

W. W. Schaefer Engineering & Consulting, P.A. (CA #6809)

7480 150th Court North
Palm Beach Gardens, FL 33418
Phone (561)744-3424

ENGINEER'S EVALUATION REPORT #WWS-399

Prepared for:

Designer Products, LLC; dba Cambek Designer Doors
702 Troy Street
River Falls, WI 54022
Phone: 800-241-0525

Prepared by:

Warren W. Schaefer, P.E.
Florida Professional Engineer #44135

Manufacturer: Designer Products, LLC; dba Cambek Designer Doors

Product Category: Garage Doors

Evaluation Method: 1-D (Engineer's evaluation)

Product model & name: 10'-6" Wide Impact Glazed Wood Garage Doors

Documents that must accompany this report:

1. W. W. Schaefer Engineering & Consulting drawing No. 1140

Door size & configuration restrictions and assembly requirements:

See drawing No. 1140

Maximum allowable design pressure:

+48/-65 psf

Installation requirements:

See drawing No. 1140

Code compliance:

Code section(s) considered with this evaluation:

FBC Chapters 17 & 24

Wood Coatings:

All wood members shall be of an approved durable species or be treated in an approved method with an approved preservative per applicable codes and standards

Steel coatings:

Coating of steel components is galvanizing and complies with FBC.

Glass:

All glass meets the current ASTM E1300 standard.

Test Standards applicable to the testing of these doors:

TAS-201, 202 & 203

Test Laboratory: Architectural Testing, Inc. (ATI) & Hurricane Test Lab (HTL) (Both currently known as Intertek Testing Services NA, Inc.)

Test report numbers: ATI report No's. 94833.01-201-18 & 02-33946.01 and HTL report No. G507-0402-08

Note: All HVHZ test reports have been signed & sealed by a Florida PE.

Compliance statement:

This product & its installations have been evaluated as required by the applicable Florida product approval rule and the Florida Building Code (FBC) and are found to be in compliance with each the rule, the Florida Building Code & all code required standards referenced here-in.

General report notes & system limitations:

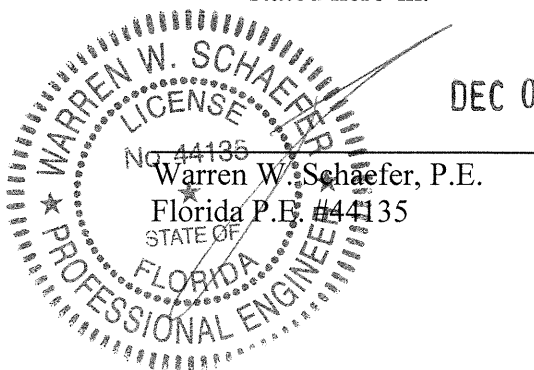
1. All size, configuration & installation conditions shown in this report and the referenced drawing No. 1140 are based off the referenced test reports and/or engineering analysis in accordance with the Florida Building Code.
2. Garage doors shall be constructed in accordance with the descriptions in this report, and the manufacturer's state approved quality assurance entity specifications.
3. This product is approved for use in & outside of the High Velocity Hurricane Zones (HVHZ).
4. Job required design wind pressure shall be calculated in accordance with the Florida Building Code Chapter 16 and ASCE 7 Minimum Design Loads for Buildings and Other Structures (0.85 directionality factor may apply per the current ASCE 7 standard).
5. These garage doors are both small & large missile impact rated for use in wind zone 4 & missile level "D" locations and need not be shuttered.
6. Any change to this product's components and/or assembly or its Florida approval without the knowledge & consent of W. W. Schaefer Engineering & Consulting, P.A. and Warren W. Schaefer, P.E. shall void this evaluation/certification and thus the products Florida approval.

Quality Assurance Entity: Intertek Testing Services NA, Inc.

Disclaimers:

1. The parts, components, assembly & performance of this product, and liability there-of are the sole responsibility of the manufacturer and their quality assurance and shall be as tested unless stated otherwise in this evaluation report or the uploaded approval drawing No. 1140. Neither W. W. Schaefer Engineering & Consulting, P.A. nor Warren W. Schaefer, P.E. claim any responsibility for said parts, components, assembly or performance and shall be deemed responsible only for the evaluation of the product as stated here-in.

DEC 07 2021



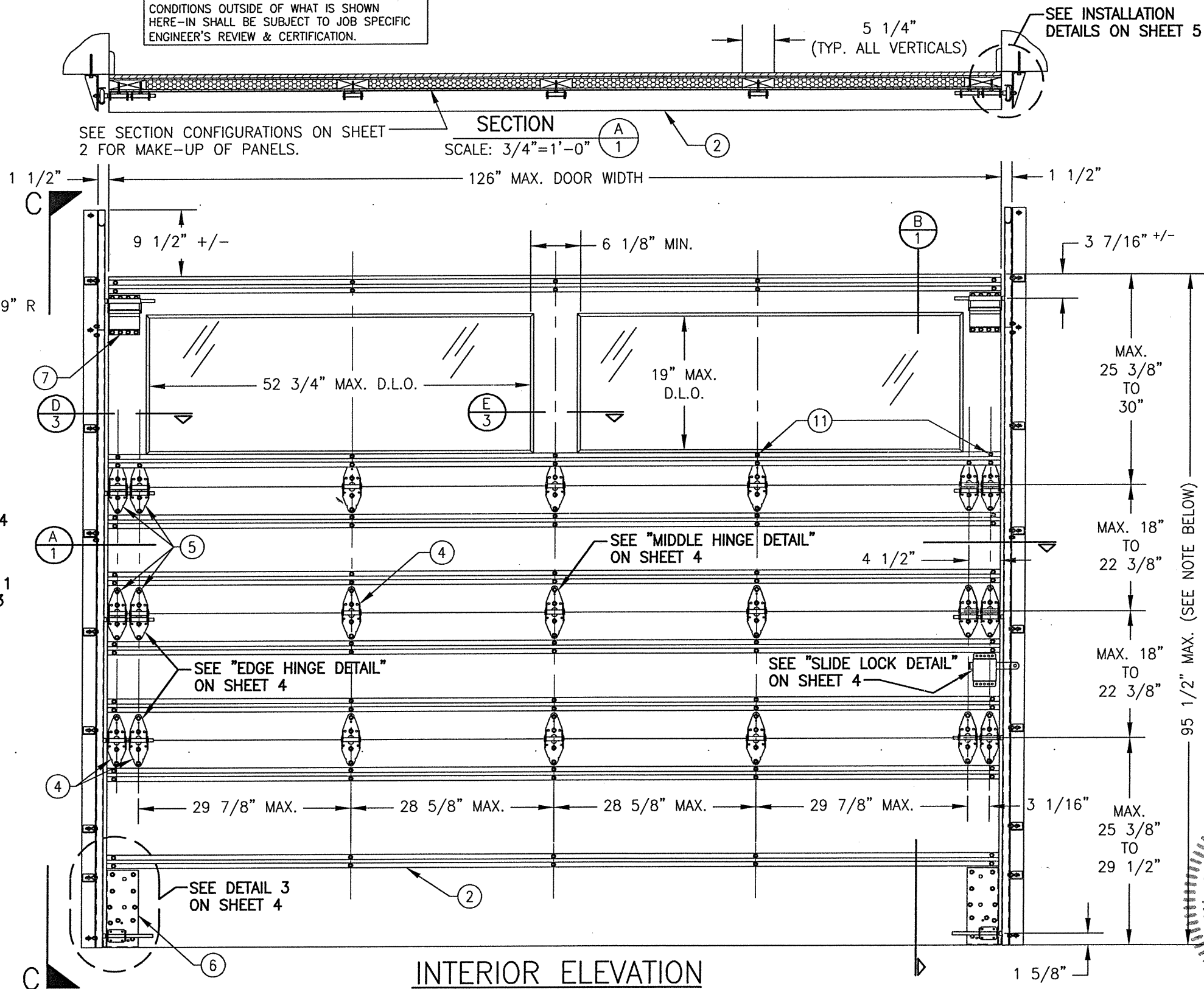
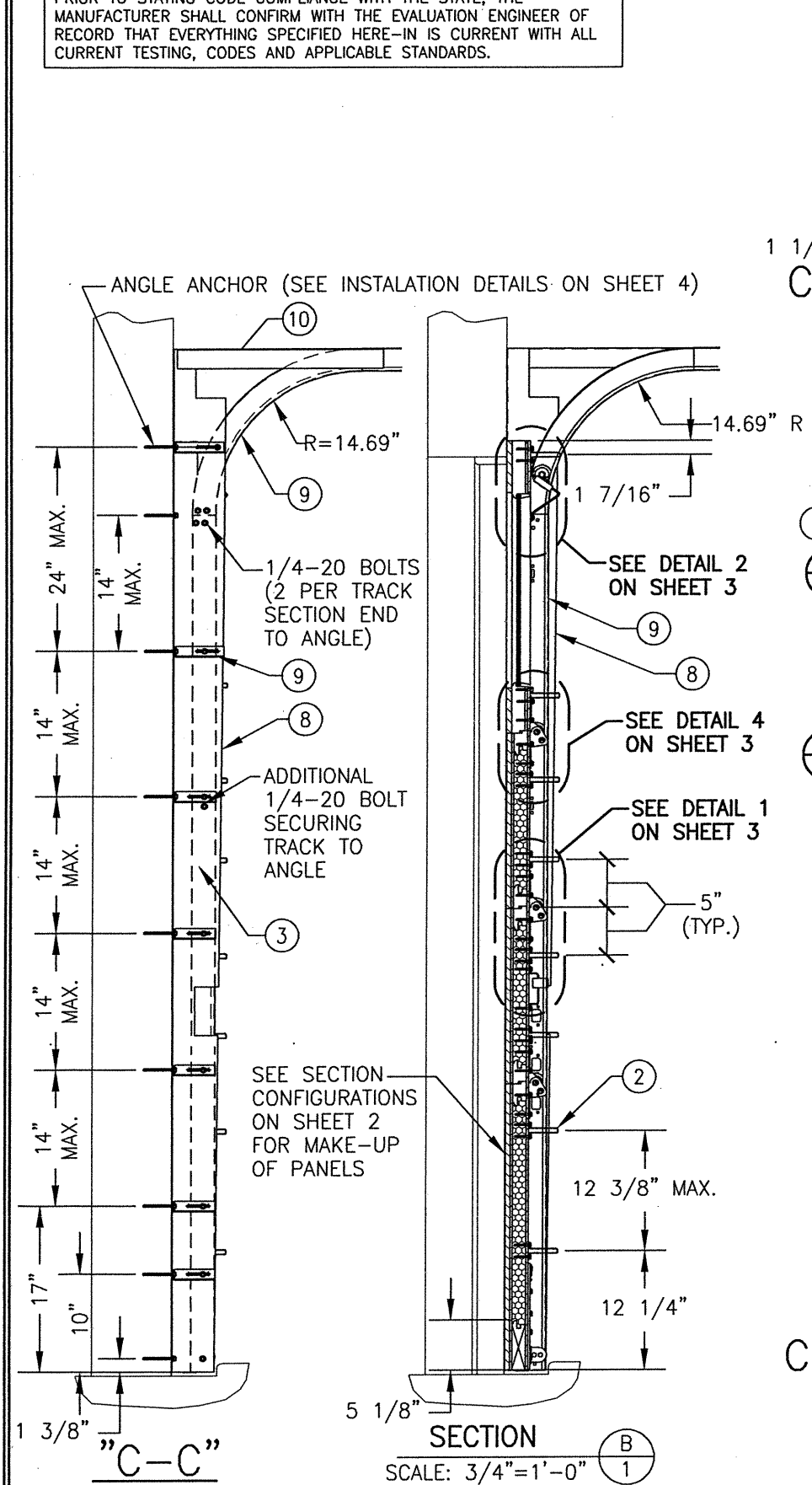
EVALUATION OF THIS PRODUCT IS BASED ON APPLICABLE STANDARDS AND/OR INFORMATION & RESULTS FROM APPLICABLE TEST REPORTS. THE FLORIDA BUILDING CODE VERSION CONSIDERED WITH THIS EVALUATION WAS THAT IN FORCE AT THE TIME OF THE EVALUATION. IN THE EVENT OF CODE VERSION CHANGES/UPDATES OR IN THE EVENT THAT NEW OR ADDITIONAL TESTING IS COMPLETED ON THIS PRODUCT, PRIOR TO STATING CODE COMPLIANCE WITH THE STATE, THE MANUFACTURER SHALL CONFIRM WITH THE EVALUATION ENGINEER OF RECORD THAT EVERYTHING SPECIFIED HERE-IN IS CURRENT WITH ALL CURRENT TESTING, CODES AND APPLICABLE STANDARDS.

ANCHOR/SUBSTRATE EVALUATION NOTE:
ALL ANCHORS IN THEIR SPECIFIED SUBSTRATES HAVE BEEN ANALYZED IN ACCORDANCE WITH THEIR APPLICABLE STANDARD(S) AND ARE FOUND TO BE CAPABLE OF SUPPORTING ALL LOADS IMPOSED ON THEM UNDER THE GUIDELINES OF THIS DOCUMENT. ANY SUBSTRATES OR CONDITIONS OUTSIDE OF WHAT IS SHOWN HERE-IN SHALL BE SUBJECT TO JOB SPECIFIC ENGINEER'S REVIEW & CERTIFICATION.

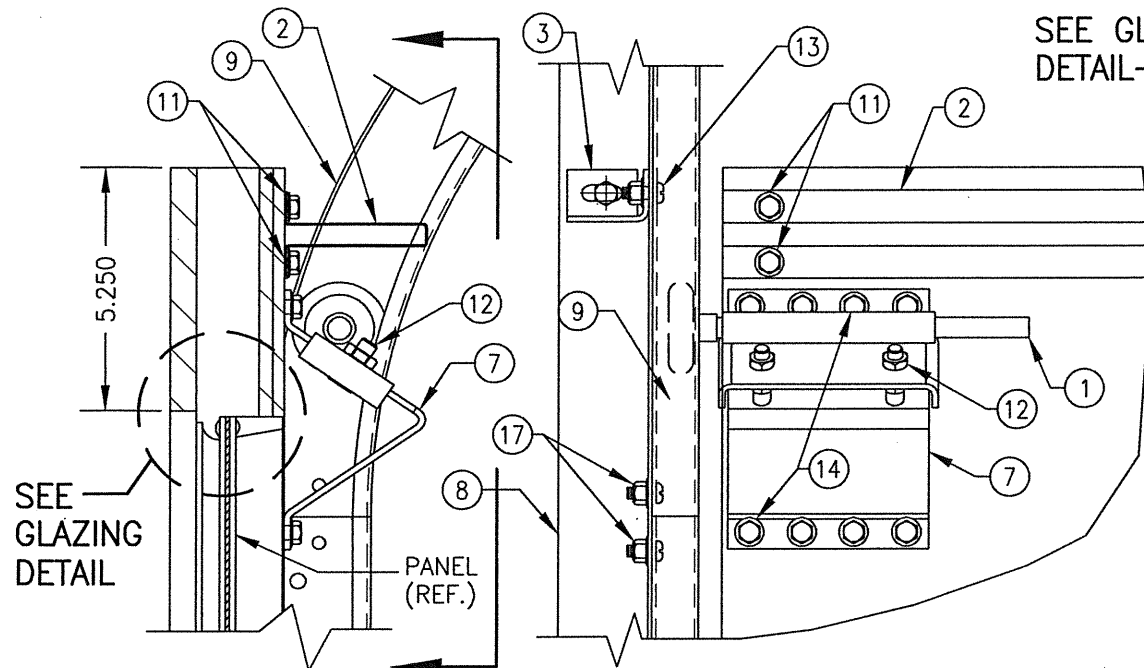
ALLOWABLE DESIGN LOAD	
POSITIVE	NEGATIVE
48 PSF	65 PSF

THESE DRAWINGS ARE APPLICABLE ONLY TO THE PRODUCT SPECIFIED. THEY MAY NOT BE USED FOR THE ASSEMBLY AND/OR INSTALLATION OF ANY OTHER PRODUCT NOR MAY THEY BE USED FOR RATIONAL AND/OR LOCAL APPROVAL OF ANY PRODUCT NOT PRODUCED BY THE MANUFACTURER STATED ON THESE DRAWINGS.

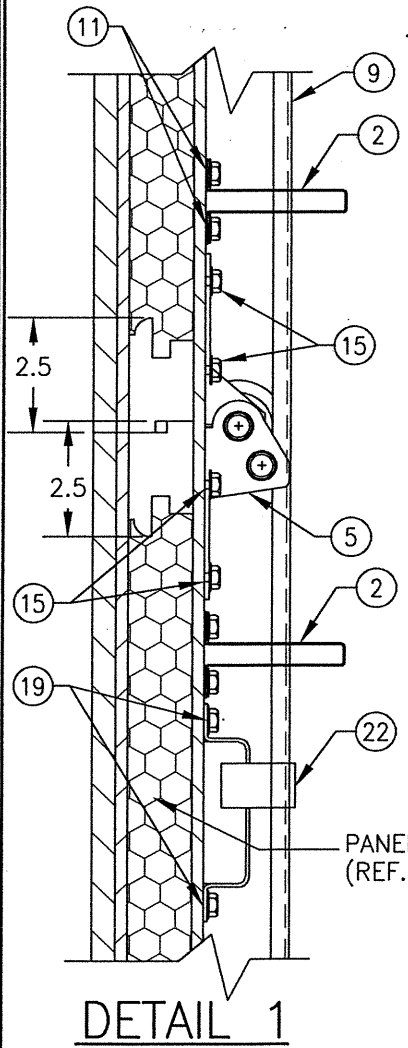
DRAWN BY: W.W.S.		CHECKED BY: W.W.S.	
PLOT: 1=16		DATE: 07/24/02	
DATE	BY	REVISION	DESCRIPTION
11/15/10	WWS	C1	ADD DUPONT BUTYCE GLASS
11/12/14	WWS	D1	MANUFACTURER NAME CHANGE
12/12/16	WWS	E1	UPDATE TO CURRENT STANDARDS
11/13/18	WWS	F1	MANUFACTURER NAME CHANGE
12/07/21	WWS	G1	CHANGE TO STATE APPROVAL
DRAWING TITLE 10'-6" WIDE GLAZED HURRICANE IMPACT WOOD GARAGE DOORS MANUFACTURER DESIGNER PRODUCTS, LLC dba CAMBEK DESIGNER DOORS 702 TROY ST. RIVER FALLS, WI 54022 800-241-0525 CONSULTANTS W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809) 7480 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424 WARREN W. SCHAEFER, P.E. P.E. NO. 44135 PROFESSIONAL ENGINEER			
DRAWING NO. 1140		REV. G	
SHEET NO. 1		OF 5	



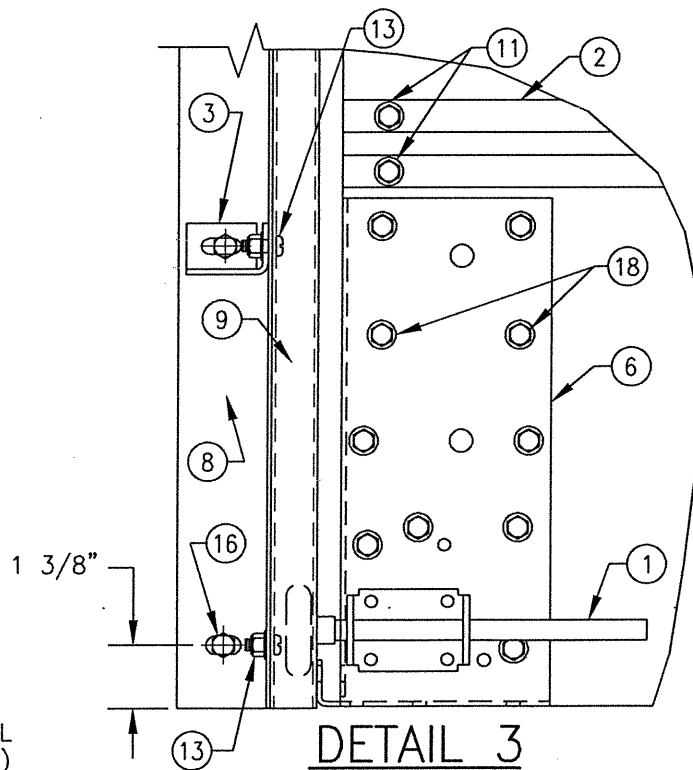
NOTE: DOOR HEIGHT MAY BE INCREASED BY UP TO 22 3/8" INCREMENTS TO A MAXIMUM OF 24 FT. PROVIDING ADDITIONAL CENTER PANEL(S) IS PLACED.
2-LIGHT DOOR SHOWN; SEE SHEET 2 FOR 3-LIGHT CONDITION.



DETAIL 2

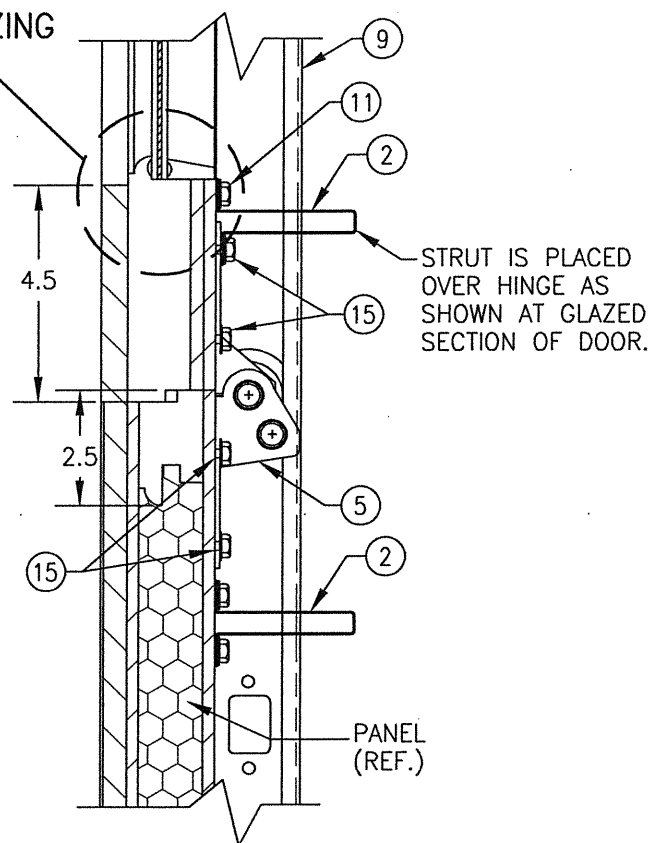


DETAIL 1

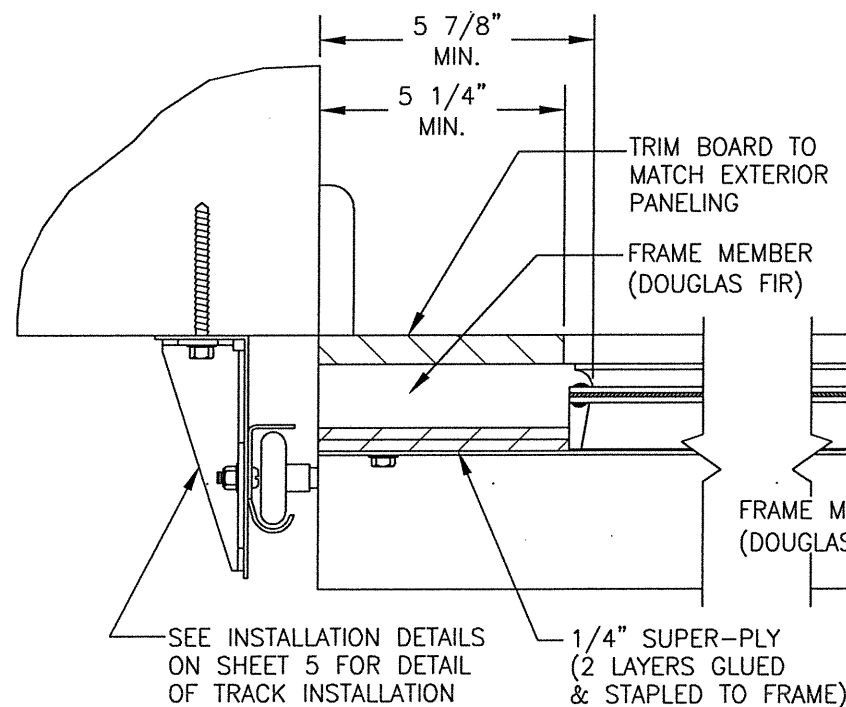


DETAIL 3

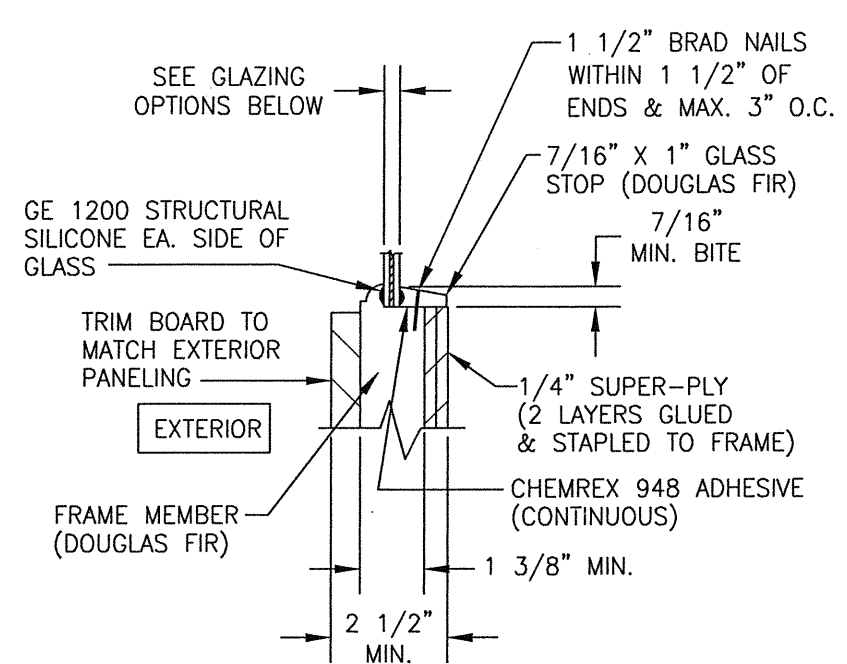
SEE GLAZING DETAIL



DETAIL 4



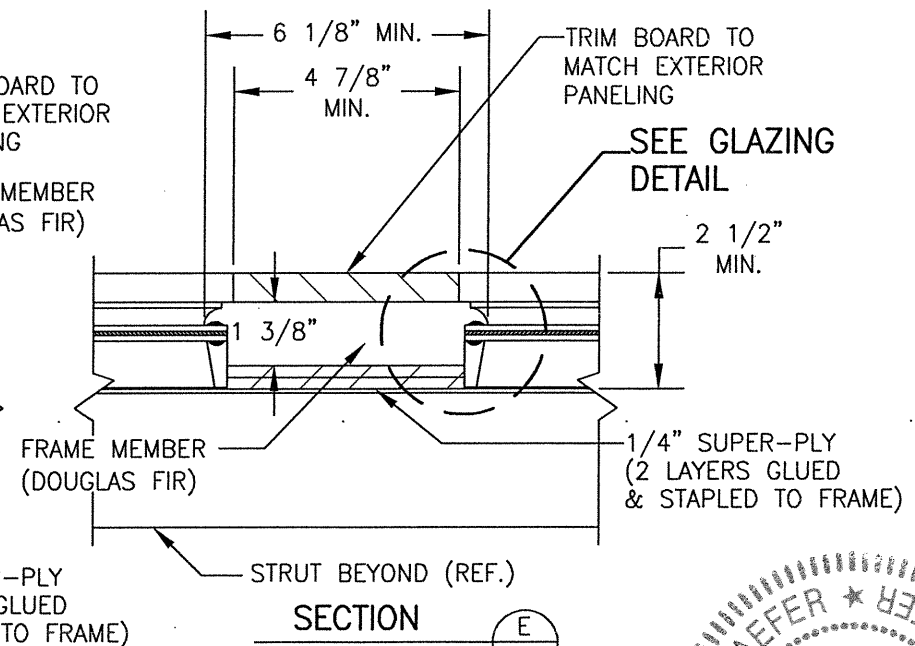
SECTION D
SCALE: 1/4 FULL



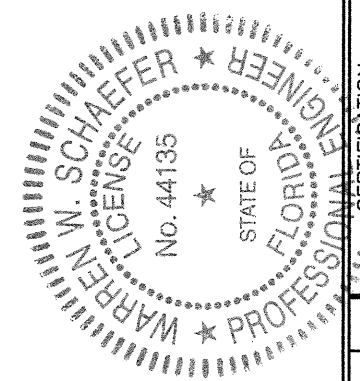
GLAZING DETAIL

GLAZING OPTIONS:

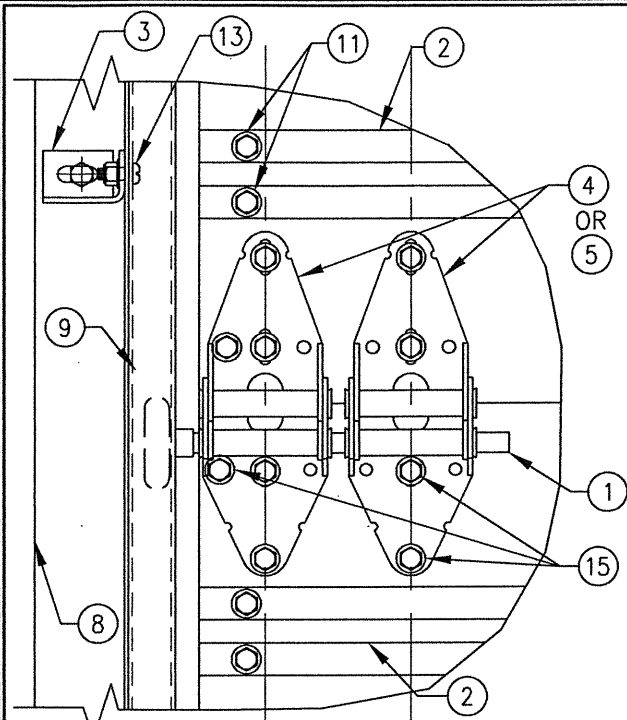
- OPTION 1: 3/8" LAMINATED GLASS (1/8" AN/0.09 EASTMAN CHEM. CO. SAFLEX/1/8" AN)
 OPTION 2: 3/8" LAMINATED GLASS (1/8" AN/0.09 KURARAY (PREVIOUSLY DUPONT) BUTACITE PVB/1/8" AN)



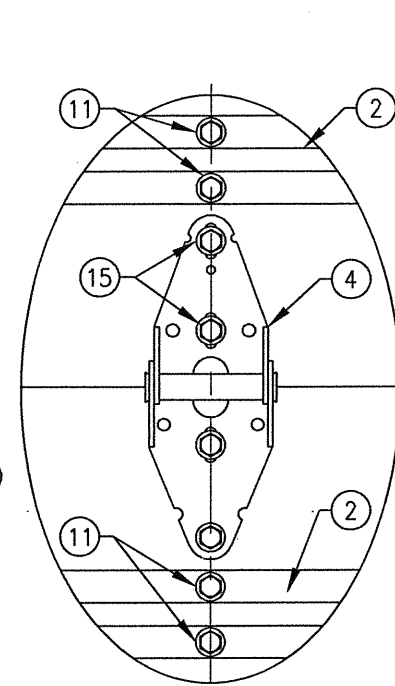
SECTION E
SCALE: 1/4 FULL



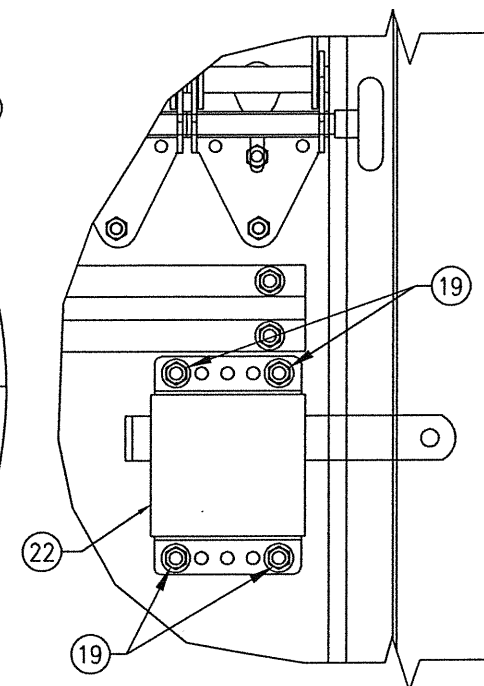
DRAWING TITLE 10'-6" WIDE GLAZED HURRICANE IMPACT WOOD GARAGE DOORS		DRAWN BY: W.W.S.	CHECKED BY: W.W.S.
CONSULTANTS W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809)		DATE: 07/24/02	
MANUFACTURER DESIGNER PRODUCTS, LLC dba CAMBEK DESIGNER DOORS			
7460 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424			
902 TROY ST. RIVER FALLS, WI 54022 800-241-0525			
CERTIFICATION DEC 07 2021			
WARREN W. SCHAEFER, P.E. P.E. NO. 44135			
DRAWING NO. 1140	REV. G		
SHEET NO. 3	OF 5		



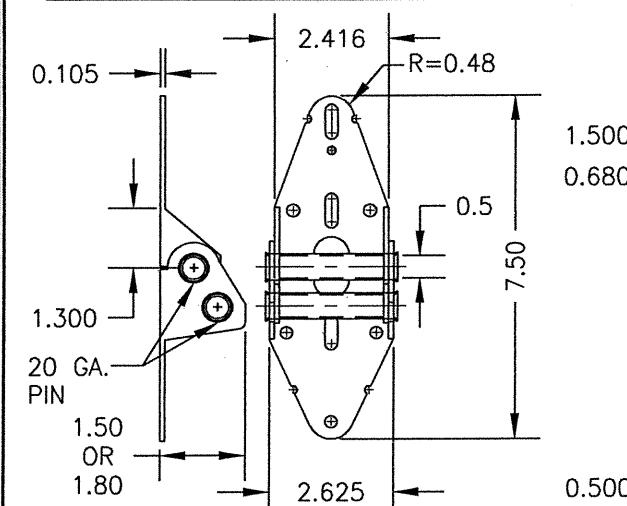
EDGE HINGE DETAIL



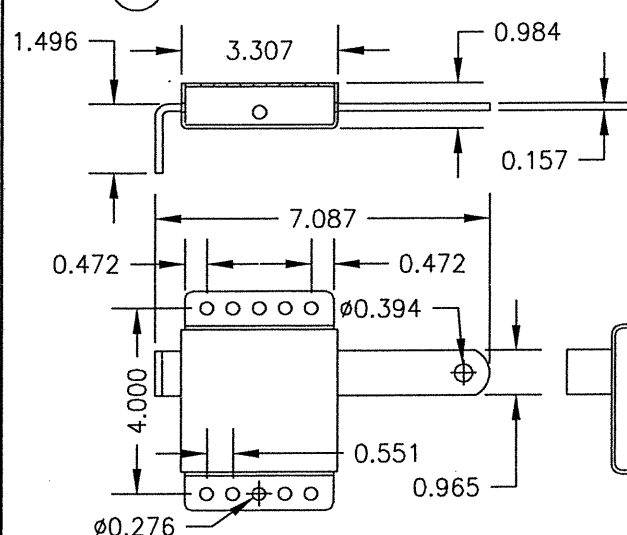
MIDDLE HINGE DETAIL



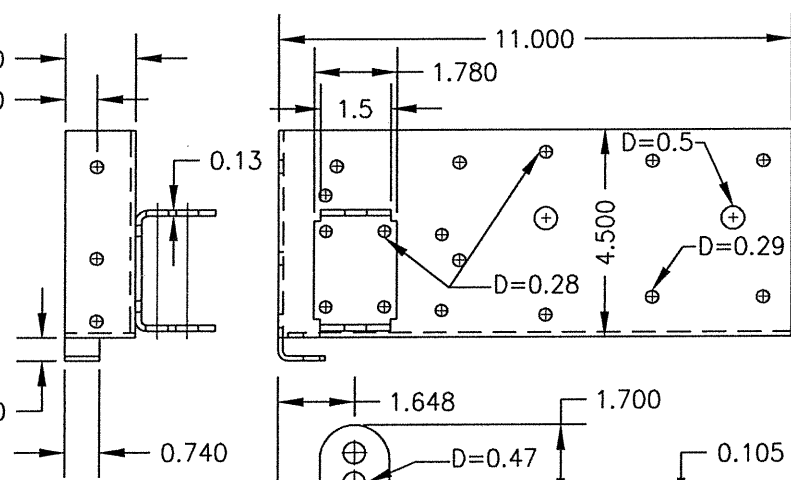
SLIDE LOCK DETAIL
(MAY BE LOCATED AT
EITHER SIDE OF DOOR)



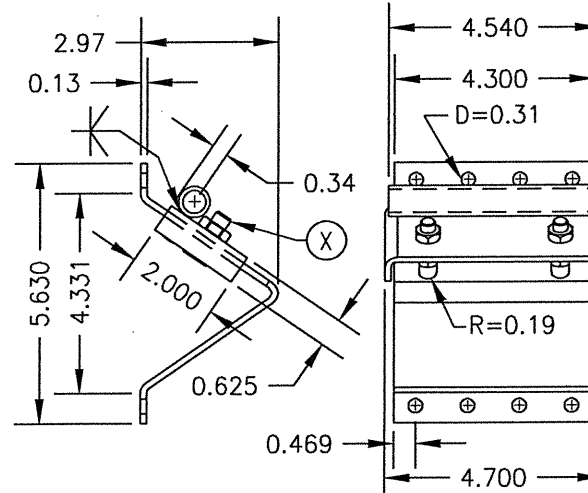
DOUBLE PIN HINGE



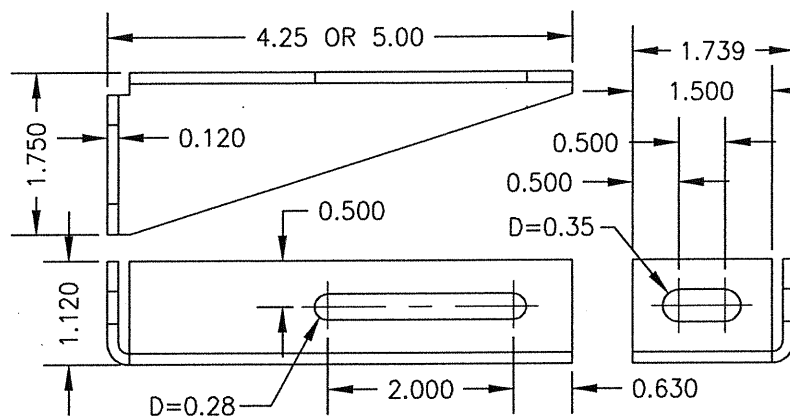
SLIDE LOCK



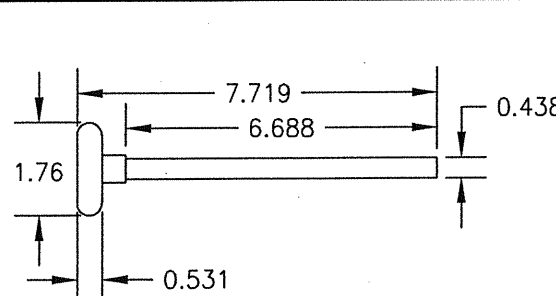
BOTTOM CABLE BRACKET



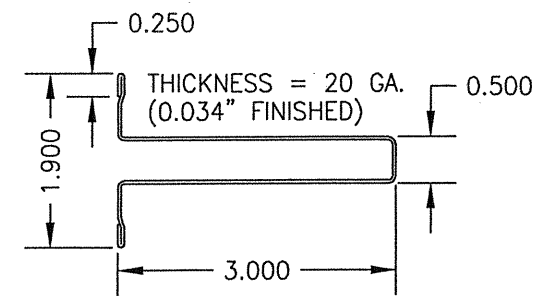
ADJUSTABLE TOP BRACKET



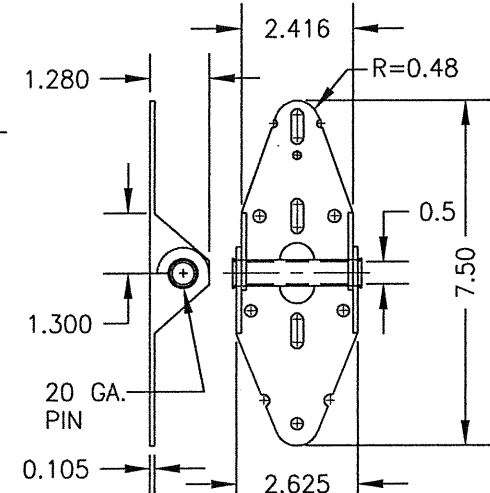
HURRICANE BRACKET



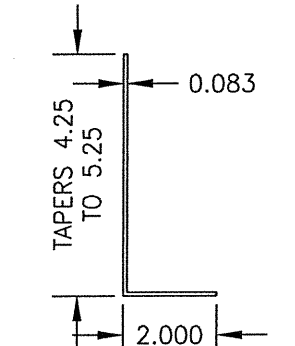
NYLON ROLLER WITH
AISL STEEL ROD



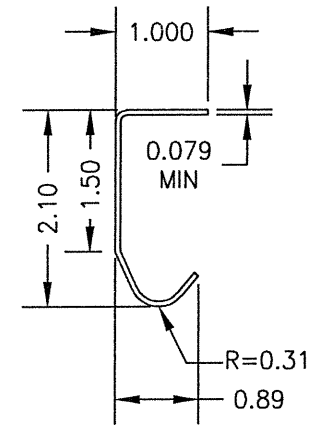
3" REINFORCING STRUT



SINGLE PIN HINGE



TRACK ANGLE



TRACK

DRAWING TITLE	10'-6" WIDE GLAZED HURRICANE IMPACT WOOD GARAGE DOORS		DRAWN BY:	W.W.S.	CHECKED BY:	W.W.S.
			PLOT:	1=4	DATE:	07/24/02
CONSULTANTS			DATE		BY	
			REVISION DESCRIPTION			
MANUFACTURER			NO.			
DRAWING NO.						
SHEET NO.						

DESIGNER PRODUCTS, LLC
dba CAMBEK DESIGNER DOORS
702 TROY ST.
RIVER FALLS, WI 54022
800-241-0525

W. W. SCHAEFER ENGINEERING
& CONSULTING, P.A. (CA 6809)
7480 150TH COURT NORTH
PALM BEACH GARDENS, FL 33418
PHONE: 561-744-3424



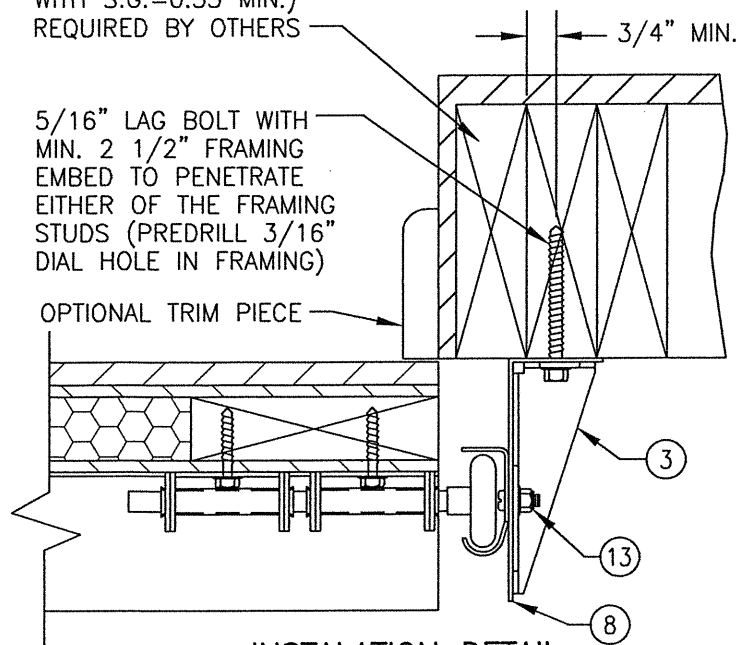
DEC 07 2021
WARREN W. SCHAEFER, P.E.
P.E. NO. 44135

DRAWING NO. 1140
REV. G
SHEET NO. 4 OF 5

MIN. (4) 2X_ STUDS (SYP
WITH S.G.=0.55 MIN.)
REQUIRED BY OTHERS

5/16" LAG BOLT WITH
MIN. 2 1/2" FRAMING
EMBED TO PENETRATE
EITHER OF THE FRAMING
STUDS (PREDRILL 3/16"
DIAL HOLE IN FRAMING)

OPTIONAL TRIM PIECE

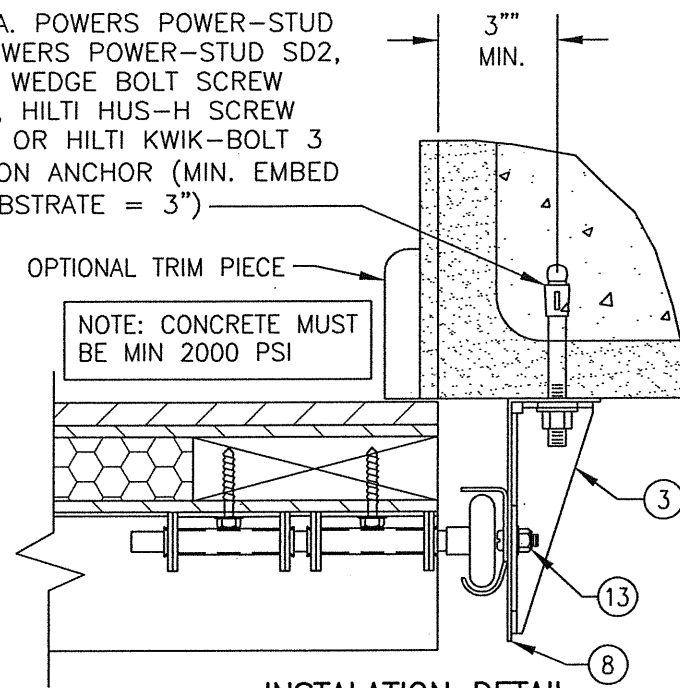


**INSTALLATION DETAIL
DIRECT TO WOOD FRAMING**

3/8" DIA. POWERS POWER-STUD
SD1, POWERS POWER-STUD SD2,
POWERS WEDGE BOLT SCREW
ANCHOR, HILTI HUS-H SCREW
ANCHOR OR HILTI KWIK-BOLT 3
EXPANSION ANCHOR (MIN. EMBED
INTO SUBSTRATE = 3")

OPTIONAL TRIM PIECE

NOTE: CONCRETE MUST
BE MIN 2000 PSI



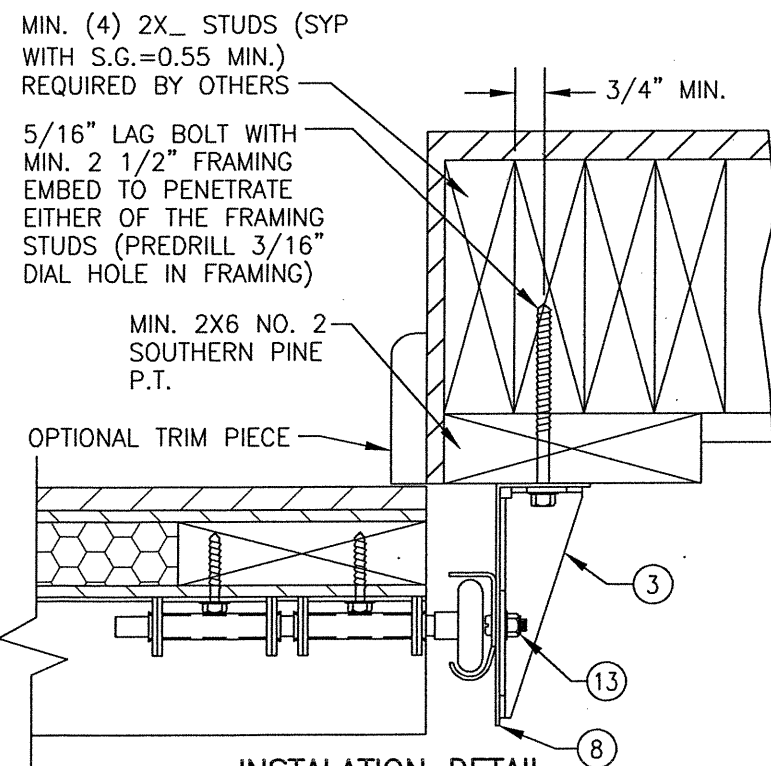
**INSTALLATION DETAIL
DIRECT TO FILLED BLOCK
OR SOLID CONCRETE**

3/8" DIA. POWERS POWER-STUD
SD1, POWERS POWER-STUD SD2,
POWERS WEDGE BOLT SCREW
ANCHOR, HILTI HUS-H SCREW
ANCHOR OR HILTI KWIK-BOLT 3
EXPANSION ANCHOR (MIN. EMBED
INTO SUBSTRATE = 3")

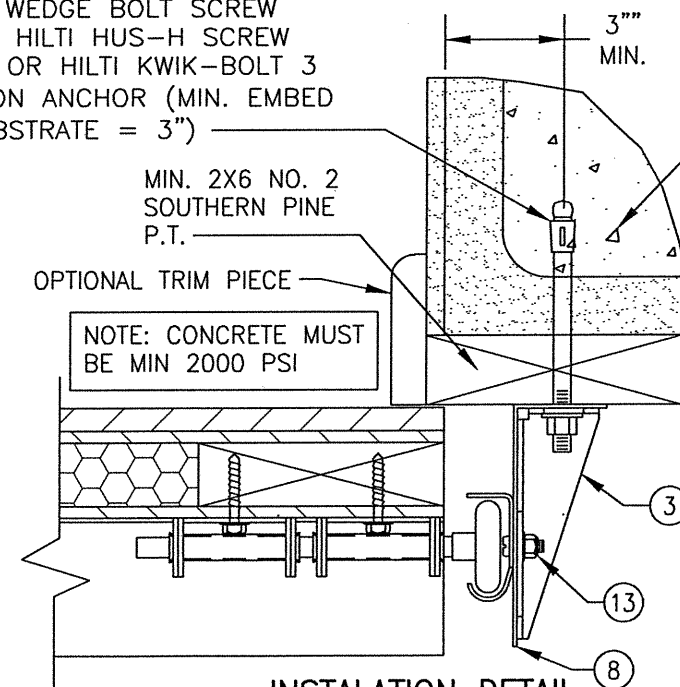
MIN. 2X6 NO. 2
SOUTHERN PINE
P.T.

OPTIONAL TRIM PIECE

NOTE: CONCRETE MUST
BE MIN 2000 PSI



**INSTALLATION DETAIL
SHIMMED TO WOOD FRAMING**



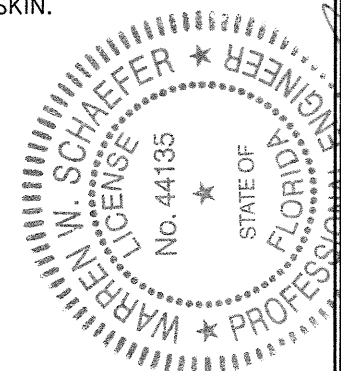
**INSTALLATION DETAIL
SHIMMED TO FILLED BLOCK
OR SOLID CONCRETE**

C90 CONCRETE BLOCK
WITH MIN. 2000 PSI
GROUTED CELLS OR
MIN. 2500 PSI SOLID
CONCRETE

ITEM #	PART	ITEM DESCRIPTION	MANUFACTURER/NOTES
PARTS & HARDWARE			
1	1030-0269	ROLLER	NYLON W/AISI 1045 STL. ROD
2	1030-0213	3" REINFORCING STRUT (2 PER PANEL)	GALV. 80 KSI STEEL
3	1030-0267 1030-0268	HURRICANE BRACKET	GALV. 36 KSI STEEL
4	1030-0123	SINGLE ROLLER HINGE	GALV. 36 KSI STEEL
5	1030-0124 1030-0125	DOUBLE ROLLER HINGE	GALV. 36 KSI STEEL
6	1030-0084	BOTTOM CABLE BRACKET	GALV. 36 KSI STEEL
7	1030-0237	ADJUSTABLE TOP BRACKET	GALV. 36 KSI STEEL
8	1030-0065	TRACK ANGLE (TAPERED)	GALV. 33 KSI STEEL
9	1030-0227	VERTICAL TRACK (HORIZ. TRACK SIMILAR)	GALV. 33 KSI STEEL
10	1030-0063	HORIZONTAL REINFORCEMENT ANGLE	GALV. 33 KSI STEEL
MISCELLANEOUS FASTENERS			
11	-	1/4 X 1 1/2 HEX WASHER HEAD LAG SCREW	ALIGNED WITH HINGES CENTERLINES PER ELEVATION
12	-	3/8-16 BOLT	2 AT EACH TOP BRACKET
13	-	1/4-20 X 5/8 RIB NECK TRACK BOLT	1 PER HURRICANE BRACKET TO TRACK
14	-	1/4 X 1 1/2 HEX WASHER HEAD LAG SCREW	8 PER TOP BRACKET
15	-	1/4 X 1 1/2 HEX WASHER HEAD LAG SCREW	4 PER HINGE (6 PER EDGE HINGE)
16	-	TRACK ANCHOR AT TOP & BOTTOM OF TRACK ANGLE	PER INSTALLATION DETAIL W/O BRACKET
17	-	1/4-20 X 5/8 RIB NECK TRACK BOLT	4 AT TRACK SEAM (TRACK TO ANGLE)
18	-	1/4 X 1 1/2 HEX WASHER HEAD LAG SCREW	10 PER BOTTOM CABLE BRACKET
19	-	1/4 X 1 1/2 HEX WASHER HEAD LAG SCREW	4 PER SLIDE LOCK
LOCKING HARDWARE			
22	1030-0199	SLIDE LOCK	STEEL 1018 ZINC PLATED

PANEL NOTES:

- HORIZONTAL & VERTICAL FRAME MEMBERS ARE EDGE COPED, BUTTED TOGETHER & GLUED WITH "GORILLA GLUE." IN ADDITION, THE VERTICAL MEMBERS ARE SCREWED TO THE HORIZONTAL WITH 2 NO. 8 X 2" SCREWS ANGLED FROM THE BACK FACE OF THE DOOR.
- SUPER-PLY PLYWOOD IS STAPLED TO THE FRAME WITH 18 GA. X 5/8" X 1/4" STAPLES AND GLUED WITH CHEMREX 948 URETHANE ADHESIVE.
- THE EXTERIOR PANEL/STRIPS ARE ATTACHED TO THE SUPER-PLY AND FRAME WITH 18 GA. X 1 1/2" X 1/4" STAPLES AND CHEMREX 948 URETHANE ADHESIVE.
- EXTERIOR FINISH WOOD (PANELS/STRIPS) USED IN TESTING WAS NO. 2 WESTERN RED CEDAR WITH A SPECIFIC GRAVITY OF G = 0.32. OTHER WOOD SPECIES APPLICABLE FOR USE WITH THIS PRODUCT ARE THOSE WITH A SPECIFIC GRAVITY OF 0.32 OR GREATER.
- ALL INTERIOR FRAME MEMBERS SHALL BE NO. 2 DOUGLAS FIR WITH G = 0.49.
- IT IS THE OPTION OF DESIGNER DOOR TO INCORPORATE AN INTERIOR FINISH FACE ON ANY DOOR. THIS FACE SHALL BE EQUAL TO THOSE EXTERIOR FACES APPROVED PER THE DETAILS ON THIS DRAWING AND BE SECURED TO THE DOOR IN THE SAME MANNER AS THE EXTERIOR FACE. THIS INTERIOR FACE SHALL BE AN ADDITIONAL LAYER AND SHALL NOT REPLACE ANY LAYER SHOWN IN THE DETAILS ON THIS SHEET. ALSO, ALL HARDWARE LAG SCREWS SHALL BE LENGTHENED TO MIN. 2 1/4" TO ALLOW FOR THE ADDITIONAL THICKNESS OF THE ADDED INTERIOR SKIN.



DRAWN BY: W.W.S.	CHECKED BY: W.W.S.
PLOT: 1=4	DATE: 07/24/02
DATE	BY
REVISION DESCRIPTION	NO.
DRAWING TITLE 10'-6" WIDE GLAZED HURRICANE IMPACT WOOD GARAGE DOORS	
MANUFACTURER DESIGNER PRODUCTS, LLC dba CAMBEK DESIGNER DOORS 702 TROY ST. RIVER FALLS, WI 54022 800-241-0525	CONSULTANTS W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809) 7480 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424
DEC 07 2021 WARREN W. SCHAEFER, P.E. P.E. NO. 44135	
DRAWING NO. 1140	REV. G
SHEET NO. 5 OF 5	