



**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)

**Transparent Protection Systems, Inc.
6643 42nd Terrace North
West Palm Beach, FL 33407**

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: Clear Polycarbonate Storm Panel Shutter

APPROVAL DOCUMENT: Drawing No. 04-342, titled "Clear Polycarbonate Storm Panel", sheets 1 through 3 of 3, prepared by Knezevich & Associates, Inc., dated June 30, 2004, last revision #1 dated July 26, 2004, signed and sealed by V. J. Knezevich, P.E., bearing the Miami-Dade County Product Control Revision stamp with the Notice of Acceptance number and expiration date by the Miami-Dade County Product Control 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 & renews** NOA # 00-0524.14 and consists of this page 1, evidence submitted page(s) as well as approval document mentioned above.

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

Helmy A. Makar
09/02/2004



**NOA No 04-0413.03
Expiration Date: 07/19/2009
Approval Date: 09/02/2004**

Transparent Protection Systems, Inc.

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. EVIDENCE SUBMITTED UNDER PREVIOUS APPROVAL # 00-0524.14

A. DRAWINGS

1. *Drawing No. 00-246, titled " Clear Polycarbonate Storm Panel ", prepared by Knezevich & Associates, Inc., dated December 14, 2000, last revision #1 dated June 7, 2001, sheets 1 through 3 of 3, signed and sealed by V. J. Knezevich, P.E.*

B. TESTS

1. *Test report on Large Missile Impact Test, Cyclic Wind Pressure Test and Uniform Static Air Pressure Test of Clear Polycarbonate Storm Panels, prepared by Construction Testing Corporation, Report No. 00-045 dated October 31, 2000, signed and sealed by Yamil G. Kuri, P.E.*
2. *Report on panel thickness of Clear Polycarbonate Storm Panel, prepared by Construction Testing Corporation, dated April 9, 2001, signed by George Dotzler.*
3. *Test report on Self Ignition Temperature, Rate of Burn, and Smoke Density Tests of Clear Polycarbonate Storm Panels, prepared by ETC Laboratories, Inc., Report No. ETC-01-753-10724.0 dated June 13, 2001, signed and sealed by Joseph L. Doldan, P.E.*
4. *Draft Test Report on 900 hours of the 4500 hours exposure of the Accelerated weathering of Clear Polycarbonate Storm Panels, prepared by PRI Asphalt Technologies, Notification No. PRI01041, dated June 13, 2001, by Don Portfolio.*

C. CALCULATIONS

1. *Anchor analysis and shutter calculation, dated December 14, 2000, Pages 1 through 38, prepared by Knezevich and Associates Inc., signed and sealed by V.J. Knezevich, P.E.*

D. MATERIAL CERTIFICATION

1. *Letter from GE Plastics, signed by Mr. Doug Hamilton, dated April 30, 2001, with comparable data between Lexan Sheet 9034 and Lexan resin 103.*

2. NEW EVIDENCE SUBMITTED

A. DRAWINGS

1. *Drawing No. 04-342, titled " Clear Polycarbonate Storm Panel ", sheets 1 through 3 of 3, prepared by Knezevich & Associates, Inc., dated June 30, 2004, last revision #1 dated July 26, 2004, signed and sealed by V. J. Knezevich, P.E.*



Helmy A. Makar, P. E.
Product Control Examiner
NOA No 04-0413.03
Expiration Date: 07/19/2009
Approval Date: 09/02/2004

Transparent Protection Systems, Inc.

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

B. TESTS

1. *None.*

C. CALCULATIONS

1. *Anchor calculations dated June 30, 2004, 20 pages, prepared by Knezevich & Associates, Inc., signed and sealed by V. J. Knezevich, P.E.*

D. QUALITY ASSURANCE

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

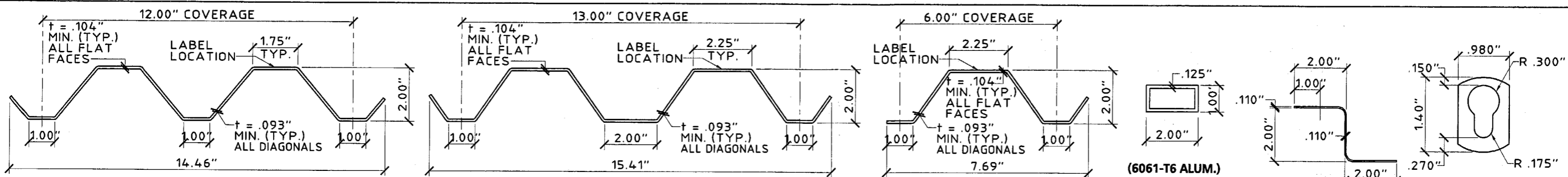
E. MATERIAL CERTIFICATIONS

1. *None.*



Helmy A. Makar, P. E.
Product Control Examiner
NOA No 04-0413.03
Expiration Date: 07/19/2009
Approval Date: 09/02/2004

07/26/04 16:14
 07/26/2004 04:14:42pm
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 Print Information:



1 STORM PANEL SCALE: 3" = 1' - 0"
2 STORM PANEL SCALE: 3" = 1' - 0"
3 STORM PANEL SCALE: 3" = 1' - 0"
4 INTERMEDIATE SUPPORT STRAP SCALE: 3" = 1' - 0"
5 "Z" BAR SCALE: 3" = 1' - 0"
6 KEYHOLE WASHER SCALE: HALF SIZE

GENERAL NOTES:

- THESE APPROVAL DOCUMENTS REPRESENT A SHUTTER SYSTEM ANALYZED WITH THE PROVISION SET FOR THE ISSUANCE OF A NOTICE OF ACCEPTANCE (NOA) BY MIAMI-DADE COUNTY PRODUCT CONTROL DIVISION FOR THE FLORIDA BUILDING CODE (FBC), THE HIGH VELOCITY HURRICANE ZONE (HVHZ).
- AN ALLOWABLE STRESS INCREASE HAS NOT BEEN USED IN THE DESIGN OF THIS PRODUCT, EXCEPT FOR WOOD ANCHOR ANALYSIS WHEREIN A LOAD DURATION FACTOR (CD = 1.33) HAS BEEN USED PER THE PROVISIONS OF CHAPTER 16 OF THE FLORIDA BUILDING CODE (FBC) AND THE NATIONAL DESIGN STANDARD (NDS) FOR WIND LOADS AND LOAD COMBINATIONS WITH WIND.
- DETERMINE THE POSITIVE AND NEGATIVE DESIGN LOADS TO USE WHEN REFERENCING THESE DOCUMENTS IN ACCORDANCE WITH THE GOVERNING CODE AND GOVERNING WIND VELOCITY.
- THESE APPROVAL DOCUMENTS ARE GENERIC AND DO NOT INCLUDE INFORMATION FOR SITE-SPECIFIC APPLICATION OF THIS SHUTTER SYSTEM.
- USE OF THESE APPROVAL DOCUMENTS SHALL COMPLY WITH CHAPTER 61G15-23 OF THE FLORIDA ADMINISTRATIVE CODE.
- THESE APPROVAL DOCUMENTS, ARE SUITABLE TO BE APPLIED BY THE CONTRACTOR PROVIDED THE CONTRACTOR DOES NOT DEVIATE FROM THE CONDITIONS DETAILED HEREIN AND THE CONTRACTOR VERIFIES THAT THE EXISTING STRUCTURE DOES NOT DEVIATE IN EITHER FORM OR MATERIAL FROM THE STRUCTURAL SUBSTRATES DETAILED HEREIN.
- ANY MODIFICATIONS OR ADDITIONS TO THESE APPROVAL DOCUMENTS WILL VOID THE APPROVAL DOCUMENTS.
- WHEN THE SITE CONDITIONS DEVIATE FROM THESE APPROVAL DOCUMENTS, THE BUILDING OFFICIAL MAY ELECT ONE OF THE FOLLOWING OPTIONS:
 A) REQUIRE THAT SITE SPECIFIC DOCUMENTS BE PREPARED, SIGNED, DATED AND SEALED BY A LICENSED ENGINEER OR REGISTERED ARCHITECT, WHICH DETAIL AND JUSTIFY THE DEVIATION. SAID DOCUMENTS SHALL BE SUBMITTED TO THE PRODUCT ENGINEER FOR REVIEW AS A CONDITION TO THE BUILDING OFFICIAL GRANTING HIS/HER APPROVAL.
 B) REQUIRE THAT A ONE-TIME SITE SPECIFIC APPROVAL BE APPLIED FOR AND SECURED FROM THE MIAMI-DADE COUNTY PRODUCT CONTROL DIVISION.

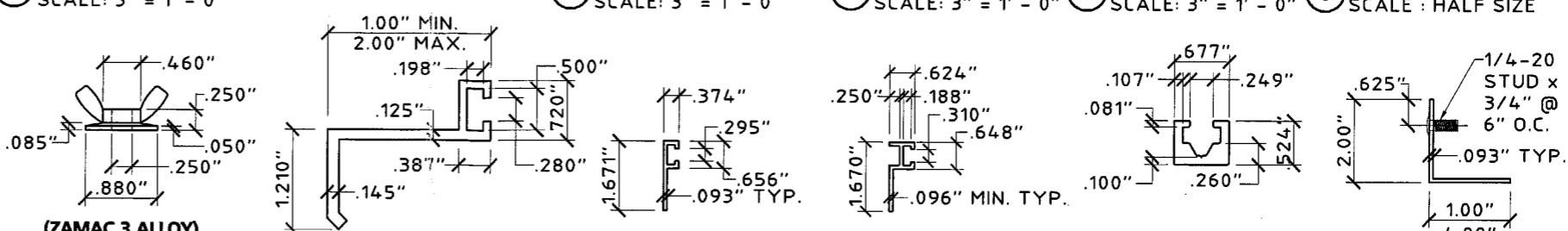
WHEN THE SITE CONDITION DEVIATIONS OCCUR WITHIN THE HIGH VELOCITY HURRICANE ZONE AREAS ONLY, OPTION "B" SHALL BE ACCEPTED BY THE BUILDING OFFICIAL.

9. PRODUCT MARKINGS SHALL BE WITHIN 12" OF ONE END OF THE PANEL WITH A MINIMUM OF ONE MARKING PER PANEL AND SHALL BE PERMANENTLY LABELED AS FOLLOWS:

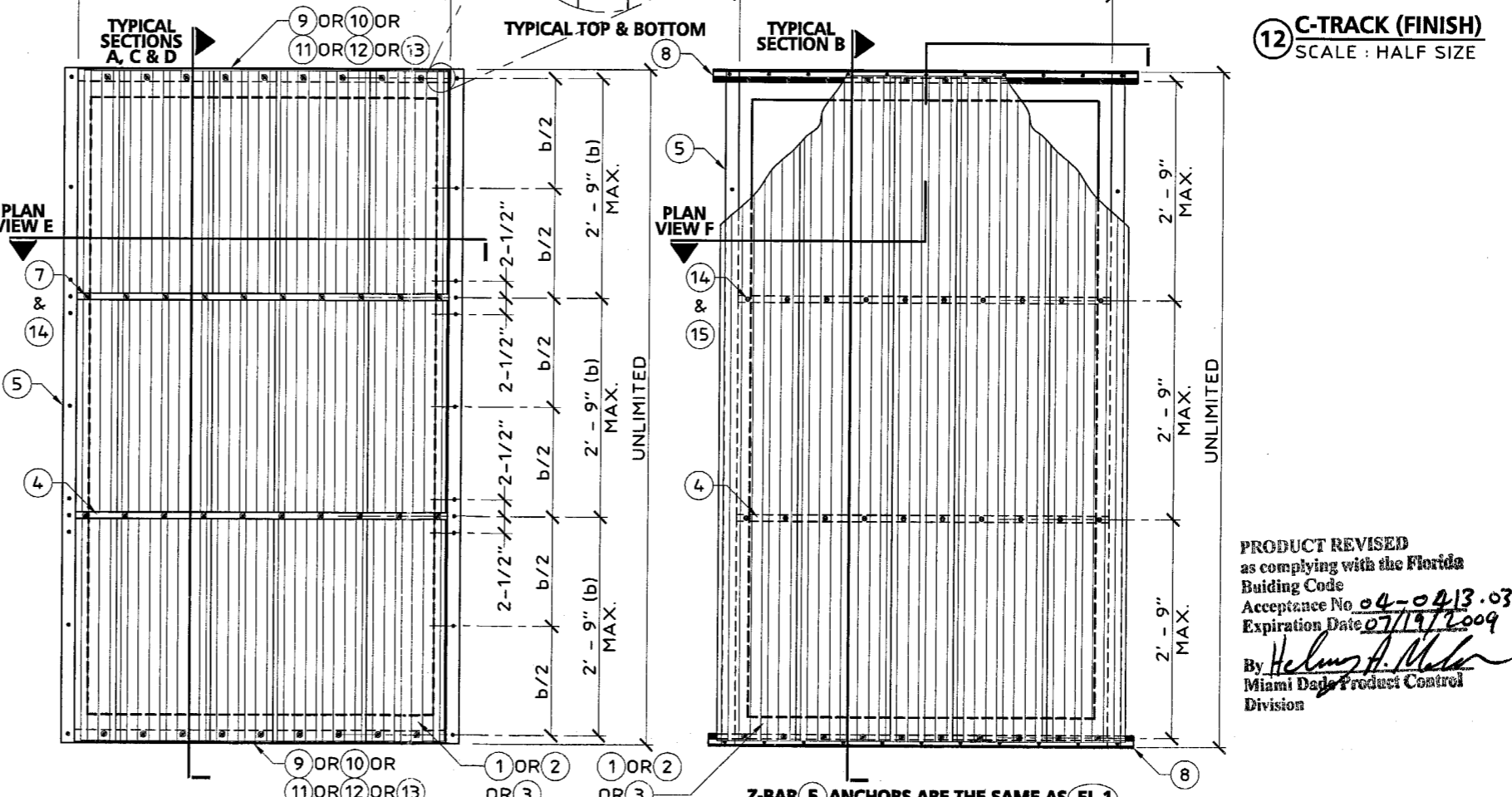
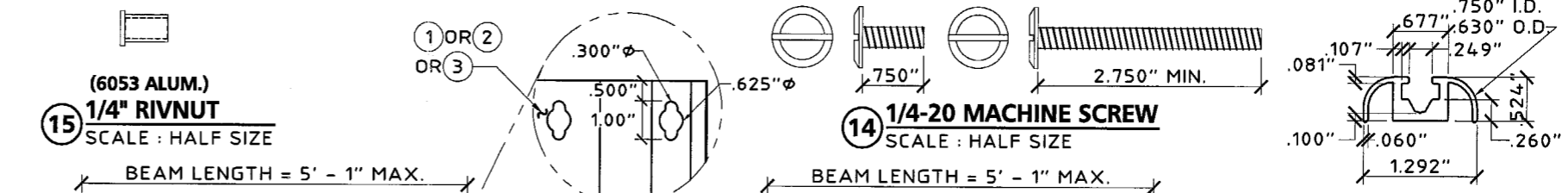
TRANSPARENT PROTECTION SYSTEMS, INC.
WEST PALM BEACH, FLORIDA
MIAMI-DADE COUNTY PRODUCT CONTROL APPROVED

- ALL BOLTS, SCREWS AND WASHERS SHALL BE 2024-T4 ALUMINUM ALLOY OR GALVANIZED OR STAINLESS STEEL WITH A MINIMUM TENSILE STRENGTH OF 60 KSI.
- STORM PANELS SHALL BE EXTRUDED IN CLEAR POLYCARBONATE WITH A MINIMUM THICKNESS AS INDICATED ON COMPONENTS ①, ② & ③. ALL EXTRUSIONS SHALL BE 6063-T6 ALUMINUM ALLOY, U.O.N.
- MATERIAL SPECIFICATIONS: ALL POLYCARBONATE PANELS SHALL BE FABRICATED FROM 100% GE SYNTHETIC THERMOPLASTIC POLYMER LEXAN RESIN NUMBER 103-112, WHICH IS COMPARATIVE TO GE LEXAN POLYCARBONATE SHEET NUMBER 9034 AS APPROVED UNDER MIAMI-DADE COUNTY NOTICE OF ACCEPTANCE NUMBER 03-0924.01. SYNTHETIC THERMOPLASTIC POLYMER TENSILE STRENGTH $F_y = 8,908$ P.S.I., FLEXURAL STRENGTH $F_{by} = 12,900$ P.S.I., FLEXURAL MODULUS = 328,700 P.S.I.
- THE DETAILS AND SPECIFICATIONS SHOWN HEREIN REPRESENT THE PRODUCTS TESTED FOR IMPACT, CYCLIC AND UNIFORM STATIC AIR PRESSURE TESTING IN CONFORMANCE WITH FLORIDA BUILDING CODE TAS 201, 202, AND 203.
MAX. POSITIVE DESIGN LOAD = + 72.0 P.S.F.
MAX. NEGATIVE DESIGN LOAD = - 72.0 P.S.F.
- THE PERMIT HOLDER SHALL VERIFY THE ADEQUACY OF THE EXISTING STRUCTURE TO SUSTAIN THE NEW SUPERIMPOSED LOADS AND TO VERIFY ALL DIMENSIONS AT THE JOB SITE BEFORE COMMENCING WITH THE WORK.
- TOP & BOTTOM DETAILS SHOWN MAY BE INTERCHANGED AS FIELD CONDITIONS DICTATE. PANELS MAY BE MOUNTED HORIZONTALLY WHERE APPLICABLE.
- AT LEAST ONE PERMANENT WARNING LABEL PER PANEL SHALL BE PLACED WITHIN 12" OF THE LOWER LEFT CORNER OF EACH PANEL FOR ANY JOB PERMITTED USING THIS MIAMI-DADE COUNTY PRODUCT APPROVAL. THIS LABEL SHALL READ AS FOLLOWS:

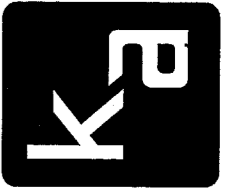
WARNING: THIS STORM PANEL SYSTEM WON'T OFFER HURRICANE PROTECTION UNLESS ALL REINFORCING BOLTS AND STRAPS ARE PROPERLY INSTALLED.



7 WASHERED WINGNUT SCALE: HALF SIZE
8 BUILD-OUT F-TRACK SCALE: HALF SIZE
9 "F" TRACK SCALE: 3" = 1' - 0"
10 "B F" TRACK (5/8") SCALE: 3" = 1' - 0"
11 C-TRACK (PRE-STUCCO) SCALE: HALF SIZE
13 STUD ANGLE SCALE: 3" = 1' - 0"



EL-1 TYPICAL ELEVATION FOR SECTIONS A, C & D SCALE: 1/2" = 1' - 0"
EL-2 TYPICAL ELEVATION FOR SECTION B SCALE: 1/2" = 1' - 0"
Z-BAR ⑤ ANCHORS ARE THE SAME AS ⑤-EL-1



Knezevich & Associates, Inc.
 Consulting Engineers • Product Testing
 330 N. Andrews Ave., Suite 450 • Ft. Lauderdale, FL 33301
 Tel. (954) 522-3690 • Fax (954) 522-3691 • COA # 3205
 Website: www.knezevich.com • E-mail: KA@knezevich.com
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CLEAR POLYCARBONATE STORM PANEL
 Transparent Protection Systems, Inc.
 6643 N. 42ND TERRACE
 WEST PALM BEACH, FL 33407
CLEAR GUARD HURRICANE PANELS
 (888) 447-8920

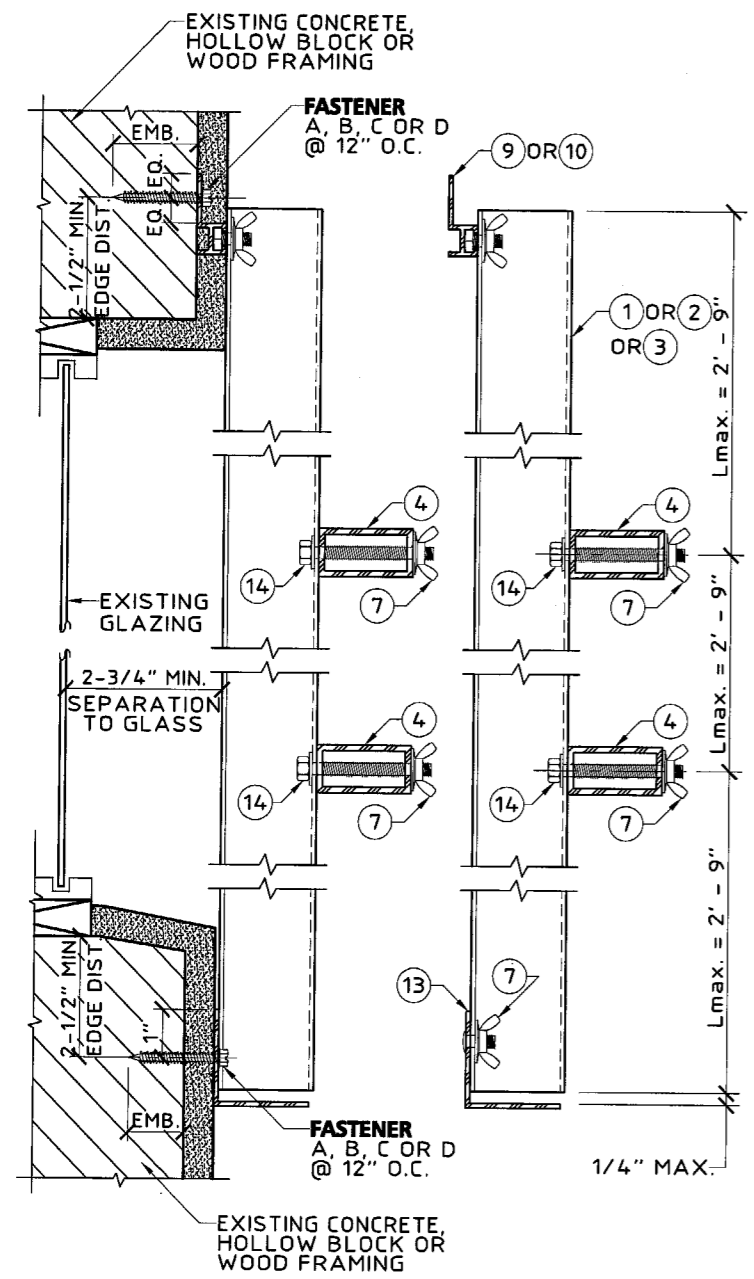
V.J. Knezevich
 Professional Engineer
 FL License No.: PE 1010983

JUL 26 2004

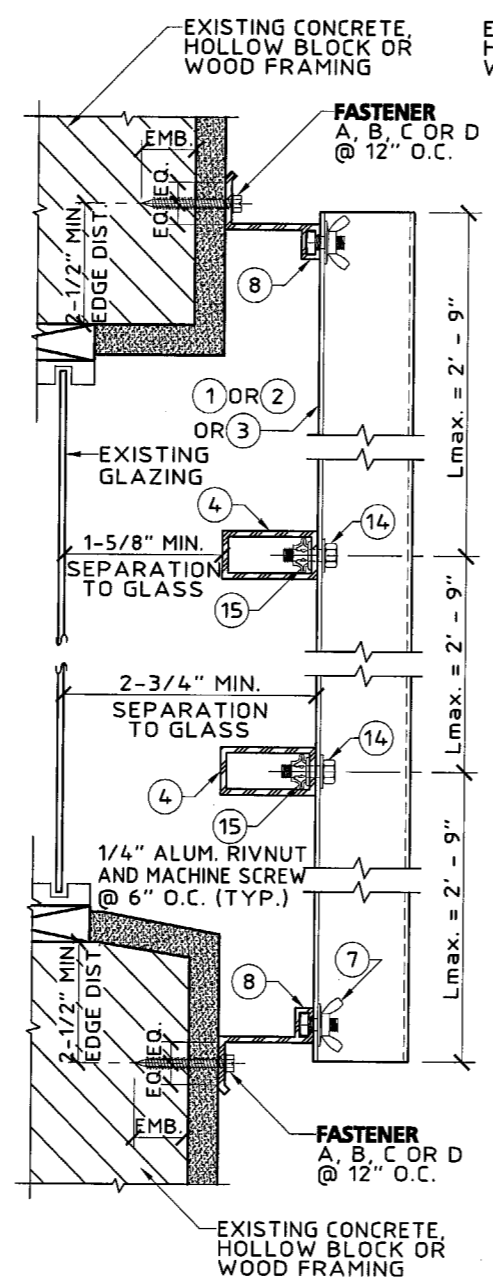
no.	date	description
0	06/30/04	PREV. DRAWING NO. 00-244 ANCHORS REVISED
1	07/26/04	VJK COUNTY COMMENTS

PRODUCT REVISED
 as complying with the Florida Building Code
 Acceptance No **04-0413.03**
 Expiration Date **07/19/2009**
 By *Helmut H. Mader*
 Miami Dade Product Control Division

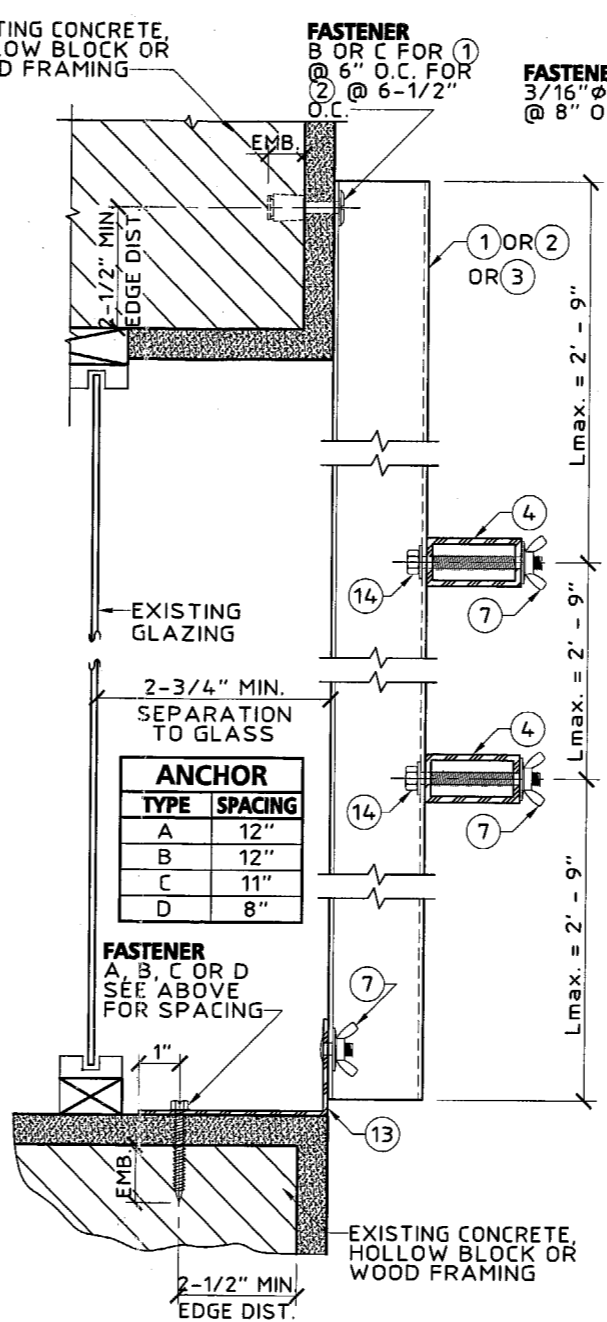
date	06/30/2004
scale	AS NOTED
drawn by	MCR
design by	VJK
checked by	VJK
drawing no.	04-342
sheet	1 of 3



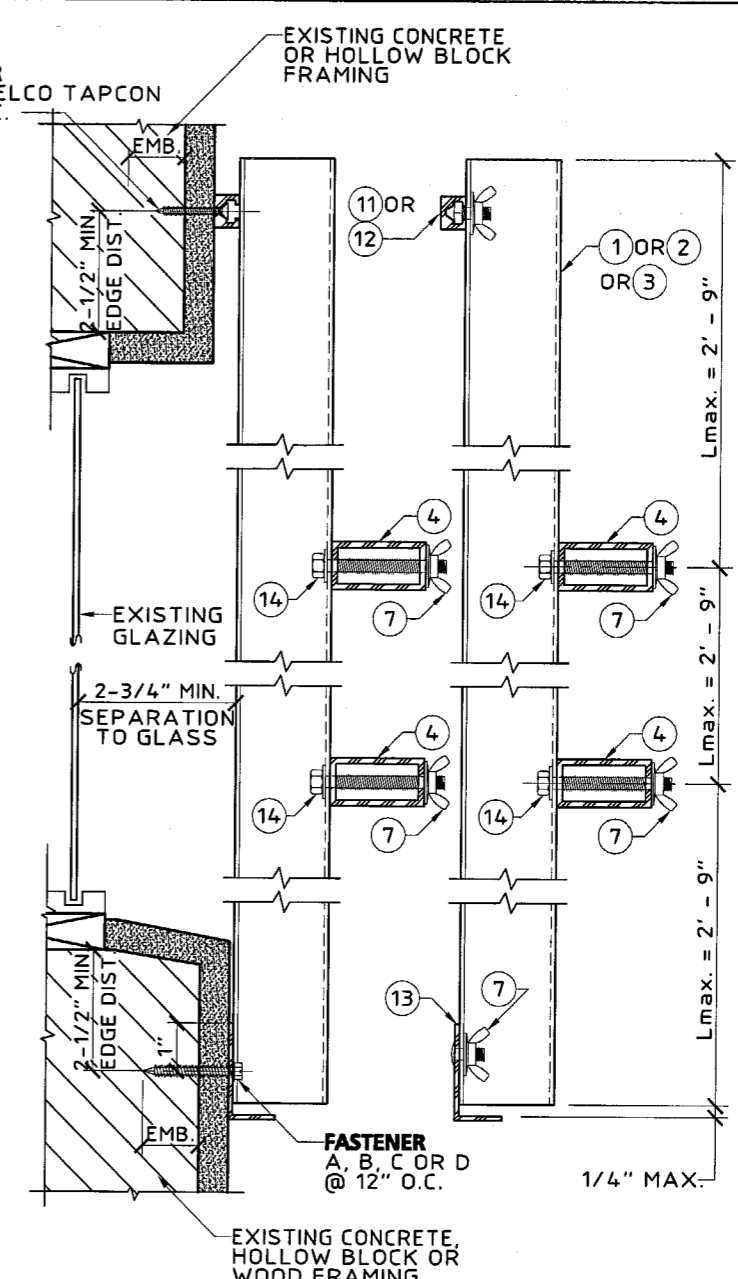
A WALL MOUNT SECTION
SCALE: 3" = 1' - 0"



B BUILD-OUT MOUNT SECTION
SCALE: 3" = 1' - 0"



C WALL / FLOOR MOUNT SECTION
SCALE: 3" = 1' - 0"



D WALL MOUNT SECTION
SCALE: 3" = 1' - 0"

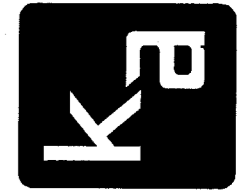
ANCHOR	
TYPE	SPACING
A	12"
B	12"
C	11"
D	8"

FASTENER TYPE	DESCRIPTION	BLOCK MIN. EMBEDMENT	CONCRETE MIN. EMBEDMENT	WOOD MIN. EMBEDMENT
	1/4" ϕ ELCO TAPCON OR 1/4" ϕ ELCO CRETE FLEX U.O.N.	1-1/4"	1-1/4" (MINIMUM 3,300 P.S.I. CONCRETE)	N / A
	1/4" ϕ ALL POINTS SOLID-SET ANCHOR WITH 7/8" EMBED. & 1/4-20 STAINLESS STEEL MACHINE SCREW	7/8"	7/8" (MINIMUM 3,000 P.S.I. CONCRETE)	N / A
	1/4" ϕ ELCO TEXTRON MALE/FEMALE "PANELMATE" & 1/4-20 MACHINE SCREW WITH NUT	1-1/4"	1-1/4" (MINIMUM 3,300 P.S.I. CONCRETE)	1-7/8"
	1/4" ϕ x MIN. 2-1/2" LONG WOOD LAG SCREW PARALLEL OR PERPENDICULAR TO GRAIN (G = .55 MIN.), U.O.N.	N / A	N / A	1-3/4"

ANCHOR NOTES:

- ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS.
- MINIMUM EMBEDMENT AND EDGE DISTANCE EXCLUDES WALL FINISH OR STUCCO. EMBEDMENT OF FASTENER SHALL ONLY INCLUDE THE THREADED PORTION. EDGE DISTANCE SHALL BE AS NOTED ON DRAWING OR SPECIFIED IN THIS NOTES.
- WHERE EXISTING STRUCTURE IS WOOD FRAMING, WOOD FRAMING CONDITIONS VARY. FIELD VERIFY THAT FASTENERS ARE INTO ADEQUATE WOOD FRAMING MEMBERS, NOT PLYWOOD.
- WHERE ELCO PANELMATES OR 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=0.55 OR GREATER DENSITY.
- MACHINE SCREWS SHALL HAVE MIN. OF 1/2" ENGAGEMENT OF THREADS IN BASE ANCHOR AND SHALL HAVE A WAFER HEAD (SIDEWALK BOLT), U.O.N.
- * DESIGNATES ANCHORS WHICH ARE REMOVABLE BY REMOVING MACHINE SCREW, NUT OR WASHERED WINGNUT.
- ALL CLEAR POLYCARBONATE PANELS TO BE MOUNTED TO, EXTRUSIONS @ 6" OR 6-1/2" O.C.

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 04-0413.03
Expiration Date 07/19/2009
By *Kelvin A. Miller*
Miami Dade Product Control Division



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Consulting Engineers • Product Testing
330 N. Andrews Ave., Suite 450 • Ft. Lauderdale, FL 33301
Tel. (954) 522-3690 • Fax (954) 522-3691 • COA # 3205
Website: www.knezevich.com • E-mail: KA@knezevich.com
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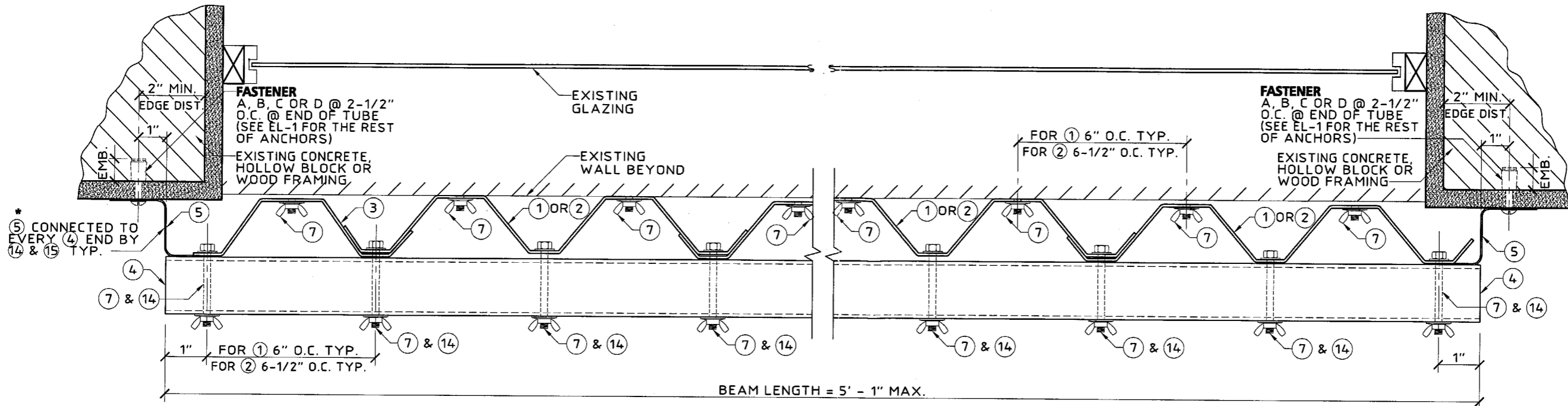
CLEAR POLYCARBONATE STORM PANEL
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CLEAR GUARD HURRICANE PANELS

V.J. Knezevich
Professional Engineer
FL License No. P70010983

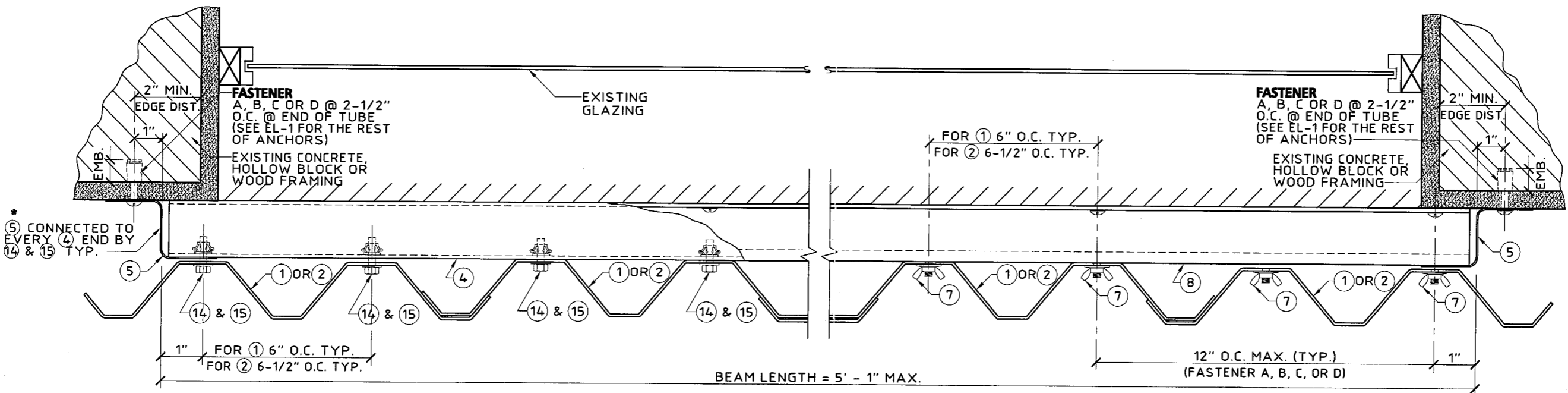
JUL 26 2004

no.	date	by	description
0	06/30/04	VJK	PREV. DRAWING NO. 00-24
1	07/26/04	VJK	ANCHORS REVISED
			COUNTY COMMENTS

date 06/30/2004
scale AS NOTED
drawn by MCR
design by VJK
checked by VJK
drawing no. 04-342
sheet 2 of 3



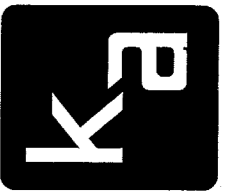
E PLAN VIEW FOR SECTIONS A, C & D
SCALE: 3" = 1' - 0"



F PLAN VIEW FOR SECTION B
SCALE: 3" = 1' - 0"

*** NOTE:**
ALL INSTALLATIONS MUST PROVIDE FULL PANELS OR HALF PANELS AT OPENINGS TO ENSURE THAT ASSEMBLY CLOSURE (5) HAS POSITIVE CONNECTIONS AS SHOWN IN ABOVE PLAN VIEW DETAILS (E) & (F).

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 04-0413.03
Expiration Date 07/14/2009
By *Helmy A. Miller*
Miami Dade Product Control Division



Knezevich & Associates, Inc.
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Website: www.Knezevich.com • E-mail: KA@Knezevich.com
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CLEAR POLYCARBONATE STORM PANEL
Transparent Protection Systems, Inc.
6645 N. 42ND TERRACE
WEST PALM BEACH, FL 33407
(888) 447-8320
GLEAR GUARD HURRICANE PANELS

V.J. Knezevich
Professional Engineer
FL License No.: PE 0010983

JUL 26 2004

no	date	by	description
0	06/30/04	VJK	PREV. DRAWING No. 00-216
1	07/26/04	VJK	ANCHORS REVISED
			COUNTY COMMENTS

date 06/30/2004
scale AS NOTED
design by VJK
checked by VJK
drawing no. 04-342
sheet 3 of 3