

ALLOWABLE SIZE/PRESSURE TABLE

DOOR TYPE	MAX. DOOR OPENING WIDTH (IN.)	MAX. DOOR OPENING HEIGHT (IN.)	MAX. D.L.O. WIDTH (IN.)	MAX. D.L.O. HEIGHT (IN.)	LOCK OPTION (3)	GLASS OPTION (1)	MISSILE LEVEL (2)	ALLOWABLE PRESSURE (+/- PSF)	
								DOORS IN 450, 451 OR 1600 FRAMES	DOORS IN IR500/501 FRAMES
DOUBLE	96	96	38 13/16	83 13/16	1 OR 2	1, 2 OR 5	D	110	90
	96	96	38 13/16	83 13/16	1	5	E	110	90
	96	96	38 13/16	83 13/16	2	6	E	90	70
	96	96	38 13/16	83 13/16	3	6	E	70	N/A
	72	108	30 13/16	95 3/16	1 OR 2	1 OR 2	D	110	90
	96	96	38 13/16	83 13/16	1 THRU 4	1, 2, 3 & 5	D	70	70
	72	96	30 13/16	83 13/16	1 THRU 4	4	D	60	60
SINGLE	48	96	38 13/16	83 13/16	1 OR 2	1, 2 OR 5	D	110	90
	48	96	38 13/16	83 13/16	1	5	E	110	90
	48	96	38 13/16	83 13/16	2	6	E	90	70
	48	96	38 13/16	83 13/16	3	6	E	70	N/A
	36	108	30 13/16	95 3/16	1 OR 2	1 OR 2	D	110	90
	48	96	38 13/16	83 13/16	1 THRU 4	1, 2, 3 & 5	D	70	70
	36	96	30 13/16	83 13/16	1 THRU 4	4	D	60	60

- LOCK OPTIONS:**
- OPTION 1 = ADAMS RITE 1850 3 POINT LOCK AT ACTIVE PANEL (ITEM #57) & ADAMS RITE FLUSHBOLTS AT HEAD AND SILL (ITEM #58) OF INACTIVE PANEL.
 - OPTION 2 = KAWNEER 1686 DEADBOLT & PANIC DEVICE (ITEM #59) AT ACTIVE PANEL & KAWNEER 1686 PANIC DEVICE (ITEM #60) AT INACTIVE PANEL.
 - OPTION 3 = SCHLAGE DEADBOLT WITH VON DUPRIN HH9947 CVR PANIC DEVICE (ITEM #61) AT ACTIVE PANEL & VON DUPRIN HH9947 CVR PANIC DEVICE (ITEM #62) AT INACTIVE PANEL.
 - OPTION 4 = SCHLAGE DEADBOLT WITH FALCON HH 1690 PANIC DEVICE (ITEM #61) AT ACTIVE PANEL & FALCON HH 1690 PANIC DEVICE (ITEM #62) AT INACTIVE PANEL.

- PRESSURE TABLE FOOTNOTES:**
- (1) FOR GLASS OPTIONS SEE GLAZING DETAILS ON SHEET 10.
 - (2) WHEN MISSILE LEVEL E IS REQUIRED ONLY LOCK OPTION 1, 2 OR 3 & GLASS OPTION 5 OR 6 ARE APPLICABLE.

- 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 AAMA 1304 & ASTM E330, E1886 & E1996 FOR LARGE MISSILE IMPACT PRODUCTS. ALL TESTING OF THIS PRODUCT TO STANDARDS LESS CURRENT THAN THOSE SPECIFIED IN THE 2018 IBC HAS BEEN DETERMINED EQUIVALENT TO THE MORE CURRENT VERSIONS OF THOSE STANDARDS REFERENCED IN THE 2018 IBC.
 5. THIS PRODUCT HAS BEEN DESIGNED IN ACCORDANCE WITH AND MEETS THE REQUIREMENTS OF THE 2018 INTERNATIONAL BUILDING CODE (IBC).
 6. 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.

FRAME ANCHOR REQUIREMENTS TABLE

OPENING TYPE (SUBSTRATE)	FRAME & MULLION PLATE TO OPENING FASTENER TYPE	MINIMUM EMBED	MINIMUM EDGE DIST.
FRAME SCREWS			
(2) MIN. 2X6 WOOD FRAME OR BUCK (MIN. GR. 2 & G=0.55)	NO. 14 OR 1/4" GR. 5 COARSE THREAD SCREW OR 1/4" CONCRETE SCREW	1 1/4"	3/4"
MIN. 16 GA. 50 KSI METAL STUD	1/4" GR. 5 SELF TAP/DRILL SCREW	FULL	1/2"
MIN. 1/8" THK A36 STEEL	1/4" GR. 5 SELF TAP/DRILL SCREW	FULL	1/2"
MIN. 0.100" THK 6063-T5 ALUM.	1/4" GR. 5 SELF TAP/DRILL SCREW	FULL	1/2"
(3) MIN. C-90 CONCRETE FILLED BLOCK	(1) 1/4" CONCRETE SCREW	1 3/4"	2 1/2"
MIN. 3000 PSI CONCRETE	(1) 1/4" CONCRETE SCREW	1 3/4"	2 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.).
 (2) 2X6 BUCKS SHALL BE OF A MINIMUM DEPTH REQUIRED TO MEET ANCHOR EDGE DISTANCE REQUIREMENTS BUT NO LESS THAN 4 1/4".
 (3) CONCRETE FILLED BLOCK SUBSTRATE IS NOT APPLICABLE AT HEAD & SILL

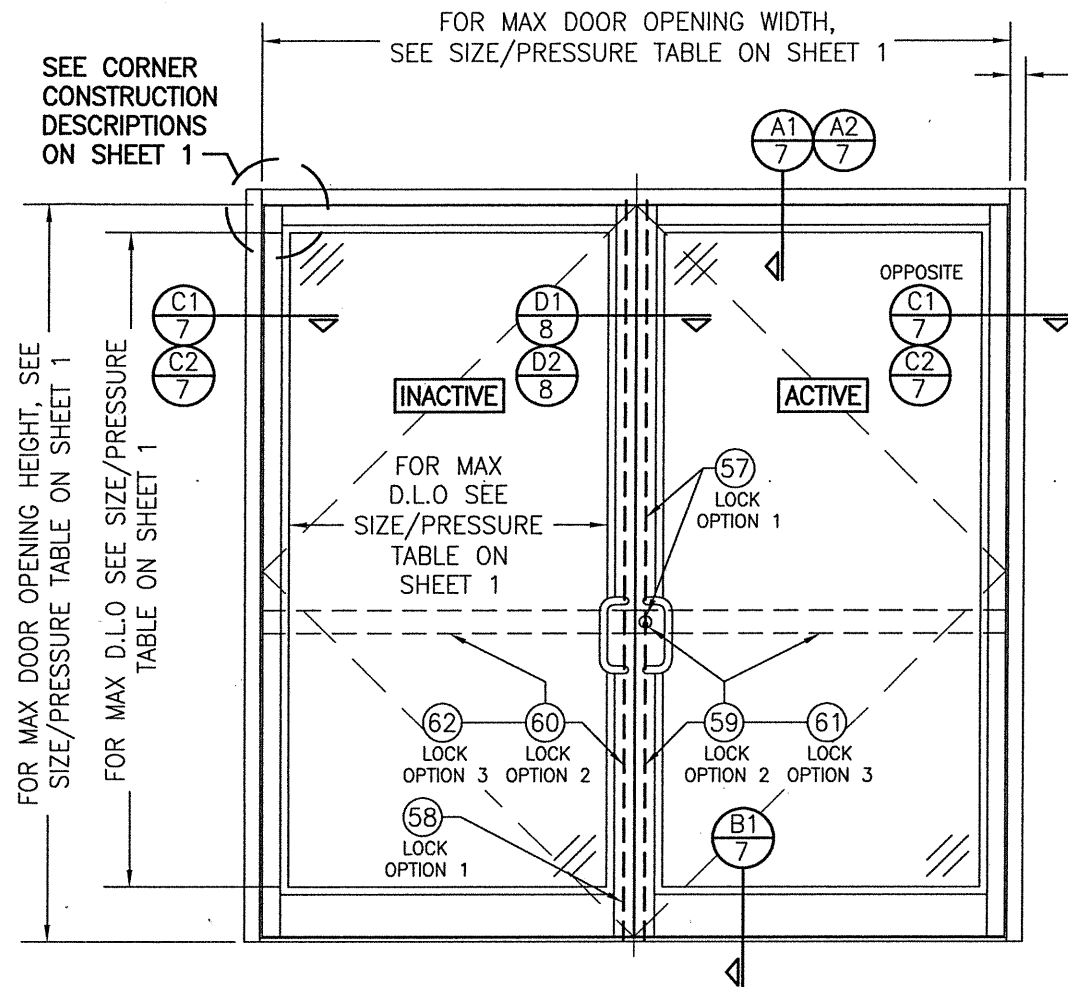
CORNER CONSTRUCTION:
TRIFAB 450 OR 451 FRAME HEAD: VERTICAL MEMBERS RUN THROUGH WHILE THE HORIZONTAL MEMBERS ARE SQUARE CUT, BUTTED AND MECHANICALLY FASTENED TO THE VERTICAL MEMBERS VIA A SHEAR BLOCK (ITEM #17). THE SHEAR BLOCK IS MECHANICALLY FASTENED TO THE VERTICAL FRAME MEMBER WITH 4 NO. 10 X 1 19/32" PHTF SCREWS. THE HORIZONTAL FRAME MEMBERS ARE ATTACHED TO THE SHEAR BLOCK WITH 2 NO. 10 X 9/16" FHTF SCREWS. CORNERS ARE SEALED WITH SILICONE SEALANT.
IR500/501 FRAME HEAD: VERTICAL MEMBERS RUN THROUGH WHILE THE HORIZONTAL MEMBERS ARE SQUARE CUT, BUTTED AND MECHANICALLY FASTENED TO THE VERTICAL MEMBERS VIA A SHEAR BLOCK (ITEM #18). THE SHEAR BLOCK IS MECHANICALLY FASTENED TO THE VERTICAL FRAME MEMBER WITH 4 NO. 12 X 1 7/8" FHTF SCREWS. THE HORIZONTAL FRAME MEMBERS ARE ATTACHED TO THE MULLION WITH 3 NO. 12 X 1" PHTF SCREWS. CORNERS ARE SEALED WITH SILICONE SEALANT.
FRAME HEAD WITHIN 1600 SYSTEM 1 CURTAIN WALL: VERTICAL MEMBERS RUN THROUGH WHILE THE HORIZONTAL MEMBERS ARE SQUARE CUT, BUTTED AND MECHANICALLY FASTENED TO THE VERTICAL MEMBERS VIA A SHEAR BLOCK (ITEM #19). THE SHEAR BLOCK IS MECHANICALLY FASTENED TO THE VERTICAL FRAME MEMBER WITH 4 NO. 10 X 1 19/32" PHTF SCREWS. THE HORIZONTAL FRAME MEMBERS ARE ATTACHED TO THE SHEAR BLOCK WITH 2 NO. 10 X 9/16" FHTF SCREWS. CORNERS ARE SEALED WITH SILICONE SEALANT.
SILL: VERTICAL MEMBERS RUN THROUGH WHILE THE THRESHOLD IS SQUARE CUT, BUTTED AND MECHANICALLY FASTENED TO THE VERTICAL MEMBER VIA A PIVOT ASSEMBLY OR CLIP (ITEM #30). THE CLIP IS MECHANICALLY FASTENED TO THE VERTICAL FRAME MEMBER WITH 3 NO. 12-24 X 3/8" FHMS. THE THRESHOLD MEMBER IS ATTACHED TO THE CLIP BLOCK WITH 2 NO. 12-24 X 3/8" FHMS. CORNERS ARE SEALED WITH SILICONE SEALANT.
DOOR PANEL: VERTICAL STILES RUN THROUGH AND ARE SECURED TO THE RAILS AT THE TOP & BOTTOM WITH 1/4" THICK EXTRUDED CHANNELS. EACH CHANNEL IS FASTENED TO THE STILE & RAIL WITH 1/4-20 X 3/4" PHMS & 3/16" THICK STEEL NUT PLATES. THE INTERSECTION OF EACH CORNER JOINT WAS WELDED WITH A 1/2" DIA. PLUG WELD AND A 1 1/8" LONG FILLET WELD AT BOTH WEBS OF THE RAIL.

NOTE: THESE DOORS ARE NOT APPROVED FOR USE WHERE WATER INFILTRATION RESISTANCE IS REQUIRED BY THE DOOR. UNLESS UNITS ARE INSTALLED IN NON-HABITABLE AREAS WHERE THE UNIT & THE AREA ARE DESIGNED TO ACCEPT WATER INFILTRATION, UNITS SHALL BE INSTALLED ONLY AT LOCATIONS PROTECTED BY A CANOPY OR OVERHANG WHERE-BY THE OVERHANG(OH) RATIO IS EQUAL TO OR MORE THAN.

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.

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=24		DATE: 03/19/13	
NO.	REVISION DESCRIPTION	DATE	BY
A1	ADDED LEVEL E LOCK OPTIONS & GLASS OPTION 6	03/06/19	W.W.S.
B1	UPDATE TO 2018 IBC	02/10/21	W.W.S.
DRAWING TITLE: IR350/500 HW WIND ZONE 4 L.M.I. OUT-SWING DOORS 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 DRAWING NO. 1821T REV. B SHEET NO. 1 OF 12 DATE: FEB 10 2021 LICENSED PROFESSIONAL ENGINEER: WARREN W. SCHAEFER, P.E. NO. 113497			



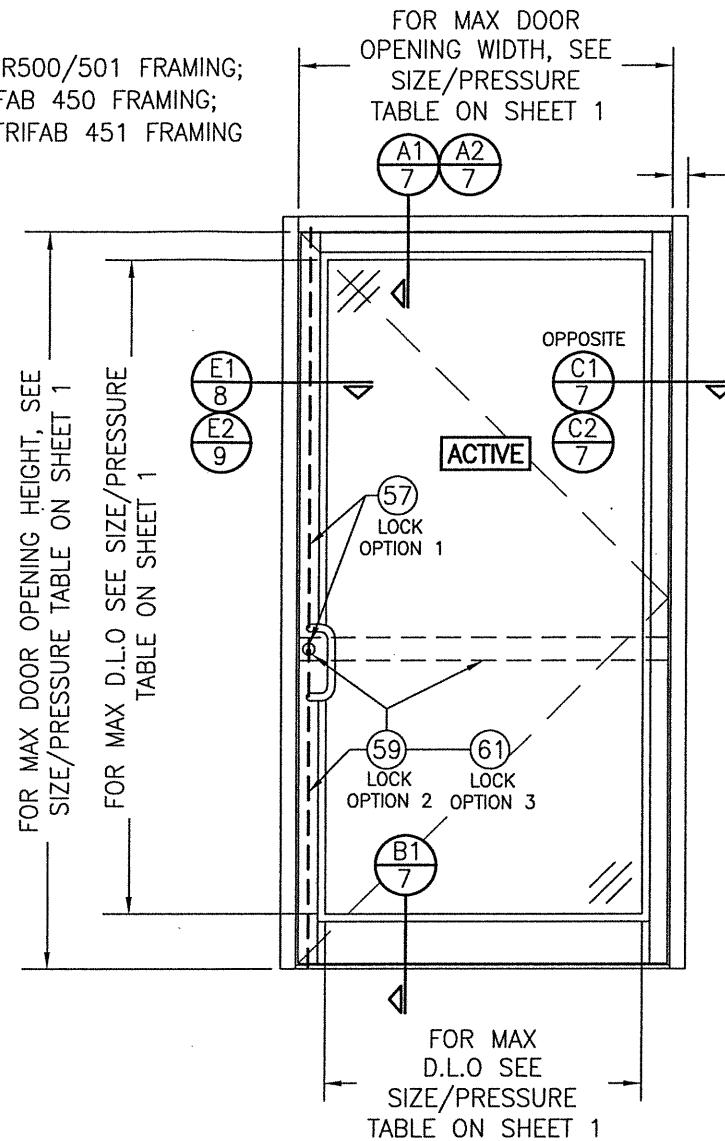
**EXTERIOR ELEVATION:
DOUBLE DOOR WITH TRIFAB 450, 451 OR IR500/501
FRAMING**

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

(FOR INSTALLATION REQUIREMENTS NOT SHOWN, SEE INSTALLATION ELEVATIONS ON SHEETS 4, 5 & 6)

(FOR HINGE REQUIREMENTS, SEE HINGE LOCATION DIAGRAMS ON SHEET 3)

2 1/2" WITH IR500/501 FRAMING;
2" WITH TRIFAB 450 FRAMING;
1 3/4" WITH TRIFAB 451 FRAMING



**EXTERIOR ELEVATION:
SINGLE DOOR WITH TRIFAB 450, 451 OR
IR500/501 FRAMING**

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

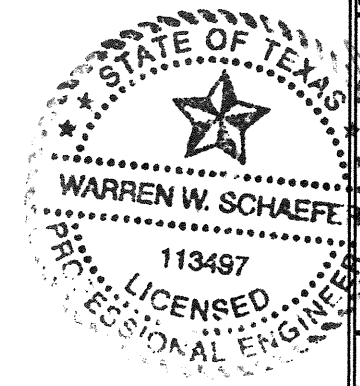
(FOR INSTALLATION REQUIREMENTS NOT SHOWN, SEE INSTALLATION ELEVATIONS ON SHEETS 4, 5 & 6)

(FOR HINGE REQUIREMENTS, SEE HINGE LOCATION DIAGRAMS ON SHEET 3)

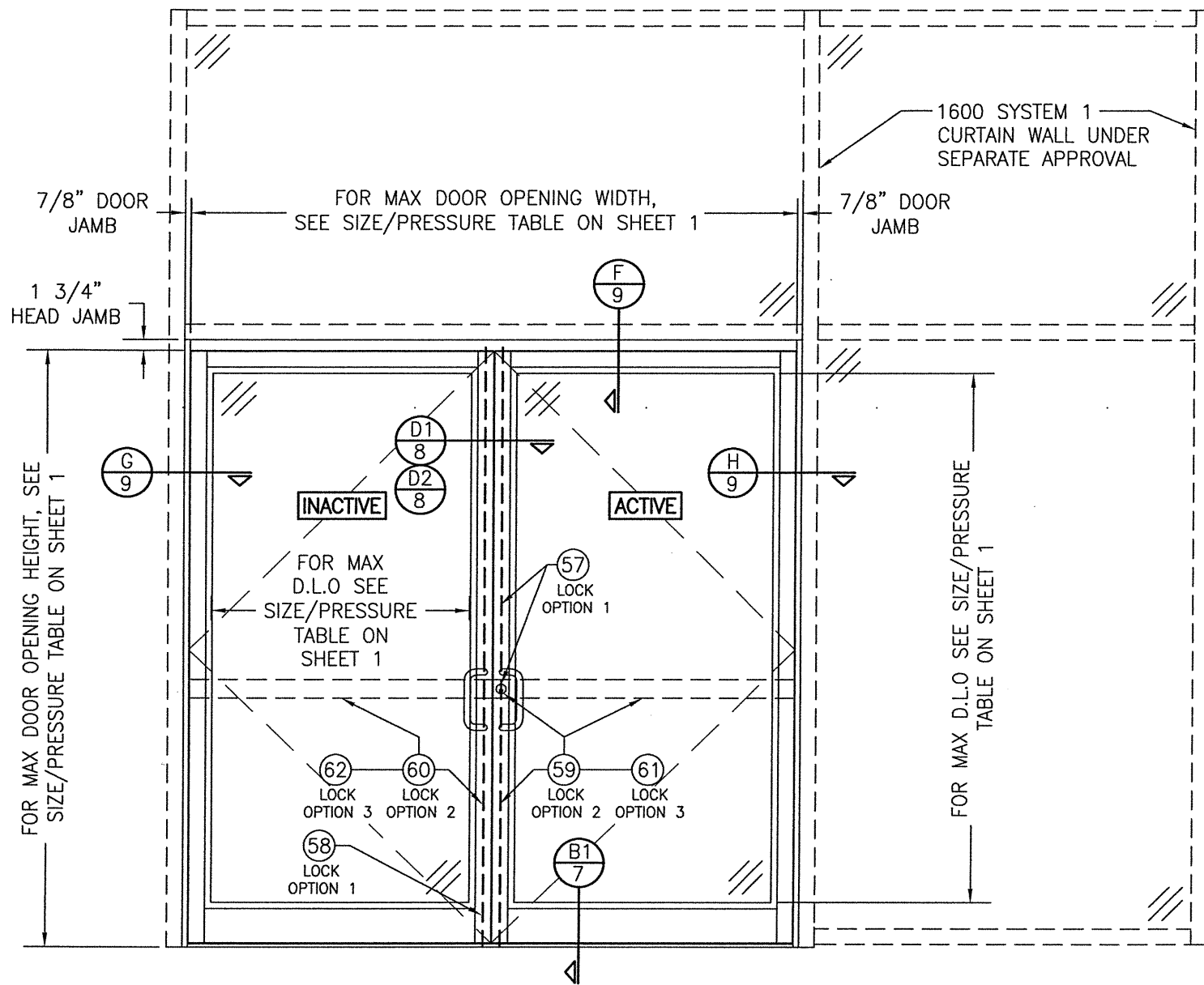
2 1/2" WITH IR500/501 FRAMING;
2" WITH TRIFAB 450 FRAMING;
1 3/4" WITH TRIFAB 451 FRAMING

ALLOWABLE DESIGN PRESSURE
SEE SIZE/PRESSURE TABLE ON SHEET 1

THE 450, 451 & 500/501 SUPPORT FRAMING MAY BE CONFIGURED FOR AND INSTALLED INTO A PUNCHED OPENING AS SHOWN OR BE PART OF A STORE FRONT FRAMING SYSTEM. IF PART OF A STORE FRONT FRAMING SYSTEM, THE LESSER OF THE ALLOWABLE PRESSURE SPECIFIED IN THE STORE FRONT APPROVAL AND THAT STATED HERE-IN SHALL CONTROL FOR THE OVERALL SYSTEM.



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PLOT: 1=24	DATE: 03/19/13
DATE	BY
REVISION DESCRIPTION	NO.
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	
DRAWING TITLE IR350/500 HW WIND ZONE 4 L.M.I. OUT-SWING DOORS	DRAWING NO. 1821T
DATE FEB 10 2021	REV. B
CERTIFICATION WARREN W. SCHAEFER, P.E. P.E. NO. 113497	SHEET NO. 2 OF 12

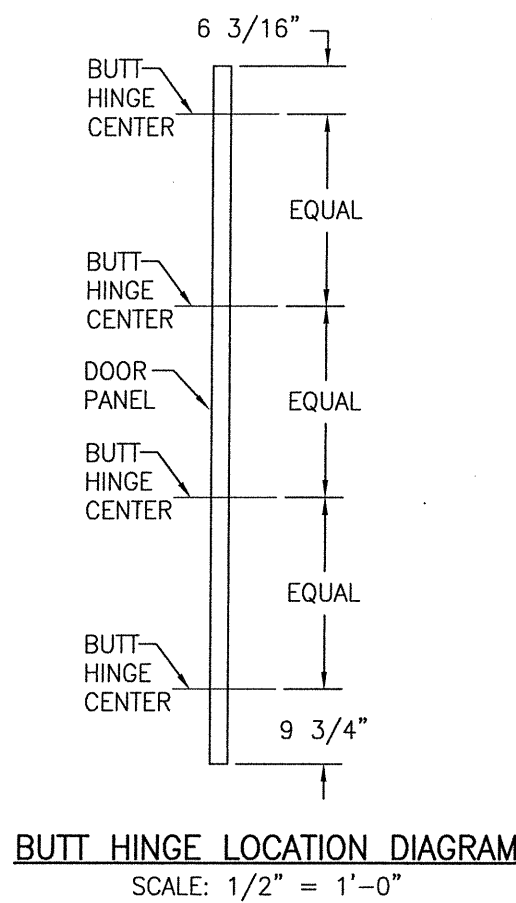


**EXTERIOR ELEVATION:
DOUBLE DOOR WITHIN 1600 SYSTEM 1 CURTAIN WALL**
SCALE: 1/2" = 1'-0"
(FOR HINGE REQUIREMENTS, SEE HINGE LOCATION DIAGRAMS ON THIS SHEET.)

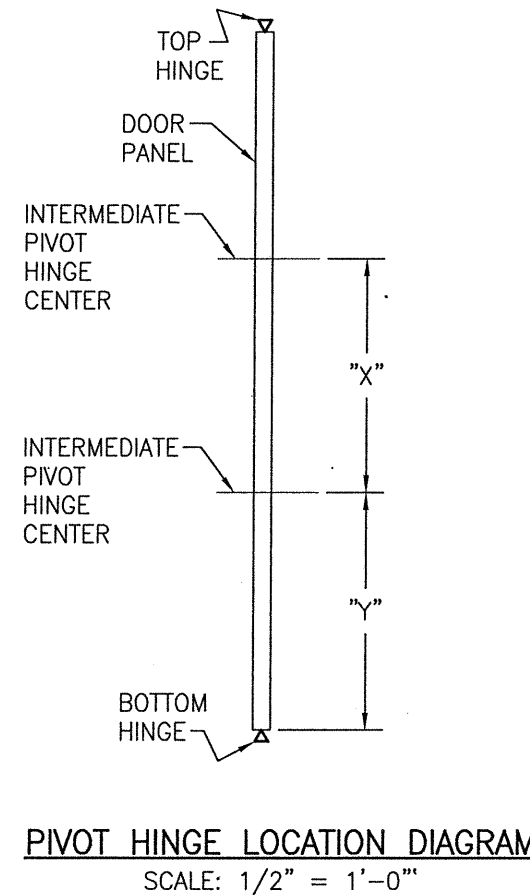
ALLOWABLE DESIGN PRESSURE SEE SIZE/PRESSURE TABLE ON SHEET 1
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NOTES:

- FOR DOOR INSTALLATION CONDITIONS NOT SHOWN, SEE INSTALLATION ELEVATIONS ON SHEET 4, 5 & 6.
- DOUBLE DOOR SHOWN, SINGLE DOOR CONDITION ALSO APPLIES.
- FOR CURTAIN WALL FRAMING REQUIREMENTS, SEE RESPECTIVE CURTAIN WALL APPROVAL.
- ALTHOUGH DOOR SECTION IS SHOWN AT A SIDE JAMB, THE DOOR MAY BE LOCATED IN ANY BAY OF THE CURTAIN WALL.
- THE LESSER ALLOWABLE PRESSURE FOR THE DOOR AND THAT FOR THE 1600 WALL SYSTEM SHALL CONTROL AS THE ALLOWABLE PRESSURE ON THE ASSEMBLY.

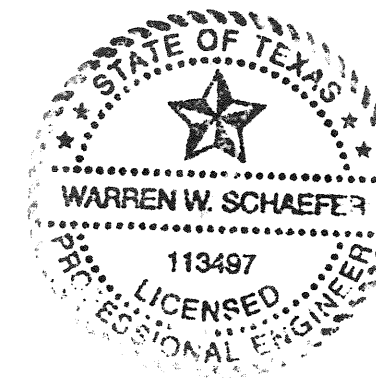


BUTT HINGE LOCATION DIAGRAM
SCALE: 1/2" = 1'-0"

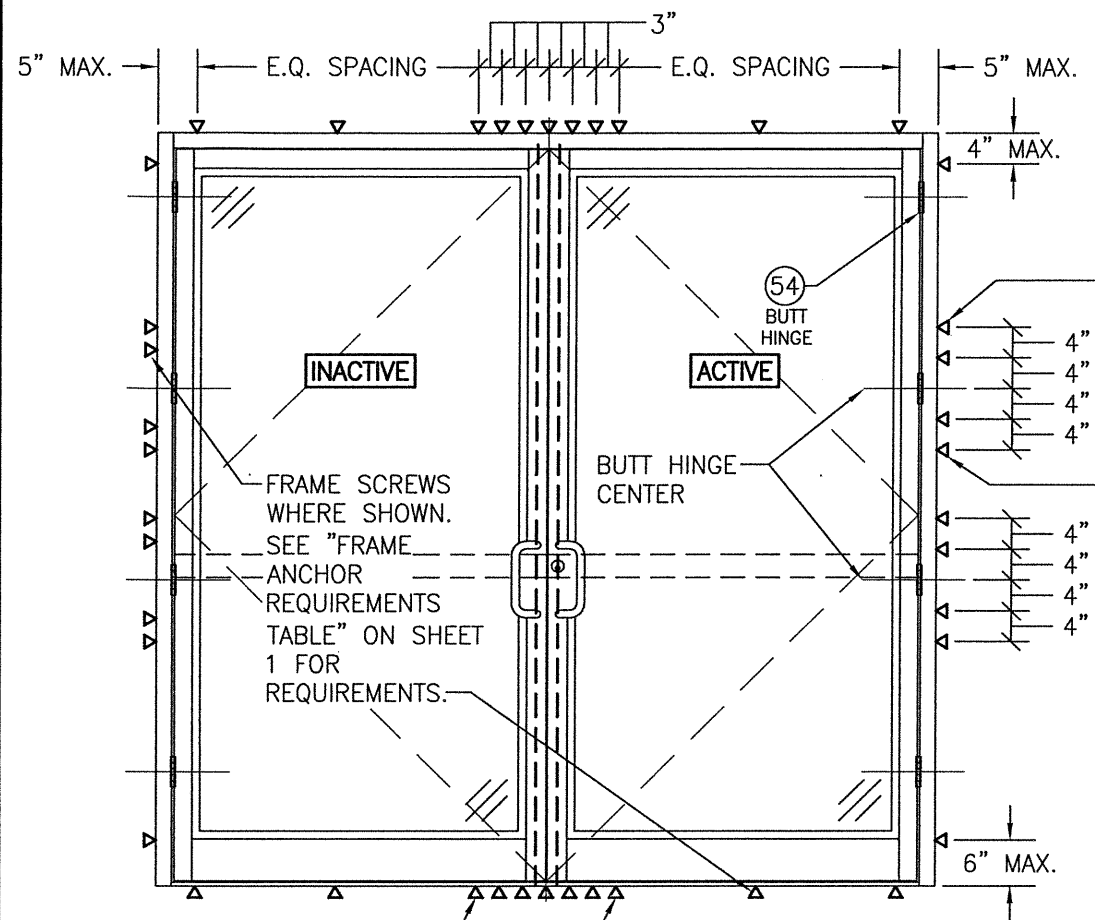


PIVOT HINGE LOCATION DIAGRAM
SCALE: 1/2" = 1'-0"

"X" = DOOR OPENING HEIGHT / (NUMBER OF INTERMEDIATE HINGES + 1)
 "Y" = "X" - 13/16"



DRAWING TITLE IR350/500 HW WIND ZONE 4 L.M.I. OUT-SWING DOORS	DRAWN BY: W.R.M.	CHECKED BY: W.W.S.
	PLLOT: 1=24	DATE: 03/19/13
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	DATE	
	BY	
JOB INFORMATION: KAWNEER COMPANY, INC. 555 GUTHRIDGE COURT NORCROSS, GA 30092 770-449-5555	REVISION DESCRIPTION	
	NO.	
DRAWING NO. 1821T	REV. B	
SHEET NO. 3	OF 12	

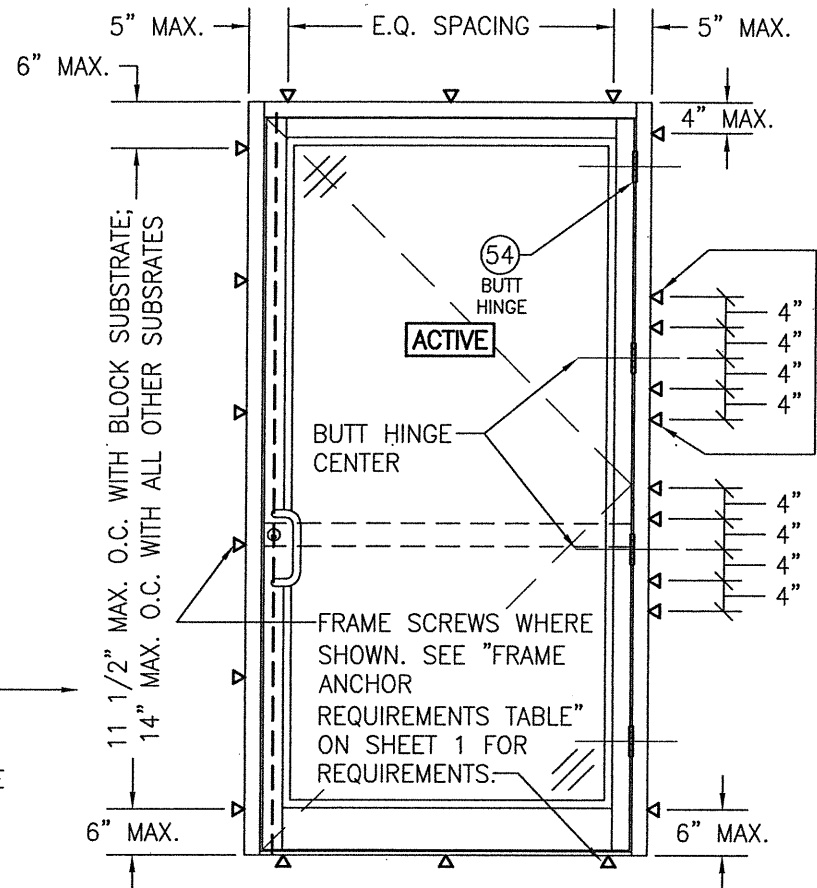


THESE 2 FRAME ANCHORS ARE ONLY REQUIRED WHEN DESIGN PRESSURE EXCEEDS +/-70 PSF (TYP. HEAD AND SILL)

**EXTERIOR ELEVATION:
INSTALLATION REQUIREMENTS FOR DOUBLE DOORS
WITH BUTT HINGES**
SCALE: 1/2" = 1'-0"
(FOR DOOR DETAIL NOT SHOWN, SEE ELEVATIONS ON SHEETS 2 & 3)

NOTE: WHEN JOB REQUIRED PRESSURE IS +/-70 PSF OR LESS, THESE OUTER MOST SCREWS AT EACH HINGE LOCATION ARE NOT REQUIRED

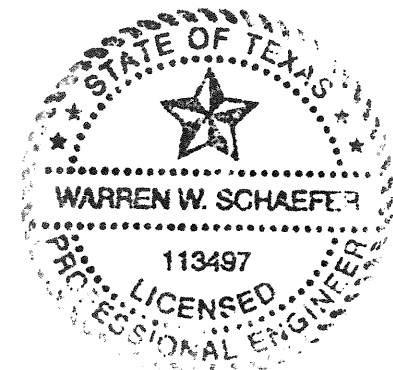
NOTE: WHEN JOB REQUIRED PRESSURE IS +/-70 PSF OR LESS, SCREW SPACING MAY BE INCREASED TO 17" O.C. WITH ALL SUBSTRATES



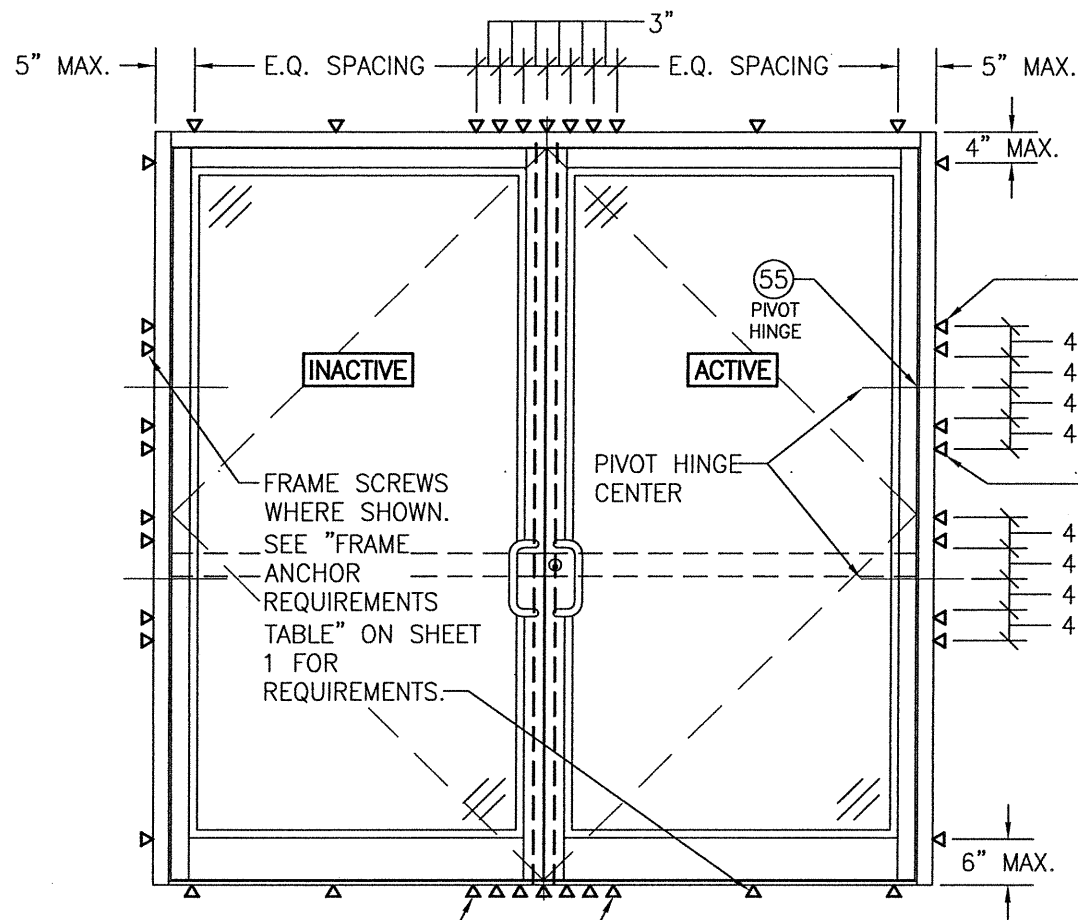
**EXTERIOR ELEVATION:
INSTALLATION REQUIREMENTS FOR SINGLE
DOORS WITH BUTT HINGES**
SCALE: 1/2" = 1'-0"
(FOR DOOR DETAIL NOT SHOWN, SEE ELEVATIONS ON SHEETS 2 & 3)

NOTE: WHEN JOB REQUIRED PRESSURE IS +/-70 PSF OR LESS, THESE OUTER MOST SCREWS AT EACH HINGE LOCATION ARE NOT REQUIRED

THE CONDITIONS SHOWN IN THESE ELEVATIONS CONSIDER THE PERIMETER FRAMING TO BE INSTALLED TO A PUNCHED WALL OPENING OR CURTAIN WALL SYSTEM OPENING. WHEN DOOR PANELS ARE INSTALLED INTO A 450, 451 OR 500/501 STOREFRONT SYSTEM (NOT A PUNCHED OPENING), THE INSTALLATION REQUIREMENTS OF THE STORE FRONT APPROVAL SHALL CONTROL WITH THE DOOR PANELS BEING HINGED AND LOCKED TO THE FRAMING AS SHOWN HERE-IN.



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PLOT: 1=24		DATE: 03/19/13	
DATE	BY	REVISION DESCRIPTION	NO.
JOB INFORMATION:			
DRAWING TITLE IR350/500 HW WIND ZONE 4 L.M.I. OUT-SWING DOORS		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. 1821T	REV. B		
SHEET NO. 4 OF 12			



NOTE: WHEN JOB REQUIRED PRESSURE IS +/-70 PSF OR LESS, THESE OUTER MOST SCREWS AT EACH HINGE LOCATION ARE NOT REQUIRED

NOTE: WHEN JOB REQUIRED PRESSURE IS +/-70 PSF OR LESS, SCREW SPACING MAY BE INCREASED TO 17" O.C. WITH ALL SUBSTRATES

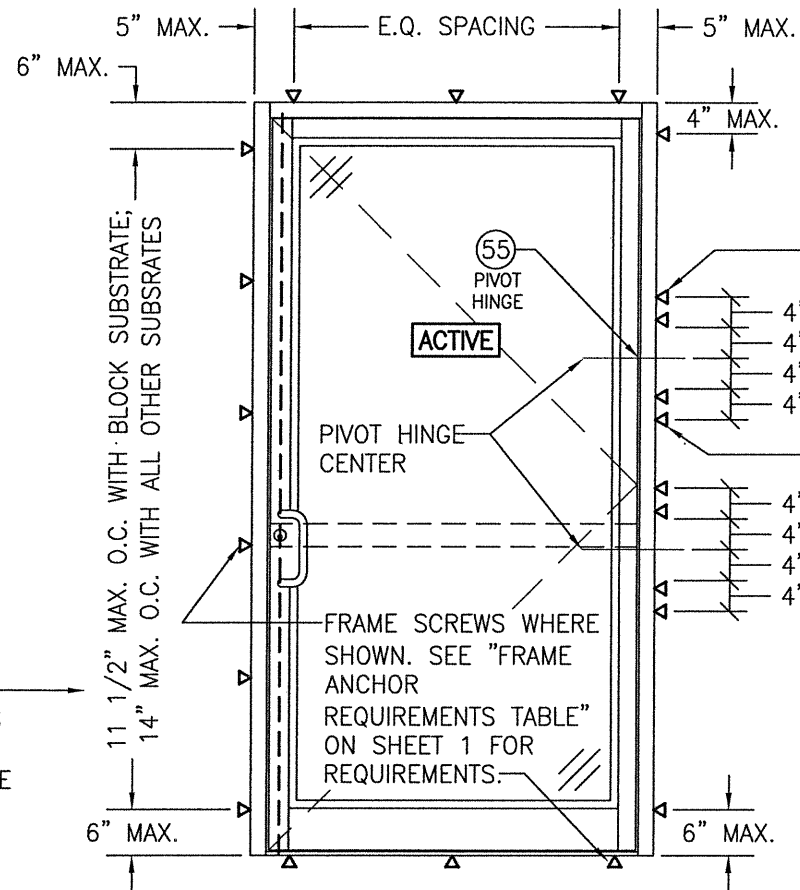
THESE 2 FRAME ANCHORS ARE ONLY REQUIRED WHEN DESIGN PRESSURE EXCEEDS +/-70 PSF (TYP. HEAD AND SILL)

**EXTERIOR ELEVATION:
INSTALLATION REQUIREMENTS FOR DOUBLE DOORS
WITH PIVOT HINGES**

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

(FOR DOOR DETAIL NOT SHOWN, SEE ELEVATIONS ON SHEETS 2 & 3)

THE CONDITIONS SHOWN IN THESE ELEVATIONS CONSIDER THE PERIMETER FRAMING TO BE INSTALLED TO A PUNCHED WALL OPENING OR CURTAIN WALL SYSTEM OPENING. WHEN DOOR PANELS ARE INSTALLED INTO A 450, 451 OR 500/501 STOREFRONT SYSTEM (NOT A PUNCHED OPENING), THE INSTALLATION REQUIREMENTS OF THE STORE FRONT APPROVAL SHALL CONTROL WITH THE DOOR PANELS BEING HINGED AND LOCKED TO THE FRAMING AS SHOWN HERE-IN.

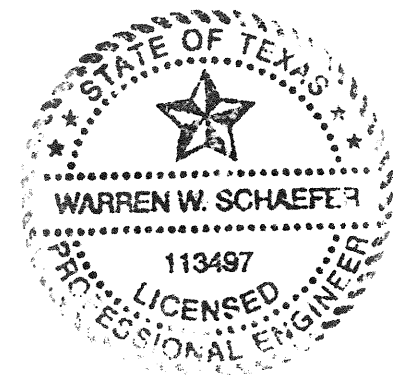


NOTE: WHEN JOB REQUIRED PRESSURE IS +/-70 PSF OR LESS, THESE OUTER MOST SCREWS AT EACH HINGE LOCATION ARE NOT REQUIRED

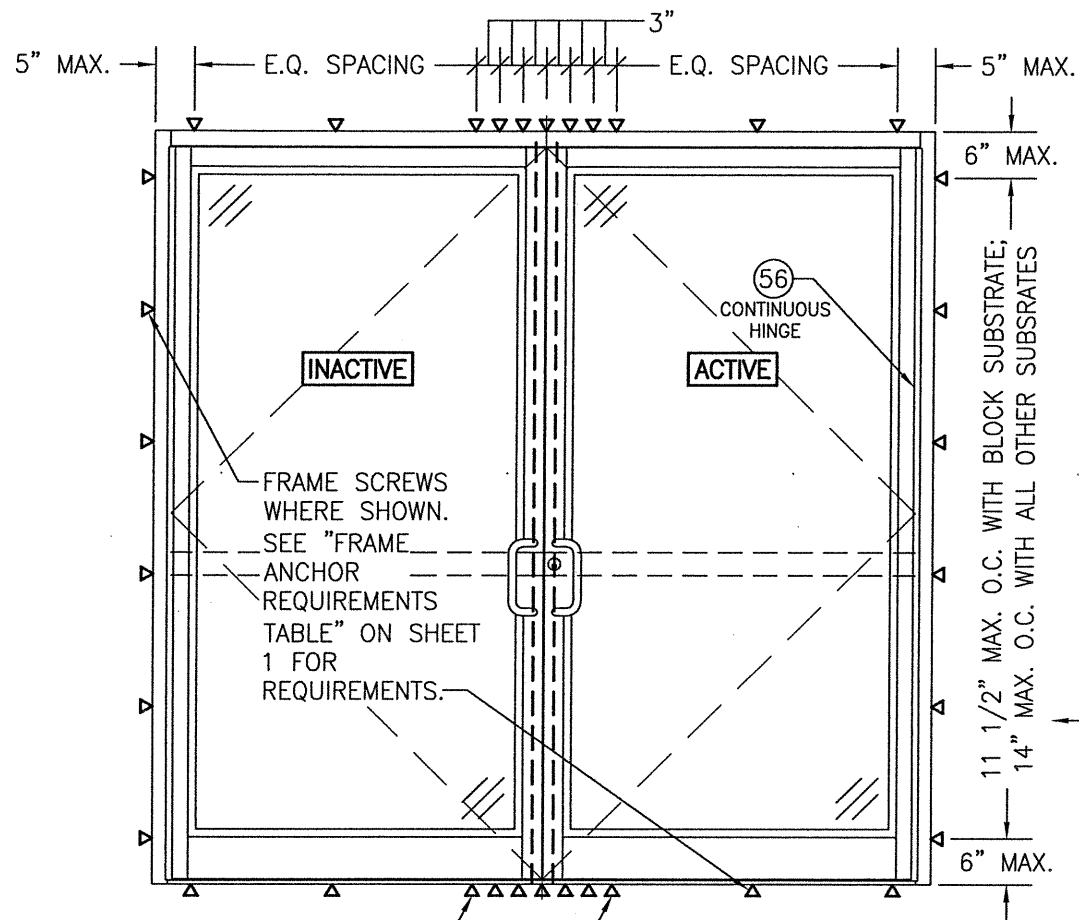
**EXTERIOR ELEVATION:
INSTALLATION REQUIREMENTS FOR SINGLE
DOORS WITH PIVOT HINGES**

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

(FOR DOOR DETAIL NOT SHOWN, SEE ELEVATIONS ON SHEETS 2 & 3)



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PLOT: 1-24		DATE: 03/19/13	
DATE	BY	REVISION DESCRIPTION	NO.
DRAWING TITLE IR350/500 HW WIND ZONE 4 L.M.I. OUT-SWING DOORS			
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			
JOB INFORMATION: KAWNEER COMPANY, INC. 555 GUTHRIDGE COURT NORCROSS, GA 30092 770-449-5555			
CERTIFICATION	FEB 10 2021	WARREN W. SCHAEFER, P.E. P.E. NO. 113497	
DRAWING NO. 1821T	REV. B	SHEET NO. 5 OF 12	



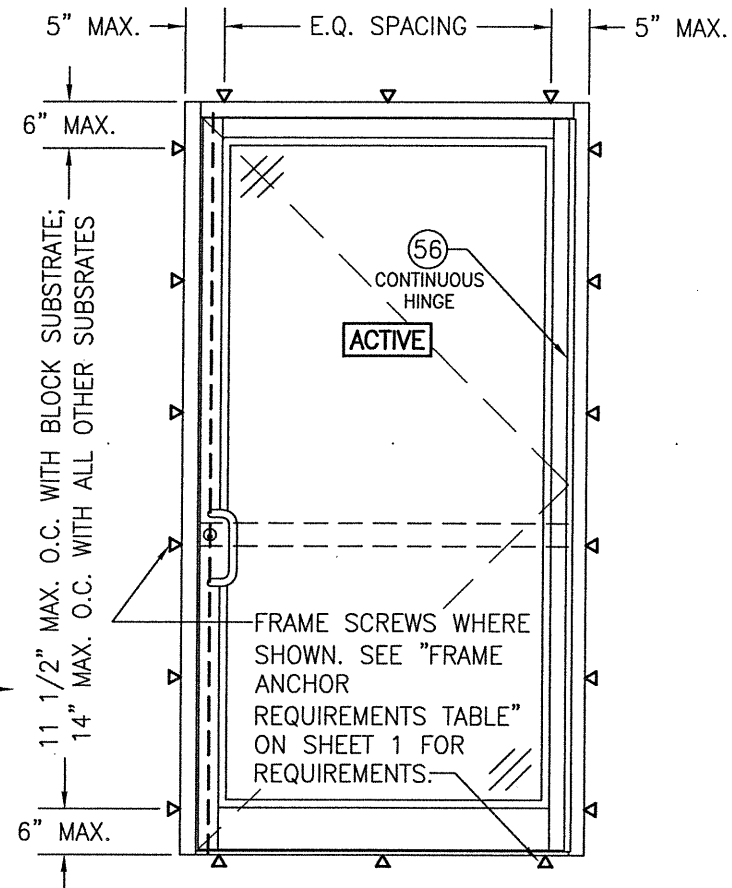
THESE 2 FRAME ANCHORS ARE ONLY REQUIRED WHEN DESIGN PRESSURE EXCEEDS +/-70 PSF (TYP. HEAD AND SILL)

**EXTERIOR ELEVATION:
INSTALLATION REQUIREMENTS FOR DOUBLE DOORS
WITH CONTINUOUS HINGES**

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

(FOR DOOR DETAIL NOT SHOWN, SEE ELEVATIONS ON SHEETS 2 & 3)

NOTE: WHEN JOB REQUIRED PRESSURE IS +/-70 PSF OR LESS, SCREW SPACING MAY BE INCREASED TO 17" O.C. WITH ALL SUBSTRATES

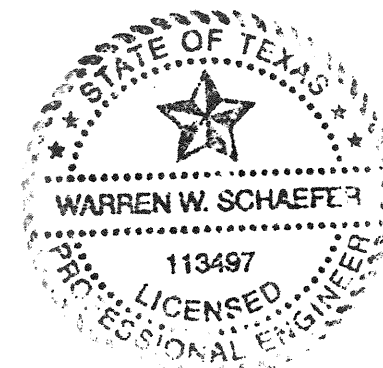


**EXTERIOR ELEVATION:
INSTALLATION REQUIREMENTS FOR SINGLE
DOORS WITH CONTINUOUS HINGE**

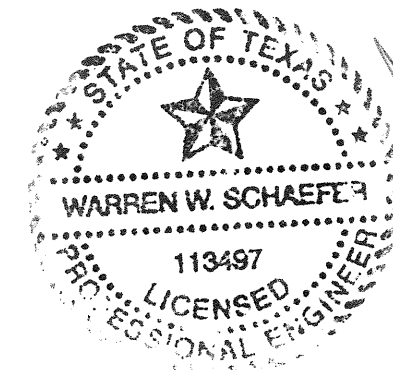
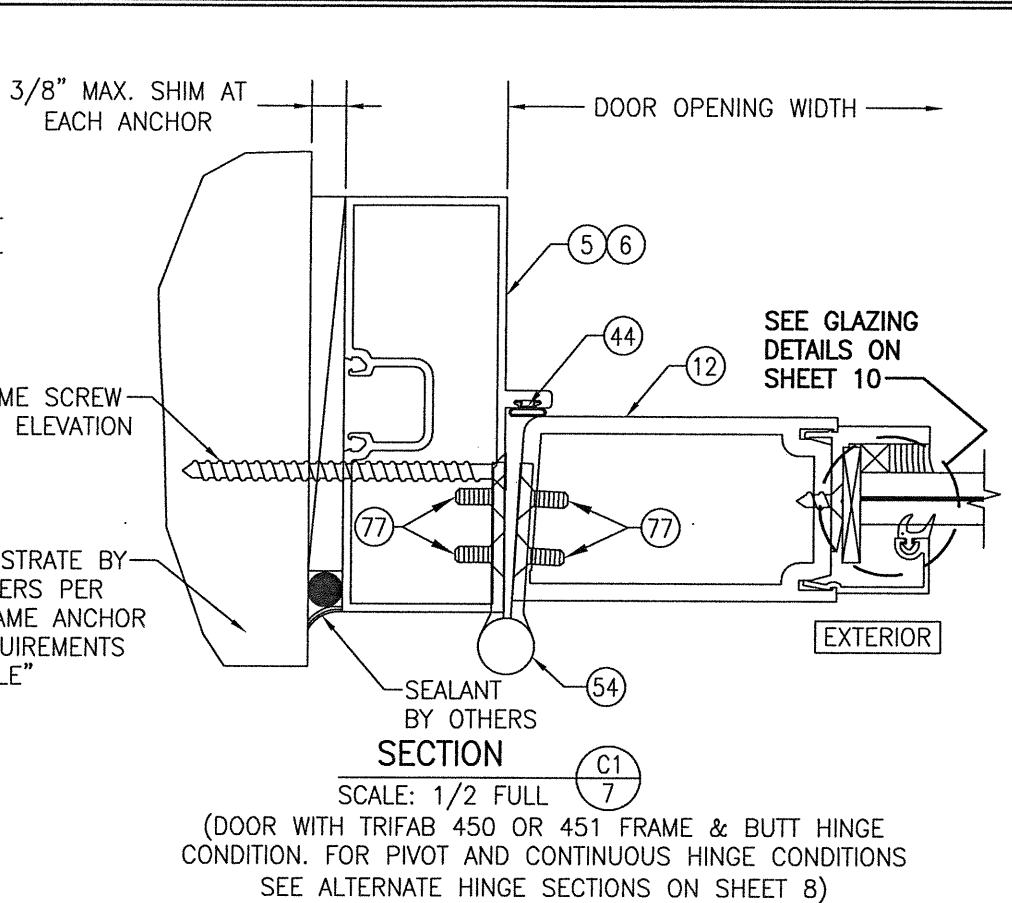
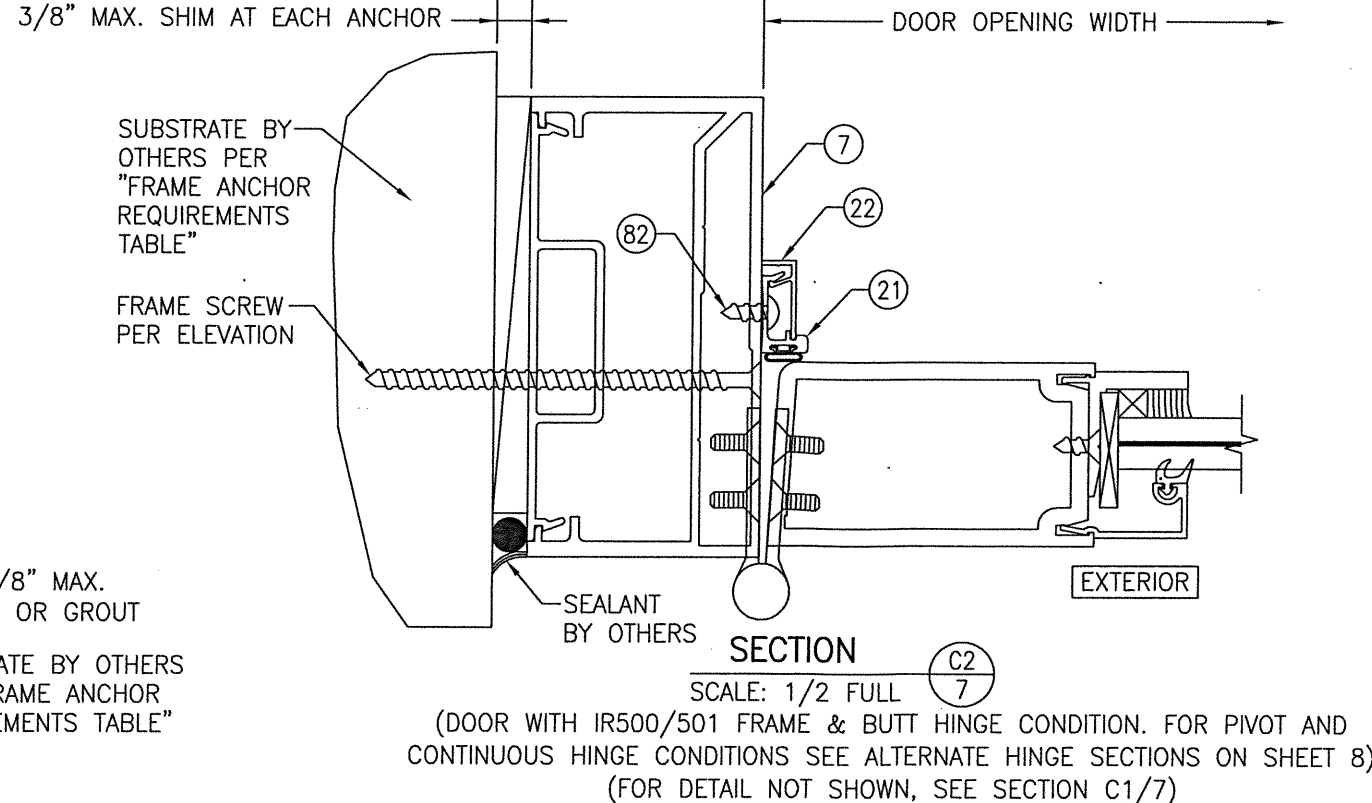
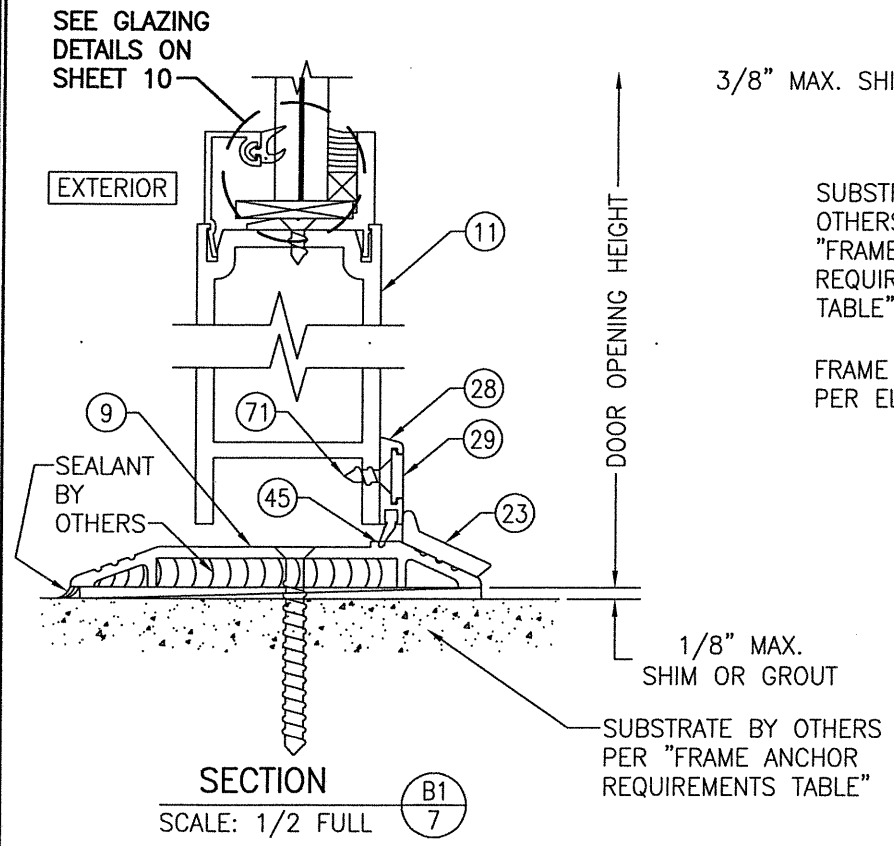
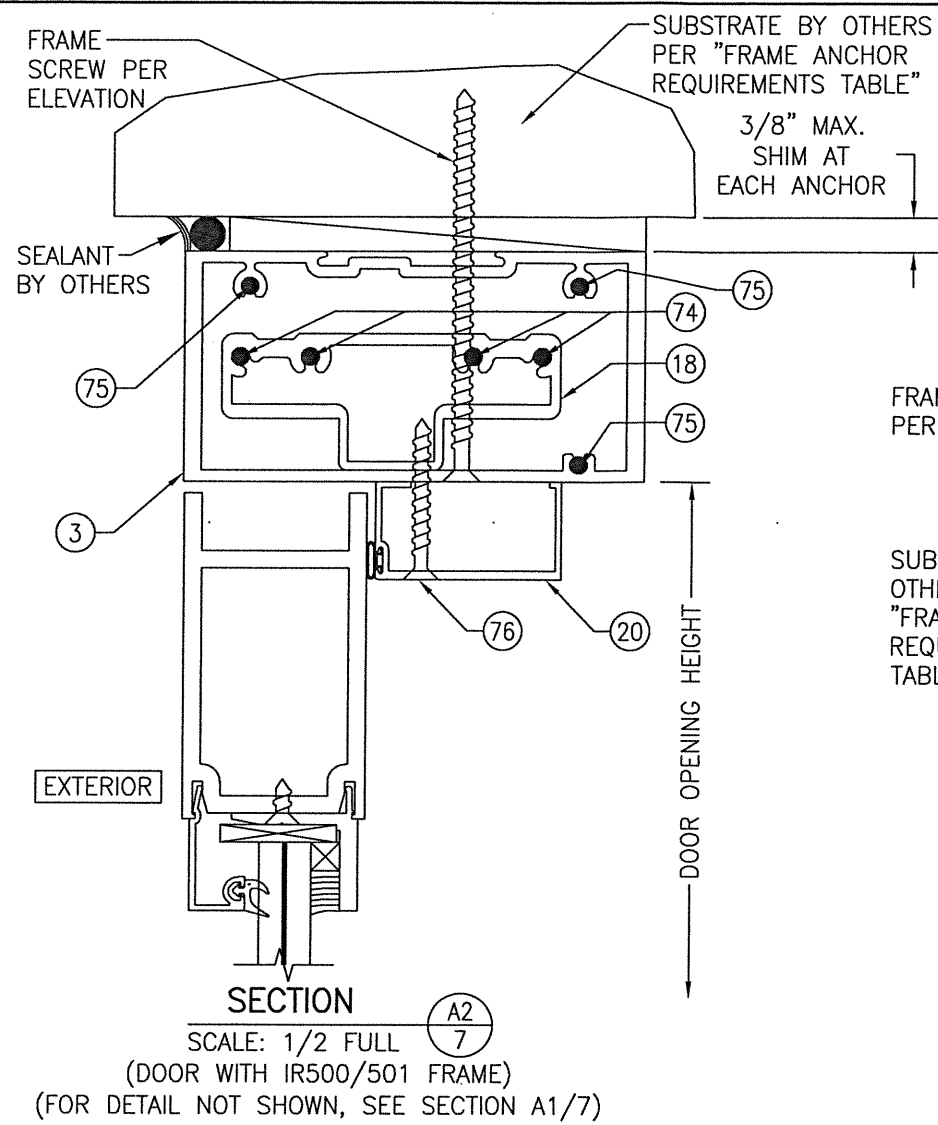
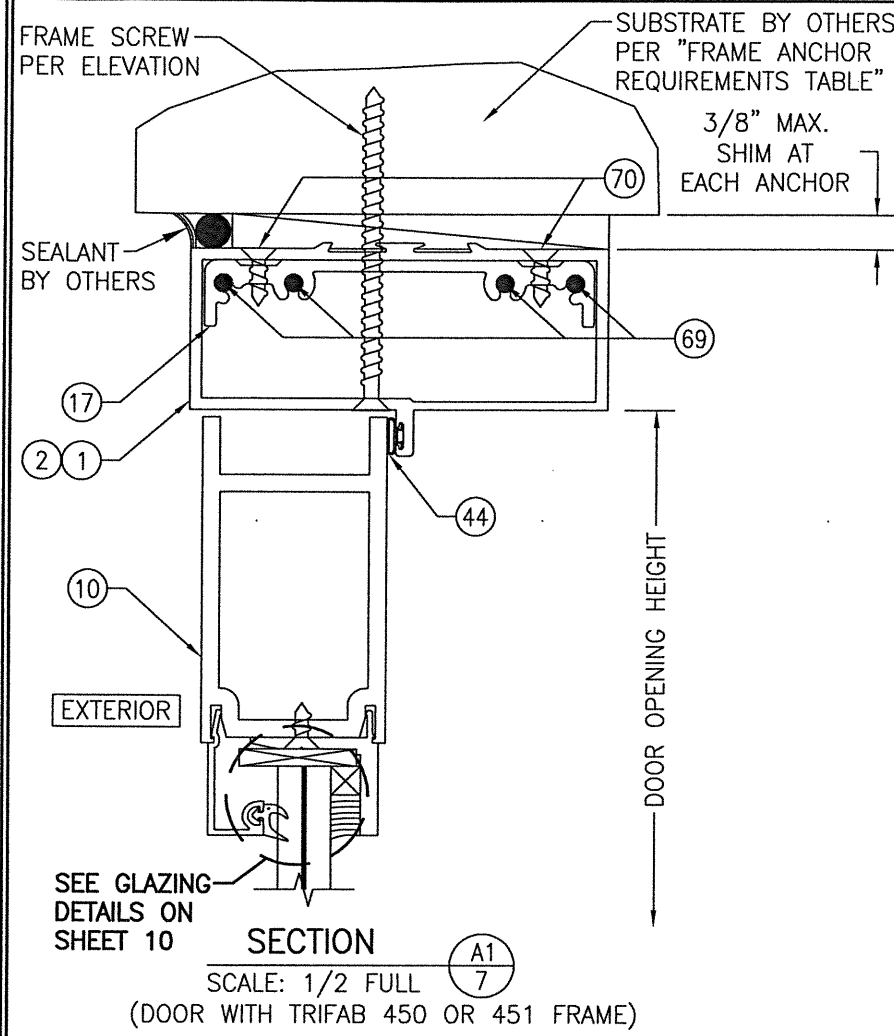
SCALE: 1/2" = 1'-0"

(FOR DOOR DETAIL NOT SHOWN, SEE ELEVATIONS ON SHEETS 2 & 3)

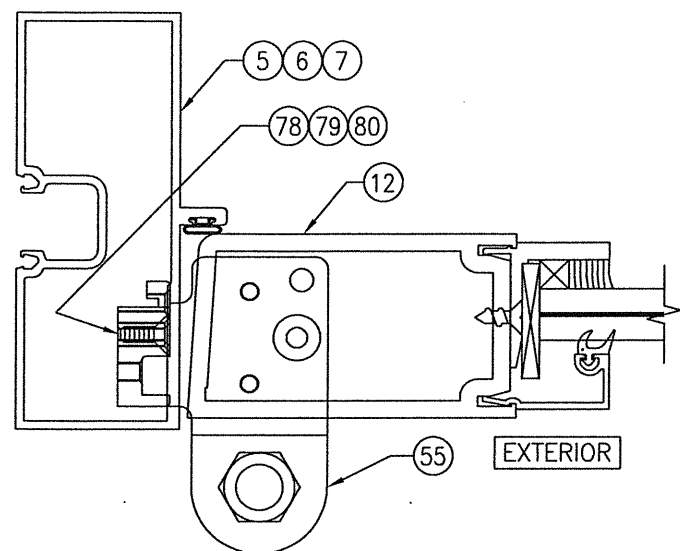
THE CONDITIONS SHOWN IN THESE ELEVATIONS CONSIDER THE PERIMETER FRAMING TO BE INSTALLED TO A PUNCHED WALL OPENING OR CURTAIN WALL SYSTEM OPENING. WHEN DOOR PANELS ARE INSTALLED INTO A 450, 451 OR 500/501 STOREFRONT SYSTEM (NOT A PUNCHED OPENING), THE INSTALLATION REQUIREMENTS OF THE STORE FRONT APPROVAL SHALL CONTROL WITH THE DOOR PANELS BEING HINGED AND LOCKED TO THE FRAMING AS SHOWN HERE-IN.



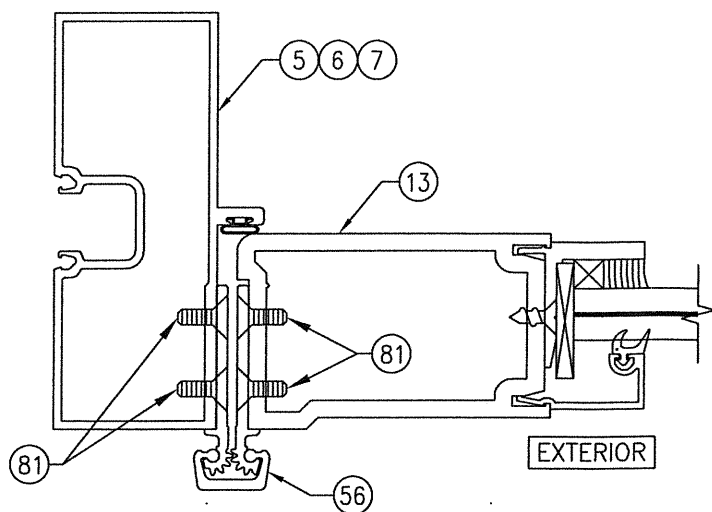
DRAWN BY: W.R.M.		CHECKED BY: W.W.S.	
PLOT: 1=24		DATE: 03/19/13	
NO.	REVISION DESCRIPTION	BY	DATE
DRAWING TITLE IR350/500 HW WIND ZONE 4 L.M.I. OUT-SWING DOORS			
JOB INFORMATION: KAWNEER COMPANY, INC. 555 GUTHRIDGE COURT NORCROSS, GA 30092 770-449-5555			
CONSULTANTS W. W. SCHAEFER ENGINEERING & CONSULTING, 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. 1821T	REV. B		
SHEET NO. 6 OF 12			



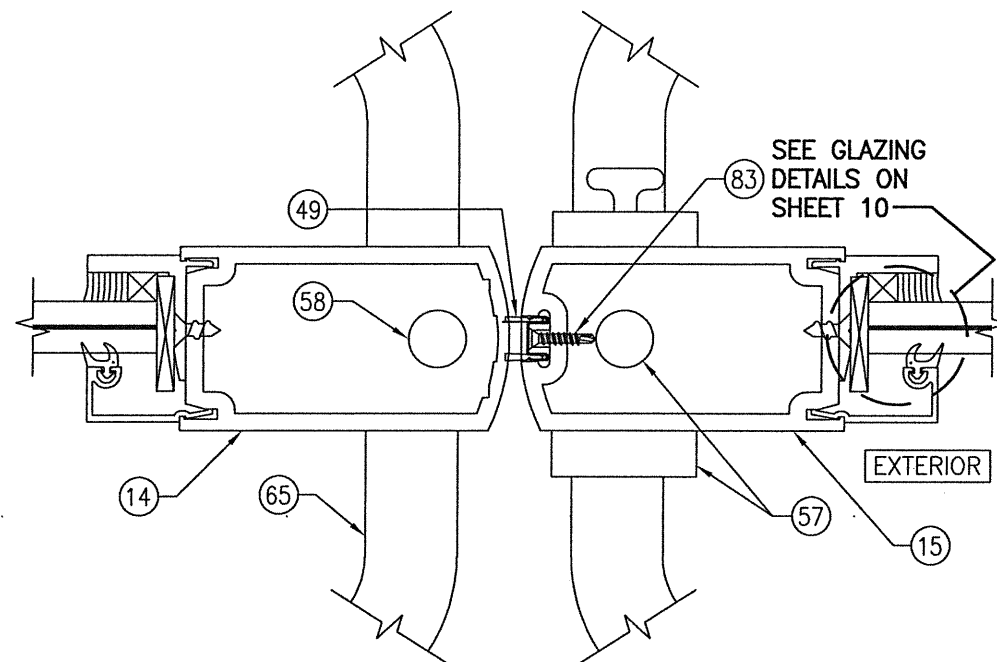
DRAWN BY: W.R.M.		CHECKED BY: W.W.S.	
PLOT: 1=2		DATE: 03/19/13	
DATE	BY	REVISION DESCRIPTION	NO.
DRAWING TITLE: IR350/500 HW WIND ZONE 4 L.M.I. OUT-SWING DOORS			
JOB INFORMATION: KAWNEER COMPANY, INC. 555 GUTHRIDGE COURT NORCROSS, GA 30092 770-449-5555			
CONSULTANTS: W. W. SCHAEFER ENGINEERING & CONSULTING, 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. 1821T		REV. B	
SHEET NO. 7 OF 12			



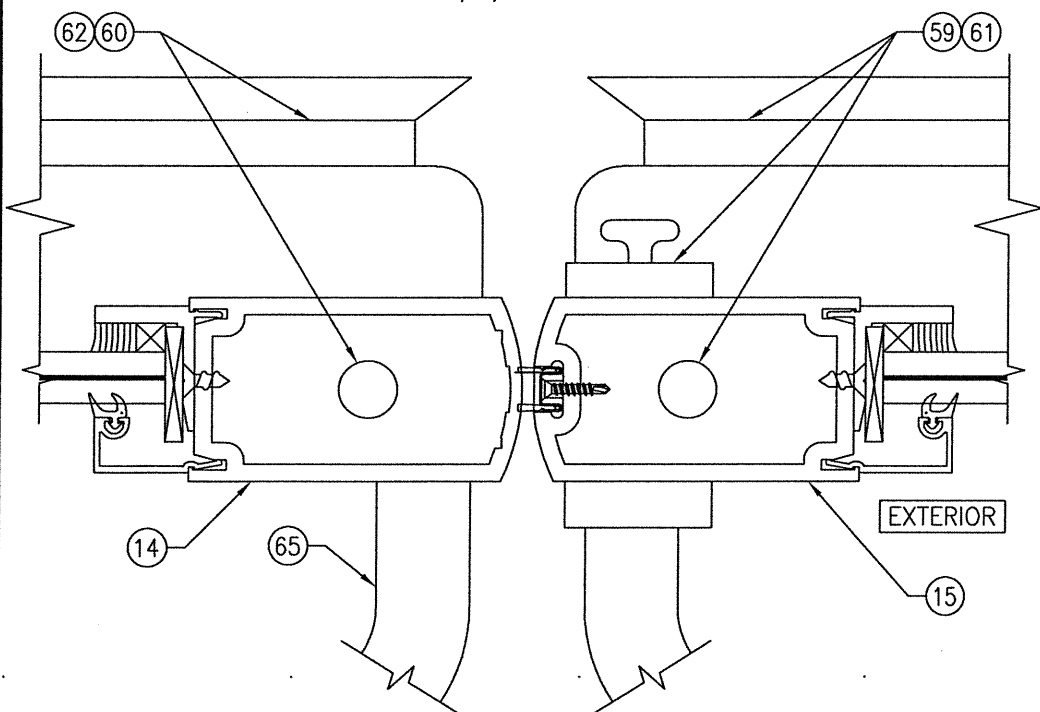
ALTERNATE HINGE SECTION
(PIVOT HINGE CONDITION)
(FOR DETAIL AND INSTALLATION NOT SHOWN, SEE SECTION C1/7)



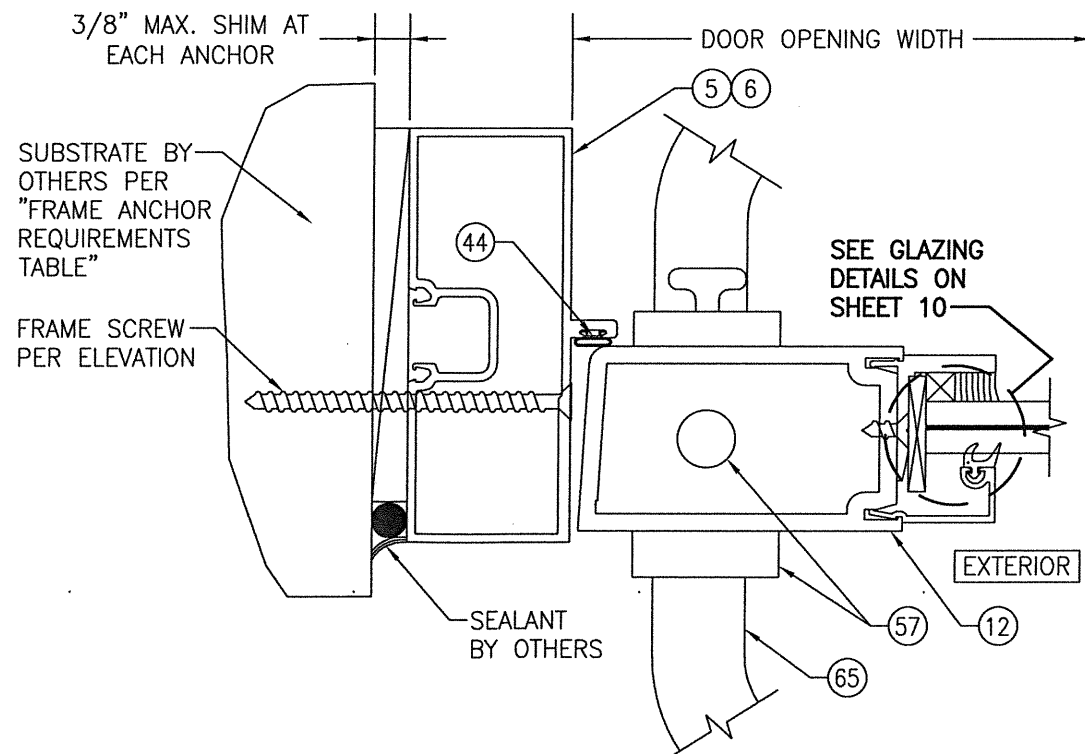
ALTERNATE HINGE SECTION
(CONTINUOUS HINGE CONDITION)
(FOR DETAIL AND INSTALLATION NOT SHOWN, SEE SECTION C1/7)



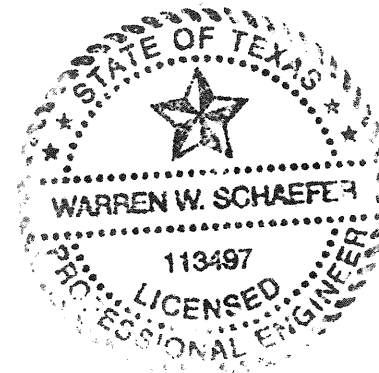
SECTION $\frac{D1}{8}$
SCALE: 1/2 FULL
(DOOR WITH LOCK OPTION 1)



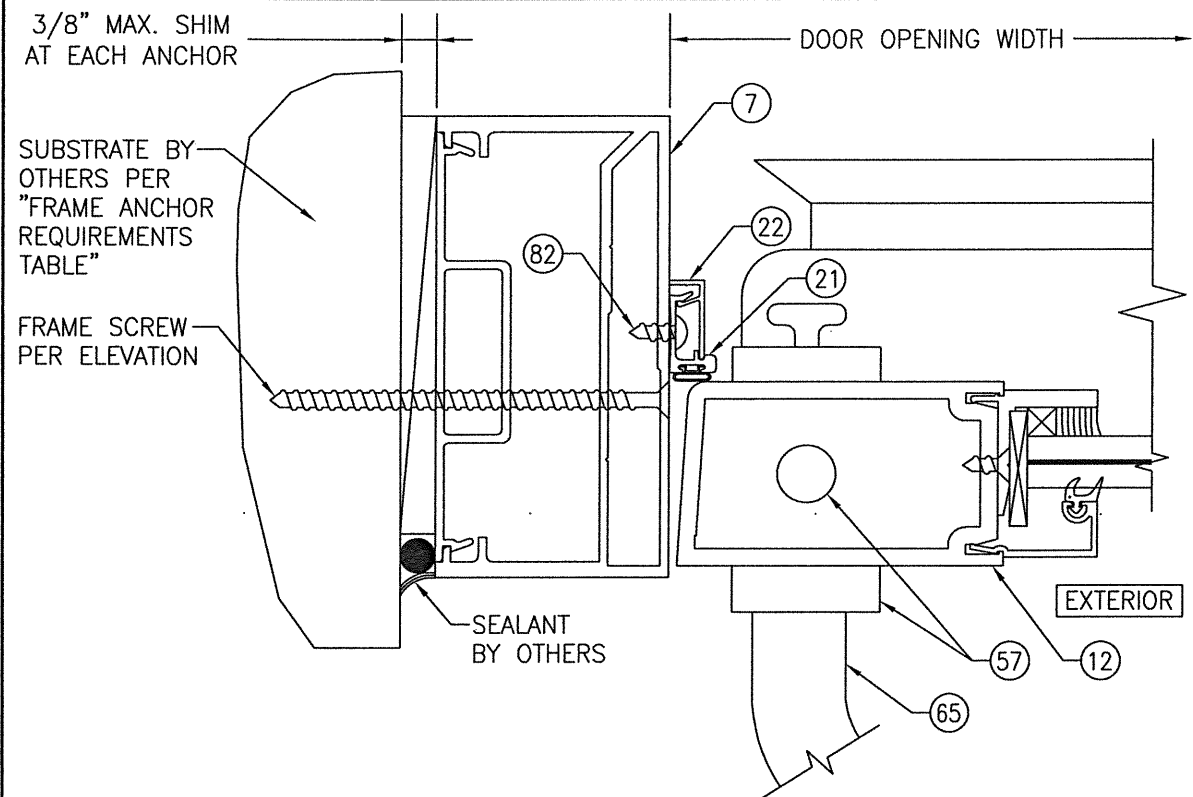
SECTION $\frac{D2}{8}$
SCALE: 1/2 FULL
(DOOR WITH LOCK OPTIONS 2 & 3)
(FOR DETAIL NOT SHOWN, SEE SECTION D1/8)



SECTION $\frac{E1}{8}$
SCALE: 1/2 FULL
(DOOR WITH TRIFAB 450 OR 451 FRAME & LOCK OPTION 1. FOR LOCK OPTIONS 2 & 3 SEE ALTERNATE LOCK SECTION ON SHEET 9)



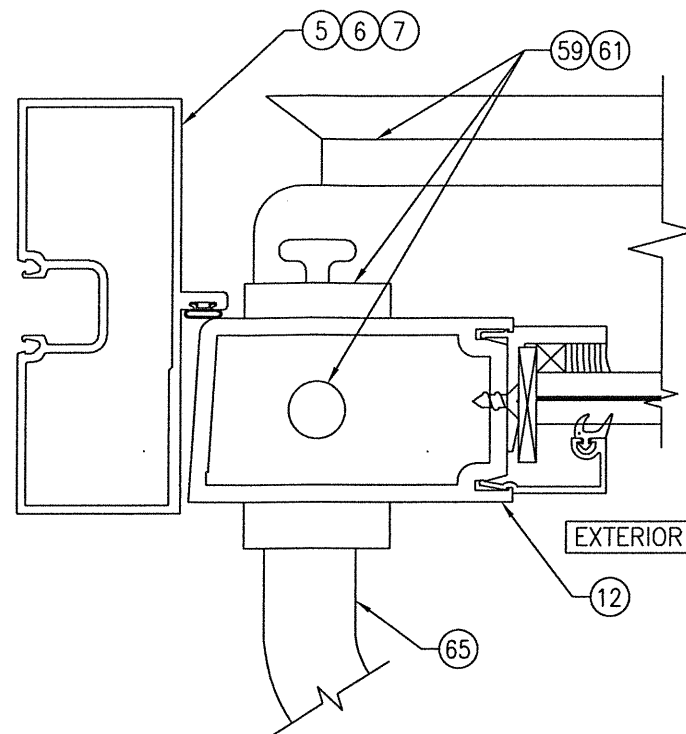
DRAWING TITLE IR350/500 HW WIND ZONE 4 L.M.I. OUT-SWING DOORS	DRAWN BY: W.R.M.	CHECKED BY: W.W.S.
	PLLOT: 1=2	DATE: 03/19/13
CONSULTANTS W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (REG. NO. F-14980) 7480 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424	NO.	REVISION DESCRIPTION
	DATE	BY
JOB INFORMATION: KAWNEER COMPANY, INC. 555 GUTHRIDGE COURT NORCROSS, GA 30092 770-449-5555	CERTIFICATION FEB 10 2021	
	WARREN W. SCHAEFER, P.E. NO. 113497	
DRAWING NO. 1821T	REV. B	
SHEET NO. 8 OF 12		



SECTION E2

SCALE: 1/2 FULL

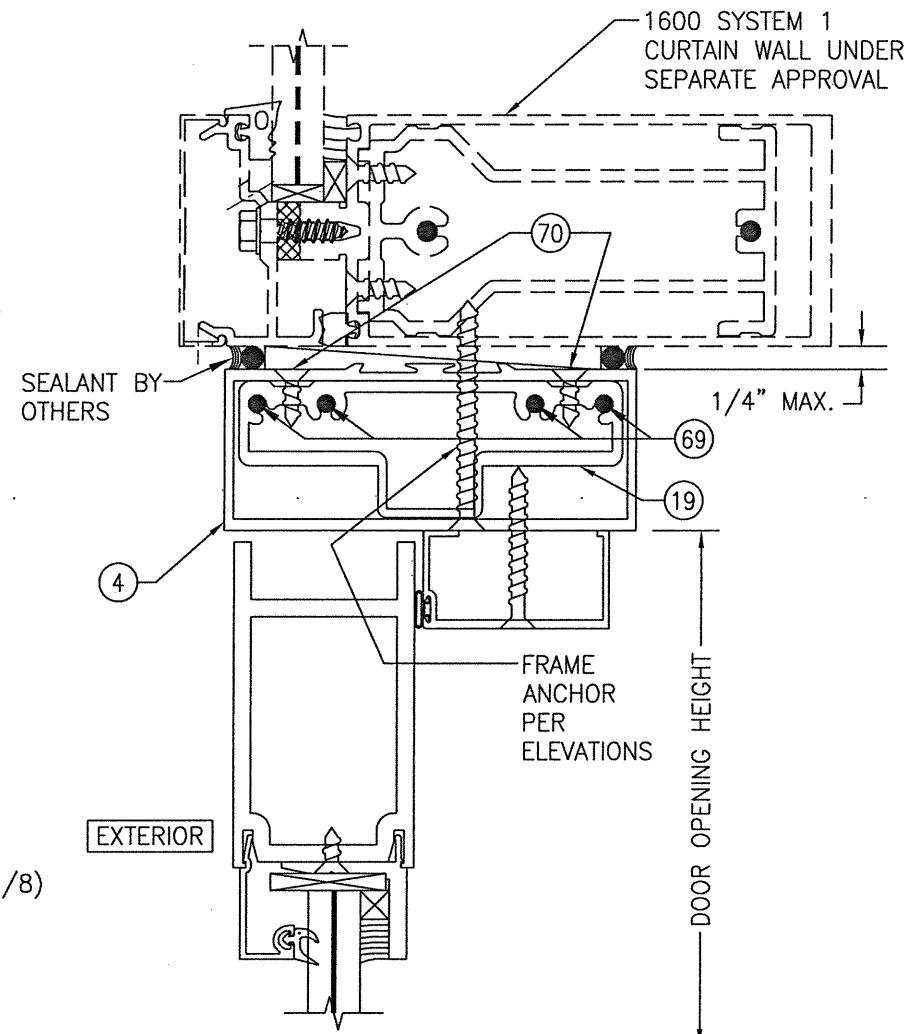
(DOOR WITH IR500/501 FRAME & LOCK OPTION 1. FOR LOCK OPTIONS 2 & 3 SEE ALTERNATE LOCK SECTION ON THIS SHEET)
(FOR DETAIL NOT SHOWN, SEE SECTION E1/8)



ALTERNATE LOCK SECTION

(LOCK OPTIONS 2 & 3)

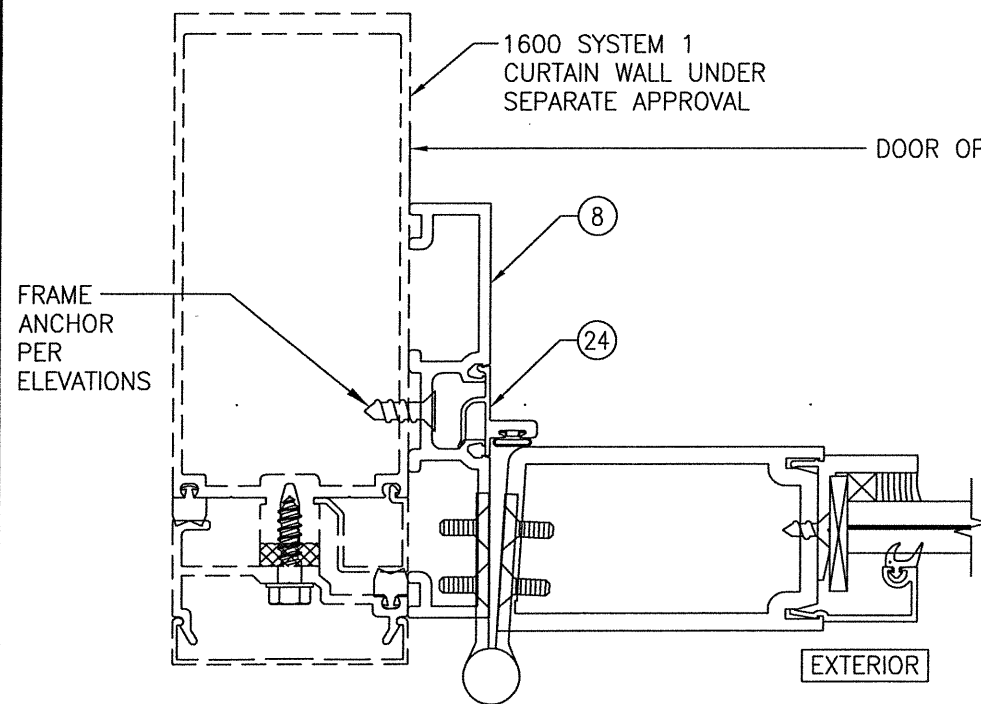
(FOR DETAIL AND INSTALLATION NOT SHOWN, SEE SECTION E1/8)



SECTION F

SCALE: 1/2 FULL

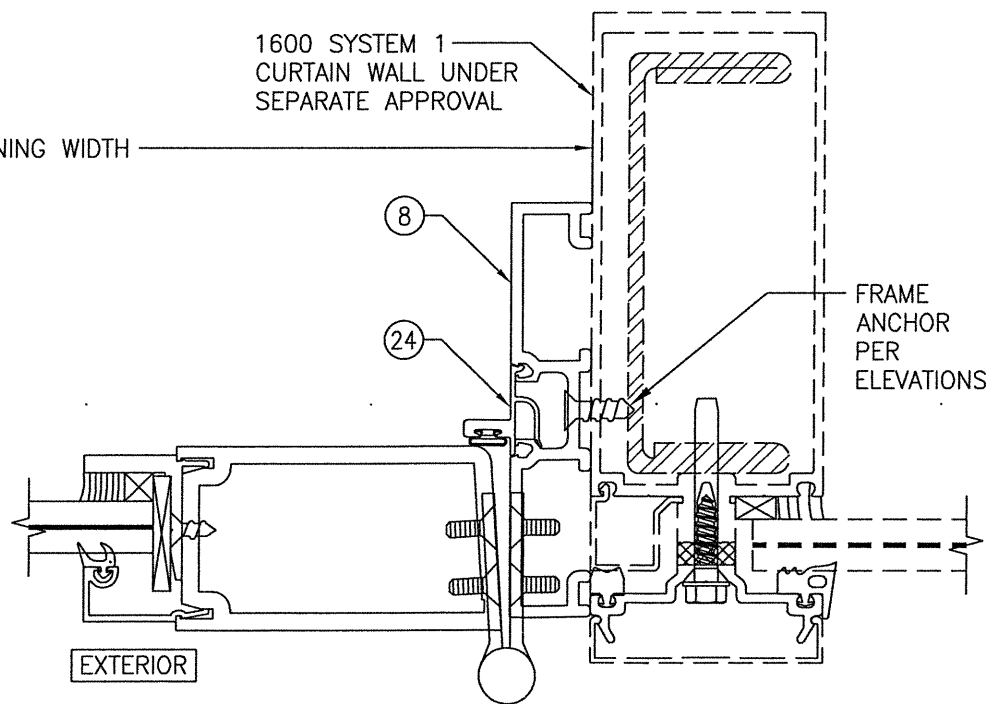
(FOR DETAIL NOT SHOWN, SEE OTHER SECTIONS)



SECTION G

SCALE: 1/2 FULL

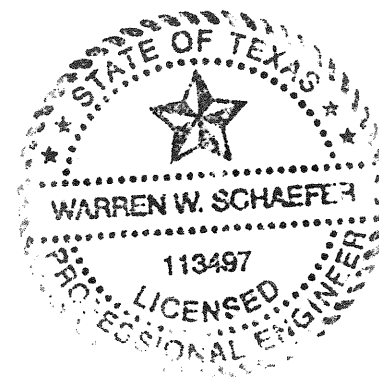
(BUTT HINGE CONDITION SHOWN. PIVOT AND CONTINUOUS HINGE CONDITIONS ALSO APPLY)
(FOR DETAIL NOT SHOWN, SEE OTHER SECTIONS)



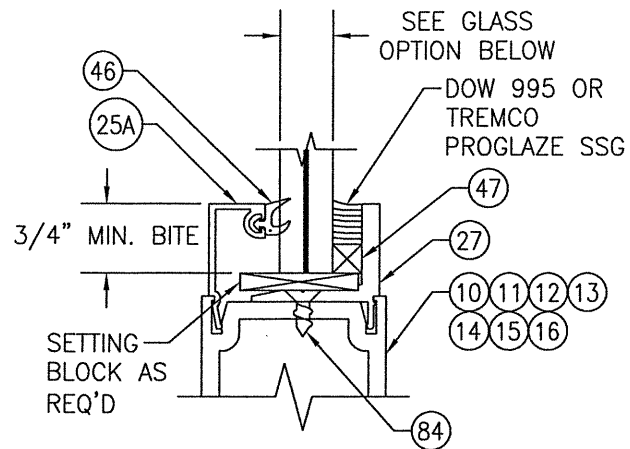
SECTION H

SCALE: 1/2 FULL

(BUTT HINGE CONDITION SHOWN. PIVOT AND CONTINUOUS HINGE CONDITIONS ALSO APPLY)
(FOR DETAIL NOT SHOWN, SEE OTHER SECTIONS)



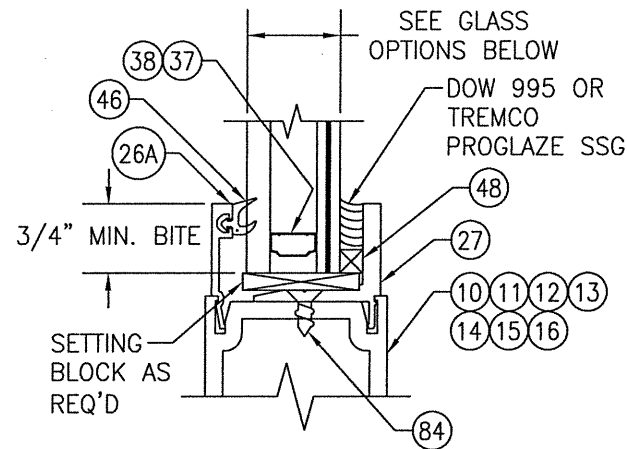
DRAWN BY: W.R.M.		CHECKED BY: W.W.S.	
PLOT: 1=2		DATE: 03/19/13	
NO.	REVISION DESCRIPTION	BY	DATE
JOB INFORMATION:			
DRAWING TITLE: IR350/500 HW WIND ZONE 4 L.M.I. OUT-SWING DOORS			
CONSULTANTS: KAWNEER COMPANY, INC. 555 GUTHRIDGE COURT NORCROSS, GA 30092 770-449-5555			
CONSULTANTS: W. W. SCHAEFER 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. 1821T		REV. B	
SHEET NO. 9 OF 12			



TYPICAL MONOLITHIC GLAZING DETAIL

GLASS OPTION: (WET GLAZED)

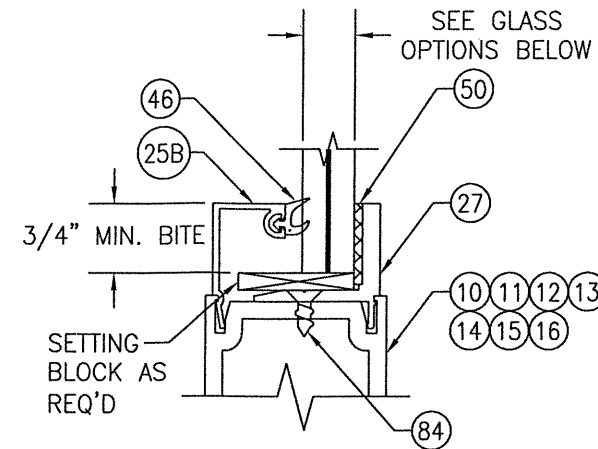
OPTION 1: 9/16" THICK LAMINATED GLASS (1/4" HT. ST./0.090" KURARAY SG/1/4" HT. ST.)



TYPICAL I.G. GLAZING DETAIL

GLASS OPTIONS: (WET GLAZED)

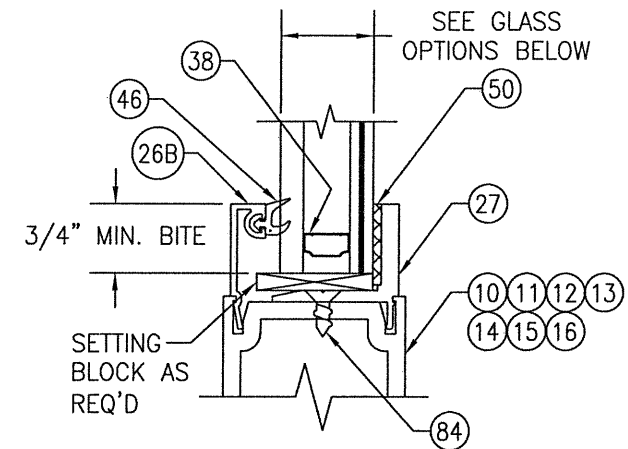
OPTION 2: 1" THICK I.G LAMINATED GLASS (1/4" TEMP EXTERIOR; 1/2" AIR SPACE; 1/8" HT. ST./0.090" KURARAY SG/1/8" HT. ST. INTERIOR)
OPTION 5: 1" THICK I.G LAMINATED GLASS (1/4" TEMP EXTERIOR; 1/4" AIR SPACE; 3/16" HT. ST./0.180" KURARAY SG/3/16" HT. ST. INTERIOR)



TYPICAL MONOLITHIC GLAZING DETAIL

GLASS OPTIONS: (TAPE GLAZED)

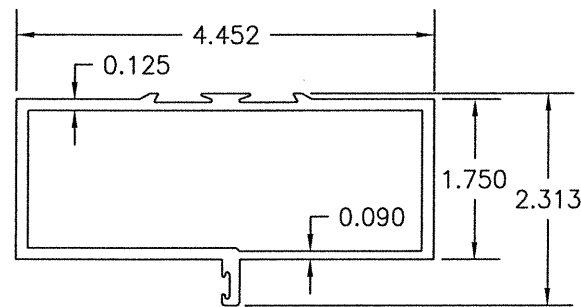
OPTION 3: 9/16" THICK LAMINATED GLASS (1/4" HT. ST./0.090" KURARAY BUTACITE PVB/1/4" HT. ST.)



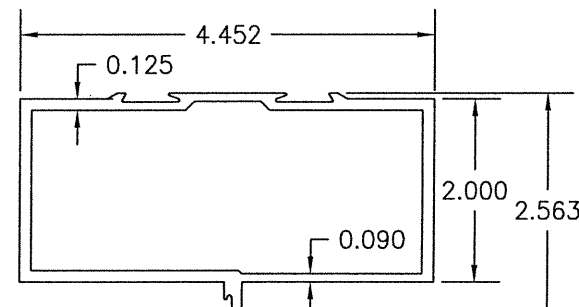
TYPICAL I.G. GLAZING DETAIL

GLASS OPTIONS: (TAPE GLAZED)

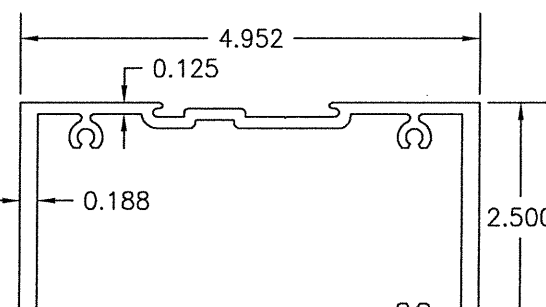
OPTION 4: 1" THICK I.G LAMINATED GLASS (1/4" TEMP EXTERIOR; 1/2" AIR SPACE; 1/8" HT. ST./0.090" KURARAY BUTACITE PVB/1/8" HT. ST. INTERIOR)
OPTION 6: 1" THICK I.G LAMINATED GLASS (1/4" TEMP EXTERIOR; 1/4" AIR SPACE; 3/16" HT. ST./0.180" KURARAY SG/3/16" HT. ST. INTERIOR)



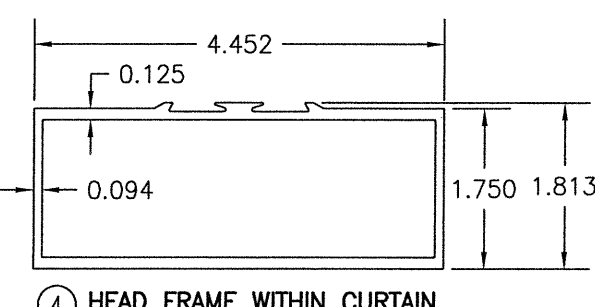
① TRIFAB 450 HEAD FRAMING



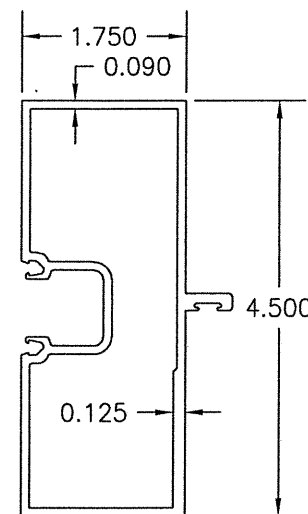
TRIFAB 451 HEAD FRAMING ②



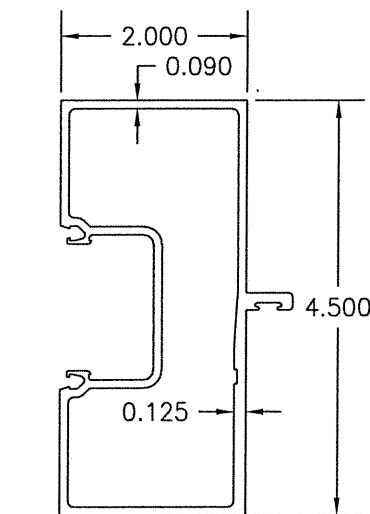
③ IR500/501 HEAD FRAMING



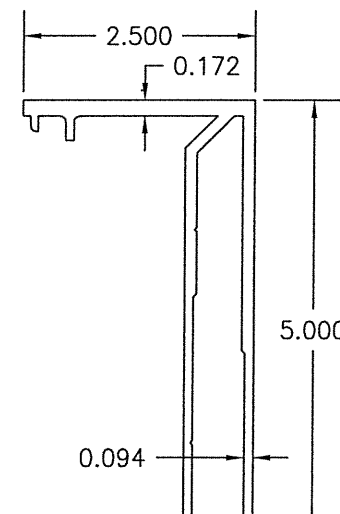
④ HEAD FRAME WITHIN CURTAIN WALL



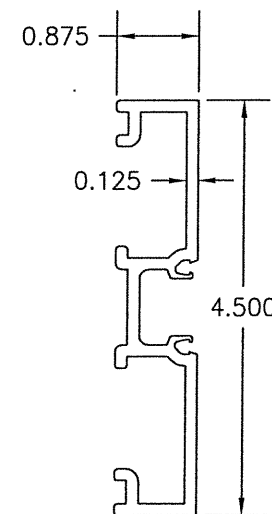
⑤ TRIFAB 450 JAMB FRAMING



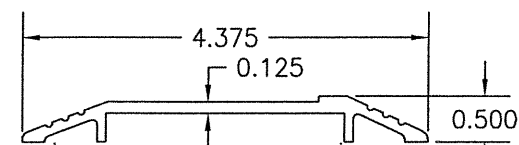
⑥ TRIFAB 451 JAMB FRAMING



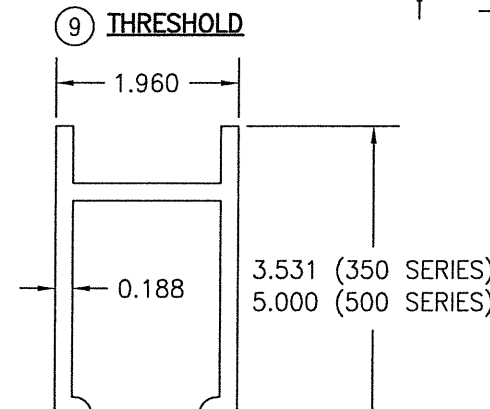
⑦ IR500/501 JAMB FRAMING



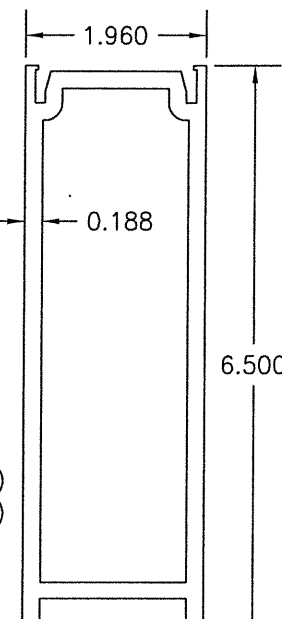
⑧ DOOR ADAPTOR WITHIN CURTAIN WALL SYSTEM



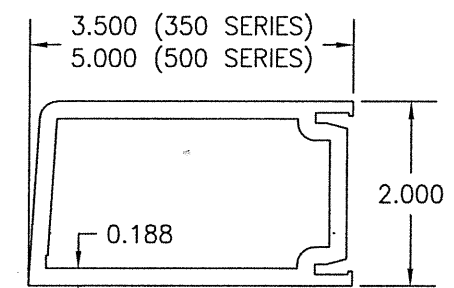
⑨ THRESHOLD



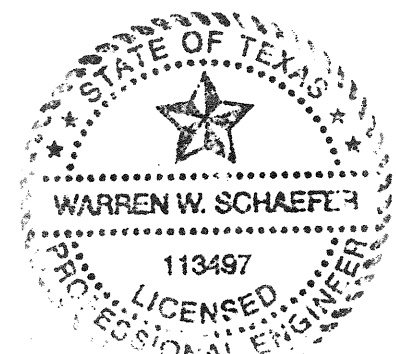
⑩ TOP RAIL



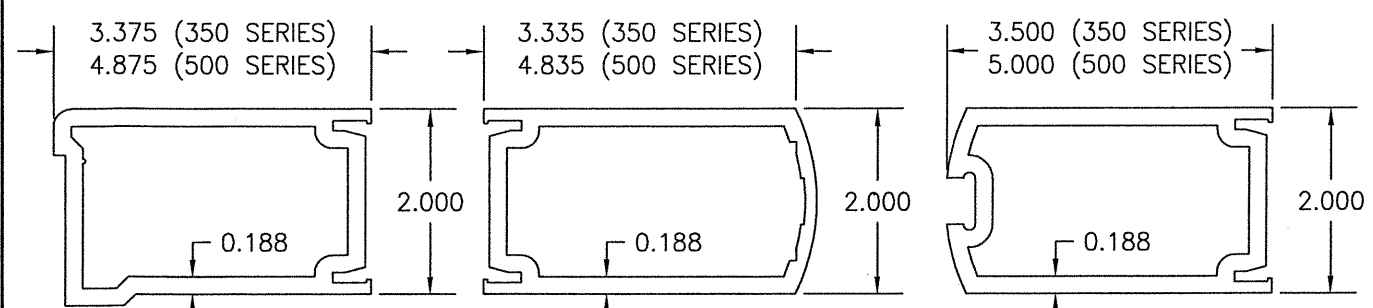
⑪ BOTTOM RAIL



⑫ JAMB STILE USED WITH BUTT OR PIVOT HINGES



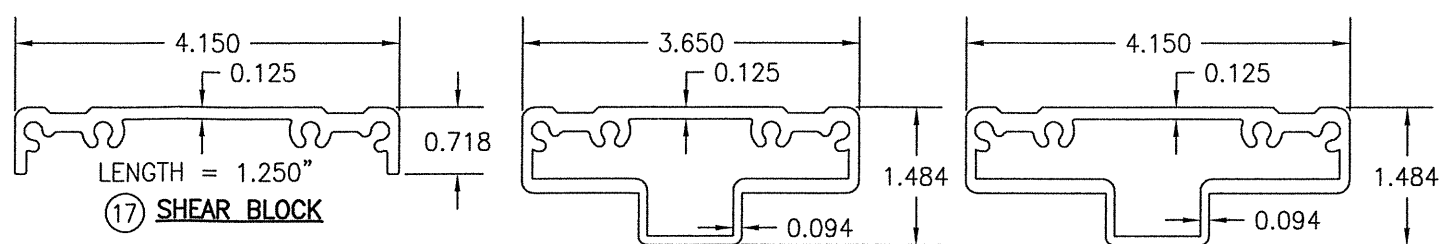
DRAWN BY: W.R.M.	CHECKED BY: W.W.S.
PLOT: 1=2	DATE: 03/19/13
DATE	
BY	
REVISION DESCRIPTION	
NO.	
DRAWING TITLE IR350/500 HW WIND ZONE 4 L.M.I. OUT-SWING DOORS	
JOB INFORMATION: KAWNEER COMPANY, INC. 555 GUTHRIDGE COURT NORCROSS, GA 30092 770-449-5555	
CONSULTANTS W. W. SCHAEFER ENGINEERING & CONSULTING, 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. 1821T	REV. B
SHEET NO. 10 OF 12	



13 JAMB STILE USED WITH CONTINUOUS HINGES

14 INACTIVE MEETING STILE

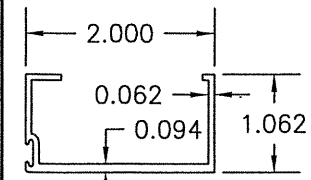
15 ACTIVE MEETING STILE



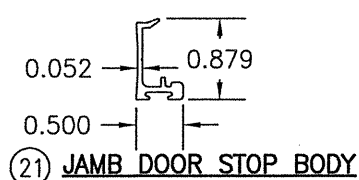
17 SHEAR BLOCK

18 SHEAR BLOCK

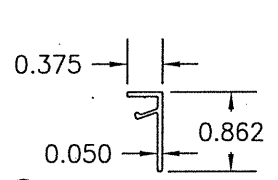
19 SHEAR BLOCK



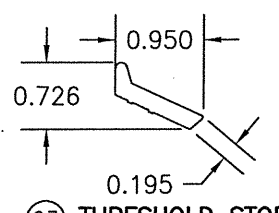
20 TOP DOOR STOP



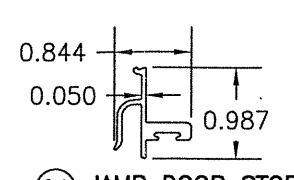
21 JAMB DOOR STOP BODY



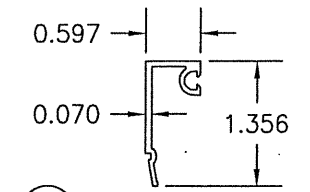
22 JAMB DOOR STOP COVER



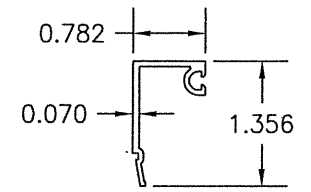
23 THRESHOLD STOP
LENGTH = 4"



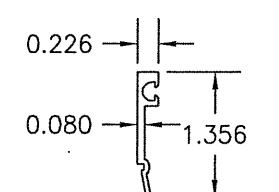
24 JAMB DOOR STOP



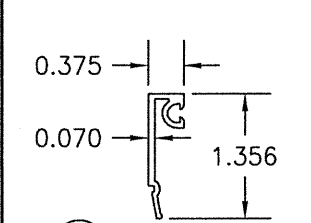
25A EXTERIOR MONOLITHIC GLAZING BEAD (WET GLAZED)



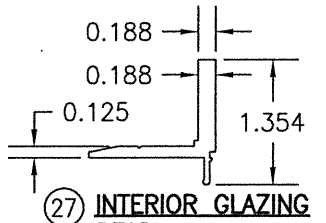
25B EXTERIOR MONOLITHIC GLAZING BEAD (TAPE GLAZED)



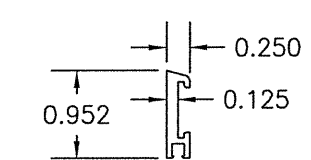
26A EXTERIOR I.G. GLAZING BEAD (WET GLAZED)



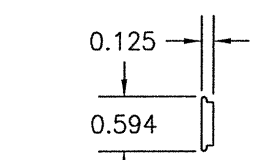
26B EXTERIOR I.G. GLAZING BEAD (TAPE GLAZED)



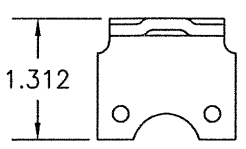
27 INTERIOR GLAZING BEAD



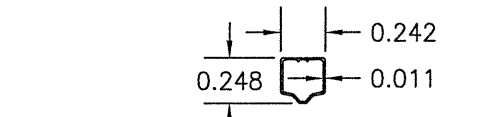
28 DOOR BOTTOM WEATHER SWEEP BODY



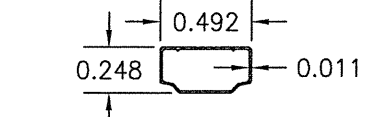
29 DOOR BOTTOM WEATHER SWEEP SCREW COVER



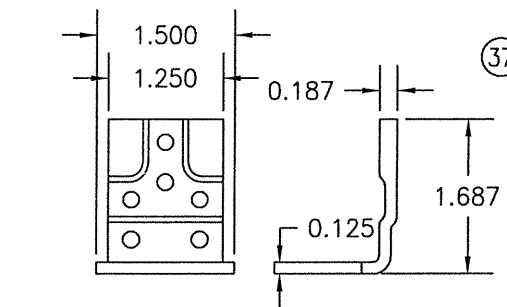
30 THRESHOLD CLIP



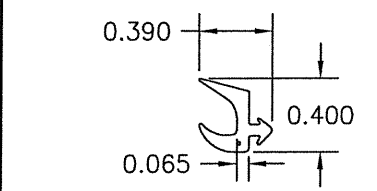
37 1/4" I.G. GLASS SPACER



38 1/2" I.G. GLASS SPACER

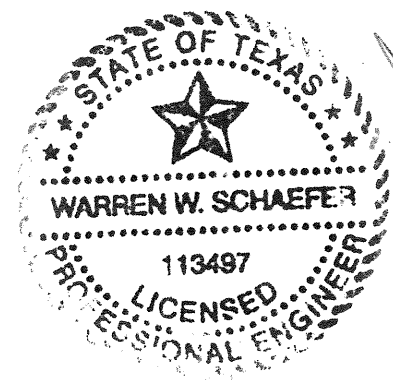


30 THRESHOLD CLIP



46 EXTERIOR GLAZING GASKET

DRAWN BY: W.R.M.	CHECKED BY: W.W.S.
PLOT: 1=2	DATE: 03/19/13
DATE	
BY	
REVISION DESCRIPTION	
NO.	
DRAWING TITLE IR350/500 HW WIND ZONE 4 L.M.I. OUT-SWING DOORS	
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	WARREN W. SCHAEFER, P.E. P.E. NO. 113497
FEB 10 2021	
DRAWING NO. 1821T	REV. B
SHEET NO. 11 OF 12	



ITEM #	ITEM DESCRIPTION	MANUFACTURER/NOTES
PARTS		
1	TRIFAB 450 HEAD FRAMING	6063-T6 ALUMINUM
2	TRIFAB 451 HEAD FRAMING	6063-T6 ALUMINUM
3	IR500/501 HEAD FRAMING	6063-T6 ALUMINUM
4	HEAD FRAME WITHIN CURTAIN WALL SYSTEM	6063-T6 ALUMINUM
5	TRIFAB 450 JAMB FRAMING	6063-T6 ALUMINUM
6	TRIFAB 451 JAMB FRAMING	6063-T6 ALUMINUM
7	IR500/501 JAMB FRAMING	6063-T6 ALUMINUM
8	DOOR ADAPTOR WITHIN CURTAIN WALL SYSTEM	6063-T6 ALUMINUM
9	THRESHOLD	6063-T6 ALUMINUM
10	TOP RAIL	6063-T6 ALUMINUM
11	BOTTOM RAIL	6063-T6 ALUMINUM
12	JAMB STILE USED WITH BUTT OR PIVOT HINGES	6063-T6 ALUMINUM
13	JAMB STILE USED WITH CONTINUOUS HINGES	6063-T6 ALUMINUM
14	INACTIVE MEETING STILE	6063-T6 ALUMINUM
15	ACTIVE MEETING STILE	6063-T6 ALUMINUM
17	SHEAR BLOCK	6063-T6 ALUMINUM
18	SHEAR BLOCK	6063-T6 ALUMINUM
19	SHEAR BLOCK	6063-T6 ALUMINUM
20	TOP DOOR STOP	6063-T6 ALUMINUM
21	JAMB DOOR STOP BODY	6063-T6 ALUMINUM
22	JAMB DOOR STOP COVER	6063-T6 ALUMINUM
23	THRESHOLD STOP	6063-T6 ALUMINUM (PLACED @ MID-SPAN OF SILL)
24	JAMB DOOR STOP	6063-T6 ALUMINUM
25A	EXTERIOR MONOLITHIC GLAZING BEAD (WET GLAZED)	6063-T6 ALUMINUM
25B	EXTERIOR MONOLITHIC GLAZING BEAD (TAPE GLAZED)	6063-T6 ALUMINUM
26A	EXTERIOR I.G. GLAZING BEAD (WET GLAZED)	6063-T6 ALUMINUM
26B	EXTERIOR I.G. GLAZING BEAD (TAPE GLAZED)	6063-T6 ALUMINUM
27	INTERIOR GLAZING BEAD	6063-T6 ALUMINUM
28	DOOR BOTTOM WEATHER SWEEP BODY	6063-T6 ALUMINUM
29	DOOR BOTTOM WEATHER SWEEP SCREW COVER	6063-T6 ALUMINUM
30	THRESHOLD CLIP	1010-1020 H.R. STEEL
37	1/4" I.G. GLASS SPACER	3005 OR 3105 ALUMINUM
38	1/2" I.G. GLASS SPACER	3005 OR 3105 ALUMINUM
SEALS & SEALANTS		
44	DOOR BULB WEATHERING	ALCRYN DUROMETER 70 +/-5 & RIGID PVC
45	DOOR SWEEP	NEOPRENE
46	EXTERIOR GLAZING GASKET	TREMCO TR-13536E EPDM DUROMETER 70 +/-5
47	5/16" X 5/16" GLAZING TAPE	POLYURETHANE FAOM DUROMETER 30 +/-5
48	1/4" X 1/4" GLAZING TAPE	POLYURETHANE FAOM DUROMETER 30 +/-5
49	ADJUSTABLE ASTRAGAL WEATHERING	5052-H32 ALUMINUM/NYLON/POLYURETHANE/EPDM
50	0.090" X 0.875" GLAZING TAPE	3M CONFORMABLE ACRYLIC FOAM
HARDWARE		
54	BUTT HINGE	HAGER 037-264
55	TOP OFFSET PIVOT HINGE	KAWNEER NO. 050-322
	INTERMEDIATE PIVOT HINGE	KAWNEER NO. 037-233/037-234
	BOTTOM OFFSET PIVOT HINGE	KAWNEER NO. 050-326/050-327
56	CONTINUOUS HINGE	HAGER/ROTON 050-820

ITEM #	ITEM DESCRIPTION	MANUFACTURER/NOTES
HARDWARE CONTINUED		
57	ACTIVE DOOR LOCK ASSEMBLY (LOCK OPTION 1)	ADAMS-RITE 1850 3-POINT LOCK SYSTEM WITH KAWNEER'S CYLINDER, THUMBTURN & PUSH PACKAGE
58	INACTIVE DOOR LOCK ASSEMBLY (LOCK OPTION 1)	ADAMS-RITE FLUSH BLOTS 50-079 TOP FLUSH BOLT 50-075 BOTTOM FLUSH BOLT
59	ACTIVE DOOR LOCK ASSEMBLY (LOCK OPTION 2)	KAWNEER 1686 PANIC DEVICE SYSTEM WITH KAWNEER'S DEADBOLT (PANIC DEVICE ACTUATES TOP & BOTTOM SHOOTBOLTS)
60	INACTIVE DOOR LOCK ASSEMBLY (LOCK OPTION 2)	KAWNEER 1686 PANIC DEVICE (PANIC DEVICE ACTUATES TOP & BOTTOM SHOOTBOLTS)
61	ACTIVE DOOR LOCK ASSEMBLY (LOCK OPTION 3)	FALCON HH 1690 OR VON DUPRIN HH9947 CONSEALED VERTICAL ROD PANIC DEVICE SYSTEM WITH SCHLAGE'S DEADBOLT (PANIC DEVICE ACTUATES TOP & BOTTOM SHOOTBOLTS)
62	INACTIVE DOOR LOCK ASSEMBLY (LOCK OPTION 3)	FALCON HH 1690 OR VON DUPRIN HH9947 CONSEALED VERTICAL ROD PANIC DEVICE SYSTEM (PANIC DEVICE ACTUATES TOP & BOTTOM SHOOTBOLTS)
65	PUSH-PULL HANDLE	AS REQ'D
FASTENERS		
69	NO. 10 X 1 19/32" PHTF SCREW	4 PER SHEAR BLOCK
70	NO. 10 X 9/16" FHTF SCREW	2 PER SHEAR BLOCK
71	NO. 6 X 3/8" FHTF SCREW	WITHIN 2" FROM ENDS & 10" MAX. O.C.
74	NO. 12 X 1 7/8" FHTF SCREW	4 PER SHEAR BLOCK
75	NO. 12 X 1" PHTF SCREW	3 PER HORIZONTAL
76	NO. 8 X 3/8" PHTF SCREW	WITHIN 1" FROM ENDS & 16" MAX. O.C.
77	NO. 12-24 X 9/16" SCREW	8 PER HINGE
78	5/16"-18 X 5/8" SCREW	2 PER TOP PIVOT HINGE
79	NO. 12-24 X 9/16" SCREW	2 PER INTERMEDIATE PIVOT HINGE
80	1/4-20 X 3/8" SCREW	3 PER BOTTOM PIVOT HINGE
81	NO. 12-24 X 13/32" SCREW	2 9/16" FROM ENDS & 5 1/8" MAX. O.C.
82	NO. 8 X 3/8" FHTF SCREW	WITHIN 1" FROM ENDS & 9" MAX. O.C.
83	NO. 6-18 FHTF SCREW	10 PER LEAF
84	NO. 10 X 1/2" FHTF SCREW	WITHIN 3" FROM ENDS & 11 1/8" MAX. O.C.

DRAWN BY: W.R.M.	CHECKED BY: W.W.S.
PLOT: 1=2	DATE: 03/19/13
DATE	BY
NO.	REVISION DESCRIPTION

DRAWING TITLE: IR350/500 HW WIND ZONE 4 L.M.I. OUT-SWING DOORS
 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



FEB 10 2021
 WARREN W. SCHAEFER, P.E.
 P.E. NO. 113497

DRAWING NO. 1821T	REV. B
SHEET NO. 12	OF 12