Engineering Evaluation Report #9050-122624-01

Prepared by:
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N. Venice, FL 34275
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Registration Number: #29296

Manufacturer:
WinDoor Incorporated
104 Triple Diamond Blvd.
North Venice, FL 34275
(833) 554-5432

Product Description:
TD9050 Inswing/Outswing Series Aluminum LMI HVHZ Terrace Door– FL29783

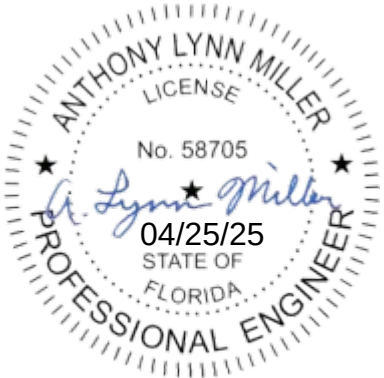
Compliance:
The above-mentioned product has been evaluated for compliance with the requirements of the Florida Department of Business and Professional Regulation for Statewide Acceptance per Rule 61 G20-3.005 method 1(d). The product listed herein complies with the requirements of the current Florida Building Code.

Supporting Technical Documentation:

1. Approval Document: drawing number TD9050LMI-FPA, signed and sealed by A. Lynn Miller, P.E.
2. Test Report NCTL-210-4060-01A, -01B and -01D dated 11/29/17, prepared by National Certified Testing Laboratory, signed, and sealed by Douglas J. McDougall P.E.; TAS 201-94, 202-94 & 203-94
3. Test Report QAI NOK-0011 signed and sealed by Idalmis Ortega, P.E.
   QAI Laboratories, Nokomis, FL.
   TAS 201-94, 202-94 & 203-94
4. Test Report QAI NOK-0032 signed and sealed by Idalmis Ortega, P.E.
   QAI Laboratories, Nokomis, FL.
   TAS 201-94, 202-94 & 203-94
5. Test Report QAI NOK-0092 signed and sealed by Idalmis Ortega, P.E.
   QAI Laboratories, Nokomis, FL.
   TAS 201-94, 202-94 & 203-94
6. Anchor Calculations and Structural Analysis, dated 01/14/19 and revised on 05/01/19, prepared by manufacturer, and signed and sealed by Anthony Lynn Miller, P.E.
7. Diamond Glass Comparative Analysis Calculations, dated 06/18/23, prepared by manufacturer and signed and sealed by Anthony Lynn Miller, P.E.

Limitations and Conditions of use:

- Units must be glazed per ASTM E1300-04/09, refer to approval document for glazing details.
- This product is rated to be used in the HVHZ.
- This product is impact resistant and does not require impact protection in wind borne debris regions.
- Units must be installed in accordance with the Approval Document.



A. LYNN MILLER, P.E.
P.E.# 58705

SERIES 9000 IMPACT-RESISTANT, ALUMINUM INSWING / OUTSWING TERRACE DOOR

FLORIDA PRODUCT APPROVAL #29783

1) THIS PRODUCT HAS BEEN DESIGNED & TESTED TO COMPLY WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE, INCLUDING THE HIGH VELOCITY HURRICANE ZONE (HVHZ).

2) SHUTTERS ARE NOT REQUIRED WHEN USED IN WIND-BORNE DEBRIS REGIONS.

3) FOR MASONRY APPLICATIONS, USE ONLY APPROVED MASONRY ANCHORS, MATERIALS USED FOR ANCHOR EVALUATIONS WERE SOUTHERN PINE, ASTM C90 CONCRETE MASONRY UNITS (CMU'S) OF NORMAL WEIGHT AND OF COMPRESSIVE STRENGTH OF MIN. 1.9 KSI AND CONCRETE WITH MIN. 4KSI PER ANCHOR TYPE.

4) ALL WOOD BUCKS LESS THAN 1-1/2" THICK ARE TO BE CONSIDERED AS INSTALLATIONS ON WOOD BUCKS ARE OPTIONAL. IF UNIT IS INSTALLED DIRECTLY TO SUBSTRATE, WOOD BUCKS SHOULD BE AS SHOWN AND 1-1/2" THICK OR GREATER. 1/4 AND 2X BUCKS (WHEN USED) SHALL BE DESIGNED TO PROPERLY TRANSFER LOADS TO THE STRUCTURE. WOOD BUCK DESIGN AND INSTALLATION IS THE RESPONSIBILITY OF THE ENGINEER OR ARCHITECT OF RECORD.

5) IF SILL IS TIGHT TO SUBSTRATE, GROUT IS NOT REQUIRED. IF USED, NON-SHRINK, NON-METALLIC GROUT AT 2.9 KSI MIN. PER ASTM C1107. (DONE BY OTHERS). MAX. 1/4" SHIM SPACE FOR GROUT WHICH MUST FULLY SUPPORT THE ENTIRE LENGTH OF THE SILL THAT IS NOT TIGHT TO THE SUBSTRATE, AND TRANSFER SHEAR LOAD TO SUBSTRATE. IF SUBSTRATE IS WOOD, #30 FELT PAPER OR MASTIC IS REQUIRED BETWEEN THE SHOUT AND WOOD SUBSTRATE. OR AS APPROVED BY THE AUTHORITY HAVING JURISDICTION COMPLYING WITH THE FBC.

6) ANCHOR EMBEDMENT TO BASE MATERIAL SHALL BE BEYOND WALL DRESSING OR STUCCO. USE ANCHORS OF SUFFICIENT LENGTH TO ACHIEVE THE EMBEDMENT SHOWN ON TABLE 1, THIS SHEET. HARDROW JOINT SEALANT IS TO BE USED ON ALL FOUR CORNERS OF THE FRAME. OVERALL SEALANT FLASHING STRATEGY FOR WATER RESISTANCE OF INSTALLATION SHALL BE DONE BY OTHERS AND IS BEYOND THE SCOPE OF THESE INSTRUCTIONS.

7) MIN. 1/4" SHIMS ARE REQUIRED AT EACH ANCHOR LOCATION WHERE THE PRODUCT IS NOT FLUSH TO THE SUBSTRATE. USE SHIMS CAPABLE OF TRANSFERRING APPLIED LOADS. WOOD SHIMS, BY OTHERS, MUST BE SUFFICIENTLY ANCHORED TO RESIST LOADS IMPOSED ON THEM BY THE DOOR.

8) DESIGN PRESSURES:
A. NEGATIVE DESIGN LOADS BASED ON STRUCTURAL AND CYCLE TEST PRESSURE. FRAME ANALYSIS AND GLASS PER ASTM E1300.
B. POSITIVE DESIGN LOADS BASED ON WATER TEST PRESSURE, STRUCTURAL AND CYCLE TEST PRESSURE. FRAME ANALYSIS AND GLASS PER ASTM E1300.
C. DESIGN LOADS ARE BASED ON ALLOWABLE STRESS DESIGN, AND

9) THE ANCHORAGE METHODS SHOWN HAVE BEEN DESIGNED TO RESIST THE ANCILLOADS CORRESPONDING TO THE REQUIRED DESIGN PRESSURE. THE 33 KSI STRESS INCREASE HAS NOT BEEN USED IN THE DESIGN OF THIS PRODUCT. THE 1.6 LOAD DURATION FACTOR WAS USED FOR THE EVALUATION OF ANCHORS WITH WOOD. ANCHORS THAT COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL MEET THE REQUIREMENTS OF THE FLORIDA BUILDING CODE INCLUDING ADOPTED STANDARDS FOR CORROSION RESISTANCE.

10) DATES MUST BE VERIFIED FOR COMPLIANCE WITH CURRED REQUIREMENTS FOR THE FLORIDA BUILDING CODE.

11) PER THE ASS 64, WATER INFILTRATION TEST PRESSURE IS 15% OF THE POSITIVE DESIGN PRESSURE OF THE SPECIFIED DOOR.

DESIGN PRESSURE RATING
SEE TABLE 1, SHEET 2 (SINGLE DOOR) SEE TABLE 4, SHEET 3 (DOUBLE DOOR)

IMPACT RATING
RATED FOR LARGE & SMALL MISSILE IMPACT RESISTANCE

TABLE 1

Anchor Group	Anchor Type	Frame Member	Substrate	Min. Edge Distance	Min. Embedment or Metal Thickness
A	#14 Screw (SS) (Dr. 3)	Head, Sill & Jamb	Southern Pine (SG = 0.55)	5/8"	1 3/8"
			ASTM C90 Masonry	5/8"	1 3/8"
			ACM Panel	5/8"	0.125"
			Steel (min. Gr. 33)	5/8"	0.048" (18 Ga.)
B	#14 Hex Washer Head (SS)	Head, Sill & Jamb	Southern Pine (SG = 0.55)	5/8"	1 3/8"
			ASTM C90 Masonry	5/8"	1 3/8"
			ACM Panel	5/8"	0.125"
			Steel (min. Gr. 33)	5/8"	0.048" (18 Ga.)
C	1/4" Tapcon Wedge-Anchor	Head	Concrete (min. 3 ksi)	1 3/4"	1 3/4"
		Sill	Concrete (min. 3 ksi)	1 1/4"	1 3/4"
		Jamb	Concrete (min. 3 ksi)	1 3/4"	1 3/4"
		Jamb	Hollow* 4x8 CMU (4 CMU Cells)	1 3/4"	1 3/4"
D	1/4" Dentrol Ultrascrew	Jamb & Head	Concrete (min. 3 ksi)	2 1/2"	1 3/4"
		Sill	Concrete (min. 3 ksi)	2 1/2"	1 3/4"
	1/4" 4-1/2 Slot Detail*Sill	Jamb & Head	Concrete (min. 3 ksi)	2 1/2"	1 3/4"
		Jamb	Hollow* 4x8 CMU (4 CMU Cells)	2 1/2"	1 1/4"
		Sill	Concrete (min. 3 ksi)	2 1/2"	1 3/4"

1) ALL ANCHOR HEAD TYPES ARE APPLICABLE.
2) MIN. OF 3 THREADS BEYOND METAL SUBSTRATE.
3) METAL SUBSTRATE TO MEET MIN. STRENGTH, APPLIED DEAD LOADS AND THICKNESS REQUIREMENTS PER CURRENT FLORIDA BUILDING CODE AND TO BE REVIEWED BY THE AUTHORITY HAVING JURISDICTION.

INSTALLATION:

1) DETERMINE THE DESIGN PRESSURE REQUIREMENT (DESIGN) FOR THE OPENING USING THE ASCE 7 STANDARD.

2) TABLE 1, SHEET 2 REFERS TO SINGLE DOOR. TABLE 4, SHEET 3 REFERS TO TO DOUBLE (3:3) DOOR. DETERMINE THE DESIGN PRESSURE OF YOUR PRODUCT USING THE APPROPRIATE TABLE. THE DESIGN PRESSURE RATING TO BE GREATER THAN OR EQUAL TO THE OPENING'S REQUIRED DESIGN PRESSURE FROM STEP 1.

3) DETERMINE YOUR ANCHOR GROUP FROM TABLE 1, THIS SHEET AND YOUR GLASS TYPE (1 ALREADY SHEET 2 OR 3.

4) ANCHOR LOCATIONS AND SPACING ARE SHOWN ON THE ELEVATIONS ON SHEETS 2 (A) & 3 (DD)

5) DEPENDING ON THE PRODUCT CONFIGURATION, SHEETS 4-6 SHOW INSTALLATION CROSS-SECTION DETAILS.

6) SEE THE EXAMPLES ON SHEET 5.

TABLE 2

Glass Type	Description (Listed from Exterior to Interior)
1	7/16" LAMI: 3/16" HS, 0.090" PVB, 3/16" HS
2	1-1/4" IGU: 3/16" TP CAP, 5/8" AIRSPACE, 3/16" HS, 0.090" PVB, 3/16" HS
3	7/16" LAMI: 3/16" HS, 0.090" SG, 3/16" HS
4	1-1/4" IGU: 3/16" TP CAP, 5/8" AIRSPACE, 3/16" HS, 0.090" SG, 3/16" HS
5	5/16" LAMI: 3/16" TP – 0.090" SG – 0.76mm ATG
6	1" LAMI IG: 3/16" TP CAP – 1/2" AIRSPACE – 3/16" TP – 0.090" SG – 0.76mm ATG

SEE SHEET 10 FOR GLAZING DETAILS

GUIDE TO SHEETS

GENERAL NOTES	1
ELEVATION, DP & GLAZING, S...	2
ELEVATION, DP & GLAZING, DO...	3
CLUSTER QTY & DETAILS	4
JAMB ANCHORS EXAMPLES	5
HORIZ. INSTALLATION	6-7
VERT. INSTALLATION	8-9
GLAZING DETAILS	10
PARTS LIST/HARDWARE LIST	11-12

WINDOOR

ADDED NOTE 11, THIS SHEET	JM	04/14/25	F
ADDED NOTE 10, THIS SHEET	JM	03/31/25	E
ADDED NOTE 9, THIS SHEET	JM	03/24/25	D
ADDED NOTE 8, THIS SHEET	JM	03/17/25	C
ADDED NOTE 7, THIS SHEET	JM	03/10/25	B
ADDED NOTE 6, THIS SHEET	JM	03/03/25	A
ADDED NOTE 5, THIS SHEET	JM	02/24/25	0
ADDED NOTE 4, THIS SHEET	JM	02/17/25	1
ADDED NOTE 3, THIS SHEET	JM	02/10/25	2
ADDED NOTE 2, THIS SHEET	JM	02/03/25	3
ADDED NOTE 1, THIS SHEET	JM	01/27/25	4
REVISIONS	BY	DATE	NO.

PREPARED BY: A. LYNN MILLER, P.E.
STATE OF FLORIDA
LICENSE NO. 68708
DATE: 01/27/25

DRAWN BY:	M. MORALES
CHECKED BY:	A. LYNN MILLER, P.E.
DATE:	01/27/25
SCALE:	AS NOTED
SHEET:	1 OF 12
DRAWING NO.	TD9000LMI-FPA

AMERICAN LYNN MILLER
LICENSE
No. 68708
STATE OF FLORIDA
PROFESSIONAL ENGINEER
A. LYNN MILLER, P.E.
FLORIDA

TABLE 3

Design Pressures, psf for Single Doors (X)

Glass Type: 1 & 2 (PVB Interlayer)

Frame Height	Overall (X) Frame Width					
	28"	32"	36"	42"	48"	48"
72"	+60 / -90	+60 / -90	+60 / -90	+60 / -90	+60 / -90	+60 / -90
80"	+60 / -90	+60 / -90	+60 / -90	+60 / -90	+60 / -90	+60 / -90
84"	+60 / -90	+60 / -90	+60 / -90	+60 / -90	+60 / -90	+60 / -90
96"	+60 / -90	+60 / -90	+60 / -90	+60 / -90	+60 / -90	+60 / -90
108"	+60 / -90	+60 / -90	+60 / -90	+60 / -90	+60 / -90	+60 / -90
120"	+60 / -90	+60 / -90	+60 / -90	+60 / -90	+60 / -90	+60 / -90

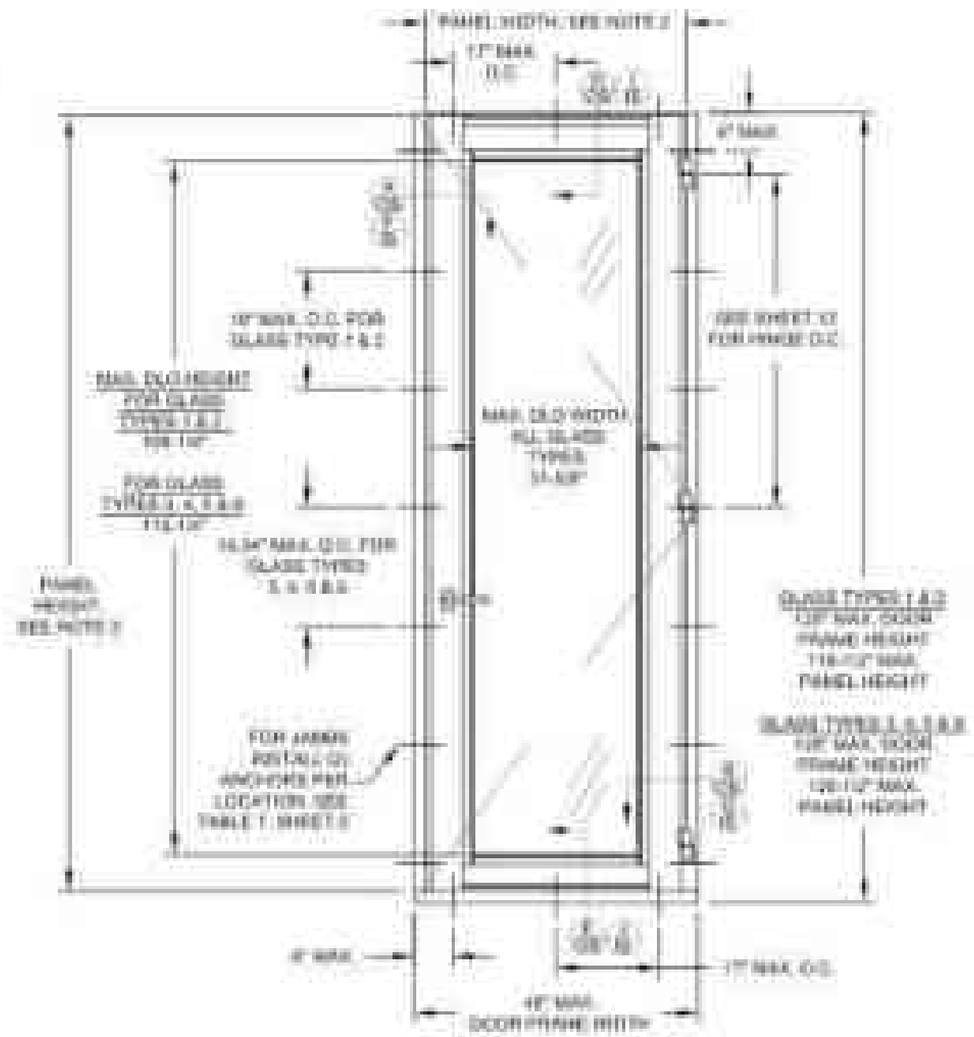
Glass Type: 3 & 4 (SG Interlayer)

Frame Height	Overall (X) Frame Width					
	28"	32"	36"	42"	48"	48"
72"	+100 / -125	+100 / -125	+100 / -125	+92 / -115	+87 psf / -108 psf	+60 / -90
80"	+100 / -125	+100 / -125	+100 / -125	+92 / -115	+87 psf / -108 psf	+60 / -90
84"	+100 / -125	+100 / -125	+100 / -125	+92 / -115	+87 psf / -108 psf	+60 / -90
96"	+100 / -125	+100 / -125	+100 / -125	+92 / -115	+87 psf / -108 psf	+60 / -90
108"	+100 / -125	+100 / -125	+100 / -125	+92 / -115	+87 psf / -108 psf	+60 / -90
120"	+100 / -125	+100 / -125	+100 / -125	+92 / -115	+87 psf / -108 psf	+60 / -90
128"	+100 / -125	+100 / -125	+100 / -125	+92 / -115	+87 psf / -108 psf	+60 / -90

Glass Type: 5 & 6 (ATG Glass)

Frame Height	Overall (X) Frame Width					
	28"	32"	36"	42"	48"	48"
72"	+80 / -90	+80 / -90	+80 / -90	+80 / -90	+80 / -90	+80 / -90
80"	+80 / -90	+80 / -90	+80 / -90	+80 / -90	+80 / -90	+80 / -90
84"	+80 / -90	+80 / -90	+80 / -90	+80 / -90	+80 / -90	+80 / -90
96"	+80 / -90	+80 / -90	+80 / -90	+80 / -90	+80 / -90	+80 / -90
108"	+80 / -90	+80 / -90	+80 / -90	+80 / -90	+80 / -90	+80 / -90
120"	+80 / -90	+80 / -90	+80 / -90	+80 / -90	+80 / -90	+80 / -90
128"	+80 / -90	+80 / -90	+80 / -90	+80 / -90	+80 / -90	+80 / -90

USED IN EXAMPLE 1 SHEET 5



TYP. ELEVATION OF SINGLE DOOR (X)

NOTES:

1) FOR SIZES NOT SHOWN, ROUND UP TO THE NEXT AVAILABLE WIDTH OR HEIGHT SUBMISSION SHOWN ON THE TABLE.
2) SEE SHEET 15 FOR GLASS DESCRIPTIONS.
3) PANEL WIDTH = DOOR FRAME WIDTH - 4 1/8
4) PANEL HEIGHT = FRAME HEIGHT - 1 1/2

DETAIL LETTER
OUTSWING, SEE SHEETS 7 & 9

DETAIL LETTER
INSWING, SEE SHEETS 8 & 8

REVISIONS			
NO.	DESCRIPTION	DATE	
1	ADD 8' HEIGHT	2-10-21	

PROJECT TITLE: 8000 MIAMI-FLA

Approved as to Florida Building Code 6th Ed.

PREPARED BY & ADDRESS: [illegible]

DRAWING TITLE: ALUMINUM SINGLE DOOR (X)

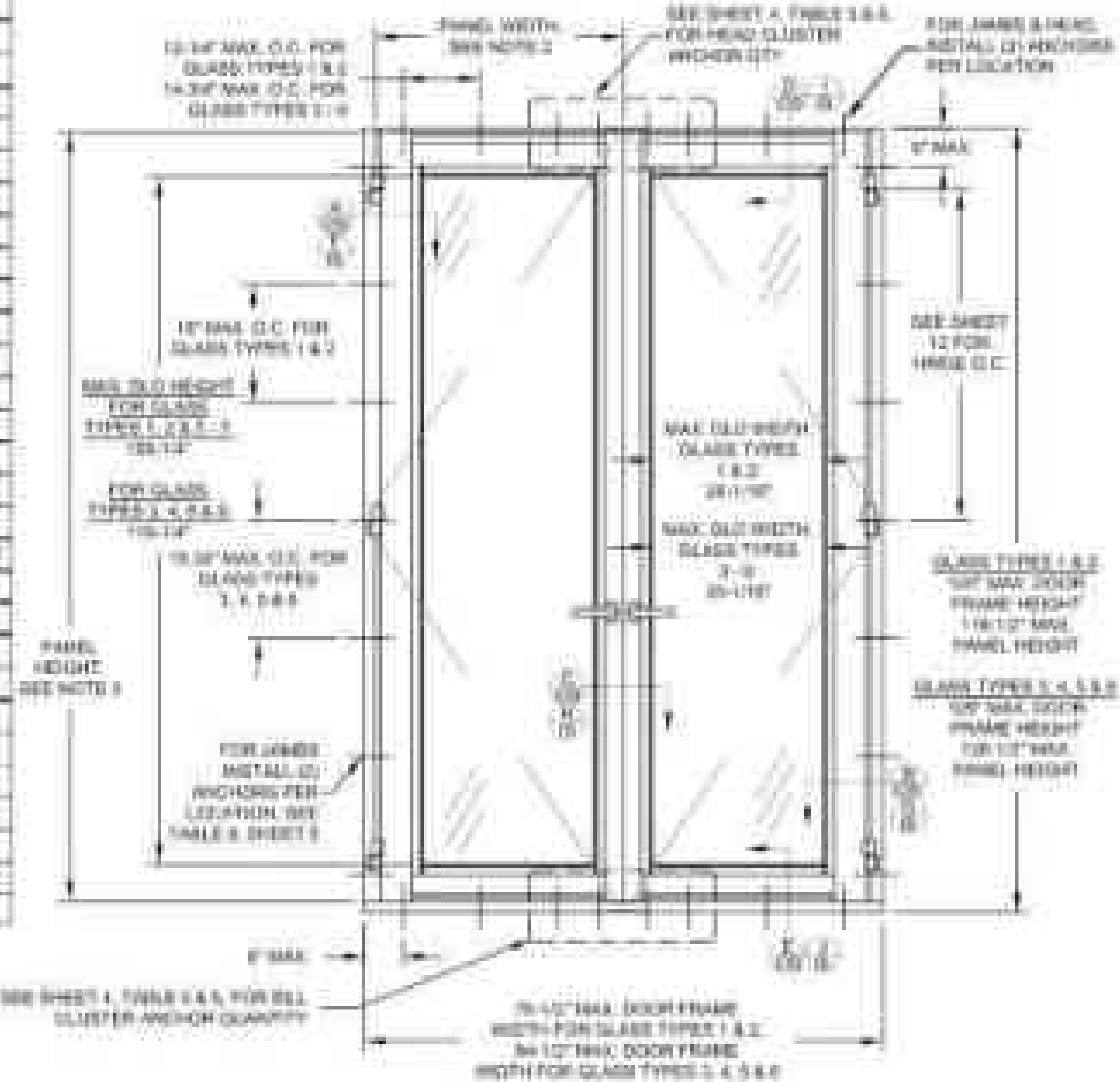
SHEET NO. 4



TABLE 4

Design Pressure, psf for Double Doors (XX)						
Glass Type: 1 & 2 (PVB Interlayer)						
Frame Height	Overall (XX) Frame Width					
	54"	60"	66"	72"	76-1/2"	-
72"	+80 / -80	+80 / -80	+80 / -80	+80 / -80	+80 / -80	-
80"	+80 / -80	+80 / -80	+80 / -80	+80 / -80	+80 / -80	-
84"	+80 / -80	+80 / -80	+80 / -80	+80 / -80	+80 / -80	-
96"	+80 / -80	+80 / -80	+80 / -80	+80 / -80	+80 / -87.8	-
108"	+80 / -80	+80 / -80	+80 / -80	+80 / -82.8	+77.8 / -77.8	-
120"	+80 / -80	+80 / -88.3	+80 / -81.1	+74.4 / -74.4	+70 / -70	-
Glass Type: 3 & 4 (SG Interlayer)						
Frame Height	Overall (XX) Frame Width					
	54"	60"	66"	72"	76-1/2"	84-1/2"
72"	+80 / -80	+80 / -80	+80 / -80	+80 / -80	+80 / -80	+80 / -80
80"	+80 / -80	+80 / -80	+80 / -80	+80 / -80	+80 / -80	+80 / -80
84"	+80 / -80	+80 / -80	+80 / -80	+80 / -80	+80 / -80	+80 / -80
96"	+80 / -80	+80 / -80	+80 / -80	+80 / -80	+80 / -80	+73.3 / -80.7
108"	+80 / -80	+80 / -80	+80 / -80	+76.5 / -80	+72 / -85.1	+65.2 / -77
120"	+80 / -80	+80 / -80	+75.1 / -88.8	+68.9 / -81.4	+64.8 / -76.8	+58.7 / -69.3
120"	+80 / -80	+77.5 / -80	+70.4 / -83.2	+64.3 / -76.2	+60.5 / -71.6	+55 / -65
Glass Type: 5 - 6 (ATG Glass)						
Frame Height	Overall (XX) Frame Width					
	54"	60"	66"	72"	76-1/2"	84-1/2"
72"	+80 / -80	+80 / -80	+80 / -80	+80 / -80	+80 / -80	+80 / -80
80"	+80 / -80	+80 / -80	+80 / -80	+80 / -80	+80 / -80	+80 / -80
84"	+80 / -80	+80 / -80	+80 / -80	+80 / -80	+80 / -80	+80 / -80
96"	+80 / -80	+80 / -80	+80 / -80	+80 / -80	+80 / -80	+73.3 / -86.7
108"	+80 / -80	+80 / -80	+80 / -80	+76.5 / -80	+72 / -85.1	+65.2 / -77
120"	+80 / -80	+80 / -80	+75.1 / -88.8	+68.9 / -81.4	+64.8 / -76.8	+58.7 / -69.3
120"	+80 / -80	+77.5 / -80	+70.4 / -83.2	+64.3 / -76.3	+60.5 / -71.6	+55 / -65

USED IN EXAMPLE 2, SHEET 5



TYP. ELEVATION OF DOUBLE DOOR, (XX)

DETAIL LETTER
OUTSWING, SEE SHEETS 7 & 9

DETAIL LETTER
INSWING, SEE SHEETS 8 & 9

NOTES:

1) FOR SIZES NOT SHOWN, ROUND UP TO THE NEXT AVAILABLE WIDTH OR HEIGHT DIMENSION SHOWN ON THE TABLE.
2) SEE SHEET 10 FOR GLASS DESCRIPTIONS.
3) PANEL WIDTH = DOOR FRAME WIDTH - 4.58
4) PANEL HEIGHT = FRAME HEIGHT - 1.42

NO CHANGES THIS SHEET

ALUMINUM IS & OS TERRACE DOOR (LM)

XX ELEVATION & DP

3 OF 12

ANTHONY LYNN MILLER
LICENSE
No. 58705
STATE OF FLORIDA
PROFESSIONAL ENGINEER

TABLE 1

Min. Quantity of Cluster Anchors @ Head & Sill, Rf

Wind Type: 1, 2, 2 (R10) (VA/(Cat))

Frame Height	Frame Width (inches)	Anchor Cluster	Frame Width				
			24"	30"	40"	72"	76-1/2"
12"	12" 24"	A	4 4	4 4	4 4	4 4	4 4
	12" 24"	B	4 4	4 4	4 4	4 4	4 4
	12" 24"	C	4 4	4 4	4 4	4 4	4 4
	12" 24"	D	4 4	4 4	4 4	4 4	4 4
24"	12" 24"	A	4 4	4 4	4 4	4 4	4 4
	12" 24"	B	4 4	4 4	4 4	4 4	4 4
	12" 24"	C	4 4	4 4	4 4	4 4	4 4
	12" 24"	D	4 4	4 4	4 4	4 4	4 4
36"	12" 24"	A	4 4	4 4	4 4	4 4	4 4
	12" 24"	B	4 4	4 4	4 4	4 4	4 4
	12" 24"	C	4 4	4 4	4 4	4 4	4 4
	12" 24"	D	4 4	4 4	4 4	4 4	4 4
48"	12" 24"	A	4 4	4 4	4 4	4 4	4 4
	12" 24"	B	4 4	4 4	4 4	4 4	4 4
	12" 24"	C	4 4	4 4	4 4	4 4	4 4
	12" 24"	D	4 4	4 4	4 4	4 4	4 4
120"	12" 24"	A	4 4	4 4	4 4	4 4	4 4
	12" 24"	B	4 4	4 4	4 4	4 4	4 4
	12" 24"	C	4 4	4 4	4 4	4 4	4 4
	12" 24"	D	4 4	4 4	4 4	4 4	4 4

NOTES:

1. FOR SIZES NOT SHOWN, ROUND UP TO THE NEXT AVAILABLE WIDTH OR HEIGHT DIMENSION SHOWN ON THIS TABLE.
2. HEAD AND SILL ANCHOR QUANTITIES ARE FOR DOUBLE DOOR (4X) ANCHOR CLUSTERS ONLY.

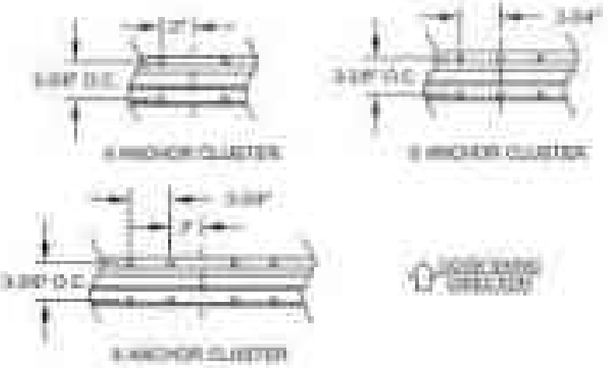
TABLE 2

Min. Quantity of Clevis Anchors @ Head & Sill, Rf

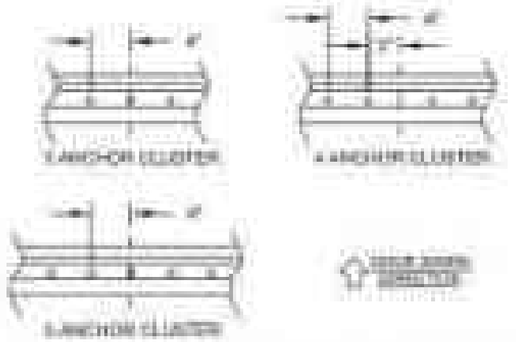
Glass Type: 1, 2, 2 (1, 2, 2)

Frame Height	Frame Width (inches)	Anchor Clevis	Frame Width					
			24"	30"	40"	72"	76-1/2"	96-1/2"
12"	12" 24"	A	4 4	4 4	4 4	4 4	4 4	4 4
	12" 24"	B	4 4	4 4	4 4	4 4	4 4	4 4
	12" 24"	C	4 4	4 4	4 4	4 4	4 4	4 4
	12" 24"	D	4 4	4 4	4 4	4 4	4 4	4 4
24"	12" 24"	A	4 4	4 4	4 4	4 4	4 4	4 4
	12" 24"	B	4 4	4 4	4 4	4 4	4 4	4 4
	12" 24"	C	4 4	4 4	4 4	4 4	4 4	4 4
	12" 24"	D	4 4	4 4	4 4	4 4	4 4	4 4
36"	12" 24"	A	4 4	4 4	4 4	4 4	4 4	4 4
	12" 24"	B	4 4	4 4	4 4	4 4	4 4	4 4
	12" 24"	C	4 4	4 4	4 4	4 4	4 4	4 4
	12" 24"	D	4 4	4 4	4 4	4 4	4 4	4 4
48"	12" 24"	A	4 4	4 4	4 4	4 4	4 4	4 4
	12" 24"	B	4 4	4 4	4 4	4 4	4 4	4 4
	12" 24"	C	4 4	4 4	4 4	4 4	4 4	4 4
	12" 24"	D	4 4	4 4	4 4	4 4	4 4	4 4
120"	12" 24"	A	4 4	4 4	4 4	4 4	4 4	4 4
	12" 24"	B	4 4	4 4	4 4	4 4	4 4	4 4
	12" 24"	C	4 4	4 4	4 4	4 4	4 4	4 4
	12" 24"	D	4 4	4 4	4 4	4 4	4 4	4 4
144"	12" 24"	A	4 4	4 4	4 4	4 4	4 4	4 4
	12" 24"	B	4 4	4 4	4 4	4 4	4 4	4 4
	12" 24"	C	4 4	4 4	4 4	4 4	4 4	4 4
	12" 24"	D	4 4	4 4	4 4	4 4	4 4	4 4

USED IN EXAMPLE 2, SHEET 3



ANCHOR CLUSTER PATTERN @ HEAD



ANCHOR CLUSTER PATTERN @ SILL

REVISIONS	
DRAWING SHEET INDEX	
TDS608 IMPACT	
DESIGNED BY: K. LYNN MILLER CERTIFICATE OF AUTHORIZATION NUMBER ADDRESS, FL 34275 PHONE: 941.488.1180 EMAIL:	
PROJECT:	
ADDRESS:	
DATE: 02/2020	
SCALE: NTS	
DRAWN BY: K. MORRISON	
CHECKED BY: K. LYNN MILLER	
APPROVED BY:	
ANCHORAGE & I.D. TABLES FOR DOOR OR WINDOW FRAMES	
ANCHORAGE QUANTITY	
TDS608	4 OF 12



TABLE 7

Min. Quantity of Anchors Required at the Jamb, X						
All Glass Types 1, 2, 3 & All Anchor Groups A, B, C & D						
Frame Height	Frame Width					
	28"	32"	36"	40"	42"	48"
72"	10	10	10	10	10	10
80"	10	10	12	10	10	10
84"	10	10	12	10	[illegible]	12
96"	12	12	12	12	12	12
108"	14	14	14	14	14	14
120"	14	14	14	14	14	14
126" *	16	16	16	16	16	16

* APPLICABLE ONLY TO GLASS TYPES 2, 4, 5 & 6

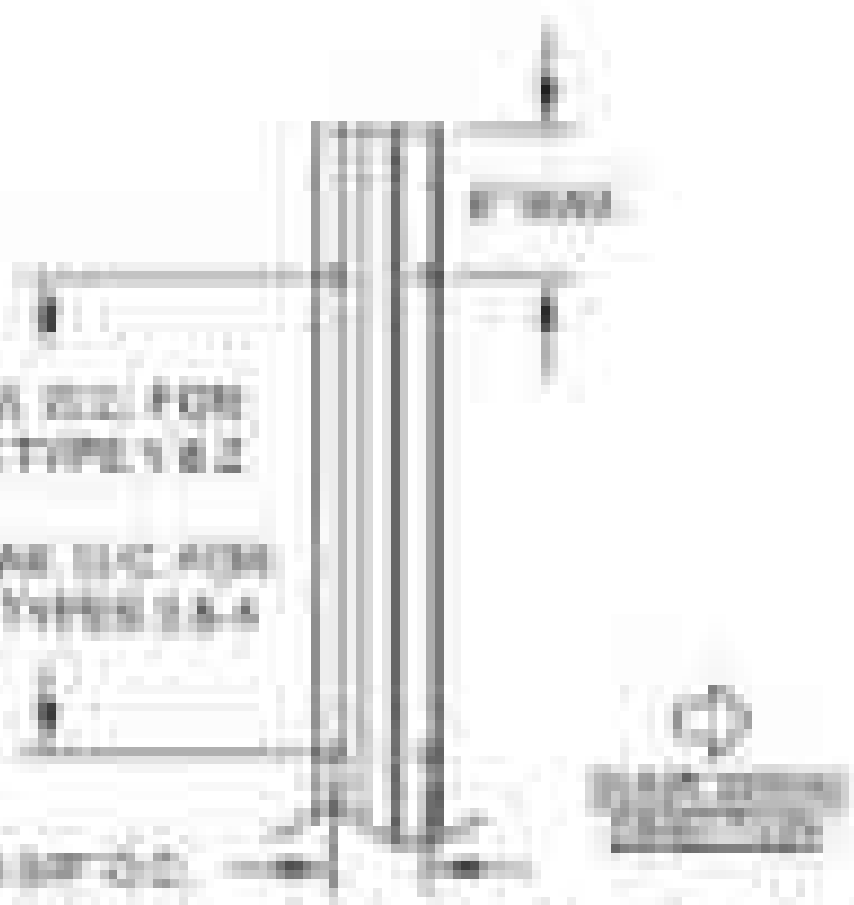
USED IN EXAMPLE 1 THIS SHEET

TABLE 8

Min. Quantity of Anchors Required at the Jamb, XX						
All Glass Types 1, 2, 3 & All Anchor Groups A, B, C & D						
Frame Height	Frame Width					
	54"	60"	66"	72"	76-1/2"	84-1/2"
72"	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
80"	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
84"	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
96"	12	12	12	12	12	12
108"	12	12	12	12	12	12
120"	14	14	14	14	14	14
126" *	14	14	14	14	14	14

* APPLICABLE ONLY TO GLASS TYPES 2, 4, 5 & 6

USED IN EXAMPLE 2, THIS SHEET



ANCHOR PATTERN @ JAMB

NOTES:

1) FOR SIZES NOT SHOWN, ROUND UP TO THE NEXT AVAILABLE WIDTH OR HEIGHT DIMENSION SHOWN ON THE TABLE.

EXAMPLE 1:

- SINGLE DOOR, X, 42" X 83-3/4". REQUIRED DESIGN PRESSURE IS +65.75 PSF.
- SUBSTRATE IS WOOD ON ALL SIDES.

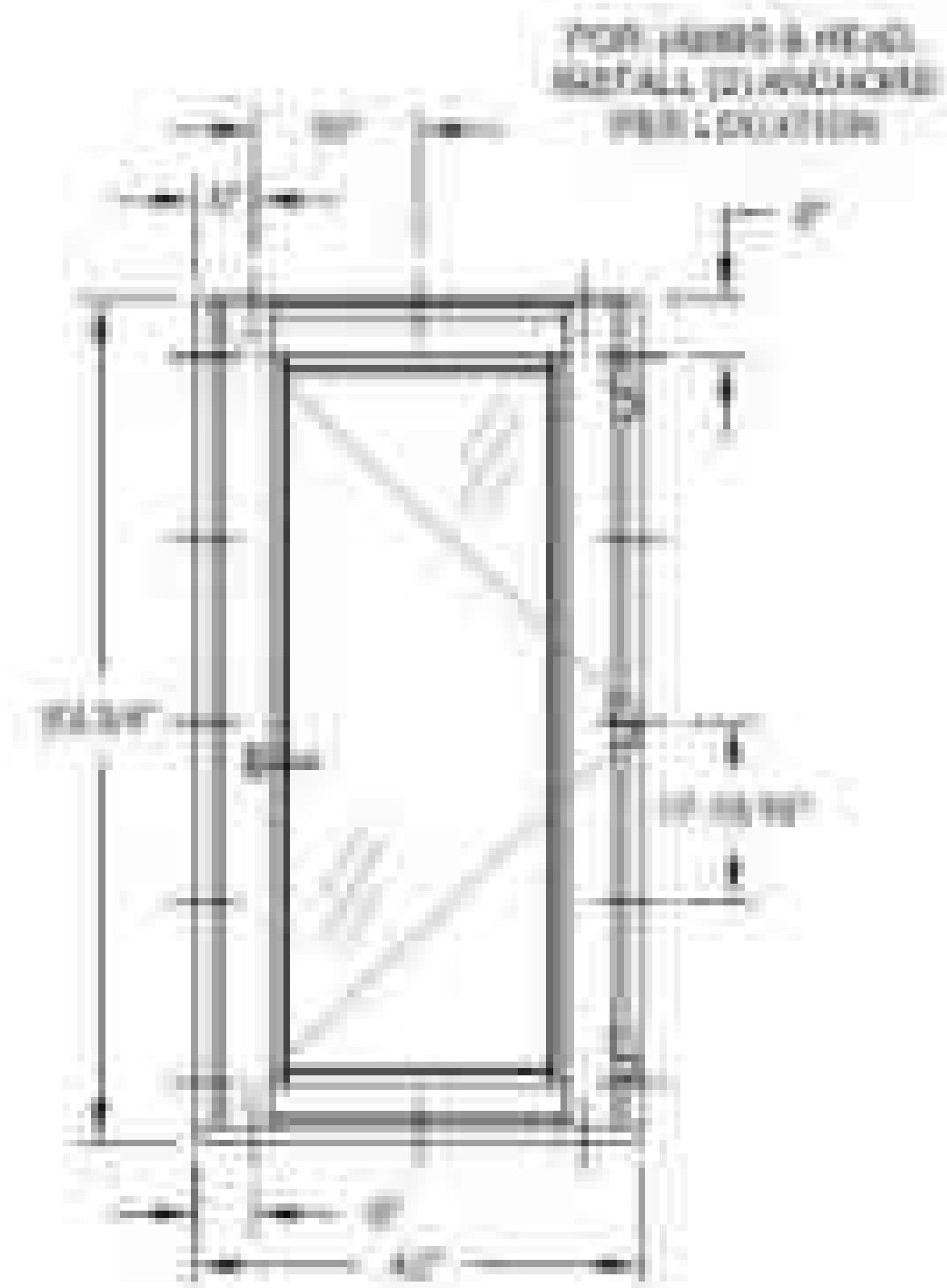
1) FROM TABLE 2, WE SEE THAT THE SIZE IS AVAILABLE USING PVB INTERLAYER GLAZING (GLASS TYPES 1 OR 2), OR SG INTERLAYER GLAZING (GLASS TYPES 3 & 4), OR ATG GLASS (GLASS TYPE 5 & 6). ON THIS EXAMPLE CHOOSE THE PVB INTERLAYER.

2) FROM TABLE 3, AFTER ROUNDING THE WIDTH AND HEIGHT UP TO THE SIZES GIVEN ON THE TABLE, WE SEE THAT THE MAXIMUM DESIGN PRESSURE IS +68.80. SINCE THIS EXCEEDS THE REQUIREMENTS OF +65.75, WE MAY PROCEED.

3) FOLLOW ANCHOR LOCATIONS AS SHOWN ON THE ELEVATION OF SHEET 2.

4) FROM TABLE 7, IT IS REQUIRED THAT WE USE AT LEAST 10 ANCHORS IN THE JAMB (5 PAIRS). FOR THE REQUIRED O.C., SEE THE ELEVATION DRAWING ON SHEET 2.

5) INSTALL USING THE CROSS-SECTION DRAWINGS ON SHEETS 6 & 7 AS A GUIDELINE.



EXAMPLE 2:

- DOUBLE DOOR, XX, 75-1/2" X 124-3/4". REQUIRED DESIGN PRESSURE IS +/-52.5 PSF.
- SUBSTRATE IS CONCRETE AT THE HEADER AND SILL AND UNFILLED CONCRETE BLOCKS AT THE JAMBS.

1) FROM TABLE 4, WE SEE THAT THE SIZE IS NOT AVAILABLE USING PVB INTERLAYER GLAZING (GLASS TYPES 1 OR 2), SG INTERLAYER GLAZING (GLASS TYPES 3 OR 4) WILL BE USED.

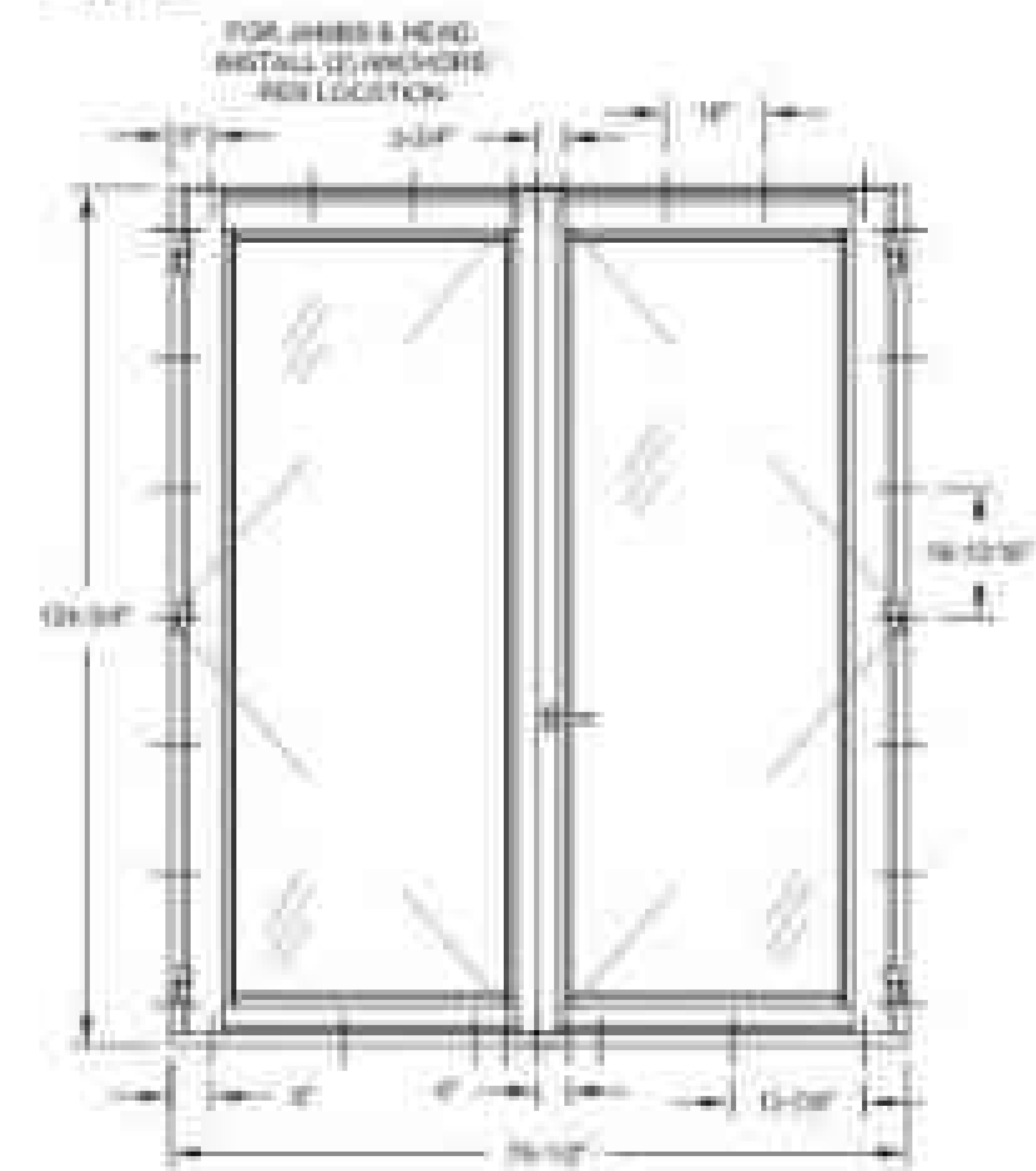
2) FROM TABLE 4, AFTER ROUNDING THE WIDTH AND HEIGHT UP TO THE SIZES GIVEN ON THE TABLE, WE SEE THAT THE MAXIMUM DESIGN PRESSURE IS +55/-65. SINCE THIS EXCEEDS THE REQUIREMENTS OF +/-52.5, WE MAY PROCEED.

3) FOLLOW ANCHOR LOCATIONS AS SHOWN ON THE ELEVATION OF SHEET 2. FOR THE HEAD AND SILL CLUSTER QUANTITIES, REFER TO TABLE 6.

4) TABLE 6 REQUIRES US TO KNOW THE ANCHOR GROUP TO BE USED. WE PLAN ON USING ULTRACON ANCHORS. LOOKING AT TABLE 1, SHEET 1, WE CHOSE ANCHOR GROUP D SINCE WE KNOW THAT THE ANCHORS AT THE HEAD AND SILL ARE INTO CONCRETE AND THE ANCHORS AT THE JAMBS ARE INTO HOLLOW BLOCK.

WE REQUIRE 4 CLUSTER ANCHORS IN THE HEAD AND 3 CLUSTER ANCHORS IN THE SILL USING THE SPACING SHOWN ON SHEET 2.

5) INSTALL USING THE CROSS-SECTION DRAWINGS ON SHEETS 5, 6 & 7 AS A GUIDELINE.



NO CHANGES THIS SHEET

PREPARED BY: A. LYNN MILLER

ALUMINUM IS & OS TERRACE DOOR (LM)

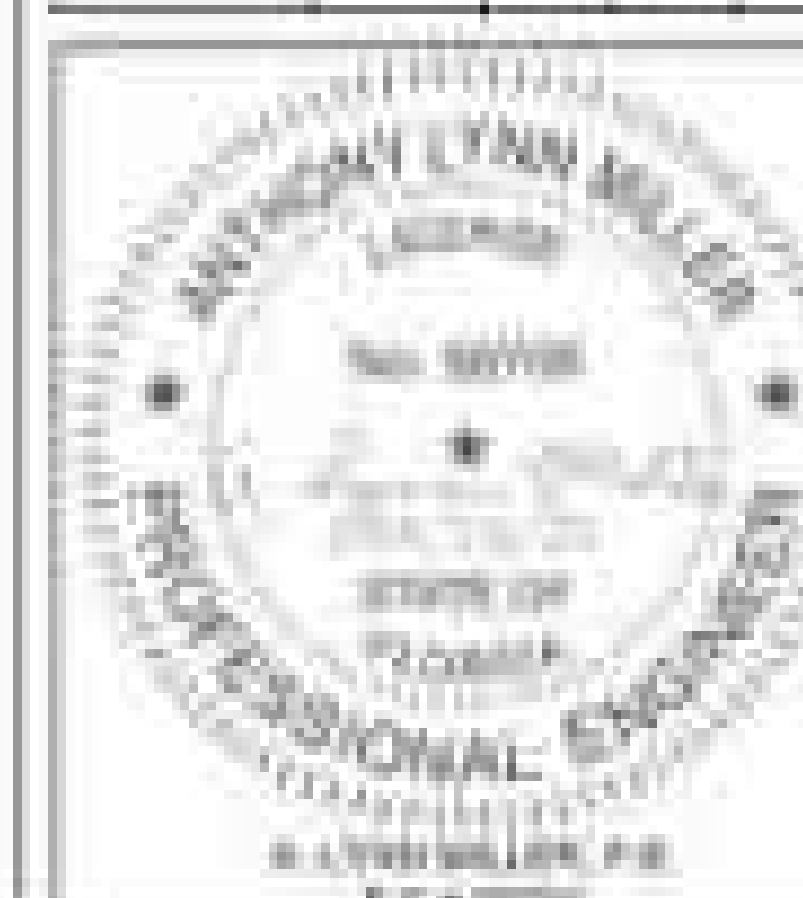
JAMB ANCHOR QTY. / EXAMPLES

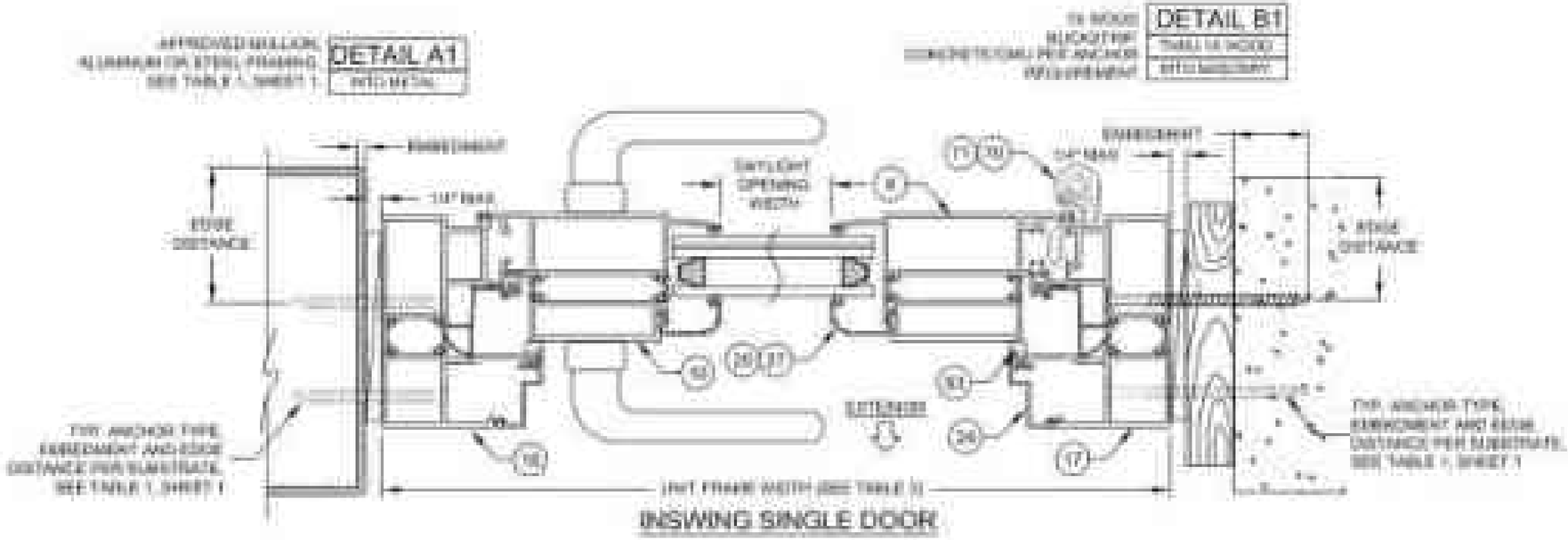
A. MORLESIN

TD9505LMI-FFA

TD9505

5 OF 12





INSWING SINGLE DOOR

INSWING DOUBLE DOOR

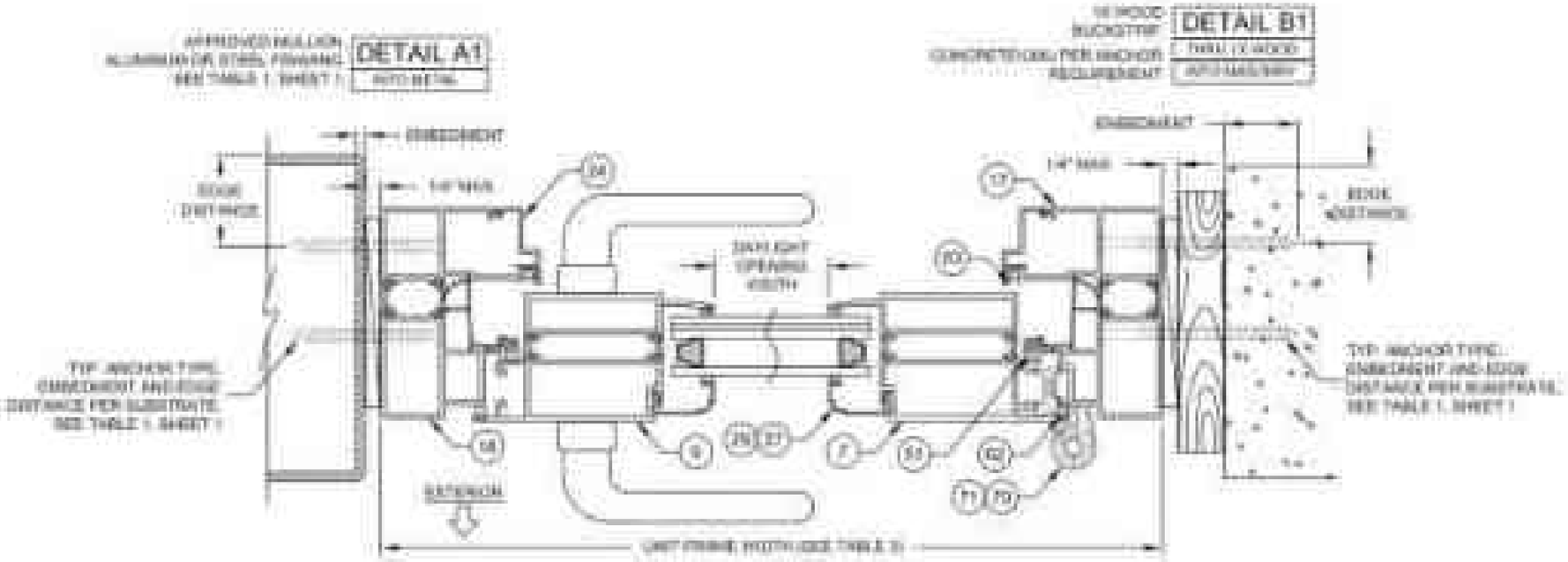
NOTES:

1) USE ONLY SUBSTRATE APPROPRIATE ANCHORS, FOLLOW EMBEDMENT, EDGE DISTANCE AND SUBSTRATE REQUIREMENTS PER TABLE 1, SHEET 1. ANY INSTALLATION OPTION SHOWN MAY BE USED. ALL ANCHOR HEAD TYPES ARE ALLOWED.

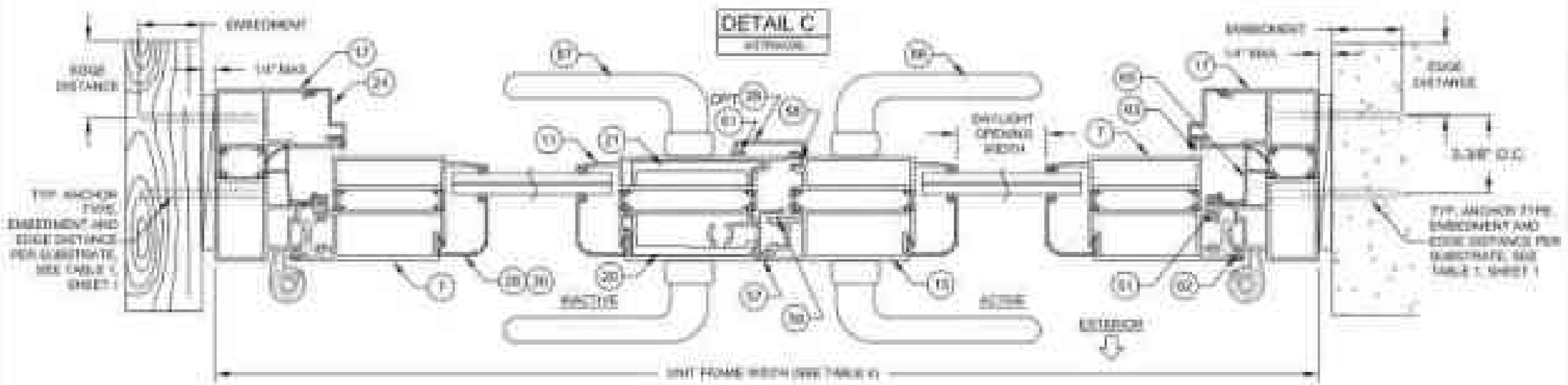
2) ALL WOOD BUCKS LESS THAN 1-1/2" THICK ARE TO BE CONSIDERED AS INSTALLATIONS. 19 INCH BUCKS ARE OPTIONAL. UNIT MAY BE INSTALLED DIRECTLY TO SUBSTRATE. WOOD BUCKS DEPICTED AS 29 ARE 1-1/2" THICK OR GREATER. 19 AND 29 BUCKS (WHEN USED) SHALL BE DESIGNED TO PROPERLY TRANSFER LOADS TO THE STRUCTURE. WOOD BUCK DESIGN AND INSTALLATION IS THE RESPONSIBILITY OF THE ENGINEER OR ARCHITECT OF RECORD.

PREPARED BY:	TDSSSW.MFPA
ALUMINUM & SS TERRACE DOOR SYSTEM	
PREPARED FOR: K-LYNN BUILDERS	
SHEET TITLE: ELEVATIONS	
DRAWING NO.	
SCALE:	
DATE: 07/01/19	
SHEET NO.	2 OF 2
REVISION	

AMERICAN LYNN BUILDERS
LICENSED
No. 000000
STATE OF
PROFESSIONAL ENGINEER
K. LYNN MILLER, P.E.
P.E. # 00000



OUTSWING SINGLE DOOR



OUTSWING DOUBLE DOOR

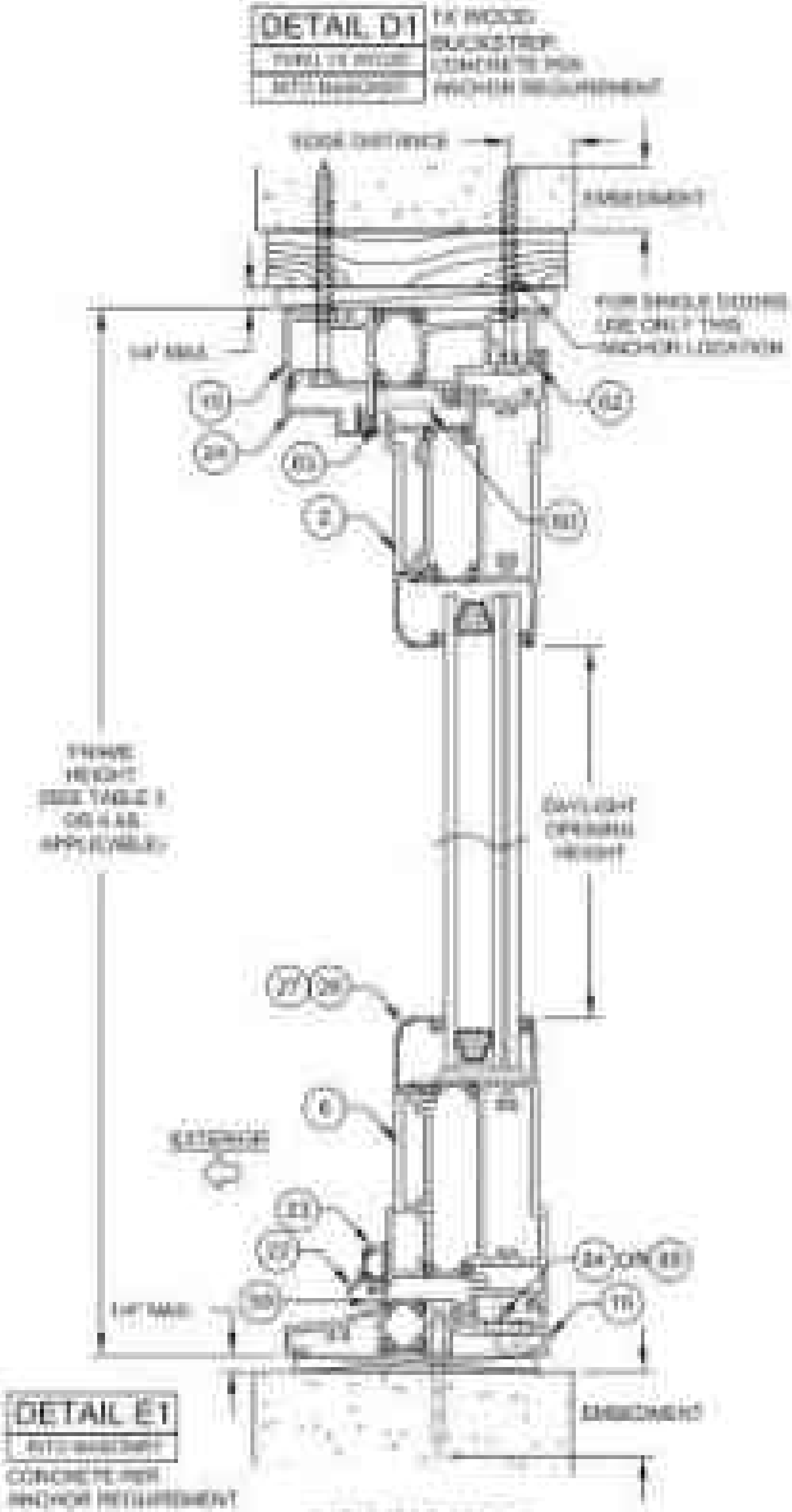
NOTES:

1) USE ONLY SUBSTRATE APPROPRIATE ANCHORS, FOLLOW EMBEDMENT, EDGE DISTANCE AND SUBSTRATE REQUIREMENTS PER TABLE 1, SHEET 1. ANY INSTALLATION OPTION SHOWN MAY BE USED. ALL ANCHOR HEAD TYPES ARE ALLOWED.

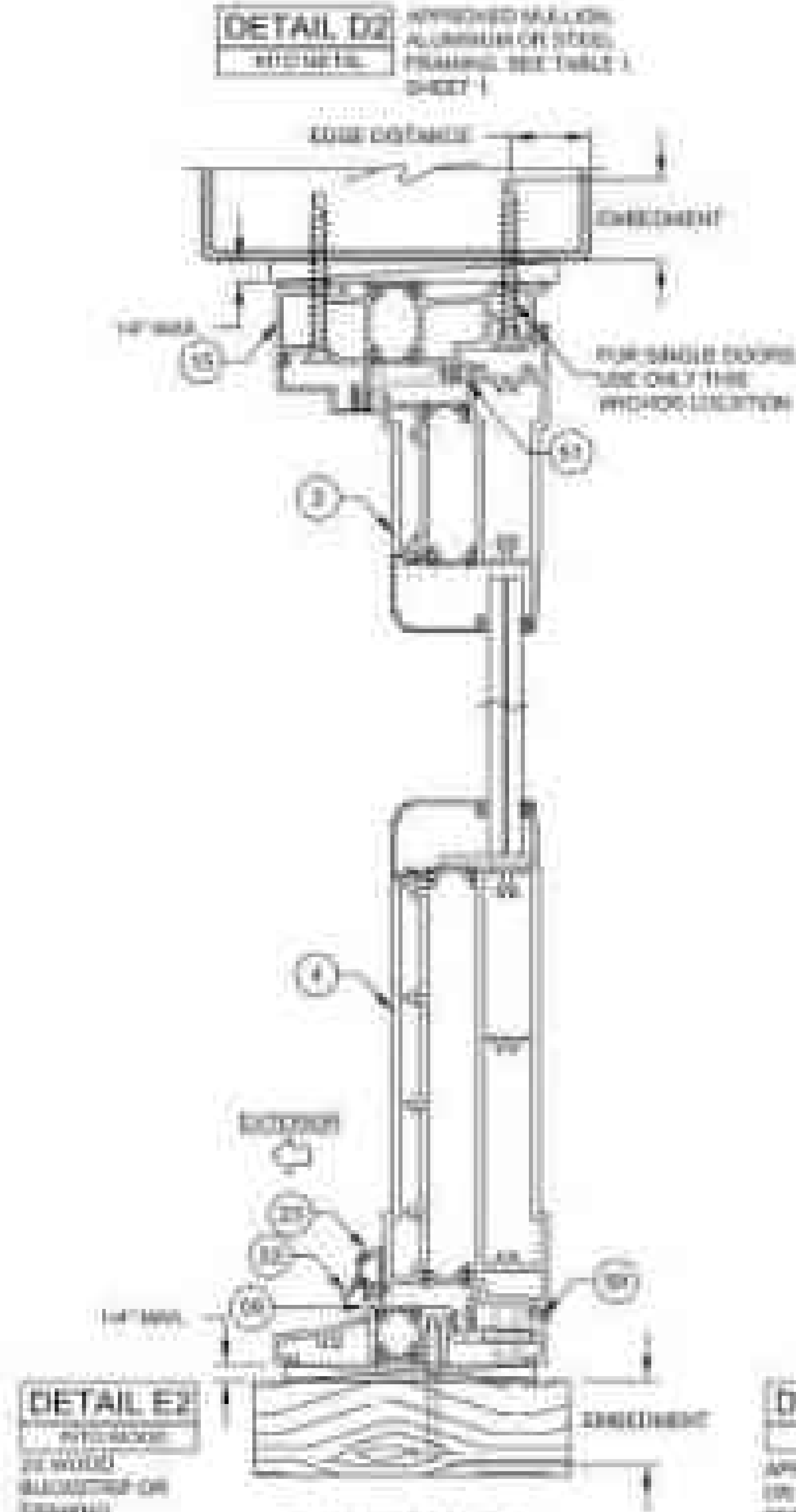
2) ALL WOOD BUCKS LESS THAN 1-1/2" THICK ARE TO BE CONSIDERED AS INSTALLATIONS. (3) WOOD BUCKS ARE OPTIONAL. UNIT MAY BE INSTALLED DIRECTLY TO SUBSTRATE. WOOD BUCKS DEPICTED AS 28 ARE 1-1/2" THICK OR GREATER. (3) AND 28 BUCKS (WHEN USED) SHALL BE DESIGNED TO PROPERLY TRANSFER LOADS TO THE STRUCTURE. WOOD BUCK DESIGN AND INSTALLATION IS THE RESPONSIBILITY OF THE ENGINEER OR ARCHITECT OF RECORD.

REVISIONS	
DRAWN BY:	R. MORGESON
DATE:	03/08/23
SCALE:	1/4" = 1'-0"
PROJECT:	OUTSWING HORIZ. SECTION
	T-DS6SW
	T-DS6SW.MI.FFA
	1 OF 1
	1 OF 2

PREPARED BY: A. LYNN MILLER
STATE OF FLORIDA
PROFESSIONAL ENGINEER
No. 66708
STATE OF FLORIDA
A. LYNN MILLER, P.E.
P.E. # 66708



INSWING WITH
STANDARD BOTTOM RAIL

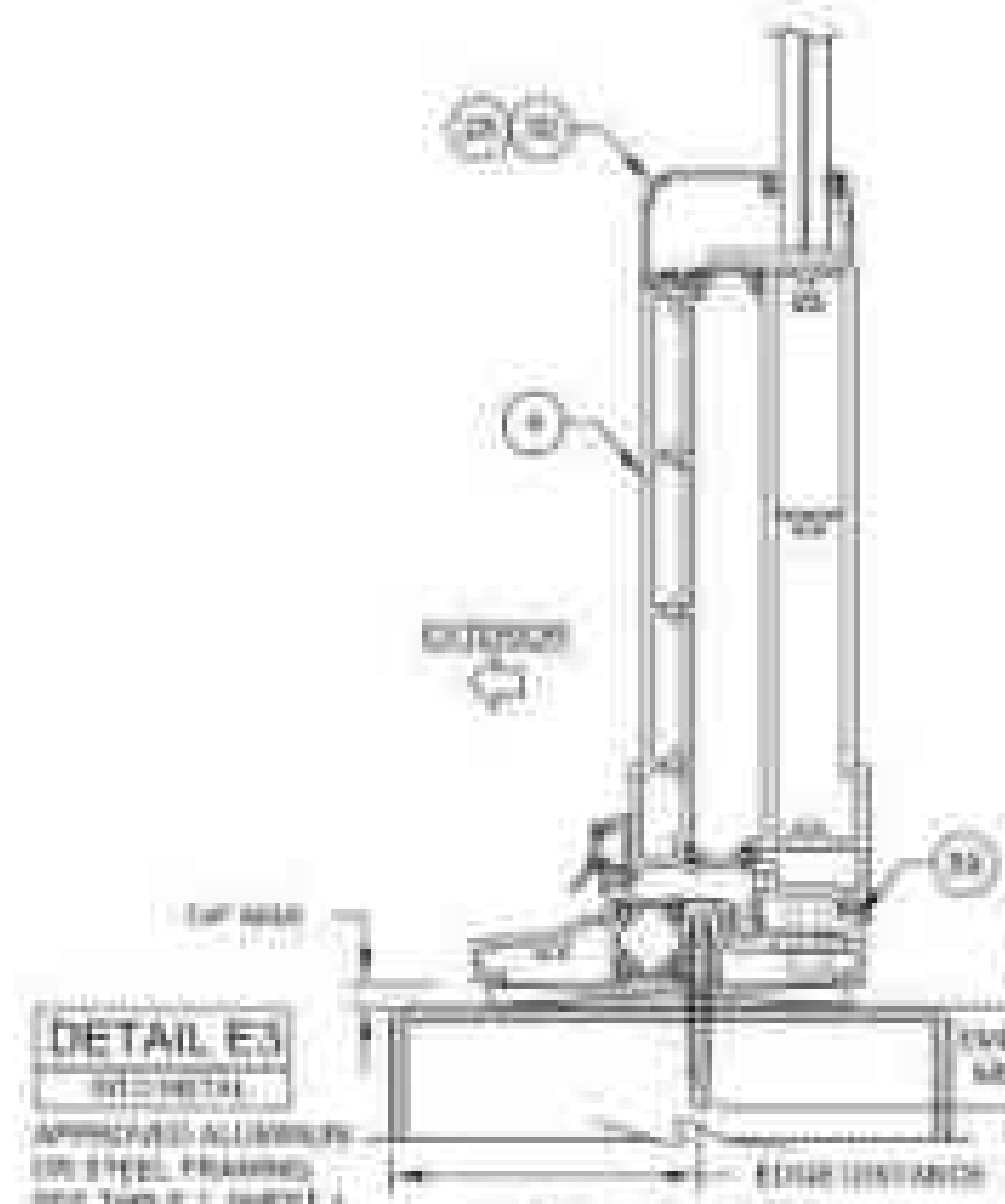


INSWING WITH
TALL BOTTOM RAIL

NOTES:

1) USE ONLY SUBSTRATE APPROPRIATE ANCHORS. FOLLOW EMBEDMENT, EDGE DISTANCE AND SUBSTRATE REQUIREMENTS PER TABLE 1, SHEET 1. ANY INSTALLATION OPTION SHOWN MAY BE USED. ALL ANCHOR HEAD TYPES ARE ALLOWED.

2) ALL WOOD BUCKS LESS THAN 1-1/2" THICK ARE TO BE CONSIDERED 1X INSTALLATIONS. 1X WOOD BUCKS ARE OPTIONAL. UNIT MAY BE INSTALLED DIRECTLY TO SUBSTRATE. WOOD BUCKS DEPICTED AS 2X ARE 1-1/2" THICK OR GREATER. 1X AND 2X BUCKS (WHEN USED) SHALL BE DESIGNED TO PROPERLY TRANSFER LOADS TO THE STRUCTURE. WOOD BUCK DESIGN AND INSTALLATION IS THE RESPONSIBILITY OF THE ENGINEER OR ARCHITECT OF RECORD.



INSWING WITH
TALL BOTTOM RAIL

NO CHANGES THIS SHEET

ALUMINUM IS & OS TERRACE DOOR (LM)

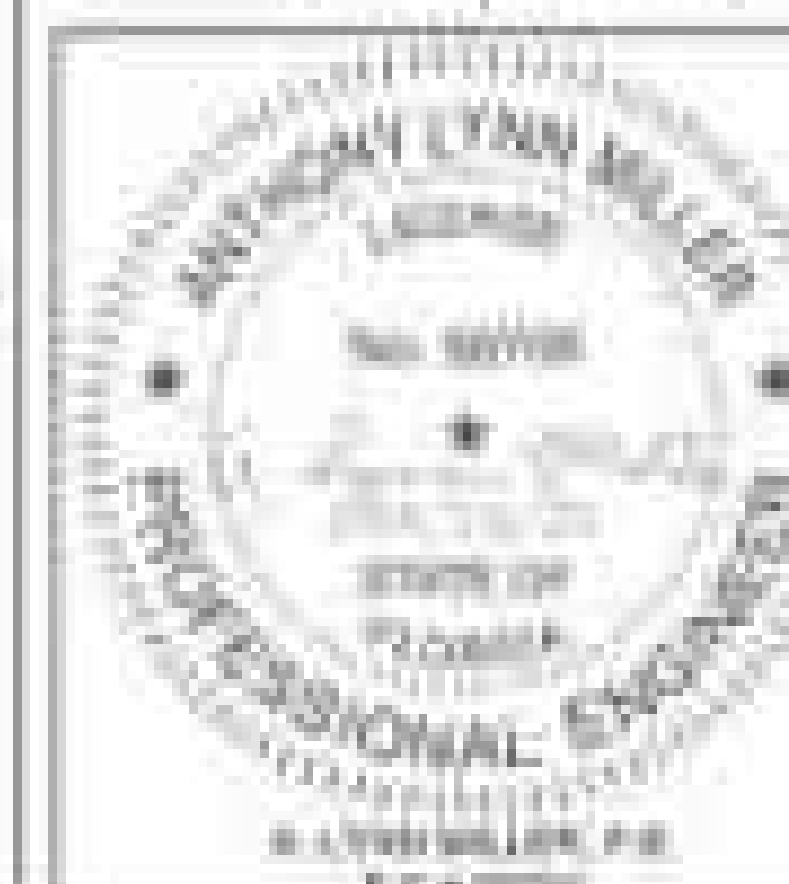
INSWING VERT. X-SECTION

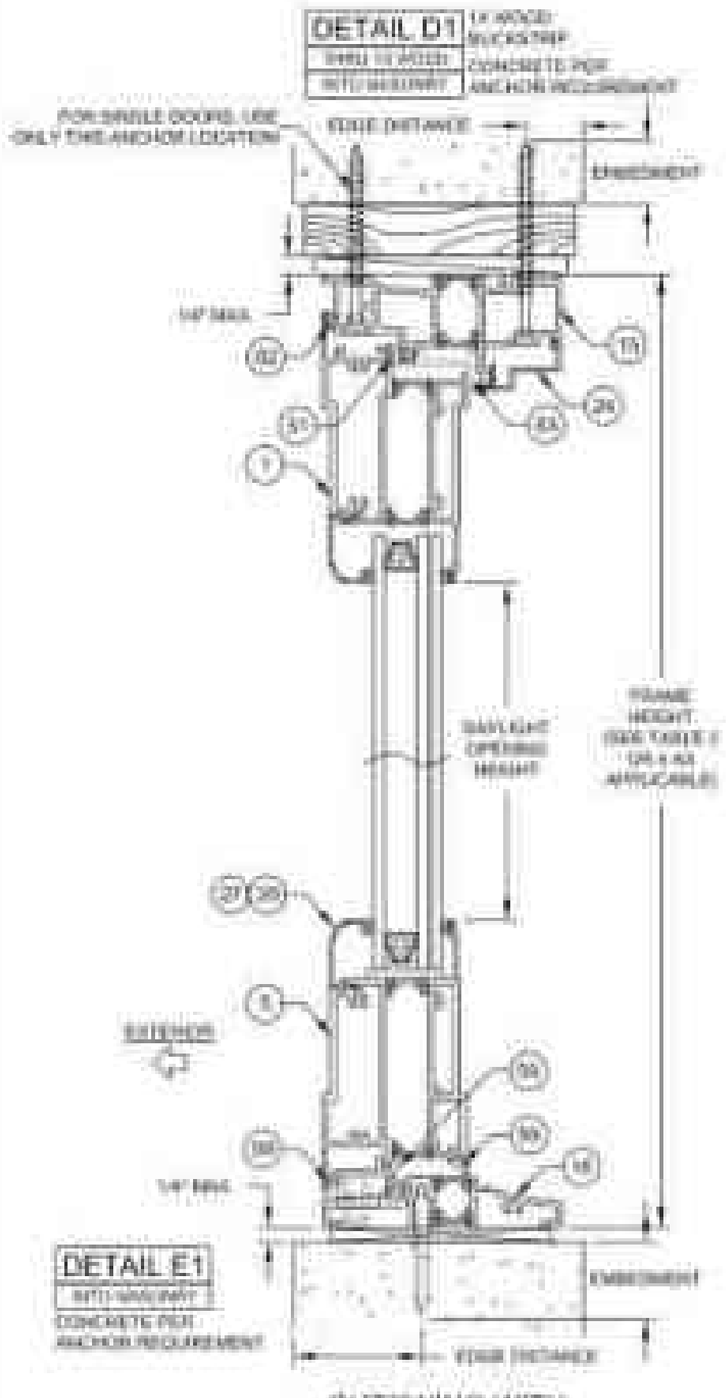
A. MORLESIN

TD3651

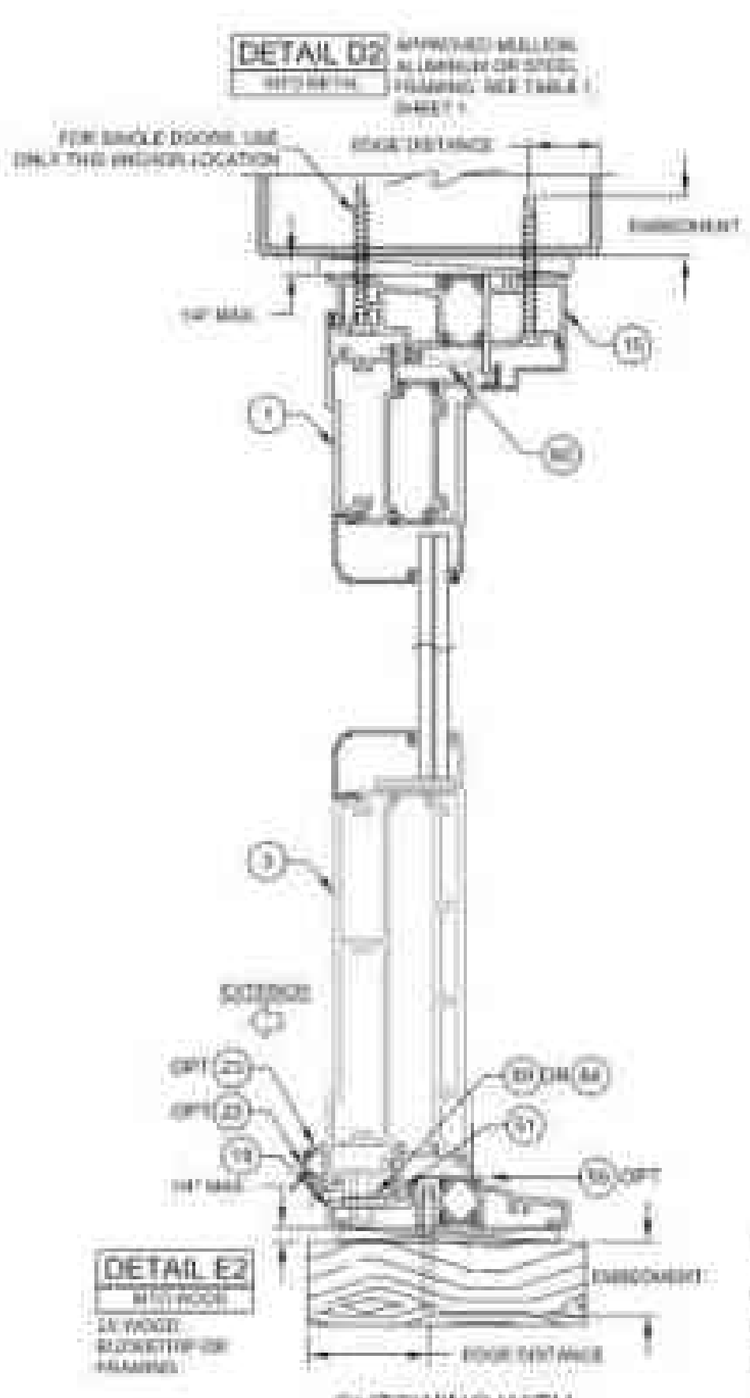
9 OF 12

TD3651MI-FFA

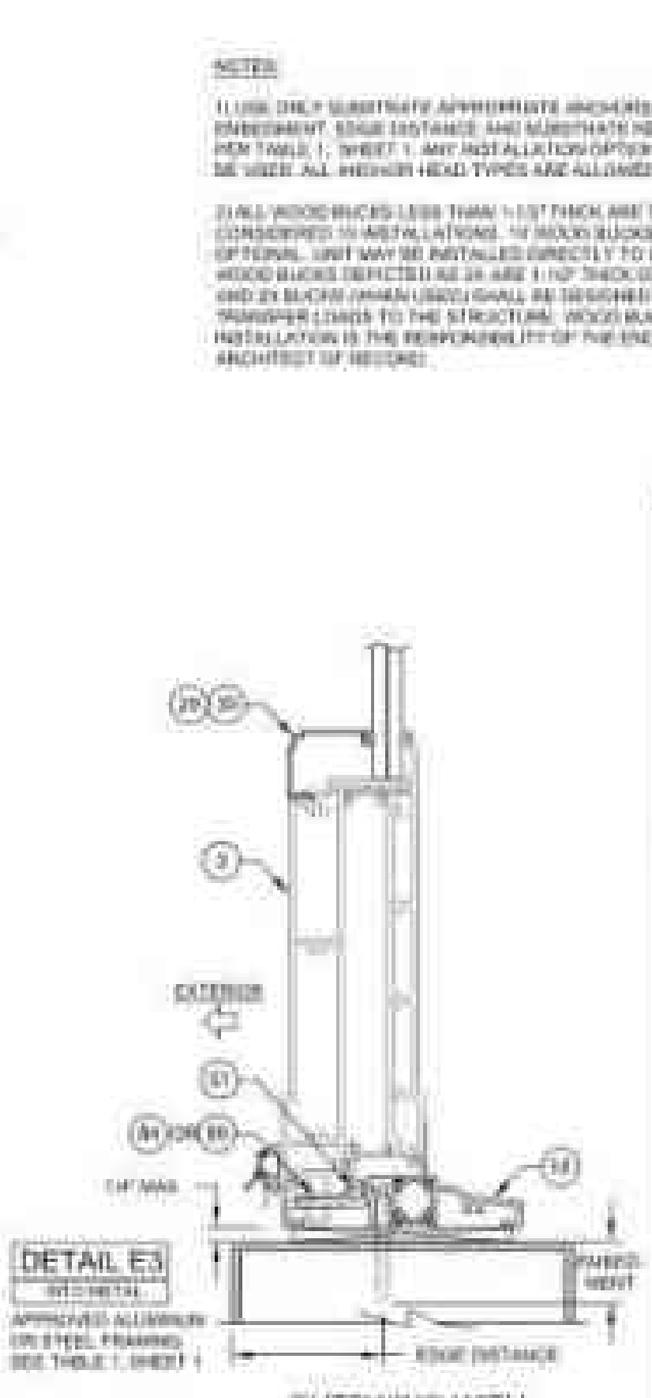




OUTSWING WITH
STANDARD BOTTOM RAIL



OUTSWING WITH
TALL BOTTOM RAIL



OUTSWING WITH
TALL BOTTOM RAIL

NOTES:

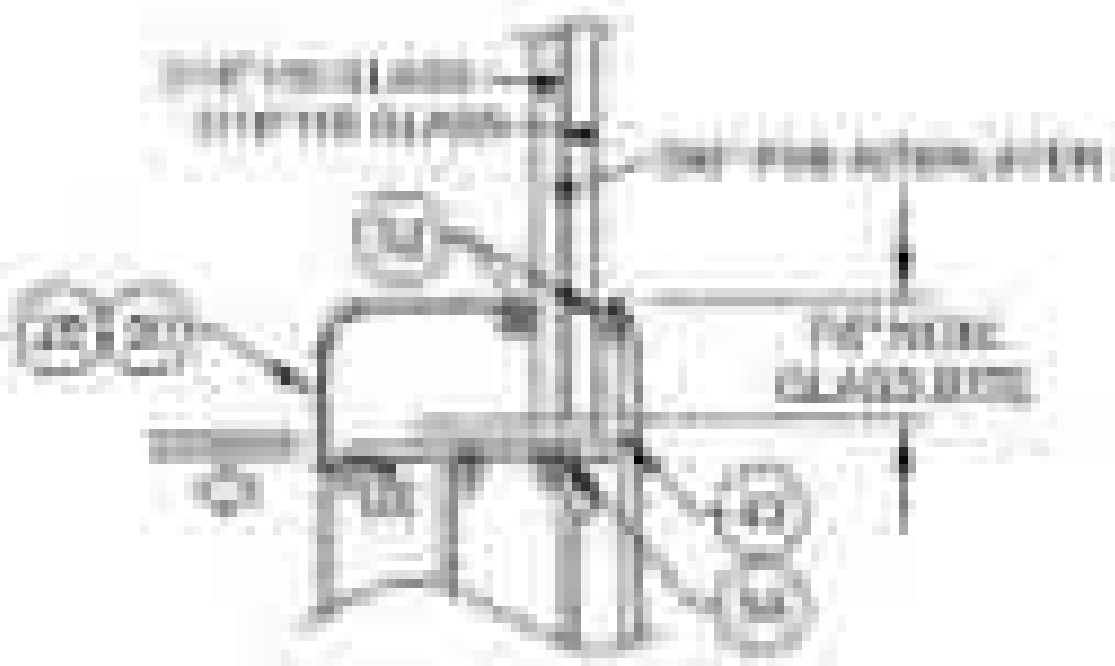
1) USE ONLY SUBSTRATE APPROPRIATE ANCHORS, FULL EMBEDMENT, EDGE DISTANCE AND SUBSTRATE REQUIREMENTS PER TABLE 1, SHEET 1. ANY INSTALLATION OPTION SHOWN MAY BE USED. ALL WASHER HEAD TYPES ARE ALLOWED.

2) ALL WOOD BUCKS LESS THAN 1-1/2" THICK ARE TO BE CONSIDERED AS METAL BUCKS. 1/4" WOOD BUCKS ARE OPTIONAL. UNIT MAY BE INSTALLED DIRECTLY TO SUBSTRATE. WOOD BUCKS DEPICTED AS 2X ARE 1-1/2" THICK OR GREATER. 1X AND 2X BUCKS (WHEN USED) SHALL BE DESIGNED TO PROPERLY TRANSFER LOADS TO THE STRUCTURE. WOOD BUCK DESIGN AND INSTALLATION IS THE RESPONSIBILITY OF THE ENGINEER OR ARCHITECT OF RECORD.

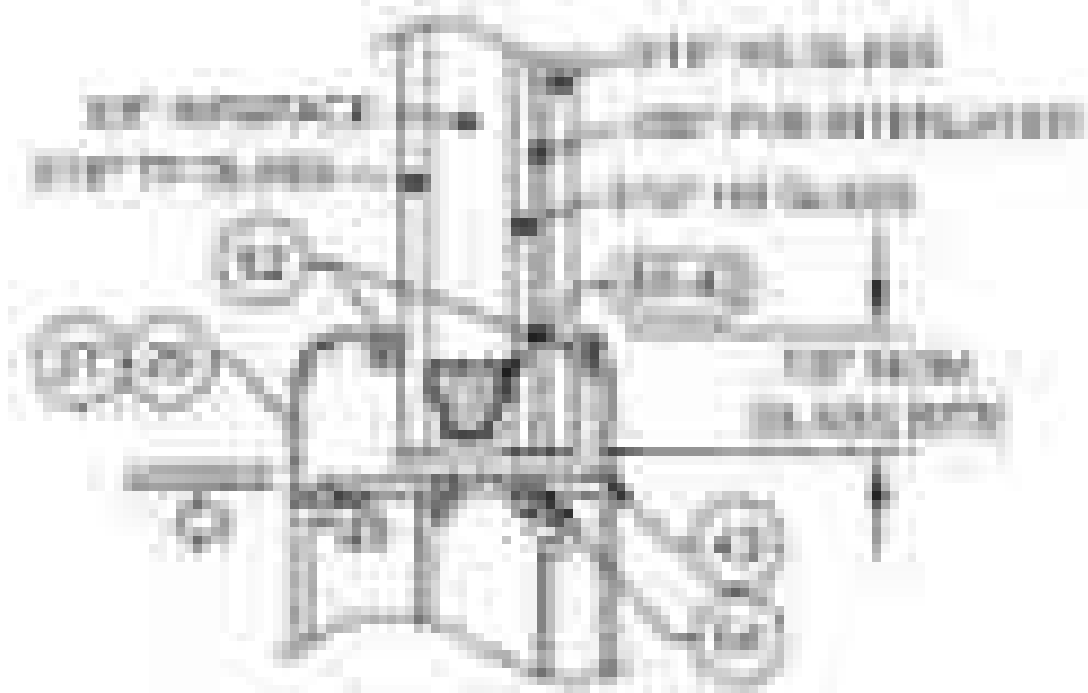
REVISIONS	DATE	BY	

PREPARED BY: A. LYNN MILLER
STATE CERTIFICATE OF AUTHORIZATION NO.
M. MORRISON
(407) 438-1400
DRAWING NO. TDS6508
ALUMINUM & SS TERRACE DOOR (HP)
OUTSWING VERT. X-SECTION
SCALE: NTS
SHEET NO. 6 OF 6
TDS6508
DATE: 12/19/2023
DRAWN BY: M. MORRISON
APPROVED BY: A. LYNN MILLER
SHEET NO. 6 OF 6
TDS6508

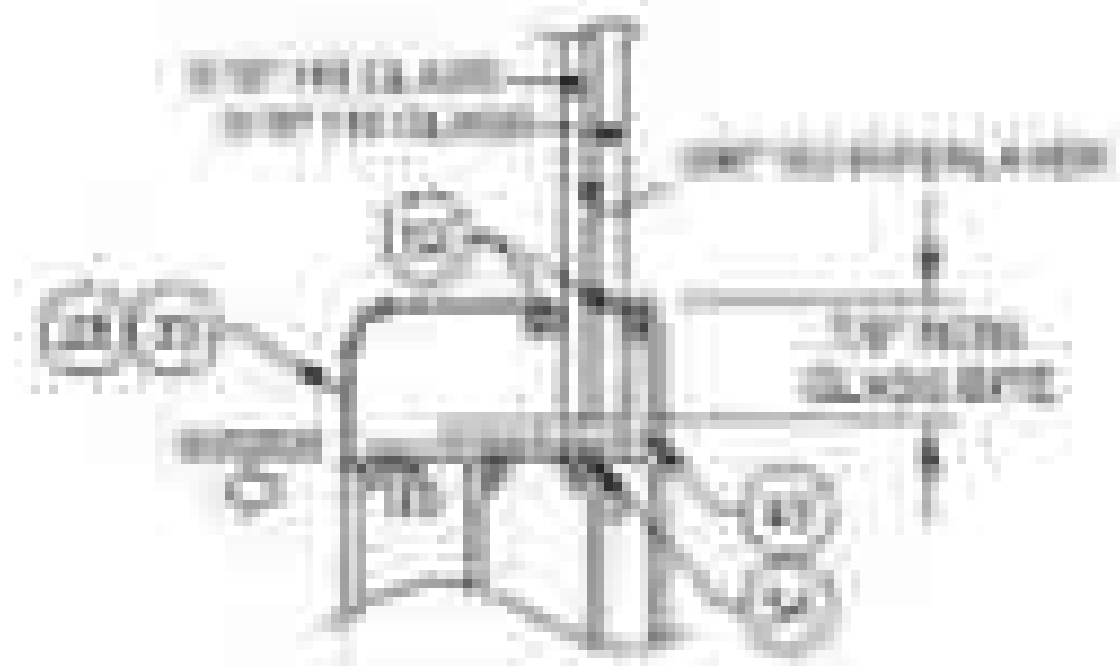




GLASS TYPE 1 (WITH PVB)
7/16" NOM



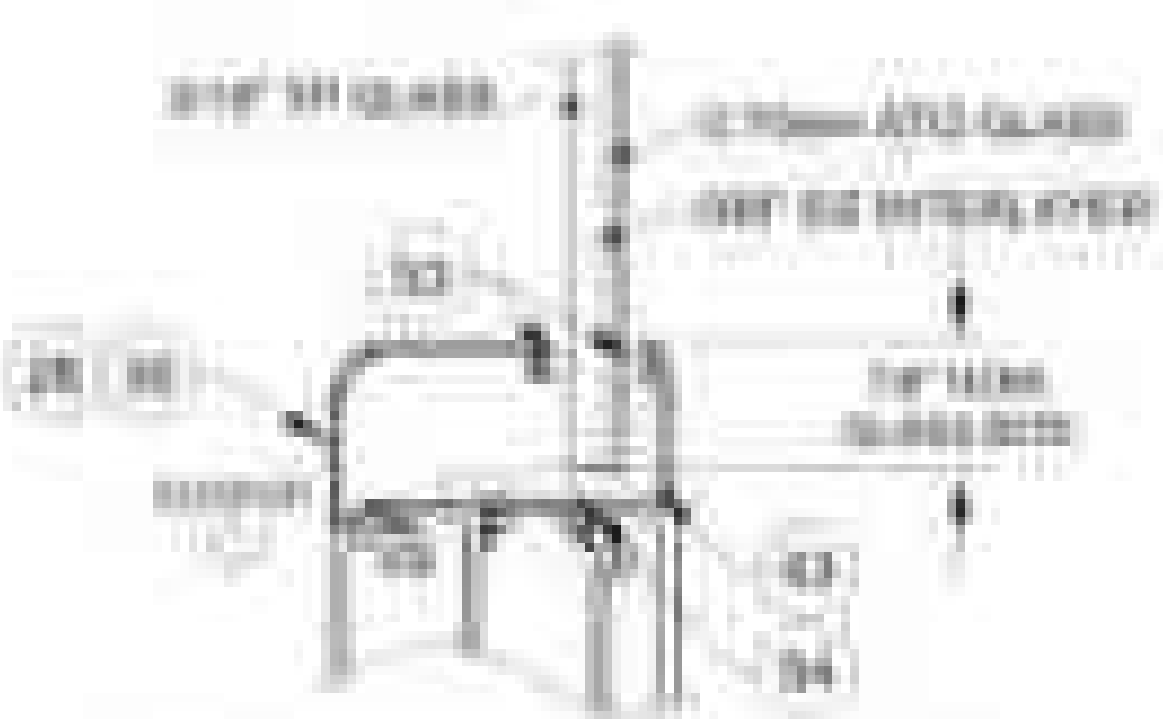
GLASS TYPE 2 (WITH PVB)
1-1/4" NOM



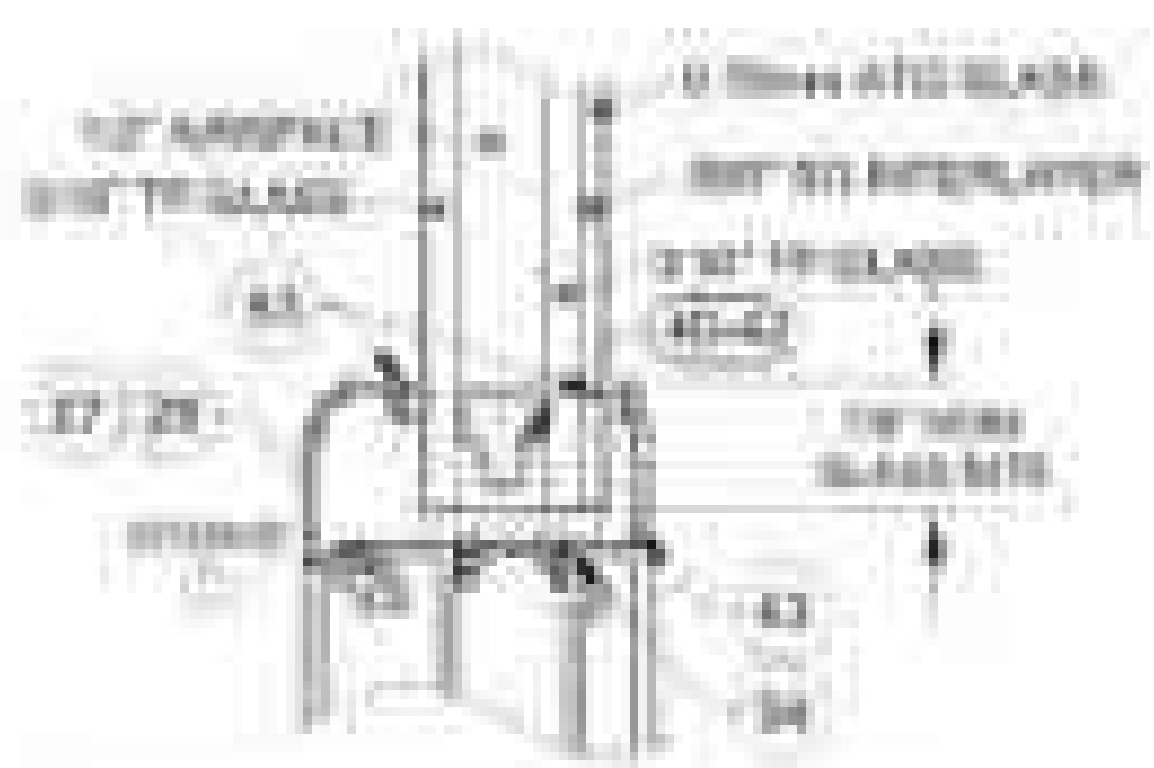
GLASS TYPE 3 (WITH SG)
7/16" NOM



GLASS TYPE 4 (WITH SG)
1-1/4" NOM



GLASS TYPE 5 (WITH ATG GLASS)
5/16" NOM



GLASS TYPE 6 (WITH ATG GLASS)
1" NOM

"HS" = HEAT STRENGTHENED
"TP" = TEMPERED
"PVB" = .090" TROSIFOL® PVB INTERLAYER BY KURARAY AMERICA, INC
"SG" = .090" SENTRYGLAS® INTERLAYER BY KURARAY AMERICA, INC
"ATG" = ARCHITECTURAL TECHNICAL GLASS BY CORNING

NO CHANGES THIS SHEET

ALUMINUM IS & OS TERRACE DOOR (LM)

GLAZING DETAILS

A. MORLESIN

TD3505LMI-FFA

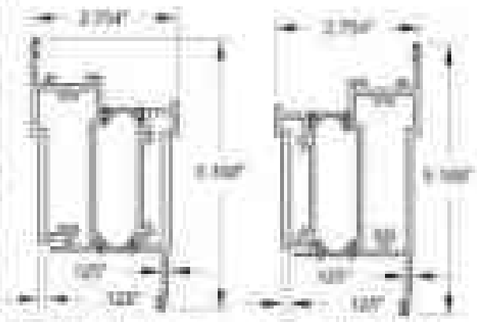
TD3505

10 OF 12

ANTHONY LYNN MILLER
LICENSE
STATE OF FLORIDA
PROFESSIONAL ENGINEER
A. LYNN MILLER, P.E.

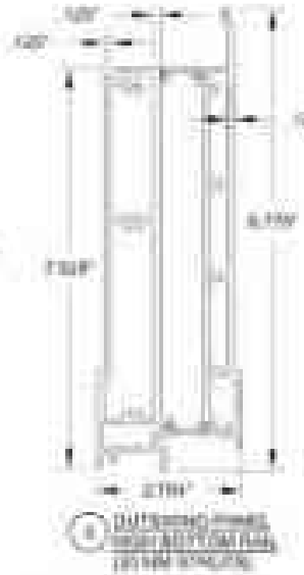
TABLE A

#	Part #	Description	Material
1	1700[illegible]	Outswing Panel Top Rail	6061-T6
2	1708[illegible]	Inswing Panel Top Rail	6063-T5
3	1708[illegible]	Outswing Panel High Bottom Rail	6063-T5
4	1708[illegible]	Inswing Panel High Bottom Rail	6063-T5
5	1709[illegible]	Outswing Panel Standard Bottom Rail	6063-T5
6	1708[illegible]	Inswing Panel Standard Bottom Rail	6063-T5
7	1709[illegible]	Outswing Panel Hinge Stile	6063-T5
8	1709[illegible]	Inswing Panel Hinge Stile	6063-T5
9	1401[illegible]	Outswing Panel Lock Stile	6063-T5
10	1301[illegible]	Inswing Panel Latch Stile	6063-T5
11	1709[illegible]	Outswing Panel Weather Panel Stile	6063-T5
12	1500[illegible]	Inswing Panel Inactive Panel Head	6063-T5
13	1304[illegible]	Outswing Panel Active Panel Head	6063-T5
14	1309[illegible]	Inswing Panel Active Panel Sill	6063-T5
15	1304[illegible]	Frame Head	6063-T5
16	1304[illegible]	Frame Sill	6063-T5
17	1308[illegible]	Frame Hinge Jamb	6063-T5
18	1301[illegible]	Frame Lock Jamb	6063-T5
19	1700[illegible]	Outswing Panel High Bottom Rail Adaptor	6063-T5
20	1150[illegible]	Center Reinforcement	6063-T5
21	1150[illegible]	Inner Reinforcement	6063-T5
22	1136[illegible]	Drip Cap Frame	6063-T5
23	1150[illegible]	Drip Cap Outswing Stile	6063-T5
24	1104[illegible]	Jamb & Head Cover Plate	6063-T5
25	1170[illegible]	Fibre Astragal	6063-T5
26	1192[illegible]	Bulb Weather Strip	6063-T5
27	1192[illegible]	Spoon Weather Strip	6063-T5
28	1192[illegible]	Open Weather Strip	6063-T5
29	1346[illegible]	Open Sweeping	6063-T5

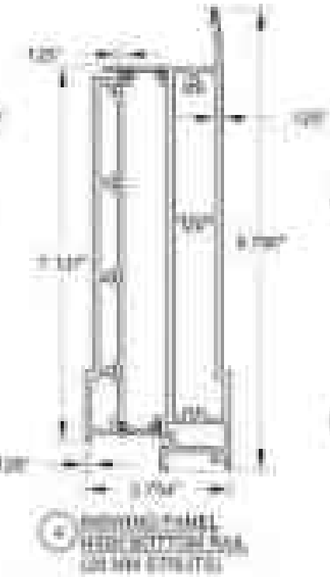


① OUTSWING PANEL TOP RAIL (20 MM STRUTS)

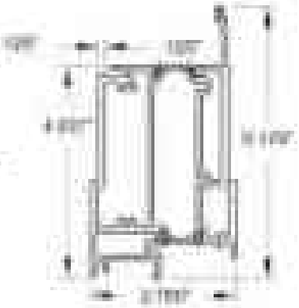
② INSWING PANEL TOP RAIL (20 MM STRUTS)



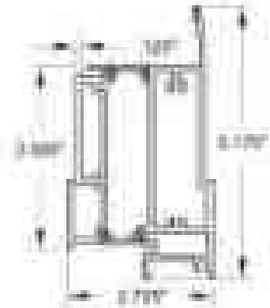
③ OUTSWING PANEL HIGH BOTTOM RAIL (20 MM STRUTS)



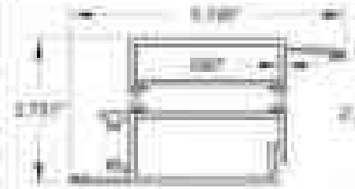
④ INSWING PANEL HIGH BOTTOM RAIL (20 MM STRUTS)



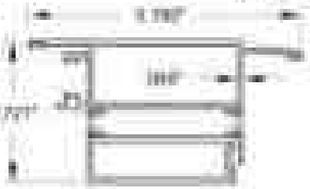
⑤ OUTSWING PANEL STANDARD BOTTOM RAIL (20 MM STRUTS)



⑥ INSWING PANEL STANDARD BOTTOM RAIL (20 MM STRUTS)



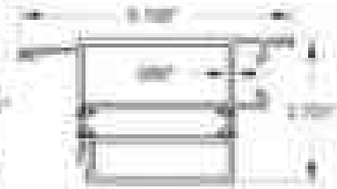
⑦ OUTSWING PANEL HINGE STILE (14 MM STRUTS)



⑧ INSWING PANEL HINGE STILE (14 MM STRUTS)



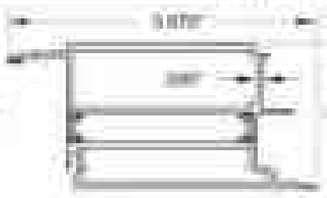
⑨ OUTSWING PANEL LOCK STILE (14 MM STRUTS)



⑩ INSWING PANEL LOCK STILE (14 MM STRUTS)



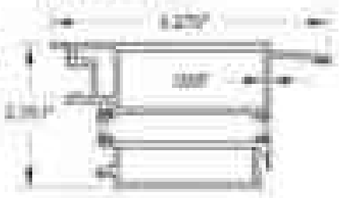
⑪ OUTSWING PANEL INACTIVE ASTRAGAL STILE (14 MM STRUTS)



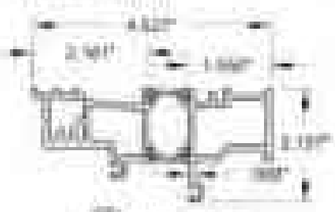
⑫ INSWING PANEL INACTIVE ASTRAGAL STILE (14 MM STRUTS)



⑬ OUTSWING PANEL ACTIVE ASTRAGAL STILE (14 MM STRUTS)



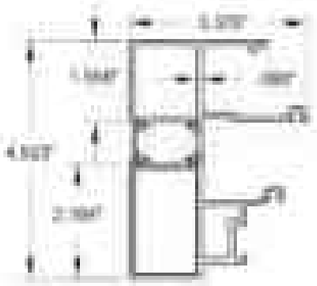
⑭ INSWING PANEL ACTIVE ASTRAGAL STILE (14 MM STRUTS)



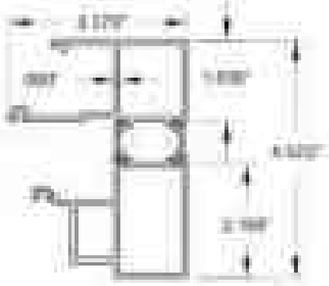
⑮ FRAME HEAD (20 MM STRUTS)



⑯ FRAME SILL (20 MM STRUTS)



⑰ FRAME HINGE JAMB (20 MM STRUTS)



⑱ FRAME LOCK JAMB (20 MM STRUTS)



⑲ OUTER REINFORCEMENT



⑳ INNER REINFORCEMENT


㉑ DRIP CAP


㉒ DRIP CAP RAISE



㉓ JAMB & HEAD COVER PLATE



㉔ VALVE ASTRAGAL



㉕ SQUARE WEATHER LEG



㉖ SQUARE WEATHER



㉗ CURVE WEATHER LEG



㉘ CURVE WEATHER

NOTE 1) VINYMAL STRUT IS FIBERGLASS REINFORCED POLYAMIDE (TENSILE STRENGTH = 28 MPa). TESTED AS PART OF THE EXTRUSIONS SHOWN

F	12/10/10	ADDED		
E	12/10/10	ADDED SHT 2 SHEET		
D	12/10/10	ADDED SHT 2 SHEET		
C	12/10/10	ADDED SHT 2 SHEET		
B	12/10/10	ADDED SHT 2 SHEET		
A	12/10/10	ADDED SHT 2 SHEET		
REVISIONS	DATE	DESCRIPTION		

PREPARED BY: A. LYNN MILLER
STL TECHNOLOGY, INC.
W. TERRACE PL.
[illegible]

ALUMINUM & VINYL TERRACE DOOR SYSTEM
EXTRUSION & BOM

DRAWN BY: A. MORALES	12/10/10	
CHECKED BY:		
APPROVED BY:		
SCALE: 1:1	SHEET 2 OF 2	
TDS600WMFFA		

AMERICAN LYNN MILLER
LICENSED
No. 99708
STATE OF
PROFESSIONAL ENGINEER
A. LYNN MILLER, P.E.
P.E. 99708

#	Part #	Description
40		Connecting Wallplate 4SQ TPS
41		Gasket Sight Spacer (HT with Hot Melt Butyl
42		Metal ID Spacer
43		Silicone RTV, 102, Low VOC, Low Mod
51	WB0604C-0102E	Sponge Seal, WB0604C-0102E, EPDM
52	13100E1015GP	Glazing Vinyl, EPDM, 60 Duro
53	23087	Glazing Vinyl, EPDM, 80 Duro, White
54	121021	Sliding Block, 1/4" x 3/4" x 1", Neoprene, 80 Duro
55	15331	Filler Strip, TP-480, PVC, 80 Duro
56	WB0604L-0102E	Active Stile Center Sponge
57	WB0604L-0411	Active Stile Outer Weatherstrip, Cover, EPDM, 60 Duro
58	WB0604L-0412	Active Stile Inner Weatherstrip, Cover, EPDM, 80 Duro
59	17070401	Sill Pan Sweep, Black, Santoprene
60	WB0604L-0102E	Stop Cover
61	19204	Double-sided Acrylonic Tape, Adhesive Foam
62	13103	Panel Flange Rub, EPDM, 80 Duro
63	19197	Frame Long Leg Weatherstrip (DS), EPDM 80 Duro
64	WB0604L-0413	Frame Long Leg Weatherstrip (IS), EPDM, 80 Duro
65	10236	Jamb Anchor Clean, PVC, 92 Duro
66		#8 x 1" Fh SQ SS/S Panel Assembly, SS
67	140039	#10 x 3/4" Ph F/S TMS (Slotted Drive Pharm., SS
68		#10 x 3/4" Ph F/S Tek SMS (Short Slot Plate), SS
69		#10 x 1-1/4" Ph SQ DWS (Frame Assembly), SS

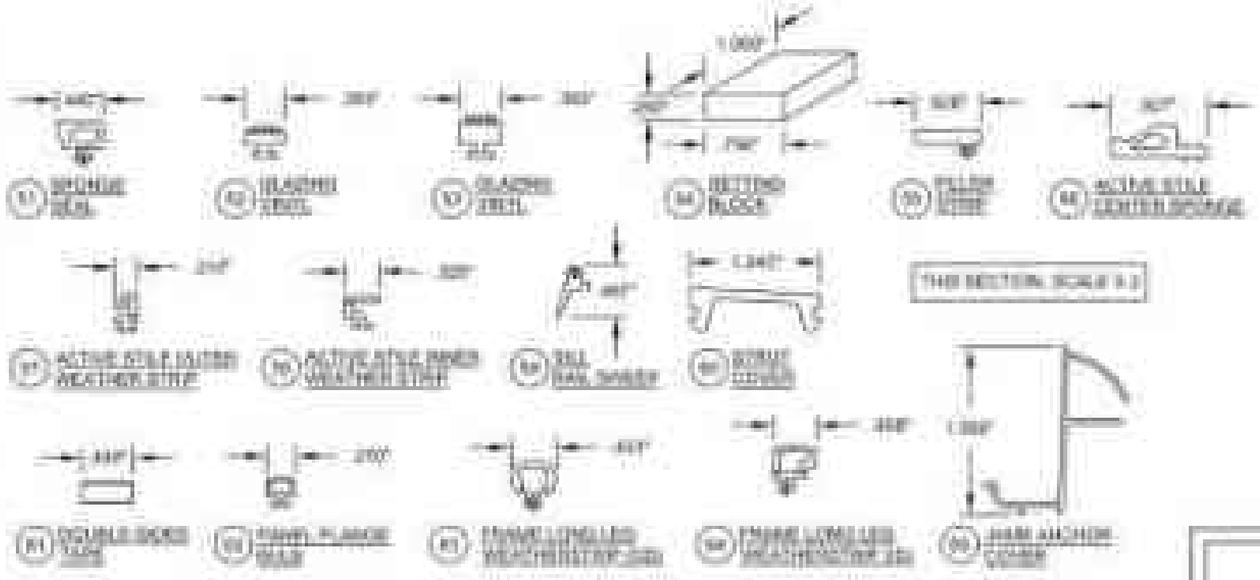
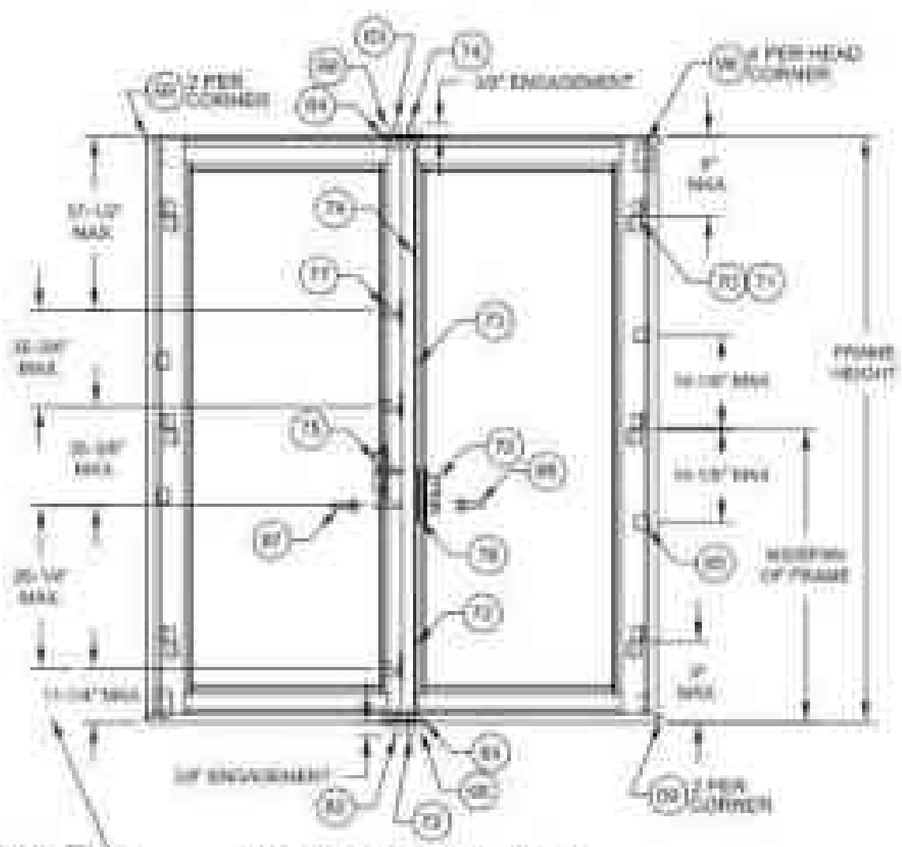


TABLE 11: HINGE AND LOCKING HARDWARE COMPONENTS AND SCHEDULE

#	Part #	Description	Manufacturer
70	HB88-BEAD10	Tach Wt. Door Hinge	Simco
71	HB00-WD0086	Hinge Covers	Simco
72	HB88-GEAR-1728	Multipt Espagnolette with Gear, Lock, Lower Swing Hook & Thrust Bolt (7/8" Engagement into Head & Sill)	Hoppe
73	3622003	Middle Extension with 2 Swing Hooks	Hoppe
74	9788221	Top Extension with Thrust Bolt	Hoppe
75	HB00-FE1007	Mortise Handset, Inactive Panel	Hoppe
77	HB00-SK1088	Hook Latch Strike Plate, SS	Salgan
78	SB00-LK1002 HB00-RK1088	Lumin Latch & Deadbolt Strike Plate, SS	Salgan
79	HB00-SP-0513	Thrust Bolt reinforcing Plate, SS	Salgan
80	HB00-SP-ADA-3021	Thrust Bolt reinforcing Shim	Salgan
81	1400908	16mm Extended Roll Guides	Hoppe
82	9788991	12mm Lower Flush Bolt Rod	Hoppe
83	9788997	12mm Upper Flush Bolt Rod	Hoppe
84	HB00-SP-2048C	Two Thrust Bolt Head & Sill Strike Plate, SS	Salgan
85	HB00-KIT4434	Counter Driver	Advantage
86	9057-P-20	Hand Drill	
87	Varies	Tubular Handle & Trim Set	Varies
88	Varies	Handle & Trim Set with Lock Cylinder & Thumb Turn	Hoppe/Various
89	HB00-SP-210	Single Thrust Bolt Head & Sill Strike Plate, SS	Salgan



HARDWARE ELEVATION

DOUBLE (SQ SIDE) SHOWN SINGLE (X) DOOR SIMILAR

F	10/24/19		
E	10/21/19	K. MORRISON	
D	10/21/19		
C	10/21/19		
B	10/21/19		
A	10/21/19		
REVISIONS			

PREPARED BY & FOR:
[illegible]

Architectural & ISO Tolerance Doors with

MISC. PARTS & BOM

12 OF 12

TDS60B

TDS60B MI FFA

