Anchor Information

SUBSTRATE	LOCATION	ANCHOR (or equivalent)		C-C SPACING (max.) Zone 4	C-C SPACING (max.) Zone 5	END DISTANCE (max.) End of Plate or Mullion	EMBEDMENT (min.)	EDGE DISTANCE (min.)
Primary Window CONCRETE (4000 psi)	HEAD	¼" ITW Redhead Tapcon+ positive & negative design load	(2 ea.) #12-24 Tek Screw negative design load only	20" max.	16" max.	1/2" min. / 4" max.	2-1/4" min.	1-3/4" min.
	SILL	¼" ITW Redhead Tapcon+ positive & negative design load	(2 ea.) #12-24 Tek Screw negative design load only	20" max.	16" max.	1/2" min. / 4" max.	2-1/4" min.	1-3/4" min.
	JAMB	¼" ITW Redhead Tapcon+ positive & negative design load	(2 ea.) #12-24 Tek Screw negative design load only	20" max.	16" max.	1/2" min. / 4" max.	2-1/4" min.	1-3/4" min.
Human Impact Window (Inboard) CONCRETE (4000 psi)	HEAD	¼" ITW Redhead Tapcon+		(6) at 4" centered on Mullion, then 4" O.C. max.	(6) at 4" centered on Mullion, then 4" O.C. max.	1/2" min. / 4" max.	2-1/4" min.	1-3/4" min.
	SILL	¼" ITW Redhead Tapcon+		(6) at 4" centered on Mullion, then 4" O.C. max.	(6) at 4" centered on Mullion, then 4" O.C. max.	1/2" min. / 4" max.	2-1/4" min.	1-3/4" min.
	JAMB	¼" ITW Redhead Tapcon+		4" max.	4" max.	1/2" min. / 4" max.	2-1/4" min.	1-3/4" min.
Human Impact Window (Inboard) HSS Steel Tube Mullion	HEAD	¼"-14 Bolt, SAE Grade 5 or Better		5-1/2" max.	5-1/2" max.	1/2" min. / 4" max.	Full Thread Engagement	5/8" min.
	SILL	¼"-14 Bolt, SAE Grade 5 or Better		5-1/2" max.	5-1/2" max.	1/2" min. / 4" max.	Full Thread Engagement	5/8" min.
	JAMB	¼"-14 Bolt, SAE Grade 5 or Better		5-1/2" max.	5-1/2" max.	1/2" min. / 4" max.	Full Thread Engagement	5/8" min.

RICE ENGINEERING
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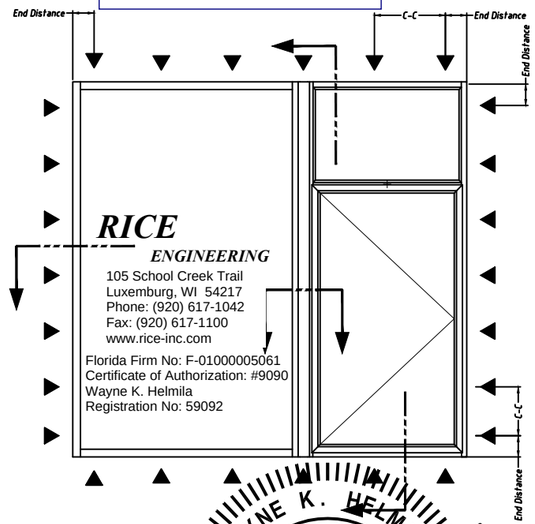
This item has been digitally signed and sealed by Wayne Helmila, PE 59092, 08/23/2022.

* Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.



WAYNE K. HELMILA LICENSE No. 59092 STATE OF FLORIDA PROFESSIONAL ENGINEER

08/23/2022
COA: 9090

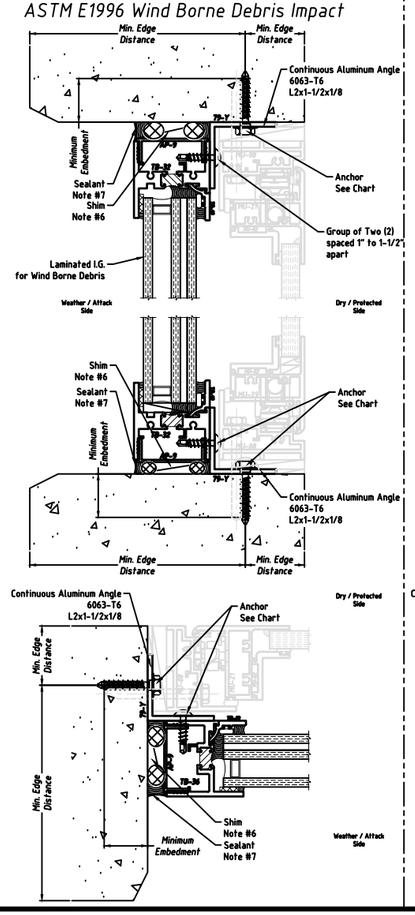
Notes:

1. Installations depicted comply with:
   7th edition Florida Building Code (FBC 2020)
   International Building Code (2018)
   National Design Specification (ANSI/AWS NDS 2018)
   Aluminum Design Manual (ADM 2015)
2. The installation depicted in this drawing and all calculations are based on a maximum size and wind pressure rating listed below. The products have been proven for resistance to wind-borne debris per ASTM E1886 and ASTM E1996

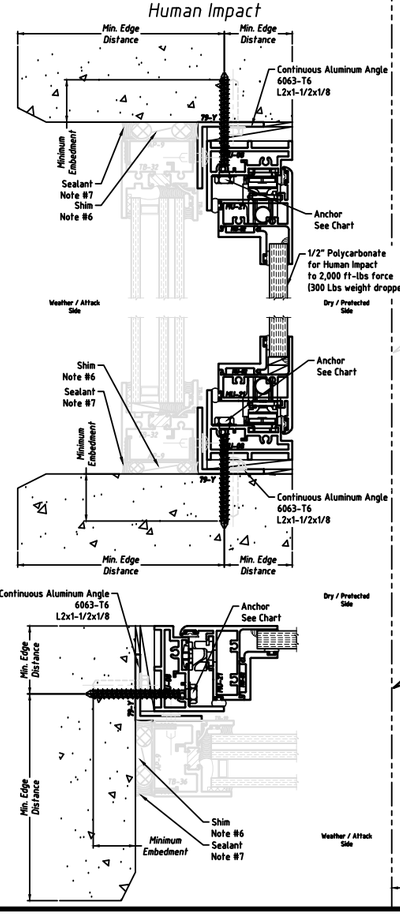
   Maximum Size: 95" x 83" [1] — Design Pressure: +/- 70 psf
   ([1] Human Impact controls maximum Height)
3. The secondary Human Impact product has been proven to meet American Architectural Manufacturers Association Standard Test Method

   Maximum Unit Size: 95"[2] x 83" — Human Impact Design Load: 2,000 ft-Lbs Force
   ([2] Wind-Borne Debris controls maximum assembled Width)
4. Approved Self Drilling screws shall be used for Steel substrate. Screw materials and dimensions shall meet the requirements of SAE Grade 5.
5. Approved Masonry anchors shall be used for Concrete and CMU substrate. Anchor materials and dimensions shall meet the requirements of ICC-ES AC106 - Acceptance Criteria for Pre-Drilled Fasteners (Screw Anchors) in Concrete Elements.
   Anchor Length shall be sufficient to guarantee 2-1/4" of full penetration into concrete. Install concrete anchors per manufacturer's instructions.
6. Maximum shim thickness of 1/2" permitted at each fastener location. Shims shall be non-compressible and load bearing type.
7. These drawings depict the details necessary to meet structural load requirements. They do not address the air infiltration, water penetration, intrusion or thermal performance requirements of the installation. See manufacturer's installation instructions for sealing, flashing and drainage requirements.
8. 1/2" Minimum / 4" Maximum End Distance from end of plate or window

Primary Window
ASTM E1996 Wind Borne Debris Impact



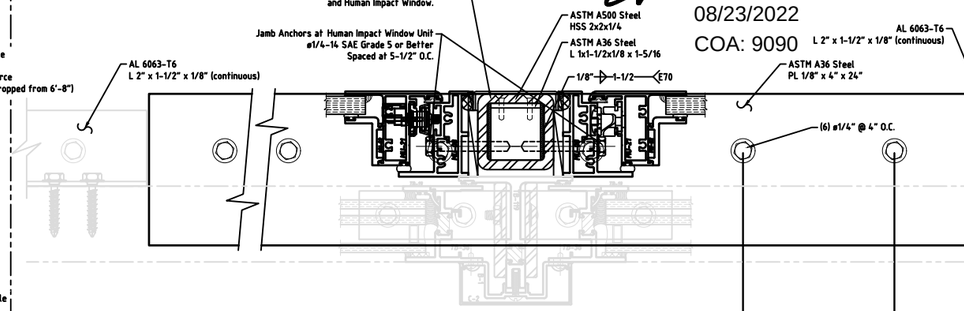
Secondary Window / Sash
Human Impact

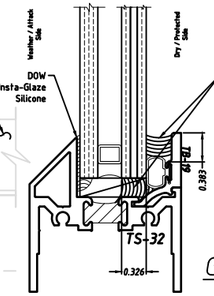


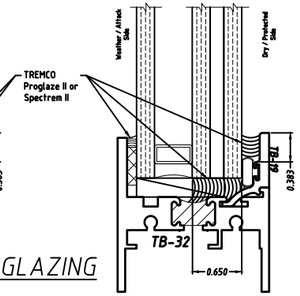
All Steel shown is to be ASTM A36 / ASTM A500 Hot ROlled with minimum Yield F_y of 36 ksi or better, primer coated to prevent direct contact between dissimilar metals.

Mullion Tube - Human Impact Window / Accessory Sash HSS 2x2x1/4 ASTM A500 or Better
Attached to Clip Angle L1x1-1/2x1/8 x 1-5/16" long w/ (2) No.12-14 Fasteners at 9/16" spacing, 3/8" Edge Distance
Clip Angle is welded to strap anchor (Hot Rolled Steel, ASTM A36 or Better) PL 1/8" x 4" x 24" long w/ 1/8" x 1-1/2" Fillet Weld (E70)

Anchor Bolts from Primary Mullion Anchor and Human Impact Window Anchor as follows: penetrate strap anchor plate to transfer Human Impact Load to wall substrate. Use (6) ø1/4 ITW Redhead Tapcon+ spaced at 4" O.C., centered on vertical mullion, 1-3/4" min. Edge Distance, 2-1/4" min. Embedment to clamp strap anchor between Wall Substrate and Human Impact Window.

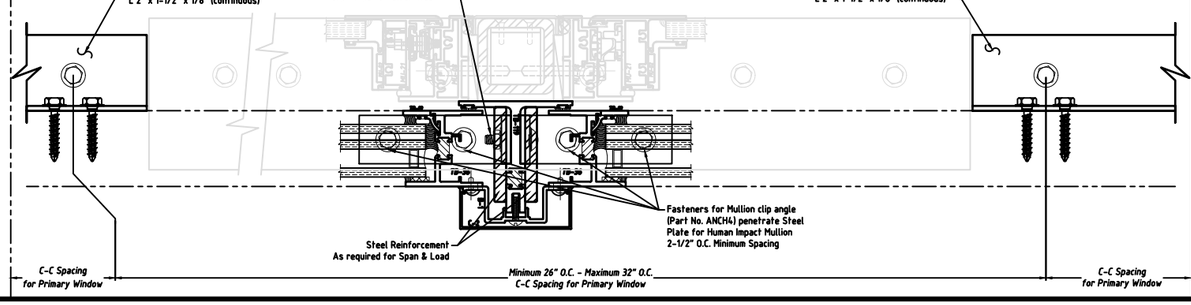






GLAZING

Mullion Anchor - Primary Window Mullion TB-119 Aluminum 6063-T6
Use (4) ø 1/4" ITW Redhead Tapcon+ (2 per Angle)
2-1/2" O.C. Spacing, 1-3/4" min. Edge Distance, 2-1/4" min. Embedment
Note: Aluminum 6061-T6 Clip Angle (L4x4x1/4 x 1-13/32" long)
Clip Angle to Wall
Use (4) ø 1/4" Thru Bolts SAE Grade 5 or Better w/ Nut & Washer
2" O.C. Spacing
Clip Angle to Mullion Web



Rev.	Description	Date

Scale: 6" = 1'
Drawn by: L. Erkens

Winco Window Co.
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WINCO Product: 1150 \ 1150S
Installation: Base Angle
Certification: ASTM E1996