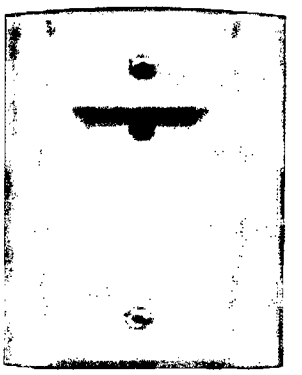


Figure 9 RA100Z UL S2522

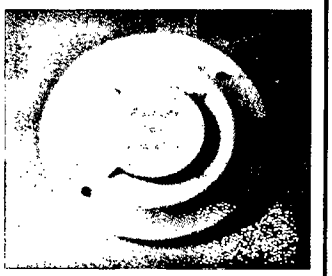


Figure 10 ASD-PL2FR

Ordering Information

Part Number	Description
DNR	Intelligent non-relay photoelectric low-flow duct smoke detector
DNRW	Watertight intelligent non-relay photoelectric low-flow duct smoke detector
ASD-PL2FR	Intelligent photoelectric smoke sensor with remote test capability in duct applications

Accessories

Part Number	Description
DCOIL	Remove test coil required with RTS151/RTS151151KEY
DST1	Metal sampling tube duct width up to 1 ft (0.3m)
DST1.5	Metal sampling tube duct widths 1 ft to 2 ft (0.3 to 0.6 m)
DST1.5	Metal sampling tube duct widths 1 ft to 2 ft (0.3 to 0.6 m)
DST3	Metal sampling tube duct widths 2 ft to 4 ft (0.6 to 1.2 m)
DST5	Metal sampling tube duct widths 4 ft to 8 ft (1.2 to 2.4 m)
DST10	Metal sampling tube duct widths 8 ft to 12 ft (2.4 to 3.7 m)
DH400OE-1	Weatherproof enclosure
ETX	Metal exhaust tube duct width 1ft (0.3m)
M02-04-00	Test magnet
P48-21-00	End cap for metal sampling tubes
RA100Z/RA100ZA	Remote annunciator alarm LED
RTS151	Remote test station
RTS151KEY	Remote test station with key lock

Gamewell FCI FIRE CONTROL INSTRUMENTS

by Honeywell

InnovairFlex™ Series Duct Smoke Detector Accessories

Description

The InnovairFlex Series Duct Smoke Detector accessories add functionality to the duct detection system by allowing quick, convenient inspections at eye level and effective audible and visible notification options. All Gamewell-FCI duct detectors and accessories are UL Listed.

The following duct smoke detector accessories are available

- APA151 Piezo Annunciator
- MHR Mini-Horn, Red
- MHW Mini-Horn, White
- RA100Z/RA100ZA Remote Annunciator
- RTS151 REmote Test Station
- RTS151KEY Remote Test Station with Key
- RTS2 Multi-Signaling Accessory
- AOS Add-On Strobe
- RTS2-AOS Multi-Signaling Accessory

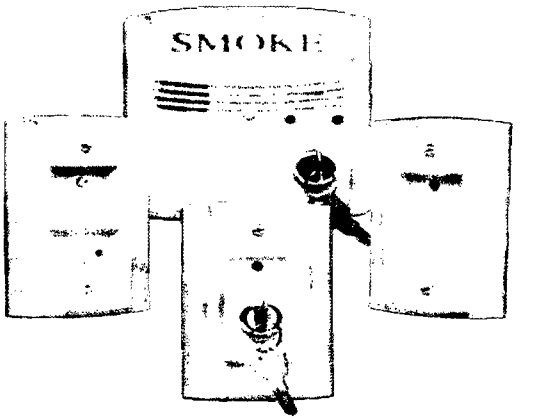
The **APA151** piezo annunciator, which replaces the APA451 with a new, improved look, provides an audible alarm signal, a red LED to indicate alarm status, and a green LED to indicate power status. It is intended for use with Gamewell-FCI 4-wire conventional duct smoke detector applications without a system control panel, to comply with NFPA 90A.

The **MHR** and **MHW** SpectrAlert® Advance mini-horns feature temporal or continuous tones at high and low volume settings. Their small footprint allows mounting to single-gang back boxes for applications where a small device is desired.

The **RA100Z** and **RA100ZA** remote annunciators are designed for both conventional and intelligent applications. Their red LED provides visual indication of an alarm condition.

The **RTS151** and **RTS151KEY** remote test stations are automatic fire detector accessories designed to test duct smoke detectors from a convenient location. For 4-wire detectors, the RTS151KEY test station features a multi-colored LED that alternates between steady green and red. For 2-wire detectors, the LED illuminates red for alarm.

Notification and Test Accessories



InnovairFlex-Series Accessories

Features

- APA151 piezo annunciator offers a new style and provides enhanced audible alarm signals
- MRH and MHW SpectrAlert Advance mini-horns feature temporal and continuous tones for both high and low volume settings
- RA100Z and RA100ZA remote annunciators flexible versatility are used for both conventional and intelligent applications
- RTS151 and RTS151KEY remote test stations are designed to test duct detectors from remote locations
- RTS2 and RTS2-AOS multi-signaling accessories are used with the InnovairFlex 4-wire conventional duct smoke detectors

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Description (Continued)

The **RTS2** and **RTS2-AOS** multi-signaling accessories are designed to work with InnovairFlex 4-wire conventional duct smoke detectors. These accessories include a key switch that can be used to select one of two connected sensors to be tested, reset, or both by a push button switch. They also enable sensitivity measurements using the SENS-RDR sensitivity reader (sold separately). The AOS (Add-On Strobe) is an optional accessory included with the RTS2-AOS model.

Specifications, Duct Smoke Detector Accessories

APA151 Piezo Annunciator

Voltage:	Regulated 24 VDC
Operating Voltage:	16 to 33 VDC
Maximum Alarm Current:	30 mA
Temperature Range:	0°C to 49°C (32°F to 120°F)
Relative Humidity:	10 to 93% non-condensing
Wire Gauge:	12 to 18 AWG
Dimensions:	4.6" H × 2.9" W × .45" D (11.6 H x 7.3 W x 1.1 D cm)

MHR/MHW SpectrAlert® Advance Mini-Horns

Voltage:	Regulated 12 DC or FWR (Full Wave Rectified) or Regulated 24 VDC or FWR
Operating Voltage:	8 to 33 VDC (9 to 33 VDC with Sync•Circuit™ Module)
Sounder Current Draw:	22 mA RMS max. at 8 to 17.5 Volts DC 17 mA RMS max. at 8 to 17.5 Volts FWR 29 mA RMS max. at 16 to 33 Volts DC 25 mA RMS max. at 16 to 33 Volts FWR
Temperature Range:	0°C to 49°C (32°F to 120°F)
Humidity Range	10 to 93% non-condensing
Nominal Sounder Frequency:	3 kHz
Wire Gauge:	12 to 18 AWG
Dimensions	4.6" H × 2.9" W × 0.45" D (11.6 H x 7.3 W x 1.1 D cm)

RA100Z/RA100ZA Remote Annunciator

Voltage Range:	Conventional System: 3.1 to 32 VDC Intelligent System: 18 to 32 VDC
Maximum Alarm Current:	12 mA
Dimensions:	4.6" H × 2.8" W × 1.3" D (11.6 H x 7.1 W x 3.3 D cm)

Specifications, Duct Smoke Detector Accessories (Continued)

RTS151 Remote Test Station

Power Requirements:	Alarm LED: 2.8 to 32 VDC, 12 mA max. Total Current: 105 mA max.
Test Switch:	10 VA @ 32 VDC
Reset Switch:	10 VA @ 32 VDC
Alarm Response Time:	40 seconds max.
Temperature Range:	–10°C to 60°C (14°F to 140°F)
Relative Humidity:	95% non-condensing
Wire Gauge:	14 to 18 AWG
Dimensions:	4.8" H x 2.90" W x 1.4" D (12.1 H x 7.3 W x 3.5 D cm)

RTS151KEY Remote Test Station with Key

Power Requirements:	Power LED (Green): 14 to 35 VDC, 12 mA max. Alarm LED (Red): 2.8 to 32 VDC, 12 mA max. Total Current: 105 mA max.
Alarm Response Time:	40 seconds max.
Temperature Range:	–10°C to 60°C (14°F to 140°F)
Relative Humidity:	95% non-condensing
Wire Gauge:	14 to 18 AWG
Dimensions	4.6" H × 2.75" W × 1.8" D (11.6 H x 6.9 W x 4.5 D cm)

RTS2 and RTS2-AOS Multi-signaling Accessory

Voltage:	20 to 29 VDC
Power Requirements:	
Standby:	3.0 mA max.
Trouble:	16.0 mA max.
Alarm without strobe:	30 mA max.
Alarm with strobe:	55 mA max.
Sounder:	85 dBA at ten feet
Temperature Range:	–10°C to 60°C (14°F to 140°F)
Relative Humidity:	95% non-condensing
Wire Gauge:	14 to 22 AWG
Dimensions:	4.8" W x 5.3" H x 1.6" D (12.1 W x 13.4 H x 4.0 D cm)

For the very latest product specifications and listing information, please visit the Gamewell-FCI Web site at www.gamewell-fci.com.

Accessories

Gamewell-FCI provides system flexibility with a variety of accessories, including two remote test stations and several different means of visible and audible system annunciation. As with our duct smoke detectors, all duct smoke detector accessories are UL Listed.

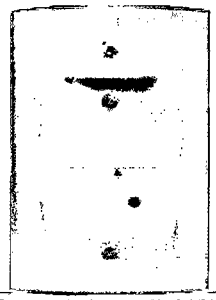

Figure 1 RTS151 UL S2522

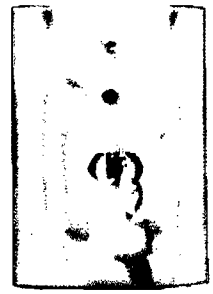

Figure 2 RTS151KEY UL S2522

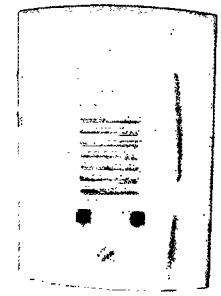

Figure 3 APA151 UL S4011

Figure 4 RTS2-AOS UL S2522

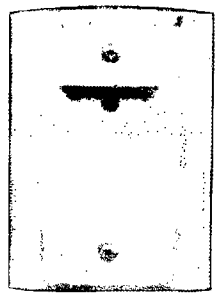

Figure 5 RA100Z UL S2522

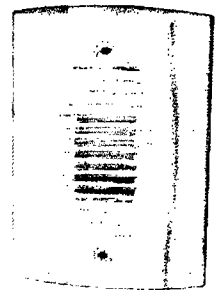

Figure 6 MHW UL S4011

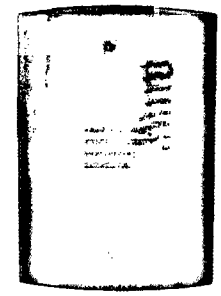

Figure 7 MHR UL S4011

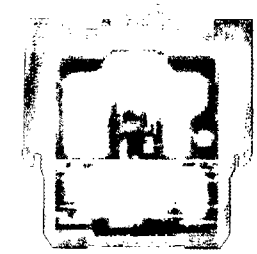

Figure 8 RTS2-AOS with PS24LOW Strobe and PS12/24 LENSW lens

Ordering Information

Part Number	Description

Accessories

Part Number	Description
APA151	Piezo Annunciator
MHR	Mini Horn, Red
MHW	Mini Horn, White
RA100Z/RA100ZA	Remote annunciator alarm LED
RTS151	Remote test station

Part Number	Description
RTS151KEY	Remote test station with key lock
RTS2	Multi-signaling accessory
AOS	Add-On Strobe
RTS2-AOS	Multi-signaling accessory

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U.S. DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
National Flood Insurance Program

ELEVATION CERTIFICATE

Important: Read the instructions on pages 1–9.

OMB No. 1660-0008
Expiration Date: July 31, 2015

SECTION A – PROPERTY INFORMATION

FOR INSURANCE COMPANY USE
Policy Number:
Company NAIC Number:

A1. Building Owner's Name HOTEL EVA
14-0564

A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.
1506 COLLINS AVENUE

City MIAMI BEACH State FL ZIP Code 33139

A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)
LOT 1, BLOCK 57, FISHER'S FIRST SUB. OF ALTON BEACH, P.B. 2, PG. 77, MIAMI-DADE COUNTY, FL.

A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.) NON-RESIDENTIAL

A5. Latitude/Longitude: Lat. N25°47'16.02" Long. W80°07'50.35" Horizontal Datum: ☐ NAD 1927 ☒ NAD 1983

A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.

A7. Building Diagram Number 3

A8. For a building with a crawlspace or enclosure(s):
- a) Square footage of crawlspace or enclosure(s) N/A sq ft
- b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade N/A
- c) Total net area of flood openings in A8.b N/A sq in
- d) Engineered flood openings? ☐ Yes ☒ No

A9. For a building with an attached garage:
- a) Square footage of attached garage N/A sq ft
- b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade N/A
- c) Total net area of flood openings in A9.b N/A sq in
- d) Engineered flood openings? ☐ Yes ☒ No

SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1. NFIP Community Name & Community Number	B2. County Name	B3. State
CITY OF MIAMI BEACH 120651	MIAMI-DADE	FLORIDA

B4. Map/Panel Number	B5. Suffix	B6. FIRM Index Date	B7. FIRM Panel Effective/Revised Date	B8. Flood Zone(s)	B9. Base Flood Elevation(s) (Zone AO, use base flood depth)
12086C0317	L	09-11-2009	09-11-2009	AE	8 FEET

B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9.
☐ FIS Profile ☒ FIRM ☐ Community Determined ☐ Other/Source: _____

B11. Indicate elevation datum used for BFE in Item B9: ☒ NGVD 1929 ☐ NAVD 1988 ☐ Other/Source: _____

B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? ☐ Yes ☒ No
Designation Date: N/A ☐ CBRS ☐ OPA

SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: ☐ Construction Drawings* ☐ Building Under Construction* ☒ Finished Construction
*A new Elevation Certificate will be required when construction of the building is complete.

C2. Elevations – Zones A1–A30, AE, AH, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, AR/AO. Complete Items C2.a–h below according to the building diagram specified in Item A7. In Puerto Rico only, enter meters.
Benchmark Utilized: D-148-R ELEV= 6.35' Vertical Datum: N.G.V.D. 1929
Indicate elevation datum used for the elevations in items a) through h) below. ☒ NGVD 1929 ☐ NAVD 1988 ☐ Other/Source: _____
Datum used for building elevations must be the same as that used for the BFE.

		Check the measurement used.	
a) Top of bottom floor (including basement, crawlspace, or enclosure floor)	4.77	☒ feet	☐ meters
b) Top of the next higher floor	5.19	☒ feet	☐ meters
c) Bottom of the lowest horizontal structural member (V Zones only)	N/A	☐ feet	☐ meters
d) Attached garage (top of slab)	N/A	☐ feet	☐ meters
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)	9.65	☒ feet	☐ meters
f) Lowest adjacent (finished) grade next to building (LAG)	4.7	☒ feet	☐ meters
g) Highest adjacent (finished) grade next to building (HAG)	4.8	☒ feet	☐ meters
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support	N/A	☐ feet	☐ meters

SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by law to certify elevation information. *I certify that the information on this Certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.*

☒ Check here if comments are provided on back of form.
☐ Check here if attachments.

Were latitude and longitude in Section A provided by a licensed land surveyor? ☒ Yes ☐ No

Certifier's Name ORIA JANNET SUAREZ License Number 6781

Title P.S.M. Company Name J.BONFILL & ASSOCIATES, INC.

Address 7100 SW 99th AVE, STE 104 City MIAMI State FL ZIP Code 33173

Signature [signature] Date 12-03-2014 Telephone 305-598-8383

6781
12/3/14

IMPORTANT: In these spaces, copy the corresponding information from Section A.	FOR INSURANCE COMPANY USE
Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 1506 COLLINS AVENUE	Policy Number:
City MIAMI BEACH State FL ZIP Code 33139	Company NAIC Number:

SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION (CONTINUED)

Copy both sides of this Elevation Certificate for (1) community official, (2) insurance agent/company, and (3) building owner.

Comments C2(a) Parking area elev. 4.77' C2(b) Finish floor elev. commercial area: 5.19' C2(e) Electric Panel Elev.= 9.65'
A/C (wall units)

Horizontal Collection Method (Latitude & Longitude) using Global Positioning System(GPS) device.

Signature Date 12-03-2014

SECTION E – BUILDING ELEVATION INFORMATION (SURVEY NOT REQUIRED) FOR ZONE AO AND ZONE A (WITHOUT BFE)

For Zones AO and A (without BFE), complete Items E1–E5. If the Certificate is intended to support a LOMA or LOMR-F request, complete Sections A, B, and C. For Items E1–E4, use natural grade, if available. Check the measurement used. In Puerto Rico only, enter meters.

E1. Provide elevation information for the following and check the appropriate boxes to show whether the elevation is above or below the highest adjacent grade (HAG) and the lowest adjacent grade (LAG).
a) Top of bottom floor (including basement, crawlspace, or enclosure) is _____.____ ☐ feet ☐ meters ☐ above or ☐ below the HAG.
b) Top of bottom floor (including basement, crawlspace, or enclosure) is _____.____ ☐ feet ☐ meters ☐ above or ☐ below the LAG.

E2. For Building Diagrams 6–9 with permanent flood openings provided in Section A Items 8 and/or 9 (see pages 8–9 of Instructions), the next higher floor (elevation C2.b in the diagrams) of the building is _____.____ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

E3. Attached garage (top of slab) is _____.____ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

E4. Top of platform of machinery and/or equipment servicing the building is _____.____ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

E5. Zone AO only: If no flood depth number is available, is the top of the bottom floor elevated in accordance with the community's floodplain management ordinance? ☐ Yes ☐ No ☐ Unknown. The local official must certify this information in Section G.

SECTION F – PROPERTY OWNER (OR OWNER'S REPRESENTATIVE) CERTIFICATION

The property owner or owner's authorized representative who completes Sections A, B, and E for Zone A (without a FEMA-issued or community-issued BFE) or Zone AO must sign here. The statements in Sections A, B, and E are correct to the best of my knowledge.

Property Owner's or Owner's Authorized Representative's Name

Address City State ZIP Code

Signature Date Telephone

Comments

☐ Check here if attachments.

SECTION G – COMMUNITY INFORMATION (OPTIONAL)

The local official who is authorized by law or ordinance to administer the community's floodplain management ordinance can complete Sections A, B, C (or E), and G of this Elevation Certificate. Complete the applicable item(s) and sign below. Check the measurement used in Items G8–G10. In Puerto Rico only, enter meters.

G1. ☐ The information in Section C was taken from other documentation that has been signed and sealed by a licensed surveyor, engineer, or architect who is authorized by law to certify elevation information. (Indicate the source and date of the elevation data in the Comments area below.)

G2. ☐ A community official completed Section E for a building located in Zone A (without a FEMA-issued or community-issued BFE) or Zone AO.

G3. ☐ The following information (Items G4–G10) is provided for community floodplain management purposes.

G4. Permit Number	G5. Date Permit Issued	G6. Date Certificate Of Compliance/Occupancy Issued

G7. This permit has been issued for: ☐ New Construction ☐ Substantial Improvement

G8. Elevation of as-built lowest floor (including basement) of the building: _____.____ ☐ feet ☐ meters Datum _____

G9. BFE or (in Zone AO) depth of flooding at the building site: _____.____ ☐ feet ☐ meters Datum _____

G10. Community's design flood elevation: _____.____ ☐ feet ☐ meters Datum _____

Local Official's Name Title

Community Name Telephone

Signature Date

Comments

☐ Check here if attachments.

Building Photographs

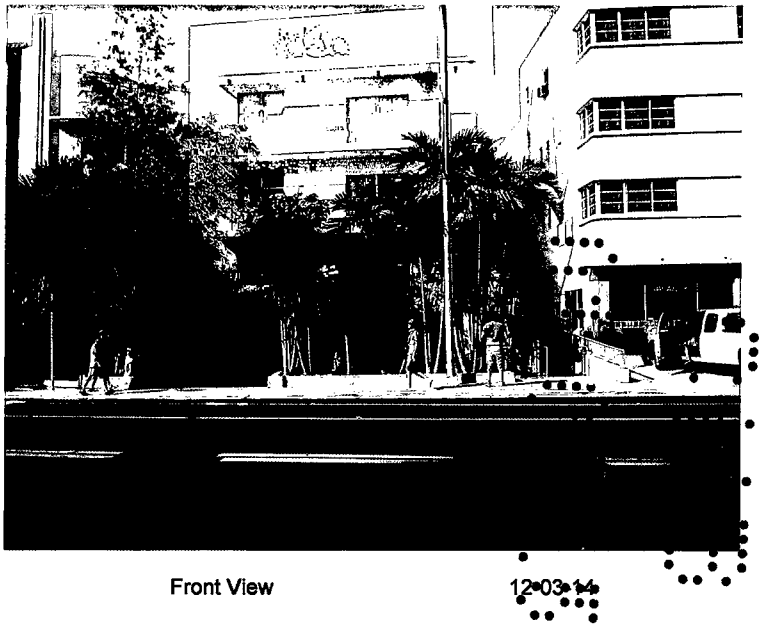
See Instructions for Item A6.

IMPORTANT: In these spaces, copy the corresponding information from Section A.

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 1506 COLLINS AVENUE	FOR INSURANCE COMPANY USE Policy Number:
City MIAMI BEACH State FL ZIP Code 33139	Company NAIC Number:

If using the Elevation Certificate to obtain NFIP flood insurance, affix at least 2 building photographs below according to the instructions for Item A6. Identify all photographs with date taken; "Front View" and "Rear View"; and, if required, "Right Side View" and "Left Side View." When applicable, photographs must show the foundation with representative examples of the flood openings or vents, as indicated in Section A8. If submitting more photographs than will fit on this page, use the Continuation Page.

Front View 12-03-14



Front View 12-03-14

Rear View 12-03-14

Lateral View 12-03-14

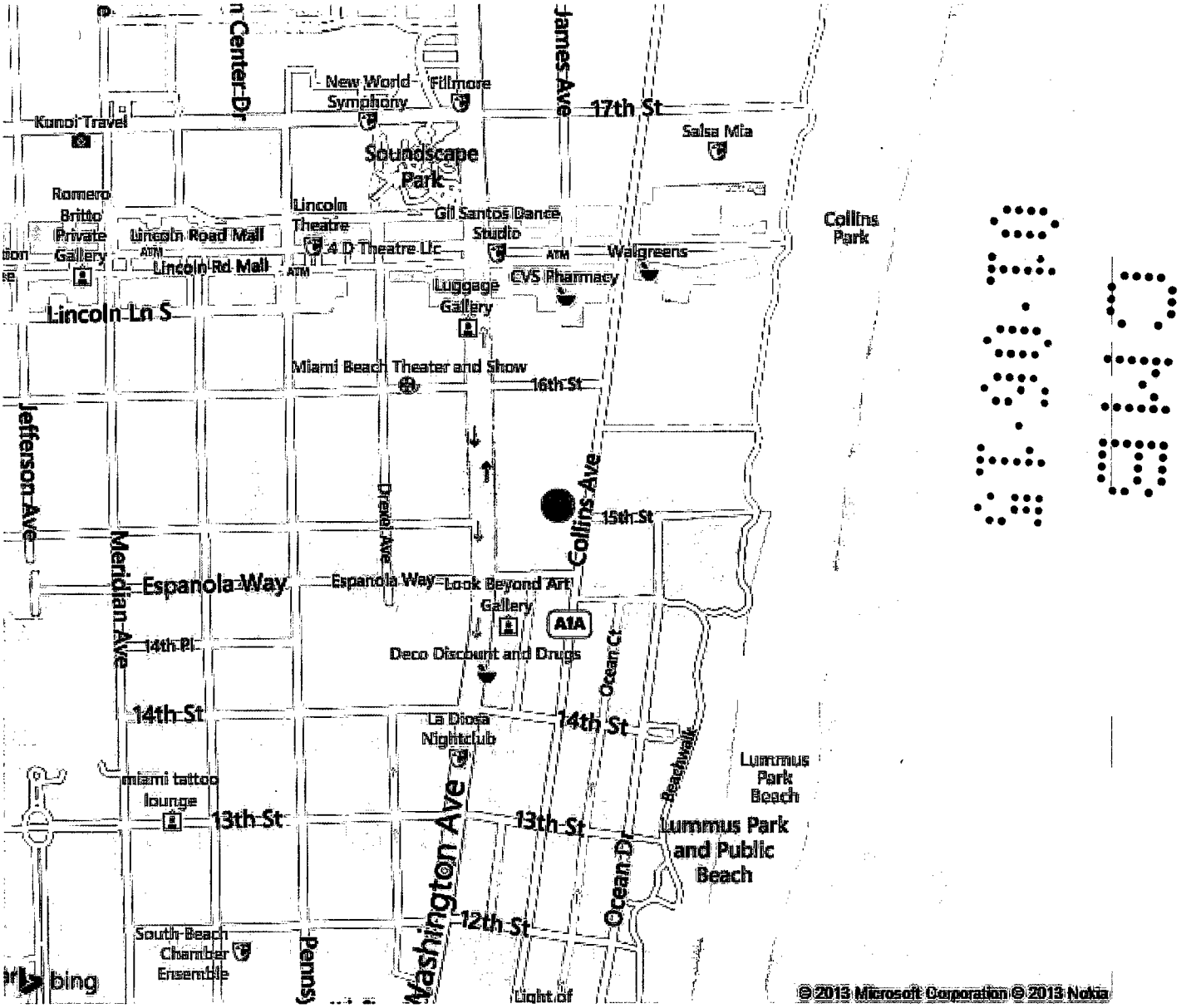
Building Photographs

Continuation Page

IMPORTANT: In these spaces, copy the corresponding information from Section A.

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 1506 COLLINS AVENUE	FOR INSURANCE COMPANY USE Policy Number:
City MIAMI BEACH State FL ZIP Code 33139	Company NAIC Number:

If submitting more photographs than will fit on the preceding page, affix the additional photographs below. Identify all photographs with: date taken; "Front View" and "Rear View"; and, if required, "Right Side View" and "Left Side View." When applicable, photographs must show the foundation with representative examples of the flood openings or vents, as indicated in Section A8.



VICINITY MAP
NOT TO SCALE

MIAMI-DADE COUNTY
BUILDING CODE COMPLIANCE OFFICE (BCCO)
PRODUCT CONTROL DIVISION

MIAMI-DADE COUNTY, FLORIDA
METRO-DADE FLAGLER BUILDING
140 WEST FLAGLER STREET, SUITE 1603
MIAMI, FLORIDA 33130-1563
(305) 375-2901 FAX (305) 375-2908
www.miamidade.gov

NOTICE OF ACCEPTANCE (NOA)

F & L Aluminum Parts, Inc.
1720 N.W. 22nd Court, Unit #3
Pompano Beach, Florida 33069

SCOPE:
This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County PERA-Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. PERA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: Aluminum Roof Mounted Stand Frame Support for Air Conditioning Units

APPROVAL DOCUMENT: Drawing No. FNL.11003, titled " Aluminum Stands for Rooftop Equipment, Square Posts ", sheets 1 through 3 of 3, prepared by Nu-Wind Engineering, dated July 15, 2011, signed and sealed by Christian Langley, P.E. on March 07, 2012, bearing the Miami-Dade County Product Control Revision stamp with the Notice of Acceptance number and the expiration date by the Miami-Dade County Product Control Section.

MISSILE IMPACT RATING: None

LABELING: Each stand frame shall bear a permanent label with the manufacturer's name or logo, city, state and the following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA **revises & renews NOA # 09-0709.04** and consists of this page 1, evidence submitted pages E-1 & E-2 as well as approval document mentioned above.

The submitted documentation was reviewed by **Helmy A. Makar, P.E., M.S.**

MIAMI-DADE COUNTY APPROVED

Helmy A. Makar
04/12/2012

NOA No. 11-0824.01
Expiration Date: 12/28/2016
Approval Date: 04/12/2012

F & L Aluminum Parts, Inc.

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL #06-0922.03

A. DRAWINGS

1. Drawing No. 06-501, titled " Air Conditioning Stands ", sheets 1 through 3 of 3, prepared by Thornton Tomasetti, dated September 13, 2006, signed and sealed by John W. Knezevich, P.E.

B. TESTS

1. None.

C. CALCULATIONS

1. Calculation titled " Air Conditioning Stands Calculations ", dated September 15, 2006, sheets 1 through 160 of 160, signed and sealed by J. W. Knezevich, P.E.

D. QUALITY ASSURANCE

1. By Miami-Dade County Building Code Compliance Office.

E. MATERIAL CERTIFICATIONS

1. None.

2. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 09-0709.04

A. DRAWINGS

1. Drawing No. S-1, titled " Air Conditioning Stands Florida ", sheets 1 through 3 of 3, prepared by Milton Cubas, P.E., Inc., dated May 12, 2009, signed and sealed by Milton Cubas, P.E., on December 02, 2009.

B. TESTS

1. None.

C. CALCULATIONS

1. Calculation titled " Air Conditioning Stands ", dated May 13, 2009, sheets 1 through 206 of 206, signed and sealed by Milton Cubas, P.E.

D. QUALITY ASSURANCE

1. By Miami-Dade County Building Code Compliance Office.

E. MATERIAL CERTIFICATIONS

1. None.

Helmy A. Makar, P. E., M.S.
PERA, Product Control Unit Supervisor
NOA No. 11-0824.01
Expiration Date: 12/28/2016
Approval Date: 04/12/2012

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

3. NEW EVIDENCE SUBMITTED

A. DRAWINGS

1. *Drawing No. FNL.11003, titled " Aluminum Stands for Rooftop Equipment, Square Posts ", sheets 1 through 3 of 3, prepared by Nu-Wind Engineering, dated July 15, 2011, signed and sealed by Christian Langley, P.E., on March 07, 2012.*

B. TESTS

1. *None.*

C. CALCULATIONS

1. *Calculation titled "Air Conditioning Stands Calculations", dated August 10, 2011, sheets 1 through 50 of 50, prepared by Nu-Wind Engineering, signed and sealed by Christian Langley, P.E.*
2. *Calculation titled " Air Conditioning Stands Calculations ", dated March 07, 2012, sheets 1 through 30 of 30, prepared by Nu-Wind Engineering, signed and sealed by Christian Langley, P.E.*

D. QUALITY ASSURANCE

1. *By Miami-Dade County Department of Permitting, Environment, and regulatory Affairs (PERA).*

E. MATERIAL CERTIFICATIONS

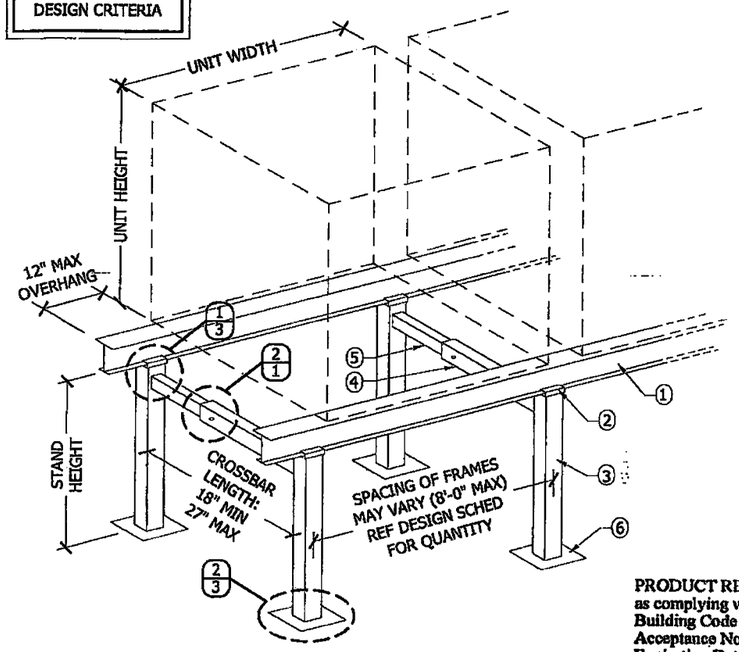
1. *None.*

Helmy A. Makar, P. E., M.S.
PERA, Product Control Unit Supervisor
NOA No. 11-0824.01
Expiration Date: 12/28/2016
Approval Date: 04/12/2012

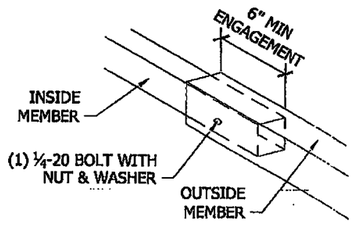
ALUMINUM ROOFTOP EQUIPMENT STAND

WITH SQUARE POSTS & TELESCOPIC CROSSBAR

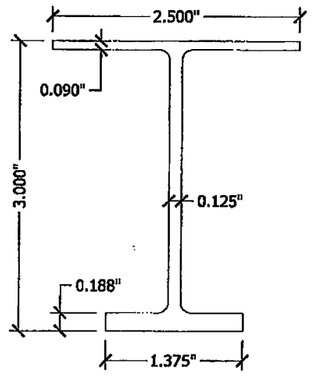
REFER TO DESIGN SCHEDULE FOR ALLOWABLE WIND LOADS AND OTHER DESIGN CRITERIA



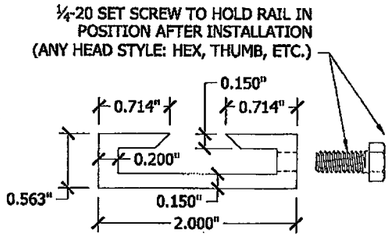
1/1 STAND ASSEMBLY
SCALE: N.T.S. ISOMETRIC VIEW



2/1 TELESCOPIC CROSSBAR COUPLING ATTACHMENT
SCALE: N.T.S. ISOMETRIC VIEW



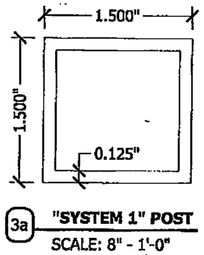
1/1 I-BEAM RAIL
SCALE: 8" - 1'-0"



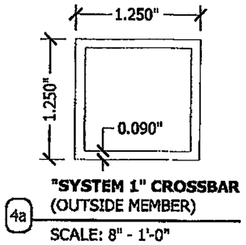
2/1 RAIL CONNECTOR
SCALE: 8" - 1'-0"

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 11-0824.01
Expiration Date 12/28/2016
By
Miami Dade Product Control

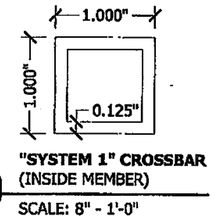
"SYSTEM 1" COMPONENTS



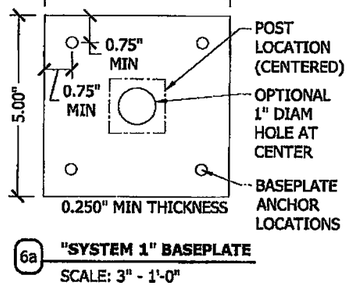
3a "SYSTEM 1" POST
SCALE: 8" - 1'-0"



4a "SYSTEM 1" CROSSBAR (OUTSIDE MEMBER)
SCALE: 8" - 1'-0"

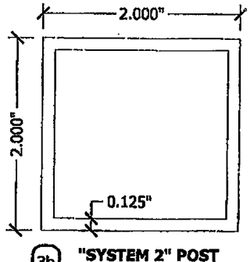


5a "SYSTEM 1" CROSSBAR (INSIDE MEMBER)
SCALE: 8" - 1'-0"

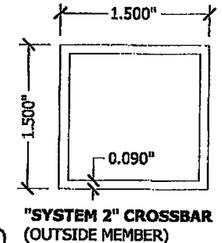


6a "SYSTEM 1" BASEPLATE
SCALE: 3" - 1'-0"

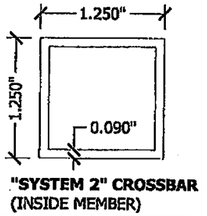
"SYSTEM 2" COMPONENTS



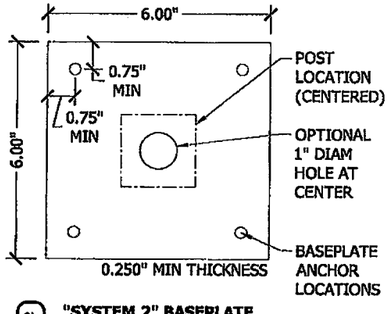
3b "SYSTEM 2" POST
SCALE: 8" - 1'-0"



4b "SYSTEM 2" CROSSBAR (OUTSIDE MEMBER)
SCALE: 8" - 1'-0"



5b "SYSTEM 2" CROSSBAR (INSIDE MEMBER)
SCALE: 8" - 1'-0"



6b "SYSTEM 2" BASEPLATE
SCALE: 3" - 1'-0"

GENERAL NOTES

1. THIS SYSTEM HAS BEEN EVALUATED IN ACCORDANCE WITH THE 2007 FLORIDA BUILDING CODE WITH 2009 SUPPLEMENTS, FOR USE WITHIN & OUTSIDE THE HIGH VELOCITY HURRICANE ZONE (HVHZ).
2. THIS SYSTEM HAS BEEN EVALUATED IN ACCORDANCE WITH THE 2010 FLORIDA BUILDING CODE, FOR USE WITHIN & OUTSIDE THE HIGH VELOCITY HURRICANE ZONE (HVHZ).
3. THE SYSTEM DEPICTED HEREIN HAS BEEN EVALUATED IN ACCORDANCE WITH THE 2010 FLORIDA BUILDING CODE, FOR USE WITHIN AND OUTSIDE THE HIGH VELOCITY HURRICANE ZONE (HVHZ).
4. THIS SYSTEM HAS BEEN EVALUATED WITHOUT A ONE-THIRD INCREASE IN ALLOWABLE STRESS. WIND LOAD DURATION FACTOR Cd=1.6 HAS BEEN USED FOR WOOD ANCHOR DESIGN.
5. SITE WIND PRESSURES CALCULATED FOR USE WITH THIS SYSTEM SHALL BE DETERMINED BY OTHERS ON A SITE-SPECIFIC BASIS IN ACCORDANCE WITH THE GOVERNING CODE.
6. 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 PROFESSIONAL ENGINEER OR REGISTERED ARCHITECT SHALL PREPARE SITE-SPECIFIC DOCUMENTS AND APPLY FOR ONE-TIME MIAMI-DADE NOA FOR USE IN CONJUNCTION WITH THIS APPROVAL.
7. PERMIT HOLDER SHALL VERIFY THE ADEQUACY OF THE EXISTING STRUCTURE TO WITHSTAND SUPERIMPOSED LOADS.
8. ALL ALUMINUM EXTRUSIONS SHALL BE 6061-T6 ALLOY & TEMPER, UNLESS NOTED OTHERWISE. WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AWS REQUIREMENTS, USING FILLER ALLOYS 4043, 4047, 5183, 5356, OR 5556.
9. STANDS SHALL BE INSTALLED WITH MINIMUM CLEAR HEIGHT AS SPECIFIED IN THE ABOVE-NOTED BUILDING CODE. "*STAND HEIGHT*" AS USED HEREIN IS NOT NECESSARILY EQUIVALENT TO "*STAND CLEAR HEIGHT*" AS SPECIFIED IN THE BLDG CODE.
10. VIBRATION ISOLATOR PADS SHALL BE PROVIDED BY CONTRACTOR BETWEEN UNITS & STAND.
11. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT FASTENING AS SHOWN HEREIN WILL NOT VOID THE EQUIPMENT MANUFACTURER'S WARRANTY, ESPECIALLY WHERE UNITS ARE INSTALLED WITH OVERHANG PAST RAIL (SEE TIE-DOWN DETAILS).
12. ALL BOLTS & WASHERS SHALL BE ZINC COATED STEEL, GALVANIZED STEEL, OR STAINLESS STEEL WITH A MINIMUM TENSILE YIELD STRENGTH OF 60 KSI.
13. PLASTIC COMPONENTS USED WITHIN THE HVHZ MUST MEET ALL APPLICABLE FIRE/SMOKE/UV PERFORMANCE REQUIREMENTS AS SET FORTH IN THE ABOVE-NOTED BUILDING CODE.
14. ANY STEEL IN CONTACT WITH ALUMINUM SHALL BE PAINTED OR PLATED AS PRESCRIBED IN THE ABOVE-NOTED BUILDING CODE.

C.A. #28511
NU-WIND ENGINEERING
PRODUCT APPROVALS
DONE RIGHT.
1200 N FEDERAL HWY, #200
BOCA RATON, FL 33432
Ofc: (954) 333-8965
Fax: (954) 719-3707
www.nu-wind.com
CHRISTIAN LANIER, PE
FL PE #67382 CA #28511

REVISIONS	DESCRIPTION	DATE	BY
1	INITIAL SUBMITTAL	7/15/11	CL
2	-	-	-
3	-	-	-
4	-	-	-
5	-	-	-

PROJECT: ALUMINUM STANDS FOR ROOFTOP EQUIPMENT (SQUARE POSTS) MIAMI-DADE NOA

CONTRACTOR: F & L ALUMINUM PARTS, Inc. 1710 NW 22nd CT, UNIT 3 POMPANO BEACH, FL 33064

DRAWING NUMBER: FNL.11003

SHEET 1 OF 3

dongby 3/7/2012 14:14

DESIGN SCHEDULE

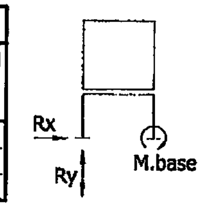
UNIT SIZE (FRONTAL AREA)	STAND HEIGHT	"SYSTEM 1" 1 UNIT 2 FRAMES	"SYSTEM 1" 2 UNITS 3 FRAMES	"SYSTEM 1" UNLIMITED UNITS PER STAND "N" UNITS "N" FRAMES	"SYSTEM 1" 3 UNITS 2 FRAMES	"SYSTEM 1" 4 UNITS 3 FRAMES	"SYSTEM 1" 5 OR MORE UNITS PER STAND "N" UNITS "N-1" FRAMES	"SYSTEM 2" 1 UNIT 2 FRAMES	"SYSTEM 2" 2 UNITS 3 FRAMES	"SYSTEM 2" UNLIMITED UNITS PER STAND "N" UNITS "N" FRAMES	"SYSTEM 2" 3 UNITS 2 FRAMES	"SYSTEM 2" 4 UNITS 3 FRAMES	"SYSTEM 2" 5 OR MORE UNITS PER STAND "N" UNITS "N-1" FRAMES
4.0 sqft	18"	170.1 PSF	127.6 PSF	85.0 PSF	56.7 PSF	63.8 PSF	68.0 PSF	200.0 PSF	200.0 PSF	148.2 PSF	98.8 PSF	111.2 PSF	118.6 PSF
	21"	137.7 PSF	103.3 PSF	68.8 PSF	45.9 PSF	51.6 PSF	55.1 PSF	200.0 PSF	177.1 PSF	118.1 PSF	78.7 PSF	88.6 PSF	94.5 PSF
	24"	115.1 PSF	86.3 PSF	57.6 PSF	38.4 PSF	43.2 PSF	46.1 PSF	194.9 PSF	146.2 PSF	97.4 PSF	65.0 PSF	73.1 PSF	78.0 PSF
6.25 sqft	18"	108.9 PSF	81.6 PSF	54.4 PSF	36.3 PSF	40.8 PSF	43.5 PSF	169.7 PSF	142.3 PSF	94.9 PSF	63.2 PSF	71.1 PSF	75.9 PSF
	21"	88.1 PSF	66.1 PSF	44.1 PSF	29.4 PSF	33.0 PSF	35.2 PSF	151.2 PSF	113.4 PSF	75.6 PSF	50.4 PSF	56.7 PSF	60.5 PSF
	24"	73.7 PSF	55.3 PSF	36.8 PSF	24.6 PSF	27.6 PSF	29.5 PSF	124.7 PSF	93.5 PSF	62.4 PSF	41.6 PSF	46.8 PSF	49.9 PSF
7.5 sqft	18"	90.7 PSF	68.0 PSF	45.4 PSF	30.2 PSF	34.0 PSF	36.3 PSF	117.9 PSF	117.9 PSF	79.1 PSF	52.7 PSF	59.3 PSF	63.2 PSF
	21"	73.4 PSF	55.1 PSF	36.7 PSF	24.5 PSF	27.5 PSF	29.4 PSF	117.9 PSF	94.5 PSF	63.0 PSF	42.0 PSF	47.2 PSF	50.4 PSF
	24"	61.4 PSF	46.1 PSF	30.7 PSF	20.5 PSF	23.0 PSF	24.6 PSF	103.9 PSF	78.0 PSF	52.0 PSF	34.6 PSF	39.0 PSF	41.6 PSF
9.0 sqft	18"	75.6 PSF	56.7 PSF	37.8 PSF	25.2 PSF	28.3 PSF	30.2 PSF	98.2 PSF	98.2 PSF	65.9 PSF	43.9 PSF	49.4 PSF	52.7 PSF
	21"	61.2 PSF	45.9 PSF	30.6 PSF	20.4 PSF	22.9 PSF	24.5 PSF	98.2 PSF	78.7 PSF	52.5 PSF	35.0 PSF	39.4 PSF	42.0 PSF
	24"	51.2 PSF	38.4 PSF	25.6 PSF	17.1 PSF	19.2 PSF	20.5 PSF	86.6 PSF	65.0 PSF	43.3 PSF	28.9 PSF	32.5 PSF	34.6 PSF
12.25 sqft	18"	55.5 PSF	41.7 PSF	27.8 PSF	18.5 PSF	20.8 PSF	22.2 PSF	61.9 PSF	61.9 PSF	48.4 PSF	32.3 PSF	36.3 PSF	38.7 PSF
	21"	45.0 PSF	33.7 PSF	22.5 PSF	15.0 PSF	16.9 PSF	18.0 PSF	61.9 PSF	57.8 PSF	38.6 PSF	25.7 PSF	28.9 PSF	30.8 PSF
	24"	37.6 PSF	28.2 PSF	18.8 PSF	12.5 PSF	14.1 PSF	15.0 PSF	61.9 PSF	47.7 PSF	31.8 PSF	21.2 PSF	23.9 PSF	25.5 PSF
16.0 sqft	18"	41.4 PSF	31.9 PSF	21.3 PSF	14.2 PSF	15.9 PSF	17.0 PSF	41.4 PSF	41.4 PSF	37.1 PSF	24.7 PSF	27.8 PSF	29.6 PSF
	21"	34.4 PSF	25.8 PSF	17.2 PSF	11.5 PSF	12.9 PSF	13.8 PSF	41.4 PSF	41.4 PSF	29.5 PSF	19.7 PSF	22.1 PSF	23.6 PSF
	24"	28.8 PSF	21.6 PSF	14.4 PSF	9.6 PSF	10.8 PSF	11.5 PSF	41.4 PSF	36.5 PSF	24.4 PSF	16.2 PSF	18.3 PSF	19.5 PSF

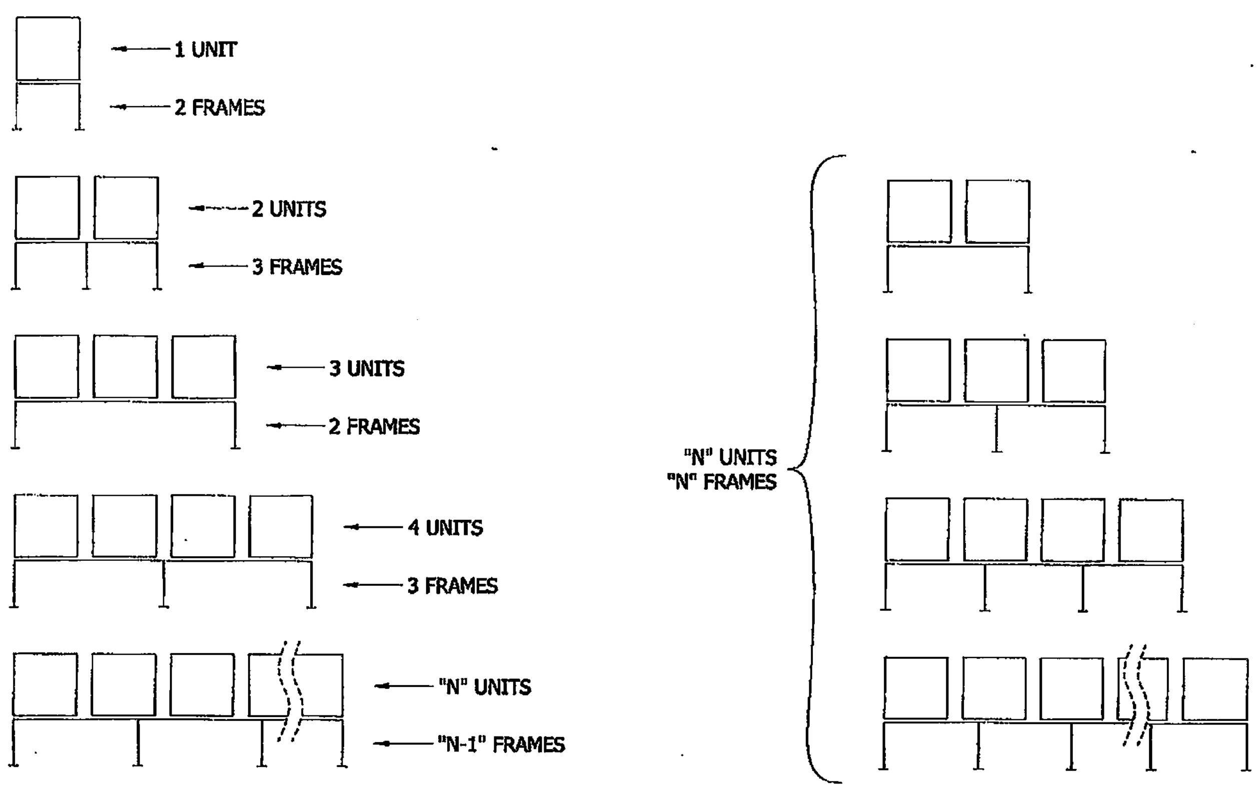
DESIGN SCHEDULE NOTES

1. DESIGN SCHEDULE GIVES MAXIMUM ALLOWABLE WIND LOAD FOR EACH COMBINATION OF UNIT SIZE, STAND HEIGHT, AND UNIT/POST CONFIGURATION.
2. **"UNIT SIZE** (FRONTAL AREA)" IS AREA OF UNIT FACE PARALLEL TO I-BEAM RAIL (= UNIT HEIGHT x UNIT WIDTH), AS DEPICTED HEREIN. UNIT HEIGHT SHALL NOT EXCEED UNIT WIDTH.
3. FOR STANDS WITH VARYING UNIT SIZES, ENTER DESIGN SCHEDULE USING MAXIMUM SIZE OF ALL UNITS TO BE INSTALLED ON EACH STAND.
4. **"STAND HEIGHT"** IS AS DEPICTED HEREIN.
5. **"UNIT & POST CONFIGURATIONS"** INDICATE NUMBER OF UNITS & NUMBER OF FRAMES PER STAND, AS DEPICTED IN DIAGRAMS. "FRAME" HERE DENOTES ASSEMBLAGE OF 2 POSTS WITH A CROSSBAR.
6. ***"N" UNITS*** & ***"N" FRAMES*** INDICATES ANY NUMBER OF UNITS WITH AN EQUAL NUMBER OF FRAMES PER STAND. ***"N" UNITS*** & ***"N-1" FRAMES*** INDICATES ANY NUMBER OF UNITS WITH A NUMBER OF FRAMES PER STAND EQUAL TO THE NUMBER OF UNITS MINUS ONE.
7. EACH UNIT SHALL HAVE A MAXIMUM WEIGHT OF 300 LBS.
8. MULTIPLE UNITS MAY BE GROUPED TOGETHER FOR CONSIDERATION AS A SINGLE UNIT (OR VICE VERSA) IN THE DESIGN SCHEDULE.
   a. WHERE MULTIPLE UNITS ARE GROUPED TOGETHER FOR CONSIDERATION IN DESIGN SCHEDULE AS A SINGLE UNIT, THE "UNIT SIZE (FRONTAL AREA)" SHALL BE THE TOTAL OF THE GROUPED UNIT SIZES. ACTUAL UNIT WEIGHT SHALL NOT EXCEED THE MAXIMUM PER-UNIT WEIGHT NOTED ABOVE.
   b. WHERE A SINGLE UNIT IS SPLIT UP FOR CONSIDERATION IN DESIGN SCHEDULE AS MULTIPLE UNITS, THE "UNIT SIZE (FRONTAL AREA)" SHALL BE THE ACTUAL UNIT SIZE DIVIDED BY THE NUMBER OF UNITS CONSIDERED. ACTUAL UNIT WEIGHT SHALL NOT EXCEED THE MAXIMUM PER-UNIT WEIGHT NOTED ABOVE MULTIPLIED BY THE NUMBER OF UNITS CONSIDERED IN DESIGN SCHEDULE.
9. SPACING BETWEEN UNITS MAY VARY (UNLIMITED).
10. REFERENCE ANCHOR SCHEDULE FOR ALLOWABLE ANCHORS AND INSTALLATION CRITERIA.

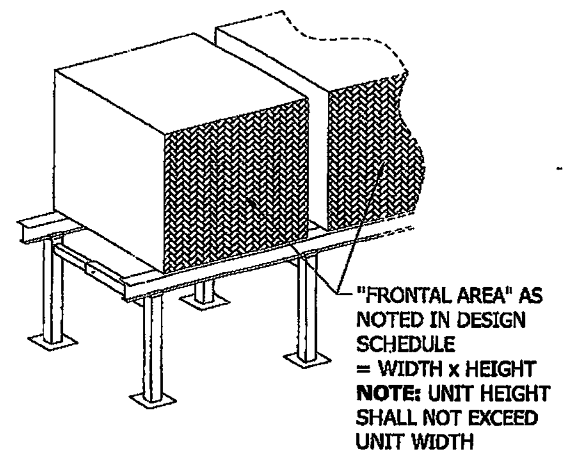
REACTION SCHEDULE

STAND HEIGHT	"SYSTEM 1" REACTION AT BASE Rx	"SYSTEM 1" REACTION AT BASE Ry	"SYSTEM 1" REACTION AT BASE M.base	"SYSTEM 2" REACTION AT BASE Rx	"SYSTEM 2" REACTION AT BASE Ry	"SYSTEM 2" REACTION AT BASE M.base
18"	170 LB	104 LB	2.1 K-IN	296 LB	150 LB	4.0 K-IN
21"	138 LB	104 LB	2.0 K-IN	236 LB	150 LB	3.6 K-IN
24"	115 LB	104 LB	1.8 K-IN	195 LB	150 LB	3.3 K-IN



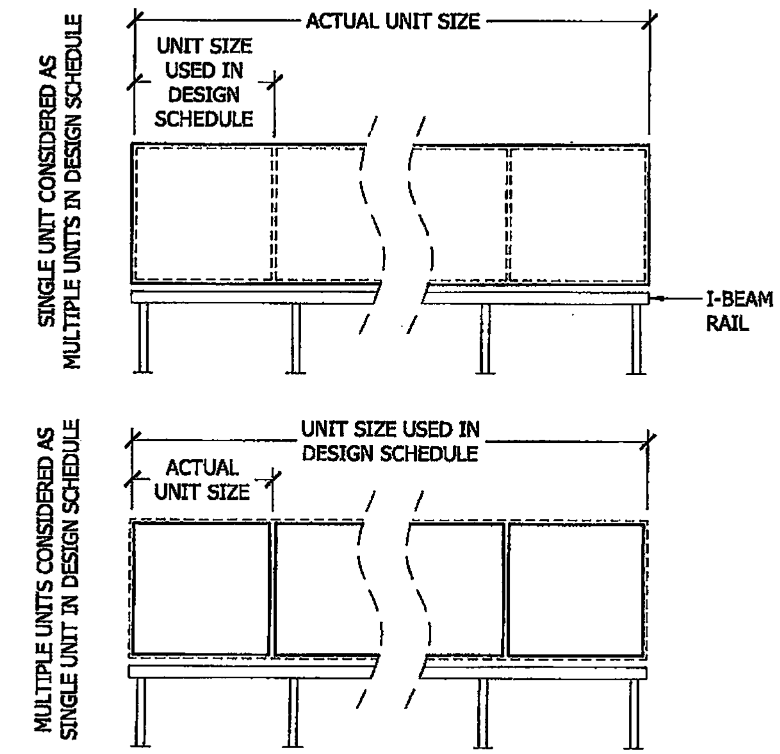


1/2 UNIT & POST CONFIGURATIONS
SCALE: N.T.S. DIAGRAMS



2/2 UNIT SIZE (FRONTAL AREA)
SCALE: N.T.S. ISOMETRIC

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 11-0824.01
Expiration Date 12/28/2016
By
Miami Dade Product Control



3/2 GROUPING/SPLITTING OF UNITS FOR USE IN DESIGN SCHEDULE
SCALE: N.T.S. FRONT ELEVATION

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1200 N. FEDERAL HWY, #200
BOCA RATON, FL. 33432
www.nu-wind.com
Ofc: (954) 333-8965
Fax: (954) 719-3707
CHRISTIAN LANGLEY, PE
FL PE #57382 CA #28511

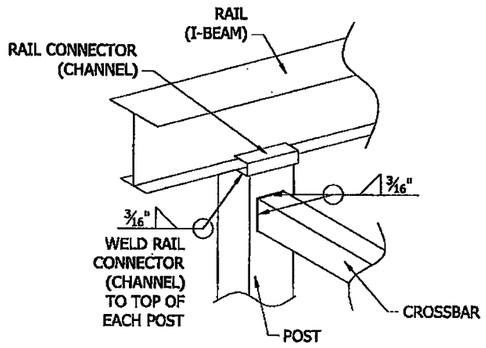
REV	DATE	DESCRIPTION	BY
	7/15/11	INITIAL SUBMITTAL	CL

PROJECT: ALUMINUM STANDS FOR ROOFTOP EQUIPMENT (SQUARE POSTS) MIAMI-DADE NOA

CONTRACTOR: F & L ALUMINUM PARTS, Inc. 1710 NW 22nd CT, UNIT 3 POMPANO BEACH, FL 33064

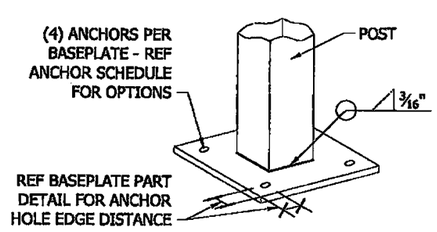
DRAWING NUMBER: FNL.11003

SHEET 2 OF 3



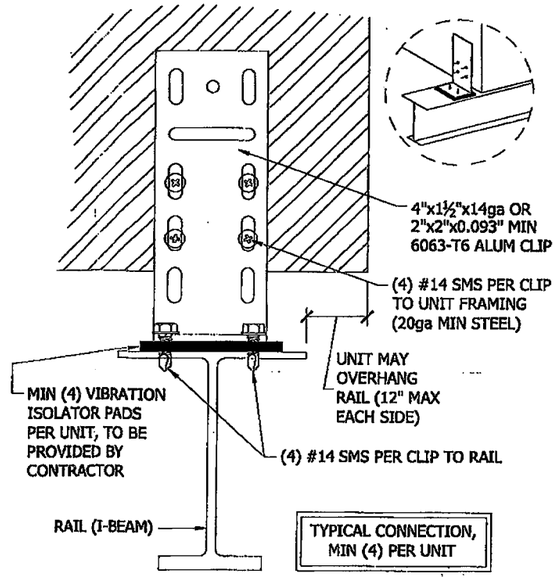
1/3 STAND ASSEMBLY: POST, CROSSBAR, & RAIL CONN

SCALE: N.T.S. ISOMETRIC



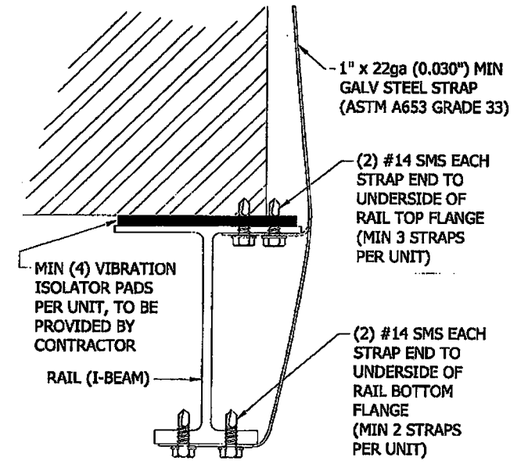
2/3 STAND ASSEMBLY: POST & BASEPLATE

SCALE: N.T.S. ISOMETRIC



4/3 CLIPPED UNIT CONNECTION

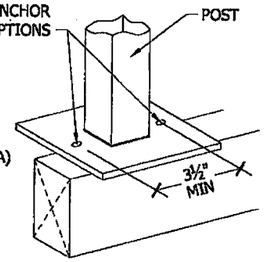
SCALE: 1:2 VERT SECTION



5/3 STRAPPED UNIT CONNECTION

SCALE: 1:2 VERT SECTION

ALTERNATE: (2) ANCHORS PER BASEPLATE FOR INSTALLATION TO WOOD RAFTERS - REF ANCHOR SCHED FOR OPTIONS



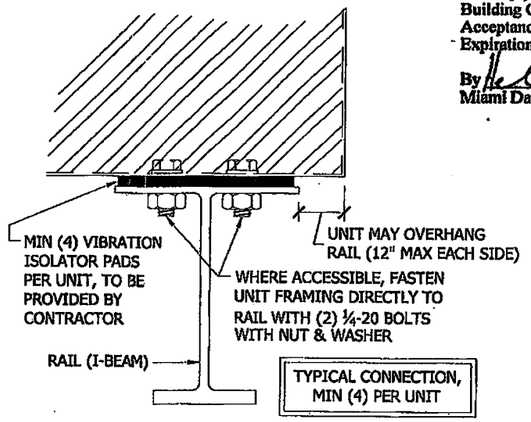
ALT BASEPLATE ANCHORAGE SHALL BE LIMITED TO THE FOLLOWING:

- (2) UNITS MAX
- (3) FRAMES MIN
- 6.25 SQ FT MAX UNIT SIZE (FRONTAL AREA)
- 24" MAX STAND HT
- MAX ALLOWABLE DESIGN PRESSURES:
  - **"SYSTEM 1": 55.3 PSF**
  - **"SYSTEM 2": 71.4 PSF**

3/3 ALTERNATE BASEPLATE ANCHORAGE

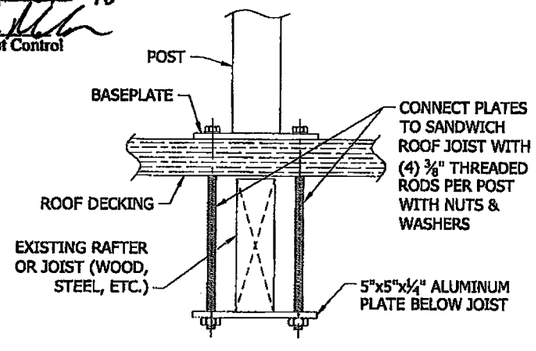
SCALE: N.T.S. ISOMETRIC

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 11-0824.01
Expiration Date 12/28/2016
By [signature]
Miami Dade Product Control



6/3 DIRECT UNIT CONNECTION

SCALE: 6" = 1'-0" VERT SECTION



7/3 RAFTER/JOIST BASEPLATE ANCHORAGE

SCALE: 2" = 1'-0" VERT SECTION

ANCHOR SCHEDULE:

TO CONCRETE (MIN 2,000 PSI)

A. ⅜" POWERS *WEDGE BOLT*
   3" MIN EMBED
   4½" MIN EDGE DISTANCE
B. ⅜" HILTI *KWIK BOLT III*
   3½" MIN EMBED
   5" MIN EDGE DISTANCE

TO WOOD HOST STRUCTURE

C. ⅜" LAG SCREW
   3½" MIN THREAD PENETRATION

TO STEEL (MIN 3/16" THICK)

D. ¼" TEKS SCREWS OR ¼-20 SELF-THREADING METAL SCREWS (SAE GRADE 5)

ANCHOR NOTES:

1. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS, & LOCATED PER BASEPLATE COMPONENT DETAIL(S).
2. ENSURE MINIMUM EMBEDMENT, EDGE DISTANCE, & SPACING FOR ALL ANCHORS ARE IN ACCORDANCE WITH ANCHOR SCHEDULE.
3. MINIMUM EMBEDMENT AND EDGE DISTANCE EXCLUDES SHEATHING, UNDERLAYMENT, INSULATION, AND OTHER ROOFING MATERIALS.
4. MINIMUM 3/4" EDGE DISTANCE IS CONSIDERED IN DESIGN FOR ALL ANCHORS TO WOOD HOST STRUCTURE (i.e. ANCHOR SHALL BE LOCATED IN CENTER OF TRUSS/RAFTER WHERE FASTENED TO NARROW FACE OF NOMINAL 2x LUMBER).
5. WOOD HOST STRUCTURE SHALL BE "SOUTHERN PINE" WITH G=0.55 OR GREATER SPECIFIC GRAVITY (≈ DENSITY).
6. WHERE HOST STRUCTURE IS WOOD FRAMING, EXISTING CONDITIONS MAY VARY. FIELD VERIFY THAT FASTENERS ARE INTO ADEQUATE WOOD FRAMING MEMBERS, NOT INTO PLYWOOD (U.N.O.).
7. SELF-TAPPING OR SELF-THREADING METAL SCREWS SHALL BE INSTALLED WITH FULL THREAD ENGAGEMENT INTO METAL HOST STRUCTURE AND MAY HAVE A FLAT HEAD, PAN HEAD, TRUSS HEAD, OR OTHER HEAD STYLES.
8. ANCHORS THAT INCORPORATE MACHINE SCREWS SHALL HAVE MINIMUM OF 1/2" ENGAGEMENT OF THREADS IN BASE ANCHOR AND MAY HAVE ANY HEAD STYLE, UNLESS INDICATED OTHERWISE BY MFR.

NU-WIND ENGINEERING
PRODUCT APPROVALS
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Ofc: (954) 333-8865
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CHRISTIAN LANG, PE
FL PE #67382

REVISIONS	DATE	DESCRIPTION	BY
	7/15/11	INITIAL SUBMITTAL	CL

PROJECT: ALUMINUM STANDS FOR ROOFTOP EQUIPMENT (SQUARE POSTS) MIAMI-DADE NOA

CONTRACTOR: F & L ALUMINUM PARTS, Inc. 1710 NW 22nd CT, UNIT 3 POMPANO BEACH, FL 33064

DRAWING NUMBER: FNL.11003

SHEET 3 OF 3

BEAME
ARCHITECTURAL
PARTNERSHIP

3059
GRAND AVENUE
SUITE 440
COCONUT GROVE
FLORIDA 33133

PH 305.444.7100
FX 305.444.9803

Web site:
www.bapdesign.com

Florida Corp.
AA0002364

February 6, 2015

Mr. Mohsen Jarahpour
Building Department -Engineering
1700 Convention Center Drive 2nd Floor
Miami Beach, Florida 33139

RE: Hotel Eva 1506 Collins Ave
#B1404595

Dear Mr. Jarahpour:

This letter is to clarify the new scope of work regarding the project mentioned above.

The following was the first scope of work which plans were submitted for back in May of 2014. This scope was the following:

- Interior alteration to existing hotel to include, reconfiguration of entrance, kitchen and bathroom of all units, add new ADA & hearing impaired units, (18) new (1/2) bathrooms in existing units. Convert (1) existing unit into communal space with new kitchen and ADA bathroom. Provide new chase walls for ventilation of existing and new bathrooms.

Due to cost implications the scope was drastically reduced and plans were resubmitted on October of 2014. The new scope is as follows:

-Convert units 301 & 401 to communal bathrooms.
-Provide new ADA bathrooms to units 302 & 402 as required.
-Convert existing unit 300 into a communal space with new kitchen.
-Provide hearing impaired/communication features as required.
-Provide required chase walls for ventilation.

The area of work per the previous scope was +/-15,820 sq.ft.

The area of work per the new scope is +/- 2,500 sq.ft.

The new scope reduced the cost to under $500,000. Described in the Affidavit provided by Klewin the General Contractor dated December 16th of 2014.

BEAME ARCHITECTURAL PARTNERSHIP, P.A.

Lawrence Beame, AIA
President

STRUCTURAL CALCULATIONS

For

HOTEL EVA

1506 COLLINS AVE
MIAMI BEACH, FL 33139

NOTICE: In addition to the requirement 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 government entities such as water management's districts, state agencies, or federal agencies.
The city of Miami Beach assumes no responsibility for accuracy of or results from these plans which are approved subject to compliance with all Federal, State, and Local Laws, Rules, and Regulations.

Prepared by:

UNITED Engineering, Inc.

Certificate of Authorization No. 29691

October 9, 2014

UNITED Engineering, Inc.

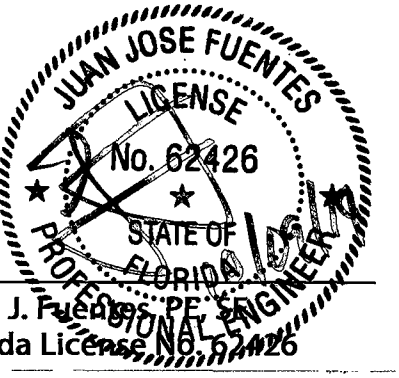
Index 1 of 2

Table of Contents

I. ITEMS **Pages**

Certificate of Authorization No. 29691

Calculations have been prepared by the undersigned engineer assuming responsibility for manual and computer generated information.



Juan J. Fuentes, PE, ENGINEER
Florida License No. 62426

UNITED Engineering, Inc.

PROJECT No. _____ SHEET No. ____ OF ____
PROJECT NAME HOTEL EVA
CALCULATED BY AM DRAWN BY _____
SCALE _____ DATE 10/14

Index 2 of 2

= PROJECT LOCATION

- 1506 COLLINS AVE, MIAMI BEACH, FL 33139

= SCOPE

- New roof top units added to an existing 20,000 sf four story hotel. Project utilizes new wood joists.

= SOFTWARE

- Wind Loading- Standards Design Group Wind Load on Structures
- Gravity- IES, Inc. Visual Analysis (Wood Design), and internally developed Mathcad and Excel worksheets.

= CODES

- **GRAVITY**

  FLORIDA BUILDING CODE 2010

- **WIND**

  ASCE 7-10

= LOADING

- **GRAVITY**

  Roof (Flat): Live Load= 30 psf Dead Load= 20 psf

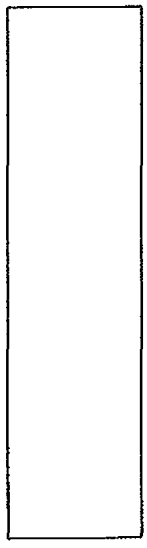
- **WIND**

  Please refer to attached "Wind Loads on Structures" analysis.

JUAN JOSE FUENTES LICENSE No. 62426 STATE OF FLORIDA PROFESSIONAL ENGINEER 10/9/14

Juan J. Fuentes, PE
Florida License No. 62426

Project Name: HOTEL EVA



Location: MIAMI BEACH, FL

By: AM

Start Date: 10/14

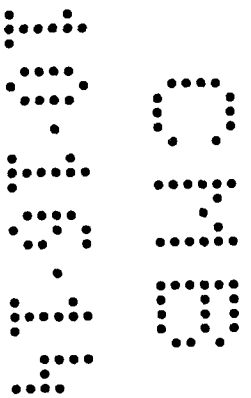
Comments:

Local Information

Wind Dir.	Exposure
1	D
2	D
3	D
4	D

Basic Wind Speed: 175 mph

Topography: None



Optional Factors

This project uses load combinations from ASCE 7.

HOTEL EVA

October 8, 2014

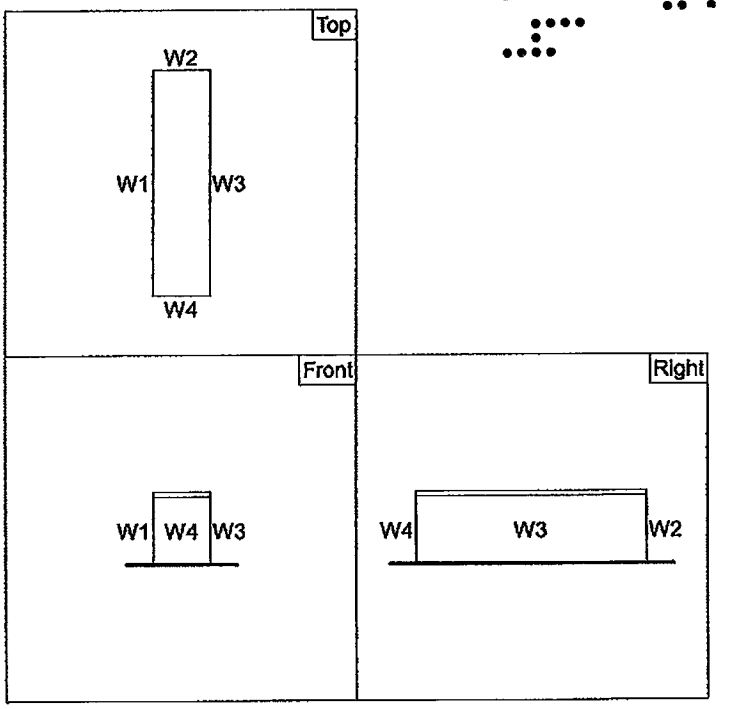
ASCE7-10

Section - Main Section

Enclosure Classification: Enclosed

Wall	Length(ft)	Overhang(ft)
1	140.0	0.0
2	34.75	0.0
3	140.0	0.0
4	34.75	0.0

Eave Height: 42 ft
Parapet Height: 3 ft
Parapet Enclosure: Solid
Roof Shape: Flat

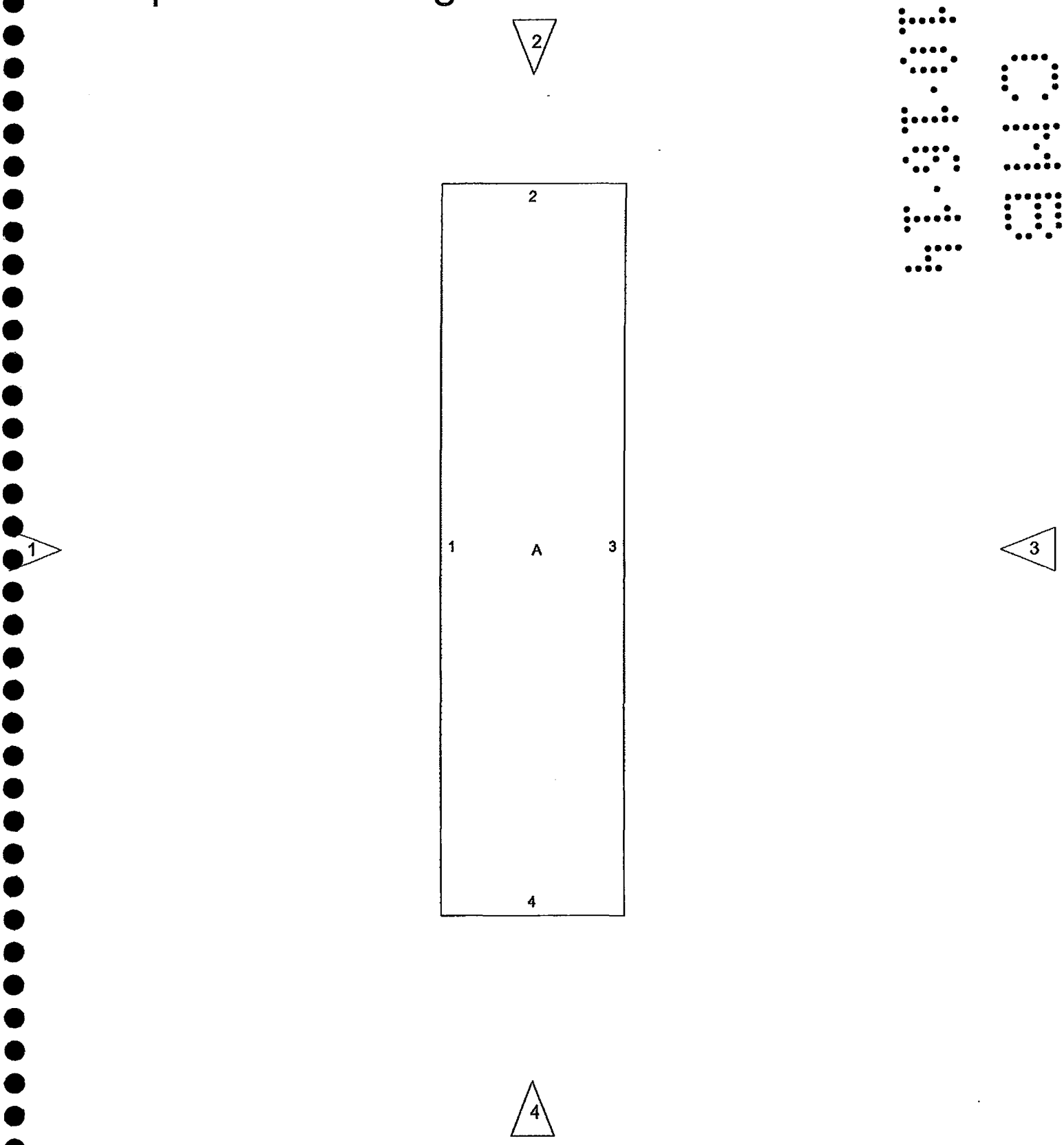


HOTEL EVA

October 8, 2014

ASCE7-10

Composite Drawing



ASCE7-10

Components and Cladding Input

Component Description	Wall/Roof	Surface Label	Zone	Span(ft)	Width(ft)	Area(sqft)
Roof A<=10 sf	Roof	A	(All)			10
Roof A<=20 sf	Roof	A	(All)			20
Roof A<=30 sf	Roof	A	(All)			30
Roof A<=40 sf	Roof	A	(All)			40
Roof A<=50 sf	Roof	A	(All)			50
Roof A<=60 sf	Roof	A	(All)			60
Roof A<=70 sf	Roof	A	(All)			70
Roof A<=80 sf	Roof	A	(All)			80
Roof A<=90 sf	Roof	A	(All)			90
Roof A<=100 sf	Roof	A	(All)			100
Wall A<=10 sf	Wall	1	(All)			10.
Wall A<=20 sf	Wall	1	(All)			20
Wall A<=30 sf	Wall	1	(All)			30
Wall A<=40 sf	Wall	1	(All)			40
Wall A<=50 sf	Wall	1	(All)			50
Wall A<=60 sf	Wall	1	(All)			60
Wall A<=70 sf	Wall	1	(All)			70
Wall A<=80 sf	Wall	1	(All)			80
Wall A<=90 sf	Wall	1	(All)			90
Wall A<=100 sf	Wall	1	(All)			100
Parapet A<=10 sf	Parapet	1	(All)			10
Parapet A<=20 sf	Parapet	1	(All)			20
Parapet A<=30 sf	Parapet	1	(All)			30

HOTEL EVA

October 8, 2014

ASCE7-10

Components and Cladding Output

Component Description	Surface	Zone	z(ft)	q(psf)	GCp	GCpi	ExtPres(psf)	Net w/ +GCpi (psf)	Net w/ -GCpi (psf)
Roof A<=10 sf	A	1	42.0	82.1	0.30	0.18	24.6	9.9	39.4
			42.0	82.1	-1.00		-82.1	-96.9	-67.3
		2	42.0	82.1	0.30		24.6	9.9	39.4
			42.0	82.1	-1.80		-147.8	-162.6	-133.0
		3	42.0	82.1	0.30		24.6	9.9	39.4
			42.0	82.1	-1.80		-147.8	-162.6	-133.0
Roof A<=20 sf	A	1	42.0	82.1	0.27	0.18	22.2	7.4	36.9
			42.0	82.1	-0.97		-79.6	-94.4	-64.9
		2	42.0	82.1	0.27		22.2	7.4	36.9
			42.0	82.1	-1.59		-130.5	-145.3	-115.8
		3	42.0	82.1	0.27		22.2	7.4	36.9
			42.0	82.1	-1.59		-130.5	-145.3	-115.8
Roof A<=30 sf	A	1	42.0	82.1	0.25	0.18	20.5	5.7	35.3
			42.0	82.1	-0.95		-78.0	-92.8	-63.2
		2	42.0	82.1	0.25		20.5	5.7	35.3
			42.0	82.1	-1.47		-120.7	-135.5	-105.9
		3	42.0	82.1	0.25		20.5	5.7	35.3
			42.0	82.1	-1.47		-120.7	-135.5	-105.9
Roof A<=40 sf	A	1	42.0	82.1	0.24	0.18	19.7	4.9	34.5
			42.0	82.1	-0.94		-77.2	-92.0	-62.4
		2	42.0	82.1	0.24		19.7	4.9	34.5
			42.0	82.1	-1.38		-113.3	-128.1	-98.5
		3	42.0	82.1	0.24		19.7	4.9	34.5
			42.0	82.1	-1.38		-113.3	-128.1	-98.5
Roof A<=50 sf	A	1	42.0	82.1	0.23	0.18	18.9	4.1	33.7
			42.0	82.1	-0.93		-76.4	-91.1	-61.6
		2	42.0	82.1	0.23		18.9	4.1	33.7
			42.0	82.1	-1.31		-107.6	-122.3	-92.8
		3	42.0	82.1	0.23		18.9	4.1	33.7
			42.0	82.1	-1.31		-107.6	-122.3	-92.8
Roof A<=60 sf	A	1	42.0	82.1	0.22	0.18	18.1	3.3	32.8

HOTEL EVA

October 8, 2014

ASCE7-10

Components and Cladding Output

Roof A<=60 sf	A	1	42.0	82.1	0.22	0.18	18.1	3.3	32.8
Component Description	Surface	Zone	z(ft)	q(psf)	GCp	GCpi	ExtPres(psf)	Net w/ +GCpi (psf)	Net w/ -GCpi (psf)
Roof A<=60 sf	A	1	42.0	82.1	-0.92	0.18	-75.5	-90.3	-60.8
		2	42.0	82.1	0.22		18.1	3.3	32.8
			42.0	82.1	-1.26		-103.4	-118.2	-88.7
		3	42.0	82.1	0.22		18.1	3.3	32.8
			42.0	82.1	-1.26		-103.4	-118.2	-88.7
Roof A<=70 sf	A	1	42.0	82.1	0.22	0.18	18.1	3.3	32.8
			42.0	82.1	-0.92		-75.5	-90.3	-60.8
		2	42.0	82.1	0.22		18.1	3.3	32.8
			42.0	82.1	-1.21		-99.3	-114.1	-84.6
		3	42.0	82.1	0.22		18.1	3.3	32.8
			42.0	82.1	-1.21		-99.3	-114.1	-84.6
Roof A<=80 sf	A	1	42.0	82.1	0.21	0.18	17.2	2.5	32.0
			42.0	82.1	-0.91		-74.7	-89.5	-59.9
		2	42.0	82.1	0.21		17.2	2.5	32.0
			42.0	82.1	-1.17		-96.1	-110.8	-81.3
		3	42.0	82.1	0.21		17.2	2.5	32.0
			42.0	82.1	-1.17		-96.1	-110.8	-81.3
Roof A<=90 sf	A	1	42.0	82.1	0.20	0.18	16.4	1.6	31.2
			42.0	82.1	-0.90		-73.9	-88.7	-59.1
		2	42.0	82.1	0.20		16.4	1.6	31.2
			42.0	82.1	-1.13		-92.8	-107.6	-78.0
		3	42.0	82.1	0.20		16.4	1.6	31.2
			42.0	82.1	-1.13		-92.8	-107.6	-78.0
Roof A<=100 sf	A	1	42.0	82.1	0.20	0.18	16.4	1.6	31.2
			42.0	82.1	-0.90		-73.9	-88.7	-59.1
		2	42.0	82.1	0.20		16.4	1.6	31.2
			42.0	82.1	-1.10		-90.3	-105.1	-75.5
		3	42.0	82.1	0.20		16.4	1.6	31.2
			42.0	82.1	-1.10		-90.3	-105.1	-75.5
Wall A<=10 sf	1	4	42.0	82.1	0.90	0.18	73.9	59.1	88.7

ASCE7-10

Components and Cladding Output

Wall A<=10 sf	1	4	42.0	82.1	0.90	0.18	73.9	59.1	88.7
Component Description	Surface	Zone	z(ft)	q(psf)	GCp	GCpi	ExtPres(psf)	Net w/ +GCpi (psf)	Net w/ -GCpi (psf)
Wall A<=10 sf	1	4	42.0	82.1	-0.99	0.18	-81.3	-96.1	-66.5
		5	42.0	82.1	0.90		73.9	59.1	88.7
			42.0	82.1	-1.26		-103.4	-118.2	-88.7
Wall A<=20 sf	1	4	42.0	82.1	0.85	0.18	69.8	55.0	84.6
			42.0	82.1	-0.94		-77.2	-92.0	-62.4
		5	42.0	82.1	0.85		69.8	55.0	84.6
			42.0	82.1	-1.16		-95.2	-110.0	-80.5
Wall A<=30 sf	1	4	42.0	82.1	0.82	0.18	67.3	52.5	82.1
			42.0	82.1	-0.91		-74.7	-89.5	-59.9
		5	42.0	82.1	0.82		67.3	52.5	82.1
			42.0	82.1	-1.11		-91.1	-105.9	-76.4
Wall A<=40 sf	1	4	42.0	82.1	0.80	0.18	65.7	50.9	80.5
			42.0	82.1	-0.89		-73.1	-87.8	-58.3
		5	42.0	82.1	0.80		65.7	50.9	80.5
			42.0	82.1	-1.07		-87.8	-102.6	-73.1
Wall A<=50 sf	1	4	42.0	82.1	0.79	0.18	64.9	50.1	79.6
			42.0	82.1	-0.88		-72.2	-87.0	-57.5
		5	42.0	82.1	0.79		64.9	50.1	79.6
			42.0	82.1	-1.04		-85.4	-100.2	-70.6
Wall A<=60 sf	1	4	42.0	82.1	0.78	0.18	64.0	49.3	78.8
			42.0	82.1	-0.87		-71.4	-86.2	-56.6
		5	42.0	82.1	0.78		64.0	49.3	78.8
			42.0	82.1	-1.01		-82.9	-97.7	-68.1
Wall A<=70 sf	1	4	42.0	82.1	0.77	0.18	63.2	48.4	78.0
			42.0	82.1	-0.86		-70.6	-85.4	-55.8
		5	42.0	82.1	0.77		63.2	48.4	78.0
			42.0	82.1	-0.99		-81.3	-96.1	-66.5
Wall A<=80 sf	1	4	42.0	82.1	0.76	0.18	62.4	47.6	77.2

HOTEL EVA

October 8, 2014

ASCE7-10

Components and Cladding Output

Wall A<=80 sf	1	4	42.0	82.1	0.76	0.18	62.4	47.6	77.2
Component Description	Surface	Zone	z(ft)	q(psf)	GCp	GCpi	ExtPres(psf)	Net w/ +GCpi (psf)	Net w/ -GCpi (psf)
Wall A<=80 sf	1	4	42.0	82.1	-0.85	0.18	-69.8	-84.6	-55.0
		5	42.0	82.1	0.76		62.4	47.6	77.2
			42.0	82.1	-0.97		-79.6	-94.4	-64.9
Wall A<=90 sf	1	4	42.0	82.1	0.75	0.18	61.6	46.8	76.4
			42.0	82.1	-0.84		-69.0	-83.7	-54.2
		5	42.0	82.1	0.75		61.6	46.8	76.4
			42.0	82.1	-0.96		-78.8	-93.6	-64.0
Wall A<=100 sf	1	4	42.0	82.1	0.74	0.18	60.8	46.0	75.5
			42.0	82.1	-0.83		-68.1	-82.9	-53.4
		5	42.0	82.1	0.74		60.8	46.0	75.5
			42.0	82.1	-0.94		-77.2	-92.0	-62.4
Parapet A<=10 sf	Front (A)	4	45.0	83.1	0.90	0	74.8	74.8	74.8
	Back (A)	2	42.0	82.1	-1.80		-147.8	-147.8	-147.8
	Front (B)	4	45.0	83.1	-0.99		-82.3	-82.3	-82.3
	Back (B)		45.0	83.1	0.90		74.8	74.8	74.8
	Front (A)	5	45.0	83.1			74.8	74.8	74.8
	Back (A)	3	42.0	82.1	-1.80		-147.8	-147.8	-147.8
	Front (B)	5	45.0	83.1	-1.26		-104.7	-104.7	-104.7
	Back (B)		45.0	83.1	0.90		74.8	74.8	74.8
Parapet A<=20 sf	Front (A)	4	45.0	83.1	0.85	0	70.6	70.6	70.6
	Back (A)	2	42.0	82.1	-1.59		-130.5	-130.5	-130.5
	Front (B)	4	45.0	83.1	-0.94		-78.1	-78.1	-78.1
	Back (B)		45.0	83.1	0.85		70.6	70.6	70.6
	Front (A)	5	45.0	83.1			70.6	70.6	70.6
	Back (A)	3	42.0	82.1	-1.59		-130.5	-130.5	-130.5
	Front (B)	5	45.0	83.1	-1.16		-96.4	-96.4	-96.4
	Back (B)		45.0	83.1	0.85		70.6	70.6	70.6
Parapet A<=30 sf	Front (A)	4	45.0	83.1	0.82	0	68.1	68.1	68.1
	Back (A)	2	42.0	82.1	-1.47		-120.7	-120.7	-120.7
	Front (B)	4	45.0	83.1	-0.91		-75.6	-75.6	-75.6

HOTEL EVA

October 8, 2014

ASCE7-10

Components and Cladding Output

Component Description	Surface	Zone	z(ft)	q(psf)	GCp	GCpi	ExtPres(psf)	Net w/ +GCpi (psf)	Net w/ -GCpi (psf)
Parapet A<=30 sf	Back (B)	4	45.0	83.1	0.82	0	68.1	68.1	68.1
	Front (A)	5	45.0	83.1			68.1	68.1	68.1
	Back (A)	3	42.0	82.1	-1.47		-120.7	-120.7	-120.7
	Front (B)	5	45.0	83.1	-1.11		-92.2	-92.2	-92.2
	Back (B)		45.0	83.1	0.82		68.1	68.1	68.1

ASD WIND LOAD PRESSURES FOR ROOF					
ZONE	AREA				
	<19 sf	20 sf to 49 sf	50 sf to 79 sf	80 sf to 100 sf	Roofing
1	-58.1	-56.6	-54.7	-53.7	-49.3
2	-97.6	-87.2	-73.4	-66.5	-88.7
3	-97.6	-87.2	-73.4	-66.5	-88.7

ASD WIND LOAD PRESSURES FOR WALLS				
AREA	ZONE 4		ZONE 5	
	(+)	(-)	(+)	(-)
Window	53.2	-57.7	53.2	-70.9
Door	50.8	-55.2	50.8	-66.0
0 sf to 19 sf	53.2	-57.7	53.2	-70.9
20 sf to 29 sf	50.8	-55.2	50.8	-66.0
30 sf to 49 sf	49.3	-53.7	49.3	-63.5
50 sf to 99 sf	47.8	-52.2	47.8	-60.1
100 sf to 199 sf	45.3	-49.7	45.3	-55.2

*ASD wind pressure values for roof and walls are based on WLS4 wind calculations

*Per ASCE 7-10, ASD wind pressure = 0.6 x (WLS4 wind pressure)

UNITED Engineering, Inc.

JOB# _____ SHEET# _____

PROJECT NAME: HOTEL EVA

SUBJECT: a distance

CALCULATED BY: AM DATE: Oct-14

CHECKED BY: _____ DATE: _____

Subject: a, Distance for wall at zone 5
Enclosed
Building Category: II
Exposure: D
Wind Speed: 175 mph

Parapet:		1.5 FT	
L	=	140.00 FT	
W	=	35.00 FT	
H	=	40.00 FT	MEAN ROOF HEIGHT
a	=	3.50 FT	(0.1*MIN.(L,W)) GOVERN
a	=	16.00 FT	(0.4*H)
a	=	1.40 FT	(0.04*MIN.(L,W))
a	=	3.00 FT	

CHOOSE a=3'-6"

UNITED Engineering, Inc.
12595 SW 137 Ave, Suite 112
Miami, FL 33186
o. 786.347.5250
e. info@unitedeng.pro
w. www.unitedeng.pro

Computed By: AM **Date:** 10/14
Checked By: _ **Date:** _
Project: EVA Hotel
Subject: A/C Reactions

RTU-1 Support Reactions

**Per ASCE 7-10 Ch. 29*

$kz := 1.23$ $V := 175 \cdot mph$

$kzt := 1.0$

$kd := 0.85$

$qz := \frac{0.00256psf}{mph^2} \cdot kz \cdot kzt \cdot kd \cdot V^2 = 82 \cdot psf$

Mechanical Unit Dimensions:

$H := 35 \cdot in$

$W := 44 \cdot in$

$L := 82 \cdot in$

$A1 := H \cdot W = 10.694 \cdot ft^2$ (short face)

$A2 := H \cdot L = 19.931\ ft^2$ (long face)

Lateral Force

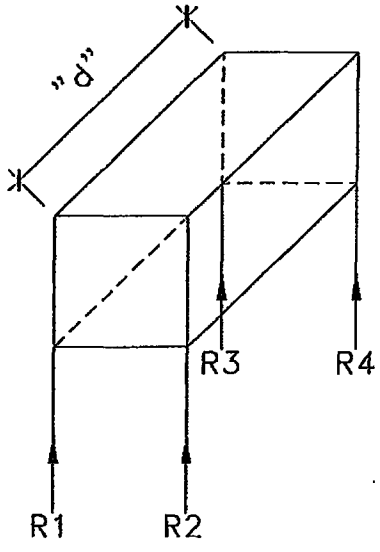
$Fh1 := qz \cdot 3.1 \cdot A1 = 2717.4\ lbf$ (short face)

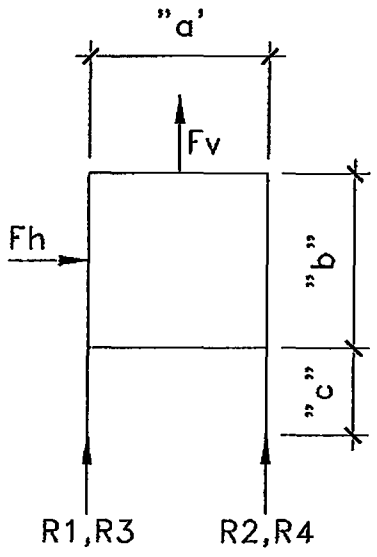
$Fh2 := qz \cdot 3.1 \cdot A2 = 5064.3\ lbf$ (long face)

Uplift Force

$Ar := W \cdot L = 25.056\ ft^2$

$Fv := qz \cdot 1.5 \cdot Ar = 3080.6\ lbf$





Wind Direction: Perp. to Long Face

Wind load: $Fh := 5064.3 \cdot lbf$ $Fv = 3080.6\,lbf$

Dead load: $R1m := 240 \cdot lbf$ $R2m := 240 \cdot lbf$ $R3m := 240 \cdot lbf$ $R4m := 240 \cdot lbf$

Dimensions: $a := W = 3.667\,ft$ $b := H = 2.917\,ft$ $c := 1 \cdot ft$ $d := L = 6.833\,ft$

0.9DL + 1.0W

WIND (+)

$$R1 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 0.9R1m = -2251.8\,lbf$$

$$R2 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 0.9R2m = 1143.5\,lbf$$

$$R3 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 0.9R3m = -2251.8\,lbf$$

$$R4 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 0.9R4m = 1143.5\,lbf$$

WIND (-)

$$R1 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 0.9R1m = 1143.5\,lbf$$

$$R2 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 0.9R2m = -2251.8\,lbf$$

$$R3 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 0.9R3m = 1143.5\,lbf$$

$$R4 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 0.9R4m = -2251.8\,lbf$$

1.2DL + 1.0W

WIND (+)

$$R1 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 1.2 \cdot R1m = -2179.8\,lbf$$

$$R2 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 1.2 \cdot R2m = 1215.5\,lbf$$

$$R3 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 1.2 \cdot R3m = -2179.8\,lbf$$

$$R4 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 1.2 \cdot R4m = 1215.5\,lbf$$

WIND (-)

$$R1 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 1.2 \cdot R1m = 1215.5\,lbf$$

$$R2 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 1.2 \cdot R2m = -2179.8\,lbf$$

$$R3 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 1.2 \cdot R3m = 1215.5\,lbf$$

$$R4 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 1.2 \cdot R4m = -2179.8\,lbf$$

DL + 0.6W

WIND (+)

$$R1 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] \cdot 0.6 + R1m = -1240.7\,lbf$$

$$R2 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] 0.6 + R2m = 796.5\,lbf$$

$$R3 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] 0.6 + R3m = -1240.7\,lbf$$

$$R4 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] 0.6 + R4m = 796.5\,lbf$$

WIND (-)

$$R1 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] \cdot 0.6 + R1m = 796.5\,lbf$$

$$R2 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] 0.6 + R2m = -1240.7\,lbf$$

$$R3 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] 0.6 + R3m = 796.5\,lbf$$

$$R4 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] 0.6 + R4m = -1240.7\,lbf$$

0.6DL + 0.6W

WIND (+)

$$R1 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4} \right] \quad 0.6 + 0.6 \cdot R1m = -1336.7\,lbf$$

$$R2 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4} \right] \quad 0.6 + 0.6 \cdot R2m = 700.5\,lbf$$

$$R3 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4} \right] \quad 0.6 + 0.6 \cdot R3m = -1336.7\,lbf$$

$$R4 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4} \right] \quad 0.6 + 0.6 \cdot R4m = 700.5\,lbf$$

WIND (-)

$$R1 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4} \right] \quad 0.6 + 0.6 \cdot R1m = 700.5\,lbf$$

$$R2 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4} \right] \quad 0.6 + 0.6 \cdot R2m = -1336.7\,lbf$$

$$R3 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4} \right] \quad 0.6 + 0.6 \cdot R3m = 700.5\,lbf$$

$$R4 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4} \right] \quad 0.6 + 0.6 \cdot R4m = -1336.7\,lbf$$

UNITED
Engineering, Inc.

12595 SW 137 Ave, Suite 112
Miami, FL 33186
o. 786.347.5250
e. info@unitedeng.pro
w. www.unitedeng.pro

Computed By: AM **Date:** 10/14
Checked By: _ **Date:** _
Project: EVA Hotel
Subject: A/C Reactions

CU-1 Support Reactions

**Per ASCE 7-10 Ch. 29*

$kz := 1.23$ $V := 175 \cdot mph$

$kzt := 1.0$

$kd := 0.85$

$$qz := \frac{0.00256 psf}{mph^2} \cdot kz \cdot kzt \cdot kd \cdot V^2 = 82 \cdot psf$$

Mechanical Unit Dimensions:

$H := 32.3 \cdot in$

$W := 25.75 \cdot in$

$L := 25.75 \cdot in$

$A1 := H \cdot W = 5.776 \cdot ft^2$ (short face)

$A2 := H \cdot L = 5.776\, ft^2$ (long face)

Lateral Force

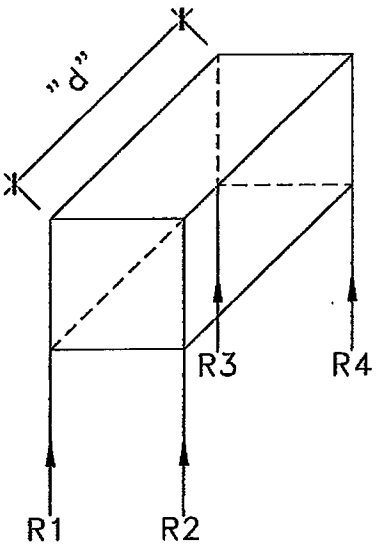
$Fh1 := qz \cdot 3.1 \cdot A1 = 1467.6\, lbf$ (short face)

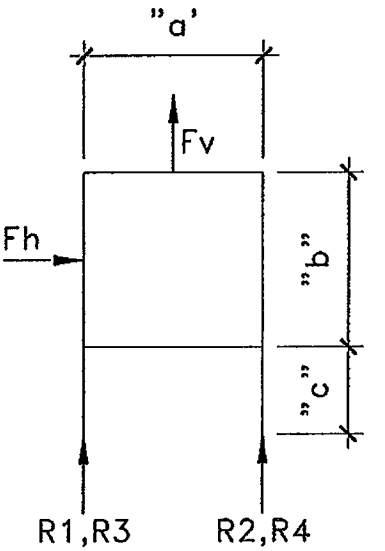
$Fh2 := qz \cdot 3.1 \cdot A2 = 1467.6\, lbf$ (long face)

Uplift Force

$Ar := W \cdot L = 4.605\, ft^2$

$Fv := qz \cdot 1.5 \cdot Ar = 566.1\, lbf$





Wind Direction: Perp. to Long Face

Wind load: $Fh := 1467 \cdot lbf$ $Fv = 566.1\,lbf$

Dead load: $R1m := 39.3 \cdot lbf$ $R2m := 39.3 \cdot lbf$ $R3m := 39.3 \cdot lbf$ $R4m := 39.3 \cdot lbf$

Dimensions: $a := W = 2.146\,ft$ $b := H = 2.692\,ft$ $c := 1.5 \cdot ft$ $d := L = 2.146\,ft$

0.9DL + 1.0W

WIND (+)

$$R1 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 0.9R1m = -1078.9\,lbf$$

$$R2 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 0.9R2m = 866.6\,lbf$$

$$R3 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 0.9R3m = -1078.9\,lbf$$

$$R4 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 0.9R4m = 866.6\,lbf$$

WIND (-)

$$R1 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 0.9R1m = 866.6\,lbf$$

$$R2 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 0.9R2m = -1078.9\,lbf$$

$$R3 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 0.9R3m = 866.6\,lbf$$

$$R4 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 0.9R4m = -1078.9\,lbf$$

1.2DL + 1.0W

WIND (+)

$$R1 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 1.2 \cdot R1m = -1067.2\,lbf$$

$$R2 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 1.2 \cdot R2m = 878.4\,lbf$$

$$R3 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 1.2 \cdot R3m = -1067.2\,lbf$$

$$R4 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 1.2 \cdot R4m = 878.4\,lbf$$

WIND (-)

$$R1 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 1.2 \cdot R1m = 878.4\,lbf$$

$$R2 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 1.2 \cdot R2m = -1067.2\,lbf$$

$$R3 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 1.2 \cdot R3m = 878.4\,lbf$$

$$R4 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 1.2 \cdot R4m = -1067.2\,lbf$$

DL + 0.6W

WIND (+)

$$R1 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] \cdot 0.6 + R1m = -629.3\,lbf$$

$$R2 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] 0.6 + R2m = 538\,lbf$$

$$R3 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] 0.6 + R3m = -629.3\,lbf$$

$$R4 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] 0.6 + R4m = 538\,lbf$$

WIND (-)

$$R1 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] \cdot 0.6 + R1m = 538\,lbf$$

$$R2 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] 0.6 + R2m = -629.3\,lbf$$

$$R3 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] 0.6 + R3m = 538\,lbf$$

$$R4 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] 0.6 + R4m = -629.3\,lbf$$

0.6DL + 0.6W

WIND (+)

$$R1 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4} \right] \quad 0.6 + 0.6 \cdot R1m = -645\ lbf$$

$$R2 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4} \right] \quad 0.6 + 0.6 \cdot R2m = 522.3\ lbf$$

$$R3 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4} \right] \quad 0.6 + 0.6 \cdot R3m = -645\ lbf$$

$$R4 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4} \right] \quad 0.6 + 0.6 \cdot R4m = 522.3\ lbf$$

WIND (-)

$$R1 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4} \right] \quad 0.6 + 0.6 \cdot R1m = 522.3\ lbf$$

$$R2 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4} \right] \quad 0.6 + 0.6 \cdot R2m = -645\ lbf$$

$$R3 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4} \right] \quad 0.6 + 0.6 \cdot R3m = 522.3\ lbf$$

$$R4 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4} \right] \quad 0.6 + 0.6 \cdot R4m = -645\ lbf$$

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Engineering, Inc.

12595 SW 137 Ave, Suite 112
Miami, FL 33186
o. 786.347.5250
e. info@unitedeng.pro
w. www.unitedeng.pro

Computed By: AM **Date:** 10/14
Checked By: _ **Date:** _
Project: EVA Hotel
Subject: A/C Reactions

KEF-1 Support Reactions

**Per ASCE 7-10 Ch. 29*

$kz := 1.23$ $V := 175 \cdot mph$

$kzt := 1.0$

$kd := 0.85$

$$qz := \frac{0.00256psf}{mph^2} \cdot kz \cdot kzt \cdot kd \cdot V^2 = 82 \cdot psf$$

Mechanical Unit Dimensions:

$H := 26.5 \cdot in$

$W := 19.3 \cdot in$

$L := 29.5 \cdot in$

$A1 := H \cdot W = 3.552 \cdot ft^2$ (short face)

$A2 := H \cdot L = 5.429\,ft^2$ (long face)

Lateral Force

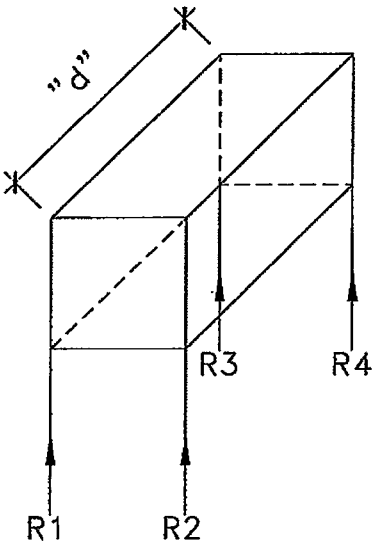
$Fh1 := qz \cdot 3.1 \cdot A1 = 902.5\,lbf$ (short face)

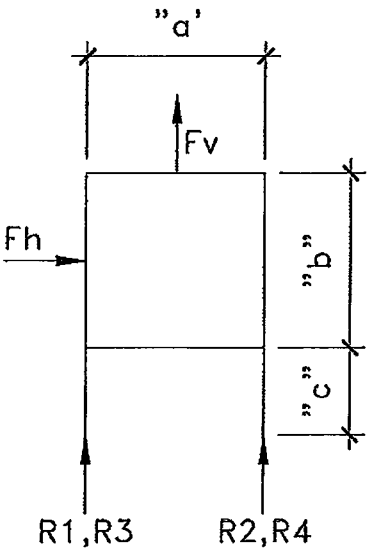
$Fh2 := qz \cdot 3.1 \cdot A2 = 1379.5\,lbf$ (long face)

Uplift Force

$Ar := W \cdot L = 3.954\,ft^2$

$Fv := qz \cdot 1.5 \cdot Ar = 486.1\,lbf$





Wind Direction: Perp. to Long Face

Wind load: $Fh := 1380 \cdot lbf$ $Fv = 486.1\ lbf$

Dead load: $R1m := 45.3 \cdot lbf$ $R2m := 45.3 \cdot lbf$ $R3m := 45.3 \cdot lbf$ $R4m := 45.3 \cdot lbf$

Dimensions: $a := W = 1.608\ ft$ $b := H = 2.208\ ft$ $c := 2 \cdot ft$ $d := L = 2.458\ ft$

0.9DL + 1.0W

WIND (+)

$$R1 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 0.9R1m = -1412.5\ lbf$$

$$R2 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 0.9R2m = 1251\ lbf$$

$$R3 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 0.9R3m = -1412.5\ lbf$$

$$R4 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 0.9R4m = 1251\ lbf$$

WIND (-)

$$R1 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 0.9R1m = 1251\ lbf$$

$$R2 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 0.9R2m = -1412.5\ lbf$$

$$R3 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 0.9R3m = 1251\ lbf$$

$$R4 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 0.9R4m = -1412.5\ lbf$$

1.2DL + 1.0W

WIND (+)

$$R1 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 1.2 \cdot R1m = -1398.9\,lbf$$

$$R2 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 1.2 \cdot R2m = 1264.6\,lbf$$

$$R3 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 1.2 \cdot R3m = -1398.9\,lbf$$

$$R4 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 1.2 \cdot R4m = 1264.6\,lbf$$

WIND (-)

$$R1 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 1.2 \cdot R1m = 1264.6\,lbf$$

$$R2 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 1.2 \cdot R2m = -1398.9\,lbf$$

$$R3 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 1.2 \cdot R3m = 1264.6\,lbf$$

$$R4 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a}\right] - \frac{Fv}{4} + 1.2 \cdot R4m = -1398.9\,lbf$$

DL + 0.6W

WIND (+)

$$R1 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] \cdot 0.6 + R1m = -826.7\,lbf$$

$$R2 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] 0.6 + R2m = 771.4\,lbf$$

$$R3 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] 0.6 + R3m = -826.7\,lbf$$

$$R4 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] 0.6 + R4m = 771.4\,lbf$$

WIND (-)

$$R1 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] \cdot 0.6 + R1m = 771.4\,lbf$$

$$R2 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] 0.6 + R2m = -826.7\,lbf$$

$$R3 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] 0.6 + R3m = 771.4\,lbf$$

$$R4 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] 0.6 + R4m = -826.7\,lbf$$

0.6DL + 0.6W

WIND (+)

$$R1 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] 0.6 + 0.6 \cdot R1m = -844.8\,lbf$$

$$R2 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] 0.6 + 0.6 \cdot R2m = 753.3\,lbf$$

$$R3 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] 0.6 + 0.6 \cdot R3m = -844.8\,lbf$$

$$R4 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] 0.6 + 0.6 \cdot R4m = 753.3\,lbf$$

WIND (-)

$$R1 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] 0.6 + 0.6 \cdot R1m = 753.3\,lbf$$

$$R2 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] 0.6 + 0.6 \cdot R2m = -844.8\,lbf$$

$$R3 := \left[Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] 0.6 + 0.6 \cdot R3m = 753.3\,lbf$$

$$R4 := \left[-Fh \cdot \frac{\left(c + \frac{b}{2}\right)}{2a} - \frac{Fv}{4}\right] 0.6 + 0.6 \cdot R4m = -844.8\,lbf$$

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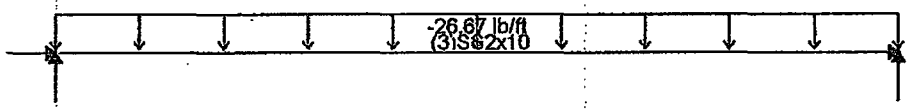
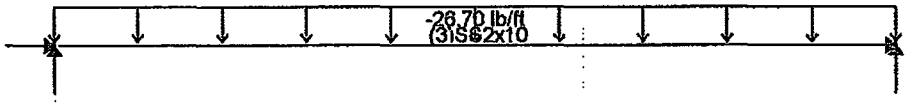
PROJECT No. _____ SHEET No. ____ OF ____
PROJECT NAME HOTEL EVA
CALCULATED BY AM DRAWN BY _____
SCALE _____ DATE 6/14

= RTU1 Loading

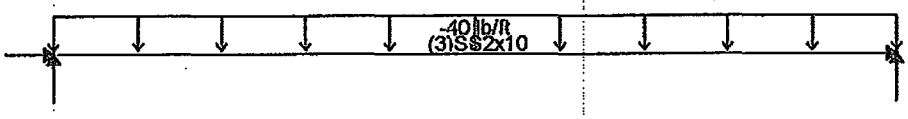
= SDL = 20 psf	(16"/12"/1)	=	26.7 plf
= L = 30 psf	(16"/12"/1)	=	40 plf
= Wind ZONE 1 (A = 50 ft²)			
= W = -91.1 psf	(16/12)	=	-121 plf
= RTU SW (Refer to MATHCAD)			
= RTU W (Refer to MATHCAD)			

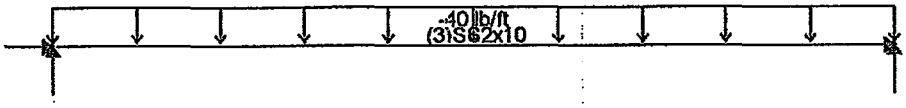
RTU-1
UNITED ENGINEERING, INC., amorfin
Oct 08, 2014; 09:55 PM
Load Case: SDL
IES VisualAnalysis 11.00.0009



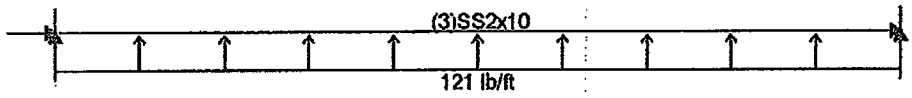


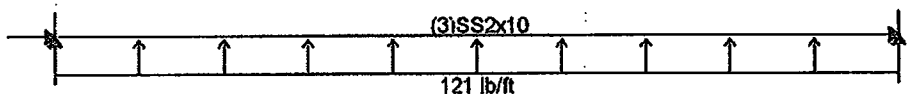
RTU-1
UNITED ENGINEERING, INC., amorfin
Oct 08, 2014; 09:59 PM
Load Case: L
IES VisualAnalysis 11.00.0009



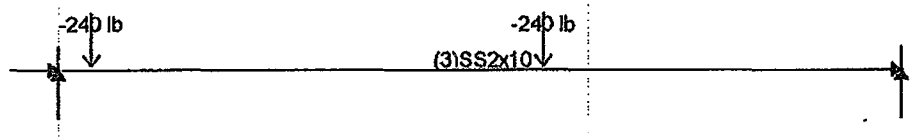


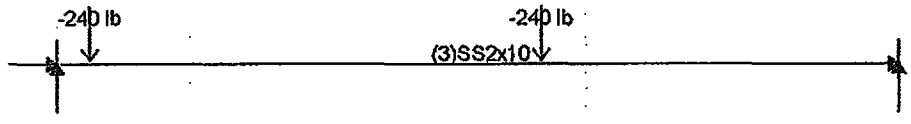
RTU-1
UNITED ENGINEERING, INC., amorfin
Oct 08, 2014; 09:59 PM
Load Case: W+Y
IES VisualAnalysis 11.00.0009



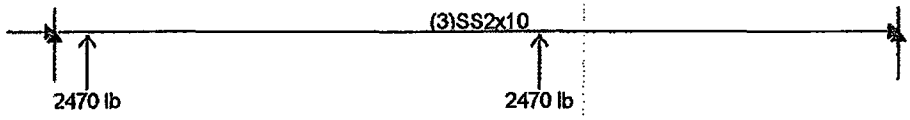


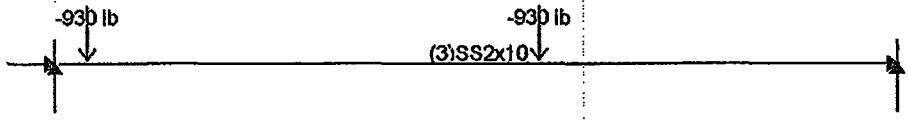
RTU-1
UNITED ENGINEERING, INC., amorfin
Oct 08, 2014; 10:00 PM
Load Case: RTU SW
IES VisualAnalysis 11.00.0009



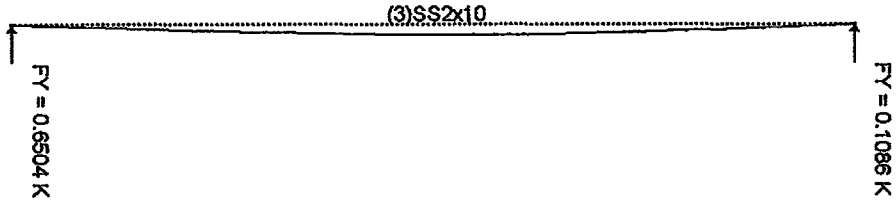


RTU-1
UNITED ENGINEERING, INC., amorfin
Oct 08, 2014; 10:01 PM
Load Case: RTU W+Y
IES VisualAnalysis 11.00.0009





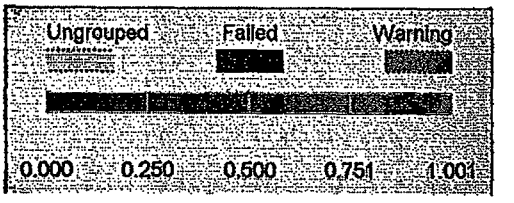
RTU-1
UNITED ENGINEERING, INC., amorfin
Oct 08, 2014; 10:01 PM
Result Case: .6D+.6W »+Y
IES VisualAnalysis 11.00.0009



RTU-1
UNITED ENGINEERING, INC., amorfin
Oct 08, 2014; 10:02 PM
Design View, Unity Checks
IES VisualAnalysis 11.00.0009

Wood_Beam X_G01 0.74
(3)SS2x10

Wood_Beam X_G01 0.50
(3)SS2x10



Project: RTU-1

amorfin , UNITED ENGINEERING, INC. October 08, 2014
P:\0-Hotel Eva\3-Calcs\IES\

Design Group Results

Design Group: Wood_Beam X_G01 per NDS 2012 ASD

Designed As: (3)SS2x10, Material: \NDS Lumber (Visual)\No.2\Southern Pine (10" deep)
Members Included (2): BmX001, BmX001-c2

Strong Deflection Check

Member Name	Result Case	Offset ft	Demand dy in	Capacity dy in	Code Ref.	Unity Check	Details
BmX001	0.75(D+L+W) »+Y	6.502	0.374	0.850	IBC 1604.3.1	0.44 OK	
BmX001-c2	.42Wind »+Y	6.375	0.073	0.425	IBC 1604.3.1	0.17 OK	

Strong Flexure Check

Member Name	Result Case	Offset ft	Demand fbz Ksi	Capacity Fbz Ksi	Code Ref.	Unity Check	Details
BmX001	.6D+.6W »+Y	7.331	-1.021	1.380	3.3-1	0.74 OK	CF = 1.100 , CL = 0.980 , Mz = -5.458 K-ft, Lb = 12.750 ft, CD = 1.600
BmX001-c2	D+L	7.331	0.434	0.870	3.3-1	0.50 OK	CF = 1.100 , CL = 0.989 , Mz = 2.322 K-ft, Lb = 12.750 ft, CD = 1.000

Strong Shear Check

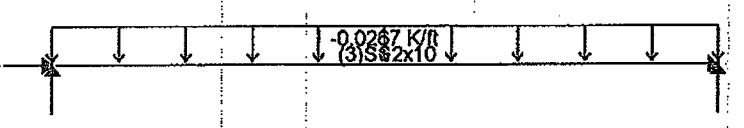
Member Name	Result Case	Offset ft	Demand fvz Ksi	Capacity Fvz Ksi	Code Ref.	Unity Check	Details
BmX001	.6D+.6W »+Y	0.000	-0.078	0.280	3.4-2	0.28 OK	V = -2.177 K, CD = 1.600
BmX001-c2	D+L	0.000	0.030	0.175	3.4-2	0.17 OK	V = 0.822 K, CD = 1.000

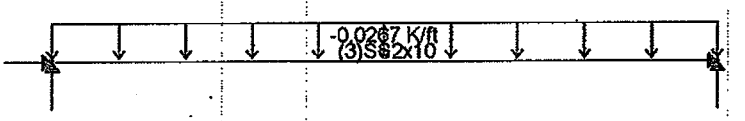
UNITED Engineering, Inc.

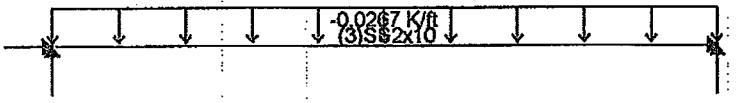
PROJECT No. _____ SHEET No. ____ OF ____
PROJECT NAME HOTEL EVA
CALCULATED BY AM DRAWN BY _____
SCALE _____ DATE 10/14

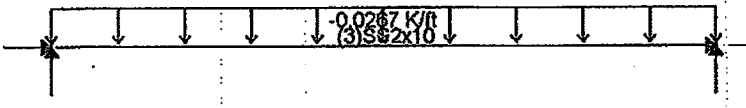
= CU-1 Loading			
= SDL = 20 psf	(16"/12"/1)	=	26.7 plf
= L = 30 psf	(16"/12"/1)	=	40 plf
= Wind ZONE 1 (CA = 80 ft²)			
= W = -89.5 psf	(16/12)	=	-119 plf
= Wind Zone 2 (CA = 60 ft²)			
= W = -110.8 psf	(16/12)	=	-147.8 plf
= CU-SW (Refer to MATHCAD)			
= CU W (Refer to MATHCAD)			

CU-1
UNITED ENGINEERING, INC., amorfin
Oct 09, 2014; 12:11 PM
Load Case: SDL
IES VisualAnalysis 11.00.0009

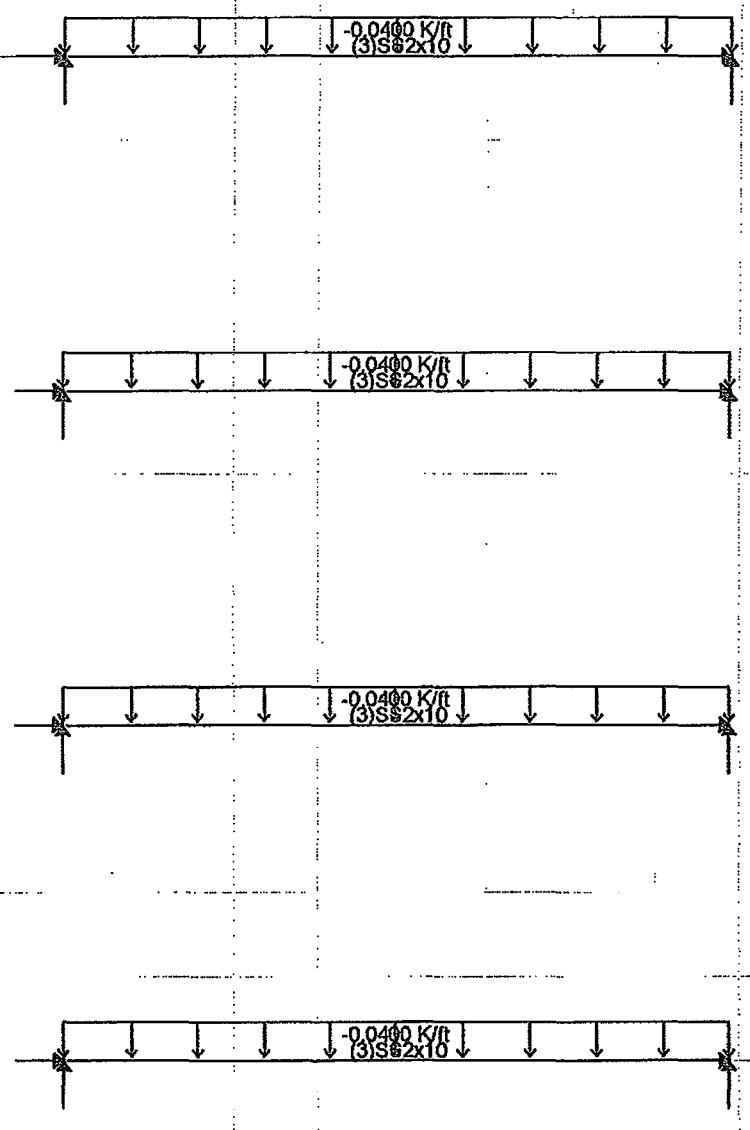




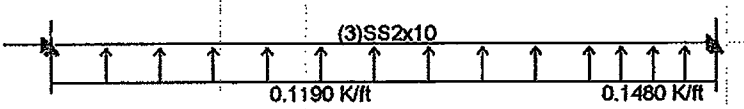


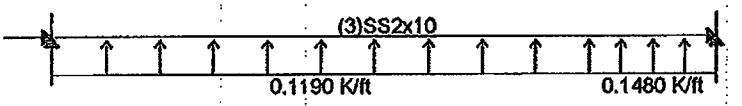


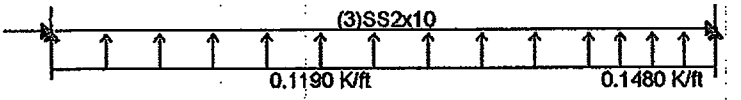
CU-1
UNITED ENGINEERING, INC., amorfin
Oct 09, 2014; 12:11 PM
Load Case: L
IES VisualAnalysis 11.00.0009

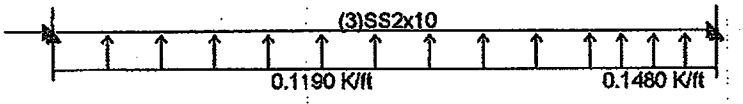


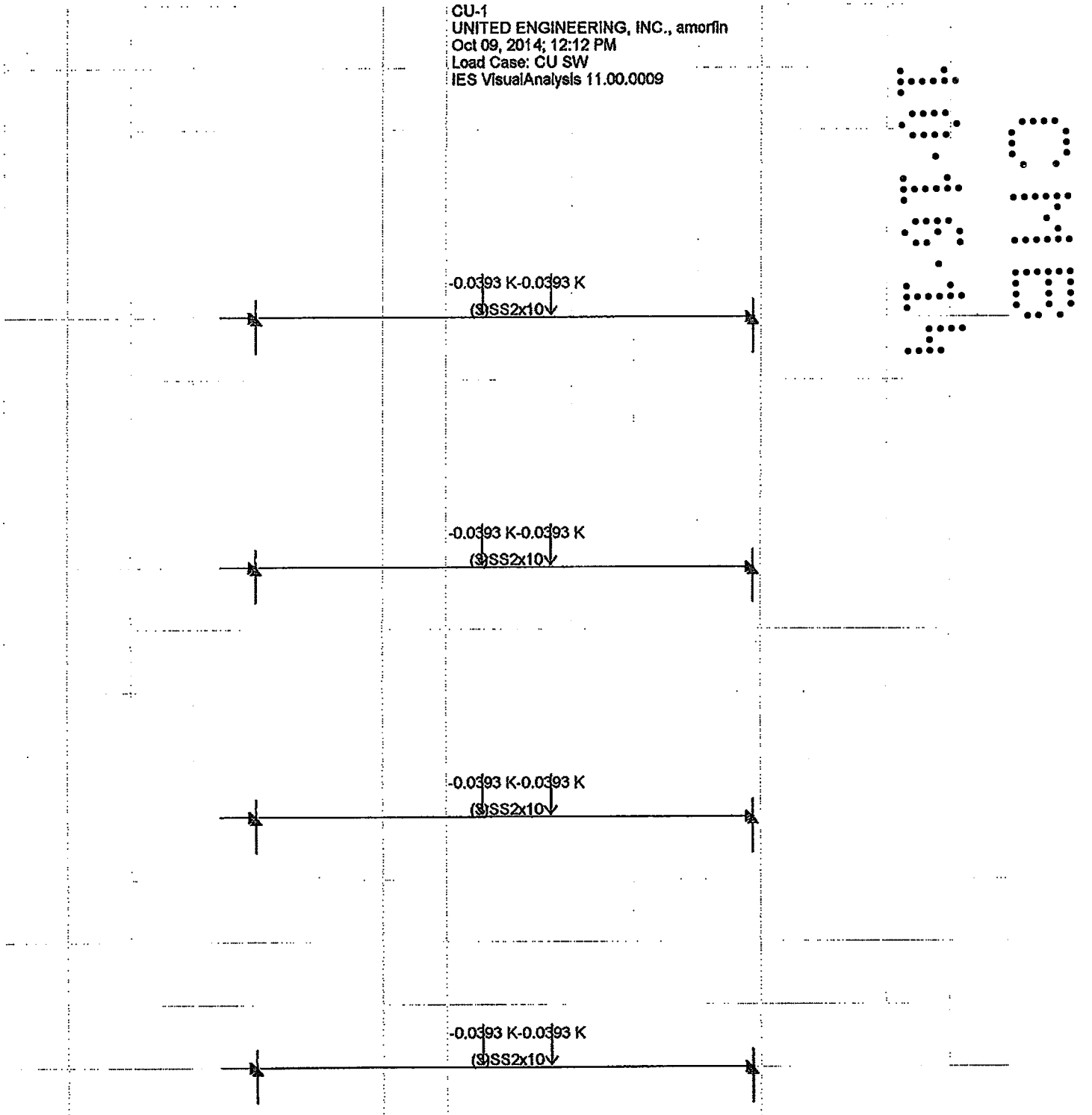
CU-1
UNITED ENGINEERING, INC., amorfin
Oct 09, 2014; 12:12 PM
Load Case: W+Y
IES VisualAnalysis 11.00.0009

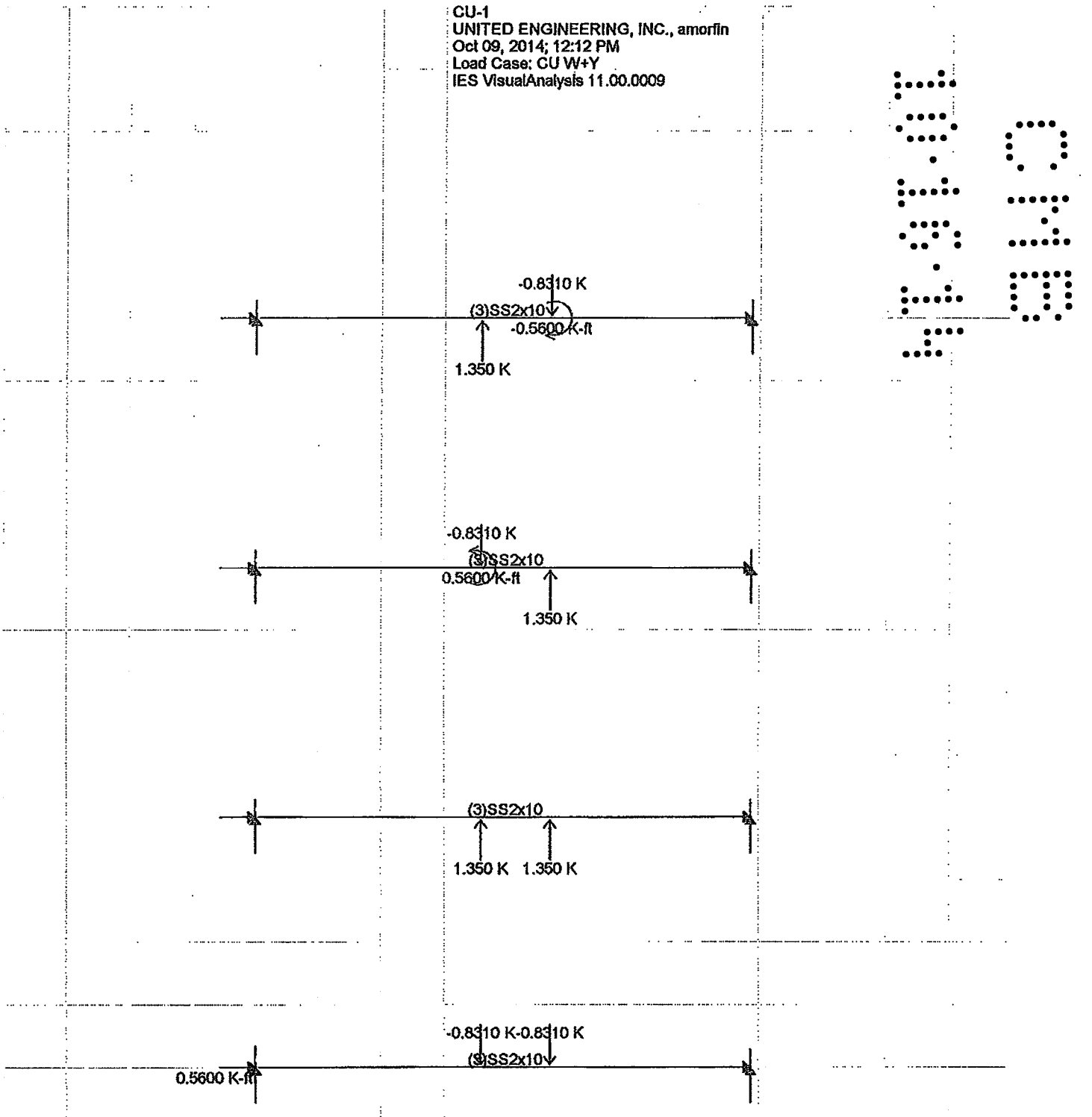




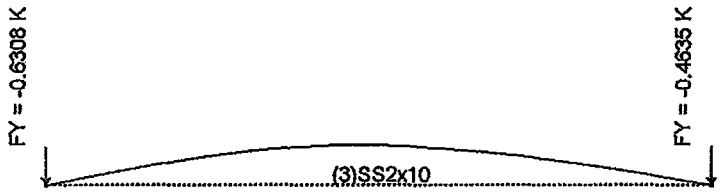


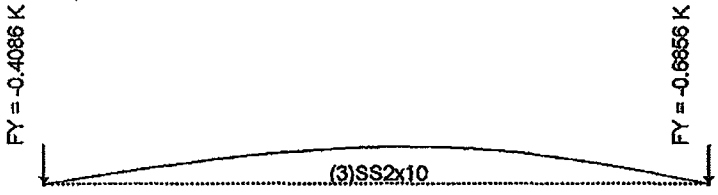


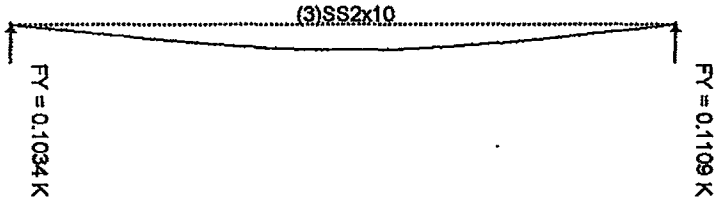

CU-1
UNITED ENGINEERING, INC., amorfin
Oct 09, 2014; 12:12 PM
Load Case: CU SW
IES VisualAnalysis 11.00.0009
-0.0393 K-0.0393 K
(S)SS2x10
-0.0393 K-0.0393 K
(S)SS2x10
-0.0393 K-0.0393 K
(S)SS2x10
-0.0393 K-0.0393 K
(S)SS2x10


CU-1
UNITED ENGINEERING, INC., amorfin
Oct 09, 2014; 12:12 PM
Load Case: CU W+Y
IES VisualAnalysis 11.00.0009
-0.8310 K
(3)SS2x10
-0.5600 K-ft
1.350 K
-0.8310 K
(3)SS2x10
0.5600 K-ft
1.350 K
(3)SS2x10
1.350 K
1.350 K
-0.8310 K-0.8310 K
(3)SS2x10
0.5600 K-ft

CU-1
UNITED ENGINEERING, INC., amorfin
Oct 09, 2014; 12:12 PM
Result Case: .6D+.6W »+Y
IES VisualAnalysis 11.00.0009







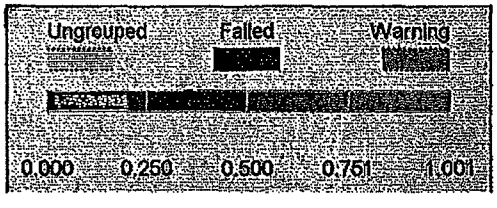
CU-1
UNITED ENGINEERING, INC., amorfin
Oct 09, 2014; 12:12 PM
Design View, Unity Checks
IES VisualAnalysis 11.00.0009

Wood_Beam X_G01 0.56
(3)SS2x10

Wood_Beam X_G01 0.56
(3)SS2x10

Wood_Beam X_G01 0.94
(3)SS2x10

Wood_Beam X_G01 0.56
(3)SS2x10



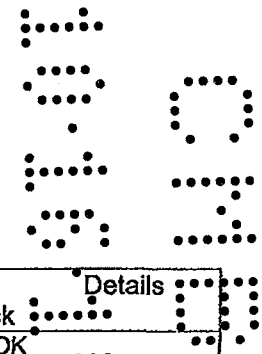
Project: CU-1

amorfin , UNITED ENGINEERING, INC. October 09, 2014
P:\0-Hotel Eva\3-Calcs\IES\

Design Group Results

Design Group: Wood_Beam X_G01 per NDS 2012 ASD

Designed As: (3)SS2x10, Material: \NDS Lumber (Visual)\No.2\Southern Pine (10" deep)
Members Included (4): BmX001, BmX001-c2, BmX001-c1, BmX001-c3



Strong Deflection Check

Member Name	Result Case	Offset ft	Demand dy in	Capacity dy in	Code Ref.	Unity Check	Details
BmX001	0.75(D+L+W) »+Y	7.954	0.758	1.050	IBC 1604.3.1	0.72 OK	
BmX001-c2	.42Wind »+Y	7.875	0.170	0.525	IBC 1604.3.1	0.32 OK	
BmX001-c1	.42Wind »+Y	7.875	0.170	0.525	IBC 1604.3.1	0.32 OK	
BmX001-c3	.42Wind »+Y	7.875	0.170	0.525	IBC 1604.3.1	0.32 OK	

Strong Flexure Check

Member Name	Result Case	Offset ft	Demand fbz Ksi	Capacity Fbz Ksi	Code Ref.	Unity Check	Details
BmX001	.6D+.6W »+Y	7.245	-1.295	1.372	3.3-1	0.94 OK	CF = 1.100 , CL = 0.974 , Mz = -6.925 K-ft, Lb = 15.750 ft, CD = 1.600
BmX001-c2	D+L	7.875	0.495	0.880	3.3-1	0.56 OK	CF = 1.100 , Mz = 2.645 K-ft, Lb = 0.000 ft, CD = 1.000
BmX001-c1	D+L	7.875	0.495	0.880	3.3-1	0.56 OK	CF = 1.100 , Mz = 2.645 K-ft, Lb = 0.000 ft, CD = 1.000
BmX001-c3	D+L	7.875	0.495	0.880	3.3-1	0.56 OK	CF = 1.100 , Mz = 2.645 K-ft, Lb = 0.000 ft, CD = 1.000

Strong Shear Check

Member Name	Result Case	Offset ft	Demand fvz Ksi	Capacity Fvz Ksi	Code Ref.	Unity Check	Details
BmX001	.6D+.6W »+Y	15.750	0.045	0.280	3.4-2	0.16 OK	V = 1.260 K, CD = 1.600
BmX001-c2	D+L	15.750	-0.023	0.175	3.4-2	0.13 OK	V = -0.645 K, CD = 1.000
BmX001-c1	D+L	15.750	-0.023	0.175	3.4-2	0.13 OK	V = -0.645 K, CD = 1.000
BmX001-c3	D+L	15.750	-0.023	0.175	3.4-2	0.13 OK	V = -0.645 K, CD = 1.000

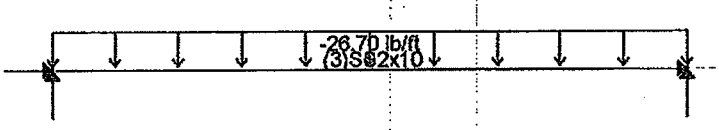
UNITED Engineering, Inc.

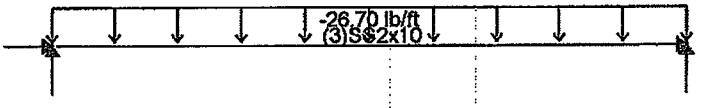
PROJECT No. _____ SHEET No. ____ OF ____
PROJECT NAME HOTEL EVA
CALCULATED BY AM DRAWN BY _____
SCALE _____ DATE 6/14

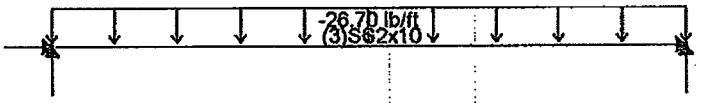
= REF1 Loading

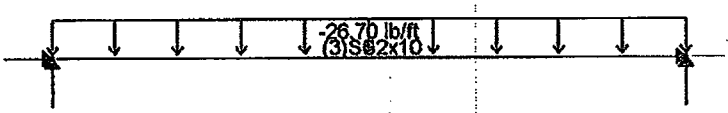
= SDL = 20 psf	(16"/12"/1)	=	26.7 plf
= L = 30 psf	(16"/12"/1)	=	40 plf
= Wind ZONE 1 (A = 80 ft²)			
= W = -89.5 psf	(16/12)	=	-119 plf
= Wind Zone 2 (A = 60 ft²)			
= W = -110.8 psf	(16/12)	=	-147.8 plf
= REF SW (Refer to MATHCAD)			
= REF W (Refer to MATHCAD)			

KEF-1
UNITED ENGINEERING, INC., amorfin
Oct 09, 2014; 12:57 AM
Load Case: SDL
IES VisualAnalysis 11.00.0009

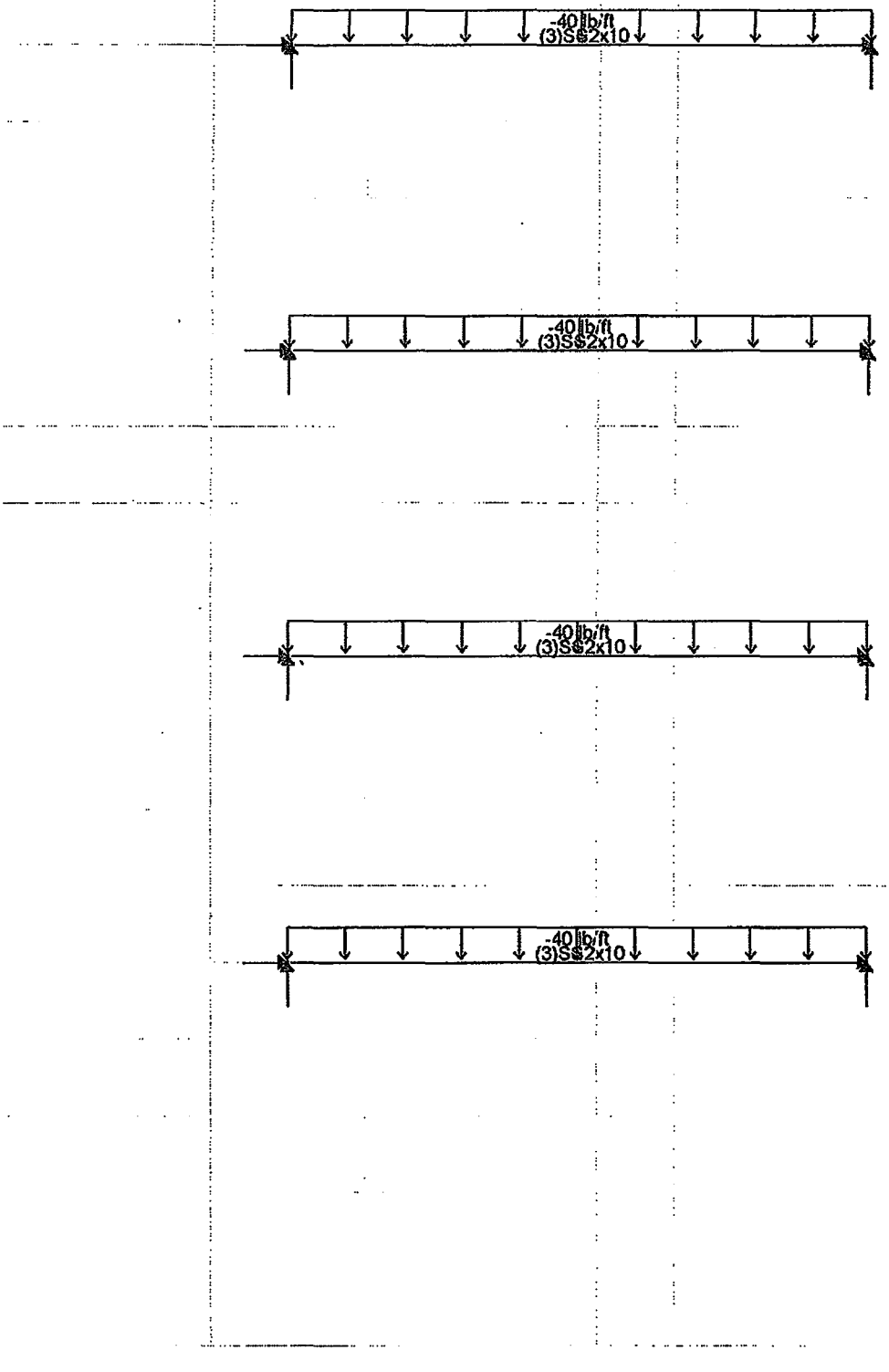




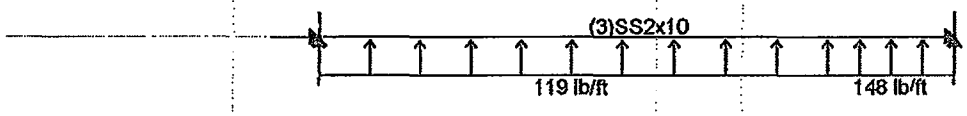


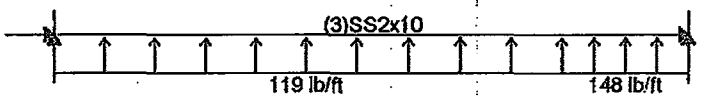


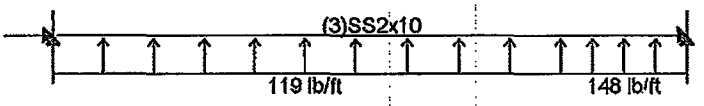
KEF-1
UNITED ENGINEERING, INC., amorfin
Oct 09, 2014; 12:57 AM
Load Case: L
IES VisualAnalysis 11.00.0009

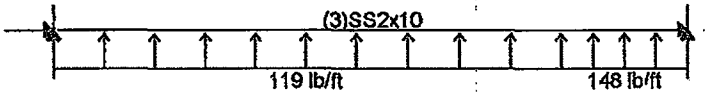


KEF-1
UNITED ENGINEERING, INC., amorfin
Oct 09, 2014; 12:57 AM
Load Case: W+Y
IES VisualAnalysis 11.00.0009

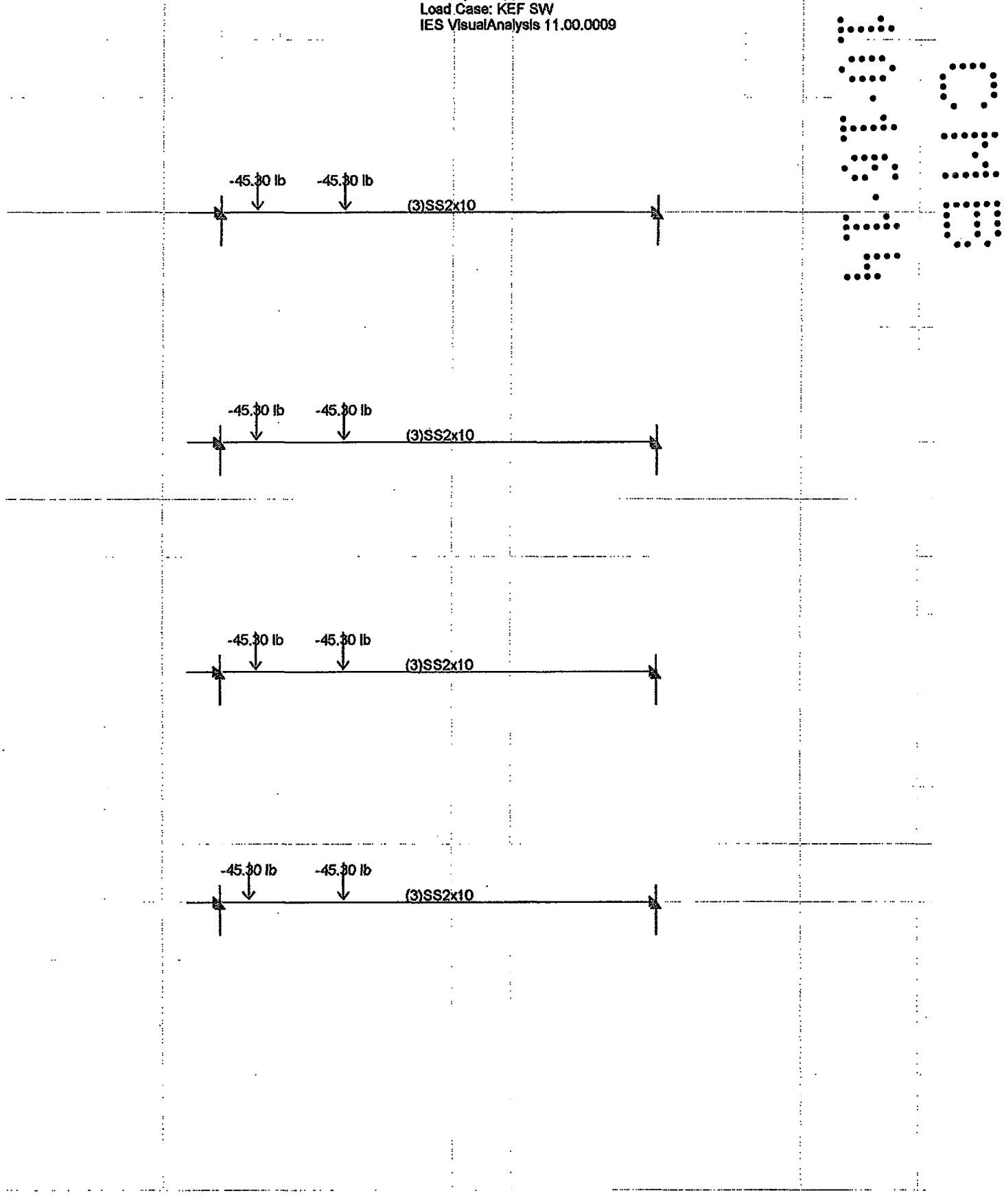




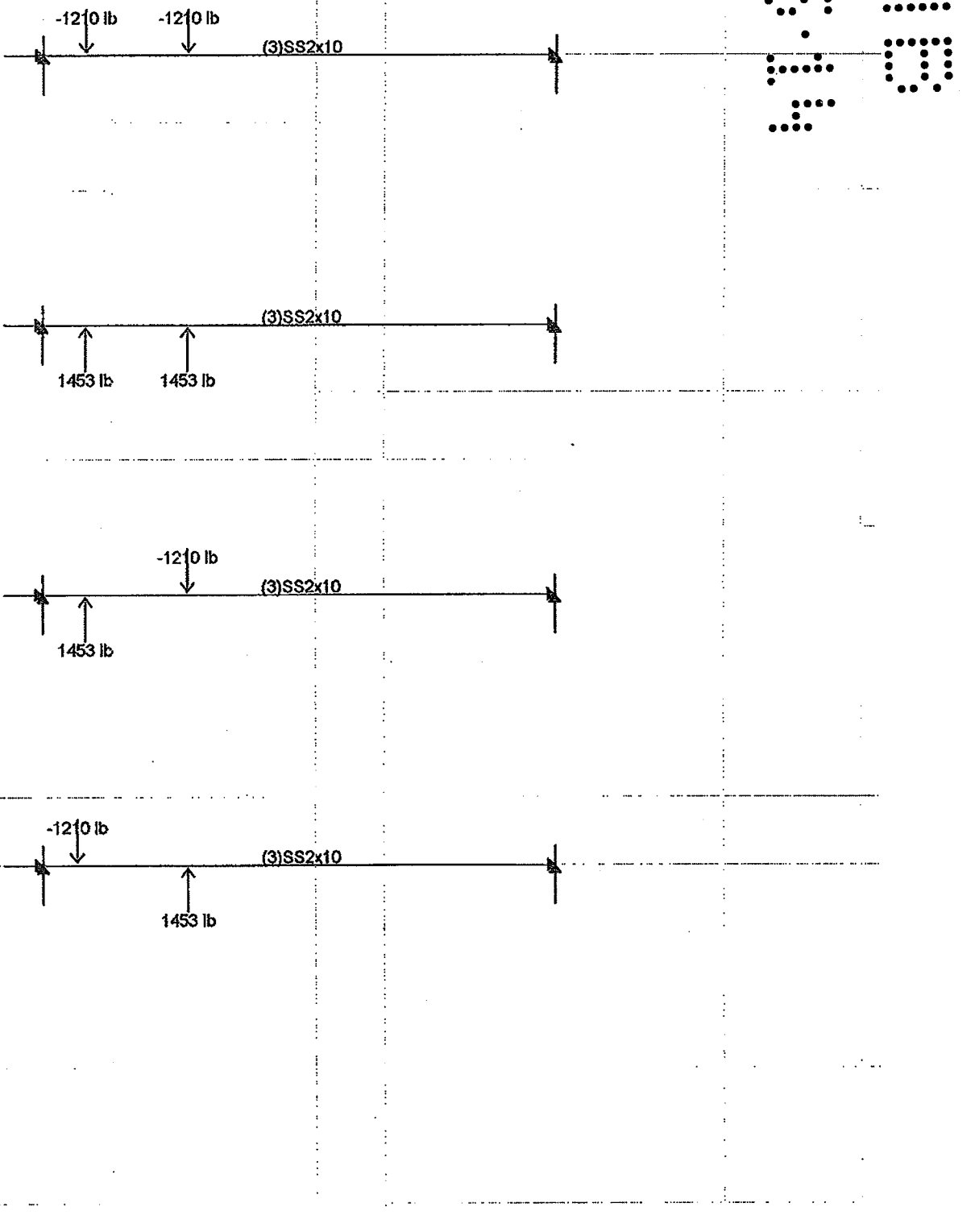




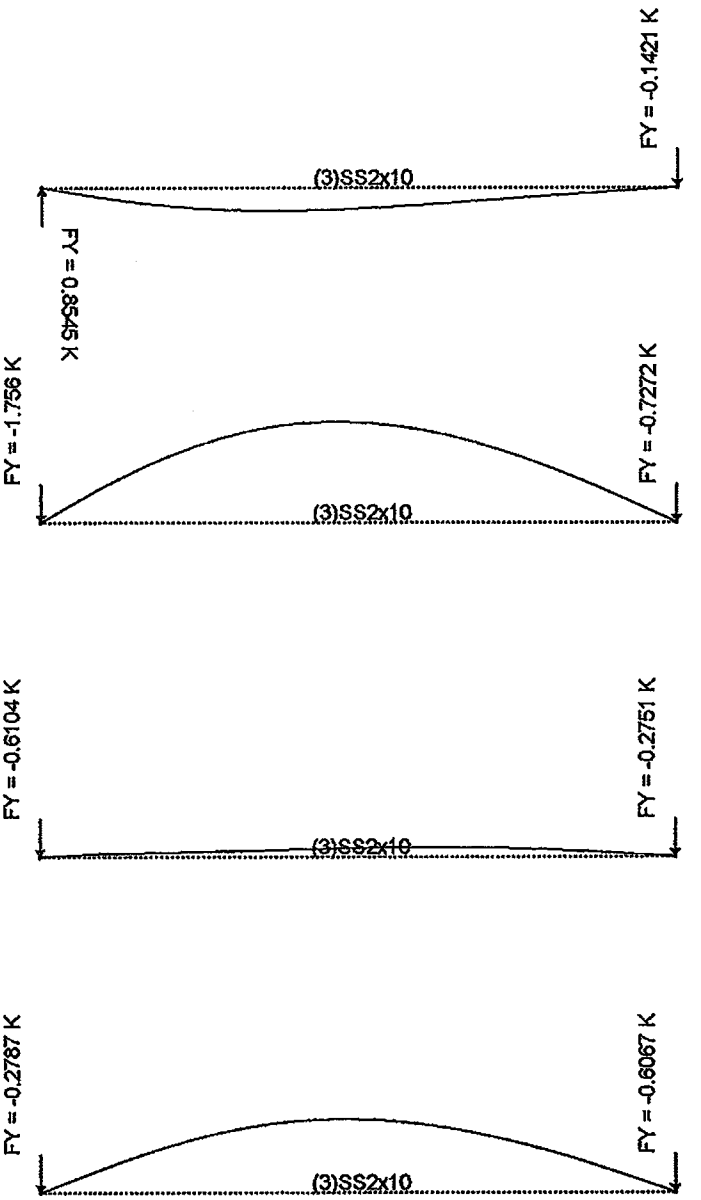
KEF-1
UNITED ENGINEERING, INC., amorfin
Oct 09, 2014; 12:57 AM
Load Case: KEF SW
IES VisualAnalysis 11.00.0009



KEF-1
UNITED ENGINEERING, INC., amorfin
Oct 09, 2014; 12:58 AM
Load Case: KEF W+Y
IES VisualAnalysis 11.00.0009



KEF-1
UNITED ENGINEERING, INC., amorfin
Oct 09, 2014; 12:58 AM
Result Case: .6D+.6W »+Y
IES VisualAnalysis 11.00.0009



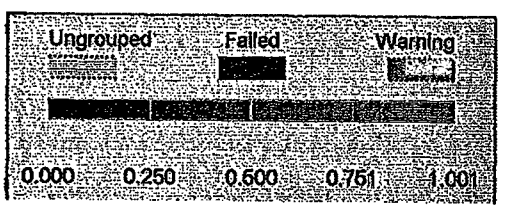
KEF-1
UNITED ENGINEERING, INC., amorfin
Oct 09, 2014; 12:58 AM
Design View, Unity Checks
IES VisualAnalysis 11.00.0009

Wood Beam X G01 0.49
(3)SS2x10

Wood Beam X G01 0.61
(3)SS2x10

Wood Beam X G01 0.49
(3)SS2x10

Wood Beam X G01 0.49
(3)SS2x10



Project: KEF-1

amorfin , UNITED ENGINEERING, INC. October 09, 2014
P:\0-Hotel Eva\3-Calcs\IES\

Design Group Results

Design Group: Wood_Beam X_G01 per NDS 2012 ASD

Designed As: (3)SS2x10, Material: \NDS Lumber (Visual)\No.2\Southern Pine (10" deep)
Members Included (4): BmX001, BmX001-c2, BmX001-c5, BmX001-c6

Strong Deflection Check

Member Name	Result Case	Offset ft	Demand dy in	Capacity dy in	Code Ref.	Unity Check	Details
BmX001	.42Wind »+Y	7.510	0.141	0.501	IBC 1604.3.1	0.28 OK	
BmX001-c2	.42Wind »+Y	7.510	0.141	0.501	IBC 1604.3.1	0.28 OK	
BmX001-c5	0.75(D+L+W) »+Y	6.834	0.408	1.001	IBC 1604.3.1	0.41 OK	
BmX001-c6	.42Wind »+Y	7.510	0.141	0.501	IBC 1604.3.1	0.28 OK	

Strong Flexure Check

Member Name	Result Case	Offset ft	Demand fbz Ksi	Capacity Fbz Ksi	Code Ref.	Unity Check	Details
BmX001	D+L	7.285	0.428	0.880	3.3-1	0.49 OK	CF = 1.100 , Mz = 2.289 K-ft, Lb = 0.000 ft, CD = 1.000
BmX001-c2	D+L	7.285	0.427	0.880	3.3-1	0.49 OK	CF = 1.100 , Mz = 2.283 K-ft, Lb = 0.000 ft, CD = 1.000
BmX001-c5	.6D+.6W »+Y	4.281	-0.838	1.374	3.3-1	0.61 OK	CF = 1.100 , CL = 0.976 , Mz = -4.479 K-ft, Lb = 15.020 ft, CD = 1.600
BmX001-c6	D+L	7.285	0.428	0.880	3.3-1	0.49 OK	CF = 1.100 , Mz = 2.289 K-ft, Lb = 0.000 ft, CD = 1.000

Strong Shear Check

Member Name	Result Case	Offset ft	Demand fvz Ksi	Capacity Fvz Ksi	Code Ref.	Unity Check	Details
BmX001	D+L	0.000	0.023	0.175	3.4-2	0.13 OK	V = 0.650 K, CD = 1.000
BmX001-c2	D+L	0.000	0.023	0.175	3.4-2	0.13 OK	V = 0.651 K, CD = 1.000
BmX001-c5	.6D+.6W »+Y	0.000	-0.063	0.280	3.4-2	0.23 OK	V = -1.756 K, CD = 1.600
BmX001-c6	D+.75(L+.6W+Lr) »+Y	0.000	0.038	0.280	3.4-2	0.14 OK	V = 1.058 K, CD = 1.600

UNITED Engineering, Inc.

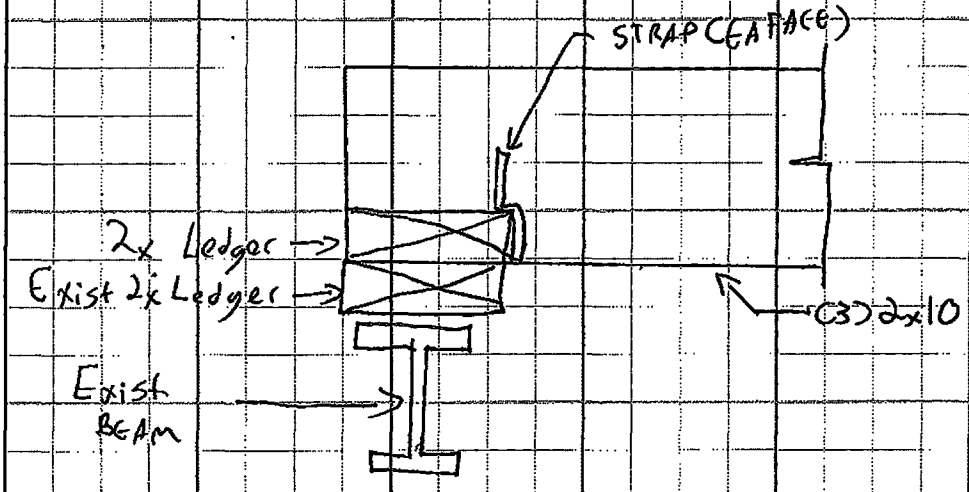
PROJECT No. _____ SHEET No. 1 OF _____
PROJECT NAME HOTEL EVA
CALCULATED BY AM DRAWN BY _____
SCALE _____ DATE 10/24

= RTU-1 Uplift Connection

= Loading (From [ES)

- .6D + .6W = 2.2 kips

= Connection



- STRAP
  - HTS 16
    - Simpson Strongtie
      - Product Approval #: 10456, 22
      - Allowable Uplift = (2)(1,260) = 2,520 lbs
        2,520 lbs > 2,200 lbs ∴ ok
      - Provide (16) 10d nails

UNITED Engineering, Inc.

PROJECT No. _____ SHEET No. 2 OF _____
PROJECT NAME HOTELEVA
CALCULATED BY AM DRAWN BY _____
SCALE _____ DATE 10/14

= RTU-1 Uplift Connection

= 2x Ledger to exist 2x Ledger

- Provide 10d nails
- Withdrawl = 56 lbs / inch
- Capacity = 3" (56 lbs) = 168 lbs
- # of nails required
  - $\frac{2,200 \text{ lbs}}{168 \text{ lbs}}$ = 14 nails
- Spacing

.40 = 4C.14S) = .59" → 3/4"

+ STAGGER 11½" - 2x Ledger

= Exist LEDGER TO W-BEAM

- Provide TBG1460S (SIMPSON STRONG-TIE SCREWS)
- Withdrawl = 390 lbs
- # of screws required
  - $\frac{2,200 \text{ lbs}}{390 \text{ lbs}}$ = 5.6 → 6 screws

UNITED Engineering, Inc.

PROJECT No. _____ SHEET No. ____ OF ____
PROJECT NAME HOTEL EVA
CALCULATED BY AM DRAWN BY _____
SCALE _____ DATE 10/19

= CU-1 Connection

= Loading (From ETS)

- Uplift = 1,100 lbs

- Reaction is less than reaction at RTU-1. 2,200lbs > 1,100lbs ∴ OK

- Use RTU-1 connection at joists of CU-1

= KEF1 Connection

= Loading (From ETS)

- Uplift = 1,700 lbs

2,200lbs > 1,700lbs ∴ OK

- USE RTU-1 Connection at KEF-1 JOISTS

FL #	FL10456-R2
Application Type	Editorial Change
Code Version	2010
Application Status	Approved
Comments	
Archived	
Product Manufacturer	Simpson Strong-Tie Co.
Address/Phone/Email	2221 Country Lane McKinney, TX 75070 (972) 439-3029 rshackelford@strongtie.com
Authorized Signature	Randall Shackelford rshackelford@strongtie.com
Technical Representative	Randall Shackelford
Address/Phone/Email	1720 Couch Drive McKinney, TX 75069 (800) 999-5099 rshackelford@strongtie.com
Quality Assurance Representative	Pat Woodall
Address/Phone/Email	1720 Couch Drive McKinney, TX 75069 (800) 999-5099 pwoodall@strongtie.com
Category	Structural Components
Subcategory	Wood Connectors
Compliance Method	Evaluation Report from a Product Evaluation Entity
Evaluation Entity	ICC Evaluation Service, LLC
Quality Assurance Entity	Benchmark Holdings, L.L.C.
Quality Assurance Contract Expiration Date	12/31/2014
Validated By	Jeffrey P. Arneson, P.E. ✓ Validation Checklist - Hardcopy Received
Certificate of Independence	FL10456_R2_COI_ICC Cert of Independence.pdf

Referenced Standard and Year (of Standard)

Standard	Year
ASTM D1761	2000
N.A. SPEC FOR DESIGN OF COLD FORMED STEEL CONSTRUCTION	2001
NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION	2005

Equivalence of Product Standards Certified By: Florida Licensed Professional Engineer or Architect
FL10456_R2_Equiv_2010 Self Affirmation Simpson.pdf

Sections from the Code

Product Approval Method	Method 1 Option C
Date Submitted	03/14/2012
Date Validated	04/25/2012
Date Pending FBC Approval	05/02/2012
Date Approved	06/11/2012

Summary of Products

Go to Page [ ] GO

FL #	Model, Number or Name	Description
10456.21	HS24	Hurricane Tie
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** N/A **Design Pressure:** N/A **Other:** Supplimental connectors must be used to acheive 700# uplift for HVHZ.		**Installation Instructions** FL10456_R2_II_ESR-2613.pdf Verified By: Randall Shackelford P.E. 68675 Created by Independent Third Party: Yes **Evaluation Reports** FL10456_R2_AE_ESR-2613.pdf
10456.22	HTS16	Heavy Twist Strap
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** N/A **Design Pressure:** N/A **Other:**		**Installation Instructions** FL10456_R2_II_ESR-2613.pdf Verified By: Randall Shackelford P.E. 68675 Created by Independent Third Party: Yes **Evaluation Reports** FL10456_R2_AE_ESR-2613.pdf
10456.23	HTS20	Heavy Twist Strap
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** N/A **Design Pressure:** N/A **Other:**		**Installation Instructions** FL10456_R2_II_ESR-2613.pdf Verified By: Randall Shackelford P.E. 68675 Created by Independent Third Party: Yes **Evaluation Reports** FL10456_R2_AE_ESR-2613.pdf
10456.24	HTS24	Heavy Twist Strap
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** N/A **Design Pressure:** N/A **Other:**		**Installation Instructions** FL10456_R2_II_ESR-2613.pdf Verified By: Randall Shackelford P.E. 68675 Created by Independent Third Party: Yes **Evaluation Reports** FL10456_R2_AE_ESR-2613.pdf
10456.25	HTS28	Heavy Twist Strap
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** N/A **Design Pressure:** N/A **Other:**		**Installation Instructions** FL10456_R2_II_ESR-2613.pdf Verified By: Randall Shackelford P.E. 68675 Created by Independent Third Party: Yes **Evaluation Reports** FL10456_R2_AE_ESR-2613.pdf
10456.26	HTS30	Heavy Twist Strap
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** N/A **Design Pressure:** N/A **Other:**		**Installation Instructions** FL10456_R2_II_ESR-2613.pdf Verified By: Randall Shackelford P.E. 68675 Created by Independent Third Party: Yes **Evaluation Reports** FL10456_R2_AE_ESR-2613.pdf
10456.27	HTS30C	Heavy Twist Strap
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** N/A **Design Pressure:** N/A **Other:**		**Installation Instructions** FL10456_R2_II_ESR-2613.pdf Verified By: Randall Shackelford P.E. 68675 Created by Independent Third Party: Yes **Evaluation Reports** FL10456_R2_AE_ESR-2613.pdf

10456.28	LFTA	Floor Tie Anchor
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** N/A **Design Pressure:** N/A **Other:**		**Installation Instructions** FL10456_R2_II_ESR-2613.pdf *Verified By: Randall Shackelford P.E. 68675* Created by Independent Third Party: Yes **Evaluation Reports** FL10456_R2_AE_ESR-2613.pdf
10456.29	LTS12	Light Twist Strap
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** N/A **Design Pressure:** N/A **Other:** When using SPF/HF lumber 2 connectors must be used to acheive 700# uplift for HVHZ.		**Installation Instructions** FL10456_R2_II_ESR-2613.pdf Verified By: Randall Shackelford P.E. 68675 Created by Independent Third Party: Yes **Evaluation Reports** FL10456_R2_AE_ESR-2613.pdf
10456.30	LTS16	Light Twist Strap
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** N/A **Design Pressure:** N/A **Other:** When using SPF/HF lumber 2 connectors must be used to acheive 700# uplift for HVHZ.		**Installation Instructions** FL10456_R2_II_ESR-2613.pdf Verified By: Randall Shackelford P.E. 68675 Created by Independent Third Party: Yes **Evaluation Reports** FL10456_R2_AE_ESR-2613.pdf
10456.31	LTS18	Light Twist Strap
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** N/A **Design Pressure:** N/A **Other:** When using SPF/HF lumber 2 connectors must be used to acheive 700# uplift for HVHZ.		**Installation Instructions** FL10456_R2_II_ESR-2613.pdf Verified By: Randall Shackelford P.E. 68675 Created by Independent Third Party: Yes **Evaluation Reports** FL10456_R2_AE_ESR-2613.pdf
10456.32	LTS20	Light Twist Strap
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** N/A **Design Pressure:** N/A **Other:** When using SPF/HF lumber 2 connectors must be used to acheive 700# uplift for HVHZ.		**Installation Instructions** FL10456_R2_II_ESR-2613.pdf Verified By: Randall Shackelford P.E. 68675 Created by Independent Third Party: Yes **Evaluation Reports** FL10456_R2_AE_ESR-2613.pdf
10456.33	MTS12	Medium Twist Strap
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** N/A **Design Pressure:** N/A **Other:**		**Installation Instructions** FL10456_R2_II_ESR-2613.pdf Verified By: Randall Shackelford P.E. 68675 Created by Independent Third Party: Yes **Evaluation Reports** FL10456_R2_AE_ESR-2613.pdf
10456.34	MTS16	Medium Twist Strap
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** N/A **Design Pressure:** N/A **Other:**		**Installation Instructions** FL10456_R2_II_ESR-2613.pdf Verified By: Randall Shackelford P.E. 68675 Created by Independent Third Party: Yes **Evaluation Reports** FL10456_R2_AE_ESR-2613.pdf
10456.35	MTS18	Medium Twist Strap
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** N/A **Design Pressure:** N/A **Other:**		**Installation Instructions** FL10456_R2_II_ESR-2613.pdf Verified By: Randall Shackelford P.E. 68675 Created by Independent Third Party: Yes **Evaluation Reports** FL10456_R2_AE_ESR-2613.pdf
10456.36	MTS20	Medium Twist Strap
Limits of Use **Approved for use in HVHZ:** Yes		**Installation Instructions** FL10456_R2_II_ESR-2613.pdf

Approved for use outside HVHZ: Yes **Impact Resistant:** N/A **Design Pressure:** N/A **Other:**		Verified By: Randall Shackelford P.E. 68675 Created by Independent Third Party: Yes **Evaluation Reports** FL10456_R2_AE_ESR-2613.pdf
10456.37	MTS30	Medium Twist Strap
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** N/A **Design Pressure:** N/A **Other:**		**Installation Instructions** FL10456_R2_II_ESR-2613.pdf Verified By: Randall Shackelford P.E. 68675 Created by Independent Third Party: Yes **Evaluation Reports** FL10456_R2_AE_ESR-2613.pdf
10456.38	RSP4	Stud to Plate Connector
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** N/A **Design Pressure:** N/A **Other:** Supplimental connectors must be used to acheive 700# uplift for HVHZ.		**Installation Instructions** FL10456_R2_II_ESR-2613.pdf Verified By: Randall Shackelford P.E. 68675 Created by Independent Third Party: Yes **Evaluation Reports** FL10456_R2_AE_ESR-2613.pdf
10456.39	RST-1	Hurricane Tie
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** N/A **Design Pressure:** N/A **Other:** Supplimental connectors must be used to acheive 700# uplift for HVHZ.		**Installation Instructions** FL10456_R2_II_ESR-2613.pdf Verified By: Randall Shackelford P.E. 68675 Created by Independent Third Party: Yes **Evaluation Reports** FL10456_R2_AE_ESR-2613.pdf
10456.40	RST-2	Hurricane Tie
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** N/A **Design Pressure:** N/A **Other:** Supplimental connectors must be used to acheive 700# uplift for HVHZ.		**Installation Instructions** FL10456_R2_II_ESR-2613.pdf Verified By: Randall Shackelford P.E. 68675 Created by Independent Third Party: Yes **Evaluation Reports** FL10456_R2_AE_ESR-2613.pdf

Go to Page [ ] Go

Page 2 / 3

Back Next

ES REPORT™

ESR-2613

Issued February 1, 2008

This report is subject to re-examination in two years.

ICC Evaluation Service, Inc.
www.icc-es.org

Business/Regional Office # 5360 Workman Mill Road, Whittier, California 90601 # (562) 699-0543
Regional Office # 900 Montclair Road, Suite A, Birmingham, Alabama 35213 # (205) 599-9800
Regional Office # 4051 West Flossmoor Road, Country Club Hills, Illinois 60478 # (708) 799-2305

DIVISION: 06—WOOD AND PLASTICS
Section: 06090—Wood and Plastics Fastenings

REPORT HOLDER:

SIMPSON STRONG-TIE COMPANY, INC.
5956 WEST LAS POSITAS BOULEVARD
PLEASANTON, CALIFORNIA 94588
(800) 925-5099
www.strongtie.com

EVALUATION SUBJECT:

SIMPSON STRONG-TIE HURRICANE AND SEISMIC STRAPS AND TIES FOR WOOD FRAMING

1.0 EVALUATION SCOPE

Compliance with the following codes:

2006 *International Building Code*® (IBC)

2006 *International Residential Code*® (IRC)

Other Codes (see Section 8.0)

Properties evaluated:

Structural

2.0 USES

The Simpson Strong-Tie hurricane and seismic straps and ties described in this report are used as wood framing connectors in accordance with Section 2304.9.3 of the IBC. The products may also be used in structures regulated under the IRC when an engineered design is submitted in accordance with Section R301.1.3 of the IRC.

3.0 DESCRIPTION

3.1 General:

The Simpson Strong-Tie hurricane and seismic straps and ties recognized in this report are installed to resist design forces on wood-frame construction resulting from the application of the most critical effects of the load combinations prescribed by code that include wind or seismic loads.

3.1.1 Hurricane Ties: Hurricane ties are used to anchor wood rafters or joists to wood wall plates or studs or to anchor wood studs to wood sill plates. The H6, H7Z, H15, and H15-2 ties are formed from No. 16 gage galvanized steel; the H1, H2, H2.5, H2.5A, H3, H5, H10, H10R, and H10-2 ties are formed from No. 18 gage galvanized steel; and the H4 tie is formed from No. 20 gage galvanized steel. See Table 1 for tie model numbers, tie dimensions, fastener schedules, and allowable loads. See Figures 1a and 1b for drawings of the hurricane ties recognized in this report, and Figure 1c for drawings of installation configurations with designated allowable load directions.

3.1.2 HS24 Hurricane Tie: The HS24 hurricane tie anchors wood rafters or trusses to wood wall top plates. The HS24 connector is formed from No. 18 gage galvanized steel. See Table 2 for required fasteners and allowable loads. See Figure 2 for a drawing of the HS24 tie and a typical installation detail.

3.1.3 RST-1 and RST-2 Hurricane Ties: The RST hurricane ties are used to anchor single-ply wood roof trusses (or rafters) to vertically aligned wood studs. The RST-1 is designed to anchor single-ply wood trusses with lumber oriented horizontally, and the RST-2 is designed to anchor two-ply wood trusses with lumber oriented vertically or single-ply wood trusses with lumber oriented horizontally. The RST-1 and RST-2 hurricane tie connectors are fabricated from No. 20 and No. 18 gage galvanized steel, respectively. See Table 3 for RST model numbers, width and length dimensions, required fasteners, and allowable uplift loads. See Figure 3 for drawings of the RST-1 tie and a typical installation detail.

3.1.4 LTS, MTS, and HTS Series Twist Straps: The LTS, MTS, and HTS series twist straps are used to anchor wood trusses or rafters to wood wall double top plates, wood studs, wood beams, or wood rim boards. The LTS, MTS, and HTS series twist straps are formed from No. 18, No. 16, and No. 14 gage galvanized steel, respectively. See Table 4 for strap model numbers, overall strap lengths, required fasteners, and allowable uplift loads when installed with different fastener schedules. See Figure 4 for a drawing of an LTS12 twist strap and two typical MTS strap installations.

3.1.5 LFTA Light Floor Tie Anchor: The LFTA light floor tie anchor is used as a floor-to-floor tension tie and is formed from No. 16 gage galvanized steel. See Table 5 for anchor tie dimensions, required fasteners, and the assigned allowable uplift load. See Figure 5 for a drawing of the LFTA connector.

3.1.6 FTA Floor Tie Anchors: The FTA floor tie anchors are used to connect vertically aligned studs between a horizontal wood diaphragm assemblage with floor joists having a maximum 12-inch nominal depth. The FTA2 and FTA5 are formed from No. 10 gage galvanized steel, and the FTA7 is formed from No. 3 gage galvanized steel. See Table 6 for FTA models, anchor dimensions, required fasteners, and allowable tension loads. See Figure 6a for a drawing of an FTA floor anchor tie defining overall length and clear span, and Figure 6b for drawings of a typical FTA anchor installation.

3.1.7 SP and SPH Series Stud Plate Connectors: The SP1 connector fastens one edge of a wood stud to the contiguous edge of a wood sill plate, and the SP2 connector fastens to one side of a wood double top plate and to the contiguous edge of a wood stud. The SP4, SP6, SP8, SPH4, SPH6, and SPH8 are $1^1/_4$-inch-wide (32 mm) U-shaped straps

with a horizontal portion that bears against the wood wall top plates or sill plates and two vertical legs that are nailed to the edges of a wood stud. The SP and SPH connectors are fabricated from No. 20 and No. 18 gage galvanized steel, respectively. See Table 7 for SP and SPH models, connector dimensions, required fasteners, and allowable uplift loads. See Figure 7 for drawings of the SP1 and SP2 connector, and of typical stud-to-plate connection details for the SP1, SP2, SP4, and SPH4 connectors.

3.1.8 RSP4 Reversible Stud Plate Ties: The RSP4 tie plates are used to connect a nominally 2-inch-wide wood stud to either a top or sill plate of a wood framed wall. The RSP4 tie connector is fabricated from No. 20 gage galvanized steel. See Table 8 for required fasteners and allowable loads. See Figure 8a for a drawing of the RSP4 connector showing overall dimensions; Figure 8b for a drawing of a typical RSP4 installation connecting a wood double top plate to a wood stud; and Figure 8c for a typical RSP4 installation connecting a wood stud to a wood sill plate.

3.1.9 SSP and DSP Stud Plate Connectors: The SSP stud-to-plate connector is used to provide a positive connection between a single wood stud and the top or sill plate of the same wood wall, and the DSP stud-to-plate connector is used to provide a positive connection between a double wood stud and the wood wall top or sill plate of the same wood wall. The SSP and DSP connectors are fabricated from No. 18 gage galvanized steel. See Table 9 for required fasteners and allowable uplift loads. See Figure 9 for drawings of the SSP and DSP connectors showing overall dimensions; a drawing of an SSP installation connecting a stud to a sill plate; and a drawing of a DSP installation connecting a double wood stud assembly to a top plate.

3.1.10 HGT Heavy Girder Tiedown Brackets: The HGT heavy girder tiedown brackets are used to provide a positive connection between wood roof beams or multi-ply wood roof trusses and wood posts vertically aligned to support the end reaction of the beam or truss member. The HGT tiedown connector is a U-shaped bracket that is installed over the top chord of the roof truss having a slope from 3:12 (14 degrees) to 8:12 (34 degrees). Other components required for the connection, such as the anchor rods and hold-down or tie-down devices, that must be used to form a complete load path to resist design uplift forces from their point of origin to the load-resisting elements, that is, the vertically aligned supporting wood post, must be designed and specified by the registered design professional. The HGT tiedown brackets are fabricated from No. 7 gage steel, and are supplied with insert plates and crescent washers. See Table 9 for tiedown connector models, connector dimensions, fastener schedules, and allowable uplift loads. See Figure 9 for a drawing of the HGT-2 tiedown connector, and a drawing of a typical connection detail showing necessary components, including those not covered in this evaluation report, such as the HTT22 tension tie.

3.2 Materials:

3.2.1 Steel: Unless otherwise noted, the connectors described in this report are fabricated from ASTM A 653, SS designation, Grade 33, galvanized steel with a minimum yield strength, F_y, of 33,000 psi (227 MPa) and a minimum tensile strength, F_u, of 45,000 psi (310 MPa). The FTA floor anchor ties are fabricated from ASTM A 1011, SS designation, Grade 33, hot rolled steel with a minimum yield strength of 33,000 psi (227 MPa) and a minimum tensile strength of 52,000 psi (358 MPa). The HTS twist straps, the SSP and DSP stud-to-plate ties, and the H2.5A hurricane tie are fabricated from ASTM A 653, SS designation, Grade 40, steel with a minimum yield strength of 40,000 psi (275 MPa) and a minimum tensile strength of 55,000 psi (379 MPa).

The body of the HGT heavy girder tiedown backet is fabricated from ASTM A 1011, SS designation, Grade 33, hot rolled steel with a minimum yield strength of 33,000 psi (227 MPa) and a minimum tensile strength of 52,000 psi (358 MPa), and the crescent washers of the HGT bracket are fabricated from ASTM A 36 steel with a minimum yield strength of 36,000 psi (248 MPa) and a minimum tensile strength of 58,000 psi (399 MPa).

Base-metal thicknesses for the connectors in this report are as follows:

NOMINAL THICKNESS (gage)	MINIMUM BASE-METAL THICKNESS (inch)
No. 3	0.2285
No. 7	0.1705
No. 10	0.1275
No. 14	0.0685
No. 16	0.0555
No. 18	0.0445
No. 20	0.0335

For SI: 1 inch = 25.4 mm.

The galvanized connectors have a minimum G90 zinc coating specification in accordance with ASTM A 653. Some models (designated with a model number ending with Z) are available with a G185 zinc coating specification in accordance with ASTM A 653. Some models (designated with a model number ending with HDG) are available with a hot-dip galvanization, also known as "batch" galvanization, in accordance with ASTM A 123, with a minimum specified coating weight of 2.0 ounces of zinc per square foot of surface area (600 g/m^2), total for both sides. Model numbers in this report do not include the Z or HDG ending, but the information shown applies.

The FTA floor anchor ties and HTS twist straps have a painted finish and may also be available with the HDG finish.

The lumber treater or holder of this report (Simpson Strong-Tie Company) should be contacted for recommendations on minimum corrosion resistance of steel connectors in contact with the specific proprietary preservative treated or fire retardant treated lumber.

3.2.2 Wood: Supporting wood members to which these connectors are fastened must be solid sawn lumber, glued-laminated lumber, or engineered lumber [such as Laminated Veneer Lumber (LVL), Parallel Strand Lumber (PSL), and Laminated Strand Lumber (LSL)] having dimensions consistent with the connector dimensions shown in this report. Unless otherwise noted, supporting wood members and supported members must have an assigned minimum specific gravity of 0.50 (minimum equivalent specific gravity of 0.50 for engineered lumber), except as noted in Table 7 for the SPH stud plate tie connectors, which permits lumber having an assigned minimum specific gravity of 0.50 and 0.55; and Table 9 for the SSP and DSP stud-to-plate tie connectors, which permits lumber having an assigned minimum specific gravity of 0.50 and 0.43. The lumber used with the connectors described in this report must have a maximum moisture content of 19 percent (16 percent for engineered lumber) except as noted in Section 4.1.

The thickness of the wood members must be equal to or greater than the length of the fasteners specified in the tables in this report, except if noted otherwise in the tables and accompanying footnotes in this report, or as required by wood member design, whichever controls.

3.2.3 Fasteners: Bolts, at a minimum, must comply with ASTM A 36 or A 307. Nails used for connectors, straps, and ties described in this report must comply with ASTM F 1667

and have the following minimum dimensions and bending yield strengths (F_{yb}):

FASTENERS	NAIL DIAMETER (inch)	NAIL LENGTH (inches)	F_{yb} (psi)
8d × 1½	0.131	1½	100,000
8d	0.131	2½	100,000
10d × 1½	0.148	1½	90,000
10d	0.148	3	90,000

For SI: 1 inch = 25.4 mm.

Fasteners used in contact with preservative treated or fire retardant treated lumber must comply with IBC Section 2304.9.5 or IRC Section R319.3, as applicable. The lumber treater or this report holder (Simpson Strong-Tie Company) should be contacted for recommendations on minimum corrosion resistance of fasteners and connection capacities of fasteners used with the specific proprietary preservative treated or fire retardant treated lumber.

4.0 DESIGN AND INSTALLATION

4.1 Design:

The tabulated allowable loads shown in this report are based on allowable stress design (ASD) and include the load duration factor, C_D, corresponding with the applicable loads in accordance with the NDS.

Tabulated allowable loads apply to products connected to wood used under dry conditions and where sustained temperatures are 100°F (37.8°C) or less. When products are installed to wood having a moisture content greater than 19 percent (16 percent for engineered wood products), or when wet service is expected, the allowable loads must be adjusted by the wet service factor, C_M, specified in the NDS. When connectors are installed in wood that will experience sustained exposure to temperatures exceeding 100°F (37.8°C), the allowable loads in this report must be adjusted by the temperature factor, C_t, specified in the NDS.

Connected wood members must be analyzed for load-carrying capacity at the connection in accordance with the NDS.

4.2 Installation:

Installation of the connectors must be in accordance with this evaluation report and the manufacturer's published installation instructions. In the event of a conflict between this report and the manufacture's published installation instructions, this report governs.

4.3 Special Inspection:

4.3.1 IBC: Periodic special inspection is required for installation of connectors described in this report that are designated as components of the seismic-force-resisting system for a structure in Seismic Design Category C, D, E or F in accordance with Section 1707.3 or 1707.4, with the exception of those structures qualifying under Section 1704.1.

4.3.2 IRC: Special inspections are not required.

5.0 CONDITIONS OF USE

The Simpson Strong-Tie Hurricane and Seismic Straps and Ties described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 The connectors must be manufactured, identified and installed in accordance with this report and the manufacturer's published installation instructions. A copy of the instructions must be available at the jobsite at all times during installation.

5.2 Calculations showing compliance with this report must be submitted to the code official. The calculations must be prepared by a registered design professional where required by the statues of the jurisdiction in which the project is to be constructed.

5.3 Adjustment factors noted in Section 4.1 and the applicable codes must be considered, where applicable.

5.4 Connected wood members and fasteners must comply, respectively, with Sections 3.2.2 and 3.2.3 of this report.

5.5 Use of connectors with preservative or fire retardant treated lumber must be in accordance with Section 3.2.1 of this report. Use of fasteners with preservative or fire retardant treated lumber must be in accordance with Section 3.2.3 of this report.

5.6 The FTA series tie anchors are factory-welded connectors manufactured under a quality control program with inspections by Professional Service Industries, Inc. (AA-660) or by Intertek Testing Services NA, Inc. (AA-688).

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Joist Hangers and Similar Devices (AC13), dated October 2006 (corrected March 2007).

7.0 IDENTIFICATION

The products described in this report are identified with a die-stamped label indicating the name of the manufacturer (Simpson Strong-Tie), the model number, and the number of an Index evaluation report (ESR-2523) that is used as an identifier for the products recognized in this report. Additionally, the factory-welded FTA series tie anchors manufactured in the United States are identified with their acronym of the inspection agency (PSI), and factory-welded FTA series tie anchors manufactured in Canada are identified with the name of their inspection agency (Intertek).

8.0 OTHER CODES

8.1 Evaluation Scope:

In addition to the codes referenced in Section 1.0, the products in this report were evaluated for compliance with the requirements of the following codes:

2003 *International Building Code*® (2003 IBC)

2003 *International Residential Code*® (2003 IRC)

2000 *International Building Code*® (2000 IBC)

2000 *International Residential Code*® (2000 IRC)

1997 *Uniform Building Code*™ (UBC)

The products described in this report comply with, or are suitable alternatives to what is specified in, the codes listed above, subject to the provisions of Sections 8.2 through 8.7.

8.2 Uses:

8.2.1 2003 IBC, 2003 IRC, 2000 IBC, and 2000 IRC: See Section 2.0 of this report.

8.2.2 UBC: Replace the information in Section 2.0 with the following: Simpson Strong-Tie hurricane and seismic straps and ties are used as wood framing connectors in accordance with Section 2318.4.8 of the UBC.

8.3 Description:

8.3.1 2003 IBC and 2003 IRC: See Section 3.0 of this report.

8.3.2 2000 IBC and 2000 IRC: See Section 3.0 of this report, except modify Section 3.2.3 to reference Section R323.3 of the IRC.

8.3.3 UBC: See Section 3.0 of this report, except modify the first sentence in the last paragraph of Section 3.2.3 as follows: Fasteners used in contact with preservative treated or fire retardant treated lumber must, as a minimum, comply with UBC Section 2304.3.

8.4 Design and Installation:

8.4.1 2003 IBC, 2003 IRC, 2000 IBC, 2000 IRC: See Section 4.0 of this report.

8.4.2 UBC: See Section 4.0 of this report, except delete Section 4.3 since special inspection is not required.

8.5 Conditions of Use:

8.5.1 2003 IBC, 2003 IRC 2000 IBC, and 2000 IRC: The Simpson Strong-Tie products described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 8.0, subject to the same conditions of use described in Section 5.0 of this report.

8.5.2 UBC: The Simpson Strong-Tie products described in this report comply with, or are suitable alternatives to what is specified in, the UBC, subject to the same conditions of use indicated in Section 5.0 of this report, except the last sentence of Section 5.5 is replaced with the following: Fasteners used in contact with preservative treated or fire retardant treated lumber must, as a minimum, comply with UBC Section 2304.3.

8.6 Evidence Submitted: 2003 IBC, 2003 IRC, 2000 IBC, 2000 IRC, and the UBC:

See Section 6.0 of this report.

8.7 Identification: 2003 IBC, 2003 IRC, 2000 IBC, 2000 IRC, and the UBC:

See Section 7.0 of this report.