



**DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)  
BOARD AND CODE ADMINISTRATION DIVISION**

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

[www.miamidade.gov/economy](http://www.miamidade.gov/economy)

**NOTICE OF ACCEPTANCE (NOA)**

**Shutter Tech, Inc.  
7485 West 2<sup>nd</sup> Court  
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: Maximum Impact 0.031” (min.) Steel Storm Panels Shutter**

**APPROVAL DOCUMENT:** Drawing No. 98001, titled “Maximum Impact .031 Steel Storm Panel”, sheets 1 through 7 of 7, prepared by Ramms Engineering, Inc., dated January 10, 1998, last revision dated September 29, 2015, signed and sealed by Robert S. Monsour, P.E., bearing the Miami-Dade County Product Control Renewal stamp with the Notice of Acceptance number & expiration date by Miami-Dade County Product Control Section.

**MISSILE IMPACT RATING: Large and Small Missile Impact Resistant**

**LABELING:** Each panel 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-201, 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 **renews NOA #15-0714.23** and consists of this page 1, evidence submitted pages E-1, E-2, E-3, E-4, E-5 & E-6 as well as approval document mentioned above.

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



*Helmy A. Makar*  
02/16/2017

**NOA No. 16-1222.07  
Expiration Date: 03/22/2022  
Approval Date: 02/16/2017**

**NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED**

**1. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL #98-0304.03**

**A. DRAWINGS:**

1. *Drawing No. 98001, titled "24 ga. maximum impact storm panel", prepared by Ramms Engineering, Inc., dated January 10, 1998, last revised on August 14, 1998, sheets 1 through 7 of 7, signed and sealed by Robert S. Monsour, P.E.*

**B. TESTS:**

1. *Test report on Large Missile Impact Test, Cyclic Wind Pressure Test and Uniform Static Air Pressure Test of a 24 ga. steel storm panels, prepared by Construction Testing Corporation, Report No. 98-003, dated 02/27/98, signed and sealed by Christopher G. Tyson, P.E.*
2. *Test report on Large Missile Impact Test, Cyclic Wind Pressure Test and Uniform Static Air Pressure Test of aluminum storm panels, prepared by Construction Testing Corporation, Report No. 98-005, dated 05/21/98, signed and sealed by Christopher G. Tyson, P.E.*

**C. CALCULATIONS:**

1. *Comparative Analysis, dated February 18, 1998, pages 1 through 4, prepared by Ramms Engineering, Inc., signed and sealed by Robert S. Monsour, P.E.*
2. *Revised calculations for Comparative Analysis and Anchor Spacing Analysis, dated June 4, 1998, pages 1 through 49, prepared by Ramms Engineering, Inc., signed and sealed by Robert S. Monsour, P.E.*
3. *Revised calculations for Anchor Spacing Analysis, dated August 3, 1998, pages 1 through 35, prepared by Ramms Engineering, Inc., signed and sealed by Robert S. Monsour, P.E.*
4. *Revised calculations for Anchor Spacing Analysis, dated September 1, 1998, pages 1 through 94, prepared by Ramms Engineering, Inc., signed and sealed by Robert S. Monsour, P.E.*

**D. MATERIAL CERTIFICATION:**

1. *Mill Certified Inspection Report dated December 10, 1997, prepared by Kieh Co., for steel panel.*
2. *Certified Tensile Test Report by Certified Testing Laboratories, Report No. CTL-076D, dated 02/04/98, signed and sealed by Ramesh Patel, P.E.*



**Helmy A. Makar, P.E., M.S.  
Product Control Section Supervisor**

**NOA No. 16-1222.07**

**Expiration Date: 03/22/2022**

**Approval Date: 02/16/2017**

**Shutter Tech, Inc.**

**NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED**

**2. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL #00-1207.03**

**A. DRAWINGS:**

1. *Drawing No. 98001, titled "24 ga. maximum impact storm panel", prepared by Ramms Engineering, Inc., dated January 10, 1998, last revised on December 15, 2000, sheets 1 and 5 of 7, August 14, 1998, sheets 2, 3, 6, and 7 of 7, and on December 4, 2000, sheet 4 of 7, all signed and sealed by Robert S. Monsour, P.E. on December 22, 2000.*

**B. TESTS:**

1. *None.*

**C. CALCULATIONS:**

1. *None.*

**D. MATERIAL CERTIFICATION:**

1. *None.*

**3. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL #01-0205.01**

**A. DRAWINGS:**

1. *Drawing No. 98001, titled "24 ga. maximum impact storm panel", prepared by Ramms Engineering, Inc., dated January 10, 1998, last revised on January 17, 2001, signed and sealed by Robert S. Monsour, P.E. on January 29, 2001.*

**B. TESTS:**

1. *None.*

**C. CALCULATIONS:**

1. *None.*

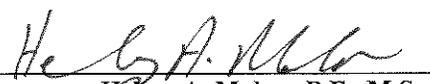
**D. MATERIAL CERTIFICATION:**

1. *None.*

**4. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 01-1224.07**

**A. DRAWINGS**

1. *Drawing No. 98001, titled "Maximum Impact Storm Panel ", sheets 1 through 7 of 7, prepared by Ramms Engineering, Inc., dated January 10, 1998, last revision dated September 09, 2002 signed and sealed by Robert S. Monsour, P.E.*

  
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**Helmy A. Makar, P.E., M.S.**  
**Product Control Section Supervisor**  
**NOA No. 16-1222.07**  
**Expiration Date: 03/22/2022**  
**Approval Date: 02/16/2017**

**Shutter Tech, Inc.**

**NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED**

**B. TESTS**

1. *Test reports on Large Missile Impact Test per SFBC, PA 201-94 along with installation diagram of Steel Storm Panel Shutter, prepared by American Test Lab of South Florida, Test Report No. 0 502.02-02, dated May 09, 2002, signed and sealed by William R. Mehner, P.E.*
2. *Addendum to Test reports on Large Missile Impact Test per SFBC, PA 201-94 of Steel Storm Panel Shutter, prepared by American Test Lab of South Florida, Test Report No. 0 502.02-02, dated July 09, 2002, signed and sealed by William R. Mehner, P.E.*

**C. CALCULATIONS**

1. *Comparative analysis, prepared by prepared by Ramms Engineering, Inc., dated January 14, 2002, signed and sealed by Robert S. Monsour, P.E.*

**D. MATERIAL CERTIFICATIONS**

1. *None.*

**5. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 06-0110.04**

**A. DRAWINGS**

1. *Drawing No. 98001, titled " Maximum Impact Storm Panel ", sheets 1 through 7 of 7, prepared by Ramms Engineering, Inc., dated January 10, 1998, last revision dated January 06, 2006, signed and sealed by Robert S. Monsour, P.E.*

**B. TESTS**

1. *None.*

**C. CALCULATIONS**

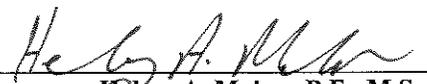
1. *Revised calculations for Anchor Spacing Analysis, dated January 06, 2006, 88 pages, prepared by Ramms Engineering, Inc., signed and sealed by Robert S. Monsour, P.E.*

**D. QUALITY ASSURANCE**

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

**E. MATERIAL CERTIFICATIONS**

1. *None.*

  
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**Helmy A. Makar, P.E., M.S.**  
**Product Control Section Supervisor**  
**NOA No. 16-1222.07**  
**Expiration Date: 03/22/2022**  
**Approval Date: 02/16/2017**

**Shutter Tech, Inc.**

**NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED**

**6. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL #11-0304.01**

**A. DRAWINGS**

1. *Drawing No. 98001, titled " Maximum Impact Storm Panel ", sheets 1 through 7 of 7, prepared by Ramms Engineering, Inc., dated January 10, 1998, last revision dated January 06, 2006, signed and sealed by Robert S. Monsour, P.E.*

**B. TESTS**

1. *None. One year renewal to give manufacturer time to submit a verification test report.*

**C. CALCULATIONS**

1. *None.*

**D. QUALITY ASSURANCE**

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

**E. MATERIAL CERTIFICATIONS**

1. *None.*

**F. OTHERS**

1. *Conformance letter from Ramms Engineering, Inc., dated March 24, 2011, certifying compliance with the Florida Building Code, 2007 Edition, signed and sealed by Robert S. Monsour, P.E.*

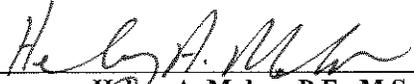
**7. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 12-0320.26**

**A. DRAWINGS**

1. *Drawing No. 98001, titled " Maximum Impact Storm Panel ", sheets 1 through 7 of 7, prepared by Ramms Engineering, Inc., dated January 10, 1998, last revision dated January 06, 2006, signed and sealed by Robert S. Monsour, P.E.*

**B. TESTS**

1. *Test report on Large Missile Impact Test, Cyclic Wind Pressure Test and Uniform Static Air Pressure Test of a 24 ga. steel storm panels, prepared by Blackwater Testing, Inc., Report No. AG-11-001, dated 03/12/12, signed and sealed by yamil G. Kuri, P.E.*

  
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Helmy A. Makar, P.E., M.S.

Product Control Section Supervisor

NOA No. 16-1222.07

Expiration Date: 03/22/2022

Approval Date: 02/16/2017

**Shutter Tech, Inc.**

**NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED**

**C. CALCULATIONS**

1. *None.*

**D. QUALITY ASSURANCE**

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

**E. MATERIAL CERTIFICATIONS**

1. *Certified report of Chemical Analysis and mechanical tests by The techs.*

**F. OTHERS**

1. *Conformance letter from Ramms Engineering, Inc., dated March 20, 2012, certifying compliance with the Florida Building Code, 2010 Edition, signed and sealed by Robert S. Monsour, P.E.*

**8. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 14-0127.02**

**A. DRAWINGS**

1. *Drawing No. 98001, titled "Maximum Impact .031 Steel Storm Panel", sheets 1 through 7 of 7, prepared by Ramms Engineering, Inc., dated January 10, 1998, last revision dated January 16, 2014, signed and sealed by Robert S. Monsour, P.E.*

**B. TESTS**

1. *None.*

**C. CALCULATIONS**

1. *None.*

**D. QUALITY ASSURANCE**

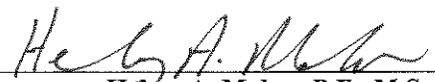
1. *By Miami-Dade County Department of Regulatory and Economic Resources.*

**E. MATERIAL CERTIFICATIONS**

1. *None.*

**F. OTHERS**

1. *Asset Purchase Agreement.*



Henry A. Makar, P.E., M.S.  
Product Control Section Supervisor  
NOA No. 16-1222.07  
Expiration Date: 03/22/2022  
Approval Date: 02/16/2017

**Shutter Tech, Inc.**

**NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED**

**9. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 15-0714.23**

**A. DRAWINGS**

1. *Drawing No. 98001, titled "Maximum Impact .031 Steel Storm Panel", sheets 1 through 7 of 7, prepared by Ramms Engineering, Inc., dated January 10, 1998, last revision dated September 29, 2015, signed and sealed by Robert S. Monsour, P.E.*

**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.*

**F. OTHERS**

1. *FBC, 2014 Edition compliance letter prepared by Ramms Engineering, Inc., dated June 26, 2015, signed & sealed by Robert Monsour, P.E.*

**10. NEW EVIDENCE SUBMITTED**

**A. DRAWINGS**

1. *None.*

**B. TESTS**

1. *None.*

**C. CALCULATIONS**

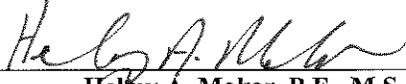
1. *None.*

**D. QUALITY ASSURANCE**

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

**E. MATERIAL CERTIFICATIONS**

1. *None.*

  
\_\_\_\_\_  
Helmy A. Makar, P.E., M.S.  
Product Control Section Supervisor  
NOA No. 16-1222.07  
Expiration Date: 03/22/2022  
Approval Date: 02/16/2017

COMPLIES WITH:  
 FLORIDA BUILDING CODE FIFTH EDITION (2014) (H.V.H.Z.)  
 TESTED TO TAS201, TAS202 AND TAS203

**24GA .031  
 (H.V.H.Z.)**

**DESIGN CRITERIA:**

WIND LOADS TO BE CALCULATED AS PER ASCE 7-10  
 NO INCREASE IN ALLOWABLE STRESS WAS USED IN THE DESIGN OF THIS PRODUCT

**GENERAL NOTES:**

ALL ALUMINUM EXTRUSIONS TO BE ALLOY 6063-T6 OR EQUAL  
 STORM PANELS SHALL BE:  
 24 GAUGE STEEL, ASTM A653 S0 GRADE E MIN.  $F_y = 90$  K.S.I. MINIMUM VALUE  
 WITH .031 MINIMUM THICKNESS  
 HOT DIP COATED, WITH A NOMINAL WIDTH OF 12 1/2"

THE STORM PANEL SHUTTER MAY BE INSTALLED VERTICALLY OR HORIZONTALLY,  
 IN ACCORDANCE TO THE DETAILED SPECIFICATIONS HEREIN.

PANELS MAY BE NOTCHED OR MITERED TO ACCOMMODATE AN OBSTRUCTION  
 PANELS MAY HAVE A RIPPLED SURE GRIP OR A HEMMED EDGE

ANCHORAGE OF THE SHUTTER SYSTEM TO CONCRETE OR MASONRY SHALL CONSIST OF  
 THE FOLLOWING OR EQUAL WITH MINIMUM ULTIMATE LOAD VALUES SHOWN

- 1/4" DIA. RAWL LOK/BOLT ANCHOR ( SLEEVED DRIVE ANCHOR )  
 MIN. TENSILE 1190 - MIN. SHEAR 1520 - 1 1/8" MIN. EMBED. IN CONCRETE  
 MIN. TENSILE 1200 - MIN. SHEAR 1270 - 1 1/8" MIN. EMBED. IN MASONRY
- 1/4-20 RAWL CALK-IN ANCHOR ( MACHINE SCREW ANCHOR ) WITH 1/4-20 BOLTS  
 MIN. TENSILE 1870 - MIN. SHEAR 1730 - 7/8" MIN. EMBED. IN CONCRETE  
 MIN. TENSILE 880 - MIN. SHEAR 1340 - 7/8" MIN. EMBED. IN MASONRY
- 1/4" PERMA-SEAL TAPPER BY RAWL ( MASONRY SCREWS VARIOUS HEAD TYPES )  
 MIN. TENSILE 1520 - MIN. SHEAR 1980 - 1 1/2" MIN. EMBED. IN CONCRETE  
 MIN. TENSILE 880 - MIN. SHEAR 1270 - 1 1/4" MIN. EMBED. IN MASONRY
- 1/4" ZAMAC NAILIN BY RAWL ( ZAMAC HAMMER DRIVES )  
 MIN. TENSILE 980 - MIN. SHEAR 1400 - 1 3/8" MIN. EMBED. IN CONCRETE  
 MIN. TENSILE 730 - MIN. SHEAR 1320 - 1 1/4" MIN. EMBED. IN MASONRY

ANCHORAGE TO WOOD CONSTRUCTION SHALL BE 1/4" STEEL LAGS OR LARGER  
 WITH 1" MIN. THREAD PENETRATION, 1/4-20 BRASS WOOD BUSHINGS OR  
 1/4" ELCO PANEL MATES OR MASONRY SCREW WITH 1 7/8" MIN. THREAD PENETRATION.

REFER TO SHEETS 5,6 & 7 OF 7 FOR ANCHOR SPACING AND MINIMUM EMBEDMENTS

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SOUNDNESS OF THE  
 STRUCTURE TO WITHSTAND THE ADDITIONAL LOADS AND INSURE PROPER ANCHORAGE.

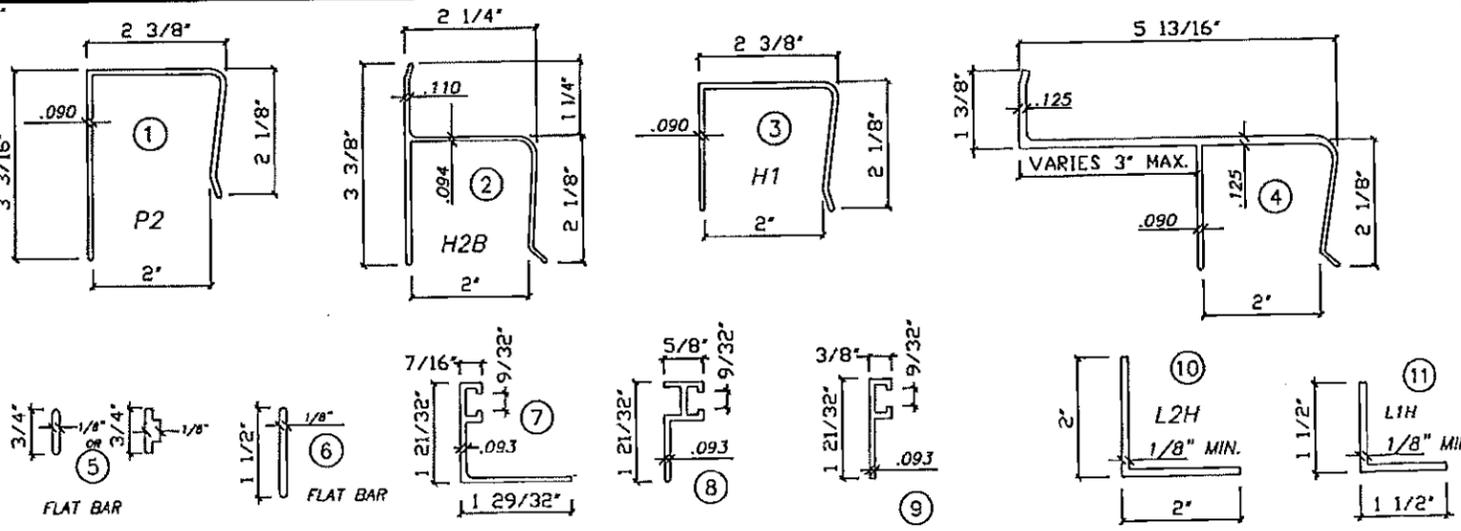
EACH PANEL SHALL BEAR A PERMANENT LABEL OR STAMP SHOWING  
 " SHUTTER TECH, INC. HIALEAH, FL " " DADE COUNTY PRODUCT CONTROL APPROVED "

WARNING TO OWNER OR TENANT LOCATED IN EACH HEADER OR ONE PANEL OF EACH OPENING,  
 STATING " STORM PANELS WILL NOT OFFER HURRICANE PROTECTION UNLESS ALL REINFORCING  
 STRAPS OR BOLTS ARE PROPERLY INSTALLED, WHEN REQUIRED "

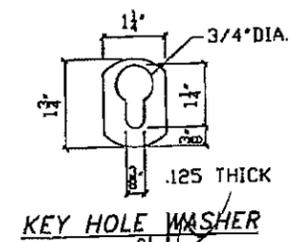
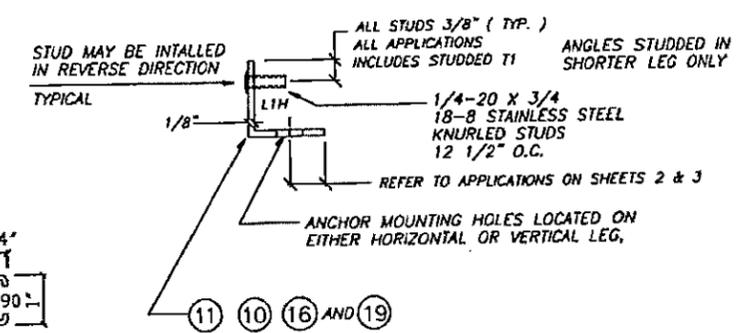
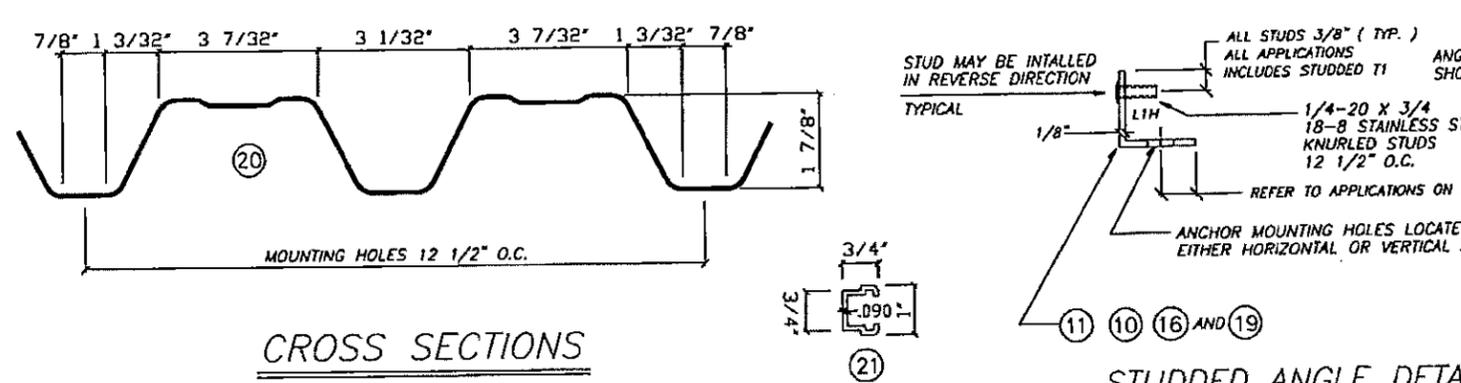
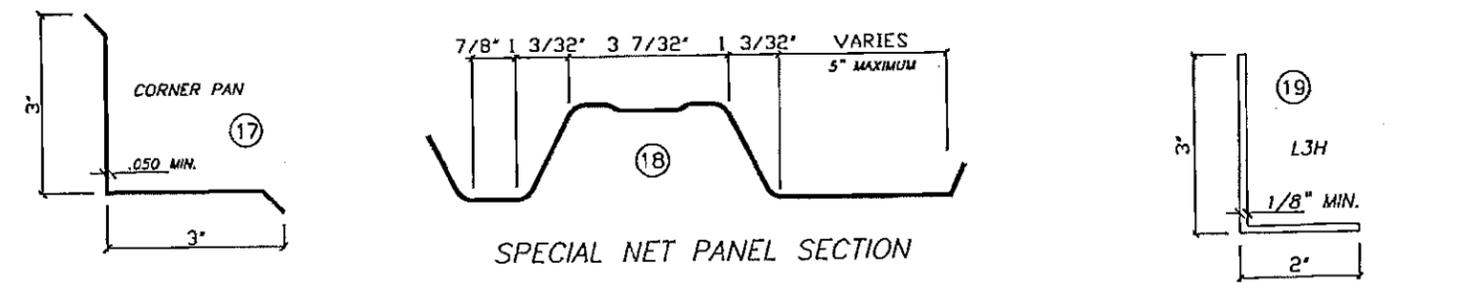
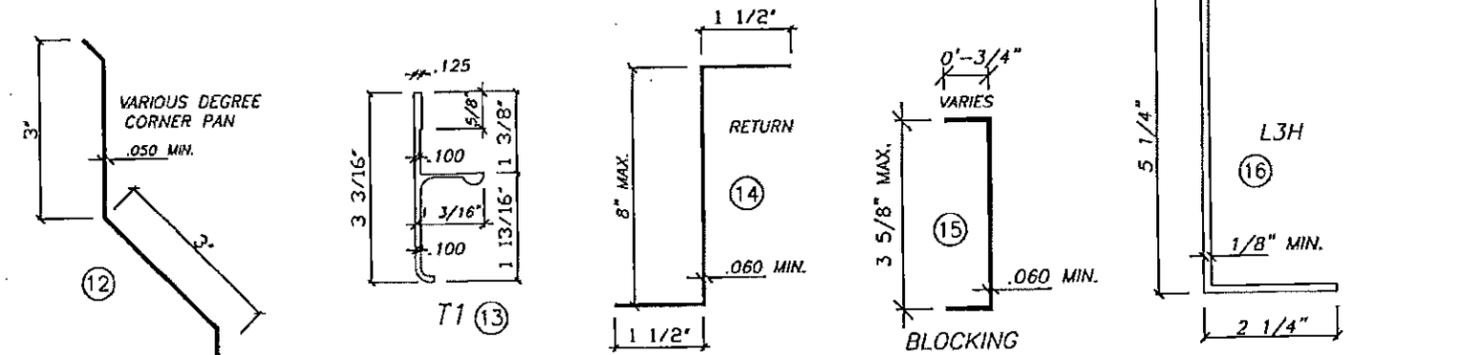
PERMANENT FASTENER COMPONENTS, EMBEDDED ANCHOR BOLTS, THREADED CONES  
 OR METAL SHIELDS, NOT IN USE, MUST BE PROTECTED AGAINST CORROSION,  
 CONTAMINATION AND DAMAGE AT ALL TIME.

PRODUCT RENEWED  
 as complying with the Florida  
 Building Code  
 Acceptance No 16-1222.07  
 Expiration Date 03/22/2022  
 By *Helga A. Miller*  
 Miami Dade Product Control

PRODUCT REVISED  
 as complying with the Florida  
 Building Code  
 Acceptance No 15-0714.23  
 Expiration Date 03/22/2017  
 By *Helga A. Miller*  
 Miami Dade Product Control



VARIOUS TYPES OF F-TRACK NOT SHOWN



ROBERT S. MONSOUR, PE  
 EB-0006024  
 RAMMS ENGINEERING, INC.

1/8" x 1 1/2" FLAT STUDDED STRAP MAY BE USED IN PLACE OF ANGLE

**MAXIMUM IMPACT STORM PANEL**

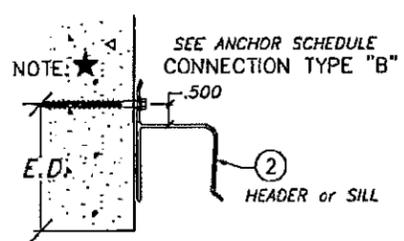
| REVISIONS | BY |
|-----------|----|
| 03/20/98  | SP |
| 12/15/00  | SP |
| 01/17/01  | SP |
| 01/05/06  | SP |
| 01/16/14  | SP |
| 09/29/15  | SP |

RAMMS ENGINEERING, INC.  
*Structural Design*  
 2100 W. 78th STREET, SUITE 311  
 HIALEAH, FLORIDA 33015  
 EB 0006024

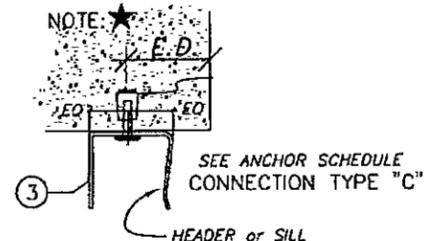
MAXIMUM IMPACT .031 STEEL STORM PANEL  
**SHUTTER-TECH, INC.**  
 7485 W. SECOND CT. HIALEAH, FL 33014

| DATE     | BY          |
|----------|-------------|
| SEP/JRB  | APPROVED    |
| 01/10/98 | SCALE SHOWN |
| 98001    | SHEET       |
| 1        |             |
| 7        |             |

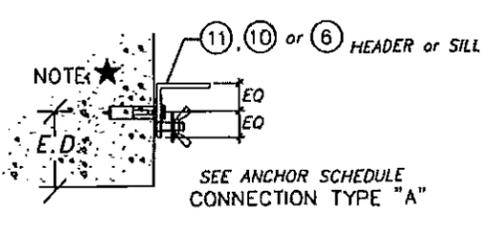
BUILDING CODE COMPLIANCE



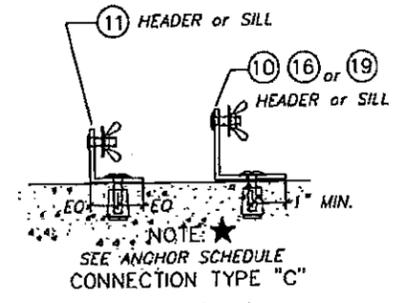
**DETAIL 1**



**DETAIL 2**

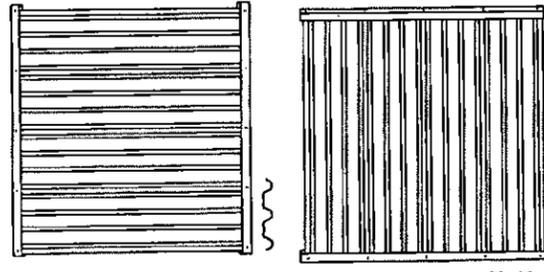


**DETAIL 3**



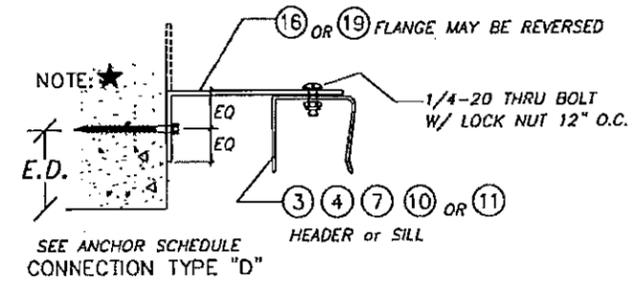
**DETAIL 4**

**MAXIMUM IMPACT STORM PANEL**

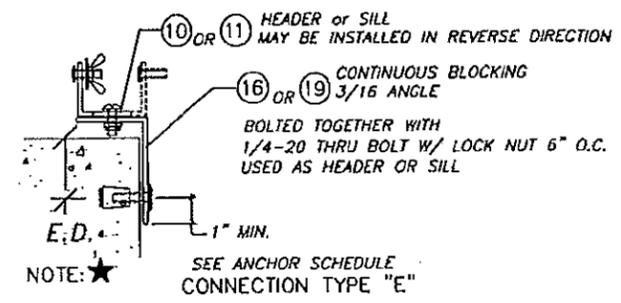


**HORIZONTAL INSTALLATION ELEVATION**

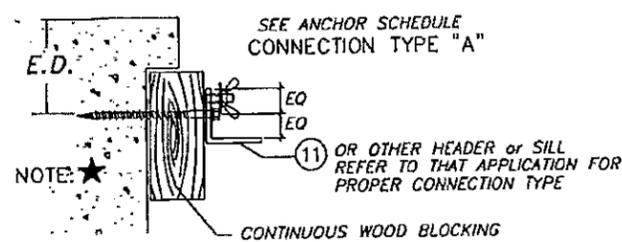
**VERTICAL INSTALLATION ELEVATION**



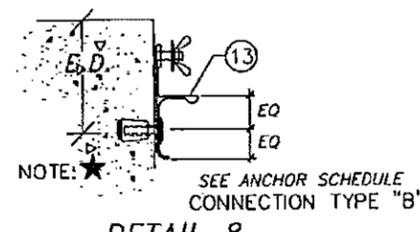
**DETAIL 5**



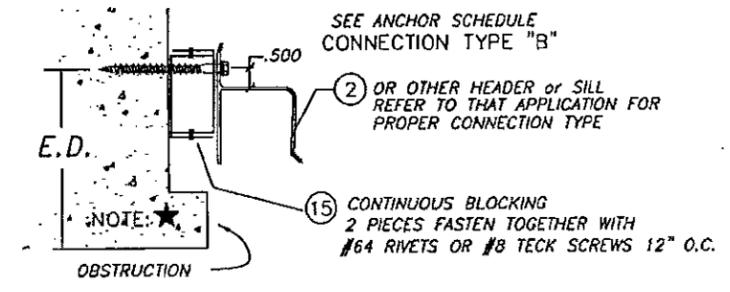
**DETAIL 6**



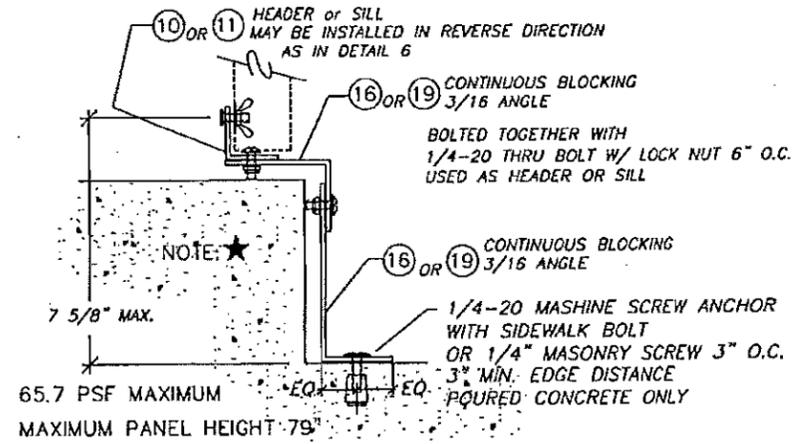
**DETAIL 7**



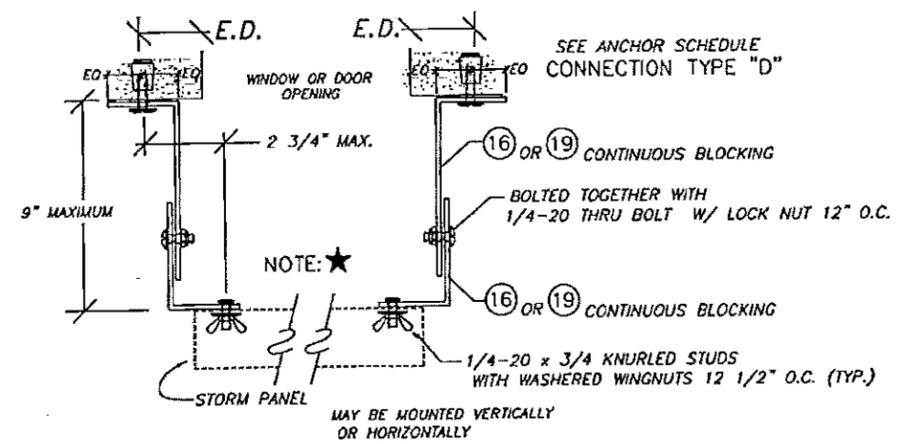
**DETAIL 8**



**DETAIL 9**



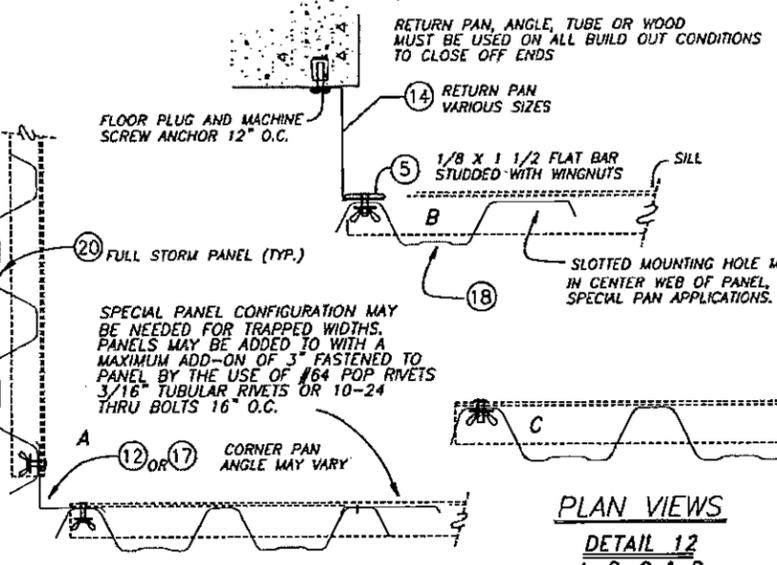
**DETAIL 10**



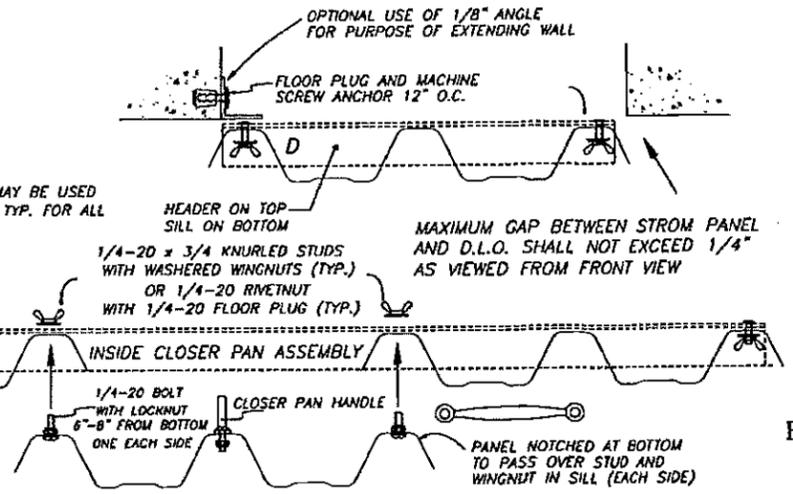
**DETAIL 11**

**NOTE:** IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SOUNDNESS OF THE STRUCTURE TO WITH STAND THE ADDITIONAL LOADS AND INSURE PROPER ANCHORAGE. SHUTTER SYSTEM MAY BE INTSALL INTO WOOD, CONCRETE, MASONRY.

WHEN ANCHORING TO WOOD, THE WOOD MUST BE A MINIMUM 2 X 4 EQUAL TO #2 SOUTHERN PINE WITH 0.55 SPECIFIC GRAVITY AND STRUCTURALLY PART OF THE FRAMING STRUCTURE OR SUCURELY ATTACHED TO FRAMING STRUCTURE



**PLAN VIEWS  
DETAIL 12  
A, B, C & D**



**ROBERT S. MONSOUR, PE**  
EB-0006024  
RAMMS ENGINEERING, INC.

PRODUCT RENEWED as complying with the Florida Building Code  
Acceptance No 16-1222-07  
Expiration Date 03/22/2022  
By *Heidi A. Monro*  
Miami Dade Product Control

PRODUCT REVISED as complying with the Florida Building Code  
Acceptance No 15-0714.23  
Expiration Date 03/22/2017  
By *Heidi A. Monro*  
Miami Dade Product Control

BUILDING CODE COMPLIANCE

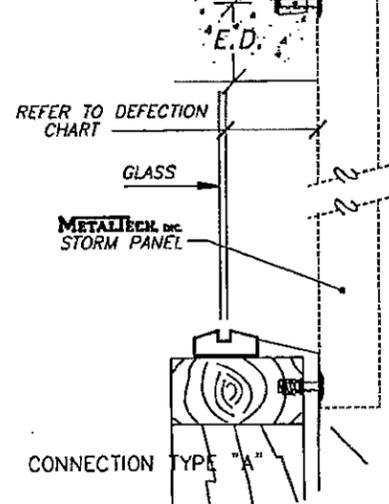
| REVISIONS | BY |
|-----------|----|
| 03/20/98  | SP |
| 01/17/01  | SP |
| 01/06/06  | SP |
| 01/16/14  | SP |

RAMMS ENGINEERING, INC.  
*Structural Design*  
2100 W. 76th STREET, SUITE 311  
HIALEAH, FLORIDA 33016  
EB 0006024

MAXIMUM IMPACT .031 STEEL STORM PANEL  
**SHUTTER-TECH, INC.**  
7485 W. SECOND CT. HIALEAH, FL 33014

| DATE     | BY        | REVISION |
|----------|-----------|----------|
| 01/10/98 | JRB / ASM | APPROVED |
| 01/10/98 |           | DATE     |
| 98001    |           | SCALE    |
|          |           | SHOWN    |
|          |           | DATE     |
|          |           | NO.      |
|          |           | 2        |
|          |           | 7        |

1/4-20 FLOOR PLUG WITH MACHINE SCREW ANCHOR HEADER OR SILL CONCRETE OR MASONRY CONNECTION TYPE "A"



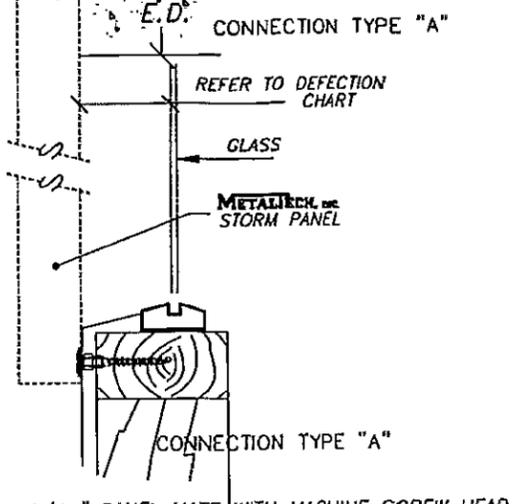
1/4-20 FLOOR PLUG WITH 1/4-20 BRASS WOOD BUSHING HEADER OR SILL INTO WOOD

NOTE: THE METALTECH STORM PANEL MAY BE INSTALLED WITHOUT THE USE OF AN EXTRUDED HEADER OR SILL. THE SHUTTER MAY BE ANCHORED DIRECTLY TO THE STRUCTURE WITH THE USE OF ONE OR A COMBINATION OF DETAIL 13

NOTE: ★

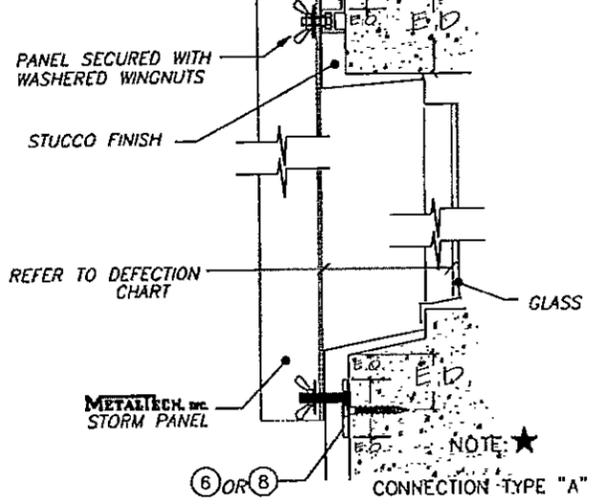
DETAIL 13

NOTE: ★ 1/4" PANEL MATE SCREW WITH 14-20 STUD HEAD WITH WASHERED WINGNUT HEADER OR SILL WOOD, CONCRETE OR MASONRY CONNECTION TYPE "A"

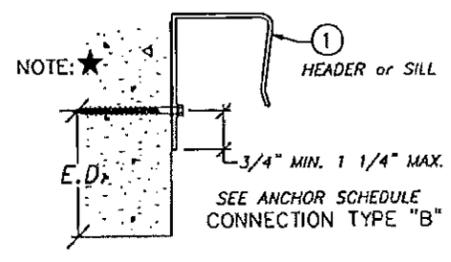


1/4" PANEL MATE WITH MACHINE SCREW HEAD WITH 14-20 SIDEWALK BOLT HEADER OR SILL WOOD, CONCRETE OR MASONRY

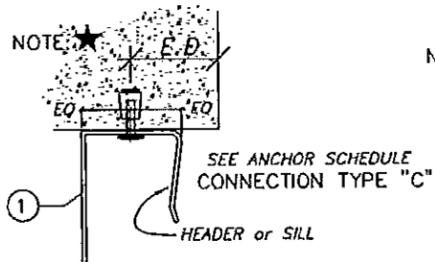
NOTE: ★ CONNECTION TYPE "A"



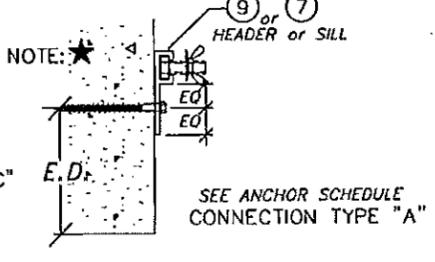
DETAIL 14  
PRESTUCCO INSTALLATION



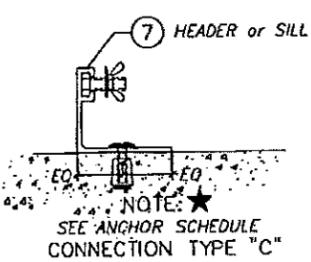
DETAIL 15



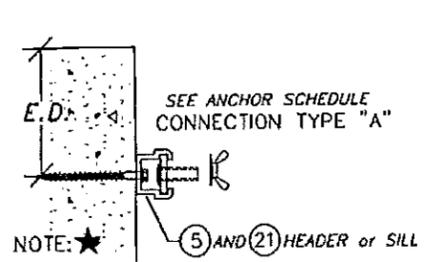
DETAIL 16



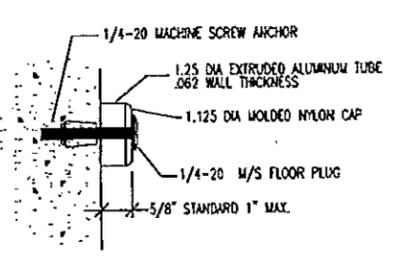
DETAIL 17



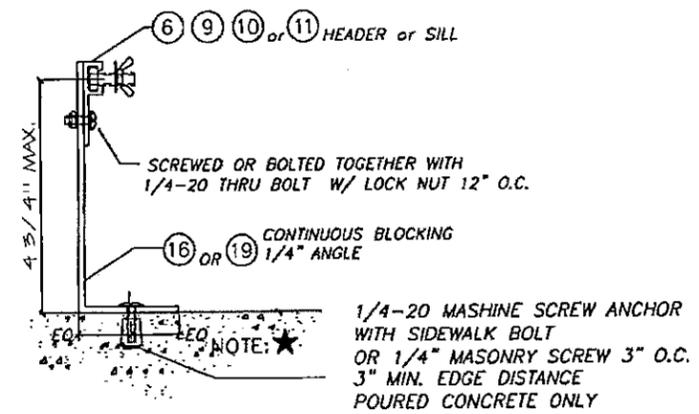
DETAIL 18



DETAIL 19



DETAIL 20



59.5 PSF MAXIMUM / PANEL HEIGHT 109\"/>

DETAIL 21  
ADJUSTABLE HEADER OR SILL

NOTE: ★ IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SOUNDNESS OF THE STRUCTURE TO WITH STAND THE ADDITIONAL LOADS AND INSURE PROPER ANCHORAGE. SHUTTER SYSTEM MAY BE INTSALL INTO WOOD, CONCRETE, MASONRY.

WHEN ANCHORING TO WOOD, THE WOOD MUST BE A MINIMUM 2 X 4 EQUAL TO #2 SOUTHERN PINE WITH 0.55 SPECIFIC GRAVITY AND STRUCTURALLY PART OF THE FRAMING STRUCTURE OR SUCURELY ATTACHED TO FRAMING STRUCTURE

PRODUCT RENEWED as complying with the Florida Building Code Acceptance No 16-1222.07 Expiration Date 03/22/2022

By *Herby A. Albin*  
Miami Dade Product Control

*Monahan*  
9/20/15  
11/15/15

ROBERT S. MONSOUR, PE  
EB-0006024  
RAMMS ENGINEERING, INC.

PRODUCT REVISED as complying with the Florida Building Code Acceptance No 15-0714.23 Expiration Date 03/22/2017

By *Herby A. Albin*  
Miami Dade Product Control

BUILDING CODE COMPLIANCE

| REVISIONS | BY |
|-----------|----|
| 03/20/98  | SP |
| 01/17/01  | SP |
| 01/11/02  | SP |
| 01/06/06  | SP |
| 01/16/14  | SP |

RAMMS ENGINEERING, INC.  
*Structural Design*  
2100 W. 76th STREET, SUITE 311  
HALEAH, FLORIDA 33016

MAXIMUM IMPACT .031 STEEL STORM PANEL

**SHUTTER-TECH, INC.**  
7485 W. SECOND CT. HALEAH, FL 33014

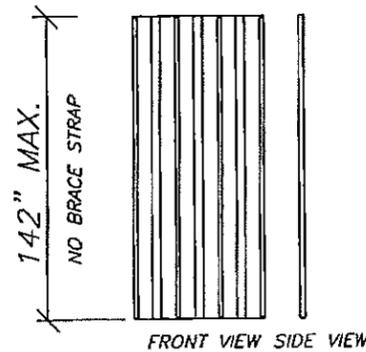
| DATE          | BY        | REASON      |
|---------------|-----------|-------------|
| SEP / 10 / 97 | JRB / RSM | APPROVED    |
| 01/10/97      |           | SCALE SHOWN |
| 98001         |           | SPED        |
| 3             |           |             |
| 7             |           |             |

24 ga. STEEL

| DESIGN PRESSURE | PANEL SPAN |
|-----------------|------------|
| 21.93           | 142"       |
| 25.51           | 139"       |
| 29.99           | 136"       |
| 35.36           | 132"       |
| 37.44           | 130"       |
| 39.10           | 129"       |
| 40.77           | 127"       |
| 44.40           | 124"       |
| 47.81           | 123        |
| 51.23           | 119"       |
| 58.06           | 112"       |
| 61.47           | 109"       |
| 66.85           | 104"       |
| 71.46           | 100"       |
| 75.30           | 95"        |
| 81.45           | 88"        |
| 86.83           | 82"        |
| 91.44           | 78"        |

USE 59.5 P.S.F. COLUMN AND 124" PANEL SPAN ON ANCHOR SCHEDULE FOR ANCHOR SPACING FOR SPANS OVER 124"

THE METALTECH STORM PANELS MAY BE INSTALLED WITH OR WITHOUT THE HORIZONTAL BRACE STRAP. REFER TO PANEL DEFLECTION CHARTS.

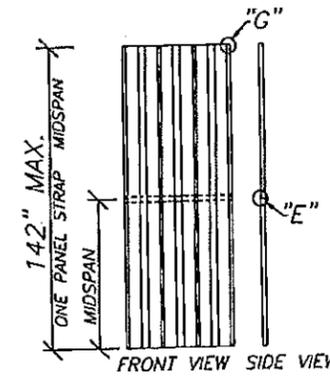


142" MAX. PANEL HEIGHT  
NO PANEL STRAP IS REQUIRED

HIGH VELOCITY HURRICANE ZONE  
PANEL DEFLECTION CHART  
WITHOUT HORIZONTAL STRAP

| PANEL HEIGHT | 0"-90" | 90"-142" |
|--------------|--------|----------|
| WALL MOUNT   | 2 5/8" | 3 1/2"   |
| INSIDE MOUNT | 2 5/8" | 3 1/2"   |
| BUILD OUT    | 2 5/8" | 3 1/2"   |

MINIMUM DISTANCE BETWEEN GLASS AND PANEL



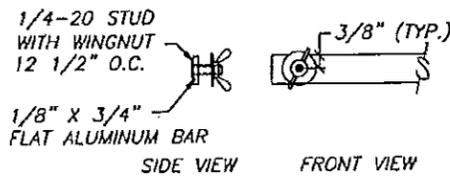
142" MAX. PANEL HEIGHT  
ONE PANEL STRAP  
LOCATED MIDSPAN

HIGH VELOCITY HURRICANE ZONE  
PANEL DEFLECTION CHART  
WITH HORIZONTAL STRAP

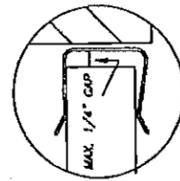
| PANEL HEIGHT | 0"-104" | 104"-142" |
|--------------|---------|-----------|
| WALL MOUNT   | 2"      | 2 1/4"    |
| INSIDE MOUNT | 2"      | 2 1/4"    |
| BUILD OUT    | 2"      | 2 1/4"    |

MINIMUM DISTANCE BETWEEN GLASS AND PANEL

**HORIZONTAL BRACE STRAP**



DETAIL "E"

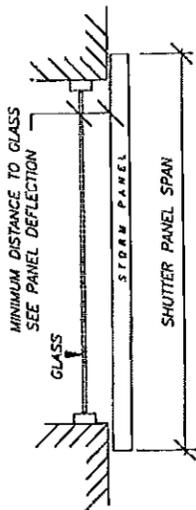


MAXIMUM GAP BETWEEN PANEL AND HEADER IS 1/4" (TYP.)

DETAIL "F"

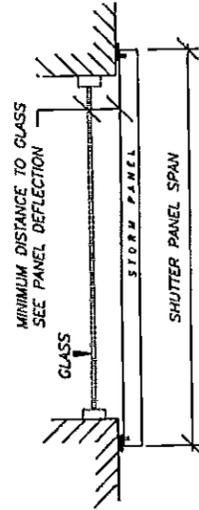
HEADER AND SILL TYPE MAY VARY, DEPENDING ON APPLICATION

DETAIL 13 ON SHEET 3



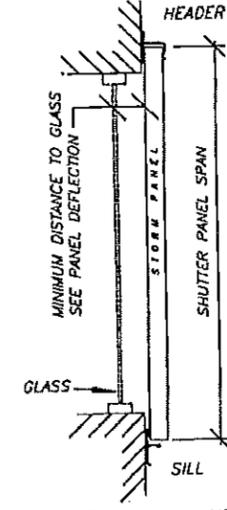
DETAIL 13 ON SHEET 3

DETAIL 3, 4, & 8 ON SHEET 2



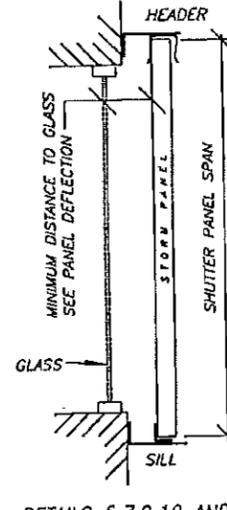
DETAIL 3, 4, & 8 ON SHEET 2

DETAIL 1 ON SHEET 2  
DETAIL 15 ON SHEET 3



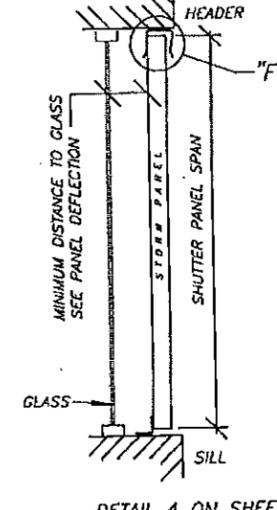
DETAILS 3, 4 AND 8 ON SHEET 2

DETAILS 5, 7, 9, 10 AND 11 ON SHEET 2

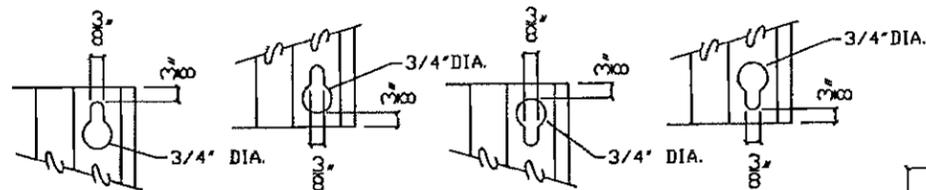


DETAILS 5, 7, 9, 10 AND 11 ON SHEET 2

DETAIL 2 ON SHEET 2  
DETAIL 16 ON SHEET 3



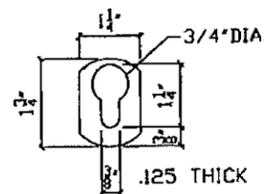
DETAIL 4 ON SHEET 2



FASTENER MUST BE IN NARROW PORTION OF KEY HOLE, IF NOT A KEY HOLE WASHER SHOULD BE USED  
MOUNTING HOLE MAY ALSO BE A 9/16" DIA. CIRCLE

**WALL MOUNT**

ANCHORING PANEL TOP & BOTTOM NO HDR. OR SILL



KEY HOLE WASHER

**WALL MOUNT**

ANCHORING PANEL TOP & BOTTOM WITH STUDDED HDR/SILL

**WALL MOUNT**

WITH HDR. AND SILL

**BUILD OUT**

WITH HDR. AND SILL

**INSIDE MOUNT**

WITH HDR. AND SILL

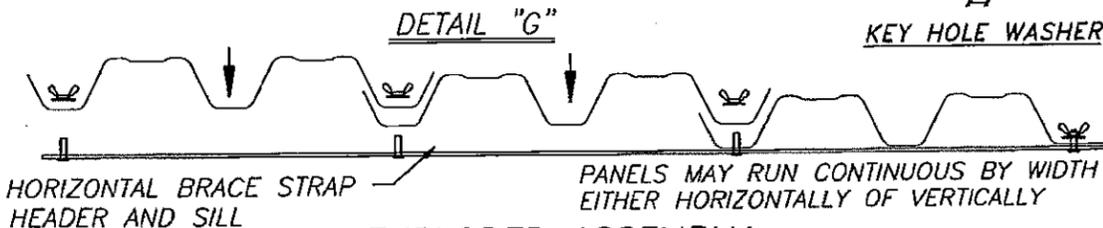
**TYPICAL SECTION VIEWS**

PRODUCT RENEWED as complying with the Florida Building Code  
Acceptance No 16-1222.07  
Expiration Date 03/22/2022

By *Heidi A. Miller*  
Miami Dade Product Control

PRODUCT REVISED as complying with the Florida Building Code  
Acceptance No 15-0714.23  
Expiration Date 03/22/2017

By *Heidi A. Miller*  
Miami Dade Product Control



EXPLODED ASSEMBLY

*Monson*  
9/20/15  
1/19/55

ROBERT S. MONSOUR, PE  
EB-0006024  
RAMS ENGINEERING, INC.

| REVISIONS | BY |
|-----------|----|
| 03/20/98  | SP |
| 12/04/00  | SP |
| 01/17/01  | SP |
| 09/09/02  | SP |
| 01/16/14  | SP |

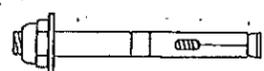
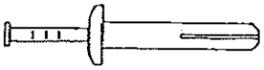
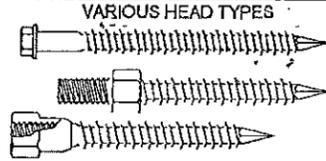
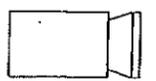
RAMS ENGINEERING, INC.  
*Structural Design*  
2100 W. 75th STREET, SUITE 311  
HIALEAH, FLORIDA 33015  
EB 0006024

MAXIMUM IMPACT .031 STEEL STORM PANEL  
**SHUTTER-TECH, INC.**  
7485 W. SECOND CT. HIALEAH, FL 33014

| DATE     | APPROVED    |
|----------|-------------|
| 01/10/98 | SEP/JRB     |
| 98001    | SCALE SHOWN |
| 4        | 4           |
| 7        | 7           |

BUILDING CODE COMPLIANCE

# ANCHOR SCHEDULE

| ANCHOR SPACING vs DESIGN PRESSURE AND CONNECTION TYPE   |           |        | UP TO 59.6 PSF  |    |    |    |    |                |    |    |    |    | UPTO 71.5 PSF   |    |    |    |    |                |    |   |    |    |    |    |   |    |    |    |   |   |   |   |
|---|-----------|--------|-----------------|----|----|----|----|----------------|----|----|----|----|-----------------|----|----|----|----|----------------|----|---|----|----|----|----|---|----|----|----|---|---|---|---|
|   |           |        | POURED CONCTETE |    |    |    |    | CONCRETE BLOCK |    |    |    |    | POURED CONCTETE |    |    |    |    | CONCRETE BLOCK |    |   |    |    |    |    |   |    |    |    |   |   |   |   |
|   |           |        | CONECTION TYPE  |    |    |    |    | CONECTION TYPE |    |    |    |    | CONECTION TYPE  |    |    |    |    | CONECTION TYPE |    |   |    |    |    |    |   |    |    |    |   |   |   |   |
| ANCHOR TYPE   | PANEL     | E.D.   | A               | B  | C  | D  | E  | A              | B  | C  | D  | E  | A               | B  | C  | D  | E  | A              | B  | C | D  | E  |    |    |   |    |    |    |   |   |   |   |
| <br>1/4" RAWL LOK/BOLT (SLEEVE ANCHOR)<br>1 1/8" MIN. EMBEDMENT  | 68" SPAN  | 3"     | 16              | 13 | 8  | 13 | 13 | 16             | 13 | 10 | 13 | 13 | 16              | 13 | 7  | 13 | 13 | 16             | 13 | 8 | 13 | 13 | 16 | 13 | 6 | 13 | 13 |    |   |   |   |   |
|   |           | 2"     | 16              | 13 | 7  | 13 | 13 | 16             | 13 | 8  | 13 | 13 | 16              | 13 | 5  | 13 | 13 | 16             | 13 | 6 | 13 | 13 | 14 | 13 | 4 | 13 | 13 |    |   |   |   |   |
|   |           | 1 1/4" | 16              | 13 | 5  | 13 | 13 | 16             | 13 | 6  | 13 | 13 | 14              | 13 | 4  | 13 | 13 | 14             | 13 | 4 | 13 | 13 |    |    |   |    |    |    |   |   |   |   |
|   | 88" SPAN  | 3"     | 16              | 13 | 6  | 13 | 13 | 16             | 13 | 7  | 13 | 13 | 14              | 6  | 5  | 9  | 10 | 14             | 6  | 6 | 9  | 10 | 12 | 6  | 4 | 8  | 9  | 12 | 6 | 5 | 8 | 9 |
|   |           | 2"     | 15              | 11 | 5  | 13 | 13 | 15             | 11 | 6  | 13 | 13 | 12              | 6  | 4  | 8  | 9  | 12             | 6  | 5 | 8  | 9  | 11 | 5  | 3 | 7  | 8  | 11 | 5 | 4 | 7 | 8 |
|   |           | 1 1/4" | 13              | 10 | 4  | 13 | 13 | 13             | 10 | 5  | 13 | 13 | 11              | 5  | 3  | 7  | 8  | 11             | 5  | 3 | 7  | 8  |    |    |   |    |    |    |   |   |   |   |
|   | 105" span | 3"     | 14              | 6  | 5  | 9  | 10 | 14             | 7  | 6  | 9  | 10 | 11              | 4  | 4  | 5  | 4  | 12             | 4  | 5 | 5  | 4  |    |    |   |    |    |    |   |   |   |   |
|   |           | 2"     | 12              | 6  | 4  | 8  | 9  | 12             | 6  | 5  | 8  | 9  | 10              | 4  | 4  | 5  | 4  | 10             | 4  | 4 | 5  | 4  |    |    |   |    |    |    |   |   |   |   |
|   |           | 1 1/4" | 11              | 5  | 3  | 7  | 8  | 11             | 5  | 4  | 7  | 8  | 9               | 3  | 3  | 4  |    | 9              | 3  | 3 | 4  |    |    |    |   |    |    |    |   |   |   |   |
|   | 123" span | 3"     | 11              | 4  | 4  | 5  | 4  | 12             | 4  | 5  | 5  | 4  |                 |    |    |    |    |                |    |   |    |    |    |    |   |    |    |    |   |   |   |   |
|   |           | 2"     | 10              | 4  | 4  | 5  | 4  | 10             | 4  | 4  | 5  | 4  |                 |    |    |    |    |                |    |   |    |    |    |    |   |    |    |    |   |   |   |   |
|   |           | 1 1/4" | 9               | 3  | 3  | 4  | 3  | 9              | 3  | 3  | 4  | 3  |                 |    |    |    |    |                |    |   |    |    |    |    |   |    |    |    |   |   |   |   |
| <br>1/4" RAWL ZAMAC NAILIN DRIVE (HAMMER DRIVE)<br>1 3/8" MIN. EMBEDMENT IN CONCRETE<br>1 1/4" MIN. EMBEDMENT IN BLOCK   | 68" SPAN  | 3"     | 16              | 13 | 7  | 13 | 13 | 13             | 13 | 6  | 13 | 13 | 15              | 13 | 6  | 13 | 13 | 11             | 11 | 5 | 11 | 11 |    |    |   |    |    |    |   |   |   |   |
|   |           | 2"     | 15              | 13 | 6  | 13 | 13 | 12             | 12 | 5  | 12 | 12 | 13              | 13 | 5  | 13 | 13 | 10             | 10 | 4 | 10 | 10 |    |    |   |    |    |    |   |   |   |   |
|   |           | 1 1/4" | 14              | 13 | 5  | 13 | 13 | 10             | 10 | 4  | 10 | 10 | 12              | 12 | 4  | 12 | 12 | 9              | 9  | 3 | 9  | 9  |    |    |   |    |    |    |   |   |   |   |
|   | 88" SPAN  | 3"     | 13              | 10 | 6  | 13 | 13 | 10             | 8  | 5  | 10 | 10 | 11              | 5  | 5  | 7  | 8  | 8              | 4  | 4 | 5  | 6  |    |    |   |    |    |    |   |   |   |   |
|   |           | 2"     | 12              | 9  | 5  | 12 | 12 | 9              | 7  | 4  | 9  | 9  | 10              | 5  | 4  | 6  | 7  | 7              | 3  | 3 | 6  | 6  |    |    |   |    |    |    |   |   |   |   |
|   |           | 1 1/4" | 11              | 8  | 4  | 11 | 11 | 8              | 6  | 3  | 8  | 8  | 9               | 4  | 3  | 6  | 6  | 7              | 3  | 3 | 4  | 6  |    |    |   |    |    |    |   |   |   |   |
|   | 105" span | 3"     | 11              | 5  | 5  | 7  | 8  | 8              | 4  | 4  | 5  | 6  | 9               | 3  | 4  | 4  | 3  | 7              |    | 3 | 3  | 3  |    |    |   |    |    |    |   |   |   |   |
|   |           | 2"     | 10              | 5  | 4  | 7  | 7  | 7              | 4  | 3  | 5  | 6  | 8               | 3  | 3  | 4  | 3  | 6              |    | 3 | 3  | 3  |    |    |   |    |    |    |   |   |   |   |
|   |           | 1 1/4" | 9               | 4  | 3  | 6  | 7  | 7              | 3  | 3  | 4  | 5  | 8               | 3  | 3  | 4  | 3  | 6              |    | 3 | 3  | 3  |    |    |   |    |    |    |   |   |   |   |
|   | 123" span | 3"     | 9               | 3  | 4  | 4  | 3  | 7              |    | 3  | 3  | 3  |                 |    |    |    |    |                |    |   |    |    |    |    |   |    |    |    |   |   |   |   |
|   |           | 2"     | 8               | 3  | 3  | 4  | 3  | 6              |    | 3  | 3  |    |                 |    |    |    |    |                |    |   |    |    |    |    |   |    |    |    |   |   |   |   |
|   |           | 1 1/4" | 8               | 3  | 3  | 4  | 3  | 6              |    | 3  | 3  |    |                 |    |    |    |    |                |    |   |    |    |    |    |   |    |    |    |   |   |   |   |
| <br>VARIOUS HEAD TYPES<br>(MASONRY SCREWS)<br>1/4" RAWL PERMA-SEAL TAPPER<br>1/4" ELCO PANEL MATES<br>1 1/2" MIN. EMBEDMENT IN CONCRETE<br>1 1/4" MIN. EMBEDMENT IN BLOCK | 68" SPAN  | 3"     | 16              | 13 | 11 | 13 | 13 | 16             | 13 | 7  | 13 | 13 | 16              | 13 | 9  | 13 | 13 | 13             | 13 | 6 | 13 | 13 |    |    |   |    |    |    |   |   |   |   |
|   |           | 2"     | 16              | 13 | 9  | 13 | 13 | 14             | 13 | 6  | 13 | 13 | 16              | 13 | 8  | 13 | 13 | 12             | 12 | 5 | 12 | 12 |    |    |   |    |    |    |   |   |   |   |
|   |           | 1 1/4" | 16              | 13 | 8  | 13 | 13 | 13             | 13 | 5  | 13 | 13 | 16              | 13 | 6  | 13 | 13 | 10             | 10 | 4 | 10 | 10 |    |    |   |    |    |    |   |   |   |   |
|   | 88" SPAN  | 3"     | 16              | 13 | 9  | 13 | 13 | 12             | 9  | 5  | 12 | 12 | 16              | 8  | 7  | 11 | 12 | 10             | 5  | 4 | 6  | 7  |    |    |   |    |    |    |   |   |   |   |
|   |           | 2"     | 16              | 13 | 7  | 13 | 13 | 11             | 8  | 4  | 11 | 11 | 15              | 7  | 6  | 10 | 11 | 9              | 4  | 4 | 6  | 6  |    |    |   |    |    |    |   |   |   |   |
|   |           | 1 1/4" | 16              | 13 | 6  | 13 | 13 | 10             | 7  | 4  | 10 | 10 | 14              | 7  | 5  | 9  | 10 | 8              | 4  | 3 | 5  | 6  |    |    |   |    |    |    |   |   |   |   |
|   | 105" span | 3"     | 16              | 8  | 7  | 11 | 13 | 10             | 5  | 4  | 7  | 8  | 15              | 5  | 6  | 7  | 5  | 8              | 3  | 4 | 4  | 3  |    |    |   |    |    |    |   |   |   |   |
|   |           | 2"     | 16              | 7  | 6  | 10 | 12 | 9              | 4  | 4  | 6  | 7  | 13              | 5  | 5  | 6  | 5  | 8              | 3  | 3 | 4  | 3  |    |    |   |    |    |    |   |   |   |   |
|   |           | 1 1/4" | 14              | 7  | 5  | 9  | 10 | 8              | 4  | 3  | 5  | 6  | 12              | 4  | 4  | 5  | 4  | 7              |    | 3 | 3  | 3  |    |    |   |    |    |    |   |   |   |   |
|   | 123" span | 3"     | 15              | 5  | 6  | 7  | 5  | 8              | 3  | 4  | 4  | 3  |                 |    |    |    |    |                |    |   |    |    |    |    |   |    |    |    |   |   |   |   |
|   |           | 2"     | 13              | 5  | 5  | 6  | 5  | 8              | 3  | 3  | 4  | 3  |                 |    |    |    |    |                |    |   |    |    |    |    |   |    |    |    |   |   |   |   |
|   |           | 1 1/4" | 12              | 4  | 4  | 5  | 4  | 7              |    | 3  | 3  |    |                 |    |    |    |    |                |    |   |    |    |    |    |   |    |    |    |   |   |   |   |
| <br>1/4-20 x 7/8", 1/2" DIA.<br>RAWL CALK-IN<br>(MACHINE SCREW ANCHOR)<br>7/8" MIN. EMBEDMENT  | 68" SPAN  | 3"     | 16              | 13 | 12 | 13 | 13 | 16             | 13 | 7  | 13 | 13 | 16              | 13 | 10 | 13 | 13 | 13             | 13 | 6 | 13 | 13 |    |    |   |    |    |    |   |   |   |   |
|   |           | 2.5"   | 16              | 13 | 10 | 13 | 13 | 14             | 13 | 6  | 13 | 13 | 16              | 13 | 9  | 13 | 13 | 12             | 12 | 5 | 12 | 12 |    |    |   |    |    |    |   |   |   |   |
|   |           | 2"     | 16              | 13 | 8  | 13 | 13 | 13             | 13 | 5  | 13 | 13 | 16              | 13 | 7  | 13 | 13 | 10             | 10 | 4 | 10 | 10 |    |    |   |    |    |    |   |   |   |   |
|   | 88" SPAN  | 3"     | 16              | 13 | 9  | 13 | 13 | 12             | 9  | 5  | 12 | 12 | 16              | 10 | 8  | 13 | 13 | 10             | 5  | 4 | 6  | 7  |    |    |   |    |    |    |   |   |   |   |
|   |           | 2.5"   | 16              | 13 | 8  | 13 | 13 | 11             | 8  | 5  | 11 | 11 | 16              | 9  | 7  | 12 | 13 | 9              | 4  | 4 | 6  | 6  |    |    |   |    |    |    |   |   |   |   |
|   |           | 2"     | 16              | 13 | 6  | 13 | 13 | 10             | 7  | 4  | 10 | 10 | 16              | 8  | 5  | 11 | 12 | 8              | 4  | 3 | 5  | 6  |    |    |   |    |    |    |   |   |   |   |
|   | 105" span | 3"     | 16              | 10 | 8  | 13 | 13 | 10             | 5  | 4  | 7  | 8  | 16              | 6  | 7  | 8  | 3  | 8              | 3  | 4 | 4  | 3  |    |    |   |    |    |    |   |   |   |   |
|   |           | 2.5"   | 16              | 9  | 7  | 13 | 13 | 9              | 4  | 4  | 6  | 7  | 16              | 6  | 6  | 8  | 3  | 8              | 3  | 3 | 4  | 3  |    |    |   |    |    |    |   |   |   |   |
|   |           | 2"     | 16              | 8  | 6  | 11 | 13 | 8              | 4  | 3  | 5  | 6  | 14              | 5  | 4  | 7  | 3  | 7              |    | 3 | 3  | 3  |    |    |   |    |    |    |   |   |   |   |
|   | 123" span | 3"     | 16              | 6  | 7  | 8  | 7  | 8              | 3  | 4  | 4  | 3  |                 |    |    |    |    |                |    |   |    |    |    |    |   |    |    |    |   |   |   |   |
|   |           | 2.5"   | 16              | 6  | 6  | 8  | 6  | 8              | 3  | 3  | 4  | 3  |                 |    |    |    |    |                |    |   |    |    |    |    |   |    |    |    |   |   |   |   |
|   |           |        | 2"              | 14 | 5  | 4  | 7  | 5              | 7  |    | 3  | 3  | 3               |    |    |    |    |                |    |   |    |    |    |    |   |    |    |    |   |   |   |   |

NOTES:

SPANS AND LOADS SHOWN IN THIS SCHEDULE ARE FOR DETERMINING ANCHOR SPACING ONLY. FOR ALLOWABLE SPANS VS. DESIGN LOADS REFER TO SHEET 4.

MINIMUM ENBEDMENT AND EDGE DISTANCE EXCLUDES STUCCO AND/OR WALL FINISHES.

SHADED AREAS REPRESENT ANCHOR CONDITIONS THAT ARE NOT ACCEPTABLE.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SOUNDNESS OF THE STRUCTURE TO WITH STAND THE ADDITIONAL LOADS AND INSURE PROPER ANCHORAGE. SHUTTER SYSTEM MAY BE INTSALL INTO WOOD, CONCRETE OR MASONRY .

| REVISIONS | BY |
|-----------|----|
| 03/20/98  | SP |
| 12/15/00  | SP |
| 01/17/01  | SP |
| 01/05/06  | SP |
| 01/16/14  | SP |

**RAMMS ENGINEERING, INC.**  
*Structural Design*  
 2100 W. 76th STREET, SUITE 311  
 HIALEAH, FLORIDA 33016  
 EB 0006024

MAXIMUM IMPACT .031 STEEL STORM PANEL  
**SHUTTER-TECH, INC.**  
 7485 W. SECOND CT. HIALEAH, FL 33014

PRODUCT RENEWED  
 as complying with the Florida  
 Building Code  
 Acceptance No 16-1222.07  
 Expiration Date 03/22/2022  
 By *Heby A. M...*  
 Miami Dade Product Control

PRODUCT REVISED  
 as complying with the Florida  
 Building Code  
 Acceptance No 15-0714.23  
 Expiration Date 03/22/2017  
 By *Heby A. M...*  
 Miami Dade Product Control

*Monsoon*  
 9/20/15  
 11/9/15  
**ROBERT S. MONSOUR, PE**  
 EB-0006024  
 RAMMS ENGINEERING, INC.

BUILDING CODE COMPLIANCE

SEP/JRB  
 01/10/98  
 SCALE  
 SHOWN  
 98001  
 5  
 7

# ANCHOR SCHEDULE

| ANCHOR SPACING vs DESIGN PRESSURE AND CONNECTION TYPE |           |        | UP TO 81.5 PSF  |    |   |    |    |                 |    |   |    |    | UPTO 91.4 PSF   |    |   |    |    |                 |   |   |   |    |
|---|-----------|--------|-----------------|----|---|----|----|-----------------|----|---|----|----|-----------------|----|---|----|----|-----------------|---|---|---|----|
|   |           |        | POURED CONCRETE |    |   |    |    | CONCRETE BLOCK  |    |   |    |    | POURED CONCRETE |    |   |    |    | CONCRETE BLOCK  |   |   |   |    |
|   |           |        | CONNECTION TYPE |    |   |    |    | CONNECTION TYPE |    |   |    |    | CONNECTION TYPE |    |   |    |    | CONNECTION TYPE |   |   |   |    |
| ANCHOR TYPE   | PANEL     | E.D.   | A               | B  | C | D  | E  | A               | B  | C | D  | E  | A               | B  | C | D  | E  | A               | B | C | D | E  |
|   | 68" SPAN  | 3"     | 15              | 10 | 6 | 13 | 13 | 16              | 10 | 7 | 13 | 13 | 13              | 7  | 5 | 9  | 11 | 13              | 7 | 6 | 9 | 11 |
|   |           | 2"     | 14              | 9  | 5 | 13 | 13 | 14              | 9  | 6 | 13 | 13 | 12              | 6  | 4 | 8  | 9  | 12              | 6 | 5 | 8 | 10 |
|   |           | 1 1/4" | 12              | 8  | 4 | 12 | 12 | 12              | 8  | 4 | 12 | 12 | 11              | 5  | 3 | 7  | 9  | 11              | 5 | 4 | 7 | 9  |
|   | 88" SPAN  | 3"     | 12              | 4  | 5 | 6  | 5  | 12              | 5  | 5 | 6  | 5  | 11              | 3  | 4 | 5  | 3  | 11              | 4 | 5 | 5 | 3  |
|   |           | 2"     | 11              | 4  | 4 | 5  | 4  | 11              | 4  | 4 | 5  | 5  | 9               | 3  | 3 | 4  | 3  | 10              | 3 | 4 | 4 | 3  |
|   |           | 1 1/4" | 10              | 4  | 3 | 5  | 4  | 10              | 4  | 3 | 5  | 4  | 9               | 3  | 3 | 4  | 3  | 9               | 3 | 3 | 4 | 3  |
|   | 105" span | 3"     |                 |    |   |    |    |                 |    |   |    |    |                 |    |   |    |    |                 |   |   |   |    |
|   |           | 2"     |                 |    |   |    |    |                 |    |   |    |    |                 |    |   |    |    |                 |   |   |   |    |
|   |           | 1 1/4" |                 |    |   |    |    |                 |    |   |    |    |                 |    |   |    |    |                 |   |   |   |    |
|   | 123" span | 3"     |                 |    |   |    |    |                 |    |   |    |    |                 |    |   |    |    |                 |   |   |   |    |
|   |           | 2"     |                 |    |   |    |    |                 |    |   |    |    |                 |    |   |    |    |                 |   |   |   |    |
|   |           | 1 1/4" |                 |    |   |    |    |                 |    |   |    |    |                 |    |   |    |    |                 |   |   |   |    |
|   | 68" SPAN  | 3"     | 13              | 8  | 5 | 12 | 13 | 9               | 6  | 4 | 9  | 9  | 11              | 5  | 5 | 8  | 9  | 8               | 4 | 4 | 6 | 7  |
|   |           | 2"     | 11              | 7  | 5 | 11 | 11 | 8               | 5  | 4 | 8  | 8  | 10              | 5  | 4 | 7  | 8  | 8               | 4 | 3 | 5 | 6  |
|   |           | 1 1/4" | 10              | 7  | 4 | 10 | 10 | 8               | 5  | 3 | 7  | 8  | 9               | 4  | 3 | 6  | 7  | 7               | 3 | 3 | 4 | 5  |
|   | 88" SPAN  | 3"     | 10              | 4  | 4 | 5  | 4  | 7               | 3  | 3 | 4  | 3  | 9               | 3  | 4 | 4  | 3  | 7               |   | 3 | 3 |    |
|   |           | 2"     | 9               | 3  | 3 | 4  | 4  | 7               |    | 3 | 3  | 3  | 8               | 3  | 3 | 3  |    | 6               |   | 3 |   |    |
|   |           | 1 1/4" | 8               | 3  | 3 | 4  | 3  | 6               |    | 3 | 3  |    | 7               |    | 3 | 3  |    | 5               |   |   |   |    |
|   | 105" span | 3"     |                 |    |   |    |    |                 |    |   |    |    |                 |    |   |    |    |                 |   |   |   |    |
|   |           | 2"     |                 |    |   |    |    |                 |    |   |    |    |                 |    |   |    |    |                 |   |   |   |    |
|   |           | 1 1/4" |                 |    |   |    |    |                 |    |   |    |    |                 |    |   |    |    |                 |   |   |   |    |
|   | 123" span | 3"     |                 |    |   |    |    |                 |    |   |    |    |                 |    |   |    |    |                 |   |   |   |    |
|   |           | 2"     |                 |    |   |    |    |                 |    |   |    |    |                 |    |   |    |    |                 |   |   |   |    |
|   |           | 1 1/4" |                 |    |   |    |    |                 |    |   |    |    |                 |    |   |    |    |                 |   |   |   |    |
|   | 68" SPAN  | 3"     | 16              | 13 | 8 | 13 | 13 | 11              | 7  | 5 | 11 | 11 | 16              | 8  | 7 | 12 | 13 | 10              | 5 | 4 | 7 | 8  |
|   |           | 2"     | 16              | 11 | 7 | 13 | 13 | 10              | 6  | 4 | 10 | 10 | 16              | 8  | 6 | 10 | 12 | 9               | 4 | 4 | 6 | 7  |
|   |           | 1 1/4" | 16              | 10 | 6 | 13 | 13 | 9               | 6  | 3 | 9  | 9  | 14              | 7  | 5 | 9  | 11 | 8               | 4 | 3 | 5 | 6  |
|   | 88" SPAN  | 3"     | 15              | 6  | 6 | 8  | 6  | 9               | 3  | 4 | 4  | 4  | 14              | 4  | 6 | 6  | 4  | 8               | 3 | 3 | 3 | 3  |
|   |           | 2"     | 14              | 5  | 5 | 7  | 6  | 8               | 3  | 3 | 4  | 3  | 12              | 4  | 5 | 5  | 4  | 7               |   | 3 | 3 |    |
|   |           | 1 1/4" | 12              | 5  | 4 | 6  | 5  | 7               | 3  | 3 | 4  | 3  | 11              | 4  | 4 | 5  | 3  | 6               |   |   | 3 |    |
|   | 105" span | 3"     |                 |    |   |    |    |                 |    |   |    |    |                 |    |   |    |    |                 |   |   |   |    |
|   |           | 2"     |                 |    |   |    |    |                 |    |   |    |    |                 |    |   |    |    |                 |   |   |   |    |
|   |           | 1 1/4" |                 |    |   |    |    |                 |    |   |    |    |                 |    |   |    |    |                 |   |   |   |    |
|   | 123" span | 3"     |                 |    |   |    |    |                 |    |   |    |    |                 |    |   |    |    |                 |   |   |   |    |
|   |           | 2"     |                 |    |   |    |    |                 |    |   |    |    |                 |    |   |    |    |                 |   |   |   |    |
|   |           | 1 1/4" |                 |    |   |    |    |                 |    |   |    |    |                 |    |   |    |    |                 |   |   |   |    |
|   | 68" SPAN  | 3"     | 16              | 13 | 9 | 13 | 13 | 11              | 7  | 5 | 11 | 11 | 16              | 10 | 8 | 13 | 13 | 10              | 5 | 4 | 7 | 8  |
|   |           | 2.5"   | 16              | 13 | 7 | 13 | 13 | 10              | 7  | 4 | 10 | 10 | 16              | 9  | 7 | 13 | 13 | 9               | 4 | 4 | 6 | 7  |
|   |           | 2"     | 16              | 12 | 6 | 13 | 13 | 9               | 6  | 3 | 9  | 9  | 16              | 8  | 5 | 12 | 13 | 8               | 4 | 3 | 5 | 6  |
|   | 88" SPAN  | 3"     | 16              | 7  | 7 | 9  | 8  | 9               | 3  | 4 | 4  | 4  | 16              | 5  | 6 | 7  | 5  | 8               | 3 | 3 | 3 | 3  |
|   |           | 2.5"   | 16              | 6  | 6 | 8  | 7  | 8               | 3  | 3 | 4  | 3  | 15              | 5  | 5 | 6  | 5  | 7               |   | 3 | 3 |    |
|   |           | 2"     | 15              | 6  | 4 | 8  | 6  | 7               | 3  | 3 | 4  | 3  | 13              | 4  | 4 | 6  | 4  | 6               |   |   | 3 |    |
|   | 105" span | 3"     |                 |    |   |    |    |                 |    |   |    |    |                 |    |   |    |    |                 |   |   |   |    |
|   |           | 2.5"   |                 |    |   |    |    |                 |    |   |    |    |                 |    |   |    |    |                 |   |   |   |    |
|   |           | 2"     |                 |    |   |    |    |                 |    |   |    |    |                 |    |   |    |    |                 |   |   |   |    |
|   | 123" span | 3"     |                 |    |   |    |    |                 |    |   |    |    |                 |    |   |    |    |                 |   |   |   |    |
|   |           | 2"     |                 |    |   |    |    |                 |    |   |    |    |                 |    |   |    |    |                 |   |   |   |    |

NOTES:  
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MINIMUM EMBEDMENT AND EDGE DISTANCE EXCLUDES STUCCO AND/OR WALL FINISHES.

SHADED AREAS REPRESENT ANCHOR CONDITIONS THAT ARE NOT ACCEPTABLE.

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PRODUCT RENEWED  
 as complying with the Florida Building Code  
 Acceptance No 16-1222.07  
 Expiration Date 03/22/2022  
 By *Heidi A. Miller*  
 Miami Dade Product Control

*Monsour*  
 9/30/15  
 11/9/15

ROBERT S. MONSOUR, PE  
 EB-0006024  
 RAMMS ENGINEERING, INC.

PRODUCT REVISED  
 as complying with the Florida Building Code  
 Acceptance No 15-0714.23  
 Expiration Date 03/22/2017  
 By *Heidi A. Miller*  
 Miami Dade Product Control

BUILDING CODE COMPLIANCE

| REVISIONS | BY |
|-----------|----|
| 03/20/98  | SP |
| 01/17/01  | SP |
| 01/05/06  | SP |
| 01/16/14  | SP |

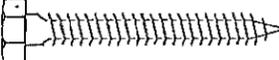
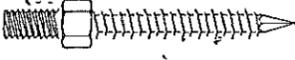
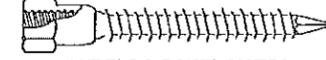
RAMMS ENGINEERING, INC.  
*Structural Design*  
 2100 W. 76th STREET, SUITE 311  
 HIALEAH, FLORIDA 33016  
 EB 0006024

MAXIMUM IMPACT .031 STEEL STORM PANEL  
**SHUTTER-TECH, INC.**  
 7485 W. SECOND CT. HIALEAH, FL 33014

BUILDING CODE COMPLIANCE

|          |             |
|----------|-------------|
| DATE     | SEP/JRB/RSM |
| APPROVAL |             |
| DATE     | 01/10/98    |
| SCALE    | SHOWN       |
| NO.      | 98001       |
| REV      |             |
| 6        |             |
| 7        |             |

# ANCHOR SCHEDULE

| WOOD APPLICATIONS   |        |           | UP TO 59.5 PSF  |    |    |    |    | UP TO 71.5 PSF  |    |    |    |    | UP TO 81.5 PSF  |    |   |    |    | UP TO 91.4 PSF  |   |   |    |    |
|---|--------|-----------|-----------------|----|----|----|----|-----------------|----|----|----|----|-----------------|----|---|----|----|-----------------|---|---|----|----|
|   |        |           | CONNECTION TYPE |    |    |    |    | CONNECTION TYPE |    |    |    |    | CONNECTION TYPE |    |   |    |    | CONNECTION TYPE |   |   |    |    |
| ANCHOR TYPE   | DIA.   | SPAN      | A               | B  | C  | D  | E  | A               | B  | C  | D  | E  | A               | B  | C | D  | E  | A               | B | C | D  | E  |
|  BRASS WOOD BUSHING<br>1" MIN. PENETRATION                                     | 1/4-20 | 68" SPAN  | 14              | 13 | 5  | 13 | 13 | 12              | 12 | 5  | 12 | 12 | 10              | 7  | 4 | 10 | 10 | 9               | 4 | 4 | 6  | 7  |
|   |        | 88" SPAN  | 11              | 8  | 4  | 11 | 11 | 9               | 4  | 3  | 6  | 7  | 8               | 3  | 3 | 4  | 3  | 7               |   | 3 | 3  |    |
|   |        | 105" SPAN | 9               | 4  | 4  | 6  | 7  | 8               | 3  | 3  | 4  | 3  |                 |    |   |    |    |                 |   |   |    |    |
|   |        | 123" SPAN | 8               | 3  | 3  | 4  | 3  |                 |    |    |    |    |                 |    |   |    |    |                 |   |   |    |    |
|  WOOD LAGS<br>1" MINIMUM TREAD PENETRATION                                     | 1/4"   | 68" SPAN  | 16              | 13 | 8  | 13 | 13 | 15              | 13 | 6  | 13 | 13 | 14              | 9  | 6 | 13 | 13 | 12              | 6 | 5 | 8  | 9  |
|   |        | 88" SPAN  | 14              | 11 | 6  | 13 | 13 | 12              | 6  | 5  | 8  | 9  | 10              | 4  | 4 | 5  | 4  | 9               | 3 | 4 | 4  | 3  |
|   |        | 105" SPAN | 12              | 6  | 5  | 8  | 9  | 10              | 4  | 4  | 5  | 4  |                 |    |   |    |    |                 |   |   |    |    |
|   |        | 123" SPAN | 10              | 4  | 3  | 5  | 4  |                 |    |    |    |    |                 |    |   |    |    |                 |   |   |    |    |
|  WOOD LAGS<br>1" MINIMUM TREAD PENETRATION                                     | 5/16"  | 68" SPAN  | 16              | 13 | 10 | 13 | 13 | 16              | 13 | 8  | 13 | 13 | 16              | 10 | 7 | 13 | 13 | 14              | 7 | 6 | 9  | 11 |
|   |        | 88" SPAN  | 16              | 13 | 7  | 13 | 13 | 14              | 7  | 6  | 9  | 10 | 12              | 5  | 5 | 6  | 5  | 11              | 4 | 5 | 5  | 3  |
|   |        | 105" SPAN | 14              | 7  | 6  | 9  | 10 | 12              | 4  | 5  | 8  | 4  |                 |    |   |    |    |                 |   |   |    |    |
|   |        | 123" SPAN | 12              | 4  | 5  | 6  | 4  |                 |    |    |    |    |                 |    |   |    |    |                 |   |   |    |    |
|  WOOD LAGS<br>1" MINIMUM TREAD PENETRATION                                     | 3/8"   | 68" SPAN  | 16              | 13 | 11 | 13 | 13 | 16              | 13 | 9  | 13 | 13 | 16              | 12 | 8 | 13 | 13 | 16              | 8 | 7 | 11 | 13 |
|   |        | 88" SPAN  | 16              | 13 | 9  | 13 | 13 | 16              | 8  | 7  | 10 | 12 | 14              | 5  | 6 | 7  | 6  | 13              | 4 | 6 | 5  | 4  |
|   |        | 105" SPAN | 16              | 8  | 7  | 11 | 12 | 14              | 5  | 6  | 6  | 5  |                 |    |   |    |    |                 |   |   |    |    |
|   |        | 123" SPAN | 13              | 5  | 6  | 6  | 5  |                 |    |    |    |    |                 |    |   |    |    |                 |   |   |    |    |
|  WOOD LAGS<br>1" MINIMUM TREAD PENETRATION                                     | 7/16"  | 68" SPAN  | 16              | 13 | 12 | 13 | 13 | 16              | 13 | 10 | 13 | 13 | 16              | 13 | 9 | 13 | 13 | 16              | 9 | 8 | 12 | 13 |
|   |        | 88" SPAN  | 16              | 13 | 9  | 13 | 13 | 16              | 8  | 8  | 12 | 13 | 16              | 6  | 7 | 8  | 7  | 14              | 5 | 6 | 6  | 4  |
|   |        | 105" SPAN | 16              | 9  | 8  | 12 | 13 | 15              | 5  | 7  | 7  | 6  |                 |    |   |    |    |                 |   |   |    |    |
|   |        | 123" SPAN | 15              | 5  | 7  | 7  | 6  |                 |    |    |    |    |                 |    |   |    |    |                 |   |   |    |    |
|  1/4" ELCO PANEL MATES<br>1 7/8" MIN. THREAD PENETRATION                       | 1/4"   | 68" SPAN  | 16              | 13 | 8  | 13 | 13 | 15              | 13 | 6  | 13 | 13 | 14              | 9  | 6 | 13 | 13 | 12              | 6 | 5 | 8  | 9  |
|   |        | 88" SPAN  | 14              | 11 | 6  | 13 | 13 | 12              | 6  | 5  | 8  | 9  | 10              | 4  | 4 | 5  | 4  | 9               | 3 | 4 | 4  | 3  |
|   |        | 105" SPAN | 12              | 6  | 5  | 8  | 9  | 10              | 4  | 4  | 5  | 4  |                 |    |   |    |    |                 |   |   |    |    |
|   |        | 123" SPAN | 10              | 4  | 3  | 5  | 4  |                 |    |    |    |    |                 |    |   |    |    |                 |   |   |    |    |
|  VERIOUS HEAD TYPES<br>1/4" MASONRY SCREWS<br>1 7/8" MIN. THREAD PENETRATION | 1/4"   | 68" SPAN  | 16              | 13 | 8  | 13 | 13 | 15              | 13 | 6  | 13 | 13 | 14              | 9  | 6 | 13 | 13 | 12              | 6 | 5 | 8  | 9  |
|   |        | 88" SPAN  | 14              | 11 | 6  | 13 | 13 | 12              | 6  | 5  | 8  | 9  | 10              | 4  | 4 | 5  | 4  | 9               | 3 | 4 | 4  | 3  |
|   |        | 105" SPAN | 12              | 6  | 5  | 8  | 9  | 10              | 4  | 4  | 5  | 4  |                 |    |   |    |    |                 |   |   |    |    |
|   |        | 123" SPAN | 10              | 4  | 3  | 5  | 4  |                 |    |    |    |    |                 |    |   |    |    |                 |   |   |    |    |

**NOTES:**

SPANS AND LOADS SHOWN IN THIS SCHEDULE ARE FOR DETERMINING ANCHOR SPACING ONLY. FOR ALLOWABLE SPANS VS. DESIGN LOADS REFER TO SHEET 4.

WHEN ANCHORING TO WOOD, THE WOOD MUST BE A MINIMUM 2 X 4 EQUAL TO #2 SOUTHERN PINE 0.55 SPECIFIC GRAVITY AND STRUCTURALLY PART OF THE FRAMING STRUCTURE OR SUCURELY ATTACHED TO FRAMING STRUCTURE

SHADED AREAS REPRESENT ANCHOR CONDITIONS THAT ARE NOT ACCEPTABLE.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SOUNDNESS OF THE STRUCTURE TO WITH STAND THE ADDITIONAL LOADS AND INSURE PROPER ANCHORAGE. SHUTTER SYSTEM MAY BE INTSALL INTO WOOD, CONCRETE OR MASONRY.

PRODUCT RENEWED  
as complying with the Florida  
Building Code  
Acceptance No 16-1222.07  
Expiration Date 03/22/2022  
By *Hebert A. Hester*  
Miami Dade Product Control

PRODUCT REVISED  
as complying with the Florida  
Building Code  
Acceptance No 15-0714.23  
Expiration Date 03/22/2017  
By *Hebert A. Hester*  
Miami Dade Product Control

*Monmour 9/20/15 1955*  
ROBERT S. MONSOUR, PE  
EB-0006024  
RAMMS ENGINEERING, INC.

| REVISIONS | BY |
|-----------|----|
| 08/14/98  | SP |
| 01/17/01  | SP |
| 01/05/06  | SP |
| 01/16/14  | SP |

RAMMS ENGINEERING, INC.  
*Structural Design*  
2100 W. 76th STREET, SUITE 311  
HIALEAH, FLORIDA 33015  
EB 0006024

MAXIMUM IMPACT .031 STEEL STORM PANEL  
**SHUTTER-TECH, INC.**  
7485 W. SECOND CT. HIALEAH, FL 33014

DRAWN  
SEP/JRB/RSM  
DATE  
01/10/98  
SCALE  
SHOWN  
JOB  
98001  
SHEET  
7  
8/15

BUILDING CODE COMPLIANCE