

STRUCTURAL NOTES:

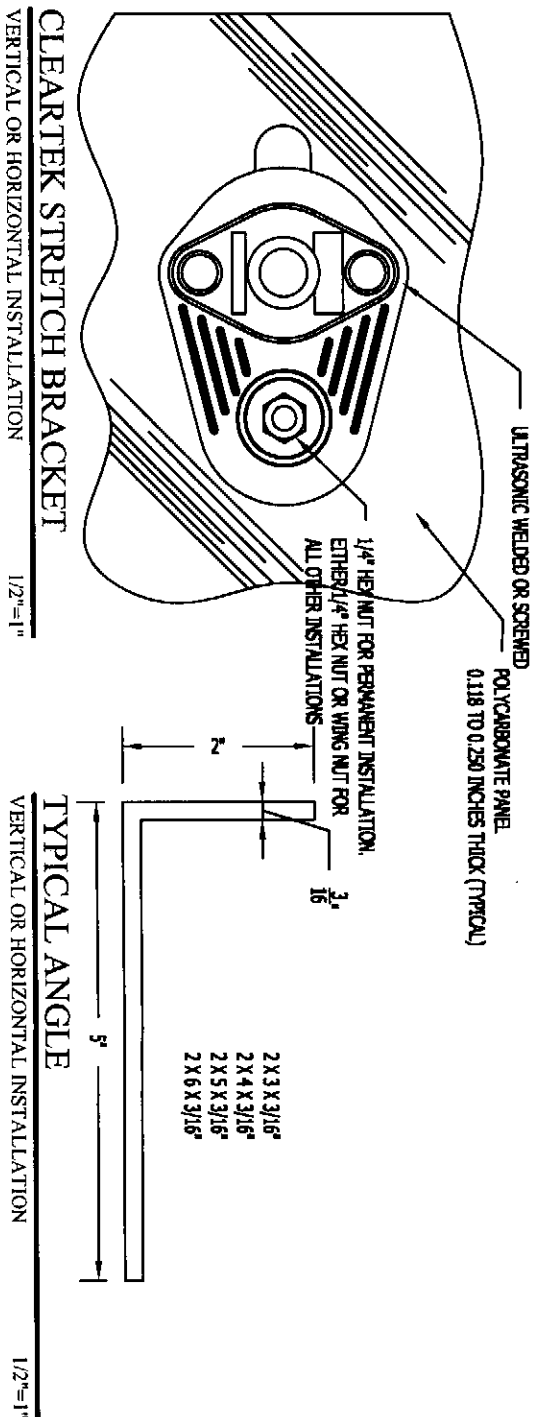
- THIS SYSTEM HAS BEEN VERIFIED FOR COMPLIANCE IN ACCORDANCE WITH THE 2007 EDITION OF THE FLORIDA BUILDING CODE (FBC). THIS SYSTEM SHALL NOT BE INSTALLED IN THE HIGH VELOCITY HURRICANE ZONE (MAIN-ORDE/ BROWARD COUNTIES). THE Adequacy FOR IMPACT, DEFLECTION AND FATIGUE RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH SECTION 1609.1.2 OF THE ABOVE REFERENCED CODE, AND AS PER ASTM 1986-05, ASTM 1996-05 AND ASTM E300-02 AS LISTED HEREIN AS WELL AS ADDITIONAL STANDARDS AS MENTIONED ELSEWHERE ON SHEET 1 OF 5.
- DESIGN PRESSURE REQUIREMENTS OF A SPECIFIC SITE SHALL BE DETERMINED BY OTHERS IN COMPLIANCE TO SECTION 1609 OF THE FBC AS REQUIRED BY THE JURISDICTION WHERE THE SYSTEM WILL BE INSTALLED. WHEN CALCULATING PRESSURES PER ASCE 7, USE OF DIRECTIONALITY FACTOR K_d-0.85 IS ALLOWED.
- IMPACT AND FATIGUE RESISTANCE HAS BEEN DETERMINED IN ACCORDANCE WITH THE FBC SECTION 1609.1.2 AS LISTED HEREIN.
- NO 33-1/2% INCREASE IN ALLOWABLE STRESS INCREASE HAS BEEN USED IN THE DESIGN OF THIS PRODUCT.
- THIS PRODUCT EVALUATION DOCUMENT (PED) DETAILED HEREIN IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC SITE. IF SITE CONDITIONS DEVIATE FROM THE CONDITIONS DETAILED HEREIN, A LICENSED ENGINEER OR REGISTERED ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS TO BE USED IN CONJUNCTION WITH THIS DOCUMENT.
- THE CONTRACTOR AND / OR PERMIT HOLDER IS TO BE RESPONSIBLE FOR THE SELECTION, PURCHASE AND INSTALLATION OF THIS SYSTEM, INCLUDING VERIFYING THE Adequacy OF THE EXISTING STRUCTURE TO WITHSTAND THE NEW SUPERIMPOSED LOADS SHOWN BELOW AND THE SOUNDNESS OF THE STRUCTURE WHERE THE SYSTEM IS TO BE ATTACHED TO INSURE PROPER ANCHORAGE.
- SITE SPECIFIC PROJECTS SHALL BE PREPARED BY A FLORIDA LICENSED ENGINEER OR ARCHITECT WHO WILL BECOME THE ENGINEER OF RECORD (EOR) FOR THE PROJECT AND WHO WILL BE RESPONSIBLE FOR THE PROPER USE OF THE PED. THE ENGINEER OF RECORD, ACTING AS A DELEGATED ENGINEER TO THE PED ENGINEER SHALL SUBMIT TO THIS ENGINEER THE SITE SPECIFIC DRAWINGS FOR REVIEW.
- THIS PED SHALL BEAR THE DATE AND ORIGINAL SEAL OF THE PROFESSIONAL ENGINEER OF RECORD THAT PREPARED IT REGARDLESS OF ITS AVAILABILITY FROM THE FLORIDA PRODUCT APPROVAL WEBSITE.
- THIS SYSTEM MAY ALSO BE INSTALLED HORIZONTALLY FOLLOWING INSTALLATION DETAILS SHOWN HEREIN.
- AN OPTIONAL UV AND / OR SOLAR EXTERNAL LAYER MAY BE ADDED ONTO THE SYSTEM.
- LIMITATIONS OF USE:
THE MAXIMUM SIZE SHALL BE 60 PSF MAX. PRESSURE @109 INCHES MAXIMUM WIDTH (CENTER / CENTER OF WALL FASTENERS). SEE TABLE ON SHEET 5 OF 5.
FOR DETERMINING INTERVAL PRESSURE IN THE ABOVE REFERENCED CODES, THIS PRODUCT IS CLASSIFIED AS NON-POROUS WITH A POROSITY OF LESS THAN 10% FOR THE CONDITIONS SHOWN IN THIS PRODUCT EVALUATION DOCUMENT. CLEAR PANELS MUST COMPLETELY COVER AN OPENING IN ALL DIRECTIONS.
- ALL SCREWS TO BE STAINLESS STEEL, 304 OR GALVANIZED A307 STEEL.
- ALL BOLTS TO BE ASTM A307, GALVANIZED OR 304 SERIES STAINLESS STEEL.
- SUPPORT BRACKETS AND ANCHORS:
A. ANCHORS INTO THE SUPPORT SUBSTRUCTURE (WALL, CEILING, BEAMS AND FLOORS) SHALL BE INSTALLED PER MANUFACTURER'S REQUIREMENTS.
B. THE ANCHOR SPACING SHOWN ON SHEET 5 OF 5 INDICATED FOR 1/4" AND 3/8" DIAMETERS REFER TO CENTER OF SUPPORTING BRACKETS.
C. THE ANCHOR SPACING CHARTS ARE BASED ON A REMOVAL BRACKET SYSTEM USING MALE PANEL MATES WITH WING NUTS, FEMALE PANEL MATES, SCREWS AND DROP-IN ANCHORS WITH SIDEWALK BOLTS. TAPONS OF THE SAME SIZE CAN BE SUBSTITUTED FOR REMOVAL BRACKET INSTALLATIONS.
D. ANCHOR MINIMUM EMBEDMENT AND EDGE DISTANCES
- NO EMBEDMENT INTO NON-STRUCTURAL MATERIAL, SUCH AS STUCCO, SIDING AND PAVERS SHALL BE INCLUDED AS PART OF THE EMBEDMENT REQUIREMENT.
- STEEL SURFACES TO BE PLACED IN CONTACT WITH ALUMINUM SHALL BE GIVEN ONE COAT OF ZINC CHROMATE PRIMER IN ACCORDANCE WITH FEDERAL SPEC. NO.: TT-645, OR BE GALVANIZED.
- MAXIMUM DESIGN PRESSURE VERSUS PANEL SPAN SHOWN ON SHEET 5 OF 5.
- ALL ALUMINUM ALLOYS SHALL BE 6063-T5 OR 6061-T6.
- ANCHORING OR LOADING CONDITIONS OTHER THAN THOSE SHOWN IN THESE DETAILS ARE NOT PART OF THIS APPROVAL.
- PERMANENT INSTALLATION REQUIRES USE OF UV COVER. SEE SHEET 2 OF 5.
- TRACKS MAY BE CURVED TO FOLLOW THE INSTALLATION PROFILE AROUND ARCHES AND RADI.
- FLAT PANELS MAY BE MOUNTED INSIDE AND / OR OUTSIDE OF THE BUILDING ENVELOPE.
- STRETCH BRACKETS MAY BE USED ON ANCHORED PANEL SECTIONS. MIN. OF 11 INCHES BETWEEN FASTENER CENTERS.
- FLAT PANEL'S MANUFACTURER LABEL SHALL BE PLACED ON A READILY AND VISIBLE LOCATION ON THE PANEL. ONE LABEL SHALL BE PLACED FOR EVERY OPENING. LABEL SHALL READ AS FOLLOWS:
ULTRATEK WORLDWIDE
3801 N. Washington Blvd.
Sarasota, FL 34234
FLORIDA PRODUCT APPROVAL NUMBER: F-XXXX. OPENING NO.: XX
- THIS DOCUMENT IN ITS ENTIRETY WILL BE CONSIDERED INVALID IF IT IS ALTERED BY ANY MEANS OR DOES NOT BEAR THE DATE AND ORIGINAL SEAL OF THE PROFESSIONAL ENGINEER OF RECORD THAT PREPARED IT.

SUBSTRUCTURE	EMBEDMENT	EDGE DISTANCE
HOLLOW BLOCK	1-1/4 INCH	12 D OR PER MANUF.
GROUT FILLED OR FSI CONCRETE	1-3/4 INCH	12 D OR PER MANUF.
4 PSI CONCRETE OR 2 PSI CONCRETE	1-3/4 INCH	12 D OR PER MANUF.
WOOD OR TIMBER	8 D	3/4 INCH

POLYCARBONATE SOURCES		RESULT	
TYPICAL PROPERTIES	STANDARD	SABIK LEXAN 103 RESIN	BAYER MAKROLON 3103
MECHANICAL			
TENSILE YIELD STRENGTH	ASTM D638	9.5 ksi	9.4 ksi
FLEXURAL STRENGTH AT YIELD	ASTM D790	12.5 ksi	12.5 ksi
FLEXURAL MODULUS	ASTM D790	345 ksi	340 ksi
IMPACT:			
NOTCHED IZOD	ASTM D256	17 ft-lb/in	18 ft-lb/in
FIRE BURNING CHARACTERISTICS:			
SMOKE DENSITY	ASTM D2843	64.5% MAX.	47.20%
RATE OF BURNING	ASTM D635	C-1 CLASS	C-1 CLASS
SELF IGNITION	ASTM D1929	980 deg. F	1040 deg. F
WEATHERING:			
TENSILE STRENGTH AFTER WEATHERING	ASTM G155	8,840 ksi	9,302 ksi
TENSILE STRESS BEFORE WEATHERING	ASTM G38	8,880 ksi	8,461 ksi
PHYSICAL:			
TENSILE STRESS BEFORE WEATHERING	ASTM D792	0.043 lb/in ³	0.043 lb/in ³

SWAY (AST) WOOD	PANEL MATE (MALE FASTENER)	PANEL MATE (FEMALE FASTENER)	FASTENER, 3/8\"/>	ROUGH SMOOTH WALL DROP-IN	ROUGH HOLLOW SET DROP-IN
SWAY (AST) CONC	ROUGHER TAPERED ANCHOR INCLUDING WASHER, SCOTS, AND 410 SS	ROUGHER FLANGED LP DROP-IN	ROUGHER SMOOTH WALL DROP-IN	ROUGHER SMOOTH WALL DROP-IN	PANEL MATE INSERT

TYPICAL FASTENERS - 1/4" AND 3/8" N.T.S.



CLEARTEK STRETCH BRACKET

TYPICAL ANGLE

EVALUATION BASED ON:
ARCHITECTURAL TESTING INC.
REPORT NO.: A398A01-401-44
REPORT DATE: 09/09/10
TEST PROTOCOL: ASTM E 1986-05 (IMPACT & CYCLIC TEST METHOD)
ASTM E 1996-05 (IMPACT STANDARD SPECIFICATION)
ASTM E 300-02 (STATIC TEST METHOD)
DESIGN PRESSURE: 60 PSF W/ MISSILE LEVEL D AND WIND ZONE 4.
OVERALL SPAN: 9'-1" (109 IN.) CONTR. FASTENERS: #8 (109 IN.) INSIDE TO INSIDE FRAME

MAXIMUM ALLOWABLE DESIGN PRESSURES:
+60 PSF
-60 PSF
SEE TABLES SHEET 5 OF 5

John H. Kompfmann, Jr., PE
FL License # 47516
DATE: 9/8/10

CA #6752
WWW.MEAENGINEERS.COM



5656 Lawton Drive
Sarasota, Florida 34233
(941) 922-3854 CA-6072

REV.	DESCRIPTION
1	XX/XX/XX - RESERVED.

Ultratek Worldwide Inc.
3801 N. Washington Blvd.
Sarasota, FL 34234
PHONE: (941) 924-2285
www.ultratekworldwide.com

CLEARTEK-INVISISHIELD
Flat Polycarbonate Panel

FBC (NON-HIGH VELOCITY HURRICANE ZONE)

Project Name:

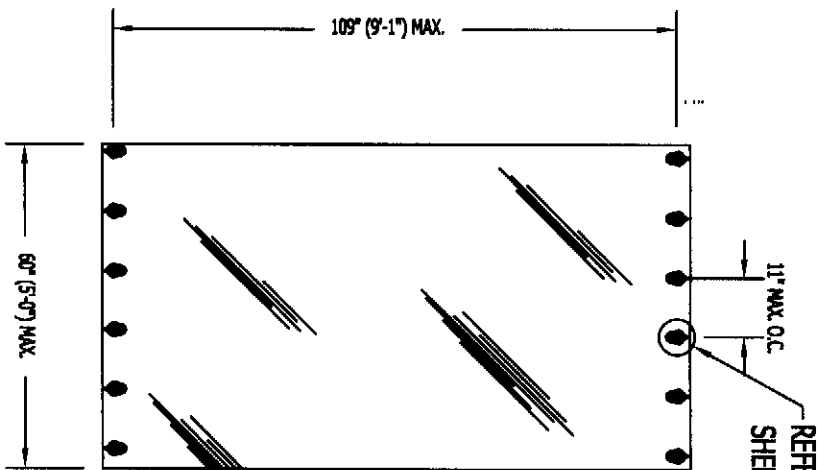
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Project #:

Date:

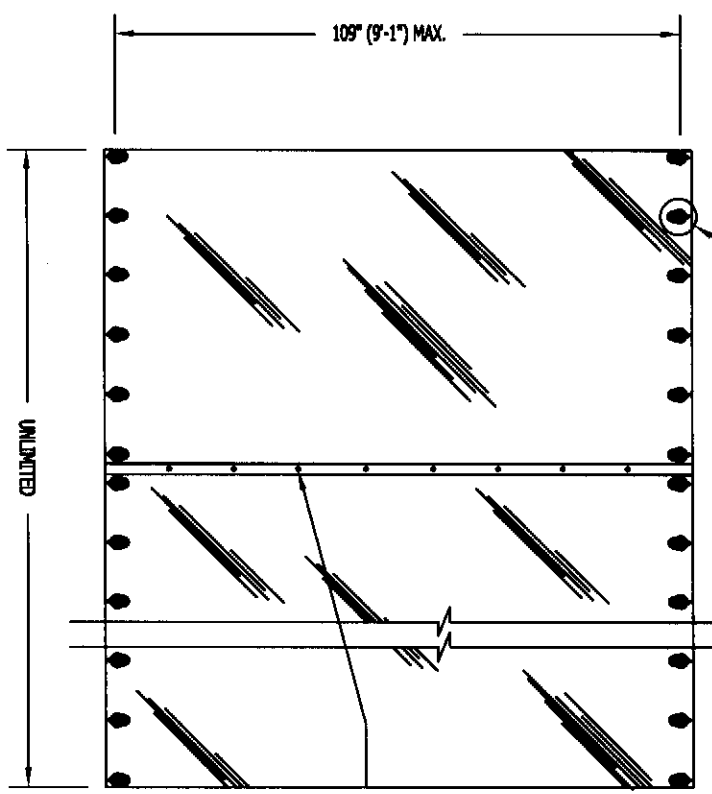
Scale:

Sheet No.:



REFER TO SHIT. 2 OF 5 FOR ADDITIONAL DETAILS AND SHEET 5 OF 5 FOR FASTENER SPACING

TYPICAL TWO-SIDED INSTALLATION
VERTICAL OR HORIZONTAL INSTALLATION
N.T.S.

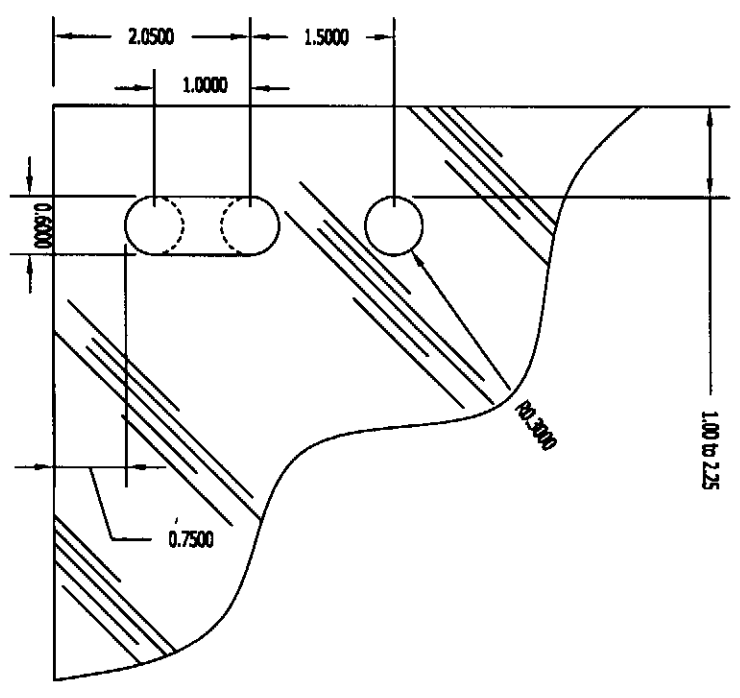


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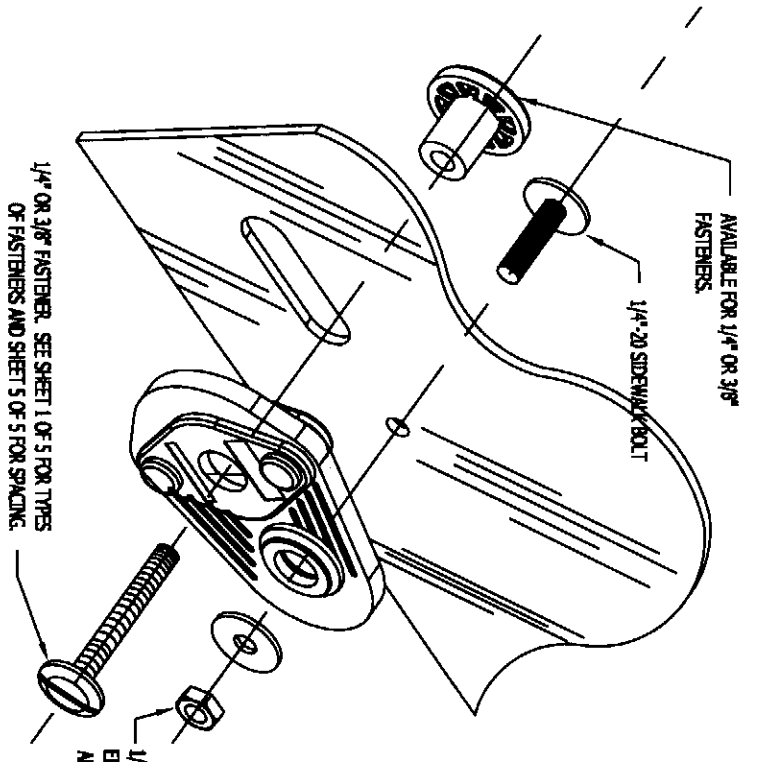
TYPICAL OVERLAP INSTALLATION
VERTICAL OR HORIZONTAL INSTALLATION
N.T.S.

NOTE:
SIDE COURTESY STRETCH BRACKETS MAY BE USED.

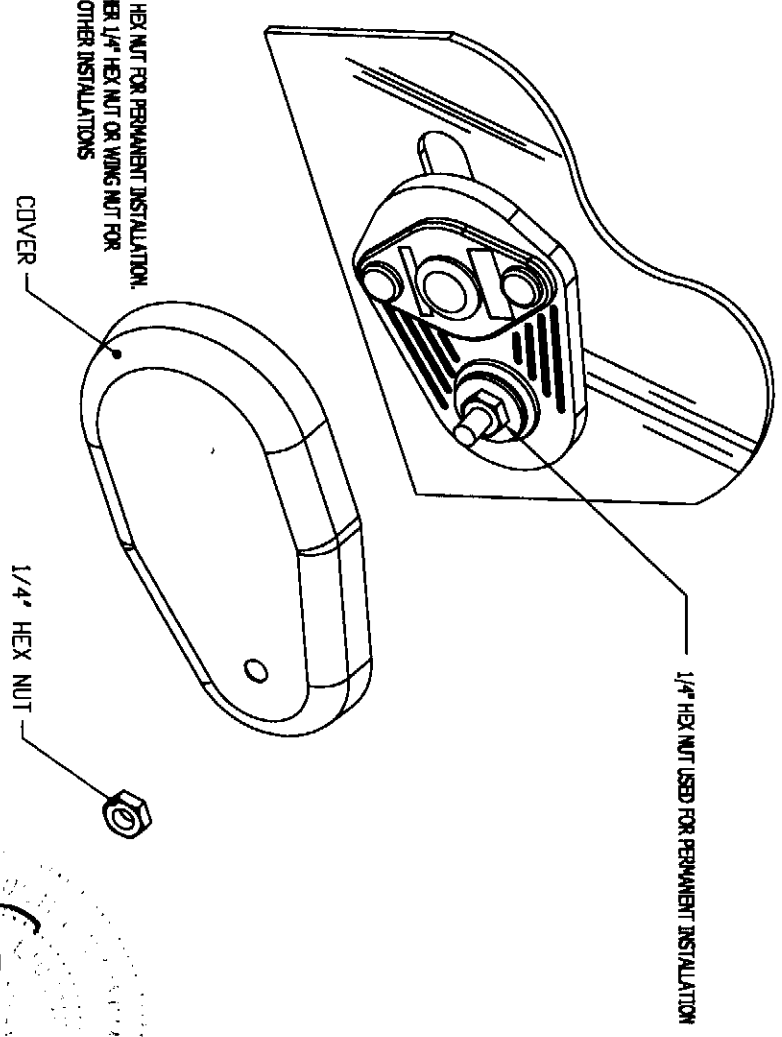
1/4\"/>



TYPICAL EDGE DETAIL
VERTICAL OR HORIZONTAL INSTALLATION
1/2\"/>



TYPICAL ATTACHMENT DETAIL
VERTICAL OR HORIZONTAL INSTALLATION
1/2\"/>



OPTIONAL COVER DETAIL
VERTICAL OR HORIZONTAL INSTALLATION
1/2\"/>

John H. Kampmann Jr., PE
FL License #: 47516
Date: 9/18/10

FBC (NON-HIGH VELOCITY HURRICANE ZONE)

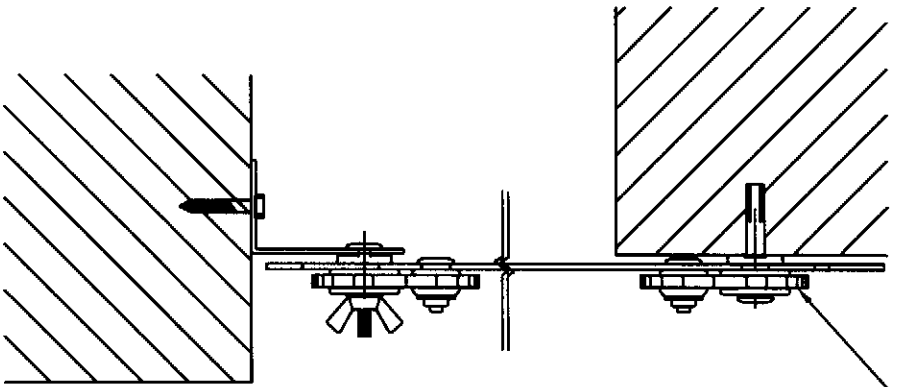
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DESCRIPTION:
CLEARTEK-INVISISHIELD
Flat Polycarbonate Panel

Project Name:
Ultratek Worldwide Inc.
3801 N. Washington Blvd.
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PHONE: (941) 924-2285
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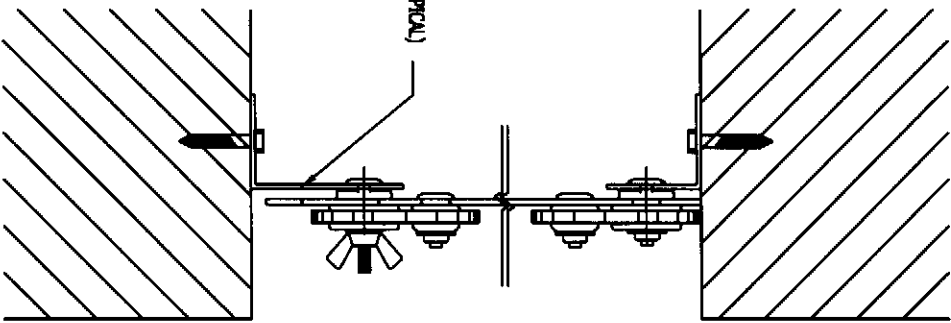
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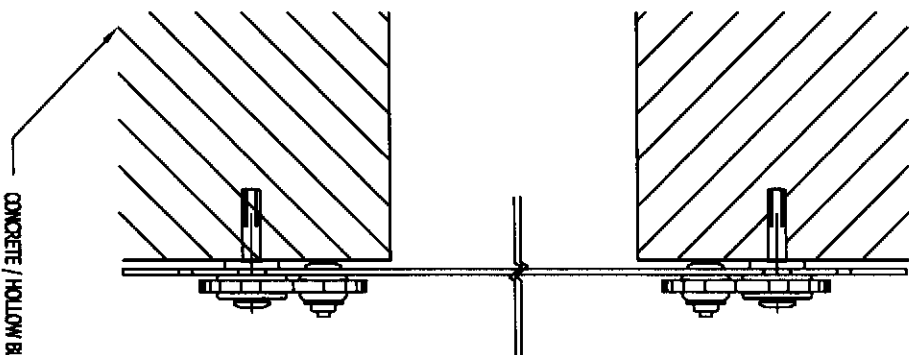
CLEARTEK STRETCH BRACKET (TYPICAL)

TYPICAL ANGLE: SEE SHEET 1 OF 5 (TYPICAL)



TRAP / DIRECT MOUNT DETAIL
INSIDE MOUNT INSTALLATION 1/2"=1"

TRAP MOUNT DETAIL
INSIDE MOUNT INSTALLATION 1/2"=1"



CONCRETE / HOLLOW BLOCK / SOLID BLOCK (TYPICAL)

DIRECT MOUNT DETAIL
INSIDE MOUNT INSTALLATION 1/2"=1"

- NOTES:
1. SEE SHEET 1 OF 5 FOR FASTENERS.
 2. SEE SHEET 5 OF 5 FOR FASTENER SPACING.
 3. SEE SHEET 2 OF 5 FOR STRETCH BRACKET ATTACHMENT DETAILS

John H. Kompmann, Jr., PE
 FL License # 47516
 DATE 09/18/10

FBC (NON-HIGH VELOCITY HURRICANE ZONE)

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Project: JK
 Project # 10-0902A
 Scale: NTS
 Date: 09/02/10
 Sheet No.: 3 of 5

CLEARTEK-INVISISHIELD
Flat Polycarbonate Panel

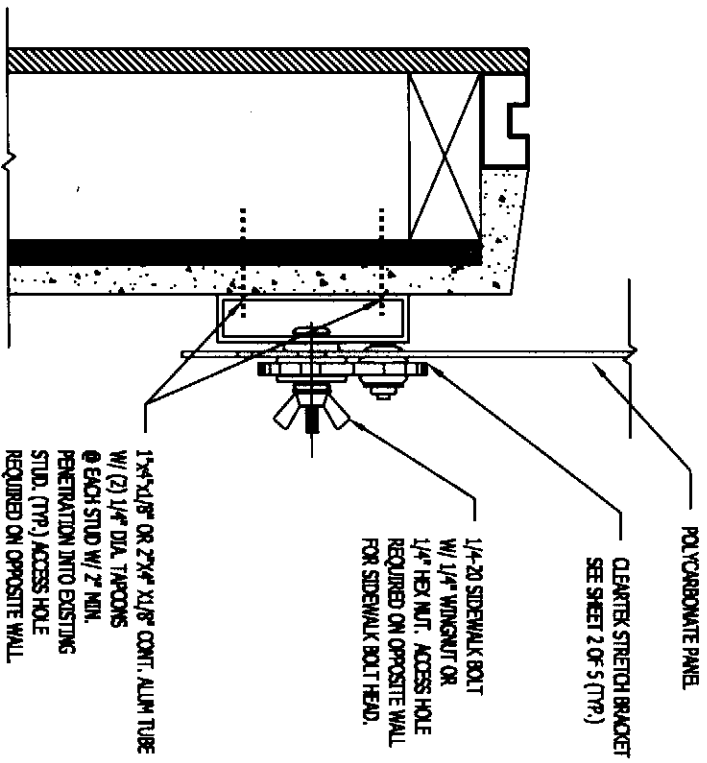
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 PHONE: (941) 924-2285
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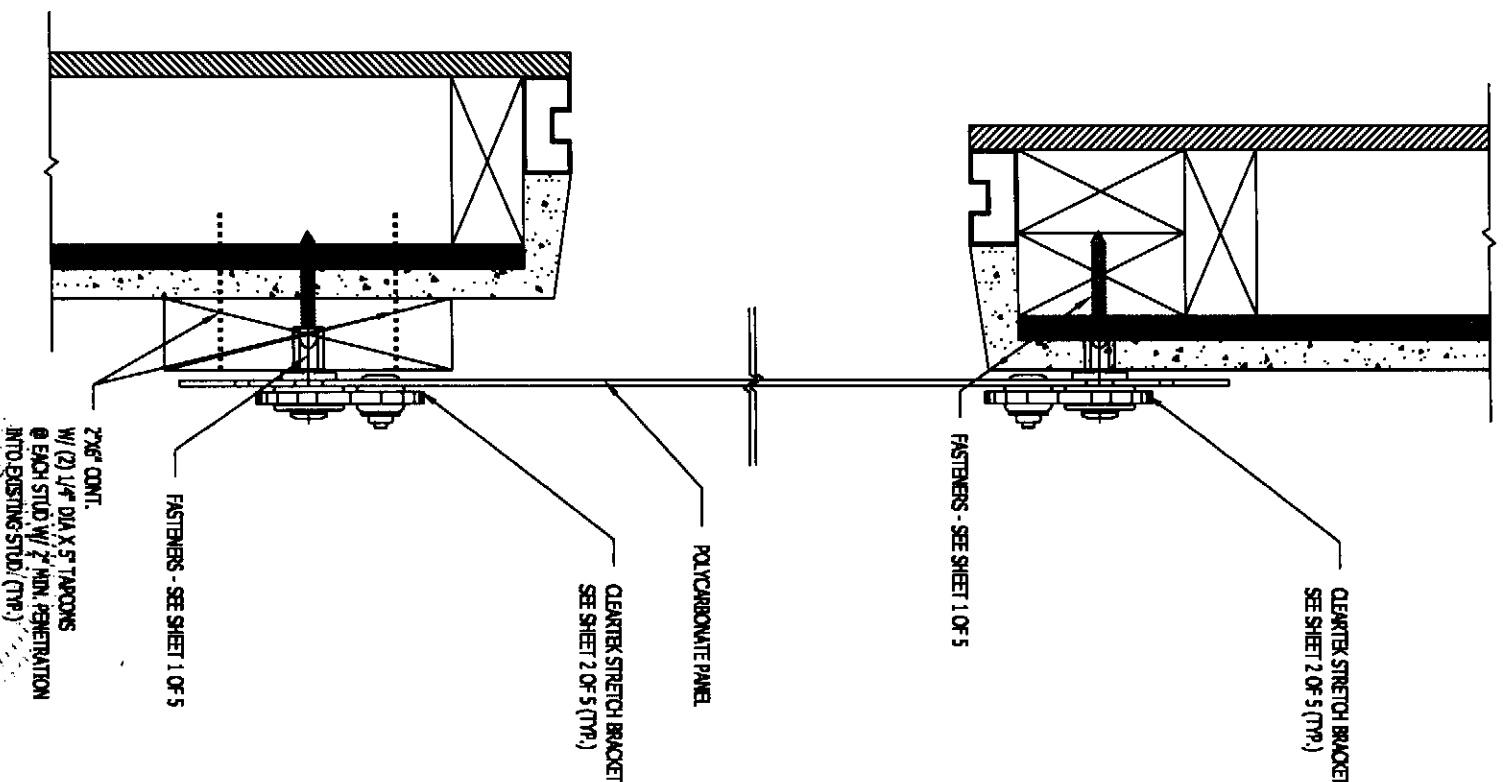
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 Sarasota, Florida 34233
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INSTALLATION DETAIL ON EXISTING WOOD STUDS

1. DETAILS SHOW CONNECTION OF 2x6 BLOCK AND 1x4 ALUM. TUBE TO WOOD STUDS TO PROVIDE A CONTINUOUS SURFACE FOR SHUTTER INSTALLATION.
2. FOR INSTALLATION DETAILS OF HEADER / SILL TO CONTINUOUS WOOD MEMBERS SEE SHEET 3 OF 5.
3. THESE DETAILS MAY BE APPLIED TO CONCRETE, HOLLOW AND SOLID BLOCK STRUCTURES ALSO.



DIRECT MOUNT DETAIL
INSIDE MOUNT INSTALLATION 1/2"=1'



DIRECT MOUNT DETAIL
INSIDE MOUNT INSTALLATION 1/2"=1'

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CLEARTEK-INVISISHIELD Flat Polycarbonate Panel

Description:
Project Name: JK
Project #: 10-0902A
Scale: NTS
Date: 09/02/10

FBC (NON-HIGH VELOCITY HURRICANE ZONE)

John H. Kammann, Jr., PE
FL License # 47516
DATE: 9/8/10

DESIGN PRESSURE 60 PSF	Span(in.)	4000 PSI CONCRETE	2000 PSI CONCRETE	HOLLOW BLOCK	WOOD
		105	7	7	5
Panelmates	86	9	8	6	5
	67	11	10	7	7
	48	11	11	10	9
Span(in.)					
	105	11	11	11	6
	86	11	11	11	7
	67	11	11	11	9
	48	11	11	11	11

DESIGN PRESSURE 40 PSF	Span(in.)	4000 PSI CONCRETE	2000 PSI CONCRETE	HOLLOW BLOCK	WOOD
		105	10	9	7
Panelmates	86	11	11	8	7
	67	11	11	10	9
	48	11	11	11	11
Span(in.)					
	105	11	11	11	8
	86	11	11	11	10
	67	11	11	11	11
	48	11	11	11	11

DESIGN PRESSURE 50 PSF	Span(in.)	4000 PSI CONCRETE	2000 PSI CONCRETE	HOLLOW BLOCK	WOOD
		105	9	8	6
Panelmates	86	10	9	7	6
	67	11	11	9	8
	48	11	11	11	10
Span(in.)					
	105	11	11	11	7
	86	11	11	11	8
	67	11	11	11	10
	48	11	11	11	11

DESIGN PRESSURE 30 PSF	Span(in.)	4000 PSI CONCRETE	2000 PSI CONCRETE	HOLLOW BLOCK	WOOD
		105	11	11	8
Panelmates	86	11	11	10	9
	67	11	11	11	11
	48	11	11	11	11
Span(in.)					
	105	11	11	11	10
	86	11	11	11	11
	67	11	11	11	11
	48	11	11	11	11

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Project Name:
CLEARTEK-INVISISHIELD
Flat Polycarbonate Panel

Description:
JK
Project # 10-0902A
NTS
DATE: 09/02/10
5 of 5

John H. Kampmann Jr., PE
FL License # 47516
DATE: 9/18/10

FBC (NON-HIGH VELOCITY HURRICANE ZONE)