



BUILDING CODE COMPLIANCE OFFICE (BCCO)
PRODUCT CONTROL DIVISION

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

NOTICE OF ACCEPTANCE (NOA)

www.buildingcodeonline.com

YKK AP America, Inc.,
332 Firetower Road,
Dublin, GA 31021

SCOPE:

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

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Division (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. BORA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Division 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: YVS 410 TUH Aluminum Stacking Mullion

APPROVAL DOCUMENT: Drawing No. YKK-MUL-410, titled "Vinyl Double Hung Windows", sheets 1 through 4 of 4, dated 12/15/08 with revision 1 dated 05/12/09, prepared by OM Engineering Services, Inc., signed and sealed by Nimesh Bhavsar, 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 Division.

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 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 consists of this page 1 and evidence pages E-1, as well as approval document mentioned above. The submitted documentation was reviewed by **Fitz A. Harris, P.E.**

Fitz A. Harris
5/28/09



NOA No 08-0813.05
Expiration Date: June 17, 2014
Approval Date: June 17, 2009

YKK AP America

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

A. DRAWINGS

1. Manufacturer's die drawings and sections.
2. Drawing No **YKK-MUL-410**, Sheets 1 through 4 of 4, titled "Vinyl Double Hung Windows", prepared by OM Engineering Services, dated 12/15/08 with revision 1 dated 05/12/09, signed and sealed by Nimesh Bhavsar, P.E.

B. TESTS

1. Test reports on
 - 1) Air Infiltration Test, per FBC, TAS 202-94
 - 2) Uniform Static Air Pressure Test, Loading per FBC TAS 202-94
 - 3) Water Resistance Test, per FBC, TAS 202-94
 - 4) Large Missile Impact Test per FBC, TAS 201-94
 - 5) Cyclic Wind Pressure Loading per FBC, TAS 203-94
 - 6) Forced Entry Test, per FBC 2411 3.2.1, TAS 202-94along with marked-up drawings and installation diagram of YVS 410 TUH Aluminum Stacking Mullion, prepared by Hurricane Test Laboratory , Test Report No. **HTL 0231-0409-04**, dated 06/26/04, signed and sealed by Vinu Abraham P.E.
(Submitted under **NOA # 04-1117.01**)

C. CALCULATIONS

1. Anchor Calculations and structural analysis, prepared by OM Engineering Services, Inc., dated 10/23/08, signed and sealed by Nimesh Bhavsar, P.E.

D. QUALITY ASSURANCE

1. Miami Dade Building Code Compliance Office (BCCO).

E. MATERIAL CERTIFICATIONS

None

F. STATEMENTS

1. Statement letter of no financial interest, dated August 6, 2008, signed and sealed by Nimesh Bhavsar, P.E.
3. Laboratory compliance letter for Test Report no. **HTL0231-0409-04**, issued by Hurricane Test Laboratory, Inc., dated June 26, 2004, signed and sealed by Vinu J. Abraham, P.E.

G. OTHER

None



Fitz A. Harris, P.E.

Product Control Examiner

NOA No 08-0813.05

Expiration Date: June 17, 2014

Approval Date: June 17, 2009

YKK AP AMERICA

YVS-410TUH Series Windows Stacking Mullions - 4652

INSTALLATION NOTES:

- ONE (1) INSTALLATION ANCHOR IS REQUIRED AT EACH ANCHOR LOCATION SHOWN, UNLESS OTHERWISE STATED.
- THE NUMBER OF INSTALLATION ANCHORS DEPICTED IS THE MINIMUM NUMBER OF ANCHORS TO BE USED FOR PRODUCT INSTALLATION.
- INSTALL INDIVIDUAL INSTALLATION ANCHORS WITHIN A TOLERANCE OF $\pm 1/2$ INCH OF THE DEPICTED LOCATION IN THE ANCHOR LAYOUT DETAIL (I.E., WITHOUT CONSIDERATION OF TOLERANCES). TOLERANCES ARE NOT CUMULATIVE FROM ONE INSTALLATION ANCHOR TO THE NEXT.
- FOR INSTALLATION ON WOOD FRAME SUBSTRATE USE #10x2" PAN-HEAD STAINLESS-STEEL WOOD SCREWS WITH EMBEDMENT AS SHOWN. USE FOUR (4) SCREWS PER INSTALLATION BRACKET, AND TWO (2) BRACKETS PER ANCHOR LOCATION (HEAD AND SILL)
- FOR INSTALLATION ON MASONRY AND CONCRETE SUBSTRATE, USE 3/16" DIAMETER ITW TAPCON SCREWS WITH EMBEDMENT AS SHOWN. USE TWO (2) SCREWS PER INSTALLATION BRACKET, AND TWO (2) BRACKETS PER ANCHOR LOCATION (HEAD AND SILL).
- FOR INSTALLATION ON STEEL STUDS, USE #12 SELF-TAPPING SCREWS WITH EMBEDMENT AS SHOWN. USE TWO (2) SCREWS PER INSTALLATION BRACKET, AND TWO (2) BRACKETS PER ANCHOR LOCATION (HEAD AND SILL).
- FOR INSTALLATION THROUGH BCCO APPROVED ALUMINUM MULLIONS, USE #12 SELF-TAPPING SCREWS WITH EMBEDMENT AS SHOWN. USE TWO (2) SCREWS PER INSTALLATION BRACKET, AND TWO (2) BRACKETS PER ANCHOR LOCATION (HEAD AND SILL).
- MINIMUM EMBEDMENT AND EDGE DISTANCE EXCLUDE WALL FINISHES, INCLUDING BUT NOT LIMITED TO STUCCO, FOAM, BRICK VENEER, AND SIDING.
- INSTALLATION ANCHORS AND ASSOCIATED HARDWARE MUST BE MADE OF CORROSION RESISTANT MATERIAL OR HAVE A CORROSION RESISTANT COATING.
- INSTALLATION ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH ANCHOR MANUFACTURER'S INSTALLATION INSTRUCTIONS, AND ANCHORS SHALL NOT BE USED IN SUBSTRATES WITH STRENGTHS LESS THAN THE MINIMUM STRENGTH SPECIFIED BY THE ANCHOR MANUFACTURER.
- INSTALLATION ANCHOR CAPACITIES FOR PRODUCTS HEREIN ARE BASED ON SUBSTRATE MATERIALS WITH THE FOLLOWING PROPERTIES:
 - WOOD - MINIMUM SPECIFIC GRAVITY OF 0.55.
 - MASONRY - STRENGTH CONFORMANCE TO ASTM C-90, GRADE N, TYPE 1 (OR GREATER)
 - CONCRETE - MINIMUM COMPRESSIVE STRENGTH OF 3,192 PSI
 - STEEL - MINIMUM YIELD STRENGTH OF 33 KSI. MINIMUM WALL THICKNESS OF 33 MILS.
 - ALUMINUM - ALLOWABLE STRESS OF 13.94 KSI. MINIMUM WALL THICKNESS OF 0.090".
- INSTALLATION ANCHOR CAPACITIES HAVE BEEN CALCULATED BASED ON MINIMUM 1-1/2" ANCHOR SPACING FOR STEEL, MASONRY AND ALUMINUM, AND 1" ANCHOR SPACING FOR WOOD INSTALLATION.

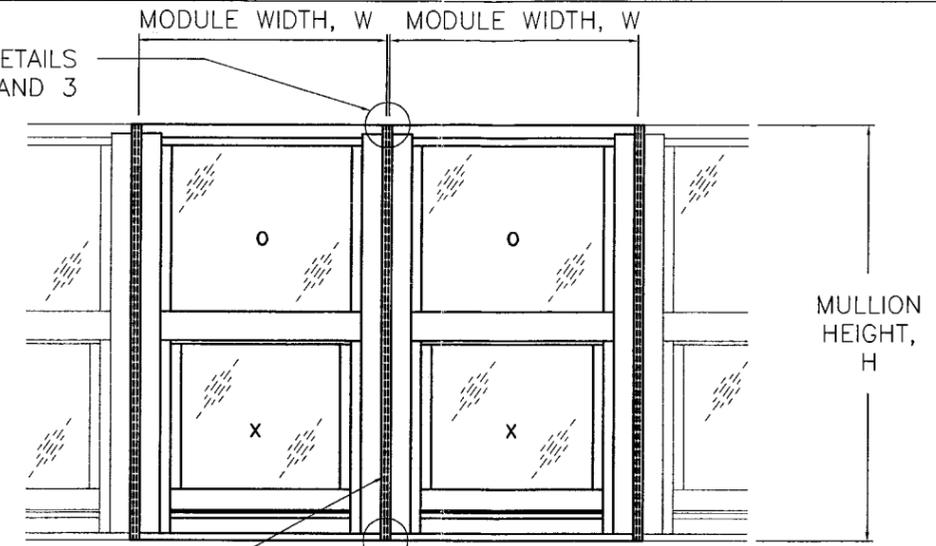
GENERAL NOTES:

- THE PRODUCT SHOWN HEREIN IS DESIGNED AND MANUFACTURED TO COMPLY WITH THE 2007 FLORIDA BUILDING CODE.
- THIS MULLION IS ONLY VALID WHEN USED IN CONJUNCTION WITH APPLICABLE YKK WINDOWS PRODUCTS.
- ALL WINDOWS USED WITH THIS MULLION SHALL BE QUALIFIED UNDER SEPARATE APPROVAL. ALL GLAZING PRODUCTS USED WITH THESE MULLIONS MUST MEET THE APPLICABLE FLORIDA BUILDING CODE REQUIREMENTS.
- ADEQUACY OF THE EXISTING STRUCTURAL CONCRETE/MASONRY, 2X AND STEEL STUD FRAMING AS A MAIN WIND FORCE RESISTING SYSTEM CAPABLE OF WITHSTANDING AND TRANSFERRING APPLIED PRODUCT LOADS TO THE FOUNDATION IS THE RESPONSIBILITY OF THE ENGINEER OR ARCHITECT OF RECORD FOR THE PROJECT OF INSTALLATION.
- 2X BUCKS (WHEN USED) SHALL BE DESIGNED AND ANCHORED TO PROPERLY TRANSFER ALL LOADS TO THE STRUCTURE. BUCK DESIGN AND INSTALLATION IS THE RESPONSIBILITY OF THE ENGINEER OR ARCHITECT OF RECORD FOR THE PROJECT OF INSTALLATION.
- THE INSTALLATION DETAILS DESCRIBED HEREIN ARE GENERIC AND MAY NOT REFLECT ACTUAL CONDITIONS FOR A SPECIFIC SITE. IF SITE CONDITIONS CAUSE INSTALLATION TO DEVIATE FROM THE REQUIREMENTS DETAILED HEREIN, A LICENSED ENGINEER OR ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE WITH THIS DOCUMENT.
- IMPACT PROTECTIVE SYSTEM IS NOT REQUIRED IN AREAS REQUIRING IMPACT RESISTANCE.
- MATERIALS INCLUDING BUT NOT LIMITED TO STEEL/METAL SCREWS, THAT COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL MEET THE REQUIREMENTS OF THE 2007 FLORIDA BUILDING CODE SECTION 2003.8.4.
- DESIGNATIONS "X" AND "O" STAND FOR THE FOLLOWING:
X: OPERABLE PANEL
O: FIXED PANEL

NOTE: SEE SEPARATE NOA FOR WINDOWS AND GLAZING

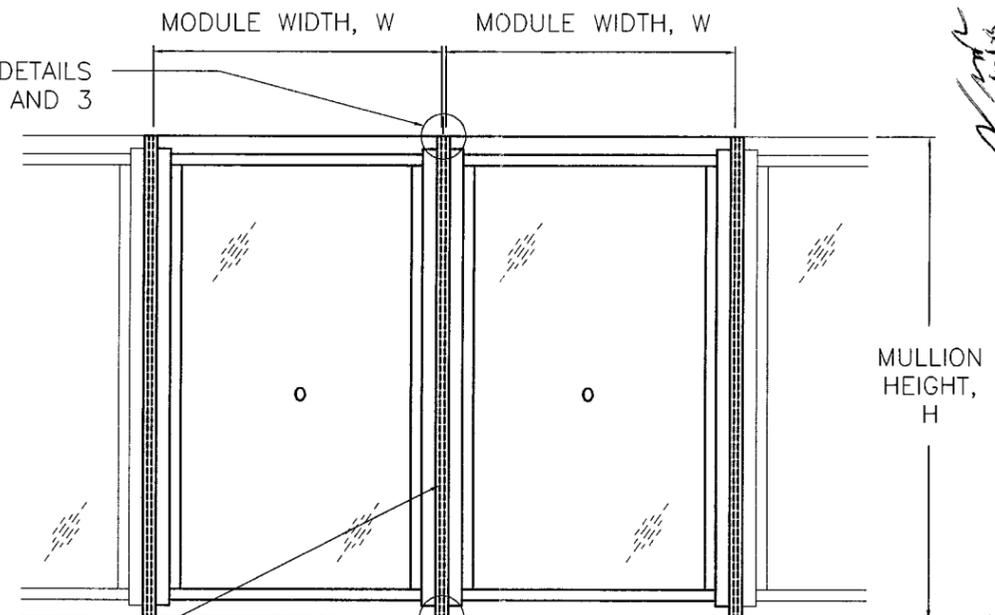
Window	NOA #	IMPACT RATING
Single Hung Window	04-1117.01	LARGE MISSILE
	04-1117.02	SMALL MISSILE
	04-1117.03	NO IMPACT
Fixed/Fixed Window	05-0301.06	LARGE MISSILE
	05-0301.07	SMALL MISSILE
	05-0301.08	NO IMPACT

SEE INSTALLATION DETAILS ON SHEETS 2 AND 3



VERTICAL MULLION SINGLE HUNG WINDOW

SEE INSTALLATION DETAILS ON SHEETS 2 AND 3



VERTICAL MULLION FIXED/FIXED WINDOW

SEE INSTALLATION DETAILS ON SHEETS 2 AND 3

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SHEET	SHEET DESCRIPTION
1	GENERAL & INSTALLATION NOTES
2	INSTALLATION DETAILS FOR WOOD/MASONRY
3	INSTALLATION DETAILS FOR STEEL/ALUMINUM
4	PRESSURE CHARTS & BILL OF MATERIALS

Approved as complying with the Florida Building Code
Date 6-17-2009
NOA# 08-0813-05
Miami Dade Product Control Division
By *[Signature]*

OWNER
YKK AP AMERICA INC
7680 THE BLUFFS,
SUITE 100
AUSTELL, GA 30168

PROJECT
VINYL DOUBLE HUNG
WINDOWS



CONSULTANTS



OM ENGINEERING
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621 E. WASHINGTON ST.
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C.A.#26637
PROFESSIONAL ENGINEER
NIMESH BHAVSAR, P.E.

REGISTRATION #: 56861

DESIGNED BY: NJB
DRAWN BY: MS
CHECKED BY: NJB
DATE DRAWN: 12-15-06

REVISIONS:
A 5/12/09 MIAMI-DADE
COMMENTS

DRAWING SCALE

AS NOTED

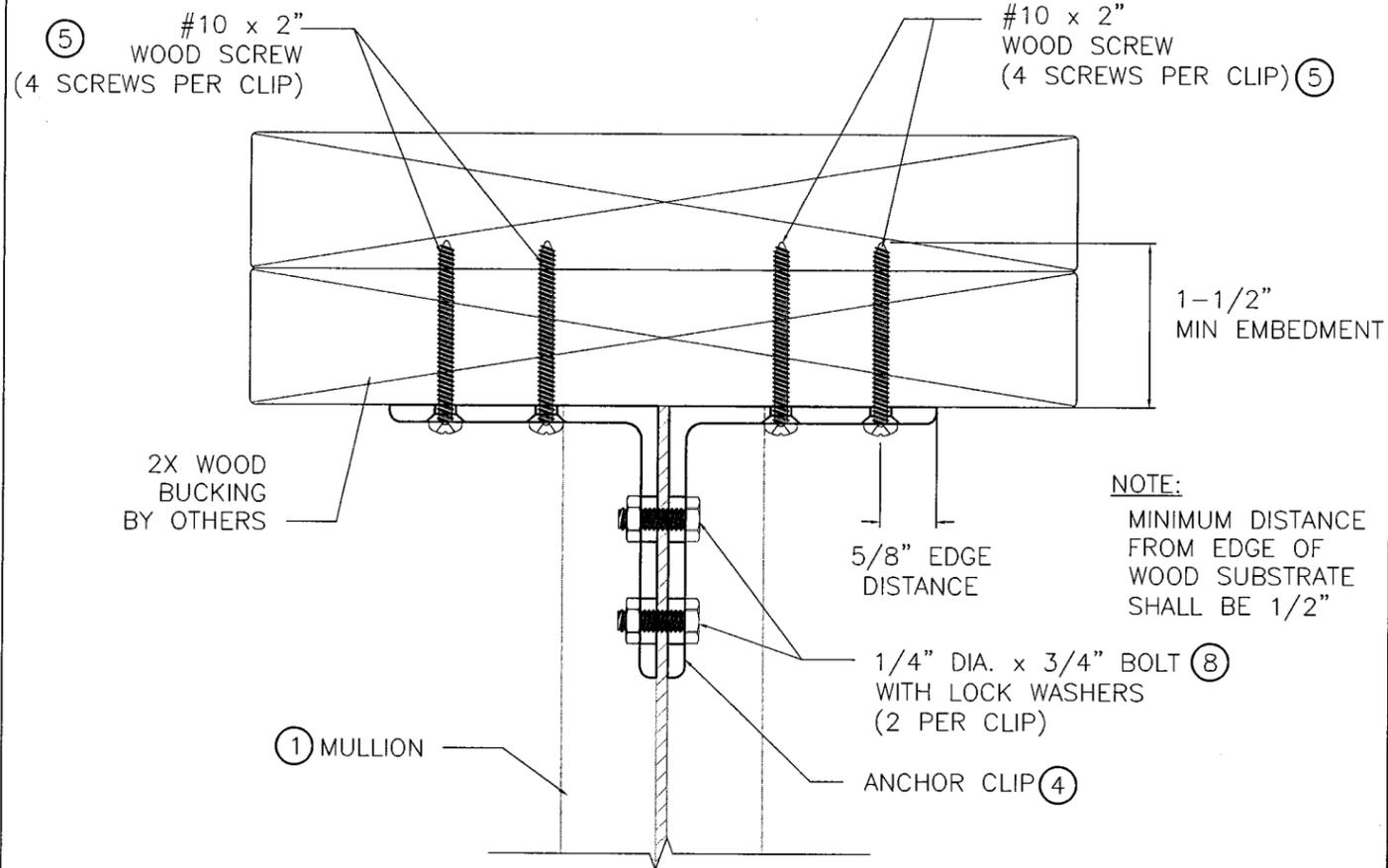
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GENERAL
NOTES

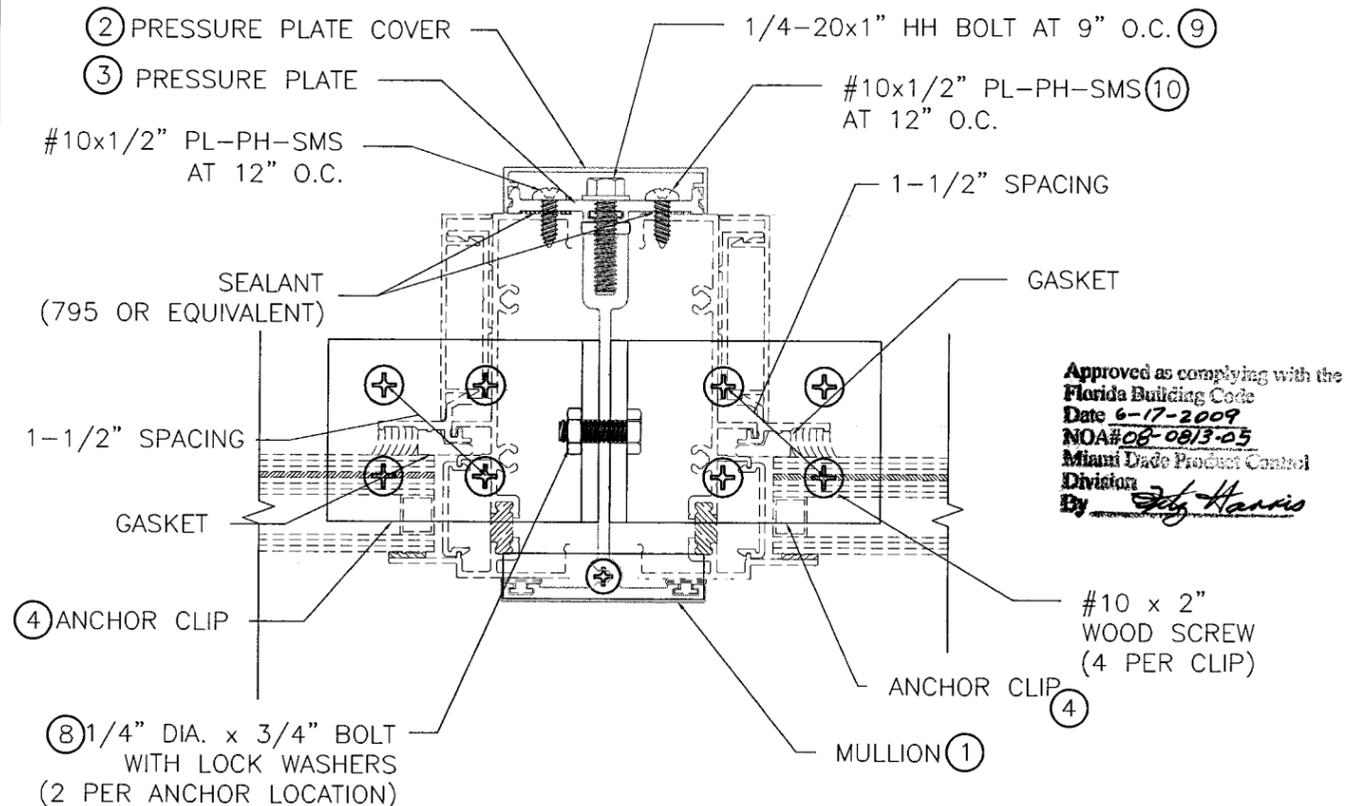
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YKK-MUL-410

SHEET 01 OF 04

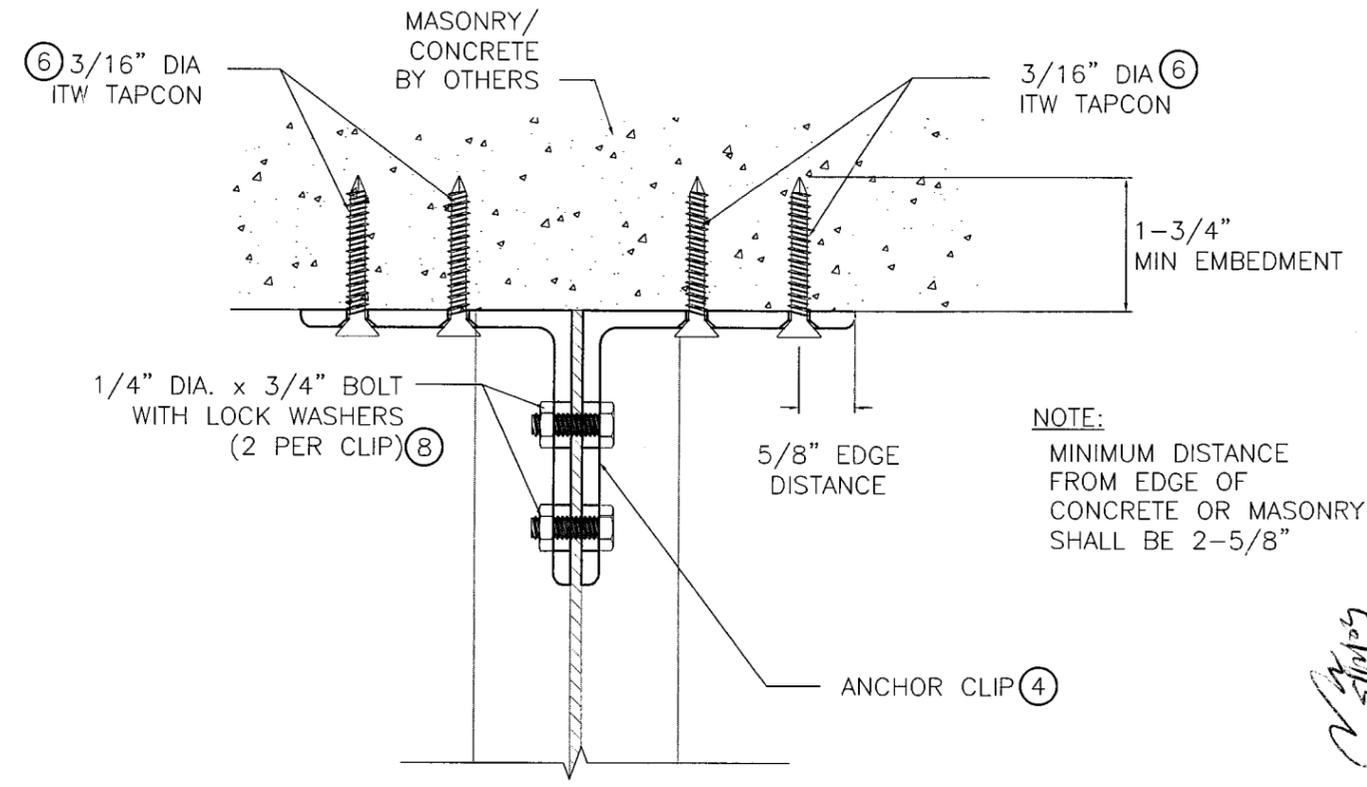


INSTALLATION FOR WOOD VERTICAL SECTION ① SCALE: 6"=1'-0"

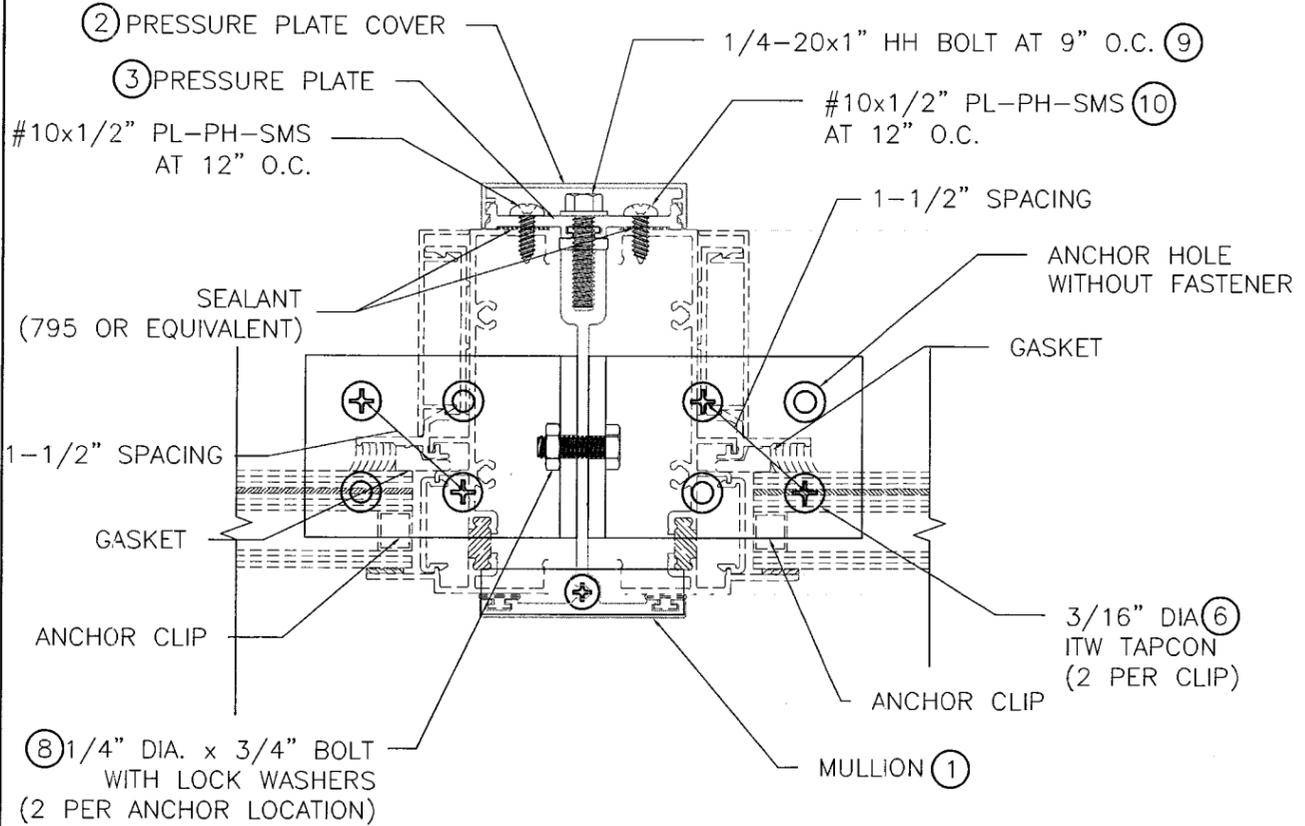


MULLION E9-4652 HORIZONTAL SECTION ③ SCALE: 6"=1'-0"

NOTE: WINDOWS SHOWN WITH DASHED LINES ARE NOT PART OF THIS APPROVAL. SEE SEPARATE NOA FOR WINDOWS.



INSTALLATION FOR MASONRY/CONCRETE VERTICAL SECTION ② SCALE: 6"=1'-0"



MULLION E9-4652 HORIZONTAL SECTION ④ SCALE: 6"=1'-0"

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DESIGNED BY: NUB
DRAWN BY: MS
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DATE DRAWN: 12-15-08

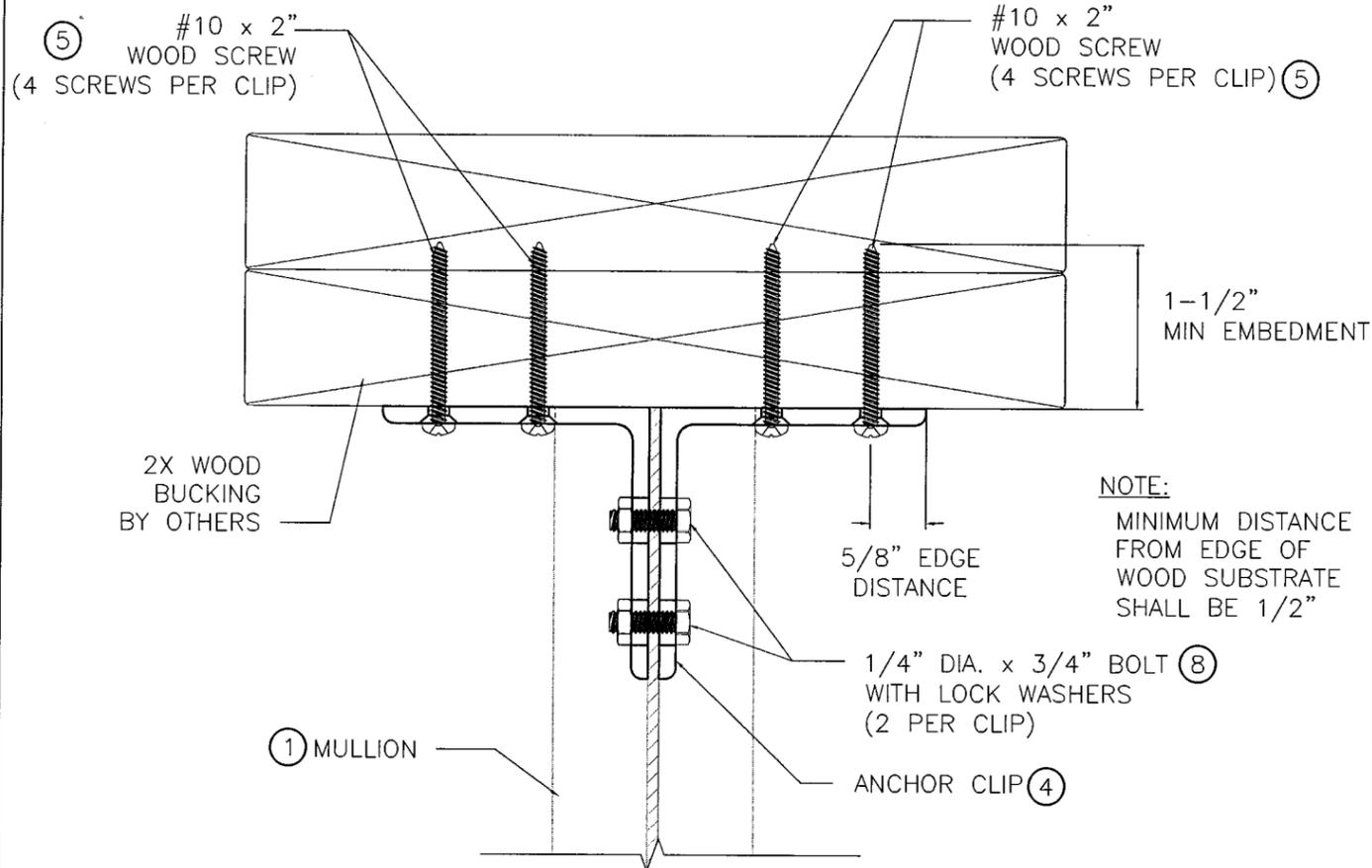
REVISIONS:
▲ 5/12/09 MIAMI-DADE
COMMENTS

DRAWING SCALE
AS NOTED

DRAWING TITLE
WOOD &
MASONRY
INSTALLATION

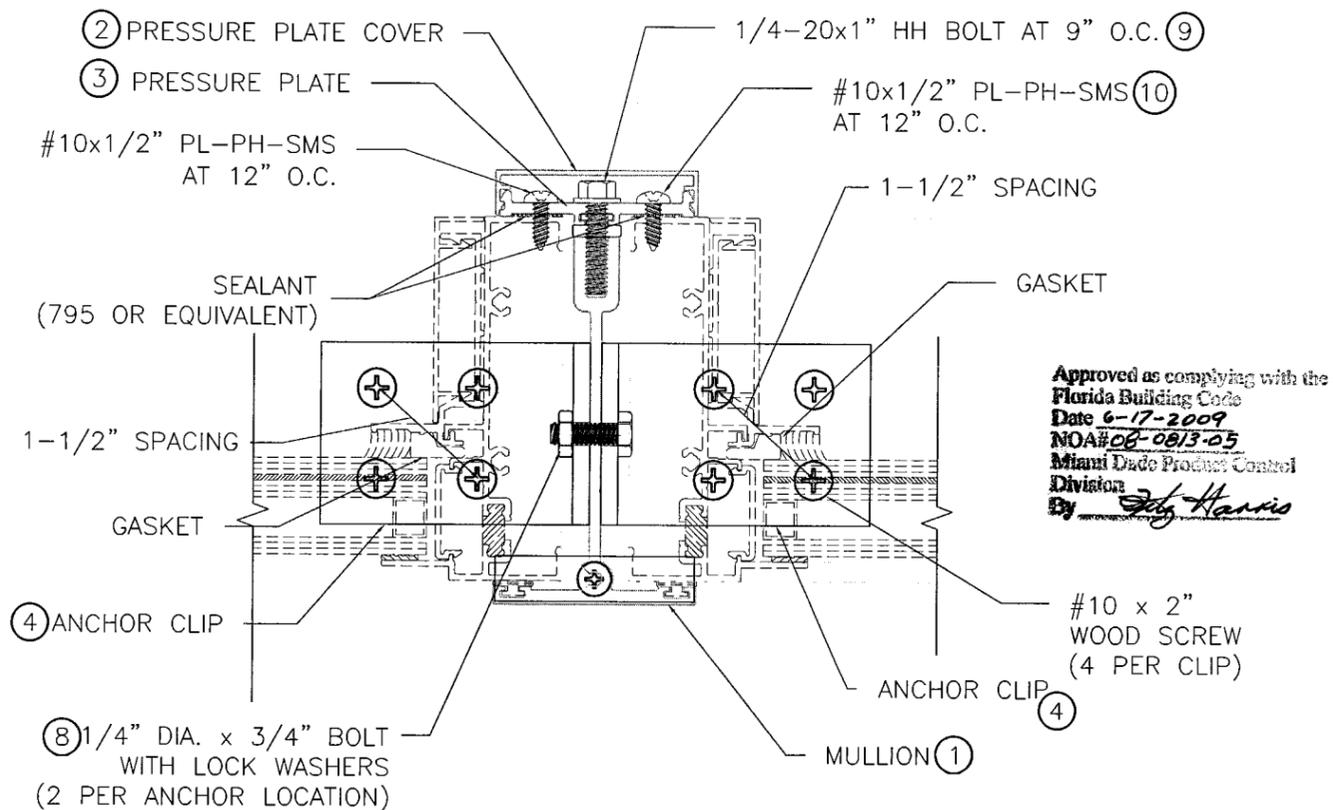
DRAWING NUMBER
YKK-MUL-410

SHEET 02 OF 04



INSTALLATION FOR WOOD VERTICAL SECTION

SCALE: 6" = 1'-0"

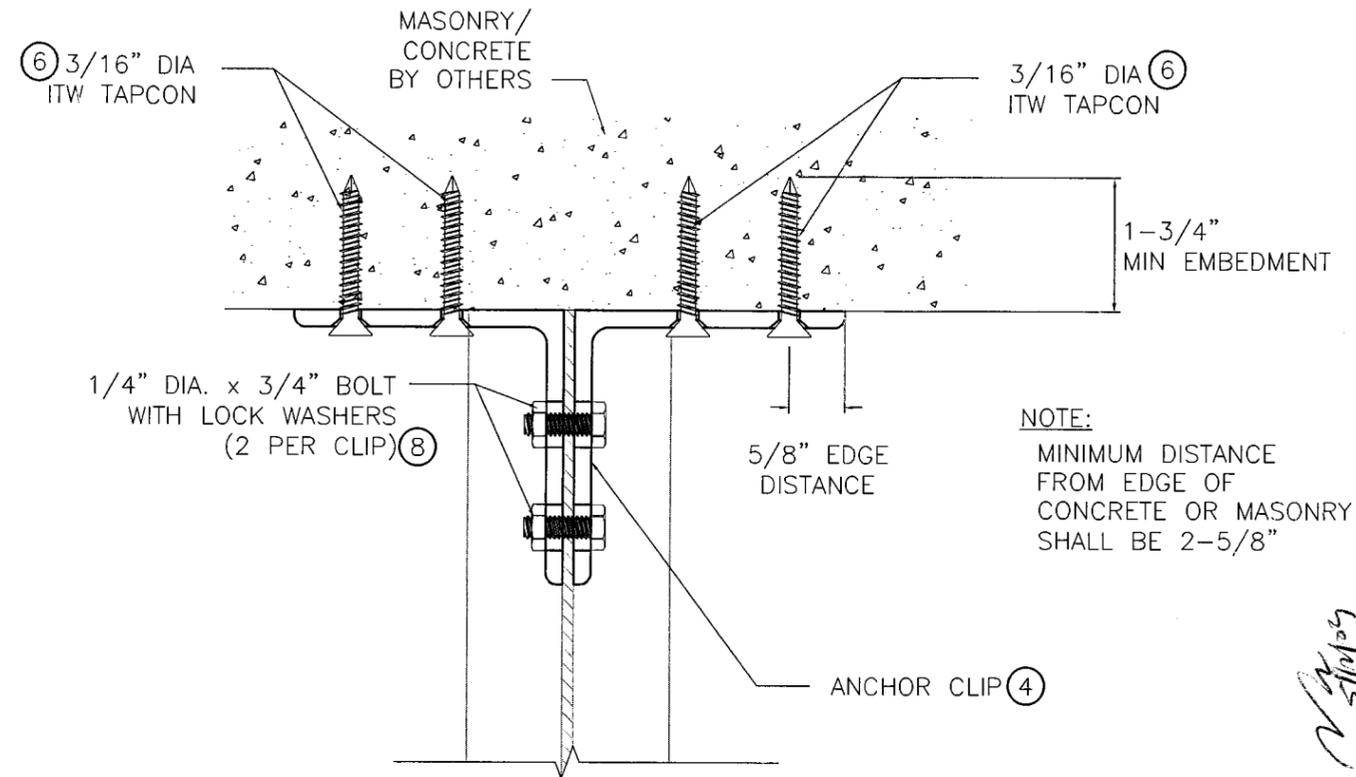


MULLION E9-4652 HORIZONTAL SECTION

SCALE: 6" = 1'-0"

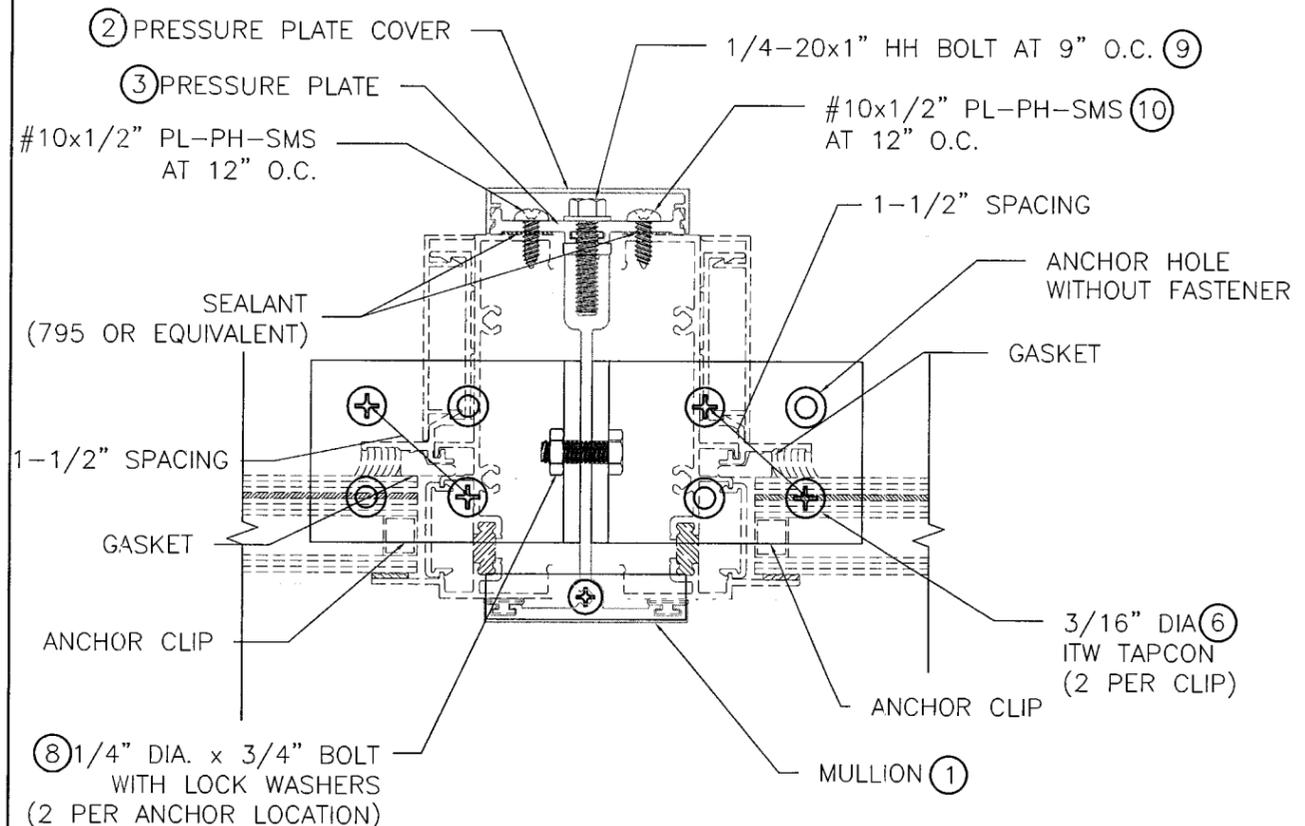
Approved as complying with the Florida Building Code Date 6-17-2009 NOA# 08-0813-05 Miami Dade Product Control Division By *Jerry Harris*

NOTE: WINDOWS SHOWN WITH DASHED LINES ARE NOT PART OF THIS APPROVAL. SEE SEPARATE NOA FOR WINDOWS.



INSTALLATION FOR MASONRY/CONCRETE VERTICAL SECTION

SCALE: 6" = 1'-0"



MULLION E9-4652 HORIZONTAL SECTION

SCALE: 6" = 1'-0"

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REGISTRATION # 36861

DESIGNED BY: NJB
DRAWN BY: MS
CHECKED BY: NJB
DATE DRAWN: 12-15-08

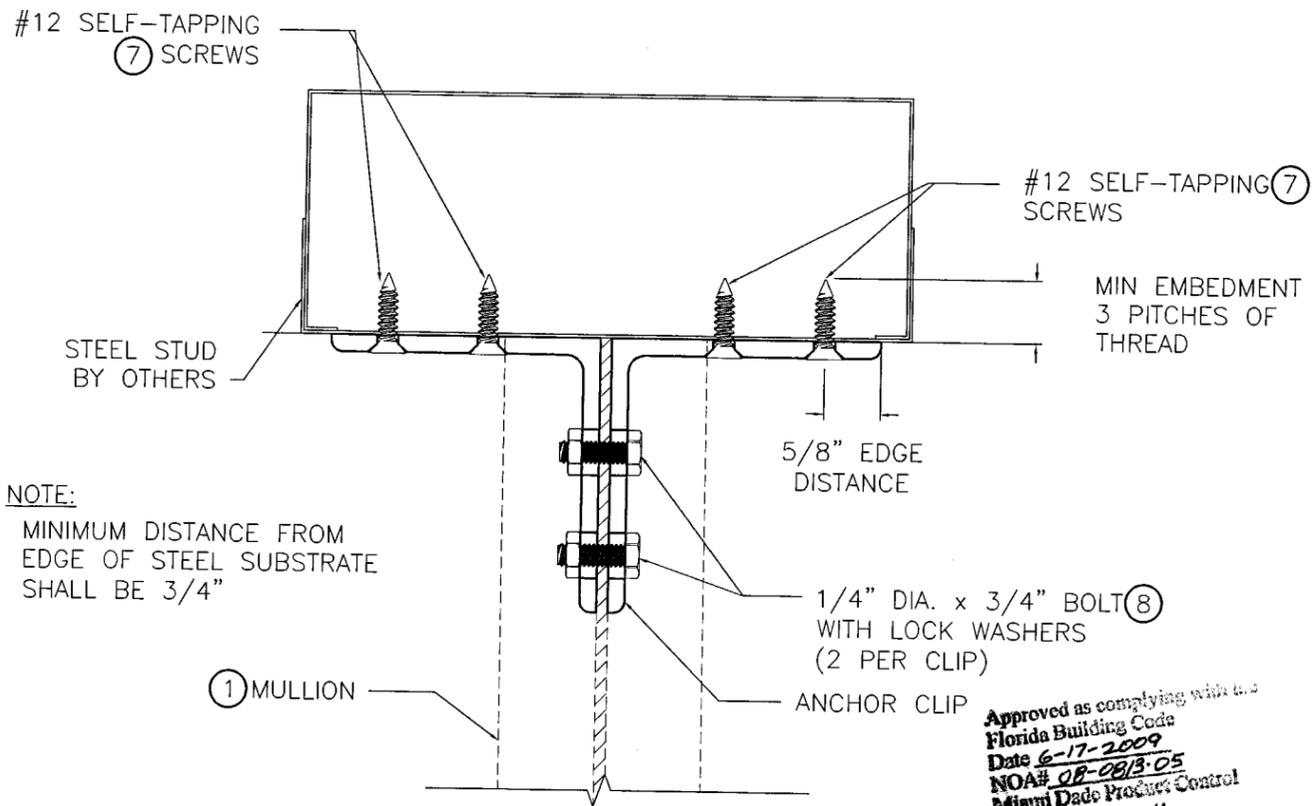
REVISIONS:
Δ 5/12/09 MIAMI-DADE
COMMENTS

DRAWING SCALE
AS NOTED

DRAWING TITLE
WOOD &
MASONRY
INSTALLATION
DRAWING NUMBER

YKK-MUL-410

SHEET 02 OF 04

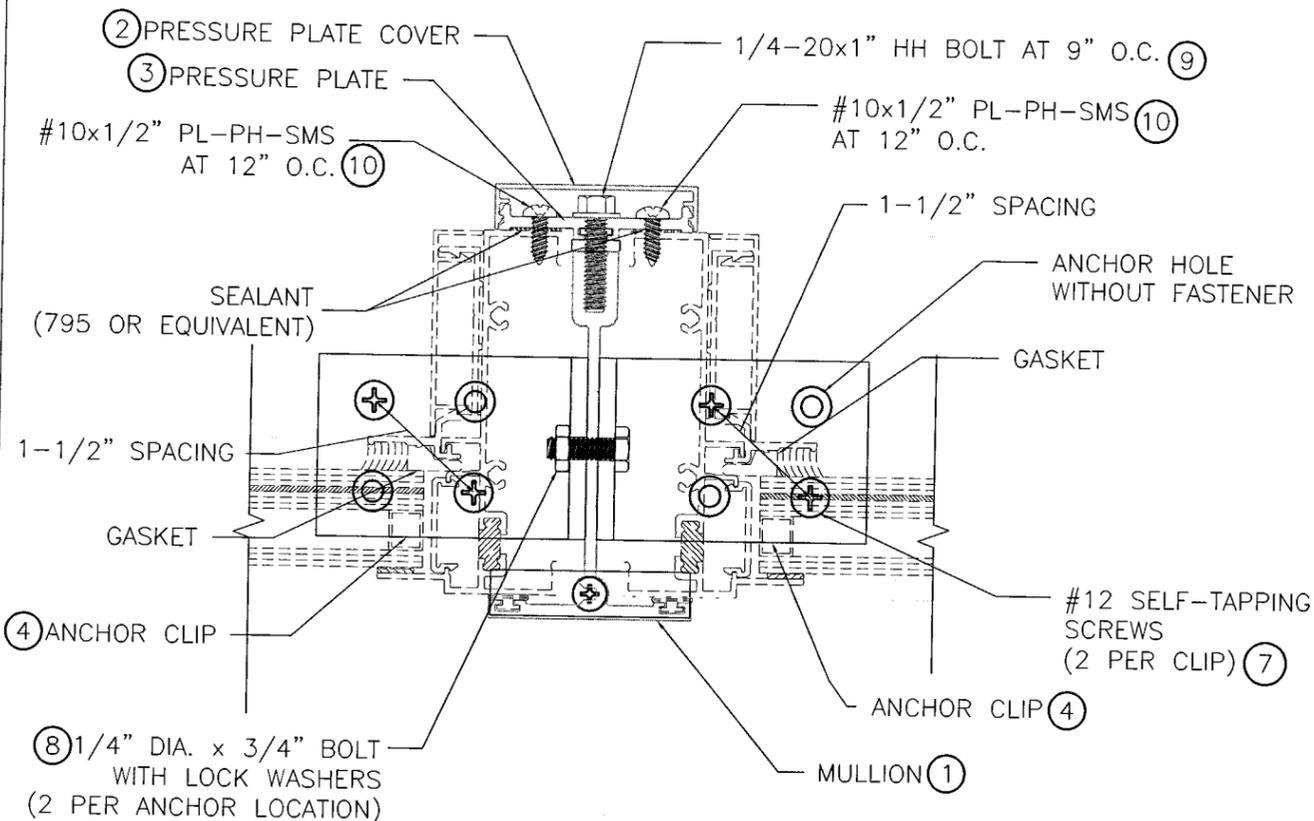


NOTE:
MINIMUM DISTANCE FROM
EDGE OF STEEL SUBSTRATE
SHALL BE 3/4"

Approved as complying with the
Florida Building Code
Date 6-17-2009
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Miami Dade Product Control
Division
By *[Signature]*

INSTALLATION FOR STEEL VERTICAL SECTION

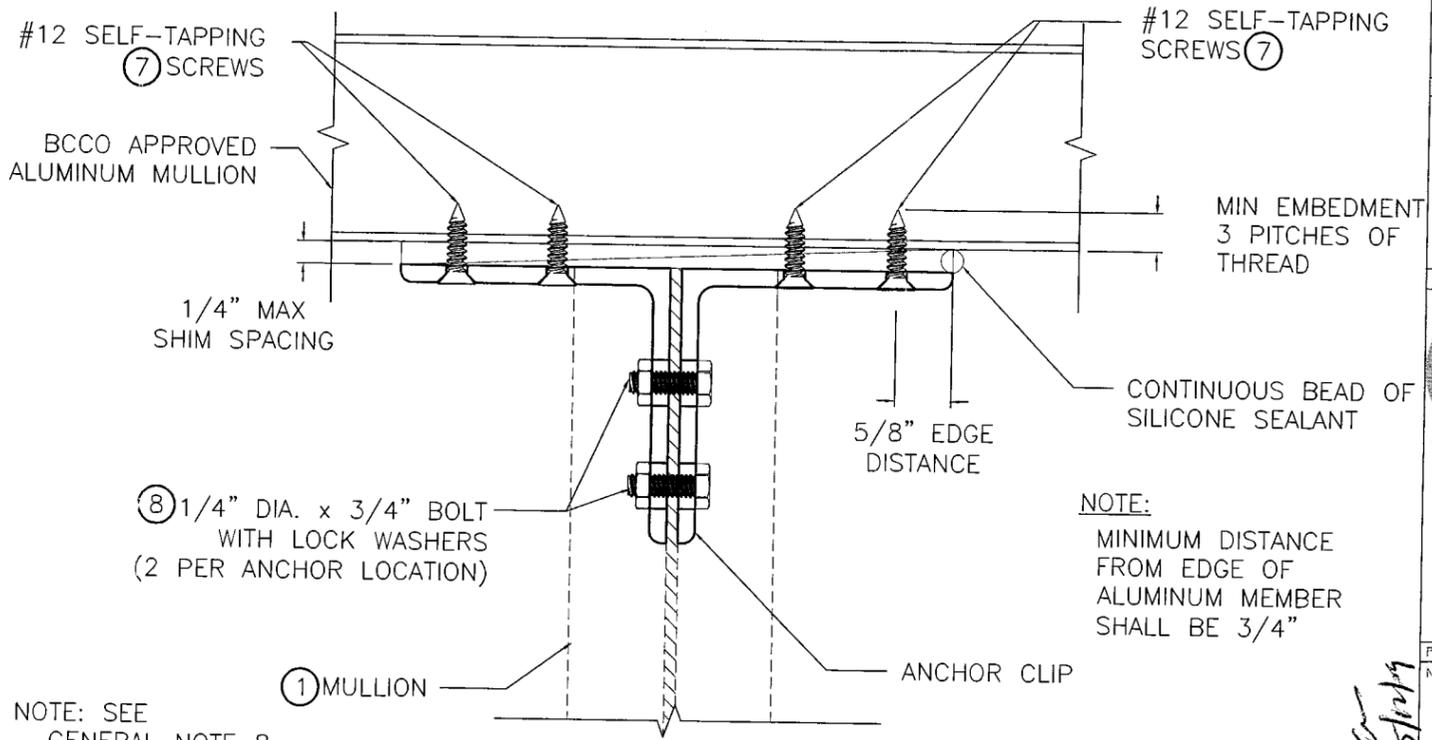
SCALE: 6" = 1'-0"



MULLION E9-4652 HORIZONTAL SECTION

SCALE: 6" = 1'-0"

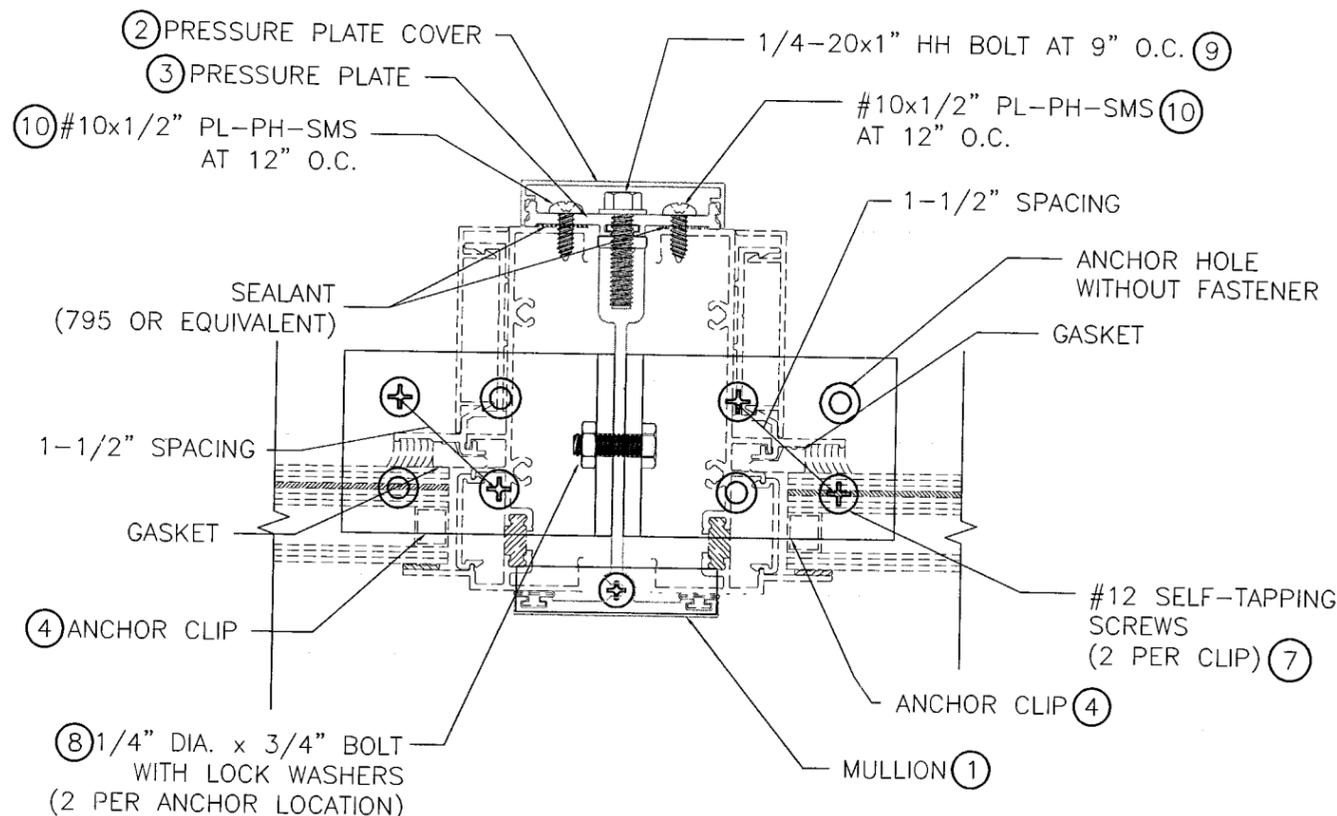
NOTE: WINDOWS SHOWN WITH DASHED LINES ARE NOT PART OF THIS APPROVAL.
SEE SEPARATE NOA FOR WINDOWS.



NOTE: SEE
GENERAL NOTE 8
FOR DISSIMILAR
METAL CONTACT

INSTALLATION FOR ALUMINUM MULLION VERTICAL SECTION

SCALE: 6" = 1'-0"



MULLION E9-4652 HORIZONTAL SECTION

SCALE: 6" = 1'-0"

OWNER YKK AP AMERICA INC 7680 THE BLUFFS, SUITE 100 AUSTELL, GA 30168
PROJECT VINYL DOUBLE HUNG WINDOWS
YKK AP
CONSULTANTS  OM ENGINEERING SERVICES, INC. 621 E. WASHINGTON ST. SUITE 8 ORLANDO, FL 32801 (P) 407-704-7815 (F) 407-704-7816
C.A.#20637 PROFESSIONAL ENGINEER NIMESH BHAVSAR, P.E.
REGISTRATION #: 56861

Handwritten note: 5/12/09

DESIGNED BY: NJB
DRAWN BY: MS
CHECKED BY: NJB
DATE DRAWN: 12-15-08
REVISIONS:
▲ 5/12/09 MIAMI-DADE
COMMENTS
DRAWING SCALE
AS NOTED
DRAWING TITLE
STEEL & ALUMINUM INSTALLATION
DRAWING NUMBER
YKK-MUL-410
SHEET 03 OF 04

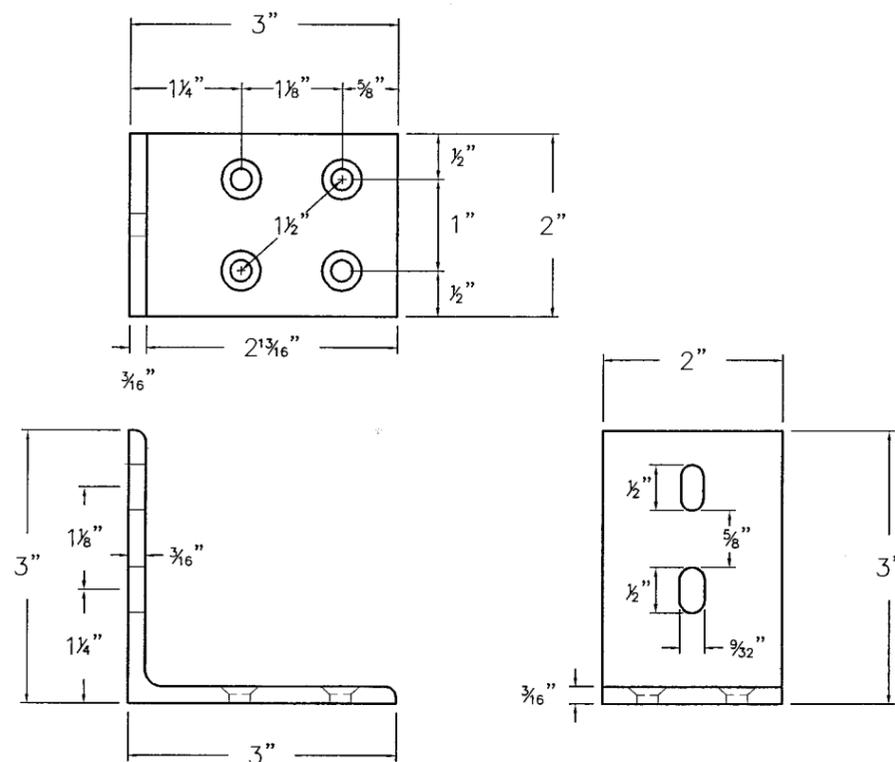
PRESSURE CHARTS (PSF)

NOTES

1. THE DESIGN PRESSURES IN THIS CHART ARE FOR THE MULLIONS LISTED HERE WHEN USED WITH THE CLIP DETAILED IN THIS DOCUMENT.
2. DESIGN PRESSURES ARE LIMITED BY THE MINIMUM OF MULLION, FASTENER AND ANCHOR CLIP CAPACITY.
3. DESIGN PRESSURE VALUES APPLY TO MULLION WHERE TWO OR MORE WINDOWS ARE LISTED IN A SINGLE OPENING.
4. SELECT PANEL WIDTH (W) AND MULLION SPAN (H) IN INCHES AND OBTAIN THE MAXIMUM DESIGN PRESSURE FROM THE CHART.
5. WHEN PANEL WIDTHS ARE NOT EQUAL, USE THE LARGER PANEL WIDTH ON THE CHART.
6. POSITIVE PRESSURES ARE LIMITED TO 80 PSF AND NEGATIVE PRESSURES ARE LIMITED TO 120 PSF

		Module Width, W (in)							
		28	30	36	40	43-3/4	46	48-3/8	50
Mullion Height, H (in)	56	119	112	98	92	87	86	84	83
	60	102	97	84	78	74	72	70	69
	72	69	65	56	51	48	46	45	44
	80	56	52	45	41	38	37	35	34
	87-1/2	46	43	37	34	31	30	29	28
	92	42	39	33	30	28	27	26	25
	96	38	36	30	28	25	24	23	
	100	35	33	28	25	23			

NOTE: TRIBUTARY AREAS NOT TO EXCEED 24.125 SF

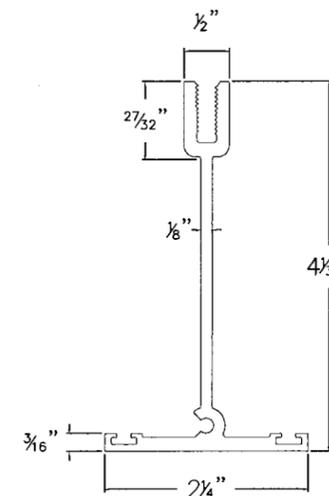


ANCHOR CLIP (E1-1587) 4

MATERIAL: ALUMINUM 6063-T5

SCALE: 6" = 1'-0"

BILL OF MATERIALS			
NO.	PART NUMBER	DESCRIPTION	MATERIAL
1	E9-4652	MULLION	6063-T5
2	E9-5111	PRESSURE PLATE COVER	6063-T5
3	E9-4231	PRESSURE PLATE	6063-T5
4	E1-1587	ANCHOR CLIP	6063-T5
5		#10x2" WOOD SCREW	
6		3/16" ITW TAPCON	
7		#12 SELF-TAPPING SCREWS	
8		1/4" DIA. x3/4" BOLT W/ LOCK WASHERS	
9		1/4-20x1" HH BOLT	
10		#10x1/2" PL-PH-SMS	

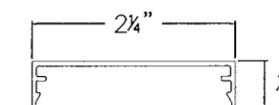


MULLION E9-4652 1

MATERIAL: ALUMINUM 6063-T5

SCALE: 6" = 1'-0"

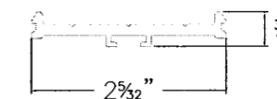
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Miami Dade Product Control
Division
By *Stacy Harris*



PRESSURE PLATE COVER (E9-5111) 2

MATERIAL: ALUMINUM 6063-T5

SCALE: 6" = 1'-0"



PRESSURE PLATE (E9-4231) 3

MATERIAL: ALUMINUM 6063-T5

SCALE: 6" = 1'-0"

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PROJECT
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C.S.#26697
PROFESSIONAL ENGINEER
NIMESH BHAVSAR, P.E.
REGISTRATION #: 56861

DESIGNED BY: NJB
DRAWN BY: MS
CHECKED BY: NJB
DATE DRAWN: 12-15-08

REVISIONS:
5/12/09 MIAMI-DADE
COMMENTS

DRAWING SCALE
AS NOTED

DRAWING TITLE
PRESSURE CHARTS &
BILL OF MATERIALS
DRAWING NUMBER
YKK-MUL-410
SHEET 04 OF 04