

GENERAL NOTES:

- THIS PRODUCT HAS BEEN TESTED, ANALYZED & APPROVED FOR DESIGN PRESSURES NOT TO EXCEED THOSE SHOWN IN THE "ALLOWABLE DESIGN PRESSURE TABLE(S)".
- OPENINGS, BUCKING & BUCKING FASTENERS MUST BE PROPERLY DESIGNED & INSTALLED TO TRANSFER WIND LOADS TO THE STRUCTURE.
- 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.
- 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.
- IMPACT SHUTTERS ARE NOT REQUIRED WITH THIS PRODUCT.
- 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.
- 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 Kd = 0.85 MAY BE APPLIED PER THE ASCE-7 STANDARD.
- MATERIALS, INCLUDING BUT NOT LIMITED TO STEEL SCREWS, THAT COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL MEET THE REQUIREMENTS OF FLORIDA BUILDING CODE.
- 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.
- 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.
- 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.

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.

FRAME ANCHOR REQUIREMENTS TABLE

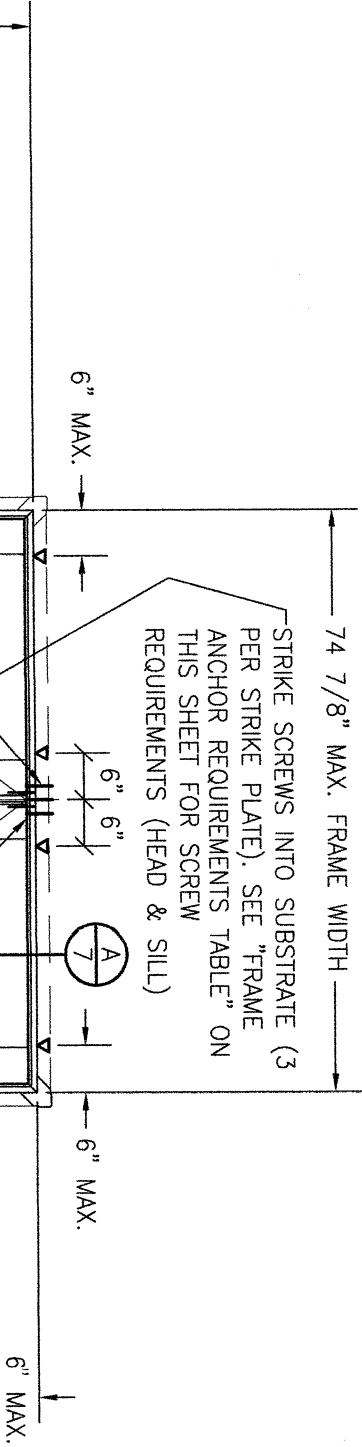
OPENING TYPE (SUBSTRATE)	FRAME/HINGE/STRIKE/CLIP TO OPENING FASTENER TYPE	MINIMUM EMBED	MINIMUM EDGE DIST.
FRAME SCREWS			
MIN. 2X4 WOOD FRAME OR BUCK (MIN. GR. 3 & G=0.55)	NO. 10 SMS OR WOOD SCREW	1 1/4"	3/4"
MIN. 18 GA. 33 KSI METAL STUD	NO. 10 GR. 5 SELF TAP/DRILL SCREW	FULL	1/2"
MIN. 1/8" THK A36 STEEL	NO. 10 GR. 5 SELF TAP/DRILL SCREW	FULL	1/2"
MIN. 1/8" THK 6063-T5 ALUM.	NO. 10 GR. 5 SELF TAP/DRILL SCREW	FULL	1/2"
MIN. C-90 CMU	(1) 1/4" CONCRETE SCREW	1 1/4"	2"
MIN. 2500 PSI CONCRETE	(1) 1/4" CONCRETE SCREW	1 1/2"	2"
HINGE & STRIKE SCREWS			
MIN. 2X4 WOOD FRAME OR BUCK (MIN. GR. 3 & G=0.55)	NO. 10 SMS OR WOOD SCREW	1 1/4"	3/4"
MIN. 18 GA. 33 KSI METAL STUD	NO. 10 GR. 5 SELF TAP/DRILL SCREW	FULL	1/2"
MIN. 1/8" THK A36 STEEL	NO. 10 GR. 5 SELF TAP/DRILL SCREW	FULL	1/2"
MIN. 1/8" THK 6063-T5 ALUM.	NO. 10 GR. 5 SELF TAP/DRILL SCREW	FULL	1/2"
MIN. C-90 CMU	(1) 3/16" CONCRETE SCREW	1 1/4"	2"
MIN. 2500 PSI CONCRETE	(1) 3/16" CONCRETE SCREW	1 1/2"	2"

INSTALLATION CLIP SCREWS

MIN. 2X4 WOOD FRAME OR BUCK (MIN. GR. 3 & G=0.55)	NO. 8 SMS SCREW	1 3/8"	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"

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

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.



EXTERIOR ELEVATION:
DOUBLE RECTANGULAR DOOR
SCALE: 1/2" = 1'-0"

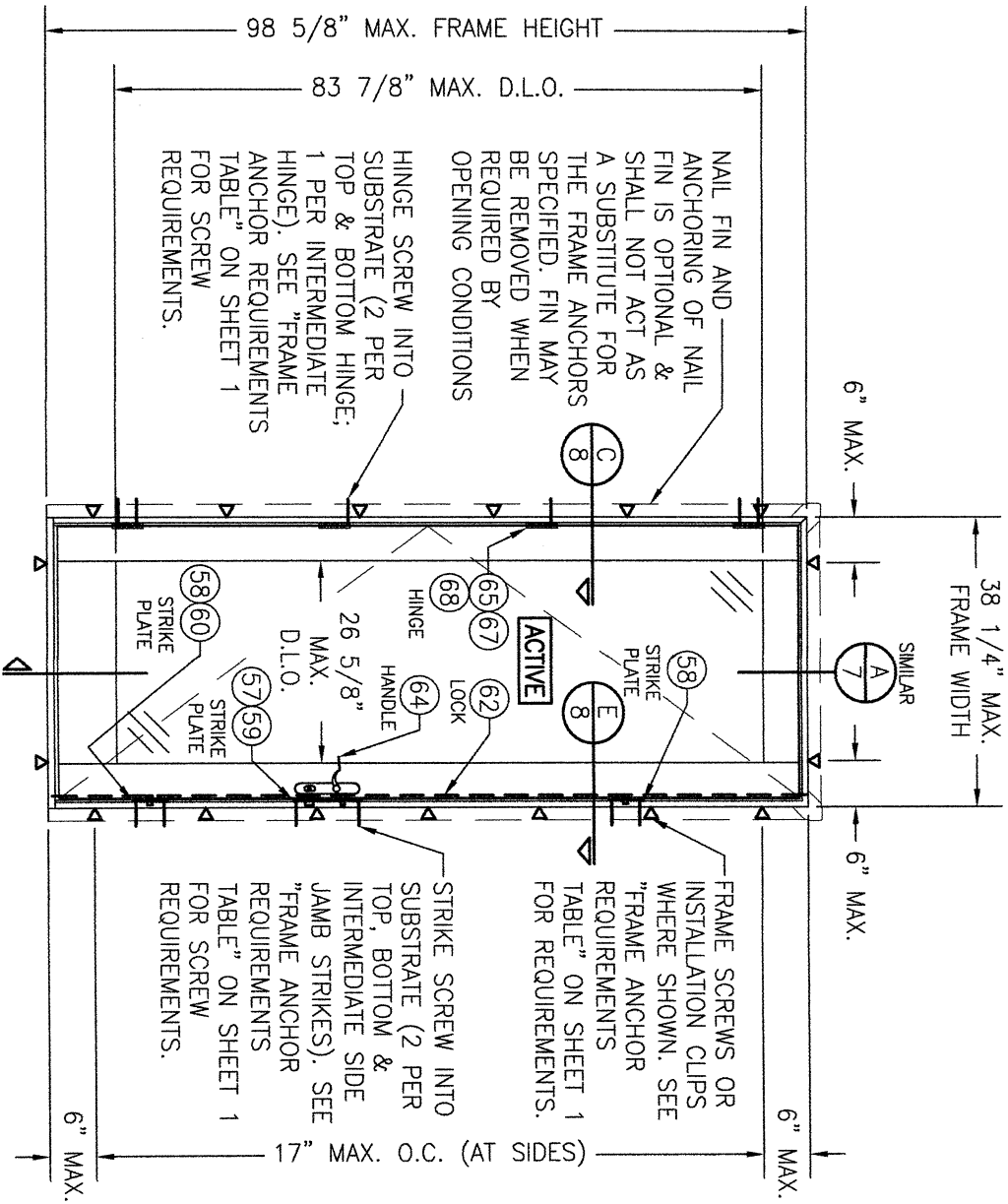
HINGE REQUIREMENTS (ALL DOOR CONDITIONS)	
4 PER PANEL (ALL DOOR SIZES)	

ALLOWABLE DESIGN PRESSURE (ALL DOOR CONDITIONS)		
DOOR FRAME HEIGHT	POSITIVE	NEGATIVE
82.6" OR LESS	70 PSF	70 PSF
TALLER THAN 82.6"	65 PSF	65 PSF

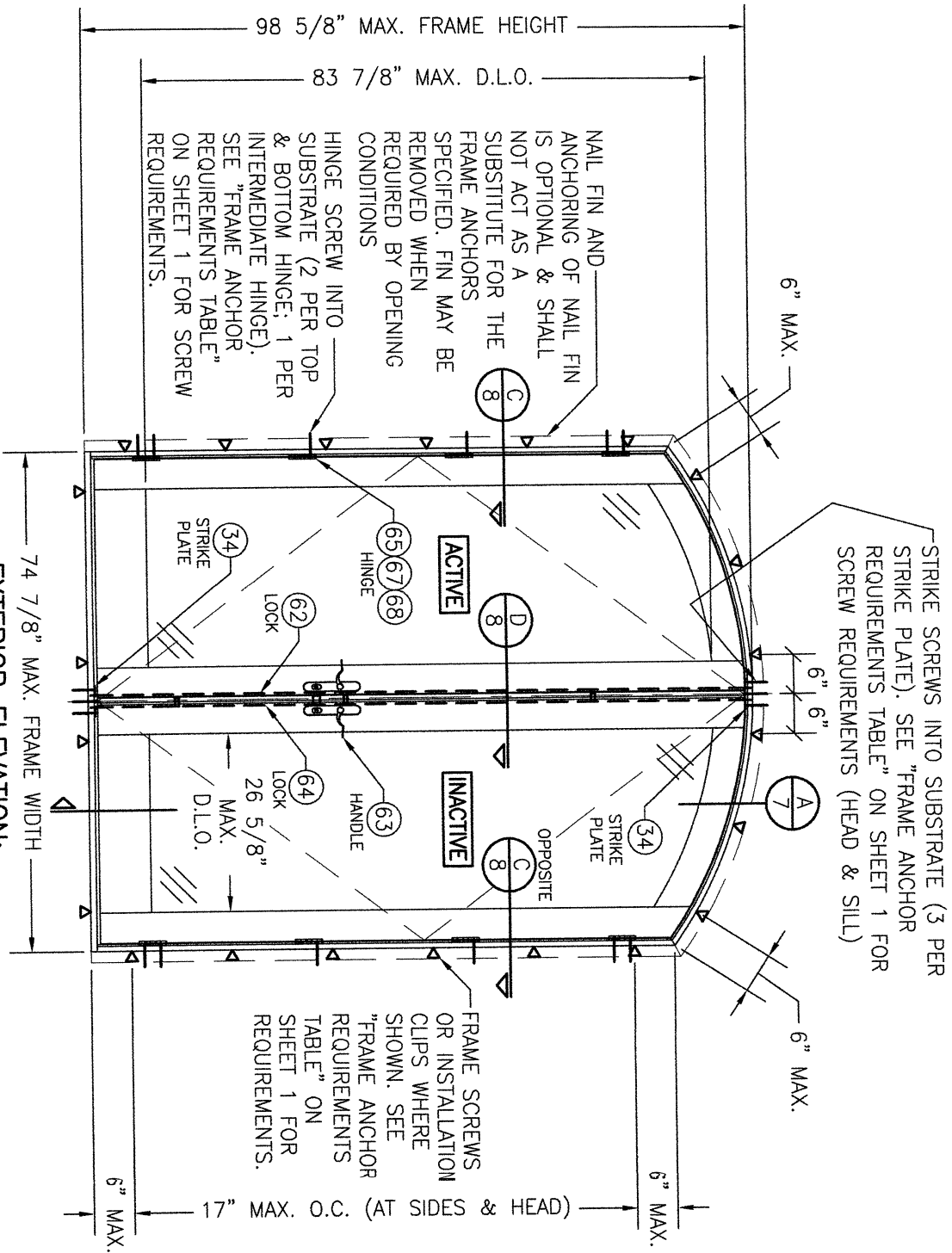


Digitally signed
by Warren W
Schaefer
Date:
2026.06.17
14:08:54 -04'00'

DRAWING TITLE ULTRA SERIES MANOR IMPACT DOOR		DRAWN BY: W.R.M.		CHECKED BY: W.M.S.	
CONSULTANTS W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. 25601 AYSEN DRIVE PUNTA GORDA, FL 33983		MANUFACTURER KOLBE & KOLBE MILLWORK CO., INC. 1323 SOUTH 11TH AVE. WAUSAU, WI 54401 715-842-5666		DATE: 08/13/13	
CERTIFICATION WARREN W. SCHAEFER, P.E. P.E. NO. 44135		NO. REVISION DESCRIPTION BY DATE		PLOT: 1=24	
DRAWING NO. 1830 SHEET NO. 1 OF 12		A1 UPDATE TO CURRENT STANDARDS W.W.S. 01/06/15		DATE: 08/13/13	
		B1 ALTERNATE PANEL ATTACHMENT W.W.S. 10/26/20			
		C1 ADD HLS-8000 LOCK SYSTEM W.W.S. 06/10/26			

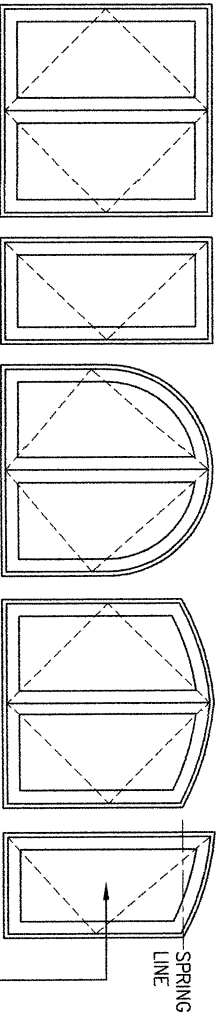


EXTERIOR ELEVATION:
SINGLE RECTANGULAR DOOR
SCALE: 1/2" = 1'-0"

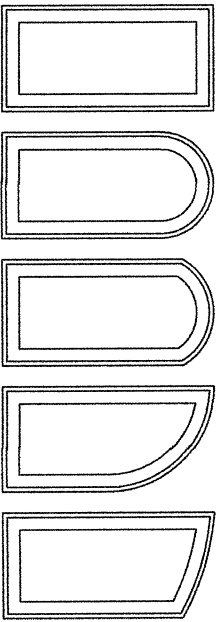


EXTERIOR ELEVATION:
DOUBLE EYEBROW TOP DOOR
SCALE: 1/2" = 1'-0"

APPROVED SHAPES
OPERABLE DOORS



FIXED PANEL DOORS



THIS SHAPE MAY BE USED AS AN OPERABLE DOOR ONLY IF SPRING LINE HEIGHT ABOVE SILL IS 80" OR MORE

NOTES:

1. OTHER SHAPES MAY APPLY PROVIDING THEY ARE SIMILAR TO THOSE SHOWN, & HAVE CORNER CONSTRUCTION AS DESCRIBED IN THIS DRAWING.

DRAWN BY:		CHECKED BY:	
W.R.M.		W.M.S.	
PLOT:	1-24	DATE:	06/13/13
NO.	REVISION	DESCRIPTION	BY

ULTRA SERIES MANOR IMPACT DOOR

CONSULTANTS
W. W. SCHAEFER ENGINEERING
& CONSULTING, P.A.
25601 AYSEN DRIVE
PUNTA GORDA, FL 33983

MANUFACTURER
KOLBE & KOLBE MILLWORK CO., INC.
1323 SOUTH 11TH AVE.
WAUSAU, WI 54401
715-842-5666

CERTIFICATION

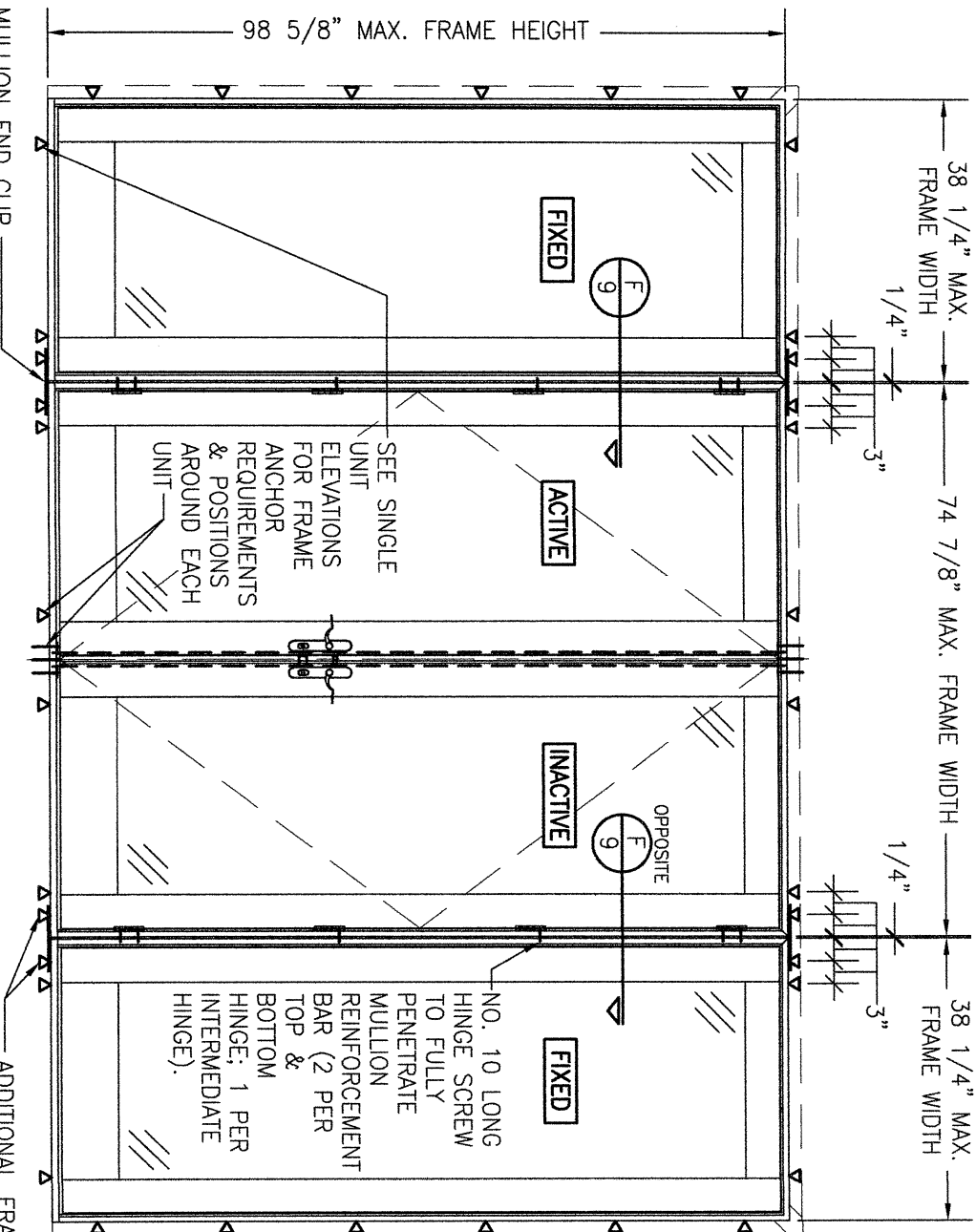
WARREN W. SCHAEFER, P.E.
P.E. NO. 44135

DRAWING NO. 1830

REV. C

SHEET NO. 2

OF 12



EXTERIOR ELEVATION:

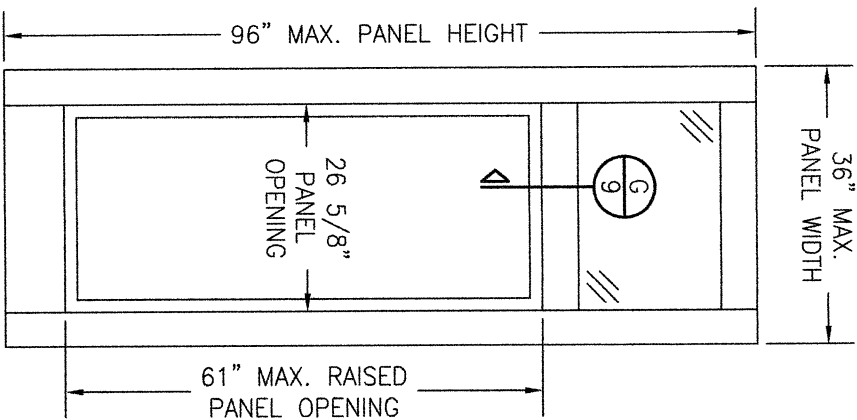
DOUBLE DOORS WITH FIXED PANELS

SEE SINGLE UNIT ELEVATIONS FOR FRAME ANCHOR REQUIREMENTS & POSITIONS AROUND EACH UNIT

SCALE: 1/2" = 1'-0"
(RECTANGULAR DOORS SHOWN, SHAPED DOORS ALSO APPLY. SEE "APPROVED SHAPES" TABLE ON SHEET 2)

MULTIPLE UNIT NOTES:

1. FOR DETAIL NOT SHOWN, SEE INDIVIDUAL UNIT ELEVATIONS.
2. THERE IS NO LIMIT ON THE NUMBER OF DOORS THAT MAY BE COMBINED IN ONE DIRECTION INTO ONE OPENING PROVIDING THE OPENING IS DESIGNED TO SUPPORT ALL LOADS TRANSFERRED FROM THE DOORS & THEIR MULLIONS.
3. OXO UNIT IS SHOWN. ALL OTHER FIXED/OPERABLE COMBINATIONS ALSO APPLY WITH THE MULLION CONDITIONS SHOWN.



EXTERIOR ELEVATION:

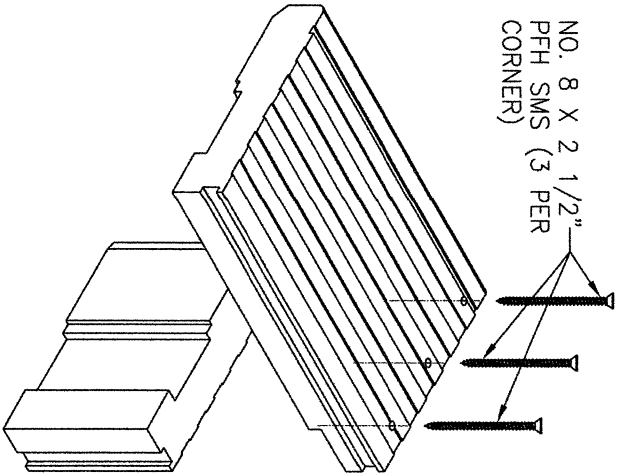
RAISED PANEL

SCALE: 1/2" = 1'-0"

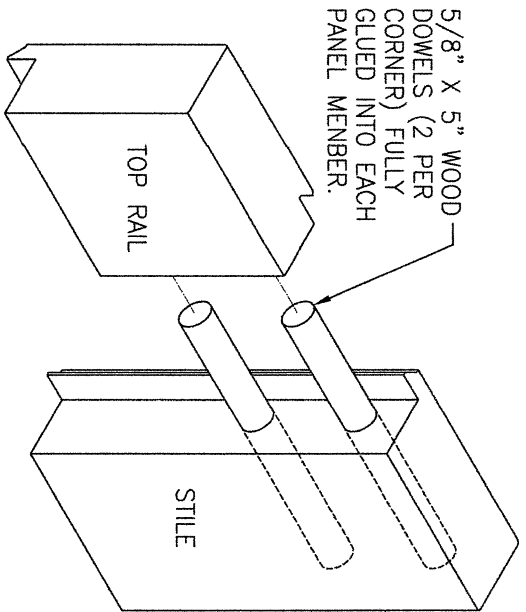
RAISED PANEL NOTES:

1. SINGLE RAISED PANEL CONDITION SHOWN, MORE THAN ONE RAISED PANEL MAY EXIST IN A SINGLE DOOR PANEL WHEN MULTIPLE MID-RAILS ARE USED.
2. PANEL ONLY IS SHOWN. FOR INSTALLATION INTO FRAME, SEE OTHER ELEVATIONS.
3. THESE PANEL CONDITIONS APPLY WITH BOTH OPERABLE & FIXED PANEL DOORS
4. RECTANGULAR CONDITION SHOWN, SHAPED CONDITIONS ALSO APPLY.
5. VERTICAL MID-RAILS MAY BE USED BETWEEN HORIZONTAL MID-RAILS AT RAISED PANEL PROVIDING RAIL SPAN DOES NOT EXCEED 26 5/8".

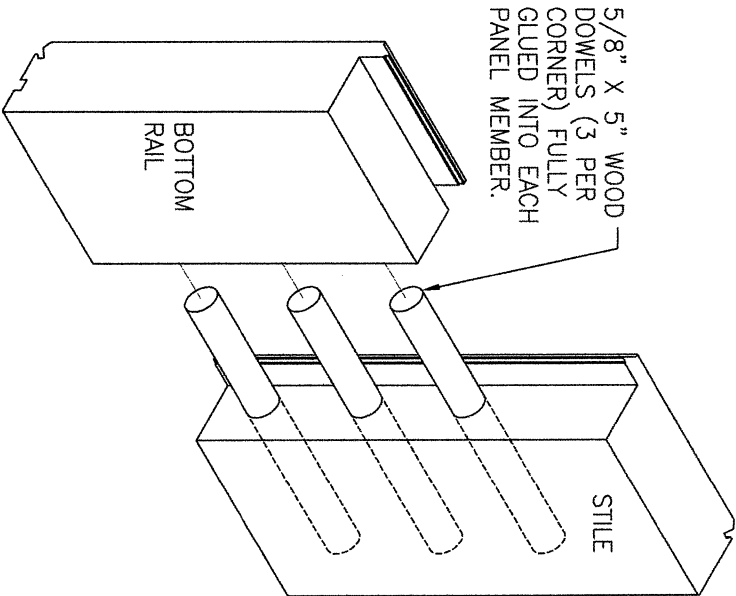
DRAWING NO. 1830		REV. C	SHEET NO. 4 OF 12	CERTIFICATION	DRAWING TITLE					NO. REVISION DESCRIPTION BY DATE					PLOT: 1=24	DRAWN BY: W.R.M.	CHECKED BY: W.M.S.		
					ULTRA SERIES MANOR IMPACT DOOR														
WARREN W. SCHAEFER, P.E. P.E. NO. 44135					CONSULTANTS W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. 25601 AYSEN DRIVE PUNTA GORDA, FL 33983					MANUFACTURER KOLBE & KOLBE MILLWORK CO., INC. 1323 SOUTH 11TH AVE. WAUSAU, WI 54401 715-842-5666					DATE: 08/13/13				



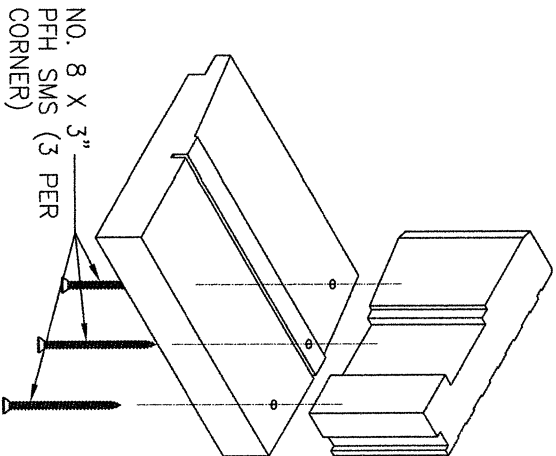
FRAME CORNER DETAIL
NOTE: FRAME MEETING SURFACES ARE SEALED WITH SILICONE.



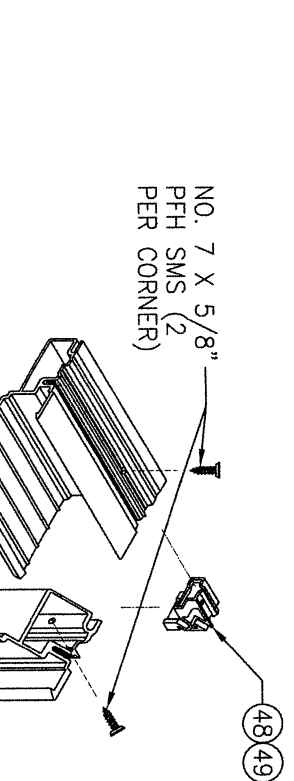
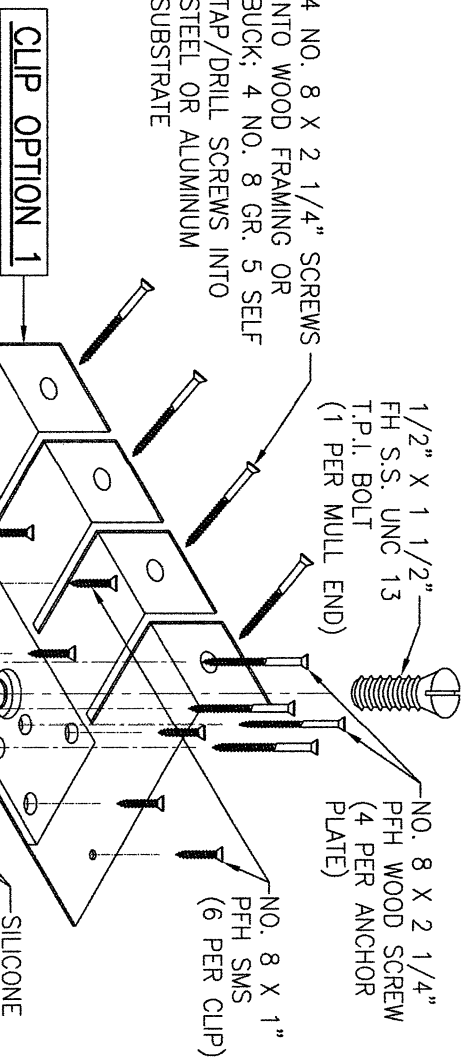
PANEL TOP CORNER DETAIL
NOTE: STILE & RAIL MEETING SURFACES ARE SEALED WITH SILICONE. CLAD JOINT IS ALSO SEALED WITH SILICONE.



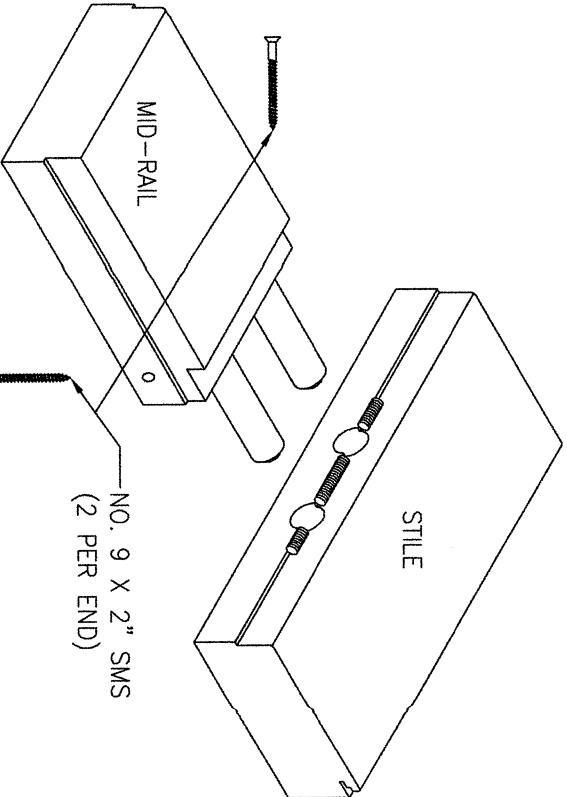
PANEL BOTTOM CORNER DETAIL
NOTE: STILE & RAIL MEETING SURFACES ARE SEALED WITH SILICONE. CLAD JOINT IS ALSO SEALED WITH SILICONE.



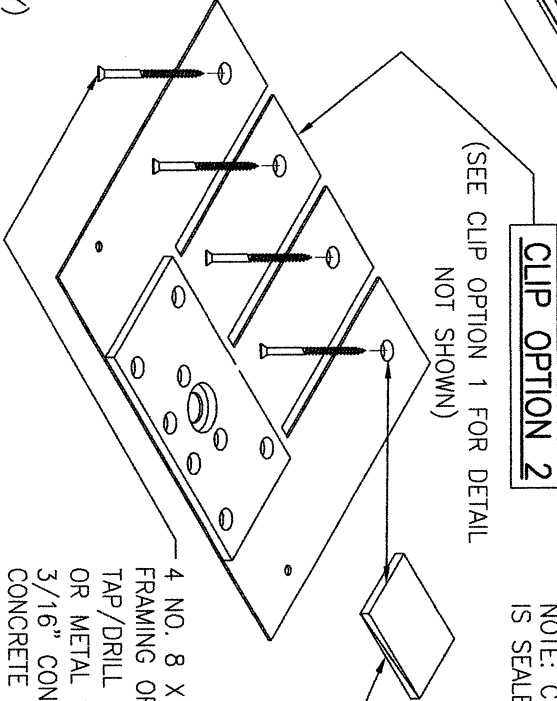
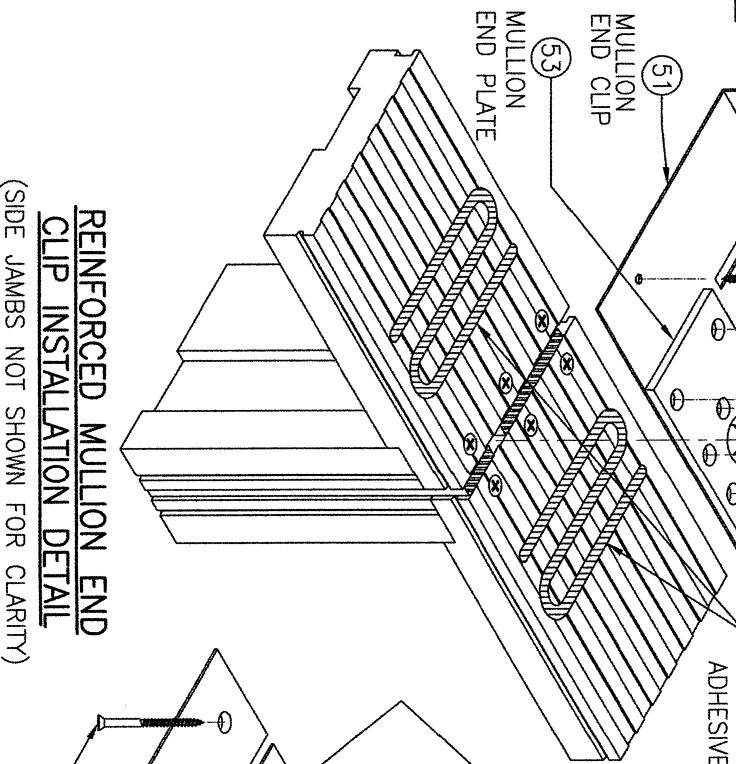
SILL CORNER DETAIL
NOTE: FRAME MEETING SURFACES ARE SEALED WITH SILICONE.



FRAME CLAD CORNER DETAIL
NOTE: CORNER OF CLAD IS SEALED WITH SILICONE



MID-RAIL END DETAIL
NOTE: STILE & RAIL MEETING SURFACES ARE SEALED WITH SILICONE. CLAD JOINT IS ALSO SEALED WITH SILICONE.



NOTE: SHIM AS REQUIRED WITH PLASTIC OR COMPOSITE SHIMS TO FILL ANY VOID THAT MAY OCCUR BETWEEN THE CLIP AND THE SUPPORTING SUBSTRATE.

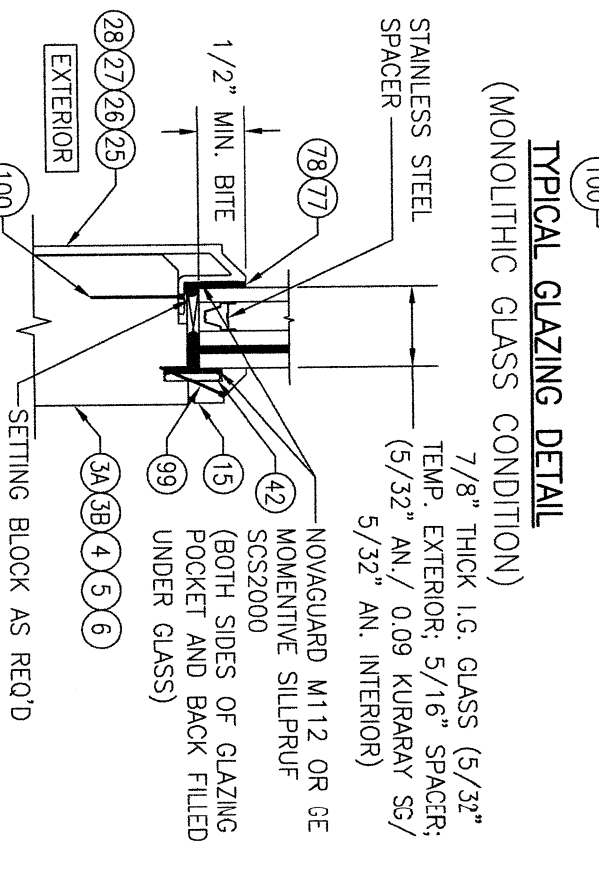
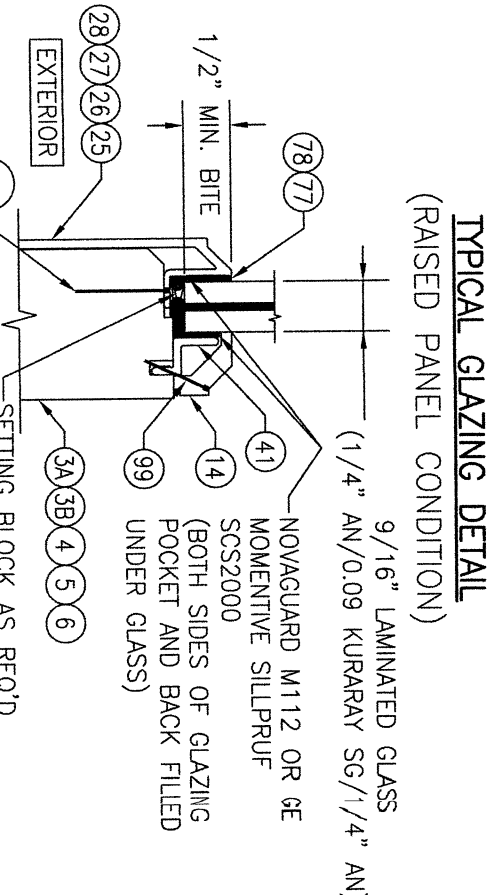
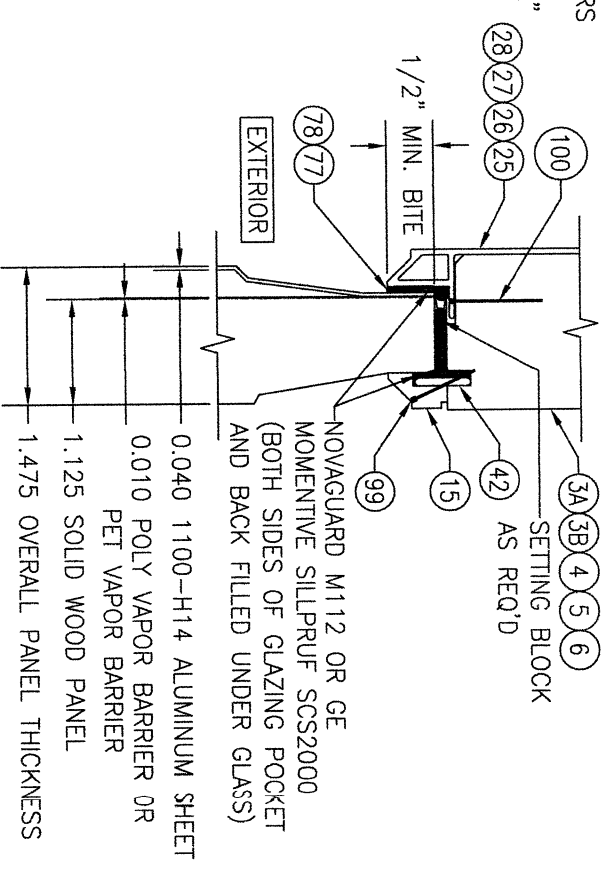
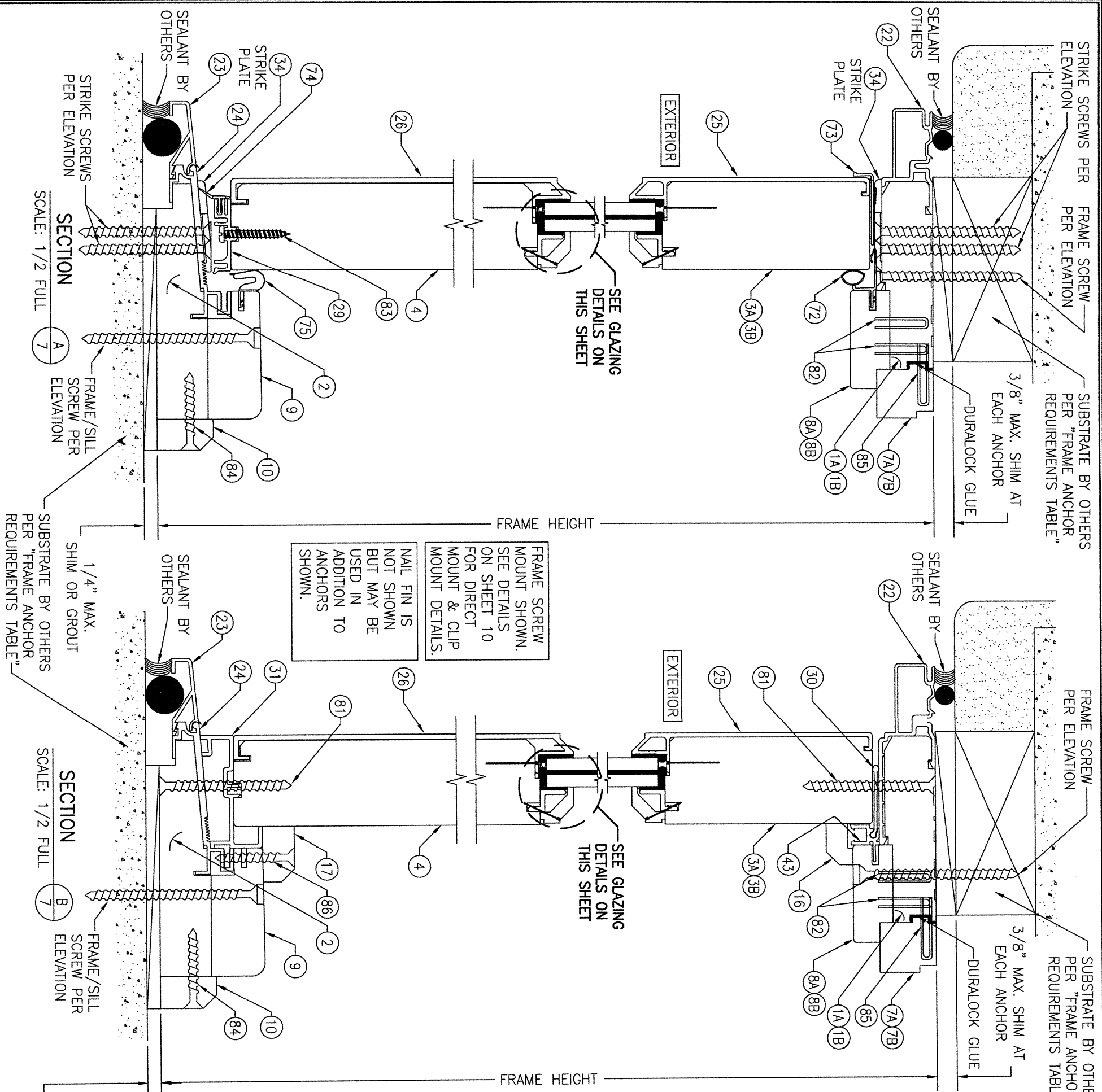
4 NO. 8 X 2 1/4" SCREWS INTO WOOD FRAMING OR BUCK; 4 NO. 8 GR. 5 SELF TAP/DRILL SCREWS INTO STEEL, ALUMINUM OR METAL STUD SUBSTRATE; FOUR(4) 3/16" CONCRETE SCREWS INTO CMU OR CONCRETE

REINFORCED MULLION END CLIP INSTALLATION DETAIL
(SIDE JAMBS NOT SHOWN FOR CLARITY)

DRAWN BY:	CHECKED BY:	DATE				BY	REVISION DESCRIPTION	NO.
		W.R.M.	W.M.S.	DATE	1-24			
				06/13/13				

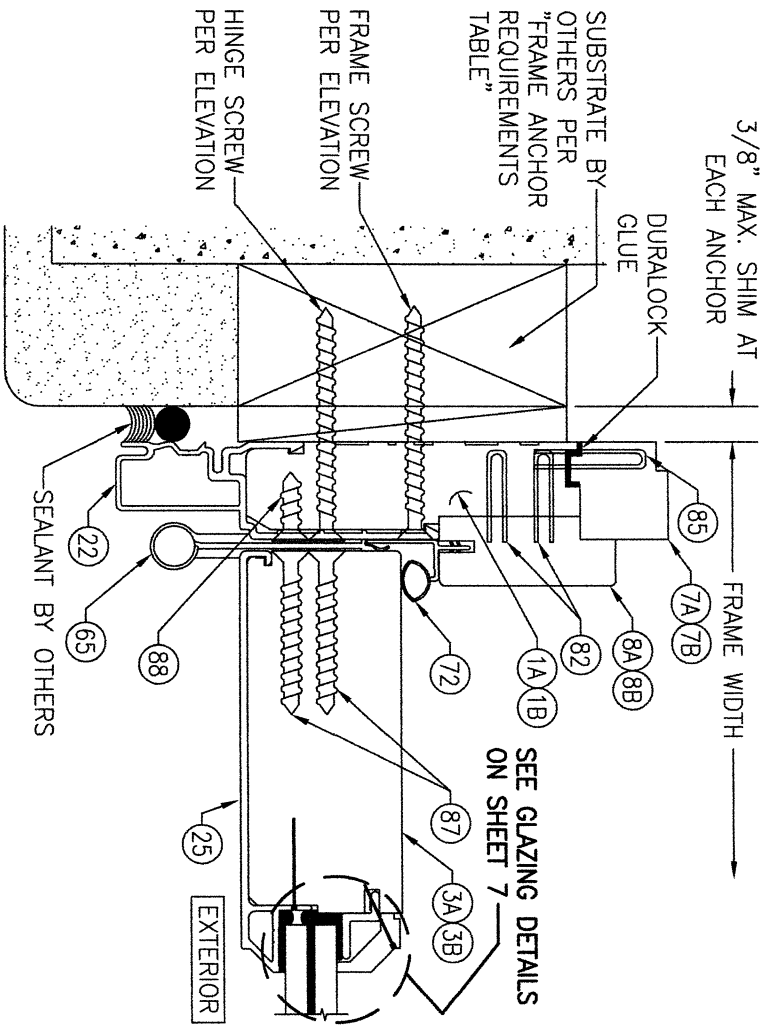
DRAWING TITLE		MANUFACTURER	
ULTRA SERIES MANOR IMPACT DOOR		KOLBE & KOLBE MILLWORK CO., INC.	
CONSULTANTS		1323 SOUTH 11TH AVE.	
W. W. SCHAEFER ENGINEERING & CONSULTING, P.A.		WAUSAU, WI 54401	
25601 AYSEN DRIVE		715-842-5666	
PUNTA GORDA, FL 33983			

<u>CERTIFICATION</u>		DRAWING NO.	REV.
WARREN W. SCHAEFER, P.E.			
P.E. NO. 44135		1830	C
SHEET NO.		6 OF 12	

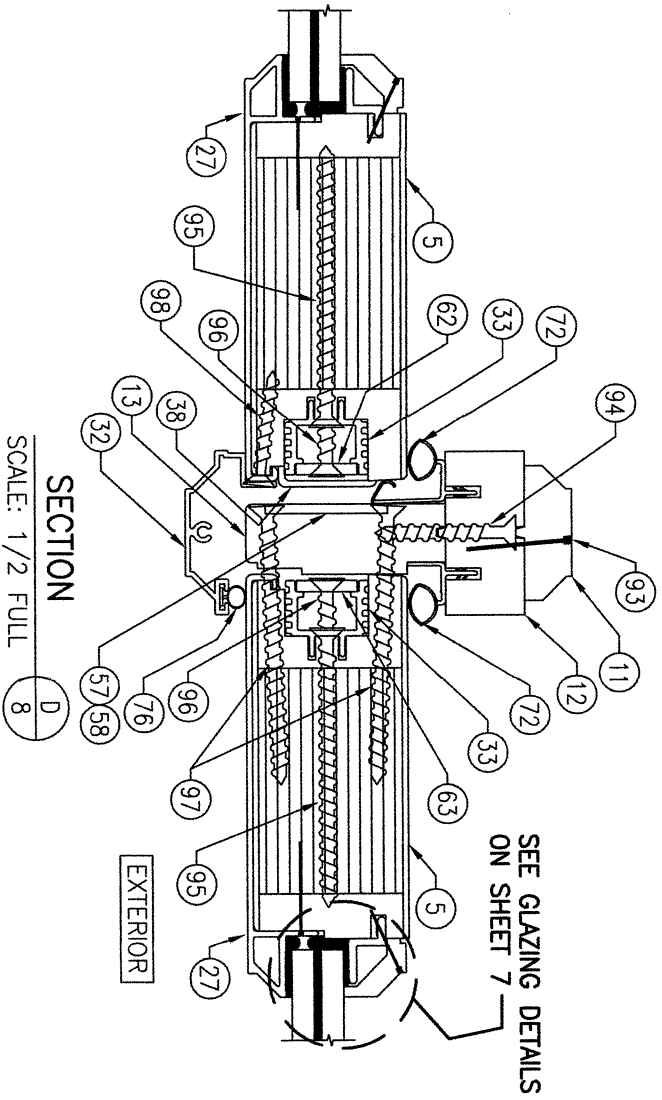


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W.R.M.		W.M.S.		
DATE: 08/13/13		DATE: 08/13/13		
PLOT: 1=2		PLOT: 1=2		
NO.	REVISION	DESCRIPTION	BY	DATE

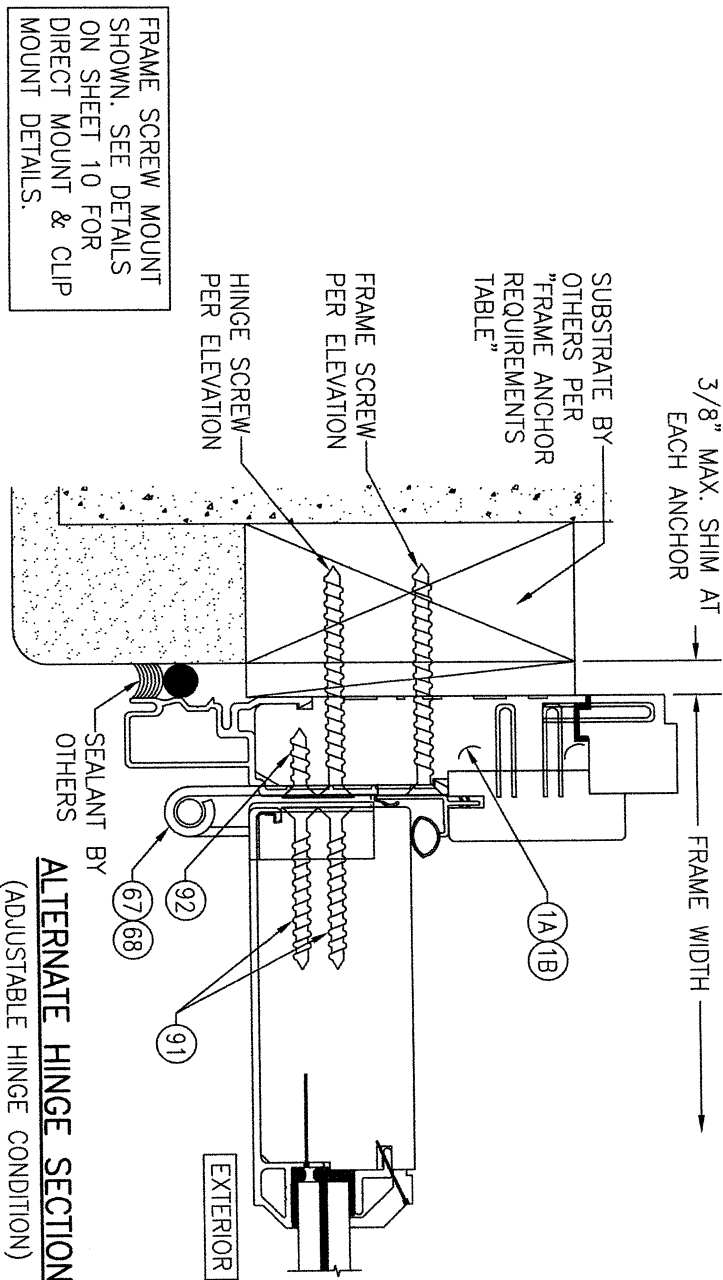
DRAWING TITLE		MANUFACTURER	
ULTRA SERIES MANOR IMPACT DOOR		KOLBE & KOLBE MILLWORK CO., INC.	
CONSULTANTS		1323 SOUTH 11TH AVE.	
W. W. SCHAEFER ENGINEERING & CONSULTING, P.A.		WAUSAU, WI 54401	
25601 AYSEN DRIVE		715-842-5666	
PUNTA GORDA, FL 33983			
CERTIFICATION		DRAWING NO. 1830	
WARREN W. SCHAEFER, P.E.		REV. C	
P.E. NO. 44135		SHEET NO. 7 OF 12	



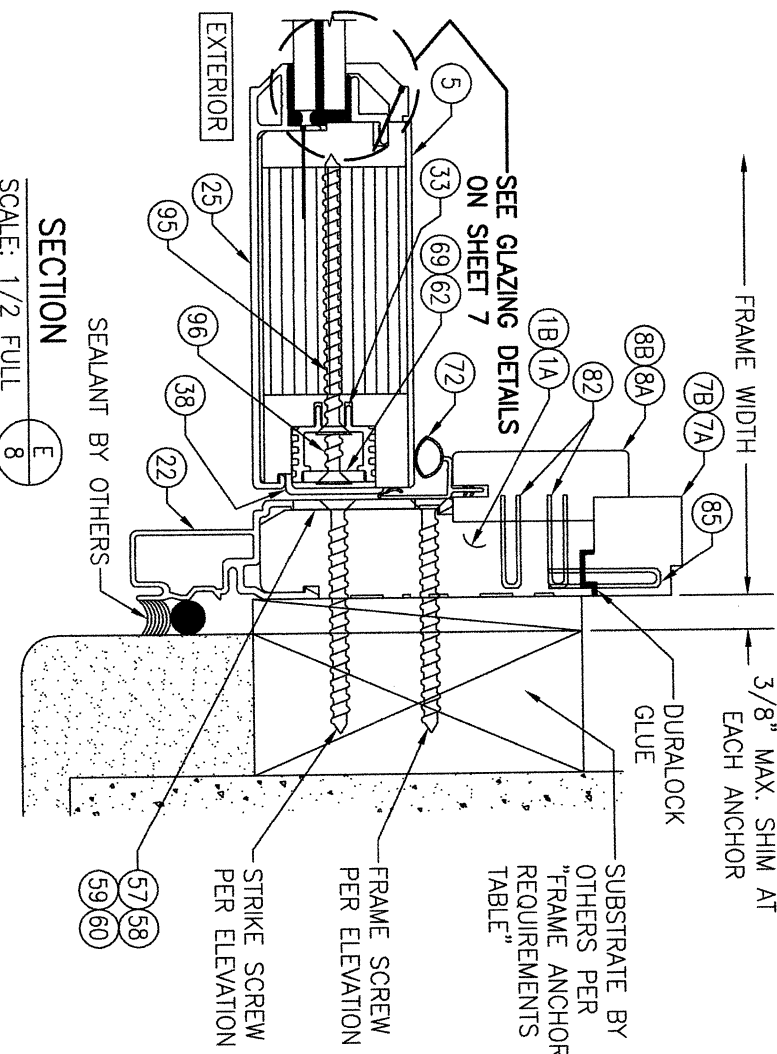
SECTION C
SCALE: 1/2 FULL
(BUTT HINGE CONDITION SHOWN. FOR ADJUSTABLE HINGE CONDITION SEE THE ALTERNATE HINGE SECTION ON THIS SHEET)



SECTION D
SCALE: 1/2 FULL



ALTERNATE HINGE SECTION
(ADJUSTABLE HINGE CONDITION)
(FOR DETAIL NOT SHOWN, SEE SECTION C/8)



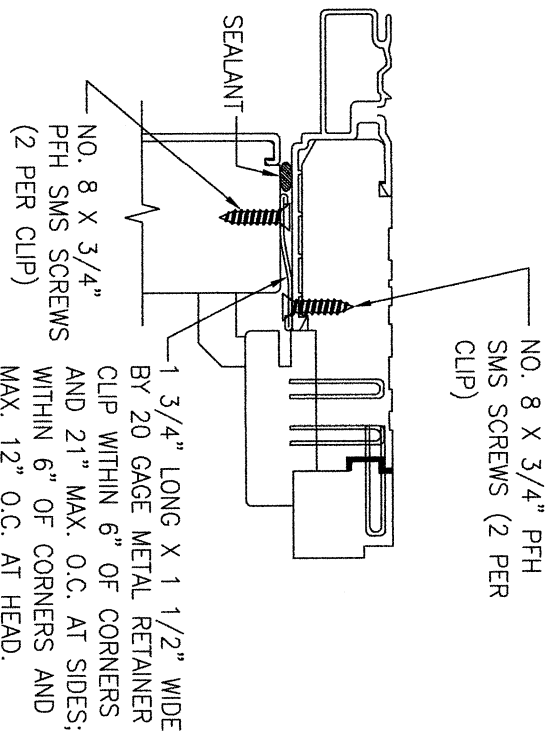
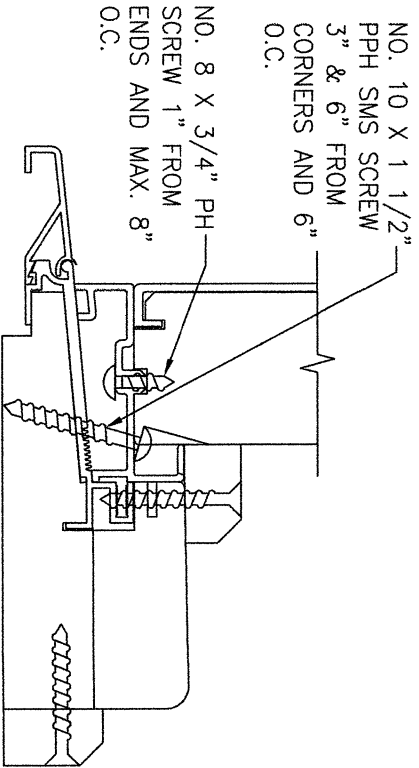
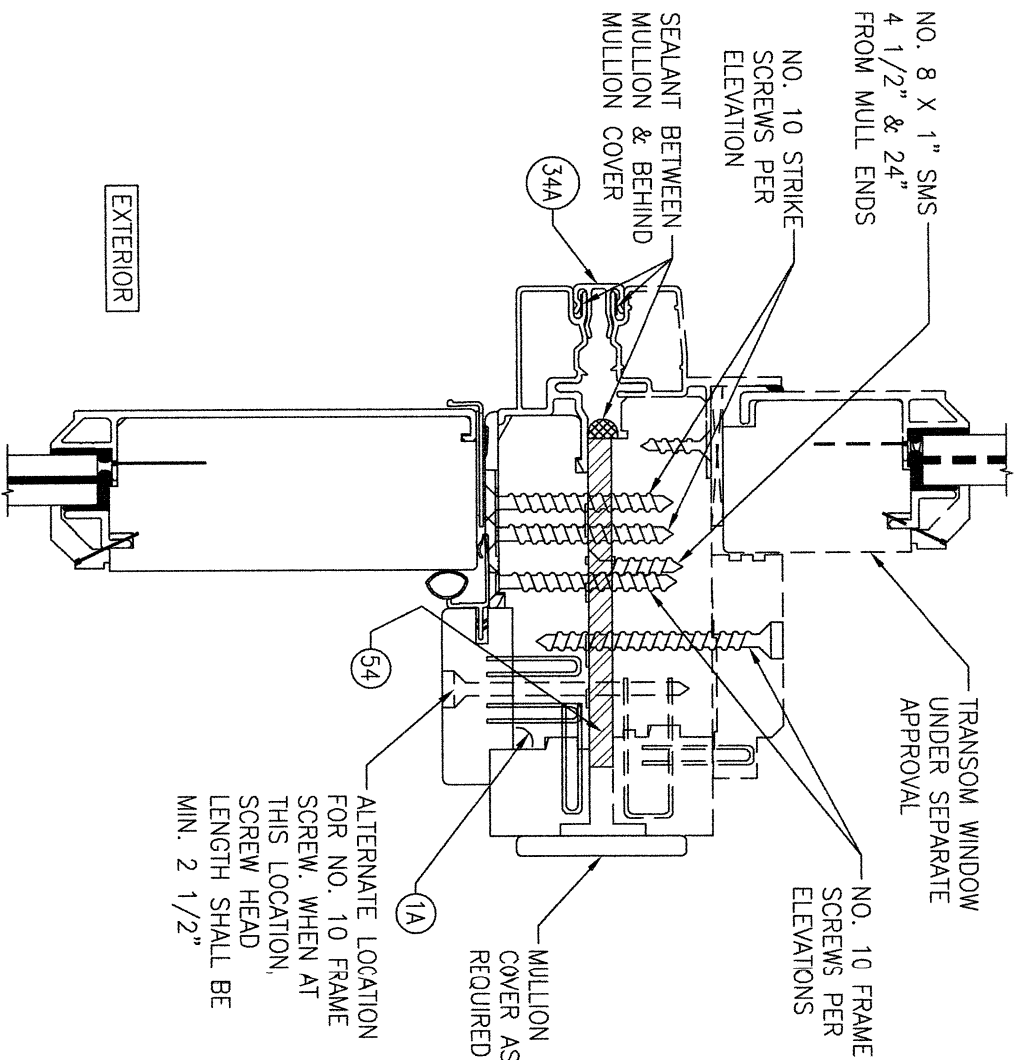
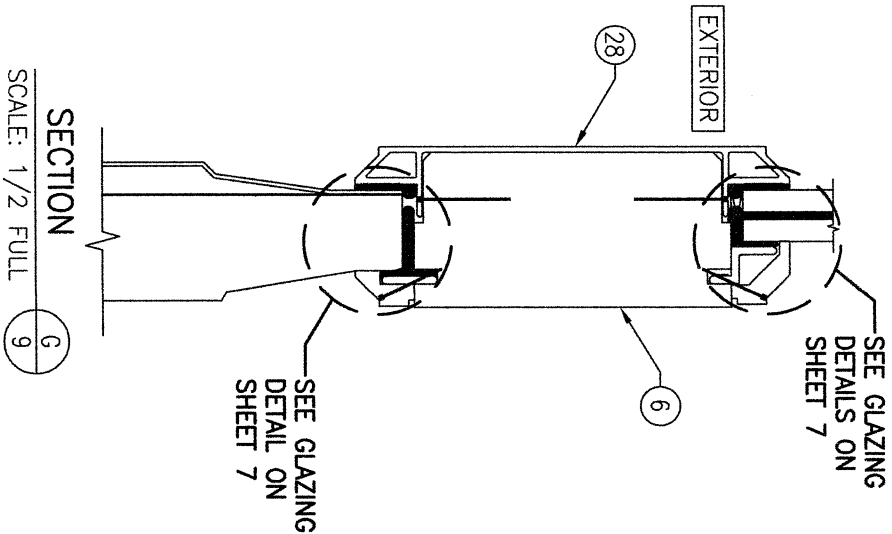
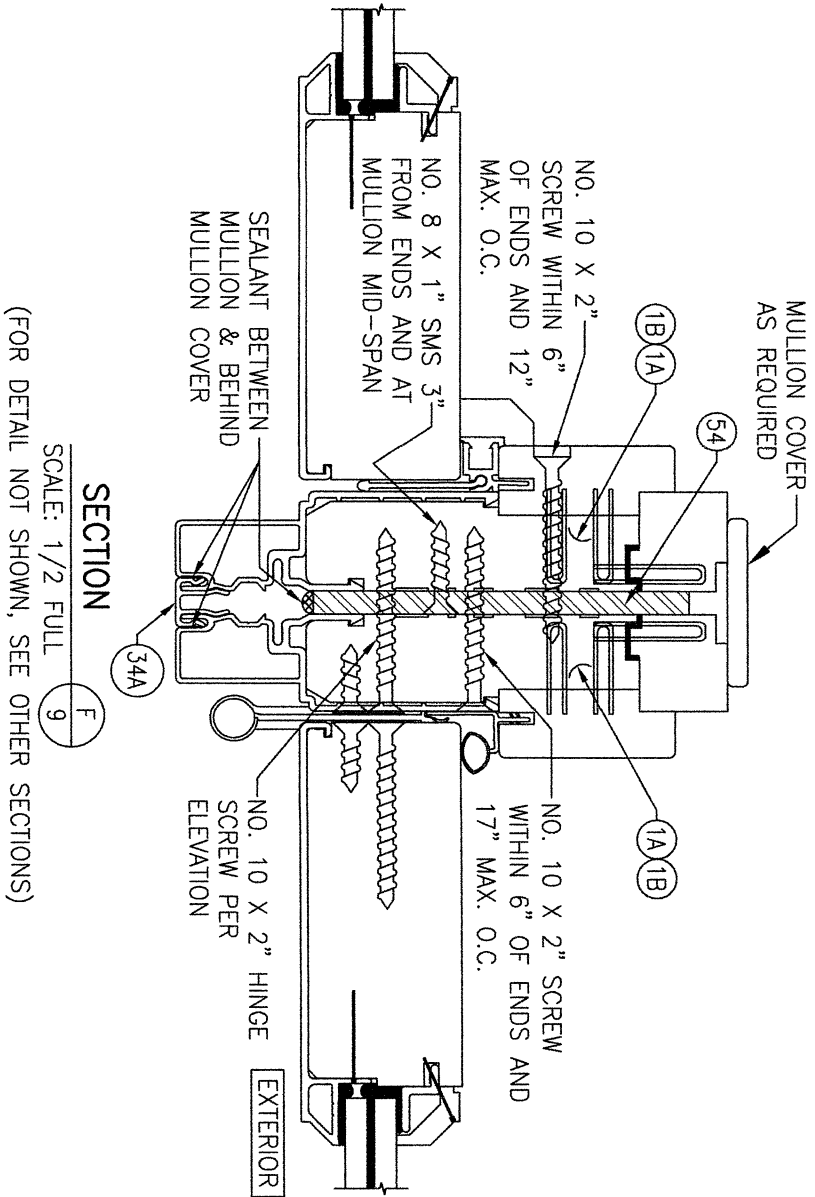
SECTION E
SCALE: 1/2 FULL

NO.	REVISION	DESCRIPTION	BY	DATE
1-2				

DRAWING TITLE	MANUFACTURER
ULTRA SERIES MANOR IMPACT DOOR	KOLBE & KOLBE MILLWORK CO., INC.
CONSULTANTS W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. 25601 AYSEN DRIVE PUNTA GORDA, FL 33983	1323 SOUTH 11TH AVE. WAUSAU, WI 54401 715-842-5666

CERTIFICATION
WARREN W. SCHAEFER, P.E. P.E. NO. 44135

DRAWING NO.	REV.
1830	C
SHEET NO.	OF
8	12



DATE	BY	DESCRIPTION	REVISION	NO.
06/13/13			1-2	

MANUFACTURER
KOLBE & KOLBE MILLWORK CO., INC.
 1323 SOUTH 11TH AVE.
 WAUSAU, WI 54401
 715-842-5666

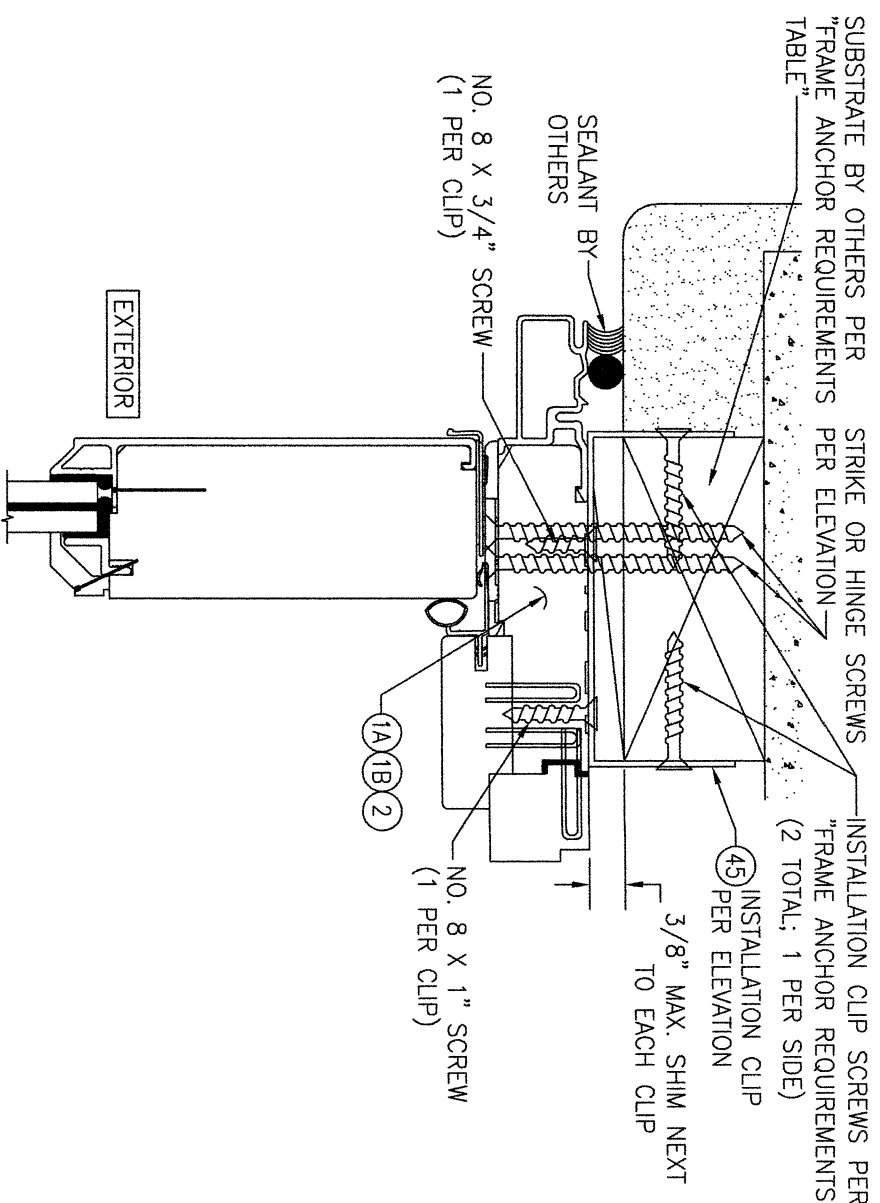
CONSULTANTS
W. W. SCHAEFER ENGINEERING & CONSULTING, P.A.
 25601 AYSEN DRIVE
 PUNTA GORDA, FL 33983

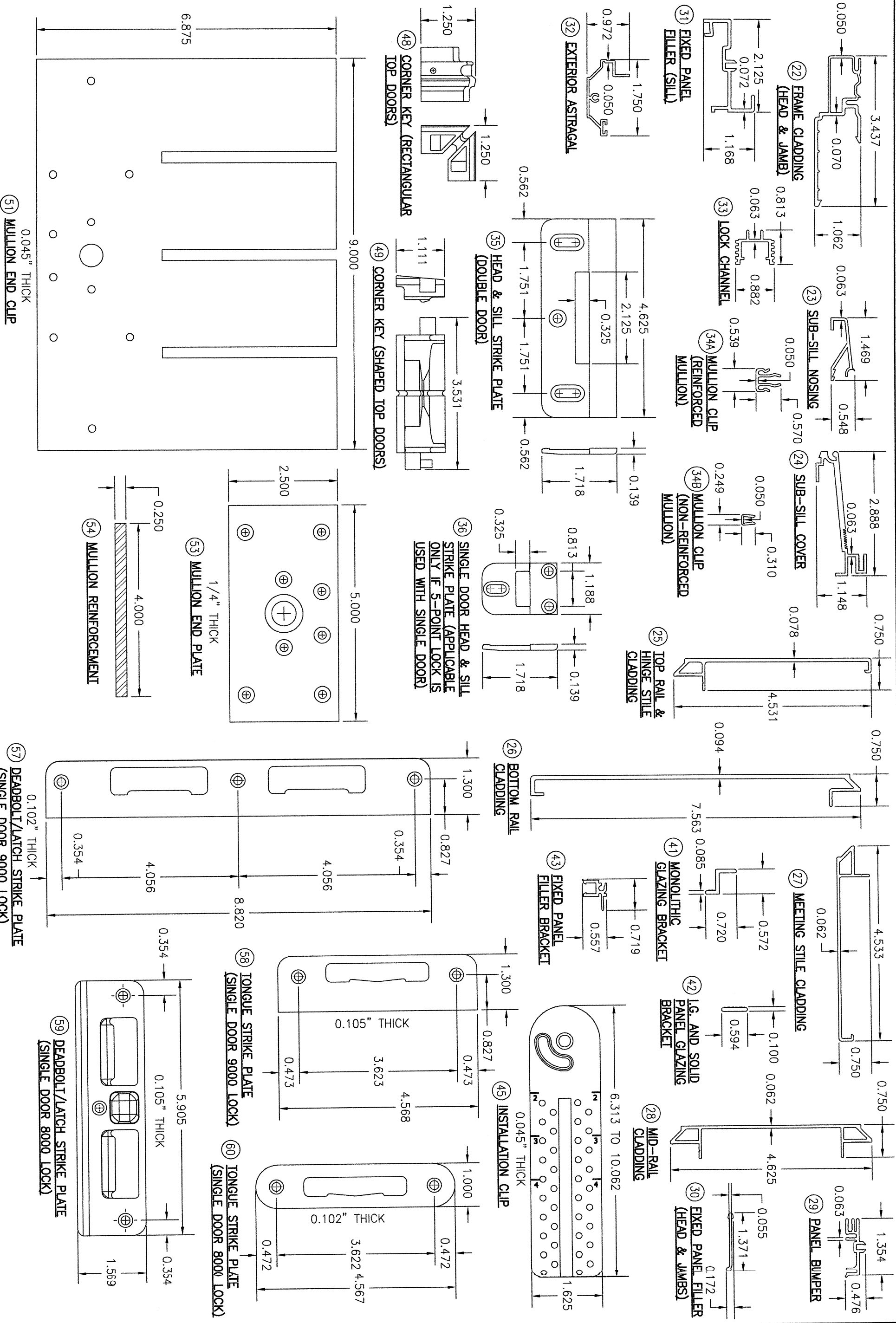
WARREN W. SCHAEFER, P.E.
 P.E. NO. 44135

ULTRA SERIES MANOR IMPACT DOOR

CERTIFICATION

DRAWING NO. **1830**
 SHEET NO. **9** OF **12**





DRAWN BY: W.R.M.		CHECKED BY: W.W.S.	
PLOT: 1=2	DATE: 06/13/13		
NO.	REVISION	DESCRIPTION	BY

DRAWING TITLE
ULTRA SERIES MANOR IMPACT DOOR

CONSULTANTS
W. W. SCHAEFER ENGINEERING & CONSULTING, P.A.
25601 AYSEN DRIVE
PUNTA GORDA, FL 33983

MANUFACTURER
KOLBE & KOLBE MILLWORK CO., INC.
1323 SOUTH 11TH AVE.
WAUSAU, WI 54401
715-842-5666

CERTIFICATION
WARREN W. SCHAEFER, P.E.
P.E. NO. 44135

DRAWING NO. 1830
SHEET NO. 11 OF 12

ITEM #		ITEM DESCRIPTION	MANUFACTURER/NOTES
PARTS			
1A	HEAD & SIDE JAMB (RECTANGULAR TOP DOORS)	WOOD	
1B	HEAD & SIDE JAMB (SHAPED TOP DOORS)	LVL	
2	SUB-SILL	WOOD	
3A	TOP RAIL & JAMB STILE (RECTANGULAR TOP DOORS)	WOOD	
3B	TOP RAIL & JAMB STILE (SHAPED TOP DOORS)	LVL	
4	BOTTOM RAIL	WOOD	
5	MEETING & LOCK STILE	LVL CORE WITH WOOD VENEER	
6	MID-RAIL	WOOD	
7A	JAMB EXTENSION (RECTANGULAR TOP DOORS)	WOOD	
7B	JAMB EXTENSION (SHAPED TOP DOORS)	LVL	
8A	STILE/RAIL STOP (RECTANGULAR TOP DOORS)	WOOD	
8B	STILE/RAIL STOP (SHAPED TOP DOORS)	LVL WITH WOOD VENEER	
9	THRESHOLD	WOOD	
10	SUB-SILL COVER	WOOD	
11	INTERIOR ASTRAGAL CAP	WOOD	
12	INTERIOR ASTRAGAL BASE	WOOD	
13	INTERIOR ASTRAGAL EXTENSION	WOOD	
14	MONOLITHIC GLAZING BEAD	WOOD	
15	I.G. & SOLID PANEL GLAZING BEAD	WOOD	
16	FIXED PANEL SASH STOP COVER	WOOD	
17	FIXED PANEL THRESHOLD COVER	WOOD	
22	FRAME CLADDING	6063-T5 ALUMINUM	
23	SUB-SILL NOSING	6063-T5 ALUMINUM	
24	SUB-SILL COVER	6063-T5 ALUMINUM	
25	TOP RAIL & HINGE STILE CLADDING	6063-T5 ALUMINUM	
26	BOTTOM RAIL CLADDING	6063-T5 ALUMINUM	
27	MEETING STILE CLADDING	6063-T5 ALUMINUM	
28	MID-RAIL CLADDING	6063-T5 ALUMINUM	
29	PANEL BUMPER	6063-T5 ALUMINUM	
30	FIXED PANEL FILLER (HEAD & JAMBS)	6063-T5 ALUMINUM	
31	FIXED PANEL FILLER (SILL)	6063-T5 ALUMINUM	
32	EXTERIOR ASTRAGAL	6063-T5 ALUMINUM	
33	LOCK CHANNEL	6063-T5 ALUMINUM	
34A	MULLION CLIP (REINFORCED MULLION)	6063-T5 ALUMINUM	
34B	MULLION CLIP (NON-REINFORCED MULLION)	6063-T5 ALUMINUM	
35	HEAD & SILL STRIKE PLATE (DOUBLE DOOR)	6105-T5 ALUMINUM	
36	SINGLE DOOR HEAD & SILL STRIKE PLATE (APPLICABLE ONLY IF 5-POINT LOCK IS USED WITH SINGLE DOOR)	6105-T5 ALUMINUM	
38	7" LONG S.S. LOCK STILE U-CHANNEL	18-8 S.S. (TOP & BOTTOM OF LOCK STILE)	
41	MONOLITHIC GLAZING BRACKET (DUROMETER = 70)	PRESTIGE PLASTICS RIGID PVC	
42	I.G. AND SOLID PANEL GLAZING BRACKET (DUROMETER = 70)	PRESTIGE PLASTICS RIGID PVC	
43	FIXED PANEL FILLER BRACKET	CLIM-A-TECH RIGID & FLEXABLE PVC	
45	INSTALLATION CLIP	ASTM A653 MIN. 33 KSI GALV. STEEL	
48	CORNER KEY (RECTANGULAR TOP DOORS)	DARTIER PLASTICS POLYCARBONATE	
49	CORNER KEY (SHAPED TOP DOORS)	DARTIER PLASTICS POLYCARBONATE	
51	MULLION END CLIP	ASTM A653 GALV. STEEL (Fy = 50 ksi)	
53	MULLION END PLATE	A-36 STEEL	
54	MULLION REINFORCEMENT	A-36 STEEL	
57	DEADBOLT/LATCH STRIKE PLATE (SINGLE DOORS)	S.S., BRASS OR BRONZE (9000 LOCK)	
58	TONGUE STRIKE PLATE (SINGLE DOORS)	S.S., BRASS OR BRONZE (9000 LOCK)	
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. ALL WOOD IS MINIMUM GRADE 2 MILLED BY KOLBE & KOLBE TO SELECT.			

ITEM #		ITEM DESCRIPTION	MANUFACTURER/NOTES
59	DEADBOLT/LATCH STRIKE PLATE (SINGLE DOORS)	S.S., BRASS OR BRONZE (8000 LOCK)	
60	TONGUE STRIKE PLATE (SINGLE DOORS)	S.S., BRASS OR BRONZE (8000 LOCK)	
HARDWARE			
62	5-POINT LOCK HARDWARE (ACTIVE PANEL)	HTL HLS-9000 OR HLS-8000 SERIES	
63	2-POINT LOCK HARDWARE (INACTIVE PANEL)	HTL HLS-9000 OR HLS-8000 SERIES	
64	HANDLE	AS REQUIRED TO OPERATE LOCK SYSTEM	
65	4X4 BUTT HINGE WITH STATIONARY PIN	HAGER 5060390 S.S., STEEL, BRASS OR BRONZE	
67	4X4 ADJUSTABLE SET (INTERMEDIATE) HINGE	HTL 5143790 S.S., STEEL, BRASS OR BRONZE	
68	4X4 ADJUSTABLE GUIDE (TOP & BOTTOM) HINGE	HTL 5143780 S.S., STEEL, BRASS OR BRONZE	
SEALS & SEALANTS			
72	BULB/FIN WEATHERSTRIP	INTEK 5074565 POLYPROPYLENE/SANTOPRENE	
73	FIN WEATHERSTRIP	CLIM-A-TECH 5095675 RIGID & FLEXABLE PVC	
74	EXTERIOR PANEL WEATHERSTRIP	AMESBURY GROUP 5031500 RIGID & FLEXABLE PVC	
75	SILL WEATHERSTRIP	AMESBURY GROUP 5146560 POLYPROPYLENE/SANTOPRENE	
76	BULB WEATHERSTRIP	AMESBURY GROUP 5066980 POLYPROPYLENE	
77	SHIM 1/16" X 1/4" X 1/2"	80 DUROMETER EPDM WITHIN 1" OF ENDS & 8" MAX. O.C.	
78	GLAZING TAPE 1/16" X 1/4"	CONTINUOUS	
FASTENERS			
81	NO. 10 X 2 1/2" WOOD SCREW	(4 AT EA. PANEL CORNER 2" APART & ONE(1) AT PANEL MIDSPAN)	
82	1/8" X 1" 18 GAUGE STAPLE	WITHIN 2" FROM ENDS & MAX. 8" O.C.	
83	NO. 8 X 1 1/4" PPH SMS	WITHIN 1" FROM ENDS & MAX. 8" O.C.	
84	NO. 8 X 1 1/4" PPH SMS	WITHIN 2" FROM ENDS & MAX. 14" O.C.	
85	1/8" X 1 1/4" 18 GAUGE STAPLE	WITHIN 2" FROM CORNERS & MAX. 8" O.C.	
86	NO. 8 X 1 1/4" PFH SMS	WITHIN 4" FROM CORNERS & MAX. 13 1/2" O.C.	
87	NO. 12 X 1 3/4" PFH BRASS OR S.S. WOOD SCREW	4 PER HINGE	
88	NO. 12 X 3/4" PFH BRASS OR S.S. SMS	2 PER TOP & BOTTOM HINGE; 3 PER INTERMEDIATE HINGE	
91	NO. 9 X 1 3/4" PFH BRASS OR S.S. WOOD SCREW	4 PER HINGE	
92	NO. 9 X 3/4" PFH BRASS OR S.S. SMS	2 PER TOP & BOTTOM HINGE; 3 PER INTERMEDIATE HINGE	
93	1/8" X 1" 18 GAUGE STAPLE	WITHIN 1/2" FROM ENDS & MAX. 8" O.C.	
94	NO. 8 X 1 3/4" SMS	WITHIN 4" FROM ENDS & MAX. 12" O.C.	
95	NO.10 X 3" PFH SMS	6 PER CHANNEL SPACED ALONG STILE	
96	NO. 10 X 3" PFH SMS	2 PER TOP & 1 PER BOTTOM U-CHANNEL	
97	NO. 8 X 3" PFH SMS (2 ROWS)	WITHIN 2" FROM ENDS & MAX. 8" O.C.	
98	NO. 6 X 1 1/4" SELF TAPPING SCREW	WITHIN 2" FROM ENDS & MAX. 15" O.C.	
99	18 GAUGE X 3/4" BRAD NAIL	WITHIN 1" FROM CORNERS & MAX. 6" O.C.	
100	15 GAUGE X 1" BRAD NAIL	WITHIN 2" FROM CORNERS & MAX. 8" O.C.	

DRAWN BY: W.R.M.	CHECKED BY: W.W.S.
PLOT: 1-2	DATE: 06/13/13

NO.	REVISION	DESCRIPTION	BY	DATE

DRAWING TITLE ULTRA SERIES MANOR IMPACT DOOR	
CONSULTANTS W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. 25601 AYSEN DRIVE PUNTA GORDA, FL 33983	MANUFACTURER KOLBE & KOLBE MILLWORK CO., INC. 1323 SOUTH 11TH AVE. WAUSAU, WI 54401 715-842-5666

CERTIFICATION WARREN W. SCHAEFER, P.E. P.E. NO. 44135	
DRAWING NO. 1830	REV. C
SHEET NO. 12	OF 12