

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.

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.

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.

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.R.M.
CHECKED BY: W.W.S.
PLOT: 1=16
DATE: 10/27/11

NO.	REVISION DESCRIPTION	DATE	BY
1	UPDATE TO CURRENT STANDARDS	07/06/13	W.R.M.
2	ADDED NEW GLAZING COMPOUND	07/30/13	W.W.S.

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
JAN 30 2018
W. W. SCHAEFER, P.E.
P.E. NO. 44135

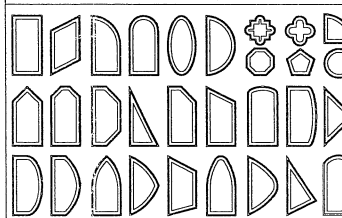
DRAWING NO. 1764
SHEET NO. 1 OF 7
REV. B

FRAME ANCHOR REQUIREMENTS TABLE

OPENING TYPE (SUBSTRATE)	FRAME/CLIP TO OPENING FASTENER TYPE	MINIMUM EMBED	MINIMUM EDGE DIST.
FRAME SCREWS			
MIN. 2X4 WOOD FRAME OR BUCK (MIN. GR. 3 & G=0.55)	NO. 12 SMS OR WOOD SCREW	1 1/4"	3/4"
MIN. 18 GA. 33 KSI METAL STUD	NO. 12 GR. 5 SELF TAP/DRILL SCREW	FULL	1/2"
MIN. 1/8" THK A36 STEEL	NO. 12 GR. 5 SELF TAP/DRILL SCREW	FULL	1/2"
MIN. 1/8" THK 6063-T5 ALUM.	NO. 12 GR. 5 SELF TAP/DRILL SCREW	FULL	1/2"
MIN. C-90 CMU OR 2500 PSI CONCRETE	(1) 1/4" CONCRETE SCREW	1 1/4"	2"
INSTALLATION CLIP SCREWS			
MIN. 2X4 WOOD FRAME OR BUCK (MIN. GR. 3 & G=0.55)	NO. 8 SMS SCREW	1 1/4"	1/2"
MIN. 18 GA. 33 KSI METAL STUD	NO. 8 GR. 5 SELF TAP/DRILL SCREW	FULL	1/2"
MIN. 1/8" THK A36 STEEL	NO. 8 GR. 5 SELF TAP/DRILL SCREW	FULL	1/2"
MIN. 1/8" THK 6063-T5 ALUM.	NO. 8 GR. 5 SELF TAP/DRILL SCREW	FULL	1/2"
(2) REINFORCED MULLION END CLIP SCREWS			
MIN. 2X4 WOOD FRAME OR BUCK (MIN. GR. 3 & G=0.55)	NO. 8 SMS SCREW	1 1/4"	3/4"
MIN. 1/8" THK A36 STEEL	NO. 8 GR. 5 SELF TAP/DRILL SCREW	FULL	1/2"
MIN. 1/8" THK 6063-T5 ALUM.	NO. 8 GR. 5 SELF TAP/DRILL SCREW	FULL	1/2"

(1) CONCRETE SCREWS SHALL BE ELCO ULTRACONS, ELCO CRETE-FLEX, ITW RAMSET/RED HEAD TAPCONS OR HILTI KWIK-CON II (HARDENED STEEL OR S.S.).

(2) WHEN A REINFORCED MULLION IS USED, METAL STUD, CMU & CONCRETE SUBSTRATES SHALL NOT APPLY. MULLION END CLIP MUST BE ATTACHED TO EITHER A WOOD BUCK, WOOD FRAMING, STEEL OR ALUMINUM SUBSTRATE.

APPROVED SHAPES**NOTES:**

1. OTHER SHAPES MAY APPLY PROVIDING THEY ARE SIMILAR TO THOSE SHOWN & HAVE CORNER CONSTRUCTION AS DESCRIBED IN THIS DRAWING.
2. ALL SHAPED UNITS MUST FIT INSCRIBED INTO THE ALLOWABLE RECTANGULAR UNITS & BE GOVERNED BY THE ALLOWABLE PRESSURE OF THE RESPECTIVE RECTANGULAR UNIT.

CORNER CONSTRUCTION:

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. CORNERS ARE SEALED WITH SILICONE SEALANT.

HALF ROUND AND EYEBROW 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 TWO NO. 8 X 1" SMS SCREWS. CORNERS ARE SEALED WITH SILICONE SEALANT.

EYEBROW TOP SASH: HEAD CORNERS WERE BUTTED & SECURED WITH 2 NO. 8 X 2 1/4" PFH SCREW THROUGH EACH STILE AND INTO THE RAIL AND 1 NO. 8 X 3" PFH SCREW THROUGH THE RAIL INTO THE STILE. CORNERS ARE SEALED WITH SILICONE SEALANT.

HALF ROUND 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 #38) AND 2 NO. 7 X 5/8" FH SMS PER CORNER. CORNERS ARE SEALED WITH SILICONE SEALANT.

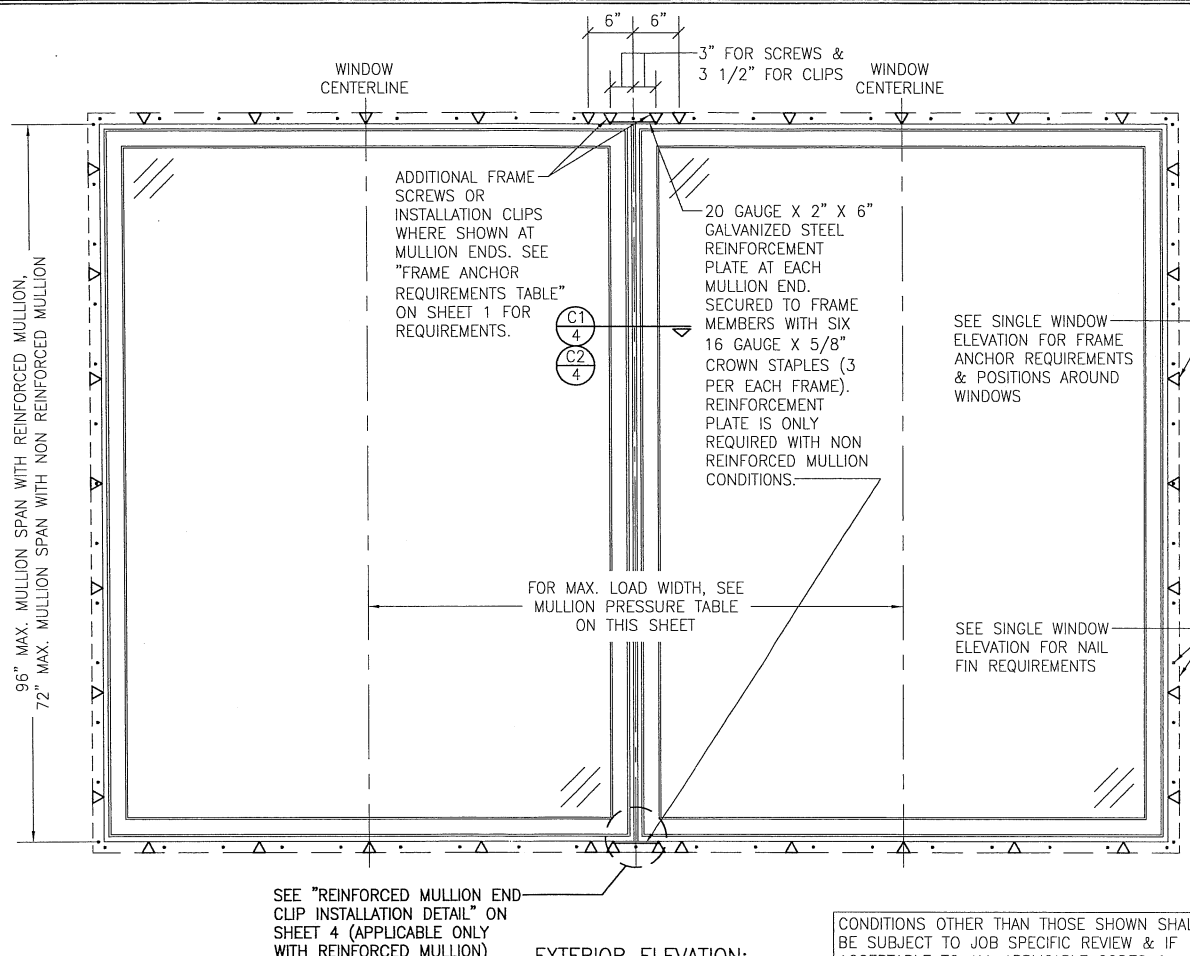
EYEBROW TOP FRAME CLAD CORNERS: CLADDING MEMBERS WERE MITERED AND JOINED WITH A CORNER KEY (PART #39) AND 2 NO. 7 X 5/8" FH SMS PER CORNER. CORNERS ARE SEALED WITH SILICONE SEALANT.

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

MULTIION DESIGN		ALLOWABLE PRESSURE			
MAXIMUM MULTION SPAN (IN.)	MAXIMUM LOAD WIDTH (IN.)	ALLOWABLE PRESSURE (PSF)			
		NON REINFORCED		REINFORCED	
		POS.	NEG.	POS.	NEG.
96	72	N/A	N/A	50.1	58.4
	66	N/A	N/A	53.3	62.2
	60	N/A	N/A	56.7	66.1
	55 1/2	N/A	N/A	60.0	70.0
90	72	N/A	N/A	58.5	68.2
	67	N/A	N/A	60.0	70.0
88	72	N/A	N/A	60.0	70.0
72	72 OR GREATER	49.8	49.8	60.0	70.0
	66	50.5	50.5	60.0	70.0
	60	51.9	51.9	60.0	70.0
	54	54.6	54.6	60.0	70.0
	48	58.6	58.6	60.0	70.0
	42	60.0	64.3	60.0	70.0
	36	60.0	70.0	60.0	70.0
66	66 OR GREATER	60.0	64.6	60.0	70.0
	60	60.0	65.6	60.0	70.0
	54	60.0	67.3	60.0	70.0
	48	60.0	70.0	60.0	70.0
60	60 OR GREATER	60.0	70.0	60.0	70.0

NOTES:

1. SEE 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 WINDOW.
3. "N/A" DESIGNATES A SIZE NOT APPLICABLE TO THAT REINFORCEMENT CONDITION.
4. SIZE VALUES IN TABLE ARE $\pm 1/2"$



MULTIPLE UNIT NOTES:

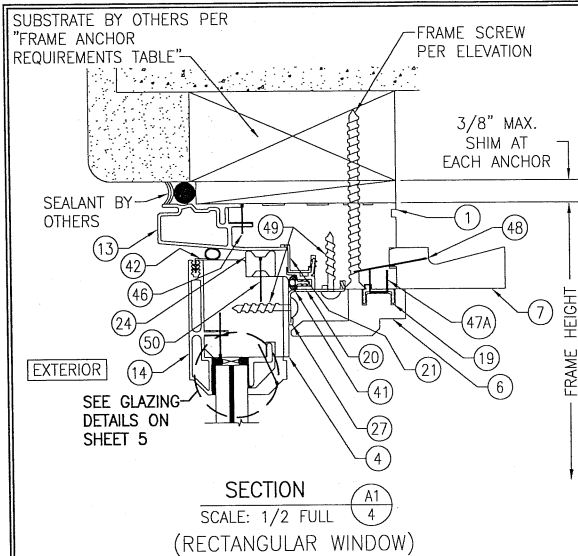
1. FOR ALL DETAIL NOT SHOWN, SEE SINGLE WINDOW ELEVATION.
2. MULLION MAY BE HORIZONTAL OR VERTICAL PROVIDING UNIT SIZES ARE RESTRICTED AS SHOWN IN THIS ELEVATION.
3. IF VERTICALLY STACKED, THE MANUFACTURER &/OR INSTALLER SHALL INSURE THAT THE DEAD LOAD WEIGHT OF THE ABOVE WINDOWS CAN NOT CAUSE UNDO FAILURE TO THE BELOW WINDOWS.
4. 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.
5. RECTANGULAR WINDOWS SHOWN. SHAPED WINDOWS ALSO APPLY UNDER THE SAME CONDITIONS SHOWN FOR RECTANGULAR.

EXTERIOR ELEVATION:
MULTIPLE WINDOWS

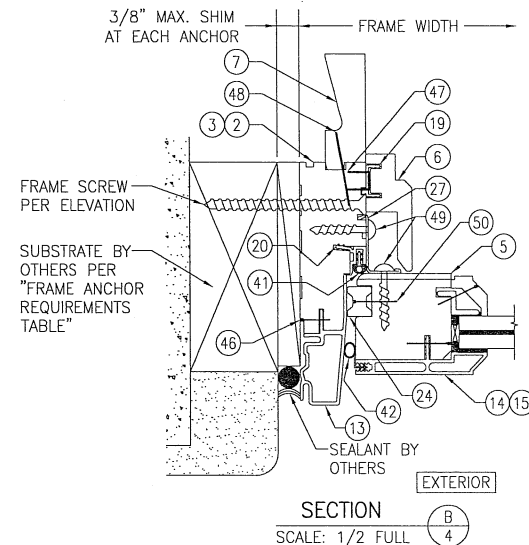
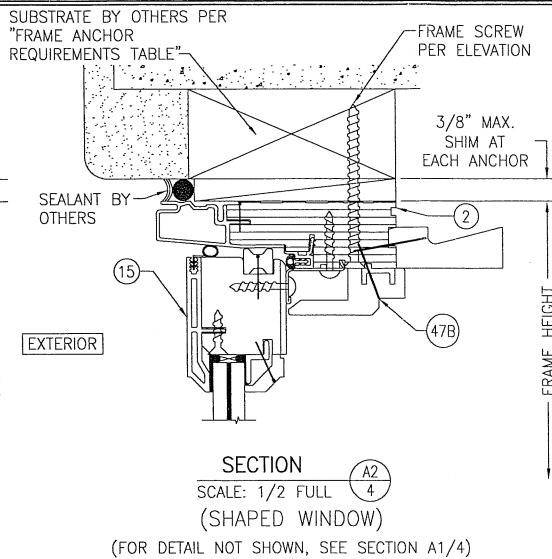
SCALE: 3/4" = 1'-0"

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.

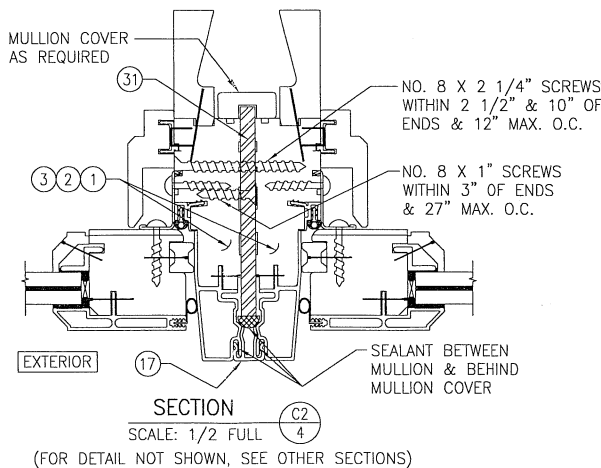
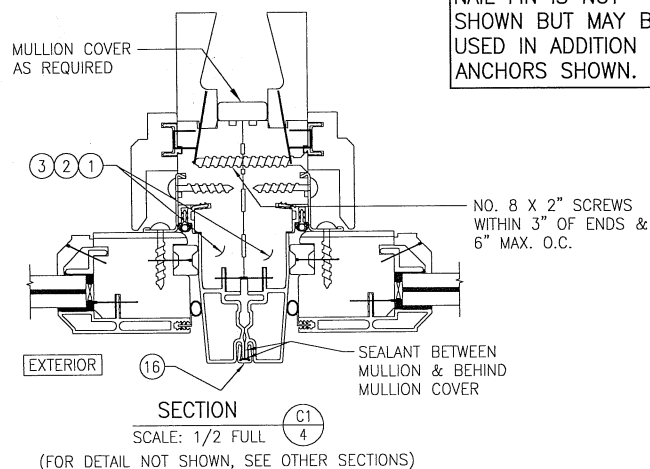
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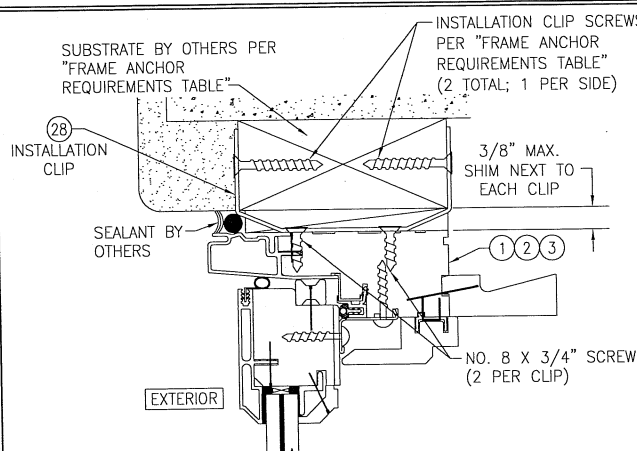
FRAME SCREW MOUNT SHOWN. SEE DETAILS ON SHEET 5 FOR DIRECT MOUNT & CLIP MOUNT DETAILS.



FRAME SCREW MOUNT SHOWN. SEE DETAILS ON SHEET 5 FOR DIRECT MOUNT & CLIP MOUNT DETAILS.

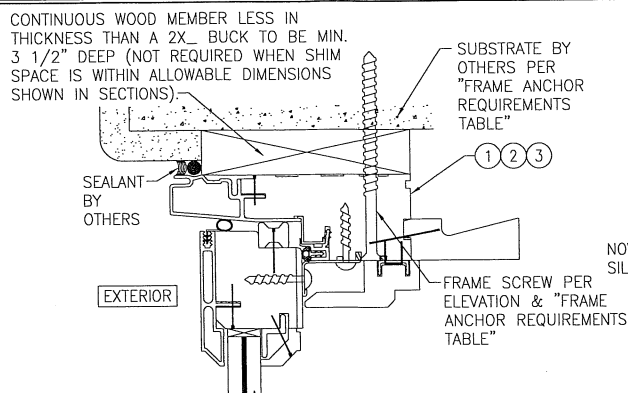


DRAWN BY:	W.R.M.	CHECKED BY:	W.W.S.
PLOT:	1-2	DATE:	10/27/11
DATE:		BY:	
REVISION:		DESCRIPTION:	
NO.			
DRAWING TITLE: ULTRA IMPACT FIXED FRAME WINDOW MANUFACTURER: KOLBE & KOLBE MILLWORK CO., INC. 1323 SOUTH 11TH AVE. WAUSAU, WI 54401 715-842-5666			
CONSULTANTS: W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809) 7480 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424			
CERTIFICATION: JAN 30 2018 WARREN W. SCHAEFER, P.E. P.E. NO. 44135			
DRAWING NO.	1764	REV.	B
SHEET NO.	4	OF	7



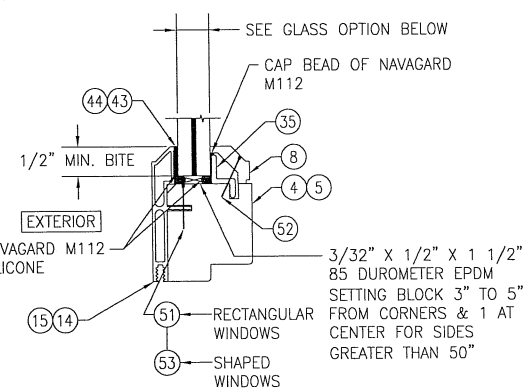
OPTIONAL INSTALLATION CLIP DETAIL

(HEAD SECTION SHOWN; SILL & SIDES ARE INSTALLED THE SAME)
(FOR DETAIL NOT SHOWN, SEE OTHER SECTIONS)



OPTIONAL DIRECT MOUNT DETAIL TO SUBSTRATE WITH SPACER

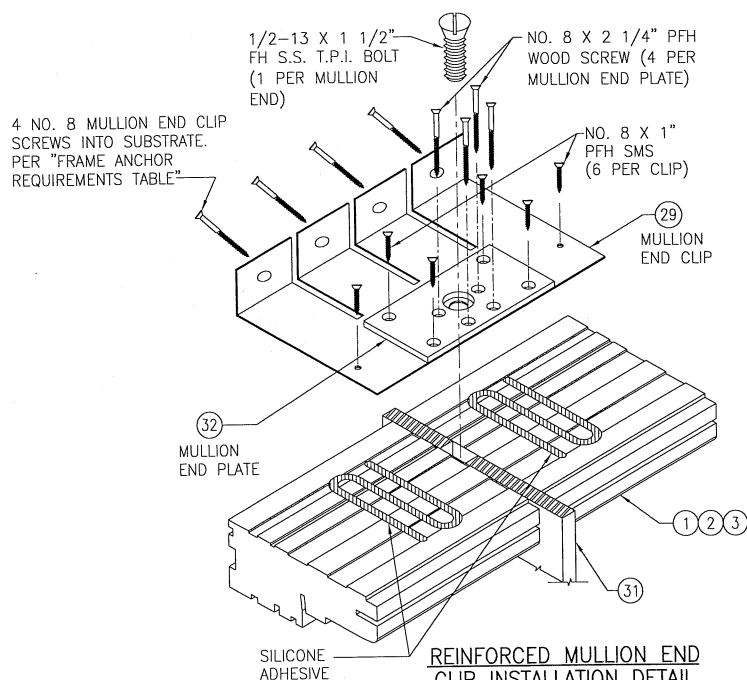
(HEAD SECTION SHOWN; SILL & SIDES ARE INSTALLED THE SAME)
(FOR DETAIL NOT SHOWN, SEE OTHER SECTIONS)



TYPICAL GLAZING DETAIL (NON-I.G. CONDITION)

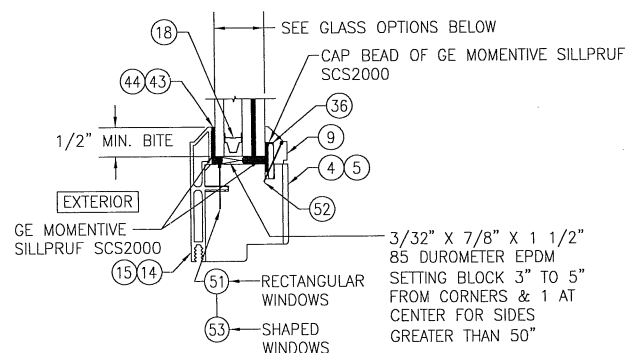
GLASS OPTION:

OPTION 1: 9/16" LAMINATED GLASS (1/4" HT. ST./0.09 KURARAY SG/1/4" HT. ST.)



REINFORCED MULLION END CLIP INSTALLATION DETAIL

(SIDE JAMBS & FRAME CLADDING NOT SHOWN FOR CLARITY)



TYPICAL GLAZING DETAIL

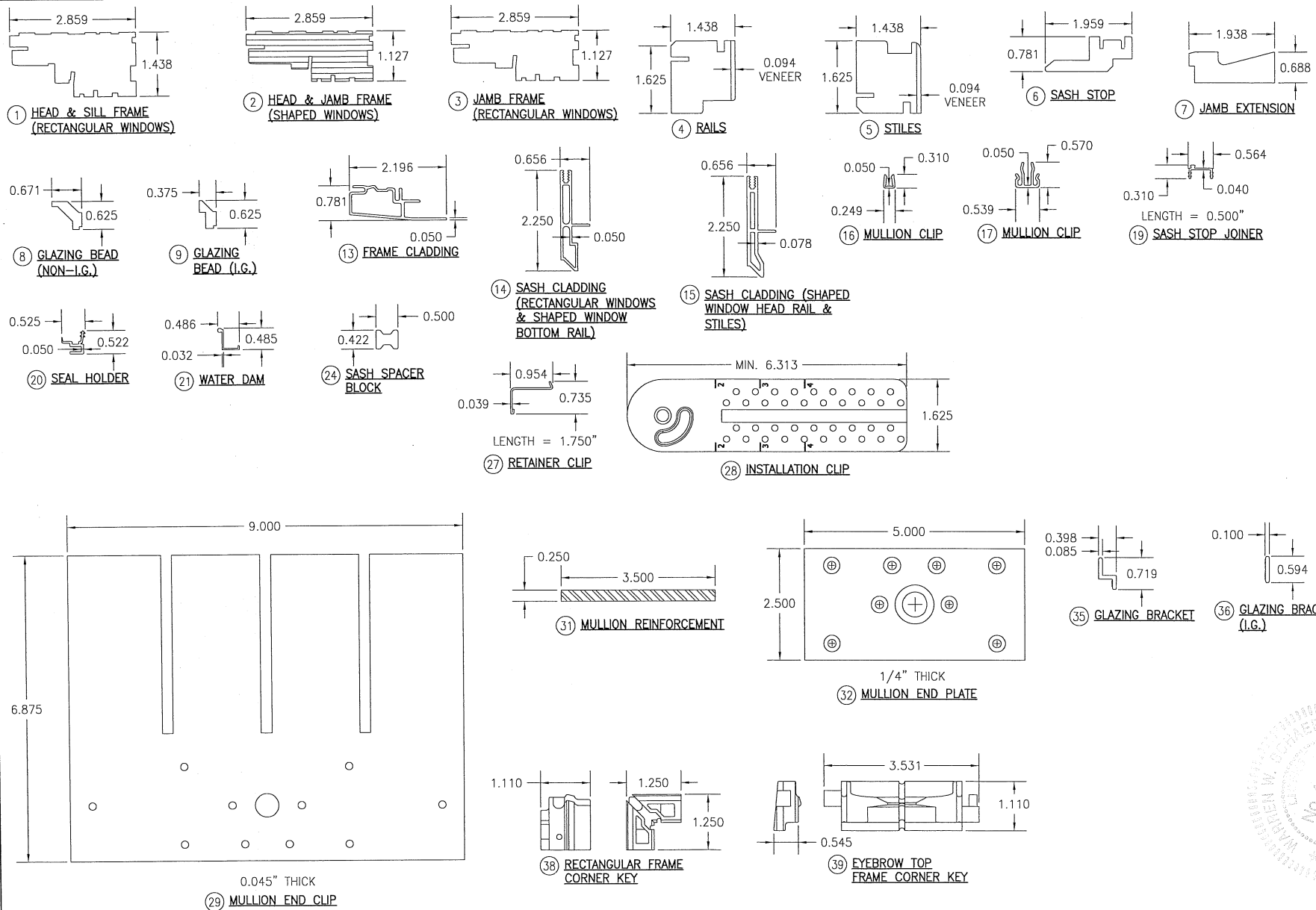
(I.G. CONDITION)

GLASS OPTIONS:

OPTION 2: 7/8" THICK I.G. GLASS (5/32" TEMP. EXTERIOR; 5/16" SPACER; (5/32" AN./0.09 KURARAY SG/5/32" AN. INTERIOR)

OPTION 3: 7/8" THICK I.G. GLASS (5/32" TEMP. EXTERIOR; 5/16" SPACER; (5/32" HT. ST./0.09 KURARAY SG/5/32" HT. ST. INTERIOR)

DRAWN BY: W.R.M.	CHECKED BY: W.W.S.
PLOT: 1-2	DATE: 10/27/11
DATE	
BY	
REVISION DESCRIPTION	
NO.	
DRAWING TITLE ULTRA IMPACT FIXED FRAME 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, 34418 PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424	CERTIFICATION JAN 20 2018 WARREN W. SCHAEFER, P.E. P.E. NO. 24135
DRAWING NO. 1764	REV. B
SHEET NO. 5	OF 7



DRAWING NO.		REV.	
1764		B	
SHEET NO.			
6		7	
OF			
DRAWING TITLE			
ULTRA IMPACT FIXED FRAME WINDOW			
CONSULTANTS		MANUFACTURER	
W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809)		KOLBE & KOLBE MILLWORK CO., INC. 1323 SOUTH 11TH AVE. WAUSAU, WI 54401 715-842-5666	
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