



**BUILDING CODE COMPLIANCE OFFICE (BCCO)  
PRODUCT CONTROL DIVISION**

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

**NOTICE OF ACCEPTANCE (NOA)**

**MetalTech, Inc.  
7635 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 by Miami-Dade County Product Control Division and accepted by the Board of Rules and Appeals (BORA) to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

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

This product is approved as described herein, and has been designed to comply with the High Velocity Hurricane Zone of the Florida Building Code.

**DESCRIPTION: 0.031” (min.) Steel Storm Panels Shutter**

**APPROVAL DOCUMENT:** 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, bearing the Miami-Dade County Product Control Revision stamp with the Notice of Acceptance number and expiration date by the Miami-Dade County Product Control Division.

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

**LABELING:** Each panel shall bear a permanent label with the manufacturer's name or logo, city, state and the following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

**RENEWAL** of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

**TERMINATION** of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

**ADVERTISEMENT:** The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

**INSPECTION:** A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA revises **NOA # 01-0205.01** and consists of this page 1 as well as approval document mentioned above. The submitted documentation was reviewed by **Helmy A. Makar, P.E.**



**NOA No 01-1224.07  
Expiration Date: 03/22/2006  
Approval Date: 10/17/2002  
Page 1**

COMPLIES WITH:  
 FLORIDA BUILDING CODE 2001  
 TESTED TO TAS201, TAS202 AND TAS203

DESIGN CRITERIA:

PRESSURE REQUIREMENT CALCULATIONS  
 MUST BE PERFORMED PER ASCE 7 "MINIMUM DESIGN LOADS FOR BUILDING AND  
 OTHER STRUCTURES"

GENERAL NOTES:

ALL ALUMINUM EXTRUSIONS TO BE ALLOY 6063-T6 OR EQUAL

STORM PANELS SHALL BE:

**24 GAUGE STEEL, ASTM A653 SQ GRADE E MIN. Fy = 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

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" MEN. 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.

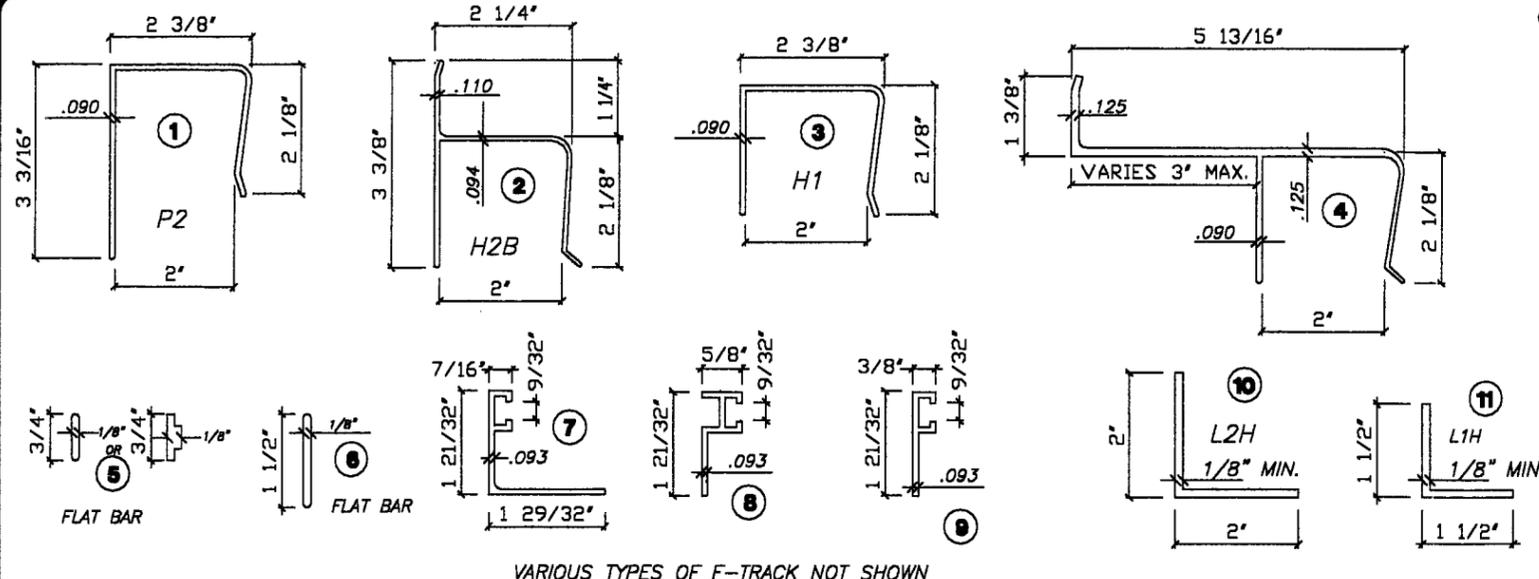
REFER TO SHEETS 5, 6 & 7 OF 7 FOR ANCHOR SPACING AND MINIMUM EMBEDMENTS

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

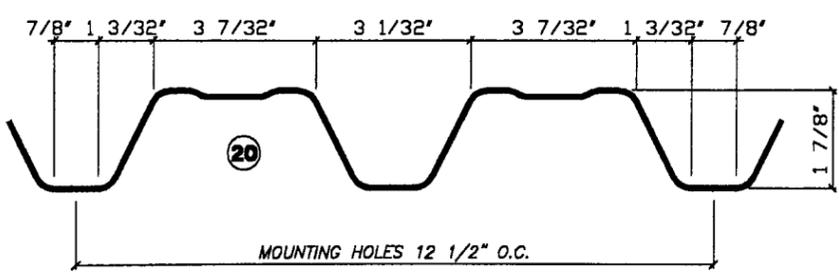
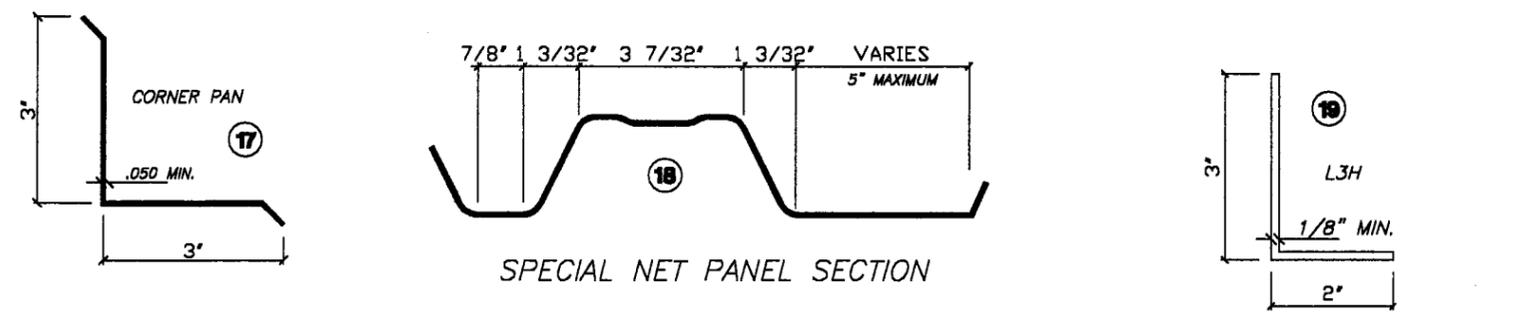
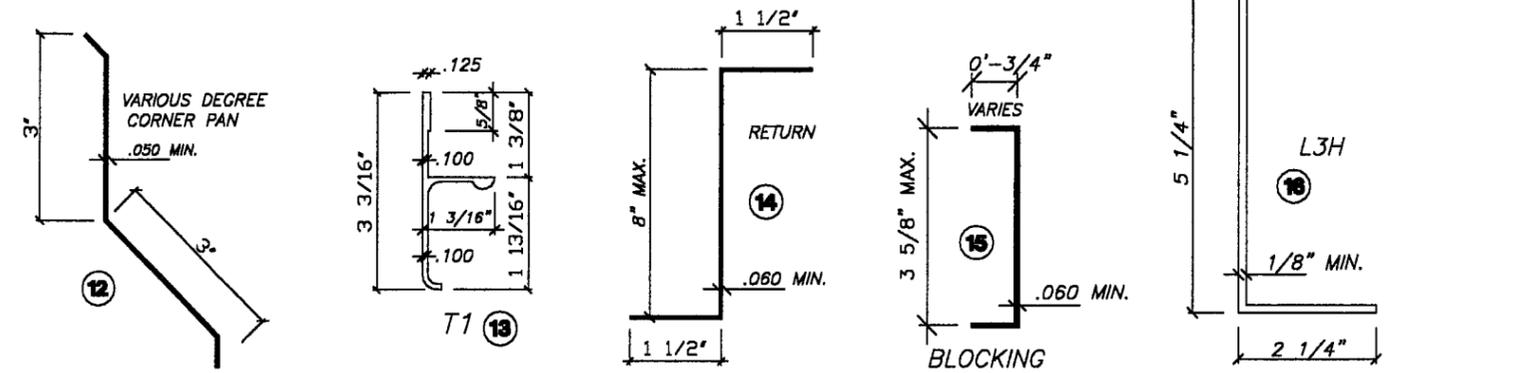
EACH PANEL SHALL BEAR A PERMANENT LABEL OR STAMP SHOWING  
 " METALTECH, INC. HIALEAH, FL " " DADE COUNTY PRODUCT CONTROL APPROVED "

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 "

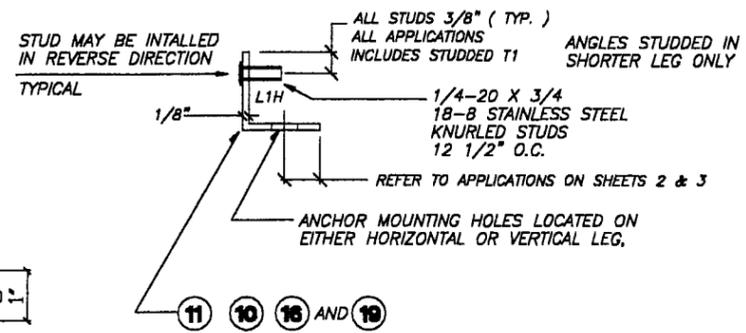
PERMANENT FASTENER COMPONENTS, EMBEDDED ANCHOR BOLTS, THREADED CONES  
 OR METAL SHIELDS, NOT IN USE, MUST BE PROTECTED AGAINST CORROSION,  
 CONTAMINATION AND DAMAGE AT ALL TIME.



VARIOUS TYPES OF F-TRACK NOT SHOWN

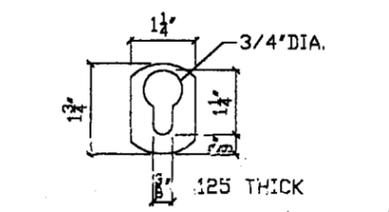


CROSS SECTIONS



STUDED ANGLE DETAIL

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



KEY HOLE WASHER

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

PRODUCT REVISED  
 as complying with the Florida  
 Building Code  
 Acceptance No 01-1224-07  
 Expiration Date 03/22/2006  
 By *Heather A. M...*  
 Miami Dade Product Control  
 Division

BUILDING CODE COMPLIANCE

REVISIONS	BY
03/20/98	SP
06/12/98	SP
08/14/98	SP
12/15/00	SP
01/17/01	SP
07/15/02	SP
09/09/02	SP

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

**METALTECH, INC.**  
 7635 W. SECOND CT. HIALEAH, FL 33014  
 EST. 1957  
 EXPANDED WORLDWIDE

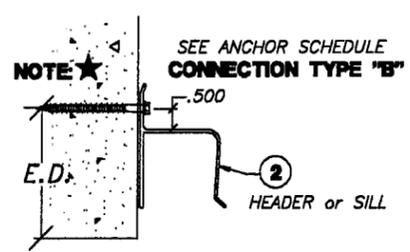
DATE	BY	REVISION
01/10/98	SEP/JRB	APPROVED
03/22/2006	SHOWN	98001
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7		

REVISIONS	BY
03/20/98	SP
06/12/98	SP
08/14/98	SP
01/17/01	SP

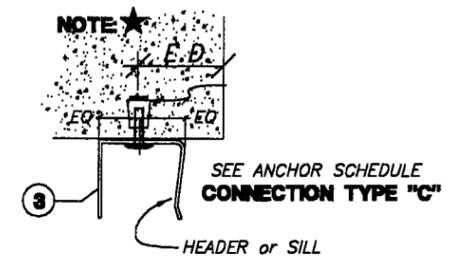
RAMMS ENGINEERING, INC.  
Structural Design  
2100 W. 78th STREET, SUITE 311  
HIALEAH, FLORIDA 33015  
EST. 1957  
EB 0006024

**METALTECH, INC.**  
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7835 W. SECOND CT.  
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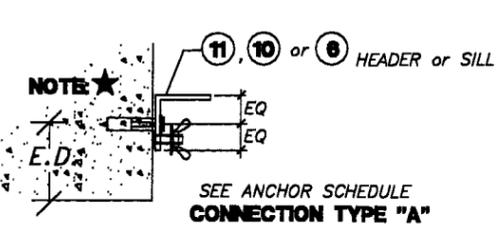
DATE	BY	REVISION
SEP / JRB / RSM		APPROVED
DATE		
01/10/98		
SCALE		
SHOWN		
JOB		
98001		
SHEET		
<b>2</b>		
OF		
7		



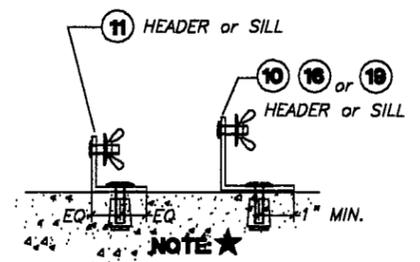
DETAIL 1



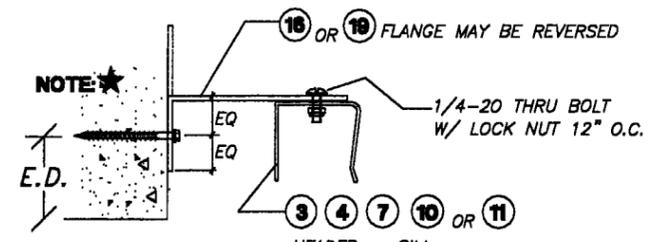
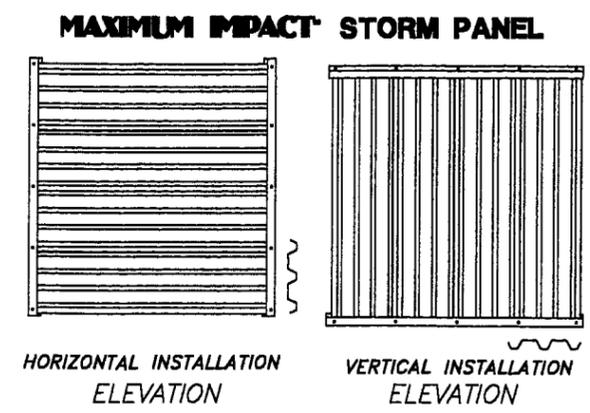
DETAIL 2



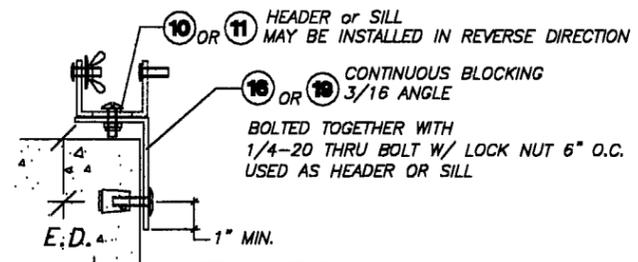
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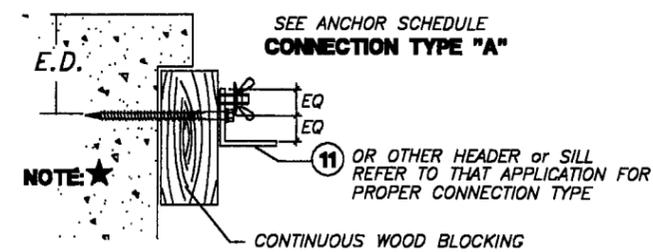
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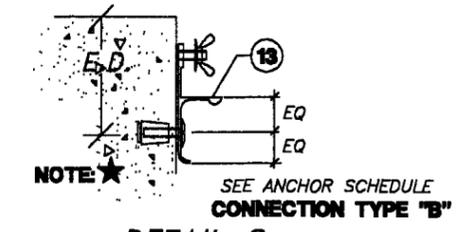
DETAIL 5



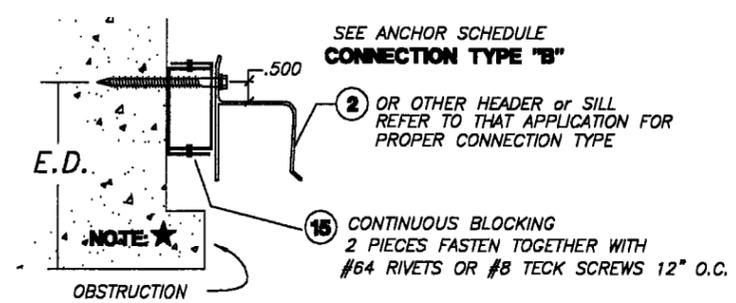
DETAIL 6



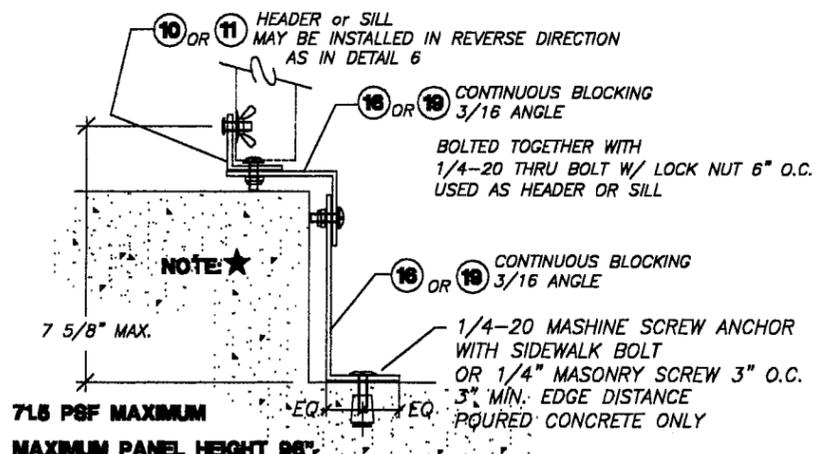
DETAIL 7



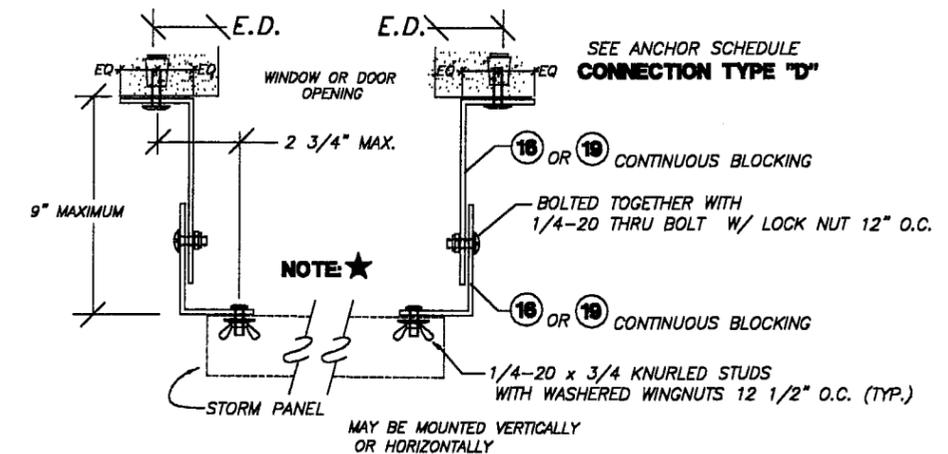
DETAIL 8



DETAIL 9



DETAIL 10



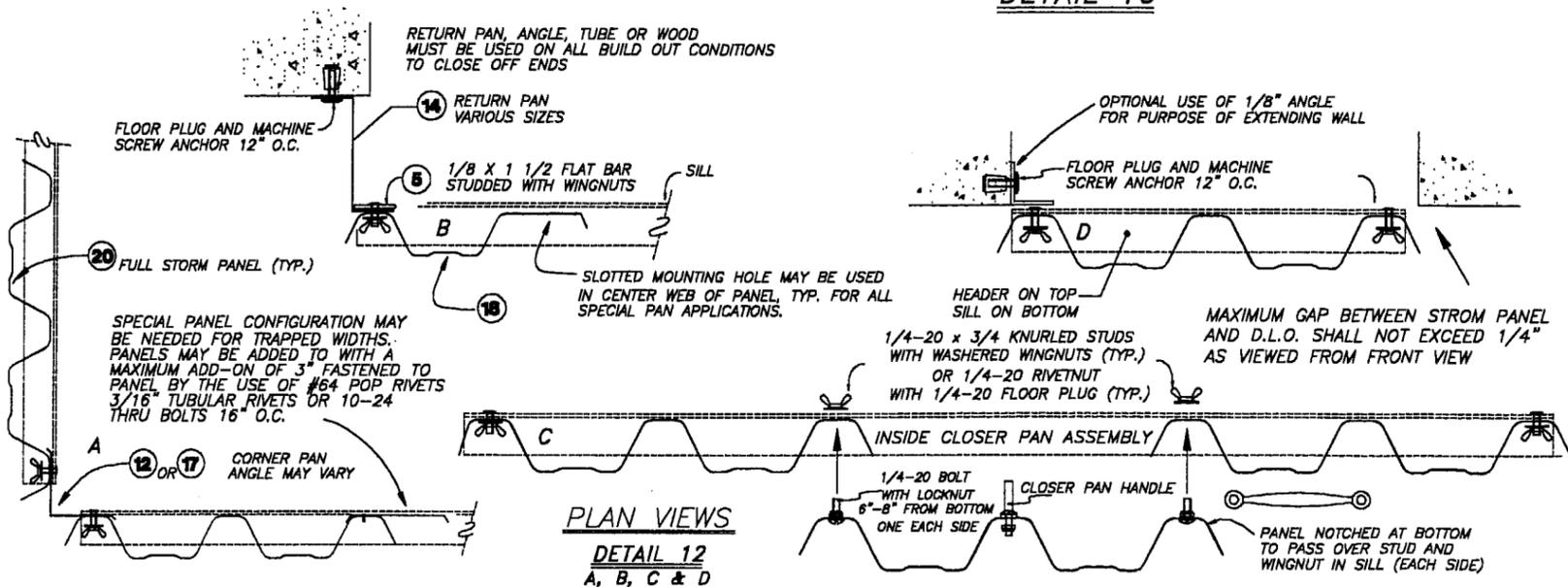
DETAIL 11

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

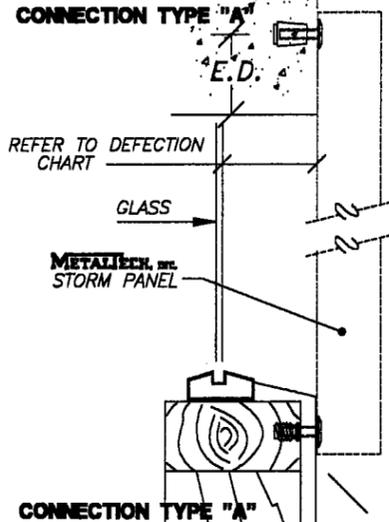
ROBERT S. MONSOUR, PE  
EB-0006024  
RAMMS ENGINEERING, INC.



BUILDING CODE COMPLIANCE

PRODUCT REVISED as complying with the Florida Building Code  
Acceptance No 01-1224.07  
Expiration Date 03/22/2006  
By Helmut A. Nelson  
Miami Dade Product Control Division

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



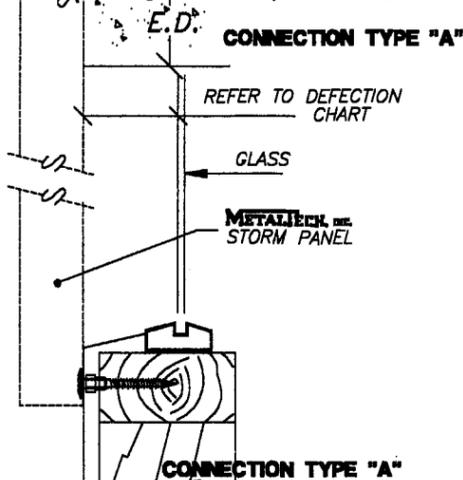
**NOTE:**  
THE METALTECH STORM PANEL MAY BE INSTALLED WITHOUT THE USE OF AN EXTRUDED HEADER OR SILL. THE SHUTTER MAY BE ANCHORED DIRECTLY TO THE STRUCTURE WITH THE USE OF ONE OR A COMBINATION OF DETAIL 13

**NOTE:** ★

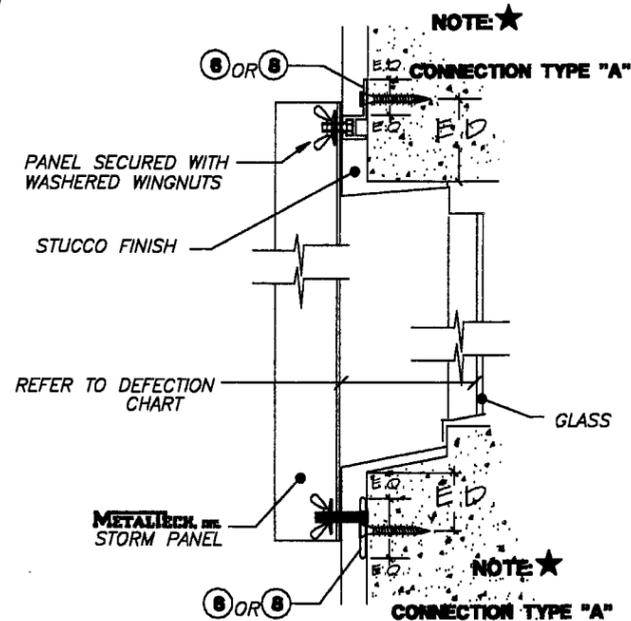
**DETAIL 13**

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

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

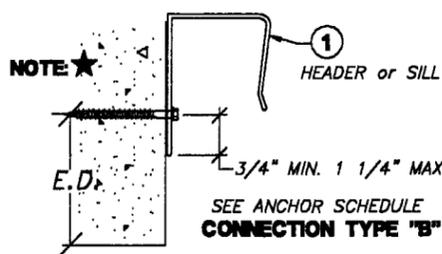


1/4" PANEL MATE WITH MACHINE SCREW HEAD WITH 14-20 SIDEWALK BOLT HEADER OR SILL WOOD, CONCRETE OR MASONRY

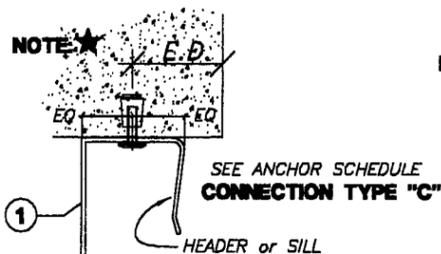


PRESTUCCO INSTALLATION

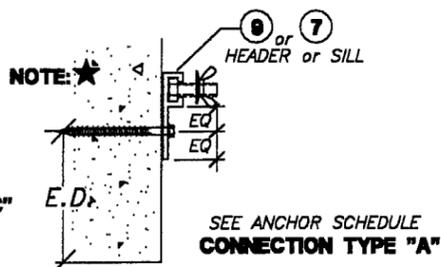
**DETAIL 14**



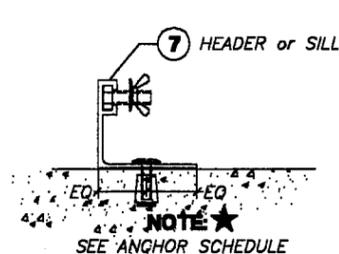
**DETAIL 15**



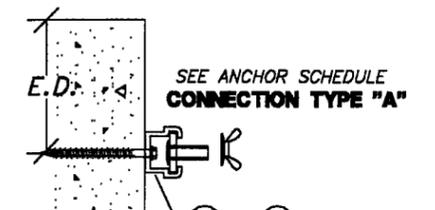
**DETAIL 16**



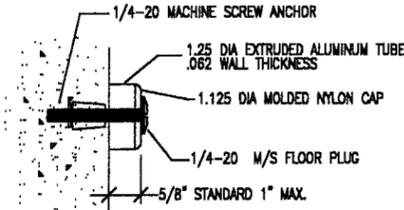
**DETAIL 17**



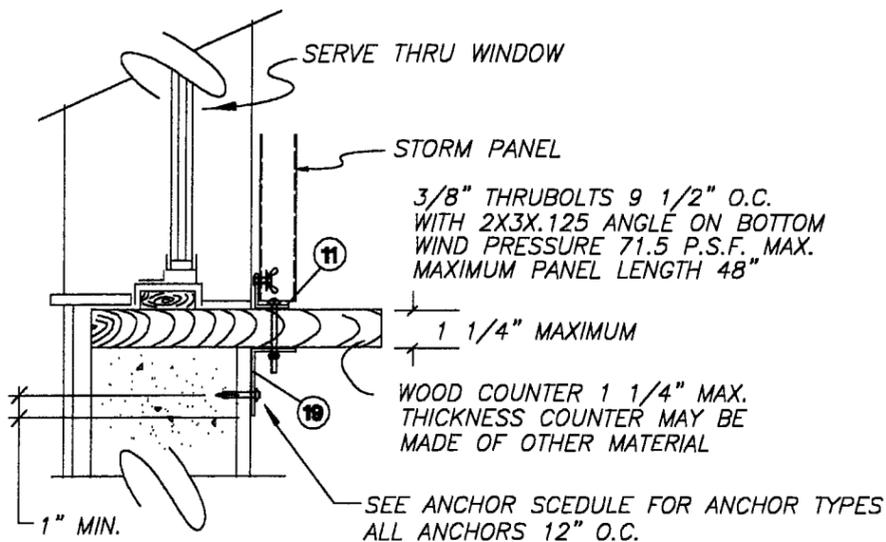
**DETAIL 18**



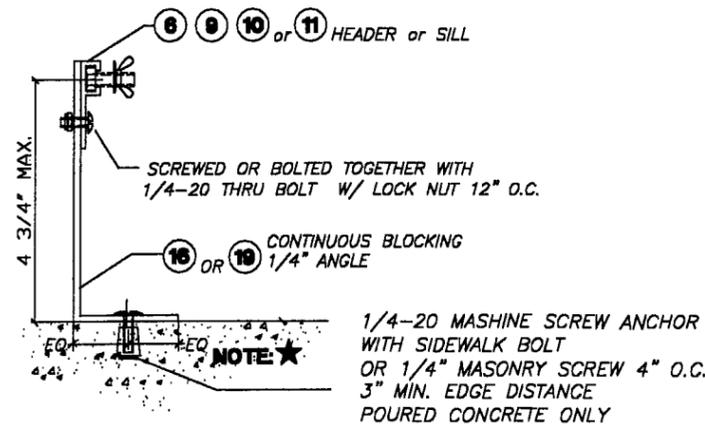
**DETAIL 19**



**DETAIL 20**



**DETAIL 21**



59.5 PSF MAXIMUM / PANEL HEIGHT 109" MAXIMUM

**DETAIL 22**  
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

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

**PRODUCT REVISED**  
as complying with the Florida Baiding Code  
Acceptance No 01-1224.07  
Expiration Date 03/22/2006  
By *Helmut H. M...*  
Miami Dade Product Control Division

BUILDING CODE COMPLIANCE

REVISIONS	BY
03/20/98	SP
04/20/98	SP
06/12/98	SP
08/14/98	SP
01/17/01	SP
01/11/02	SP

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

**METALTECH, INC.**  
7635 W. SECOND CT. HIALEAH, FL 33014  
EST. 1957  
SERVED WORLD-WIDE

DATE	BY
SEP / JRB / RSM	APPROVED
01/10/97	DATE
SHOWN	BY
98001	BY
3	BY
7	BY

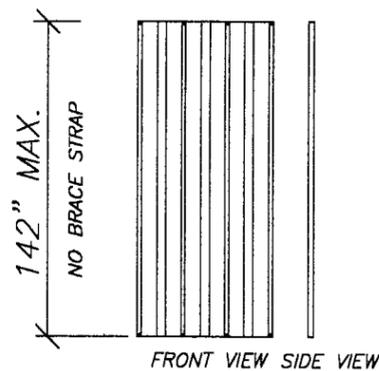
**24 ga. STEEL**

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.

**24 GA MAXIMUM IMPACT STEEL STORM PANEL**

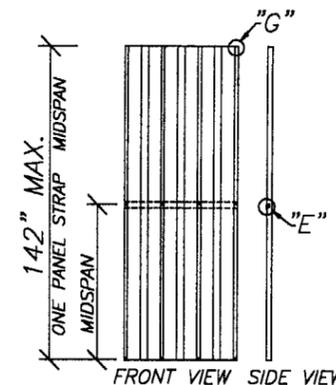


**142" MAX. PANEL HEIGHT  
NO PANEL STRAP  
IS REQUIRED**

**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



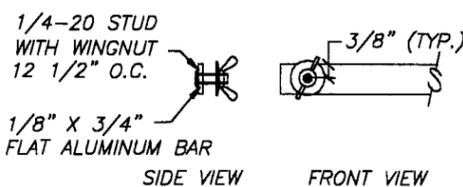
**142" MAX. PANEL HEIGHT  
ONE PANEL STRAP  
LOCATED MIDSPAN**

**HIGH VELOCITY HURRICANE ZONE  
PANEL DEFLECTION CHART  
WITH HORIZONTAL STRAP**

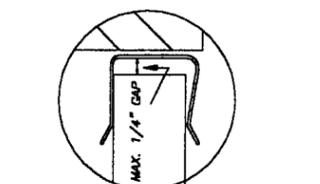
PANEL HEIGHT	0"-104"	104"-142"
WALL MOUNT	2"	2 1/4"
INSIDE MOUNT	2"	2 1/4"
BUILD OUT	2"	2 1/4"

MINIMUM DISTANCE BETWEEN GLASS AND PANEL

**HORIZONTAL BRACE STRAP**



**DETAIL "E"**

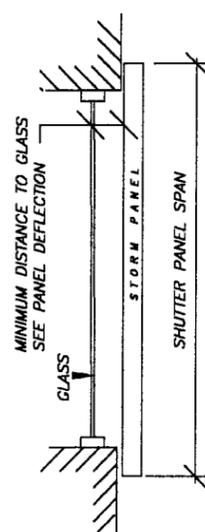


MAXIMUM GAP BETWEEN PANEL AND HEADER IS 1/4" (TYP.)

**DETAIL "F"**

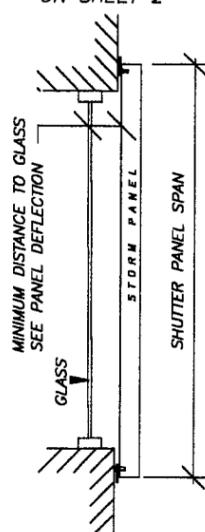
HEADER AND SILL TYPE MAY VARY, DEPENDING ON APPLICATION

DETAIL 13 ON SHEET 3



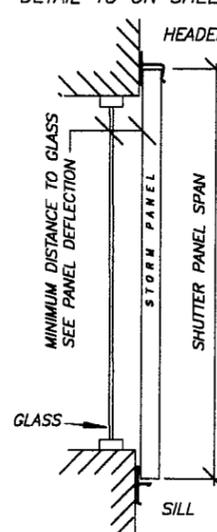
DETAIL 13 ON SHEET 3

DETAIL 3,4, & 8 ON SHEET 2



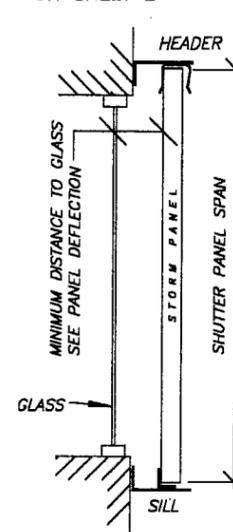
DETAIL 3,4, & 8 ON SHEET 2

DETAIL 1 ON SHEET 2  
DETAIL 15 ON SHEET 3



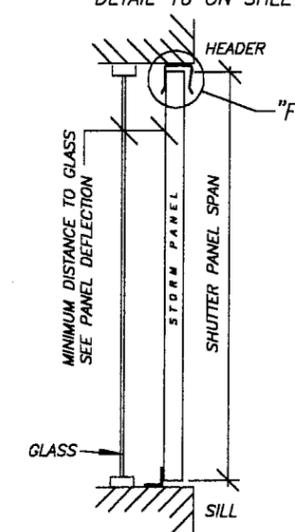
DETAILS 3,4 AND 8 ON SHEET 2

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

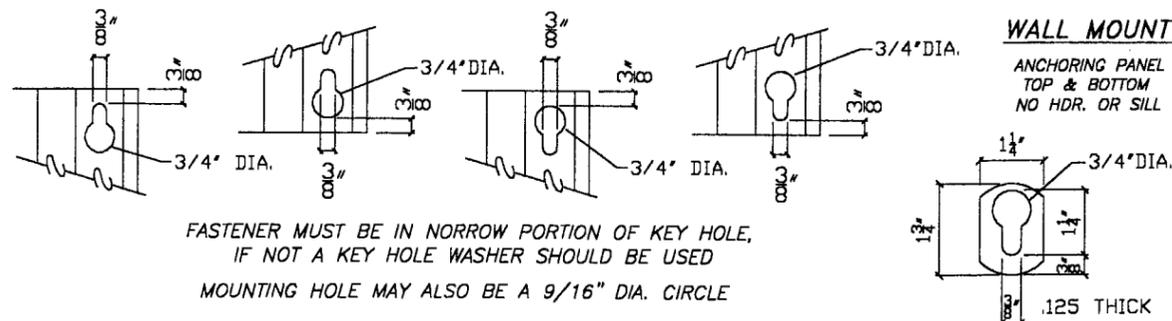


DETAILS 5,7,9,10 AND 11 ON SHEET 2

DETAIL 2 ON SHEET 2  
DETAIL 16 ON SHEET 3

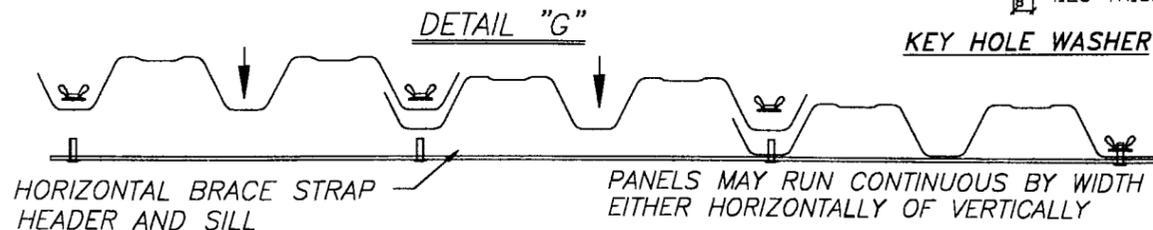


DETAIL 4 ON SHEET 2



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

**KEY HOLE WASHER**



**EXPLODED ASSEMBLY**

PANELS MAY RUN CONTINUOUS BY WIDTH EITHER HORIZONTALLY OF VERTICALLY

*Robert S. Monsour*  
9/10/06

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

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Miami Dade Product Control Division

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01/11/02	SP
09/09/02	SP

RAMMS ENGINEERING, INC.  
Structural Design  
2100 W. 78th STREET, SUITE 311  
HALEAH, FLORIDA 33016  
EB 0006024

**METALTECH, INC.**  
7635 W. SECOND CT. HIALEAH, FL 33014  
EST. 1957  
EXPANDED WORLD-WIDE

SEP/JRB APPROVED
DATE 01/10/98
BY SHOWN
98001
SHEET
<b>4</b>
7

# ANCHOR SCHEDULE

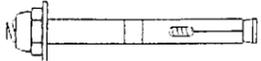
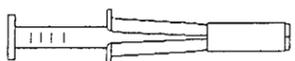
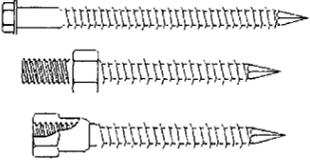
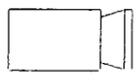
**NOTES:**

**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 .

ANCHOR SPACING vs DESIGN PRESSURE AND CONNECTION TYPE			59.6 PSF										71.5 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					
 1/4" SLEEVE ANCHOR 1 1/4" MIN. EMBEDMENT	68" Span	3"	16	13	11	13	13	16	13	13	13	13	16	13	9	13	13	16	13	11	13	13	16	13	9	13	13
		2"	16	13	9	13	13	16	13	10	13	13	16	13	7	13	13	16	13	9	13	13	16	13	7	13	13
		1 1/4"	16	13	7	13	13	16	13	8	13	13	16	13	6	13	13	16	13	7	13	13	16	13	6	13	13
	88" Span	3"	16	13	8	13	13	16	13	10	13	13	16	8	7	12	13	16	9	8	12	13	16	8	7	12	13
		2"	16	13	7	13	13	16	13	8	13	13	16	8	6	10	12	16	8	7	11	12	16	8	6	10	12
		1 1/4"	16	13	5	13	13	16	13	6	13	13	15	7	5	9	10	15	7	5	9	11	15	7	5	9	11
	105" Span	3"	16	9	7	12	13	16	9	8	12	13	15	5	6	7	6	15	5	7	6	6	14	5	5	6	5
		2"	16	8	6	11	12	16	8	7	11	12	14	5	5	6	5	14	5	6	5	6	14	5	6	5	6
		1 1/4"	15	7	5	10	11	16	7	5	10	11	12	4	4	6	5	12	4	4	6	5	12	4	4	6	5
	124" Span	3"	15	5	6	7	6	15	5	7	7	6															
		2"	14	5	5	6	5	14	5	6	6	5															
		1 1/4"	12	4	4	6	5	12	4	4	6	5															
 1/4" SLEEVED DRIVE ANCHOR 1 3/8" MIN. EMBEDMENT	68" Span	3"	16	13	10	13	13	16	13	8	13	13	16	13	8	13	13	14	13	7	13	13	16	13	7	13	13
		2"	16	13	7	13	13	15	13	7	13	13	16	13	7	13	13	13	13	6	13	13	15	13	6	13	13
		1 1/4"	16	13	6	13	13	14	13	6	13	13	15	13	6	13	13	12	12	5	12	12	12	12	5	12	12
	88" Span	3"	16	13	8	13	13	13	10	6	13	13	15	7	6	10	11	11	5	5	7	8	13	6	5	9	10
		2"	16	12	6	13	13	12	9	5	12	12	12	6	5	9	10	10	5	4	6	7	10	5	4	6	7
		1 1/4"	14	11	5	13	13	11	8	4	11	11	12	6	4	8	9	9	4	4	6	6	9	4	4	6	6
	105" Span	3"	15	7	6	10	11	11	5	5	7	8	13	4	6	6	5	9	3	4	4	3	11	4	4	5	4
		2"	13	6	5	9	10	10	5	4	7	7	11	4	4	5	4	8	3	4	4	3	10	4	4	5	4
		1 1/4"	12	6	4	8	9	9	4	4	6	7	10	4	4	5	4	7	3	3	4	3	10	4	4	5	4
	124" Span	3"	13	4	5	6	5	9	3	4	4	3															
		2"	11	4	4	5	4	8	3	4	4	3															
		1 1/4"	10	4	4	5	4	7	3	3	4	3															
 1/4" MASONRY SCREWS 1 1/2" MIN. EMBEDMENT	68" Span	3"	16	13	13	13	13	16	13	9	13	13	16	13	13	13	13	16	13	7	13	13	16	13	6	13	13
		2"	16	13	12	13	13	16	13	7	13	13	16	13	10	13	13	15	13	6	13	13	16	13	5	12	13
		1 1/4"	16	13	10	13	13	16	13	6	13	13	16	13	8	13	13	14	13	5	12	13	16	13	8	13	13
	88" Span	3"	16	13	12	13	13	16	12	7	13	13	16	11	10	13	13	13	6	6	9	10	16	10	8	13	13
		2"	16	13	10	13	13	14	11	6	13	13	16	10	8	13	13	12	6	5	8	9	16	9	7	12	13
		1 1/4"	16	13	8	13	13	13	10	5	13	13	16	9	7	12	13	11	5	4	7	8	16	9	7	12	13
	105" Span	3"	16	11	10	13	13	13	6	6	9	10	16	7	8	9	7	11	4	5	5	4	16	6	7	8	6
		2"	16	10	8	13	13	12	6	5	8	9	16	6	7	8	6	10	4	4	5	4	16	6	5	7	6
		1 1/4"	16	9	7	12	13	11	5	4	7	8	16	6	5	7	6	9	3	3	4	3	16	6	5	7	6
	124" Span	3"	16	7	8	9	7	11	4	5	5	4															
		2"	16	6	7	8	6	10	4	4	5	4															
		1 1/4"	16	6	6	7	6	9	3	3	4	3															
 1/4-20 x 7/8" , 1/2" DIA. MACHINE SCREW ANCHOR 7/8" MIN. EMBEDMENT	68" Span	3"	16	13	13	13	13	16	13	9	13	13	16	13	13	13	13	16	13	8	13	13	16	13	6	13	13
		2.5"	16	13	13	13	13	16	13	8	13	13	16	13	11	13	13	16	13	6	13	13	16	13	9	13	13
		2"	16	13	11	13	13	16	13	6	13	13	16	13	9	13	13	14	13	5	13	13	16	13	9	13	13
	88" Span	3"	16	13	13	13	13	16	12	7	13	13	16	13	11	13	13	13	6	6	9	10	16	12	9	13	13
		2.5"	16	13	11	13	13	14	11	6	13	13	16	12	9	13	13	12	6	5	8	9	16	11	7	13	13
		2"	16	13	8	13	13	13	10	5	13	13	16	11	7	13	13	11	5	4	7	8	16	8	9	11	9
	105" Span	3"	16	13	11	13	13	13	6	6	9	10	16	8	9	11	9	11	4	5	5	4	16	8	7	10	8
		2.5"	16	12	9	13	13	12	6	5	8	9	16	8	7	10	8	10	4	4	5	4	16	7	6	9	7
		2"	16	11	7	13	13	11	5	4	7	8	16	7	6	9	7	9	3	3	4	3	16	7	6	9	7
	124" Span	3"	16	8	9	11	9	11	4	5	5	4															
		2"	16	8	7	10	8	10	4	4	5	4															

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

**PRODUCT REVISED**  
 as complying with the Florida  
 Building Code  
 Acceptance No 01-1224.07  
 Expiration Date 03/22/2006  
 By *Helmut A. Helmer*  
 Miami Dade Product Control  
 Division

BUILDING CODE COMPLIANCE

REVISIONS	BY
03/20/98	SP
06/12/98	SP
08/14/98	SP
12/15/00	SP
01/17/01	SP

**RAMMS ENGINEERING, INC.**  
*Structural Design*  
 2100 W. 79th STREET, SUITE 311  
 HIALEAH, FLORIDA 33018  
 EB 0006024

**METALTECH, INC.**  
 7835 W. SECOND CT. HIALEAH, FL 33014  
 EST. 1957  
 ASSOCIATED WORLD-WIDE

DATE	BY
SEP/98	JRB
01/10/98	SCALE SHOWN
98001	SHEET
5	7

# ANCHOR SCHEDULE

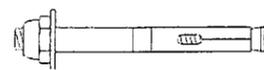
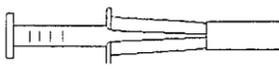
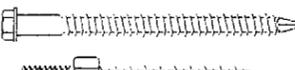
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ANCHOR SPACING vs DESIGN PRESSURE AND CONNECTION TYPE			81.5 PSF										91.4 PSF									
			POURED CONCRETE					CONCRETE BLOCK					POURED CONCRETE					CONCRETE BLOCK				
			CONNECTION TYPE					CONNECTION TYPE					CONNECTION TYPE					CONNECTION TYPE				
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
 1/4" SLEEVE ANCHOR 1 1/4" MIN. EMBEDMENT	68" Span	3"	16	13	8	13	13	16	13	9	13	13	16	9	8	12	13	16	9	9	12	13
		2"	16	12	6	13	13	16	12	7	13	13	16	8	7	11	13	16	8	7	11	13
		1 1/4"	16	11	5	13	13	16	11	6	13	13	15	7	5	10	11	15	7	6	10	11
	88" Span	3"	16	6	6	8	7	16	6	7	8	7	14	5	5	6	5	14	5	6	6	5
		2"	14	5	5	7	6	14	5	6	7	6	13	4	4	5	4	13	4	5	5	4
		1 1/4"	13	5	4	6	5	13	5	5	6	5	11	4	4	5	4	11	4	4	5	4
	105" Span	3"																				
		2"																				
		1 1/4"																				
	124" Span	3"																				
		2"																				
		1 1/4"																				
 1/4" SLEEVED DRIVE ANCHOR 1 3/8" MIN. EMBEDMENT	68" Span	3"	16	11	7	13	13	13	8	6	12	13	15	7	7	10	12	11	5	6	7	9
		2"	15	10	6	13	13	11	7	5	11	11	13	6	5	9	10	10	5	5	7	8
		1 1/4"	14	9	5	13	13	10	6	4	9	10	12	6	4	8	9	9	4	4	6	7
	88" Span	3"	13	5	6	7	6	10	4	4	5	4	12	4	5	5	4	9		4	4	3
		2"	12	4	5	6	5	9	3	4	4	4	10	3	4	4	3	8		3	3	
		1 1/4"	10	4	4	5	4	8	3	3	4	3	9	3	3	4	3	7		3		
	105" Span	3"																				
		2"																				
		1 1/4"																				
	124" Span	3"																				
		2"																				
		1 1/4"																				
 1/4" MASONRY SCREWS 1 1/2" MIN. EMBEDMENT	68" Span	3"	16	13	11	13	13	15	10	7	13	13	16	11	10	13	13	14	7	6	9	11
		2"	16	13	9	13	13	14	9	5	13	13	16	10	8	13	13	12	6	5	8	9
		1 1/4"	16	13	7	13	13	12	8	4	11	12	16	9	7	12	13	11	5	4	7	8
	88" Span	3"	16	8	9	10	9	12	4	5	6	5	16	6	8	8	6	11	3	5	5	3
		2"	16	7	7	9	8	10	4	4	5	4	16	5	6	7	5	9	3	4	4	3
		1 1/4"	16	6	6	8	7	9	4	3	5	4	15	5	5	6	5	8	3	3	4	3
	105" Span	3"																				
		2"																				
		1 1/4"																				
	124" Span	3"																				
		2"																				
		1 1/4"																				
 1/4-20 x 7/8" , 1/2" DIA. MACHINE SCREW ANCHOR 7/8" MIN. EMBEDMENT	68" Span	3"	16	13	12	13	13	15	10	7	13	13	16	13	11	13	13	14	7	6	9	11
		2.5"	16	13	10	13	13	14	9	6	13	13	16	12	9	13	13	12	6	5	8	9
		2"	16	13	8	13	13	12	8	5	11	12	16	11	7	13	13	11	5	4	7	8
	88" Span	3"	16	9	9	13	11	12	4	5	6	5	16	7	8	10	7	11	3	5	5	3
		2.5"	16	8	8	11	9	11	4	4	5	4	16	7	7	9	6	9	3	4	4	3
		2"	16	8	6	10	8	9	4	4	5	4	16	6	5	8	6	8	3	3	4	3
	105" Span	3"																				
		2.5"																				
		2"																				
	124" Span	3"																				
		2"																				

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

**PRODUCT REVISED**  
 as complying with the Florida  
 Building Code  
 Acceptance No 01-1224.07  
 Expiration Date 03/22/2006  
 By Helmut A. Heler  
 Miami Dade Product Control  
 Division

BUILDING CODE COMPLIANCE

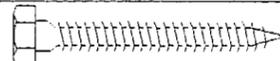
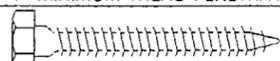
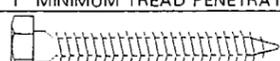
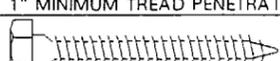
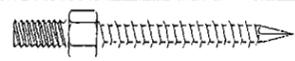
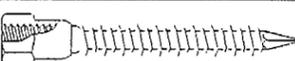
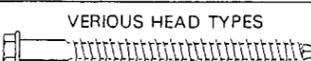
REVISIONS	BY
03/20/98	SP
06/12/98	SP
08/14/98	SP
01/17/01	SP

**RAMMS ENGINEERING, INC.**  
*Structural Design*  
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 HIALEAH, FLORIDA 33018  
 EB 0006024

**METALTECH, INC.**  
 7835 W. SECOND CT. HIALEAH, FL 33014  
 EST. 1957  
 WORLD-WIDE

DATE	BY	SCALE	SHEET
SEP/JRB/RSM			
01/10/98			
SHOWN			
98001			
<b>6</b>			
<b>7</b>			

# ANCHOR SCHEDULE

WOOD APPLICATIONS			UP TO 59.5 PSF					UP TO 71.5 PSF					UP TO 81.5 PSF					UP TO 91.4 PSF				
ANCHOR TYPE	DIA.	SPAN	CONNECTION TYPE					CONNECTION TYPE					CONNECTION TYPE					CONNECTION TYPE				
			A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
 BRASS WOOD BUSHING 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										
		124" SPAN	8	3	3	4	3															
 WOOD LAGS 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										
		124" SPAN	10	4	3	5	4															
 WOOD LAGS 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	6	4										
		124" SPAN	12	4	5	6	4															
 WOOD LAGS 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										
		124" SPAN	13	5	6	6	5															
 WOOD LAGS 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										
		124" SPAN	15	5	7	7	6															
 1/4" ELCO PANEL MATES 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										
		124" SPAN	10	4	3	5	4															
 1/4" ELCO PANEL MATES 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										
		124" SPAN	10	4	3	5	4															
 VERIOUS HEAD TYPES 1/4" MASONRY SCREWS 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										
		124" SPAN	10	4	3	5	4															

**NOTES:**

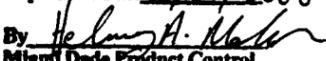
**SPANS AND LOADS SHOWN IN THIS SCHEDULE ARE FOR DETERMINING ANCHOR SPACING ONLY. FOR ALLOWABLE SPANS VS. DESIGN LOADS REFER TO SHEET 4.**

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.

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

PRODUCT REVISED  
 as complying with the Florida  
 Building Code  
 Acceptance No 01-1224-07  
 Expiration Date 03/22/2006  
 By   
 Miami Dade Product Control  
 Division

BUILDING CODE COMPLIANCE

REVISIONS	BY
08/14/98	SP
01/17/01	SP

**RAMMS ENGINEERING, INC.**  
*Structural Design*  
 2100 W. 78th STREET, SUITE 311  
 HIALEAH, FLORIDA 33016  
 EB 0006024

**METALTECH, INC.**  
 7835 W. SECOND CT. HIALEAH, FL 33014  
 EST. 1957  
 EXPANDED WORLD-WIDE

SEP/JRB/RSM  
 DATE: 01/10/98  
 SCALE: SHOWN  
 SHEET: 98001  
**7**  
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