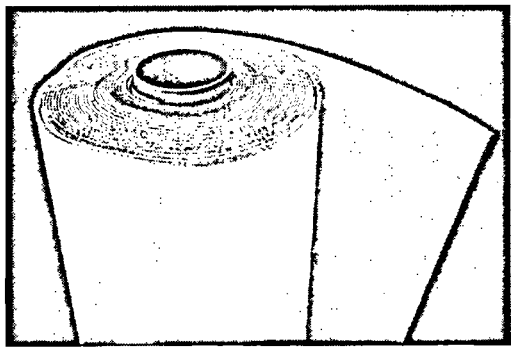
BC 1910502

Premium Building Products That Protect

WHISPER MAT® HW

PRODUCT DATA SHEET



1. PRODUCT NAME

Whisper Mat HW

2. MANUFACTURER

Protecto Wrap Co.
1955 South Cherokee St.
Denver, CO 80223
(800) 759-9727
(303) 777-3001
Fax: (303) 777-9273
E-mail: info@protectowrap.com
www.protectowrap.com

3. PRODUCT DESCRIPTION

Whisper Mat HW is a peel & stick non-permeable sound control membrane for engineered hardwood, parquet and laminate flooring.

Accessory Materials

No. 6000 Primer - This high tack water based primer is ideal for use on indoor applications. Available as a concentrate, this primer can be mixed at the jobsite with clean water or used in its full concentrate form, depending on the condition and porosity of the substrate.

Packaging

Whisper Mat HW is available in 36" × 50' (914 mm × 15.24 m) rolls

Coverage

Whisper Mat HW
Approximate 150 ft2 (13.9 m2) per roll

Shelf Life

Whisper Mat HW maintains optimum initial adhesion to substrates when used within one year from the date of manufacture.

Uses

- For interior applications under engineered wood, parquet and laminate floors

Advantages

- Reduces impact and airborne
- Sound transmissions
- Can be installed with radiant heat floor systems
- Provides a Light Commercial Load Rating
- Provides a moisture and air vapor barrier

Recommended Substrates (Interior Use Only)

- Concrete
- Plywood
- Ceramic tile
- Portland based leveling and patching compounds
- Cement backer board

Limitations

- Not for use with solid wood plank flooring
- Not for use with nail down installations
- Not for use as a waterproofing membrane
- Only use wood adhesives that have been determined to be compatible with Whisper Mat HW
- Not for use on concrete floors where hydrostatic pressure exists or where moisture vapor transmission exceeds 4 lb.
- *Not for use under Gypsum type patches* and levelers
- Do not use solvent based sealants, sealers or adhesives where contact with membrane may occur
- Do not install over wet primer
- Not for use over expansion or structural movement joints

4. TECHNICAL DATA

Property	Test method	Result
Color		Tan top/black adhesive
Thickness		1/8"
Application Temperature		45°F to 120°F (7°C to 49°C)
Operating Temperature		-20°F to 180°F (-29°C to 82°C)
Delta Impact sound transmission	ASTM E2179	Delta IIC 22
Airborne sound transmission	ASTM E90	STC 52
Impact sound transmission	ASTM E492	IIC 51

Sound Reduction Ratings:

8" Concrete Floor with a Gypsum Board Ceiling Assembly: **IIC 72 STC 71**

6" Concrete Floor: **IIC 51 STC 52**

Delta Impact sound transmission: **Delta IIC 22**

5. INSTALLATION

Surface Preparation

Follow wood flooring manufacturers recommended installation instructions as to fully adhered or floating floor installation guidelines. Installation must also conform to NWFA standards. Flooring and membrane must acclimate to jobsite conditions before installation.

Wood subfloor

16" Trust/Joist spacing:
Nominal 5/8" (19/32") exposure 1 plywood
Nominal 23/32" exposure 1 OSB subfloor panels

16" – 19.2" Trust/Joist spacing:
Nominal 3/4" (23/32") T&G exposure 1 plywood
Nominal 3/4" (23/32") exposure 1 OSB subfloor panels

19.2" – 24" Trust/Joist spacing:
Nominal 7/8" T&G exposure 1 plywood
Nominal 1" exposure 1 OSB subfloor panels

Concrete subfloor.

Concrete subfloors must be dry, clean and free of dirt, grease, wax, paint, oil or anything that would adversely affect adhesion of the Whisper Mat. Check subfloor for excessive moisture. Using ASTM E1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride. Readings must be less than 4 lb. (1.8 kg). Leveling cements must be completely dry before installing membrane.

Priming
Always apply the Protecto Wrap No. 6000 Primer to the subfloor and allow to dry (approximately 30 minutes) before installing the Whisper Mat HW to ensure a good bond.

Layout
Unroll Whisper Mat HW with the release liner side down. Cut the length approximately 12" longer than the distance to be covered. Trim membrane to fit tightly against walls and cutouts (within ¼"). Fold back half of the length of the roll back over the other half of the material. Score through the release liner only and take care not to cut completely through membrane.

Application
Pull release liner away from membrane where scored. As the release liner is pulled away, hand-smooth the membrane to contact the primed subfloor. Keep the release liner material close to the floor while pulling away; this will allow for a more controlled application of the membrane. Align membranes in a butt joint fashion making sure not to overlap seams.

Note - There will be an immediate and aggressive bond of the membrane to the primed subfloor. Realignment of the membrane can be difficult once adherence to the subfloor begins.

Approved Wood Adhesive
Contact Protecto Wrap Company for a current list of compatible wood adhesives.

After Whisper Mat HW is installed, follow flooring manufacturer's installation recommendations through the remainder of the flooring installation.

6. AVAILABILITY AND COST
Whisper Mat HW is manufactured in Denver, CO; it is competitively priced and available worldwide through a network of Protecto Wrap distributors. For detailed product information or to find a local representative or distributor, contact Protecto Wrap Company corporate office for information.

7. WARRANTY
Call for limitations and coverage.

8. MAINTENANCE
None required. If installed in accordance with manufacturer's recommendations, Whisper Mat HW should last the life of the structure.

9. TECHNICAL SERVICES
Complete technical assistance and information are available from Protecto Wrap field representatives and distributors or by contacting the manufacturer.

10. FILING SYSTEM
Additional product information is available on our website at protectowrap.com or contacting our corporate office at 1-800-759-9727.

BL910502

MIAMI-DADE COUNTY

DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
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/economy

NOTICE OF ACCEPTANCE (NOA)

PCI Industries Inc d/b/a Pottorff
5101 Blue Mound Road
Fort Worth, TX 76106

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 RER-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. RER 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: Model ECD-545-MD Aluminum Louver w/ or w/o CD-51 Damper

APPROVAL DOCUMENT: Drawing No. **ECD-545-MD NOA**, titled "ECD-545-MD", sheets 1 through 17 of 17, dated 08/30/2018, prepared by the manufacturer, signed and sealed by Theodore Berman, P.E., bearing the Miami-Dade County Product Control revision stamp with the Notice of Acceptance number and expiration date by the Miami-Dade County Product Control Section.

MISSILE IMPACT RATING: Large and Small Missile Impact Resistant

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state, model/series, and 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 **renews** and **revises NOA # 17-0227.07** and consists of this page 1 and evidence pages E-1, E-2 and E-3, as well as approval document mentioned above.

The submitted documentation was reviewed by **Carlos M. Utrera, P.E.**

MIAMI-DADE COUNTY APPROVED

12/27/2018

NOA No. 18-1120.06
Expiration Date: October 23, 2023
Approval Date: January 3, 2019

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. Evidence submitted under previous NOA's

A. DRAWINGS ***"Submitted under NOA # 17-0227.07"***

1. Drawing No. **ECD-545-MD NOA**, titled "ECD-545-MD", sheets 1 through 19 of 19, dated 05/08/2014, with revision 3 dated 01/26/2017, prepared by the manufacturer, signed and sealed by L. David Rice, P.E.

B. TESTS ***"Submitted under NOA # 14-0714.03"***

1. Test reports on 1) Uniform Static Air Pressure Test, Loading per FBC, TAS 202-94
   2) Large Missile Impact Test per FBC, TAS 201-94
   3) Cyclic Wind Pressure Loading per FBC, TAS 203-94

   along with installation diagram of Model ECD-545-MD Aluminum Louvers, prepared by Architectural Testing, Inc, Test Report No. **C8133.01-801-18**, dated 04/10/2014, with revision 2 dated 01/27/2015, signed and sealed by Shawn G. Collins, P.E.
2. Test reports on 1) Uniform Static Air Pressure Test, Loading per FBC, TAS 202-94
   2) Large Missile Impact Test per FBC, TAS 201-94
   3) Cyclic Wind Pressure Loading per FBC, TAS 203-94

   along with installation diagram of Model ECD-545-MD Aluminum Louvers, prepared by Architectural Testing, Inc, Test Report No. **C8133.01-801-18**, dated 04/10/2014, signed and sealed by Vinu J. Abraham, P.E.
3. Test report on High Velocity Wind Driven Rain Resistance per AMCA 550-09 of a Model ECD-545-MD Aluminum Louver, prepared by Architectural Testing, Inc, Test Report No. **C3811.01-801-18**, dated 12/18/2012, signed and sealed by Vinu J. Abraham, P.E.

"Submitted under NOA # 11-0429.04"

4. Test reports on 1) Uniform Static Air Pressure Test, Loading per FBC, TAS 202-94
   2) Large Missile Impact Test per FBC, TAS 201-94
   3) Cyclic Wind Pressure Loading per FBC, TAS 203-94

   along with installation diagram of a Model ECD-545-MD Aluminum Louver, prepared by Architectural Testing, Inc, Test Report No. **A1620.01-801-18**, dated 10/18/2010, signed and sealed by Joseph A. Reed, P.E.

"Submitted under NOA # 09-1015.08"

5. Test report on Wind Driven Rain Resistance per FBC TAS 100(A)-95 (modified by Checklist # 0240) along with marked-up drawings and installation diagram of Model ECD-545-MD Fixed Aluminum Louver with a CD-55 Damper, prepared by Architectural Testing, Inc, Test Report No. **92027.01-109-18**, dated 09/09/2009, with Revision 1 dated 01/11/2010, signed and sealed by Michael D. Stremmel, P.E.

12/27/2018

Carlos M. Utrera, P.E.
Product Control Examiner
NOA No. 18-1120.06
Expiration Date: October 23, 2023
Approval Date: January 3, 2019

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

B. TESTS (Cont.)

"Submitted under NOA # 08-0528.04"

6. Test reports on 1) Uniform Static Air Pressure Test, Loading per FBC TAS 202-94
   2) Large Missile Impact Test per FBC, TAS 201-94
   3) Cyclic Wind Pressure Loading per FBC, TAS 203-94
   along with marked-up drawings and installation diagram of Model ECD-545-MD Aluminum Louver, prepared by Hurricane Test Laboratory, LLC, Test Report No. **HTL-0399-0116-07**, dated 02/27/2008, signed and sealed by Vinu J. Abraham, P.E.

C. CALCULATIONS *"Submitted under NOA # 14-0714.03"*

1. ECD-545-MD Louver calculations prepared by Rice Engineering, dated 01/21/2015, signed and sealed by L. David Rice, P.E.

"Submitted under NOA # 11-0429.04"

2. ECD-545-MD Louver calculations prepared by Rice Engineering, dated 04/21/2011, signed and sealed by L. David Rice, P.E.

D. QUALITY ASSURANCE

1. Miami-Dade Department of Regulatory and Economic Resources (RER)

E. MATERIAL CERTIFICATIONS

1. None.

F. STATEMENTS *"Submitted under NOA # 15-0428.02"*

1. Statement letter of code conformance to the 5th edition (2014) FBC issued by Rice Engineering, dated 04/17/2015, signed and sealed by L. David Rice, P.E.

"Submitted under NOA # 14-0714.03"

2. Statement letter of code conformance to 2010 FBC issued by Rice Engineering, dated 11/13/2013, signed and sealed by L. David Rice, P.E.
3. No financial interest letter issued by Rice Engineering, dated 03/30/2011, signed and sealed by L. David Rice, P.E.

12/27/2018

Carlos M. Utrera, P.E.
Product Control Examiner
NOA No. 18-1120.06
Expiration Date: October 23, 2023
Approval Date: January 3, 2019

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

2. New evidence submitted

A. DRAWINGS

1. Drawing No. **ECD-545-MD NOA**, titled "ECD-545-MD", sheets 1 through 17 of 17, dated 08/30/2018, prepared by the manufacturer, signed and sealed by Theodore Berman, P.E.

B. TESTS

1. Test reports on 1) Uniform Static Air Pressure Test, Loading per FBC, TAS 202-94
   2) Large Missile Impact Test per FBC, TAS 201-94 (Missile Level 'E')
   3) Cyclic Wind Pressure Loading per FBC, TAS 203-94
   along with installation diagram of Model ECD-545-MD Aluminum Louvers, prepared by UL LLC, Test Report No. **SV30902-20180808**, dated 09/13/2018, signed and sealed by Alexis Spyrou, P.E.
2. Test report on Wind Driven Rain Resistance per FBC TAS 100(A)-95 on an ECD-545-MD Louver with a CD-51 Damper, prepared by Intertek, Test Report No. **I8042.01-801-44 R0**, dated 09/05/2018, signed and sealed by Tyler Westerling, P.E.
3. Test report on Wind Driven Rain Resistance per FBC AMCA 550-15 on an ECD-545-MD Louver with a CD-51 Damper, prepared by Intertek, Test Report No. **I8042.02-801.44 R0**, dated 09/07/2018, signed and sealed by Tyler Westerling, P.E.

C. CALCULATIONS

1. ECD-545-MD louver structural calculations prepared by the manufacturer, dated 07/17/2018, signed and sealed by Theodore Berman, P.E.

D. QUALITY ASSURANCE

1. Miami-Dade Department of Regulatory and Economic Resources (RER)

E. MATERIAL CERTIFICATIONS

1. None.

F. STATEMENTS

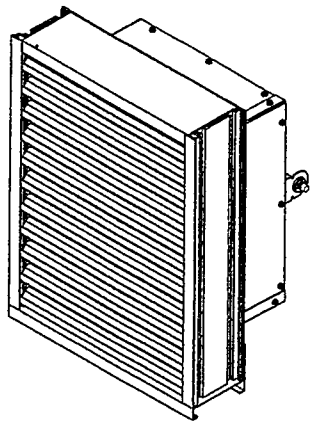
1. Statement letter of code conformance to the 6th edition (2017) FBC and of no financial interest, dated 12/19/2018, issued, signed and sealed by Theodore Berman, P.E.

12/27/2018

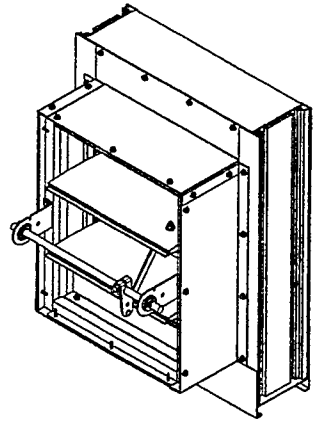
Carlos M. Utrera, P.E.
Product Control Examiner
NOA No. 18-1120.06
Expiration Date: October 23, 2023
Approval Date: January 3, 2019

NOTES:

1. THIS NOA DRAWING INCLUDES INSTALLATION DETAILS TO ATTAIN MAXIMUM DESIGN PRESSURES OF 150 PSF AS TESTED IN ACCORDANCE WITH PROTOCOLS TAS 201 (LARGE MISSILE IMPACT), TAS 202 (STATIC WIND PRESSURE), AND TAS 203 (CYCLIC WIND PRESSURE) FOR USE WITHIN HIGH VELOCITY HURRICANE-AFFECTED ZONES DEFINED BY THE FLORIDA BUILDING CODE. THE INSTALLATION OF AN OPTIONAL CD-51 DAMPER YIELDS WATER INGRESS PROTECTION AS TESTED IN ACCORDANCE WITH AMCA 550 AND TAS 100(A).
2. ALL VARIATIONS ARE LARGE MISSILE IMPACT RESISTANT.
3. UNITS OF MEASURE ARE FRACTIONAL INCHES UNLESS OTHERWISE SPECIFIED.
4. IT IS ASSUMED THAT THE LOUVER SYSTEMS DO NOT SUPPORT ANY LOADS TRANSFERRED FROM THE BUILDING CONDITION.
5. IT IS ASSUMED THAT THE BUILDING CONDITIONS ARE ADEQUATELY DESIGNED TO SUPPORT LOADS IMPARTED BY THE LOUVER SYSTEM.
6. TO PREVENT GALVANIC CORROSION, ELECTROCHEMICALLY DISSIMILAR MATERIALS IN CONTACT WITH ONE ANOTHER SHALL BE PROTECTED BY PAINT, GASKETING, OR OTHER MEANS PER THE FLORIDA BUILDING CODE.
7. WATER PENETRATION:
   a. WHEN LOUVERS ARE INSTALLED WITHOUT THE OPTIONAL CD-51 DAMPER, THE ROOM BEHIND THE LOUVER MUST BE DESIGNED TO DRAIN WATER PENETRATING INTO THE ROOM, AND THE ROOM MUST HOUSE WATER-RESISTANT/WATERPROOF EQUIPMENT, COMPONENTS, OR SUPPLIES.
   b. ADDITIONAL PROTECTION FROM WATER INGRESS IS NOT NECESSARY WHEN LOUVERS ARE INSTALLED WITH CD-51 DAMPERS AND THE DAMPERS ARE CLOSED.
8. OTHER BUILDING CONDITIONS THAN THOSE DENOTED MAY BE UTILIZED IF ANALYZED AND APPROVED BY A PROFESSIONAL ENGINEER.
9. MULTI-SECTION WIDE AND HIGH LOUVER SYSTEMS ARE ALLOWABLE PROVIDED THE INDIVIDUAL SECTIONS ARE SUPPORTED PER THE DETAILS ON THIS DRAWING AND A SUITABLE SUPPORT STRUCTURE IS ANALYZED AND APPROVED BY A PROFESSIONAL ENGINEER.



EXTERIOR VIEW
W/ OPTIONAL DAMPER



INTERIOR VIEW
W/ OPTIONAL DAMPER

TABLE 1		
SINGLE SECTION SIZE LIMITATIONS		
MAX DESIGN PRESSURE	MIN (W X H)	MAX (W X H)
150 PSF	6" X 6" STANDARD 10" X 14" W/ DAMPER	60" X 144"

TABLE 2	
MULTIPLE SECTION SIZE LIMITATIONS (MAX DESIGN PRESSURE: 150 PSF)	
SINGLE SECTION HIGH - UNLIMITED WIDTH	SEE SHEET #4
SINGLE SECTION WIDE - UNLIMITED HEIGHT	SEE SHEET #12

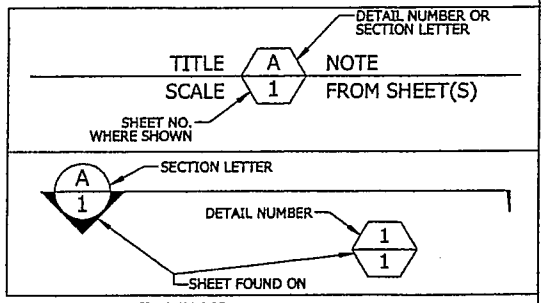


TABLE 3					
ANCHOR SCHEDULE					
SUBSTRATE	LOCATION	ANCHOR TYPE	MIN. EMBEDMENT	MIN. EDGE DISTANCE	SPACING
CONCRETE (f'c ≥ 4000 PSI)	JAMBS	3/8" X 3 1/2" HILTI KWIK HUS-EZ SCREW ANCHOR (F-7)	3 1/4"	1 5/8"	10"
	MULLIONS (WALL DEPTH < 12 3/8")	5/8" X 4" HILTI KWIK HUS-EZ SCREW ANCHOR (F-8)	3 1/4"	2 1/2"	7"
	MULLIONS (WALL DEPTH ≥ 12 3/8")	5/8" X 5 1/2" HILTI KWIK HUS-EZ SCREW ANCHOR (F-9)	5"	5 5/8"	9"
GROUT FILLED CMU (f'm ≥ 1500 PSI)	JAMBS	3/8" X 3 1/2" HILTI KWIK HUS-EZ SCREW ANCHOR (F-7)	3 1/4"	1 5/8"	8"
	MULLIONS	1/2" X 5" HILTI KWIK HUS-EZ SCREW ANCHOR (F-10)	4 1/4"	4"	7 3/8"
STRUCTURAL STEEL (MIN. 3/16" THICK, Fy ≥ 36 KSI)	JAMBS	1/4" X 1" SELF-DRILLING SCREW (F-11)	FULL	1/2"	8"
	MULLIONS	1/4" X 1" SELF-DRILLING SCREW (F-11); TWELVE (12) FASTENERS PER CONNECTION	FULL	1/2"	3/4"
STEEL STUD (MIN. 12 GA, Fy ≥ 50 KSI)	JAMBS	1/4" X 1" SELF-DRILLING SCREW (F-11)	FULL	1/2"	8"
	MULLIONS	1/4" X 1" SELF-DRILLING SCREW (F-11); TWELVE (12) FASTENERS PER CONNECTION	FULL	1/2"	3/4"
WOOD (S.G. ≥ 0.43)	JAMBS	1/2" X 3 1/2" LAG BOLT WITH FLAT WASHER (F-12)	3"	2"	10"
	MULLIONS	1/2" X 3 1/2" LAG BOLT WITH FLAT WASHER (F-12); TWELVE ANCHORS PER CONNECTION	3"	2"	2 1/2"

PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 18-1120.06
Expiration Date 10/23/2023
By
Miami-Dade Product Control

P.E. STAMP

Ted Berman & Assoc. LLC
CA # 27502

THEODORE BERMAN LICENSE No 09814 STATE OF FLORIDA PROFESSIONAL ENGINEER

10/24/18

REV. NO.	DESCRIPTION	DATE	DRAWN BY
1	INITIAL RELEASE	8/30/2018	LGH

UNLESS OTHERWISE SPECIFIED DIMENSION ARE IN INCHES.
TOLERANCE UNLESS NOTED:
X.X ±0.060
X.XX ±0.030
X.XXX ±0.010
ANGLE ±1°
FRACTION ±1/16
MAX HOLE BREAKOUT: 15% OF MATERIAL THICKNESS

5101 Blue Mound Road
Fort Worth, Texas 76106
Phone: 817-509-2300
Fax: 817-831-3110

THIRD ANGLE PROJECTION

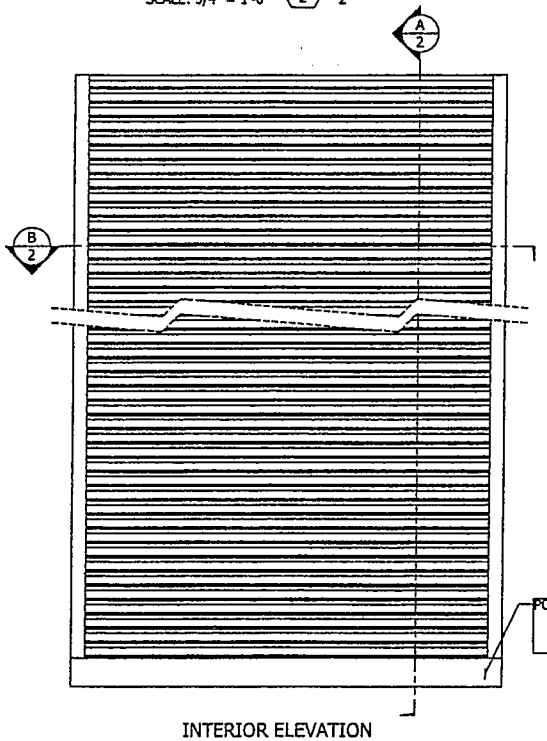
PCI INDUSTRIES DOING BUSINESS AS
POTTORFF

DRAWING DESCR: COVER SHEET			
PROJECT: ECD-545-MD			
LOCATION:			
CUSTOMER:			
PROJ. MGR.:	DRAWN BY: LGH		
DATE: 6/27/2018 CHK'D BY: NW	ORDER NUMBER	P.O. NUMBER	DRAWING NUMBER
SHEET 1 of 19 SCALE: NONE			ECD-545-MD NOA

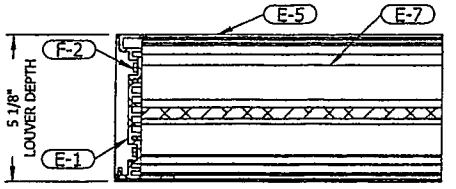
I:\Engineering Library\Engineering Projects\2018 NOA Files for ECD-545-MD with CD-51\

GENERAL LOUVER ASSEMBLY

SECTION VIEW B 2 GENERAL ASSEMBLY
SCALE: 3/4" = 1'-0" 2 2

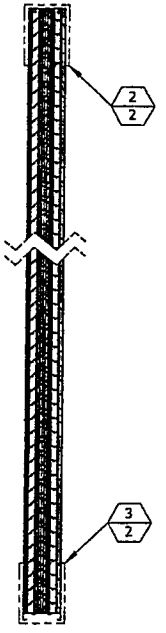


INTERIOR ELEVATION

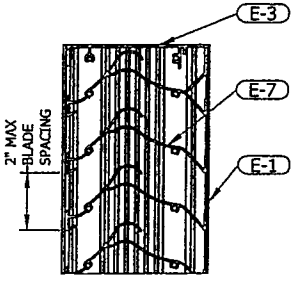


CONSTRUCTION 1 2 DETAIL 2
3"=1'-0"

IN FLANGED CONFIGURATIONS:
E-2 WILL BE USED IN PLACE OF E-1
E-6 WILL BE USED IN PLACE OF E-5

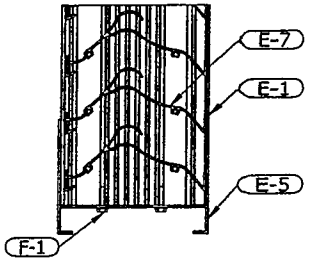


SECTION VIEW A 2 GENERAL ASSEMBLY
3/4"=1'-0" 2 2



CONSTRUCTION 2 2 DETAIL 2
3"=1'-0"

IN FLANGED CONFIGURATIONS:
E-2 WILL BE USED IN PLACE OF E-1
E-4 WILL BE USED IN PLACE OF E-3



CONSTRUCTION 3 2 DETAIL 2
3"=1'-0"

IN FLANGED CONFIGURATIONS:
E-2 WILL BE USED IN PLACE OF E-1
E-6 WILL BE USED IN PLACE OF E-5

PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 18-1120.06
Expiration Date 10/23/2023
By
Miami-Dade Product Control

P.E. STAMP

Ted Berman & Assoc. LLC
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REV. NO.	DESCRIPTION	DATE	DRAWN BY
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UNLESS OTHERWISE SPECIFIED DIMENSION ARE IN INCHES.
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X.XX ±0.030
X.XXX ±0.010
ANGLE ±1°
FRACTION ±1/16
MAX HOLE BREAKOUT: 15% OF MATERIAL THICKNESS

5101 Blue Mound Road
Fort Worth, Texas 76106
Phone: 817-509-2300
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THIRD ANGLE PROJECTION

PCI INDUSTRIES DOING BUSINESS AS POTTORFF

DRAWING DESCR: GENERAL LOUVER ASSEMBLY			
PROJECT: ECD-545-MD			
LOCATION:			
CUSTOMER:			
PROJ. MGR.:	DRAWN BY: LGH		
DATE: 6/27/2018 CHK'D BY: NW	ORDER NUMBER	P.O. NUMBER	DRAWING NUMBER
SHEET: 2 of 12 SCALE: 3/4"=1'-0"			ECD-545-MD NOA

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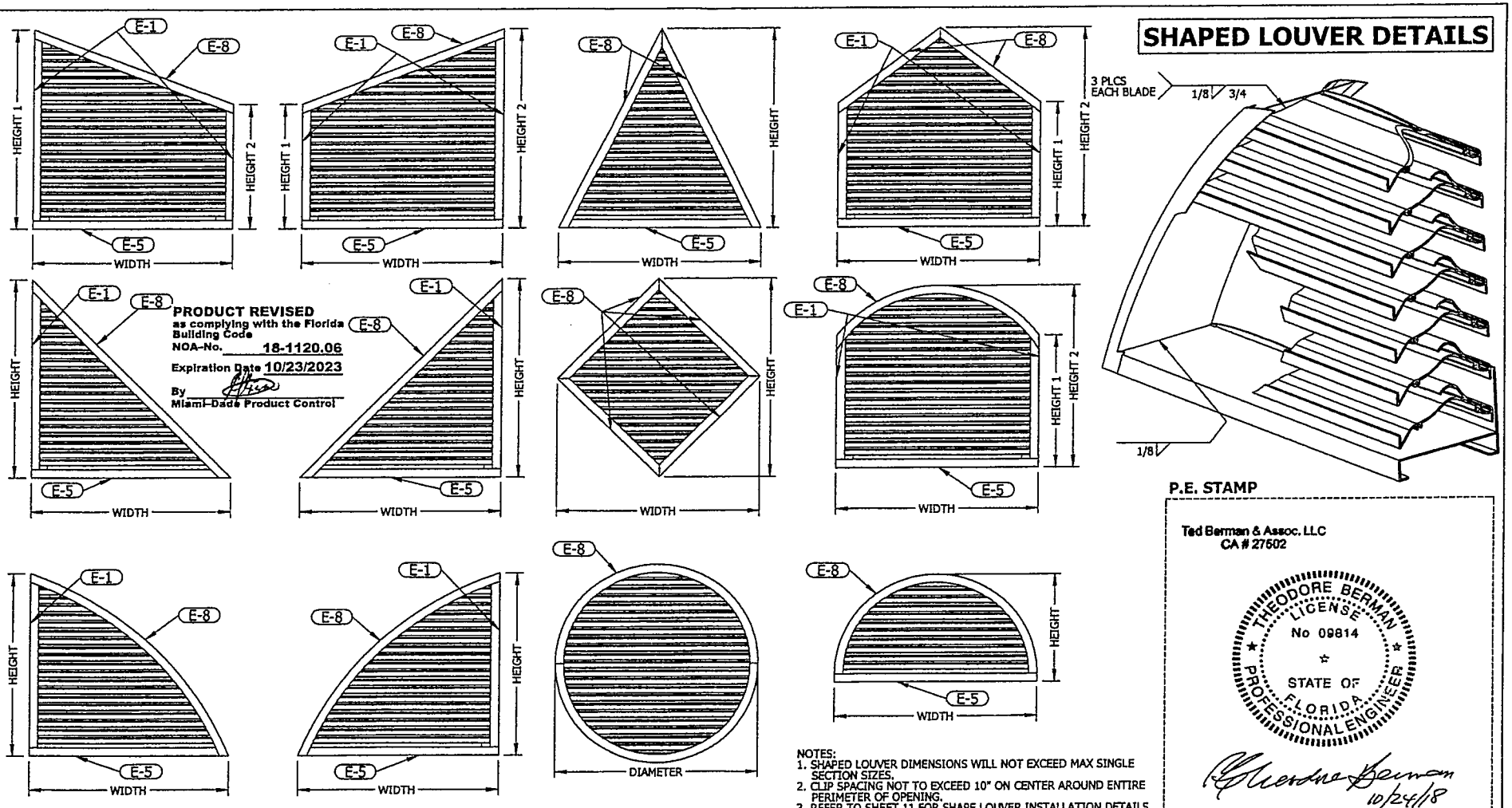
SHAPED LOUVER DETAILS



PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 18-1120.06
Expiration Date 10/23/2023
By
Miami-Dade Product Control

NOTES:
1. SHAPED LOUVER DIMENSIONS WILL NOT EXCEED MAX SINGLE SECTION SIZES.
2. CLIP SPACING NOT TO EXCEED 10" ON CENTER AROUND ENTIRE PERIMETER OF OPENING.
3. REFER TO SHEET 11 FOR SHAPE LOUVER INSTALLATION DETAILS.

P.E. STAMP

Ted Berman & Assoc. LLC
CA # 27502

THEODORE BERMAN
LICENSE
No 09814
STATE OF FLORIDA
PROFESSIONAL ENGINEER

10/24/18

REV. NO.	DESCRIPTION	DATE	DRAWN BY
1	INITIAL RELEASE	8/30/2018	LGH

UNLESS OTHERWISE SPECIFIED DIMENSION ARE IN INCHES.
TOLERANCE UNLESS NOTED:
X.X ±0.060
X.XX ±0.030
X.XXX ±0.010
ANGLE ±1°
FRACTION ±1/16
MAX HOLE BREAKOUT: 15% OF MATERIAL THICKNESS

5101 Blue Mound Road
Fort Worth, Texas 76106
Phone: 817-509-2300
Fax: 817-831-3110

THIRD ANGLE PROJECTION

PCI INDUSTRIES DOING BUSINESS AS
POTTORFF

DRAWING DESCR: SHAPED LOUVER DETAILS			
PROJECT: ECD-545-MD			
LOCATION:			
CUSTOMER:			
PROJ. MGR.:	DRAWN BY: LGH		
DATE: 6/27/2018 CHK'D BY: NW	ORDER NUMBER	P.O. NUMBER	DRAWING NUMBER
SHEET 3 of 17 SCALE: NONE			ECD-545-MD NOA

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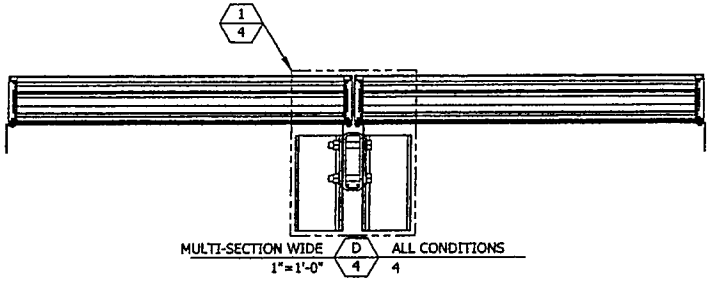
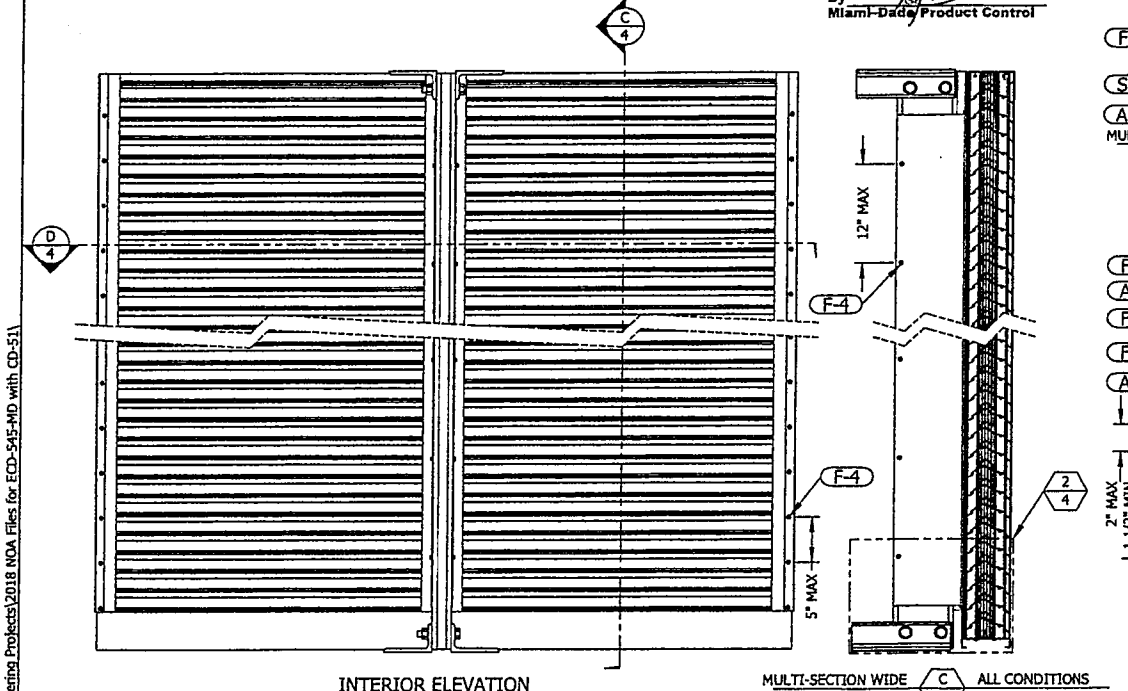
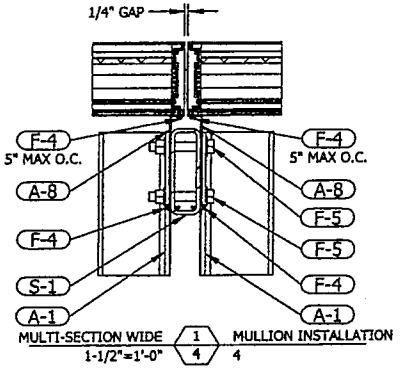
GENERAL MULLION DETAILS



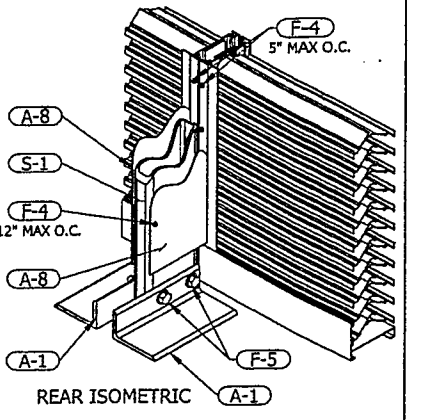
PRODUCT REVISED
as complying with the Florida Building Code
NOA No. 18-1120.06
Expiration Date 10/23/2023
By
Miami-Dade Product Control



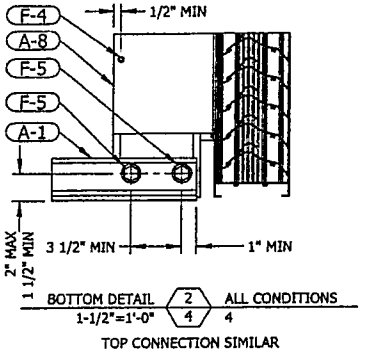
INTERIOR ELEVATION
QUANTITY SECTIONS WIDE IS UNLIMITED



QUANTITY SECTIONS WIDE IS UNLIMITED



REAR ISOMETRIC



TOP CONNECTION SIMILAR

P.E. STAMP

Ted Berman & Assoc. LLC
CA # 27502

THEODORE BERMAN LICENSE No 09814 STATE OF FLORIDA PROFESSIONAL ENGINEER

10/24/18

REV. NO.	DESCRIPTION	DATE	DRAWN BY
1	INITIAL RELEASE	8/30/2018	LGH

UNLESS OTHERWISE SPECIFIED DIMENSION ARE IN INCHES.
TOLERANCE UNLESS NOTED:
X.X ±0.060
X.XX ±0.030
X.XXX ±0.010
ANGLE ±1°
FRACTION ±1/16
MAX HOLE BREAKOUT: 15% OF MATERIAL THICKNESS

5101 Blue Mound Road
Fort Worth, Texas 76106
Phone: 817-509-2300
Fax: 817-431-3110

THIRD ANGLE PROJECTION

PCI INDUSTRIES DOING BUSINESS AS
POTTORFF

DRAWING DESCR: GENERAL MULLION DETAILS			
PROJECT: ECD-545-MD			
LOCATION:			
CUSTOMER:			
PROJ. MGR.:	DRAWN BY: LGH		
DATE: 6/27/2018 CHK'D BY: NW	ORDER NUMBER	P.O. NUMBER	DRAWING NUMBER
SHEET 1 of 1 SCALE: 1"=1'-0"			ECD-545-MD NOA

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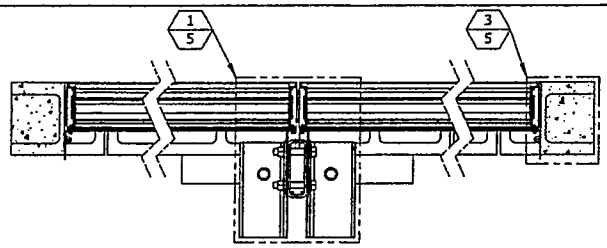
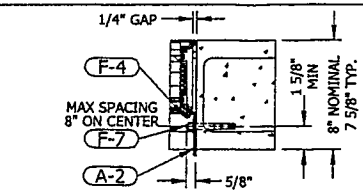
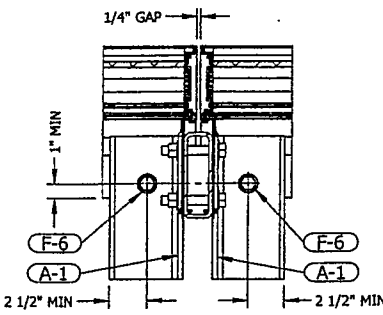
GROUT FILLED CMU CONDITION



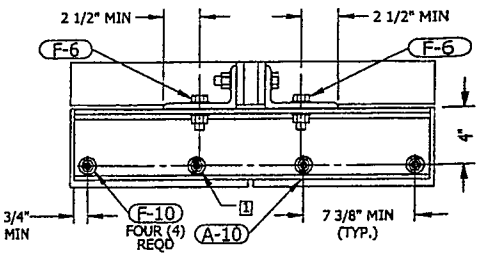
SECTION VIEW 1"=1'-0" (F / 5) GROUT FILLED CMU 5



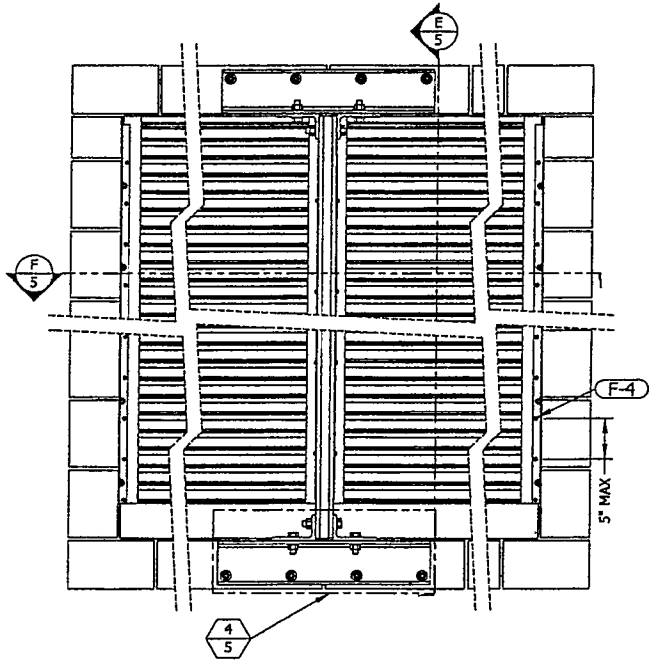
JAMB DETAIL 1-1/2"=1'-0" (3 / 5) GROUT FILLED CMU 5
TYPICAL OPP. HAND



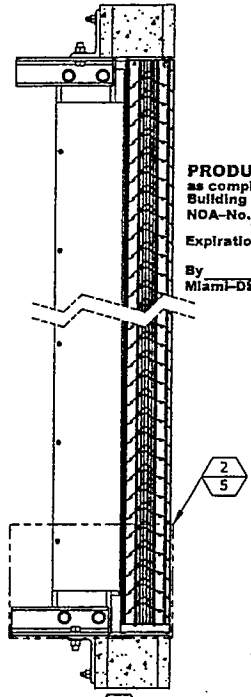
MULLION INSTALLATION 1-1/2"=1'-0" (1 / 5) GROUT FILLED CMU 5



MULLION INSTALLATION 1-1/2"=1'-0" (4 / 5) GROUT FILLED CMU 5
TOP CONNECTION SIMILAR



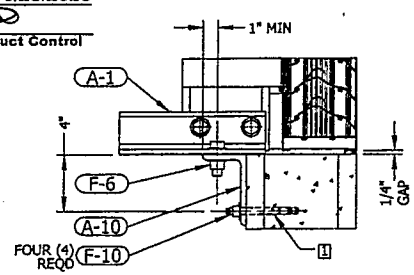
INTERIOR ELEVATION
QUANTITY SECTIONS WIDE IS UNLIMITED



SECTION VIEW 1"=1'-0" (E / 5) GROUT FILLED CMU 5

PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 18-1120.06
Expiration Date 10/23/2023
By
Miami-Dade Product Control

QUANTITY SECTIONS WIDE IS UNLIMITED



BOTTOM DETAIL 1-1/2"=1'-0" (2 / 5) GROUT FILLED CMU 5
TOP CONNECTION SIMILAR

NOTES:
[1] NO ANCHOR MAY BE LOCATED CLOSER THAN 1-1/4" TO A VERTICAL JOINT BETWEEN CMU BLOCKS.

P.E. STAMP

Ted Berman & Assoc. LLC
CA # 27502

THEODORE BERMAN LICENSE No 09814 STATE OF FLORIDA PROFESSIONAL ENGINEER

10/24/18

REV. NO.	DESCRIPTION	DATE	DRAWN BY
1	INITIAL RELEASE	8/30/2018	LGH

UNLESS OTHERWISE SPECIFIED DIMENSION ARE IN INCHES.
TOLERANCE UNLESS NOTED: X.X ±0.060, X.XX ±0.030, X.XXX ±0.010, ANGLE ±1°, FRACTION ±1/16
MAX HOLE BREAKOUT: 15% OF MATERIAL THICKNESS

5101 Blue Mound Road
Fort Worth, Texas 76106
Phone: 817-509-2300
Fax: 817-831-3110

THIRD ANGLE PROJECTION

PCI INDUSTRIES DOING BUSINESS AS
POTTORFF

DRAWING DESCR: GROUT FILLED CMU CONDITION			
PROJECT: ECD-545-MD			
LOCATION:			
CUSTOMER:			
PROJ. MGR.:	DRAWN BY: LGH		
DATE: 6/27/2018 CHK'D BY: NW	ORDER NUMBER	P.O. NUMBER	DRAWING NUMBER
SHEET: 6 of 17 SCALE: 1"=1'-0"			ECD-545-MD NOA

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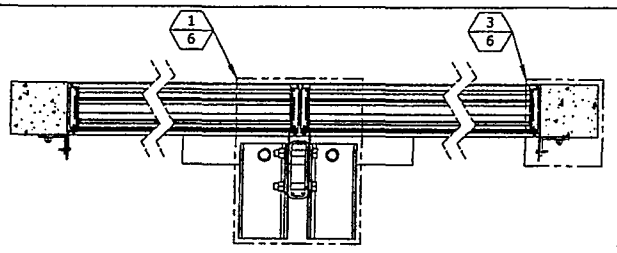
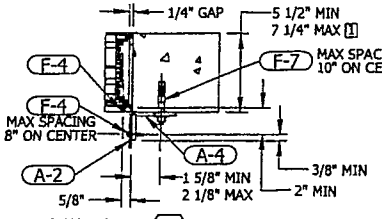
9A.9

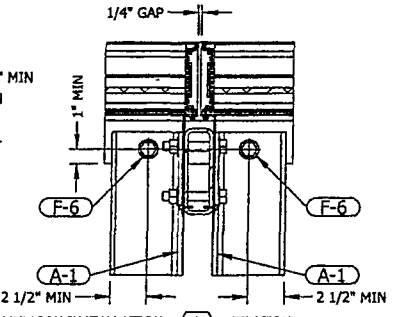
CONCRETE CONDITION TENSION CONNECTION



SECTION VIEW H 6 TENSION 6
1"=1'-0"

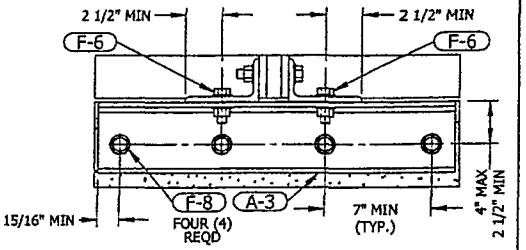


JAMB DETAIL 3 6 TENSION 6
1-1/2"=1'-0"
TYPICAL OPP. HAND



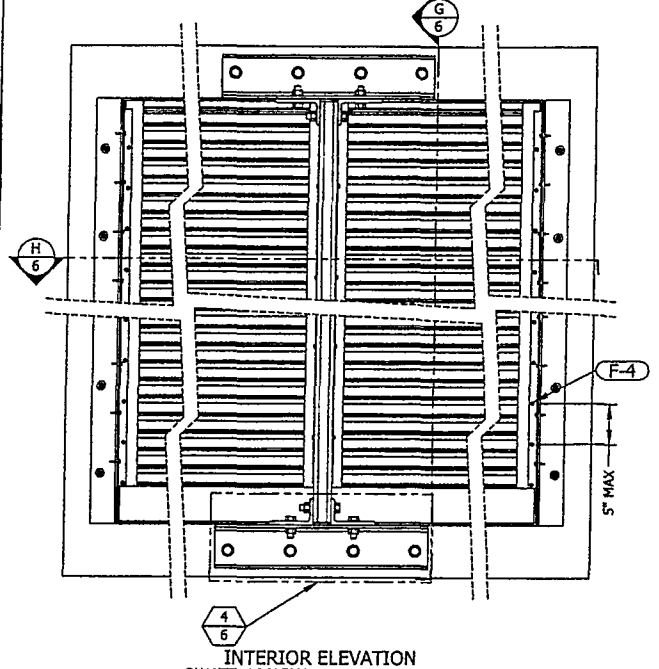
MULLION INSTALLATION 1 6 TENSION 6
1-1/2"=1'-0"

QUANTITY SECTIONS WIDE IS UNLIMITED

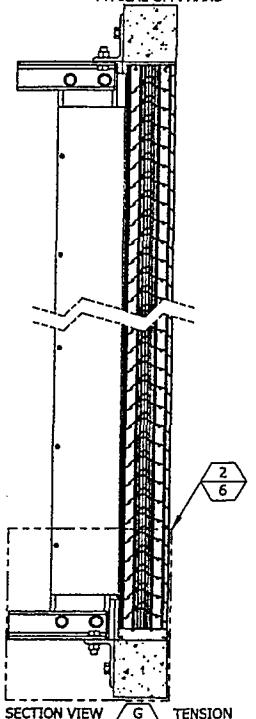


MULLION INSTALLATION 4 6 TENSION 6
1-1/2"=1'-0"

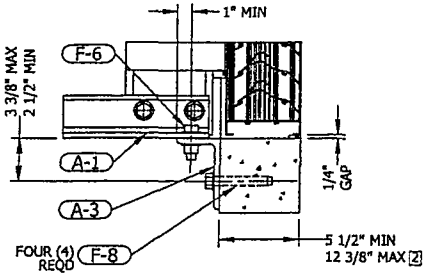
TOP CONNECTION SIMILAR



INTERIOR ELEVATION
QUANTITY SECTIONS WIDE IS UNLIMITED



SECTION VIEW G 6 TENSION 6
1"=1'-0"



BOTTOM DETAIL 2 6 TENSION 6
1-1/2"=1'-0"

TOP CONNECTION SIMILAR

PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 18-1120.06
Expiration Date 10/23/2023
By Miami-Dade Product Control

P.E. STAMP

Ted Berman & Assoc. LLC
CA # 27502

THEODORE BERMAN
LICENSE
No 09814
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

Theodore Berman
10/24/18

NOTES:
1. SEE SHEET 7 FOR SHEAR CONNECTION DETAILS WHEN CONCRETE CONDITION AT JAMB > 7 1/4" THICK.
2. SEE SHEET 7 FOR SHEAR CONNECTION DETAILS WHEN CONCRETE CONDITION AT MULLION > 12 3/8" THICK.

REV. NO.	DESCRIPTION	DATE	DRAWN BY
1	INITIAL RELEASE	8/30/2018	LGH

UNLESS OTHERWISE SPECIFIED DIMENSION ARE IN INCHES.
TOLERANCE UNLESS NOTED:
XX ±0.060
X.XX ±0.030
X.XXX ±0.010
ANGLE ±1°
FRACTION ±1/16
MAX HOLE BREAKOUT: 15% OF MATERIAL THICKNESS

5101 Blue Mound Road
Fort Worth, Texas 76106
Phone: 817-509-2300
Fax: 817-831-3110

THIRD ANGLE PROJECTION

PCI INDUSTRIES DOING BUSINESS AS
POTTORFF

DRAWING DESCR: CONCRETE CONDITION TENSION CONNECTION			
PROJECT: ECD-545-MD			
LOCATION:			
CUSTOMER:			
PROJ. MGR.:	DRAWN BY: LGH		
DATE: 6/29/2018 CHK'D BY: NW	ORDER NUMBER	P.O. NUMBER	DRAWING NUMBER
SHEET: 6 of 17 SCALE: 1"=1'-0"			ECD-545-MD NOA

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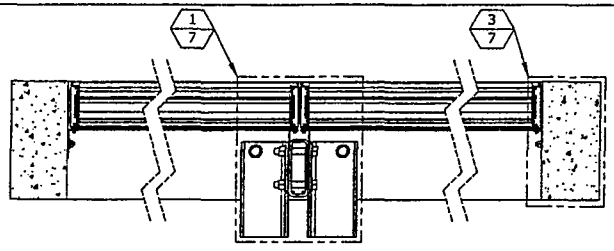
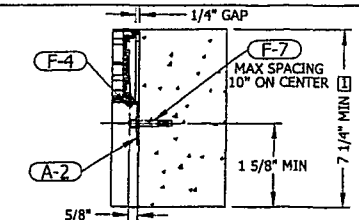
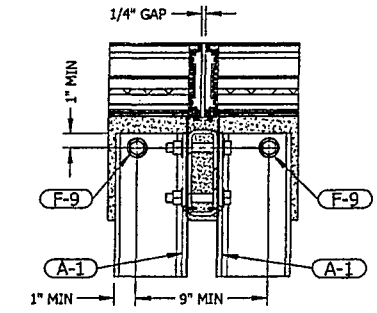
CONCRETE CONDITION SHEAR CONNECTION



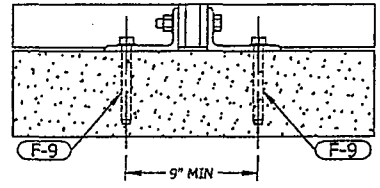
SECTION VIEW K/7 SHEAR 7
1"=1'-0"



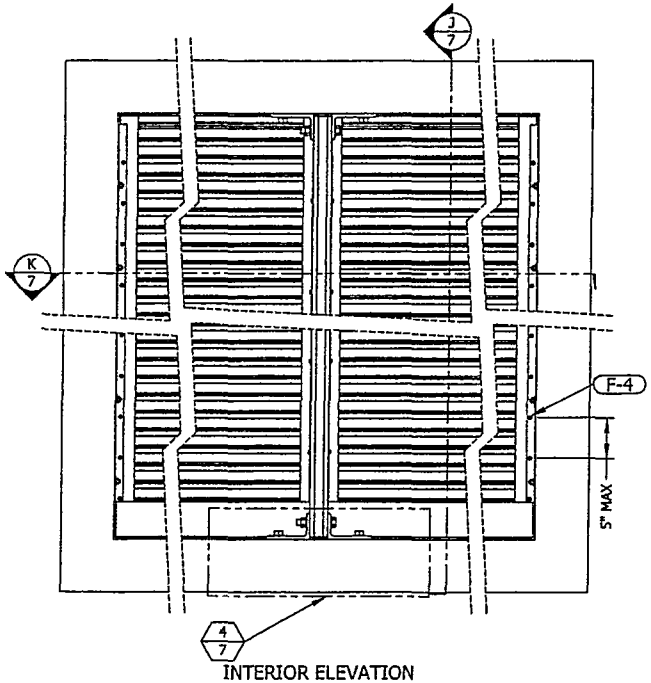
JAMB DETAIL 3/7 SHEAR 7
1-1/2"=1'-0"
TYPICAL OPP. HAND



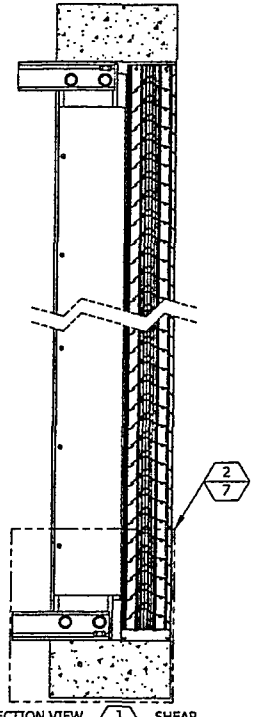
MULLION INSTALLATION 1/7 SHEAR 7
1-1/2"=1'-0"
QUANTITY SECTIONS WIDE IS UNLIMITED



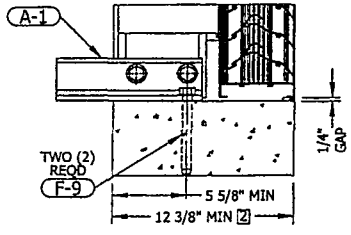
MULLION INSTALLATION 4/7 SHEAR 7
1-1/2"=1'-0"
TOP CONNECTION SIMILAR



INTERIOR ELEVATION
QUANTITY SECTIONS WIDE IS UNLIMITED



SECTION VIEW J/7 SHEAR 7
1"=1'-0"



BOTTOM DETAIL 2/7 SHEAR 7
1-1/2"=1'-0"
TOP CONNECTION SIMILAR

PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 18-1120.06
Expiration Date 10/23/2023
By
Miami-Dade Product Control

P.E. STAMP

Ted Berman & Assoc. LLC
CA # 27502

THEODORE BERMAN
LICENSE
No 09814
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

10/24/18

NOTES:
1 SEE SHEET 6 FOR TENSION CONNECTION DETAILS WHEN CONCRETE CONDITION AT JAMB ≤ 7 1/4" THICK.
2 SEE SHEET 6 FOR TENSION CONNECTION DETAILS WHEN CONCRETE CONDITION AT MULLION ≤ 12 3/8" THICK.

REV. NO.	DESCRIPTION	DATE	DRAWN BY
1	INITIAL RELEASE	8/30/2018	LGH

UNLESS OTHERWISE SPECIFIED DIMENSION ARE IN INCHES.
TOLERANCE UNLESS NOTED:
X.X ±0.060
X.XX ±0.030
X.XXX ±0.010
ANGLE ±1°
FRACTION ±1/16
MAX HOLE BREAKOUT: 15% OF MATERIAL THICKNESS

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Fort Worth, Texas 76106
Phone: 817-509-2300
Fax: 817-831-3110

THIRD ANGLE PROJECTION

PCI INDUSTRIES DOING BUSINESS AS
POTTORFF

DRAWING DESCR: CONCRETE CONDITION SHEAR CONNECTION			
PROJECT: ECD-545-MD			
LOCATION:			
CUSTOMER:			
PROJ. MGR.:		DRAWN BY: LGH	
DATE: 6/27/2018	CHK'D BY: NW	ORDER NUMBER / P.O. NUMBER	DRAWING NUMBER
SHEET: 7 of 17	SCALE: 1"=1'-0"		ECD-545-MD NOA

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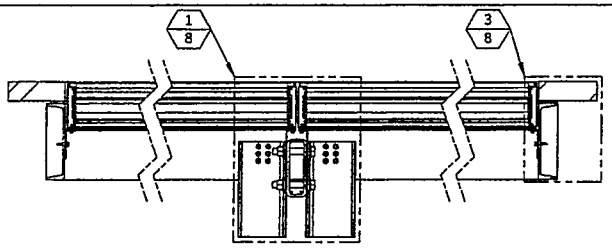
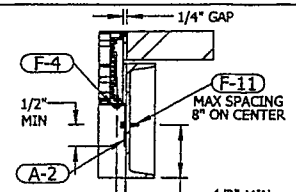
STEEL CONDITION

PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 18-1120.06
Expiration Date 10/23/2023
By
Miami-Dade Product Control

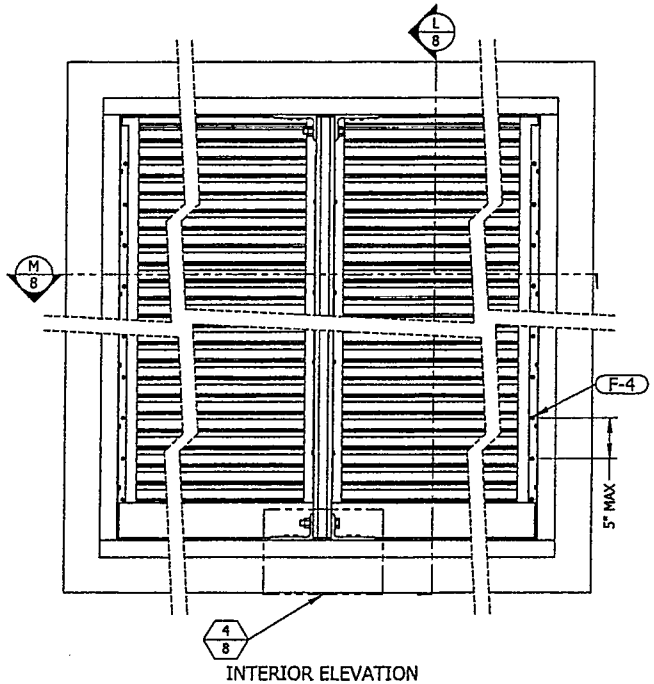


SECTION VIEW M/8 STEEL
1"=1'-0" 8

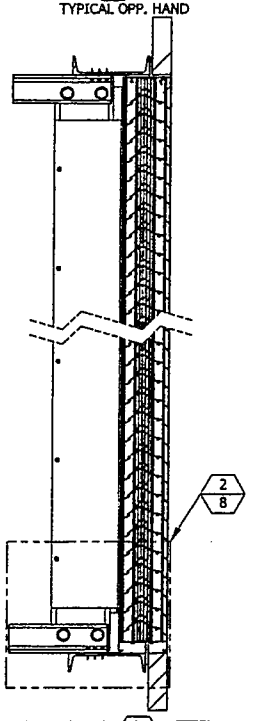


JAMB DETAIL 3/8 STEEL
1-1/2"=1'-0" 8

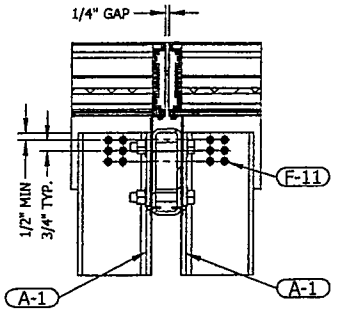
TYPICAL OPP. HAND



INTERIOR ELEVATION
QUANTITY SECTIONS WIDE IS UNLIMITED

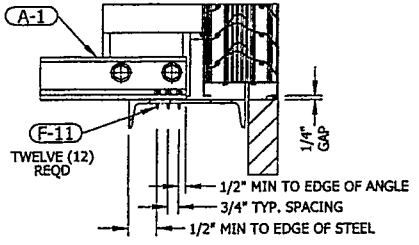


SECTION VIEW L/8 STEEL
1"=1'-0" 8



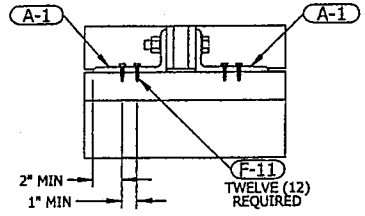
MULLION INSTALLATION 1/8 STEEL
1-1/2"=1'-0" 8

QUANTITY SECTIONS WIDE IS UNLIMITED



BOTTOM DETAIL 2/8 STEEL
1-1/2"=1'-0" 8

TOP CONNECTION SIMILAR



MULLION INSTALLATION 4/8 STEEL
1-1/2"=1'-0" 8

TOP CONNECTION SIMILAR

P.E. STAMP

Ted Berman & Assoc. LLC
CA # 27502

THEODORE BERMAN LICENSE No 09814 STATE OF FLORIDA PROFESSIONAL ENGINEER

Theodore Berman 10/24/18

REV. NO.	DESCRIPTION	DATE	DRAWN BY
1	INITIAL RELEASE	8/30/2018	LGH

UNLESS OTHERWISE SPECIFIED DIMENSION ARE IN INCHES.

TOLERANCE UNLESS NOTED:
X.X ±0.060
X.XX ±0.030
X.XXX ±0.010
ANGLE ±1°
FRACTION ±1/16

MAX HOLE BREAKOUT: 15% OF MATERIAL THICKNESS

5101 Blue Mound Road
Fort Worth, Texas 76106
Phone: 817-509-2300
Fax: 817-831-3110

THIRD ANGLE PROJECTION

PCI INDUSTRIES DOING BUSINESS AS POTTORFF

DRAWING DESCR: STEEL CONDITION			
PROJECT: ECD-545-MD			
LOCATION:			
CUSTOMER:			
PROJ. MGR.:		DRAWN BY: LGH	
DATE: 6/27/2018	CHK'D BY: NW	ORDER NUMBER / P.O. NUMBER	DRAWING NUMBER
SHEET: 8 of 17	SCALE: 1"=1'-0"		ECD-545-MD NOA

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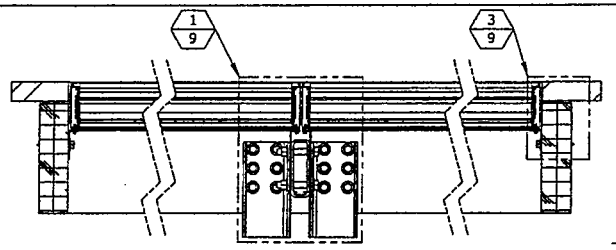
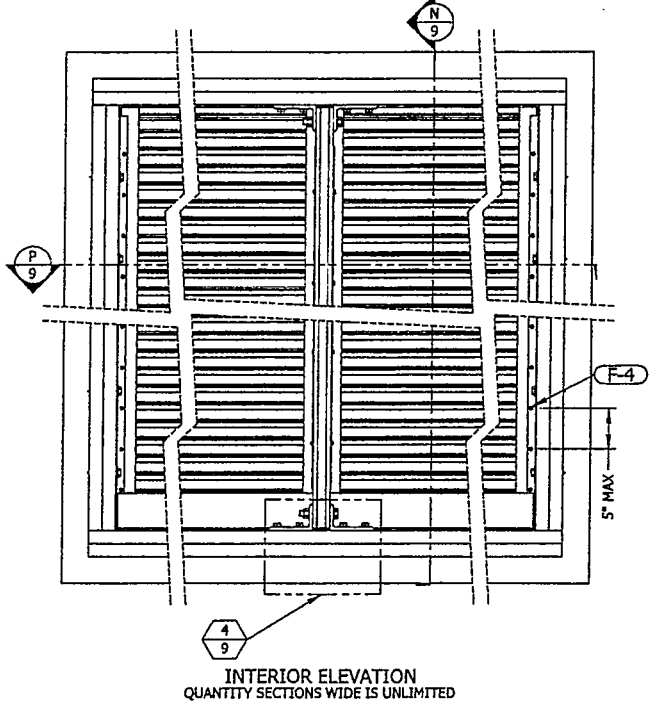
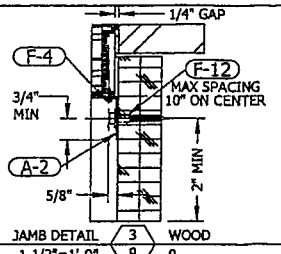
WOOD CONDITION



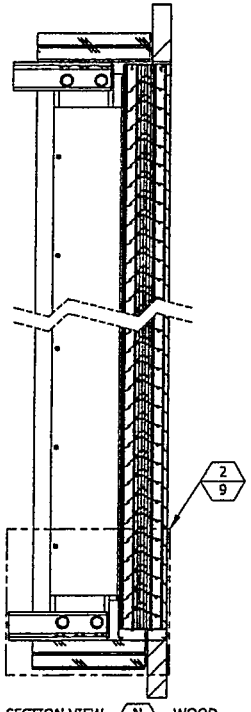
SECTION VIEW P 9 WOOD
1"=1'-0" 9



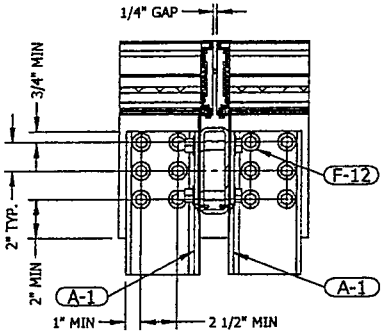
INTERIOR ELEVATION
QUANTITY SECTIONS WIDE IS UNLIMITED



JAMB DETAIL 3 9 WOOD
1-1/2"=1'-0" 9
TYPICAL OPP. HAND

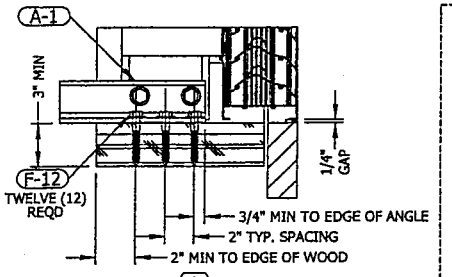


SECTION VIEW N 9 WOOD
1"=1'-0" 9

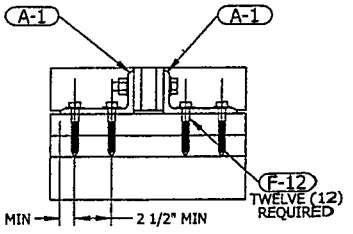


MULLION INSTALLATION 1 9 WOOD
1-1/2"=1'-0" 9

QUANTITY SECTIONS WIDE IS UNLIMITED



BOTTOM DETAIL 2 9 WOOD
1-1/2"=1'-0" 9
TOP CONNECTION SIMILAR



MULLION INSTALLATION 4 9 WOOD
1-1/2"=1'-0" 9
TOP CONNECTION SIMILAR

PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 18-1120.06
Expiration Date 10/23/2023
By Miami-Dade Product Control

P.E. STAMP

Ted Berman & Assoc. LLC
CA # 27502

THEODORE BERMAN LICENSE No 09814 STATE OF FLORIDA PROFESSIONAL ENGINEER

Theodore Berman 10/24/18

REV. NO.	DESCRIPTION	DATE	DRAWN BY
1	INITIAL RELEASE	8/30/2018	LGH

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X.XX ±0.030
X.XXX ±0.010
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FRACTION ±1/16
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Fax: 817-831-3110

THIRD ANGLE PROJECTION

PCI INDUSTRIES DOING BUSINESS AS
POTTORFF

DRAWING DESCR: WOOD CONDITION			
PROJECT: ECD-545-MD			
LOCATION:			
CUSTOMER:			
PROJ. MGR.:		DRAWN BY: LGH	
DATE: 6/27/2018	CHK'D BY: NW	ORDER NUMBER / P.O. NUMBER	DRAWING NUMBER
SHEET: 9 of 17	SCALE: 1"=1'-0"		ECD-545-MD NOA

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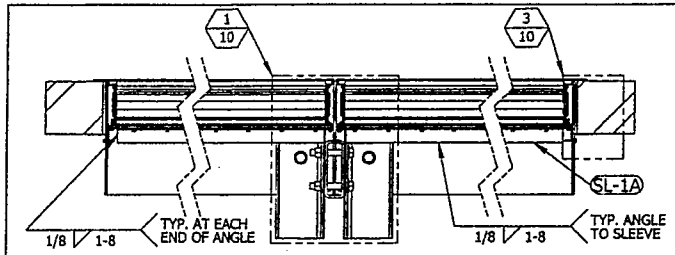
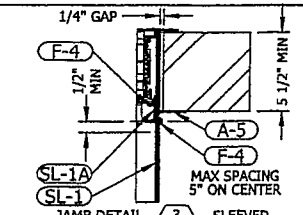
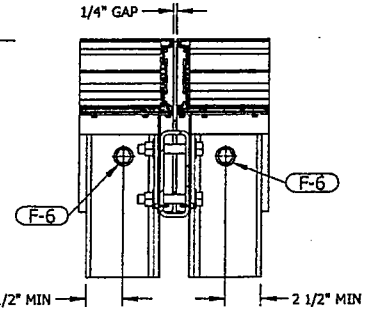
SLEEVED

PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 18-1120.06
Expiration Date 10/23/2023
By
Miami-Dade Product Control

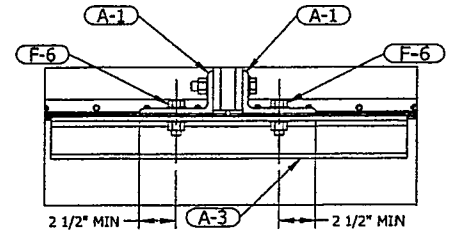




JAMB DETAIL 3 10 SLEEVED 10
1-1/2"=1'-0"
TYPICAL OPP. HAND

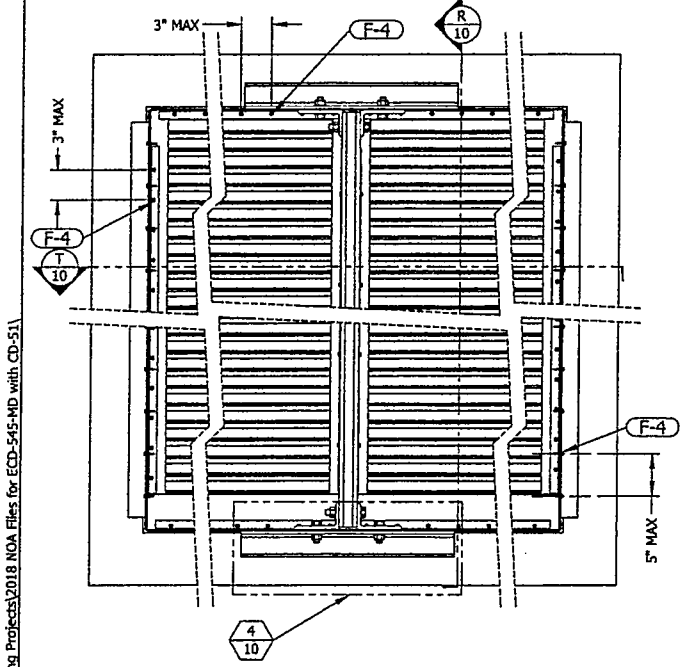


MULLION INSTALLATION 1 10 SLEEVED 10
1-1/2"=1'-0"
QUANTITY SECTIONS WIDE IS UNLIMITED

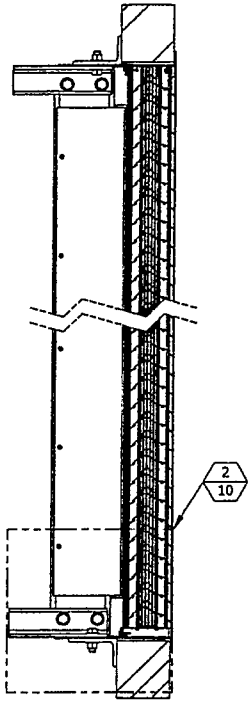


MULLION INSTALLATION 4 10 SLEEVED 10
1-1/2"=1'-0"
TOP CONNECTION SIMILAR

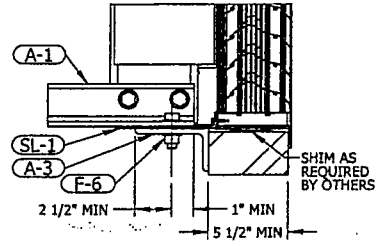
SECTION VIEW T 10 SLEEVED 10
1"=1'-0"



INTERIOR ELEVATION
QUANTITY SECTIONS WIDE IS UNLIMITED



SECTION VIEW R 10 SLEEVED 10
1"=1'-0"



BOTTOM DETAIL 2 10 SLEEVED 10
1-1/2"=1'-0"
TOP CONNECTION SIMILAR

P.E. STAMP

Ted Berman & Assoc. LLC
CA # 27502

THEODORE BERMAN LICENSE No 09814 STATE OF FLORIDA PROFESSIONAL ENGINEER

10/24/18

REV. NO.	DESCRIPTION	DATE	DRAWN BY
1	INITIAL RELEASE	8/30/2018	LGH

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X.XXX ±0.010
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Fax: 817-831-3110

THIRD ANGLE PROJECTION

PCI INDUSTRIES DOING BUSINESS AS
POTTORFF

DRAWING DESCR: SLEEVED			
PROJECT: ECD-545-MD			
LOCATION:			
CUSTOMER:			
PROJ. MGR.:	DRAWN BY: LGH		
DATE: 6/27/2018	CHK'D BY: NW	ORDER NUMBER	P.O. NUMBER	DRAWING NUMBER
SHEET: 10 of 17	SCALE: 1"=1'-0"			ECD-545-MD NOA

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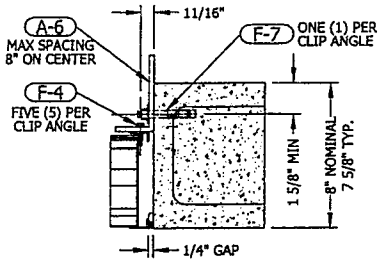
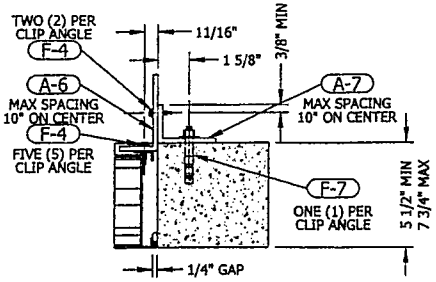
SPECIAL SHAPES INSTALLATION



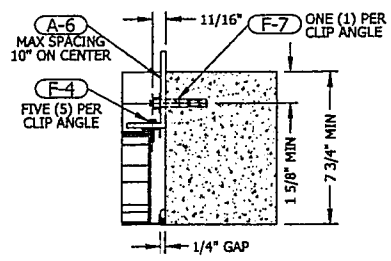
SPECIAL SHAPE 1 / 11 JAMB CONNECTION 11
SCALE 1-1/2"=1'-0"

GROUT FILLED CMU



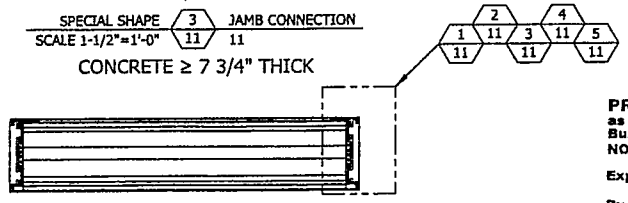
SPECIAL SHAPE 2 / 11 JAMB CONNECTION 11
SCALE 1-1/2"=1'-0"

CONCRETE ≤ 7 3/4" THICK

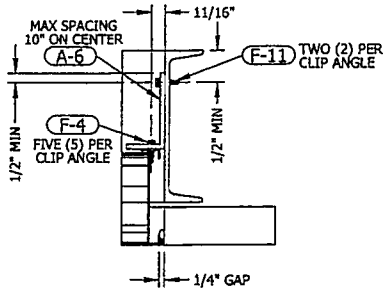


SPECIAL SHAPE 3 / 11 JAMB CONNECTION 11
SCALE 1-1/2"=1'-0"

CONCRETE ≥ 7 3/4" THICK

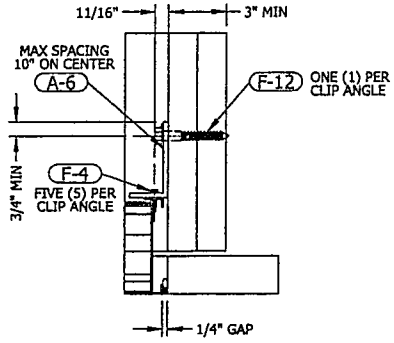


SECTION VIEW U / 11 SHAPES 11
1-1/2"=1'-0"



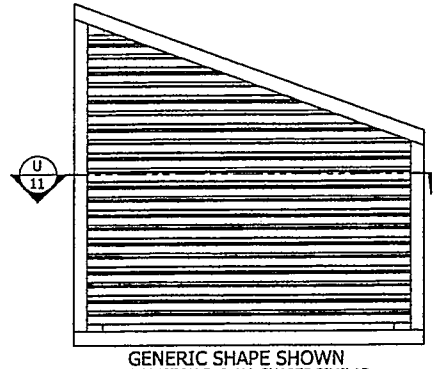
SPECIAL SHAPE 4 / 11 JAMB CONNECTION 11
SCALE 1-1/2"=1'-0"

STEEL



SPECIAL SHAPE 5 / 11 JAMB CONNECTION 11
SCALE 1-1/2"=1'-0"

WOOD



GENERIC SHAPE SHOWN
INSTALLATION FOR ALL SHAPES SIMILAR

PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 18-1120.06
Expiration Date 10/23/2023
By
Miami-Dade Product Control

P.E. STAMP

Ted Berman & Assoc. LLC
CA # 27502

THEODORE BERMAN LICENSE No 09814 STATE OF FLORIDA PROFESSIONAL ENGINEER

10/24/18

REV. NO.	DESCRIPTION	DATE	DRAWN BY
1	INITIAL RELEASE	8/30/2018	LGH

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X.XX ±0.030
X.XXX ±0.010
ANGLE ±1°
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Fort Worth, Texas 76106
Phone: 817-509-2300
Fax: 817-831-3110

THIRD ANGLE PROJECTION

PCI INDUSTRIES DOING BUSINESS AS
POTTORFF

DRAWING DESCR: SPECIAL SHAPES INSTALLATION			
PROJECT: ECD-545-MD			
LOCATION:			
CUSTOMER:			
PROJ. MGR.:		DRAWN BY: LGH	
DATE: 6/27/2018	CHK'D BY: NW	ORDER NUMBER / P.O. NUMBER	DRAWING NUMBER
SHEET: 11 of 17	SCALE: 1-1/2"=1'-0"		ECD-545-MD NOA

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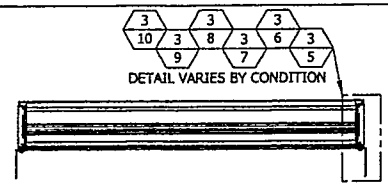
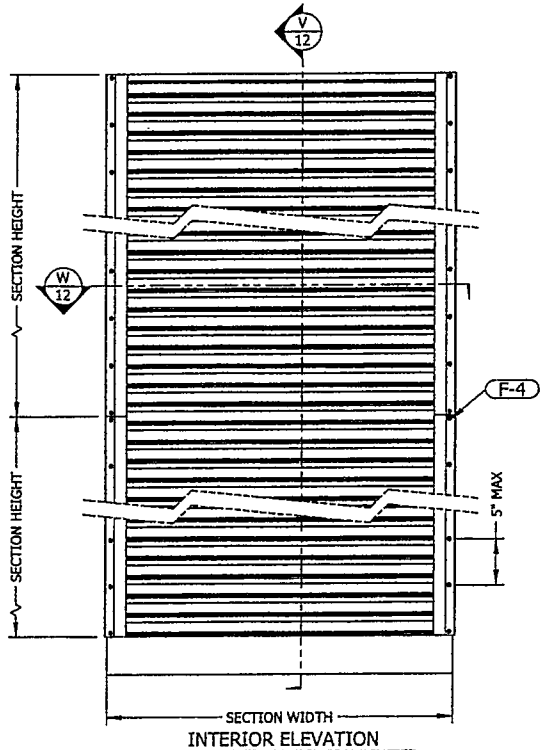
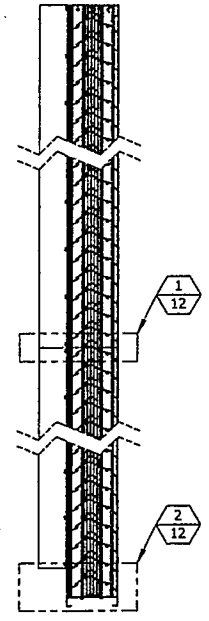
MULTI-SECTION HIGH



SECTION VIEW W/12 MULTI-SECTION HIGH 12
1"=1'-0"

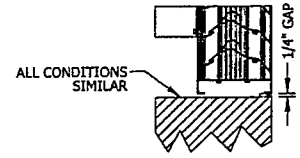


INTERIOR ELEVATION
QUANTITY SECTIONS HIGH IS UNLIMITED



SECTION VIEW V/12 MULTI-SECTION HIGH 12
1"=1'-0"

SPLICE SECTION 1/12 MULTI-SECTION HIGH 12
1-1/2"=1'-0"



BOTTOM DETAIL 2/12 MULTI-SECTION HIGH 12
1-1/2"=1'-0"
TOP CONNECTION SIMILAR

PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 18-1120.06
Expiration Date 10/23/2023
By
Miami-Dade Product Control

P.E. STAMP

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10/24/18

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THIRD ANGLE PROJECTION

PCI INDUSTRIES DOING BUSINESS AS
POTTORFF

DRAWING DESCR: MULTI-SECTION HIGH			
PROJECT: ECD-545-MD			
LOCATION:			
CUSTOMER:			
PROJ. MGR.:		DRAWN BY: LGH	
DATE: 6/27/2018	CHK'D BY: NW	ORDER NUMBER / P.O. NUMBER	DRAWING NUMBER
SHEET: 12 of 17	SCALE: 1"=1'-0"		ECD-545-MD NOA

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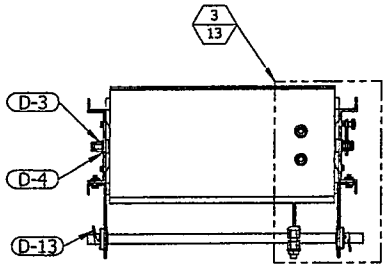
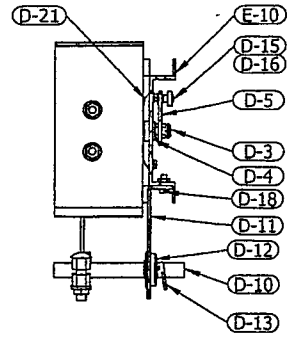
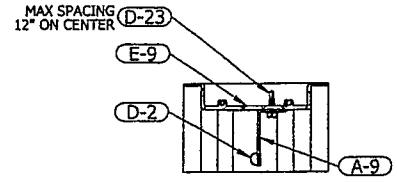
CD-51 DAMPER



SECTION VIEW AA 13 CD-51 13
6"=1'-0"

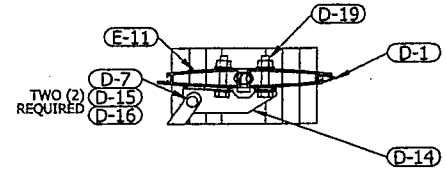


LINKAGE DETAIL 3 13 CD-51 13
3"=1'-0"

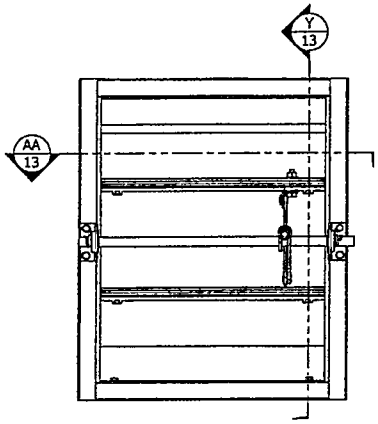


TOP DETAIL 1 13 CD-51 13
3"=1'-0"

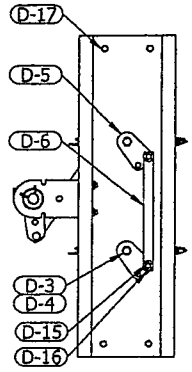
BOTTOM DETAIL SIMILAR



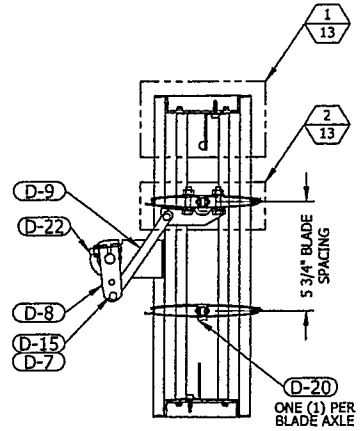
BLADE DETAIL 2 13 CD-51 13
3"=1'-0"



INTERIOR ELEVATION



SIDE VIEW



SECTION VIEW Y 13 CD-51 13
6"=1'-0"

PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 18-1120.06
Expiration Date 10/23/2023
By
Miami-Dade Product Control

P.E. STAMP

Ted Berman & Assoc. LLC
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10/24/18

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REV. NO.	DESCRIPTION	DATE	DRAWN BY
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Fax: 817-831-3110

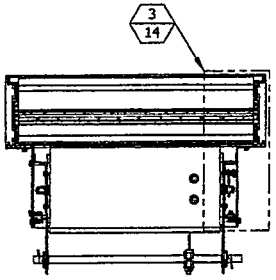
THIRD ANGLE PROJECTION

PCI INDUSTRIES DOING BUSINESS AS
ROTTOREF

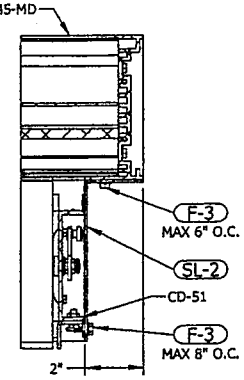
DRAWING DESCR: CD-51 DAMPER			
PROJECT: ECD-545-MD			
LOCATION:			
CUSTOMER:			
PROJ. MGR.:		DRAWN BY: LGH	
DATE: 6/27/2018	CHK'D BY: NW	ORDER NUMBER / P.O. NUMBER	DRAWING NUMBER
SHEET: 13 of 17	SCALE: 2"=1'-0"		ECD-545-MD NOA

ECD-545-MD WITH CD-51 DAMPER

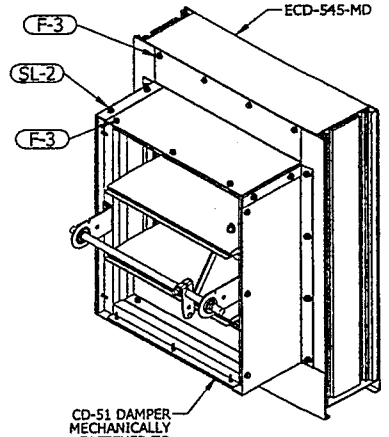
PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 18-1120.06
Expiration Date 10/23/2023
By
Miami-Dade Product Control

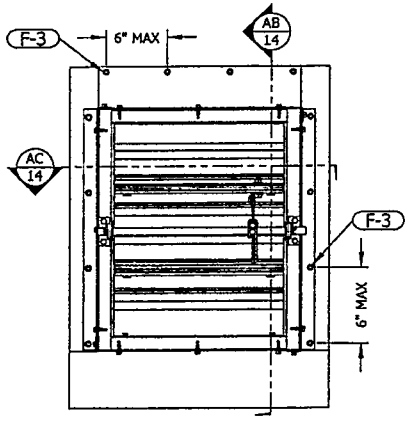


SECTION VIEW AC 14 ECD-545-MD WITH CD-51
1-1/2"=1'-0" 14

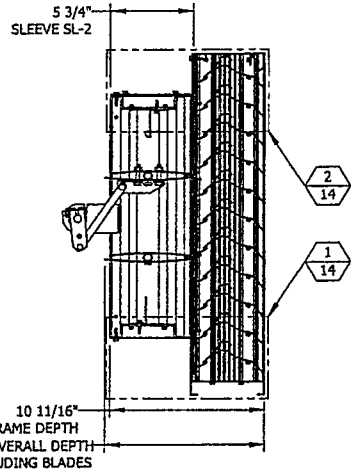


JAMB INTERFACE DETAIL 3 14 ECD-545-MD WITH CD-51
3"=1'-0" 14

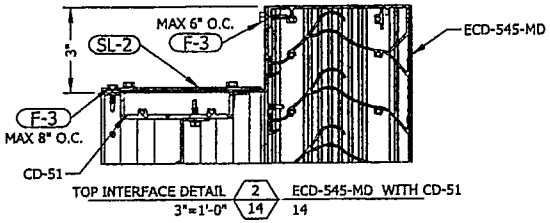




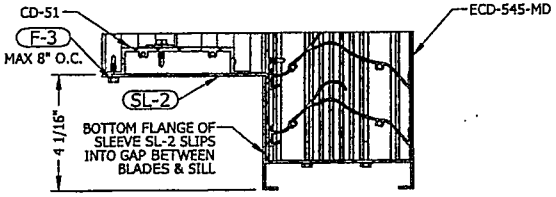
INTERIOR ELEVATION



SECTION VIEW AB 14 ECD-545-MD WITH CD-51
1-1/2"=1'-0" 14



TOP INTERFACE DETAIL 2 14 ECD-545-MD WITH CD-51
3"=1'-0" 14



BOTTOM INTERFACE DETAIL 1 14 ECD-545-MD WITH CD-51
3"=1'-0" 14

P.E. STAMP

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CA # 27502

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10/24/18

REV. NO.	DESCRIPTION	DATE	DRAWN BY
1	INITIAL RELEASE	8/30/2018	LGH

UNLESS OTHERWISE SPECIFIED DIMENSION ARE IN INCHES.
TOLERANCE UNLESS NOTED:
X.X ±0.060
X.XX ±0.030
X.XXX ±0.010
ANGLE ±1°
FRACTION ±1/16
MAX HOLE BREAKOUT: 15% OF MATERIAL THICKNESS

5101 Blue Mound Road
Fort Worth, Texas 76106
Phone: 817-509-2300
Fax: 817-831-3110

THIRD ANGLE PROJECTION

PCI INDUSTRIES DOING BUSINESS AS
POTTORFF

DRAWING DESCR: ECD-545-MD WITH CD-51 DAMPER			
PROJECT: ECD-545-MD			
LOCATION:			
CUSTOMER:			
PROJ. MGR.:		DRAWN BY: LGH	
DATE: 6/27/2018	CHK'D BY: NW	ORDER NUMBER / P.O. NUMBER	DRAWING NUMBER
SHEET: 14 of 17	SCALE: 1-1/2"=1'-0"		ECD-545-MD NOA

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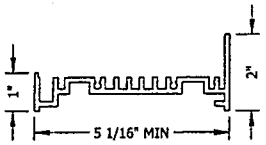
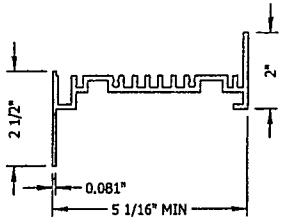
BILL OF MATERIALS

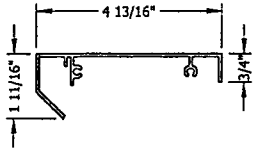
PART NO: E-1
PART NAME: LOUVER JAMB
MATERIAL: 0.125" THICK 6063-T5 EXTRUDED ALUMINUM
SCALE: 4"=1'-0"



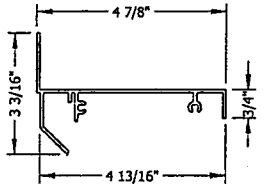
PART NO: E-2
PART NAME: LOUVER JAMB, FLANGED
MATERIAL: 0.125" THICK 6063-T5 EXTRUDED ALUMINUM
SCALE: 4"=1'-0"



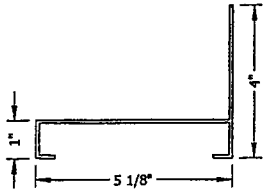
PART NO: E-3
PART NAME: LOUVER HEAD
MATERIAL: 0.081" THICK 6063-T5 EXTRUDED ALUMINUM
SCALE: 4"=1'-0"



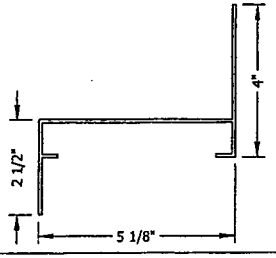
PART NO: E-4
PART NAME: LOUVER HEAD, FLANGED
MATERIAL: 0.081" THICK 6063-T5 EXTRUDED ALUMINUM
SCALE: 4"=1'-0"



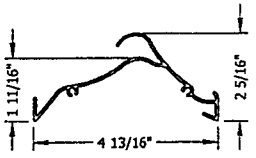
PART NO: E-5
PART NAME: LOUVER SILL
MATERIAL: 0.081" THICK 6063-T5 EXTRUDED ALUMINUM
SCALE: 4"=1'-0"



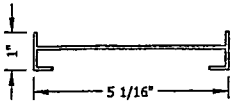
PART NO: E-6
PART NAME: LOUVER SILL, FLANGED
MATERIAL: 0.081" THICK 6063-T5 EXTRUDED ALUMINUM
SCALE: 4"=1'-0"



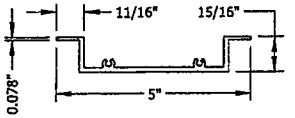
PART NO: E-7
PART NAME: LOUVER BLADE
MATERIAL: 0.063" THICK 6063-T5 EXTRUDED ALUMINUM
SCALE: 4"=1'-0"



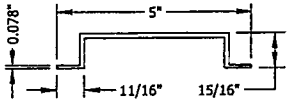
PART NO: E-8
PART NAME: ROLLFRAME EXTRUSION
MATERIAL: 0.081" THICK 6063-T5 EXTRUDED ALUMINUM
SCALE: 4"=1'-0"



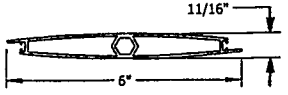
PART NO: E-9
PART NAME: DAMPER HEAD, SILL
MATERIAL: 0.125" THICK 6063-T5 EXTRUDED ALUMINUM
SCALE: 4"=1'-0"



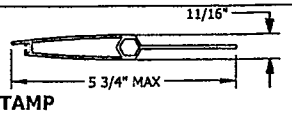
PART NO: E-10
PART NAME: DAMPER JAMB
MATERIAL: 0.125" THICK 6063-T5 EXTRUDED ALUMINUM
SCALE: 4"=1'-0"



PART NO: E-11
PART NAME: DAMPER BLADE, FULL
MATERIAL: 0.070" THICK 6063-T5 EXTRUDED ALUMINUM
SCALE: 4"=1'-0"



PART NO: E-12
PART NAME: DAMPER BLADE, HALF
MATERIAL: 0.070" THICK 6063-T5 EXTRUDED ALUMINUM
SCALE: 4"=1'-0"



PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 18-1120.06
Expiration Date 10/23/2023
By
Miami-Dade Product Control

P.E. STAMP

Ted Berman & Assoc. LLC
CA # 27502

THEODORE BERMAN LICENSE No 09814 STATE OF FLORIDA PROFESSIONAL ENGINEER

10/24/18

REV. NO.	DESCRIPTION	DATE	DRAWN BY
1	INITIAL RELEASE	8/30/2018	LGH

UNLESS OTHERWISE SPECIFIED DIMENSION ARE IN INCHES.
TOLERANCE UNLESS NOTED:
X.X ±0.060
X.XX ±0.030
X.XXX ±0.010
ANGLE ±1°
FRACTION ±1/16
MAX HOLE BREAKOUT: 15% OF MATERIAL THICKNESS

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Fax: 817-831-3110

THIRD ANGLE PROJECTION

PCI INDUSTRIES DOING BUSINESS AS
POTTORFF

DRAWING DESCR: BILL OF MATERIALS			
PROJECT: ECD-545-MD			
LOCATION:			
CUSTOMER:			
PROJ. MGR.:		DRAWN BY: LGH	
DATE: 6/27/2018	CHK'D BY: NW	ORDER NUMBER / P.O. NUMBER	DRAWING NUMBER
SHEET: 15 of 17	SCALE: AS NOTED		ECD-545-MD NOA

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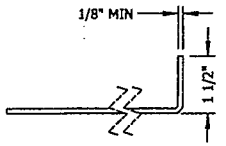
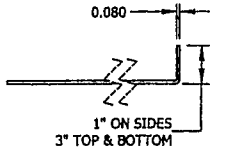
BILL OF MATERIALS

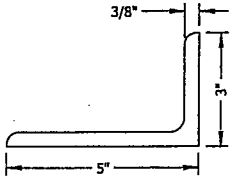
PART NO: SL-1
PART NAME: SLEEVE, LOUVER
MATERIAL: MIN 1/8" THICK 5052-H32 SHEET ALUMINUM
SCALE: 4"=1'-0"



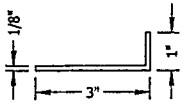
PART NO: SL-2
PART NAME: SLEEVE, DAMPER
MATERIAL: 0.080 THICK 5052-H32 SHEET ALUMINUM
SCALE: 4"=1'-0"



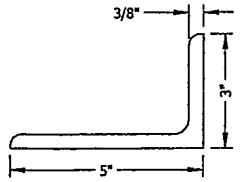
PART NO: A-1
PART NAME: CLIP ANGLE, MULLION
MATERIAL: 5" X 3" X 3/8" X 10" LONG 6061-T6 EXTRUDED ALUMINUM
SCALE: 4"=1'-0"



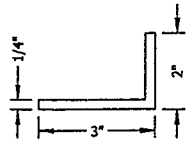
PART NO: A-2
PART NAME: CONTINUOUS ANGLE
MATERIAL: 3" X 1" X 1/8" 6063-T5 EXTRUDED ALUMINUM
SCALE: 4"=1'-0"



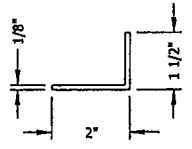
PART NO: A-3
PART NAME: SHELF ANGLE, MULLION
MATERIAL: 5" X 3" X 3/8" X 24" LONG 6061-T6 EXTRUDED ALUMINUM
SCALE: 4"=1'-0"



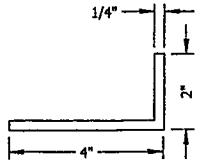
PART NO: A-4
PART NAME: CONTINUOUS SUPPORT ANGLE
MATERIAL: 3" X 2" X 1/4" 6063-T5 EXTRUDED ALUMINUM
SCALE: 4"=1'-0"



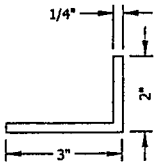
PART NO: A-5
PART NAME: RETAINING ANGLE
MATERIAL: 2" X 1-1/2" X 1/8" 6063-T5 EXTRUDED ALUMINUM
SCALE: 4"=1'-0"



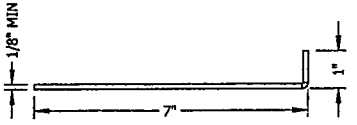
PART NO: A-6
PART NAME: CLIP ANGLE, SHAPES
MATERIAL: 4" X 2" X 1/4" X 4" LONG 6063-T5 EXTRUDED ALUMINUM
SCALE: 4"=1'-0"



PART NO: A-7
PART NAME: SUPPORT ANGLE, SHAPES
MATERIAL: 3" X 2" X 1/4" X 4" LONG 6063-T5 EXTRUDED ALUMINUM
SCALE: 4"=1'-0"



PART NO: A-8
PART NAME: MULLION ATTACHMENT ANGLE
MATERIAL: MIN. 1/8" THICK 5052-H32 SHEET ALUMINUM
SCALE: 4"=1'-0"



PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 18-1120.06
Expiration Date 10/23/2023
By
Miami-Dade Product Control

P.E. STAMP

Ted Berman & Assoc. LLC
CA # 27502

THEODORE BERMAN LICENSE No 09814 STATE OF FLORIDA PROFESSIONAL ENGINEER

10/24/18

REV. NO.	DESCRIPTION	DATE	DRAWN BY
1	INITIAL RELEASE	8/30/2018	LGH

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TOLERANCE UNLESS NOTED:
X.X ±0.060
X.XX ±0.030
X.XXX ±0.010
ANGLE ±1°
FRACTION ±1/16
MAX HOLE BREAKOUT: 15% OF MATERIAL THICKNESS

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THIRD ANGLE PROJECTION

PCI INDUSTRIES DOING BUSINESS AS
POTTORFF

DRAWING DESCR: BILL OF MATERIALS			
PROJECT: ECD-545-MD			
LOCATION:			
CUSTOMER:			
PROJ. MGR.:		DRAWN BY: LGH	
DATE: 6/27/2018	CHK'D BY: NW	ORDER NUMBER / P.O. NUMBER	DRAWING NUMBER
SHEET: 16 of 17	SCALE: AS NOTED		ECD-545-MD NOA

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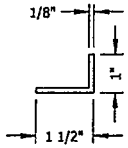
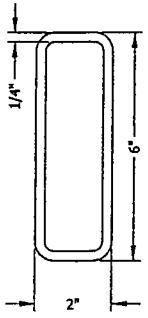
BILL OF MATERIALS

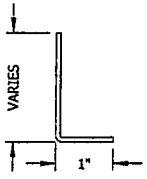
PART NO: SL-1A
PART NAME: SLEEVE ATTACHMENT ANGLE
MATERIAL: 1-1/2" X 1" X 1/8" 6063-T5 EXTRUDED ALUMINUM
SCALE: 4"=1'-0"



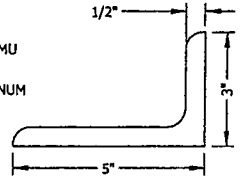
PART NO: S-1
PART NAME: TUBE, MULLION SUPPORT
MATERIAL: 6" X 2" X 1/4" HSS
SCALE: 4"=1'-0"



PART NO: A-9
PART NAME: DAMPER STOP
MATERIAL: 0.080" THICK 5052-H32 SHEET ALUMINUM
SCALE: 6"=1'-0"



PART NO: A-10
PART NAME: SHELF ANGLE, MULLION, CMU
MATERIAL: 5" X 3" X 1/2" X 24" LONG 6061-T6 EXTRUDED ALUMINUM
SCALE: 4"=1'-0"



MISCELLANEOUS FASTENERS	
PART NO.	DESCRIPTION
F-1	#10-24 X 3/4" LONG, HWH, 410 SST, 'F' POINT MACHINE SCREW
F-2	#10-16 X 2" LONG, HWH, 410 SST, TEK SELF-DRILLING SCREW
F-3	#12-14 X 3/4" LONG, HWH, 410 SST, TEK SELF-DRILLING SCREW
F-4	#12-14 X 1" LONG, HWH, 410 SST, TEK SELF-DRILLING SCREW
F-5	5/8-11 X 4" LONG, 18-8 SST, HEX BOLT, NUT, AND TWO (2) FLAT WASHERS
F-6	5/8-11 X 2" LONG, 18-8 SST, HEX BOLT, NUT, AND TWO (2) FLAT WASHERS
F-7	3/8" X 3-1/2" HILTI KWIK HUS-EZ SCREW ANCHOR
F-8	5/8" X 4" HILTI KWIK HUS-EZ SCREW ANCHOR
F-9	5/8" X 5-1/2" HILTI KWIK HUS-EZ SCREW ANCHOR
F-10	1/2" X 5" HILTI KWIK HUS-EZ SCREW ANCHOR
F-11	1/4-14 X 1" LONG, HWH, TEK SELF-DRILLING SCREW
F-12	1/2" X 3-1/2" LONG HEX LAG BOLT AND FLAT WASHER

MISCELLANEOUS DAMPER PARTS		
PART NO.	DESCRIPTION	MATERIAL
D-1	BLADE SEAL	PVC
D-2	STOP SEAL	PVC
D-3	HEX AXLE	ZINC-PLATED STEEL
D-4	HEX BUSHING	304 SST
D-5	PARALLEL CAM	ZINC-PLATED STEEL
D-6	LINK BAR, 1/2" WIDE X 1/8" THICK	GALV. STEEL
D-7	WASHER, 1/4" I.D., 1/2" O.D.	NYLON
D-8	SPRING ARM, 10-GA	GALV. STEEL
D-9	DRIVE ROD, 1/2" WIDE X 1/8" THICK	GALV. STEEL
D-10	JACKSHAFT, 1/2" DIA.	ZINC-PLATED STEEL
D-11	JACKSHAFT BRACKET, 12 GA.	GALV. STEEL
D-12	JACKSHAFT BEARING	STEEL
D-13	JACKSHAFT SPRING CLIP	SPRING STEEL
D-14	DRIVE BRACKET, 14 GA.	GALV. STEEL
D-15	LINKAGE PIN, 1/4"	304 SST
D-16	E-RING, 1/4"	ZINC-PLATED STEEL
D-17	#8-18 X 1" LONG, HWH, NEEDLE POINT SCREW	ZINC-PLATED STEEL
D-18	#10-32 X 1/2" LONG HEX BOLT WITH KEPS NUT	ZINC-PLATED STEEL
D-19	1/4-20 X 1-1/4" LONG HEX BOLT WITH KEPS NUT	ZINC-PLATED STEEL
D-20	1/4-20 X 1/2" LONG HEX BOLT	ZINC-PLATED STEEL
D-21	JAMB SEAL, 2-9/16" X 5/16" X 0.007" THICK	302 SST
D-22	5/16-18 X 1-1/2" LONG CARRIAGE BOLT WITH LOCKNUT	ZINC-PLATED STEEL
D-23	#10-16 X 3/4" LONG, HWH, TEK SELF-DRILLING SCREW	ZINC-PLATED STEEL

PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 18-1120.06
Expiration Date 10/23/2023
By
Miami-Dade Product Control

P.E. STAMP

Ted Berman & Assoc. LLC
CA # 27502

THEODORE BERMAN LICENSE No 09814 STATE OF FLORIDA PROFESSIONAL ENGINEER

10/24/18

I:\Engineering Library\Engineering Projects\2018 NOA Files for ECD-545-MD with CD-51\

REV. NO.	DESCRIPTION	DATE	DRAWN BY
1	INITIAL RELEASE	8/30/2018	LGH

UNLESS OTHERWISE SPECIFIED DIMENSION ARE IN INCHES
TOLERANCE UNLESS NOTED:
X.X ±0.060
X.XX ±0.030
X.XXX ±0.010
ANGLE ±1°
FRACTION ±1/16
MAX HOLE BREAKOUT: 15% OF MATERIAL THICKNESS

5101 Blue Mound Road
Fort Worth, Texas 76106
Phone: 817-509-2300
Fax: 817-831-3110

THIRD ANGLE PROJECTION

FCI INDUSTRIES DOING BUSINESS AS POTTORFF

DRAWING DESCR: BILL OF MATERIALS			
PROJECT: ECD-545-MD			
LOCATION:			
CUSTOMER:			
PROJ. MGR.:		DRAWN BY: LGH	
DATE: 6/27/2018	CHK'D BY: NW	ORDER NUMBER / P.O. NUMBER	DRAWING NUMBER
SHEET: 17 of 17	SCALE: AS NOTED		ECD-545-MD NOA

9409

BE1910502

Florida Building Code, Sixth Edition (2017) - Energy Conservation

EnergyGauge Summit® Fla/Com-2017, Effective Date: Dec 31, 2017

IECC 2015 - Total Building Performance Compliance Option

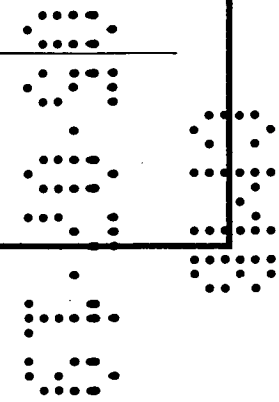
Check List

Applications for compliance with the Florida Building Code, Energy Conservation shall include:

- ☐ This Checklist
- ☐ The full compliance report generated by the software that contains the project summary, compliance summary, certifications and detailed component compliance reports.
- ☐ The compliance report must include the full input report generated by the software as contigous part of the compliance report.
- ☐ Boxes appropriately checked in the Mandatory Section of the complaince report.

PROJECT SUMMARY

Short Desc:	Offices	**Description:**	OFFICES
Owner:			
Address1:	119 WASHINGTON AVE.	**City:**	MIAMI BEACH
Address2:	SUITE 502	**State:**	Florida
		Zip:	0
Type:	Office	**Class:**	Renovation to existing building
Jurisdiction:	MIAMI BEACH, MIAMI-DADE COUNTY, FL (232500)		
Conditioned Area:	1776 SF	**Conditioned & UnConditioned Area:**	1776 SF
No of Stories:	1	**Area entered from Plans**	1776 SF
Permit No:		**Max Tonnage**	4.5
		If different, write in:	



Compliance Summary

Component	Design	Criteria	Result
Gross Energy Cost (in $)	1,048.0	1,750.0	**PASSED**
LIGHTING CONTROLS			**PASSES**
EXTERNAL LIGHTING			**No Entry**
HVAC SYSTEM			**PASSES**
PLANT			**No Entry**
WATER HEATING SYSTEMS			**PASSES**
PIPING SYSTEMS			**No Entry**
Met all required compliance from Check List?			**Yes/No/NA**

IMPORTANT MESSAGE
Info 5009 -- -- -- An input report of this design building must be submitted along with this Compliance Report

CERTIFICATIONS

I hereby certify that the plans and specifications covered by this calculation are in compliance with the Florida Energy Code

Prepared By: CLAUDIO JOFRE Building Official: _____

Date: 5-3-19 Date: _____

I certify that this building is in compliance with the FLorida Energy Efficiency Code

Owner Agent: MARVIN JACKSON Date: 5-3-19

If Required by Florida law, I hereby certify (*) that the system design is in compliance with the Florida Energy Efficiency Code

Architect: _____ Reg No: _____

Electrical Designer: _____ Reg No: 28531

Lighting Designer: _____ Reg No: _____

Mechanical Designer: _____ Reg No: 28531

Plumbing Designer: _____ Reg No: _____

CLAUDIO JOFRE LICENSE No. 28531 STATE OF FLORIDA PROFESSIONAL ENGINEER

(*) Signature is required where Florida Law requires design to be performed by registered design professionals. Typed names and registration numbers may be used where all relevant information is contained on signed/sealed plans.

Project: Offices
Title: OFFICES
Type: Office
(WEA File: FL_MIAMI_INTL_AP.tm3)

Building End Uses

	1) Proposed	2) Baseline
Total	*67.60*	*131.50*
	$1,048	*$2,058*
ELECTRICITY(MBtu/kWh/$)	67.60	131.50
	19814	38546
	$1,048	*$2,058*
AREA LIGHTS	7.50	20.60
	2205	6037
	$117	*$322*
MISC EQUIPMT	26.60	26.60
	7806	7806
	$413	*$417*
SPACE COOL	27.80	38.10
	8147	11171
	$431	*$597*
VENT FANS	5.70	46.20
	1656	13532
	$88	*$723*

Credits Applied: None
Passing Criteria = 1750
Design (including any credits) = 1048
Passing requires Proposed Building cost to be at most 85% of Baseline cost. This Proposed Building is at 50.9%

PASSES

External Lighting Compliance

Description	Category	Tradable?	Allowance (W/Unit)	Area or Length or No. of Units (Sqft or ft)	ELPA (W)	CLP (W)

None

Project: Offices
Title: OFFICES
Type: Office
(WEA File: FL_MIAMI_INTL_AP.tm3)

Lighting Controls Compliance

Acronym	Ashrae ID	Description	Area (sq.ft)	Design CP	Min CP	Compli-ance
Offices	17	Office - Enclosed	1,776	1	1	PASSES

PASSES

Project: Offices
Title: OFFICES
Type: Office
(WEA File: FL_MIAMI_INTL_AP.tm3)

System Report Compliance

AHU-1 **System 1** **Constant Volume Air Cooled Split System < 65000 Btu/hr** **No. of Units 1**

Component	Category	Capacity	Design Eff	Eff Criteria	Design IPLV	IPLV Criteria	Comp-liance
Cooling System	Air Conditioners Air Cooled Split System < 65000 Btu/h Cooling Capacity	54000	16.00	13.00	8.90		PASSES
Heating System	Electric Furnace	34120	1.00	1.00			PASSES
Air Handling System -Supply	Air Handler (Supply) - Constant Volume	2340	0.10	0.82			PASSES
Air Handling System - Return	Air Handler (Return) - Constant Volume	1880	0.10	0.82			PASSES
Air Distribution System (Sup)	Not in Check list - Compliance Ignored		4.20	4.20			N/A
Air Distribution System (Ret)	Not in Check list - Compliance Ignored		4.20	4.20			N/A

PASSES

Plant Compliance

Description	Installed No	Size	Design Eff	Min Eff	Design IPLV	Min IPLV	Category	Compliance

None

Project: Offices
Title: OFFICES
Type: Office
(WEA File: FL_MIAMI_INTL_AP.tm3)

Water Heater Compliance

Description	Type	Category	Design Eff	Min Eff	Design Loss	Max Loss	Compliance
Water Heater 1	Electric water heater	<= 12 [kW]	1.00	0.97			PASSES

PASSES

Piping System Compliance

Category	Pipe Dia [inches]	Is Runout?	Operating Temp [F]	Ins Cond [Btu-in/hr .SF.F]	Ins Thick [in]	Req Ins Thick [in]	Compliance

None

Mandatory Requirements (as applicable)

Mandatory requirements compiled by US Department of Energy and Pacific Northwest National Laboratory. Adopted with permission

Topic	Section	Component	Description	Yes	N/A	Exempt
1. To be checked by Designer or Engineer						
Insulation	C303.2	Envelope	Below-grade wall insulation installed per manufacturer's instructions.	☑	☐	☐
Insulation	C303.2	Envelope	Slab edge insulation installed per manufacturer's instructions.	☑	☐	☐
Insulation	C303.2	Envelope	Above-grade wall insulation installed per manufacturer's instructions.	☑	☐	☐
Insulation	C402.3	Envelope	High-albedo roofs satisfy one of the following: 3-year-aged solar reflectance >= 0.55 and thermal emittance >= 0.75 or 3-year-aged solar reflectance index >= 64.0.	☑	☐	☐
Fenestration	C402.4.4	Envelope	U-factor of opaque doors associated with the building thermal envelope meets requirements.	☑	☐	☐
SYSTEM_SPECIFIC	C403.2.12.1	Mechanical	HVAC fan systems at design conditions do not exceed allowable fan system motor nameplate hp or fan system bhp.	☑	☐	☐
SYSTEM_SPECIFIC	C403.2.12.2	Mechanical	HVAC fan motors not oversized beyond allowable limits.	☑	☐	☐
SYSTEM_SPECIFIC	C403.2.3(8) Table	Mechanical	Heat Rejection Equipment: Minimum Efficiency Requirement meet those listed in Table C403.2.3(8)	☑	☐	☐
HVAC	C403.2.7	Mechanical	Exhaust air energy recovery on systems meeting Table C403.2.7(1) and C403.2.7(2).	☑	☐	☐
SYSTEM_SPECIFIC	C403.3	Mechanical	Air economizers provided where required, meet the requirements for design capacity, control signal, ventilation controls, high-limit shut-off, integrated economizer control, and provide a means to relieve excess outside air during operation.	☑	☐	☐
SYSTEM_SPECIFIC	C403.3.2	Mechanical	Economizer operation will not increase heating energy use during normal operation.	☑	☐	☐
SYSTEM_SPECIFIC	C403.3.4, C403.3.4.1, C403.3.4.2, C403.3.1	Mechanical	Water economizers provided where required, meet the requirements for design capacity, maximum pressure drop and integrated economizer control.	☑	☐	☐
SYSTEM_SPECIFIC	C403.4.2.1	Mechanical	Three-pipe hydronic systems using a common return for hot and chilled water are not used.	☑	☐	☐
SYSTEM_SPECIFIC	C403.4.2.3.1	Mechanical	Hydronic heat pump systems connected to a common water loop meet heat rejection and heat addition requirements.	☑	☐	☐
SYSTEM_SPECIFIC	C403.4.3.4	Mechanical	Open-circuit cooling towers having water cooled chiller systems and multiple or vairable speed condenser pumps, are designed so that tower cells can run in parallel with larger of flow crtieria.	☑	☐	☐
SYSTEM_SPECIFIC	C404.2	Mechanical	Service water heating equipment meets efficiency requirements.	☑	☐	☐
Wattage	C405.3	Interior Lighting	Exit signs do not exceed 5 watts per face.	☑	☐	☐
2. To be checked by Plan Reviewer						
Plan Review	C103.2	Envelope	Plans and/or specifications provide all information with which compliance can be determined for the building envelope and document where exceptions to the standard are claimed.	☐	☐	☐

Plan Review	C103.2	Mechanical	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical systems and equipment and document where exceptions to the standard are claimed. Load calculations per acceptable engineering st	☐ ☐ ☐
Plan Review	C103.2	Mechanical	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the service water heating systems and equipment and document where exceptions to the standard are claimed. Hot water system sized per manufact	☐ ☐ ☐
Plan Review	C103.2	Interior Lighting	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided shoul	☐ ☐ ☐
Plan Review	C103.2	Exterior Lighting	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the exterior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided shoul	☐ ☐ ☐
Insulation	C402.2.5	Envelope	Slab edge insulation depth/length. Slab insulation extending away from building is covered by pavement or >= 10 inches of soil.	☐ ☐ ☐
Insulation	C402.2.6	Project	Radiant heating systems panels insulated to >=R-3.5 on face opposite space being heated.	☐ ☐ ☐
HVAC	C402.2.6	Mechanical	Thermally ineffective panel surfaces of sensible heating panels have insulation >= R-3.5.	☐ ☐ ☐
Insulation	C402.2.6	Envelope	Radiant panels and associated components, designed for heat transfer from the panel surfaces to the occupants or indoor space are insulated with a minimum of R-3.5.	☐ ☐ ☐
Air Leakage	C402.5.7	Envelope	Vestibules are installed on all building entrances. Doors have self-closing devices.	☐ ☐ ☐
SYSTEM_SPECIFIC	C403.2.12.3	Mechanical	Fans have efficiency grade (FEG) >= 67. The total efficiency of the fan at the design point of operation <= 15% of maximum total efficiency of the fan.	☐ ☐ ☐
HVAC	C403.2.13	Mechanical	Unenclosed spaces that are heated use only radiant heat.	☐ ☐ ☐
HVAC	C403.2.4.2	Mechanical	Each zone equipped with setback controls using automatic time clock or programmable control system.	☐ ☐ ☐
SYSTEM_SPECIFIC	C403.2.4.4	Mechanical	Zone isolation devices and controls installed where applicable.	☐ ☐ ☐
SYSTEM_SPECIFIC	C403.2.4.7	Mechanical	Fault detection and diagnostics installed with air-cooled unitary DX units having economizers.	☐ ☐ ☐
SYSTEM_SPECIFIC	C403.2.5	Mechanical	Hot water boilers supplying heat via one- or two-pipe systems include outdoor setback control.	☐ ☐ ☐
HVAC	C403.2.6.1	Mechanical	Demand control ventilation provided for spaces >500 ft2 and >25 people/1000 ft2 occupant density and served by systems with air side economizer, auto modulating outside air damper control, or design airflow >3,000 cfm.	☐ ☐ ☐
SYSTEM_SPECIFIC	C403.4.1.1	Mechanical	Hydronic and multizone HVAC system controls areVAV fans driven by mechanical or electrical variable speed drive per Table C403.4.1.1.	☐ ☐ ☐
SYSTEM_SPECIFIC	C403.4.1.3	Mechanical	Reset static pressure setpoint for DDC controlled VAV boxes reporting to central controller based on the zones requiring the most pressure.	☐ ☐ ☐
SYSTEM_SPECIFIC	C403.4.2	Mechanical	Temperature reset by representative building loads in pumping systems for chiller and boiler systems >500,000 Btu/h.	☐ ☐ ☐

SYSTEM_SPECIFIC	C403.4.2.3.2.1	Mechanical	Closed-circuit cooling tower within heat pump loop have either automatic bypass valve or lower leakage positive closure dampers. Open-circuit tower within heat pump loop have automatic valve to bypass all heat pump water flow around the tower. Open- or cl	☐	☐	☐
SYSTEM_SPECIFIC	C403.4.2.4	Mechanical	Hydronic systems greater than 500,000 Btu/h designed for variable fluid flow.	☐	☐	☐
SYSTEM_SPECIFIC	C403.4.2.5	Mechanical	System turndown requirement met through multiple single-input boilers, one or more modulating boilers, or a combination of single-input and modulating boilers. Boiler input between 1.0 MBtu/h and 5 MBtu/h has 3:1 turndown ratio, boiler input between 5.0	☐	☐	☐
SYSTEM_SPECIFIC	C403.4.2.6	Mechanical	Chilled water plants with multiple chillers have capability to reduce flow automatically through the chiller plant when a chiller is shut down. Boiler plants with multiple boilers have the capability to reduce flow automatically through the boiler plant	☐	☐	☐
SYSTEM_SPECIFIC	C403.4.3, C403.4.3.2	Mechanical	Fan systems with motors >=7.5 hp associated with heat rejection equipment to have capability to operate at 2/3 of full-speed and auto speed controls to control the leaving fluid temperature or condensing temp/pressure of heat rejection device.	☐	☐	☐
SYSTEM_SPECIFIC	C403.4.4.5	Mechanical	Multiple zone HVAC systems have supply air temperature reset controls.	☐	☐	☐
SYSTEM_SPECIFIC	C403.4.4.6	Mechanical	Multiple zone VAV systems with DDC of individual zone boxes have static pressure setpoint reset controls.	☐	☐	☐
SYSTEM_SPECIFIC	C404.2.1	Mechanical	Gas-fired water-heating equipment installed in new buildings: where a singular piece of water-heating equipment >= 1,000 kBtu/h serves the entire building, thermal efficiency >= 90 Et. Where multiple pieces of water-heating equipment serve the building wi	☐	☐	☐
SYSTEM_SPECIFIC	C404.4	Mechanical	All piping insulated in accordance with section details and Table C403.2.10.	☐	☐	☐
SYSTEM_SPECIFIC	C404.5, C404.5.1, C404.5.2	Mechanical	Heated water supply piping conforms to pipe length and volume requirements. Refer to section details.	☐	☐	☐
SYSTEM_SPECIFIC	C404.6.3	Mechanical	Pumps that circulate water between a heater and storage tank have controls that limit operation from startup to <= 5 minutes after end of heating cycle.	☐	☐	☐
SYSTEM_SPECIFIC	C404.7	Mechanical	Water distribution system that pumps water from a heated-water supply pipe back to the heated-water source through a cold-water supply pipe is a demand recirculation water system. Pumps within this system have controls that start the pump upon receiving	☐	☐	☐
Wattage	C405.5.1	Exterior Lighting	Exterior lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	☐	☐	☐
Plan Review	C405.6	Project	Group R-2 dwelling units have separate electrical meters.	☐	☐	☐
Plan Review	C406	Project	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	☐	☐	☐
SYSTEM_SPECIFIC	C408.2.2.2	Mechanical	HVAC hydronic heating and cooling coils have means to balance and have pressure test connections.	☐	☐	☐
SYSTEM_SPECIFIC	C408.2.2.2	Mechanical	HVAC hydronic heating and cooling coils have means to balance and have pressure test connections.	☐	☐	☐

3. To be checked by Inspector

Insulation	C303.1	Envelope	Roof insulation installed per manufacturerâ€™s instructions. Blown or poured loose-fill insulation is installed only where the roof slope is <=3 in 12.	☐ ☐ ☐
Insulation	C303.1	Envelope	Building envelope insulation is labeled with R-value or insulation certificate providing R-value and other relevant data.	☐ ☐ ☐
Fenestration	C303.1.3	Envelope	Fenestration products rated in accordance with NFRC.	☐ ☐ ☐
Fenestration	C303.1.3	Envelope	Fenestration products are certified as to performance labels or certificates provided.	☐ ☐ ☐
Insulation	C303.2, C402.2.4	Envelope	Floor insulation installed per manufacturer's instructions. Cavity or structural slab insulation installed in permanent contact with underside of decking or structural slabs.	☐ ☐ ☐
Insulation	C303.2.1	Envelope	Exterior insulation protected against damage, sunlight, moisture, wind, landscaping and equipment maintenance activities.	☐ ☐ ☐
Insulation	C303.2.1	Envelope	Exterior insulation is protected from damage with a protective material. Verification for exposed foundation insulation may need to occur during Foundation Inspection.	☐ ☐ ☐
Insulation	C402.1.3	Envelope	Non-swinging opaque doors have R-4.75 insulation.	☐ ☐ ☐
Insulation	C402.2.2	Envelope	Skylight curbs are insulated to the level of roofs with insulation above deck or R-5.	☐ ☐ ☐
Insulation	C402.2.2	Envelope	Insulation intended to meet the roof insulation requirements cannot be installed on top of a suspended ceiling. Mark this requirement compliant if insulation is installed accordingly.	☐ ☐ ☐
Air Leakage	C402.5	Envelope	Building envelope contains a continuous air barrier that has been tested and deemed to limit air leakage <= 0.40 cfm/ft2.	☐ ☐ ☐
Air Leakage	C402.5.1	Envelope	The building envelope contains a continuous air barrier that is sealed in an approved manner and either constructed or tested in an approved manner. Air barrier penetrations are sealed in an approved manner.	☐ ☐ ☐
Air Leakage	C402.5.1.1	Envelope	All sources of air leakage in the building thermal envelope are sealed, caulked, gasketed, weather stripped or wrapped with moisture vapor-permeable wrapping material to minimize air leakage.	☐ ☐ ☐
Air Leakage	C402.5.1.2.1	Envelope	The building envelope contains a continuous air barrier that is sealed in an approved manner and material permeability <= 0.004 cfm/ft2. Air barrier penetrations are sealed in an approved manner.	☐ ☐ ☐
Air Leakage	C402.5.1.2.2	Envelope	The building envelope contains a continuous air barrier that is sealed in an approved manner and average assembly air leakage <= 0.04 cfm/ft2. Air barrier penetrations are sealed in an approved manner.	☐ ☐ ☐
Air Leakage	C402.5.2, C402.5.4	Envelope	Factory-built fenestration and doors are labeled as meeting air leakage requirements.	☐ ☐ ☐
Air Leakage	C402.5.3	Envelope	Where open combustion air ducts provide combustion air to open combustion fuel burning appliances, the appliances and combustion air opening are located outside the building thermal envelope or enclosed in a room, isolated from inside the thermal envelope	☐ ☐ ☐
Air Leakage	C402.5.5, C403.2.4.3	Envelope	Stair and elevator shaft vents have motorized dampers that automatically close.	☐ ☐ ☐
Air Leakage	C402.5.5, C403.2.4.3	Envelope	Outdoor air and exhaust systems have motorized dampers that automatically shut when not in use and meet maximum leakage rates. Check gravity dampers where allowed.	☐ ☐ ☐
Air Leakage	C402.5.6	Envelope	Weatherseals installed on all loading dock cargo doors.	☐ ☐ ☐

Air Leakage	C402.5.8	Envelope	Recessed luminaires in thermal envelope to limit infiltration and be IC rated and labeled. Seal between interior finish and luminaire housing.	☐	☐	☐
HVAC	C403.2.1	Mechanical	HVAC systems and equipment design loads calculated in accordance with ANSI/ASHRAE/ACCA Standard 183 or by an approved equivalent computational procedure	☐	☐	☐
SYSTEM_SPECIFIC	C403.2.10	Mechanical	HVAC piping insulation thickness. Where piping is installed in or under a slab, verification may need to occur during Foundation Inspection.	☐	☐	☐
HVAC	C403.2.3	Mechanical	HVAC equipment efficiency verified.	☐	☐	☐
SYSTEM_SPECIFIC	C403.2.3	Mechanical	PTAC and PTHP with sleeves 16 in. by 42 in. labeled for replacement only as per Footnote b to Table C403.2.3(3).	☐	☐	☐
SYSTEM_SPECIFIC	C403.2.4.1	Mechanical	Heating and cooling to each zone is controlled by a thermostat control. Minimum one humidity control device per installed humidification/dehumidification system.	☐	☐	☐
SYSTEM_SPECIFIC	C403.2.4.1.1	Mechanical	Heat pump controls prevent supplemental electric resistance heat from coming on when not needed.	☐	☐	☐
HVAC	C403.2.4.1.2	Mechanical	Thermostatic controls have a 5 Â°F deadband.	☐	☐	☐
HVAC	C403.2.4.1.2	Mechanical	Thermostatic controls have a 5 Â°F deadband.	☐	☐	☐
HVAC	C403.2.4.1.3	Mechanical	Temperature controls have setpoint overlap restrictions.	☐	☐	☐
HVAC	C403.2.4.2.1, C403.2.4.2.2	Mechanical	Automatic Controls: Setback to 55°F (heat) and 85°F (cool); 7-day clock, 2-hour occupant override, 10-hour backup	☐	☐	☐
SYSTEM_SPECIFIC	C403.2.4.2.3	Mechanical	Systems include optimum start controls.	☐	☐	☐
HVAC	C403.2.4.5, C403.2.4.6	Mechanical	Snow/ice melting system sensors for future connection to controls. Freeze protection systems have automatic controls installed.	☐	☐	☐
HVAC	C403.2.6.2	Mechanical	Enclosed parking garage ventilation has automatic contaminant detection and capacity to stage or modulate fans to 50% or less of design capacity.	☐	☐	☐
HVAC	C403.2.9	Mechanical	HVAC ducts and plenums insulated. Where ducts or plenums are installed in or under a slab, verification may need to occur during Foundation Inspection.	☐	☐	☐
SYSTEM_SPECIFIC	C403.2.9.1.3	Mechanical	Ductwork operating >3 in. water column requires air leakage testing.	☐	☐	☐
SYSTEM_SPECIFIC	C403.4.1.2	Mechanical	VAV fans have static pressure sensors located so controller setpoint <=1.2 w.c..	☐	☐	☐
SYSTEM_SPECIFIC	C403.4.2.2	Mechanical	Two-pipe hydronic systems using a common distribution system have controls to allow a deadband >=15°F, allow operation in one mode for at least 4 hrs before changeover, and have rest controls to limit heating and cooling supply temperature to <=30 °F.	☐	☐	☐
SYSTEM_SPECIFIC	C403.4.2.3.3	Mechanical	Two-position automatic valve interlocked to shut off water flow when hydronic heat pump with pumping system >10 hp is off.	☐	☐	☐
SYSTEM_SPECIFIC	C403.4.4.5, C403.4.4.5.1-4	Mechanical	Zone controls can limit simultaneous heating and cooling and sequence heating and cooling to each zone.	☐	☐	☐
SYSTEM_SPECIFIC	C403.4.5	Mechanical	Condenser heat recovery system that can heat water to 85°F or provide 60% of peak heat rejection is installed for preheating of service hot water.	☐	☐	☐
SYSTEM_SPECIFIC	C403.4.6	Mechanical	Hot gas bypass limited to: <=240 kBtu/h - 50% capacity, >240 kBtu/h - 25% capacity	☐	☐	☐
SYSTEM_SPECIFIC	C404.3	Mechanical	Heat traps installed on non-circulating storage water tanks.	☐	☐	☐

SYSTEM_SPECIFIC	C404.3	Mechanical	Heat traps installed on supply and discharge piping of non-circulating systems.	☐ ☐ ☐
SYSTEM_SPECIFIC	C404.3	Mechanical	Heat traps installed on supply and discharge piping of non-circulating systems.	☐ ☐ ☐
SYSTEM_SPECIFIC	C404.6.1	Mechanical	Controls are installed that limit the operation of a recirculation pump installed to maintain temperature of a storage tank. System return pipe is a dedicated return pipe or a cold water supply pipe.	☐ ☐ ☐
SYSTEM_SPECIFIC	C404.6.1, C404.6.2	Mechanical	Automatic time switches installed to automatically switch off the recirculating hot-water system or heat trace.	☐ ☐ ☐
SYSTEM_SPECIFIC	C404.9.1	Mechanical	Pool heaters are equipped with on/off switch and no continuously burning pilot light.	☐ ☐ ☐
SYSTEM_SPECIFIC	C404.9.2	Mechanical	Time switches are installed on all pool heaters and pumps.	☐ ☐ ☐
SYSTEM_SPECIFIC	C404.9.2	Mechanical	Time switches are installed on all pool heaters and pumps.	☐ ☐ ☐
SYSTEM_SPECIFIC	C404.9.3	Mechanical	Vapor retardant pool covers are provided for heated pools and permanently installed spas.	☐ ☐ ☐
Controls	C405.2.1	Interior Lighting	Lighting controls installed to uniformly reduce the lighting load by at least 50%.	☐ ☐ ☐
Controls	C405.2.1	Interior Lighting	Occupancy sensors installed in required spaces.	☐ ☐ ☐
Controls	C405.2.1, C405.2.2.3	Interior Lighting	Independent lighting controls installed per approved lighting plans and all manual controls readily accessible and visible to occupants.	☐ ☐ ☐
Controls	C405.2.2.1	Interior Lighting	Automatic controls to shut off all building lighting installed in all buildings.	☐ ☐ ☐
Controls	C405.2.3	Interior Lighting	Daylight zones provided with individual controls that control the lights independent of general area lighting.	☐ ☐ ☐
Controls	C405.2.3, C405.2.3.1, C405.2.3.2	Interior Lighting	Primary sidelighted areas are equipped with required lighting controls.	☐ ☐ ☐
Controls	C405.2.3, C405.2.3.1, C405.2.3.3	Interior Lighting	Enclosed spaces with daylight area under skylights and rooftop monitors are equipped with required lighting controls.	☐ ☐ ☐
Controls	C405.2.4	Interior Lighting	Separate lighting control devices for specific uses installed per approved lighting plans.	☐ ☐ ☐
Wattage	C405.2.4	Interior Lighting	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	☐ ☐ ☐
Controls	C405.2.5	Exterior Lighting	Automatic lighting controls for exterior lighting installed. Controls will be daylight controlled, set based on business operation time-of-day, or reduce connected lighting > 30%.	☐ ☐ ☐
Wattage	C405.4.1	Interior Lighting	Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	☐ ☐ ☐
Mandatory Additional Eff	C406.4	Project	Enhanced digital lighting controls efficiency package: Interior lighting has following enhanced lighting controls in accordance with Section C405.2.2: Luminaires capable of continuous dimming and being addressed individually, <= 8 luminaires controlled in	☐ ☐ ☐
Mandatory Additional Eff	C406.6	Project	Dedicate outdoor air system efficiency package: Buildings with hydronic and/or multiple-zone HVAC systems are equipped with an independent ventilation system designed to provide >= 100-percent outdoor air to each individual occupied space, as specified by	☐ ☐ ☐

Mandatory Additional Eff	C406.7, C406.7.1	Project	Enhanced Service Water Heat System efficiency package. One of the following SWH system enhancements must satisfy 60 percent of hot water requirements, or 100 percent if the building otherwise complies with heat recovery per Section C403.4.5: Waste heat re	☐ ☐ ☐
HVAC	C408.2.2.1	Mechanical	Air outlets and zone terminal devices have means for air balancing.	☐ ☐ ☐
HVAC	C408.2.2.1	Mechanical	Air outlets and zone terminal devices have means for air balancing.	☐ ☐ ☐
Testing	C408.2.3.2	Mechanical	HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls.	☐ ☐ ☐

4. To be checked by Inspector at Project Completion and Prior to Issuance of Certificate of Occupancy

Post Construction	C303.3, C408.2.5.2	Interior Lighting	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	☐ ☐ ☐
Post Construction	C303.3, C408.2.5.3	Mechanical	Furnished O&M manuals for HVAC systems within 90 days of system acceptance.	☐ ☐ ☐
Fenestration	C402.4.2.2	Envelope	Skylights in office, storage, automotive service, manufacturing, non-refrigerated warehouse, retail store, and distribution/sorting area have a measured haze value > 90 percent unless designed to exclude direct sunlight.	☐ ☐ ☐
Post Construction	C408.2.1	Mechanical	Commissioning plan developed by registered design professional or approved agency.	☐ ☐ ☐
Post Construction	C408.2.3.1	Mechanical	HVAC equipment has been tested to ensure proper operation.	☐ ☐ ☐
Post Construction	C408.2.3.3	Mechanical	Economizers have been tested to ensure proper operation.	☐ ☐ ☐
Post Construction	C408.2.4	Mechanical	Preliminary commissioning report completed and certified by registered design professional or approved agency.	☐ ☐ ☐
Post Construction	C408.2.5.1	Mechanical	Furnished HVAC as-built drawings submitted within 90 days of system acceptance.	☐ ☐ ☐
Post Construction	C408.2.5.1	Interior Lighting	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	☐ ☐ ☐
Post Construction	C408.2.5.3	Mechanical	An air and/or hydronic system balancing report is provided for HVAC systems.	☐ ☐ ☐
Post Construction	C408.2.5.4	Mechanical	Final commissioning report due to building owner within 90 days of receipt of certificate of occupancy.	☐ ☐ ☐
Post Construction	C408.3	Interior Lighting	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	☐ ☐ ☐

Input Data Report

Project Information

Project Name: Offices **Project Title:** OFFICES

Address: 119 WASHINGTON AVE. **State:** Florida **Zip:** 0

Owner:

Building Type: Office **Building Classification:** Renovation to existing building

No.of Stories: 1 **GrossArea (SF):** 1,776

Bldg. Rotation: None

Zones

No	Acronym	Description	Type	Area [sf]	Multi	Total Area [sf]	
1	Offices	Zone 1	CONDITIONED	1776.0	1	1776.0	☐

Spaces

No	Acronym	Description	Type	Depth [ft]	Width [ft]	Height [ft]	Mult	Total Area [sf]	Total Vol[cf]	
In Zone:	**Offices**									
1	Offices	Zo0Sp1	Office - Enclosed	1.00	1776.00	8.00	1	1776.0	14208.0	☐

Lighting

No	Type	Category	No. of Luminaires	Watts per Luminaire	Power [W]	Control Type	No.of Ctrl pts	
In Zone:	**Offices**							
In Space:	**Offices**							
1	Suspended Fluorescent	General Lighting	12	60	720	Manual On/Off	1	☐

Walls (Walls will be rotated clockwise by building rotation value)

No	Description	Type	Width [ft]	H (Effec) [ft]	Multi plier	Area [sf]	Orient ation	Cond- uctance [Btu/h.sf.F]	Heat Capacity [Btu/sf.F]	Dens. [lb/cf]	R-Value [h.sf.F/Btu]	
In Zone:	**Offices**											
1	EXIST.	5/8" stucco /8"CMU/3/4"ISO BTWN24"oc/.5" Gyp	46.75	8.00	1	374.0	East	0.2067	5.731	34.65	4.8	☐
2	Existing	5/8" stucco /8"CMU/3/4"ISO BTWN24"oc/.5" Gyp	15.68	8.00	1	125.4	North	0.2067	5.731	34.65	4.8	☐
3	EXIST.	5/8" stucco /8"CMU/3/4"ISO BTWN24"oc/.5" Gyp	42.33	8.00	1	338.6	West	0.2067	5.731	34.65	4.8	☐
4	Existing	5/8" stucco /8"CMU/3/4"ISO BTWN24"oc/.5" Gyp	40.17	8.00	1	321.4	South	0.2067	5.731	34.65	4.8	☐

Windows (Windows will be rotated clockwise by building rotation value)

No	Description	Orientation	Shaded	U [Btu/hr sf F]	SHGC	Vis.Tra	W [ft]	H (Effec) [ft]	Multi plier	Total Area [sf]	
In Zone:	**Offices**										
In Wall:	**NORTH Wall**										
1	Existing	North	No	1.2500	0.82	0.76	3.08	4.22	3	39.0	☐
In Wall:	**SOUTH Wall**										
1	Existing	South	No	1.2500	0.82	0.76	7.76	4.00	2	62.1	☐
2	Existing	South	No	1.2500	0.82	0.76	7.84	6.68	1	52.4	☐
In Wall:	**WEST Wall**										
3	Existing	West	No	1.2500	0.82	0.76	7.76	4.00	3	93.1	☐

Doors

No	Description	Type	Shade?	Width [ft]	H (Effec) [ft]	Multi plier	Area [sf]	Cond. [Btu/h.sf.F]	Dens. [lb/cf]	Ht Cap. [Btu/sf. F]	R [h.sf.F/ Btu]	
In Zone:	**Offices**											
In Wall:	**NORTH Wall**											
1	metal Door	Aluminum door, 1.25 in. polystyrene	No	3.00	6.68	1	20.0	0.1919	43.67	0.53	5.21	☐

Roofs

No	Description	Type	Width [ft]	H (Effec) [ft]	Multi plier	Area [sf]	Tilt [deg]	Cond. [Btu/h.Sf. F]	Heat Cap [Btu/sf. F]	Dens. [lb/cf]	R-Value [h.sf.F/Btu	
In Zone:	**Offices**											
1	Existing	6"Concrete Tees Built-up assamble	1776.00	1.00	1	1776.0	0.00	0.0504	14.79	76.44	19.8	☐

Skylights

No	Description	Type	U [Btu/hr sf F]	SHGC	Vis.Trans	W [ft]	H (Effec) [ft]	Multi-plier	Area [Sf]	Total Area [Sf]	
In Zone:											
In Roof:											☐

Floors

No	Description	Type	Width [ft]	H (Effec) [ft]	Multi plier	Area [sf]	Cond. [Btu/h.sf.F	Heat Cap. [Btu/sf. F]	Dens. [lb/cf]	R-Value [h.sf.F/Btu
In Zone:	Offices									
1	Existing	1 ft. soil, concrete floor, carpet and rubber pad	1776.00	1.00	1	1776.0	0.2681	34.00	113.33	3.73

Systems

AHU-1 **System 1** **Constant Volume Air Cooled Split System < 65000 Btu/hr** **No. Of Units** 1

Component	Category	Capacity	Efficiency	IPLV
1	Cooling System	54000.00	16.00	8.90
2	Heating System	34120.00	1.00	
3	Air Handling System -Supply	2340.00	0.10	
4	Air Handling System - Return	1880.00	0.10	
5	Air Distribution System (Sup)		4.20	
6	Air Distribution System (Ret)		4.20	

Plant

Equipment	Category	Size	Inst.NoEff.	IPLV

Water Heaters

W-Heater Description	Capacity	Cap.Unit	I/P Rt.	Efficiency	Loss
1 Electric water heater	1	[Gal]	12 [kW]	0.9950 [Ef]	[Btu/h]

Ext-Lighting

Description	Category	No. of Lumin-aires	Watts per Lumin-aire	Area/Len/No [sf/ft/No]	Control Type	Wattage [W]

Piping

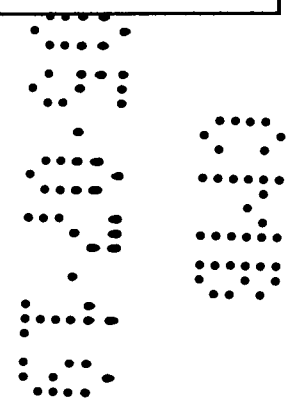
No	Type	Operating Temp [F]	Insulation Conductivity [Btu-in/h.sf.F]	Nomonal pipe Diameter [in]	Insulation Thickness [in]	Is Runout?

Fenestration Used

Name	Glass Type	No. of Panes	Glass Conductance [Btu/h.sf.F]	SHGC	VLT
ASHULSglClrAll Frm	User Defined	1	1.2500	0.8200	0.7600

Materials Used

Mat No	Acronym	Description	Only R-Value Used	RValue [h.sf.F/Btu]	Thick [ft]	Cond-uctivity [Btu/h.ft.F	Density [lb/cf]	Sp. Heat [Btu/lb.F]	
264	Matl264	ALUMINUM, 1/16 IN	No	0.0002	0.0050	26.0000	480.00	0.1000	☐
214	Matl214	POLYSTYRENE, EXP., 1-1/4IN,	No	5.2100	0.1042	0.0200	1.80	0.2900	☐
187	Matl187	GYP OR PLAS BOARD,1/2IN	No	0.4533	0.0417	0.0920	50.00	0.2000	☐
178	Matl178	CARPET W/RUBBER PAD	Yes	1.2300					☐
265	Matl265	Soil, 1 ft	No	2.0000	1.0000	0.5000	100.00	0.2000	☐
48	Matl48	6 in. Heavyweight concrete	No	0.5000	0.5000	1.0000	140.00	0.2000	☐
268	Matl268	0.625" stucco	No	0.1302	0.0521	0.4000	16.00	0.2000	☐
42	Matl42	8 in. Lightweight concrete block	No	2.0212	0.6670	0.3300	38.00	0.2000	☐
269	Matl269	.75" ISO BTWN24" oc	No	2.2321	0.0625	0.0280	4.19	0.3000	☐
94	Matl94	BUILT-UP ROOFING, 3/8IN	No	0.3366	0.0313	0.0930	70.00	0.3500	☐
407	Matl407	R-19 Generic Insulation	No	19.0000	0.4147	0.0218	0.30	0.2000	☐



Constructs Used

No	Name	Simple Construct	Massless Construct	Conductance [Btu/h.sf.F]	Heat Cap [Btu/sf.F]	Density [lb/cf]	RValue [h.sf.F/Btu]	
1002	Aluminum door, 1.25 in. polystyrene	No	No	0.19	0.53	43.67	5.2	☐

Layer	Material No.	Material	Thickness [ft]	Framing Factor	
1	264	ALUMINUM, 1/16 IN	0.0050	0.000	☐
2	214	POLYSTYRENE, EXP., 1-1/4IN,	0.1042	0.000	☐
3	264	ALUMINUM, 1/16 IN	0.0050	0.000	☐

No	Name	Simple Construct	Massless Construct	Conductance [Btu/h.sf.F]	Heat Cap [Btu/sf.F]	Density [lb/cf]	RValue [h.sf.F/Btu]	
1011	5/8" stucco /8"CMU/3/4"ISO BTWN24"oc/.5" Gyp	No	No	0.21	5.73	34.65	4.8	☐

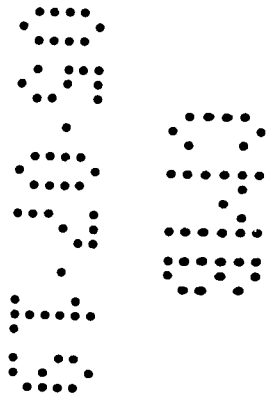
Layer	Material No.	Material	Thickness [ft]	Framing Factor	
1	268	0.625" stucco	0.0521	0.000	☐
2	42	8 in. Lightweight concrete block	0.6670	0.000	☐
3	269	.75" ISO BTWN24" oc	0.0625	0.000	☐
4	187	GYP OR PLAS BOARD,1/2IN	0.0417	0.000	☐

No	Name	Simple Construct	Massless Construct	Conductance [Btu/h.sf.F]	Heat Cap [Btu/sf.F]	Density [lb/cf]	RValue [h.sf.F/Btu]	
1057	1 ft. soil, concrete floor, carpet and rubber pad	No	No	0.27	34.00	113.33	5.7	☐

Layer	Material No.	Material	Thickness [ft]	Framing Factor	
1	265	Soil, 1 ft	1.0000	0.000	☐
2	48	6 in. Heavyweight concrete	0.5000	0.000	☐
3	178	CARPET W/RUBBER PAD		0.000	☐

No	Name	Simple Construct	Massless Construct	Conductance [Btu/h.sf.F]	Heat Cap [Btu/sf.F]	Density [lb/cf]	RValue [h.sf.F/Btu]	
1065	6"Concrete Tees Built-up assamble	No	No	0.05	14.79	76.44	19.8	☐

Layer	Material No.	Material	Thickness [ft]	Framing Factor	
1	48	6 in. Heavyweight concrete	0.5000	0.000	☐
2	94	BUILT-UP ROOFING, 3/8IN	0.0313	0.000	☐
3	407	R-19 Generic Insulation	0.4147	0.000	☐



Air System Sizing Summary for AHU-1

Project Name: OFFICE REMODEL
Prepared by:

05/01/2019
09:46AM

Air System Information

Air System Name	**AHU-1**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**1776.0**	ft²
Air System Type	**SZCAV**		Location	**Miami IAP, Florida**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**4.4**	Tons	Load occurs at	**Jun 1700**	
Total coil load	**53.4**	MBH	OA DB / WB	**88.9 / 76.7**	°F
Sensible coil load	**33.0**	MBH	Entering DB / WB	**84.7 / 71.6**	°F
Coil CFM at Jun 1700	**1112**	CFM	Leaving DB / WB	**57.2 / 56.8**	°F
Max block CFM	**1112**	CFM	Coil ADP	**56.1**	°F
Sum of peak zone CFM	**1112**	CFM	Bypass Factor	**0.038**	
Sensible heat ratio	**0.619**		Resulting RH	**58**	%
CFM/Ton	**249.9**		Design supply temp.	**55.0**	°F
ft²/Ton	**399.3**		Zone T-stat Check	**1 of 1**	OK
BTU/(hr·ft²)	**30.0**		Max zone temperature deviation	**0.0**	°F
Water flow @ 10.0 °F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**34.0**	MBH	Load occurs at	**Des Htg**	
Coil CFM at Des Htg	**1112**	CFM	BTU/(hr·ft²)	**19.1**	
Max coil CFM	**1112**	CFM	Ent. DB / Lvg DB	**60.1 / 88.4**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**1112**	CFM	Fan motor BHP	**0.10**	BHP
Standard CFM	**1111**	CFM	Fan motor kW	**0.08**	kW
Actual max CFM/ft²	**0.63**	CFM/ft²	Fan static	**0.30**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**460**	CFM	CFM/person	**14.38**	CFM/person
CFM/ft²	**0.26**	CFM/ft²			

Air System Design Load Summary for AHU-1

Project Name: OFFICE REMODEL
Prepared by:

05/01/2019
09:46AM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1500 COOLING OA DB / WB 91.0 °F / 77.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 47.0 °F / 38.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	208 ft²	5052	-	208 ft²	-	-
Wall Transmission	906 ft²	1447	-	906 ft²	2399	-
Roof Transmission	1776 ft²	1716	-	1776 ft²	3010	-
Window Transmission	208 ft²	1707	-	208 ft²	2813	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	21 ft²	88	-	21 ft²	145	-
Floor Transmission	1776 ft²	0	-	1776 ft²	1948	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1776 W	3621	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	178 W	566	-	0	0	-
People	32	6407	6560	0	0	0
Infiltration	-	409	574	-	11759	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	5% / 5%	1051	357	5%	1104	0
>> Total Zone Loads	-	**22065**	**7491**	-	**23177**	**0**
Zone Conditioning	-	20764	7491	-	23113	0
Plenum Wall Load	20%	487	-	0	0	-
Plenum Roof Load	70%	4005	-	0	0	-
Plenum Lighting Load	30%	1818	-	0	0	-
Return Fan Load	1112 CFM	0	-	1112 CFM	0	-
Ventilation Load	460 CFM	4748	11156	460 CFM	11121	0
Supply Fan Load	1112 CFM	278	-	1112 CFM	-278	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**32100**	**18647**	-	**33956**	**0**
Central Cooling Coil	-	32100	18648	-	0	0
Central Heating Coil	-	0	-	-	33956	-
>> Total Conditioning	-	**32100**	**18648**	-	**33956**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Space Design Load Summary for AHU-1

Project Name: OFFICE REMODEL
Prepared by: L & D engineering Design

05/01/2019
09:46AM

TABLE 1.1.A. Component Loads For Space "OFFICES" In Zone "Zone 1"						
	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1700 COOLING OA DB / WB 89.9 °F / 76.7 °F OCCUPIED T-STAT 75.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 47.0 °F / 38.6 °F OCCUPIED T-STAT 70.0 °F		
		Sensible	Latent		Sensible	Latent
SPACE LOADS	Details	(BTU/hr)	(BTU/hr)	Details	(BTU/hr)	(BTU/hr)
Window & Skylight Solar Loads	208 ft²	6107	-	208 ft²	-	-
Wall Transmission	906 ft²	1947	-	906 ft²	2399	-
Roof Transmission	1776 ft²	1833	-	1776 ft²	3010	-
Window Transmission	208 ft²	1643	-	208 ft²	2813	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	21 ft²	85	-	21 ft²	145	-
Floor Transmission	1776 ft²	0	-	1776 ft²	1948	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1776 W	3700	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	178 W	571	-	0	0	-
People	32	6589	6560	0	0	0
Infiltration	-	380	628	-	11759	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	5% / 5%	1143	359	5%	1104	0
>> Total Zone Loads	-	23999	7547	-	23177	0

TABLE 1.1.B. Envelope Loads For Space "OFFICES" In Zone "Zone 1"						
				COOLING	COOLING	HEATING
	Area	U-Value	Shade	TRANS	SOLAR	TRANS
	(ft²)	(BTU/(hr·ft²·°F))	Coeff.	(BTU/hr)	(BTU/hr)	(BTU/hr)
S EXPOSURE						
WALL	350	0.115	-	804	-	927
N EXPOSURE						
WALL	104	0.115	-	160	-	275
DOOR	21	0.300	-	85	-	145
W EXPOSURE						
WALL	246	0.115	-	577	-	651
WINDOW 1	93	0.588	0.811	735	4381	1258
S EXPOSURE						
WALL	206	0.115	-	407	-	545
WINDOW 1	115	0.588	0.811	908	1727	1555
H EXPOSURE						
ROOF	1776	0.074	-	1833	-	3010