



DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES
BOARD AND CODE ADMINISTRATION DIVISION

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

NOTICE OF ACCEPTANCE (NOA)

www.miamidade.gov/building

General Impact Glass and Windows, Corp.
290 West 78th Road
Hialeah, Florida 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 High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: "High Impact 90" Aluminum Accordion Shutter System

APPROVAL DOCUMENT: Drawing No. 12-048, titled "High Impact 90 Accordion Shutter System", sheets 1 through 9 of 9, prepared by Tilteco, Inc., dated February 20, 2012, last revision #1 dated February 20, 2012, signed and sealed by Walter A. Tillit Jr., P.E., on May 01, 2012 bearing the Miami-Dade County Product Control Revision stamp with the Notice of Acceptance number and expiration date by 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, the following statement: Miami-Dade County Product Control Approved, and NOA number, per TAS-210, TAS-202, and TAS-203, 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 # 11-0107.12 and consists of this page 1, evidence submitted pages E-1 & E-2 as well as approval document mentioned above.

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



Helmy A. Makar
08/09/2012

NOA No. 12-0507.07
Expiration Date: 01/05/2016
Approval Date: 08/09/2012

General Impact Glass and Windows, Corp.

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 05-1122.09

A. DRAWINGS:

1. *Drawing No. 05-294, titled "High Impact 90 Accordion Shutter System", sheets 1 through 9 of 9, prepared by Tilteco, Inc., dated October 10, 2005, last revision #1 dated December 13, 2005, signed and sealed by Walter A. Tillit Jr., P.E.*

B. TESTS

1. *Test report on Large Missile Impact Test and Cyclic Wind Pressure Test for "Aluminum Accordion Shutter", prepared by Fenestration Testing Laboratory, Inc., Report # 4730, dated October 17, 2005, signed and sealed by Edmundo Largaespada, P.E.*
2. *Test report on Uniform Static Air Pressure Test for "Aluminum Accordion Shutter", prepared by Fenestration Testing Laboratory, Inc., Report # 4726, dated October 14, 2005, signed and sealed by Edmundo Largaespada, P.E.*

C. CALCULATIONS

1. *Comparative analysis and anchor calculations dated November 02, 2005, pages 1 through 53 of 53, prepared by Tilteco, Inc., signed and sealed by Walter A. Tillit Jr., P.E.*

D. QUALITY ASSURANCE

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

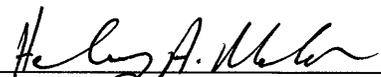
E. MATERIAL CERTIFICATIONS

1. *Mill Certified Test Reports issued by Applied Technical Services, Inc., dated November 17, 2005, with chemical composition and mechanical properties of Aluminum Flat Reduced Section.*
2. *Tensile Test Report # 05-429, prepared by Fenestration Testing Laboratory, Inc., dated October 12, 2005, signed and sealed by Edmundo Largaespada, P.E.*

2. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 11-0107.12

A. DRAWINGS:

1. *Drawing No. 11-001, titled "High Impact 90 Accordion Shutter System", sheets 1 through 9 of 9, prepared by Tilteco, Inc., dated January 03, 2011, last revision #1 dated January 03, 2011, signed and sealed by Walter A. Tillit Jr., P.E.*



Helmy A. Makar, P.E., M.S.
Product Control Unit Supervisor
NOA No. 12-0507.07
Expiration Date: 01/05/2016
Approval Date: 08/09/2012

General Impact Glass and Windows, Corp.

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

B. TESTS

1. *None.*

C. CALCULATIONS

1. *Anchor calculations dated January 03, 2011, pages 1 through 11 of 11, prepared by Tilteco, Inc., signed and sealed by Walter A. Tillit Jr., P.E.*

D. QUALITY ASSURANCE

1. *By Miami-Dade County Building and Neighborhood Compliance Department (BNC).*

E. MATERIAL CERTIFICATIONS

1. *None.*

3. NEW EVIDENCE SUBMITTED

A. DRAWINGS:

1. *Drawing No. 12-048, titled "High Impact 90 Accordion Shutter System", sheets 1 through 9 of 9, prepared by Tilteco, Inc., dated February 20, 2012, last revision #1 dated February 20, 2012, signed and sealed by Walter A. Tillit Jr., P.E., on May 01, 2012.*

B. TESTS

1. *None.*

C. CALCULATIONS

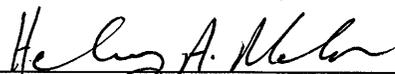
1. *None.*

D. QUALITY ASSURANCE

1. *By Miami-Dade County Department of Regulatory and Economic Resources.*

E. MATERIAL CERTIFICATIONS

1. *None.*



Henry A. Makar, P.E., M.S.
Product Control Unit Supervisor
NOA No. 12-0507.07
Expiration Date: 01/05/2016
Approval Date: 08/09/2012

GENERAL NOTES:

1. HIGH IMPACT 90° ACCORDION SHUTTER SYSTEM SHOWN ON THIS PRODUCT APPROVAL DOCUMENT (P.A.D.) HAS BEEN VERIFIED FOR COMPLIANCE IN ACCORDANCE WITH THE 2007 & 2010 EDITIONS OF THE FLORIDA BUILDING CODE. THIS ACCORDION SHUTTER SYSTEM MAY BE INSTALLED AT HIGH VELOCITY HURRICANE ZONES (MIAMI-DADE/BROWARD COUNTIES).

DESIGN WIND LOADS SHALL BE DETERMINED AS PER SECTIONS 1620 OF THE ABOVE MENTIONED CODES, USING ASCE 7-05 STANDARD FOR INSTALLATIONS UNDER 2007 FBC & ASCE 7-10 FOR INSTALLATIONS UNDER 2010 FBC AND SHALL NOT EXCEED THE MAXIMUM (A.S.D.) DESIGN PRESSURE RATINGS INDICATED ON SHEETS 7, 8 & 9.

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 SHEETS 7, 8 & 9.

IN ORDER TO VERIFY THAT ANCHORS ON THIS P.A.D., AS TESTED, WERE NOT OVERSTRESSED, A 33% INCREASE IN ALLOWABLE LOADS FOR WIND LOADS WAS NOT USED IN THEIR ANALYSIS. A DURATION FACTOR CD=1.60 WAS USED TO VERIFY ANCHOR SPACINGS IN WOOD. HIGH IMPACT 90° ACCORDION SHUTTER SYSTEM'S ADEQUACY FOR WIND AND IMPACT LOAD HAS BEEN VERIFIED IN ACCORDANCE WITH SECTION 1626 OF THE ABOVE MENTIONED CODE AS PER FENESTRATION TESTING LAB REPORTS # 4726 AND # 4730 AS PER TAS-201, TAS-202 AND TAS-203 PROTOCOLS.

2. HIGH IMPACT 90° ACCORDION SHUTTER SYSTEM PINS USED AT BLADES KNUCKLE SHALL BE # 14X 2 3/4" 410-HT MINIMUM SERIES STAINLESS STEEL SCREWS WITH 135.0 ksi YIELD STRENGTH AND 180 ksi TENSILE STRENGTH. PINS SHALL BE COATED WITH XLAN 5000 SERIES FLUOROPOLYMER COATING AS MANUFACTURED BY WITFORD Co. BOX507. WEST CHESTER PA. 19381.

3. ALL ALUMINUM EXTRUSIONS SHALL BE ALUMINUM ASSOCIATION 6063-T6 ALLOY AND TEMPER, WITH Fy = 31.0 ksi MINIMUM.

4. ALL SCREWS TO BE STAINLESS STEEL 304 OR 316 AISI SERIES OR CORROSION RESISTANT COATED CARBON STEEL AS PER DIN 50018 AND SECTION 2411.3.3.4 OF THE FLORIDA BUILDING CODE 2007 WITH 50 ksi YIELD STRENGTH AND 90 ksi TENSILE STRENGTH.

5. BOLTS TO BE ASTM A-307 GALVANIZED STEEL, OR AISI 304 SERIES STAINLESS STEEL WITH 35 ksi MINIMUM YIELD STRENGTH.

6. SEE SHEET 9 OF 9 FOR ANCHORS SPECIFICATIONS. SEE SHEET 8 FOR MAXIMUM A.S.D. DESIGN LOAD VS. SPAN SCHEDULE.

7. THIS HIGH IMPACT 90° ACCORDION SHUTTER SYSTEM IS PATENT PENDING. COMPONENTS OF THIS APPROVAL ARE COVERED, IN WHOLE OR IN PART BY U.S. PATENT ISSUED TO GENERAL IMPACT GLASS AND WINDOWS, CORP.

8. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SOUNDNESS OF THE STRUCTURE WHERE SHUTTER IS TO BE ATTACHED TO INSURE PROPER ANCHORAGE. CONTRACTOR TO SEAL/CAULK ALL SHUTTER COMPONENT EDGES WHICH REMAIN IN CONTINUOUS CONTACT WITH THE BUILDING TO PREVENT WIND/RAIN INTRUSION.

9. EACH UNIT MUST BEAR A PERMANENT LABEL IN A VISIBLE PLACE WITH WARNING NOTE INSTRUCTING THE TENANT OR HOME OWNER THAT LOCK (M) MUST BE PROPERLY LOCKED DURING PERIODS OF HURRICANE WARNING. FOR EGRESS CONDITIONS, AN INSIDE LOCK (M) (WHERE KEY MUST REMAIN IN THE LOCK), OR AN EGRESS LOCK (M) SHALL BE USED.

10. HIGH IMPACT 90° ACCORDION SHUTTER SYSTEM'S INSTALLATION SHALL COMPLY WITH SPECS INDICATED IN THIS DRAWING PLUS ANY BUILDING AND ZONING REGULATIONS PROVIDED BY THE JURISDICTION WHERE PERMIT IS APPLIED TO.

11. (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.

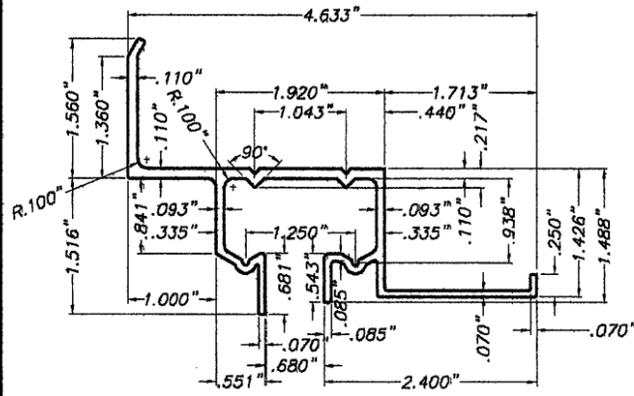
(c) THIS P.A.D. WILL BE CONSIDERED INVALID IF ALTERED BY ANY MEANS.

(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 A DELEGATED ENGINEER TO THE P.A.D. ENGINEER SHALL SUBMIT TO THIS LATTER THE SITE SPECIFIC DRAWINGS FOR REVIEW.

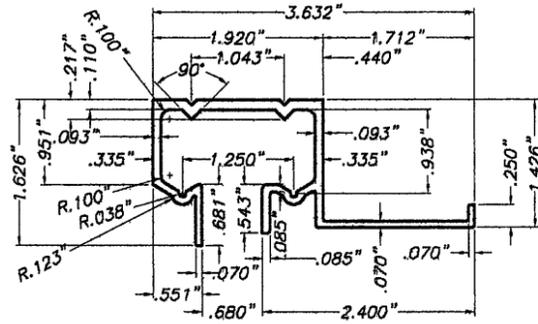
(e) THIS P.A.D. SHALL BEAR THE DATE AND ORIGINAL SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER OF RECORD THAT PREPARED IT.

12. SHUTTER'S MANUFACTURER STAMP SHALL BE PLACED ON THE EXPOSED SURFACE OF THE CENTERMATE "L" OR "L1". ONE LABEL SHALL BE PLACED FOR EVERY OPENING. LABEL SHALL READ AS FOLLOWS:
GENERAL IMPACT GLASS AND WINDOWS, CORP.
HIALEAH, FL.
 MIAMI-DADE COUNTY PRODUCT CONTROL APPROVED.

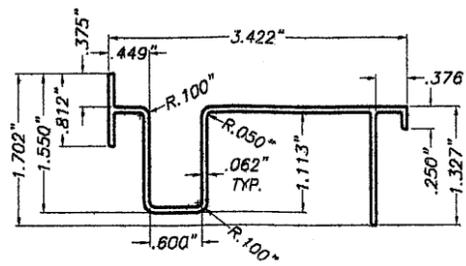
<p>PRODUCT REVISED as complying with the Florida Building Code Acceptance No 12-0507.07 Expiration Date 01/05/2016 By <i>[Signature]</i> Miami Dade Product Control</p> <p style="text-align: center;">MIAMI-DADE COUNTY</p>	<p>WALTER A. TILLIT JR. LICENSE NO. 44167 STATE OF FLORIDA PROFESSIONAL ENGINEER P.E. SEAL/SIGNATURE/DATE</p>	<p>FLORIDA BUILDING CODE (HIGH VELOCITY HURRICANE ZONE)</p> <p>© 2012 TILTECO, INC.</p> <p>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</p>		<p>HIGH IMPACT 90° ACCORDION SHUTTER SYSTEM</p> <p>290 WEST 78 ROAD HIALEAH, FL. 33014 PHONE: (305) 558-8103 FAX: (305) 558-6665 www.generalimpact.com</p>	<p>DRAWN BY: J.J.V./L.G./ M.C.V./A.G.</p> <p>02/20/12 DATE</p> <p>12-048 DRAWING No</p>																	
		<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>REV. No</th> <th>DESCRIPTION</th> <th>DATE</th> <th>REV. No</th> <th>DESCRIPTION</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>OLD 11-001</td> <td>02/20/12</td> <td>3</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td>4</td> <td></td> <td></td> </tr> </tbody> </table>	REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE	1	OLD 11-001	02/20/12	3			2			4				
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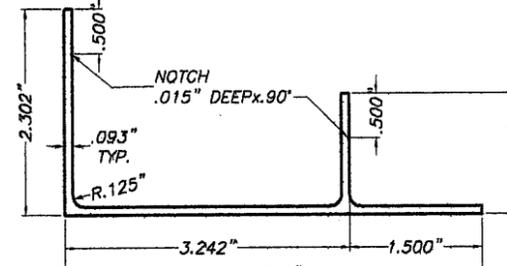
(A) WALL HEADER FOR 90°
SCALE: 1/2" = 1"



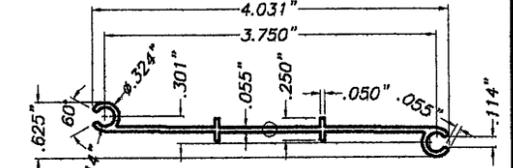
(B) CEILING HEADER FOR 90°
SCALE: 1/2" = 1"



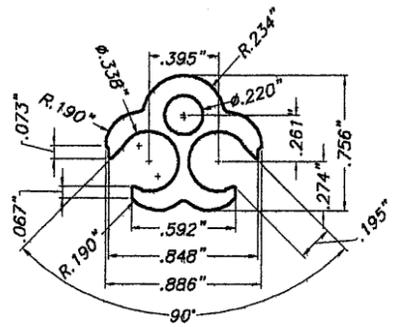
(D) FLOOR SILL FOR 90°
SCALE: 1/2" = 1"



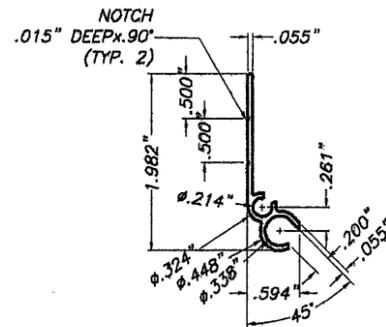
(E1) SILL ADAPTOR W/LIP FOR 90°
SCALE: 1/2" = 1"



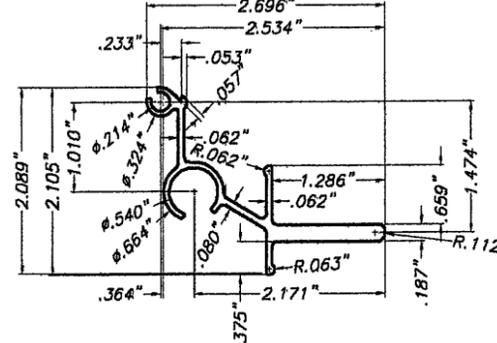
(G) LOUVER BLADE
SCALE: 1/2" = 1"



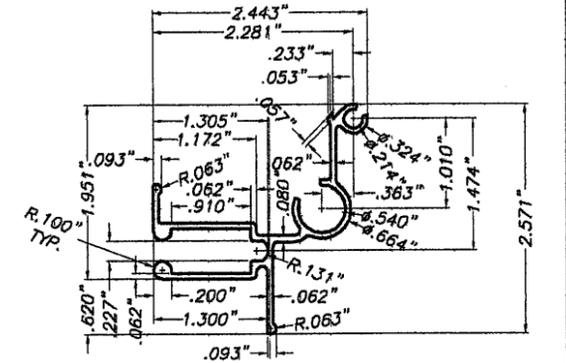
(H) 90° SYSTEM BLADE & CENTERMATE CONNECTOR
SCALE: 1" = 1"



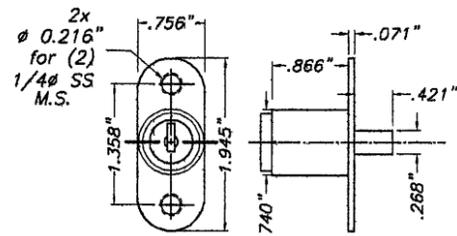
(J) 90° SYSTEM STARTER
SCALE: 1/2" = 1"



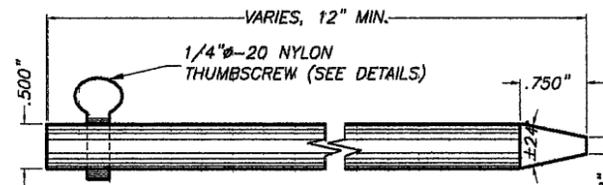
(L) 90° SYSTEM MALE CENTERMATE
SCALE: 1/2" = 1"



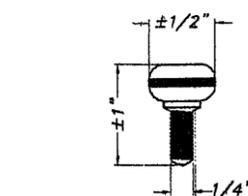
(L1) 90° SYSTEM FEMALE CENTERMATE
SCALE: 1/2" = 1"



(M) CHROME PLATED ZINC ALLOY PUSH LOCK BY WIND CORPORATION (DWG# 19034)
SCALE: 1/2" = 1"



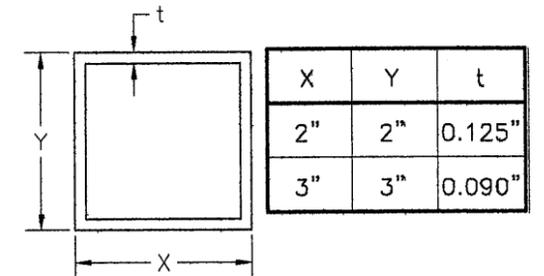
(N) LOCKING ROD
SCALE: 1/2" = 1"



(Q) 1/4"Ø-20 NYLON THUMBSCREW FOR LOCKING ROD (N)

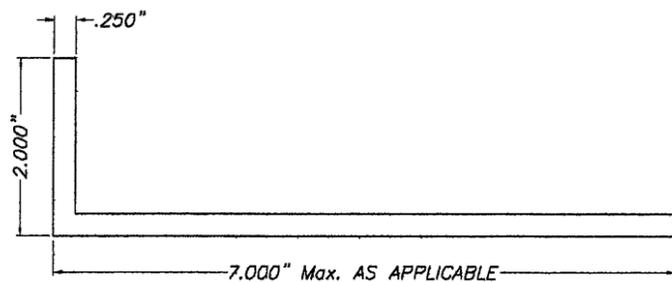
X	Y	t
1"	1"	0.062"
1"	2"	0.062"
2"	2"	0.062"
2"	3"	0.062"
2"	4"	0.062"
2"	5"	0.062"

(R) SIDE ANGLE



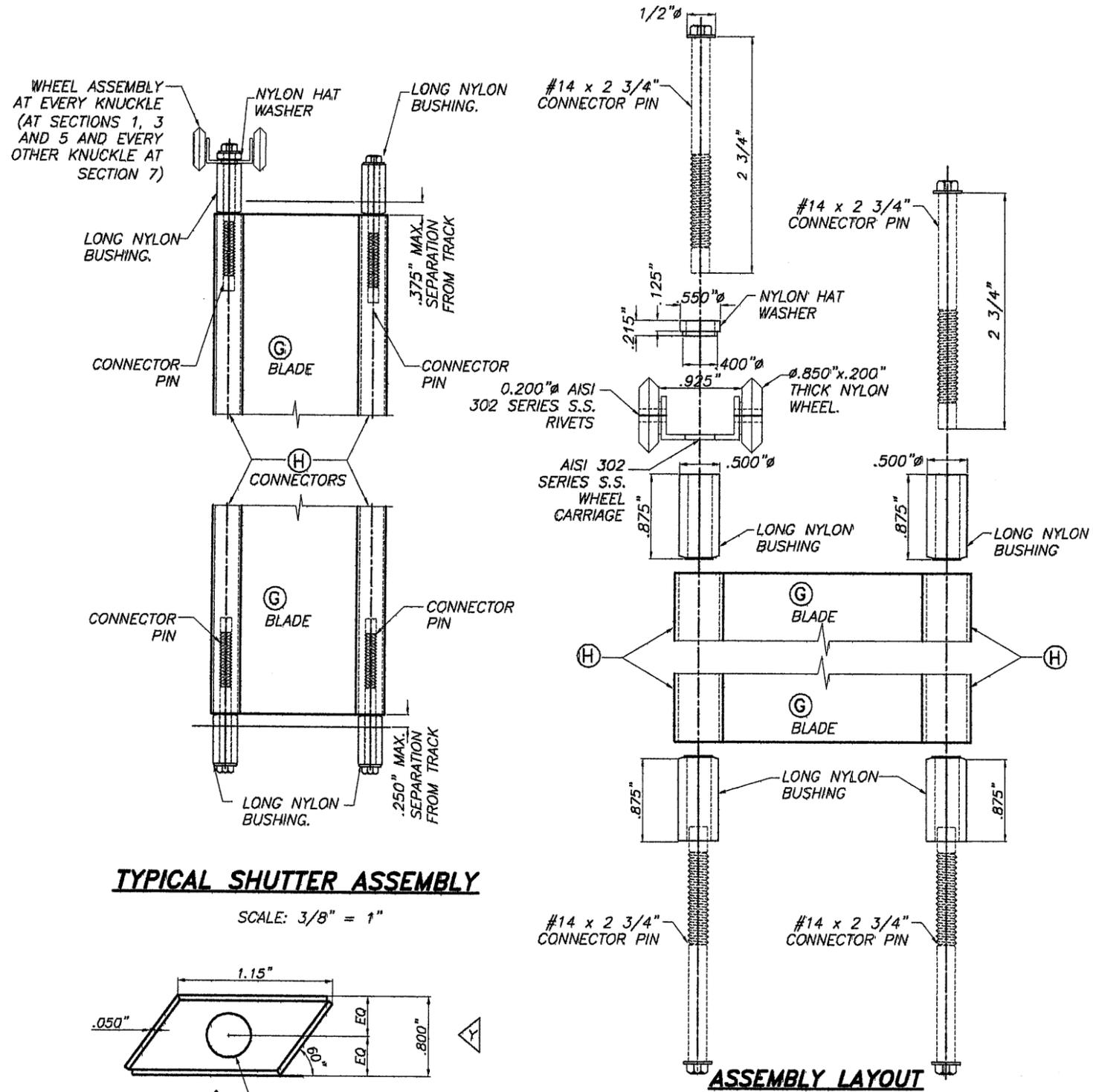
(S) CORNER POST

COMPONENTS



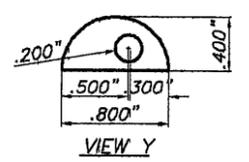
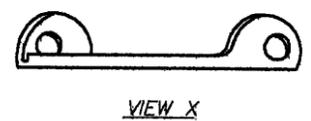
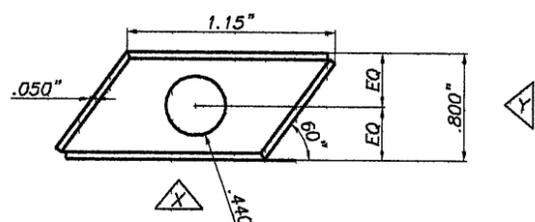
(P1) B.O. ALUMINUM ANGLE
SCALE: 1/2" = 1"

PRODUCT REVISED as complying with the Florida Building Code Acceptance No 12-0507.07 Expiration Date 01/03/2016 By <i>Walter A. Tillit Jr.</i> Miami Dade Product Control MIAMI-DADE COUNTY		FLORIDA BUILDING CODE (HIGH VELOCITY HURRICANE ZONE)																			
		© 2012 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: tiltco@aol.com EB-0006719 WALTER A. TILLIT JR. P.E. FLORIDA Lic. # 44167	HIGH IMPACT 90° ACCORDION SHUTTER SYSTEM 290 WEST 78 ROAD HIALEAH, FL 33014 PHONE: (305) 558-8103 FAX: (305) 558-6665 www.generalimpact.com																		
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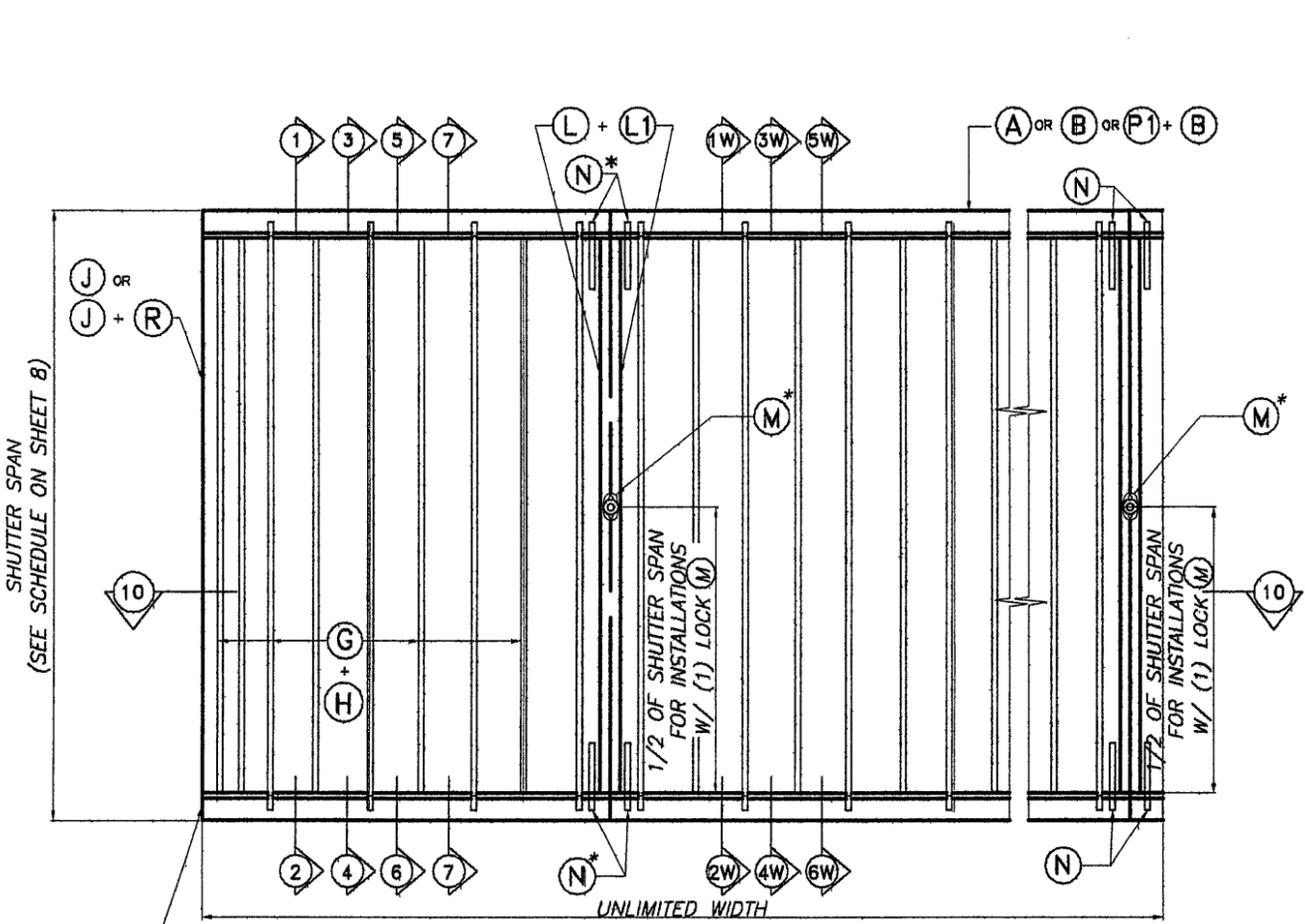
TYPICAL SHUTTER ASSEMBLY

SCALE: 3/8" = 1"



WHEEL CARRIAGE DETAIL: AISI 302 SERIES

N.T.S.



TYPICAL SHUTTER ELEVATION **

N.T.S.

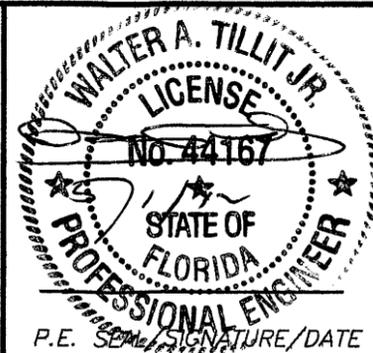
*** NOTES ON LOCK (M) AND LOCKING RODS (N)**

- ONE LOCK (M) SHALL ALWAYS BE USED AT SHUTTER'S MIDSPAN AT ALL INSTALLATIONS.
- (2) LOCKING RODS (N) SHALL ALWAYS BE USED TOP & BOTTOM AT SHUTTER'S CENTERMATES (L) & (L1) AT ALL INSTALLATIONS. LOCKING RODS (N) SHALL BE SECURED W/ 1/4"-20 NYLON THUMBSCREW.

**** NOTE: SEE SECTIONS 1 THRU 6 ON SHEET 4. SEE SECTIONS 7 ON SHEET 5. SEE SECTIONS 1W THRU 6W ON SHEET 7.**

PRODUCT REVISED as complying with the Florida Building Code Acceptance No 12-0507-07 Expiration Date 01/05/2016
 By *Walter A. Tillit Jr.*
 Miami Dade Product Control

MIAMI-DADE COUNTY



© 2012 TILTECO, INC.

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

FLORIDA BUILDING CODE (HIGH VELOCITY HURRICANE ZONE)

© 2012 TILTECO, INC.

HIGH IMPACT 90° ACCORDION SHUTTER SYSTEM

DRAWN BY: J.J.V./L.G./M.C.V./A.G.

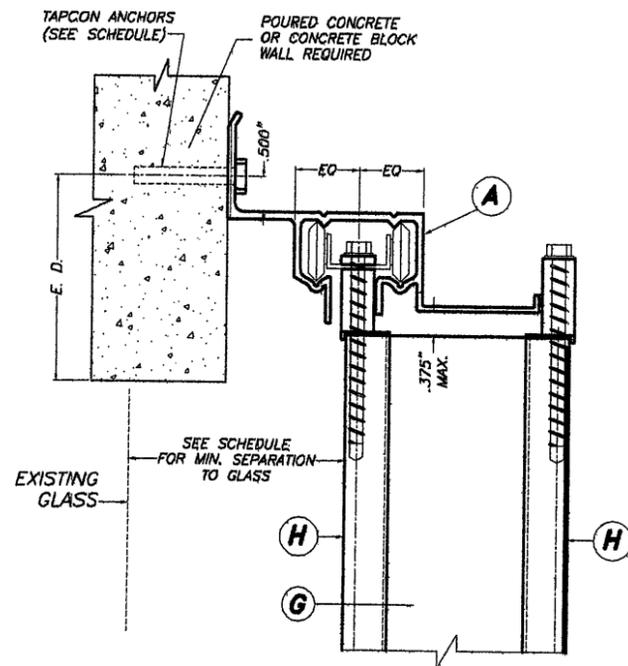
02/20/12 DATE

12-048 DRAWING No

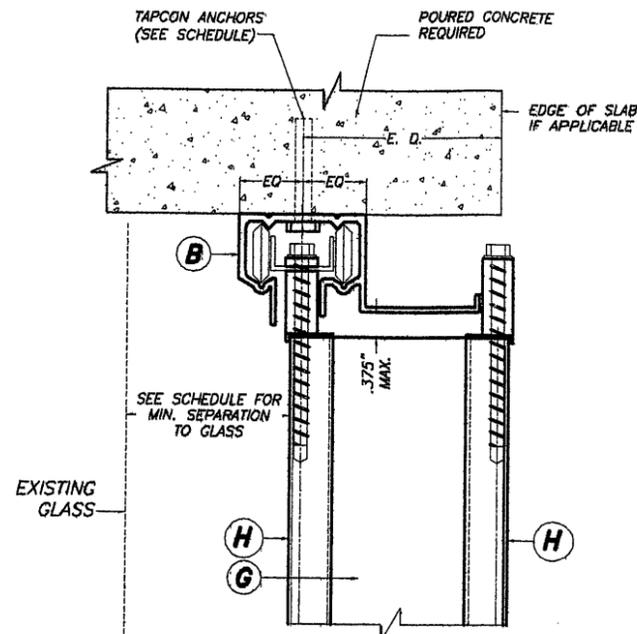
290 WEST 78 ROAD
 HIALEAH, FL. 33014
 PHONE: (305) 558-8103
 FAX: (305) 558-6665
 www.generalimpact.com

REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 11-001	02/20/12	3		
2			4		

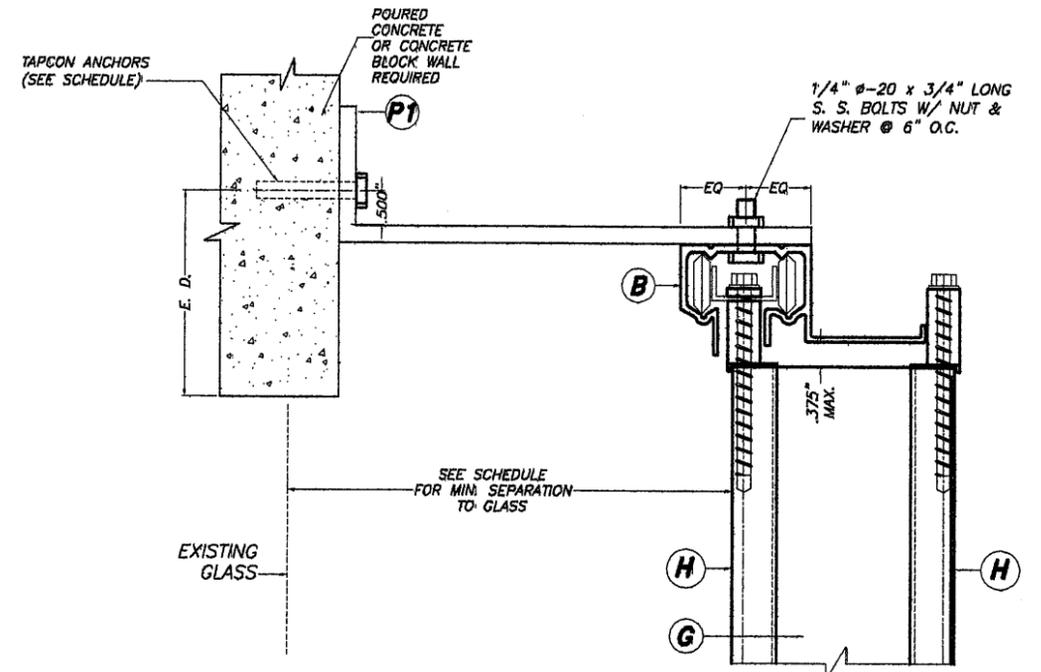
SHEET 3 OF 9



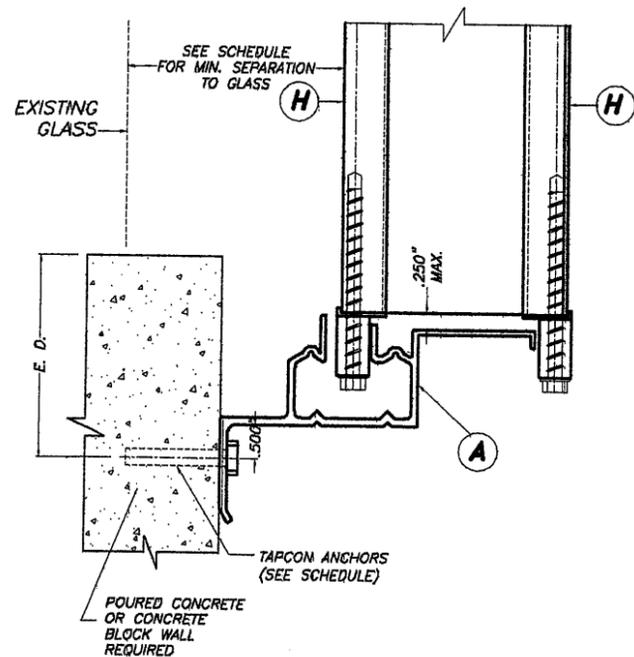
SECTION 1:
WALL MOUNTING INSTALLATION



SECTION 3:
CEILING MOUNTING INSTALLATION



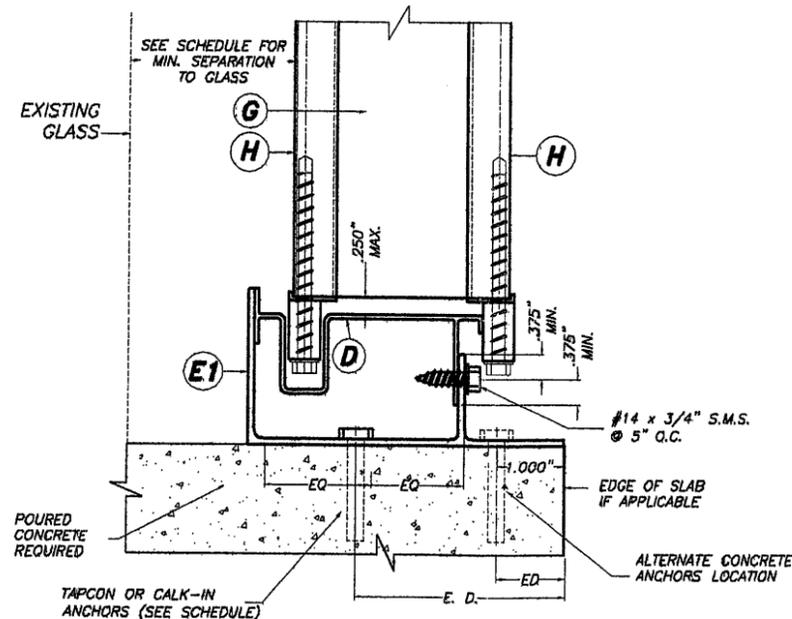
SECTION 5:
BUILD-OUT MOUNTING INSTALLATION



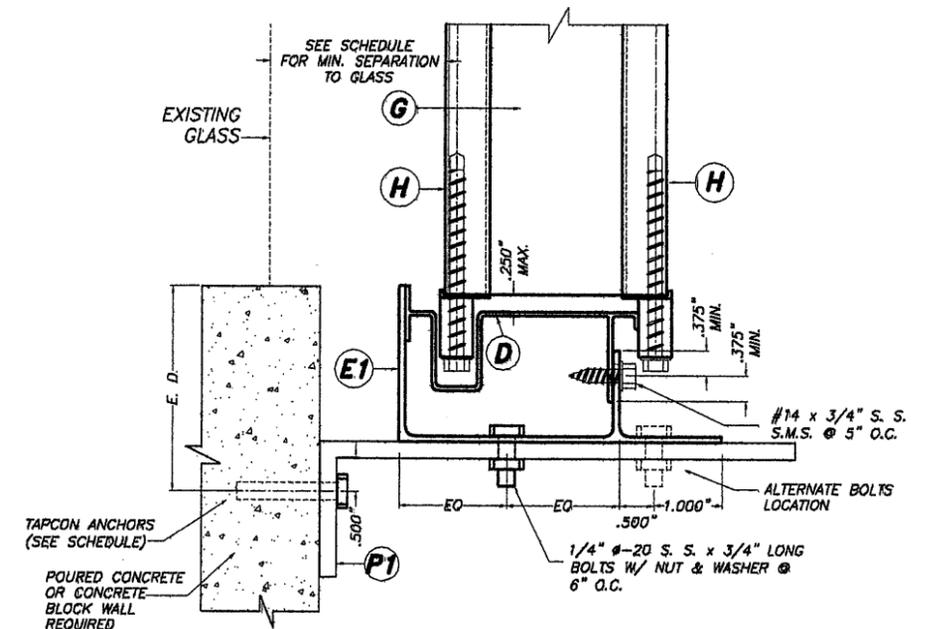
SECTION 2:
WALL MOUNTING INSTALLATION

INSTALLATION DETAILS

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



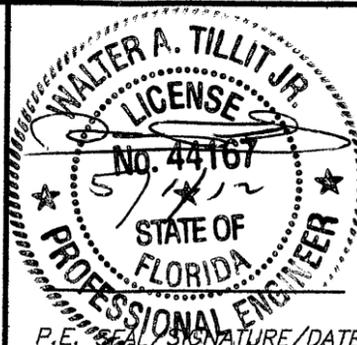
SECTION 4:
FLOOR MOUNTING INSTALLATION



SECTION 6:
BUILD-OUT MOUNTING INSTALLATION

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 12-0507.07
Expiration Date 01/05/2016
By *Walter A. Tillit Jr.*
Miami Dade Product Control

MIAMI-DADE COUNTY



FLORIDA BUILDING CODE (HIGH VELOCITY HURRICANE ZONE)

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EB-0006719
WALTER A. TILLIT JR. P.E.
FLORIDA Lic. # 44167

HIGH IMPACT 90° ACCORDION
SHUTTER SYSTEM



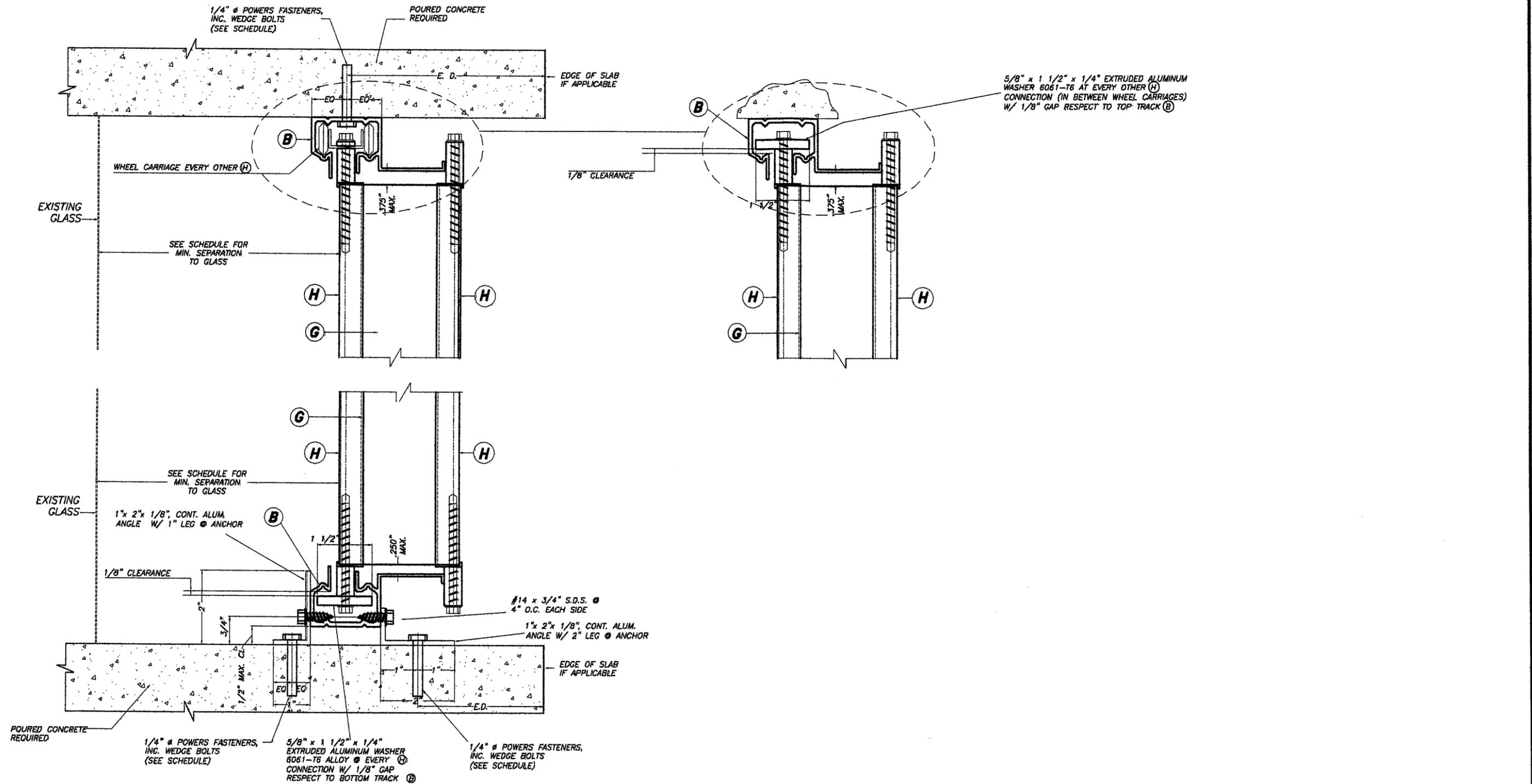
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FAX: (305) 558-6665
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2			4		



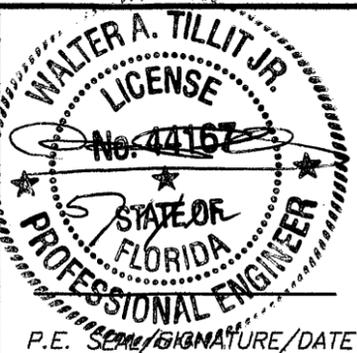
SECTION 7:
CEILING & FLOOR MOUNTING INSTALLATION

INSTALLATION DETAILS

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

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 Building Code
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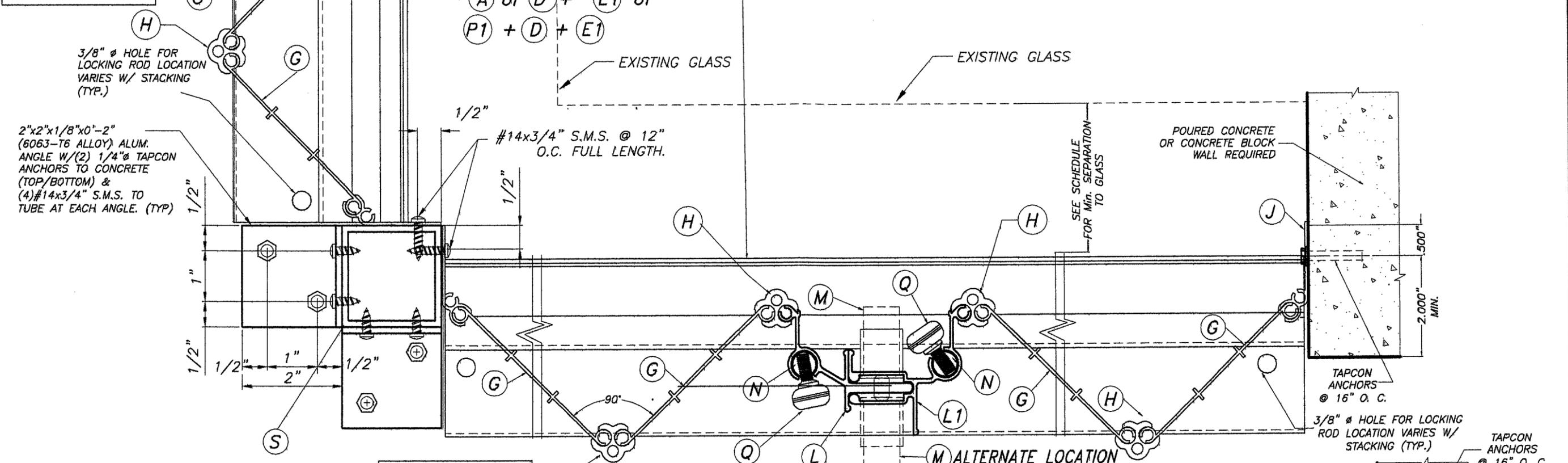
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2			4		

EXTERIOR

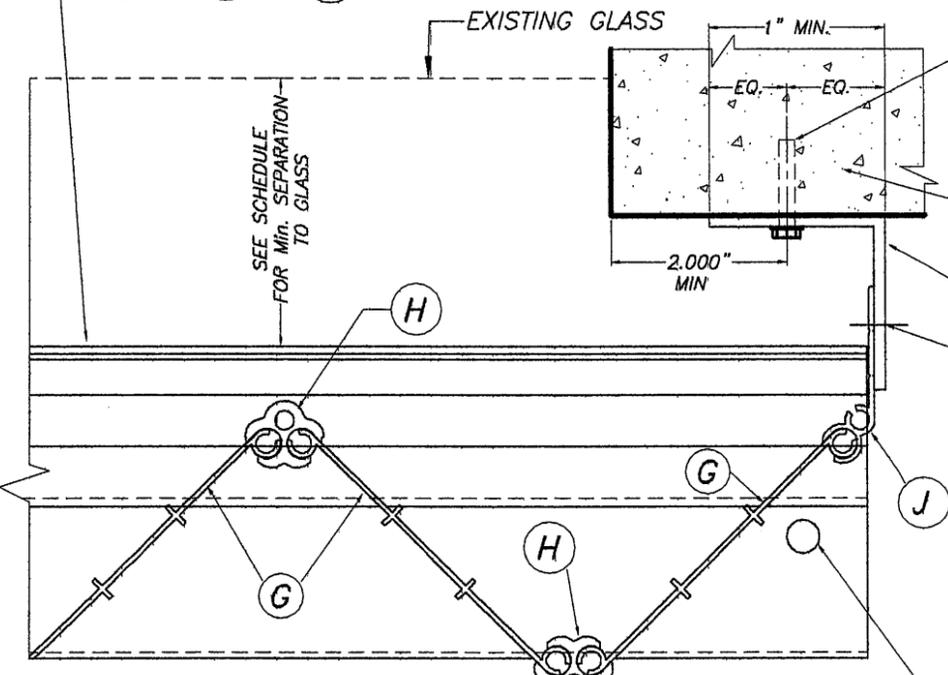


EXTERIOR

SECTION: 10

SCALE: 1/2"=1'-0"

A or D + E1 or P1 + D + E1

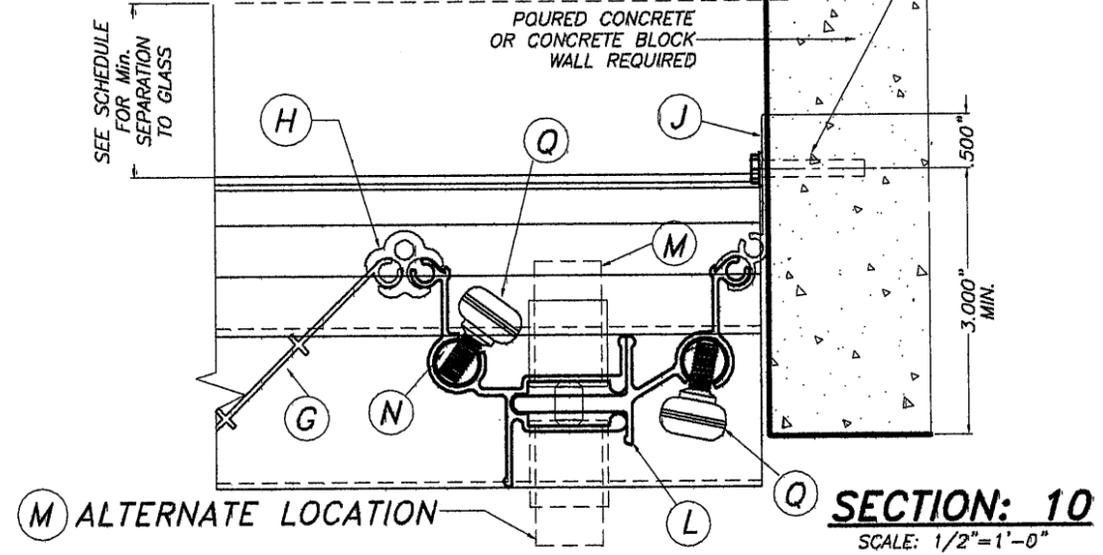


SECTION: 10

SCALE: 1/2"=1'-0"

3/8" ϕ HOLE FOR LOCKING ROD LOCATION VARIES W/ STACKING (TYP.)

SEE SCHEDULE FOR Min. SEPARATION TO GLASS

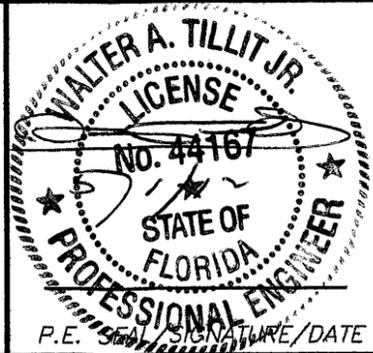


SECTION: 10

SCALE: 1/2"=1'-0"

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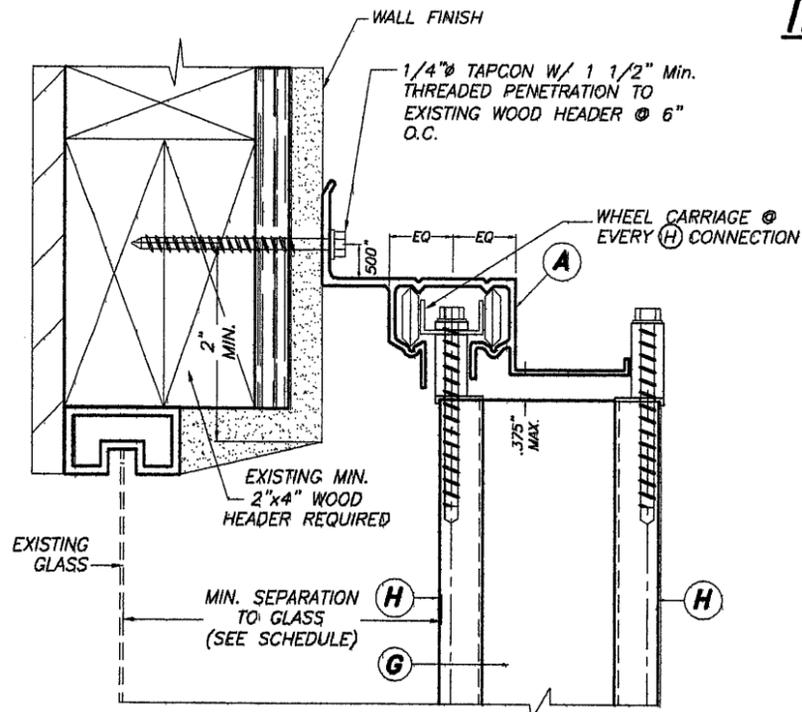
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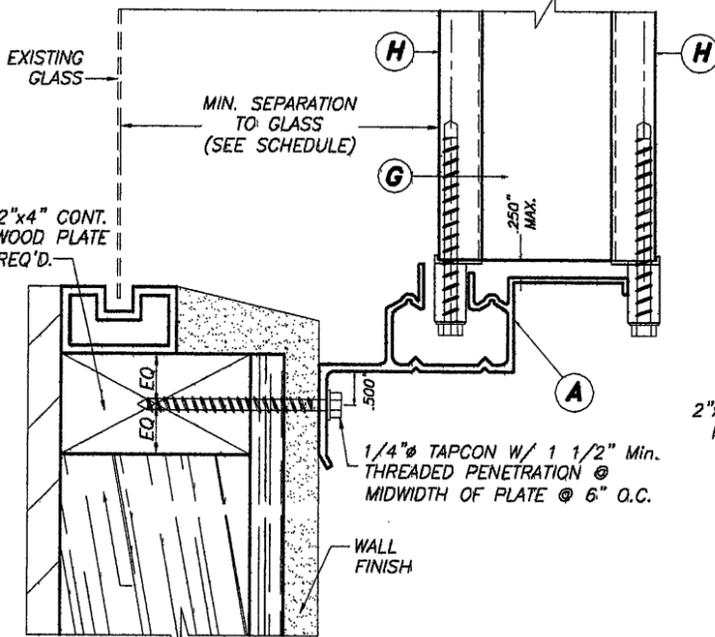
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 SHEET 6 OF 9

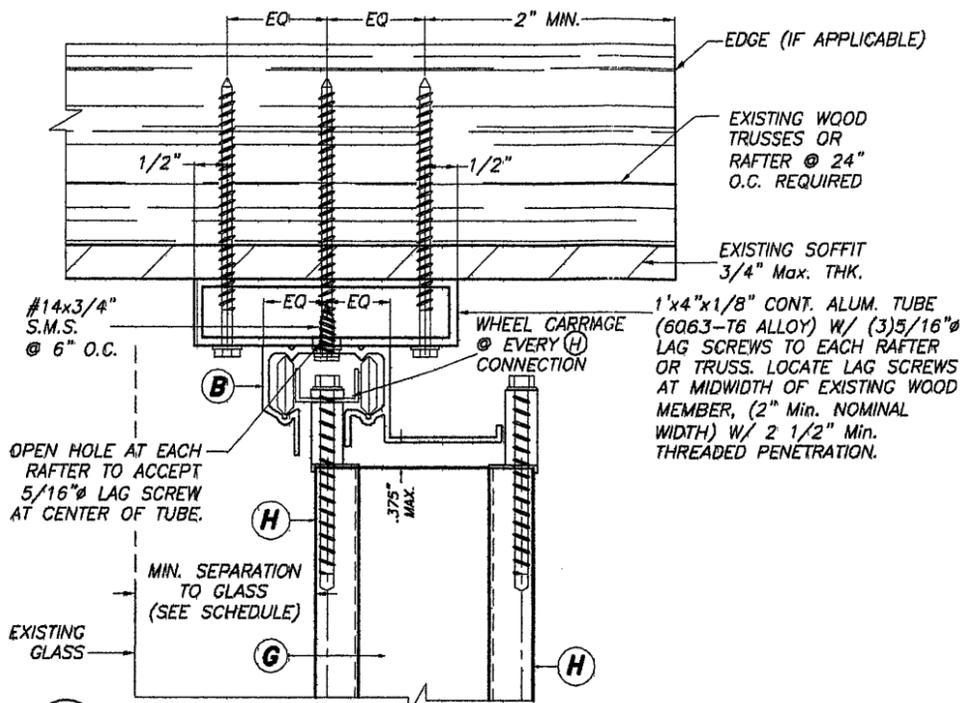
INSTALLATION DETAILS ON EXISTING WOOD BUILDINGS



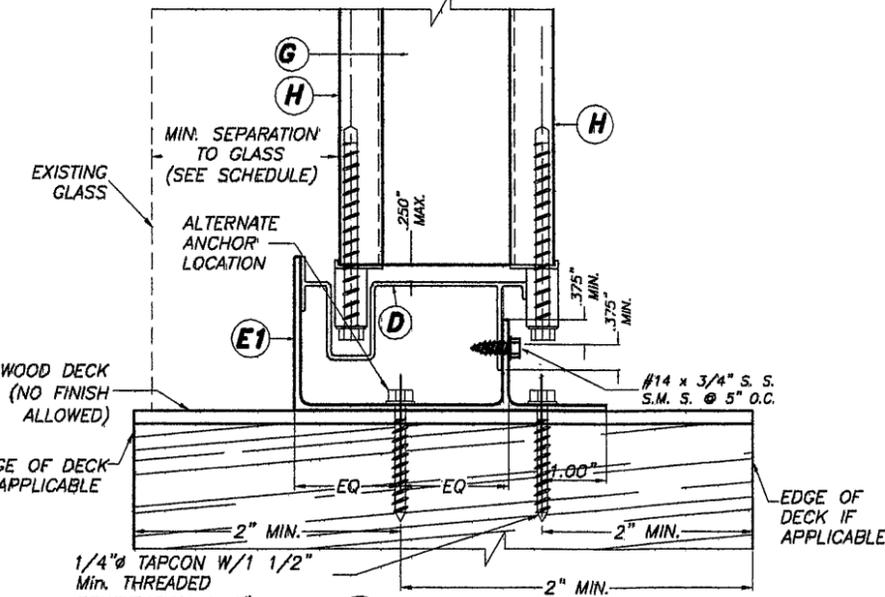
1W WALL CONNECTION AT TOP



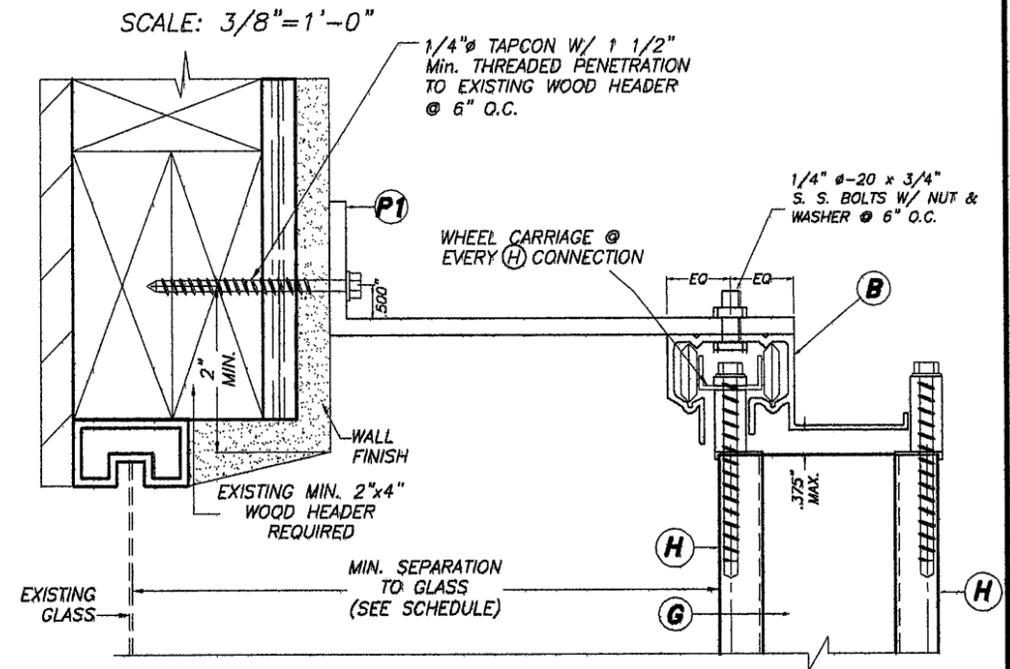
2W WALL CONNECTION AT BOTTOM



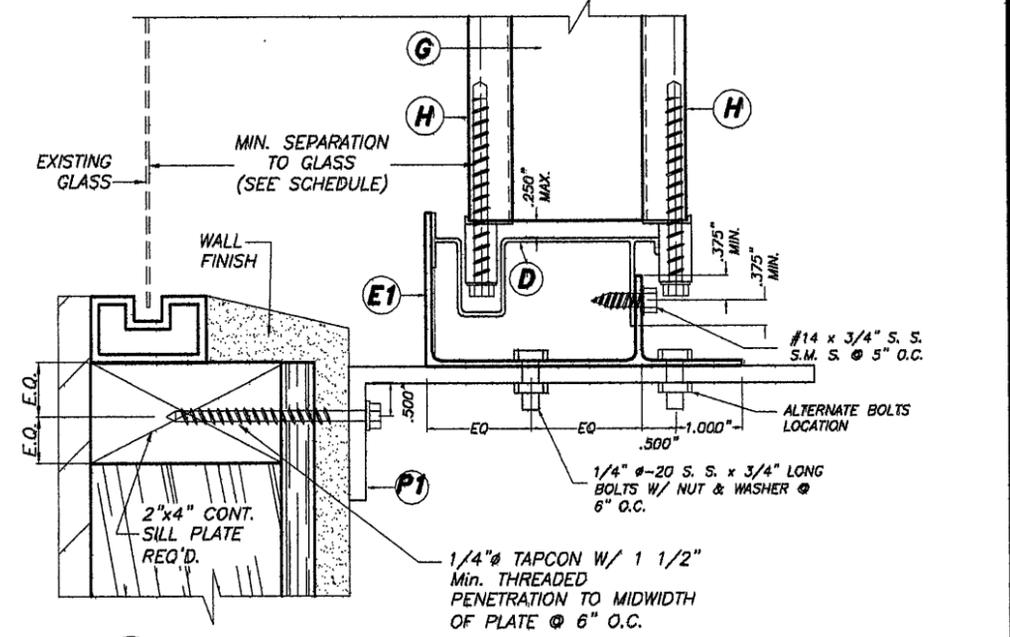
3W HOLLOW CEILING MOUNTING INSTALLATION



4W FLOOR CONNECTION



5W WALL CONNECTION AT TOP

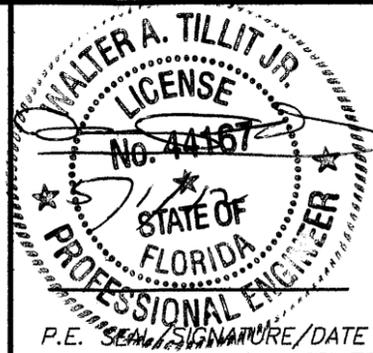


6W WALL CONNECTION AT BOTTOM

NOTES:
 1. INSTALLATIONS ARE ONLY VALID FOR A.S.D. DESIGN PRESSURE RATING UP TO +60.0 -72.0 psf AND SHUTTER'S SPAN UP TO 9'-0".
 2. FOR NEW WOOD FRAME CONSTRUCTION: WOOD MEMBERS TO BE SOUTHERN PINE No. 2, W/ SPECIFIC DENSITY OF 0.55 OR EQUAL.

NOTE:
 1-SEE SHEET 3 FOR TYPICAL SHUTTER ASSEMBLY
 2-MOUNTING SECTIONS CAN BE COMBINED IN ANY WAY TO SUIT ANY INSTALLATION.

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 Miami Dade Product Control
 MIAMI-DADE COUNTY



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 SHEET 7 OF 9

MAXIMUM SHUTTER SPAN
 "L+" OR "L-" (ft.) *
 INSTALLATIONS W/ (L) AND (L1)
 90° CENTERMATES, ONE (M) LOCK
 & LOCKING RODS (N)

MAX. A.S.D. DESIGN PRESSURE RATING (p.s.f.) (+ OR -)	CONCRETE & CONCRETE BLOCK INSTALLATIONS			
	MOUNTING CONDITIONS PER SECTIONS 1 THRU 6		MOUNTING CONDITIONS PER SECTION 7	
	L + (ft)	L - (ft)	L + (ft)	L - (ft)
30 OR LESS	13'-7"	16'-0"	10'-0"	10'-0"
35	13'-1"	15'-11"	10'-0"	10'-0"
40	12'-8"	15'-11"	10'-0"	10'-0"
45	12'-3"	15'-11"	10'-0"	10'-0"
50	12'-0"	15'-5"	10'-0"	10'-0"
55	11'-8"	14'-10"	10'-0"	10'-0"
60	11'-5"	14'-2"	10'-0"	10'-0"
65	11'-2"	13'-7"	10'-0"	10'-0"
70	11'-0"	13'-1"	10'-0"	10'-0"
75	10'-10"	12'-8"	10'-0"	10'-0"
80	10'-7"	12'-3"	10'-0"	10'-0"
85	10'-3"	11'-11"	10'-0"	10'-0"
90	10'-0"	11'-7"	10'-0"	10'-0"
95	9'-9"	11'-3"	10'-0"	10'-0"
100	9'-6"	11'-0"	10'-0"	10'-0"
105	9'-3"	10'-9"	-	10'-0"
110	9'-1"	10'-6"	-	10'-0"
115	8'-9"	10'-3"	-	10'-0"
120	8'-5"	10'-0"	-	10'-0"
125	-	9'-10"	-	10'-0"
130	-	9'-8"	-	10'-0"
135	-	9'-5"	-	10'-0"
140	-	9'-3"	-	10'-0"
145	-	9'-1"	-	10'-0"
150	-	9'-0"	-	10'-0"
155	-	8'-9"	-	10'-0"
160	-	8'-6"	-	10'-0"
165	-	8'-3"	-	-
170	-	8'-0"	-	-
175	-	7'-9"	-	-
180	-	7'-7"	-	-
185	-	7'-4"	-	-
190	-	7'-2"	-	-
195	-	7'-0"	-	-

*** NOTES:**

(1) L+: MAXIMUM ALLOWABLE SPAN FOR A GIVEN POSITIVE A.S.D. DESIGN PRESSURE RATING.
 L-: MAX. ALLOWABLE SPAN FOR A GIVEN NEGATIVE A.S.D. DESIGN PRESSURE RATING.

(2) PROCEDURE TO DETERMINE MAXIMUM SPAN FOR WALL MOUNTINGS OR FLOOR/CEILING:

GIVEN A POSITIVE A.S.D. DESIGN PRESSURE RATING, DETERMINE MAXIMUM SPAN "L+" FROM SCHEDULE. GIVEN A NEGATIVE A.S.D. DESIGN PRESSURE RATING, DETERMINE MAXIMUM SPAN "L-" FROM SCHEDULE.

FINAL MAXIMUM ALLOWABLE SPAN IS EQUAL TO THE MINIMUM DETERMINED SPAN BETWEEN "L+" AND "L-".

(3) GO TO ANCHOR SCHEDULE WITH FINAL MAXIMUM ALLOWABLE SPAN AND MAXIMUM A.S.D. DESIGN PRESSURE RATING TO DETERMINE MAXIMUM ANCHOR SPACING.

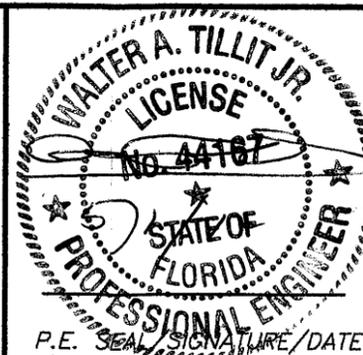
♦ SEPARATION TO GLASS SCHEDULE

MINIMUM SEPARATION TO GLASS FOR SHUTTERS INSTALLED AT ALL ELEVATIONS OF BUILDING IS 3" FOR SHUTTER SPANS UP TO 9'-1" AND 3 3/4" FOR LARGER SPANS.

INSTALLATION LEGEND	
SUBSTRATE MOUNTINGS	CONCRETE & CONCRETE BLOCK(SHEETS 5 & 6)
WALL MOUNTING	# 1, 2, 5 & 6
FLOOR/CEILING MOUNTING	# 3, 4 & 7

PRODUCT REVISED as complying with the Florida Building Code
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 By *Walter A. Tillit Jr.*
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MIAMI-DADE COUNTY



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HIGH IMPACT 90° ACCORDION SHUTTER SYSTEM



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2			4		

ANCHORS SPACING LEGEND

TAPCON
CALK-IN

MAXIMUM A.S.D. DESIGN PRESSURE RATING (p.s.f.) AND CORRESPONDING MAXIMUM ANCHOR* SPACING (in.) SCHEDULE FOR A GIVEN MAX. SHUTTER SPAN. MAXIMUM A.S.D. DESIGN PRESSURE RATING AND A CORRESPONDING MOUNTING TYPE FOR POURED CONCRETE INSTALLATIONS

MAXIMUM SPAN (ft)	MOUNTINGS PER SECTIONS 1 THRU 6 (SHEET 4)				
	MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf)				
	50 OR LESS	>50 TO 90	>90 TO 120	>120 TO 160	>160 TO 195
9'-0" OR LESS	6	5 1/2"	4"	3"	3"
	6" *	4 1/2" *	3 1/2" *	2 1/2" *	2 1/2" *
>9'-0" UP TO 12'-1"	6"	4"	3 1/2"	3 1/2"	-
	6" *	3 1/2" *	3" *	3" *	-
>12'-1" UP TO 16'-0"	5 1/2"	5 1/2"	-	-	-
	4 1/2" *	4 1/2" *	-	-	-

*ANCHOR SPACING ONLY VALID FOR INSTALLATIONS AS PER SECTION 4, SHEET 4 OF 8

ANCHORS SPACING LEGEND

TAPCON

MAXIMUM A.S.D. DESIGN PRESSURE RATING (p.s.f.) AND CORRESPONDING MAXIMUM ANCHOR* SPACING (in.) SCHEDULE FOR A GIVEN MAX. SHUTTER SPAN. MAXIMUM A.S.D. DESIGN PRESSURE RATING AND A CORRESPONDING MOUNTING TYPE FOR CONCRETE BLOCK INSTALLATIONS

MAXIMUM SPAN (ft)	MOUNTINGS PER SECTIONS 1, 2, 5 & 6 (SHEET 4)				
	MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf)				
	50 OR LESS	>50 TO 90	>90 TO 120	>120 TO 160	>160 TO 195
5'-0" OR LESS	6"	6"	6"	3"	3" (1)
>5'-0" UP TO 9'-0"	6"	3"	3" (2)	-	-
>9'-0" UP TO 12'-1"	6"	3" (3)	3" (4)	-	-
>12'-1" UP TO 16'-0"	3 1/2"	3" (5)	-	-	-

- (1) VALID ONLY UP TO 170 p.s.f.
- (2) VALID ONLY UP TO 94 p.s.f.
- (3) VALID ONLY UP TO 70 p.s.f. W/ MAX SPAN = 12'-0"
- (4) VALID ONLY UP TO 91 p.s.f. W/ MAX SPAN = 9'-3"
- (5) VALID ONLY UP TO 60 p.s.f. W/ MAX SPAN = 14'-2"

ANCHORS SPACING LEGEND

WEDGE-BOLT

MAXIMUM A.S.D. DESIGN PRESSURE RATING (p.s.f.) AND CORRESPONDING MAXIMUM ANCHOR* SPACING (in.) SCHEDULE FOR A GIVEN MAX. SHUTTER SPAN. MAXIMUM A.S.D. DESIGN PRESSURE RATING AND A CORRESPONDING MOUNTING TYPE FOR POURED CONCRETE INSTALLATIONS

MAXIMUM SPAN (ft)	MOUNTINGS PER SECTION 7 (SHEET 5)				
	MAXIMUM A.S.D. DESIGN PRESSURE RATING (psf)				
	50 OR LESS	>50 TO 90	>90 TO 120	>120 TO 160	>160 TO 195
10'-0"	4"	4"	4"	4"	-

*NOTES ON ANCHOR REQUIREMENTS: POURED CONCRETE OR CONCRETE BLOCK SUBSTRATES

1. ANCHORS TO WALL SHALL BE AS FOLLOWS (SEE SCHEDULES FOR APPLICABILITY):

- (A) TO EXISTING POURED CONCRETE: (Min. f'c = 3.350 ksi)
 - 1/4" TAPCON ANCHORS, AS MANUFACTURED BY ITW BUILDEX, INC.
 - 1/4" CALK-IN ANCHORS AS MANUFACTURED BY POWERS FASTENERS, INC.
 - 1/4" WEDGE-BOLT ANCHORS AS MANUFACTURED BY POWERS FASTENERS, INC.

NOTES:

A.1) MINIMUM EMBEDMENT INTO POURED CONCRETE OF TAPCON ANCHORS IS 1 3/4", MINIMUM EMBEDMENT INTO POURED CONCRETE OF CALK-IN ANCHORS IS 7/8", MINIMUM EMBEDMENT INTO CONCRETE OF WEDGE-BOLT ANCHORS IS 3 1/8"

A.2) IN CASE THAT PRECAST STONE, PRECAST CONCRETE PANELS, PAVERS OR ANY VENEER BE FOUND ON THE EXISTING WALL OR FLOOR, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN STRUCTURE BEHIND SAID WALL FINISHES. ANCHORAGE SHALL BE AS INDICATED ON NOTE A.1) ABOVE. FOR INSTALLATIONS ON VINYL SIDING OR EIFS CONSULT THIS ENGINEER.

(B) TO EXISTING ASTM C-90 CONCRETE BLOCK WALL:

- 1/4" TAPCON ANCHORS, AS MANUFACTURED BY ITW BUILDEX, INC.

NOTES:

B.1) MINIMUM EMBEDMENT INTO CONCRETE BLOCK OF TAPCON ANCHORS IS 1 1/4".

B.2) IN CASE THAT PRECAST STONE, PRECAST CONCRETE PANELS, PAVERS OR ANY VENEER BE FOUND ON THE EXISTING WALL OR FLOOR, ANCHORS SHALL BE LONG ENOUGH TO REACH THE MAIN STRUCTURE BEHIND SAID WALL FINISHES. ANCHORAGE SHALL BE AS INDICATED ON NOTE B.1) ABOVE. FOR INSTALLATIONS ON VINYL SIDING OR EIFS CONSULT THIS ENGINEER.

(C) ANCHORS SHALL BE INSTALLED FOLLOWING ALL OF THE RECOMMENDATIONS AND SPECIFICATIONS OF THE ANCHOR'S MANUFACTURER.

(D) SEE SCHEDULE BELOW FOR EDGE DISTANCE (E.D.) VERSUS SPACING RELATIONSHIP FOR ANCHORS.

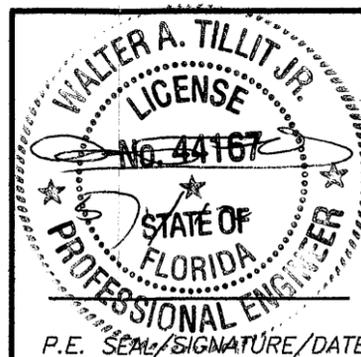
EDGE DISTANCE VERSUS SPACING SCHEDULE FOR ANCHORS:

MAXIMUM ANCHOR SPACINGS ARE VALID FOR EDGE DISTANCES INDICATED BELOW. FOR E.D. LESS THAN THE INDICATED, REDUCE ANCHOR SPACING BY MULTIPLYING SPACING SHOWN ON SCHEDULE BY THE FOLLOWING FACTORS. REDUCED SPACING OBTAINED USING FACTOR SHALL NOT BE LESS THAN MINIMUM SPACING INDICATED FOR EACH ANCHOR TYPE.

ACTUAL E. D.	FACTOR		
	1/4" TAPCON	1/4" CALK-IN	1/4" WEDGE-BOLT
	MIN. SPACING = 3"	MIN. SPACING = 2 1/2"	MIN. SPACING = 3"
3 1/2"	-	1.0	1.0
3"	1.0	0.63	0.76
2 1/2"	-	0.50	0.52
1 1/2"	0.35	-	-

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