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Product Approval

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- ▶ COMMUNITY PLANNING
- ▶ HOUSING & COMMUNITY DEVELOPMENT
- ▶ EMERGENCY MANAGEMENT
- ▶ OFFICE OF THE SECRETARY

<p>FL #</p> <p>Application Type</p> <p>Code Version</p> <p>Application Status</p> <p>Comments</p> <p>Archived</p>	<p>FL8918-R1</p> <p>Revision</p> <p>2007</p> <p>Approved</p> <p><input type="checkbox"/></p>
<p>Product Manufacturer</p> <p>Address/Phone/Email</p>	<p>All American Shutters, Inc.</p> <p>1540 Donna Road</p> <p>West Palm Beach, FL 33409</p>
<p>Authorized Signature</p>	<p>Frank Bennardo</p> <p>frank@engexp.com</p>
<p>Technical Representative</p> <p>Address/Phone/Email</p>	
<p>Quality Assurance Representative</p> <p>Address/Phone/Email</p>	
<p>Category</p> <p>Subcategory</p>	<p>Shutters</p> <p>Storm Panels</p>
<p>Compliance Method</p>	<p>Evaluation Report from a Florida Registered Professional Engineer</p> <p><input checked="" type="checkbox"/> Evaluation Report - Hardcopy Received</p>
<p>Florida Engineer or Architect Name who developed the Evaluation Report</p> <p>Florida License</p> <p>Quality Assurance Entity</p> <p>Quality Assurance Contract Expiration Date</p> <p>Validated By</p>	<p>Frank L. Bennardo, P.E.</p> <p>PE-0046549</p> <p>National Accreditation and Management International</p> <p>12/31/2010</p> <p>Jorge A. Pomerantz, P.E.</p> <p><input checked="" type="checkbox"/> Validation Checklist - Hardcopy Received</p>

Certificate of Independence

[FL8918_R1_COI_Cert_Indep.pdf](#)

Referenced Standard and Year (of Standard)

Standard

TAS 201

TAS 202

TAS 203

Equivalence of Product Standards
Certified By

Sections from the Code

Product Approval Method

Method 1 Option D

Date Submitted

09/18/2008

Date Validated

10/23/2008

Date Pending FBC Approval

11/02/2008

Date Approved

12/10/2008

Summary of Products

FL #	Model, Number or Name	Description
8918.1	"Safety Edge" 22ga Galv. Steel Storm Panels	22ga Galvanized Steel Storm Pa
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: Yes Design Pressure: N/A Other: Large missile impact resistant; approved for use within and outside HVHZ.		Installation Instructions FL8918_R1_II_Dwg.pdf Verified By: Frank L. Bennardo, Created by Independent Third P Evaluation Reports FL8918_R1_AE_Eval_Report.pdf Created by Independent Third P

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Department of Community Affairs
Florida Building Code Online
Codes and Standards

2555 Shumard Oak Boulevard
 Tallahassee, Florida 32399-2100
 (850) 487-1824, Fax (850) 414-8436

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Product Approval Accepts:





Product Evaluation Report

September 12, 2008

Application Number: _____
FLB Project Number: 01-AAS-0696

Product Manufacturer: All American Shutters, Inc.
Manufacturer Address: 1540 Donna Road
West Palm Beach, FL

Product Name & Description: 22ga Galvanized Steel Storm Panels

Scope of Evaluation:

This Product Evaluation Report is being issued in accordance with the requirements of the Florida Department of Community Affairs (Florida Building Commission) Rule Chapter 9B-72.070, F.A.C., for statewide acceptance per Method 1(d). All products listed above have been tested and/or evaluated as summarized herein to show compliance with the 2007 Florida Building Code and are, for the purpose intended, at least equivalent to that required by the Code. Re-evaluation of this product shall be required following pertinent Florida Building Code modifications or revisions.

Substantiating Data:

- **PRODUCT EVALUATION DOCUMENTS**

FLB drawing #01-AAS-0696 titled "22ga Galvanized Steel Storm Panels", sheets 1-3, prepared by Engineering Express, signed & sealed by Frank L. Bennardo, P.E. is an integral part of this Evaluation Report.

- **TEST REPORTS**

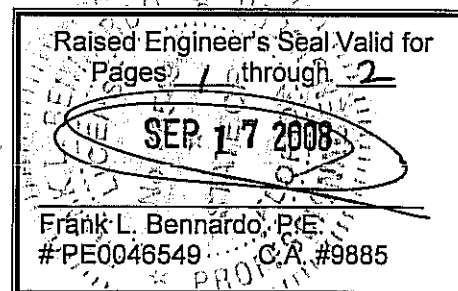
Uniform static structural performance has been tested in accordance with TAS 202 test standards per test report(s) #02-002 by Construction Testing Corporation (CTC).

Large missile impact resistance and cyclic loading performance have been tested in accordance with TAS 201 & 203 test standards per test report(s) #02-002 by Construction Testing Corporation (CTC).

- **STRUCTURAL ENGINEERING CALCULATIONS**

Structural engineering calculations have been prepared which evaluate the product based on comparative and/or rational analysis to qualify the following design criteria:

1. Maximum Allowable Spans
2. Minimum Glass Separation
3. Anchor Spacing
4. Maximum Allowable Size/Pressure Combinations
5. Anchor Capacity



No 33% increase in allowable stress has been used in the design of each product.

Impact Resistance:

Large Missile Impact Resistance has been demonstrated as evidenced in previously listed test reports, and is accounted for in the engineering design of this product.

Wind Load Resistance

Each product has been designed to resist wind loads as indicated in the span schedule(s) on its respective Product Evaluation Document (i.e. engineering drawing).

Installation

Each product listed above shall be installed in strict compliance with its respective Product Evaluation Document (i.e. engineering drawing), along with all components noted therein.

Each product component shall be of the material specified in that product's respective Product Evaluation Document (i.e. engineering drawing).

Limitations & Conditions of Use:

Use of each product shall be in strict accordance with its respective Product Evaluation Document (i.e. engineering drawing) as noted herein.

All supporting host structures shall be designed to resist all superimposed loads and shall be of a material listed in each product's respective anchor schedule. Host structure conditions which are not accounted for in each product's respective anchor schedule shall be designed for on a site-specific basis by a registered professional engineer.

All components which are permanently installed shall be protected against corrosion, contamination, and other such damage at all times.

Each product has been designed for use within and outside the High Velocity Hurricane Zone (HVHZ).

September 12, 2008

Florida Department of Community Affairs
2555 Shumard Oak Boulevard
Tallahassee, FL 32399

Regarding: All American Shutters
22ga Glavanized Steel Storm Panels
Project #01-ASS-0696

To Whom It May Concern:

Please be advised that the below-signed engineer does not have nor will acquire a financial interest in the company manufacturing or distributing the product(s) for which an evaluation report or validation certification has been prepared, as referenced above. This engineer is not owned, operated, nor controlled by the manufacturer or distributor noted above and does not have any financial interest in any other entity involved in the approval process of the above-noted product(s).

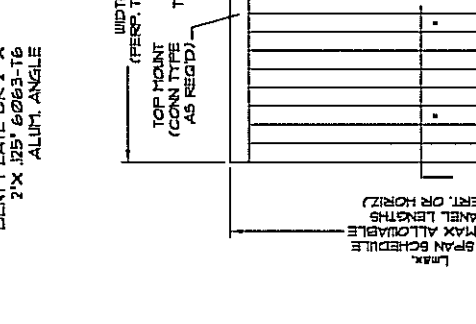
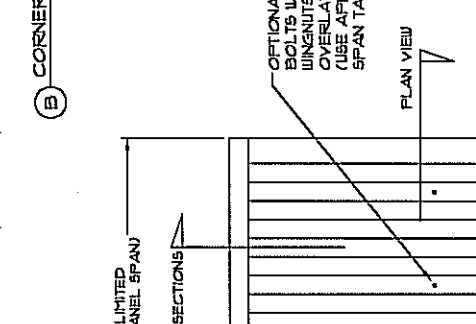
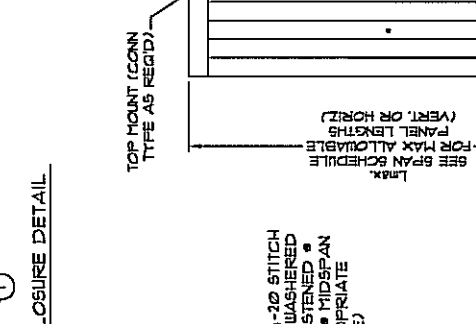
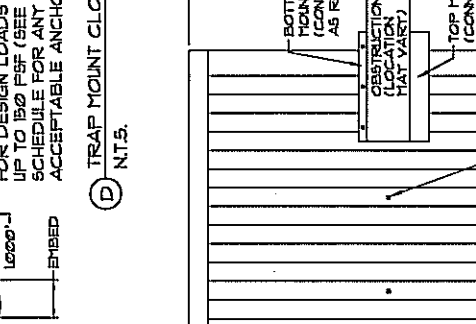
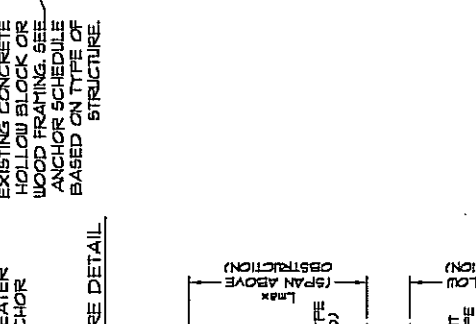
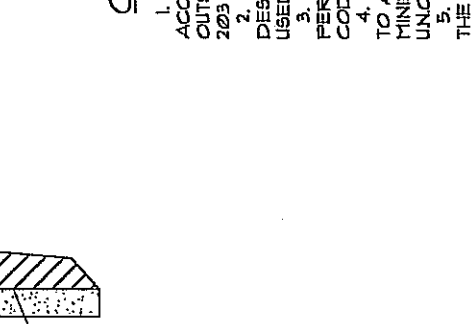
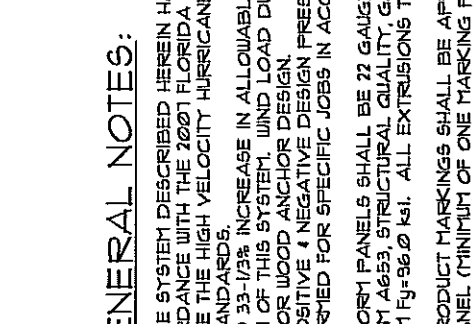
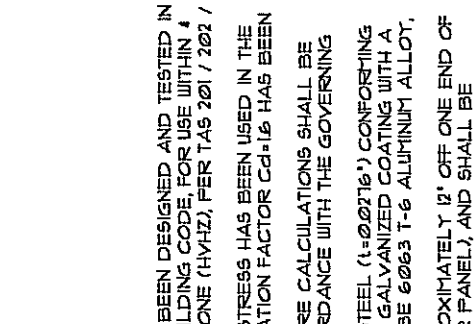
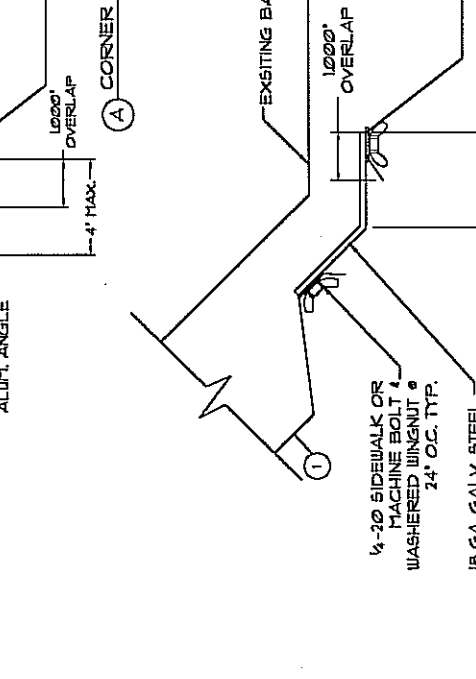
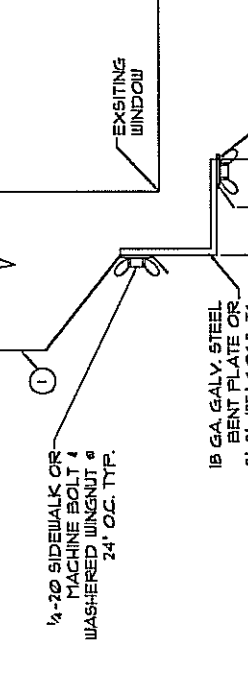
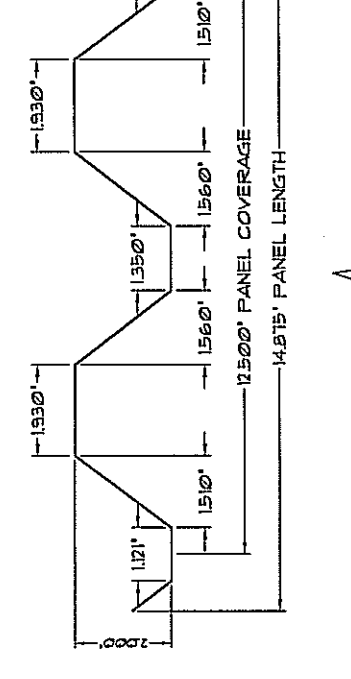
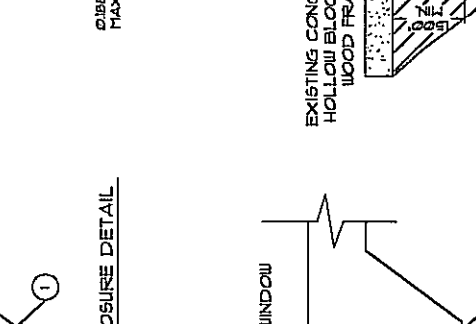
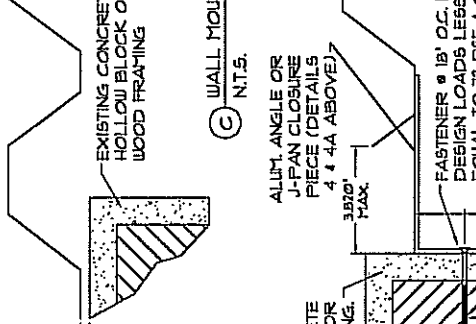
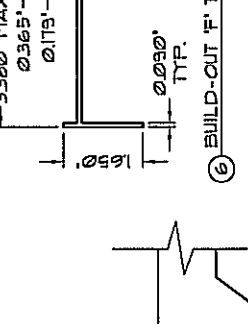
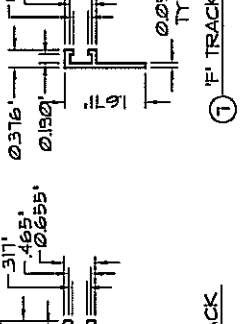
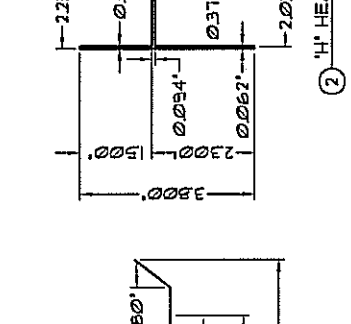
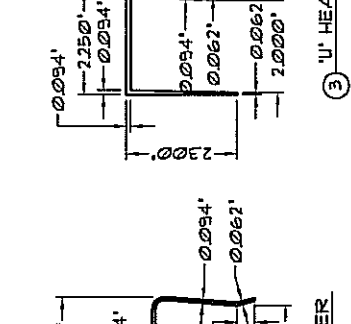
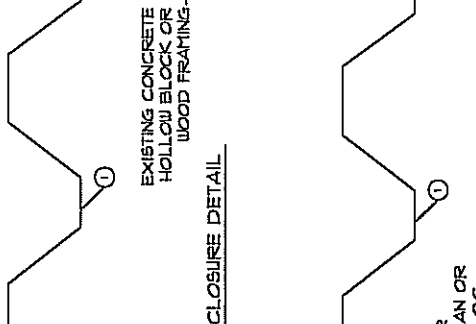
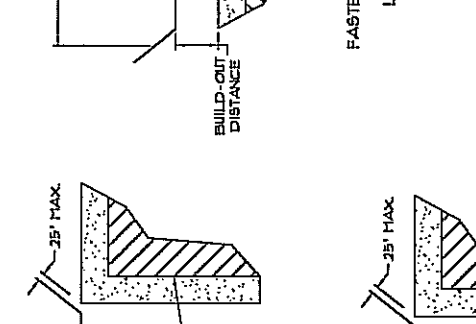
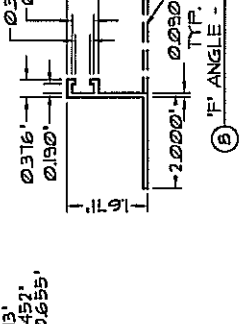
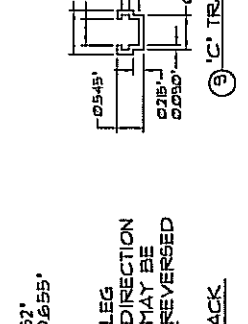
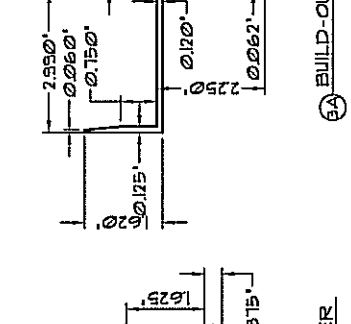
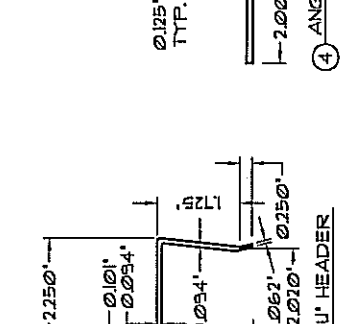
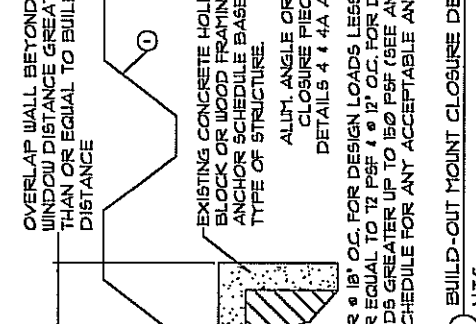
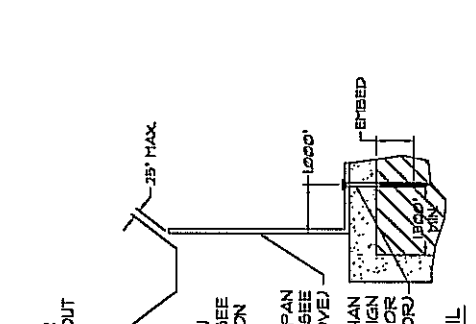
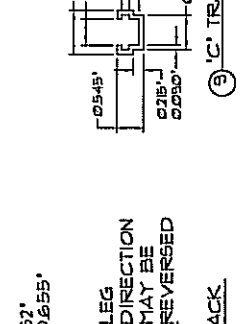
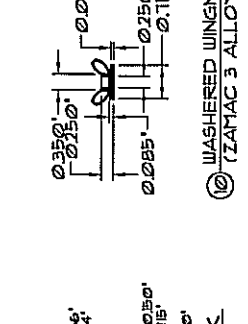
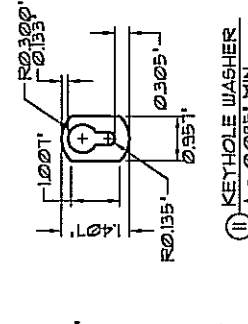
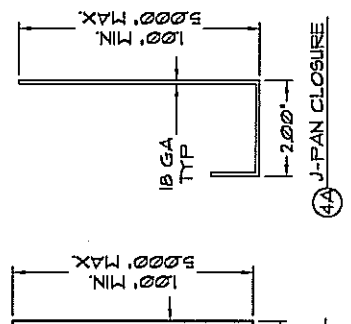
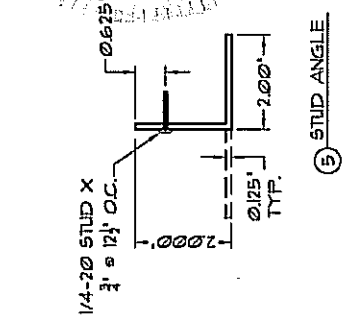
Respectfully,



SEP 17 2008

Frank L. Bennardo, P.E.
Frank L. Bennardo, P.E., Inc.
FL PE 0046549
Cert of Auth #9885

DATE	DRWN	CHKD	REMARKS
05/16/07	KL	CL	INIT ISSUE
07/05/07	KL	CL	REV. SPAN AND SEP TABLE
09/12/08	RKB	CL	REVISE FOR '07 FBC



FASTENER 1/8" O.C. FOR DESIGN LOADS LESS THAN OR EQUAL TO 12 PSF & 12" O.C. FOR DESIGN LOADS GREATER UP TO 150 PSF (SEE ANCHOR SCHEDULE FOR ANY ACCEPTABLE ANCHOR)

ALUM. ANGLE OR J-PAN CLOSURE PIECE (SEE DETAILS 4 & 4A ABOVE)

OVERLAP WALL BEYOND WINDOW DISTANCE GREATER THAN OR EQUAL TO BUILD-OUT DISTANCE

EXISTING CONCRETE HOLLOW BLOCK OR WOOD FRAMING. SEE ANCHOR SCHEDULE BASED ON TYPE OF STRUCTURE.

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GENERAL NOTES:

1. THE SYSTEM DESCRIBED HEREIN HAS BEEN DESIGNED AND TESTED IN ACCORDANCE WITH THE 2001 FLORIDA BUILDING CODE, FOR USE WITHIN 4 MILES OF THE HIGH VELOCITY HURRICANE ZONE (HVHZ), PER TAS 201 / 202 / 203 STANDARDS.
2. NO 33-1/3% INCREASE IN ALLOWABLE STRESS HAS BEEN USED IN THE DESIGN OF THIS SYSTEM. WIND LOAD DURATION FACTOR Cd=1.6 HAS BEEN USED FOR WOOD ANCHOR DESIGN.
3. POSITIVE & NEGATIVE DESIGN PRESSURE CALCULATIONS SHALL BE PERFORMED FOR SPECIFIC JOBS IN ACCORDANCE WITH THE GOVERNING CODE.
4. STORM PANELS SHALL BE 22 GAUGE STEEL (1+0.0276") CONFORMING TO ASTM A653, STRUCTURAL QUALITY, G60 GALVANIZED COATING WITH A MINIMUM Fy=56.0 ksi. ALL EXTRUSIONS TO BE 6063 T-6 ALUMINUM ALLOY, UNO.
5. PRODUCT MARKINGS SHALL BE APPROXIMATELY 12" OFF ONE END OF THE PANEL (MINIMUM OF ONE MARKING PER PANEL), AND SHALL BE LABELED AS FOLLOWS:
ALL-AMERICAN SHUTTERS
WEST PALM BEACH, FL
FLORIDA STATEWIDE APPROVED
6. ALL BOLTS & WASHERS SHALL BE ZINC COATED, GALVANIZED, OR STAINLESS STEEL WITH A MINIMUM TENSILE STRENGTH OF 60 ksi.
1. TOP & BOTTOM DETAILS SHOWN MAY BE INTERCHANGED AS FIELD CONDITIONS DICTATE. PANELS MAY BE MOUNTED HORIZONTALLY WHERE APPLICABLE.
2. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS. EMBEDMENT LENGTHS SHALL BE AS NOTED & DO NOT INCLUDE STUCCO OR OTHER FINISHES.
3. ALTERATIONS, ADDITIONS, HIGHLIGHTING, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION.

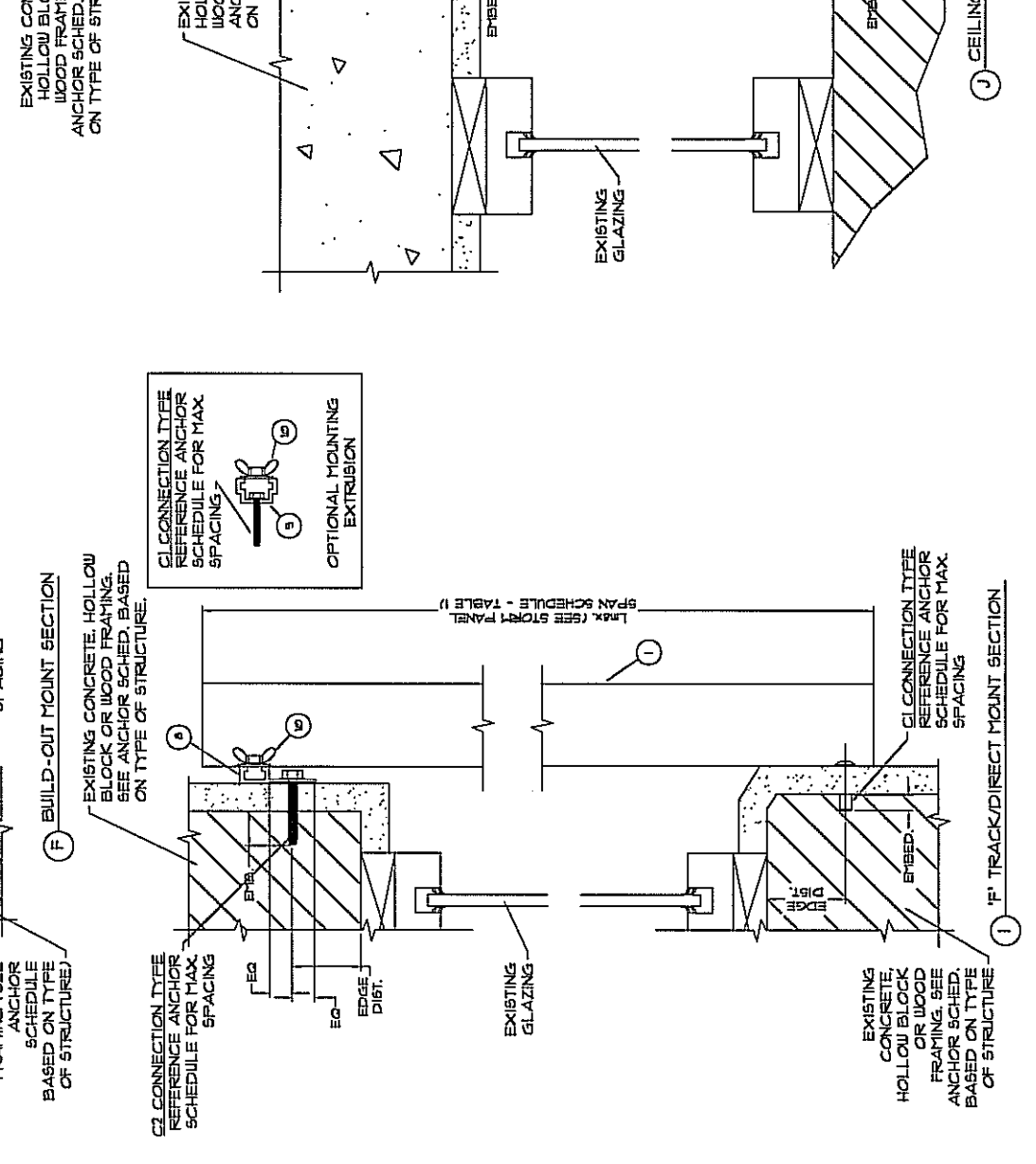
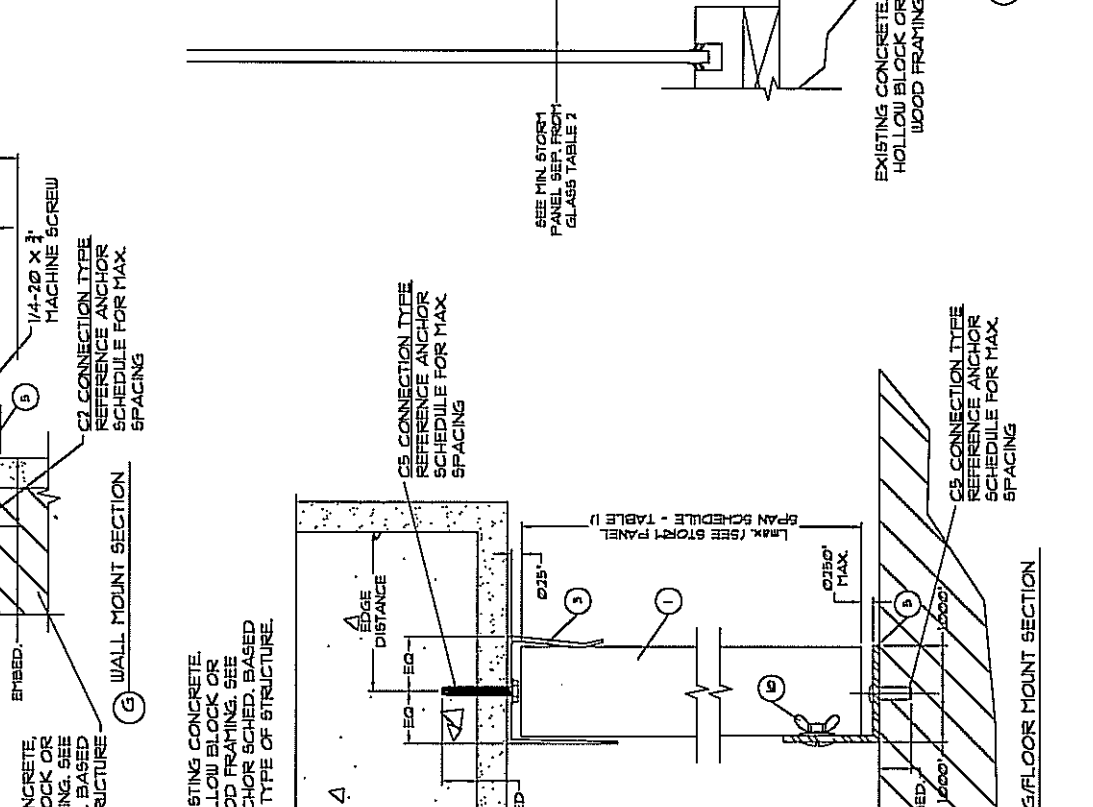
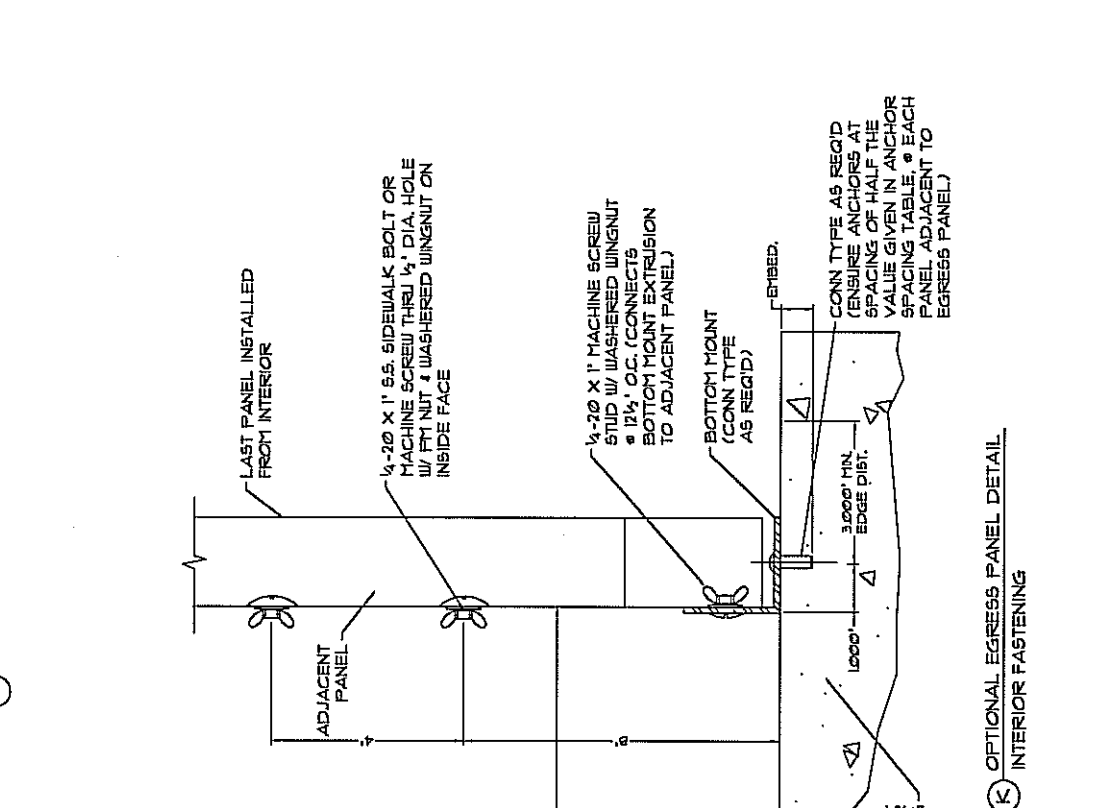
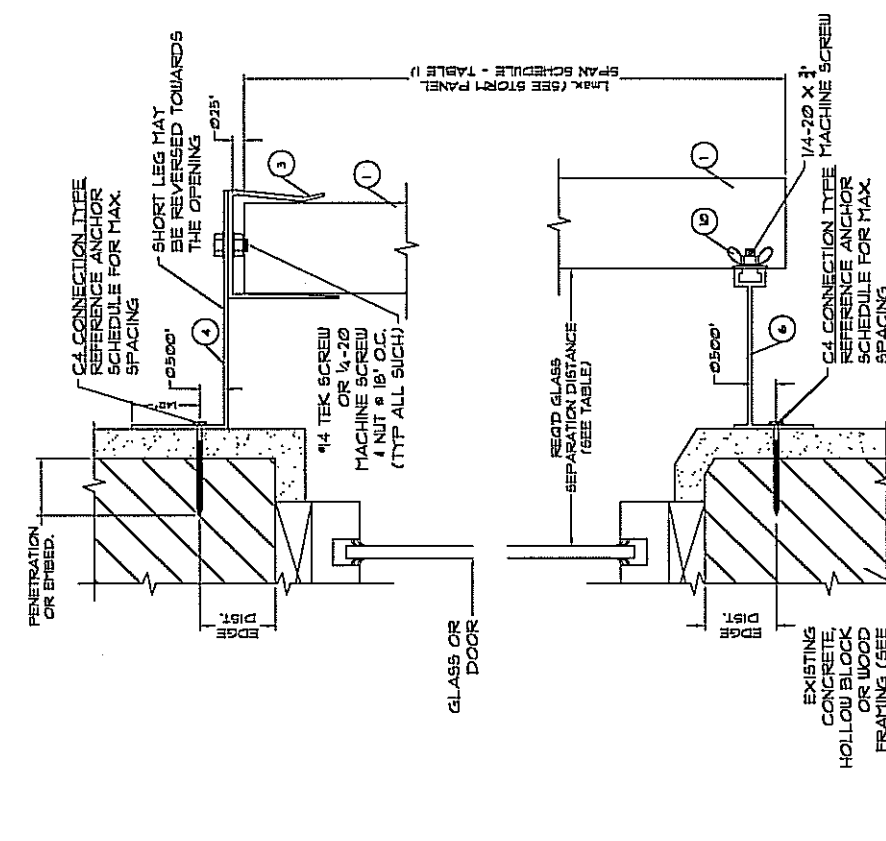
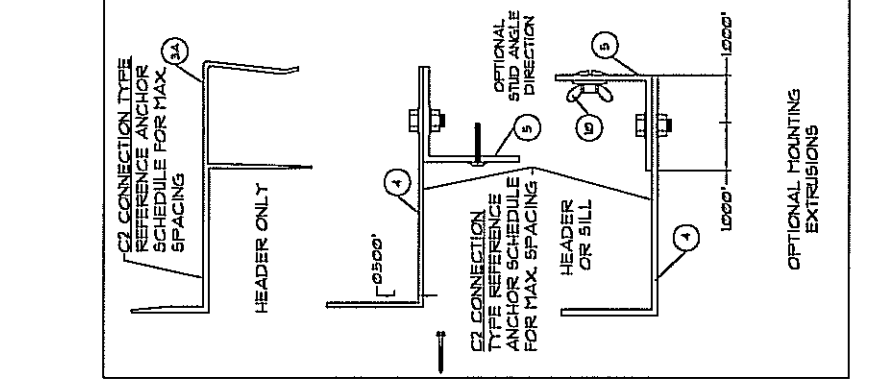
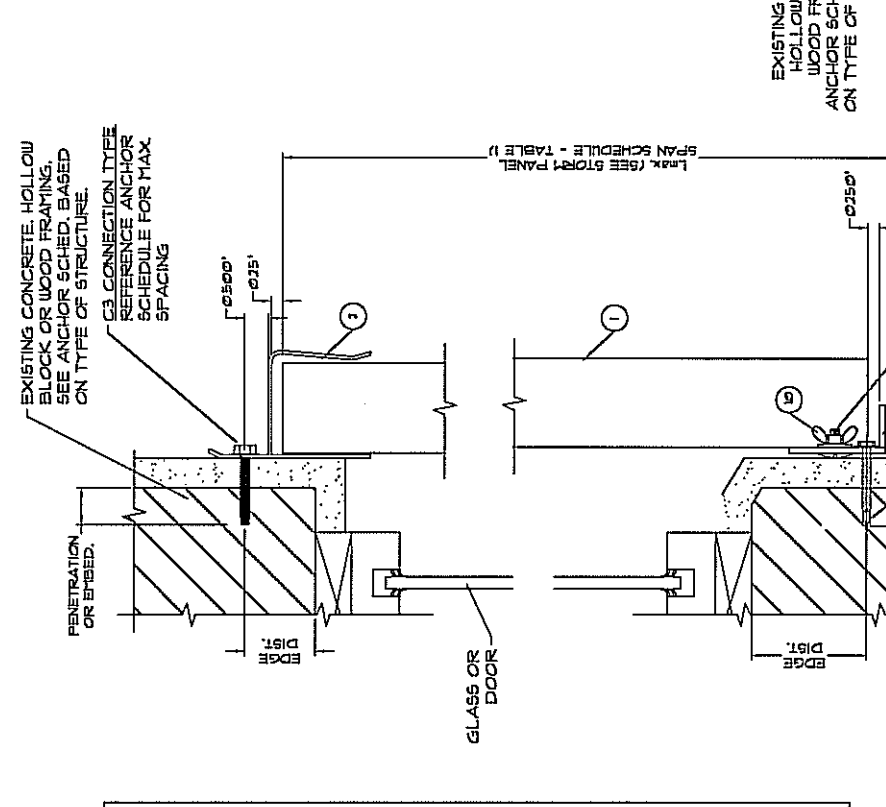
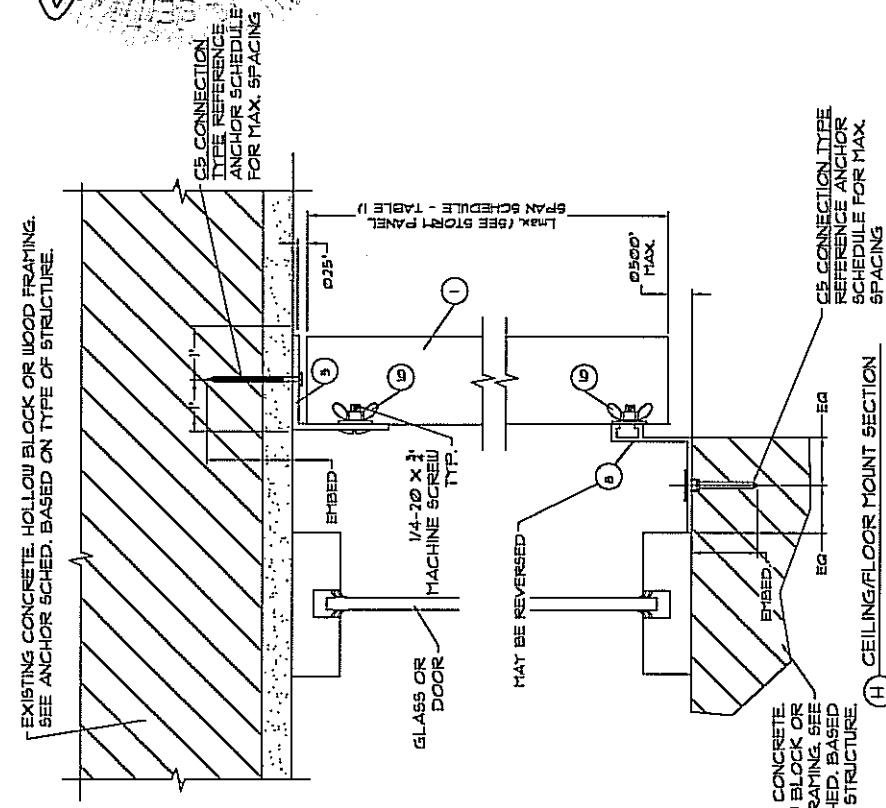
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FLORIDA STATEWIDE APPROVED
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REMARKS	DATE	DRWN	CHKD
INIT ISSUE	05/16/07	KL	CL
REV. SPAN AND SEP TABLE	07/05/07	KL	CL
REVISE FOR 07 FBC	08/12/08	RKB	CL



GLASS SEPARATION TABLE

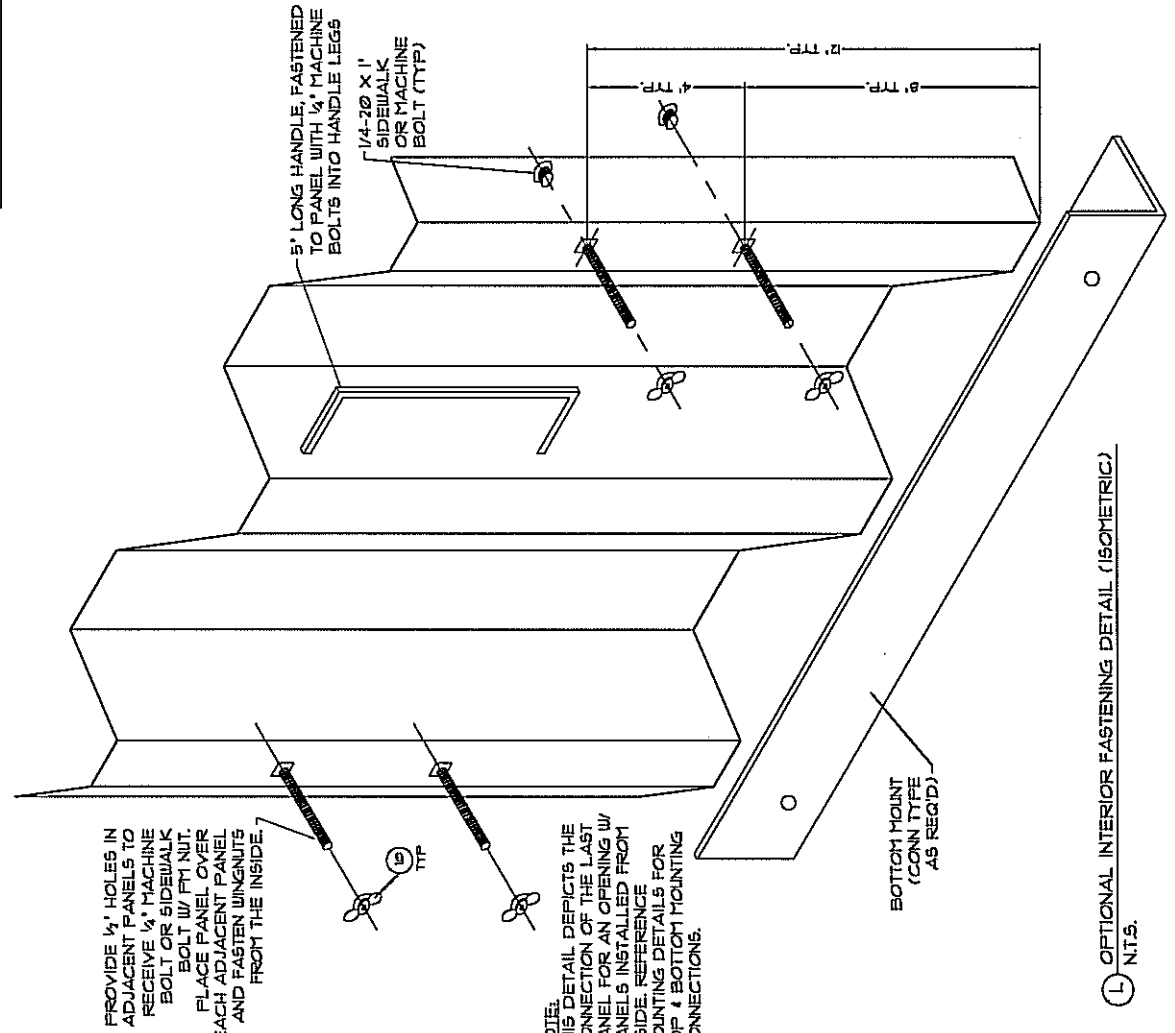
Load (psf)	Span Less Than:	Separation @ 30' Above Grade (in)	Separation @ 30' Above Grade (ft)
30	6'-0"	2.75	1.12
	8'-8"	2.75	1.52
	12'-0"	2.91	2.91
40	6'-0"	2.75	1.16
	8'-8"	2.75	1.69
	11'-2"	2.91	2.91
50	6'-0"	2.75	1.20
	8'-8"	2.75	1.86
	10'-8"	2.98	2.98
60	6'-0"	2.75	1.24
	8'-8"	2.75	2.04
	10'-2"	2.97	2.97
70	6'-0"	2.75	1.28
	8'-8"	2.75	2.21
	9'-8"	2.87	2.87
150	2'-0"	2.75	1.01
	3'-6"	2.75	1.07
	4'-9"	2.75	1.23

ALLOWABLE SPAN TABLE

Load W (psf)	No Slitch Bolts		With Slitch Bolts	
	LMAX (ft)	LMAX (ft)	LMAX (ft)	LMAX (ft)
30	11'-2"	12'-0"	11'-6"	11'-4"
35	10'-4"	11'-6"	11'-2"	11'-2"
40	9'-8"	11'-2"	10'-10"	10'-10"
45	9'-1"	10'-10"	10'-7"	10'-6"
49	8'-9"	10'-7"	10'-6"	10'-3"
50	8'-8"	10'-6"	10'-3"	10'-1"
55	7'-11"	10'-3"	9'-11"	9'-11"
60	7'-3"	10'-1"	9'-9"	9'-9"
62	7'-0"	9'-11"	9'-4"	9'-4"
65	6'-9"	9'-9"	8'-10"	8'-10"
70	6'-3"	9'-4"	8'-9"	8'-9"
72	6'-1"	9'-3"	8'-5"	8'-5"
75	5'-10"	9'-0"	8'-11"	8'-11"
80	5'-5"	8'-9"	8'-4"	8'-4"
90	4'-10"	7'-11"	7'-9"	7'-9"
92	4'-9"	7'-9"	7'-1"	7'-1"
100	4'-4"	7'-1"	6'-5"	6'-5"
110	3'-11"	6'-5"	5'-11"	5'-11"
120	3'-7"	6'-1"	5'-5"	5'-5"
130	3'-4"	5'-5"	5'-1"	5'-1"
140	3'-1"	5'-1"	4'-9"	4'-9"
150	2'-11"	4'-9"		

ANCHOR SPACING TABLE

EXIST STRUCT	ANCHOR	LOAD	SPAN < 6 FT					SPAN < 8.67 FT					SPAN < 12 FT							
			C1	C2	C3	C4	C5	C1	C2	C3	C4	C5	C1	C2	C3	C4	C5			
CONCRETE	1/4" x 1 3/4" EMBED ELCO TAPCON (MIN 3320 PSI CONG)	49	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
		62	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
		72	12.5	12.4	11.3	12.5	11.4	12.5	12.2	11.1	12.5	11.2	12.5	12.2	11.1	12.5	11.2	12.5	12.2	11.1
		92	12.5	12.2	11.1	12.5	11.2	12.5	12.2	11.1	12.5	11.2	12.5	12.2	11.1	12.5	11.2	12.5	12.2	11.1
		150	12.5	12.2	11.1	12.5	11.2	12.5	12.2	11.1	12.5	11.2	12.5	12.2	11.1	12.5	11.2	12.5	12.2	11.1
	1/4" x 7/8" EMBED POWERS CALK-IN (MIN 2000 PSI CONG)	49	12.5	12.5	12.5	12.5	12.5	12.5	12.2	11.1	12.5	10.9	12.5	12.0	11.0	12.5	10.8	12.5	12.0	11.0
		62	12.5	12.5	12.5	12.5	12.4	12.5	11.8	10.8	12.5	10.5	12.5	11.8	10.8	12.5	10.5	12.5	11.8	10.8
		72	12.5	12.0	11.0	12.5	10.7	12.5	11.8	10.8	12.5	10.5	12.5	11.8	10.8	12.5	10.5	12.5	11.8	10.8
		92	12.5	11.8	10.8	12.5	10.5	12.5	11.8	10.8	12.5	10.5	12.5	11.8	10.8	12.5	10.5	12.5	11.8	10.8
		150	12.5	11.8	10.8	12.5	10.5	12.5	11.8	10.8	12.5	10.5	12.5	11.8	10.8	12.5	10.5	12.5	11.8	10.8
	1/4" x 7/8" EMBED ALL-POINTS SOLID-SET MACH. SCREW ANCHOR	49	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
		62	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
		72	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
		92	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
		150	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
1/4" x 2" EMBED ELCO PANELMATE (MIN 3350 PSI CONG)	49	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.0	12.5	12.5	12.5	12.5	11.8	12.5	12.5	12.5	
	62	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	11.6	12.5	12.5	12.5	12.5	11.6	12.5	12.5	12.5	
	72	12.5	12.5	12.5	12.5	11.8	12.5	12.5	12.5	12.5	11.6	12.5	12.5	12.5	12.5	11.6	12.5	12.5	12.5	
	92	12.5	12.5	12.5	12.5	11.6	12.5	12.5	12.5	12.5	11.6	12.5	12.5	12.5	12.5	11.6	12.5	12.5	12.5	
	150	12.5	12.5	12.5	12.5	11.6	12.5	12.5	12.5	12.5	11.6	12.5	12.5	12.5	12.5	11.6	12.5	12.5	12.5	



- ANCHOR NOTES:**
1. SPANS AND LOADS SHOWN HERE ARE FOR DETERMINING ANCHOR SPACING ONLY. ALLOWABLE STORY PANEL SPANS FOR SPECIFIC LOADS MUST BE LIMITED TO THOSE SHOWN IN ANCHOR TABLE ABOVE.
 2. ENTER ANCHOR SCHEDULE BASED ON THE EXISTING STRUCTURE MATERIAL, ANCHOR TYPE AND EDGE DISTANCE. SELECT DESIGN LOAD GREATER THAN OR EQUAL TO NEGATIVE DESIGN LOAD ON SHUTTER AND SELECT SPAN GREATER THAN OR EQUAL TO SHUTTER SPAN.
 3. SEE MOUNTING SECTION DETAILS FOR IDENTIFICATION OF CONNECTION TYPE.
 4. EXISTING STRUCTURE MAY BE CONCRETE, HOLLOW BLOCK OR WOOD FRAMING. REFERENCE ANCHOR SCHEDULE FOR PROPER ANCHOR TYPE BASED ON TYPE OF EXISTING STRUCTURE.
 5. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 6. WHERE EXISTING STRUCTURE IS CONCRETE OR HOLLOW CONCRETE BLOCK, MINIMUM EDGE DISTANCE SHALL BE 2 1/2" FOR ALL ANCHORS.
 7. WHERE EXISTING STRUCTURE IS WOOD FRAMING, EXISTING CONDITIONS MAY VARY. FIELD VERIFY THAT FASTENERS ARE INTO ADEQUATE WOOD FRAMING MEMBERS. NOT ACCEPTABLE TO FASTEN TO PLYWOOD IS ACCEPTABLE ONLY FOR SIDE CLOSURE PIECES.
 8. WHERE LAG SCREWS FASTEN TO NARROW FACE OF STUD FRAMING, FASTENER SHALL BE LOCATED IN CENTER OF NOMINAL 2" x 4" (MIN) WOOD STUD (3/4" EDGE DISTANCE IS ACCEPTABLE FOR WOOD FRAMING). WOOD STUD SHALL BE "SOUTHERN PINE" G-055 OR GREATER DENSITY. LAG SCREW SHALL HAVE PHILLIPS PAN HEAD OR HEX HEAD.
 9. MACHINE SCREWS SHALL HAVE MINIMUM OF 1/2" ENGAGEMENT OF THREADS IN BASE ANCHOR AND MAY HAVE EITHER A PAN HEAD, TRUSS HEAD, OR WAFFER HEAD (SIDEWALK BOLT) UNO.
 10. MINIMUM EMBEDMENT AND EDGE DISTANCE EXCLUDES STUCCO OR OTHER WALL FINISHES.
 11. DESIGNATES ANCHOR CONDITIONS WHICH ARE NOT ACCEPTABLE USES.

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FRANK L. BENNARDO, P.E.
 #PE0046549
 10/20/2008

DATE	CHKD	DRWN	INT ISSUE	REV. SPAN AND SEP TABLE	REV. FOR '07 FBC
05/16/07	CL	CL	CL	CL	CL
07/05/07	CL	CL	CL	CL	CL
09/12/08	CL	CL	CL	CL	CL

REMARKS

PAGE SCALE: -

DESCRIPTION:

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