

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 (VHYZ) & 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.

(1) LOCK QUANTITY REQUIREMENTS (EYEBROW TOP WINDOWS)	
MAXIMUM FRAME HEIGHT (IN.)	QUANTITY PER PANEL
72	3
48	2
(1) THIS TABLE APPLIES TO BOTH CRANK-OUT & PUSH-OUT WINDOWS	

ALLOWABLE SIZE/PRESSURE TABLE (SINGLE WINDOW)			
MAX. FRAME HEIGHT (IN.)	WINDOW HARDWARE	WINDOW SHAPE	ALLOWABLE PRESSURE (+/- PSF)
(1)90	CRANK-OUT	RECTANGULAR	65
72	PUSH-OUT OR CRANK-OUT	RECTANGULAR	80
72	PUSH-OUT OR CRANK-OUT	SHAPED TOP	65
(1) PUSH-OUT CONDITION DOES NOT APPLY TO WINDOW HEIGHTS GREATER THAN 72".			

(1) (2) TRI-EURO HINGE QUANTITY REQUIREMENTS (SHAPED TOP CRANK-OUT WINDOWS)	
MAXIMUM FRAME HEIGHT (IN.)	QUANTITY PER PANEL
72	4
54	3
36	2
(1) TRI-EURO HINGES APPLY ONLY TO SHAPE TOP WINDOWS. (2) SHAPES INCLUDE BOTH HALF-ROUND AND EYEBROW TOP.	

(1) TRI-EURO HINGE QUANTITY REQUIREMENTS (HALF-ROUND TOP PUSH-OUT WINDOWS)	
MAXIMUM FRAME HEIGHT (IN.)	QUANTITY PER PANEL
72	(2) 6
60	(2) 5
48	3
36	2

(1) TRI-EURO HINGES APPLY ONLY TO SHAPE TOP WINDOWS.
(2) WHEN MORE THAN 3 HINGES EXIST, THERE ARE 2 HINGES GROUPED AT THE TOP & BOTTOM WITH REMAINDER EQUALLY SPACED.

ALTERNATE
ANCHOR/SUBSTRATE
EVALUATION NOTE:
ALL ALTERNATE
ANCHORS IN THEIR
SPECIFIED SUBSTRATES
HAVE BEEN ANALYZED
IN ACCORDANCE WITH
THEIR APPLICABLE
STANDARD(S) AND ARE
FOUND TO BE
EQUIVALENT TO OR
STRONGER THAN THE
ANCHOR(S) USED IN
TESTING WITH THIS
PRODUCT.

RECTANGULAR FRAME: FRAME MEMBERS WERE RABBETED, BUTTED AND SECURED WITH TWO 16 GAUGE X 1/2" CROWN X 2" LONG STAPLES AND ONE NO. 8 X 2 1/4" PFH SCREWS PER CORNER (THE NO. 8 X 2 1/4" SCREW IS ONLY APPLICABLE TO PUSH-OUT WINDOWS). CORNERS ARE SEALED WITH SILICONE SEALANT.

SHAPED TOP FRAME: FRAME MEMBERS WERE RABBETED, BUTTED, & SECURED WITH 2 NO. 8 X 2 1/4" PFH SCREWS PER END. ENDS ARE SEALED WITH SILICONE SEALANT.

RECTANGULAR SASH: SASH CORNERS UTILIZED OPEN MORTISE AND TENON CONSTRUCTION AND WERE SECURED WITH 2 15 GAUGE X 1 1/4" BRAD NAILS & 2 NO. 8 X 1" SMS SCREWS (THE NO. 8 X 1" SCREWS ARE ONLY APPLICABLE TO CRANK-OUT WINDOWS WITH A FRAME HEIGHT GREATER THAN 72"). CORNERS ARE SEALED WITH SILICONE SEALANT.

SHAPED TOP SASH: SASH CORNERS UTILIZED OPEN MORTISE AND TENON CONSTRUCTION AND WERE SECURED WITH TWO NO. 8 X 1" SMS SCREWS. CORNERS ARE SEALED WITH SILICONE SEALANT.

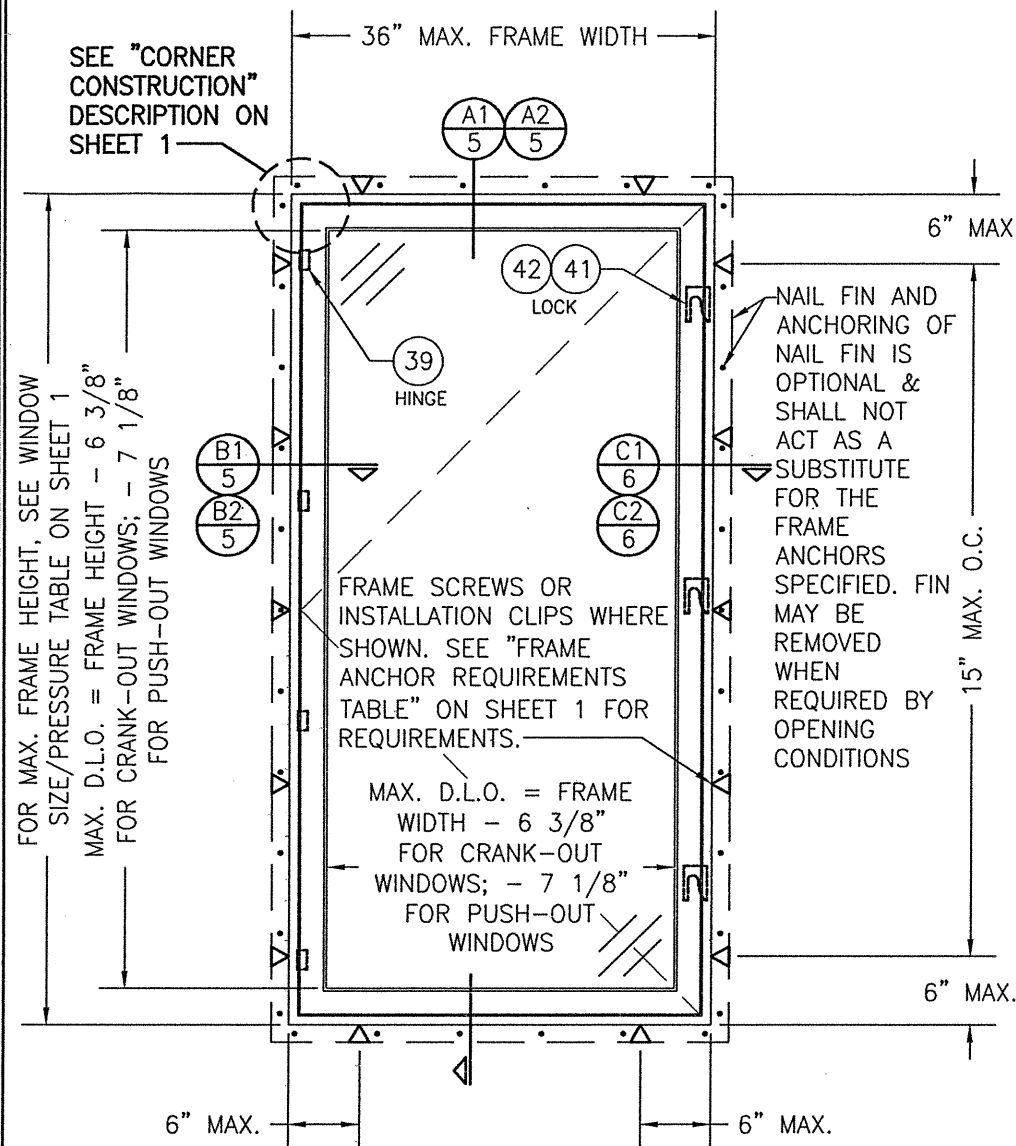
RECTANGULAR FRAME CLAD CORNERS: CLADDING MEMBERS WERE MITERED AND JOINED WITH A CORNER KEY (PART #31A) AND 2 NO. 7 X 5/8" FH SMS PER CORNER. CORNERS ARE SEALED WITH SILICONE SEALANT.

EYEBROW TOP FRAME CLAD CORNERS: CLADDING MEMBERS WERE MITERED AND JOINED WITH A CORNER KEY (PART #31B) AND 2 NO. 7 X 5/8" FH SMS PER CORNER. CORNERS ARE SEALED WITH SILICONE SEALANT.

SASH CLAD CORNERS: CLADDING MEMBERS WERE SQUARE CUT OR PROFILE CUT, BUTTED TOGETHER & SEALED WITH SILICONE SEALANT.

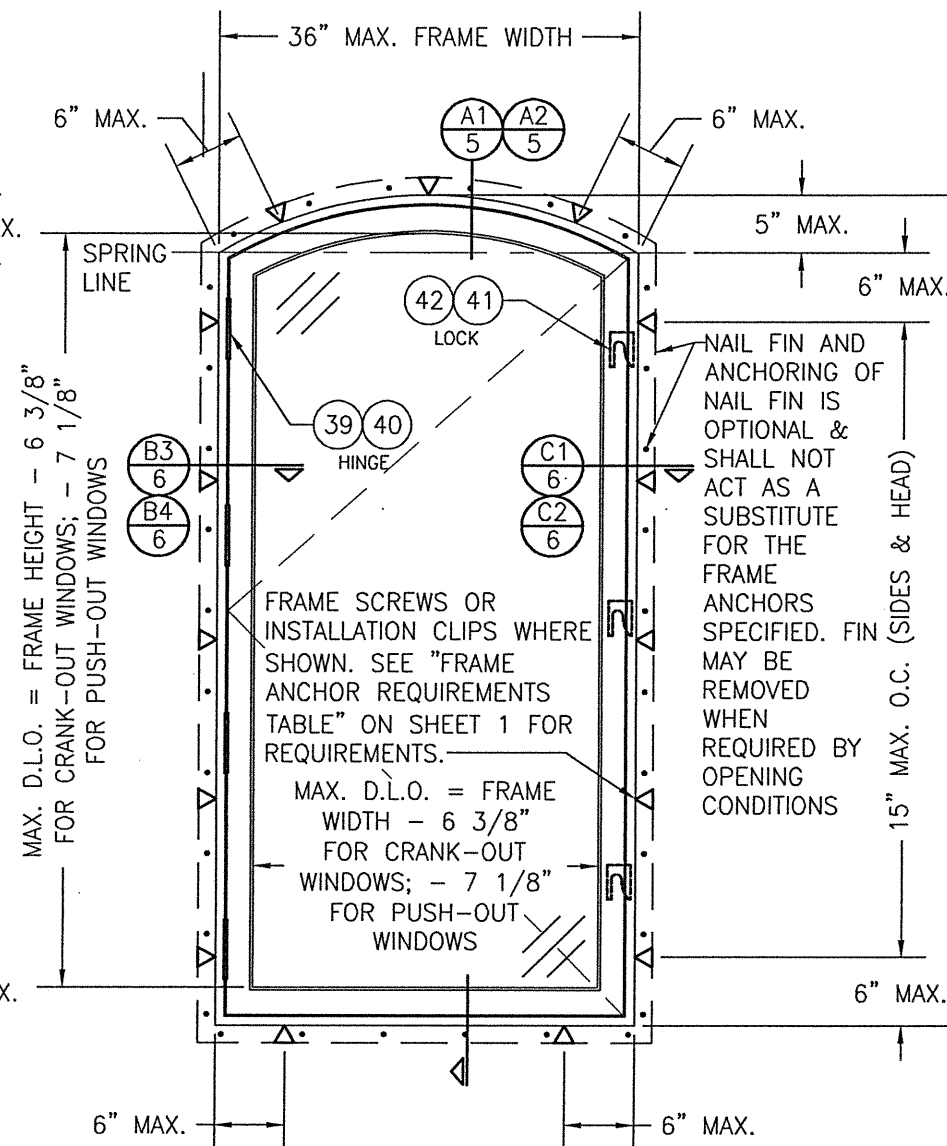
THESE DRAWINGS ARE APPLICABLE ONLY TO THE PRODUCT SPECIFIED. THEY MAY NOT BE USED FOR THE ASSEMBLY AND/OR INSTALLATION OF ANY OTHER PRODUCT NOR MAY THEY BE USED FOR NATIONAL AND/OR LOCAL APPROVAL OF ANY PRODUCT NOT PRODUCED BY THE MANUFACTURER STATED ON THESE DRAWINGS.

CERTIFICATION  NOV 15 2021 WARREN W. SCHAEFFER, P.E. P.E. NO. 44135	DRAWING NO.		REV.
	1762		F
	SHEET NO.		
	1 OF 9		
	DRAWING TITLE		
	ULTRA SERIES IMPACT CASEMENT WINDOW		
CONSULTANTS		MANUFACTURER	
W. W. SCHAEFFER ENGINEERING & CONSULTING, P.A. (CA 6809) 7480 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424		KOLBE & KOLBE MILLWORK CO., INC. 1323 SOUTH 11TH AVE. WAUSAU, WI 54401 715-842-5666	
DRAWN BY:	W.R.M.	CHECKED BY:	W.W.S.
PLLOT:	1=16	DATE:	12/05/11
NO.	REVISION DESCRIPTION	BY	DATE
A1	UPDATE TO CURRENT STANDARDS	W.W.S.	01/06/15
B1	ADD NON-IG GLASS OPTION	W.W.S.	02/18/16
C1	ADD NEW GLAZING COMPOUND	W.W.S.	01/30/18
D1	UPDATE GLASS REQUIREMENTS	W.W.S.	11/02/20
E1	UPDATE GLAZING DETAILS	W.W.S.	11/15/21



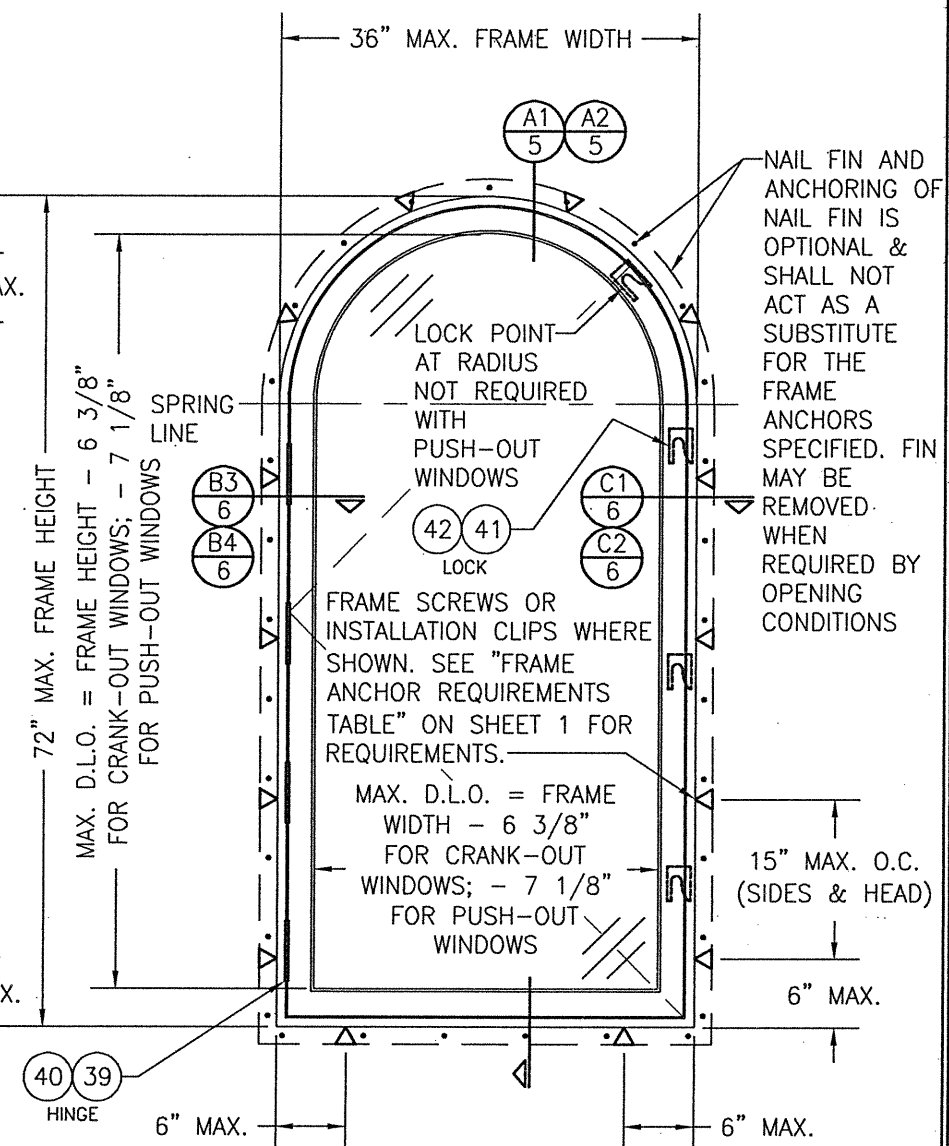
EXTERIOR ELEVATION:
SINGLE RECTANGULAR WINDOW

SCALE: $3/4" = 1'-0"$
(CRANK-OUT WINDOW SHOWN. PUSH-OUT
WINDOW ALSO APPLIES)



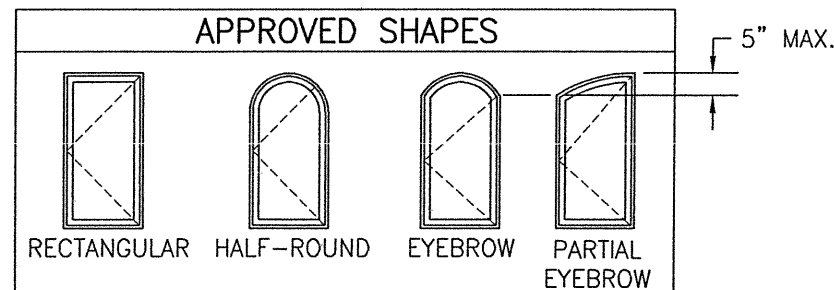
EXTERIOR ELEVATION:
SINGLE EYEBROW TOP WINDOW

SCALE: $3/4" = 1'-0"$
(CRANK-OUT WINDOW SHOWN. PUSH-OUT
WINDOW ALSO APPLIES)



EXTERIOR ELEVATION:
SINGLE HALF-ROUND WINDOW

SCALE: $\frac{3}{4}" = 1'-0"$
(CRANK-OUT WINDOW SHOWN. PUSH-OUT
WINDOW ALSO APPLIES)



NOTES:

1. SEE ELEVATIONS FOR DETAILS & SPECIFICATIONS OF EACH WINDOW SHAPE.
2. SHAPE CONDITIONS OTHER THAN THOSE SHOWN IN THE ELEVATIONS SHALL BE EVALUATED FOR JOB USE UNDER SEPARATE CERTIFICATION. ONLY CONDITIONS SHOWN HERE-IN APPLY TO THIS APPROVAL.

ALLOWABLE DESIGN PRESSURE
SEE SINGLE WINDOW SIZE/PRESSURE TABLE ON SHEET 1

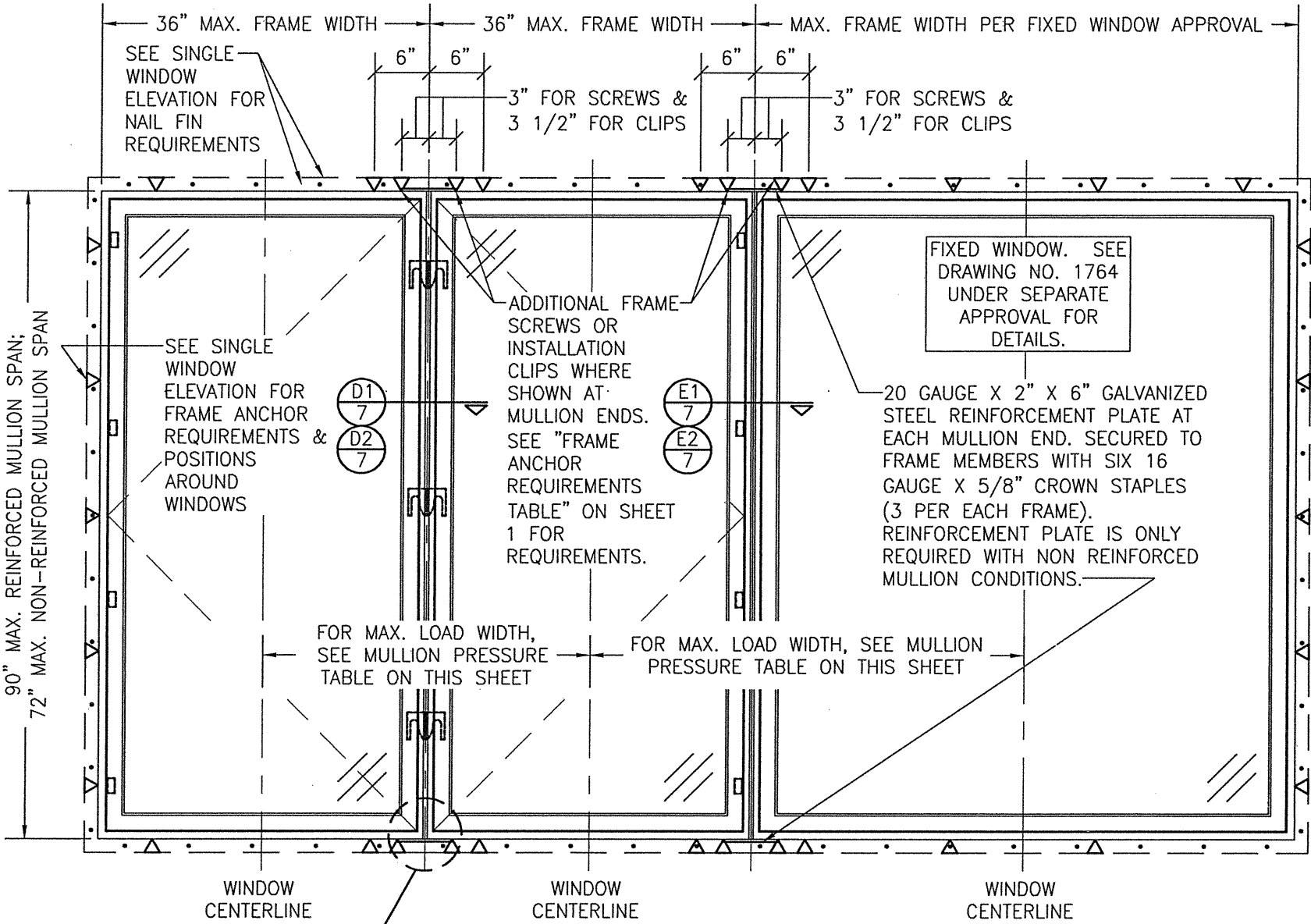
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SIDE-BY-SIDE MULLION ALLOWABLE DESIGN PRESSURE					
CASEMENT TO CASEMENT					
MAXIMUM MULLION SPAN (IN.)	MAXIMUM LOAD WIDTH (IN.)	ALLOWABLE PRESSURE (PSF)			
		NON REINFORCED		REINFORCED	
		POS.	NEG.	POS.	NEG.
90	36	N/A	N/A	60.0	65.0
72	36	72.9	72.9	80.0	80.0
72	32	80.0	80.0	80.0	80.0
66	36	80.0	80.0	80.0	80.0
CASEMENT TO FIXED					
MAXIMUM MULLION SPAN (IN.)	MAXIMUM LOAD WIDTH (IN.)	ALLOWABLE PRESSURE (PSF)			
		NON REINFORCED		REINFORCED	
		POS.	NEG.	POS.	NEG.
90	54 OR GREATER	N/A	N/A	60.0	65.0
72	54 OR GREATER	48.6	48.6	80.0	80.0
	48	54.7	54.7	80.0	80.0
	42	62.5	62.5	80.0	80.0
	36	72.9	72.9	80.0	80.0
66	51 OR GREATER	61.2	61.2	80.0	80.0
	48	65.1	65.1	80.0	80.0
	42	74.4	74.4	80.0	80.0
	39	80.0	80.0	80.0	80.0
60	48 OR GREATER	72.0	72.0	80.0	80.0
	43	80.0	80.0	80.0	80.0
54	45 OR GREATER	80.0	80.0	80.0	80.0
NOTES: 1. SEE SINGLE WINDOW ELEVATION FOR DIMENSIONING OF LOAD WIDTH. 2. ALLOWABLE UNIT PRESSURE SHALL BE THE LESSER OF THE PRESSURE SHOWN IN THIS TABLE & THAT SPECIFIED FOR THE INDIVIDUAL WINDOWS. 3. "N/A" DESIGNATES A SIZE NOT APPLICABLE TO THAT REINFORCEMENT CONDITION. 4. SIZE VALUES IN TABLE ARE +/-1/2" 5. LOAD WIDTH VALUES IN THIS TABLE CONSIDER THE VENT CASEMENT TO HAVE A MAXIMUM FRAME WIDTH OF 36". IF A JOB SPECIFIC CONDITION HAS A VENT CASEMENT WIDER THAN 36", THE "OR GREATER" SHALL NOT APPLY.					

CONDITIONS OTHER THAN THOSE SHOWN SHALL BE SUBJECT TO JOB SPECIFIC REVIEW & IF ACCEPTABLE TO ALL APPLICABLE CODES & STANDARDS, SHALL BE SEPARATELY CERTIFIED BY A FLORIDA LICENSED ENGINEER.

MULTIPLE UNIT NOTES:

- FOR ALL DETAIL NOT SHOWN, SEE SINGLE WINDOW ELEVATION.
- THERE IS NO LIMIT ON THE NUMBER OF WINDOWS THAT MAY BE COMBINED IN ONE DIRECTION INTO ONE OPENING PROVIDING THE OPENING IS DESIGNED TO SUPPORT ALL LOADS TRANSFERRED FROM THE WINDOWS & THEIR MULLIONS.
- RECTANGULAR WINDOWS SHOWN. SHAPED WINDOWS MULLED SIDE-BY-SIDE ALSO APPLY UNDER THE SAME CONDITIONS SHOWN FOR RECTANGULAR WINDOWS.
- ANY COMBINATION OF FIXED/OPERABLE WINDOWS IN ONE OPENING SHALL APPLY.

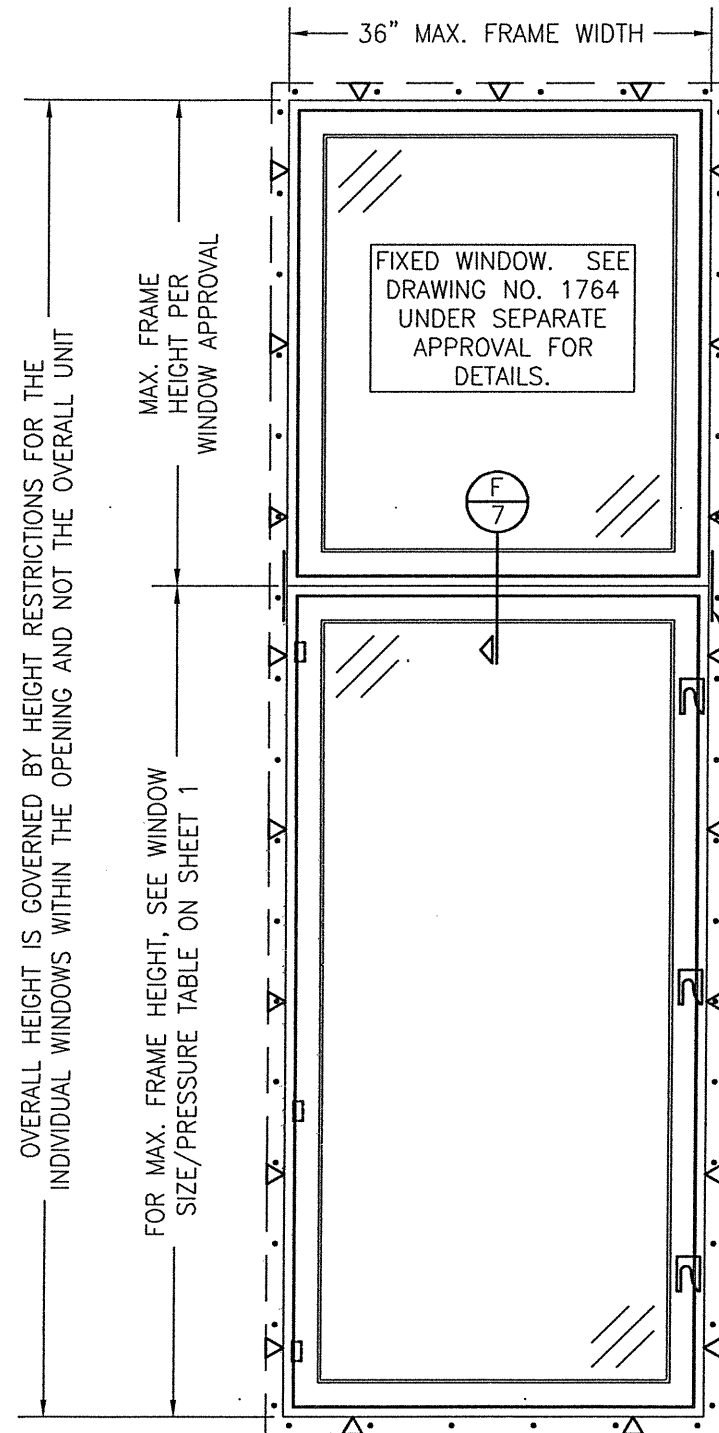


EXTERIOR ELEVATION;
MULTIPLE WINDOWS

SCALE: 3/4" = 1'-0"

(SEE SINGLE WINDOW ELEVATION ON SHEET 2 FOR CASEMENT WINDOW DETAIL NOT SHOWN)
(CRANK-OUT WINDOW SHOWN. PUSH-OUT WINDOW ALSO APPLIES)

DRAWN BY: W.R.M.	CHECKED BY: W.W.S.
PLOT: 1=16	DATE: 12/05/11
DATE	BY
REVISION DESCRIPTION	NO.
DRAWING TITLE ULTRA SERIES IMPACT CASEMENT WINDOW	
MANUFACTURER KOLBE & KOLBE MILLWORK CO., INC. 1323 SOUTH 11TH AVE. WAUSAU, WI 54401 715-842-5666	
CONSULTANTS W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809)	7480 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424
CERTIFICATION NOV 15 2021	WARREN W. SCHAEFER, P.E. P.E. NO. 44135
DRAWING NO. 1762	REV. F
SHEET NO. 3 OF 9	



**EXTERIOR ELEVATION:
SINGLE WINDOW WITH TRANSOM**

SCALE: 3/4" = 1'-0"

(SEE SINGLE WINDOW ELEVATION ON SHEET 2 FOR CASEMENT
WINDOW DETAIL NOT SHOWN)

**ALLOWABLE DESIGN PRESSURE
(SINGLE WINDOW WITH TRANSOM)**

ALLOWABLE PRESSURE SHALL BE AS
RESTRICTED BY THE INDIVIDUAL WINDOW
ALLOWABLE PRESSURES. SEE SINGLE
WINDOW PRESSURE TABLE ON SHEET 2)

20 GAUGE X 2" X 6"
GALVANIZED STEEL
REINFORCEMENT PLATE AT
EACH MULLION END.
SECURED TO FRAME
MEMBERS WITH SIX 16
GAUGE X 5/8" CROWN
STAPLES (3 PER EACH
FRAME).

4 NO. 8 MULLION END CLIP
SCREWS INTO SUBSTRATE.
PER "FRAME ANCHOR
REQUIREMENTS TABLE"

1/2-13 X 1 1/2"
FH S.S. T.P.I. BOLT
(1 PER MULLION
END)

NO. 8 X 2 1/4" PFH
WOOD SCREW (4 PER
MULLION END PLATE)

NO. 8 X 1"
PFH SMS
(6 PER CLIP)

33
MULLION
END CLIP

35
MULLION
END PLATE

SILICONE
ADHESIVE

**REINFORCED MULLION END
CLIP INSTALLATION DETAIL**

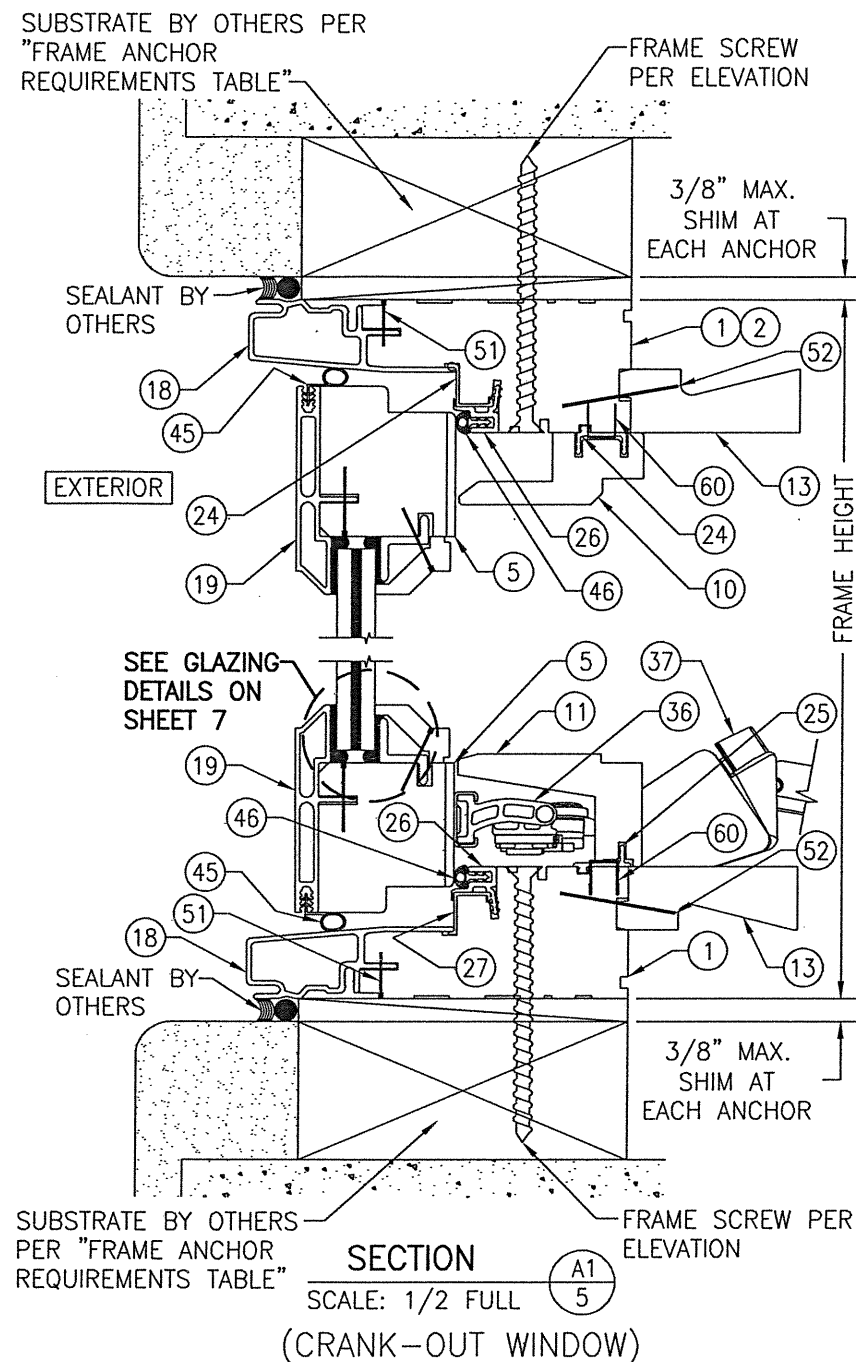
(SIDE JAMBS & FRAME CLADDING NOT SHOWN FOR CLARITY)

DRAWING NO.		REV.	
1762		F	
SHEET NO.			
4 OF 9			

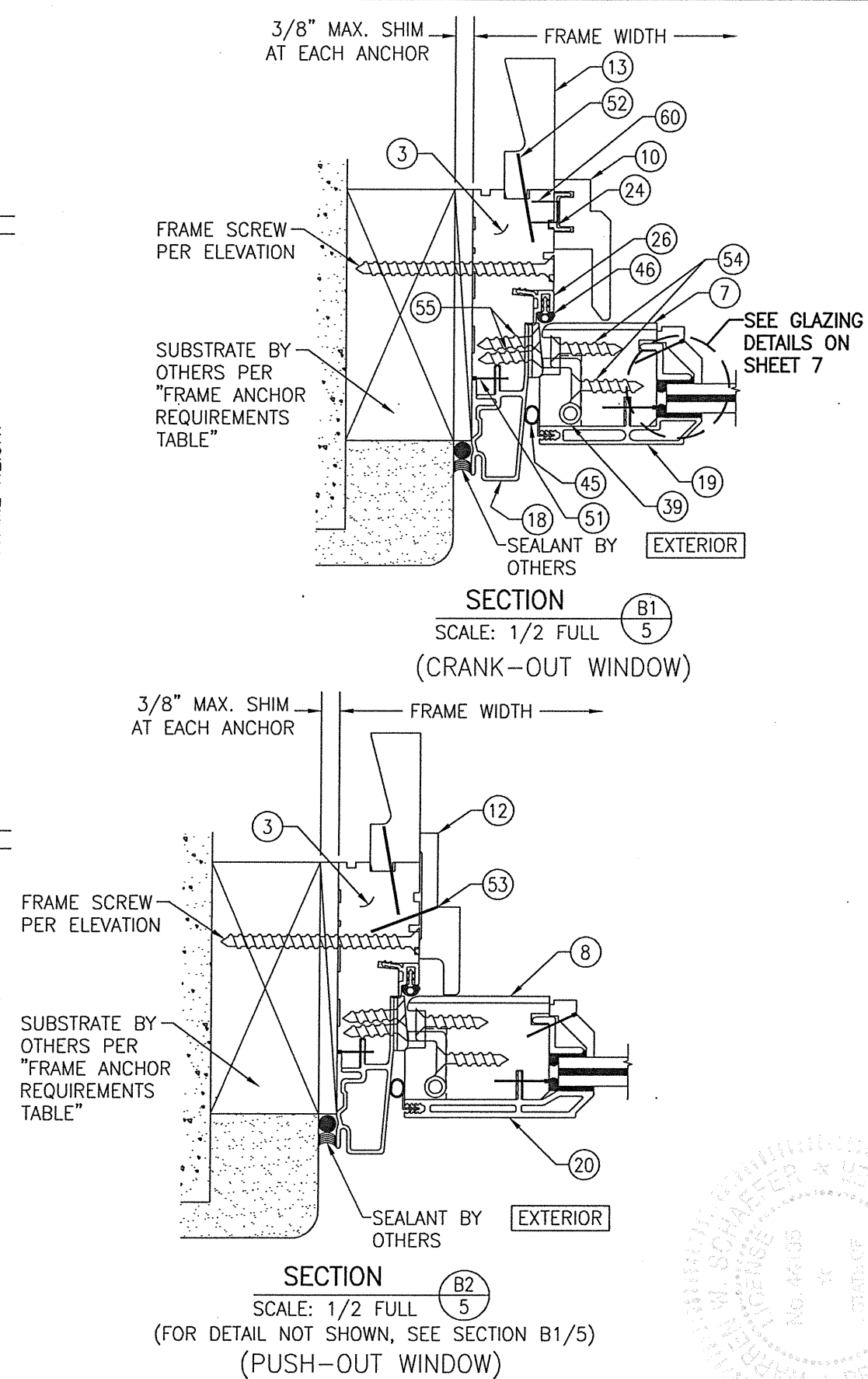
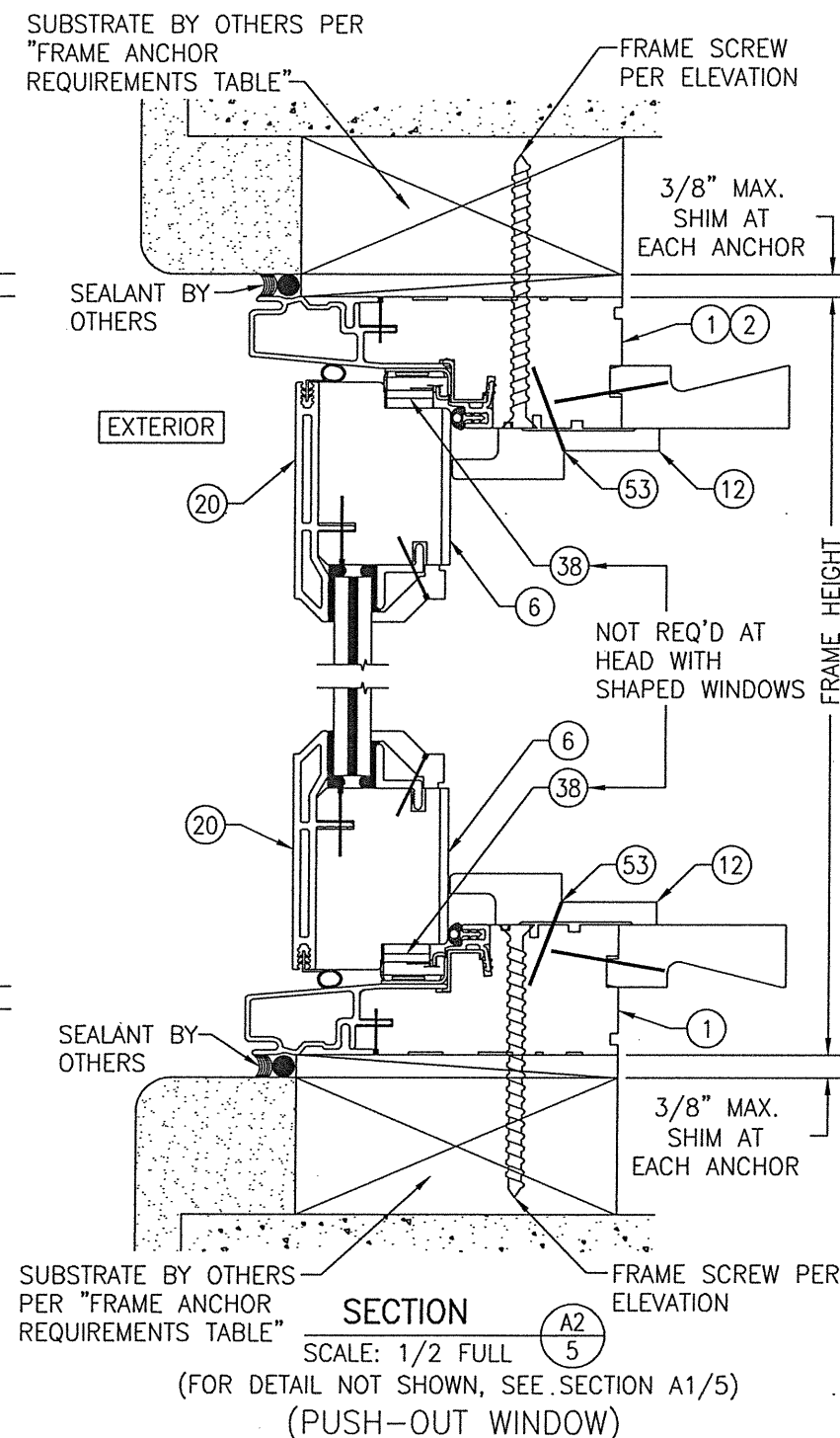
CERTIFICATION		NOV 15 2021	
WARREN W. SCHAEFER, P.E.		P.E. NO. 44135	

DRAWING TITLE		ULTRA SERIES IMPACT CASEMENT WINDOW	
CONSULTANTS		MANUFACTURER	
W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809)		KOLBE & KOLBE MILLWORK CO., INC.	
7480 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424		1323 SOUTH 11TH AVE. WAUSAU, WI 54401 715-842-5666	

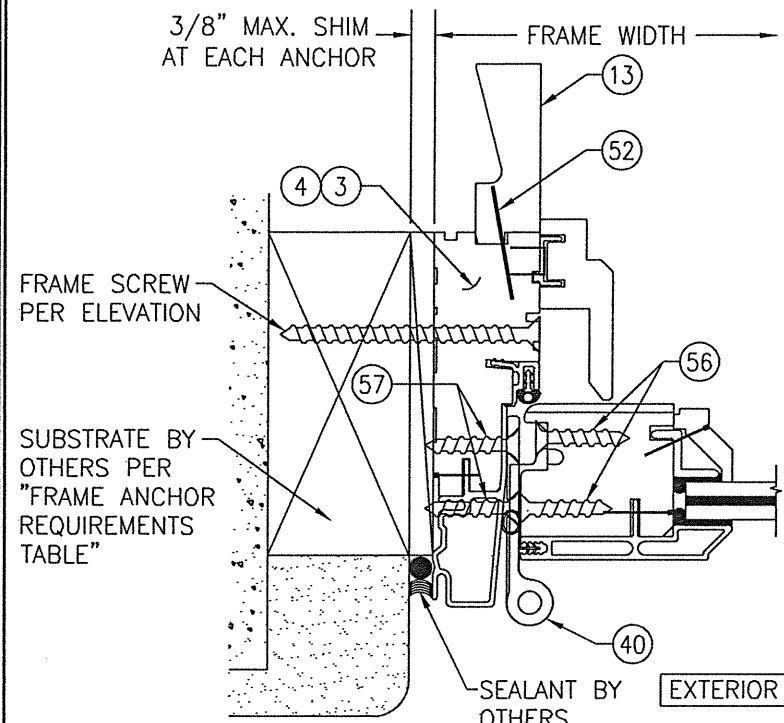
DRAWN BY: W.R.M.		CHECKED BY: W.W.S.		
PLOT: 1=16		DATE: 12/05/11		
NO.	REVISION	DESCRIPTION	BY	DATE



NAIL FIN IS NOT SHOWN BUT MAY BE USED IN ADDITION TO ANCHORS SHOWN.

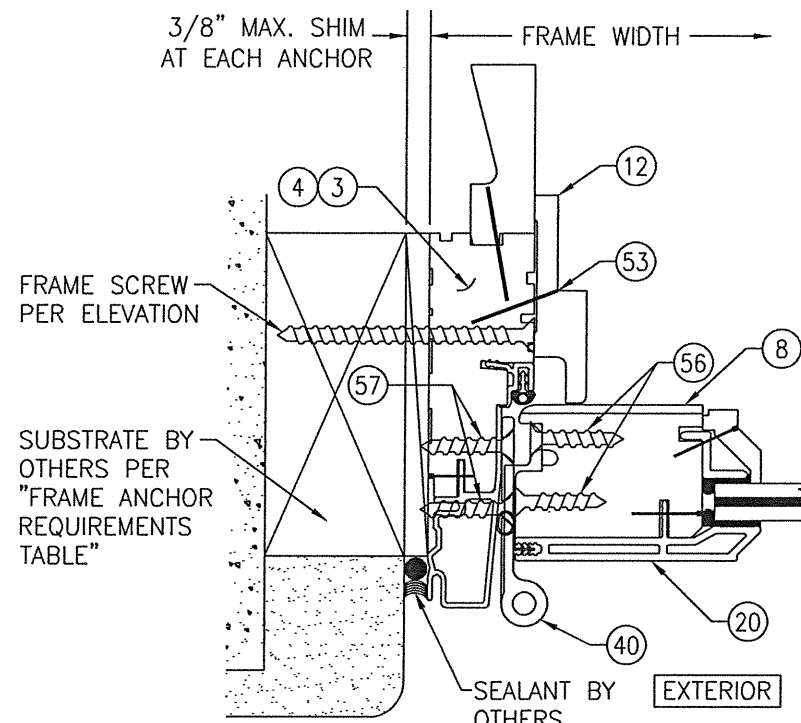


DRAWING NO.		1762		REV.		F			
SHEET NO.		5		OF		9			
CERTIFICATION		NOV 15 2021							
WARREN W. SCHAEFER, P.E.		P.E. NO. 44135							
DRAWING TITLE		ULTRA SERIES IMPACT CASEMENT WINDOW							
CONSULTANTS		W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809) 7480 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424							
MANUFACTURER		KOLBE & KOLBE MILLWORK CO., INC. 1323 SOUTH 11TH AVE. WAUSAU, WI 54401 715-842-5666							
NO.		REVISION		DESCRIPTION		BY		DATE	



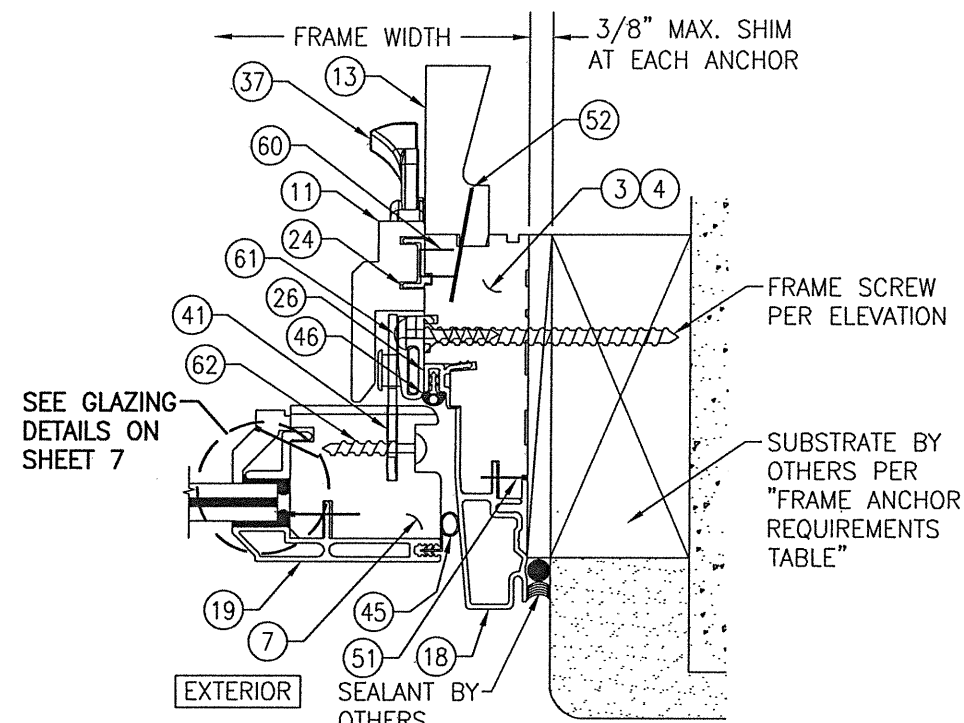
SECTION B3
SCALE: 1/2 FULL 6

(FOR DETAIL NOT SHOWN, SEE SECTION B1/5)
(CRANK-OUT WINDOW)



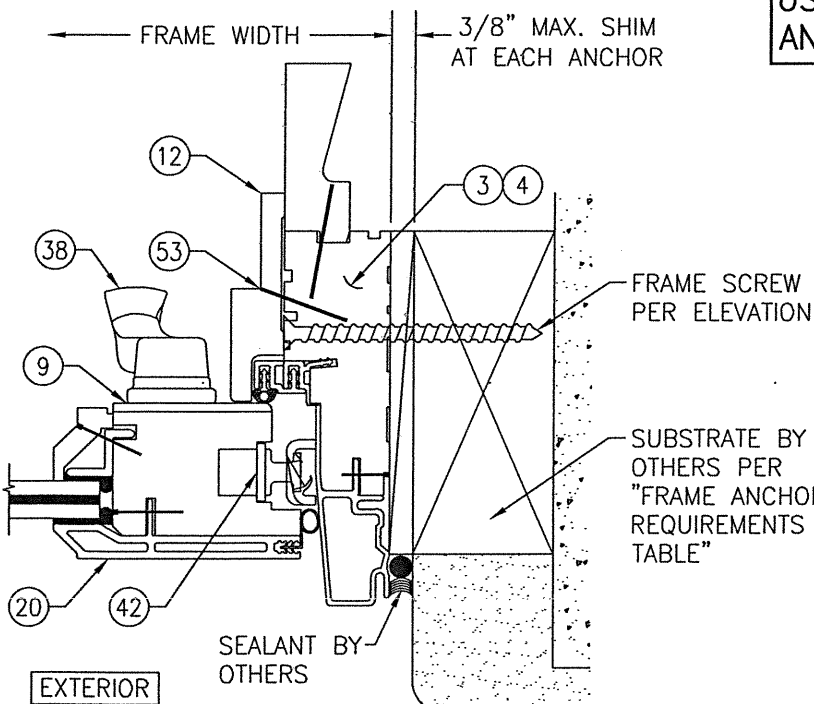
SECTION B4
SCALE: 1/2 FULL 6

(FOR DETAIL NOT SHOWN, SEE SECTION B1/5)
(PUSH-OUT WINDOW)



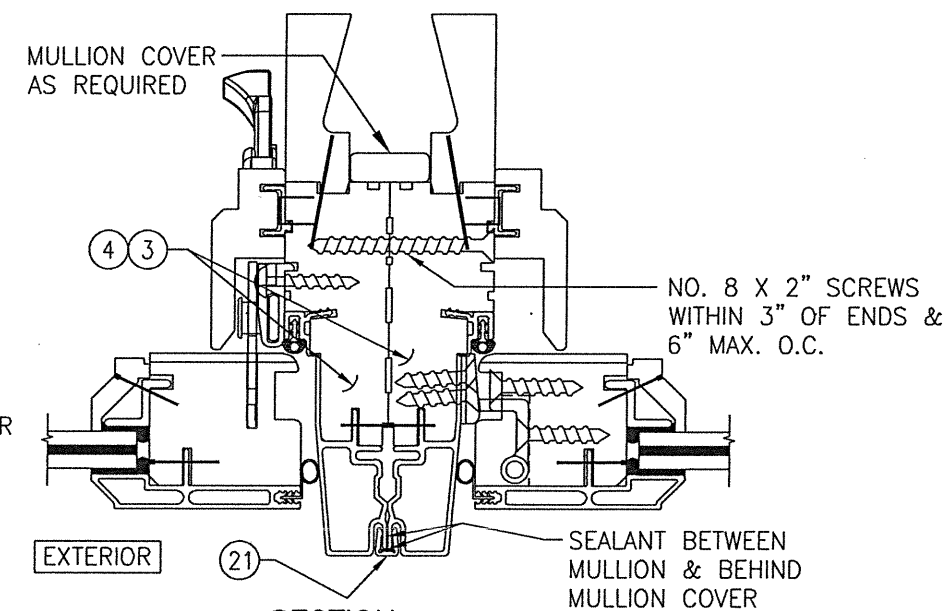
SECTION C1
SCALE: 1/2 FULL 6

(CRANK-OUT WINDOW)



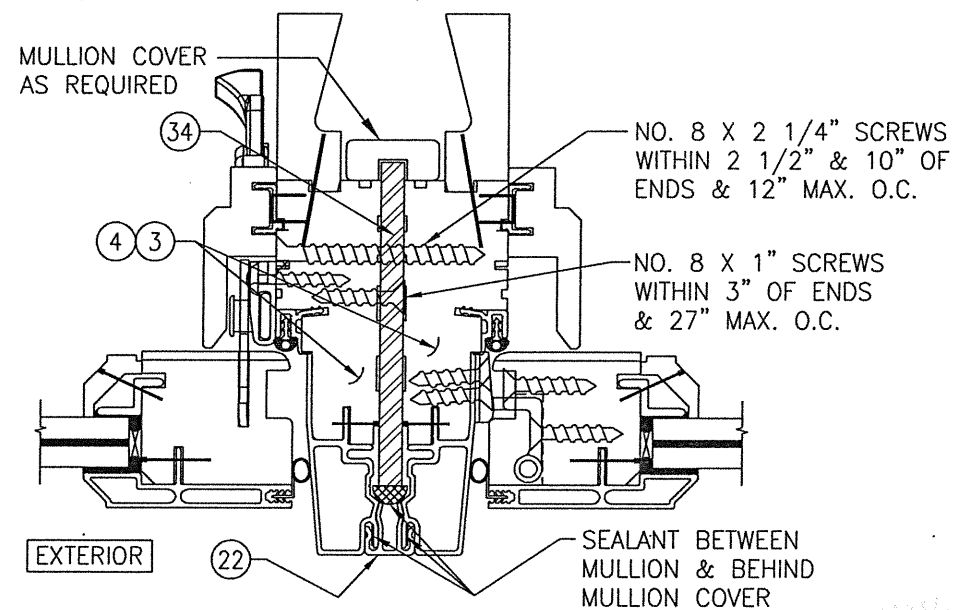
SECTION C2
SCALE: 1/2 FULL 6

(FOR DETAIL NOT SHOWN, SEE SECTION C1/6)
(PUSH-OUT WINDOW)



SECTION D1
SCALE: 1/2 FULL 6

(FOR DETAIL NOT SHOWN, SEE OTHER SECTIONS)
(CRANK-OUT WINDOWS SHOWN.
PUSH-OUT WINDOWS ALSO APPLY)



SECTION D2
SCALE: 1/2 FULL 6

(FOR DETAIL NOT SHOWN, SEE OTHER SECTIONS)

DRAWN BY: W.R.M.	CHECKED BY: W.W.S.
PLOT: 1-2	DATE: 12/05/11
DATE	BY
REVISION DESCRIPTION	NO.
DRAWING TITLE ULTRA SERIES IMPACT CASEMENT WINDOW	
MANUFACTURER KOLBE & KOLBE MILLWORK CO., INC. 1323 SOUTH 11TH AVE. WAUSAU, WI 54401 715-842-5666	
CONSULTANTS W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809) 7480 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424	
CERTIFICATION NOV 15 2021 WARREN W. SCHAEFER, P.E. P.E. NO. 44135	
DRAWING NO. 1762	REV. F
SHEET NO. 6 OF 9	

ITEM #	ITEM DESCRIPTION	MANUFACTURER/NOTES
PARTS		
1	HEAD & SILL FRAME (RECTANGULAR WINDOWS)	PINE
2	HEAD FRAME (SHAPED WINDOWS)	LVL
3	SIDE JAMB (STRAIGHT JAMB)	PINE
4	SIDE JAMB (SHAPED JAMB)	LVL
5	TOP & BOTTOM RAIL (CRANK-OUT WINDOWS)	MAPLE WITH PINE VENEER
6	TOP & BOTTOM RAIL (PUSH-OUT WINDOWS)	MAPLE/PINE VENEER
7	STILES (CRANK-OUT WINDOWS)	MAPLE/PINE VENEER
8	HINGE STILE (PUSH-OUT WINDOWS)	MAPLE/PINE VENEER
9	LOCK STILE (PUSH-OUT WINDOWS)	MAPLE/PINE VENEER
10	TOP RAIL & STILE SASH STOP (CRANK-OUT WINDOWS)	MAPLE/PINE VENEER
11	BOTTOM RAIL SASH STOP (CRANK-OUT WINDOWS)	MAPLE/PINE VENEER
12	SASH STOP (PUSH-OUT WINDOWS)	PINE
13	JAMB EXTENSION	PINE
14A	GLAZING BEAD (NON-I.G. GLASS OPTION 1)	PINE
14B	GLAZING BEAD (NON-I.G. GLASS OPTION 2)	PINE
15	GLAZING BEAD (I.G.)	PINE
16	5/16" IG GLASS SPACER	201 STAINLESS (0.045" WALL THICKNESS)
18	FRAME CLADDING	6063-T5 ALUMINIUM
19	SASH CLADDING (CRANK-OUT WINDOWS)	6063-T5 ALUMINIUM
20	SASH CLADDING (PUSH-OUT WINDOWS)	6063-T5 ALUMINIUM
21	MULLION CLIP	6063-T5 ALUMINIUM
22	MULLION CLIP	6063-T5 ALUMINIUM
24	HEAD & SIDES SASH STOP JOINER (CRANK-OUT WINDOWS)	RIGID PVC WITHIN 4 3/8" OF CORNERS & 24" MAX. O.C.
25	SILL SASH STOP JOINER (CRANK-OUT WINDOWS)	RIGID PVC WITHIN 4 3/8" OF CORNERS & 24" MAX. O.C.
26	SEAL HOLDER	RIGID PVC
27	WATER DAM	RIGID PVC
29A	GLAZING BRACKET (NON-I.G. GLASS OPTION 1)	VINYL
29B	GLAZING BRACKET (NON-I.G. GLASS OPTION 2)	VINYL
30	GLAZING BRACKET (I.G.)	VINYL
31A	RECTANGULAR FRAME CORNER KEY	POLYCARBONATE
31B	EYEBROW TOP FRAME CORNER KEY	POLYCARBONATE
32	INSTALLATION CLIP	20 GAGE GALVANIZED SHEET STEEL ASTM A653 CS TYPE B, W/G90 COATING
33	MULLION END CLIP	ASTM A653 GALV. STEEL (Fy = 50 ksi)
34	MULLION REINFORCEMENT	A-36 STEEL
35	MULLION END PLATE	A-36 STEEL
HARDWARE		
36	CRANK-OUT OPERATOR	TRUTH 5125940
37	HANDLE	AS REQ'D TO OPERATE OPERATOR/LOCK
38	FRICTION ADJUSTER	TRUTH 5129550
39	CONCEALED HINGE	ADVANTAGE 5126870
40	TRI-EURO HINGE	MELRON 6236037
41	MULTI-PIONT LOCK (CRANK-OUT WINDOWS)	TRUTH 5126160
42	MULTI-PIONT LOCK (PUSH-OUT WINDOWS)	HOPPE 5127810

ITEM #	ITEM DESCRIPTION	MANUFACTURER/NOTES
SEALS & SEALANTS		
45	BULB WEATHERSTRIP	INTEK 5129070 FOAM FILLED BULB & RIGID PVC
46	BULB WEATHERSTRIP	INTEK 5142150 RIGID & FLEXIBLE PVC
47	SHIM 1/16" X 1/4" X 1/2"	80 DUROMETER EPDM WITHIN 1" OF ENDS & 8" MAX. O.C.
48	GLAZING TAPE 1/16" X 1/4"	CONTINUOUS
FASTENERS		
51	18 GAUGE X 1/2" BRAD	WITHIN 1"-2" OF CORNERS & 5"-6" MAX. O.C.
52	7/16" X 1 1/4" 16 GAUGE CROWN STAPLE	WITHIN 1"-2" OF CORNERS & 8"-10" MAX. O.C.
53	3/16" X 1 1/8" 16 GAUGE CROWN STAPLE	WITHIN 1"-2" OF CORNERS & 8"-10" MAX. O.C.
54	NO. 8 X 1" SMS S.S.	4 PER HINGE INTO SASH
55	NO. 8 X 7/8" SMS S.S.	4 PER HINGE INTO JAMB
56	NO. 8 X 1" SMS S.S.	6 PER HINGE INTO SASH
57	NO. 8 X 7/8" SMS S.S.	3 PER HINGE INTO JAMB
58	16 GAUGE X 3/4" T NAIL	WITHIN 1"-2" OF CORNERS & 5"-6" MAX. O.C.
59	18 GAUGE X 1 3/16" BRAD	WITHIN 1" OF CORNERS & 5"-6" MAX. O.C.
60	1/2" X 1/2" CARDBOARD STAPLE	1 PER HEAD, SIDES & SILL SASH STOP JOINER
61	NO. 6 X 1" SMS S.S.	2 PER LOCK INTO JAMB
62	NO. 6 X 1" SMS S.S.	2 PER KEEPER INTO SASH

NOTE: WOOD USED IN TESTING WAS PINE WITH A SPECIFIC GRAVITY OF G = 0.43 AND A MODULUS OF ELASTICITY OF E = 1,200,000 PSI. OTHER WOOD SPECIES APPLICABLE FOR USE WITH THIS PRODUCT ARE THOSE WITH A SPECIFIC GRAVITY AND MODULUS OF ELASTICITY EQUAL TO OR GREATER THAN THAT USED WITH TESTING. ALL WOOD IS MINIMUM GRADE 2 MILLED BY KOLBE & KOLBE TO SELECT.

DRAWN BY: W.R.M.		CHECKED BY: W.W.S.	
PLOT: 1=2		DATE: 12/05/11	
DATE	BY	REVISION	DESCRIPTION
NO.			
DRAWING TITLE ULTRA SERIES IMPACT CASEMENT WINDOW			
CONSULTANTS W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809)		MANUFACTURER KOLBE & KOLBE MILLWORK CO., INC. 1323 SOUTH 11TH AVE. WAUSAU, WI 54401 715-842-5666	
7480 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424		WARREN W. SCHAEFER, P.E. P.E. NO. 44135	
CERTIFICATION NOV 15 2011		DRAWING NO. 1762	
		REV. E	
SHEET NO. 9		OF 9	