

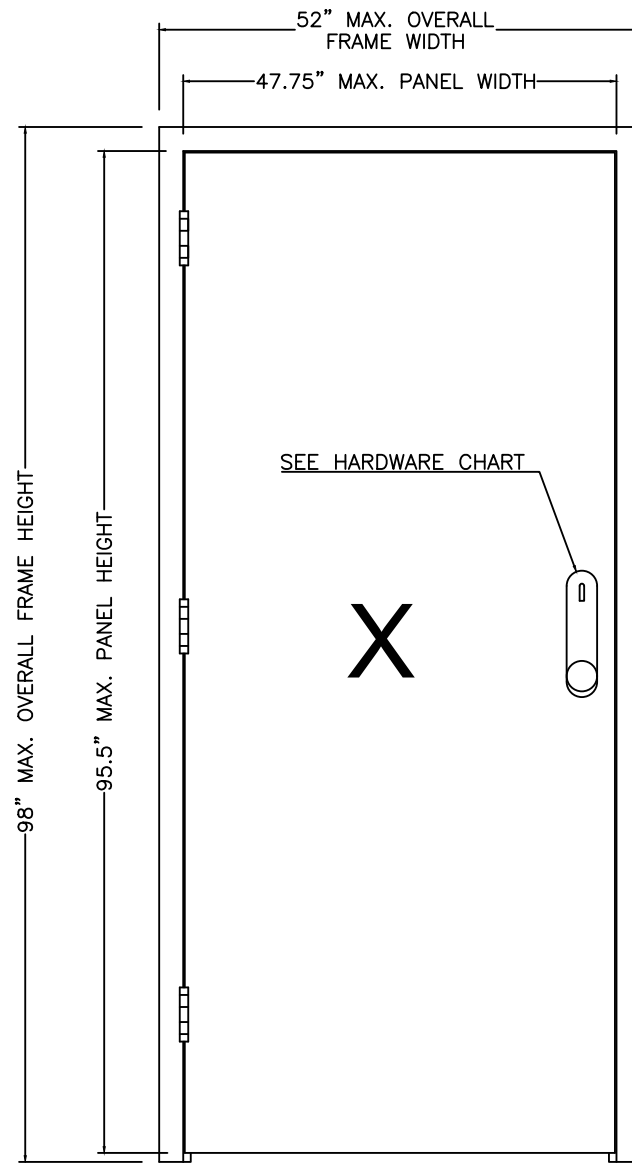


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 Wilmington, NC 28405
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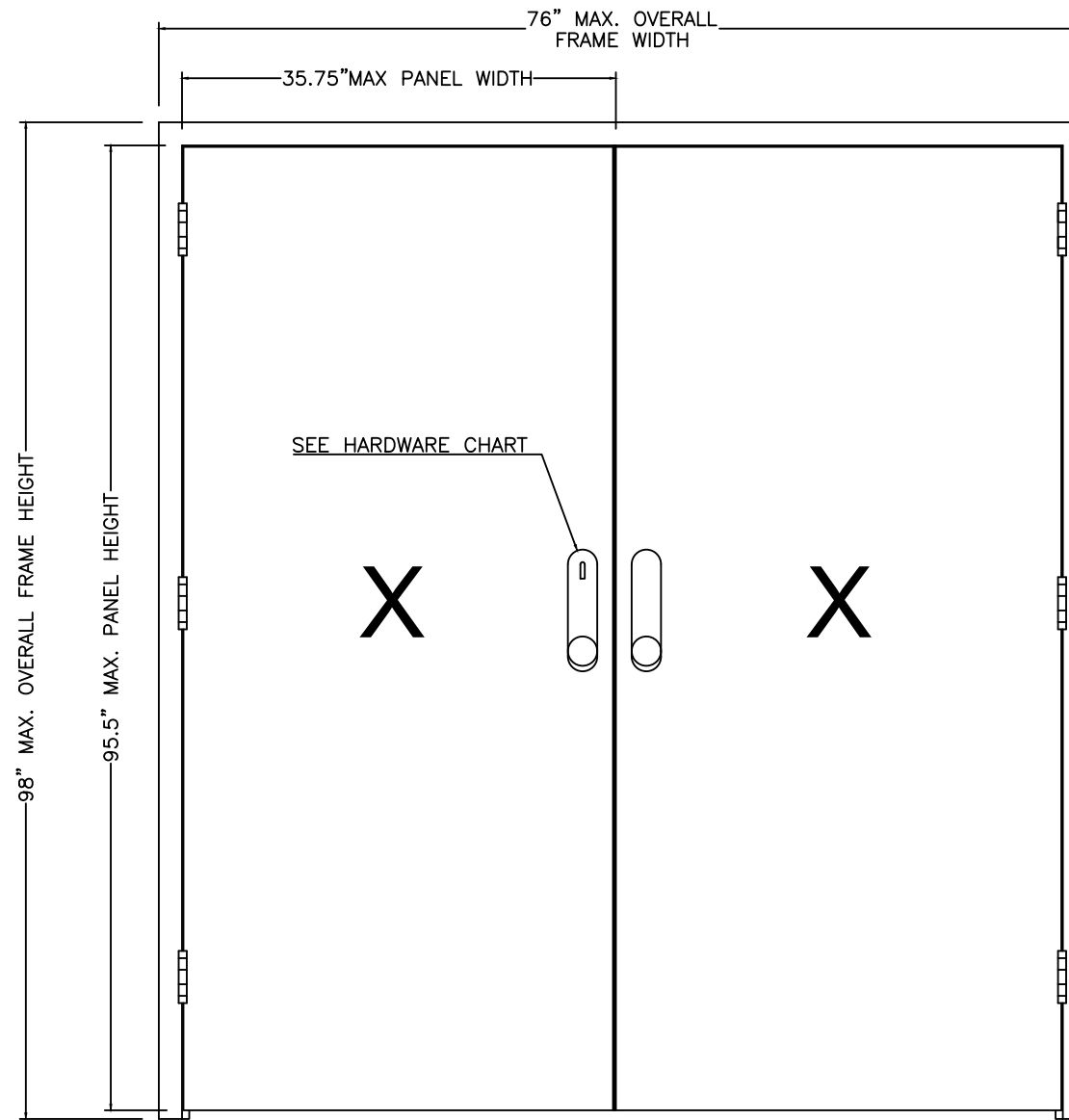
SERIES HSS STEEL DOOR, OUTSWING, IMPACT (X, XX)

GENERAL NOTES

- THIS PRODUCT HAS BEEN EVALUATED AND IS IN COMPLIANCE WITH THE 7TH EDITION (2020) FLORIDA BUILDING CODE (FBC) REQUIREMENTS INCLUDING THE HIGH VELOCITY HURRICANE ZONE (HVHZ) AND HAS BEEN EVALUATED TO THE FOLLOWING.
 - TAS 201-1994
 - TAS 202-1994
 - TAS 203-1994
- PRODUCT ANCHORS SHALL BE AS LISTED AND SPACED AS SHOWN ON DETAILS. ANCHOR EMBEDMENT TO BASE MATERIAL SHALL BE BEYOND WALL DRESSING OR STUCCO.
- WHEN USED IN THE "HVHZ" THIS PRODUCT COMPLIES WITH SECTION 1626 OF THE FLORIDA BUILDING CODE AND DOES NOT REQUIRE AN IMPACT RESISTANT COVERING.
- WHEN USED IN AREAS OUTSIDE OF THE "HVHZ" REQUIRING WIND BORNE DEBRIS PROTECTION THIS PRODUCT COMPLIES WITH SECTION 1609.1.2 OF THE FBC AND DOES NOT REQUIRE AN IMPACT RESISTANT COVERING THIS PRODUCT MEETS MISSILE LEVEL "D" AND INCLUDES WIND ZONE 4 AS DEFINED IN ASTM E1996 AND SECTION 1609.1.2.2 OF THE FBC.
- SITE CONDITIONS THAT DEVIATE FROM THE DETAILS OF THIS DRAWING REQUIRE FURTHER ENGINEERING ANALYSIS BY A LICENSED ENGINEER OR REGISTERED ARCHITECT.
- ALL STEEL SHALL BE PROTECTED AS SPECIFIED IN SECTION 2222.6 OF THE FBC.
- SEE MIAMI-DADE NOA NO. 20-1211.03 FOR CARPENTER CO. PREFORMED BLOCK TYPE EPS INSULATION COMPONENT APPROVAL.
- SEE SHEET 9 FOR FRAME AND PANEL CONSTRUCTION DETAILS.
- POWER TRANSFER PREPS, DOOR POSITION SWITCH AND ELECTRICAL HINGE PREPS ARE ALLOWED AS LONG AS THE STRUCTURAL INTEGRITY OF THE DOOR PANEL IS NOT AFFECTED.



① SINGLE OPAQUE STEEL DOOR



② DOUBLE OPAQUE STEEL DOOR

STEEL DOOR SKIN: 18GA. A60 GALV. (MIN. 0.047 THK., Fy=36,800 PSI MIN.)
 CORE MATERIAL: EPS FOAM (POLYSTYRENE - 1.0PCF MIN. DENSITY)

TABLE OF CONTENTS	
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1	TYPICAL ELEVATIONS, DESIGN PRESSURES AND GENERAL NOTES
2	DOOR PANEL DETAILS
3	ELEVATION & HORIZONTAL CROSS SECTIONS - X DOOR
4	ELEVATION & HORIZONTAL CROSS SECTIONS - XX DOOR
5	VERTICAL CROSS SECTIONS - X & XX DOORS
6	ANCHORING DETAILED
7	BILL OF MATERIALS AND COMPONENTS
8	PANEL AND FRAME CONSTRUCTION DETAILS

DOOR TYPES	MAXIMUM OVERALL DIMENSION	DESIGN PRESSURE (PSF)	
		POSITIVE	NEGATIVE
SINGLE DOOR	52" x 98"	+47	- 47
DOUBLE DOOR	76" x 98"	+47	- 47

IMPACT RATING: LARGE AND SMALL MISSILE - HVHZ & WIND ZONE 4, MISSILE LEVEL D

PROJECT # 420-1002

HMF EXPRESS
 2501 NORTHCHASE PARKWAY SE
 WILMINGTON, NC 28405

TITLE: SERIES HSS STEEL DOOR, OUTSWING, IMPACT (X, XX)
 TYP. ELEVATIONS, DESIGN PRESSURES AND GENERAL NOTES

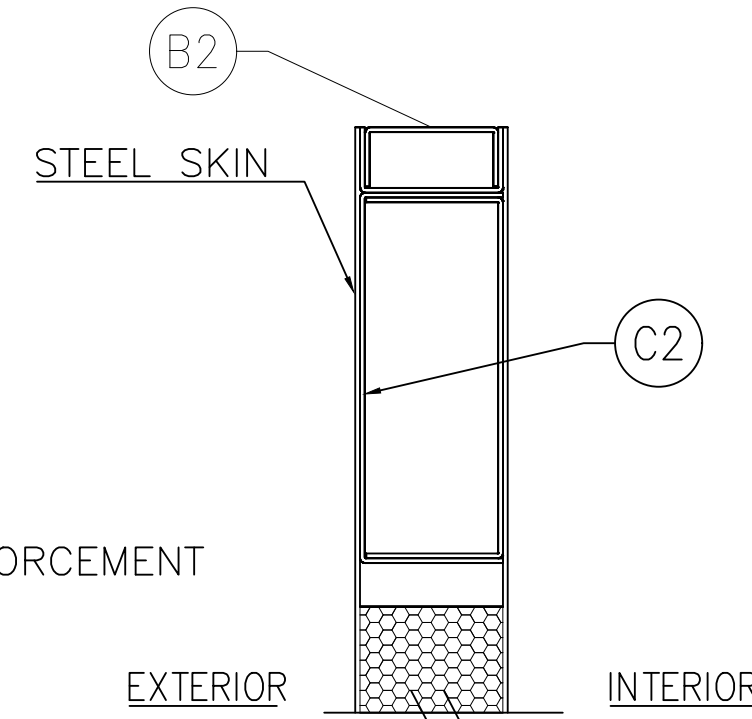
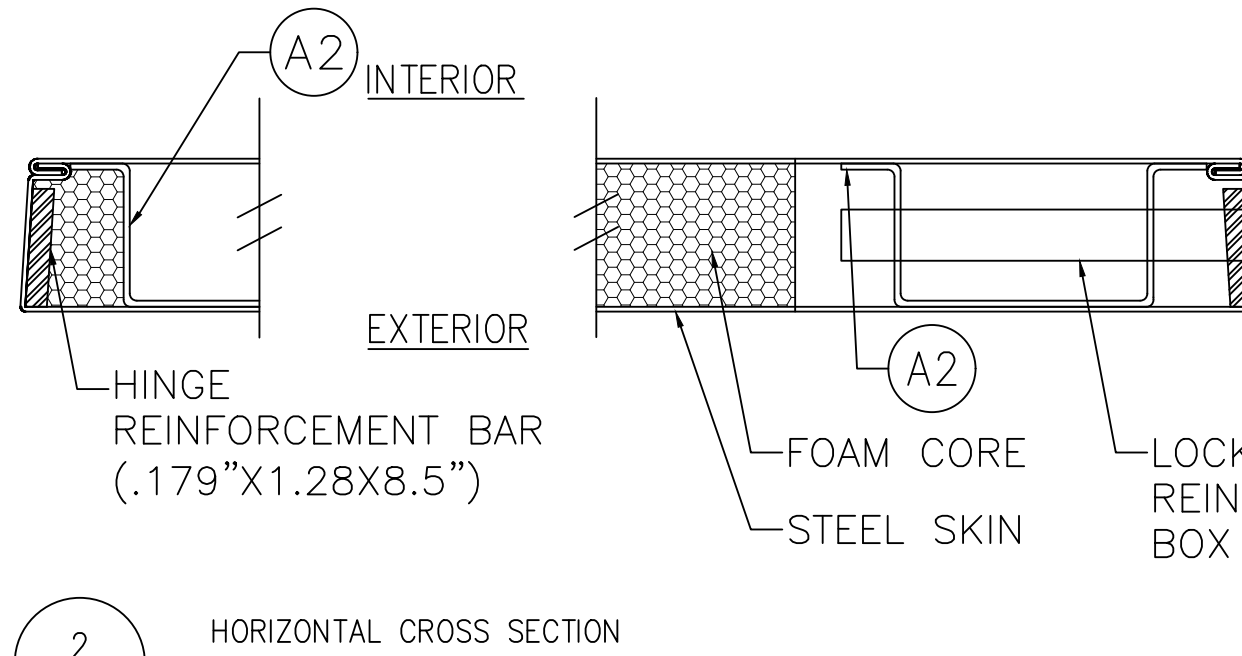
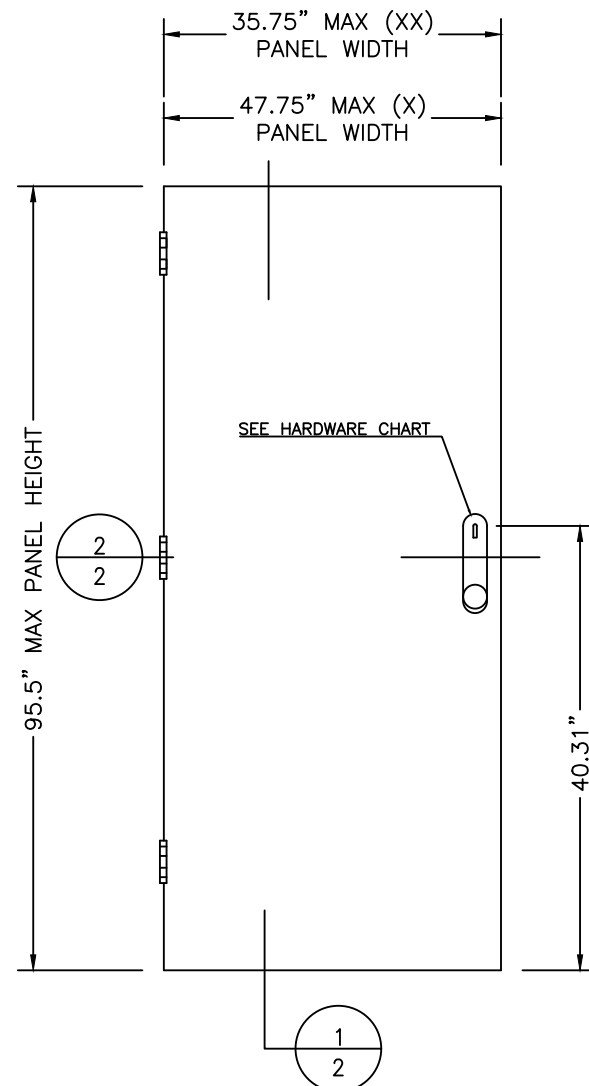
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DRAWING NO.:	HMF0002
SCALE:	N.T.S.
REV:	A
STREET:	1 OF 8



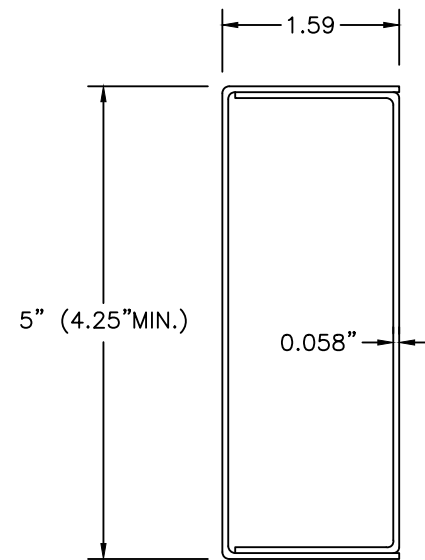
Robert J. Amoruso, P.E.
 Florida P.E. No. 49752



REV	DESCRIPTION	DATE	BY
A	UPDATE TO 2020 FBC	8/4/21	RJA

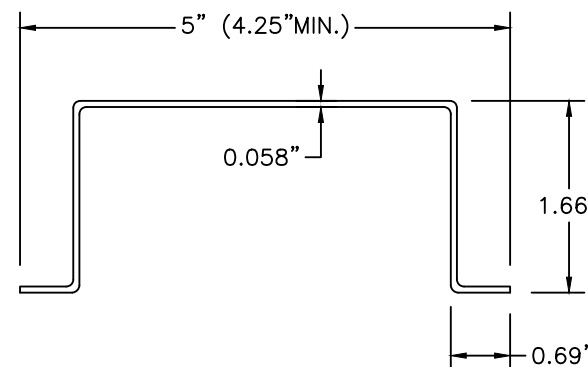


1 SINGLE OPAQUE STEEL DOOR
 STEEL DOOR SKIN: 18GA. A60 GALV.
 (MIN. 0.047" THK., Fy=36,800psi MIN.)
 CORE MATERIAL: EPS FOAM
 (POLYSTYRENE - 1.0 PCF MIN. DENSITY)



B2 CHANNEL BOTTOM REINFORCEMENT
 A60 GALV. STEEL

C2 BOX CHANNEL TOP REINFORCEMENT
 A60 GALV. STEEL

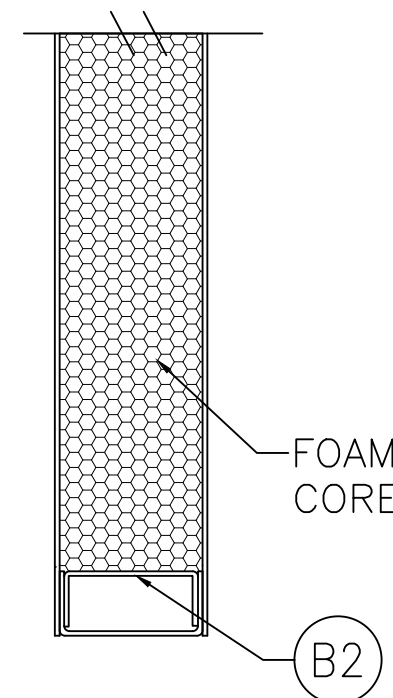


A2 RIB STIFFENER
 A60 GALV. STEEL

1 VERTICAL CROSS SECTION
2

HARDWARE CHART		
X OR XX DOOR	MANUFACTURER	MODEL
X & XX (W/SURFACE BOLTS)	SCHLAGE	LOCK: D-SERIES DEADBOLT: D100
X & XX (W/SURFACE BOLTS)	SCHLAGE	MORTISE LOCK: L9457 W/DEADBOLT
X & XX (W/SURFACE BOLTS)	VON DUPRIN	LOCK: 9975 PANIC EXIT DEVICE W/ MORTISE LOCK (575 STRIKE PLATE) *
X & XX (W/SURFACE BOLTS)	VON DUPRIN	LOCK: 98NL PANIC EXIT DEVICE (499 STRIKE PLATE) *
X	SCHLAGE	SCHLAGE GRADE 1 L9000 MORTISE LOCK SERIES WITH ASA STRIKE (4-7/8")
X	VON DUPRIN	VON DUPRIN GRADE 1 RIM EXIT WITH RIM EXIT NO. 98/99 SERIES
XX (W/SURFACE BOLTS)	SCHLAGE	SCHLAGE GRADE 1 L9000 MORTISE LOCK SERIES WITH ASA (4-7/8") STRIKE AND SURFACE BOLTS
XX	VON DUPRIN	VON DUPRIN SVR EXIT DEVICES AT BOTH DOORS, GRADE 1, NO. 9827/9927 SERIES
XX	VON DUPRIN	VON DUPRIN GRADE 1 RIM EXIT X RIM EXIT NO. 98/99 SERIES WITH HH9954 HARDWARE MULLION

* PANIC EXIT DEVICE FOR USE ON ONE ACTIVE PANEL ONLY.



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PROJECT # 420-1002

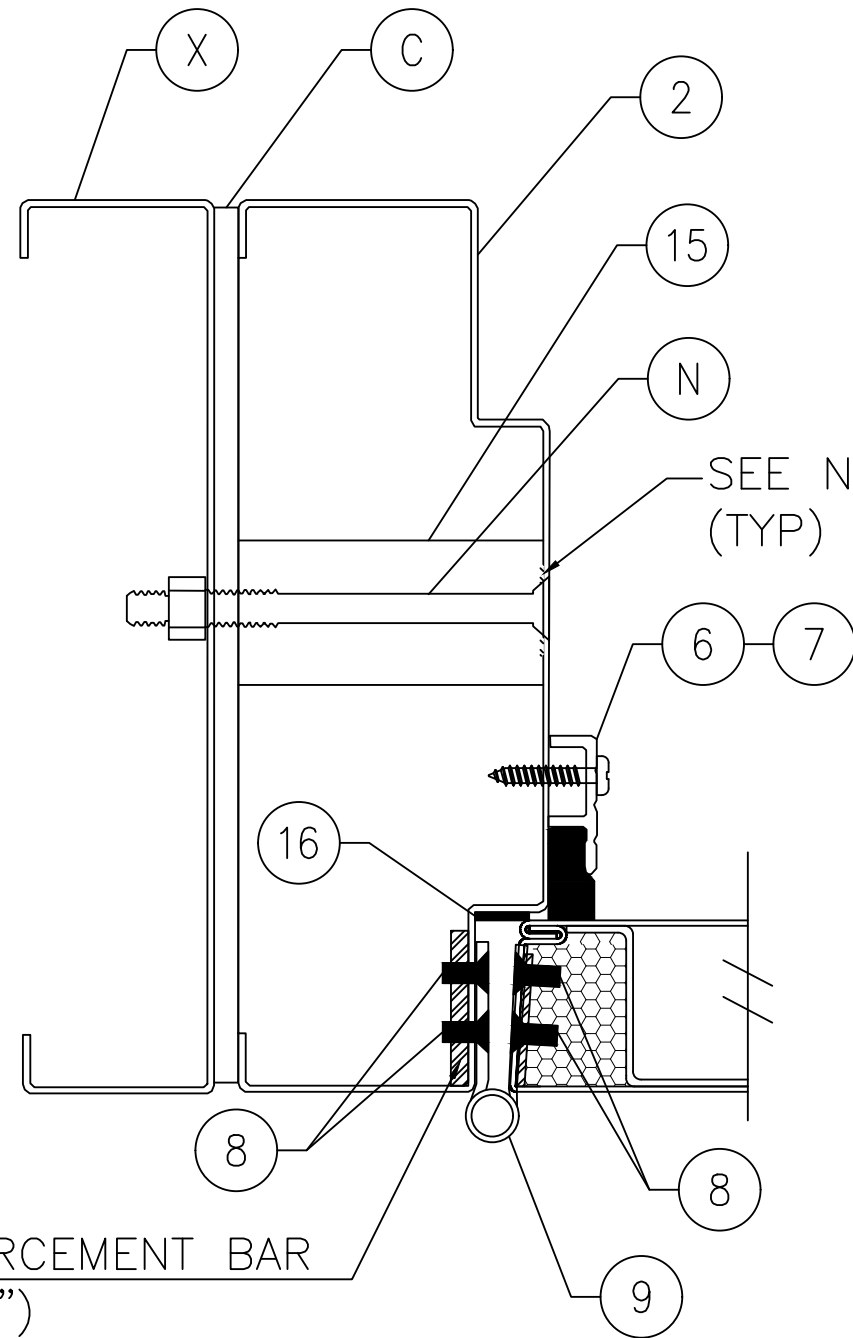
HMF EXPRESS
 2501 NORTHCCHASE PARKWAY SE
 WILMINGTON, NC 28405

TITLE: SERIES HSS STEEL DOOR, OUTSWING, IMPACT (X, XX)
 SELECTION CHART

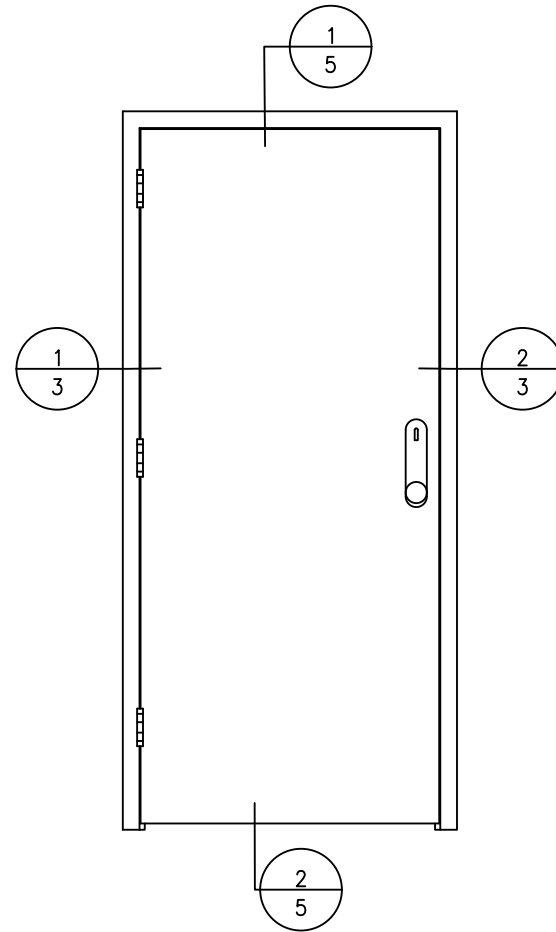
DATE:	2/27/19	DATE:	8/4/21	DATE:	
DRAWING NO.:	HMF0002	DESCRIPTION:	UPDATE TO 2020 FBC	REV:	
DRAWN BY:	DAS	REVISION:	A	BY:	RJA
SCALE:	N.T.S.	REVISION:		DATE:	
REV:	A	SHEET:	2 OF 8	BY:	

NOTE:

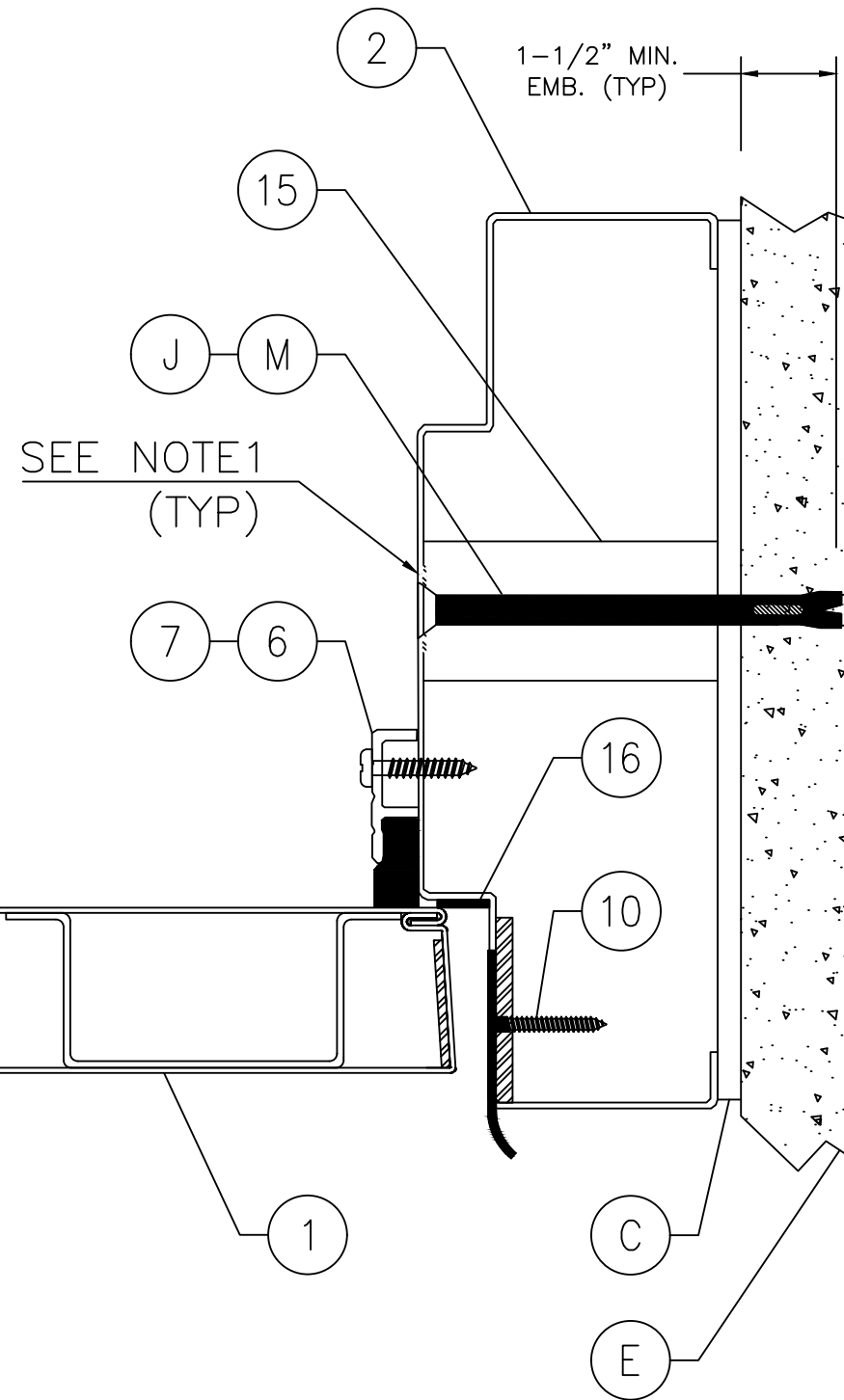
- SPOT WELD ANCHOR BRACKET TO FRAME. 2 WELDS PER FLANGE (4 TOTAL PER BRACKET). ALTERNATIVELY MIG WELD, 1 PER FLANGE (2 TOTAL PER BRACKET).**



1
3 HORIZONTAL CROSS SECTION
STEEL STUD CONSTRUCTION



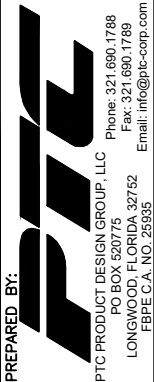
2
3 HORIZONTAL CROSS SECTION
DIRECT TO MASONRY CONSTRUCTION



PROJECT # 420-1002

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 2501 NORTHCHASE PARKWAY SE
 WILMINGTON, NC 28405

TITLE: SERIES HSS STEEL DOOR, OUTSWING, IMPACT (X, XX)
 ELEVATION & HORIZONTAL CROSS SECTIONS - X DOOR



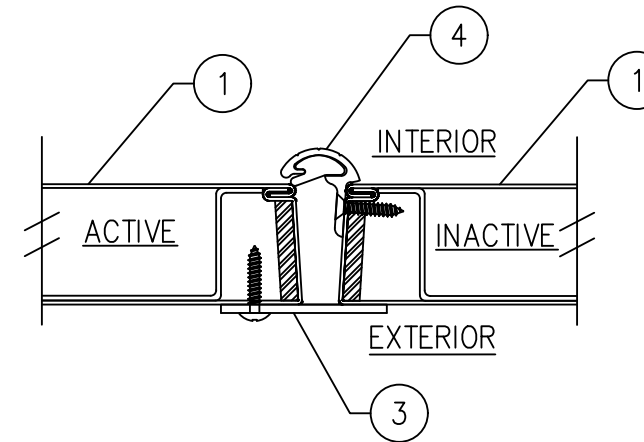
PREPARED BY: DAS
 SCALE: N.T.S.
 DRAWING NO: HMF0002
 DATE: 2/27/19
 SHEET: 3 OF 8

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 Email: info@ptc-corp.com

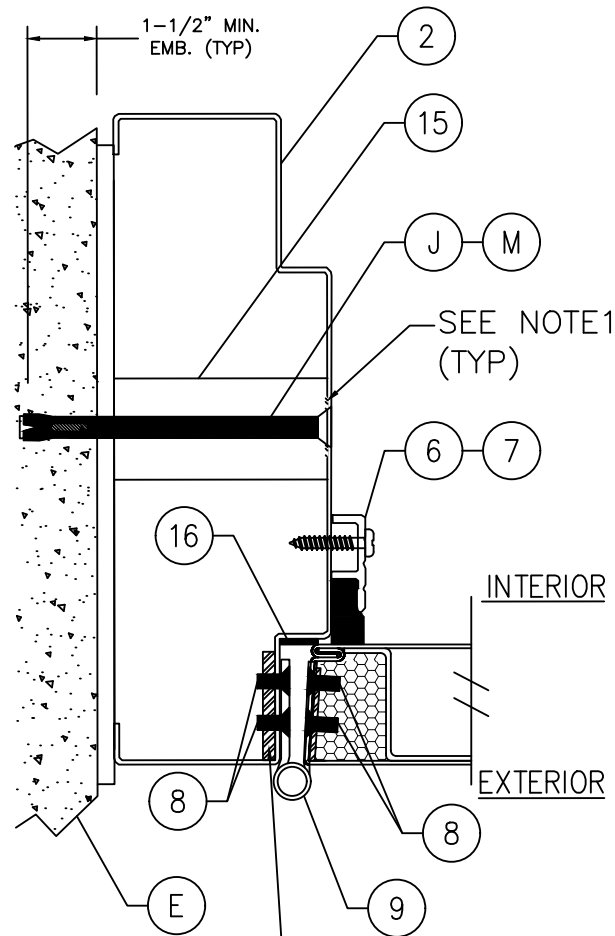
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 Florida P.E. No. 49752



NOTES:
 1. SPOT WELD ANCHOR BRACKET TO
 FRAME: 2 WELDS PER FLANGE (4 TOTAL
 PER BRACKET).

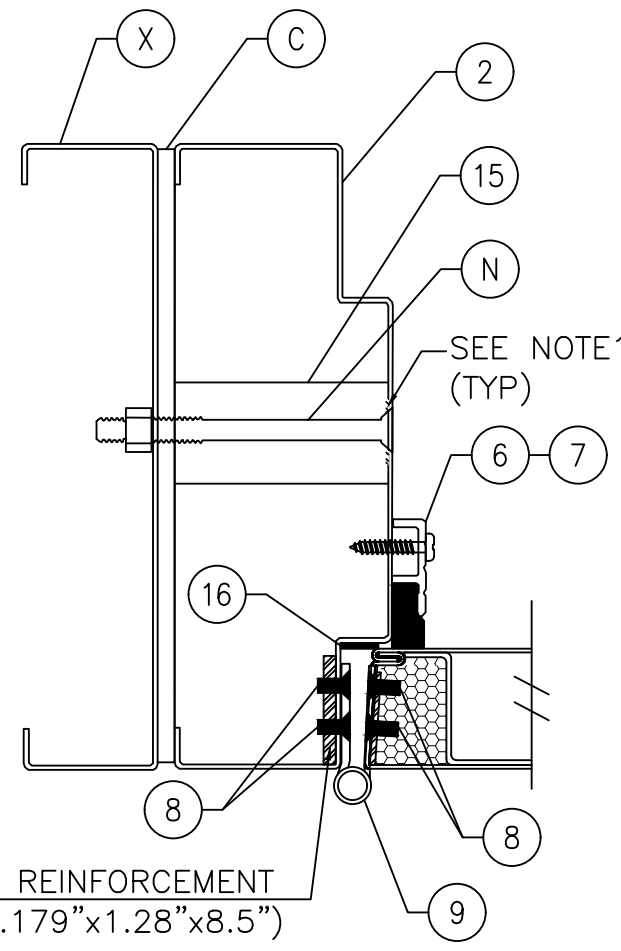
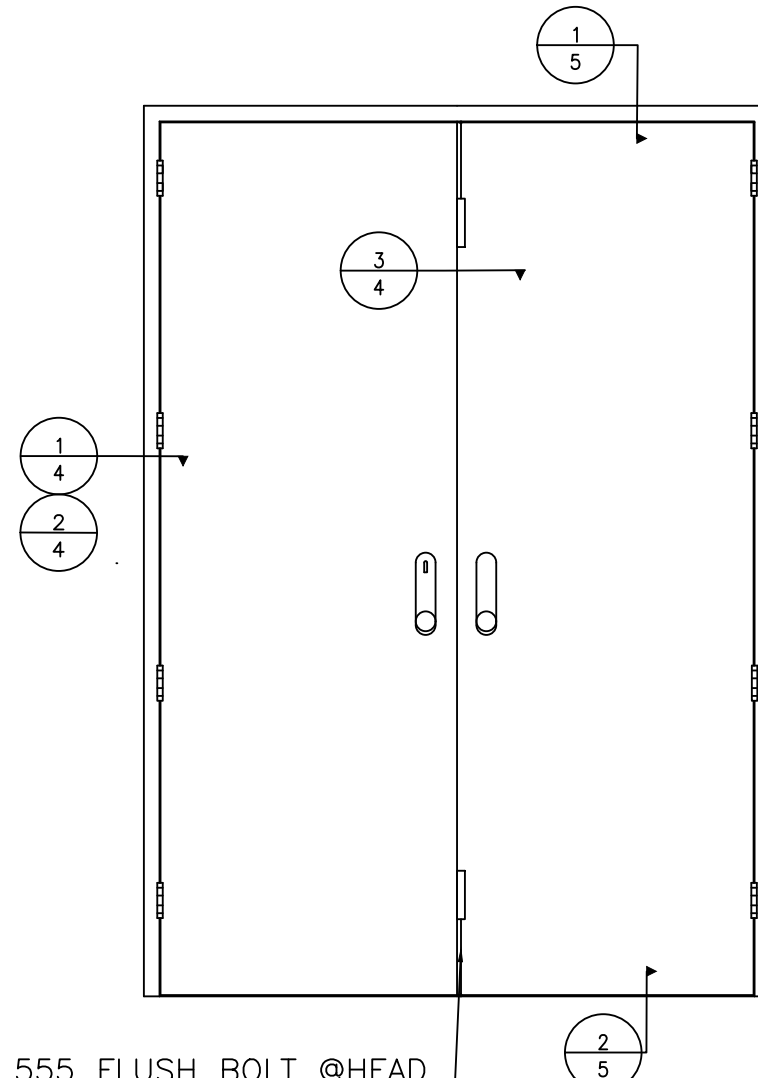


③ HORIZONTAL CROSS SECTION
 ④ PULL SIDE ASTRAGAL



① HORIZONTAL CROSS SECTION
 ④ DIRECT TO MASONRY CONSTRUCTION

ROCKWELL 555 FLUSH BOLT @HEAD
 & SILL W/ 3/4" THROW. MORTISE
 STRIKE PLATES (1 5/16" x 2-1/4")
 ATTACHED TO FRAME HEAD AND
 ALUMINUM THRESHOLD W/ (2) #8
 COMB. WS/SMS EACH.



HINGE REINFORCEMENT
 BAR (.179"x1.28"x8.5")
 ② HORIZONTAL CROSS SECTION
 ④ STEEL STUD CONSTRUCTION

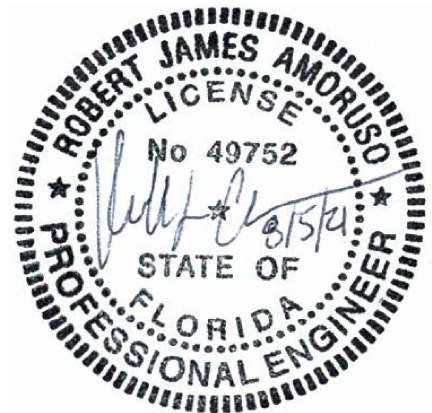
PROJECT # 420-1002

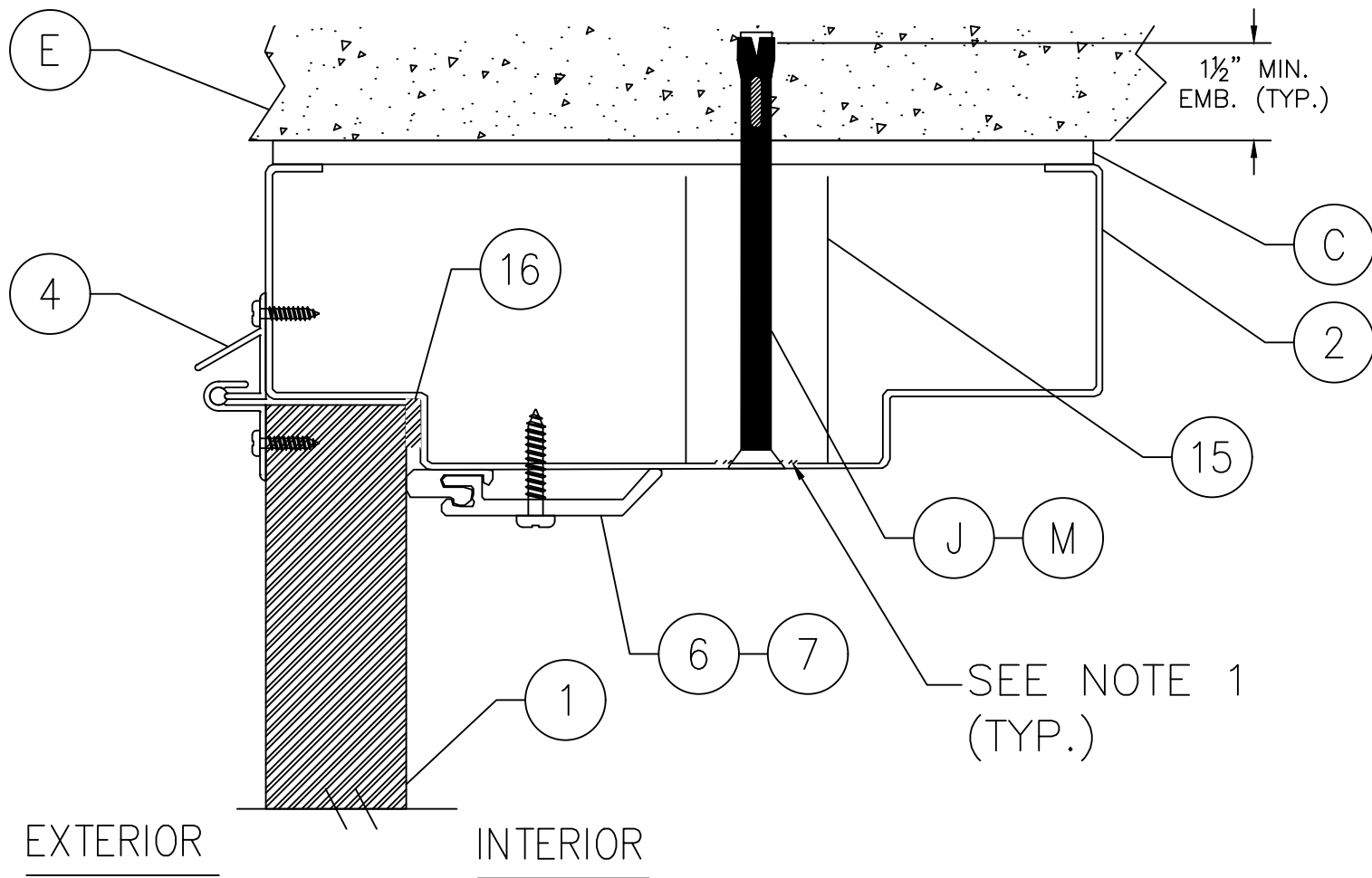
HMF EXPRESS
 2501 NORTHCHASE PARKWAY SE
 WILMINGTON, NC 28405

TITLE: SERIES HSS STEEL DOOR, OUTSWING, IMPACT (X, XX)
 ELEVATION & HORIZONTAL CROSS SECTIONS - XX DOOR

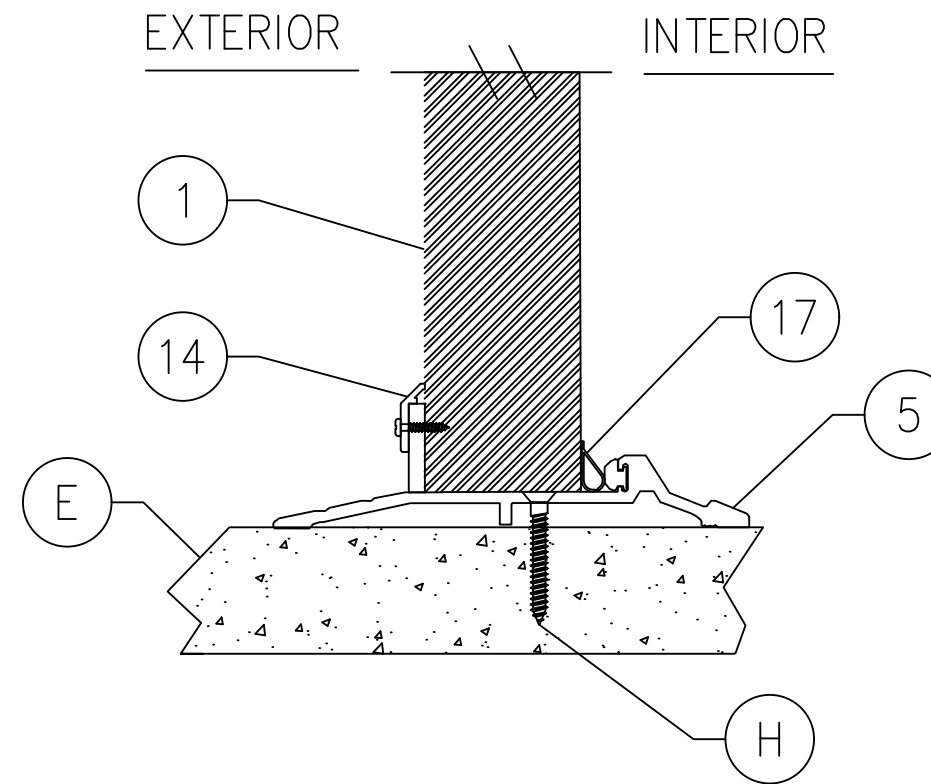
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DRAWN BY:	DAS
SCALE:	N.T.S.
PREPARED BY:	A
REV:	4 OF 8
DESCRIPTION	UPDATE TO 2020 FBC
DATE	8/4/21
BY	RJA

Robert J. Amoruso, P.E.
 Florida P.E. No. 49752





1
5 VERTICAL CROSS SECTION
 DIRECT TO MASONRY CONSTRUCTION



2
5 VERTICAL CROSS SECTION
 CONCRETE SILL

PROJECT # 420-1002

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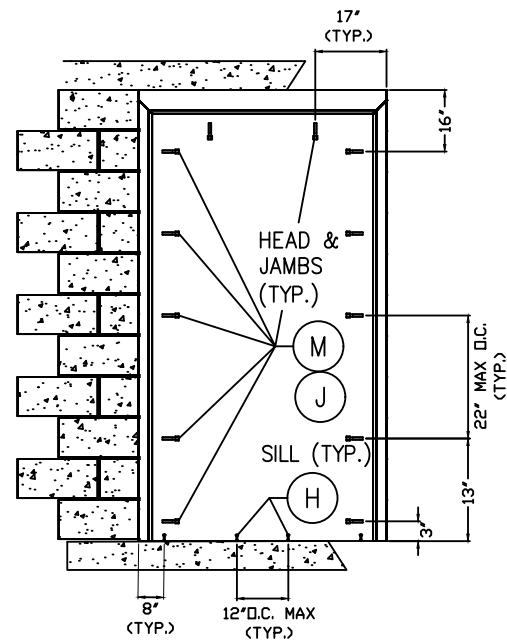
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REV:	A
SHEET:	5 OF 8

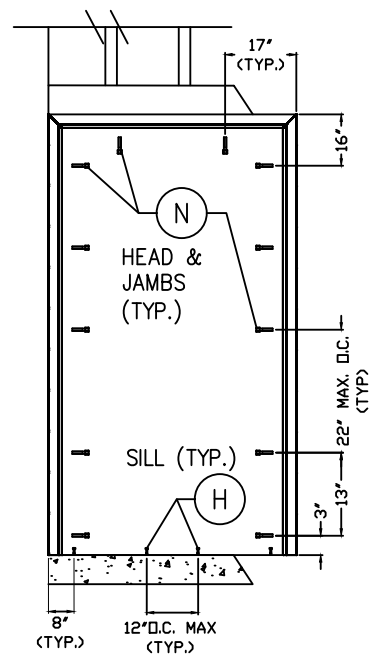
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A	UPDATE TO 2020 FBC	8/4/21	RJA

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 Florida P.E. No. 49752

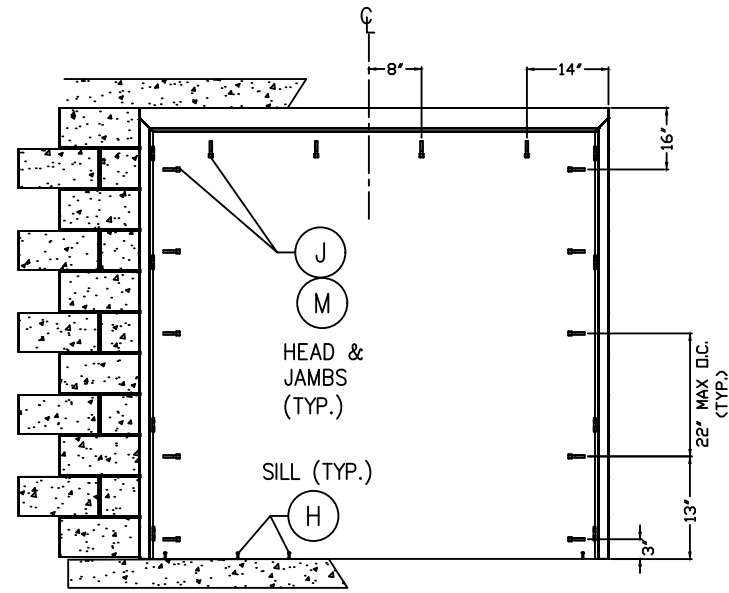




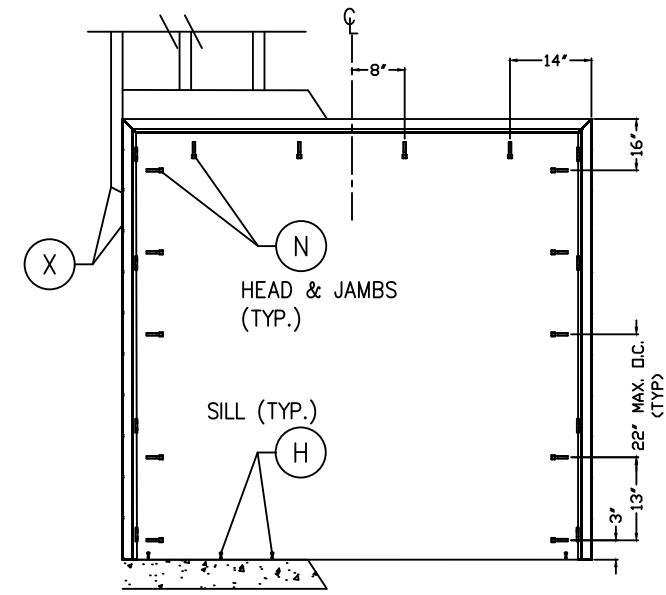
FRAME ANCHORING
 DIRECT TO MASONRY



FRAME ANCHORING
 STEEL STUDS



FRAME ANCHORING
 DIRECT TO MASONRY

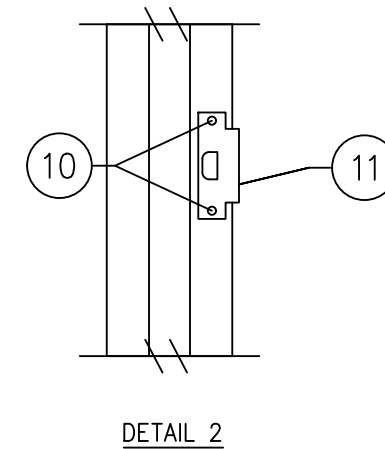
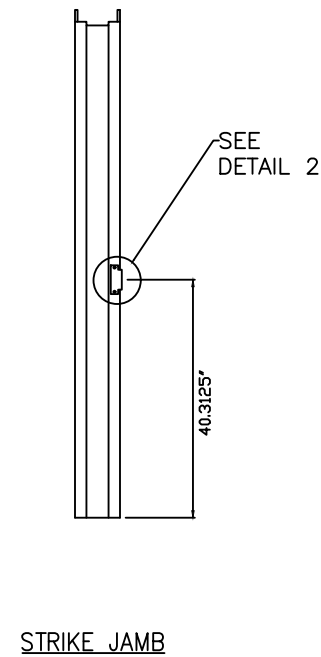
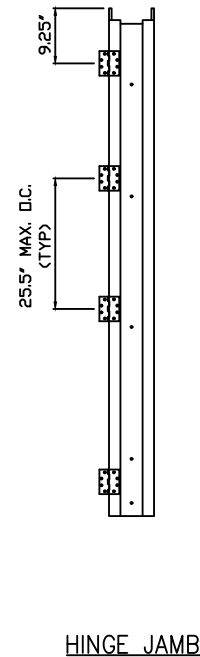
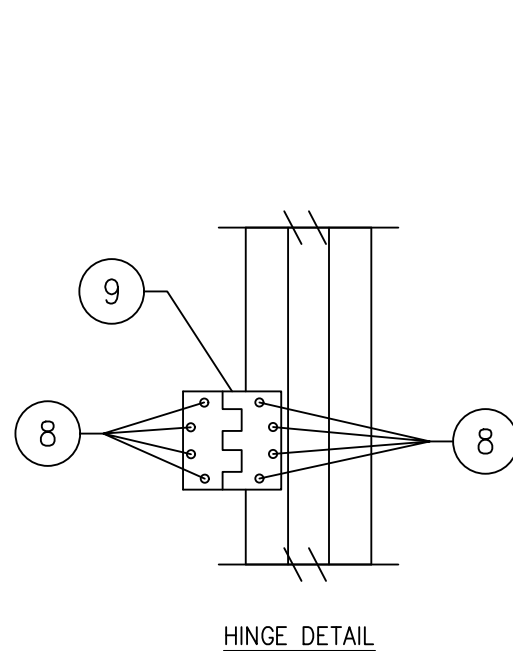


FRAME ANCHORING
 STEEL STUDS

CONCRETE ANCHOR NOTES:

1. CONCRETE SCREW LOCATIONS MAY BE ADJUSTED TO MAINTAIN A MINIMUM 1" EDGE DISTANCE TO MORTAR JOINTS. IF CONCRETE SCREW LOCATIONS NOTED AS "MAX. O.C." MUST BE ADJUSTED TO MAINTAIN THE MINIMUM EDGE DISTANCE TO MORTAR JOINTS, ADDITIONAL CONCRETE SCREWS MAY BE REQUIRED TO ENSURE THE MAXIMUM ON CENTER DIMENSION IS NOT EXCEEDED.
2. CONCRETE ANCHOR TABLE:

ANCHOR TYPE	ANCHOR LOCATION	ANCHOR SIZE	MANUFACTURER	MIN. EDGE DISTANCE	MIN. EMBEDMENT
CONCRETE ANCHOR SCREW	HEAD/JAMBS	3/8"	LDT TAPCON (ITW BUILDEX)	3"	1-1/2"
	SILL	1/4"	TAPCON (ITW BUILDEX) ULTRACON (ELCO) CRETE FLEX (ELCO)	2-1/2"	1-1/4"
			TAPPER+ (POWERS)	2-1/2"	1-3/4"
CONCRETE SLEEVE ANCHOR	HEAD/JAMBS	3/8"	DYNABOLT SLEEVE ANCHOR (ITW REDHEAD)	2-1/4"	1-1/2"



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 WILMINGTON, NC 28405

TITLE: SERIES HSS STEEL DOOR, OUTSWING, IMPACT (X, XX)
 ANCHORING DETAILS

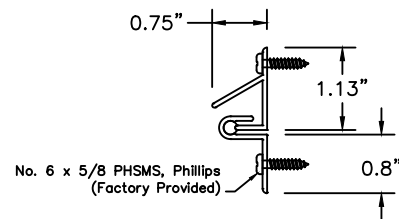
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SCALE:	N.T.S.	DRAWING NO.:	HMF-0002
REV:	A	SHEET:	6 OF 8



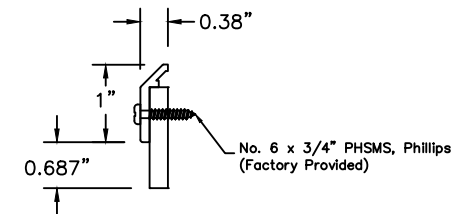
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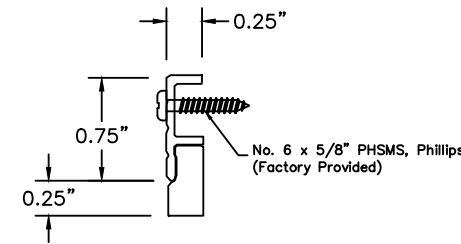
BILL OF MATERIALS		
ITEM #	DESCRIPTION	MATERIALS
C	1/4" MAX. SHIM SPACE	-
E	MASONRY-2,500 PSI MIN. CONCRETE TO ACI 301 OR HOLLOW BLOCK (GROUT FILLED) CONFORMING TO ASTM C90	CONCRETE
H	1/4" DIA. PFH CONCRETE SCREW (SEE ANCHOR TABLE ON SHEET 6)	STEEL
J	3/8" DIA. PFH DYNABOLT SLEEVE ANCHOR (SEE ANCHOR TABLE ON SHEET 6)	STEEL
M	3/8" DIA. LDT TAPCON CONCRETE SCREW (SEE ANCHOR TABLE ON SHEET 6)	STEEL
N	3/8" X 5" BOLT (ASTM A307) W/NUT AND WASHER	STEEL
X	STEEL STUD (14GA, Fu=50ksi, Fy=33ksi)	STEEL
1	STEEL DOOR PANEL	-
2	HOLLOW METAL FRAME (HEAD AND JAMB) - 16GA (0.058" THK)	STEEL
3	ASTRAGAL (EXTERIOR PEMKO #357SC)	ALUM
4	ASTRAGAL (INTERIOR PEMKO #352CR)	ALUM
5	THRESHOLD (PEMKO #179AV)	ALUM
6	PERIMETER GASKET (PEMKO #312CR)	-
7	PERIMETER GASKET (PEMKO #315CR)	-
8	.210 X .525" SELF TAP FH SCREW	STEEL
9	HINGE 4.5"X4.5"	STEEL
10	#12-24 X 1.0" COMBINATION MACHINE / WOOD SCREW	STEEL
11	LATCH STRIKE	STEEL
12	REINFORCEMENT (LOCK BOX)	STEEL
13	DOOR GASKET (PEMKO #347A / 68AR)	-
14	DOOR GASKET (PEMKO #368CN)	-
15	ANCHOR BRACKET	A60 GALV.
16	WEATHERSTRIPPING TAPE	NEOPRENE
17	PERIMETER GASKET (PEMKO #S88)	-



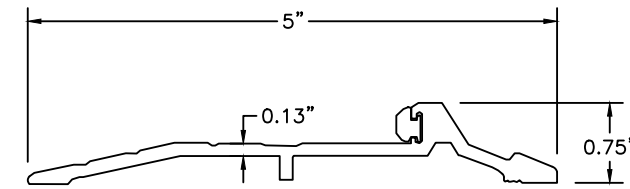
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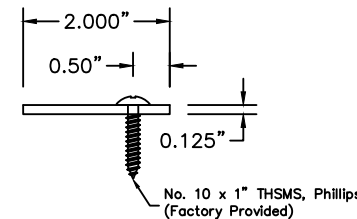
14 DOOR GASKET



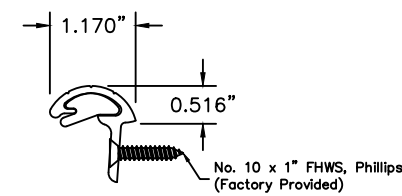
6 PERIMETER GASKETING



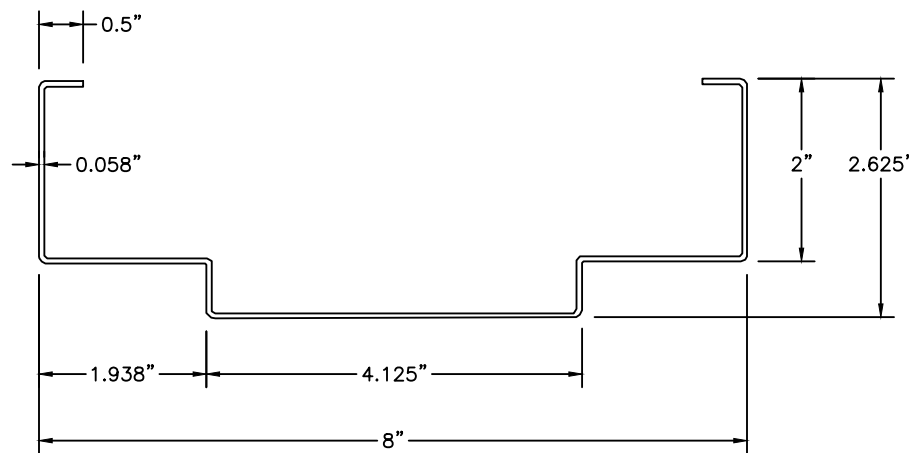
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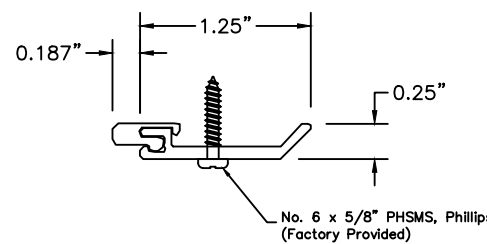
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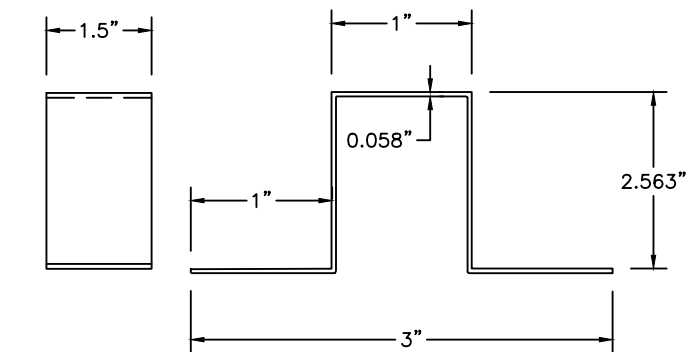
4 ASTRAGAL



2 HOLLOW METAL FRAME (HEAD & JAMBS)



7 PERIMETER GASKETING



15 ANCHOR BRACKET

PROJECT # 420-1002

REV	DESCRIPTION	DATE	BY
A	UPDATE TO 2020 FBC	8/4/21	RJA

HMF EXPRESS
 2501 NORTHCHASE PARKWAY SE
 WILMINGTON, NC 28405

TITLE: SERIES HSS STEEL DOOR, OUTSWING, IMPACT (X, XX)
 BILL OF MATERIALS AND COMPONENTS

PREPARED BY: DAS
 DRAWN BY: DAS
 DATE: 2/27/19
 SCALE: N.T.S.
 DRAWING NO: HMF0002
 SHEET: 7 OF 8
 REV: A

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 Phone: (910) 452-1845
 Fax: (910) 452-1848

FRAME CONSTRUCTION

THE HEAD AND SIDE JAMBS ARE A ONE-PIECE BRAKE PRESS FORMED STEEL FRAME FROM 16 GA. (0.053" MIN,) COLD ROLLED STEEL MEASURING 5.875" X 2.625". THE CORNERS OF BOTH THE HEADER AND SIDE JAMBS ARE MITERED AND BUTTED. WELDED FRAMES ARE SEAM WELDED ON THE FRAME FACE AND CONTINUOUSLY WELDED ON THE INTERIOR SURFACES. THE KNOCKED DOWN FRAME (KD) HEADER HAS SLOTS PUNCHED IN BOTH RETURN LEGS FOR THE 18GA. (0.048") FRAME TABS THAT ARE WELDED TO THE SIDE JAMBS. THE TABS ARE BENT 90 DEGREES OVER THE HEADER AFTER BEING SLIPPED THROUGH THE SLOTS TO CREATE A MECHANICAL JOINT. THE FRAME HAT SECTION OF EACH SIDE JAMB HAS ONE PUNCHED TAB THAT IS SLIPPED INTO THE PUNCHED SLOT IN THE HEADER AND BENT DOWN 90 DEGREES OVER THE HEADER TO CREATE ANOTHER MECHANICAL JOINT. EACH HINGE LOCATION ON BOTH THE WELDED FRAME AND THE KD FRAME HAVE A 7GA. (0.179") HOT ROLLED STEEL HINGE REINFORCEMENT MEASURING 1.25" WIDE X 10.0" WELDED TO THE FRAME. EACH SIDE JAMB HAS 16 GA. (0.053") STEEL L-SHAPED FLOOR ANCHOR PLATES MEASURING 1.5" WIDE FLOOR SIDE X 1.75" WIDE FRAME SIZE X 5.0" LONG WELDED TO THE INSIDE BOTTOM OF THE FRAME.

PANEL CONSTRUCTION

THE PANELS CONSTRUCTED FROM (2) 18 GA. (0.048"MIN.) COLD ROLLED STEEL FACE SHEETS. THE VERTICAL EDGES OF THE FACE SHEETS ARE FORMED TO JOIN TOGETHER AND CREATE A MECHANICAL INTERLOCK. THE HORIZONTAL EDGES ARE CUT STRAIGHT. THE TOP AND BOTTOM PERIMETER OF THE PANEL, ON THE INTERIOR, IS REINFORCED WITH A 14 GA. (0.074" MIN.) STEEL "U" CHANNEL MEASURING 1.632" WIDE X 0.75" DEEP X 35.75" LONG AT THE TOP AND BOTTOM. THE TOP AND BOTTOM "U" CHANNEL IS 0.125" BELOW THE HORIZONTAL EDGES OF THE PANEL AND IS SPOT / PROJECTION WELDED IN 5 PLACES ALONG EACH SIDE OF THE PANEL. THE PANEL IS REINFORCED IN THE INTERIOR WITH 2 GA. (0.025" MIN.) STEEL STIFFENERS RUNNING VERTICAL FROM TOP TO BOTTOM. THE STIFFENERS CAN ONLY BE A MAXIMUM OF 9" FROM MIDLINE. THE STIFFENERS ARE WELDED AT EACH SIDE OF THE STIFFENER UP 3.0" FROM BOTTOM AND A MAXIMUM OF 6.0" ON CENTER. THE SPACES BETWEEN THE STIFFENERS AND THE EDGES OF THE PANEL ARE FILLED WITH INSULATION (EPS OR FIBERGLASS). EACH PANEL HAS THREE STEEL HINGE REINFORCEMENTS WELDED TO ONE OF THE FACE SHEETS BEFORE BOTH FACE SHEETS ARE ASSEMBLED. THE REINFORCEMENT IS CONSTRUCTED FROM A 7 GA. (0.171" MIN.) HOT ROLLED STEEL MEASURING 1.25" WIDE X 8.5". THE REINFORCEMENTS ARE LOCATED AT 7.125, 39.275, AND 71.625" FROM THE TOP OF THE CENTER OF THE REINFORCEMENTS. (LOCATIONS VARY WITH THE HEIGHT OF THE DOOR WITH MAX 39.5" O.C. SPACING).

PROJECT # 420-1002

HMF EXPRESS
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TITLE: SERIES HSS STEEL DOOR, OUTSWING, IMPACT (X, XX)
 PANEL AND FRAME DESCRIPTIONS

DRAWN BY: DAS	DATE: 2/27/19
SCALE: N.T.S.	DRAWING NO: HMF0002
REV: A	SHEET: 8 OF 8

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