

**GENERAL NOTES AND SPECIFICATIONS:**

1. SERIES LS18 FLUSH OUTSWING COMMERCIAL STEEL DOOR, SHOWN ON THIS PRODUCT EVALUATION DOCUMENT (P.E.D.) HAS BEEN VERIFIED FOR CODE COMPLIANCE IN ACCORDANCE WITH THE 2018 EDITION OF THE INTERNATIONAL BUILDING CODE, (IBC).

DESIGN WIND LOADS SHALL BE DETERMINED AS PER SECTION 1609 OF THE INTERNATIONAL BUILDING CODE, FOR A BASIC WIND SPEED AS REQUIRED BY THE JURISDICTION WHERE PRODUCT WILL BE INSTALLED, AND FOR A DIRECTIONALITY FACTOR  $K_d = 0.85$ , IN ACCORDANCE WITH ASCE 7-16 STANDARD, AND SHALL NOT EXCEED THE DESIGN PRESSURE RATING INDICATED ON THIS SHEET.

IN ORDER TO VERIFY THAT ANCHORS ON THIS P.E.D., AS TESTED, WERE NOT OVERSTRESSED, A 33% INCREASE IN ALLOWABLE STRESS FOR WIND LOADS WAS NOT USED IN THEIR ANALYSIS. FASTENERS SPACING TO WOOD HAS BEEN DETERMINED IN ACCORDANCE WITH N.D.S. 2018.

THIS DOOR'S ADEQUACY FOR IMPACT AND CYCLIC RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH SECTION 1609.2 OF THE ABOVE MENTIONED CODE AS PER FLORIDA HIGH VELOCITY HURRICANE ZONE PROTOCOLS TAS-201, TAS-202, TAS-203 AS PER FENESTRATION TESTING LABORATORY, INC. REPORT #FTL-1735, FTL-1736 AND AS PER SUBMITTED STRUCTURAL CALCULATIONS, PERFORMED AS PER SECTION 1604 OF THE ABOVE MENTIONED BUILDING CODE.

2. ALL COMPONENTS SHALL BE AS SPECIFIED ON APPLICABLE DETAIL SHEETS AND AT BILL OF MATERIALS OF THIS DRAWING.

3. COMPLIANCE OF EGRESS / ESCAPE REQUIREMENTS OF THESE DOORS PER IBC TO BE DETERMINED BY BUILDING OFFICIALS ON A CASE-BY-CASE BASIS.

4. ALL SCREWS INSTALLED TO BE STAINLESS STEEL 304 OR 316 AISI SERIES AND MEET ASTM A167, OR HOT DIPPED GALVANIZED (AFTER FABRICATION) CARBON STEEL AS PER ASTM A 123 OR ASTM A153, OR HOT DIPPED GALVANIZED OR GALVANNEALED (PRIOR TO FABRICATION) AND MEET ASTM A653 WITH 50 ksi YIELD STRENGTH AND 90 hsi TENSILE STRENGTH. BOLTS TO BE ASTM A-307 GALVANIZED STEEL OR AISI 304 SERIES STAINLESS STEEL, WITH 35 KSI MINIMUM YIELD STRENGTH.

5. ALL WELDING TO CONFORM W/AMERICAN WELDING SOCIETY A.W.S. D.1.3 AND D-19.0 REGULATIONS. USE E60XX ELECTRODES

6. ALL ANCHORS FOR DOOR FRAME CONNECTIONS TO EXISTING STRUCTURE SHALL BE AS SPECIFIED ON THIS DRAWING. MAXIMUM ANCHORS SPACINGS SHALL BE AS PER SECTIONS OF THIS DRAWING.

7. PROVIDE MAX. LOAD BEARING SHIM SPACE AS INDICATED IN THIS DRAWING.

8. **THIS DOOR WILL NOT REQUIRE A HURRICANE PROTECTION DEVICE.** DOOR MEETS IMPACT RESISTANCE FOR TYPE "D" MISSILE FOR BASIC PROTECTION.

9. THESE DOOR ASSEMBLIES ARE APPROVED FOR WATER AND AIR INFILTRATION AS PER TESTING INDICATED ON NOTE 1, AND SHALL BE LIMITED TO DESIGN PRESSURE RATINGS INDICATED ON DOOR SCHEDULE ON THIS SHEET.

10. ALL EXISTING WALLS (STRUCTURE) WHERE DOOR IS TO BE INSTALLED MUST BE BUILT IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE AND SHALL BE DESIGNED TO SUSTAIN THE SUPERIMPOSED LOADS TRANSFERRED BY THE DOOR SYSTEM.

11. ALL ALUMINUM EXTRUSIONS IN CONTACT WITH DISSIMILAR MATERIALS SHALL COMPLY WITH SECTION III-6 OF THE ALUMINUM DESIGN MANUAL 2015 EDITION.

12. PROVIDE SPECIFIED SEALANT AT ALL DOOR FRAME AND THRESHOLD.

13. (a) THIS P.E.D. PREPARED BY THIS ENGINEER IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SITE SPECIFIC PROJECT; I.E. WHERE THE SITE CONDITIONS DEVIATE FROM THE P.E.D.

(b) CONTRACTOR TO BE RESPONSIBLE FOR THE SELECTION, PURCHASE AND INSTALLATION INCLUDING LIFE SAFETY OF THIS PRODUCT, BASED ON THIS P.E.D. PROVIDED HE/SHE DOES NOT DEVIATE FROM THE CONDITIONS DETAILED ON THIS DOCUMENT. CONSTRUCTION SAFETY AT SITE IS THE CONTRACTOR RESPONSIBILITY.

(c) THIS P.E.D. WILL BE CONSIDERED INVALID IF ALTERED BY ANY MEANS.

(d) SITE SPECIFIC PROJECTS SHALL BE PREPARED BY A PROFESSIONAL ENGINEER OR ARCHITECT WHICH WILL BECOME THE ENGINEER OF RECORD (E.O.R.) FOR THE PROJECT AND WHO WILL BE RESPONSIBLE FOR THE PROPER USE OF THE P.E.D.

(e) ORIGINAL P.E.D. SHALL BEAR THE DATE AND ORIGINAL SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER OF RECORD THAT PREPARED IT.

14. PRODUCT MANUFACTURER'S LABEL SHALL BE LOCATED ON A READILY VISIBLE LOCATION AT PRODUCT IN ACCORDANCE WITH TEXAS DEPARTMENT OF INSURANCE REQUIREMENTS. ONE LABEL SHALL BE PLACED FOR EVERY OPENING.

**SHEETS CONTENT:**

PAGE #1 INDEX & COVER PAGE.

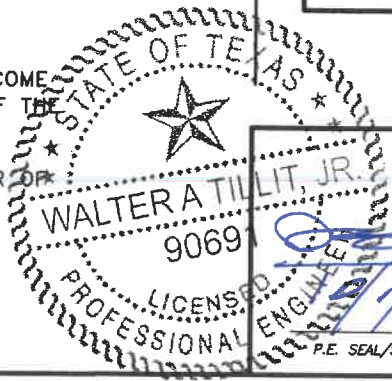
PAGES #1A, 2 & 3 HOLLOW METAL DOOR ASSEMBLY DETAILS.

PAGE #4 HOLLOW METAL DOOR COMPONENT DETAILS DETAILS.

PAGE #5 HOLLOW METAL FRAME COMPONENT DETAILS DETAILS.

DOOR SCHEDULE		
Max. Design Pressure Rating		
	Where water infiltration Requirement is needed	Where water infiltration Requirement is not needed
Positive	Not Approved	+60 PSF
Negative	Not Approved	-60 PSF

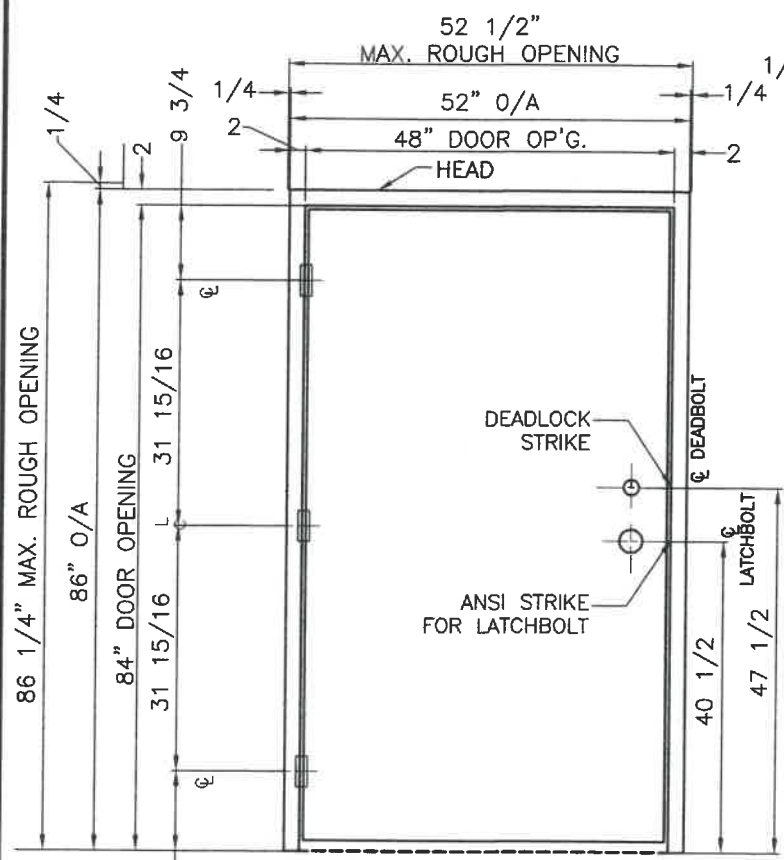
**THIS DRAWING SHALL ONLY BE USED TO OBTAIN PERMITS UNDER THE TEXAS DEPARTMENT OF INSURANCE JURISDICTION**



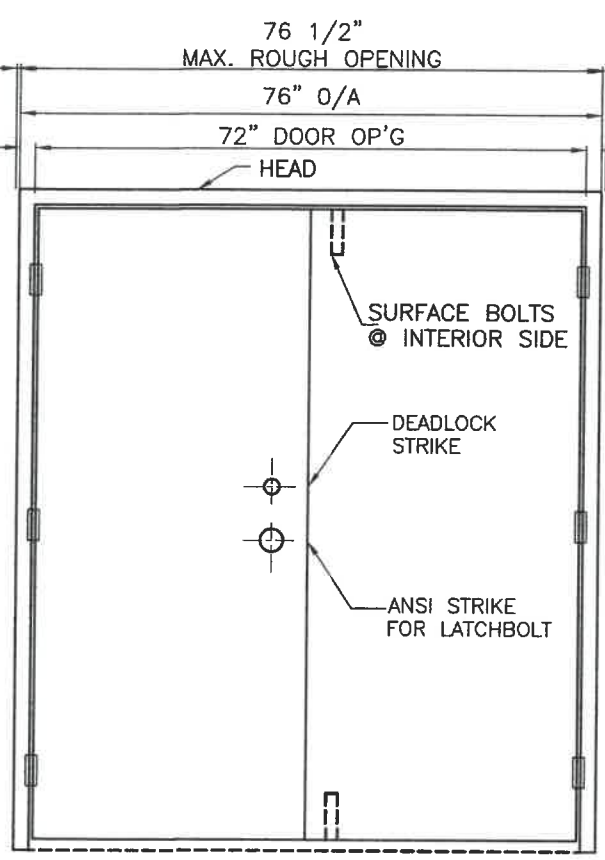
WALTER A. TILLIT Jr P.E.  
 PROFESSIONAL ENGINEER  
 6355 N.W 36 STREET, STE. 305  
 VIRGINIA GARDENS, FL 33166  
 PHONE(305) 871-1530 FAX (305) 871-1531  
 TEXAS LIC. # 90691  
 FIRM REGISTRATION # F-13790

TEXAS DEPARTMENT OF INSURANCE - 2018					
SERIES LS18 FLUSH OUTSWING COMMERCIAL STEEL DOOR - L.M.					DRAWN BY: M.P.
DAYBAR INDUSTRIES LTD					9/30/2021 DATE
50 WEST DRIVE, BRAMPTON, ON CANADA, L6T 2J4 TEL: 905 625-8000 FAX: 905 625-4204					21-127 DRAWING No
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 17-058	9/30/21	3	-	-
2	-	-	4	-	-

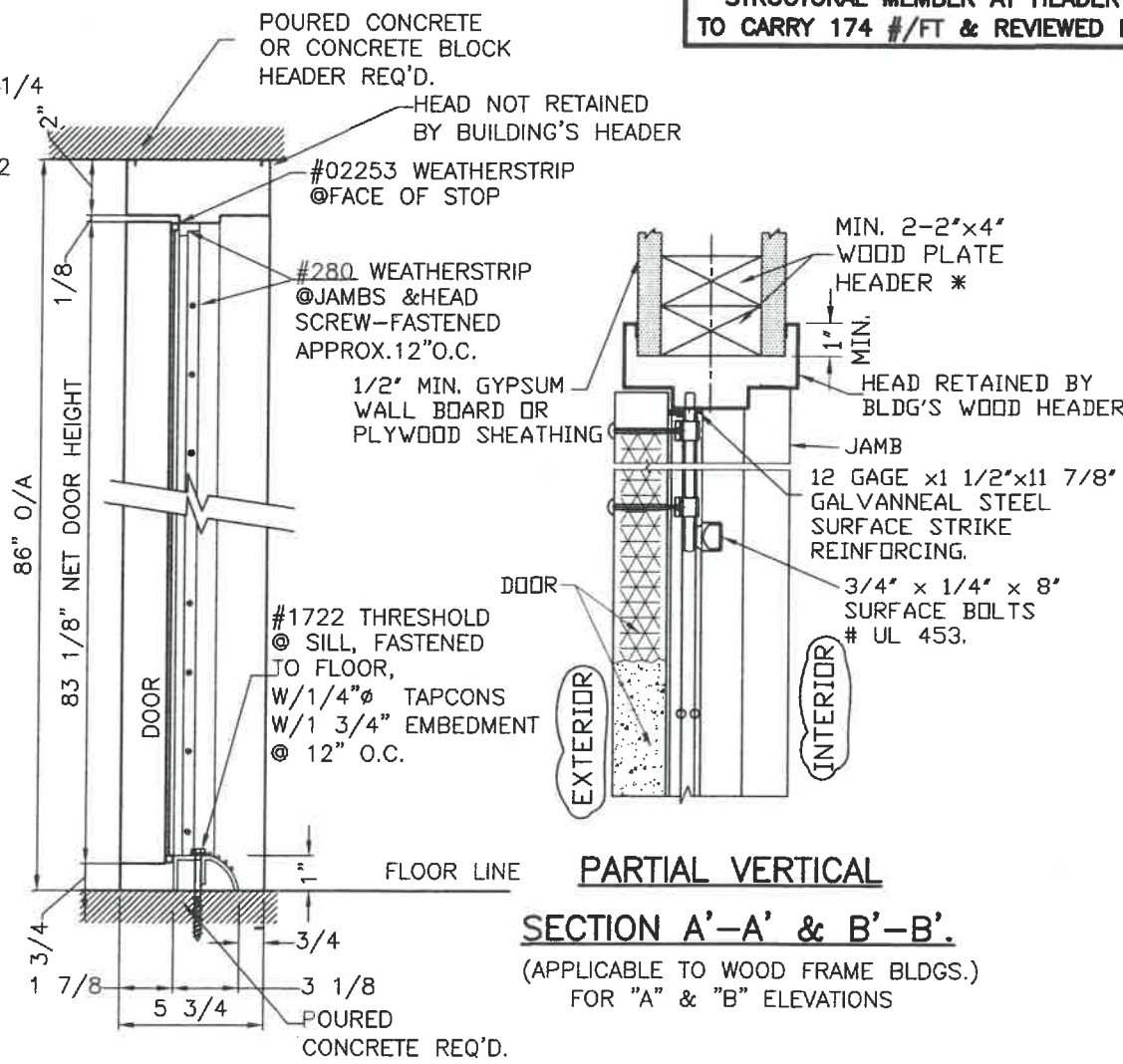
**\* STRUCTURAL MEMBER AT HEADER MUST BE DESIGNED TO CARRY 174 #/FT & REVIEWED BY BUILDING OFFICIAL.**



**ELEVATION "A"**  
SINGLE DOOR ASSEMBLY  
EXTERIOR VIEW (OUTSWING)



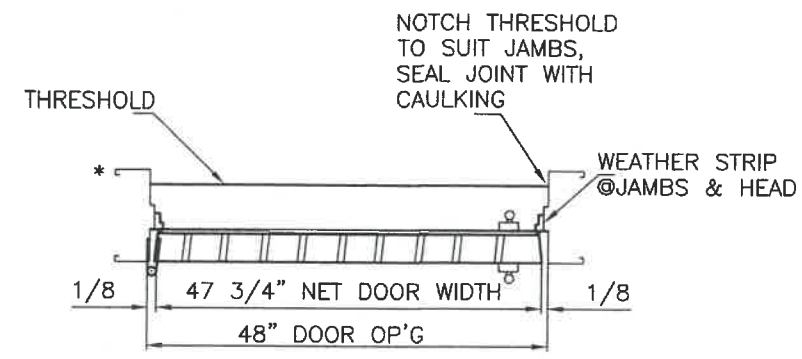
**ELEVATION "B"**  
DOUBLE DOOR ASSEMBLY  
EXTERIOR VIEW (OUTSWING)



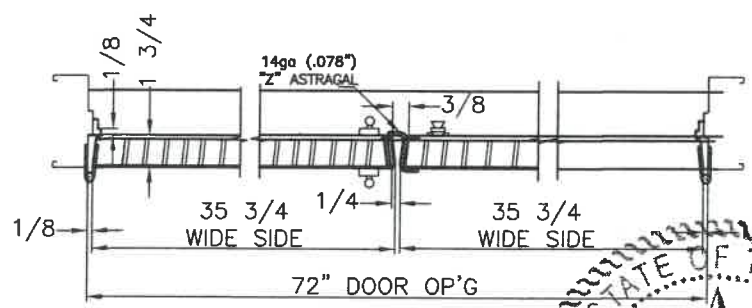
**PARTIAL VERTICAL SECTION A'-A' & B'-B'**  
(APPLICABLE TO WOOD FRAME BLDGS.)  
FOR "A" & "B" ELEVATIONS

- BILL OF MATERIALS:**
- NOTE:**  
ALL STEEL HOT-DIP GALVANIZED TO ASTM A653 (CQ,LFQ), COATING DESIGNATION A25 (ZF75).
- FRAME:**
- JAMBS & HEAD: 16ga (.057" MIN.)
  - HINGE REINF: 10 ga (.134" MIN.)
  - STRIKE/DEADBOLT REINF: 14ga (.075" MIN.)
  - MORTAR GUARDS 22ga (.027").
- DOOR:**
- FACE SHEET: 18ga (.045" MIN.)
  - HINGE REINF: 10ga (.134" MIN.)
  - LOCK REINF, END CHANNELS, CLOSER REINF: 16ga (.057" MIN.)
  - SURFACE BOLT REINF.
  - ASTRAGAL & STRIKE TABS: 14ga (.75" MIN.)
  - PAPER HONEY COMB CORE MF'D BY TENNECO PKG. BONDED TO INSIDE FACES.
- HARDWARE:**
- HINGES-4 1/2"x4" PENROD # PLPTSQSQ
  - LATCHSET-S.PARKER #B FMS 626
  - DEADLOCK-S.PARKER #92160
  - SURFACE BOLTS-3/4"x1/4"x8" #UL453
  - WEATHERSTRIP-AFCO#280,ALUM/VINYL @SECURED W/#6x1/2"S.M.S.
  - +MD # 02253 ADHESIVE BACKED CLOSED CELL FOAM (1/8"x1/2")
  - THRESHOLD-AFCO# 1722, ALUM/VINYL SECURED W/ 1/4" TAPCONS W/1 3/4" EMBEDMENT OR #8x2" F.H. SMS. OR #10x2" F.H.W.S.
  - DEADLOCK STRIKE, 0.095" THK. STEEL, NICKEL FINISH, ATTACHED W/ (2) #8-32 MS x 3/4".
  - ANSI STRIKE FOR LATCHBOLT, 0.095" THK. STEEL, NICKEL FINISH, ATTACHED W/ (2) #12-24 MS x 1/2".

**VERTICAL SECTION:**  
FOR "A" & "B" ELEVATIONS



**HORIZONTAL SECTION "A"**



**HORIZONTAL SECTION "B"**

\* SEE SHEET NUMBER 3 FOR JAMB ANCHORING DETAILS

**HOLLOW METAL DOOR ASSEMBLY DETAILS**

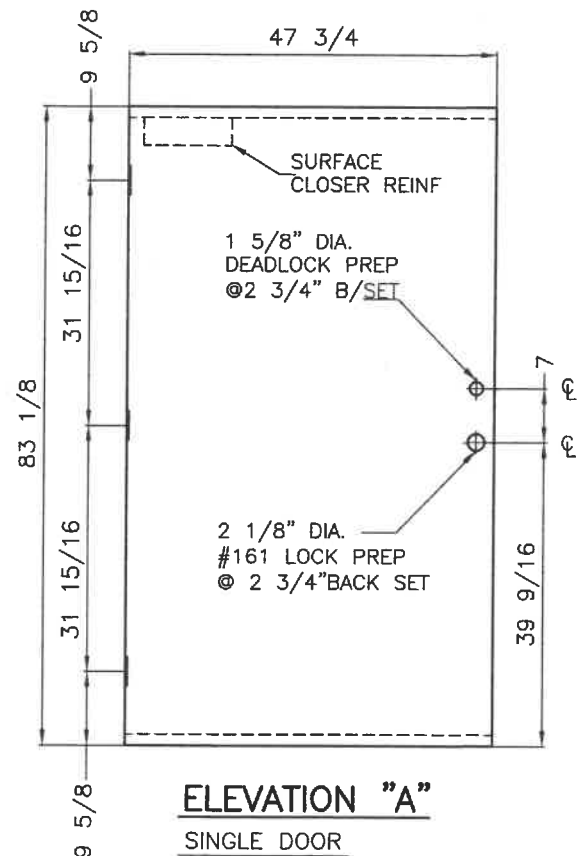
STATE OF TEXAS  
WALTER A. TILLIT, JR.  
90691  
LICENSED PROFESSIONAL ENGINEER  
11/2021  
P.E. SEAL/SIGNATURE/DATE

WALTER A. TILLIT Jr P.E.  
PROFESSIONAL ENGINEER  
6355 N.W. 36 STREET, STE. 305  
VIRGINIA GARDENS, FL 33166  
PHONE(305) 871-1530 FAX (305) 871-1531  
TEXAS LIC. # 90691  
FIRM REGISTRATION # F-13790

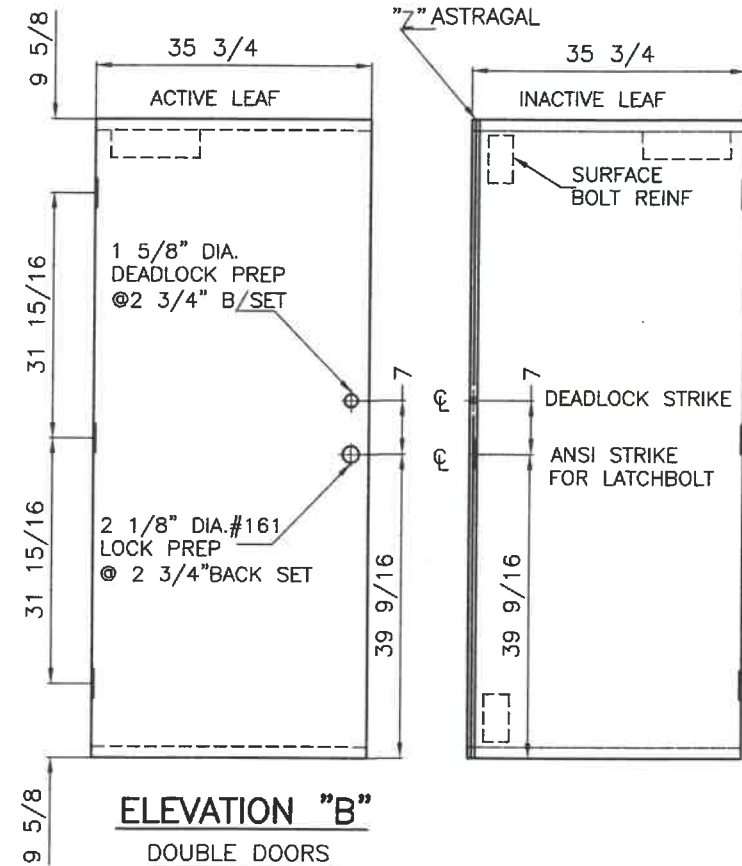
TEXAS DEPARTMENT OF INSURANCE - 2018					
SERIES LS18 FLUSH OUTSWING COMMERCIAL STEEL DOOR - L.M.				DRAWN BY: M.P.	
DAYBAR INDUSTRIES LTD				9/30/2021 DATE	
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REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
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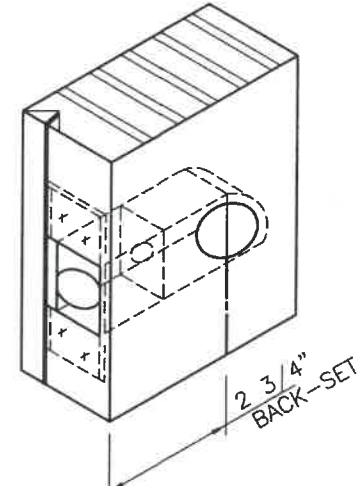
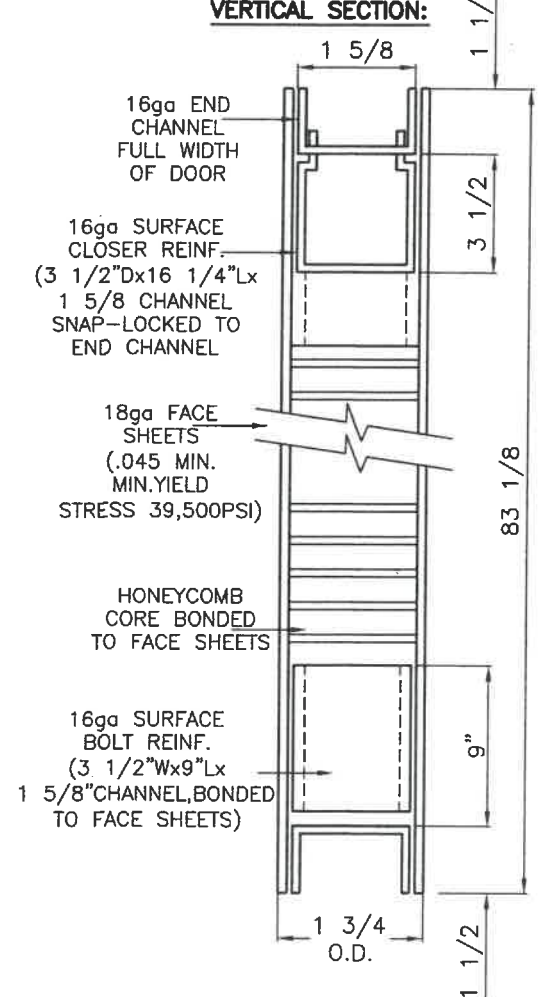
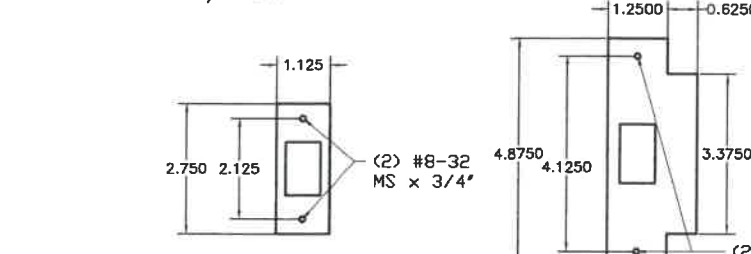
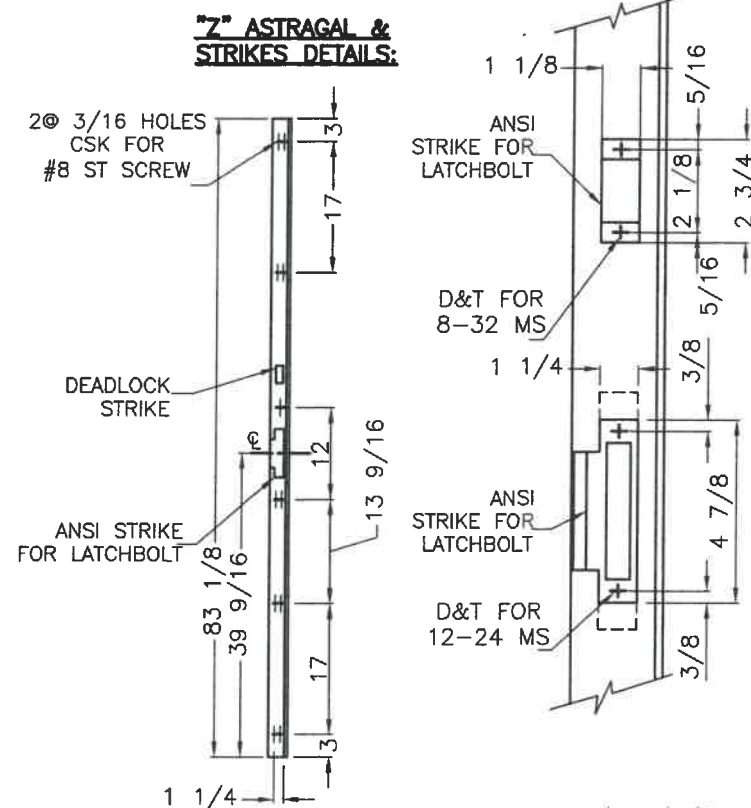
PROJECTION WELDED TO BOTH FACE SHEETS 3" O.C.



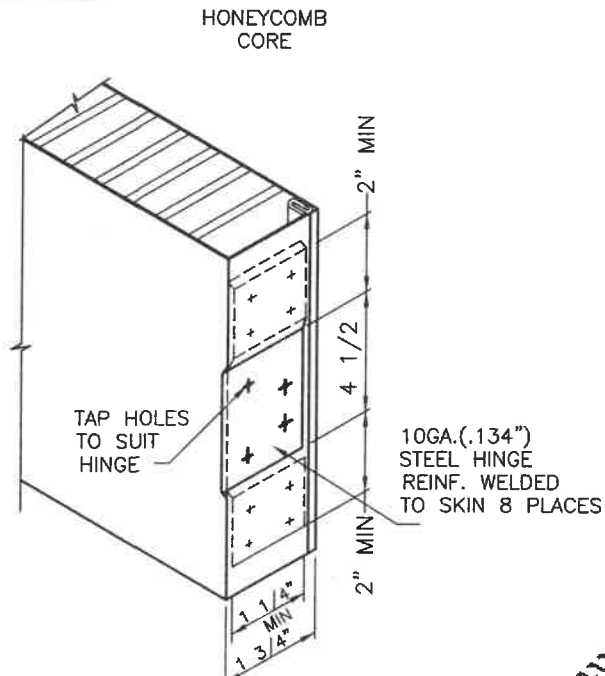
**ELEVATION "A"**  
SINGLE DOOR



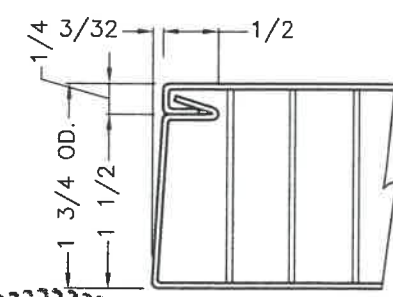
**ELEVATION "B"**  
DOUBLE DOORS



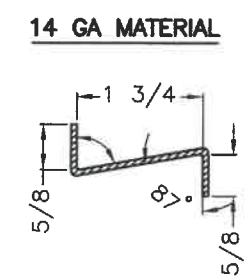
# 161  
STD. CYLINDRICAL  
LOCK PREPARATION  
(ANSI A115.2)  
  
(DEADLOCK  
PREPARATION  
SIMILAR).  
  
SEE DWG. NO.4  
FOR REINFORCING  
DETAILS



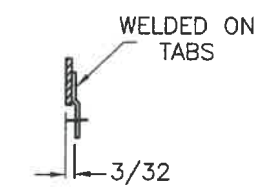
STD. HINGE  
PREPARATION



VERTICAL EDGE  
DETAIL



14 GA MATERIAL

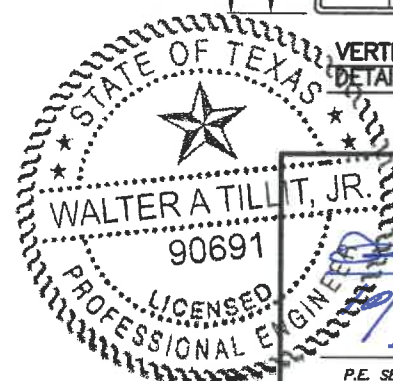


WELDED ON  
TABS  
  
STRIKE TABS

**BILL OF MATERIALS:**

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SURFACE BOLT REINF.  
- ASTRAGAL, & STRIKE  
TABS: 14ga (.075" MIN.).  
- PAPER HONEY COMB CORE MF'D BY  
TENNECO PKG. BONDED TO INSIDE FACES.

**HOLLOW METAL DOOR  
ASSEMBLY DETAILS**



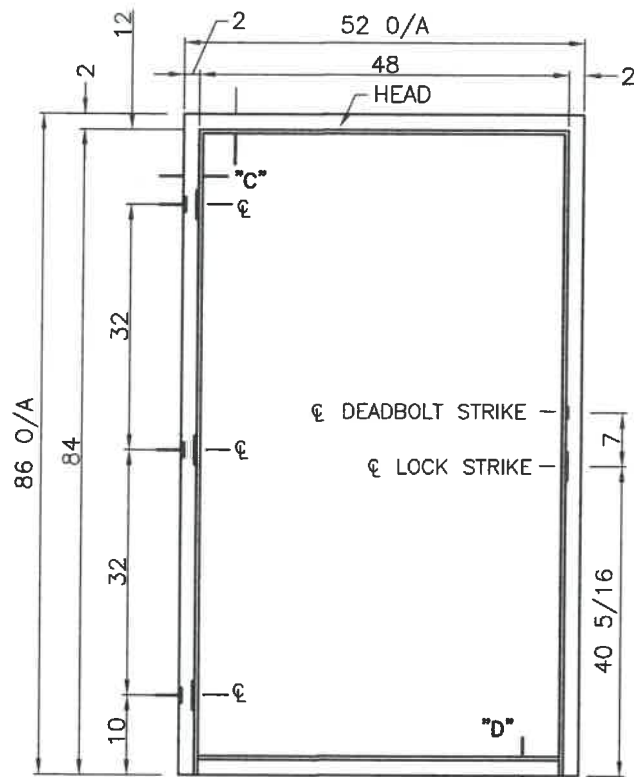
WALTER A. TILLIT Jr. P.E.  
PROFESSIONAL ENGINEER  
6355 N.W. 36 STREET, STE. 305  
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TEXAS LIC. # 90691  
FIRM REGISTRATION # F-13790

TEXAS DEPARTMENT OF INSURANCE - 2018

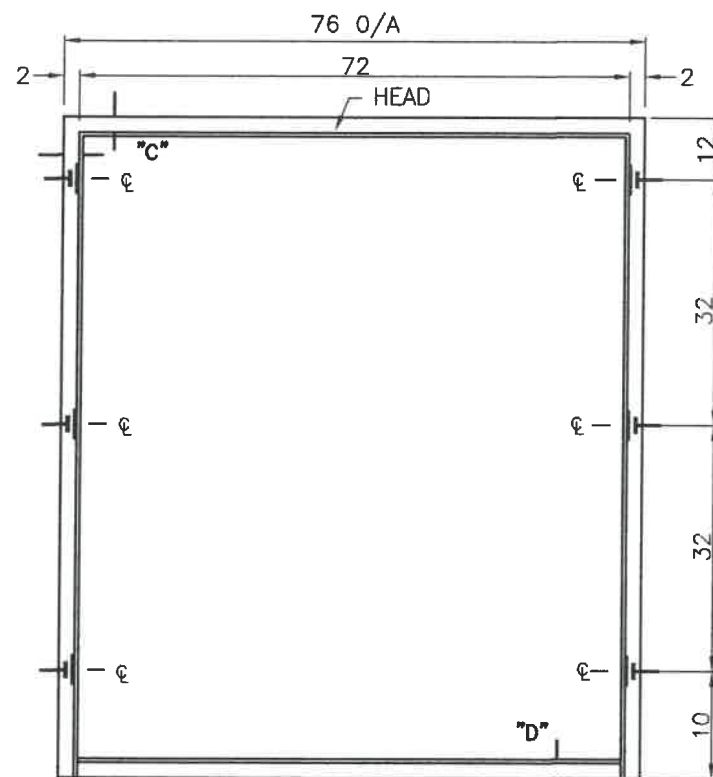
**SERIES LS18 FLUSH OUTSWING  
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**DAYBAR INDUSTRIES LTD**  
50 WEST DRIVE, BRAMPTON,  
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1	OLD 17-058	9/30/21	3	-	-
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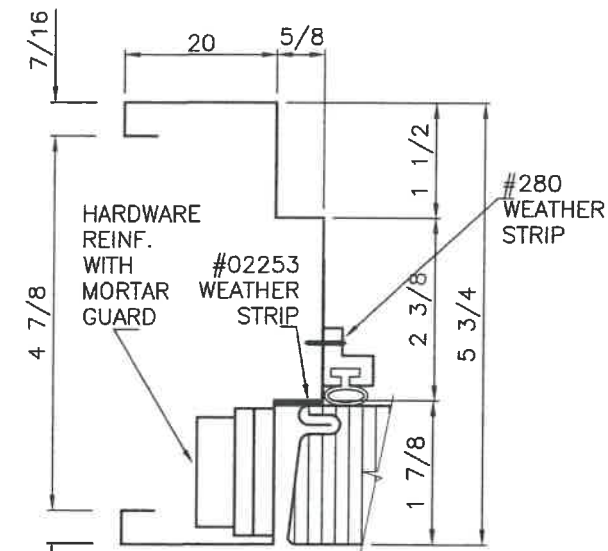
DRAWN BY:  
M.P.  
  
9/30/2021  
DATE  
  
21-127  
DRAWING No  
  
SHEET 2 OF 5



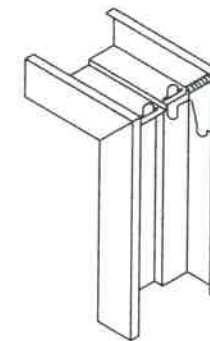
**ELEVATION "A"**  
SINGLE DOOR FRAME



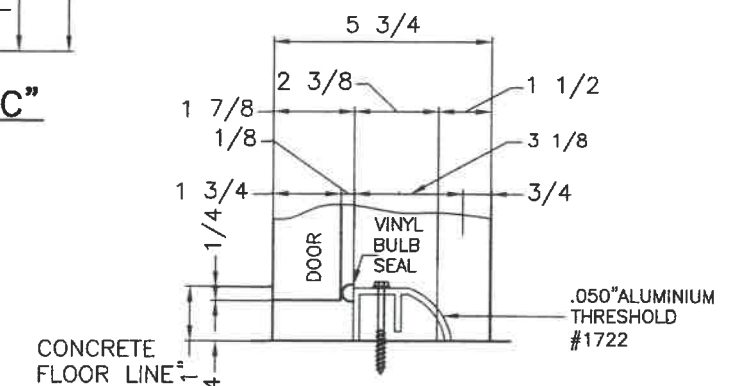
**ELEVATION "B"**  
DOUBLE DOOR FRAME  
JAMB ANCHOR LOCATION



**JAMB SECTION "C"**  
(HEAD SIMILAR)  
SEE SHEET NO. 5 FOR REINFORCING DETAILS



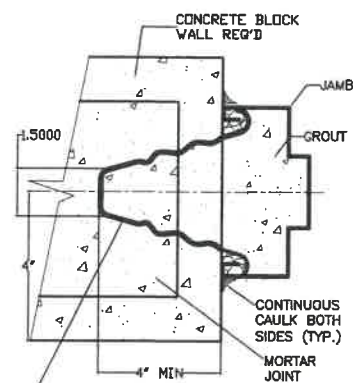
**WELDED CORNER DETAIL**  
DIEMITTED CORNER CONT. WELDED INSIDE FACES & AT RETURNS



**SILL SECTION "D"**  
#1722 THRESHOLD SCREWED TO SILL W/ 1 1/4" Ø TAPCONS W/ 1 3/4" EMBEDMENT @ 12" O.C.

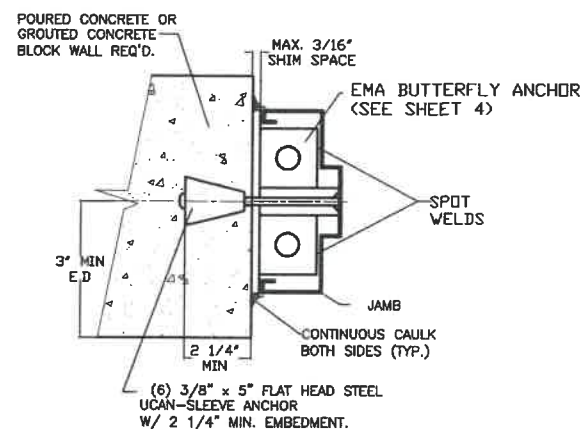
**JAMB ANCHORING DETAILS:**

(NO ANCHORS IN HEAD ARE REQUIRED WHEN HEADER & JAMBS SUBSTRATE IS CONCRETE OR GROUTED CONCRETE BLOCK HEAD IS REQ'D. TO BE RETAINED BY EXISTING BUILDINGS WOOD HEADER, WHEN HEADER & JAMBS SUBSTRATE IS WOOD)

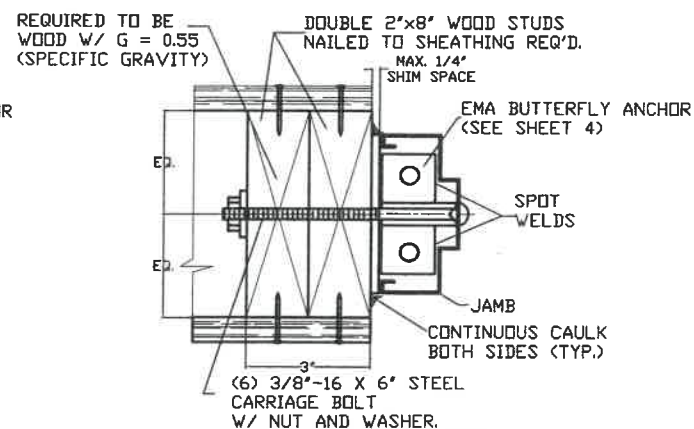


(6) MASONRY WIRE ANCHORS (0.175" Ø, SEE SHEET 4) IN HORIZ. MORTAR JOINTS; FILL JAMBS SOLID WITH GROUT PER ASTM C476 W/ MIN. COMPRESSION STRENGTH OF 2.5 KSI.

**WIRE ANCHOR INSTALLATION TO MASONRY WALLS**



**INSTALLATION OF UCAN SLEEVE ANCHORS TO MASONRY WALLS**



**INSTALLATION OF 3/8" CARRIAGE BOLT TO WOOD FRAME WALLS**

**BILL OF MATERIALS:**

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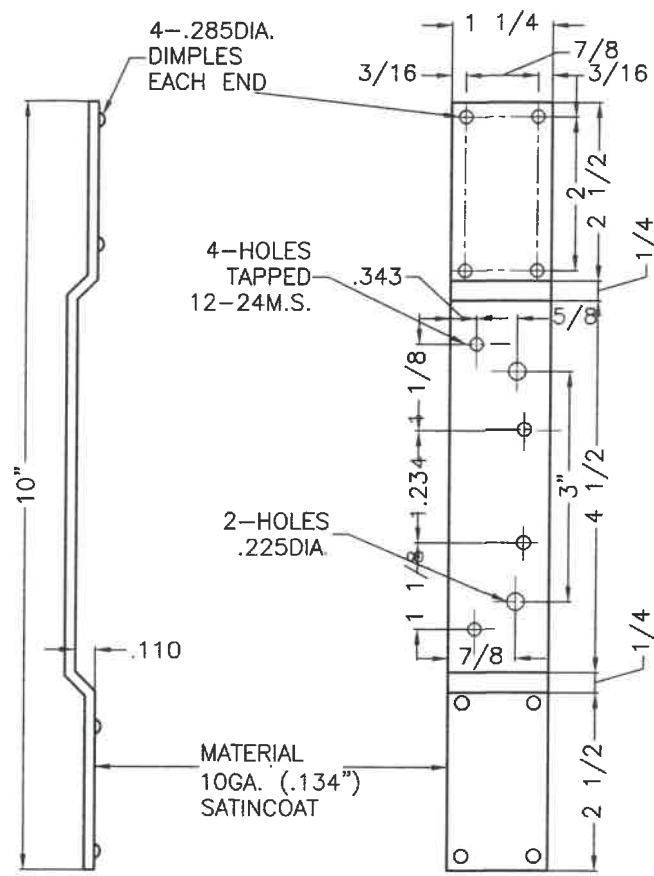
**HOLLOW METAL DOOR ASSEMBLY DETAILS**

STATE OF TEXAS  
WALTER A. TILLIT, JR.  
90691  
P.E. SEAL/SIGNATURE/DATE

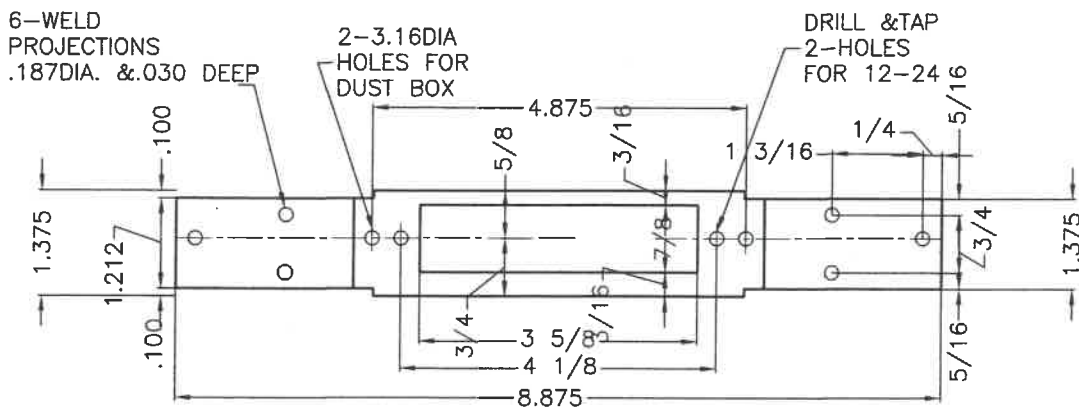
WALTER A. TILLIT Jr P.E.  
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REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
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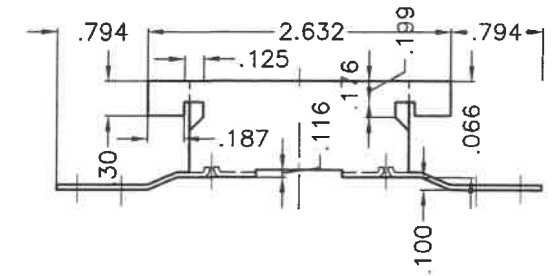




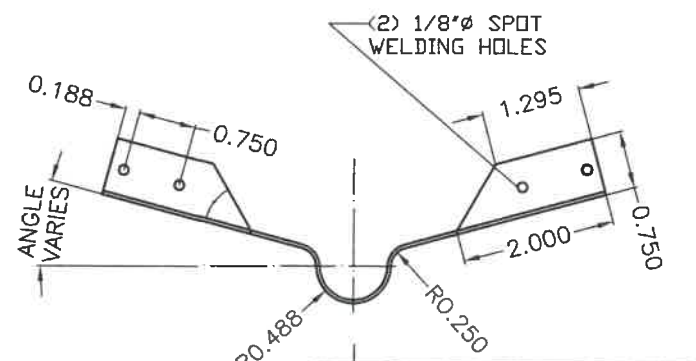
**DOOR HINGE REINFORCING**



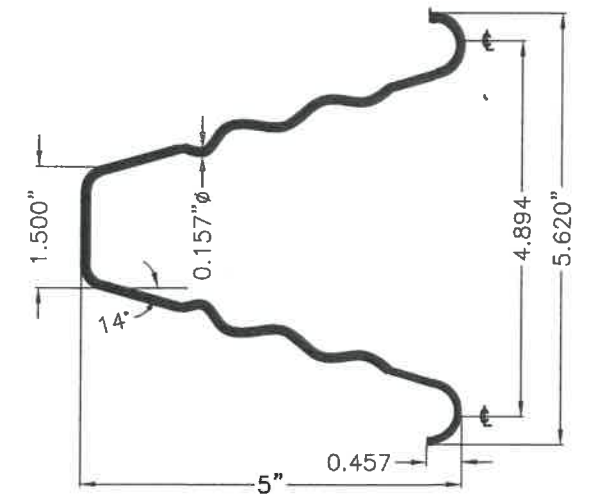
**4 7/8" A.S.A. STRIKE REINF. BAR**  
 MATERIAL 12GA. (.097") SATINCOAT (ANSI A115.1,2)



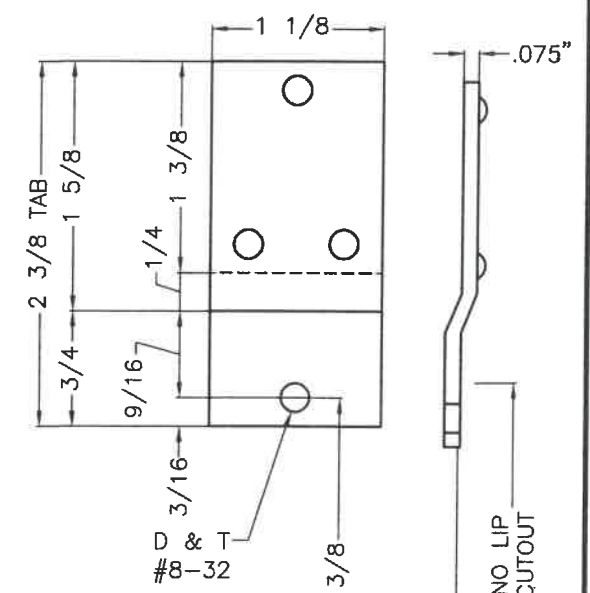
**#161 EDGE REINFORCING**  
 MAT. .045 SATINCOAT



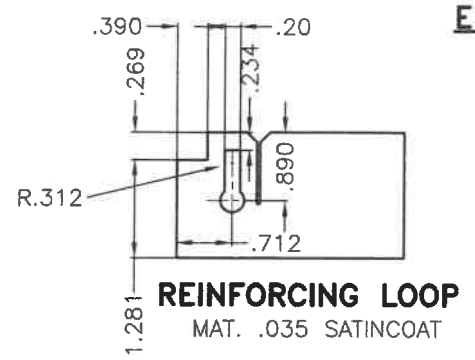
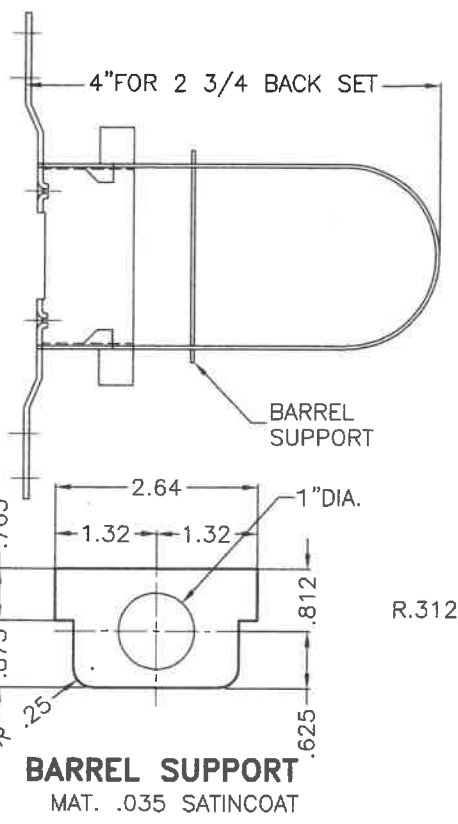
**EMA BUTTERFLY ANCHOR**  
 MATERIAL: 18 GA SATIN COAT



**WIRE ANCHOR**  
 STEEL WIRE ANCHORS  
 (0.175" DIA, 9 1/2" LONG) IN HORIZ.  
 Fu Min.=95.9 Ksi, Fy Min.=40.2 Ksi



**2 3/4" DEADBOLT STRIKE REINFORCEMENT**  
 (ANSI A115.17)



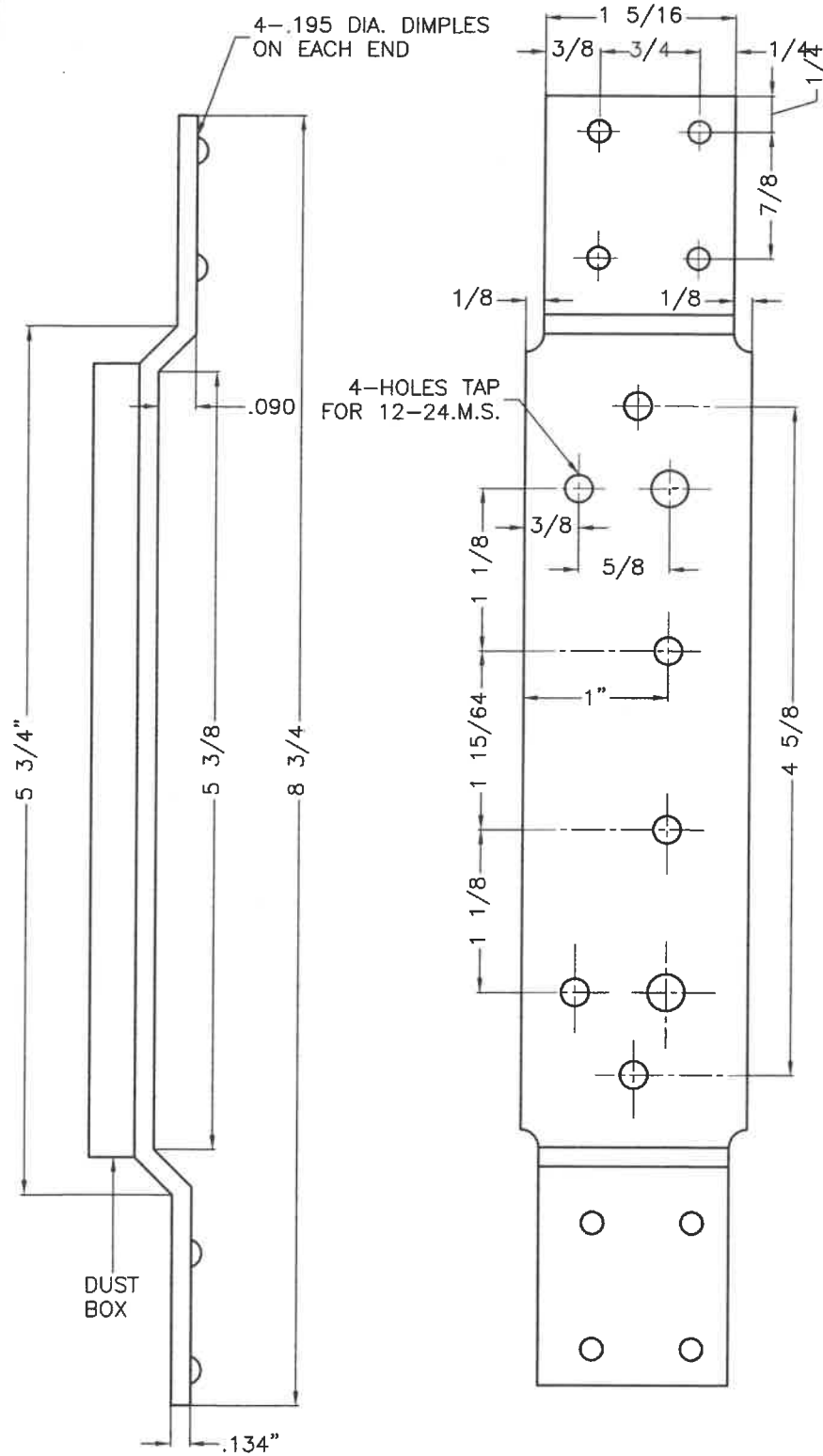
**HOLLOW METAL DOOR COMPONENT DETAILS**



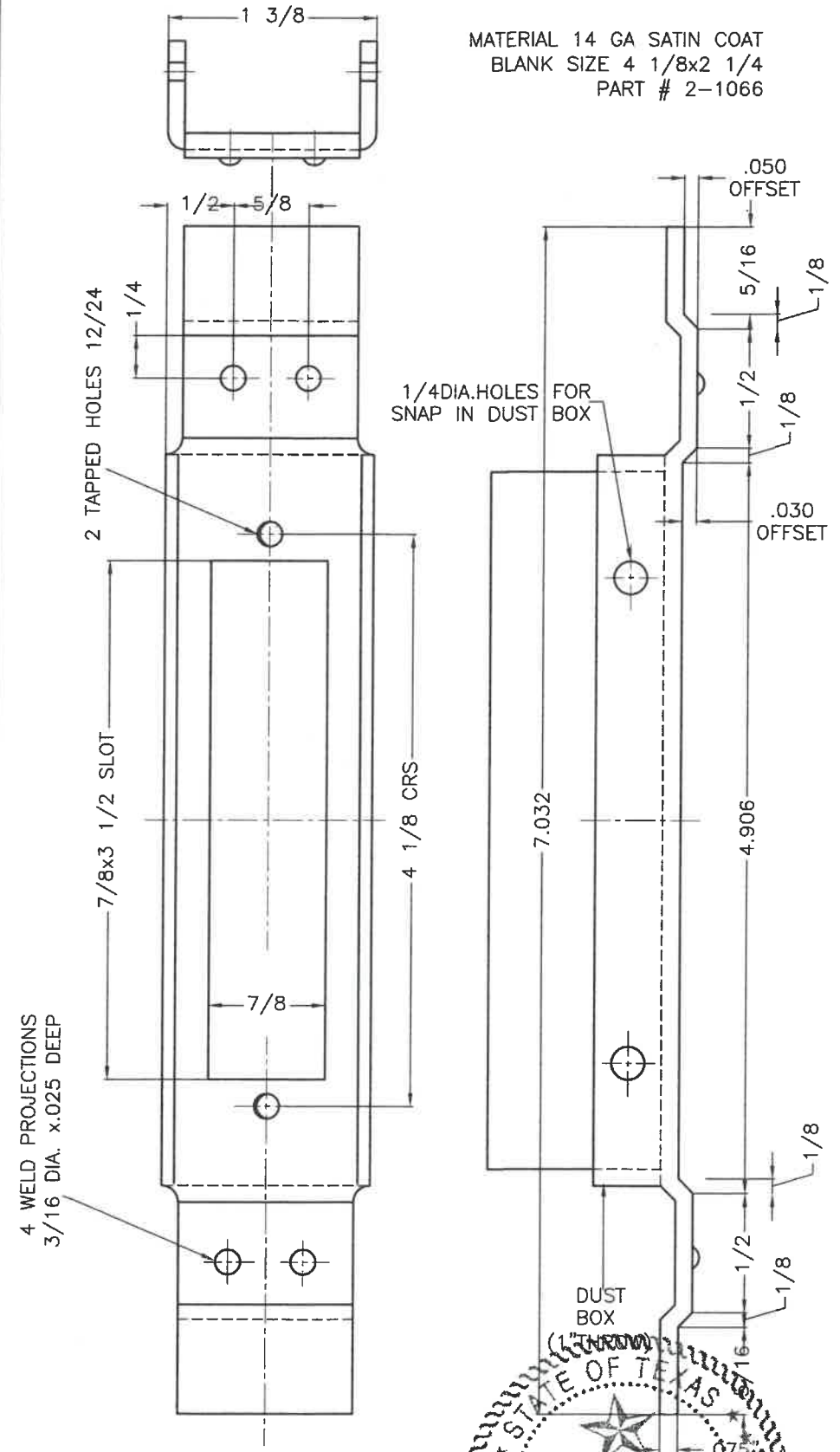
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1	OLD 17-05B	8/30/21	3	-	-
2	-	-	4	-	-

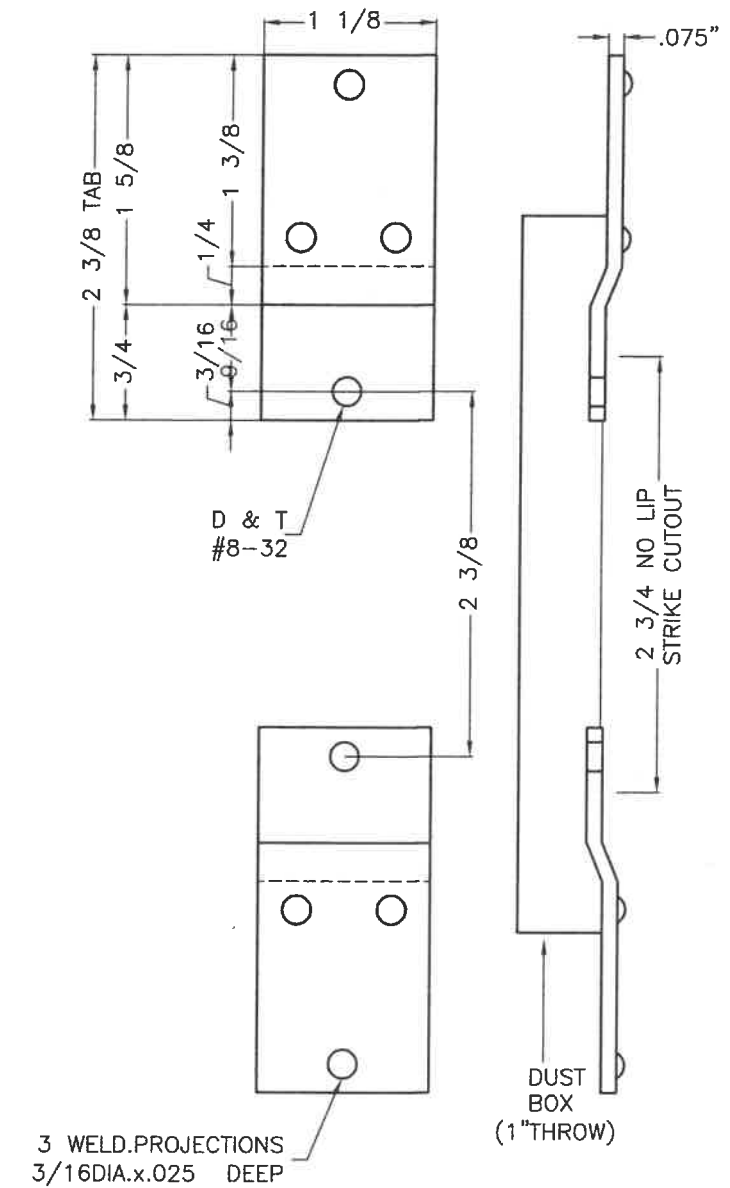
SHEET 4 OF 5



FRAME HINGE REINFORCING - 4 1/2"



4 7/8" STRIKE REINFORCEMENT - ANSI A115.1,2



2 3/4" DEADBOLT STRIKE REINFORCEMENT (ANSI A115.17)

STATE OF TEXAS  
WALTER A. TILLIT, JR.  
90691  
PROFESSIONAL ENGINEER  
P.E. SEAL/SIGNATURE/DATE

WALTER A. TILLIT Jr P.E.  
PROFESSIONAL ENGINEER  
6355 N.W. 36 STREET, STE. 305  
VIRGINIA GARDENS, FL 33166  
PHONE(305) 871-1530 FAX (305) 871-1531  
TEXAS LIC. # 90691  
FIRM REGISTRATION # F-13790

TEXAS DEPARTMENT OF INSURANCE - 2018					
SERIES LS18 FLUSH OUTSWING COMMERCIAL STEEL DOOR - L.M.			DRAWN BY: M.P.		
DAYBAR INDUSTRIES LTD			9/30/2021 DATE		
50 WEST DRIVE, BRAMPTON, ON CANADA, L7T 2J4			21-127 DRAWING No		
TEL: 905 625-8000 FAX: 905 625-4204			SHEET 5 OF 5		
REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 17-058	8/30/21	3	-	-
2	-	-	4	-	-

HOLLOW METAL FRAME COMPONENT DETAILS