

**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. THE DETAILS & SPECIFICATIONS SHOWN HEREIN REPRESENT THE PRODUCTS TESTED & PROPOSED FOR WATER, AIR, IMPACT, CYCLIC & UNIFORM STATIC AIR PRESSURE TESTING IN CONFORMANCE WITH 2018 IBC REFERENCED STANDARDS ASTM E330, E283, E331, E1886 & E1996 FOR SMALL & LEVEL "E" LARGE MISSILE IMPACT PRODUCTS FOR USE IN RISK CATEGORY III & IV BUILDINGS.
5. THIS PRODUCT HAS BEEN DESIGNED IN ACCORDANCE WITH AND MEETS THE REQUIREMENTS OF THE 2018 INTERNATIONAL BUILDING CODE (IBC) & IS BOTH LARGE & SMALL MISSILE IMPACT RATED.
6. WHEN LARGE MISSILE IMPACT GLAZED, IMPACT SHUTTERS ARE NOT REQUIRED WITH THIS PRODUCT.
7. 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.
8. 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 INTERNATIONAL BUILDING CODE, A DIRECTIONALITY FACTOR OF KD = 0.85 MAY BE APPLIED PER THE ASCE-7 STANDARD.
9. MATERIALS, INCLUDING BUT NOT LIMITED TO STEEL SCREWS, THAT COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL BE SEPARATED OR COATED AS REQUIRED TO AVOID CORROSION OF EITHER MATERIAL.
10. TO THE BEST OF OUR KNOWLEDGE, THE PRODUCT SHOWN HEREIN ARE QUALITY ASSURED BY AN APPROVED CERTIFICATION/QA ENTITY & SHALL BE LABELED IN ACCORDANCE WITH APPLICABLE STANDARDS. 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.
11. CERTIFICATION OF THIS PRODUCT SHALL BE CONSIDERED VOID IF THEY ARE INSTALLED WITHOUT A BUILDING PERMIT FROM THE APPLICABLE LOCAL BUILDING DEPARTMENT OR IF THEY ARE INSTALLED BY ANYONE OTHER THAN A LICENSED CONTRACTOR EXPERIENCED WITH INSTALLATIONS OF THIS TYPE OF PRODUCT.

**CORNER CONSTRUCTION:**

FRAME CORNERS & VERTICAL INTERMEDIATE CORNERS: HORIZONTAL MEMBERS ARE SQUARE CUT, BUTTED TO THE VERTICAL MEMBER, FASTENED WITH 3 TO 4 S.S. NO. 12 X 1" PHIFS FASTENERS THROUGH THE VERTICAL MEMBERS INTO THE HORIZONTAL MEMBER SCREW SPLINES & SEALED WITH SILICONE.

EVALUATION OF THIS PRODUCT IS BASED ON APPLICABLE STANDARDS AND/OR INFORMATION & RESULTS FROM APPLICABLE TEST REPORTS. THE 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, 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/FIN TO OPENING FASTENER TYPE	MINIMUM EMBED	MINIMUM EDGE DIST.
<b>FRAME &amp; STRAP ANCHOR SCREWS</b>			
(1) MIN. 2X_ WOOD FRAME OR BUCK (MIN. GR. 3 & G=0.55)	NO. 14 SMS OR WOOD SCREW	1 3/8"	1"
MIN. 16 GA. 50 KSI METAL STUD	1/4" SELF TAP/DRILL SCREW	FULL	1/2"
MIN. 1/8" THK A36 STEEL	1/4" SELF TAP/DRILL SCREW	FULL	1/2"
MIN. 0.100" THK 6063-T6 ALUM.	1/4" SELF TAP/DRILL SCREW	FULL	1/2"
3000 PSI CONCRETE	(2) 1/4" CONCRETE SCREW	1 3/4"	2 1/2"

(1) FRAME SCREW MOUNT REQUIRES MIN. 2X4; STRAP ANCHOR MOUNT REQUIRES MIN. 2X6.

(2) 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.):

**MULLION PRESSURE TABLE (VERTICAL INTERMEDIATE MULLION)**

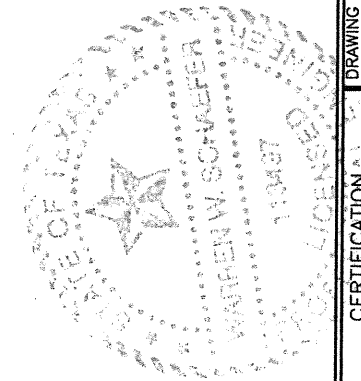
MAXIMUM FRAME HEIGHT DIMENSION (IN.)	MAXIMUM LOAD WIDTH DIMENSION (IN.)	ALLOWABLE PRESSURE (PSF)	
		6 ANCHORS	4 ANCHORS
126	60	30.0	30.0
	54	33.3	33.3
	48	37.5	37.5
	42	42.9	42.9
	36	50.0	50.0
	30	60.0	60.0
	28	60.0	60.0
120	60	33.2	31.5
	54	36.8	35.0
	48	41.5	39.4
	42	47.4	45.0
	36	55.3	52.5
114	60	38.7	33.2
	54	43.0	36.8
	48	48.3	41.5
	42	55.3	47.4
	36	60.0	55.3
108	60	45.5	35.0
	54	50.5	38.9
	48	56.9	43.8
	42	60.0	50.0
	36	60.0	58.3
	35	60.0	60.0
102	60	54.0	37.1
	54	60.0	41.2
	48	60.0	46.3
	42	60.0	53.0
	37	60.0	60.0
96	60	57.4	39.4
	54	60.0	43.8
	48	60.0	49.2
	42	60.0	56.3
	39	60.0	60.0
90	60	60.0	42.0
	54	60.0	46.7
	48	60.0	52.5
84	60	60.0	45.0
	54	60.0	50.0
	48	60.0	56.3
78	60	60.0	48.5
	54	60.0	53.9
	48	60.0	60.0
72	60	60.0	52.5
	54	60.0	58.3
	52	60.0	60.0
66	60	60.0	57.3
63	60	60.0	60.0

**MULLION PRESSURE TABLE (VERTICAL SIDE JAMB MULLION)**

MAXIMUM FRAME HEIGHT DIMENSION (IN.)	MAXIMUM LOAD WIDTH DIMENSION (IN.)	ALLOWABLE PRESSURE (PSF)	
		6 ANCHORS	4 ANCHORS
126	31 3/8	30.0	30.0
	28 3/8	33.3	33.3
	25 3/8	37.5	37.5
	22 3/8	42.9	42.9
	19 3/8	50.0	50.0
	16 3/8	60.0	60.0
	15 3/8	60.0	60.0
120	31 3/8	33.2	31.5
	28 3/8	36.8	35.0
	25 3/8	41.5	39.4
	22 3/8	47.4	45.0
	19 3/8	55.3	52.5
114	31 3/8	38.7	33.2
	28 3/8	43.0	36.8
	25 3/8	48.3	41.5
	22 3/8	55.3	47.4
	19 3/8	60.0	55.3
	17 7/8	60.0	60.0
108	31 3/8	45.5	35.0
	28 3/8	50.5	38.9
	25 3/8	56.9	43.8
	22 3/8	60.0	50.0
	19 3/8	60.0	58.3
102	31 3/8	54.0	37.1
	28 3/8	60.0	41.2
	25 3/8	60.0	46.3
	22 3/8	60.0	53.0
	19 7/8	60.0	60.0
96	31 3/8	57.4	39.4
	28 3/8	60.0	43.8
	25 3/8	60.0	49.2
	22 3/8	60.0	56.3
	20 7/8	60.0	60.0
90	31 3/8	60.0	42.0
	28 3/8	60.0	46.7
	25 3/8	60.0	52.5
84	31 3/8	60.0	45.0
	28 3/8	60.0	50.0
	25 3/8	60.0	56.3
	23 7/8	60.0	60.0
78	31 3/8	60.0	48.5
	28 3/8	60.0	53.9
	25 3/8	60.0	60.0
72	31 3/8	60.0	52.5
	28 3/8	60.0	58.3
	27 3/8	60.0	60.0
66	31 3/8	60.0	57.3
63	31 3/8	60.0	60.0

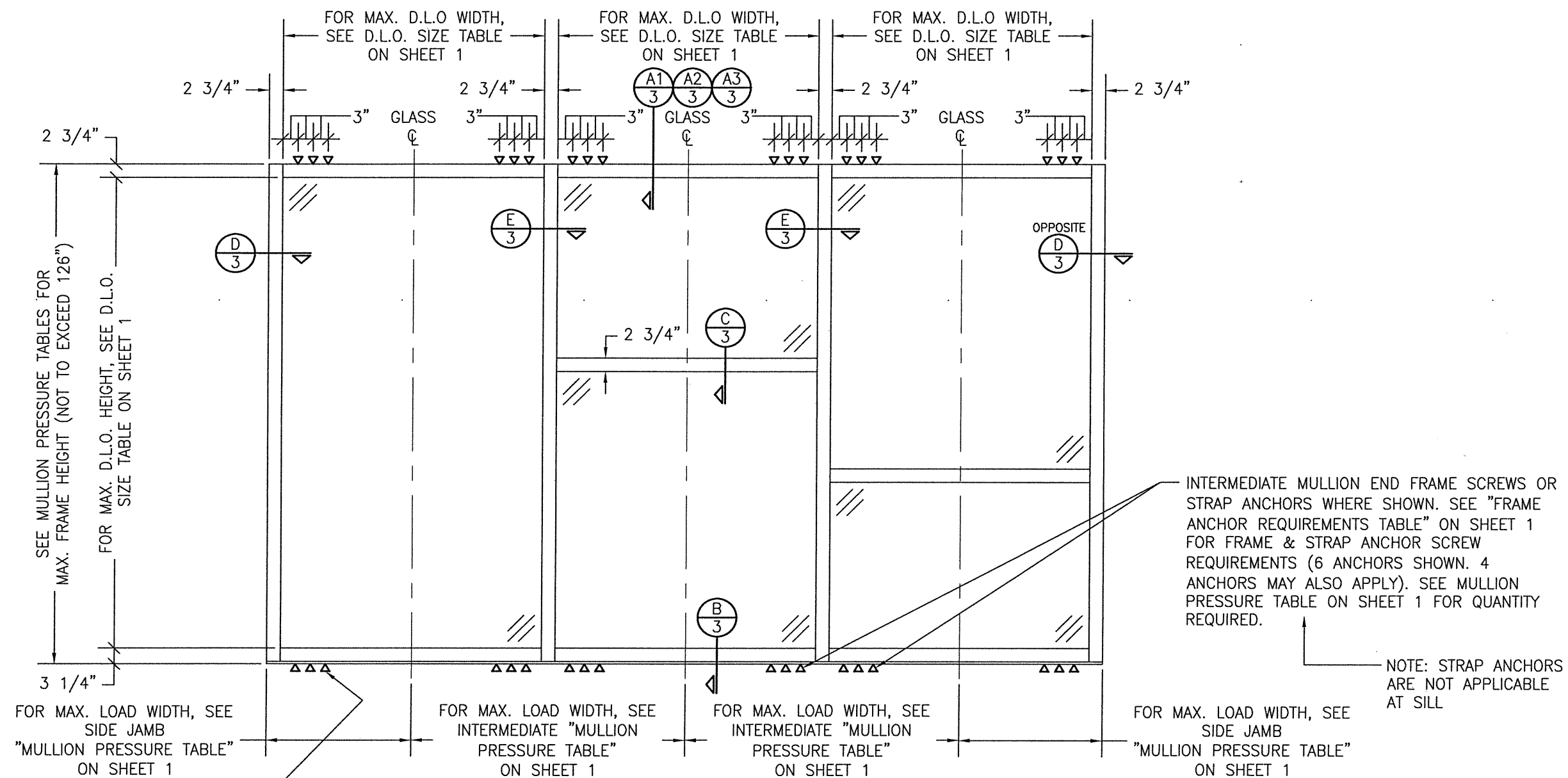
**ALLOWABLE D.L.O. SIZE TABLE**

MAXIMUM D.L.O. HEIGHT (IN.)	MAXIMUM D.L.O. WIDTH (IN.)
120	41
116 1/2	42 1/4
108 3/4	45 1/4
102	48 1/4
96	51 1/4
90 5/8	54 1/4
86	57 1/4



DRAWN BY: W.W.S.	CHECKED BY: W.W.S.
PLOT: 1=24	DATE: 02/10/21
DATE	
BY	
REVISION DESCRIPTION	
NO.	
DRAWING TITLE: IR501T & IR501UT ALUMINUM LEVEL "E" LARGE MISSILE IMPACT STORE FRONT SYSTEM	
JOB INFORMATION: KAWNEER COMPANY, INC. 555 GUTHRIDGE COURT NORCROSS, GA 30092 770-449-5555	
CONSULTANTS: W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (REG. NO. F-14980) 7480 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424	
CERTIFICATION: FEB 10 2021 WARREN W. SCHAEFER, P.E. P.E. NO. 113497	
DRAWING NO. 1981T	REV.
SHEET NO. 1 OF 5	

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.



SIDE JAMB END FRAME SCREWS OR STRAP ANCHORS WHERE SHOWN. SEE "FRAME ANCHOR REQUIREMENTS TABLE" ON SHEET 1 FOR FRAME & STRAP ANCHOR SCREW REQUIREMENTS (3 ANCHORS SHOWN. 2 ANCHORS MAY ALSO APPLY). SEE MULLION PRESSURE TABLE ON SHEET 1 FOR QUANTITY REQUIRED.

NOTE: STRAP ANCHORS ARE NOT APPLICABLE AT SILL

**EXTERIOR ELEVATION:  
MULTIPLE FIXED PANEL STORE FRONT ASSEMBLY**

SCALE: 1/2" = 1'-0"  
(HORIZONTAL STACKING & OVERALL UNIT WIDTH IS UNLIMITED PROVIDING DIMENSIONS SPECIFIED ARE NOT EXCEEDED & EXPANSION/CONTRACTION IS NOT AN ISSUE. NUMBER OF VERTICAL STACKED GLASS PANELS IS UNLIMITED BUT MUST FIT INSIDE MAXIMUM UNIT HEIGHT SHOWN)

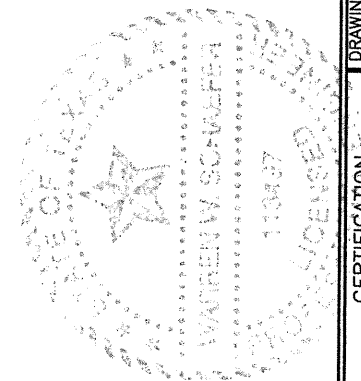
**ALLOWABLE DESIGN PRESSURE  
(STORE FRONT ASSEMBLY)**

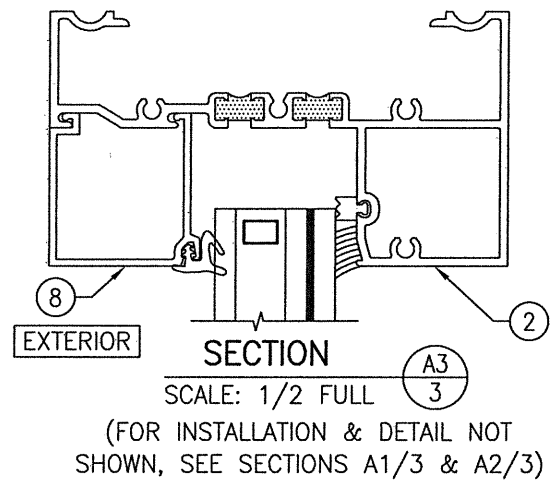
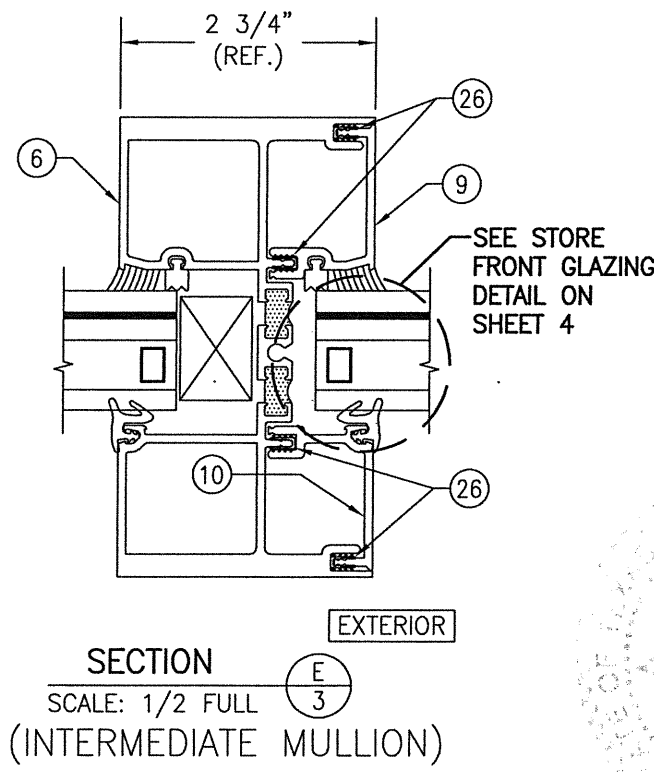
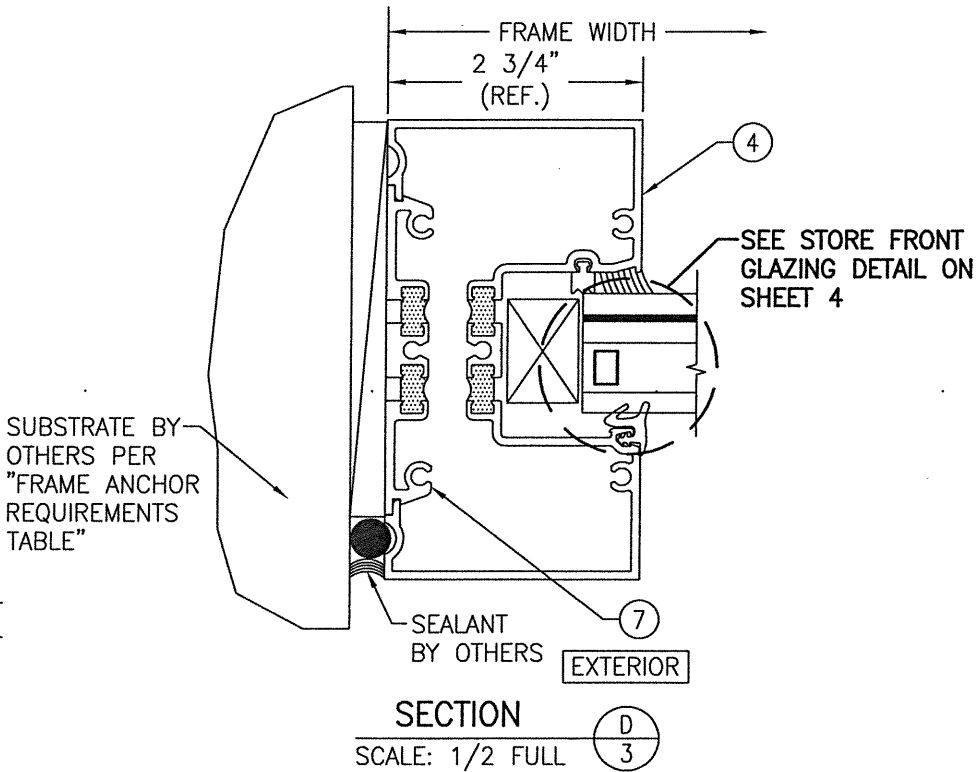
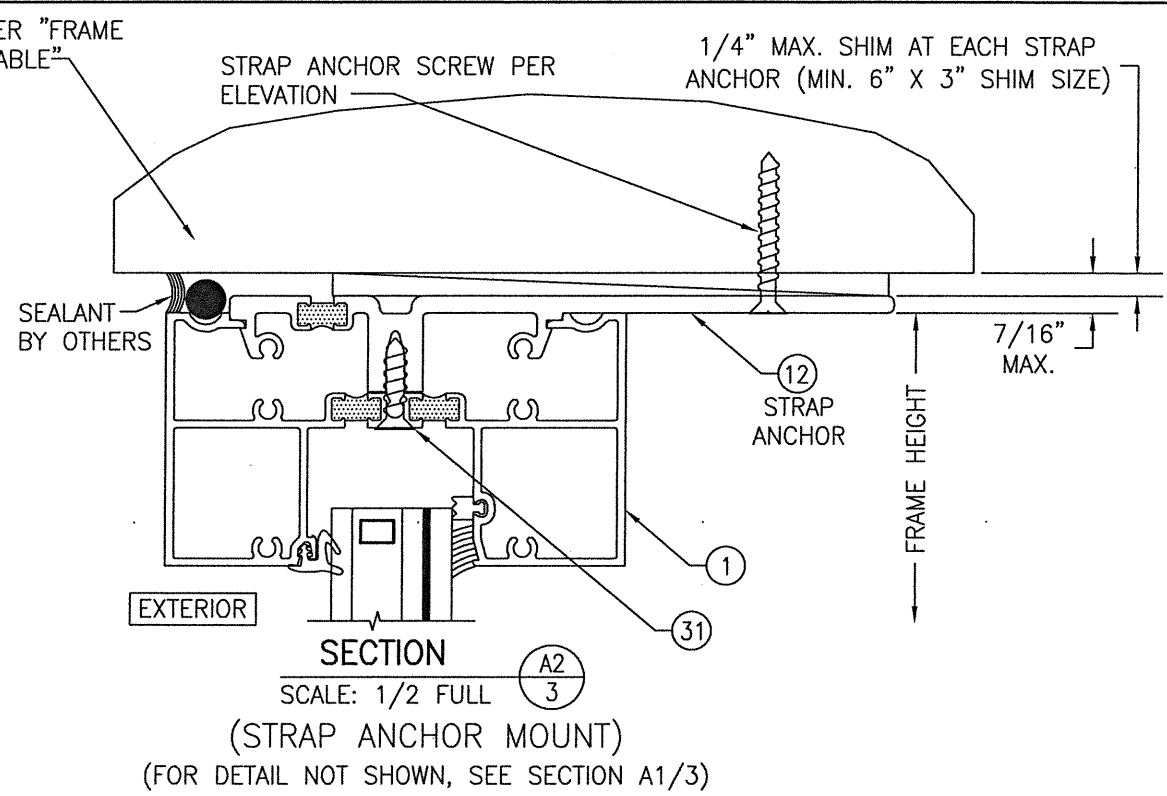
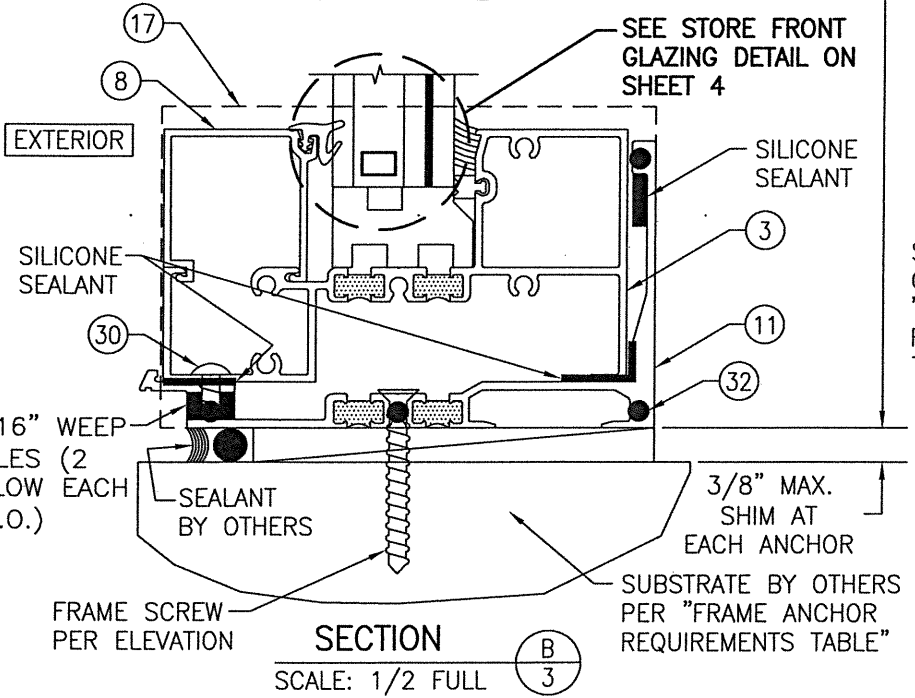
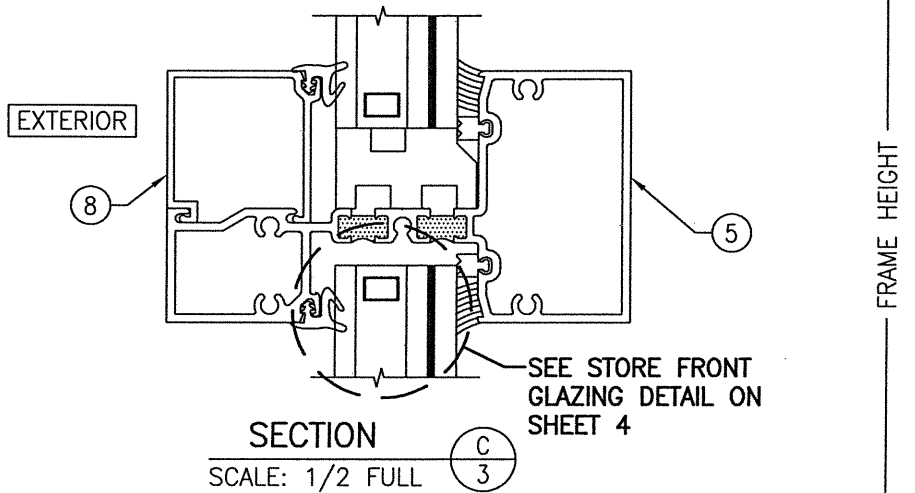
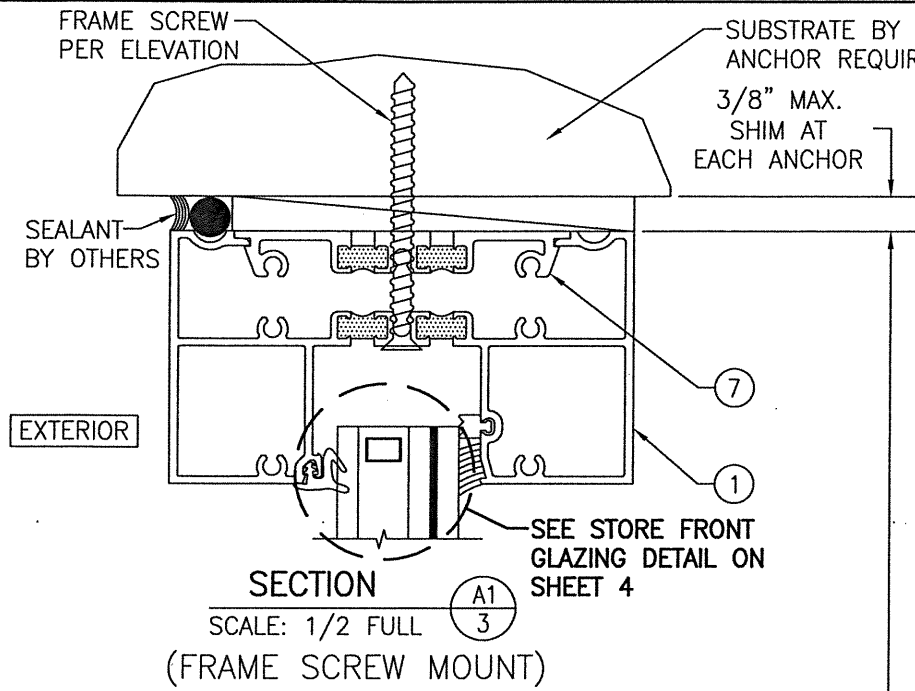
PRESSURE IS CONTROLLED BY VERTICAL FRAMING MEMBERS/MULLIONS & THEIR END ANCHOR QUANTITIES. SEE MULLION PRESSURE TABLES ON SHEET 1 FOR ALLOWABLE MULLION PRESSURE CONDITIONS.

INTERMEDIATE MULLION END FRAME SCREWS OR STRAP ANCHORS WHERE SHOWN. SEE "FRAME ANCHOR REQUIREMENTS TABLE" ON SHEET 1 FOR FRAME & STRAP ANCHOR SCREW REQUIREMENTS (6 ANCHORS SHOWN. 4 ANCHORS MAY ALSO APPLY). SEE MULLION PRESSURE TABLE ON SHEET 1 FOR QUANTITY REQUIRED.

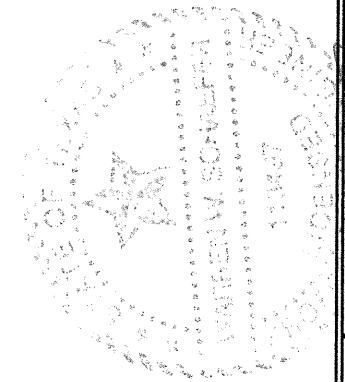
NOTE: STRAP ANCHORS ARE NOT APPLICABLE AT SILL

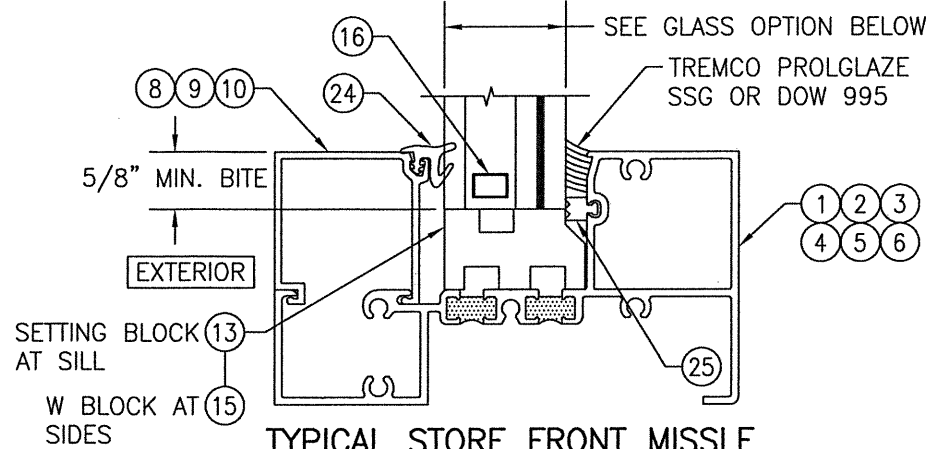
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PLOT: 1=24		DATE: 02/10/21	
NO.	REVISION DESCRIPTION	BY	DATE
DRAWING TITLE: IR501T & IR501UT ALUMINIUM LEVEL "E" LARGE MISSILE IMPACT STORE FRONT SYSTEM			
JOB INFORMATION: KAWNEER COMPANY, INC. 555 GUTHRIDGE COURT NORCROSS, GA 30092 770-449-5555			
CONSULTANTS: W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (REG. NO. F-14980) 7480 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424			
CERTIFICATION: FEB 10 2021 WARREN W. SCHAEFER, P.E. P.E. NO. 113497			
DRAWING NO. 1981T		REV.	
SHEET NO. 2		OF 5	





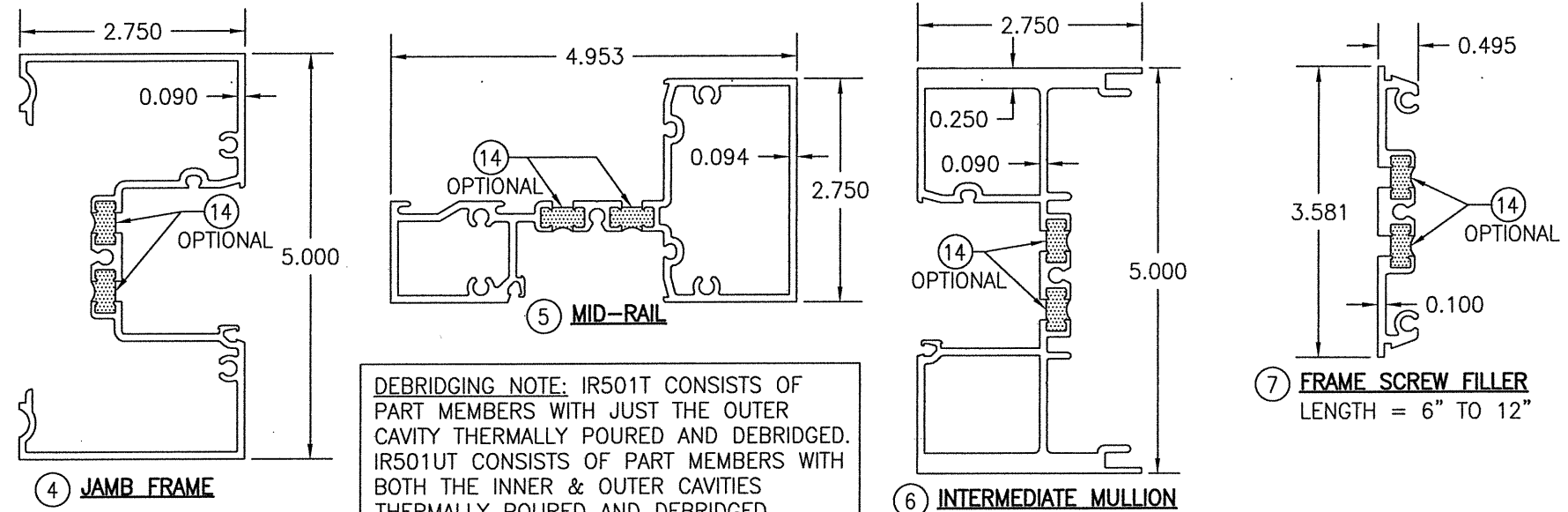
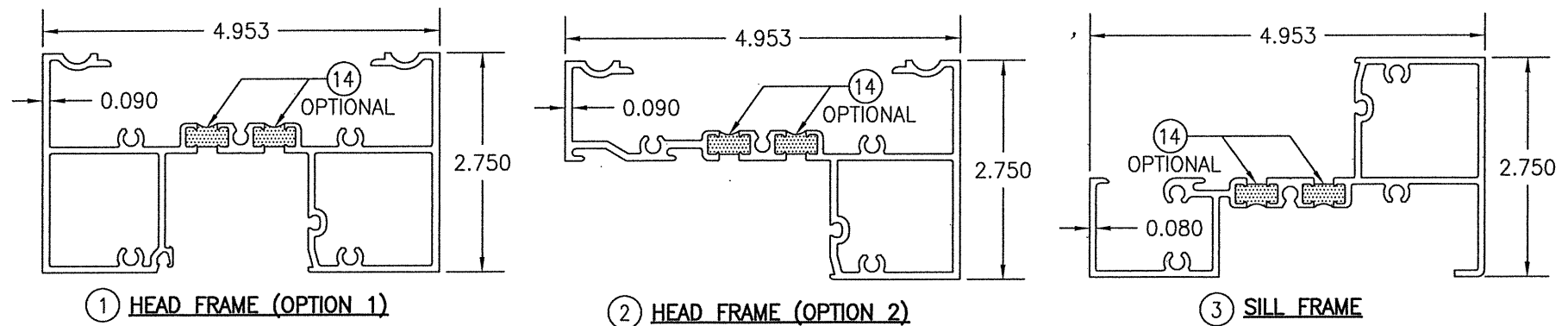
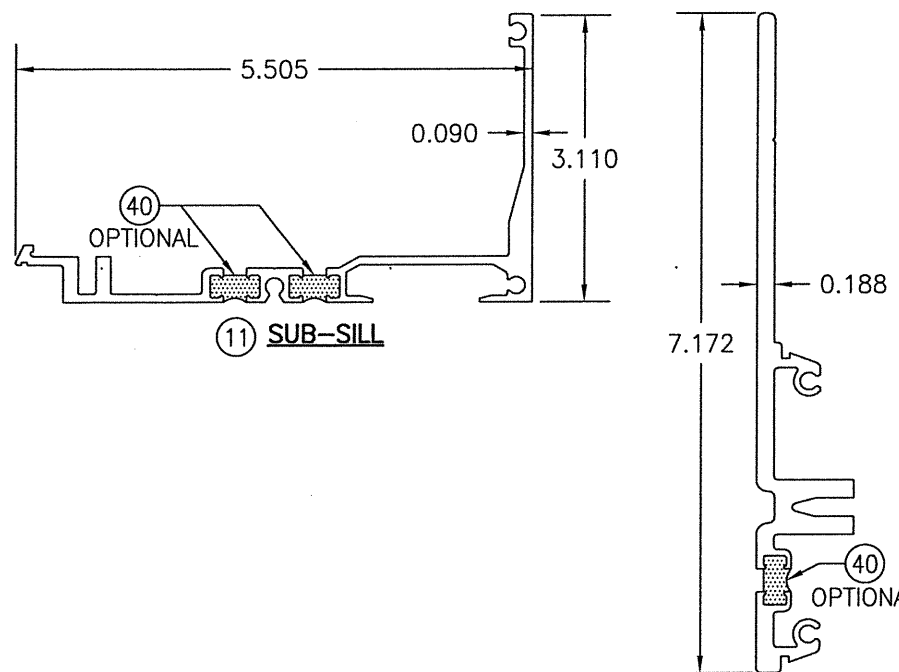
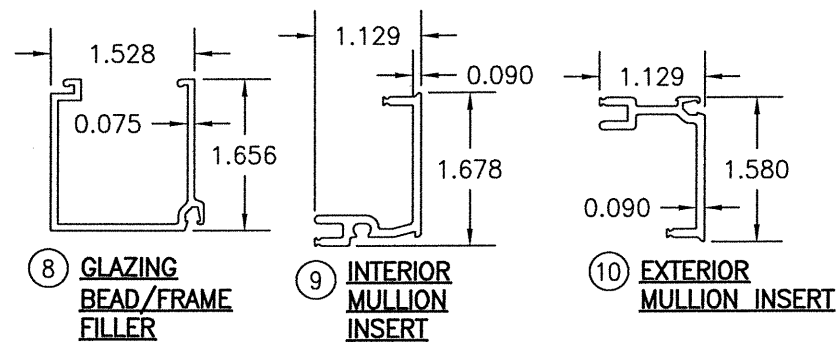
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CERTIFICATION		FEB 10 2021	
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SHEET NO. 3 OF 5		WARREN W. SCHAEFER, P.E. P.E. NO. 113497	



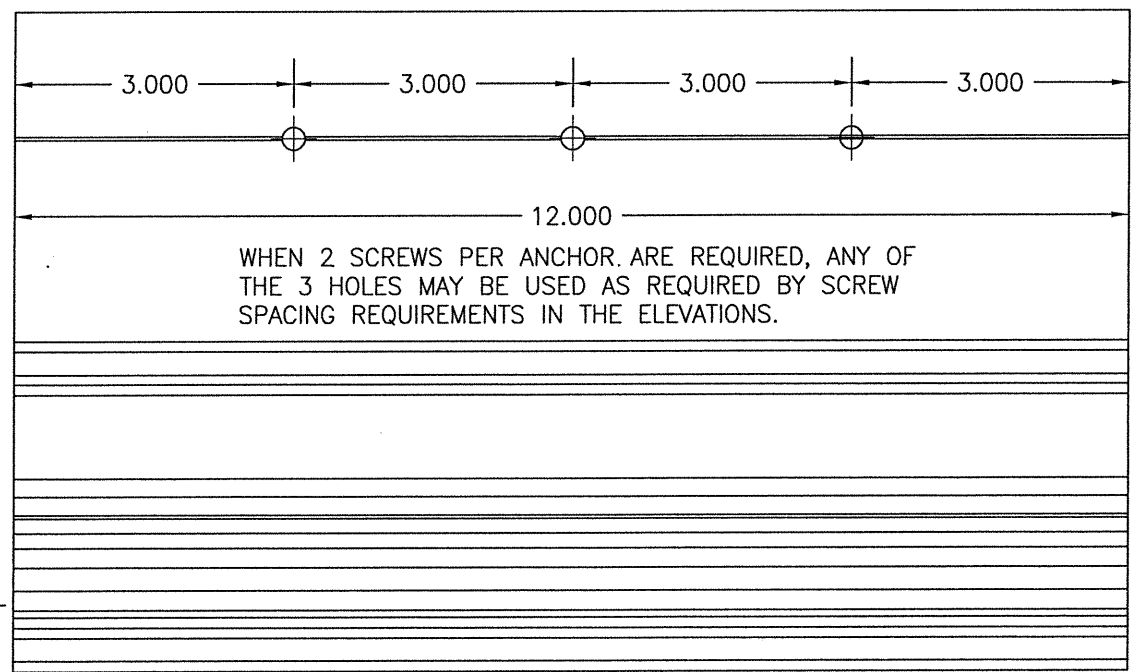
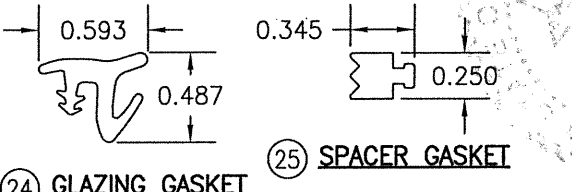
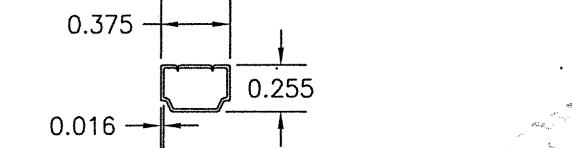
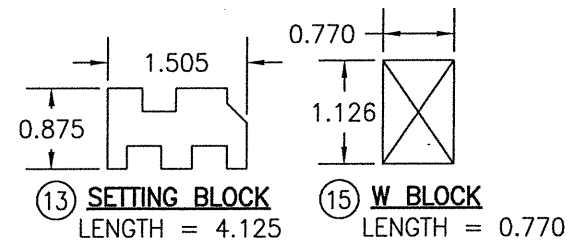
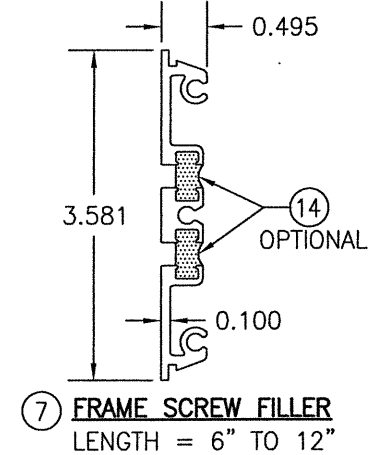


**TYPICAL STORE FRONT MISSILE LEVEL "E" GLAZING DETAIL**

**GLASS OPTION:**  
**OPTION 1:** 1 1/4" THICK I.G. GLASS (1/4" TEMP. EXTERIOR; 3/8" SPACER/1/4" HT. ST./0.180 KURARAY SG/1/4" HT. ST. INTERIOR)



**DEBRIDGING NOTE:** IR501T CONSISTS OF PART MEMBERS WITH JUST THE OUTER CAVITY THERMALLY Poured AND DEBRIDGED. IR501UT CONSISTS OF PART MEMBERS WITH BOTH THE INNER & OUTER CAVITIES THERMALLY Poured AND DEBRIDGED. PARTS SHOWN REFLECT THE IR501UT CONDITION WITH BOTH CAVITIES DEBRIDGED.



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PLOT: 1=2		DATE: 02/10/21	
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DRAWING TITLE: IR501T & IR501UT ALUMINUM LEVEL "E" LARGE MISSILE IMPACT STORE FRONT SYSTEM		KAWNEER COMPANY, INC. 555 GUTHRIDGE COURT NORCROSS, GA 30092 770-449-5555	
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CERTIFICATION:		FEB 10 2021	
DRAWING NO. 1981T		REV.	
SHEET NO. 4 OF 5			

ITEM #	ITEM DESCRIPTION	MANUFACTURER/NOTES
<b>STORE FRONT PARTS</b>		
1	HEAD FRAME (OPTION 1)	6063-T6 ALUMINUM
2	HEAD FRAME (OPTION 2)	6063-T6 ALUMINUM
3	SILL FRAME	6063-T6 ALUMINUM
4	JAMB FRAME	6063-T6 ALUMINUM
5	MID-RAIL	6063-T6 ALUMINUM
6	INTERMEDIATE MULLION	6063-T6 ALUMINUM
7	FRAME SCREW FILLER	6063-T6 ALUMINUM
8	GLAZING BEAD/FRAME FILLER	6063-T6 ALUMINUM
9	INTERIOR MULLION INSERT	6063-T6 ALUMINUM
10	EXTERIOR MULLION INSERT	6063-T6 ALUMINUM
11	SUB-SILL	6063-T6 ALUMINUM
12	STRAP ANCHOR	6063-T6 ALUMINUM
13	SETTING BLOCK	EPDM (DUROMETER = 85 +/-5)
14	OPTIONAL POURED IN DEBRIDGING/ THERMAL BREAK	STRUCTURAL THERMAL BARRIER POLYMER (UNIVERSAL NO-TAPE 303-12T BY AZON)
15	W BLOCK	EPDM (DUROMETER = 85 +/-5)
16	3/8" I.G. SPACERS	3005 OR 3105 ALUMINUM
17	SILL END DAM PLATE	PLASTIC
<b>STORE FRONT SEALS &amp; SEALANTS</b>		
24	GLAZING GASKET	70 +/-5 DUROMETER EPDM (KAWNEER PART #027-074)
25	SPACER GASKET	POLYPROPYLENE & SANDOPRENE; KRP 60 +/-5 DUROMETER
26	MATING GASKET	POLYPROPYLENE
<b>STORE FRONT FASTENERS</b>		
30	1/4-20 X 7/16" PHTC	QTY = 3 EACH SIDE OF EACH VERTICAL FRAMING MEMBER 2" FROM THE VERTICAL MEMBER & 2.5" O.C.
31	1/4-20 X 1" PHTC TYPE "D" OR "F"	QUANTITY TO MATCH THAT OF STRAP ANCHOR INSTALLATION SCREWS (SPACED 2.5" O.C.)
32	NO. 12 X 1" PHTF "AB"	4 PER END DAM

DRAWN BY: W.W.S.		CHECKED BY: W.W.S.	
PLOT: 1=2		DATE: 02/10/21	
NO.	REVISION DESCRIPTION	BY	DATE
DRAWING TITLE: IR501T & IR501UT ALUMINUM LEVEL "E" LARGE MISSILE IMPACT STORE FRONT SYSTEM			
CONSULTANTS <b>W. W. SCHAEFER ENGINEERING &amp; CONSULTING, P.A. (REG. NO. F-14980)</b> 7480 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424		JOB INFORMATION: <b>KAWNEER WINDOW COMPANY, INC.</b> 555 5515TH AVENUE DEBRIDGING COURT NORFOLK, VA 23502 770-770-4895/5555	
CERTIFICATION <b>FEB 10 2021</b> WARREN W. SCHAEFER, P.E. P.E. NO. 113497		DRAWING NO. <b>1981T</b>	
SHEET NO. <b>5</b>		REV. <b>5</b>	

