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
T (786) 315-2590 F (786) 315-2599
www.miamidade.gov/economy

NOTICE OF ACCEPTANCE (NOA)

General Impact Glass & Windows Corp.
290 West 78 Road
Hialeah, FL 33014

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: Series "12000 High Impact – Green World" Aluminum Window Wall System – L.M.I.

APPROVAL DOCUMENT: Drawing No. **13-053**, titled "High Impact Green World Fixed Glass Wall - Series 12000 Large Missile Laminated & Insulated Glass", sheets 1, 2, 3, 4, 5, 5A, 6, and 7 through 24 of 24, dated 06/26/13, with revision #2 dated 05/05/14, prepared by Tilteco, Inc., signed and sealed by Walter A. Tillit, Jr., 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 **revises NOA # 12-0206.04** and consists of this page 1 and evidence pages E-1 and E-2, as well as approval document mentioned above.

The submitted documentation was reviewed by **Manuel Perez, P.E.**

MIAMI-DADE COUNTY APPROVED

7/30/14

NOA No. 13-0930.14
Expiration Date: January 13, 2016
Approval Date: August 07, 2014

General Impact Glass & Windows Corp.

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

A. DRAWINGS

1. Manufacturer's die drawings and sections.
2. Drawing No **13-053**, Sheets 1, 2, 3, 4, 5, 5A, 6 and 7 through 24 of 24, titled "High Impact Green World Fixed Glass Wall - Series 12000 Large Missile Laminated & Insulated Glass", dated 06/26/13, with revision #2 dated 05/05/14, prepared by Tilteco, Inc., signed and sealed by Walter A. Tillit, Jr., 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

   along with marked-up drawings and installation diagram of series 12000 high impact Green World fixed glass wall captured system, prepared by Fenestration Testing Laboratory, Inc., Test Report No. **FTL-6179**, specimens **A1, B1, C1, D1** and **E1**, dated 06/24/10, and addendum letter dated 12/10/10, all signed and sealed by Jorge A. Causo, P.E.
   (Submitted under previous NOA#10-0923.04)

C. CALCULATIONS

1. Anchor verification calculations and structural analysis, complying with **FBC-2010**, prepared by Tilteco, Inc., dated 07/01/13, signed and sealed by Walter A. Tillit, Jr., P.E.
2. Glazing complies with **ASTM E1300-04**

D. QUALITY ASSURANCE

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

E. MATERIAL CERTIFICATIONS

1. Notice of Acceptance No. **13–0129.27** issued to **E.I. DuPont DeNemours & Co., Inc.** for their "**DuPont Butacite® PVB Interlayer**" dated 04/11/13, expiring on 12/11/16.
2. Notice of Acceptance No. **11–0624.02** issued to **E.I. DuPont DeNemours & Co.**, Inc. for their "**DuPont SentryGlas® Interlayer**" dated 08/25/11, expiring on 01/14/17.

Manuel Perez

Manuel Perez, P.E.
Product Control Examiner
NOA No. 13-0930.14
Expiration Date: January 13, 2016
Approval Date: August 07, 2014

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

F. STATEMENTS

1. Statement letter of conformance, complying with **FBC-2010**, dated June 13, 2013, signed and sealed by Walter A. Tillit, Jr., P.E.
2. Statement letter of no financial interest, dated July 21, 2010, signed and sealed by Walter A. Tillit, Jr., P.E.
   (Submitted under previous NOA#10-0923.04)
3. Dow Corning Corp. – Recommendations for joints 1" wide or greater, dated July 26, 2010 ,application for this specific job, prepared by Kevin Dunphy, Dow Corning Field Specialist.
   (Submitted under previous NOA#10-0923.04)

G. OTHER

1. Notice of Acceptance No. **12-0206.09**, issued to General Impact Glass & Windows, Corp. for their Series "12000 High Impact – Green World" Aluminum Window Wall System – L.M.I., approved on 04/12/12 and expiring on 01/13/16.

Manuel Perez, P.E.
Product Control Examiner
NOA No. 13-0930.14
Expiration Date: January 13, 2016
Approval Date: August 07, 2014

HIGH IMPACT GREEN WORLD FIXED GLASS WALL SERIES 12000 LARGE MISSILE LAMINATED & INSULATED GLASS

GENERAL NOTES:

1. HIGH IMPACT GREEN WORLD FIXED GLASS WALL SERIES 12000 LARGE MISSILE LAMINATED & INSULATED GLASS, SHOWN ON THIS PRODUCT APPROVAL DOCUMENT (P.A.D.) HAS BEEN VERIFIED FOR COMPLIANCE IN ACCORDANCE WITH THE 2010 EDITION OF THE FLORIDA BUILDING CODE. PRODUCT MAY BE INSTALLED WITHIN HIGH VELOCITY HURRICANE ZONES.

   DESIGN WIND LOADS SHALL BE DETERMINED AS PER SECTIONS **1620** OF THE ABOVE MENTIONED CODE, USING ASCE 7-10 AND SHALL NOT EXCEED THE MAXIMUM (A.S.D.) DESIGN PRESSURE RATINGS INDICATED ON NOTE 2 BELOW. IN ORDER TO VERIFY THE ABOVE CONDITION, ULTIMATE DESIGN WIND LOADS DETERMINED PER ASCE 7-10 SHALL BE FIRST REDUCED TO A.S.D. DESIGN WIND LOADS BY MULTIPLYING THEM BY 0.6 IN ORDER TO COMPARE THESE W/ MAX. (A.S.D.) DESIGN PRESSURE RATINGS INDICATED ON NOTE 2 BELOW.

   IN ORDER TO VERIFY THAT ANCHORS ON THIS P.A.D., AS TESTED, WERE NOT OVERSTRESSED, A 33% INCREASE IN ALLOWABLE STRESS FOR WIND LOADS WAS **NOT** USED IN THEIR ANALYSIS. FASTENERS SPACING TO WOOD HAS BEEN DETERMINED IN ACCORDANCE WITH N.D.S. 2005 AND OR AVAILABLE TEST DATA FROM MANUFACTURER.
   THIS PRODUCT'S ADEQUACY FOR IMPACT AND WIND RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH SECTION **1626** OF THE ABOVE MENTIONED CODE AS PER PROTOCOLS TAS-201, TAS-202, TAS-203, PER FENESTRATION TESTING LABORATORY REPORT # 6179 AND AS PER SUBMITTED STRUCTURAL CALCULATIONS, PERFORMED AS PER SECTION **1615** OF THE FLORIDA BUILDING CODE, 2010 EDITION.

2. MAXIMUM A.S.D. DESIGN PRESSURE RATING FOR THIS PRODUCT SHALL BE AS SHOWN ON SHEETS 5 THRU 15 & 23.

3. THIS PRODUCT WILL NOT REQUIRE AN APPROVED HURRICANE PROTECTION DEVICE.

4. THIS PRODUCT IS APPROVED FOR WATER INFILTRATION AT 19.5 p.s.f.

5. THIS PRODUCT COMPLIES WITH SECTIONS 2406.1., 2411.4.1 AND 2411.4.2 OF THE FLORIDA BUILDING CODE.

6. ALL ALUMINUM EXTRUSIONS SHALL BE ALUMINUM ASSOCIATION 6063-T6 ALLOY AND TEMPER. THE THICKNESS OF ALL EXTRUSIONS SHALL BE AS SHOWN ON SHEET 2 OF THIS DRAWING.

7. PROVIDE 1/4" OR 3/8" MAX. LOAD BEARING SHIM SPACE (TYP.), WHEN ALLOWED BY THIS DRAWING.

8. WOOD BUCKS NOT BY GENERAL IMPACT GLASS & WINDOWS, CORP. WOOD BUCKS MUST BE SOUTHERN PINE, G = 0.55, AND SHALL COMPLY WITH SECTIONS 2411.3.3.3 AND 2326 OF THE 2007 & 2010 EDITIONS OF THE FLORIDA BUILDING CODE. MUST SUSTAIN LOADS IMPOSED BY GLAZING SYSTEM AND TRANSFER THEM TO THE BUILDING STRUCTURE.

9. REMAINING COMPONENTS FOR THIS PRODUCT SHALL BE AS INDICATED ON BILL OF MATERIALS, SHEET 3 OF THIS DRAWING.

10. ALL ALUMINUM EXTRUSIONS IN CONTACT WITH STEEL, CONCRETE AND WOOD SHALL COMPLY WITH SECTIONS 2003.8.4.2, 2003.8.4.4, 2003.8.5 AND 2003.8.6 OF THE FLORIDA BUILDING CODE, RESPECTIVELY.

11. SEE ANCHOR SCHEDULES ON SHEETS 8 THRU 13 FOR ANCHOR TYPE IDENTIFICATION AND SPACING.

12. SHOP DRAWINGS PREPARED BASED ON THIS APPROVAL AND TAKING INTO ACCOUNT THE SPECIFIC JOB CONDITIONS, SHALL BE SUBMITTED TO THE BUILDING OFFICIAL AS PART OF THE PERMIT DOCUMENTS.

13. STRUCTURAL SUBSTRATES NOTED ON THIS DRAWING AS "EXISTING STEEL BY OTHERS", POURED CONCRETE AND WOOD MUST WITHSTAND THE LOADS IMPOSED BY THIS PRODUCT.

14. PRODUCT'S MANUFACTURER LABEL SHALL BE PLACED ON A READILY VISIBLE LOCATION.
    ONE LABEL SHALL BE PLACED FOR EVERY UNIT. LABEL SHALL READ AS FOLLOWS:
    GENERAL IMPACT GLASS AND WINDOWS, CORP.
    HIALEAH, FLORIDA
    MIAMI-DADE COUNTY PRODUCT CONTROL APPROVED.

15. (A) THIS P.A.D. PREPARED BY THIS ENGINEER IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SITE SPECIFIC PROJECT; I.E. WHERE THE SITE CONDITIONS DEVIATE FROM THE P.A.D.
    (B) CONTRACTOR TO BE RESPONSIBLE FOR THE SELECTION, PURCHASE AND INSTALLATION INCLUDING LIFE SAFETY OF THIS PRODUCT, BASED ON THIS P.A.D., PROVIDED HE/SHE DOES NOT DEVIATE FROM THE CONDITIONS DETAILED ON THIS DOCUMENT. CONSTRUCTION SAFETY AT SITE IS THE CONTRACTOR'S RESPONSIBILITY.

    (C) THIS P.A.D. WILL BE CONSIDERED INVALID IF ALTERED BY ANY MEANS.

    (D) SITE SPECIFIC PROJECTS SHALL BE PREPARED BY A FLORIDA REGISTERED ENGINEER OR ARCHITECT WHICH WILL BECOME THE ENGINEER OF RECORD (E.O.R.) FOR THE PROJECT AND WHO WILL BE RESPONSIBLE FOR THE PROPER USE OF THE P.A.D. ENGINEER OF RECORD, ACTING AS DELEGATED ENGINEER TO THE P.A.D., SHALL SUBMIT TO THIS LATTER SITE SPECIFIC DRAWING FOR REVIEW.

    (E) ORIGINAL P.A.D. SHALL BEAR THE DATE AND ORIGINAL SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER OF RECORD THAT PREPARED IT.

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SHEET 1: GENERAL NOTES, INDEX AND INSTRUCTIONS.
SHEET 2: HIGH IMPACT GREEN WORLD FIXED GLASS WALL SERIES 12000 COMPONENTS.
SHEET 3: GLAZING DETAILS & BILL OF MATERIALS.
SHEET 4: ELEVATIONS FOR HIGH IMPACT GREEN WORLD FIXED GLASS WALL SERIES 12000.
SHEETS 5 & 5A: MAXIMUM FRAME WIDTH "a" AND FRAME LENGTH "b" VERSUS A.S.D. DESIGN PRESSURE RATING (psf) SCHEDULE, VALID ONLY FOR INSTALLATIONS WITH JAMBS J-1, J-1A, J-2, J-2A, AND MULLIONS M-1, M-1A, M-2, M-2A.
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SHEET 7: MAX. A.S.D. DESIGN PRESSURE RATING FOR INTERIOR VERTICAL & JAMB MULLIONS SPAN. (CONTINUED)
SHEET 8: MAX. A.S.D. DESIGN PRESSURE RATING SCHEDULE FOR INTERIOR VERTICAL MULLIONS & JAMB MULLIONS HEAD/SILL CONNECTIONS FOR 1/4" MAX. LOAD BEARING SHIM SPACE.
SHEET 9: MAX. A.S.D. DESIGN PRESSURE RATING SCHEDULE FOR INTERIOR VERTICAL MULLIONS & JAMB MULLIONS HEAD/SILL CONNECTIONS FOR 1/4" MAX. LOAD BEARING SHIM SPACE. (CONTINUED)
SHEET 10: MAX. A.S.D. DESIGN PRESSURE RATING SCHEDULE FOR INTERIOR VERTICAL MULLIONS & JAMB MULLIONS HEAD/SILL CONNECTIONS FOR 1/4" MAX. LOAD BEARING SHIM SPACE. (CONTINUED)
SHEET 11: MAX. A.S.D. DESIGN PRESSURE RATING SCHEDULE FOR INTERIOR VERTICAL MULLIONS & JAMB MULLIONS HEAD/SILL CONNECTIONS FOR 3/8" MAX. LOAD BEARING SHIM SPACE.
SHEET 12: MAX. A.S.D. DESIGN PRESSURE RATING SCHEDULE FOR INTERIOR VERTICAL MULLIONS & JAMB MULLIONS HEAD/SILL CONNECTIONS FOR 3/8" MAX. LOAD BEARING SHIM SPACE. (CONTINUED)
SHEET 13: MAX. A.S.D. DESIGN PRESSURE RATING SCHEDULE FOR INTERIOR VERTICAL MULLIONS & JAMB MULLIONS HEAD/SILL CONNECTIONS FOR 3/8" MAX. LOAD BEARING SHIM SPACE. (CONTINUED)
SHEET 14: MAX. A.S.D. DESIGN PRESSURE RATING SCHEDULE FOR HORIZONTAL MULLIONS SPAN.
SHEET 15: MAX. A.S.D. DESIGN PRESSURE RATING SCHEDULE FOR HORIZONTAL MULLIONS SPAN. (CONTINUED)
SHEET 16: HORIZONTAL CONNECTION DETAILS.
SHEET 17: HEAD & SILL CONNECTIONS DETAILS.
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SHEET 19: HORIZONTAL SECTIONS AT INTERIOR VERTICAL MULLIONS AT STRAIGHT GLASS WALLS APPLICATION.
SHEET 20: HORIZONTAL SECTIONS AT INTERIOR VERTICAL MULLIONS PLUS JAMB MULLIONS AT CURVED GLASS WALLS APPLICATION.
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SHEET 22: ELEVATION FOR HIGH IMPACT GREEN WORLD FIXED GLASS WALL SERIES 12000 ADJACENT TO APPROVED DOOR (ON SEPARATE NOA).
SHEET 23: MAX. A.S.D. DESIGN PRESSURE RATING FOR DOOR JAMB MULLION SPAN.
SHEET 24: JOINT CONNECTION DETAIL & ARCHED HEAD ① SPLINE CONNECTION DETAIL.

INSTRUCTIONS:

STEP 1: DETERMINE DESIGN WIND LOAD REQUIREMENTS BASED ON WIND VELOCITY, BUILDING HEIGHT, WIND ZONE, USING APPLICABLE ASCE 7 STANDARDS.

STEP 2: GO TO SCHEDULE ON SHEETS 5, 5A, 5B & 5C TO DETERMINE MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf) CAPACITY OF DESIRED GLASS SIZE BASED ON GLASS PANEL DIMENSIONS.

STEP 3: DETERMINE MAXIMUM INTERIOR MULLION AND JAMB MULLION SPAN "L"(FT) FOR A GIVEN MULLION EFFECTIVE SPACING "b", ON SCHEDULE ON SHEETS 6 & 7, AND SELECT ANCHOR OPTION W/ A.S.D. DESIGN PRESSURE RATING EQUAL OR GREATER THAN A.S.D. DESIGN WIND LOAD SPECIFIED IN STEP 1 USING SCHEDULES ON SHEET 8 THRU 13.

STEP 4: USING SCHEDULES ON SHEETS 14 & 15, VERIFY MAXIMUM A.S.D. DESIGN PRESSURE RATING OF HORIZONTAL MULLIONS (IF USED). FOR A GIVEN HORIZONTAL MULLION EFFECTIVE "D.L.O.".

STEP 5: THE LOWEST VALUE OF A.S.D. DESIGN PRESSURE RATINGS RESULTING FROM STEPS 2, 3 AND 4 SHALL APPLY TO THE ENTIRE SYSTEM.

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 13-0930.14
Expiration Date Jan 13, 2016
By Manuel Perez
Miami Dade Product Control

MIAMI-DADE COUNTY

WALTER A. TILLIT JR. LICENSE No. 44167 STATE OF FLORIDA PROFESSIONAL ENGINEER

P.E. SEAL/SIGNATURE/DATE

FLORIDA BUILDING CODE (HIGH VELOCITY HURRICANE ZONE)

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TILTECO INC.
TILLIT TESTING & ENGINEERING COMPANY
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e-mail: tilteco@aol.com
EB-0006719
WALTER A. TILLIT Jr. P.E.
FLORIDA Lic. # 44167

HIGH IMPACT GREEN WORLD FIXED GLASS WALL SERIES 12000 LARGE MISSILE LAMINATED & INSULATED GLASS

GENERAL IMPACT GLASS & WINDOWS
The Clear Solution
290 WEST 78 ROAD
HIALEAH, FL. 33014
PHONE: (305) 558-8103
FAX: (305) 558-6665
www.generalimpact.com

REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 12-002	08/26/13	3	-	-
2	GENERAL	05/05/14	4	-	-

M.C.V./A.G. DRAWN BY

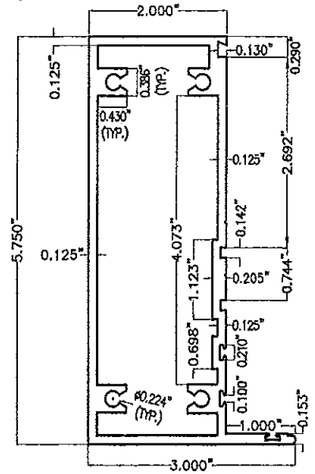
06/26/13 DATE

13-053 DRAWING No

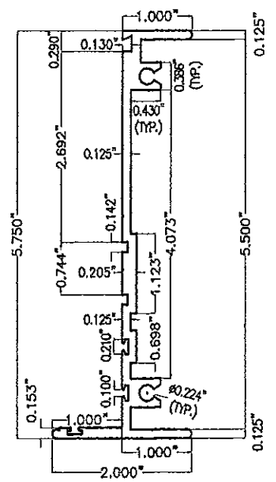
SHEET 1 OF 24

COMPONENTS FOR HIGH IMPACT GREEN WORLD FIXED GLASS WALL SERIES 12000

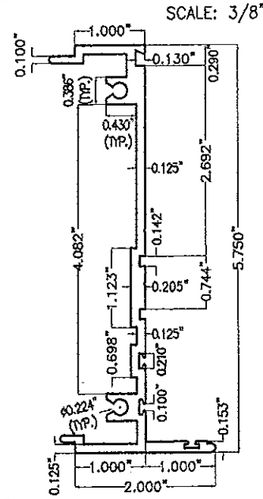
SCALE: 3/8" = 1"



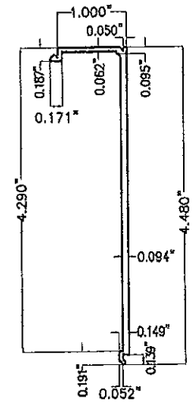
(1) FRAME JAMB, HEAD & SILL
(1/8" THICK)



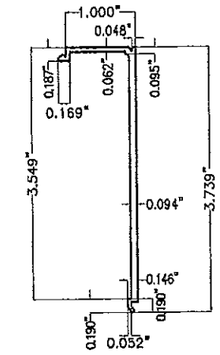
(2) FEMALE MULLION
(1/8" THICK)



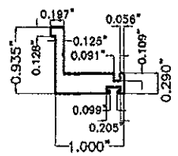
(3) MALE MULLION
(1/8" THICK)



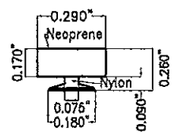
(4) LAMINATED WINDOW COVER



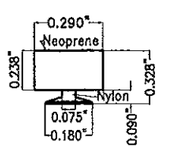
(4A) INSULATED WINDOW COVER



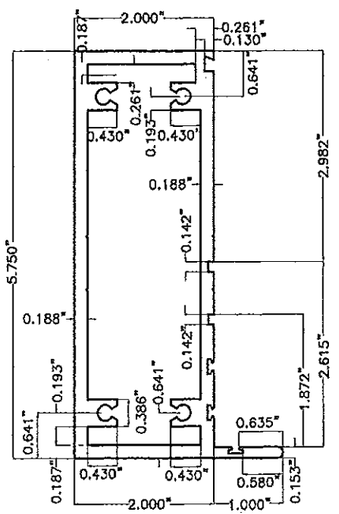
(5) GLAZING BEAD ANGLE
6063-T6 ALUMINUM ALLOY



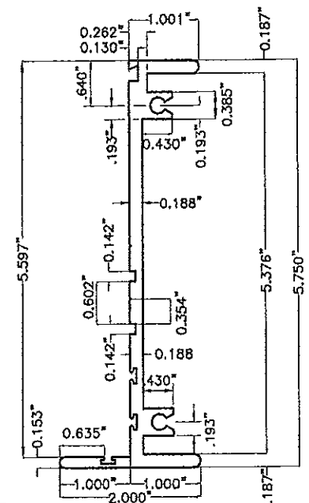
(6) SOLID RUBBER GASKET
NEOPRENE/NYLON
N.T.S.



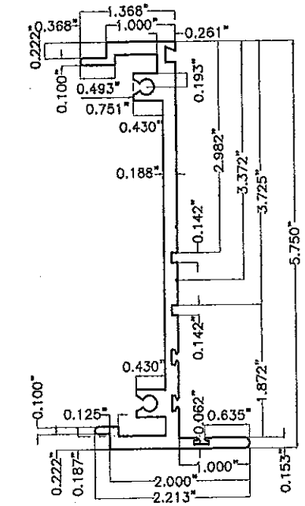
(6A) SOLID RUBBER GASKET
NEOPRENE/NYLON
N.T.S.



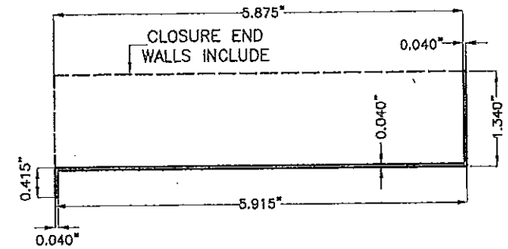
(15) FRAME JAMB, HEAD & SILL
(3/16" THICK)



(16) FEMALE MULLION
(3/16" THICK)



(17) MALE MULLION
(3/16" THICK)



(18) SILL FLASHING
(OPTIONAL)
3105-H14 ALUMINUM ALLOY

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 13-0923.14
Expiration Date Jan 13, 2016
By Manuel Perez
Miami Dade Product Control

MIAMI--DADE COUNTY

WALTER A. TILLIT JR. LICENSE No. 44167 STATE OF FLORIDA PROFESSIONAL ENGINEER 7/15/19

P.E. SEAL/SIGNATURE/DATE

FLORIDA BUILDING CODE (HIGH VELOCITY HURRICANE ZONE)

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TILTECO INC.
TILLIT TESTING & ENGINEERING COMPANY
6355 N.W. 36th. St., Ste. 305, VIRGINIA GARDENS, FL 33166
Phone : (305)871-1530 . Fax : (305)871-1531
e-mail: tilteco@aol.com
EB-0006719
WALTER A. TILLIT Jr. P.E.
FLORIDA Lic. # 44167

HIGH IMPACT GREEN WORLD FIXED GLASS WALL SERIES 12000 LARGE MISSILE LAMINATED & INSULATED GLASS

M.C.V./A.G. DRAWN BY

GENERAL IMPACT GLASS & WINDOWS "The Clear Solution"
290 WEST 78 ROAD
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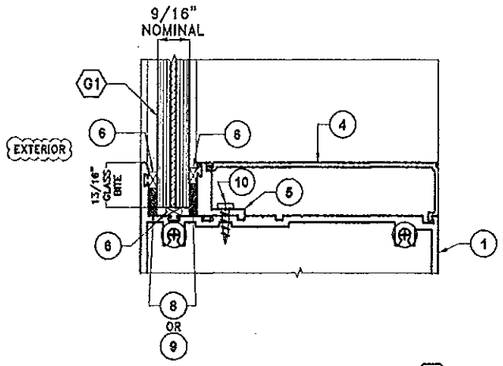
PHONE: (305) 558-8103
FAX: (305) 558-8665
www.generalimpact.com

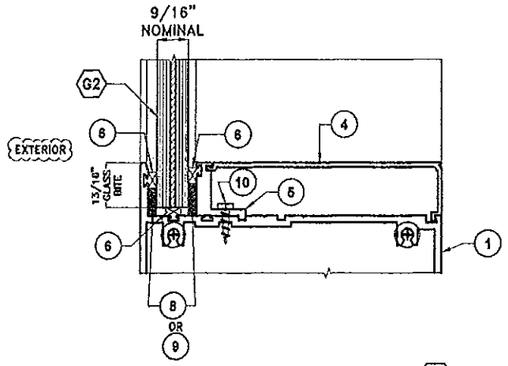
06/26/13 DATE

13-053 DRAWING No

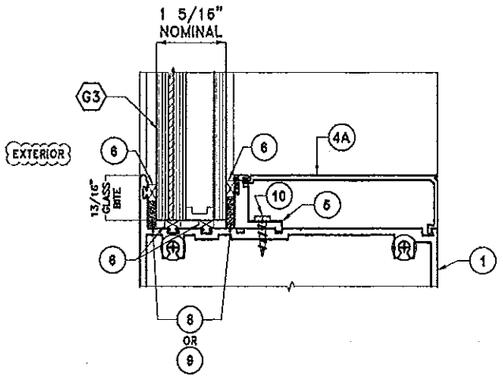
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 12-002	06/28/13	3	-	-
2			4	-	-



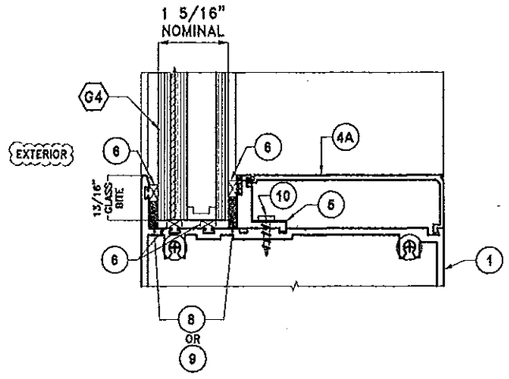
GLAZING DETAIL FOR G1



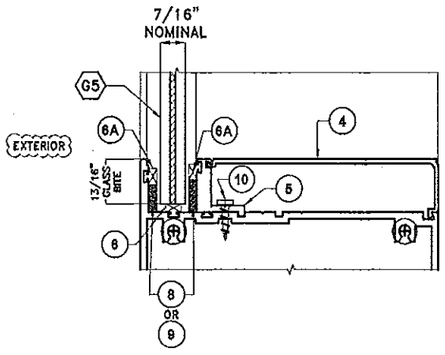
GLAZING DETAIL FOR G2



GLAZING DETAIL FOR G3



GLAZING DETAIL FOR G4



GLAZING DETAIL FOR G5

GLAZING DETAILS

SCALE: 3/8" = 1"

BILL OF MATERIALS

ITEM #	DESCRIPTION	DIMENSIONS & REMARKS	MATERIAL
1	FRAME JAMB, HEAD & SILL	5.75"x3"x0.125" THK.	6063-T6 ALUMINUM
2	FEMALE MULLION	5.75"x2"x0.125" THK.	6063-T6 ALUMINUM
3	MALE MULLION	5.75"x2"x0.125" THK.	6063-T6 ALUMINUM
4	LAMINATED WINDOW COVER	4.682"x1"xVARIES THK.	6063-T6 ALUMINUM
4A	INSULATED WINDOW COVER	3.941"x1"xVARIES THK.	6063-T6 ALUMINUM
5	GLAZING BEAD ANGLE	0.929"x0.906"xVARIES THK.	6063-T6 ALUMINUM
6	SOLID RUBBER GASKET	0.260"x0.290"xVARIES THK.	NEOPRENE/NYLON
6A	SOLID RUBBER GASKET	0.328"x0.290"xVARIES THK.	NEOPRENE/NYLON
8	STRUCTURAL SILICONE DOW CORNING 995	ALL AROUND GLASS	SILICONE OPTIONAL TO (9)
9	STRUCTURAL SILICONE DOW CORNING 795	ALL AROUND GLASS	SILICONE OPTIONAL TO (8)
10	GLAZING BEAD ANGLE ASSEMBLY SCREW	1/4"øx1" TEK SCREW @ 8" o.c.	STEEL
11	SPLINE ASSEMBLY SCREW	1/4"øx2 3/4" F.H. TEK SCREW	STEEL
11A	ARCH SPLINE ASSEMBLY SCREW	1/4"øx2 3/4" F.H. TEK SCREW	STEEL
12	JOINT DETAIL (METAL TO METAL) GASKET 1/16 XLP W/ RUBBER BASED PSA	OPTIONAL TO (13) FOR INTERNAL JOINT. MANUFACTURED BY FRANK LOWE RUBBER & GASKET CO.	CLOSED CELL POLYETHYLENE FOAM TAPE COATED IN ONE SIDE
13	STRUCTURAL SILICONE 795 DOW CORNING	OPTIONAL TO (12) FOR INTERNAL JOINT, PLUS EXTERIOR FRAME SEALANT ALL AROUND PERIMETER	SILICONE
14	MULLION ASSEMBLY BOLT	1/4"ø-20x2 1/2" THRU BOLT W/ NUT @ 12" O.C. (START @ 6" O.C. FROM TOP/BOTTOM)	STAINLESS STEEL AISI 304 SERIES
15	FRAME JAMB, HEAD & SILL	5.75"x3"x0.188" THK.	6063-T6 ALUMINUM
16	FEMALE MULLION	5.75"x2"x0.188" THK.	6063-T6 ALUMINUM
17	MALE MULLION	5.75"x2"x0.188" THK.	6063-T6 ALUMINUM
18	SILL FLASHING (OPTIONAL)	1.340" MIN.x5.915" MIN.x0.415" MIN.x0.040" THK.	3105-H14 ALUMINUM
G1	9/16" NOMINAL LAMINATED GLASS W/ 1/4" H.S. GLASS + 0.090" DUPONT SENTRYGLAS® INTERLAYER + 1/4" H.S. GLASS.	E.I. DUPONT DE NEMOURS & Co., INC.	GLASS
G2	9/16" NOMINAL LAMINATED GLASS W/ 1/4" H.S. GLASS + 0.090" DUPONT BUTACITE® PVB INTERLAYER + 1/4" H.S. GLASS.	E.I. DUPONT DE NEMOURS & Co., INC.	GLASS
G3	1 5/16" NOMINAL INSULATED GLASS W/ 1/4" H.S. GLASS + 0.090" DUPONT SENTRYGLAS® INTERLAYER + 1/4" H.S. GLASS + 1/2" AIR SPACE + 1/4" INTERIOR MONOLITHIC TEMPERED GLASS	E.I. DUPONT DE NEMOURS & Co., INC.	GLASS
G4	1 5/16" NOMINAL INSULATED GLASS W/ 1/4" H.S. GLASS + 0.090" DUPONT BUTACITE® PVB INTERLAYER + 1/4" H.S. GLASS + 1/2" AIR SPACE + 1/4" INTERIOR MONOLITHIC TEMPERED GLASS	E.I. DUPONT DE NEMOURS & Co., INC.	GLASS
G5	7/16" NOMINAL LAMINATED GLASS W/ 3/16" H.S. GLASS + 0.090" DUPONT BUTACITE® PVB INTERLAYER + 3/16" H.S. GLASS.	E.I. DUPONT DE NEMOURS & Co., INC.	GLASS

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 13-0930.14
Expiration Date Jan. 13, 2016
By Manuel Perez
Miami Dade Product Control

MIAMI-DADE COUNTY

WALTER A. TILLIT JR. LICENSE NO. 44567 STATE OF FLORIDA PROFESSIONAL ENGINEER

P.E. SEAL/SIGNATURE/DATE

FLORIDA BUILDING CODE (HIGH VELOCITY HURRICANE ZONE)

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TILLIT TESTING & ENGINEERING COMPANY
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EB-0006719
WALTER A. TILLIT Jr. P.E.
FLORIDA Lic. # 44167

HIGH IMPACT GREEN WORLD FIXED GLASS WALL
SERIES 12000 LARGE MISSILE LAMINATED & INSULATED GLASS

M.C.V./A.G.
DRAWN BY

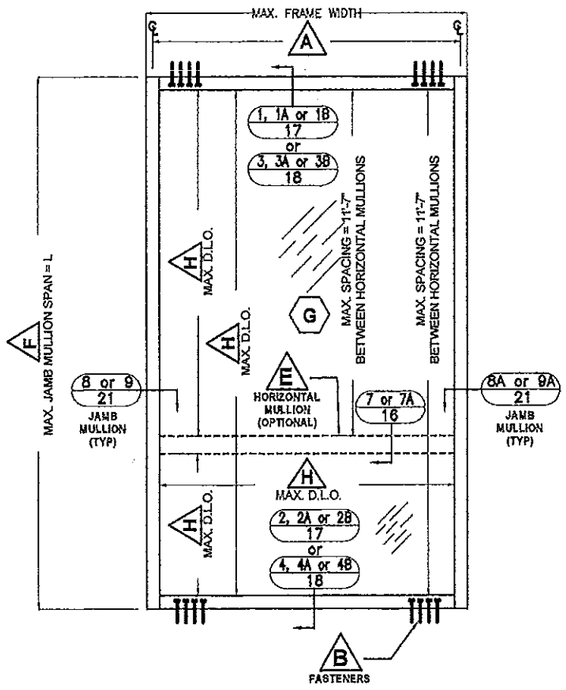
GENERAL IMPACT GLASS & WINDOWS
The Clear Solution
290 WEST 78 ROAD
HIALEAH, FL. 33014
PHONE: (305) 558-8103
FAX: (305) 558-6665
www.generalimpact.com

08/26/13
DATE

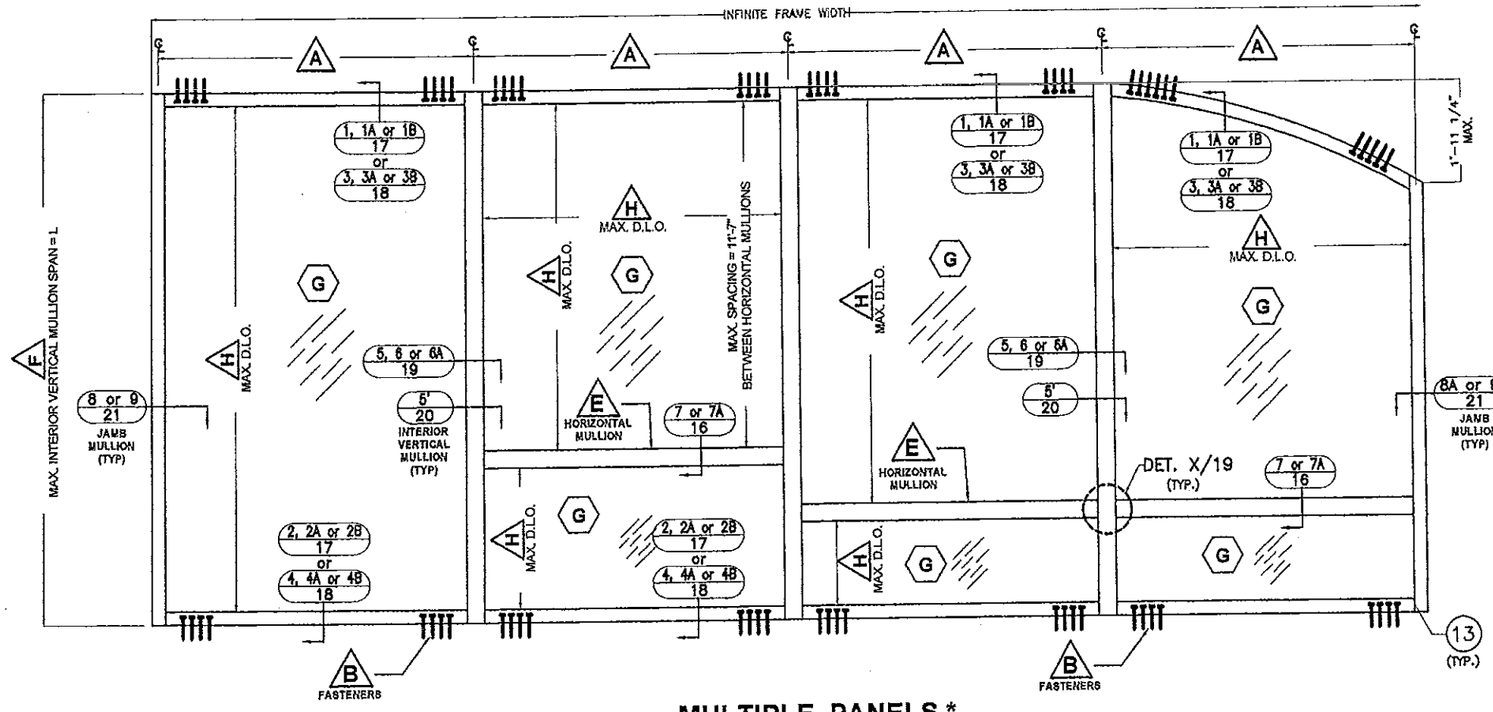
13-053
DRAWING No

REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 12-002	08/26/13	3	-	-
2			4	-	-

ELEVATIONS FOR HIGH IMPACT GREEN WORLD FIXED GLASS WALL SERIES 12000



SINGLE PANEL *



MULTIPLE PANELS *

FOOT NOTES:

- (A) FOR MAXIMUM INTERIOR VERTICAL MULLION AND JAMB MULLION SPACING SEE SHEETS 6 & 7.
- (B) FOR HEAD AND SILL FASTENERS QUANTITY, TYPES AND SPECS SEE SHEETS 8 THRU 13.
- (E) USE OF HORIZONTAL MULLION LIMITED BY SCHEDULES ON SHEETS 14 & 15.
- (F) FOR MAXIMUM INTERIOR VERTICAL MULLION AND JAMB MULLION SPAN SEE SHEETS 6 & 7.
- (G) FOR GLAZING DETAILS SEE SHEET 3 AND FOR GLASS SCHEDULE SEE SHEETS 5, 5A, 5B & 5C.
- (H) FOR MAXIMUM D.L.O. SEE SCHEDULE ON SHEETS 5, 5A, 5B & 5C.

* NOTE: ELEVATIONS FOR SINGLE & MULTIPLE PANELS FIXED GLASS WALL SERIES 12000 MAY BE INSTALLED ROTATED 90° FROM ABOVE SHOWN ORIENTATION.

PRODUCT REVISED
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Miami Dade Product Control

MIAMI–DADE COUNTY

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06/26/13
DATE

13-053
DRAWING No

REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 12-002	06/28/13	3	–	–
2			4	–	–

MAXIMUM FRAME WIDTH "a" AND FRAME LENGTH "b" VERSUS A.S.D. DESIGN PRESSURE RATING (psf) SCHEDULE *, VALID ONLY FOR INSTALLATIONS W/ JAMBS J-1, J-1A, J-2, J-2A, AND MULLIONS M-1, M-1A, M-2, M-2A

GLASS TYPE (G1)		
DIMENSION "a"	DIMENSION "b"	MAX.A.S.D. DESIGN PRESSURE RATING (psf)
18" or less	18" or less	+130.0 -140.0
18"	18" to 139"	+130.0 -140.0
20"	20" to 139"	+130.0 -140.0
22"	22" to 139"	+130.0 -140.0
24"	24" to 139"	+130.0 -140.0
26"	26" to 139"	+130.0 -140.0
28"	28" to 139"	+130.0 -140.0
30"	30" to 139"	+130.0 -140.0
32"	32" to 139"	+130.0 -140.0
34"	34" to 139"	+130.0 -140.0
36"	36" to 139"	+130.0 -140.0
38"	38" to 139"	+130.0 -140.0
40"	40" to 139"	+130.0 -140.0
42"	42" to 139"	+130.0 -140.0
44"	44" to 137"	+130.0 -120.0
46"	46" to 131"	+130.0 -116.0
48"	48" to 126"	+130.0 -140.0
	> 126" to 139"	±20.0
50"	50" to 121"	+130.0 -111.0
52"	52" to 116"	+130.0 -111.0
54"	54" to 112"	+130.0 -140.0
	> 112" to 139"	±20.0
56"	56" to 108"	+130.0 110.0
58"	58" to 104"	+130.0 -111.0
60"	60" to 98"	+130.0 -140.0
	> 98" to 139"	±20.0
62"	62" to 97"	+130.0 -114.0
64"	64" to 94"	+130.0 -110.4
66"	66" to 84"	+130.0 -140.0
	> 84" to 90"	±99.5
	> 90" to 139"	±20.0
68"	68" to 89"	+130.0 -103.9
70"	70" to 86"	+130.0 -101.0
72"	72" to 82"	+130.0 -140.0
	>82" to 84"	±91.0
	>84" to 139"	±20.0
74"	74" to 78"	+130.0 -95.5
76"	76" to 79.7"	+130.0 -93.0

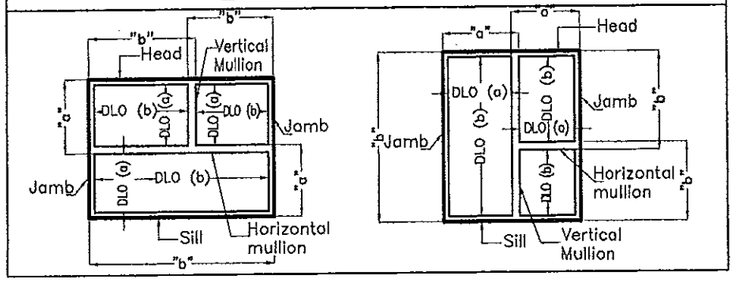
GLASS TYPE (G2)		
DIMENSION "a"	DIMENSION "b"	MAX.A.S.D. DESIGN PRESSURE RATING (psf)
18" or less	18" or less	±90.0
18"	18" to 139"	±90.0
20"	20" to 139"	±90.0
22"	22" to 139"	±90.0
24"	24" to 139"	±90.0
26"	26" to 139"	±90.0
28"	28" to 139"	±90.0
30"	30" to 139"	±90.0
32"	32" to 139"	±90.0
34"	34" to 139"	±90.0
36"	36" to 139"	±90.0
38"	38" to 132"	±90.0
40"	40" to 128"	±90.0
42"	42" to 120"	±90.0
	> 120" to 139"	±80.0
44"	44" to 117"	±90.0
	> 117" to 139"	±80.0
46"	46" to 112"	±90.0
	> 112" to 139"	±80.0
48"	48" to 107"	±90.0
	> 107" to 139"	±80.0
50"	50" to 103"	±90.0
52"	52" to 99"	±87.4
54"	54" to 98"	±84.1
56"	56" to 129"	±80.0
58"	58" to 124"	±80.0
60"	60" to 120"	±80.0
62"	62" to 116"	±80.0
64"	64" to 112"	±80.0
66"	66" to 108"	±79.6
68"	68" to 106"	±79.3
70"	70" to 103"	±79.3
72"	72" to 100"	±79.5
74"	74" to 97"	±79.8
76"	76" to 95"	±78.4
78"	78" to 92.5"	±76.4
80"	80" to 90"	±74.5
82"	82" to 88"	±72.6
84"	84" to 86"	±70.9

* DETERMINATION OF MAXIMUM DAY LIGHT OPENING (D.L.O.) AT EACH END OF GLASS GIVEN "a" & "b"

SIDE	MAX. DAY LIGHT OPENING	
	(D.L.O.) Formula at vertical & horizontal mullions	(D.L.O.) Formula at jamb, head & sill frames
MAX. D.L.O. (a) (SHORT SIDE)	"a"–6.00"	"a"–6.00"
MAX. D.L.O. (b) (LONG SIDE)	"b"–6.00"	"b"–6.00"

NOTE:
1. SEE SHEET 3 FOR GLAZING DETAILS AND GLASS DESCRIPTIONS ON BILL OF MATERIALS.

DIMENSIONS LEGEND



PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 13-0930.14
Expiration Date 12.13.2016
By Manuel Perez
Miami Dade Product Control

MIAMI–DADE COUNTY

WALTER A. TILLIT JR. LICENSE NO. 44167 STATE OF FLORIDA PROFESSIONAL ENGINEER 7/3/14

P.E. SEAL/SIGNATURE/DATE

FLORIDA BUILDING CODE (HIGH VELOCITY HURRICANE ZONE)

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HIGH IMPACT GREEN WORLD FIXED GLASS WALL SERIES 12000 LARGE MISSILE LAMINATED & INSULATED GLASS

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REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 12-002	08/26/13	3	--	--
2	GENERAL	05/05/14	4	--	--

M.C.V./A.G. DRAWN BY

06/26/13 DATE

13-053 DRAWING No

MAXIMUM FRAME WIDTH "a" AND FRAME LENGTH "b" VERSUS A.S.D. DESIGN PRESSURE RATING (psf) SCHEDULE *, VALID ONLY FOR INSTALLATIONS W/ JAMBS J-1, J-1A, J-2, J-2A, AND MULLIONS M-1, M-1A, M-2, M-2A

GLASS TYPE (G3)

DIMENSION "a"	DIMENSION "b"	MAX.A.S.D. DESIGN PRESSURE RATING (psf)
18" or less	18" or less	+130.0 -140.0
18"	18" to 139"	+130.0 -140.0
20"	20" to 139"	+130.0 -140.0
22"	22" to 139"	+130.0 -140.0
24"	24" to 139"	+130.0 -140.0
26"	26" to 139"	+130.0 -140.0
28"	28" to 139"	+130.0 -140.0
30"	30" to 139"	+130.0 -140.0
32"	32" to 139"	+130.0 -140.0
34"	34" to 139"	+130.0 -140.0
36"	36" to 139"	+130.0 -140.0
38"	38" to 139"	+130.0 -140.0
40"	40" to 139"	+130.0 -140.0
42"	42" to 139"	+130.0 -140.0
44"	44" to 137"	+130.0 -126.0
46"	46" to 131"	+130.0 -121.0
48"	48" to 122"	+130.0 -140.0
	> 122" to 139"	±20.0
50"	50" to 121"	+130.0 -113.0
52"	52" to 116"	+130.0 -113.0
54"	54" to 108"	+130.0 -140.0
	> 108" to 139"	±20.0
56"	56" to 108"	+130.0 -108.0
58"	58" to 104"	+130.0 -117.0
60"	60" to 98"	+130.0 -140.0
	> 98" to 139"	±20.0
62"	62" to 96"	+130.0 -114.0
64"	64" to 94"	+130.0 -110.4
66"	66" to 87.5"	+130.0 -140.0
	> 87.5" to 90"	±107.1
	> 90" to 139"	±20.0
68"	68" to 89"	+130.0 -103.9
70"	70" to 86"	+130.0 -101.0
72"	72" to 80.5"	+130.0 -140.0
	>80.5" to 84"	±98.1
	>84" to 139"	±20.0
74"	74" to 81"	+130.0 -95.5
76"	76" to 79"	+130.0 -93.0

GLASS TYPE (G4)

DIMENSION "a"	DIMENSION "b"	MAX.A.S.D. DESIGN PRESSURE RATING (psf)
18" or less	18" or less	±80.0
18"	18" to 139"	±80.0
20"	20" to 139"	±80.0
22"	22" to 139"	±80.0
24"	24" to 139"	±80.0
26"	26" to 139"	±80.0
28"	28" to 139"	±80.0
30"	30" to 139"	±80.0
32"	32" to 139"	±80.0
34"	34" to 139"	±80.0
36"	36" to 139"	±80.0
38"	38" to 139"	±80.0
40"	40" to 139"	±80.0
42"	42" to 139"	±80.0
44"	44" to 139"	±80.0
46"	46" to 139"	±80.0
48"	48" to 139"	±80.0
50"	50" to 139"	±80.0
52"	52" to 138"	±80.0
54"	54" to 133.5"	±80.0
56"	56" to 129"	±80.0
58"	58" to 124"	±80.0
60"	60" to 120"	±80.0
62"	62" to 116"	±80.0
64"	64" to 112"	±80.0
66"	66" to 108"	±80.0
	> 108" to 109.5"	±79.6
68"	68" to 106"	±79.3
70"	70" to 103"	±79.3
72"	72" to 96"	±80.0
	> 96" to 100"	±79.5
74"	74" to 97"	±79.8
76"	76" to 95"	±78.4
78"	78" to 91"	±76.1
80"	80" to 90"	±74.5
82"	82" to 88"	±72.6
84"	84" to 86"	±70.9

GLASS TYPE (G5)

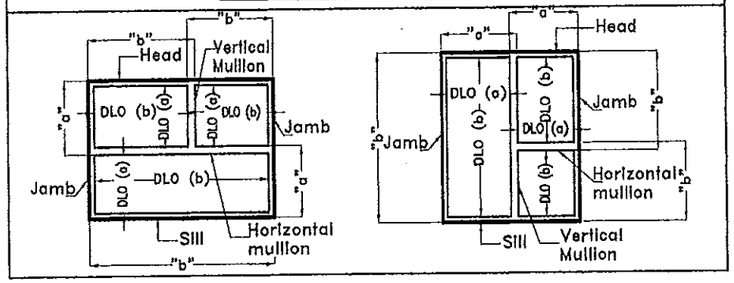
DIMENSION "a"	DIMENSION "b"	MAX.A.S.D. DESIGN PRESSURE RATING (psf)
18" or less	18" or less	±90.0
18"	18" to 139"	±90.0
20"	20" to 139"	±90.0
22"	22" to 139"	±90.0
24"	24" to 139"	±90.0
26"	26" to 139"	±90.0
28"	28" to 139"	±90.0
30"	30" to 139"	±90.0
32"	32" to 139"	±90.0
34"	34" to 139"	±90.0
36"	36" to 139"	±90.0
38"	38" to 132"	±90.0
40"	40" to 128"	±90.0
42"	42" to 120"	±90.0
44"	44" to 117"	±90.0
46"	46" to 111"	±90.0
48"	48" to 107"	±90.0
50"	50" to 103"	±90.0
52"	52" to 99"	±90.0
54"	54" to 95"	±84.1
56"	56" to 91"	±81.1
58"	58" to 88"	±78.3
60"	60" to 85.5"	±75.7
62"	62" to 83"	±73.3
64"	64" to 80"	±71.2
66"	66" to 78"	±68.8
68"	68" to 75"	±66.8
70"	70" to 73"	±64.3

* DETERMINATION OF MAXIMUM DAY LIGHT OPENING (D.L.O.) AT EACH END OF GLASS GIVEN "a" & "b"

SIDE	MAX. DAY LIGHT OPENING	
	(D.L.O.) Formula at vertical & horizontal mullions	(D.L.O.) Formula at jamb, head & sill frames
MAX. D.L.O. (a) (SHORT SIDE)	"a"−6.00"	"a"−6.00"
MAX. D.L.O. (b) (LONG SIDE)	"b"−6.00"	"b"−6.00"

NOTE:
1. SEE SHEET 3 FOR GLAZING DETAILS AND GLASS DESCRIPTIONS ON BILL OF MATERIALS.

DIMENSIONS LEGEND



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Miami Dade Product Control

MIAMI–DADE COUNTY

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FLORIDA Lic. # 44167

HIGH IMPACT GREEN WORLD FIXED GLASS WALL
SERIES 12000 LARGE MISSILE LAMINATED & INSULATED GLASS

GENERAL IMPACT GLASS & WINDOWS The Clear Solution

290 WEST 78 ROAD
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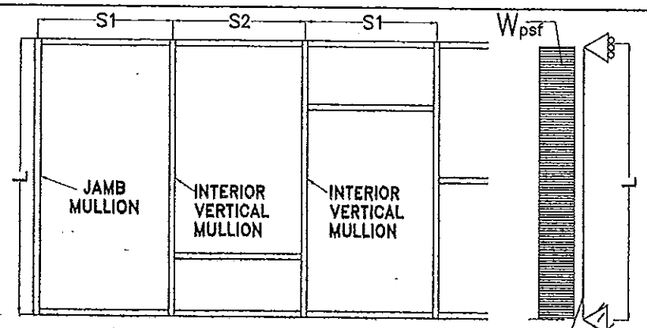
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 12-002	08/26/13	3	–	–
2	GENERAL	03/05/14	4	–	–

M.C.V./A.G. DRAWN BY
06/26/13 DATE
13-053 DRAWING No



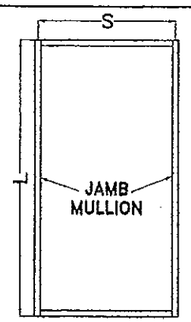
ELEVATION W/ INTERIOR VERTICAL MULLION @ MULTIPLE PANELS

"L" = MAXIMUM INTERIOR VERTICAL MULLION SPAN

EFFECTIVE SPACING: "b" = $\frac{S_1 + S_2}{2}$, FOR MULTIPLE PANELS

INTERIOR VERTICAL MULLION OR JAMB MULLION

SIDE VIEW

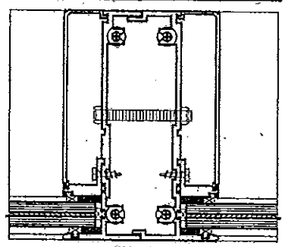


ELEVATION W/ JAMB MULLION @ SINGLE PANEL

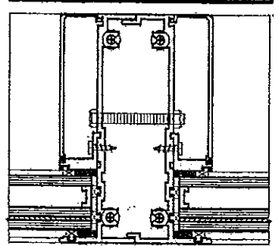
"L" = MAXIMUM JAMB MULLION SPAN

EFFECTIVE SPACING: "b" = S, FOR SINGLE PANEL.

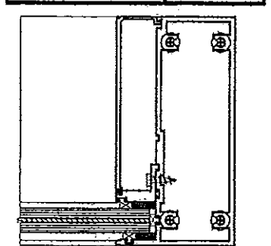
M-1	CASE 1: MULLION (2)+(3)+(2)(4)+(2)(5)	Ix = 16.999 in4 Sx = 5.566 in3
WATER INFILTRATION IS 19.5 psf		IN TERMS OF ALUM.



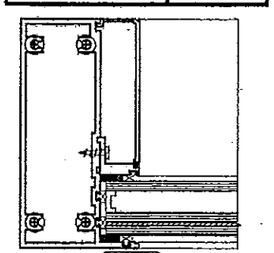
M-2	CASE 2: MULLION (2)+(3)+(2)(4A)+(2)(5)	Ix = 15.726 in4 Sx = 5.422 in3
WATER INFILTRATION IS 19.5 psf		IN TERMS OF ALUM.



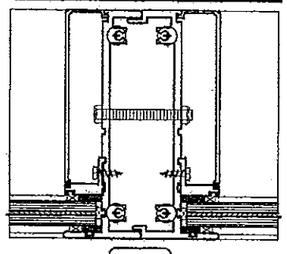
J-1	CASE 1: JAMB MULLION (1)+(4)+(5)	Ix = 13,075 in4 Sx = 4.351 in3
WATER INFILTRATION IS 19.5 psf		IN TERMS OF ALUM.



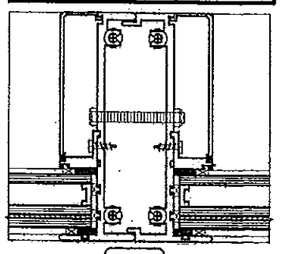
J-2	CASE 2: JAMB MULLION (1)+(4A)+(5)	Ix = 12.421 in4 Sx = 4.277 in3
WATER INFILTRATION IS 19.5 psf		IN TERMS OF ALUM.



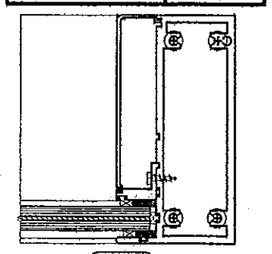
M-1A	CASE 3: MULLION (16)+(17)+(2)(4)+(2)(5)	Ix = 19.618 in4 Sx = 6.491 in3
WATER INFILTRATION IS 19.5 psf		IN TERMS OF ALUM.



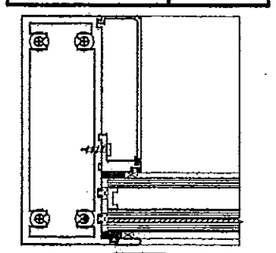
M-2A	CASE 4: MULLION (16)+(17)+(2)(4A)+(2)(5)	Ix = 18.322 in4 Sx = 6.346 in3
WATER INFILTRATION IS 19.5 psf		IN TERMS OF ALUM.



J-1A	CASE 3: JAMB MULLION (16)+(4)+(6)	Ix = 16.084 in4 Sx = 5.415 in3
WATER INFILTRATION IS 19.5 psf		IN TERMS OF ALUM.



J-2A	CASE 4: JAMB MULLION (16)+(4A)+(6)	Ix = 15.300 in4 Sx = 5.283 in3
WATER INFILTRATION IS 19.5 psf		IN TERMS OF ALUM.



CASES DEFINITIONS

CASE 1 :	M-1	INTERIOR VERTICAL MULLION: 1/8" THICK W/ LAMINATED GLASS (SEE DET. 5 ON SHEET 19)
	J-1	JAMB MULLION: 1/8" THICK W/ LAMINATED GLASS (SEE DET. 8 OR 8A ON SHEETS 20 & 21)
CASE 2 :	M-2	INTERIOR VERTICAL MULLION: 1/8" THICK W/ INSULATED GLASS (SEE DET. 6 ON SHEET 19)
	J-2	JAMB MULLION: 1/8" THICK W/ INSULATED GLASS (SEE DET. 8 OR 8A ON SHEET 21)
CASE 3 :	M-1A	INTERIOR VERTICAL MULLION: 3/16" THICK W/ LAMINATED GLASS (SEE DET. 5 ON SHEET 19)
	J-1A	JAMB MULLION: 3/16" THICK W/ LAMINATED GLASS (SEE DET. 8 OR 8A ON SHEETS 20 & 21)
CASE 4 :	M-2A	INTERIOR VERTICAL MULLION: 3/16" THICK W/ INSULATED GLASS (SEE DET. 6 ON SHEET 19)
	J-2A	JAMB MULLION: 3/16" THICK W/ INSULATED GLASS (SEE DET. 8 OR 8A ON SHEET 21)

MAXIMUM INTERIOR VERTICAL MULLION & JAMB MULLION SPAN "L"(FT) SCHEDULE FOR A GIVEN A.S.D. DESIGN PRESSURE RATING (psf) & A GIVEN MULLION EFFECTIVE SPACING "b"

MAXIMUM DESIGN PRESSURE RATING "W" (psf)	MAX. EFFECTIVE SPACING "b" (FT-IN)	MAXIMUM 1/8" THICK MULLION SPAN "L"(FT) Laminated Glass CASE 1 M-1/J-1	MAXIMUM 1/8" THICK MULLION SPAN "L"(FT) Insulated Glass CASE 2 M-2/J-2	MAXIMUM 3/16" THICK MULLION SPAN "L"(FT) Laminated Glass CASE 3 M-1A/J-1A	MAXIMUM 3/16" THICK MULLION SPAN "L"(FT) Insulated Glass CASE 4 M-2A/J-2A
± 40.0	3'-6"	15'-9"	15'-9"	15'-9"	15'-9"
	4'-0"	15'-9"	15'-9"	15'-9"	15'-9"
	4'-6"	15'-9"	15'-6"	15'-9"	15'-9"
	5'-0"	15'-4"	14'-11"	15'-9"	15'-8"
	5'-6"	14'-10"	14'-6"	15'-7"	15'-3"
	6'-0"	14'-5"	14'-1"	15'-1"	14'-9"
	6'-6"	14'-0"	13'-8"	14'-9"	14'-5"
	7'-0"	13'-8"	13'-4"	14'-4"	14'-0"
± 45.0	3'-6"	15'-9"	15'-9"	15'-9"	15'-9"
	4'-0"	15'-9"	15'-6"	15'-9"	15'-9"
	4'-6"	15'-3"	14'-10"	15'-9"	15'-8"
	5'-0"	14'-9"	14'-4"	15'-5"	15'-1"
	5'-6"	14'-3"	13'-11"	15'-0"	14'-8"
	6'-0"	13'-10"	13'-6"	14'-8"	14'-3"
	6'-6"	14'-0"	13'-8"	14'-9"	14'-5"
	7'-0"	13'-2"	12'-10"	13'-10"	13'-6"
± 50.0	3'-6"	15'-9"	15'-7"	15'-9"	15'-9"
	4'-0"	15'-4"	14'-11"	15'-9"	15'-8"
	4'-6"	14'-9"	14'-4"	15'-5"	15'-1"
	5'-0"	14'-3"	13'-10"	14'-11"	14'-7"
	5'-6"	13'-9"	13'-5"	14'-5"	14'-2"
	6'-0"	13'-5"	13'-0"	14'-0"	13'-9"
	6'-6"	13'-0"	12'-8"	13'-8"	13'-4"
	7'-0"	12'-7"	12'-5"	13'-4"	13'-0"
± 55.0	3'-6"	15'-6"	15'-1"	15'-9"	15'-9"
	4'-0"	14'-10"	14'-6"	15'-7"	15'-3"
	4'-6"	14'-3"	13'-11"	15'-0"	14'-8"
	5'-0"	13'-9"	13'-5"	14'-6"	14'-2"
	5'-6"	13'-4"	13'-0"	14'-0"	13'-8"
	6'-0"	12'-11"	12'-8"	13'-7"	13'-4"
	6'-6"	12'-5"	12'-4"	13'-3"	12'-11"
	7'-0"	12'-0"	11'-10"	12'-11"	12'-7"
± 60.0	3'-6"	15'-1"	14'-8"	15'-9"	15'-5"
	4'-0"	14'-5"	14'-1"	15'-1"	14'-9"
	4'-6"	13'-10"	13'-8"	14'-6"	14'-3"
	5'-0"	13'-5"	13'-0"	14'-0"	13'-9"
	5'-6"	12'-11"	12'-8"	13'-7"	13'-4"
	6'-0"	12'-5"	12'-3"	13'-3"	12'-11"
	6'-6"	11'-11"	11'-9"	12'-10"	12'-6"
	7'-0"	11'-6"	11'-4"	12'-4"	12'-0"
± 65.0	3'-6"	14'-8"	14'-4"	15'-5"	15'-1"
	4'-0"	14'-0"	13'-8"	14'-9"	14'-5"
	4'-6"	13'-6"	13'-2"	14'-2"	13'-10"
	5'-0"	13'-0"	12'-8"	13'-8"	13'-4"
	5'-6"	12'-5"	12'-4"	13'-3"	12'-11"
	6'-0"	11'-11"	11'-9"	12'-10"	12'-6"
	6'-6"	11'-5"	11'-4"	12'-4"	12'-0"
	7'-0"	11'-0"	10'-11"	11'-10"	11'-7"

MAXIMUM INTERIOR VERTICAL MULLION & JAMB MULLION SPAN "L"(FT) SCHEDULE FOR A GIVEN A.S.D. DESIGN PRESSURE RATING (psf) & A GIVEN MULLION EFFECTIVE SPACING "b" (CONTINUED)

MAXIMUM DESIGN PRESSURE RATING "W" (psf)	MAX. EFFECTIVE SPACING "b" (FT-IN)	MAXIMUM 1/8" THICK MULLION SPAN "L"(FT) Laminated Glass CASE 1 M-1/J-1	MAXIMUM 1/8" THICK MULLION SPAN "L"(FT) Insulated Glass CASE 2 M-2/J-2	MAXIMUM 3/16" THICK MULLION SPAN "L"(FT) Laminated Glass CASE 3 M-1A/J-1A	MAXIMUM 3/16" THICK MULLION SPAN "L"(FT) Insulated Glass CASE 4 M-2A/J-2A
±70.0	3'-6"	14'-4"	13'-11"	15'-0"	14'-8"
	4'-0"	13'-8"	13'-4"	14'-4"	14'-0"
	4'-6"	13'-2"	12'-10"	13'-10"	13'-6"
	5'-0"	12'-7"	12'-5"	13'-4"	13'-0"
	5'-6"	12'-0"	11'-10"	12'-11"	12'-7"
	6'-0"	11'-6"	11'-4"	12'-4"	12'-0"
	6'-6"	11'-0"	10'-11"	11'-10"	11'-7"
	7'-0"	10'-7"	10'-6"	11'-5"	11'-2"
±75.0	3'-6"	14'-0"	13'-8"	14'-8"	14'-4"
	4'-0"	13'-5"	13'-0"	14'-0"	13'-9"
	4'-6"	12'-9"	12'-6"	13'-6"	13'-2"
	5'-0"	12'-2"	12'-0"	13'-0"	12'-9"
	5'-6"	11'-7"	11'-6"	12'-5"	12'-2"
	6'-0"	11'-1"	11'-0"	11'-11"	11'-7"
	6'-6"	10'-8"	10'-7"	11'-5"	11'-2"
	7'-0"	10'-3"	10'-2"	11'-0"	10'-9"
±80.0	3'-6"	13'-8"	13'-4"	14'-4"	14'-0"
	4'-0"	13'-1"	12'-9"	13'-9"	13'-5"
	4'-6"	12'-5"	12'-3"	13'-3"	12'-11"
	5'-0"	11'-9"	11'-8"	12'-8"	12'-4"
	5'-6"	11'-2"	11'-1"	12'-1"	11'-9"
	6'-0"	10'-9"	10'-8"	12'-0"	10'-0"
	6'-6"	10'-0"	10'-0"	10'-0"	10'-0"
	7'-0"	9'-11"	9'-10"	10'-0"	10'-0"
±85.0	3'-6"	13'-5"	13'-1"	14'-1"	13'-9"
	4'-0"	12'-9"	12'-6"	13'-6"	13'-2"
	4'-6"	12'-0"	11'-11"	12'-11"	12'-7"
	5'-0"	11'-5"	11'-4"	12'-3"	11'-11"
	5'-6"	10'-10"	10'-8"	11'-8"	11'-5"
	6'-0"	10'-0"	10'-0"	10'-0"	10'-0"
	6'-6"	10'-0"	9'-11"	10'-0"	10'-0"
	7'-0"	9'-8"	9'-7"	10'-0"	10'-0"
±90.0	3'-6"	13'-2"	12'-10"	13'-10"	13'-6"
	4'-0"	12'-5"	12'-3"	13'-3"	12'-11"
	4'-6"	11'-8"	11'-7"	12'-7"	12'-3"
	5'-0"	11'-1"	11'-0"	11'-11"	11'-7"
	5'-6"	10'-7"	10'-6"	11'-4"	11'-1"
	6'-0"	10'-0"	10'-0"	10'-0"	10'-0"
	6'-6"	9'-9"	9'-8"	10'-0"	10'-0"
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±95.0	3'-6"	12'-11"	12'-7"	13'-7"	13'-3"
	4'-0"	12'-1"	11'-11"	13'-0"	12'-8"
	4'-6"	11'-4"	11'-3"	12'-3"	11'-11"
	5'-0"	10'-9"	10'-8"	11'-7"	11'-4"
	5'-6"	10'-3"	10'-2"	11'-1"	10'-9"
	6'-0"	9'-10"	9'-9"	10'-0"	10'-0"
	6'-6"	9'-5"	9'-4"	10'-0"	9'-11"
	7'-0"	9'-1"	9'-0"	9'-10"	9'-7"

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 13-093.14
Expiration Date 5-13-2016
By Manuel Perez
Miami Dade Product Control

MIAMI--DADE COUNTY

WALTER A. TILLIT JR. LICENSE No. 44167 STATE OF FLORIDA PROFESSIONAL ENGINEER

P.E. SEAL/SIGNATURE/DATE

FLORIDA BUILDING CODE (HIGH VELOCITY HURRICANE ZONE)

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TILLIT TESTING & ENGINEERING COMPANY
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e-mail: tileco@aol.com
EB-0006719
WALTER A. TILLIT Jr. P.E.
FLORIDA Lic. # 44167

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1	OLD 12-002	06/26/13	3	--	--
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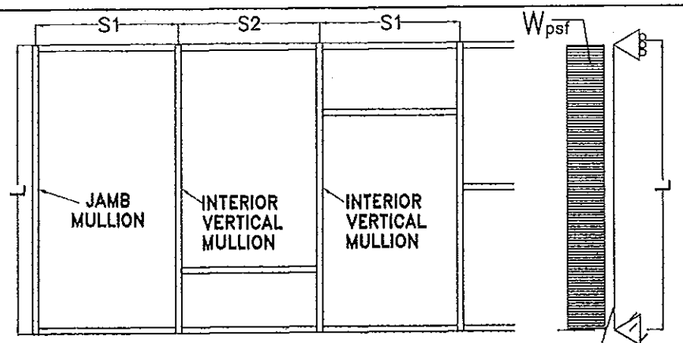
13-053 DRAWING No



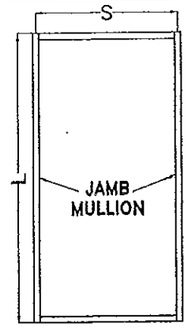
ELEVATION W/ INTERIOR VERTICAL MULLION @ MULTIPLE PANELS

"L" = MAXIMUM INTERIOR VERTICAL MULLION SPAN

EFFECTIVE SPACING: "b" = $\frac{S_1 + S_2}{2}$, FOR MULTIPLE PANELS

INTERIOR VERTICAL MULLION OR JAMB MULLION

SIDE VIEW

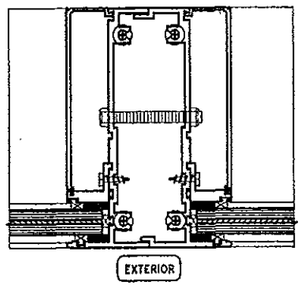


ELEVATION W/ JAMB MULLION @ SINGLE PANEL

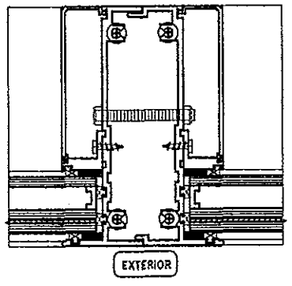
"L" = MAXIMUM JAMB MULLION SPAN

EFFECTIVE SPACING: "b" = S, FOR SINGLE PANEL.

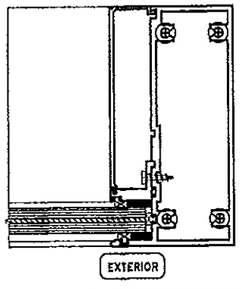
M-1	CASE 1: MULLION (2)+(3)+(2)(4)+(2)(5)	Ix = 16.999 In4 Sx = 5.566 In3
WATER INFILTRATION IS 19.5 psf		IN TERMS OF ALUM.



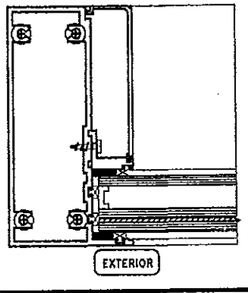
M-2	CASE 2: MULLION (2)+(3)+(2)(4A)+(2)(5)	Ix = 15.728 In4 Sx = 5.422 In3
WATER INFILTRATION IS 19.5 psf		IN TERMS OF ALUM.



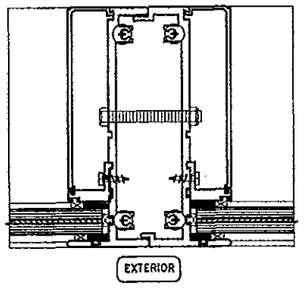
J-1	CASE 1: JAMB MULLION (1)+(4)+(5)	Ix = 13.075 In4 Sx = 4.351 In3
WATER INFILTRATION IS 19.5 psf		IN TERMS OF ALUM.



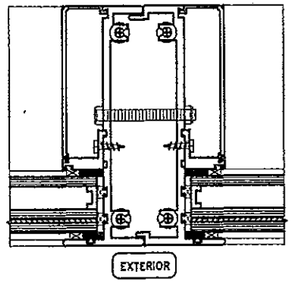
J-2	CASE 2: JAMB MULLION (1)+(4A)+(5)	Ix = 12.421 In4 Sx = 4.277 In3
WATER INFILTRATION IS 19.5 psf		IN TERMS OF ALUM.



M-1A	CASE 3: MULLION (16)+(17)+(2)(4)+(2)(5)	Ix = 19.618 In4 Sx = 6.491 In3
WATER INFILTRATION IS 19.5 psf		IN TERMS OF ALUM.



M-2A	CASE 4: MULLION (16)+(17)+(2)(4A)+(2)(5)	Ix = 18.322 In4 Sx = 6.346 In3
WATER INFILTRATION IS 19.5 psf		IN TERMS OF ALUM.



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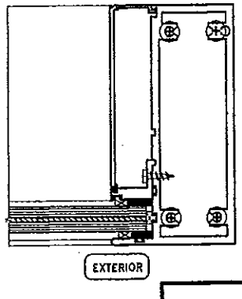
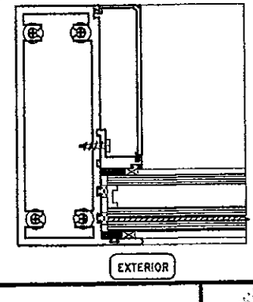
WATER INFILTRATION IS 19.5 psf		IN TERMS OF ALUM.



J-2A	CASE 4: JAMB MULLION (16)+(4A)+(5)	Ix = 16.300 In4 Sx = 5.283 In3
WATER INFILTRATION IS 19.5 psf		IN TERMS OF ALUM.



CASES DEFINITIONS

CASE 1 :	M-1	INTERIOR VERTICAL MULLION: 1/8" THICK W/ LAMINATED GLASS (SEE DET. 5 ON SHEET 19)
	J-1	JAMB MULLION: 1/8" THICK W/ LAMINATED GLASS (SEE DET. 8 OR 8A ON SHEETS 20 & 21)
CASE 2 :	M-2	INTERIOR VERTICAL MULLION: 1/8" THICK W/ INSULATED GLASS (SEE DET. 6 ON SHEET 19)
	J-2	JAMB MULLION: 1/8" THICK W/ INSULATED GLASS (SEE DET. 8 OR 8A ON SHEET 21)
CASE 3 :	M-1A	INTERIOR VERTICAL MULLION: 3/16" THICK W/ LAMINATED GLASS (SEE DET. 5 ON SHEET 19)
	J-1A	JAMB MULLION: 3/16" THICK W/ LAMINATED GLASS (SEE DET. 8 OR 8A ON SHEETS 20 & 21)
CASE 4 :	M-2A	INTERIOR VERTICAL MULLION: 3/16" THICK W/ INSULATED GLASS (SEE DET. 6 ON SHEET 19)
	J-2A	JAMB MULLION: 3/16" THICK W/ INSULATED GLASS (SEE DET. 8 OR 8A ON SHEET 21)

MAXIMUM INTERIOR VERTICAL MULLION AND JAMB MULLION SPAN "L"(FT) SCHEDULE FOR A GIVEN A.S.D. DESIGN PRESSURE RATING (psf) & A GIVEN MULLION EFFECTIVE SPACING "b" (CONTINUED)

MAXIMUM DESIGN PRESSURE RATING	MAX. EFFECTIVE SPACING	MAXIMUM 1/8" THICK MULLION SPAN "L"(FT)		MAXIMUM 3/16" THICK MULLION SPAN "L"(FT)	
		Laminated Glass	Insulated Glass	Laminated Glass	Insulated Glass
		CASE 1	CASE 2	CASE 3	CASE 4
"W" (psf)	"b" (Ft-In)	M-1/J-1	M-2/J-2	M-1A/J-1A	M-2A/J-2A
± 100.0	3'-6"	12'-7"	12'-6"	13'-4"	13'-0"
	4'-0"	11'-9"	11'-8"	12'-8"	12'-4"
	4'-6"	11'-1"	11'-0"	11'-11"	11'-7"
	5'-0"	10'-6"	10'-5"	11'-4"	11'-0"
	5'-6"	10'-0"	9'-11"	10'-9"	10'-6"
	6'-0"	9'-7"	9'-6"	10'-0"	10'-0"
	6'-6"	9'-3"	9'-2"	9'-11"	9'-8"
	7'-0"	8'-11"	8'-10"	9'-7"	9'-4"
± 105.0	3'-6"	12'-3"	12'-2"	13'-1"	12'-10"
	4'-0"	11'-6"	11'-4"	12'-4"	12'-0"
	4'-6"	10'-10"	10'-9"	11'-8"	11'-4"
	5'-0"	10'-3"	10'-2"	11'-0"	10'-9"
	5'-6"	9'-9"	9'-8"	10'-6"	10'-3"
	6'-0"	9'-4"	9'-3"	10'-0"	9'-10"
	6'-6"	9'-0"	8'-11"	9'-8"	9'-5"
	7'-0"	8'-8"	8'-7"	9'-4"	9'-1"
± 110.0	3'-6"	12'-0"	11'-10"	12'-11"	12'-7"
	4'-0"	11'-2"	11'-1"	12'-1"	11'-9"
	4'-6"	10'-7"	10'-6"	11'-4"	11'-1"
	5'-0"	10'-0"	9'-11"	10'-9"	10'-6"
	5'-6"	9'-7"	9'-6"	10'-3"	10'-0"
	6'-0"	9'-2"	9'-1"	9'-10"	9'-7"
	6'-6"	8'-9"	8'-8"	9'-6"	9'-3"
	7'-0"	8'-6"	8'-5"	9'-1"	8'-11"
± 115.0	3'-6"	11'-9"	11'-7"	12'-7"	12'-3"
	4'-0"	10'-11"	10'-10"	11'-10"	11'-6"
	4'-6"	10'-4"	10'-3"	11'-1"	10'-10"
	5'-0"	9'-10"	9'-9"	10'-7"	10'-3"
	5'-6"	9'-4"	9'-3"	10'-1"	9'-10"
	6'-0"	8'-11"	8'-10"	9'-8"	9'-6"
	6'-6"	8'-7"	8'-6"	9'-3"	9'-0"
	7'-0"	8'-3"	8'-2"	8'-10"	8'-8"
± 120.0	3'-6"	11'-6"	11'-4"	12'-4"	12'-0"
	4'-0"	10'-9"	10'-8"	11'-7"	11'-3"
	4'-6"	10'-1"	10'-0"	10'-11"	10'-7"
	5'-0"	9'-7"	9'-6"	10'-4"	10'-1"
	5'-6"	9'-2"	9'-1"	9'-10"	9'-7"
	6'-0"	8'-9"	8'-8"	9'-5"	9'-2"
	6'-6"	8'-5"	8'-4"	9'-1"	8'-10"
	7'-0"	8'-1"	8'-0"	8'-6"	8'-6"
± 126.0	3'-6"	11'-3"	11'-2"	12'-1"	11'-9"
	4'-0"	10'-6"	10'-6"	11'-4"	11'-0"
	4'-6"	9'-11"	9'-10"	10'-8"	10'-5"
	5'-0"	9'-5"	9'-4"	10'-1"	9'-10"
	5'-6"	9'-0"	8'-11"	9'-8"	9'-5"
	6'-0"	8'-7"	8'-6"	9'-3"	9'-0"
	6'-6"	8'-3"	8'-2"	8'-9"	8'-8"
	7'-0"	7'-11"	7'-10"	8'-2"	8'-2"

MAXIMUM INTERIOR VERTICAL MULLION AND JAMB MULLION SPAN "L"(FT) SCHEDULE FOR A GIVEN A.S.D. DESIGN PRESSURE RATING (psf) & A GIVEN MULLION EFFECTIVE SPACING "b" (CONTINUED)

MAXIMUM DESIGN PRESSURE RATING	MAX. EFFECTIVE SPACING	MAXIMUM 1/8" THICK MULLION SPAN "L"(FT)		MAXIMUM 3/16" THICK MULLION SPAN "L"(FT)	
		LAMINATED GLASS	INSULATED GLASS	LAMINATED GLASS	INSULATED GLASS
"W"(psf)	"b"(Ft-in)	CASE 1 M-1/J-1	CASE 2 M-2/J-2	CASE 3 M-1A/J-1A	CASE 3 M-1A/J-1A
± 130.0	3'-6"	11'-0"	10'-11"	11'-10"	11'-7"
	4'-0"	10'-4"	10'-3"	11'-1"	10'-10"
	4'-6"	9'-9"	9'-8"	10'-6"	10'-2"
	5'-0"	9'-3"	9'-2"	9'-11"	9'-8"
	5'-6"	8'-9"	8'-8"	9'-6"	9'-3"
	6'-0"	8'-5"	8'-4"	9'-1"	8'-10"
	6'-6"	8'-1"	8'-0"	8'-5"	8'-5"
	7'-0"	7'-9"	7'-9"	7'-10"	7'-10"
+130.0, -135.0	3'-6"	10'-10"	10'-9"	11'-8"	11'-4"
	4'-0"	10'-1"	10'-0"	10'-11"	10'-7"
	4'-6"	9'-6"	9'-5"	10'-3"	10'-0"
	5'-0"	9'-0"	9'-0"	9'-9"	9'-6"
	5'-6"	8'-7"	8'-7"	9'-3"	9'-0"
	6'-0"	8'-3"	8'-2"	8'-10"	8'-8"
	6'-6"	7'-11"	7'-10"	8'-2"	8'-2"
	7'-0"	7'-7"	7'-7"	7'-7"	7'-7"
+130.0, -140.0	3'-6"	10'-7"	10'-6"	11'-5"	11'-2"
	4'-0"	9'-11"	9'-10"	10'-8"	10'-5"
	4'-6"	9'-4"	9'-3"	10'-1"	9'-10"
	5'-0"	8'-11"	8'-10"	9'-7"	9'-4"
	5'-6"	8'-6"	8'-5"	9'-1"	8'-11"
	6'-0"	8'-1"	8'-0"	8'-6"	8'-6"
	6'-6"	7'-9"	7'-9"	7'-10"	7'-10"
	7'-0"	7'-3"	7'-3"	7'-3"	7'-3"

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2	GENERAL	03/05/14	4	-	-

M.C.V./A.G. DRAWN BY

06/26/13 DATE

13-053 DRAWING No

SHEET 7 OF 24

MAXIMUM A.S.D. DESIGN PRESSURE RATING SCHEDULE FOR INTERIOR VERTICAL MULLION'S & JAMB MULLION'S HEAD/SILL CONNECTIONS

MAXIMUM MULLION SPAN	EFFECTIVE SPACING	MAXIMUM DESIGN PRESSURE RATING W (psf) FOR 1/4" MAX. SHIM SPACE																								
		POURED CONCRETE SUBSTRATE										WOOD (2) 1 1/2" Min. THK. SUBSTRATE										STEEL 1/4" Min. THK. SUBSTRATE				
		FASTENERS TYPE A (1/4"ø)					FASTENERS TYPE B (3/8"ø)					FASTENERS TYPE C (1/4"ø)					FASTENERS TYPE D (3/8"ø)					FASTENERS TYPE E (3/8"ø)				
"L" (Ft-in)	"b" (Ft-in)	n = 4	n = 6	n = 8	n = 10	n = 12	n = 4	n = 6	n = 8	n = 10	n = 12	n = 4	n = 6	n = 8	n = 10	n = 12	n = 4	n = 6	n = 8	n = 10	n = 12	n = 4	n = 6	n = 8	n = 10	n = 12
8 '- 0 "	3 '- 6 "	80.8	121.2	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	67.0	100.5	140.0	140.0	140.0	62.9	94.3	126.7	140.0	140.0	140.0	140.0	140.0	140.0	140.0
	4 '- 0 "	70.7	106.1	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	58.7	88.0	140.0	140.0	140.0	55.0	82.5	110.0	137.5	140.0	140.0	140.0	140.0	140.0	140.0
	4 '- 6 "	62.9	94.3	126.7	140.0	140.0	140.0	140.0	140.0	140.0	140.0	52.1	78.2	126.7	130.3	140.0	48.9	73.3	97.8	122.2	140.0	140.0	140.0	140.0	140.0	140.0
	5 '- 0 "	56.6	84.8	113.1	140.0	140.0	140.0	140.0	140.0	140.0	140.0	46.9	70.4	113.1	117.3	140.0	44.0	66.0	88.0	110.0	132.0	140.0	140.0	140.0	140.0	140.0
	5 '- 6 "	51.4	77.1	102.8	128.6	140.0	133.3	140.0	140.0	140.0	140.0	42.7	64.0	102.8	106.6	128.0	40.0	60.0	80.0	100.0	120.0	140.0	140.0	140.0	140.0	140.0
	6 '- 0 "	47.1	70.7	94.3	117.8	140.0	122.2	140.0	140.0	140.0	140.0	39.1	58.7	94.3	97.8	117.3	36.7	55.0	73.3	91.7	110.0	140.0	140.0	140.0	140.0	140.0
	6 '- 6 "	43.5	65.3	87.0	108.8	130.5	112.8	140.0	140.0	140.0	140.0	36.1	54.1	87.0	90.2	108.3	33.9	50.8	67.7	84.6	101.6	140.0	140.0	140.0	140.0	140.0
	7 '- 0 "	40.4	60.6	80.8	101.0	121.2	104.7	140.0	140.0	140.0	140.0	33.6	50.3	80.8	83.8	100.5	31.4	47.2	62.9	78.6	94.3	130.2	140.0	140.0	140.0	140.0
8 '- 6 "	3 '- 6 "	76.1	114.1	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	63.1	94.6	140.0	140.0	140.0	59.2	88.8	118.3	140.0	140.0	140.0	140.0	140.0	140.0	140.0
	4 '- 0 "	66.5	99.8	133.1	140.0	140.0	140.0	140.0	140.0	140.0	140.0	55.2	82.8	133.1	138.0	140.0	51.8	77.7	103.6	129.4	140.0	140.0	140.0	140.0	140.0	140.0
	4 '- 6 "	59.2	88.7	118.3	140.0	140.0	140.0	140.0	140.0	140.0	140.0	49.1	73.6	118.3	122.7	140.0	46.0	69.0	92.0	115.1	138.1	140.0	140.0	140.0	140.0	140.0
	5 '- 0 "	53.2	79.9	106.5	133.1	140.0	138.0	140.0	140.0	140.0	140.0	44.2	66.2	106.5	110.4	132.5	41.4	62.1	82.8	103.6	124.3	140.0	140.0	140.0	140.0	140.0
	5 '- 6 "	48.4	72.6	96.8	121.0	140.0	125.4	140.0	140.0	140.0	140.0	40.1	60.2	96.8	100.4	120.4	37.7	56.5	75.3	94.1	113.0	140.0	140.0	140.0	140.0	140.0
	6 '- 0 "	44.4	66.5	88.7	110.9	133.1	115.0	140.0	140.0	140.0	140.0	36.8	55.2	88.7	92.0	110.4	34.5	51.8	69.0	86.3	103.6	140.0	140.0	140.0	140.0	140.0
	6 '- 6 "	41.0	61.4	81.9	102.4	122.9	106.1	140.0	140.0	140.0	140.0	34.0	51.0	81.9	84.9	101.9	31.9	47.8	63.7	79.7	95.6	131.9	140.0	140.0	140.0	140.0
	7 '- 0 "	38.0	57.0	76.1	95.1	114.1	98.6	140.0	140.0	140.0	140.0	31.6	47.3	76.1	78.9	94.6	29.6	44.4	59.2	74.0	88.8	122.5	140.0	140.0	140.0	140.0
9 '- 0 "	3 '- 6 "	71.8	107.7	140.0	140.0	140.0	140.0	140.0	140.0	140.0	140.0	59.6	89.4	140.0	140.0	140.0	55.9	83.8	111.8	139.7	140.0	140.0	140.0	140.0	140.0	140.0
	4 '- 0 "	62.9	94.3	125.7	140.0	140.0	140.0	140.0	140.0	140.0	140.0	52.1	78.2	125.7	130.3	140.0	48.9	73.3	97.8	122.2	140.0	140.0	140.0	140.0	140.0	140.0
	4 '- 6 "	55.9	83.8	111.7	139.7	140.0	140.0	140.0	140.0	140.0	140.0	46.3	69.5	111.7	115.9	139.0	43.5	65.2	86.9	108.7	130.4	140.0	140.0	140.0	140.0	140.0
	5 '- 0 "	50.3	75.4	100.6	125.7	140.0	130.3	140.0	140.0	140.0	140.0	41.7	62.6	100.6	104.3	125.1	39.1	58.7	78.2	97.8	117.4	140.0	140.0	140.0	140.0	140.0
	5 '- 6 "	45.7	68.6	91.4	114.3	137.1	118.5	140.0	140.0	140.0	140.0	37.9	56.9	91.4	94.8	113.7	35.6	53.3	71.1	88.9	106.7	140.0	140.0	140.0	140.0	140.0
	6 '- 0 "	41.9	62.9	83.8	104.8	125.7	108.6	140.0	140.0	140.0	140.0	34.8	52.1	83.8	86.9	104.3	32.6	48.9	65.2	81.5	97.8	135.0	140.0	140.0	140.0	140.0
	6 '- 6 "	38.7	58.0	77.4	96.7	116.0	100.2	140.0	140.0	140.0	140.0	32.1	48.1	77.4	80.2	96.2	30.1	45.1	60.2	75.2	90.3	124.6	140.0	140.0	140.0	140.0
	7 '- 0 "	35.9	53.9	71.8	89.8	107.7	93.1	139.6	140.0	140.0	140.0	29.8	44.7	71.8	74.6	89.4	27.9	41.9	55.9	69.9	83.8	115.7	140.0	140.0	140.0	140.0
9 '- 6 "	3 '- 6 "	68.0	102.1	136.1	140.0	140.0	140.0	140.0	140.0	140.0	140.0	56.4	84.7	136.1	140.0	140.0	52.9	79.4	105.9	132.4	140.0	140.0	140.0	140.0	140.0	140.0
	4 '- 0 "	59.5	89.3	119.1	140.0	140.0	140.0	140.0	140.0	140.0	140.0	49.4	74.1	119.1	123.5	140.0	46.3	69.5	92.7	115.8	139.0	140.0	140.0	140.0	140.0	140.0
	4 '- 6 "	52.9	79.4	105.9	132.3	140.0	137.2	140.0	140.0	140.0	140.0	43.9	65.9	105.9	109.8	131.7	41.2	61.8	82.4	102.9	123.5	140.0	140.0	140.0	140.0	140.0
	5 '- 0 "	47.6	71.5	95.3	119.1	140.0	123.5	140.0	140.0	140.0	140.0	39.5	59.3	95.3	98.8	118.5	37.1	55.6	74.1	92.7	111.2	140.0	140.0	140.0	140.0	140.0
	5 '- 6 "	43.3	65.0	86.6	108.3	129.9	112.2	140.0	140.0	140.0	140.0	35.9	53.9	86.6	89.8	107.8	33.7	50.5	67.4	84.2	101.1	139.5	140.0	140.0	140.0	140.0
	6 '- 0 "	39.7	59.5	79.4	99.2	119.1	102.9	140.0	140.0	140.0	140.0	32.9	49.4	79.4	82.3	98.8	30.9	46.3	61.8	77.2	92.7	127.9	140.0	140.0	140.0	140.0
	6 '- 6 "	36.6	55.0	73.3	91.6	109.9	95.0	140.0	140.0	140.0	140.0	30.4	45.6	73.3	76.0	91.2	28.5	42.8	57.0	71.3	85.5	118.0	140.0	140.0	140.0	140.0
	7 '- 0 "	34.0	51.0	68.0	85.1	102.1	88.2	132.3	140.0	140.0	140.0	28.2	42.3	68.0	70.6	84.7	26.6	39.7	52.9	66.2	79.4	109.6	140.0	140.0	140.0	140.0
10 '- 0 "	3 '- 6 "	64.6	97.0	129.3	140.0	140.0	140.0	140.0	140.0	140.0	140.0	53.6	80.4	129.3	134.1	140.0	50.3	75.4	100.6	125.7	140.0	140.0	140.0	140.0	140.0	140.0
	4 '- 0 "	56.6	84.8	113.1	140.0	140.0	140.0	140.0	140.0	140.0	140.0	46.9	70.4	113.1	117.3	140.0	44.0	66.0	88.0	110.0	132.0	140.0	140.0	140.0	140.0	140.0
	4 '- 6 "	50.3	75.4	100.6	126.7	140.0	130.3	140.0	140.0	140.0	140.0	41.7	62.6	100.6	104.3	125.1	39.1	58.7	78.2	97.8	117.4	140.0	140.0	140.0	140.0	140.0
	5 '- 0 "	45.3	67.9	90.5	113.1	135.8	117.3	140.0	140.0	140.0	140.0	37.5	56.3	90.5	93.8	112.6	35.2	52.8	70.4	88.0	105.6	140.0	140.0	140.0	140.0	140.0
	5 '- 6 "	41.1	61.7	82.3	102.8	123.4	106.6	140.0	140.0	140.0	140.0	34.1	51.2	82.3	85.3	102.4	32.0	48.0	64.0	80.0	96.0	132.6	140.0	140.0	140.0	140.0
	6 '- 0 "	37.7	56.6	75.4	94.3	113.1	97.7	140.0	140.0	140.0	140.0	31.3	46.9	75.4	78.2	93.8	29.3	44.0	58.7	73.3	88.0	121.5	140.0	140.0	140.0	140.0
	6 '- 6 "	34.8	52.2	69.6	87.0	104.4	90.2	135.3	140.0	140.0	140.0	28.9	43.3	69.6	72.2	86.6	27.1	40.6	54.2	67.7	81.2	112.1	140.0	140.0	140.0	140.0
	7 '- 0 "	32.3	48.5	64.6	80.8	97.0	83.8	126.7	140.0	140.0	140.0	26.8	40.2	64.6	67.0	80.4	25.1	37.7	50.3	62.9	75.4	104.1	140.0	140.0	140.0	140.0
10 '- 6 "	3 '- 6 "	61.6	92.4	123.1	140.0	140.0	140.0	140.0	140.0	140.0	140.0	51.1	76.6	123.1	127.7	140.0	47.9	71.9	95.8	119.8	140.0	140.0	140.0	140.0	140.0	140.0
	4 '- 0 "	53.9	80.8	107.7	134.7	140.0	139.6	140.0	140.0	140.0	140.0	44.7	67.0	107.7	111.7	134.1	41.9	62.9	83.8	104.8	125.7	140.0	140.0	140.0	140.0	140.0
	4 '- 6 "	47.9	71.8	95.8	119.7	140.0	124.1	140.0	140.0	140.0	140.0	39.7	59.6	95.8	99.3	119.2	37.3	55.9	74.5	93.1	111.8	140.0	140.0	140.0	140.0	140.0
	5 '- 0 "	43.1	64.6	86.2	107.7	129.3	111.7	140.0	140.0	140.0	140.0	35.7	53.6	86.2	89.4	107.2	33.5	50.3	67.1	83.8	100.6	138.8	140.0	140.0	140.0	140.0
	5 '- 6 "	39.2	58.8	78.4	97.9	117.5	101.5	140.0	140.0	140.0	140.0	32.6	48.7	78.4	81.2	97.5	30.5	45.7	61.0	76.2	91.4	126.2	140.0	140.0	140.0	140.0
	6 '- 0 "	35.9	53.9	71.8	89.8	107.7	93.1	139.6	140.0	140.0	140.0	29.8	44.7	71.8	74.6	89.4	27.9	41.9	55.9	69.9	83.8	115.7	140.0	140.0	140.0	140.0
	6 '- 6 "	33.2	49.7	66.3	82.9	99.5	85.9	128.9	140.0	140.0	140.0	27.5	41.2	66.3	68.7	82.5	25.8	38.7	51.6	64.5	77.4	106.8	140.0	140.0	140.0	140.0
	7 '- 0 "	30.8	46.2	61.6	77.0	92.4	79.8	119.7	140.0	140.0	140.0	25.6	38.3	61.6	63.8	76.6	24.0	35.9	47.9	59.9	71.9	99.2	140.0	140.0	140.0	140.0
11 '- 0 "	3 '- 6 "	58.8	88.2	117.5	140.0	140.0	140.0	140.0	140.0	140.0	140.0	48.7	73.1	117.5	121.9	140.0	45.7	68.6	91.4	114.3	137.2	140.0	140.0	140.0	140.0	140.0
	4 '- 0 "	51.4	77.1	102.8	128.6	140.0	133.3	140.0	140.0	140.0	140.0	42.7	64.0	102.8	106.6	128.0	40.0	60.0	80.0	100.0	120.0	140.0	140.0	140.0	140.0	140.0
	4 '- 6 "	45.7	68.6	91.4	114.3	137.1	118.5	140.0	140.0	140.0	140.0	37.9	56.9	91.4	94.8	113.7	35.6	53.3	71.1	88.9	106.7	140.0	140.0	140.0	140.0	140.0
	5 '- 0 "	41.1	61.7	82.3	102.8	123.4	106.6	140.0	140.0	140.0	140.0	34.1	51.2	82.3	85.3	102.4	32.0	48.0	64.0	80.0	96.0	132.5	140.0	140.0	140.0	140.0
	5 '- 6 "	37.4	56.1	74.8	93.6	112.2	96.9	140.0	140.0	140.0	140.0	31.0	46.5	74.8	77.6	93.1	29.1	43.6	58.2	72.7	87.3	120.5	140.0	140.0	140.0	140.0
	6 '- 0 "	34.3	51.4	68.6	85.7	102.8	88.9	133.3	140.0	140.0	140.0	28.4	42.7	68.6	71.1	85.3	26.7	40.0	53.3	66.7	80.0	110.4	140.0	140.0	140.0	140.0
	6 '- 6 "	31.6	47.5	63.3	79.1	94.9	82.0	123.0	140.0	140.0	140.0	26.2	39.4	63.3	65.6	78.7	24.6	36.9	49.2	61.6	73.9	101.9	140.0	140.0	140.0	140.0
	7 '- 0 "	29.4	44.1	58.8	73.5	88.2	76.2	114.2	140.0	140.0	140.0	24.4	36.6	58.8	60.9	73.1	22.9	34.3	45.7	57.2	68.6	94.7	140.0	140.0	140.0	140.0

FASTENERS TYPES & SUBSTRATES REQUIREMENTS:

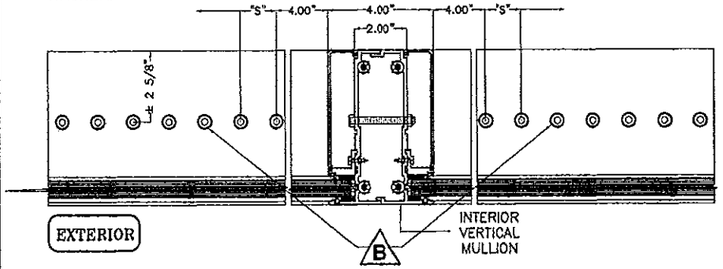
A - 1/4"Ø ELCO CONSTRUCTION PRODUCTS, ULTRACON ANCHOR W/ 1 3/4" Min. EMBEDMENT INTO POURED CONCRETE (Min. f'c = 2,730 ksi), W/ S = 4" MIN. SPACING & 2 1/2" MIN. EDGE DISTANCE. FOR MAXIMUM SPACING, EMBEDMENT & EDGE DISTANCE ARE BEYOND ANY FINISH MATERIAL.

B - 3/8"Ø POWERS FASTENERS, WEDGE-BOLT ANCHOR W/ 2" Min. EMBEDMENT INTO POURED CONCRETE (Min. f'c = 3.0 ksi), W/ S = 3" MIN. SPACING & 3 1/4" MIN. EDGE DISTANCE, FOR MAXIMUM SPACING, EMBEDMENT & EDGE DISTANCE ARE BEYOND ANY FINISH MATERIAL.

C - 1/4"Ø ELCO CONSTRUCTION PRODUCTS, ULTRACON ANCHOR TO (2) 2" x WOOD BUCKS (G=0.55) W/ 3" Min. PENETRATION INTO WOOD, W/ S = 2" Min. SPACING & 1" MIN. EDGE DISTANCE. FOR MAXIMUM SPACING, EMBEDMENT & EDGE DISTANCE ARE BEYOND ANY FINISH MATERIAL.

D - 3/8"Ø LAG SCREW TO (2) 2" x WOOD BUCKS (G=0.55) W/ 3" Min. PENETRATION INTO WOOD, W/ S = 2" Min. SPACING & 1 1/2" MIN. EDGE DISTANCE. FOR MAXIMUM SPACING, EMBEDMENT & EDGE DISTANCE ARE BEYOND ANY FINISH MATERIAL.

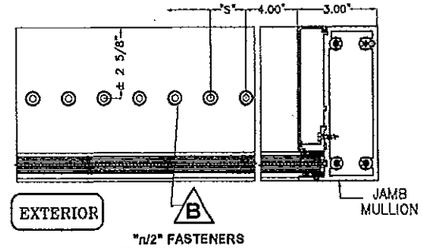
E - 3/8"Ø TYPE "F" BOLT TO 1/4" Min. THK. ASTM A-36 STEEL W/ S = 2" MIN. SPACING & 1" MIN. EDGE DISTANCE OR 3/8"Ø SAE GRADE 5 GALVANIZED STEEL HHB THRU BOLT W/ NUT & LOCK WASHER.



"n" FASTENERS
n = TOTAL NUMBER OF FASTENERS PER CONNECTION AT HEAD/SILL, EQUALLY INSTALLED AT EACH SIDE OF INTERIOR VERTICAL MULLION

SILL OR HEAD CONNECTION DETAIL @ INTERIOR VERTICAL MULLION

(PLAN VIEW)
N.T.S.



"n/2" FASTENERS
n/2 = TOTAL NUMBER OF FASTENERS PER CONNECTION AT HEAD/SILL, INSTALLED AT ONE SIDE OF JAMB MULLION

SILL OR HEAD CONNECTION DETAIL @ JAMB MULLION

(PLAN VIEW)
N.T.S.

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 13-0930.14
Expiration Date 12.13.2016
By
Miami Dade Product Control

MIAMI--DADE COUNTY

WALTER A. TILLIT JR. LICENSE No. 44167 STATE OF FLORIDA PROFESSIONAL ENGINEER 7/15/14

P.E. SEAL/SIGNATURE/DATE

FLORIDA BUILDING CODE (HIGH VELOCITY HURRICANE ZONE)

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TILLIT TESTING & ENGINEERING COMPANY
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EB-0006719
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06/26/13 DATE

13-053 DRAWING No

REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 12-002	08/28/13	3	--	--
2	GENERAL	05/05/14	4	--	--

MAXIMUM A.S.D. DESIGN PRESSURE RATING SCHEDULE FOR INTERIOR VERTICAL MULLION'S & JAMB MULLION'S HEAD/SILL CONNECTIONS

MAXIMUM DESIGN PRESSURE RATING W (psf) FOR 1/4" MAX. SHIM SPACE (CONTINUED)

MAXIMUM MULLION SPAN	EFFECTIVE SPACING	POURED CONCRETE SUBSTRATE										WOOD (2) 1 1/2" Min. THK. SUBSTRATE										STEEL 1/4" Min. THK.				
		FASTENERS TYPE A (1/4"ø)					FASTENERS TYPE B (3/8"ø)					FASTENERS TYPE C (1/4"ø)					FASTENERS TYPE D (3/8"ø)					FASTENERS TYPE E (3/8"ø)				
"L" (Ft-in)	"b" (Ft-in)	n = 4	n = 6	n = 8	n = 10	n = 12	n = 4	n = 6	n = 8	n = 10	n = 12	n = 4	n = 6	n = 8	n = 10	n = 12	n = 4	n = 6	n = 8	n = 10	n = 12	n = 4	n = 6	n = 8	n = 10	n = 12
11 ' - 6 "	3 ' - 6 "	56.2	84.3	112.4	140.0	140.0	140.0	140.0	140.0	140.0	140.0	46.6	69.9	112.4	116.6	139.9	43.7	65.6	87.5	109.3	131.2	140.0	140.0	140.0	140.0	140.0
	4 ' - 0 "	49.2	73.8	98.4	123.0	140.0	127.5	140.0	140.0	140.0	140.0	40.8	61.2	98.4	102.0	122.4	38.3	57.4	76.5	95.7	114.8	140.0	140.0	140.0	140.0	140.0
	4 ' - 6 "	43.7	65.6	87.4	109.3	131.2	113.3	140.0	140.0	140.0	140.0	36.3	54.4	87.4	90.7	108.8	34.0	51.0	68.0	85.0	102.1	140.0	140.0	140.0	140.0	140.0
	5 ' - 0 "	39.3	59.0	78.7	98.4	118.0	102.0	140.0	140.0	140.0	140.0	32.6	49.0	78.7	81.6	97.9	30.6	45.9	61.2	76.5	91.8	126.8	140.0	140.0	140.0	140.0
	5 ' - 6 "	35.8	53.7	71.5	89.4	107.3	92.7	139.1	140.0	140.0	140.0	29.7	44.5	71.5	74.2	89.0	27.8	41.7	55.7	69.6	83.5	116.2	140.0	140.0	140.0	140.0
	6 ' - 0 "	32.8	49.2	65.6	82.0	98.4	85.0	127.5	140.0	140.0	140.0	27.2	40.8	65.6	68.0	81.6	25.5	38.3	51.0	63.8	76.5	105.6	140.0	140.0	140.0	140.0
	6 ' - 6 "	30.3	45.4	60.5	75.7	90.8	78.5	117.7	140.0	140.0	140.0	25.1	37.7	60.5	62.8	75.3	23.6	35.3	47.1	58.9	70.7	97.5	140.0	140.0	140.0	140.0
	7 ' - 0 "	28.1	42.2	56.2	70.3	84.3	72.8	109.3	140.0	140.0	140.0	23.3	35.0	56.2	58.3	69.9	21.9	32.8	43.7	54.7	65.6	90.5	135.8	140.0	140.0	140.0
12 ' - 0 "	3 ' - 6 "	53.9	80.8	107.7	134.7	140.0	139.6	140.0	140.0	140.0	140.0	44.7	67.0	107.7	111.7	134.1	41.9	62.9	83.8	104.8	125.7	140.0	140.0	140.0	140.0	140.0
	4 ' - 0 "	47.1	70.7	94.3	117.8	140.0	122.2	140.0	140.0	140.0	140.0	39.1	58.7	94.3	97.8	117.3	36.7	55.0	73.3	91.7	110.0	140.0	140.0	140.0	140.0	140.0
	4 ' - 6 "	41.9	62.9	83.8	104.8	125.7	108.6	140.0	140.0	140.0	140.0	34.8	52.1	83.8	86.9	104.3	32.6	48.9	65.2	81.5	97.8	135.0	140.0	140.0	140.0	140.0
	5 ' - 0 "	37.7	56.6	75.4	94.3	113.1	97.7	140.0	140.0	140.0	140.0	31.3	46.9	75.4	78.2	93.8	29.3	44.0	58.7	73.3	88.0	121.6	140.0	140.0	140.0	140.0
	5 ' - 6 "	34.3	51.4	68.6	85.7	102.8	88.9	133.3	140.0	140.0	140.0	28.4	42.7	68.6	71.1	85.3	26.7	40.0	53.3	66.7	80.0	110.4	140.0	140.0	140.0	140.0
	6 ' - 0 "	31.4	47.1	62.9	78.6	94.3	81.4	122.2	140.0	140.0	140.0	26.1	39.1	62.9	65.2	78.2	24.4	36.7	48.9	61.1	73.3	101.2	140.0	140.0	140.0	140.0
	6 ' - 6 "	29.0	43.5	58.0	72.5	87.0	75.2	112.8	140.0	140.0	140.0	24.1	36.1	58.0	60.2	72.2	22.6	33.9	45.1	56.4	67.7	93.4	140.0	140.0	140.0	140.0
	7 ' - 0 "	26.9	40.4	53.9	67.3	80.8	69.8	104.7	139.6	140.0	140.0	22.3	33.5	53.9	55.9	67.0	21.0	31.4	41.9	52.4	62.9	86.8	130.2	140.0	140.0	140.0
12 ' - 6 "	3 ' - 6 "	51.7	77.6	103.4	129.3	140.0	134.0	140.0	140.0	140.0	140.0	42.9	64.3	103.4	107.2	128.7	40.2	60.4	80.5	100.6	120.7	140.0	140.0	140.0	140.0	140.0
	4 ' - 0 "	45.3	67.9	90.5	113.1	135.8	117.3	140.0	140.0	140.0	140.0	37.5	56.3	90.5	93.8	112.6	35.2	52.8	70.4	88.0	105.6	140.0	140.0	140.0	140.0	140.0
	4 ' - 6 "	40.2	60.3	80.4	100.6	120.7	104.3	140.0	140.0	140.0	140.0	33.4	50.0	80.4	83.4	100.1	31.3	46.9	62.6	78.2	93.9	129.6	140.0	140.0	140.0	140.0
	5 ' - 0 "	36.2	54.3	72.4	90.5	108.6	93.8	140.0	140.0	140.0	140.0	30.0	45.0	72.4	75.1	90.1	28.2	42.2	56.3	70.4	84.5	116.6	140.0	140.0	140.0	140.0
	5 ' - 6 "	32.9	49.4	65.8	82.3	98.7	85.3	127.9	140.0	140.0	140.0	27.3	40.9	65.8	68.2	81.9	25.6	38.4	51.2	64.0	76.8	106.0	140.0	140.0	140.0	140.0
	6 ' - 0 "	30.2	45.3	60.3	75.4	90.5	78.2	117.3	140.0	140.0	140.0	25.0	37.5	60.3	62.6	75.1	23.5	35.2	46.9	58.7	70.4	97.2	140.0	140.0	140.0	140.0
	6 ' - 6 "	27.8	41.8	55.7	69.6	83.5	72.2	108.3	140.0	140.0	140.0	23.1	34.6	55.7	57.7	69.3	21.7	32.5	43.3	54.2	65.0	89.7	134.6	140.0	140.0	140.0
	7 ' - 0 "	25.9	38.8	51.7	64.6	77.6	67.0	100.5	134.0	140.0	140.0	21.4	32.2	51.7	53.6	64.3	20.1	30.2	40.2	50.3	60.4	83.3	124.9	140.0	140.0	140.0
13 ' - 0 "	3 ' - 6 "	49.7	74.6	99.5	124.3	140.0	128.9	140.0	140.0	140.0	140.0	41.2	61.9	99.5	103.1	123.7	38.7	58.0	77.4	96.7	116.1	140.0	140.0	140.0	140.0	140.0
	4 ' - 0 "	43.5	65.3	87.0	108.8	130.6	112.8	140.0	140.0	140.0	140.0	36.1	54.1	87.0	90.2	108.3	33.9	50.8	67.7	84.6	101.6	140.0	140.0	140.0	140.0	140.0
	4 ' - 6 "	38.7	58.0	77.4	96.7	116.0	100.2	140.0	140.0	140.0	140.0	32.1	48.1	77.4	80.2	96.2	30.1	45.1	60.2	75.2	90.3	124.6	140.0	140.0	140.0	140.0
	5 ' - 0 "	34.8	52.2	69.6	87.0	104.4	90.2	135.3	140.0	140.0	140.0	28.9	43.3	69.6	72.2	86.6	27.1	40.6	54.2	67.7	81.2	112.1	140.0	140.0	140.0	140.0
	5 ' - 6 "	31.6	47.5	63.3	79.1	94.9	82.0	123.0	140.0	140.0	140.0	26.2	39.4	63.3	65.6	78.7	24.6	36.9	49.2	61.6	73.9	101.9	140.0	140.0	140.0	140.0
	6 ' - 0 "	29.0	43.5	58.0	72.5	87.0	75.2	112.8	140.0	140.0	140.0	24.1	36.1	58.0	60.2	72.2	22.6	33.9	45.1	56.4	67.7	93.4	140.0	140.0	140.0	140.0
	6 ' - 6 "	26.8	40.2	53.6	66.9	80.3	69.4	104.1	138.8	140.0	140.0	22.2	33.3	53.6	55.5	66.6	20.8	31.2	41.7	52.1	62.5	86.3	129.4	140.0	140.0	140.0
	7 ' - 0 "	24.9	37.3	49.7	62.2	74.6	64.4	96.7	128.9	140.0	140.0	20.6	30.9	49.7	51.6	61.9	19.3	29.0	38.7	48.4	58.0	80.1	120.1	140.0	140.0	140.0
13 ' - 6 "	3 ' - 6 "	47.9	71.8	95.8	119.7	140.0	124.1	140.0	140.0	140.0	140.0	39.7	59.6	95.8	99.3	119.2	37.3	55.9	74.5	93.1	111.8	140.0	140.0	140.0	140.0	140.0
	4 ' - 0 "	41.9	62.9	83.8	104.8	125.7	108.6	140.0	140.0	140.0	140.0	34.8	52.1	83.8	86.9	104.3	32.6	48.9	65.2	81.5	97.8	135.0	140.0	140.0	140.0	140.0
	4 ' - 6 "	37.2	55.9	74.5	93.1	111.7	96.5	140.0	140.0	140.0	140.0	30.9	46.3	74.5	77.2	92.7	29.0	43.5	58.0	72.4	86.9	120.0	140.0	140.0	140.0	140.0
	5 ' - 0 "	33.5	50.3	67.0	83.8	100.6	86.9	130.3	140.0	140.0	140.0	27.8	41.7	67.0	69.5	83.4	26.1	39.1	52.2	65.2	78.2	108.0	140.0	140.0	140.0	140.0
	5 ' - 6 "	30.5	45.7	60.9	76.2	91.4	79.0	118.5	140.0	140.0	140.0	25.3	37.9	60.9	63.2	75.8	23.7	35.6	47.4	59.3	71.1	98.2	140.0	140.0	140.0	140.0
	6 ' - 0 "	27.9	41.9	55.9	69.8	83.8	72.4	108.6	140.0	140.0	140.0	23.2	34.8	55.9	57.9	69.5	21.7	32.6	43.5	54.3	65.2	90.0	135.0	140.0	140.0	140.0
	6 ' - 6 "	25.8	38.7	51.6	64.5	77.4	66.8	100.2	133.7	140.0	140.0	21.4	32.1	51.6	53.5	64.2	20.1	30.1	40.1	50.2	60.2	83.1	124.6	140.0	140.0	140.0
	7 ' - 0 "	23.9	35.9	47.9	59.9	71.8	62.1	93.1	124.1	140.0	140.0	19.9	29.8	47.9	49.7	59.6	18.6	27.9	37.3	46.6	55.9	77.1	115.7	140.0	140.0	140.0
14 ' - 0 "	3 ' - 6 "	46.2	69.3	92.4	115.4	138.6	119.7	140.0	140.0	140.0	140.0	38.3	57.5	92.4	95.8	114.9	35.9	53.9	71.9	89.8	107.8	140.0	140.0	140.0	140.0	140.0
	4 ' - 0 "	40.4	60.6	80.8	101.0	121.2	104.7	140.0	140.0	140.0	140.0	33.5	50.3	80.8	83.8	100.5	31.4	47.2	62.9	78.6	94.3	130.2	140.0	140.0	140.0	140.0
	4 ' - 6 "	35.9	53.9	71.8	89.8	107.7	93.1	139.6	140.0	140.0	140.0	29.8	44.7	71.8	74.5	89.4	27.8	41.9	55.9	69.9	83.8	115.7	140.0	140.0	140.0	140.0
	5 ' - 0 "	32.3	48.5	64.6	80.8	97.0	83.8	125.7	140.0	140.0	140.0	26.8	40.2	64.6	67.0	80.4	25.1	37.7	50.3	62.9	75.4	104.1	140.0	140.0	140.0	140.0
	5 ' - 6 "	29.4	44.1	58.8	73.5	88.2	76.2	114.2	140.0	140.0	140.0	24.4	36.6	58.8	60.9	73.1	22.9	34.3	45.7	57.2	68.6	94.7	140.0	140.0	140.0	140.0
	6 ' - 0 "	26.9	40.4	53.9	67.3	80.8	69.8	104.7	139.6	140.0	140.0	22.3	33.5	53.9	55.9	67.0	21.0	31.4	41.9	52.4	62.9	86.8	130.2	140.0	140.0	140.0
	6 ' - 6 "	24.9	37.3	49.7	62.2	74.6	64.4	96.7	128.9	140.0	140.0	20.6	30.9	49.7	51.6	61.9	19.3	29.0	38.7	48.4	58.0	80.1	120.1	140.0	140.0	140.0
	7 ' - 0 "	23.1	34.6	46.2	57.7	69.3	59.8	89.8	119.7	140.0	140.0	19.2	28.7	46.2	47.9	57.5	18.0	26.9	35.9	44.9	53.9	74.4	111.6	140.0	140.0	140.0
14 ' - 6 "	3 ' - 6 "	44.6	66.9	89.2	111.5	133.8	115.6	140.0	140.0	140.0	140.0	37.0	55.5	89.2	92.5	110.9	34.7	52.0	69.4	86.7	104.1	140.0	140.0	140.0	140.0	140.0
	4 ' - 0 "	39.0	58.5	78.0	97.5	117.0	101.1	140.0	140.0	140.0	140.0	32.4	48.5	78.0	80.9	97.1	30.4	45.5	60.7	75.9	91.1	125.7	140.0	140.0	140.0	140.0
	4 ' - 6 "	34.7	52.0	69.4	86.7	104.0	89.9	134.8	140.0	140.0	140.0	28.8	43.1	69.4	71.9	86.3	27.0	40.5	54.0	67.4	80.9	111.7	140.0	140.0	140.0	140.0
	5 ' - 0 "	31.2	46.8	62.4	78.0	93.6	80.9	121.3	140.0	140.0	140.0	25.9	38.8	62.4	64.7	77.7	24.3	36.4	48.6	60.7	72.8	100.5	140.0	140.0	140.0	140.0
	5 ' - 6 "	28.4	42.6	56.7	70.9	85.1	73.5	110.3	140.0	140.0	140.0	23.5	35.3	56.7	58.8	70.6	22.1	33.1	44.1	55.2	66.2	91.4	137.1	140.0	140.0	140.0
	6 ' - 0 "	26.0	39.0	52.0	65.0	78.0	67.4	101.1	134.8	140.0	140.0	21.6	32.4	52.0	53.9	64.7	20.2	30.4	40.5	50.6	60.7	83.8	125.7	140.0	140.0	140.0
	6 ' - 6 "	24.0	36.0	48.0	60.0	72.0	62.2	93.3	124.4	140.0	140.0	19.9	29.9	48.0	49.8	59.7	18.7	28.0	37.4	46.7	56.0	77.3	116.0	140.0	140.0	140.0
	7 ' - 0 "	22.3	33.4	44.6	55.7	66.9	57.8	86.7	115.6	140.0	140.0	18.5	27.7	44.6	46.2	55.5	17.3	26.0	34.7	43.4	52.0	71.8	107.7	140.0	140.0	140.0

FASTENERS TYPES & SUBSTRATES REQUIREMENTS:

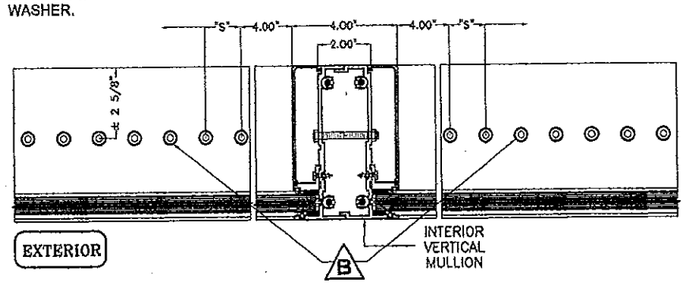
A - 1/4"Ø ELCO CONSTRUCTION PRODUCTS, ULTRACON ANCHOR W/ 1 3/4" Min. EMBEDMENT INTO POURED CONCRETE (Min. f'c = 2,730 ksi), W/ S = 4" MIN. SPACING & 2 1/2" MIN. EDGE DISTANCE. FOR MAXIMUM SPACING, EMBEDMENT & EDGE DISTANCE ARE BEYOND ANY FINISH MATERIAL.

B - 3/8"Ø POWERS FASTENERS, WEDGE-BOLT ANCHOR W/ 2" Min. EMBEDMENT INTO POURED CONCRETE (Min. f'c = 3.0 ksi), W/ S = 3" MIN. SPACING & 3 1/4" MIN. EDGE DISTANCE. FOR MAXIMUM SPACING, EMBEDMENT & EDGE DISTANCE ARE BEYOND ANY FINISH MATERIAL.

C - 1/4"Ø ELCO CONSTRUCTION PRODUCTS, ULTRACON ANCHOR TO (2) 2" x WOOD BUCKS (G=0.55) W/ 3" Min. PENETRATION INTO WOOD, W/ S = 2" Min. SPACING & 1" MIN. EDGE DISTANCE. FOR MAXIMUM SPACING, EMBEDMENT & EDGE DISTANCE ARE BEYOND ANY FINISH MATERIAL.

D - 3/8"Ø LAG SCREW TO (2) 2" x WOOD BUCKS (G=0.55) W/ 3" Min. PENETRATION INTO WOOD, W/ S = 2" Min. SPACING & 1 1/2" MIN. EDGE DISTANCE. FOR MAXIMUM SPACING, EMBEDMENT & EDGE DISTANCE ARE BEYOND ANY FINISH MATERIAL.

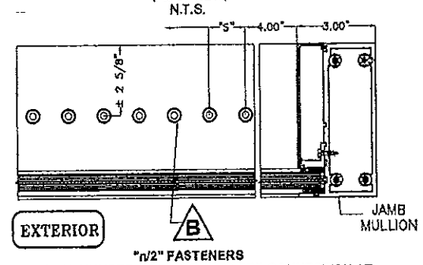
E - 3/8"Ø TYPE "F" BOLT TO 1/4" Min. THK. ASTM A-36 STEEL W/ S = 2" MIN. SPACING & 1" MIN. EDGE DISTANCE OR 3/8"Ø SAE GRADE 5 GALVANIZED STEEL HHB THRU BOLT W/ NUT & LOCK WASHER.



"n" FASTENERS
n = TOTAL NUMBER OF FASTENERS PER CONNECTION AT HEAD/SILL, EQUALLY INSTALLED AT EACH SIDE OF INTERIOR VERTICAL MULLION

SILL OR HEAD CONNECTION DETAIL @ INTERIOR VERTICAL MULLION

(PLAN VIEW)
N.T.S.



"n/2" FASTENERS
n/2 = TOTAL NUMBER OF FASTENERS PER CONNECTION AT HEAD/SILL, INSTALLED AT ONE SIDE OF JAMB MULLION

SILL OR HEAD CONNECTION DETAIL @ JAMB MULLION

(PLAN VIEW)
N.T.S.

PRODUCT REVISED
is complying with the Florida Building Code
Acceptance No 13-0930.14
Expiration Date Jan 13, 2016
By Manuel Saez
Miami Dade Product Control

MIAMI--DADE COUNTY

WALTER A. TILLIT JR. LICENSE NO 44167 STATE OF FLORIDA PROFESSIONAL ENGINEER 2/15/14

P.E. SEAL/SIGNATURE/DATE

FLORIDA BUILDING CODE (HIGH VELOCITY HURRICANE ZONE)

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e-mail: tilteco@aol.com
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WALTER A. TILLIT Jr. P.E.
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REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 12-002	06/28/13	3	-	-
2	GENERAL	08/05/14	4	-	-

M.C.V./A.G. DRAWN BY

06/26/13 DATE

13-053 DRAWING No

MAXIMUM A.S.D. DESIGN PRESSURE RATING SCHEDULE FOR INTERIOR VERTICAL MULLION'S & JAMB MULLION'S HEAD/SILL CONNECTIONS

MAXIMUM MULLION SPAN	EFFECTIVE SPACING	MAXIMUM DESIGN PRESSURE RATING W (psf) FOR 1/4" MAX. SHIM SPACE (CONTINUED)																								
		POURED CONCRETE SUBSTRATE										WOOD (2) 1 1/2" Min. THK. SUBSTRATE										STEEL 1/4" Min. THK.				
		FASTENERS TYPE A (1/4"ø)					FASTENERS TYPE B (3/8"ø)					FASTENERS TYPE C (1/4"ø)					FASTENERS TYPE D (3/8"ø)					FASTENERS TYPE E (3/8"ø)				
"L" (Ft-in)	"b" (Ft-in)	n=4	n=6	n=8	n=10	n=12	n=4	n=6	n=8	n=10	n=12	n=4	n=6	n=8	n=10	n=12	n=4	n = 6	n = 8	n = 10	n = 12	n = 4	n = 6	n = 8	n = 10	n = 12
15 '- 0 "	3 '- 6 "	43.1	64.6	86.2	107.7	129.3	111.7	140.0	140.0	140.0	140.0	35.7	53.6	86.2	89.4	107.2	33.5	50.3	67.1	83.8	100.6	138.8	140.0	140.0	140.0	140.0
	4 '- 0 "	37.7	56.6	75.4	94.3	113.1	97.7	140.0	140.0	140.0	140.0	31.3	46.9	75.4	78.2	93.8	29.3	44.0	58.7	73.3	88.0	121.5	140.0	140.0	140.0	140.0
	4 '- 6 "	33.5	50.3	67.0	83.8	100.6	86.9	130.3	140.0	140.0	140.0	27.8	41.7	67.0	69.5	83.4	26.1	39.1	52.2	65.2	78.2	108.0	140.0	140.0	140.0	140.0
	5 '- 0 "	30.2	45.3	60.3	75.4	90.5	78.2	117.3	140.0	140.0	140.0	25.0	37.5	60.3	62.6	75.1	23.5	35.2	46.9	58.7	70.4	97.2	140.0	140.0	140.0	140.0
	5 '- 6 "	27.4	41.1	54.9	68.6	82.3	71.1	106.6	140.0	140.0	140.0	22.7	34.1	54.9	56.9	68.2	21.3	32.0	42.7	53.3	64.0	88.3	132.5	140.0	140.0	140.0
	6 '- 0 "	25.1	37.7	50.3	62.9	75.4	65.2	97.7	130.3	140.0	140.0	20.9	31.3	50.3	52.1	62.6	19.6	29.3	39.1	48.9	58.7	81.0	121.5	140.0	140.0	140.0
	6 '- 6 "	23.2	34.8	46.4	58.0	69.6	60.1	90.2	120.3	140.0	140.0	19.2	28.9	46.4	48.1	57.7	18.1	27.1	36.1	45.1	54.2	74.8	112.1	140.0	140.0	140.0
	7 '- 0 "	21.5	32.3	43.1	53.9	64.6	55.9	83.8	111.7	139.6	140.0	17.9	26.8	43.1	44.7	53.6	16.8	25.1	33.5	41.9	50.3	69.4	104.1	138.8	140.0	140.0
15 '- 6 "	3 '- 6 "	41.7	62.6	83.4	104.3	125.1	108.1	140.0	140.0	140.0	140.0	34.6	51.9	83.4	86.5	103.8	32.4	48.7	64.9	81.1	97.3	134.4	140.0	140.0	140.0	140.0
	4 '- 0 "	36.5	54.7	73.0	91.2	109.5	94.6	140.0	140.0	140.0	140.0	30.3	45.4	73.0	75.7	90.8	28.4	42.6	56.8	71.0	85.2	117.6	140.0	140.0	140.0	140.0
	4 '- 6 "	32.4	48.7	64.9	81.1	97.3	84.1	126.1	140.0	140.0	140.0	26.9	40.4	64.9	67.3	80.7	25.2	37.8	50.6	63.1	75.7	104.5	140.0	140.0	140.0	140.0
	5 '- 0 "	29.2	43.8	58.4	73.0	87.6	75.7	113.5	140.0	140.0	140.0	24.2	36.3	58.4	60.5	72.7	22.7	34.1	45.4	56.8	68.1	94.0	140.0	140.0	140.0	140.0
	5 '- 6 "	26.5	39.8	53.1	66.4	79.6	68.8	103.2	137.6	140.0	140.0	22.0	33.0	53.1	55.0	66.0	20.6	31.0	41.3	51.6	61.9	85.5	128.2	140.0	140.0	140.0
	6 '- 0 "	24.3	36.5	48.7	60.8	73.0	63.1	94.6	126.1	140.0	140.0	20.2	30.3	48.7	50.5	60.5	18.9	28.4	37.9	47.3	56.8	78.4	117.6	140.0	140.0	140.0
	6 '- 6 "	22.5	33.7	44.9	56.1	67.4	58.2	87.3	116.4	140.0	140.0	18.6	27.9	44.9	46.6	55.9	17.5	26.2	34.9	43.7	52.4	72.3	108.5	140.0	140.0	140.0
	7 '- 0 "	20.9	31.3	41.7	52.1	62.6	54.0	81.1	108.1	135.1	140.0	17.3	25.9	41.7	43.2	51.9	16.2	24.3	32.4	40.6	48.7	67.2	100.8	134.4	140.0	140.0
15 '- 9 "	3 '- 6 "	41.0	61.6	82.1	102.6	123.1	106.4	140.0	140.0	140.0	140.0	34.0	51.1	82.1	85.1	102.1	31.9	47.9	63.9	79.8	95.8	132.2	140.0	140.0	140.0	140.0
	4 '- 0 "	35.9	53.9	71.8	89.8	107.7	93.1	139.6	140.0	140.0	140.0	29.8	44.7	71.8	74.5	89.4	27.9	41.9	55.9	69.9	83.8	116.7	140.0	140.0	140.0	140.0
	4 '- 6 "	31.9	47.9	63.8	79.8	95.8	82.7	124.1	140.0	140.0	140.0	26.5	39.7	63.8	66.2	79.4	24.8	37.3	49.7	62.1	74.5	102.8	140.0	140.0	140.0	140.0
	5 '- 0 "	28.7	43.1	57.5	71.8	86.2	74.5	111.7	140.0	140.0	140.0	23.8	35.7	57.5	59.6	71.5	22.4	33.6	44.7	55.9	67.1	92.6	138.8	140.0	140.0	140.0
	5 '- 6 "	26.1	39.2	52.2	65.3	78.4	67.7	101.5	135.4	140.0	140.0	21.7	32.5	52.2	54.2	65.0	20.3	30.5	40.6	50.8	61.0	84.1	126.2	140.0	140.0	140.0
	6 '- 0 "	23.9	35.9	47.9	59.9	71.8	62.1	93.1	124.1	140.0	140.0	19.9	29.8	47.9	49.7	59.6	18.6	27.9	37.3	46.6	55.9	77.1	115.7	140.0	140.0	140.0
	6 '- 6 "	22.1	33.2	44.2	55.3	66.3	57.3	85.9	114.6	140.0	140.0	18.3	27.5	44.2	45.8	55.0	17.2	25.8	34.4	43.0	51.6	71.2	106.8	140.0	140.0	140.0
	7 '- 0 "	20.5	30.8	41.0	51.3	61.6	53.2	79.8	106.4	133.0	140.0	17.0	25.5	41.0	42.6	51.1	16.0	24.0	31.9	39.9	47.9	66.1	99.2	132.2	140.0	140.0

B FASTENERS TYPES & SUBSTRATES REQUIREMENTS:

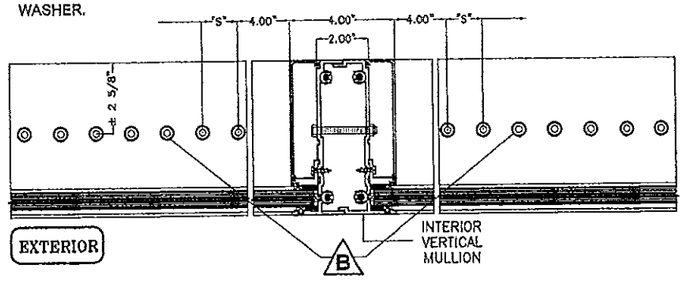
A - 1/4"Ø ELCO CONSTRUCTION PRODUCTS, ULTRACON ANCHOR W/ 1 3/4" Min. EMBEDMENT INTO POURED CONCRETE (Min. f'c = 2,730 ksi), W/ S = 4" MIN. SPACING & 2 1/2" MIN. EDGE DISTANCE. FOR MAXIMUM SPACING, EMBEDMENT & EDGE DISTANCE ARE BEYOND ANY FINISH MATERIAL.

B - 3/8"Ø POWERS FASTENERS, WEDGE-BOLT ANCHOR W/ 2" Min. EMBEDMENT INTO POURED CONCRETE (Min. f'c = 3.0 ksi), W/ S = 3" MIN. SPACING & 3 1/4" MIN. EDGE DISTANCE, FOR MAXIMUM SPACING, EMBEDMENT & EDGE DISTANCE ARE BEYOND ANY FINISH MATERIAL.

C - 1/4"Ø ELCO CONSTRUCTION PRODUCTS, ULTRACON ANCHOR TO (2) 2" x WOOD BUCKS (G=0.55) W/ 3" Min. PENETRATION INTO WOOD, W/ S = 2" Min. SPACING & 1" MIN. EDGE DISTANCE. FOR MAXIMUM SPACING, EMBEDMENT & EDGE DISTANCE ARE BEYOND ANY FINISH MATERIAL.

D - 3/8"Ø LAG SCREW TO (2) 2" x WOOD BUCKS (G=0.55) W/ 3" Min. PENETRATION INTO WOOD, W/ S = 2" Min. SPACING & 1 1/2" MIN. EDGE DISTANCE. FOR MAXIMUM SPACING, EMBEDMENT & EDGE DISTANCE ARE BEYOND ANY FINISH MATERIAL.

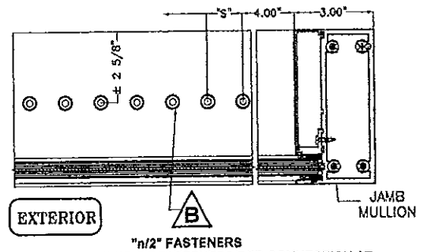
E - 3/8"Ø TYPE "F" BOLT TO 1/4" Min. THK. ASTM A-36 STEEL W/ S = 2" MIN. SPACING & 1" MIN. EDGE DISTANCE OR 3/8"Ø SAE GRADE 5 GALVANIZED STEEL HHB THRU BOLT W/ NUT & LOCK WASHER.



"n" FASTENERS
n = TOTAL NUMBER OF FASTENERS PER CONNECTION AT HEAD/SILL, EQUALLY INSTALLED AT EACH SIDE OF INTERIOR VERTICAL MULLION

SILL OR HEAD CONNECTION DETAIL @ INTERIOR VERTICAL MULLION

(PLAN VIEW)
N.T.S.



"n/2" FASTENERS
n/2 = TOTAL NUMBER OF FASTENERS PER CONNECTION AT HEAD/SILL, INSTALLED AT ONE SIDE OF JAMB MULLION

SILL OR HEAD CONNECTION DETAIL @ JAMB MULLION

(PLAN VIEW)
N.T.S.

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 13-0930.14
Expiration Date Jan. 13, 2016
By Manuel Perez
Miami-Dade Product Control

MIAMI-DADE COUNTY

WALTER A. TILLIT JR. LICENSE No. 44167 STATE OF FLORIDA PROFESSIONAL ENGINEER 7/15/14

P.E. SEAL/SIGNATURE/DATE

FLORIDA BUILDING CODE (HIGH VELOCITY HURRICANE ZONE)

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REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	CLD 12-002	08/28/13	3	-	-
2	GENERAL	05/05/14	4	-	-

M.C.V./A.G. DRAWN BY
06/26/13 DATE
13-053 DRAWING No

MAXIMUM A.S.D. DESIGN PRESSURE RATING SCHEDULE FOR INTERIOR VERTICAL MULLION'S & JAMB MULLION'S HEAD/SILL CONNECTIONS

MAXIMUM DESIGN PRESSURE RATING W (psf) FOR 3/8" MAX. LOAD BEARINGSHIM SPACE

MAXIMUM MULLION SPAN "L" (Ft-In)	EFFECTIVE SPACING "b" (Ft-In)	POURED CONCRETE SUBSTRATE										WOOD (2) 2" x THK. SUBSTRATE										STEEL 1/4" Min. THK. SUBSTRATE					
		FASTENERS TYPE A (1/4"ø)					FASTENERS TYPE B (3/8"ø)					FASTENERS TYPE C (1/4"ø)					FASTENERS TYPE D (3/8"ø)					FASTENERS TYPE E (3/8"ø)				
		n = 4	n = 6	n = 8	n = 10	n = 12	n = 4	n = 6	n = 8	n = 10	n = 12	n = 4	n = 6	n = 8	n = 10	n = 12	n = 4	n = 6	n = 8	n = 10	n = 12	n = 4	n = 6	n = 8	n = 10	n = 12
8'-0" OR LESS	3'-6"	56.7	88.0	117.4	140.0	140.0	140.0	140.0	140.0	140.0	140.0	58.7	88.0	117.4	140.0	140.0	52.9	94.3	125.7	140.0	140.0	140.0	140.0	140.0	140.0	140.0
	4'-0"	51.4	77.0	102.7	128.4	140.0	140.0	140.0	140.0	140.0	140.0	51.4	77.0	102.7	128.4	140.0	55.0	82.5	110.0	137.5	140.0	140.0	140.0	140.0	140.0	140.0
	4'-6"	45.7	68.5	91.3	114.1	137.0	135.1	140.0	140.0	140.0	140.0	45.7	68.5	91.3	114.1	137.0	48.9	73.3	97.8	122.2	140.0	140.0	140.0	140.0	140.0	140.0
	5'-0"	41.1	61.6	82.2	102.7	123.3	121.6	140.0	140.0	140.0	140.0	41.1	61.6	82.2	102.7	123.3	44.0	66.0	88.0	110.0	132.0	138.5	140.0	140.0	140.0	140.0
	5'-6"	37.4	56.0	74.7	93.4	112.1	110.5	140.0	140.0	140.0	140.0	37.4	56.0	74.7	93.4	112.1	40.0	60.0	80.0	100.0	120.0	125.8	140.0	140.0	140.0	140.0
	6'-0"	34.2	51.4	68.5	85.6	102.7	101.3	140.0	140.0	140.0	140.0	34.2	51.4	68.5	85.6	102.7	36.7	55.0	73.3	91.7	110.0	115.4	140.0	140.0	140.0	140.0
	6'-6"	31.6	47.4	63.2	79.0	94.8	93.5	140.0	140.0	140.0	140.0	31.6	47.4	63.2	79.0	94.8	33.9	50.8	67.7	84.6	101.6	106.5	140.0	140.0	140.0	140.0
	7'-0"	29.3	44.0	58.7	73.4	88.0	86.8	130.3	140.0	140.0	140.0	29.3	44.0	58.7	73.4	88.0	31.4	47.2	62.9	78.6	94.3	98.9	140.0	140.0	140.0	140.0
8'-6"	3'-6"	55.2	82.9	110.5	138.1	140.0	140.0	140.0	140.0	140.0	140.0	55.2	82.9	110.5	138.1	140.0	59.2	88.8	118.3	140.0	140.0	140.0	140.0	140.0	140.0	140.0
	4'-0"	48.3	72.5	96.7	120.8	140.0	140.0	140.0	140.0	140.0	140.0	48.3	72.5	96.7	120.8	140.0	51.8	77.7	103.6	129.4	140.0	140.0	140.0	140.0	140.0	140.0
	4'-6"	43.0	64.5	85.9	107.4	128.9	127.1	140.0	140.0	140.0	140.0	43.0	64.5	85.9	107.4	128.9	46.0	69.0	92.0	115.1	138.1	140.0	140.0	140.0	140.0	140.0
	5'-0"	38.7	58.0	77.3	96.7	116.0	114.4	140.0	140.0	140.0	140.0	38.7	58.0	77.3	96.7	116.0	41.4	62.1	82.8	103.6	124.3	130.3	140.0	140.0	140.0	140.0
	5'-6"	35.2	52.7	70.3	87.9	105.5	104.0	140.0	140.0	140.0	140.0	35.2	52.7	70.3	87.9	105.5	37.7	56.5	75.3	94.1	113.0	118.5	140.0	140.0	140.0	140.0
	6'-0"	32.2	48.3	64.5	80.6	96.7	95.4	140.0	140.0	140.0	140.0	32.2	48.3	64.5	80.6	96.7	34.5	51.8	69.0	86.3	103.6	108.6	140.0	140.0	140.0	140.0
	6'-6"	29.7	44.6	59.5	74.4	89.2	88.0	132.0	140.0	140.0	140.0	29.7	44.6	59.5	74.4	89.2	31.9	47.8	63.7	79.7	95.6	100.3	140.0	140.0	140.0	140.0
	7'-0"	27.6	41.4	55.2	69.1	82.9	81.7	122.6	140.0	140.0	140.0	27.6	41.4	55.2	69.1	82.9	29.6	44.4	59.2	74.0	88.8	93.1	139.7	140.0	140.0	140.0
9'-0"	3'-6"	52.2	78.3	104.4	130.4	140.0	140.0	140.0	140.0	140.0	140.0	52.2	78.3	104.4	130.4	140.0	55.8	83.8	111.8	139.7	140.0	140.0	140.0	140.0	140.0	140.0
	4'-0"	45.7	68.5	91.3	114.1	137.0	135.1	140.0	140.0	140.0	140.0	45.7	68.5	91.3	114.1	137.0	48.9	73.3	97.8	122.2	140.0	140.0	140.0	140.0	140.0	140.0
	4'-6"	40.6	60.9	81.2	101.5	121.7	120.1	140.0	140.0	140.0	140.0	40.6	60.9	81.2	101.5	121.7	43.5	65.2	86.9	108.7	130.4	136.8	140.0	140.0	140.0	140.0
	5'-0"	36.5	54.8	73.0	91.3	109.6	108.1	140.0	140.0	140.0	140.0	36.5	54.8	73.0	91.3	109.6	39.1	58.7	78.2	97.8	117.4	123.1	140.0	140.0	140.0	140.0
	5'-6"	33.2	49.8	66.4	83.0	99.6	98.3	140.0	140.0	140.0	140.0	33.2	49.8	66.4	83.0	99.6	35.6	53.3	71.1	88.9	106.7	111.9	140.0	140.0	140.0	140.0
	6'-0"	30.4	45.7	60.9	76.1	91.3	90.1	135.1	140.0	140.0	140.0	30.4	45.7	60.9	76.1	91.3	32.6	48.9	65.2	81.5	97.8	102.6	140.0	140.0	140.0	140.0
	6'-6"	28.1	42.1	56.2	70.2	84.3	83.1	124.7	140.0	140.0	140.0	28.1	42.1	56.2	70.2	84.3	30.1	45.1	60.2	75.2	90.3	94.7	140.0	140.0	140.0	140.0
	7'-0"	26.1	39.1	52.2	65.2	78.3	77.2	115.8	140.0	140.0	140.0	26.1	39.1	52.2	65.2	78.3	27.9	41.9	55.9	69.9	83.8	87.9	131.9	140.0	140.0	140.0
9'-6"	3'-6"	49.4	74.1	98.9	123.6	140.0	140.0	140.0	140.0	140.0	140.0	49.4	74.1	98.9	123.6	140.0	52.9	79.4	105.9	132.4	140.0	140.0	140.0	140.0	140.0	140.0
	4'-0"	43.3	64.9	86.5	108.1	129.8	128.0	140.0	140.0	140.0	140.0	43.3	64.9	86.5	108.1	129.8	46.3	69.5	92.7	115.8	139.0	140.0	140.0	140.0	140.0	140.0
	4'-6"	38.4	57.7	76.9	96.1	115.3	113.8	140.0	140.0	140.0	140.0	38.4	57.7	76.9	96.1	115.3	41.2	61.8	82.4	102.9	123.5	129.6	140.0	140.0	140.0	140.0
	5'-0"	34.6	51.9	69.2	86.5	103.8	102.4	140.0	140.0	140.0	140.0	34.6	51.9	69.2	86.5	103.8	37.1	55.6	74.1	92.7	111.2	116.6	140.0	140.0	140.0	140.0
	5'-6"	31.5	47.2	62.9	78.6	94.4	93.1	139.6	140.0	140.0	140.0	31.5	47.2	62.9	78.6	94.4	33.7	50.5	67.4	84.2	101.1	106.0	140.0	140.0	140.0	140.0
	6'-0"	28.8	43.3	57.7	72.1	86.5	85.3	128.0	140.0	140.0	140.0	28.8	43.3	57.7	72.1	86.5	30.9	46.3	61.8	77.2	92.7	97.2	140.0	140.0	140.0	140.0
	6'-6"	26.6	39.9	53.2	66.5	79.8	78.8	118.1	140.0	140.0	140.0	26.6	39.9	53.2	66.5	79.8	28.5	42.8	57.0	71.3	85.5	89.7	134.6	140.0	140.0	140.0
	7'-0"	24.7	37.1	49.4	61.8	74.1	73.1	109.7	140.0	140.0	140.0	24.7	37.1	49.4	61.8	74.1	26.5	39.7	52.9	66.2	79.4	83.3	125.0	140.0	140.0	140.0
10'-0"	3'-6"	47.0	70.4	93.9	117.4	140.0	139.0	140.0	140.0	140.0	140.0	47.0	70.4	93.9	117.4	140.0	50.3	75.4	100.6	125.7	140.0	140.0	140.0	140.0	140.0	140.0
	4'-0"	41.1	61.6	82.2	102.7	123.3	121.6	140.0	140.0	140.0	140.0	41.1	61.6	82.2	102.7	123.3	44.0	66.0	88.0	110.0	132.0	138.6	140.0	140.0	140.0	140.0
	4'-6"	36.5	54.8	73.0	91.3	109.6	108.1	140.0	140.0	140.0	140.0	36.5	54.8	73.0	91.3	109.6	39.1	58.7	78.2	97.8	117.4	123.1	140.0	140.0	140.0	140.0
	5'-0"	32.9	49.3	65.7	82.2	98.6	97.3	140.0	140.0	140.0	140.0	32.9	49.3	65.7	82.2	98.6	35.2	52.8	70.4	88.0	105.6	110.8	140.0	140.0	140.0	140.0
	5'-6"	29.9	44.8	59.8	74.7	89.6	88.4	132.6	140.0	140.0	140.0	29.9	44.8	59.8	74.7	89.6	32.0	48.0	64.0	80.0	96.0	100.7	140.0	140.0	140.0	140.0
	6'-0"	27.4	41.1	54.8	68.5	82.2	81.1	121.6	140.0	140.0	140.0	27.4	41.1	54.8	68.5	82.2	29.3	44.0	58.7	73.3	88.0	92.3	138.5	140.0	140.0	140.0
	6'-6"	25.3	37.9	50.6	63.2	75.9	74.8	112.2	140.0	140.0	140.0	25.3	37.9	50.6	63.2	75.9	27.1	40.6	54.2	67.7	81.2	85.2	127.8	140.0	140.0	140.0
	7'-0"	23.5	35.2	47.0	58.7	70.4	69.5	104.2	139.0	140.0	140.0	23.5	35.2	47.0	58.7	70.4	25.1	37.7	50.3	62.9	75.4	79.1	118.7	140.0	140.0	140.0
10'-6"	3'-6"	44.7	67.1	89.4	111.8	134.2	132.3	140.0	140.0	140.0	140.0	44.7	67.1	89.4	111.8	134.2	47.9	71.9	95.8	119.8	140.0	140.0	140.0	140.0	140.0	140.0
	4'-0"	39.1	58.7	78.3	97.8	117.4	115.8	140.0	140.0	140.0	140.0	39.1	58.7	78.3	97.8	117.4	41.9	62.9	83.8	104.8	125.7	131.9	140.0	140.0	140.0	140.0
	4'-6"	34.8	52.2	69.6	87.0	104.4	102.9	140.0	140.0	140.0	140.0	34.8	52.2	69.6	87.0	104.4	37.3	55.9	74.5	93.1	111.8	117.2	140.0	140.0	140.0	140.0
	5'-0"	31.3	47.0	62.6	78.3	93.9	92.6	139.0	140.0	140.0	140.0	31.3	47.0	62.6	78.3	93.9	33.5	50.3	67.1	83.8	100.6	105.5	140.0	140.0	140.0	140.0
	5'-6"	28.5	42.7	56.9	71.1	85.4	84.2	126.3	140.0	140.0	140.0	28.5	42.7	56.9	71.1	85.4	30.5	45.7	61.0	76.2	91.4	95.9	140.0	140.0	140.0	140.0
	6'-0"	26.1	39.1	52.2	65.2	78.3	77.2	115.8	140.0	140.0	140.0	26.1	39.1	52.2	65.2	78.3	27.9	41.9	55.9	69.9	83.8	87.9	131.9	140.0	140.0	140.0
	6'-6"	24.1	36.1	48.2	60.2	72.2	71.3	106.9	140.0	140.0	140.0	24.1	36.1	48.2	60.2	72.2	25.8	38.7	51.6	64.5	77.4	81.2	121.7	140.0	140.0	140.0
	7'-0"	22.4	33.5	44.7	55.9	67.1	66.2	99.3	132.3	140.0	140.0	22.4	33.5	44.7	55.9	67.1	24.0	35.9	47.9	59.9	71.9	75.4	113.1	140.0	140.0	140.0
11'-0"	3'-6"	42.7	64.0	85.4	106.7	128.1	126.3	140.0	140.0	140.0	140.0	42.7	64.0	85.4	106.7	128.1	45.7	68.6	91.4	114.3	137.2	140.0	140.0	140.0	140.0	140.0
	4'-0"	37.4	56.0	74.7	93.4	112.1	110.5	140.0	140.0	140.0	140.0	37.4	56.0	74.7	93.4	112.1	40.0	60.0	80.0	100.0	120.0	125.9	140.0	140.0	140.0	140.0
	4'-6"	33.2	49.8	66.4	83.0	99.6	98.3	140.0	140.0	140.0	140.0	33.2	49.8	66.4	83.0	99.6	35.6	53.3	71.1	88.9	106.7	111.9	140.0	140.0	140.0	140.0
	5'-0"	29.9	44.8	59.8	74.7	89.6	88.4	132.6	140.0	140.0	140.0	29.9	44.8	59.8	74.7	89.6	32.0	48.0	64.0	80.0	96.0	100.7	140.0	140.0	140.0	140.0
	5'-6"	27.2	40.7	54.3	67.9	81.5	80.4	120.6	140.0	140.0	140.0	27.2	40.7	54.3	67.9	81.5	29.1	43.6	58.2	72.7	87.3	91.6	137.3	140.0	140.0	140.0
	6'-0"	24.9	37.4	49.8	62.3	74.7	73.7	110.5	140.0	140.0	140.0	24.9	37.4	49.8	62.3	74.7	26.7	40.0	53.3	66.7	80.0	83.9	125.9	140.0	140.0	140.0
	6'-6"	22.0	33.0	44.0	55.0	66.0	65.1	97.6	130.1	140.0	140.0	22.0	33.0	44.0	55.0	66.0	23.6	35.3	47.1	58.9	70.7	74.1	111.2	140.0	140.0	140.0
	7'-0"	20.4	30.6	40.8	51.0	61.2	60.4	90.6	120.8	140.0	140.0	20.4	30.6	40.8	51.0	61.2	21.9	32.8	43.7	54.7	65.6	68.8	103.2	137.6	140.0	140.0

FASTENERS TYPES & SUBSTRATES REQUIREMENTS:

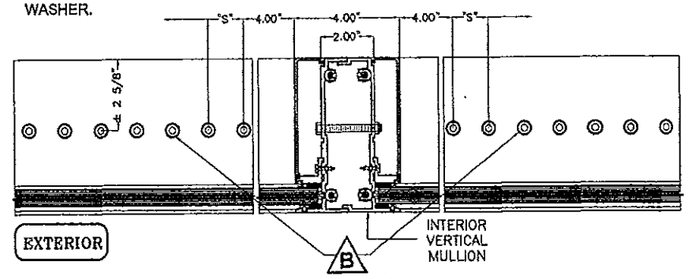
A - 1/4"Ø ELCO CONSTRUCTION PRODUCTS, ULTRACON ANCHOR W/ 1 3/4" Min. EMBEDMENT INTO POURED CONCRETE (Min. f'c = 2,730 ksi), W/ S = 4" MIN. SPACING & 2 1/2" MIN. EDGE DISTANCE. FOR MAXIMUM SPACING, EMBEDMENT & EDGE DISTANCE ARE BEYOND ANY FINISH MATERIAL.

B - 3/8"Ø POWERS FASTENERS, WEDGE-BOLT ANCHOR W/ 2" Min. EMBEDMENT INTO POURED CONCRETE (Min. f'c = 3.0 ksi), W/ S = 3" MIN. SPACING & 3 1/4" MIN. EDGE DISTANCE. FOR MAXIMUM SPACING, EMBEDMENT & EDGE DISTANCE ARE BEYOND ANY FINISH MATERIAL.

C - 1/4"Ø ELCO CONSTRUCTION PRODUCTS, ULTRACON ANCHOR TO (2) 2" x WOOD BUCKS (G=0.55) W/ 3" Min. PENETRATION INTO WOOD, W/ S = 2" Min. SPACING & 1" MIN. EDGE DISTANCE. FOR MAXIMUM SPACING, EMBEDMENT & EDGE DISTANCE ARE BEYOND ANY FINISH MATERIAL.

D - 3/8"Ø LAG SCREW TO (2) 2" x WOOD BUCKS (G=0.55) W/ 3" Min. PENETRATION INTO WOOD, W/ S = 2" Min. SPACING & 1 1/2" MIN. EDGE DISTANCE. FOR MAXIMUM SPACING, EMBEDMENT & EDGE DISTANCE ARE BEYOND ANY FINISH MATERIAL.

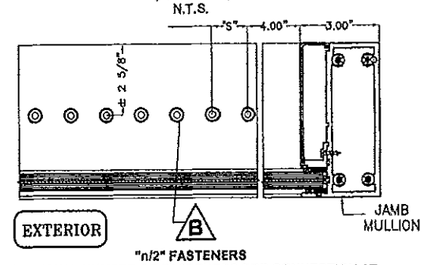
E - 3/8"Ø TYPE "F" BOLT TO 1/4" Min. THK. ASTM A-36 STEEL W/ S = 2" MIN. SPACING & 1" MIN. EDGE DISTANCE OR 3/8"Ø SAE GRADE 5 GALVANIZED STEEL HHB THRU BOLT W/ NUT & LOCK WASHER.



"n" FASTENERS
n = TOTAL NUMBER OF FASTENERS PER CONNECTION AT HEAD/SILL, EQUALLY INSTALLED AT EACH SIDE OF INTERIOR VERTICAL MULLION

SILL OR HEAD CONNECTION DETAIL @ INTERIOR VERTICAL MULLION

(PLAN VIEW)
N.T.S.



"n/2" FASTENERS
n/2 = TOTAL NUMBER OF FASTENERS PER CONNECTION AT HEAD/SILL, INSTALLED AT ONE SIDE OF JAMB MULLION

SILL OR HEAD CONNECTION DETAIL @ JAMB MULLION

(PLAN VIEW)
N.T.S.

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 13-0930.14
Expiration Date Jan. 13, 2016
By Manuel Perez
Miami Dade Product Control

MIAMI-DADE COUNTY

WALTER A. TILLIT JR. ENGINEER No. 44167 5/13/14 STATE OF FLORIDA PROFESSIONAL ENGINEER

P.E. SEAL/SIGNATURE/DATE

FLORIDA BUILDING CODE (HIGH VELOCITY HURRICANE ZONE)

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TILLIT TESTING & ENGINEERING COMPANY
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REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 12-002	06/26/13	3	-	-
2	GENERAL	05/05/14	4	-	-

M.C.V./A.G. DRAWN BY
06/26/13 DATE
13-053 DRAWING No

MAXIMUM A.S.D. DESIGN PRESSURE RATING SCHEDULE FOR INTERIOR VERTICAL MULLION'S & JAMB MULLION'S HEAD/SILL CONNECTIONS

MAXIMUM MULLION SPAN	EFFECTIVE SPACING	MAXIMUM DESIGN PRESSURE RATING W (psf) FOR 3/8" MAX. LOAD BEARING SHIM SPACE (CONTINUED)																								
		POURED CONCRETE SUBSTRATE										WOOD (2) 2" x THK. SUBSTRATE										STEEL 1/4" Min. THK.				
		FASTENERS TYPE A (1/4"ø)					FASTENERS TYPE B (3/8"ø)					FASTENERS TYPE C (1/4"ø)					FASTENERS TYPE D (3/8"ø)					FASTENERS TYPE E (3/8"ø)				
"L" (Ft-In)	"b" (Ft-In)	n = 4	n = 6	n = 8	n = 10	n = 12	n = 4	n = 6	n = 8	n = 10	n = 12	n = 4	n = 6	n = 8	n = 10	n = 12	n = 4	n = 6	n = 8	n = 10	n = 12	n = 4	n = 6	n = 8	n = 10	n = 12
	3 '- 6 "	40.8	61.2	81.7	102.1	122.5	120.8	140.0	140.0	140.0	140.0	40.8	61.2	81.7	102.1	122.5	43.7	65.6	87.5	109.3	131.2	137.6	140.0	140.0	140.0	140.0
	4 '- 0 "	35.7	53.6	71.5	89.3	107.2	105.7	140.0	140.0	140.0	140.0	35.7	53.6	71.5	89.3	107.2	38.3	57.4	76.5	95.7	114.8	120.4	140.0	140.0	140.0	140.0
	4 '- 6 "	31.8	47.6	63.5	79.4	95.3	94.0	140.0	140.0	140.0	140.0	31.8	47.6	63.5	79.4	95.3	34.0	51.0	68.0	85.0	102.1	107.0	140.0	140.0	140.0	140.0
11 '- 6 "	5 '- 0 "	28.6	42.9	57.2	71.5	85.7	84.6	126.9	140.0	140.0	140.0	28.6	42.9	57.2	71.5	85.7	30.6	45.9	61.2	76.5	91.8	96.3	140.0	140.0	140.0	140.0
	5 '- 6 "	26.0	39.0	52.0	65.0	78.0	76.9	115.3	140.0	140.0	140.0	26.0	39.0	52.0	65.0	78.0	27.8	41.7	55.7	69.6	83.5	87.6	131.4	140.0	140.0	140.0
	6 '- 0 "	23.8	35.7	47.6	59.5	71.5	70.5	105.7	140.0	140.0	140.0	23.8	35.7	47.6	59.5	71.5	25.5	38.3	51.0	63.8	76.5	80.3	120.4	140.0	140.0	140.0
	6 '- 6 "	22.0	33.0	44.0	55.0	66.0	65.1	97.6	130.1	140.0	140.0	22.0	33.0	44.0	55.0	66.0	23.6	35.3	47.1	58.9	70.7	74.1	111.2	140.0	140.0	140.0
	7 '- 0 "	20.4	30.6	40.8	51.0	61.2	60.4	90.6	120.8	140.0	140.0	20.4	30.6	40.8	51.0	61.2	21.9	32.8	43.7	54.7	65.6	68.8	103.2	137.6	140.0	140.0
	3 '- 6 "	39.1	58.7	78.3	97.8	117.4	116.8	140.0	140.0	140.0	140.0	39.1	58.7	78.3	97.8	117.4	41.9	62.9	83.8	104.8	125.7	131.9	140.0	140.0	140.0	140.0
	4 '- 0 "	34.2	51.4	68.5	85.6	102.7	101.3	140.0	140.0	140.0	140.0	34.2	51.4	68.5	85.6	102.7	36.7	55.0	73.3	91.7	110.0	115.4	140.0	140.0	140.0	140.0
	4 '- 6 "	30.4	45.7	60.9	76.1	91.3	90.1	135.1	140.0	140.0	140.0	30.4	45.7	60.9	76.1	91.3	32.6	48.9	65.2	81.5	97.8	102.6	140.0	140.0	140.0	140.0
12 '- 0 "	5 '- 0 "	27.4	41.1	54.8	68.5	82.2	81.1	121.6	140.0	140.0	140.0	27.4	41.1	54.8	68.5	82.2	29.3	44.0	58.7	73.3	88.0	92.3	138.5	140.0	140.0	140.0
	5 '- 6 "	24.9	37.4	49.8	62.3	74.7	73.7	110.5	140.0	140.0	140.0	24.9	37.4	49.8	62.3	74.7	26.7	40.0	53.3	66.7	80.0	83.9	125.9	140.0	140.0	140.0
	6 '- 0 "	22.8	34.2	45.7	57.1	68.5	67.5	101.3	135.1	140.0	140.0	22.8	34.2	45.7	57.1	68.5	24.4	36.7	48.9	61.1	73.3	76.9	115.4	140.0	140.0	140.0
	6 '- 6 "	21.1	31.6	42.1	52.7	63.2	62.4	93.5	124.7	140.0	140.0	21.1	31.6	42.1	52.7	63.2	22.6	33.9	45.1	56.4	67.7	71.0	106.5	140.0	140.0	140.0
	7 '- 0 "	19.6	29.3	39.1	48.9	58.7	57.9	86.8	115.8	140.0	140.0	19.6	29.3	39.1	48.9	58.7	21.0	31.4	41.9	52.4	62.9	66.9	98.9	131.9	140.0	140.0
	3 '- 6 "	37.6	56.3	75.1	93.9	112.7	111.2	140.0	140.0	140.0	140.0	37.6	56.3	75.1	93.9	112.7	40.2	60.4	80.5	100.6	120.7	126.6	140.0	140.0	140.0	140.0
	4 '- 0 "	32.9	49.3	65.7	82.2	98.6	97.3	140.0	140.0	140.0	140.0	32.9	49.3	65.7	82.2	98.6	35.2	52.8	70.4	88.0	105.6	110.8	140.0	140.0	140.0	140.0
	4 '- 6 "	29.2	43.8	58.4	73.0	87.7	86.5	129.7	140.0	140.0	140.0	29.2	43.8	58.4	73.0	87.7	31.3	46.9	62.6	78.2	93.9	98.5	140.0	140.0	140.0	140.0
12 '- 6 "	5 '- 0 "	26.3	39.4	52.6	65.7	78.9	77.8	116.7	140.0	140.0	140.0	26.3	39.4	52.6	65.7	78.9	28.2	42.2	56.3	70.4	84.5	88.6	132.9	140.0	140.0	140.0
	5 '- 6 "	23.9	35.9	47.8	59.8	71.7	70.7	106.1	140.0	140.0	140.0	23.9	35.9	47.8	59.8	71.7	25.6	38.4	51.2	64.0	76.8	80.6	120.9	140.0	140.0	140.0
	6 '- 0 "	21.9	32.9	43.8	54.8	65.7	64.8	97.3	129.7	140.0	140.0	21.9	32.9	43.8	54.8	65.7	23.5	35.2	46.9	58.7	70.4	73.9	110.8	140.0	140.0	140.0
	6 '- 6 "	20.2	30.3	40.5	50.6	60.7	59.9	89.8	119.7	140.0	140.0	20.2	30.3	40.5	50.6	60.7	21.7	32.5	43.3	54.2	65.0	68.2	102.3	136.4	140.0	140.0
	7 '- 0 "	18.1	27.1	36.1	45.2	54.2	53.4	80.2	106.9	133.6	140.0	18.1	27.1	36.1	45.2	54.2	19.3	29.0	38.7	48.4	58.0	60.9	91.3	121.7	140.0	140.0
	3 '- 6 "	36.1	54.2	72.2	90.3	108.4	106.9	140.0	140.0	140.0	140.0	36.1	54.2	72.2	90.3	108.4	38.7	58.0	77.4	96.7	116.1	121.7	140.0	140.0	140.0	140.0
	4 '- 0 "	31.6	47.4	63.2	79.0	94.8	93.6	140.0	140.0	140.0	140.0	31.6	47.4	63.2	79.0	94.8	33.9	50.8	67.7	84.6	101.6	106.5	140.0	140.0	140.0	140.0
	4 '- 6 "	28.1	42.1	56.2	70.2	84.3	83.1	124.7	140.0	140.0	140.0	28.1	42.1	56.2	70.2	84.3	30.1	45.1	60.2	75.2	90.3	94.7	140.0	140.0	140.0	140.0
13 '- 0 "	5 '- 0 "	25.3	37.9	50.6	63.2	75.9	74.8	112.2	140.0	140.0	140.0	25.3	37.9	50.6	63.2	75.9	27.1	40.6	54.2	67.7	81.2	85.2	127.8	140.0	140.0	140.0
	5 '- 6 "	23.0	34.5	46.0	57.5	69.0	68.0	102.0	136.0	140.0	140.0	23.0	34.5	46.0	57.5	69.0	24.6	36.9	49.2	61.6	73.9	77.5	116.2	140.0	140.0	140.0
	6 '- 0 "	21.1	31.6	42.1	52.7	63.2	62.4	93.5	124.7	140.0	140.0	21.1	31.6	42.1	52.7	63.2	22.6	33.9	45.1	56.4	67.7	71.0	106.5	140.0	140.0	140.0
	6 '- 6 "	18.7	28.1	37.5	46.8	56.2	55.4	83.1	110.8	138.6	140.0	18.7	28.1	37.5	46.8	56.2	20.1	30.1	40.1	50.2	60.2	63.1	94.7	126.3	140.0	140.0
	7 '- 0 "	17.4	26.1	34.8	43.5	52.2	51.6	77.2	102.9	128.7	140.0	17.4	26.1	34.8	43.5	52.2	18.6	27.9	37.3	46.6	55.9	58.6	87.9	117.2	140.0	140.0
	3 '- 6 "	34.8	52.2	69.6	87.0	104.4	102.9	140.0	140.0	140.0	140.0	34.8	52.2	69.6	87.0	104.4	37.3	55.9	74.5	93.1	111.8	117.2	140.0	140.0	140.0	140.0
	4 '- 0 "	30.4	45.7	60.9	76.1	91.3	90.1	135.1	140.0	140.0	140.0	30.4	45.7	60.9	76.1	91.3	32.6	48.9	65.2	81.5	97.8	102.6	140.0	140.0	140.0	140.0
	4 '- 6 "	27.1	40.6	54.1	67.6	81.2	80.1	120.1	140.0	140.0	140.0	27.1	40.6	54.1	67.6	81.2	29.0	43.5	58.0	72.4	86.9	91.2	136.8	140.0	140.0	140.0
13 '- 6 "	5 '- 0 "	24.3	36.5	48.7	60.9	73.0	72.1	108.1	140.0	140.0	140.0	24.3	36.5	48.7	60.9	73.0	26.1	39.1	52.2	65.2	78.2	82.1	123.1	140.0	140.0	140.0
	5 '- 6 "	22.1	33.2	44.3	55.3	66.4	65.5	98.3	131.0	140.0	140.0	22.1	33.2	44.3	55.3	66.4	23.7	35.6	47.4	59.3	71.1	74.6	111.9	140.0	140.0	140.0
	6 '- 0 "	18.9	28.3	37.8	47.2	56.7	55.9	83.9	111.8	139.8	140.0	18.9	28.3	37.8	47.2	56.7	20.2	30.4	40.5	50.6	60.7	63.7	95.5	127.3	140.0	140.0
	6 '- 6 "	17.4	26.2	34.9	43.6	52.3	51.6	77.4	103.2	129.0	140.0	17.4	26.2	34.9	43.6	52.3	18.7	28.0	37.4	46.7	56.0	58.8	88.2	117.6	140.0	140.0
	7 '- 0 "	16.2	24.3	32.4	40.5	48.6	47.9	71.9	95.8	119.8	140.0	16.2	24.3	32.4	40.5	48.6	17.3	26.0	34.7	43.4	52.0	54.6	81.9	109.2	136.4	140.0
	3 '- 6 "	32.4	48.6	64.8	81.0	97.2	96.8	140.0	140.0	140.0	140.0	32.4	48.6	64.8	81.0	97.2	34.7	52.0	69.4	86.7	104.1	109.2	140.0	140.0	140.0	140.0
	4 '- 0 "	28.3	42.5	56.7	70.8	85.0	83.9	125.8	140.0	140.0	140.0	28.3	42.5	56.7	70.8	85.0	30.4	45.6	60.7	76.9	91.1	95.5	140.0	140.0	140.0	140.0
	4 '- 6 "	26.2	37.8	50.4	63.0	75.6	74.5	111.8	140.0	140.0	140.0	26.2	37.8	50.4	63.0	75.6	27.0	40.5	54.0	67.4	80.9	84.9	127.3	140.0	140.0	140.0
14 '- 6 "	5 '- 0 "	22.7	34.0	45.3	56.7	68.0	67.1	100.6	134.2	140.0	140.0	22.7	34.0	45.3	56.7	68.0	24.3	36.4	48.6	60.7	72.8	76.4	114.6	140.0	140.0	140.0
	5 '- 6 "	19.9	29.9	39.8	49.8	59.8	59.0	88.4	117.9	140.0	140.0	19.9	29.9	39.8	49.8	59.8	21.3	32.0	42.7	53.3	64.0	67.1	100.7	134.3	140.0	140.0
	6 '- 0 "	18.3	27.4	36.5	45.7	54.8	54.0	81.1	108.1	135.1	140.0	18.3	27.4	36.5	45.7	54.8	19.6	29.3	39.1	48.9	58.7	61.6	92.3	123.1	140.0	140.0
	6 '- 6 "	16.9	25.3	33.7	42.1	50.6	49.9	74.8	99.8	124.7	140.0	16.9	25.3	33.7	42.1	50.6	18.1	27.1	36.1	45.1	54.2	56.8	85.2	113.6	140.0	140.0
	7 '- 0 "	15.7	23.5	31.3	39.1	47.0	46.3	69.5	92.6	115.8	139.0	15.7	23.5	31.3	39.1	47.0	16.8	25.1	33.5	41.9	50.3	52.8	79.1	105.5	131.9	140.0

FASTENERS TYPES & SUBSTRATES REQUIREMENTS:

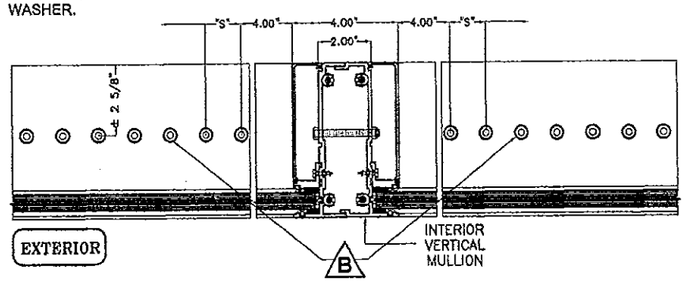
A - 1/4"Ø ELCO CONSTRUCTION PRODUCTS, ULTRACON ANCHOR W/ 1 3/4" Min. EMBEDMENT INTO POURED CONCRETE (Min. f'c = 2,730 ksi), W/ **S** = 4" MIN. SPACING & 2 1/2" MIN. EDGE DISTANCE. FOR MAXIMUM SPACING, EMBEDMENT & EDGE DISTANCE ARE BEYOND ANY FINISH MATERIAL.

B - 3/8"Ø POWERS FASTENERS, WEDGE-BOLT ANCHOR W/ 2" Min. EMBEDMENT INTO POURED CONCRETE (Min. f'c = 3.0 ksi), W/ **S** = 3" MIN. SPACING & 3 1/4" MIN. EDGE DISTANCE. FOR MAXIMUM SPACING, EMBEDMENT & EDGE DISTANCE ARE BEYOND ANY FINISH MATERIAL.

C - 1/4"Ø ELCO CONSTRUCTION PRODUCTS, ULTRACON ANCHOR TO (2) 2" x WOOD BUCKS (G=0.55) W/ 3" Min. PENETRATION INTO WOOD, W/ **S** = 2" Min. SPACING & 1" MIN. EDGE DISTANCE. FOR MAXIMUM SPACING, EMBEDMENT & EDGE DISTANCE ARE BEYOND ANY FINISH MATERIAL.

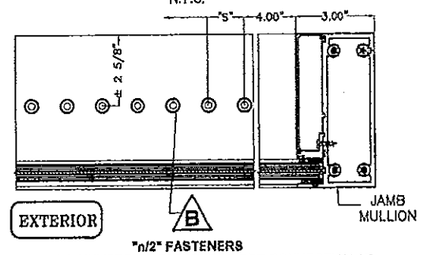
D - 3/8"Ø LAG SCREW TO (2) 2" x WOOD BUCKS (G=0.55) W/ 3" Min. PENETRATION INTO WOOD, W/ **S** = 2" Min. SPACING & 1 1/2" MIN. EDGE DISTANCE. FOR MAXIMUM SPACING, EMBEDMENT & EDGE DISTANCE ARE BEYOND ANY FINISH MATERIAL.

E - 3/8"Ø TYPE "F" BOLT TO 1/4" Min. THK. ASTM A-36 STEEL W/ **S** = 2" MIN. SPACING & 1" MIN. EDGE DISTANCE OR 3/8"Ø SAE GRADE 5 GALVANIZED STEEL HH8 THRU BOLT W/ NUT & LOCK WASHER.



"n" FASTENERS
n = TOTAL NUMBER OF FASTENERS PER CONNECTION AT HEAD/SILL, EQUALLY INSTALLED AT EACH SIDE OF INTERIOR VERTICAL MULLION

SILL OR HEAD CONNECTION DETAIL @ INTERIOR VERTICAL MULLION
(PLAN VIEW)
N.T.S.



"n/2" FASTENERS
n/2 = TOTAL NUMBER OF FASTENERS PER CONNECTION AT HEAD/SILL, INSTALLED AT ONE SIDE OF JAMB MULLION

SILL OR HEAD CONNECTION DETAIL @ JAMB MULLION
(PLAN VIEW)
N.T.S.

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 13-0930.14
Expiration Date Jan 13, 2016
By
Miami Dade Product Control

MIAMI-DADE COUNTY

WALTER A. TILLIT JR. LICENSE No. 44167 STATE OF FLORIDA PROFESSIONAL ENGINEER

P.E. SEAL/SIGNATURE/DATE

FLORIDA BUILDING CODE (HIGH VELOCITY HURRICANE ZONE)

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TILLIT TESTING & ENGINEERING COMPANY
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E8-0006719
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REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 12-002	08/15/13	3	-	-
2	GENERAL	03/03/14	4	-	-

M.C.V./A.G. DRAWN BY

06/26/13 DATE

13-053 DRAWING No

MAXIMUM A.S.D. DESIGN PRESSURE RATING SCHEDULE FOR INTERIOR VERTICAL MULLION'S & JAMB MULLION'S HEAD/SILL CONNECTIONS

MAXIMUM MULLION SPAN	EFFECTIVE SPACING	MAXIMUM DESIGN PRESSURE RATING W (psf) FOR 3/8" MAX. LOAD BEARING SHIM SPACE (CONTINUED)																								
		POURED CONCRETE SUBSTRATE										WOOD (2) 2" x THK. SUBSTRATE										STEEL 1/4" Min. THK.				
		FASTENERS TYPE A (1/4"ø)					FASTENERS TYPE B (3/8"ø)					FASTENERS TYPE C (1/4"ø)					FASTENERS TYPE D (3/8"ø)					FASTENERS TYPE E (3/8"ø)				
"L" (Ft-In)	"b" (Ft-In)	n = 4	n = 6	n = 8	n = 10	n = 12	n = 4	n = 6	n = 8	n = 10	n = 12	n = 4	n = 6	n = 8	n = 10	n = 12	n = 4	n = 6	n = 8	n = 10	n = 12	n = 4	n = 6	n = 8	n = 10	n = 12
15 '- 0 "	3 '- 6 "	31.3	47.0	62.6	78.3	93.9	92.6	139.0	140.0	140.0	140.0	31.3	47.0	62.6	78.3	93.9	33.5	50.3	67.1	83.8	100.6	105.5	140.0	140.0	140.0	140.0
	4 '- 0 "	27.4	41.1	54.8	68.5	82.2	81.1	121.6	140.0	140.0	140.0	27.4	41.1	54.8	68.5	82.2	29.3	44.0	58.7	73.3	88.0	92.3	138.5	140.0	140.0	140.0
	4 '- 6 "	24.3	36.5	48.7	60.9	73.0	72.1	108.1	140.0	140.0	140.0	24.3	36.5	48.7	60.9	73.0	26.1	39.1	52.2	65.2	78.2	82.1	123.1	140.0	140.0	140.0
	5 '- 0 "	21.2	31.8	42.4	53.0	63.6	62.8	94.1	125.5	140.0	140.0	21.2	31.8	42.4	53.0	63.6	22.7	34.1	45.4	56.8	68.1	71.5	107.2	140.0	140.0	140.0
	5 '- 6 "	19.3	28.9	38.6	48.2	57.8	57.0	85.6	114.1	140.0	140.0	19.3	28.9	38.6	48.2	57.8	20.6	31.0	41.3	51.6	61.9	65.0	97.5	130.0	140.0	140.0
	6 '- 0 "	17.7	26.5	35.3	44.2	53.0	52.3	78.4	104.6	130.7	140.0	17.7	26.5	35.3	44.2	53.0	18.9	28.4	37.9	47.3	56.8	59.6	89.3	119.1	140.0	140.0
	6 '- 6 "	16.3	24.5	32.6	40.8	48.9	48.3	72.4	96.5	120.7	140.0	16.3	24.5	32.6	40.8	48.9	17.5	26.2	34.9	43.7	52.4	55.0	82.5	110.0	137.5	140.0
	7 '- 0 "	15.1	22.7	30.3	37.9	45.4	44.8	67.2	89.6	112.1	134.5	15.1	22.7	30.3	37.9	45.4	16.2	24.3	32.4	40.6	48.7	51.1	76.6	102.1	127.6	140.0
15 '- 6 "	3 '- 6 "	30.3	45.4	60.6	75.7	90.9	89.6	134.5	140.0	140.0	140.0	30.3	45.4	60.6	75.7	90.9	32.4	48.7	64.9	81.1	97.3	102.1	140.0	140.0	140.0	140.0
	4 '- 0 "	26.5	39.8	53.0	66.3	79.5	78.4	117.7	140.0	140.0	140.0	26.5	39.8	53.0	66.3	79.5	28.4	42.6	56.8	71.0	85.2	89.3	134.0	140.0	140.0	140.0
	4 '- 6 "	23.2	34.8	46.4	58.0	69.6	68.6	102.9	137.2	140.0	140.0	23.2	34.8	46.4	58.0	69.6	24.8	37.3	49.7	62.1	74.5	78.2	117.2	140.0	140.0	140.0
	5 '- 0 "	20.9	31.3	41.7	52.2	62.6	61.8	92.6	123.5	140.0	140.0	20.9	31.3	41.7	52.2	62.6	22.4	33.5	44.7	55.9	67.1	70.3	105.5	140.0	140.0	140.0
	5 '- 6 "	19.0	28.5	37.9	47.4	56.9	56.1	84.2	112.3	140.0	140.0	19.0	28.5	37.9	47.4	56.9	20.3	30.5	40.6	50.8	61.0	63.9	95.9	127.9	140.0	140.0
	6 '- 0 "	17.4	26.1	34.8	43.5	52.2	51.5	77.2	102.9	128.7	140.0	17.4	26.1	34.8	43.5	52.2	18.6	27.9	37.3	46.6	55.9	58.6	87.9	117.2	140.0	140.0
	6 '- 6 "	16.1	24.1	32.1	40.1	48.2	47.5	71.3	95.0	118.8	140.0	16.1	24.1	32.1	40.1	48.2	17.2	25.8	34.4	43.0	51.6	54.1	81.2	108.2	135.3	140.0
	7 '- 0 "	14.9	22.4	29.8	37.3	44.7	44.1	66.2	88.2	110.3	132.3	14.9	22.4	29.8	37.3	44.7	16.0	24.0	31.9	39.9	47.9	50.2	75.4	100.5	125.6	140.0
15 '- 9 "	3 '- 6 "	29.8	44.7	59.6	74.5	89.4	88.2	132.3	140.0	140.0	140.0	29.8	44.7	59.6	74.5	89.4	31.9	47.9	63.9	79.8	95.8	100.5	140.0	140.0	140.0	140.0
	4 '- 0 "	26.1	39.1	52.2	65.2	78.3	77.2	115.8	140.0	140.0	140.0	26.1	39.1	52.2	65.2	78.3	27.9	41.9	55.9	69.9	83.8	87.9	131.9	140.0	140.0	140.0
	4 '- 6 "	23.2	34.8	46.4	58.0	69.6	68.6	102.9	137.2	140.0	140.0	23.2	34.8	46.4	58.0	69.6	24.8	37.3	49.7	62.1	74.5	78.2	117.2	140.0	140.0	140.0
	5 '- 0 "	20.9	31.3	41.7	52.2	62.6	61.8	92.6	123.5	140.0	140.0	20.9	31.3	41.7	52.2	62.6	22.4	33.5	44.7	55.9	67.1	70.3	105.5	140.0	140.0	140.0
	5 '- 6 "	19.0	28.5	37.9	47.4	56.9	56.1	84.2	112.3	140.0	140.0	19.0	28.5	37.9	47.4	56.9	20.3	30.5	40.6	50.8	61.0	63.9	95.9	127.9	140.0	140.0
	6 '- 0 "	17.4	26.1	34.8	43.5	52.2	51.5	77.2	102.9	19.7	140.0	17.4	26.1	34.8	43.5	52.2	18.6	27.9	37.3	46.6	55.9	58.6	87.9	117.2	140.0	140.0
	6 '- 6 "	16.1	24.1	32.1	40.1	48.2	47.5	71.3	95.0	19.7	140.0	16.1	24.1	32.1	40.1	48.2	17.2	25.8	34.4	43.0	51.6	54.1	81.2	108.2	135.3	140.0
	7 '- 0 "	14.9	22.4	29.8	37.3	44.7	44.1	66.2	88.2	110.3	132.3	14.9	22.4	29.8	37.3	44.7	16.0	24.0	31.9	39.9	47.9	50.2	75.4	100.5	125.6	140.0

FASTENERS TYPES & SUBSTRATES REQUIREMENTS:

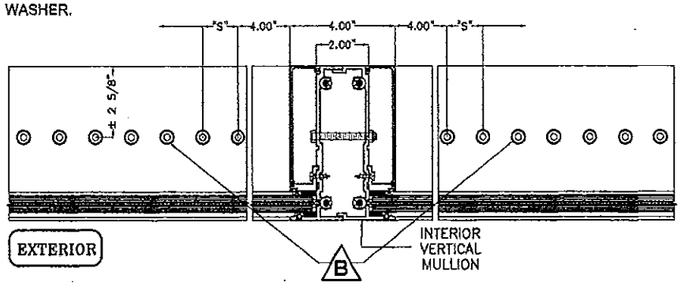
A - 1/4"Ø ELCO CONSTRUCTION PRODUCTS, ULTRACON ANCHOR W/ 1 3/4" Min. EMBEDMENT INTO POURED CONCRETE (Min. f'c = 2,730 ksi), W/ S = 4" MIN. SPACING & 2 1/2" MIN. EDGE DISTANCE. FOR MAXIMUM SPACING, EMBEDMENT & EDGE DISTANCE ARE BEYOND ANY FINISH MATERIAL.

B - 3/8"Ø POWERS FASTENERS, WEDGE-BOLT ANCHOR W/ 2" Min. EMBEDMENT INTO POURED CONCRETE (Min. f'c = 3.0 ksi), W/ S = 3" MIN. SPACING & 3 1/4" MIN. EDGE DISTANCE. FOR MAXIMUM SPACING, EMBEDMENT & EDGE DISTANCE ARE BEYOND ANY FINISH MATERIAL.

C - 1/4"Ø ELCO CONSTRUCTION PRODUCTS, ULTRACON ANCHOR TO (2) 2" x WOOD BUCKS (G=0.55) W/ 3" Min. PENETRATION INTO WOOD, W/ S = 2" Min. SPACING & 1" MIN. EDGE DISTANCE. FOR MAXIMUM SPACING, EMBEDMENT & EDGE DISTANCE ARE BEYOND ANY FINISH MATERIAL.

D - 3/8"Ø LAG SCREW TO (2) 2" x WOOD BUCKS (G=0.55) W/ 3" Min. PENETRATION INTO WOOD, W/ S = 2" Min. SPACING & 1 1/2" MIN. EDGE DISTANCE. FOR MAXIMUM SPACING, EMBEDMENT & EDGE DISTANCE ARE BEYOND ANY FINISH MATERIAL.

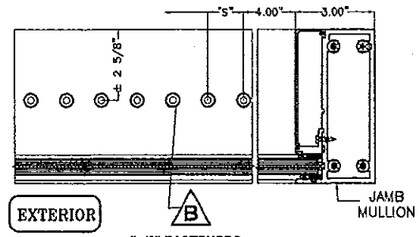
E - 3/8"Ø TYPE "F" BOLT TO 1/4" Min. THK. ASTM A-36 STEEL W/ S = 2" MIN. SPACING & 1" MIN. EDGE DISTANCE OR 3/8"Ø SAE GRADE 5 GALVANIZED STEEL HHB THRU BOLT W/ NUT & LOCK WASHER.



"n" FASTENERS
n = TOTAL NUMBER OF FASTENERS PER CONNECTION AT HEAD/SILL, EQUALLY INSTALLED AT EACH SIDE OF INTERIOR VERTICAL MULLION

SILL OR HEAD CONNECTION DETAIL @ INTERIOR VERTICAL MULLION

(PLAN VIEW)
N.T.S.



"n/2" FASTENERS
n/2 = TOTAL NUMBER OF FASTENERS PER CONNECTION AT HEAD/SILL, INSTALLED AT ONE SIDE OF JAMB MULLION

SILL OR HEAD CONNECTION DETAIL @ JAMB MULLION

(PLAN VIEW)
N.T.S.

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 13-0930.14
Expiration Date Jan. 13, 2016
By
Miami Dade Product Control

MIAMI-DADE COUNTY

WALTER A. TILLIT JR. LICENSE No. 44167 STATE OF FLORIDA PROFESSIONAL ENGINEER

P.E. SEAL/SIGNATURE/DATE

FLORIDA BUILDING CODE (HIGH VELOCITY HURRICANE ZONE)

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e-mail: tilteco@aol.com
EB-0006719
WALTER A. TILLIT Jr. P.E.
FLORIDA Lic. # 44167

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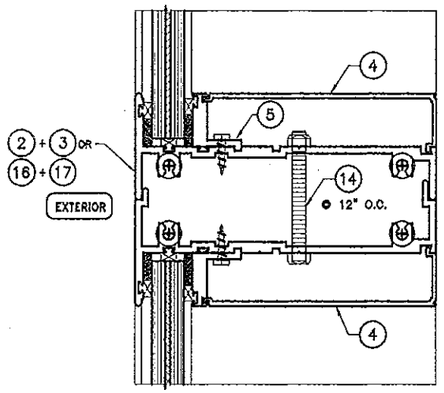
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 12-002	05/28/13	3	-	-
2	GENERAL	03/05/14	4	-	-

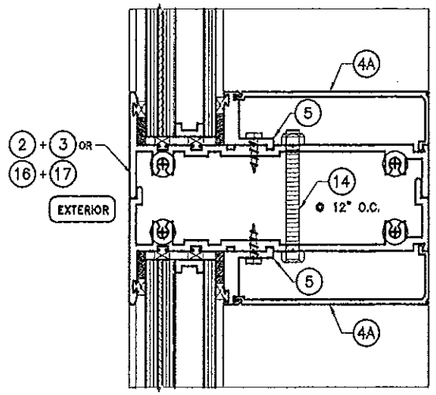
M.C.V./A.G.
DRAWN BY

06/26/13
DATE

13-053
DRAWING No

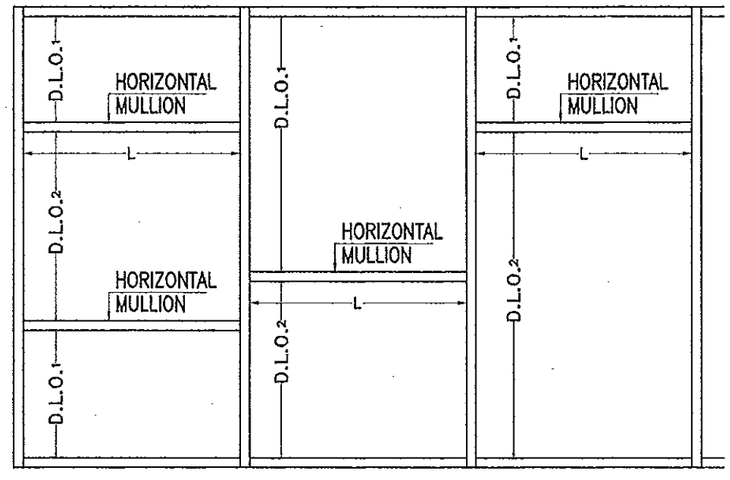


LAMINATED GLASS CASE



INSULATED GLASS CASE

SECTION AT HORIZONTAL MULLIONS



MULTIPLE PANELS

SINGLE PANEL

ELEVATIONS W/ HORIZONTAL MULLIONS

"L" = MAXIMUM HORIZONTAL MULLION SPAN

"D.L.O." = HORIZONTAL MULLION EFFECTIVE DAY LIGHT OPENING = $\frac{D.L.O._1 + D.L.O._2}{2}$

MAXIMUM HORIZONTAL MULLION SPAN "L"(FT) SCHEDULE FOR A GIVEN HORIZONTAL MULLION EFFECTIVE "D.L.O."(FT) AND A GIVEN A.S.D. DESIGN PRESSURE RATING (psf)

MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf)	MAX. EFFECTIVE DAY LIGHT OPENING "DLO" (Ft-In)	MAXIMUM 1/8" & 3/16" THICK HORIZONTAL MULLION SPAN LAMINATED/INSULATED GLASS "L" (Ft)
± 40.0	2'- 0"	7'- 0"
	2'- 6"	7'- 0"
	3'- 0"	7'- 0"
	3'- 6"	7'- 0"
	4'- 0"	7'- 0"
	4'- 6"	7'- 0"
	5'- 0"	7'- 0"
	5'- 6"	7'- 0"
	6'- 0"	7'- 0"
	6'- 6"	7'- 0"
	7'- 0"	7'- 0"
	7'- 6"	7'- 0"
± 45.0	2'- 0"	7'- 0"
	2'- 6"	7'- 0"
	3'- 0"	7'- 0"
	3'- 6"	7'- 0"
	4'- 0"	7'- 0"
	4'- 6"	7'- 0"
	5'- 0"	7'- 0"
	5'- 6"	7'- 0"
	6'- 0"	7'- 0"
	6'- 6"	7'- 0"
	7'- 0"	7'- 0"
	7'- 6"	7'- 0"
± 50.0	2'- 0"	7'- 0"
	2'- 6"	7'- 0"
	3'- 0"	7'- 0"
	3'- 6"	7'- 0"
	4'- 0"	7'- 0"
	4'- 6"	7'- 0"
	5'- 0"	7'- 0"
	5'- 6"	7'- 0"
	6'- 0"	7'- 0"
	6'- 6"	7'- 0"
	7'- 0"	7'- 0"
	7'- 6"	7'- 0"
± 55.0	2'- 0"	7'- 0"
	2'- 6"	7'- 0"
	3'- 0"	7'- 0"
	3'- 6"	7'- 0"
	4'- 0"	7'- 0"
	4'- 6"	7'- 0"
	5'- 0"	7'- 0"
	5'- 6"	7'- 0"
	6'- 0"	7'- 0"
	6'- 6"	7'- 0"
	7'- 0"	7'- 0"
	7'- 6"	7'- 0"

MAXIMUM HORIZONTAL MULLION SPAN "L"(FT) SCHEDULE FOR A GIVEN HORIZONTAL MULLION EFFECTIVE "D.L.O."(FT) AND A GIVEN A.S.D. DESIGN PRESSURE RATING (psf) (CONTINUED)

MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf)	MAX. EFFECTIVE DAY LIGHT OPENING "DLO" (Ft-In)	MAXIMUM 1/8" & 3/16" THICK HORIZONTAL MULLION SPAN LAMINATED/INSULATED GLASS "L" (Ft)
± 60.0	2'- 0"	7'- 0"
	2'- 6"	7'- 0"
	3'- 0"	7'- 0"
	3'- 6"	7'- 0"
	4'- 0"	7'- 0"
	4'- 6"	7'- 0"
	5'- 0"	7'- 0"
	5'- 6"	7'- 0"
	6'- 0"	7'- 0"
	6'- 6"	7'- 0"
	7'- 0"	7'- 0"
	7'- 6"	7'- 0"
± 65.0	2'- 0"	7'- 0"
	2'- 6"	7'- 0"
	3'- 0"	7'- 0"
	3'- 6"	7'- 0"
	4'- 0"	7'- 0"
	4'- 6"	7'- 0"
	5'- 0"	7'- 0"
	5'- 6"	7'- 0"
	6'- 0"	7'- 0"
	6'- 6"	7'- 0"
	7'- 0"	7'- 0"
	7'- 6"	7'- 0"
± 70.0	2'- 0"	7'- 0"
	2'- 6"	7'- 0"
	3'- 0"	7'- 0"
	3'- 6"	7'- 0"
	4'- 0"	7'- 0"
	4'- 6"	7'- 0"
	5'- 0"	7'- 0"
	5'- 6"	7'- 0"
	6'- 0"	7'- 0"
	6'- 6"	7'- 0"
	7'- 0"	7'- 0"
	7'- 6"	7'- 0"
± 75.0	2'- 0"	7'- 0"
	2'- 6"	7'- 0"
	3'- 0"	7'- 0"
	3'- 6"	7'- 0"
	4'- 0"	7'- 0"
	4'- 6"	7'- 0"
	5'- 0"	7'- 0"
	5'- 6"	7'- 0"
	6'- 0"	7'- 0"
	6'- 6"	7'- 0"
	7'- 0"	7'- 0"
	7'- 6"	6'- 8"

MAXIMUM HORIZONTAL MULLION SPAN "L"(FT) SCHEDULE FOR A GIVEN HORIZONTAL MULLION EFFECTIVE "D.L.O."(FT) AND A GIVEN A.S.D. DESIGN PRESSURE RATING (psf) (CONTINUED)

MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf)	MAX. EFFECTIVE DAY LIGHT OPENING "DLO" (Ft-In)	MAXIMUM 1/8" & 3/16" THICK HORIZONTAL MULLION SPAN LAMINATED/INSULATED GLASS "L" (Ft)
± 80.0	2'- 0"	7'- 0"
	2'- 6"	7'- 0"
	3'- 0"	7'- 0"
	3'- 6"	7'- 0"
	4'- 0"	7'- 0"
	4'- 6"	7'- 0"
	5'- 0"	7'- 0"
	5'- 6"	7'- 0"
	6'- 0"	7'- 0"
	6'- 6"	7'- 0"
	7'- 0"	6'- 8"
	7'- 6"	6'- 3"
± 85.0	2'- 0"	7'- 0"
	2'- 6"	7'- 0"
	3'- 0"	7'- 0"
	3'- 6"	7'- 0"
	4'- 0"	7'- 0"
	4'- 6"	7'- 0"
	5'- 0"	7'- 0"
	5'- 6"	7'- 0"
	6'- 0"	7'- 0"
	6'- 6"	6'- 10"
	7'- 0"	6'- 4"
	7'- 6"	5'- 11"
± 90.0	2'- 0"	7'- 0"
	2'- 6"	7'- 0"
	3'- 0"	7'- 0"
	3'- 6"	7'- 0"
	4'- 0"	7'- 0"
	4'- 6"	7'- 0"
	5'- 0"	7'- 0"
	5'- 6"	7'- 0"
	6'- 0"	6'- 11"
	6'- 6"	6'- 5"
	7'- 0"	6'- 0"
	7'- 6"	5'- 7"
± 95.0	2'- 0"	7'- 0"
	2'- 6"	7'- 0"
	3'- 0"	7'- 0"
	3'- 6"	7'- 0"
	4'- 0"	7'- 0"
	4'- 6"	7'- 0"
	5'- 0"	7'- 0"
	5'- 6"	7'- 0"
	6'- 0"	6'- 7"
	6'- 6"	6'- 1"
	7'- 0"	5'- 8"
	7'- 6"	5'- 3"

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 13-0930.14
Expiration Date Jan. 14, 2016
By Manuel Perez
Miami Dade Product Control

MIAMI–DADE COUNTY

WALTER A. TILLIT JR. LICENSE No. 44167 STATE OF FLORIDA PROFESSIONAL ENGINEER

P.E. SEAL/SIGNATURE/DATE

FLORIDA BUILDING CODE (HIGH VELOCITY HURRICANE ZONE)

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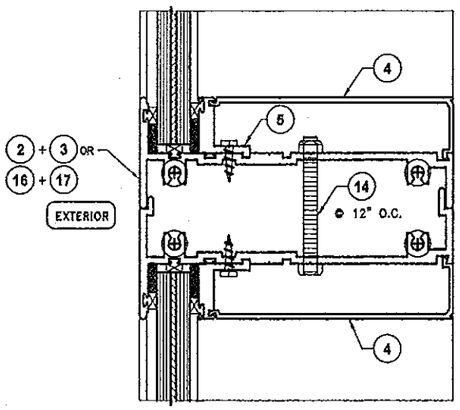
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 12-002	05/28/13	3	–	–
2			4	–	–

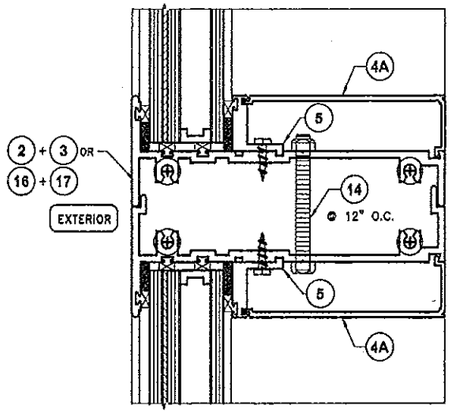
M.C.V./A.G. DRAWN BY

06/26/13 DATE

13-053 DRAWING No

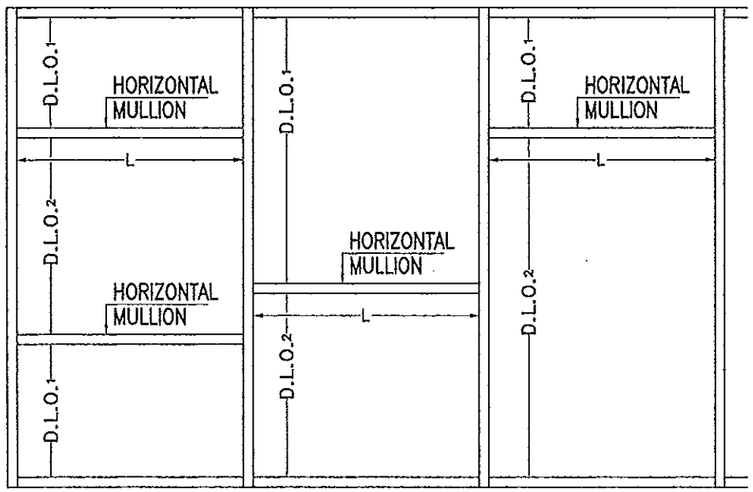


LAMINATED GLASS CASE



INSULATED GLASS CASE

SECTION AT HORIZONTAL MULLIONS



MULTIPLE PANELS

SINGLE PANEL

ELEVATIONS W/ HORIZONTAL MULLIONS

"L" = MAXIMUM HORIZONTAL MULLION SPAN

"D.L.O." = HORIZONTAL MULLION EFFECTIVE DAY LIGHT OPENING = $\frac{D.L.O._1 + D.L.O._2}{2}$

MAXIMUM HORIZONTAL SPAN "L"(FT) SCHEDULE FOR A GIVEN HORIZONTAL MULLION EFFECTIVE "D.L.O."(FT) AND A GIVEN A.S.D. DESIGN PRESSURE RATING (psf) (CONTINUED)

MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf)	MAX. EFFECTIVE DAY LIGHT OPENING "DLO" (FT-in)	MAXIMUM 1/8" & 3/16" THICK HORIZONTAL RAILS SPAN LAMINATED/INSULATED GLASS "L" (FT)
± 100.0	2 '- 0 "	7 '- 0 "
	2 '- 6 "	7 '- 0 "
	3 '- 0 "	7 '- 0 "
	3 '- 6 "	7 '- 0 "
	4 '- 0 "	7 '- 0 "
	4 '- 6 "	7 '- 0 "
	5 '- 0 "	7 '- 0 "
	6 '- 0 "	6 '- 3 "
	6 '- 6 "	5 '- 9 "
	7 '- 0 "	5 '- 4 "
	7 '- 6 "	5 '- 0 "
± 105.0	2 '- 0 "	7 '- 0 "
	2 '- 6 "	7 '- 0 "
	3 '- 0 "	7 '- 0 "
	3 '- 6 "	7 '- 0 "
	4 '- 0 "	7 '- 0 "
	4 '- 6 "	7 '- 0 "
	5 '- 0 "	7 '- 0 "
	6 '- 0 "	6 '- 0 "
	6 '- 6 "	5 '- 6 "
	7 '- 0 "	5 '- 1 "
	7 '- 6 "	4 '- 9 "
± 110.0	2 '- 0 "	7 '- 0 "
	2 '- 6 "	7 '- 0 "
	3 '- 0 "	7 '- 0 "
	3 '- 6 "	7 '- 0 "
	4 '- 0 "	7 '- 0 "
	4 '- 6 "	7 '- 0 "
	5 '- 0 "	6 '- 10 "
	6 '- 0 "	5 '- 8 "
	6 '- 6 "	5 '- 3 "
	7 '- 0 "	4 '- 11 "
	7 '- 6 "	4 '- 7 "
± 115.0	2 '- 0 "	7 '- 0 "
	2 '- 6 "	7 '- 0 "
	3 '- 0 "	7 '- 0 "
	3 '- 6 "	7 '- 0 "
	4 '- 0 "	7 '- 0 "
	4 '- 6 "	7 '- 0 "
	5 '- 0 "	6 '- 6 "
	6 '- 0 "	5 '- 5 "
	6 '- 6 "	5 '- 0 "
	7 '- 0 "	4 '- 8 "
	7 '- 6 "	4 '- 4 "

MAXIMUM HORIZONTAL SPAN "L"(FT) SCHEDULE FOR A GIVEN HORIZONTAL MULLION EFFECTIVE "D.L.O."(FT) AND A GIVEN A.S.D. DESIGN PRESSURE RATING (psf) (CONTINUED)

MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf)	MAX. EFFECTIVE DAY LIGHT OPENING "DLO" (FT-in)	MAXIMUM 1/8" & 3/16" THICK HORIZONTAL RAILS SPAN LAMINATED/INSULATED GLASS "L" (FT)
± 120.0	2 '- 0 "	7 '- 0 "
	2 '- 6 "	7 '- 0 "
	3 '- 0 "	7 '- 0 "
	3 '- 6 "	7 '- 0 "
	4 '- 0 "	7 '- 0 "
	4 '- 6 "	6 '- 11 "
	5 '- 0 "	6 '- 3 "
	6 '- 0 "	5 '- 3 "
	6 '- 6 "	4 '- 10 "
	7 '- 0 "	4 '- 6 "
	7 '- 6 "	4 '- 2 "
± 125.0	2 '- 0 "	7 '- 0 "
	2 '- 6 "	7 '- 0 "
	3 '- 0 "	7 '- 0 "
	3 '- 6 "	7 '- 0 "
	4 '- 0 "	7 '- 0 "
	4 '- 6 "	6 '- 8 "
	5 '- 0 "	6 '- 0 "
	6 '- 0 "	5 '- 0 "
	6 '- 6 "	4 '- 7 "
	7 '- 0 "	4 '- 4 "
	7 '- 6 "	4 '- 0 "
± 130.0	2 '- 0 "	7 '- 0 "
	2 '- 6 "	7 '- 0 "
	3 '- 0 "	7 '- 0 "
	3 '- 6 "	7 '- 0 "
	4 '- 0 "	7 '- 0 "
	4 '- 6 "	6 '- 5 "
	5 '- 0 "	5 '- 9 "
	6 '- 0 "	4 '- 10 "
	6 '- 6 "	4 '- 5 "
	7 '- 0 "	4 '- 2 "
	7 '- 6 "	3 '- 10 "
+130.0 - 135.0	2 '- 0 "	7 '- 0 "
	2 '- 6 "	7 '- 0 "
	3 '- 0 "	7 '- 0 "
	3 '- 6 "	7 '- 0 "
	4 '- 0 "	6 '- 11 "
	4 '- 6 "	6 '- 2 "
	5 '- 0 "	5 '- 7 "
	6 '- 0 "	4 '- 8 "
	6 '- 6 "	4 '- 3 "
	7 '- 0 "	4 '- 0 "
	7 '- 6 "	3 '- 9 "
+130.0 - 140.0	2 '- 0 "	7 '- 0 "
	2 '- 6 "	7 '- 0 "
	3 '- 0 "	7 '- 0 "
	3 '- 6 "	7 '- 0 "
	4 '- 0 "	6 '- 8 "
	4 '- 6 "	6 '- 0 "
	5 '- 0 "	5 '- 4 "
	6 '- 0 "	4 '- 6 "
	6 '- 6 "	4 '- 2 "
	7 '- 0 "	3 '- 10 "
	7 '- 6 "	3 '- 7 "

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Phone : (305)871-1530 . Fax : (305)871-1531
e-mail: tilteco@aol.com
EB-0006719
WALTER A. TILLIT Jr. P.E.
FLORIDA Lic. # 44167

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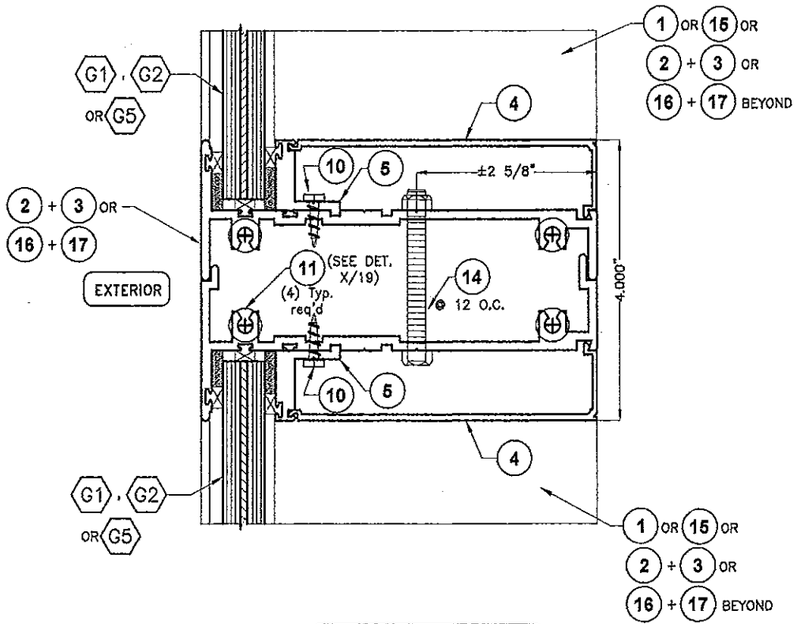
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 12-002	06/28/13	3	-	-
2	GENERAL	05/05/14	4	-	-

M.C.V./A.G. DRAWN BY

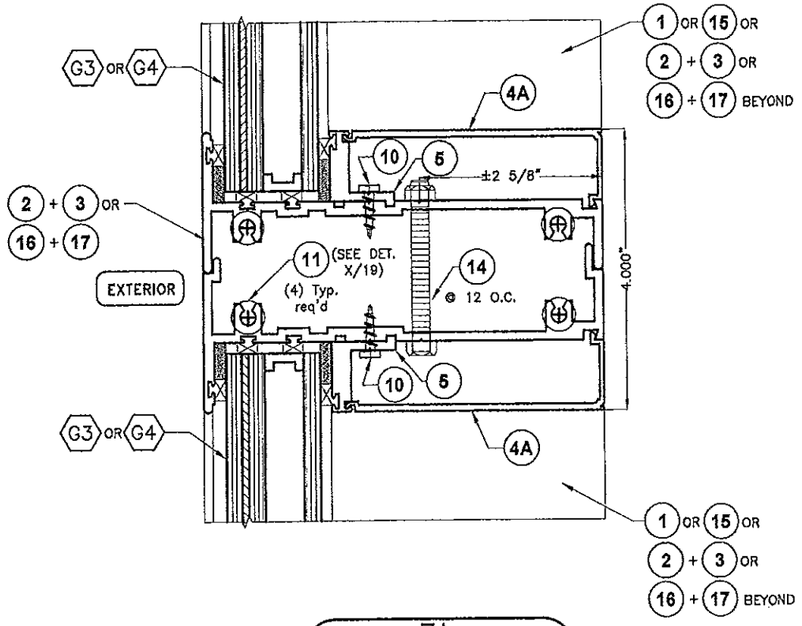
06/26/13 DATE

13-053 DRAWING No

HORIZONTAL MULLION DETAILS



7
HORIZONTAL MULLION



7A
HORIZONTAL MULLION

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 13-0930.14
Expiration Date Jan. 13, 2016
By
Miami Dade Product Control

MIAMI--DADE COUNTY

WALTER A. TILLIT JR. LICENSE No. 44167 STATE OF FLORIDA PROFESSIONAL ENGINEER

P.E. SEAL/SIGNATURE/DATE

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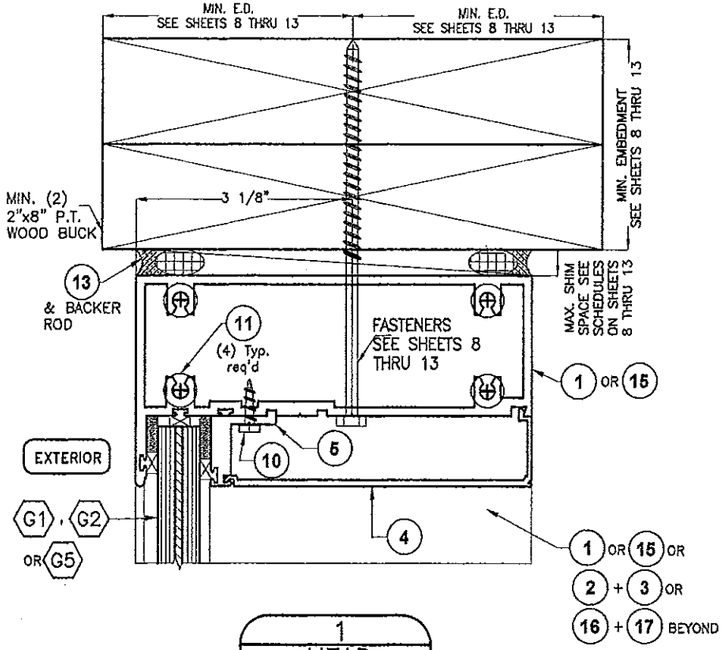
1	OLD 12-002	08/28/13	3	–	–
2			4	–	–

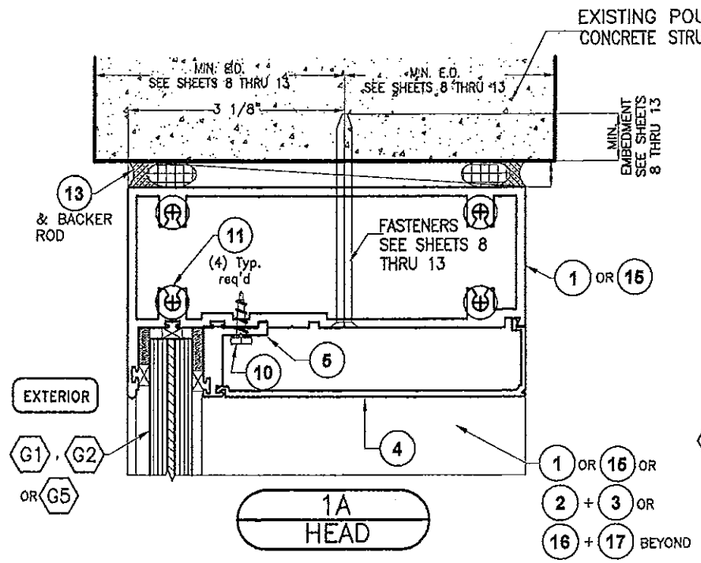
M.C.V./A.G.
DRAWN BY

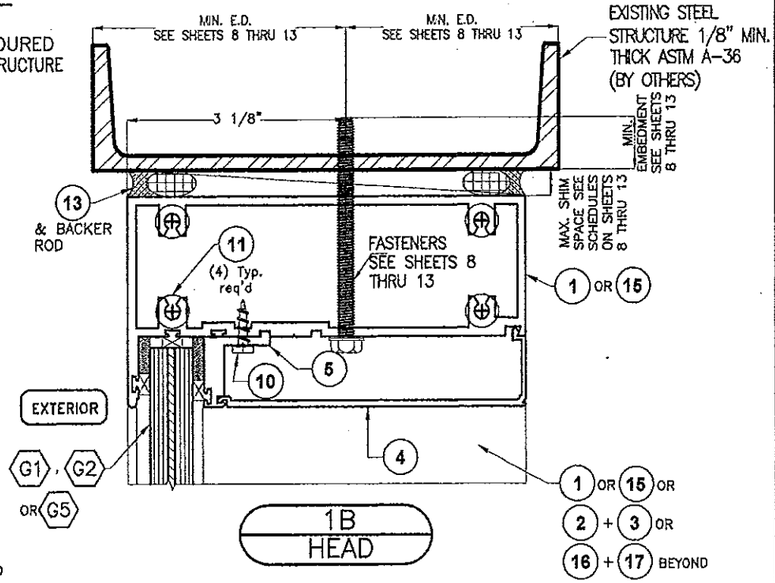
06/26/13
DATE

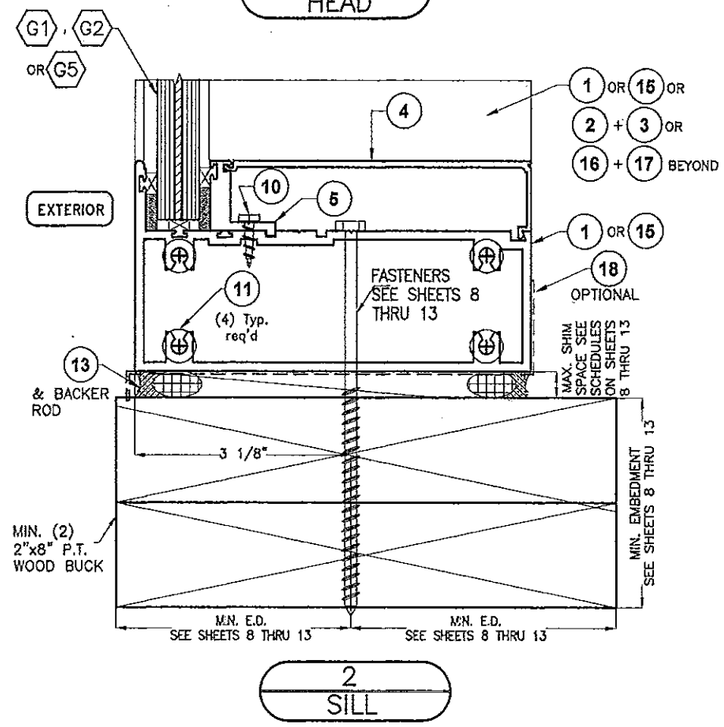
13-053
DRAWING No

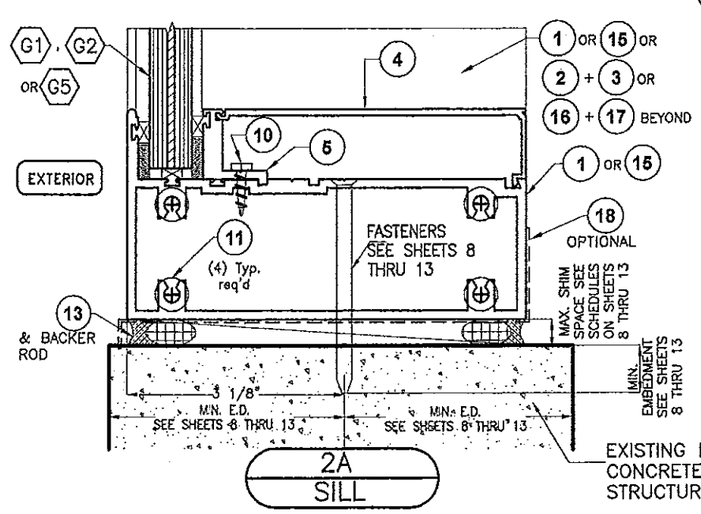
HEAD & SILL CONNECTIONS DETAILS

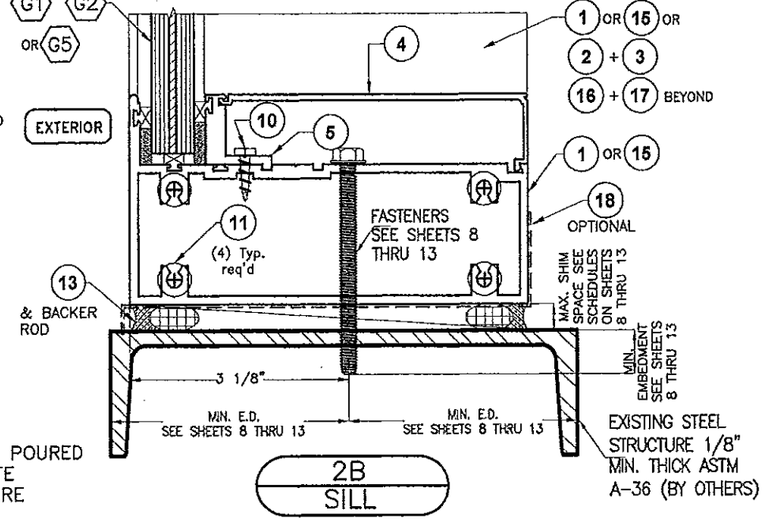












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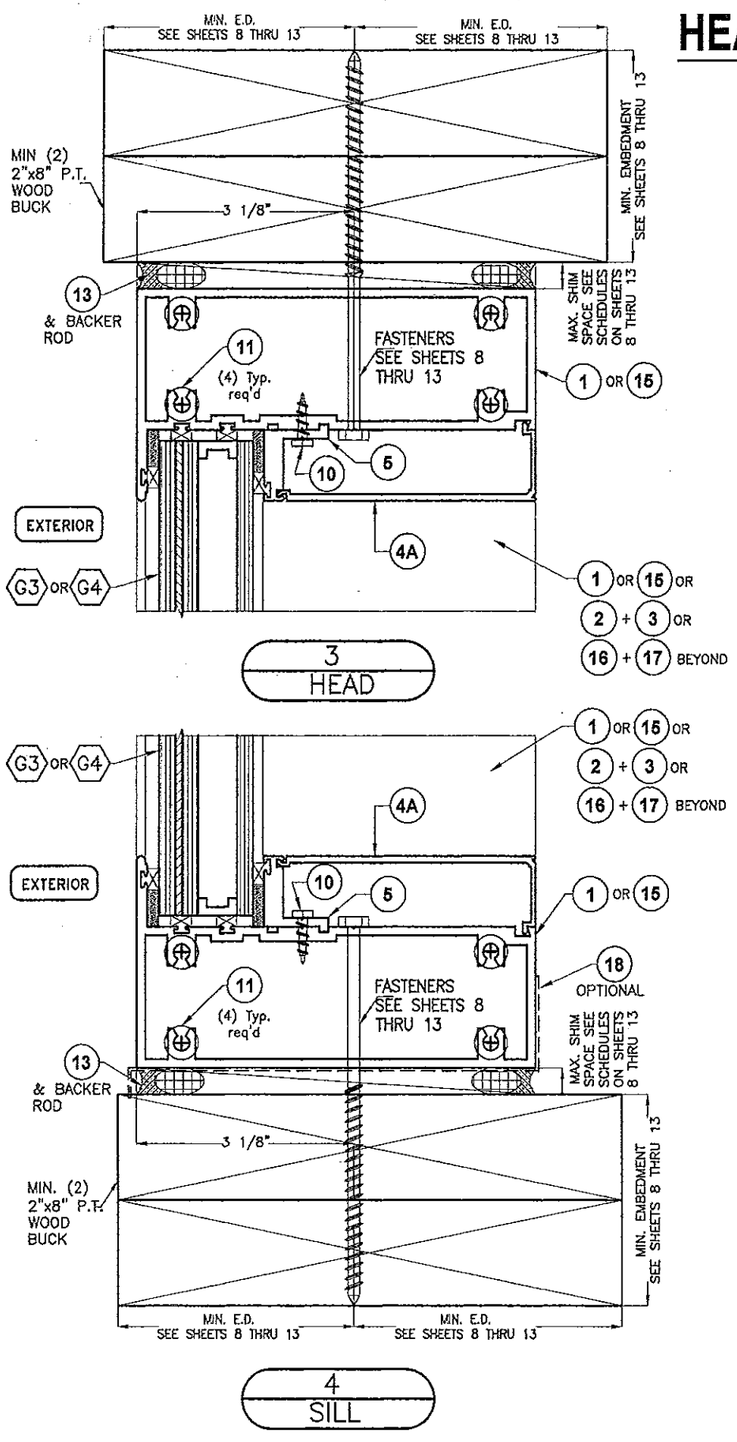
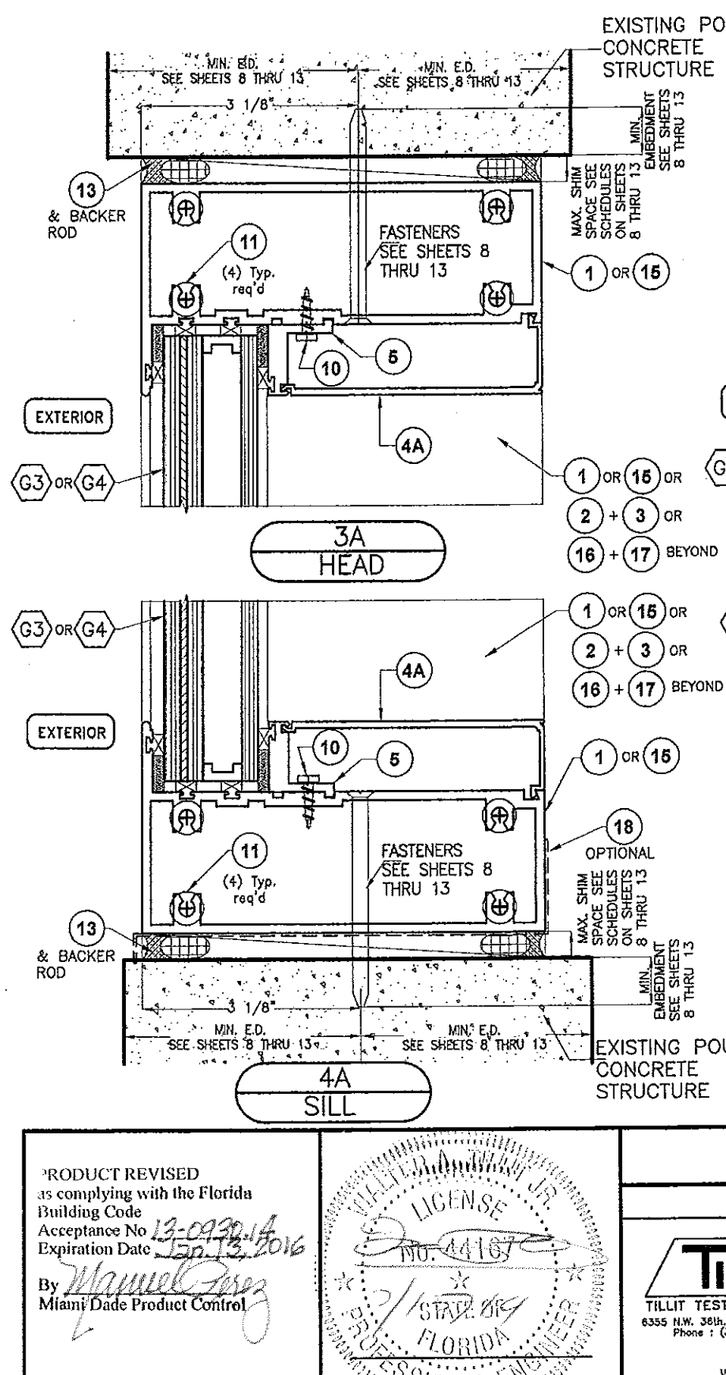
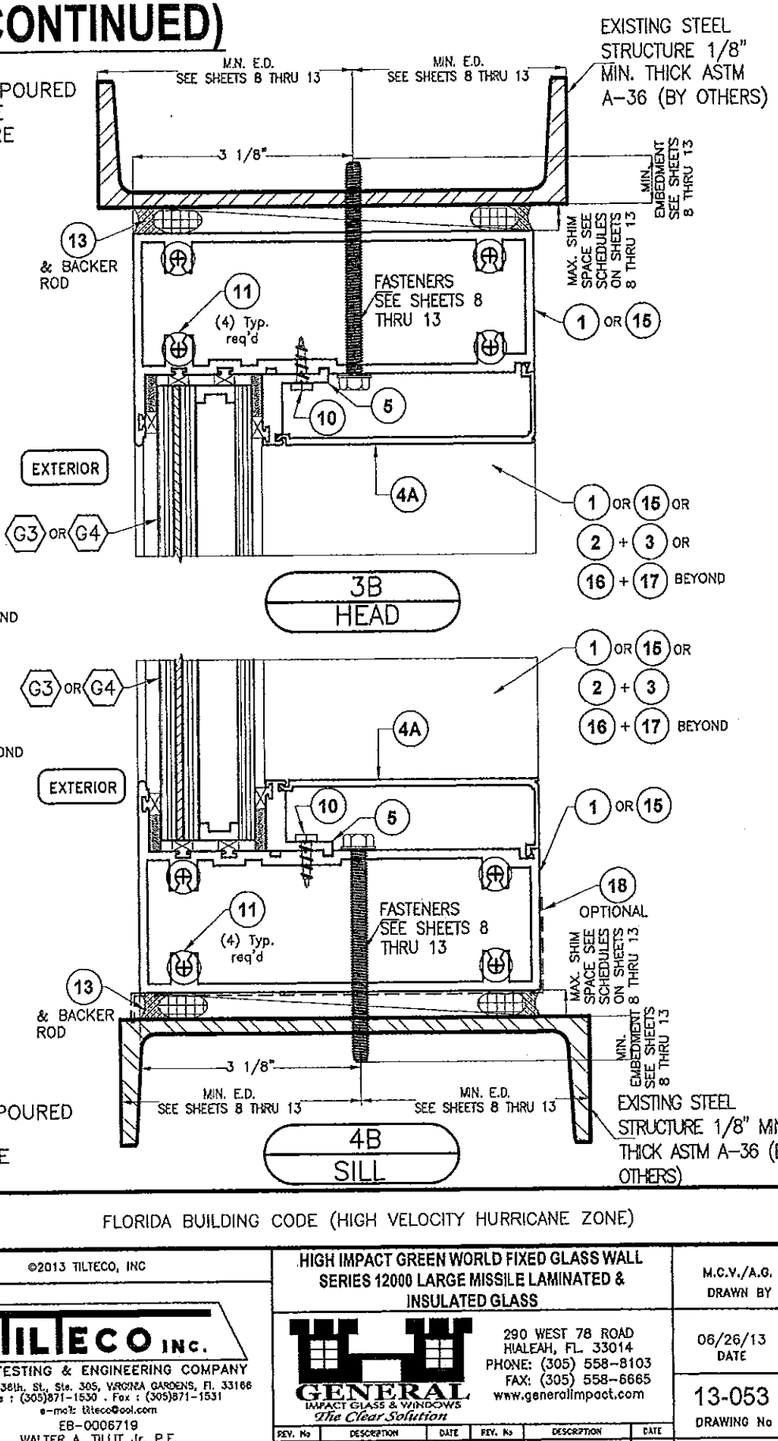
2			4	–	–

HEAD & SILL CONNECTIONS DETAILS (CONTINUED)







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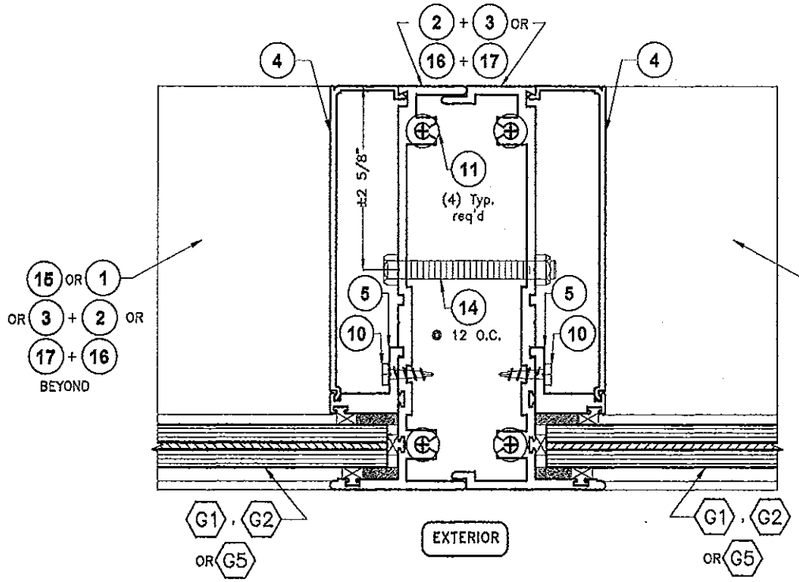
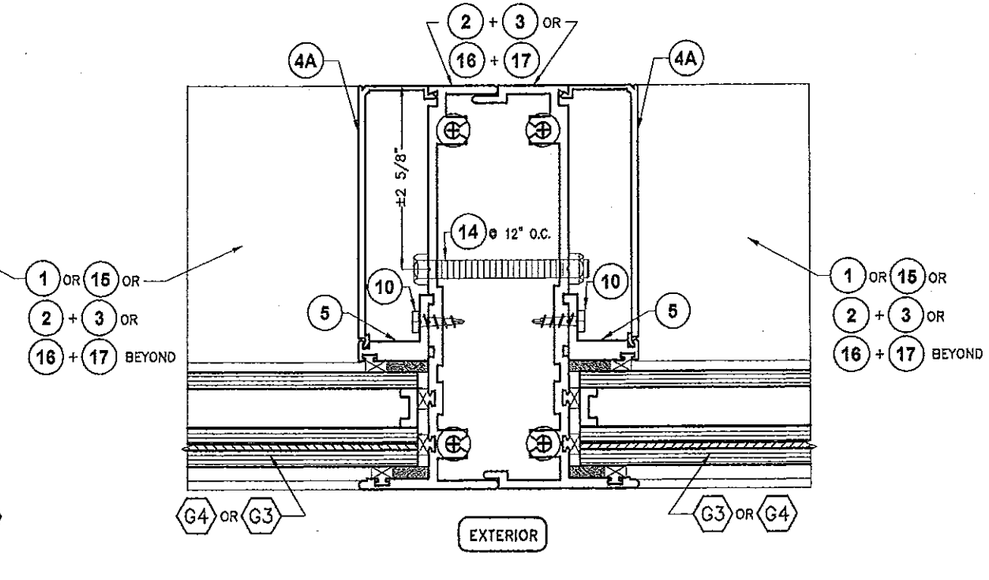
06/26/13 DATE

13-053 DRAWING No

HORIZONTAL SECTIONS AT INTERIOR VERTICAL MULLIONS AT STRAIGHT GLASS WALL APPLICATIONS



5
INTERIOR VERTICAL MULLION



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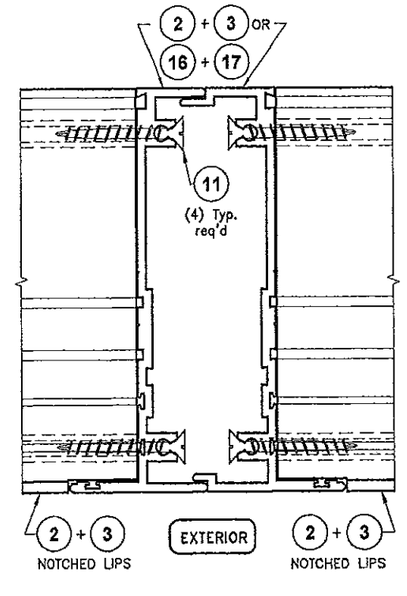
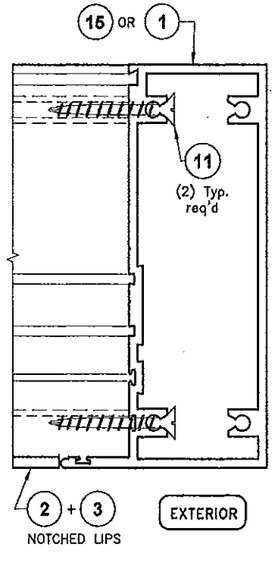
INTERIOR VERTICAL MULLION



DETAIL X
HORIZONTAL MULLION TO INTERIOR VERTICAL MULLION



DETAIL X
HORIZONTAL MULLION TO JAMB MULLION

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Acceptance No 13-0930.14
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By
Miami Dade Product Control

MIAMI–DADE COUNTY

PROFESSIONAL ENGINEER LICENSE No. 44167 STATE OF FLORIDA

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1	OLD 12-002	06/26/13	3	–	–
2			4	–	–

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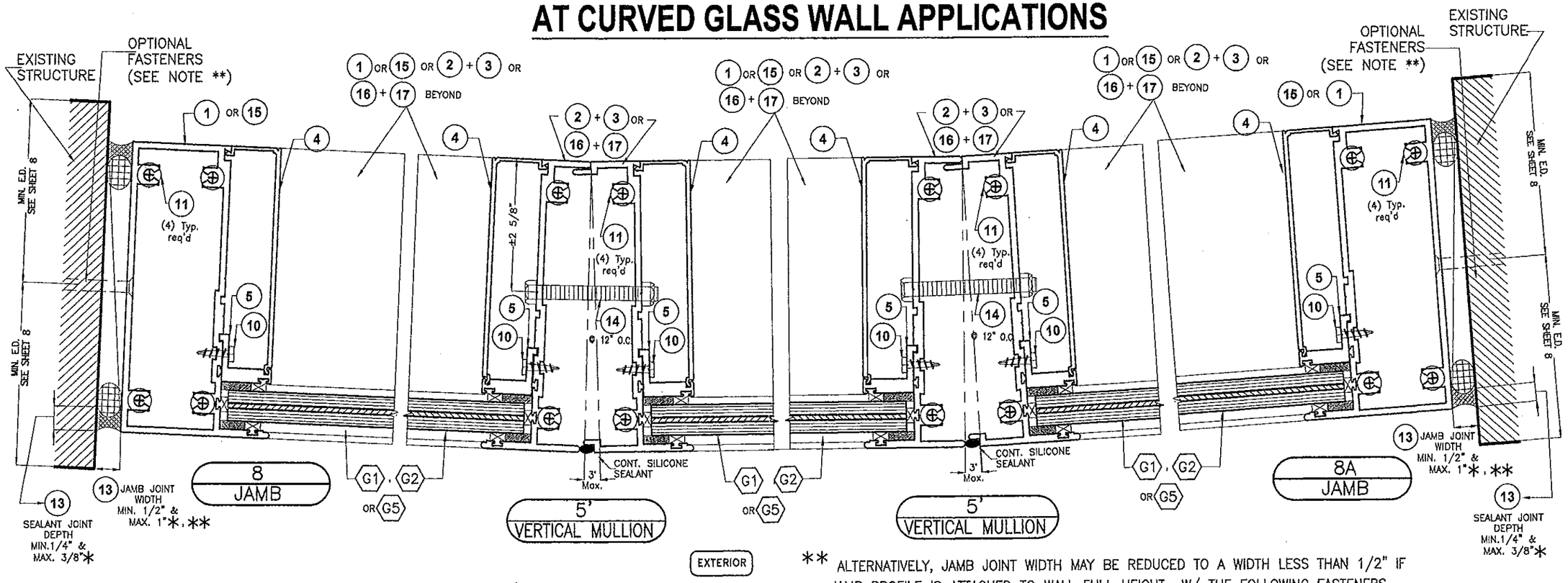
06/26/13
DATE

13-053
DRAWING No

HORIZONTAL SECTIONS AT INTERIOR VERTICAL MULLIONS PLUS JAMB MULLIONS AT CURVED GLASS WALL APPLICATIONS



* NOTE: ABOVE INDICATED MAXIMUM AND MINIMUM VALUES FOR SPECIFIED SEALANT VERTICAL JOINT WIDTH AT JAMBS NOT CONNECTED TO WALL (FREE STANDING) HAVE BEEN DETERMINED ONLY TAKING INTO CONSIDERATION THE ACTUAL MOVEMENT OF GLASS WALL AT JAMBS DUE TO THERMAL, WIND AND ITS OWN CONSTRUCTION TOLERANCE, AND NOT PERFORMANCE FACTORS FROM THE SURROUNDING STRUCTURE.

** ALTERNATIVELY, JAMB JOINT WIDTH MAY BE REDUCED TO A WIDTH LESS THAN 1/2" IF JAMB PROFILE IS ATTACHED TO WALL FULL HEIGHT W/ THE FOLLOWING FASTENERS.

SUBSTRATE Δ	FASTENERS TYPES Δ		SPACING
	3/8" SHIM SPACE OR LESS	>3/8" , <1/2" SHIM SPACE	
POURED CONCRETE	FASTENER TYPE A	FASTENER TYPE B	6" O.C.
2500 psi GROUT FILLED ASTM C-90 CONCRETE BLOCK	FASTENER TYPE A	FASTENER TYPE B	6" O.C.
STEEL	FASTENER TYPE E	FASTENER TYPE E	6" O.C.
WOOD	FASTENER TYPES C & D	FASTENER TYPE D	5" O.C.

Δ CORRESPONDS TO FASTENERS TYPES AND SUBSTRATES CHARACTERISTICS (AS APPLICABLE) DESCRIBED ON SHEET 8.

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Miami-Dade Product Control

MIAMI-DADE COUNTY

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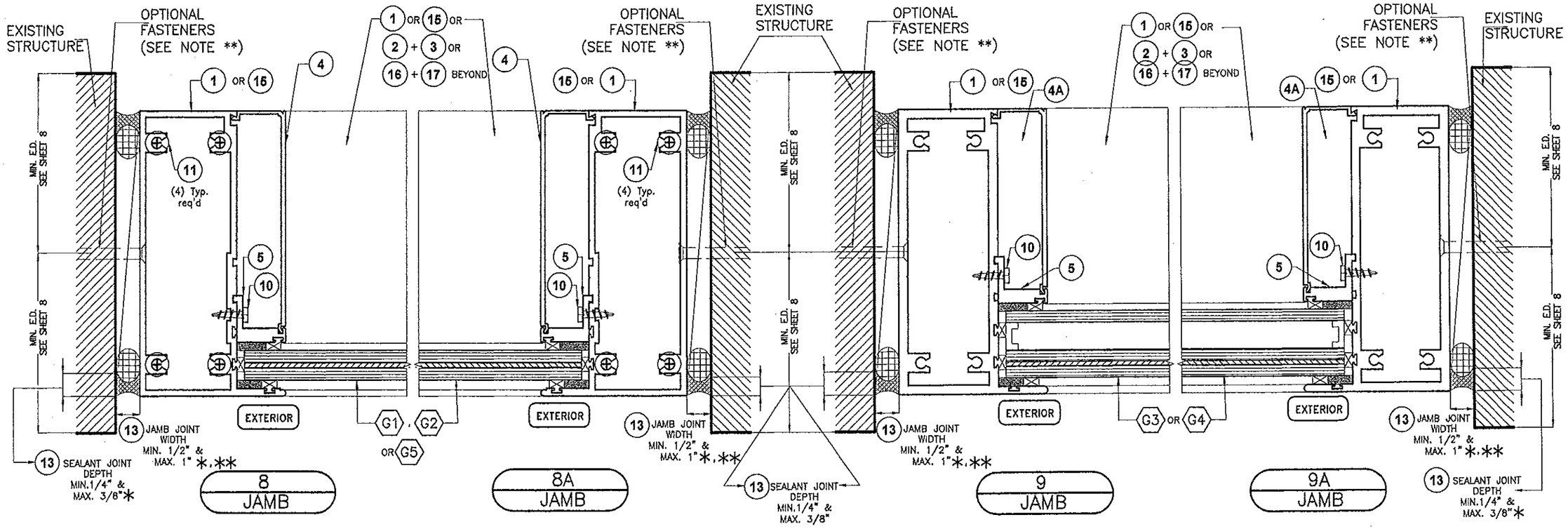
2			4	-	-

M.C.V./A.G.
DRAWN BY

06/26/13
DATE

13-053
DRAWING No

HORIZONTAL SECTIONS AT JAMBS AT STRAIGHT GLASS WALL APPLICATIONS



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POURED CONCRETE	FASTENER TYPE A	FASTENER TYPE B	6" O.C.
2500 psi GROUT FILLED ASTM C-90 CONCRETE BLOCK	FASTENER TYPE A	FASTENER TYPE B	6" O.C.
STEEL	FASTENER TYPE E	FASTENER TYPE E	6" O.C.
WOOD	FASTENER TYPES C & D	FASTENER TYPE D	5" O.C.
Δ CORRESPONDS TO FASTENERS TYPES AND SUBSTRATES CHARACTERISTICS (AS APPLICABLE) DESCRIBED ON SHEET 8.			

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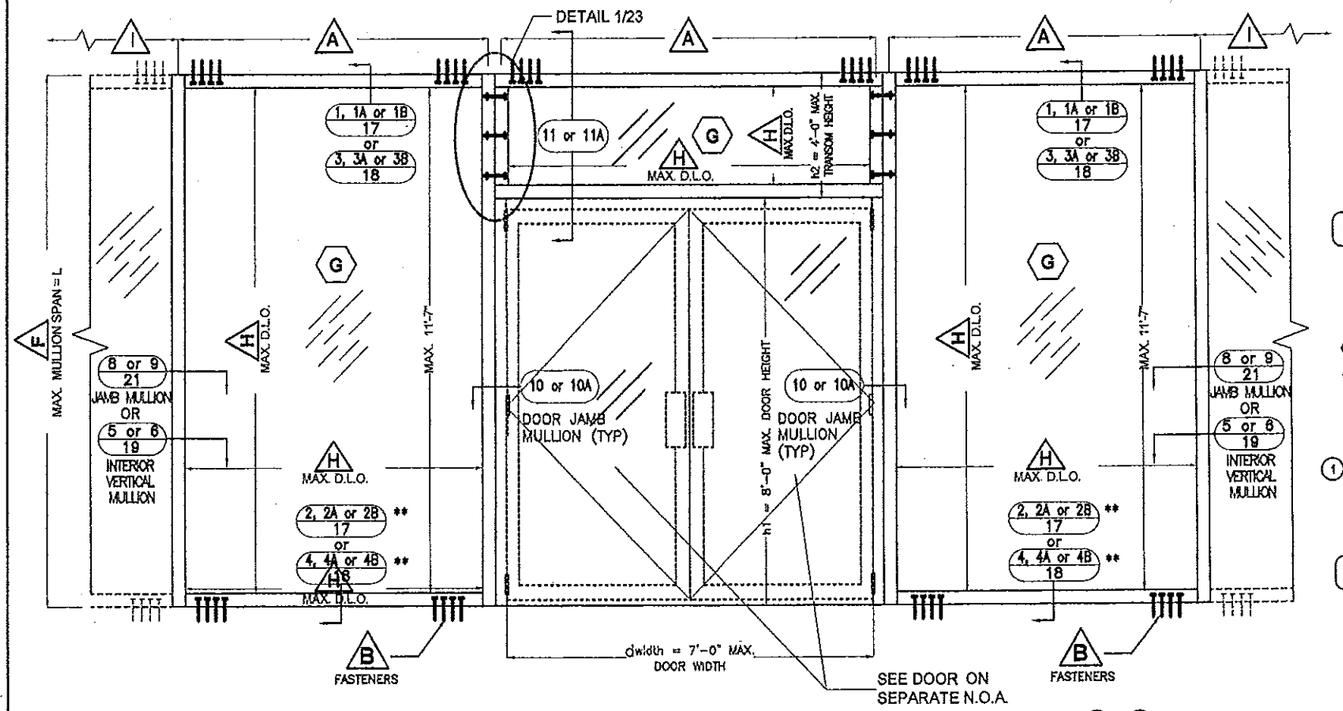
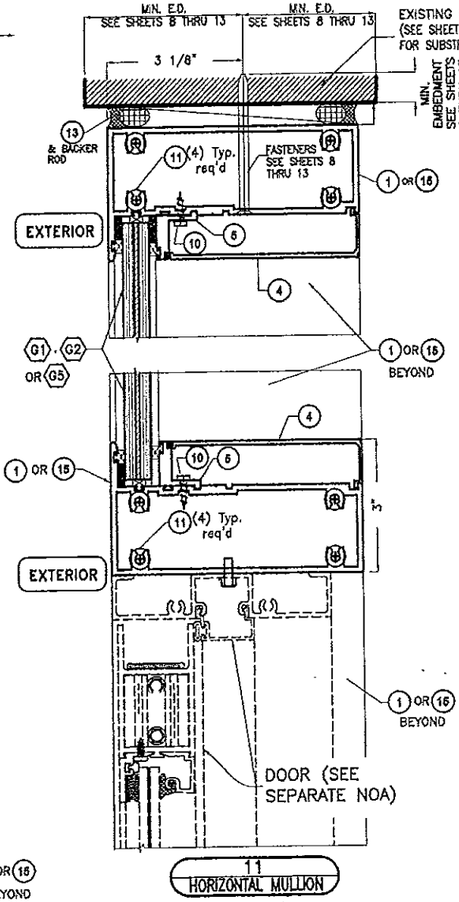
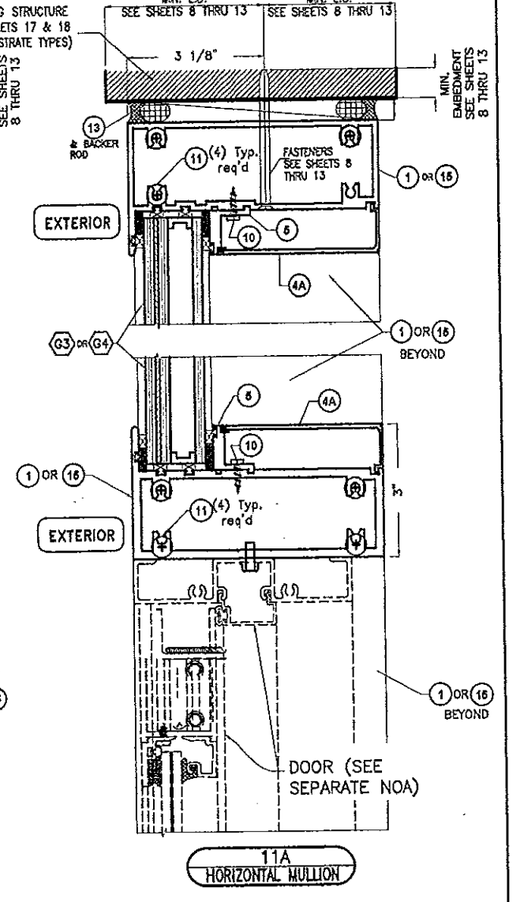
2			4	-	-

ELEVATION FOR HIGH IMPACT GREEN WORLD FIXED GLASS WALL SERIES 12000 ADJACENT TO APPROVED DOOR (ON SEPARATE NOA)

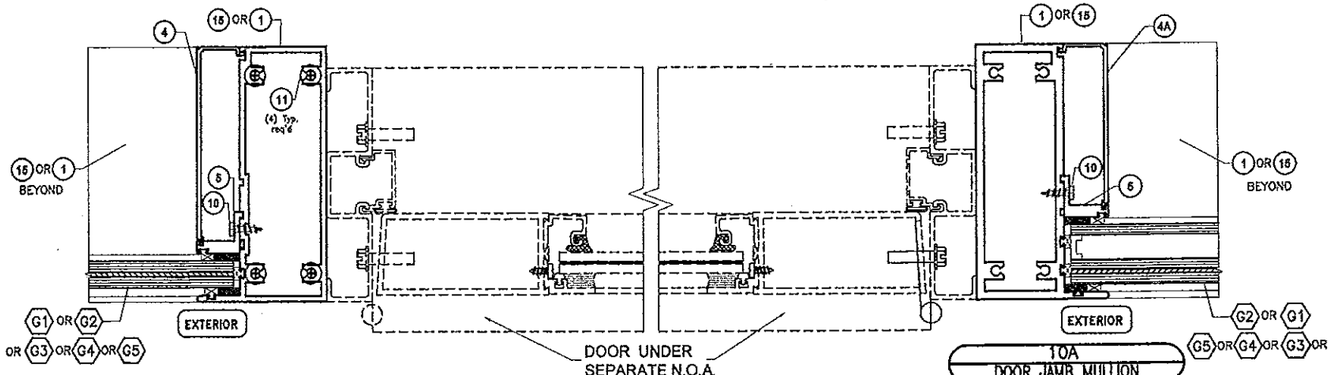




11 HORIZONTAL MULLION



11A HORIZONTAL MULLION



10 DOOR JAMB MULLION

10A DOOR JAMB MULLION

** FOR DOOR JAMB MULLION BOTTOM CONNECTION USE (4) 1/4"Ø ULTRACON ANCHORS WITH NO SHIM SPACE ALLOWED OR (4) 3/8"Ø WEDGE-BOLT ANCHORS WITH 3/8" MAX. SHIM SPACE. FOR TOP OF DOOR JAMB MULLION CONNECTIONS SEE SHEETS 8 THRU 13.

FOOT NOTES:

- A — FOR MAXIMUM DOOR JAMB MULLION SPACING ON CENTERS SEE SHEET 23.
- B — FOR HEAD AND SILL FASTENERS QUANTITY, TYPES AND SPECS SEE SHEETS 8 THRU 13.
- F — FOR MAXIMUM VERTICAL MULLION SPAN SEE SHEET 23.
- G — FOR GLAZING DETAILS SEE SHEET 3 AND FOR GLASS SCHEDULE SEE SHEETS 5, 5A, 5B & 5C.
- H — FOR MAXIMUM D.L.O. SEE SCHEDULE ON SHEETS 5, 5A, 5B & 5C.
- I — FOR MAXIMUM INTERIOR VERTICAL MULLION SPACING ON CENTERS SEE SHEETS 6 & 7.

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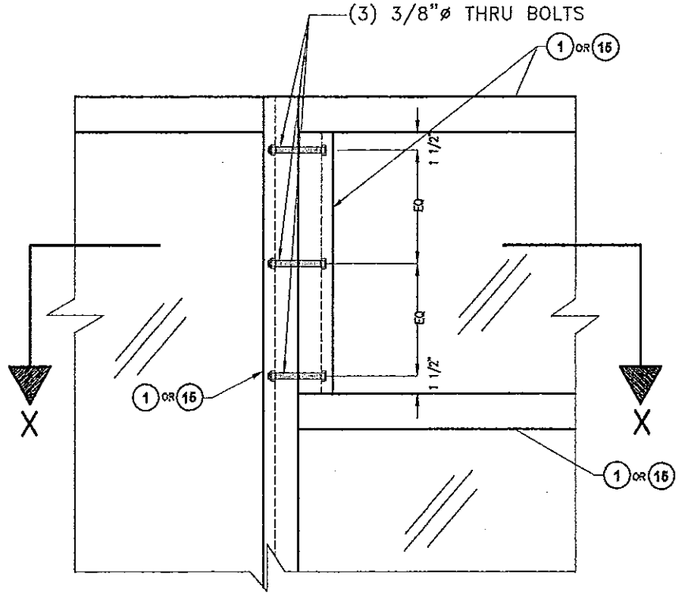
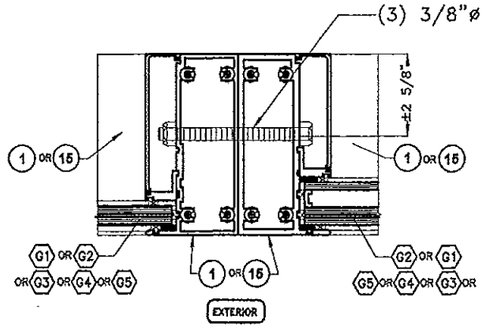


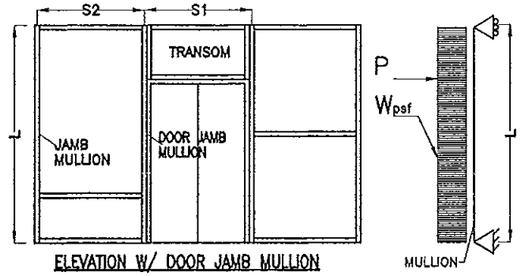
ELEVATION DETAIL 1

SCALE: 1"=1'-0"



SECTION X–X

SCALE: 3/8"=1'-0"



ELEVATION W/ DOOR JAMB MULLION

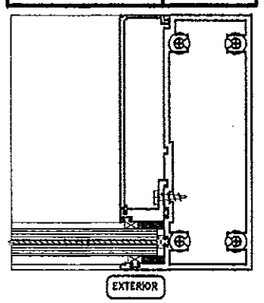
SIDE VIEW DOOR JAMB MULLION

"L" = MAXIMUM DOOR JAMB MULLION SPAN

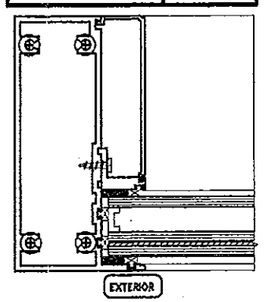
DOOR JAMB MULLION EFFECTIVE SPACING: "b" = $\frac{S1+S2}{2}$

* MAXIMUM DESIGN PRESSURE RATING FOR DOOR JAMB MULLION WILL AUTOMATICALLY QUALIFY DESIGN PRESSURE RATINGS FOR JAMBS MULLIONS FOR ANY GIVEN MULLION SPACING & PRESSURE RATING.

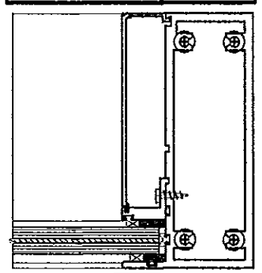
J-1	CASE 1: DOOR JAMB MULLION (1)+(4)+(5)	Ix = 13.076 In4 Sx = 4.351 In3
WATER INFILTRATION IS 19.6 psf		N TERMS OF ALUM



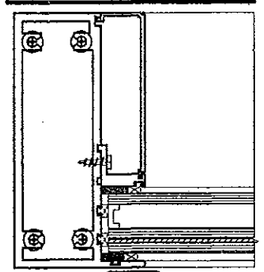
J-2	CASE 2: DOOR JAMB MULLION (1)+(4A)+(5)	Ix = 12.421 In4 Sx = 4.277 In3
WATER INFILTRATION IS 19.6 psf		N TERMS OF ALUM



J-1A	CASE 3: DOOR JAMB MULLION (15)+(4)+(5)	Ix = 16.084 In4 Sx = 5.415 In3
WATER INFILTRATION IS 19.6 psf		N TERMS OF ALUM



J-2A	CASE 4: DOOR JAMB MULLION (15)+(4A)+(5)	Ix = 15.300 In4 Sx = 5.283 In3
WATER INFILTRATION IS 19.6 psf		N TERMS OF ALUM



**MAXIMUM DOOR JAMB MULLION SPAN "L"(FT) SCHEDULE FOR A GIVEN A.S.D. DESIGN PRESSURE RATING (psf), DOOR JAMB MULLION EFFECTIVE SPACING "b"

MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf)	MAX. EFFECTIVE SPACING "b" (Ft-In)	1/8"or 3/16" THICK INTERIOR DOOR JAMB MULLION SPAN "L"(FT) Laminated/Insulated Glass CASES: 1,2,3,4 J-1, J2, J-1A & J-2A
± 40.0	3 '- 6 "	12 '- 0 "
	4 '- 0 "	12 '- 0 "
	4 '- 6 "	12 '- 0 "
	5 '- 0 "	12 '- 0 "
	5 '- 6 "	11 '- 9 "
	6 '- 0 "	11 '- 3 "
	6 '- 6 "	10 '- 10 "
	7 '- 0 "	10 '- 5 "
± 45.0	3 '- 6 "	12 '- 0 "
	4 '- 0 "	12 '- 0 "
	4 '- 6 "	12 '- 0 "
	5 '- 0 "	11 '- 7 "
	5 '- 6 "	11 '- 1 "
	6 '- 0 "	10 '- 7 "
	6 '- 6 "	10 '- 10 "
	7 '- 0 "	9 '- 10 "
± 50.0	3 '- 6 "	12 '- 0 "
	4 '- 0 "	12 '- 0 "
	4 '- 6 "	11 '- 7 "
	5 '- 0 "	11 '- 0 "
	5 '- 6 "	10 '- 6 "
	6 '- 0 "	10 '- 1 "
	6 '- 6 "	9 '- 8 "
	7 '- 0 "	9 '- 4 "
± 55.0	3 '- 6 "	12 '- 0 "
	4 '- 0 "	11 '- 9 "
	4 '- 6 "	11 '- 1 "
	5 '- 0 "	10 '- 6 "
	5 '- 6 "	10 '- 0 "
	6 '- 0 "	9 '- 7 "
	6 '- 6 "	9 '- 3 "
	7 '- 0 "	8 '- 11 "
± 60.0	3 '- 6 "	12 '- 0 "
	4 '- 0 "	11 '- 3 "
	4 '- 6 "	10 '- 7 "
	5 '- 0 "	10 '- 1 "
	5 '- 6 "	9 '- 7 "
	6 '- 0 "	9 '- 2 "
	6 '- 6 "	8 '- 10 "
	7 '- 0 "	8 '- 6 "
± 65.0	3 '- 6 "	11 '- 7 "
	4 '- 0 "	10 '- 10 "
	4 '- 6 "	10 '- 2 "
	5 '- 0 "	9 '- 8 "
	5 '- 6 "	9 '- 3 "
	6 '- 0 "	8 '- 10 "
	6 '- 6 "	8 '- 5 "
	7 '- 0 "	7 '- 10 "

**MAXIMUM DOOR JAMB MULLION SPAN "L"(FT) SCHEDULE FOR A GIVEN A.S.D. DESIGN PRESSURE RATING (psf) & DOOR GIVEN JAMB MULLION EFFECTIVE SPACING "b" (CONTINUED)

MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf)	MAX. EFFECTIVE SPACING "b" (Ft-In)	1/8"or 3/16" THICK INTERIOR DOOR JAMB MULLION SPAN "L"(FT) Laminated/Insulated Glass CASES: 1,2,3,4 J-1, J2, J-1A & J-2A
± 70.0	3 '- 6 "	11 '- 2 "
	4 '- 0 "	10 '- 5 "
	4 '- 6 "	9 '- 10 "
	5 '- 0 "	9 '- 4 "
	5 '- 6 "	8 '- 11 "
	6 '- 0 "	8 '- 6 "
	6 '- 6 "	7 '- 10 "
	7 '- 0 "	7 '- 3 "
± 75.0	3 '- 6 "	10 '- 9 "
	4 '- 0 "	10 '- 1 "
	4 '- 6 "	9 '- 6 "
	5 '- 0 "	9 '- 0 "
	5 '- 6 "	8 '- 7 "
	6 '- 0 "	7 '- 11 "
	6 '- 6 "	7 '- 4 "
	7 '- 0 "	6 '- 9 "
± 80.0	3 '- 6 "	10 '- 5 "
	4 '- 0 "	9 '- 8 "
	4 '- 6 "	9 '- 2 "
	5 '- 0 "	8 '- 9 "
	5 '- 6 "	8 '- 1 "
	6 '- 0 "	7 '- 5 "
	6 '- 6 "	6 '- 10 "
	7 '- 0 "	6 '- 4 "
± 85.0	3 '- 6 "	10 '- 1 "
	4 '- 0 "	9 '- 5 "
	4 '- 6 "	8 '- 11 "
	5 '- 0 "	8 '- 5 "
	5 '- 6 "	7 '- 7 "
	6 '- 0 "	7 '- 0 "
	6 '- 6 "	6 '- 5 "
	7 '- 0 "	6 '- 0 "

** FOR DOOR JAMB MULLION BOTTOM CONNECTION USE (4) 1/4"Ø ULTRACON ANCHORS WITH NO SHIM SPACE ALLOWED OR (4) 3/8"Ø WEDGE–BOLT ANCHORS WITH 3/8" MAX. SHIM SPACE. FOR TOP OF DOOR JAMB MULLION CONNECTIONS SEE SHEETS 8 THRU 13.

CASES DEFINITIONS

CASE 1 :	J-1	JAMB MULLION: 1/8" THICK W/ LAMINATED GLASS (SEE DET. 8/ 21 & 10/22)
CASE 2 :	J-2	JAMB MULLION: 1/8" THICK W/ INSULATED GLASS (SEE DET. 8A / 21 & 10/22)
CASE 3 :	J-1A	JAMB MULLION: 3/16" THICK W/ LAMINATED GLASS (SEE DET. 9/ 21 & 10A/22)
CASE 4 :	J-2A	JAMB MULLION: 3/16" THICK W/ INSULATED GLASS (SEE DET. 9A/21 & 10A/22)

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 13-0930.14
Expiration Date Jan. 12, 2016
By Manuel Perez
Miami-Dade Product Control

MIAMI–DADE COUNTY

WALTER A. TILLIT JR. LICENSE No. 44167 STATE OF FLORIDA PROFESSIONAL ENGINEER

P.E. SEAL/SIGNATURE/DATE

FLORIDA BUILDING CODE (HIGH VELOCITY HURRICANE ZONE)

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e–mail: titeco@aol.com
EB–0006719
WALTER A. TILLIT Jr. P.E.
FLORIDA Lic. # 44167

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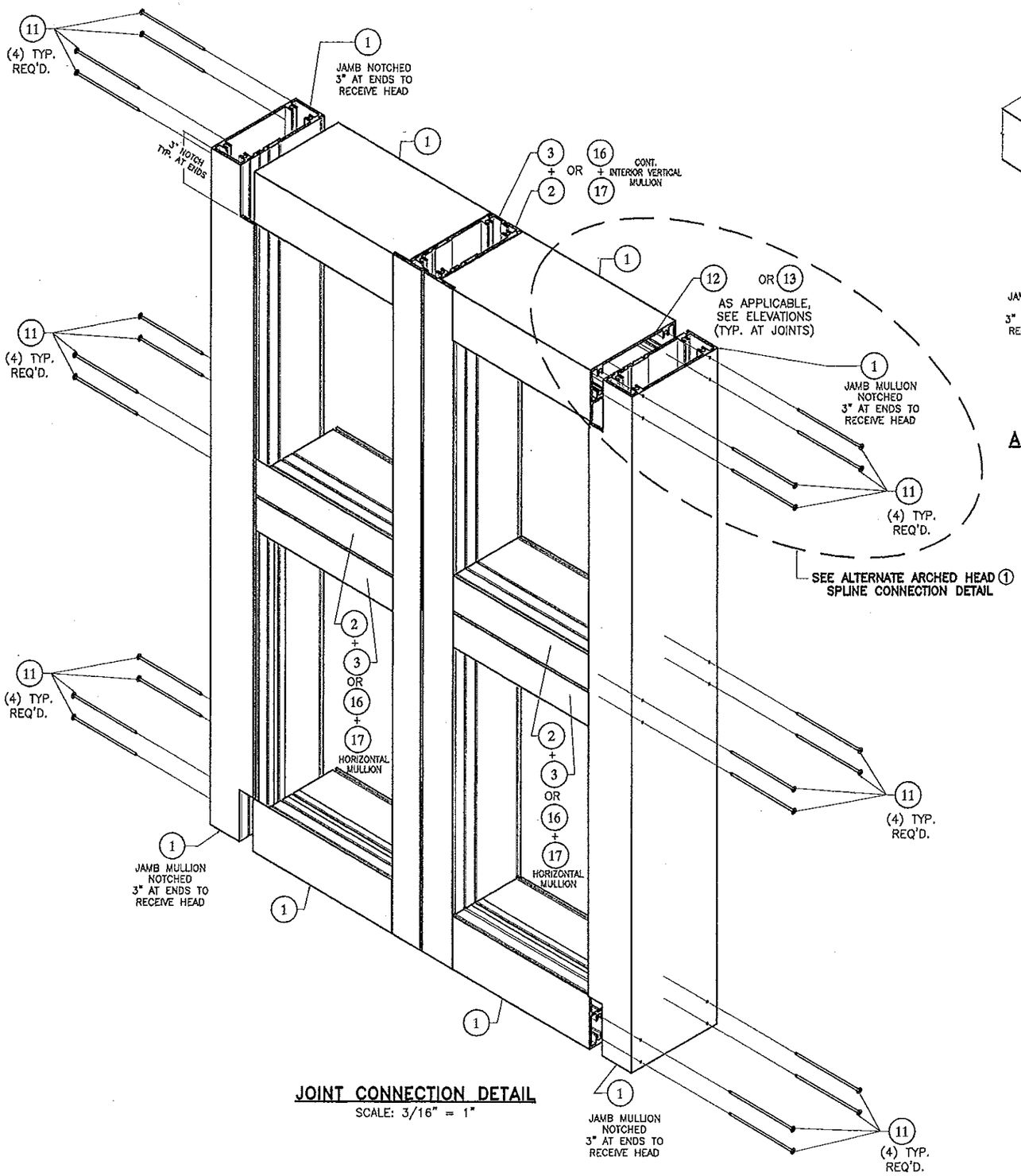
FAX: (305) 558–6665
www.generalimpact.com

REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 12-002	04/26/13	3	–	–
2	–	–	4	–	–

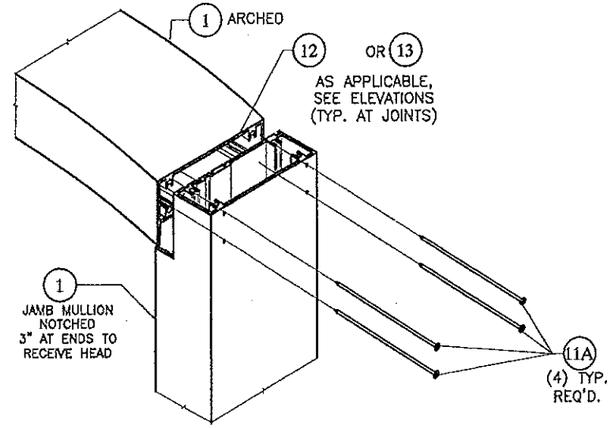
M.C.V./A.G. DRAWN BY

06/26/13 DATE

13-053 DRAWING No



JOINT CONNECTION DETAIL
SCALE: 3/16" = 1"



ARCHED HEAD ① SPLINE CONNECTION DETAIL
SCALE: 3/16" = 1"

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 13-0930.14
Expiration Date Jan 13, 2016
By Manuel Perez
Miami Dade Product Control

MIAMI-DADE COUNTY

WALTER A. TILLUT JR. LICENSE No 44167 STATE OF FLORIDA PROFESSIONAL ENGINEER 7/10/14

P.E. SEAL/SIGNATURE/DATE

FLORIDA BUILDING CODE (High Velocity Hurricane Zone)

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FAX: (305) 558-6665
www.generalimpact.com

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 12-002	06/28/13	3	-	-
2	-	-	4	-	-

M.C.V./A.G. DRAWN BY
06/26/13 DATE
13-053 DRAWING No
SHEET 24 OF 24