



2501 Northchase Parkway SE
Wilmington, NC 28405
Phone: (910) 452-1845
Fax: (910) 452-1848

SERIES HP STEEL DOOR, INSWING/OUTSWING, IMPACT (X)

GENERAL NOTES

1. 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.

1.1. TAS 201-1994

1.2. TAS 202-1994

1.3. TAS 203-1994

1.4. ASTM E330-02

1.5. ASTM E283-04

1.6. ASTM E331-00

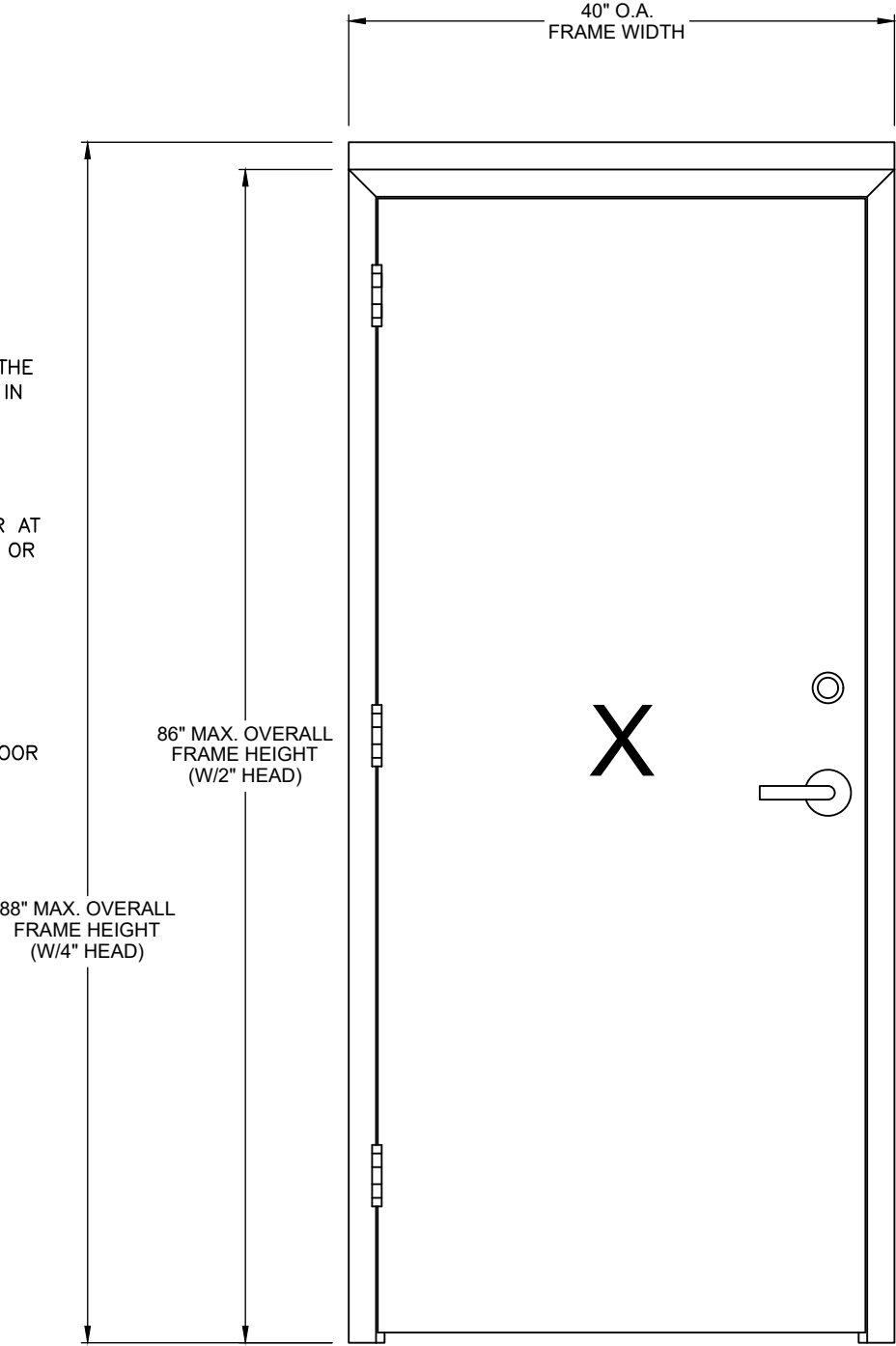
1.7. ASTM E1886-05

1.8. ASTM E1996-06
2. PRODUCT ANCHORS SHALL BE AS LISTED AND SPACED AS SHOWN ON DETAILS. ANCHOR EMBEDMENT TO BASE MATERIAL SHALL BE BEYOND WALL DRESSING OR STUCCO.
3. WHEN USED IN THE "HVHZ" THIS PRODUCT COMPLIES WITH SECTION 1626 OF THE FLORIDA BUILDING CODE AND DOES NOT REQUIRE AN IMPACT RESISTANT COVERING.
4. 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.
5. SITE CONDITIONS THAT DEVIATE FROM THE DETAILS OF THIS DRAWING REQUIRE FURTHER ENGINEERING ANALYSIS BY A LICENSED ENGINEER OR REGISTERED ARCHITECT.
6. THIS PRODUCT DOES NOT MEET THE WATER INFILTRATION REQUIREMENTS OF THE FBC AND SHALL BE INSTALLED ONLY IN NON-HABITABLE AREAS OR AT HABITABLE LOCATIONS PROTECTED BY AN OVERHANG OR CANOPY SUCH THAT THE OVERHANG RATIO (OH) = OH LENGTH / OH HEIGHT IS EQUAL TO OR GREATER THAN 1.
7. ALL STEEL SHALL BE PROTECTED AS SPECIFIED IN SECTION 2222.6 OF THE FBC.
8. SEE MIAMI-DADE NOA NO. 20-1211.03 FOR CARPENTER CO. PREFORMED BLOCK TYPE EPS INSULATION COMPONENT APPROVAL.
9. SEE HMF EXPRESS DRAWING NO. HMF0005 FOR DOUBLE (XX) NOMINAL 76" X 88" OUTSWING STEEL DOOR, HVHZ IMPACT.
10. 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.

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 WELDED TO THE INSIDE BOTTOM OF THE FRAME.

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7	Components
8	Bill of materials and components



PROJECT # 420-1002				RJA	BY
				8/4/21	DATE
			UPDATE TO 2020 FBC	A	DESCRIPTION
				REV	REV

HMF EXPRESS
2501 NORTHCHASE PARKWAY SE
WILMINGTON, NC 28405

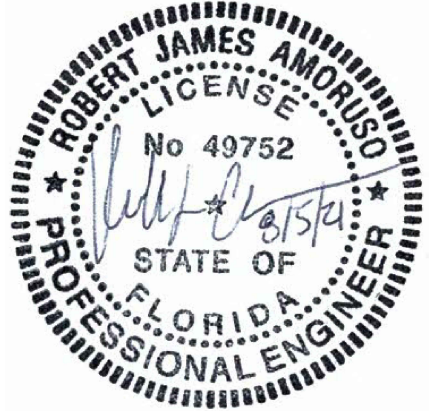
TITLE: SERIES HP STEEL DOOR INSWING/OUTSWING, IMPACT
TYP. ELEVATIONS, DESIGN PRESSURES AND GENERAL NOTES

PREPARED BY: DAS
SCALE: N.T.S.
REV: A

DATE: 2/27/19
DRAWING NO: HMF0001
SHEET: 1 OF 8

PFC PRODUCT DESIGN GROUP, LLC
PO BOX 520775
LONGWOOD, FLORIDA 32752
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Robert J. Amoruso, P.E.
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2501 Northchase Parkway SE
Wilmington, NC 28405
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DOOR SCHEDULE AND DESIGN PRESSURE LIMITATIONS				
DESIGN PRESSURE	66/-76	66/-66	70/-70	60/-60
MAX OVERALL HEIGHT	88"	88"	88"	88"
MAX OVERALL WIDTH	40"	40"	40"	40"
SWING	IN	OUT	OUT	IN or OUT
SKIN GA	18	18	16	18 or 16
HARDWARE CHART 1		X	X	
HARDWARE CHART 2	X	X	X	
HARDWARE CHART 3				X
IMPACT RATING LARGE AND SMALL MISSILE – HVHZ WIND ZONE 4, MISSILE LEVEL D				

HARDWARE CHART 1	
MANUFACTURER	MODEL
DESIGN HARDWARE	LOCK: X-75-F DEADBOLT: D2-S
FALCON	LOCK: T500 DEADBOLT: D131

HARDWARE CHART 2	
MANUFACTURER	MODEL
HAGER	LOCK: 3500 SERIES DEADBOLT: 3200 SERIES
VON DUPRIN	VON DUPRIN GRADE 1 RIM EXIT X RIM EXIT NO. 98/99 SERIES

HARDWARE CHART 3	
MANUFACTURER	MODEL
SCHLAGE	SCHLAGE GRADE 1 L9000 MORTISE LOCK SERIES WITH ASA STRIKE (4-7/8")

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2501 NORTHCHASE PARKWAY SE
WILMINGTON, NC 28405

TITLE: SERIES HP STEEL DOOR INSWING/OUTSWING, IMPACT
SELECTION CHART

PREPARED BY:

DRAWN BY: DAS

SCALE: N.T.S.

REV: A

DATE: 2/27/19

DRAWING NO: HMF0001

SHEET: 2 OF 8

UPDATE TO 2020 FBC

8/4/21

RJA

DATE

REV

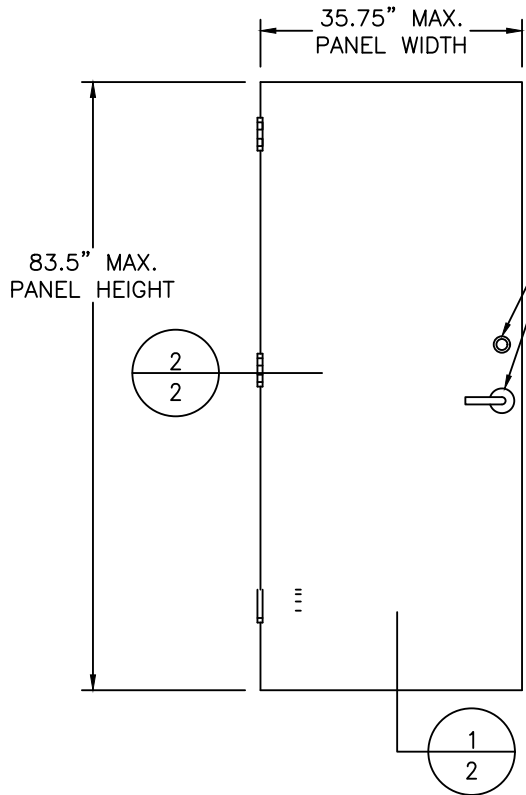
DESCRIPTION

BY

PTC PRODUCT DESIGN GROUP, LLC
PO BOX 520775
LONGWOOD, FLORIDA 32752
FBPE CA NO 23385

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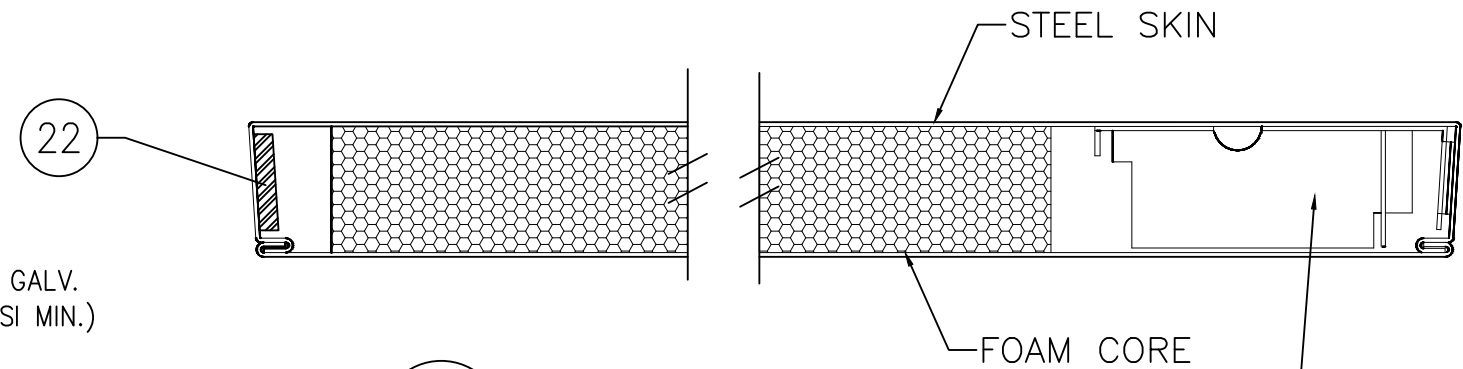


DOOR PANEL CONSTRUCTION DESCRIPTION:

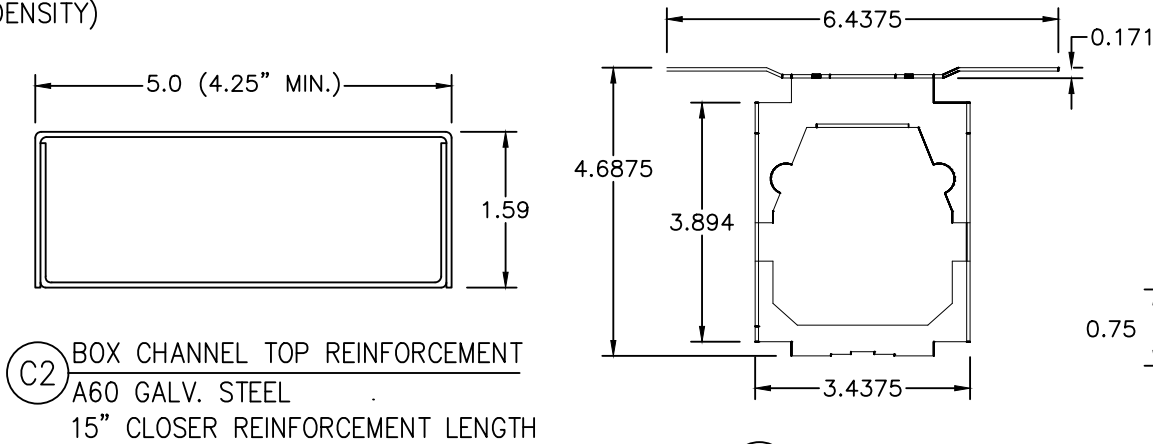
THE DOOR PANELS ARE CONSTRUCTED FROM (2) 18GA. (0.048"MIN.) OR (2) 16GA. (0.053"MIN.) COLD ROLLED STEEL FACE SHEETS. THE VERTICAL EDGES OF THE FACE SHEETS HAVE FORMED EDGES THAT ARE PLACED TOGETHER TO FORM A MECHANICAL INTERLOCK. THE HORIZONTAL EDGES ARE CUT STRAIGHT AND CLOSED WITH 14GA. (0.074") "U" CHANNEL WITH OPEN END FACING INWARD. THE "U" CHANNEL IS 0.125" BELOW THE HORIZONTAL EDGES OF THE PANEL AND IS SPOT/PROJECTION WELDED IN 5 PLACES ON EACH SIDE OF THE PANEL. THE INTERIOR CAVITY OF EACH PANEL IS FILLED WITH EXPANDED POLYSTYRENE (EPS) 1.0 LB DENSITY. THERE ARE THREE HINGE REINFORCEMENTS WELDED TO THE FACE SHEETS BEFORE BOTH FACE SHEETS ARE ASSEMBLED, THE REINFORCEMENTS IS CONSTRUCTED FROM 7GA. (0.179") HOT ROLLED STEEL MEASURING 1.25"X8.5". THE REINFORCEMENTS ARE LOCATED AT 7.125, 39.375, AND 71.637 FROM TOP OF THE DOOR TO THE CENTER OF THE REINFORCEMENTS. (LOCATIONS VARY WITH THE HEIGHT OF THE DOOR WITH MAX 39.5" O.C. SPACING).

1 OPAQUE STEEL DOOR PANEL

- A) STEEL DOOR SKIN: 16 GA A60 GALV.
(MIN. 0.053 THK. $F_y=48,400$ PSI MIN.)
CORE MATERIAL: EPS FOAM
(POLYSTYRENE-1.0 PCF MIN.DENSITY)
- B) STEEL DOOR SKIN: 18 GA A60 GALV.
(MIN. 0.045 THK. $F_y=47,400$ PSI MIN.)
CORE MATERIAL: EPS FOAM
(POLYSTYRENE-1.0 PCF MIN.DENSITY)

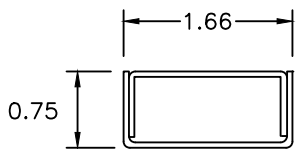


2 HORIZONTAL CROSS SECTION
2 DOOR PANEL
BEVELED (SHOWN) OR SQUARE

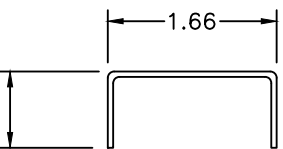
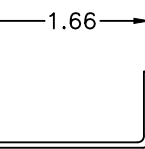


C2 BOX CHANNEL TOP REINFORCEMENT
A60 GALV. STEEL
15" CLOSER REINFORCEMENT LENGTH

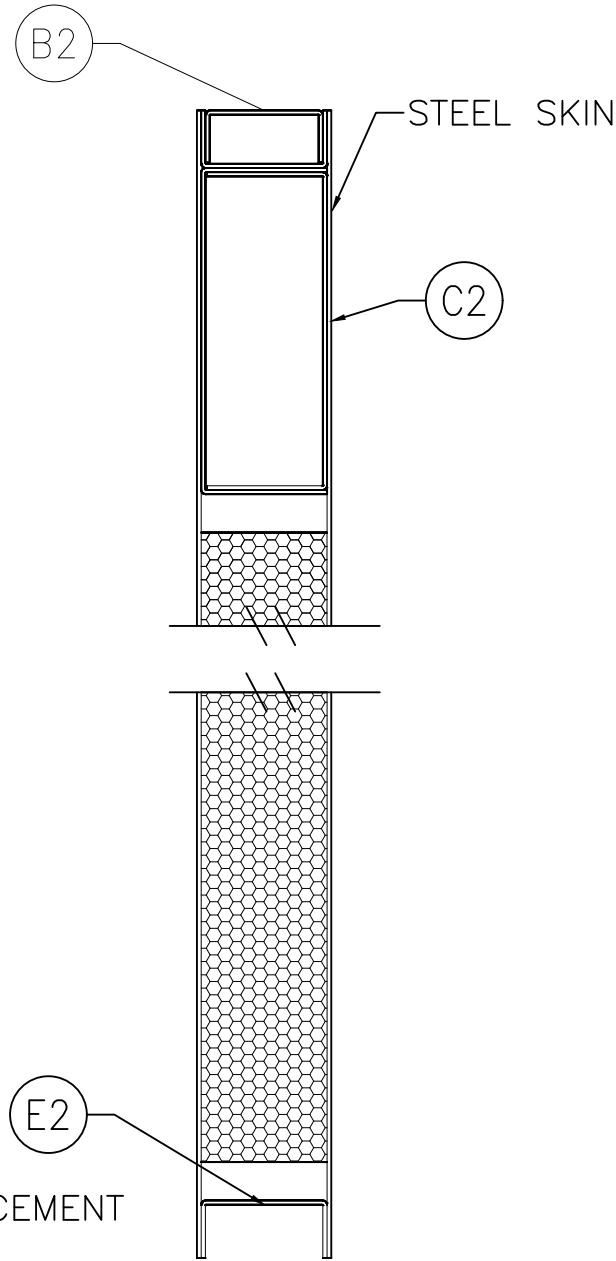
D2 LOCK BOX



B2 TOP CHANNEL
A60 GALV. STEEL
OPEN OR CLOSED



E2 BOTTOM CHANNEL
A60 GALV. STEEL



1 VERTICAL CROSS SECTION
2

PROJECT # 420-1002

HMF EXPRESS

2501 NORTHCHASE PARKWAY SE
WILMINGTON, NC 28405

TITLE: SERIES HP STEEL DOOR INSURING/OUTSWING, IMPACT

DOOR PANEL DETAILS

PREPARED BY:

DRAWN BY: DAS

DATE: 2/27/19

DRAWING NO: HMF0001

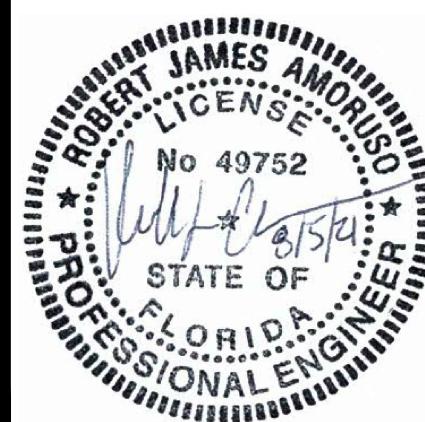
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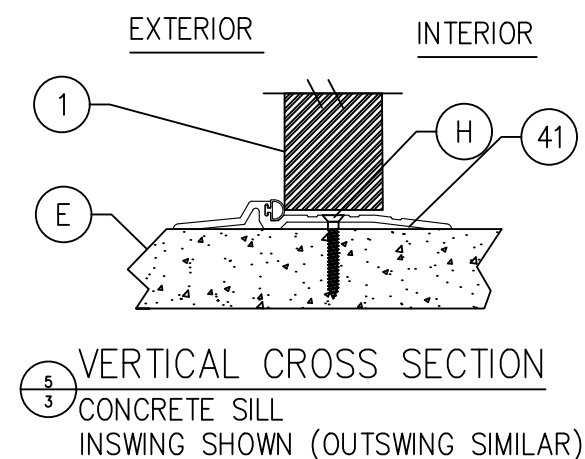
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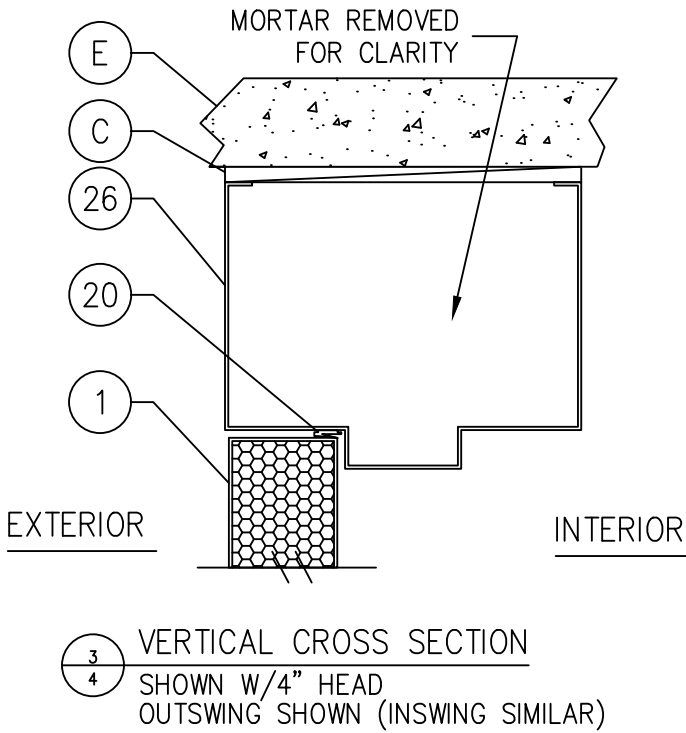
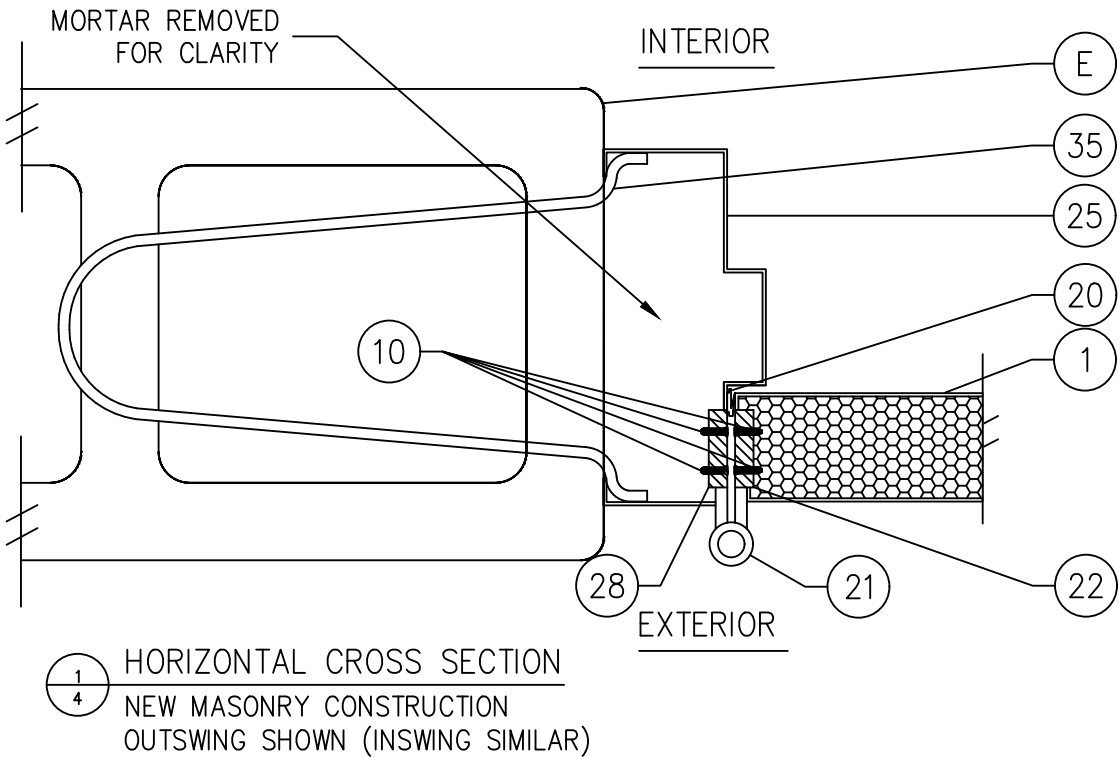
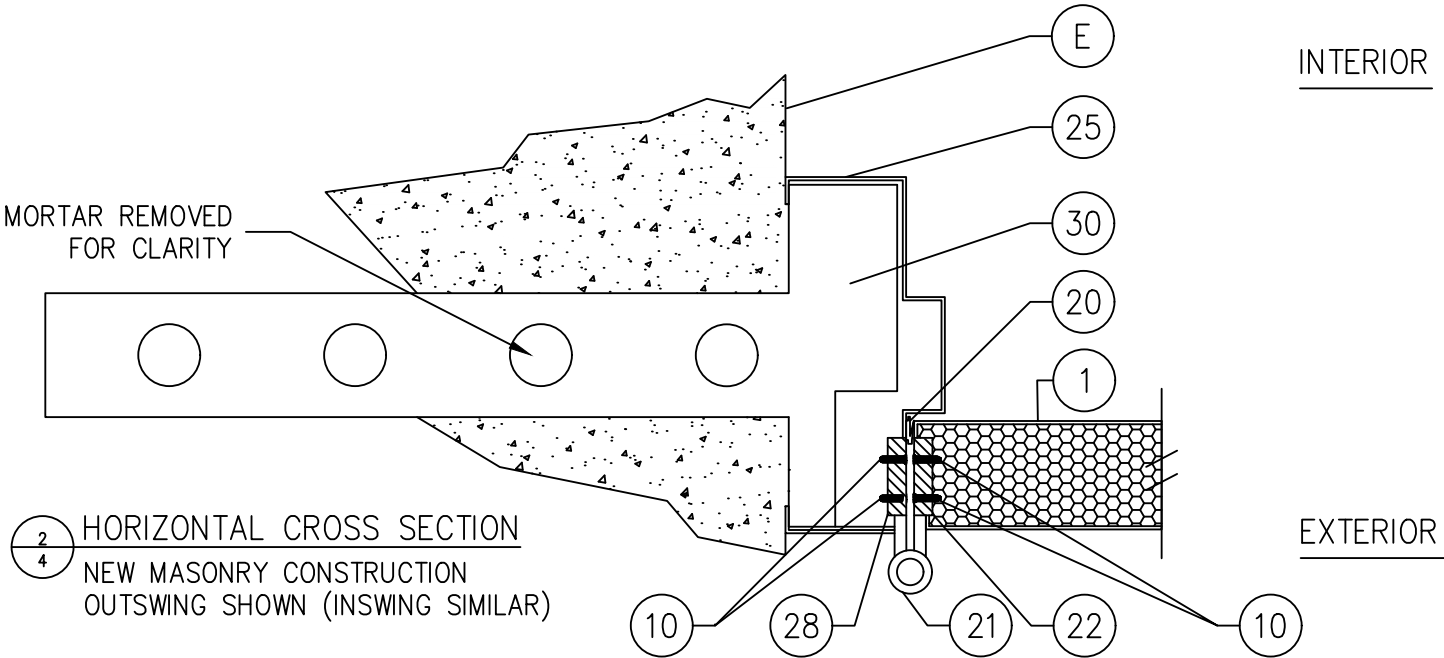
BY

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



1. SPOT WELD ANCHOR BRACKET TO FRAME (BRACKETS IN LOCATION HAVING MIN. 6" CLEARANCE) 2 WELDS PER FLANGE (4 TOTAL PER BRACKET). 1/2" MIG WELD EQUIVALENT TO 2 SPOT WELDS.





PROJECT # 420-1002

HMF EXPRESS
2501 NORTHCHASE PARKWAY SE
WILMINGTON, NC 28405

TITLE: SERIES HP STEEL DOOR INSWING/OUTSWING, IMPACT
HORIZONTAL AND VERTICAL CROSS SECTION

DATE: 2/27/19

DRAWING NO: HMF0001

SHEET: 5 OF 8

REV: A

DESCRIPTION

DATE

BY

RJA

8/4/21

UPDATE TO 2020 FBC

A

REV

DESCRIPTION

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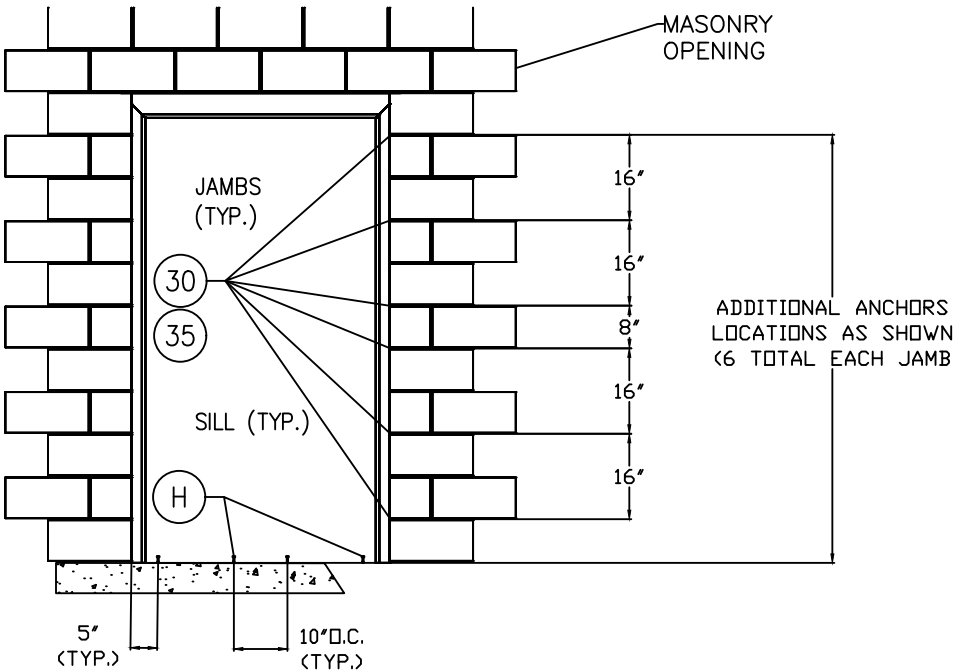
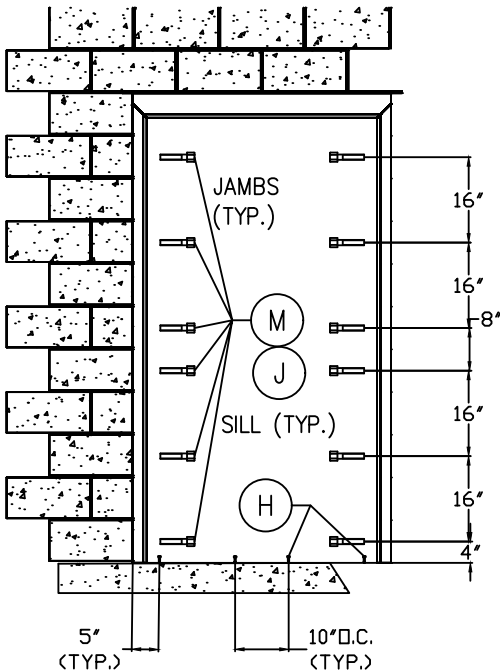
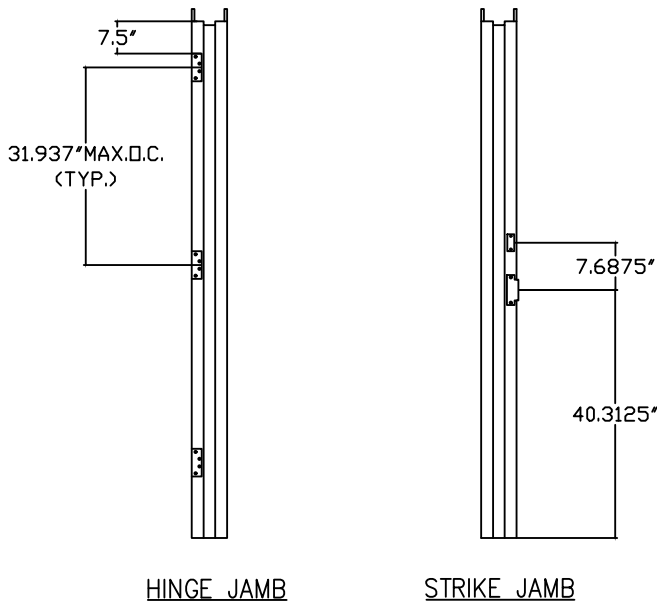
BY

RJA

8/4/21

UPDATE TO 2020 FBC

A



CONCRETE ANCHOR NOTES:

1. CONCRETE SCREW LOCATIONS MAY BE ADJUSTED TO MAINTAIN A MINIMUM 1" 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:

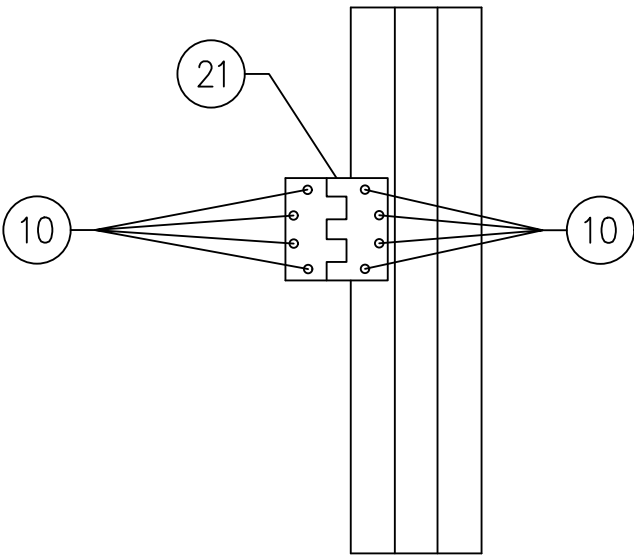
ANCHOR TYPE	ANCHOR LOCATION	ANCHOR SIZE	MANUFACTURER	MIN. EDGE DISTANCE	MIN. EMBEDMENT
CONCRETE ANCHOR SCREW	JAMBS	3/8"	LDT TAPCON (ITW BUILDEX)	3"	1-1/2"
	SILL	1/4"	TAPCON (ITW BUILDEX) ULTRACON (ELCO) CRETE FLEX (ELCO)	2-1/2"	1-1/4"
			TAPPER+ (POWERS)	2-1/2"	1-3/4"
CONCRETE SLEEVE ANCHOR	JAMBS	3/8"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

FRAME ANCHORING

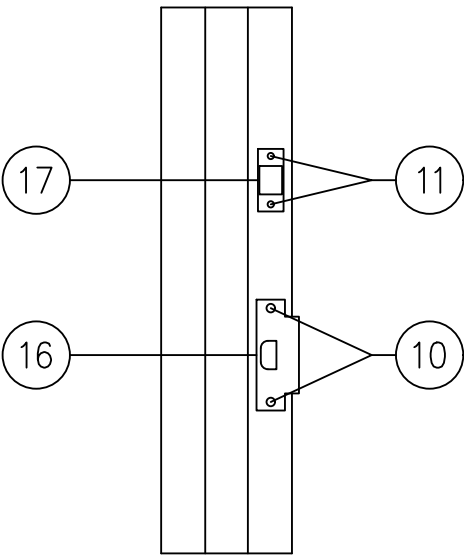
SHOWN W/4" HEAD (2" HEAD SIMILAR)
EXISTING MASONRY CONSTRUCTION
CONCRETE ANCHORS

FRAME ANCHORING

SHOWN W/4" HEAD (2" HEAD SIMILAR)
NEW MASONRY CONSTRUCTION
MASONRY ANCHORS



HINGE DETAIL



STRIKE DETAIL

PROJECT # 420-1002

HMF EXPRESS

2501 NORTHCHASE PARKWAY SE

WILMINGTON, NC 28405

TITLE: SERIES HP STEEL DOOR INSWING/OUTSWING, IMPACT

ANCHORING DETAILS

PREPARED BY:

DRAWN BY: DAS

SCALE: N.T.S.

REV: A

DATE: 2/27/19

DRAWING NO: HMF0001

SHEET: 6 OF 8

REV: A

PROJECT # 420-1002

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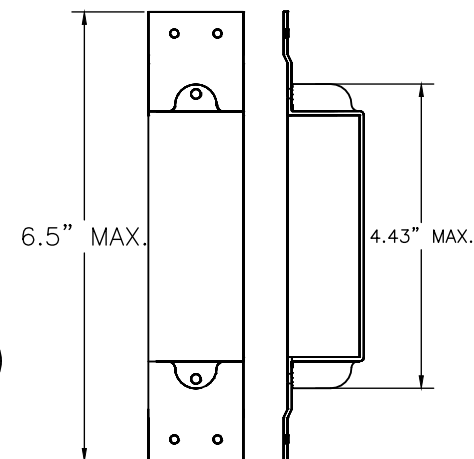
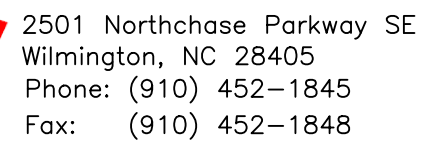
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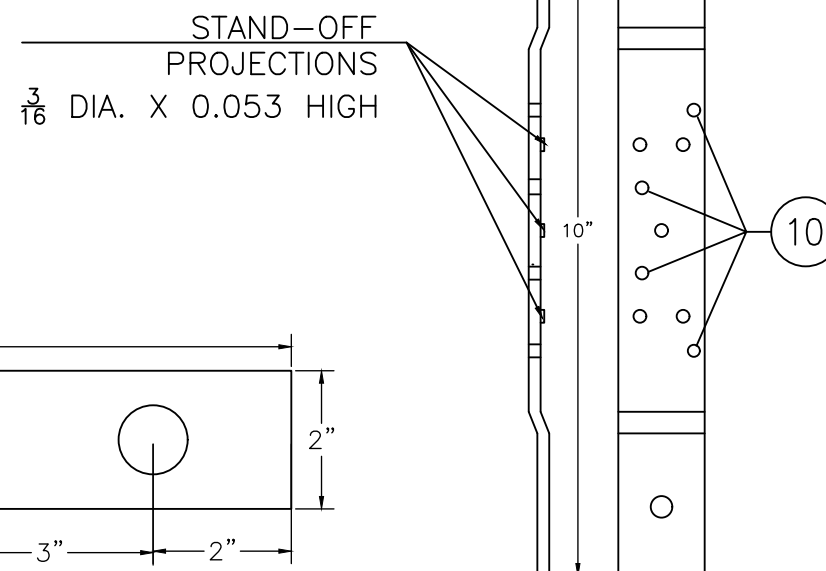




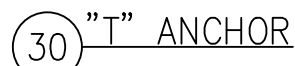
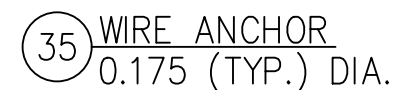
8 DUST BOX
DUST BOX (TYP.)



26 HOLLOW METAL FRAME
4" HEAD



FRAME HINGE
 (28) REINFORCEMENT
 7 GAUGE STEEL



TITLE: SERIES HP STEEL DOOR INSWING/OUTSWING, IMPACT COMPONENTS	PREPARED BY:			
	DRAWN BY: DAS		DATE: 2/27/19	
	SCALE: N.T.S.		DRAWING NO: HMF0001	
	REV: A		SHEET: 7 OF 8	
HMF EXPRESS 2501 NORTHCASE PARKWAY SE WILMINGTON, NC 28405				

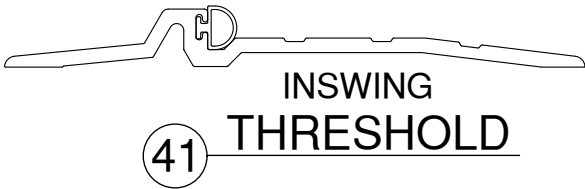
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2501 Northchase Parkway SE
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BILL OF MATERIALS		
ITEM #	DESCRIPTION	MATERAILS
C	1/4" MAX. SHIM SPACE	-
D	1/4" X 2 3/4" ELCO OR ITW CONCRETE SCREW	STEEL
E	MASONRY-3,000 PSI MIN. CONCRETE TO ACI 300 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
1	STEEL DOOR PANEL	-
8	DUST BOX 16 GA.	STEEL
9	ANCHOR BRACKET	STEEL
10	#12-24 X 1/2" PFH MACHINE SCREW	STEEL
11	#8 X 3/4" COMBINATION WOOD/MACHINE SCREW	STEEL
16	ANSI LATCH STRIKE	STEEL
17	DEADBOLT STRIKE	STEEL
20	WEATHERSTRIP (NATIONAL GUARD 5040B)	SILICONE
21	4 1/2" X 4 1/2" X 0.134" MIN. HINGE	STEEL
22	DOOR HINGE REINFORCEMENT	STEEL
25	HOLLOW METAL FRAME (2" JAMB OR HEAD)-16 GA.	STEEL
26	HOLLOW METAL FRAME (4" HEAD)-16 GA.	STEEL
28	FRAME HINGE REINFORCEMENT	STEEL
30	MASONARY "T" ANCHOR	STEEL
35	WIRE ANCHOR	STEEL
40	OUTSWING THRESHOLD (PEMKO 2001_T)	ALUMINIUM
41	INSWING THRESHOLD (HAGER #520)	ALUMINIUM



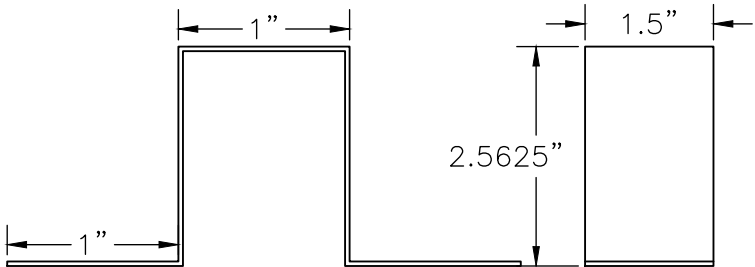
41

INSWING
THRESHOLD



40

OUTSWING
THRESHOLD



9

ANCHOR BRACKET

PROJECT # 420-1002

HMF EXPRESS

2501 NORTHCHASE PARKWAY SE

WILMINGTON, NC 28405

TITLE: SERIES HP STEEL DOOR INSWING/OUTSWING, IMPACT
BILL OF MATERIALS AND COMPONENTS

PREPARED BY:

DRAWN BY:

DAS

SCALE:

N.T.S.

REV:

A

DATE:

2/27/19

DRAWING NO:

HMF0001

SHEET:

8 OF 8

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