

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-398

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 Wood Garage Doors

Documents that must accompany this report:

1. W. W. Schaefer Engineering & Consulting drawing No. 1077

Door size & configuration restrictions and assembly requirements:

See drawing No. 1077

Maximum allowable design pressure:

+48/-65 psf

Installation requirements:

See drawing No. 1077

Code compliance:

Code section(s) considered with this evaluation:

FBC Chapters 17

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.

Test Standards applicable to the testing of these doors:

TAS-201, 202 & 203

Test Laboratory: Architectural Testing, Inc. (ATI) (Currently known as Intertek Testing Services NA, Inc.)

Test report numbers: ATI report No. 02-33027.01

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. 1077 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. 1077. 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

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



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.

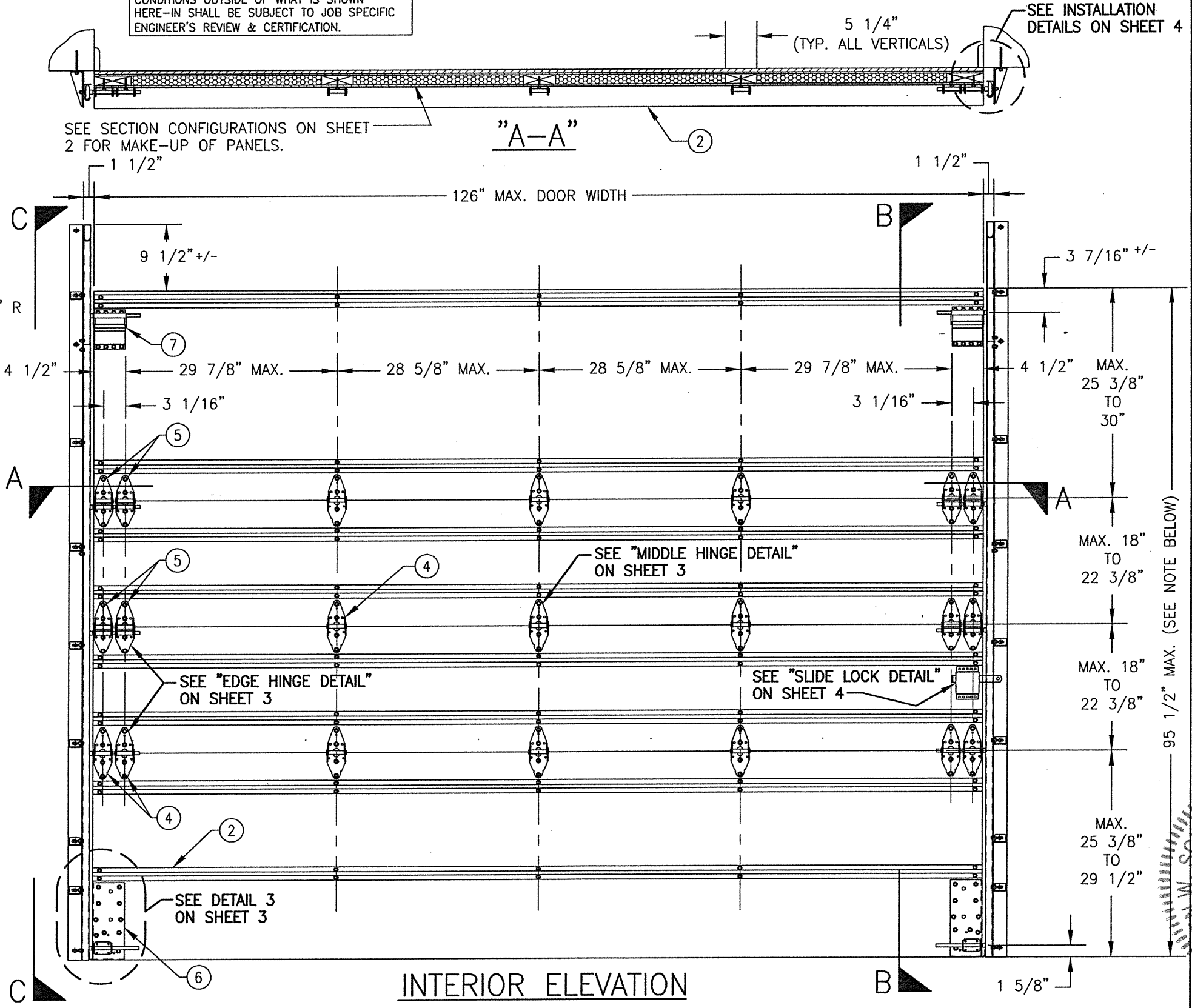
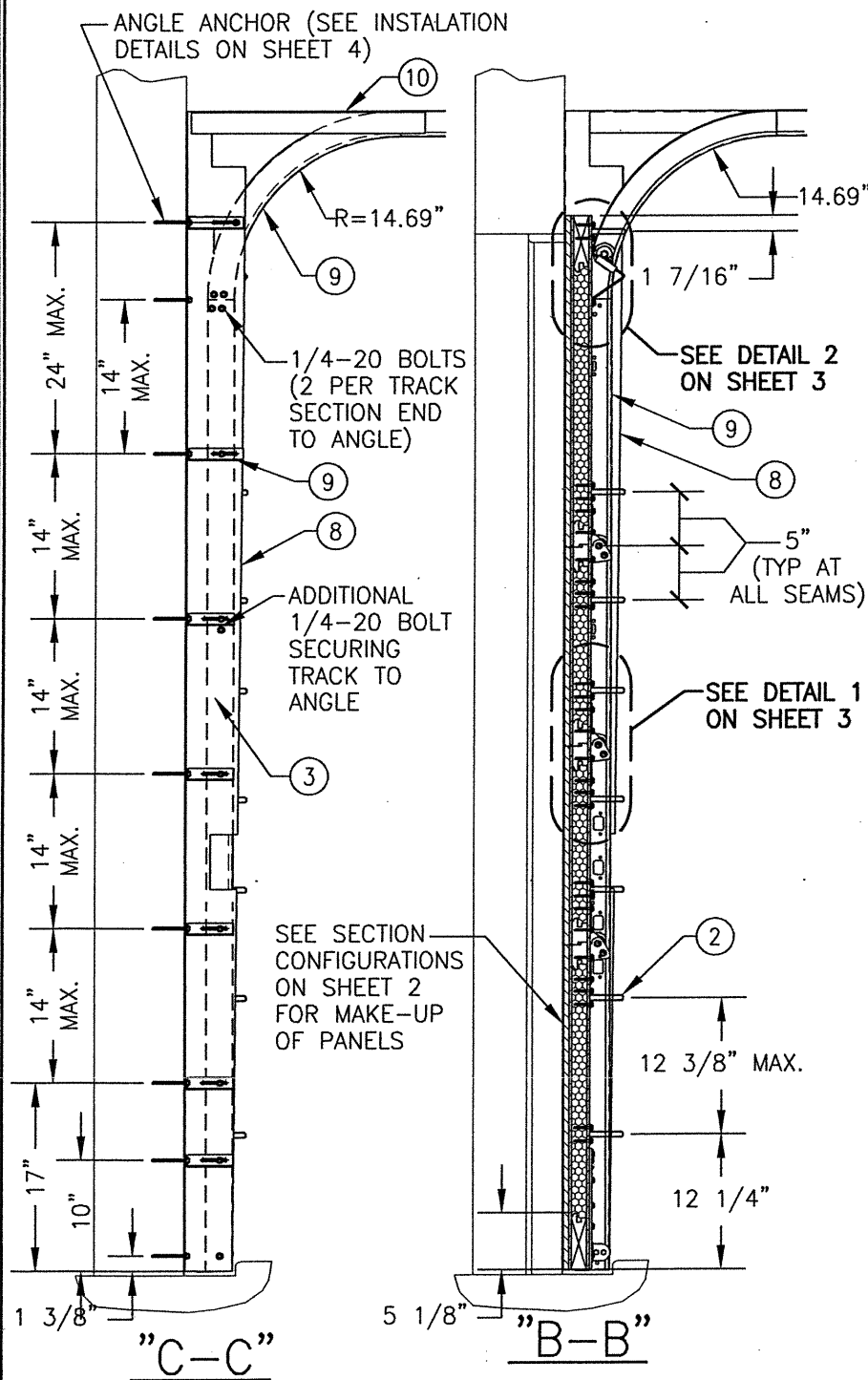
ANCHOR/SUBSTRATE EVALUATION NOTE:
ALL ANCHORS IN THEIR SPECIFIED SUBSTRATES HAVE BEEN ANALYZED IN ACCORDANCE WITH THEIR APPLICABLE STANDARD(S) AND ARE FOUND TO BE CAPABLE OF SUPPORTING ALL LOADS IMPOSED ON THEM UNDER THE GUIDELINES OF THIS DOCUMENT. ANY SUBSTRATES OR CONDITIONS OUTSIDE OF WHAT IS SHOWN 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: 05/24/02	
NO.	REVISION	DESCRIPTION	DATE
B1	UPDATE TO CURRENT STANDARDS	WRM	09/27/11
B2	ADD SLIDE LOCK	WRM	11/09/11
C1	MANUFACTURER NAME CHANGE	WRM	11/12/14
D1	UPDATE TO CURRENT STANDARDS	WWS	12/12/16
E1	MANUFACTURER NAME CHANGE	WWS	11/13/18
F1	CHANGE TO STATE APPROVAL	WWS	12/07/21



INTERIOR ELEVATION

NOTE: DOOR HEIGHT MAY BE INCREASED BY UP TO 22 3/8" INCREMENTS PROVIDING ADDITIONAL CENTER PANEL(S) IS PLACED.

10'-6" WIDE HURRICANE IMPACT WOOD GARAGE DOORS

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

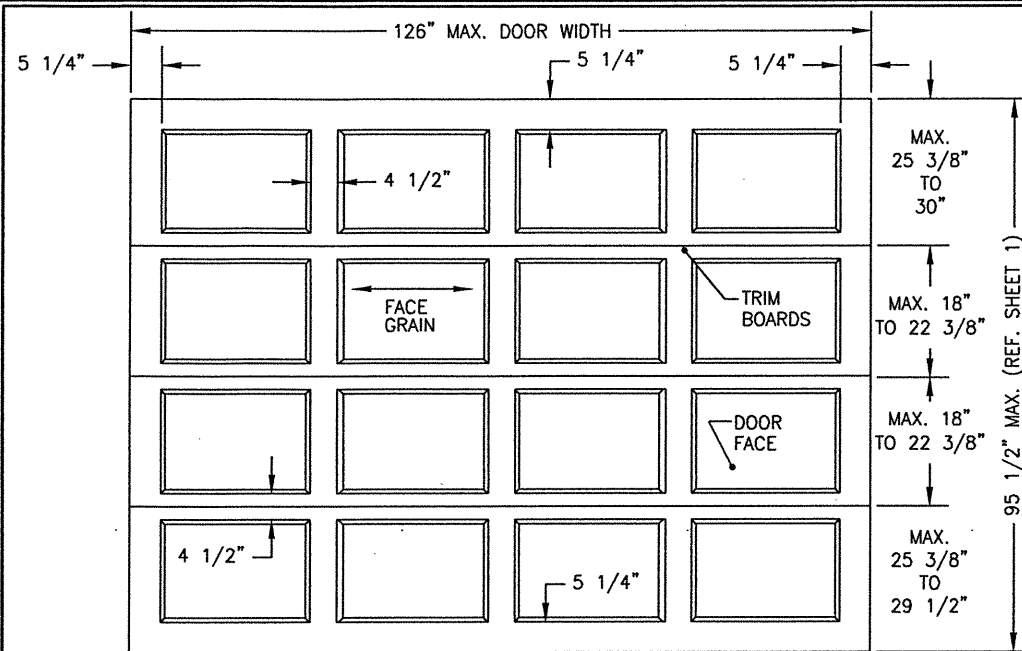
MANUFACTURER

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

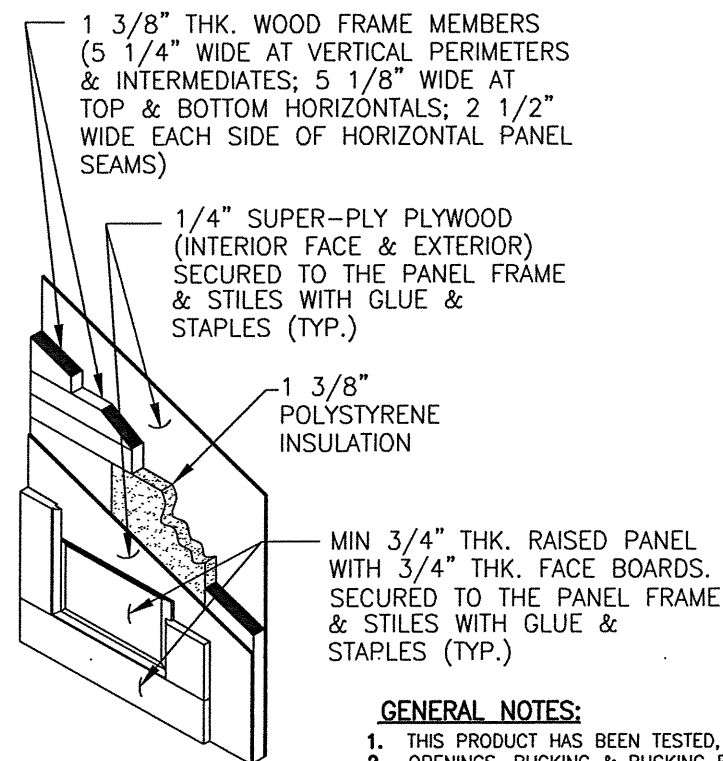
DRAWING NO. 1077
SHEET NO. 1 OF 4

REV. F

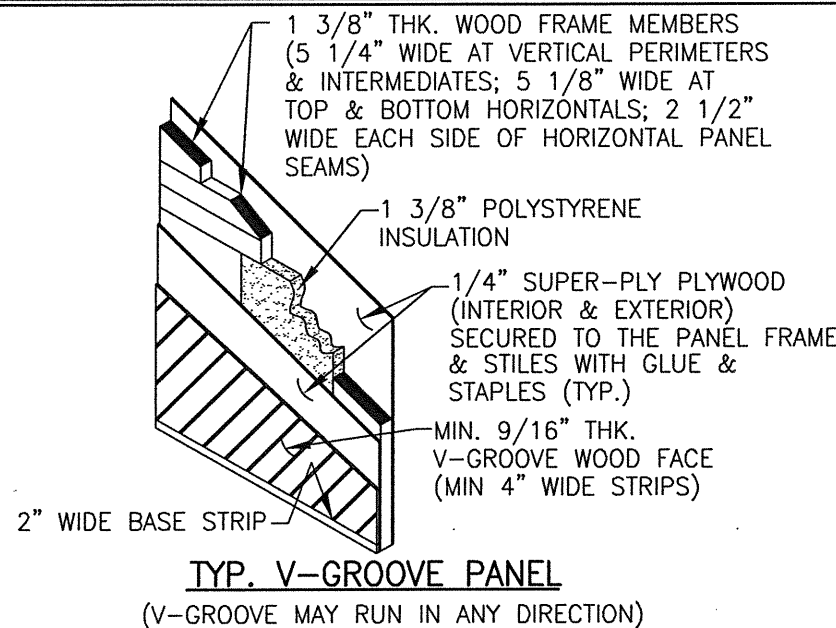
CERTIFICATION
I, W. SCHAEFER, P.E., CERTIFY THAT I AM A PROFESSIONAL ENGINEER IN THE STATE OF FLORIDA, LICENSE NO. 1077, AND I HAVE PREPARED THIS DRAWING IN ACCORDANCE WITH THE FLORIDA ENGINEERING BOARD RULES AND REGULATIONS.



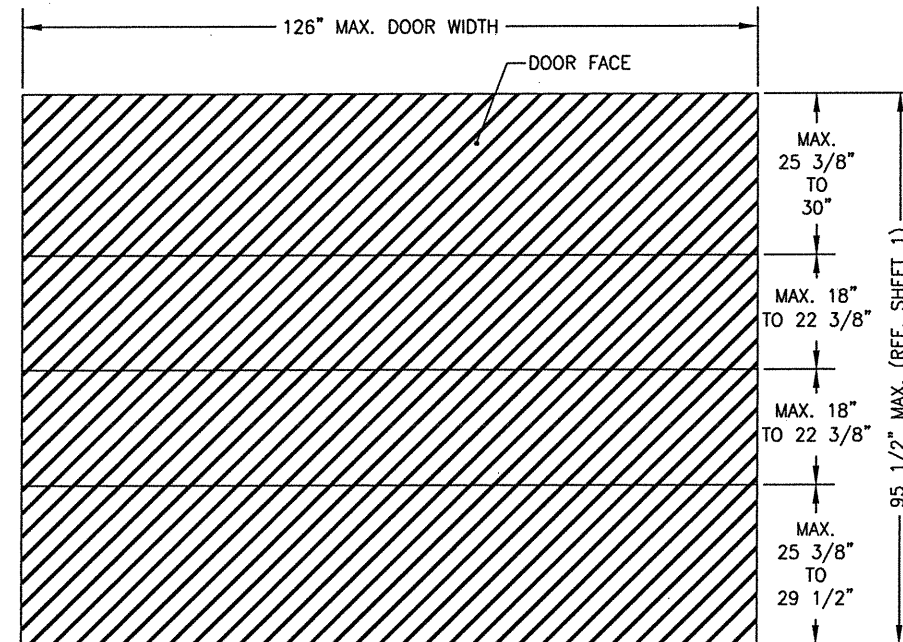
**TYP. RAISED PANEL
EXTERIOR ELEVATION**



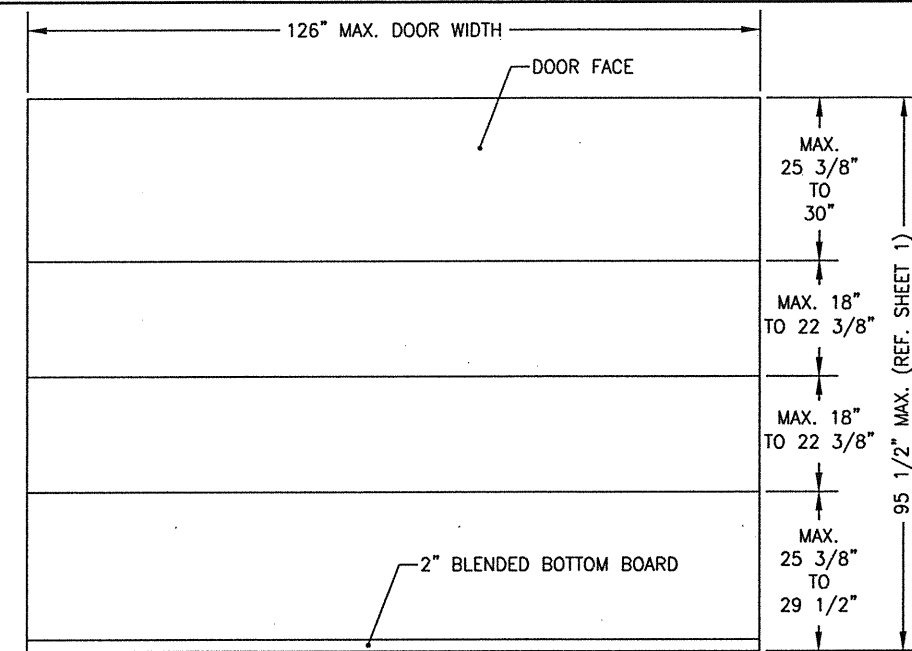
TYP. RAISED PANEL



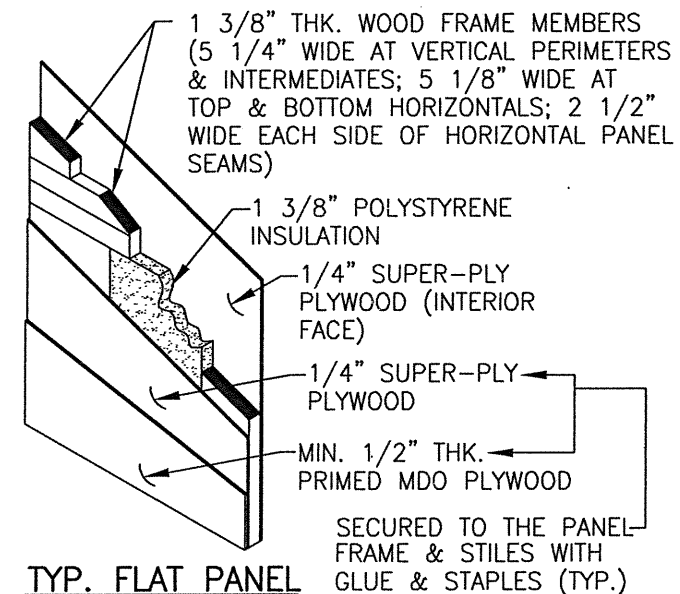
**TYP. V-GROOVE PANEL
(V-GROOVE MAY RUN IN ANY DIRECTION)**



**TYP. V-GROOVE PANEL
EXTERIOR ELEVATION
(V-GROOVE MAY RUN IN ANY DIRECTION)**



**TYP. FLAT PANEL
EXTERIOR ELEVATION**

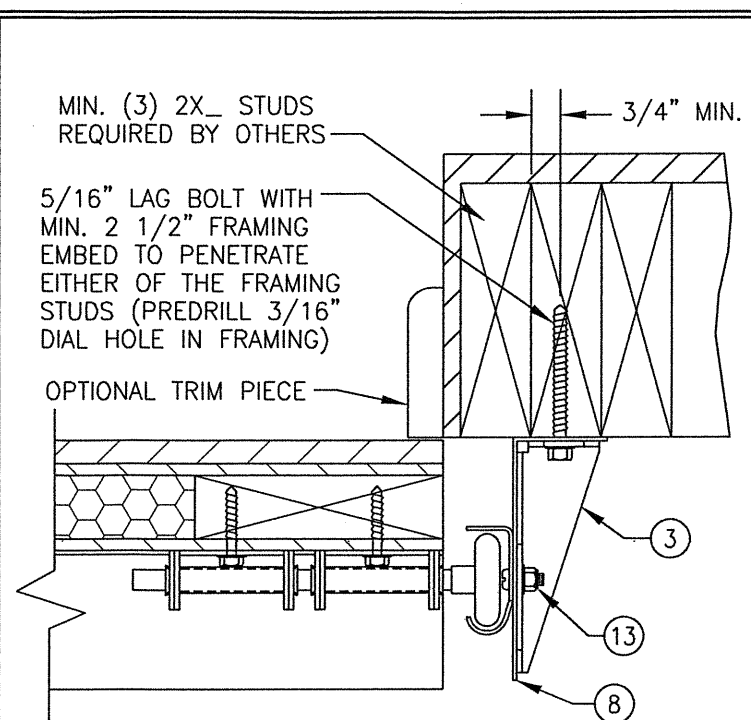


TYP. FLAT PANEL

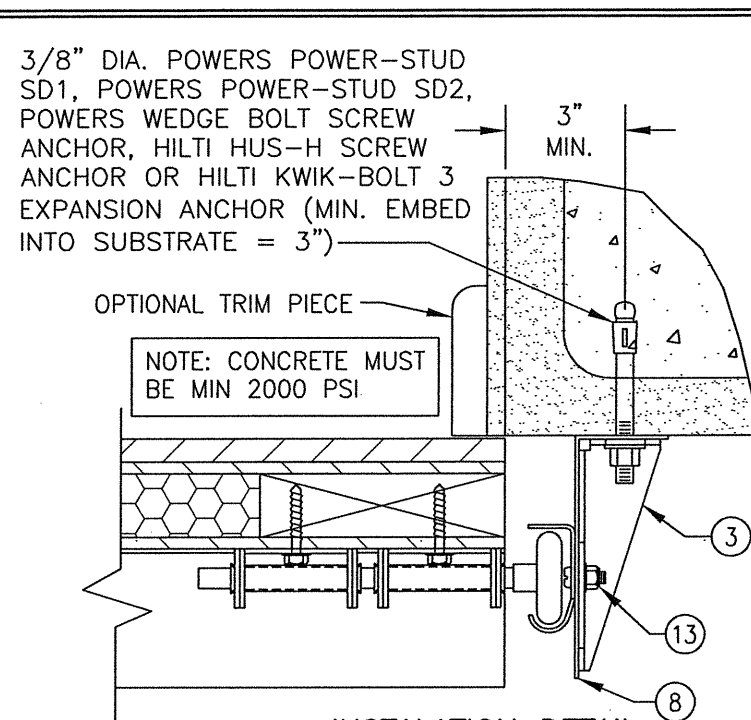
GENERAL NOTES:

1. THIS PRODUCT HAS BEEN TESTED, ANALYZED & APPROVED FOR DESIGN PRESSURES NOT TO EXCEED THOSE SHOWN IN THE "ALLOWABLE DESIGN PRESSURE TABLE(S)".
2. OPENINGS, BUCKING & BUCKING FASTENERS MUST BE PROPERLY DESIGNED & INSTALLED TO TRANSFER WIND LOADS TO THE STRUCTURE.
3. ALL HARDWARE & FASTENERS SHALL BE IN ACCORDANCE WITH THESE DRAWINGS & SHALL NOT VARY UNLESS SPECIFICALLY MENTIONED ON THE DRAWINGS. SPECIFIED ANCHOR EMBED TO BASE MATERIAL SHALL BE BEYOND WALL FINISH OR STUCCO.
4. THIS PRODUCT HAS BEEN DESIGNED IN ACCORDANCE WITH AND MEETS THE REQUIREMENTS OF THE FLORIDA BUILDING CODE (FBC) INCLUDING HIGH VELOCITY HURRICANE ZONES (HVHZ) & IS LARGE MISSILE IMPACT RATED.
5. IMPACT SHUTTERS ARE NOT REQUIRED WITH THIS PRODUCT.
6. ALL ANCHORS SECURING PRODUCT FRAMES TO PRESSURE TREATED BUCKS OR WOOD FRAMING SHALL BE CAPABLE OF RESISTING CORROSION CAUSED BY THE PRESSURE TREATING CHEMICALS IN THE WOOD.
7. DETERMINE THE POSITIVE & NEGATIVE DESIGN LOADS TO USE WHEN REFERENCING THESE DOCUMENTS IN ACCORDANCE WITH THE GOVERNING CODE AND GOVERNING WIND VELOCITY. FOR WIND LOAD CALCULATIONS IN ACCORDANCE WITH THE FLORIDA BUILDING CODE, A DIRECTIONALITY FACTOR OF $K_d = 0.85$ MAY BE APPLIED PER THE ASCE-7 STANDARD.
8. MATERIALS, INCLUDING BUT NOT LIMITED TO STEEL SCREWS, THAT COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL MEET THE REQUIREMENTS OF FLORIDA BUILDING CODE.
9. TO THE BEST OF OUR KNOWLEDGE, THE PRODUCT SHOWN HEREIN IS QUALITY ASSURED BY A FLORIDA STATE APPROVED CERTIFICATION/QA ENTITY & SHALL BE LABELED IN ACCORDANCE WITH THE FBC AND THE FLORIDA DEPARTMENT OF BUSINESS & PROFESSIONAL REGULATION SPECIFICATIONS. THESE DRAWINGS SHOW ALL APPLICABLE ELEVATION, COMBINATION, INSTALLATION & COMPARATIVE ANALYSIS CONDITIONS AS DETERMINED THROUGH TESTING & ENGINEERING RATIONAL ANALYSIS. PRODUCT ASSEMBLY SHALL BE IN ACCORDANCE WITH THESE DRAWINGS, THE MANUFACTURER'S QUALITY ASSURANCE SPECIFICATIONS & TESTING REPORTS.
10. CERTIFICATION OF THIS PRODUCT SHALL BE CONSIDERED VOID IF IT IS INSTALLED WITHOUT A BUILDING PERMIT FROM THE APPLICABLE LOCAL BUILDING DEPARTMENT OR IF IT IS INSTALLED BY ANYONE OTHER THAN A LICENSED CONTRACTOR EXPERIENCED WITH INSTALLATIONS OF THIS TYPE OF PRODUCT.
11. ALL WOOD MEMBERS OF THIS PRODUCT THAT MAY POSSIBLY COME INTO CONTACT WITH MASONRY OR CONCRETE SUBSTRATES, ARE SUBJECT TO MOISTURE &/OR ARE SUBJECT TO THE OUTSIDE ENVIRONMENT SHALL BE OF AN APPROVED DURABLE SPECIES OR BE TREATED IN AN APPROVED METHOD WITH AN APPROVED PRESERVATIVE PER FBC REQUIREMENTS.

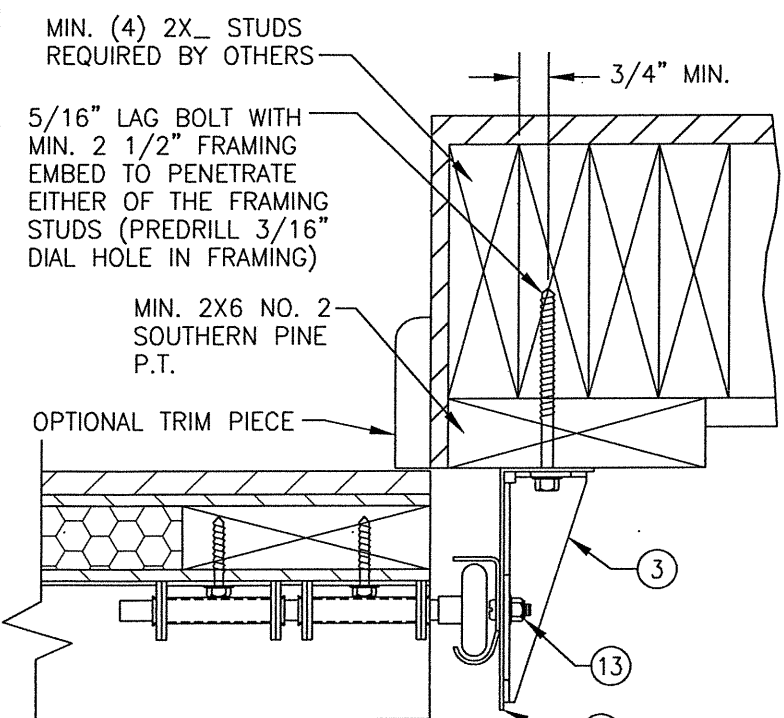
DRAWN BY: W.W.S.		CHECKED BY: W.W.S.	
PLOT: 1=32		DATE: 05/24/02	
DATE	BY	REVISION DESCRIPTION	NO.
<p>DRAWING TITLE 10'-6" WIDE HURRICANE IMPACT WOOD GARAGE DOORS</p> <p>MANUFACTURER DESIGNER PRODUCTS, LLC dba CAMBEK DESIGNER DOORS 702 TROY ST. RIVER FALLS, WI 54022 800-241-0525</p> <p>CONSULTANTS W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809) 7480 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424</p>			
<p>CERTIFICATION WARREN W. SCHAEFER No. 44135 STATE OF FLORIDA P.E. NO. 44135 DEC 07 2021</p>			
DRAWING NO. 1077		REV. F	
SHEET NO. 2 OF 4			



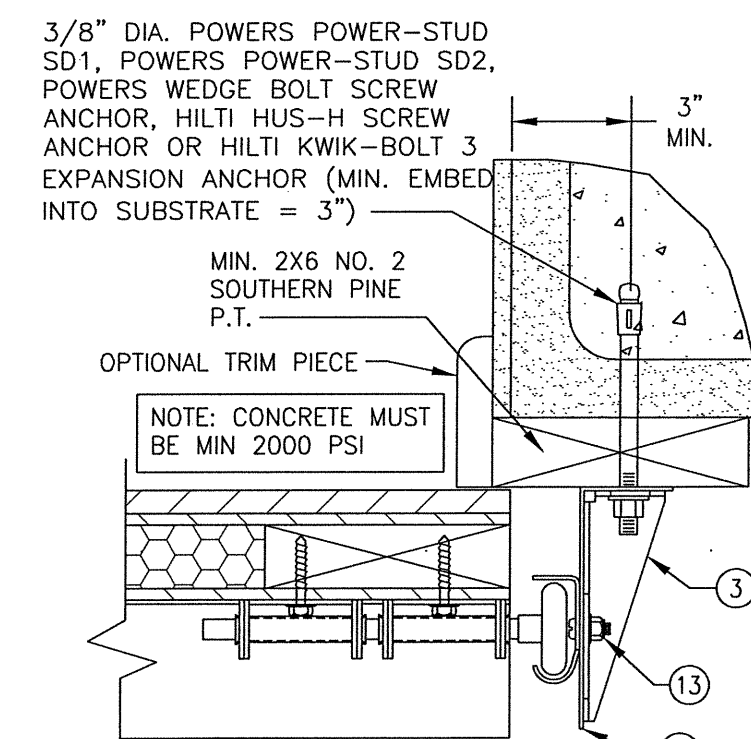
INSTALLATION DETAIL
DIRECT TO WOOD FRAMING



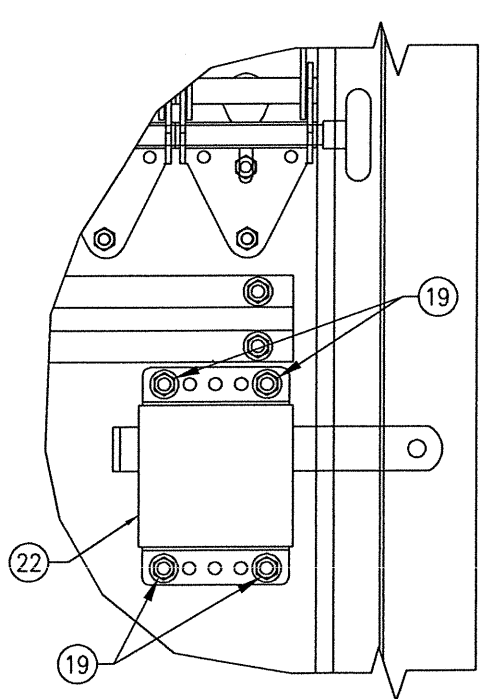
INSTALLATION DETAIL
DIRECT TO FILLED BLOCK
OR SOLID CONCRETE



INSTALLATION DETAIL
SHIMMED TO WOOD FRAMING



INSTALLATION DETAIL
SHIMMED TO FILLED BLOCK
OR SOLID CONCRETE

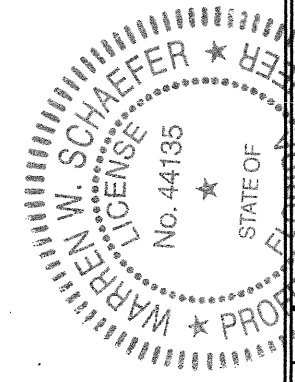


SLIDE LOCK DETAIL
(MAY BE LOCATED AT
EITHER SIDE OF DOOR)

ITEM #	PART	ITEM DESCRIPTION	MANUFACTURER/NOTES
PARTS & HARDWARE			
1	1030-0269	ROLLER	NYLON W/AISI 1045 STL. ROD
2	1030-0213	3" REINFORCING STRUT	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 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:

1. 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.
2. SUPER-PLY PLYWOOD IS STAPLED TO THE FRAME WITH 18 GA. X 1 1/2" X 1/4" STAPLES AND GLUED WITH CHEMREX 948 URETHANE ADHESIVE.
3. 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.
4. EXTERIOR FINISH WOOD (PANELS/STRIPS) USED WITH ALL TEST SPECIMEN WAS NO. 3 WESTERN CEDAR. OTHER WOODS APPLICABLE FOR USE WITH THESE DOORS IS MIN. NO. 3 OAK, CHERRY, MAHOGANY, POPLAR, YELLOW PINE, REDWOOD, SPRUCE, FIR, MAPLE, DOUGLAS FIR, BIRCH, TEAK, HICKORY & CYPRUS OR NO. 2 ASPEN, WESTERN PINE, EASTERN PINE AND PONDEROSA PINE.
5. 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:
05/24/02

DATE

BY

REVISION DESCRIPTION

NO.

10'-6" WIDE HURRICANE IMPACT WOOD GARAGE DOORS

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

CONSULTANTS
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& CONSULTING, P.A. (CA 6809)
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PALM BEACH GARDENS, FL 33418
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DRAWING NO.
1077

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F

SHEET NO.
4 OF 4