



2501 Northchase Parkway SE
Wilmington, NC 28405
Phone: (910) 452-1845
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SERIES FLUSH STEEL COMMERCIAL DOOR, OUTSWING, IMPACT (XX)

INSTALLATION NOTES:

1. ONE (1) INSTALLATION ANCHOR IS REQUIRED AT EACH ANCHOR LOCATION SHOWN.
2. THE NUMBER OF INSTALLATION ANCHORS DEPICTED IS THE MINIMUM NUMBER OF ANCHORS TO BE USED FOR PRODUCT INSTALLATION.
3. INSTALL INDIVIDUAL INSTALLATION ANCHORS WITHIN A TOLERANCE OF ±1/4 INCH OF THE DEPICTED LOCATION IN THE ANCHOR LAYOUT DETAIL (I.E., WITHOUT CONSIDERATION OF TOLERANCES). TOLERANCES ARE NOT CUMULATIVE FROM ONE INSTALLATION ANCHOR TO THE NEXT.
4. SHIM AS REQUIRED AT EACH INSTALLATION ANCHOR WITH LOAD BEARING SHIM(S). MAXIMUM ALLOWABLE SHIM STACK TO BE 1/4 INCH. SHIM WHERE SPACE OF 1/16 INCH OR GREATER OCCURS. SHIM(S) SHALL BE CONSTRUCTED OF HIGH DENSITY PLASTIC OR BETTER.
5. REFER TO SHEET 3 & 4 FOR ANCHOR TYPE AND SPACING DETAILS.
6. MINIMUM EMBEDMENT AND EDGE DISTANCE EXCLUDE WALL FINISHES, INCLUDING BUT NOT LIMITED TO STUCCO, FOAM, BRICK VENEER, AND SIDING.
7. INSTALLATION ANCHORS AND ASSOCIATED HARDWARE MUST BE MADE OF CORROSION RESISTANT MATERIAL OR HAVE A CORROSION RESISTANT COATING.
8. FOR HOLLOW BLOCK AND GROUT FILLED BLOCK, DO NOT INSTALL INSTALLATION ANCHORS INTO MORTAR JOINTS. EDGE DISTANCE IS MEASURED FROM FREE EDGE OF BLOCK OR EDGE OF MORTAR JOINT INTO FACE SHELL OF BLOCK.
9. INSTALLATION ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH ANCHOR MANUFACTURER’S INSTALLATION INSTRUCTIONS, AND ANCHORS SHALL NOT BE USED IN SUBSTRATES WITH STRENGTHS LESS THAN THE MINIMUM STRENGTH SPECIFIED BY THE ANCHOR MANUFACTURER.
10. INSTALLATION ANCHOR CAPACITIES FOR PRODUCTS HEREIN ARE BASED ON SUBSTRATE MATERIALS WITH THE FOLLOWING PROPERTIES:

A. WOOD – MINIMUM SPECIFIC GRAVITY OF 0.55.

B. CONCRETE –MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI.

C. CMU – UNIT STRENGTH CONFORMS TO ASTM C-90 (MIN 2.0KSI COMPRESSIVE STRENGTH).

D. GROUT FILLED CMU – UNIT STRENGTH CONFORMS TO ASTM C-90 (MIN. 2.0KSI COMPRESSIVE STRENGTH) & GROUT CONFORMS TO ASTM C476. GROUT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI. SEE FBC CHAPTER 21 FOR GROUTED MASONRY REQUIREMENTS.

E. STEEL – MINIMUM 20GA. (33MILS), MINIMUM 33KSI TENSILE YIELD STRENGTH.

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 201-94

1.2. TAS 202-94

1.3. TAS 203-94
2. ADEQUACY OF THE EXISTING STRUCTURAL CONCRETE/MASONRY AND 2X FRAMING AS A MAIN WIND FORCE RESISTING SYSTEM CAPABLE OF WITHSTANDING AND TRANSFERRING APPLIED PRODUCT LOADS TO THE FOUNDATION IS THE RESPONSIBILITY OF THE ENGINEER OR ARCHITECT OF RECORD FOR THE PROJECT OF INSTALLATION.
3. 1X AND 2X BUCKS (WHEN USED) SHALL BE DESIGNED AND ANCHORED TO PROPERLY TRANSFER ALL LOADS TO THE STRUCTURE. BUCK DESIGN AND ANCHOR LAYOUT IS THE RESPONSIBILITY OF THE ENGINEER OR ARCHITECT OF RECORD FOR THE PROJECT OF INSTALLATION.
4. THE INSTALLATION DETAILS DESCRIBED HEREIN ARE GENERIC AND MAY NOT REFLECT ACTUAL CONDITIONS FOR A SPECIFIC SITE. IF SITE CONDITIONS CAUSE INSTALLATION TO DEVIATE FROM THE REQUIREMENTS DETAILED HEREIN, A LICENSED ENGINEER OR ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE WITH THIS DOCUMENT IN NON-HVHZ AREA. IN HVHZ AREA, ONE TIME PRODUCT APPROVAL TO BE OBTAINED FROM MIAMI-DADE PRODUCT CONTROL OR AUTHORITY HAVING JURISDICTION (AHJ).
5. THIS PRODUCT IS A LARGE AND SMALL MISSILE IMPACT RESISTANT APPROVED. AN IMPACT PROTECTIVE SYSTEM IS NOT REQUIRED ON THIS PRODUCT IN AREAS REQUIRING IMPACT RESISTANCE.
6. STEEL COMPONENTS SHALL BE COATED OR PROVIDED WITH CORROSION RESISTANCE PROTECTION IN CONFORMANCE WITH THE MATERIAL PROTECTION PROVISIONS OF THE CURRENT EDITION OF THE FLORIDA BUILDING CODE.
7. DOOR FRAME MATERIAL:

7.1 MIN. 16GA. STEEL (.058” MIN.)

• MIN. Fy = 39,200 PSI

• MIN. Fu = 52,100 PSI
8. DOOR PANEL

8.1 18GA. FACE SHEET

• MIN. Fy = 21,400 PSI

• MIN. Fu = 41,900 PSI

8.2 16GA. FACE SHEET

• MIN. Fy = 39,200 PSI

• MIN. Fu = 52,100 PSI
9. SEE SHEET 5 FOR DOOR LEAF CONSTRUCTION, SEE SHEET 6 FOR DOOR FRAME CONSTRUCTION.
10. DESIGNATION "X" STANDS FOR OPERABLE PANEL
11. 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.

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DESIGN PRESSURES & HARDWARE			
HARDWARE	*WHERE WATER INFILTRATION IS NOT REQUIRED OR IS PROTECTED BY OVERHANG	WHERE WATER INFILTRATION REQUIREMENT IS NEEDED OR IS NOT PROTECTED BY OVERHANG	MISSILE IMPACT RATING
Z E CORBIN / RUSSWIN 26D HEAVY DUTY LOCKSET CORBIN / RUSSWIN DL3000 SERIES CYLINDRICAL DEADLOCK	*± 80PSF	NOT APPROVED SEE NOTE BELOW	LARGE AND SMALL MISSILE IMPACT RATED --- WIND ZONE 4 MISSILE LEVEL D
CORBIN / RUSSWIN ML2000 SERIES MORTISE LOCK & DEADBOLT W/ LEVER	*± 80PSF	NOT APPROVED SEE NOTE BELOW	
DORMA 9300 SERIES RIM DEVICE W/ PANIC BAR & REMOVABLE F1300 MULLION	*± 80PSF	NOT APPROVED SEE NOTE BELOW	
DORMA 9400 SERIES SURFACE VERTICAL RODS W/ PANIC BAR	*± 80PSF	NOT APPROVED SEE NOTE BELOW	
SEE SHEET 15 FOR ADDITIONAL APPROVED HARDWARE			

NOTE:
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.

PROJECT # 420-1002

HMF EXPRESS

2501 NORTHCHASE PARKWAY SE

WILMINGTON, NC 28405

SERIES FLUSH STEEL COMMERCIAL DOOR, OUTSWING, IMPACT (XX)
INSTALLATION AND GENERAL NOTES

PREPARED BY:

DRAWN BY:

DATE:

DRAWING NO:

SCALE:

REV:

SHEET:

1 OF 15

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N.T.S.

DAS

2/27/19

HMF-0005

UPDATE TO 2020 FBC

8/4/21

RJA

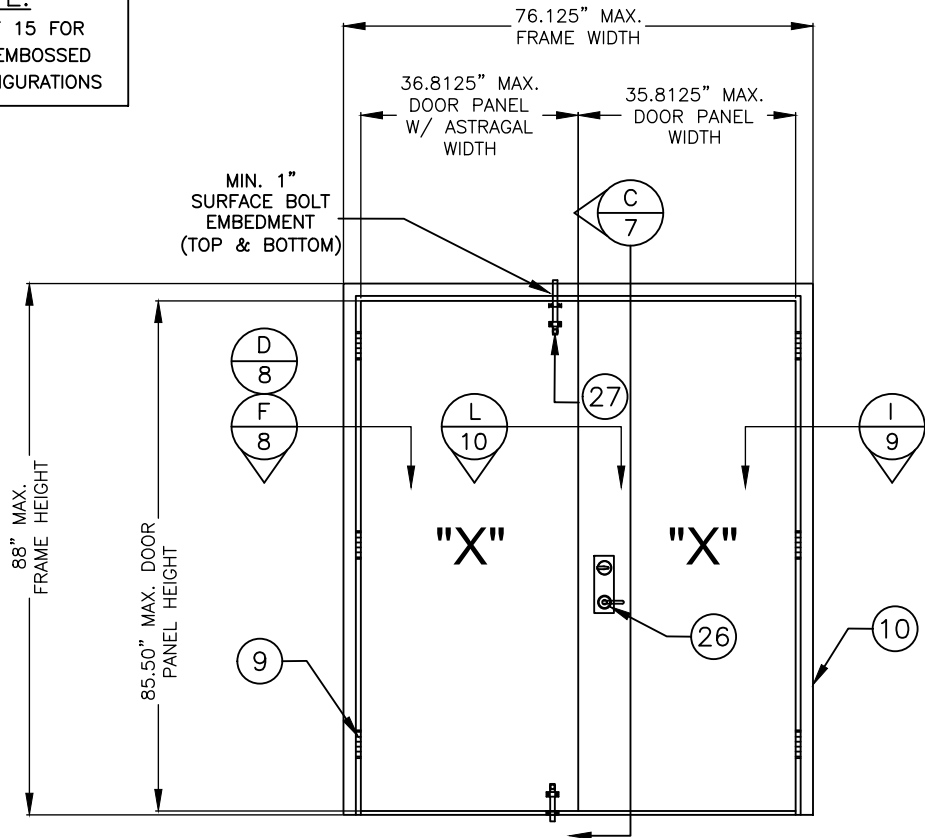
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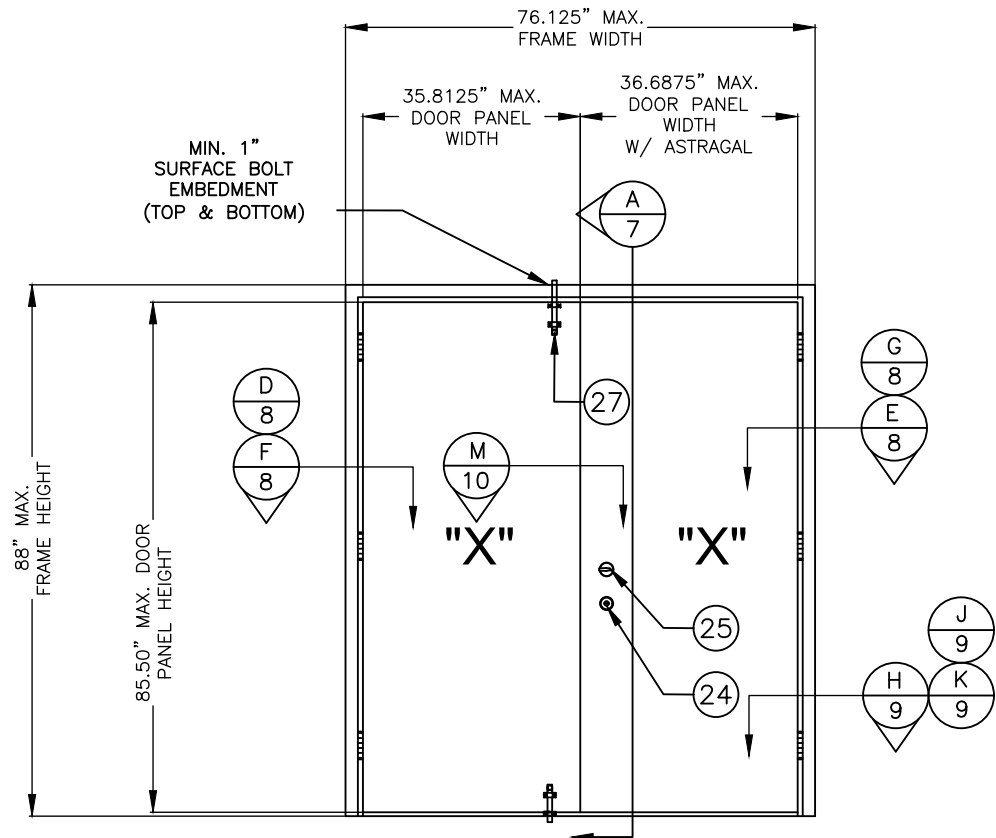
Robert J. Amoruso, P.E.
Florida P.E. No. 49752



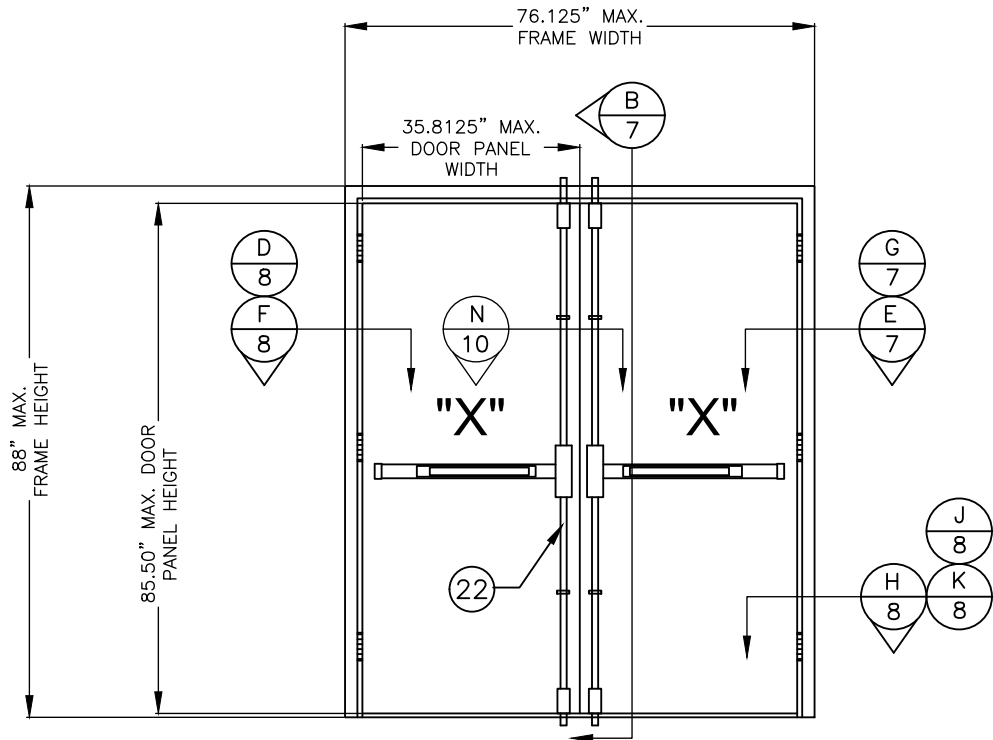
NOTE:
SEE SHEET 15 FOR
QUALIFIED EMBOSSED
PANEL CONFIGURATIONS



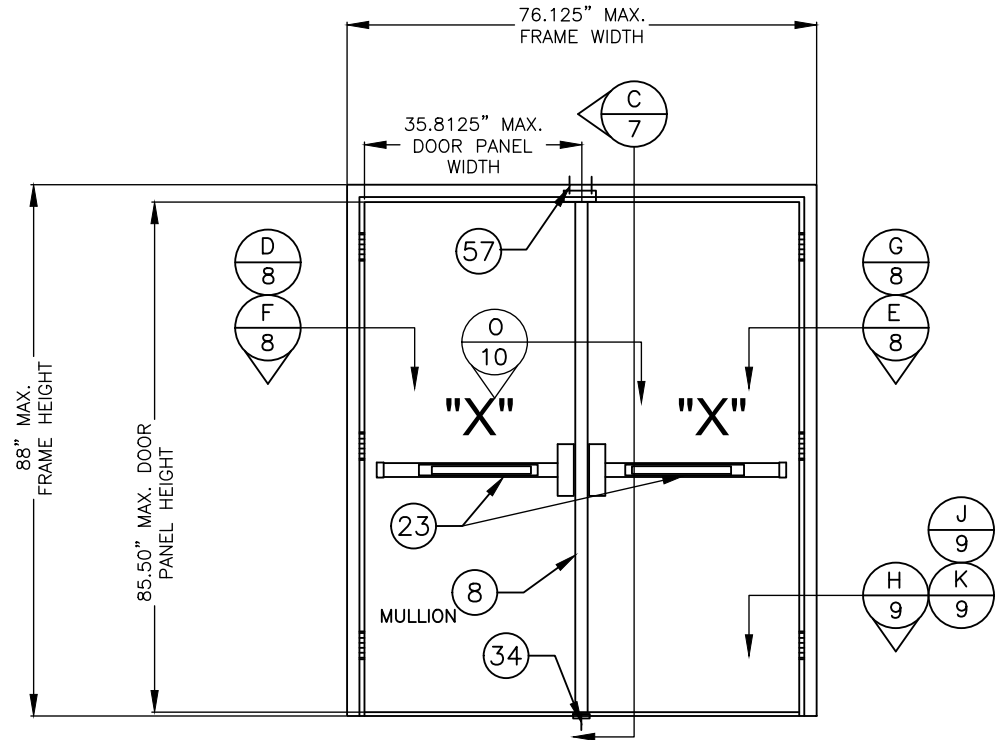
ELEVATION
INTERIOR VIEW
CORBIN/RUSSWIN ML2000 SERIES MORTISE LOCK



ELEVATION
INTERIOR VIEW
CORBIN/RUSSWIN 26D HEAVY DUTY CYLINDRICAL LOCKSET DL3000
CYLINDRICAL DEAD LOCK



ELEVATION
INTERIOR VIEW
DORMA 9400 VERTICAL RODS W/ PANIC BAR



ELEVATION
INTERIOR VIEW
DORMA 9300 RIM DEVICE W/ PANIC BAR & DORMA
REMOVABLE MULLION F-1300

PROJECT # 420-1002

HMF EXPRESS
2501 NORTHCHASE PARKWAY SE
WILMINGTON, NC 28405

SERIES FLUSH STEEL COMMERCIAL DOOR, OUTSWING, IMPACT (XX)
ELEVATIONS

PREPARED BY:

DATE:

DRAWING NO:

REV:

2/27/19

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HMF0005

DESCRIPTION

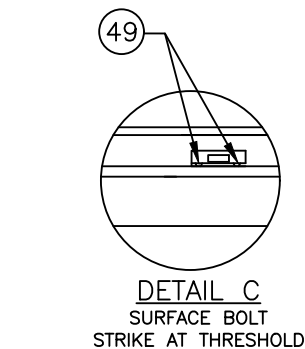
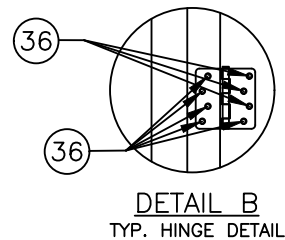
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8/4/21

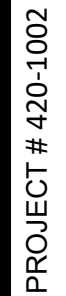
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4.1 MINIMUM EMBEDMENT OF 1½"

4.2 MINIMUM EDGE DISTANCE OF ¾"



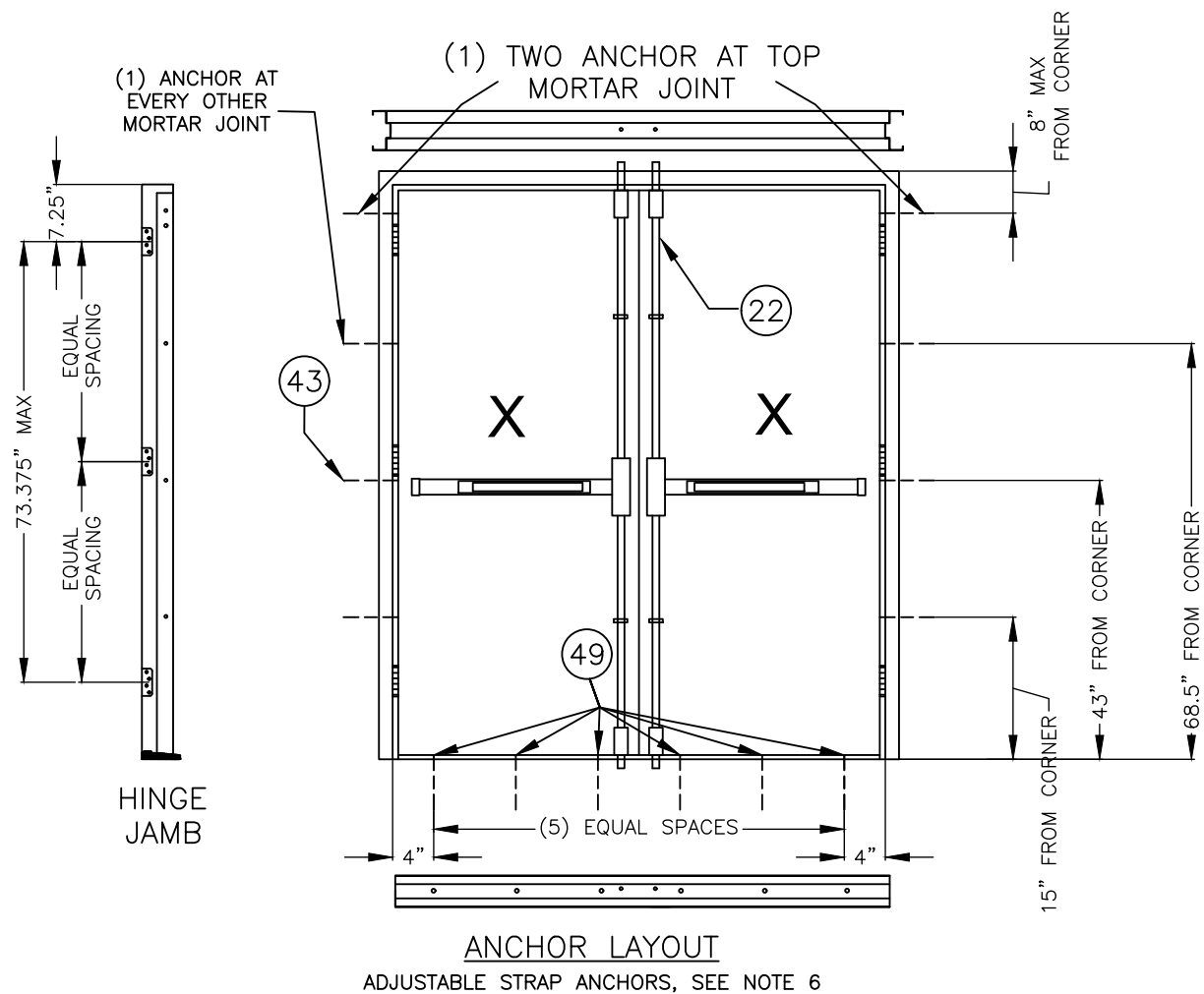
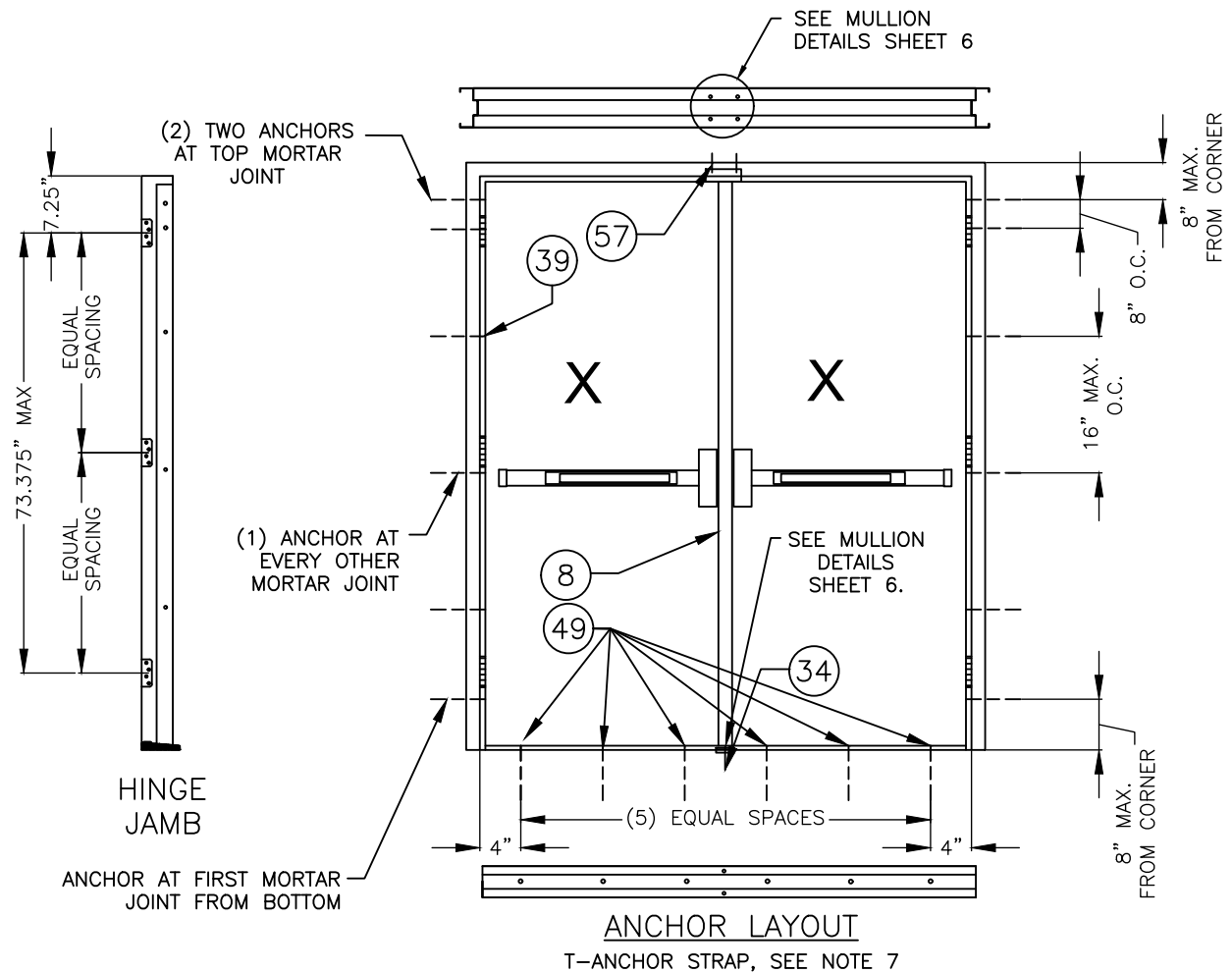
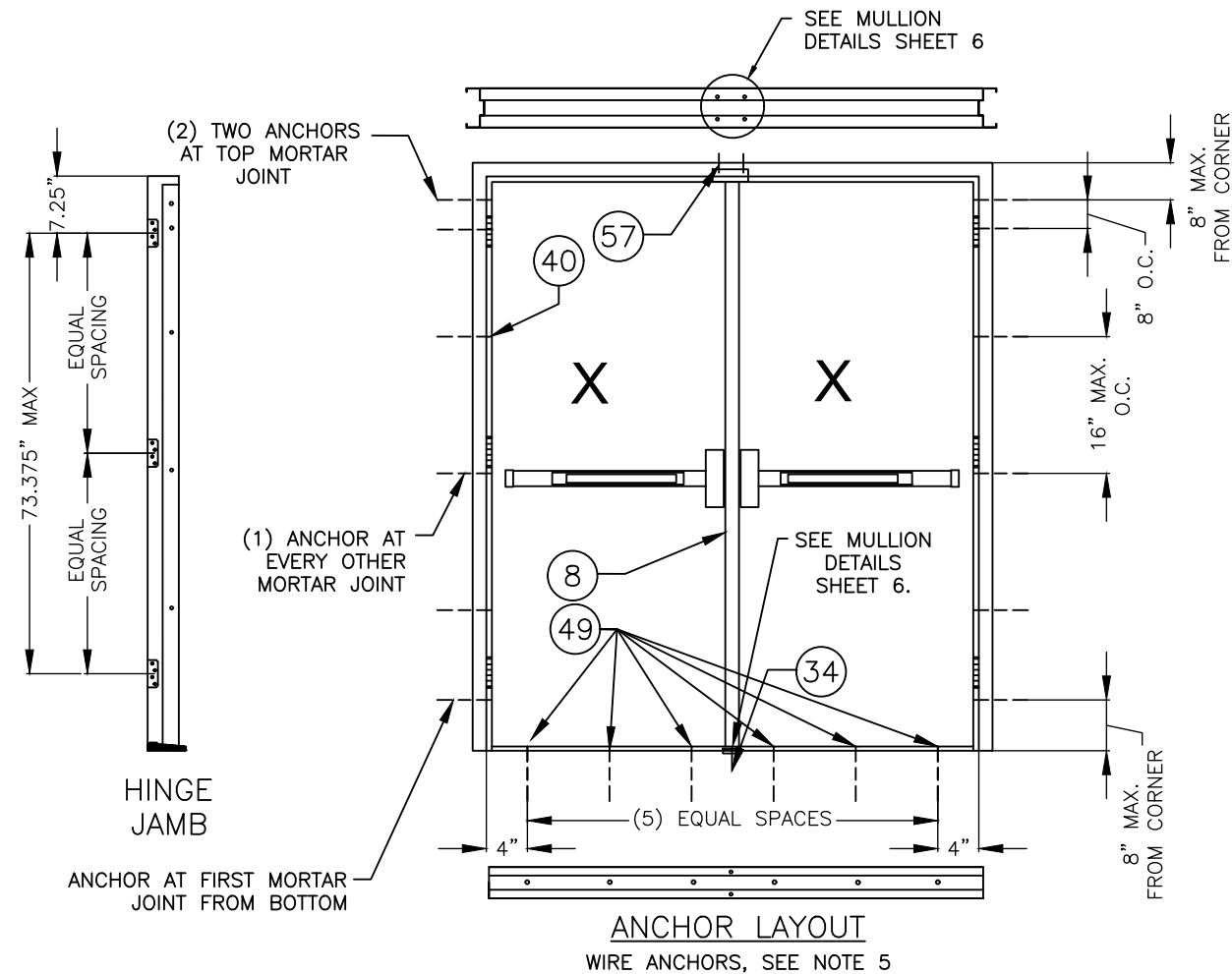
HMF EXPRESS
2501 NORTHCHASE PARKWAY SE
WILMINGTON, NC 28405

SERIES FLUSH STEEL COMMERCIAL DOOR, OUTSWING, IMPACT (XX)
ANCHOR LAYOUTS & NOTES (I)

REPAIRED BY:	DRAWN BY: DAS	DATE: 2/27/19
 PCTC PRODUCT DESIGN GROUP, LLC PO BOX 520775 LONGWOOD, FL 32752 (407) 486-9393 Email: info@pctc-corp.com	SCALE: N.T.S.	DRAWING NO: HMF0005
	REV: A	SHEET: 3 OF 15

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





INSTALLATION NOTES (CONTINUED):

5. INSTALLATION INTO GROUT FILLED CMU BLOCK SUBSTRATES WHICH UTILIZE HMF EXPRESS WIRE ANCHORS (ITEM #40) SHALL MAINTAIN THE FOLLOWING

- 5.1 MINIMUM EMBEDMENT OF $7\frac{1}{2}$ "
- 5.2 MINIMUM EDGE DISTANCE OF $1\frac{5}{16}$ "

6. INSTALLATION INTO GROUT FILLED CMU BLOCK SUBSTRATES WHICH UTILIZE HMF EXPRESS ADJUSTABLE STRAP ANCHORS (ITEM #43) SHALL MAINTAIN THE FOLLOWING:

- 6.1 MINIMUM EMBEDMENT OF 2"
- 6.2 MINIMUM EDGE DISTANCE OF $2\frac{1}{2}$ "

7. INSTALLATION INTO GROUT FILLED CMU BLOCK SUBSTRATE WHICH UTILIZE HMF EXPRESS TEE ANCHOR STRAPS (ITEM #39) SHALL MAINTAIN THE FOLLOWING:

- 7.1 MINIMUM EMBEDMENT OF 2"
- 7.2 MINIMUM EDGE DISTANCE OF $2\frac{1}{2}$ "

8. ALL ANCHORS: WELDED EMA (ITEM #41), WELDED EMA BUTTERFLY (ITEM #42), TEE STRAP ANCHOR (ITEM #39), WIRE ANCHOR (ITEM #40), AND ADJUSTABLE STRAP ANCHORS (ITEM# 43) SHALL BE SUPPLIED BY HMF EXPRESS, LLC.

PROJECT # 420-1002

HMF EXPRESS
2501 NORTHCHASE PARKWAY SE
WILMINGTON, NC 28405

SERIES FLUSH STEEL COMMERCIAL DOOR, OUTSWING, IMPACT (XX)
ANCHOR LAYOUTS & NOTES (II)

PREPARED BY:

DATE: 2/27/19

DRAWING NO: HMF0005

SHEET: 4 OF 15

REV: A

SCALE: N.T.S.

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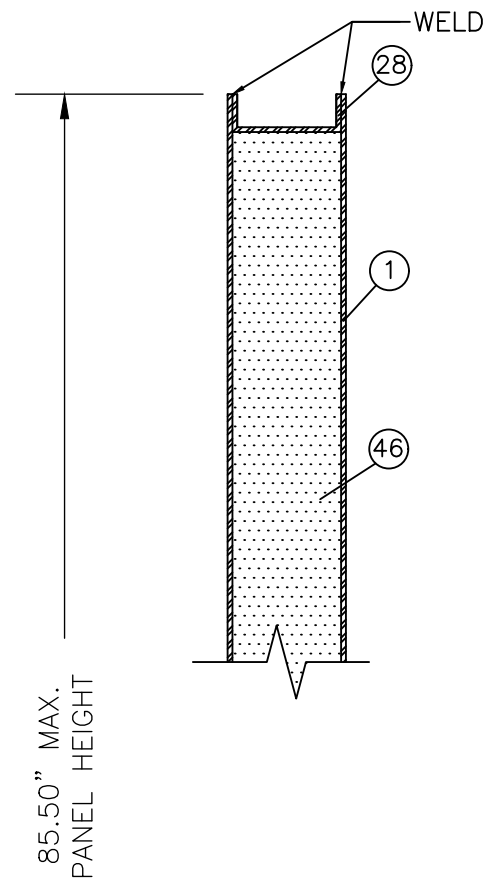
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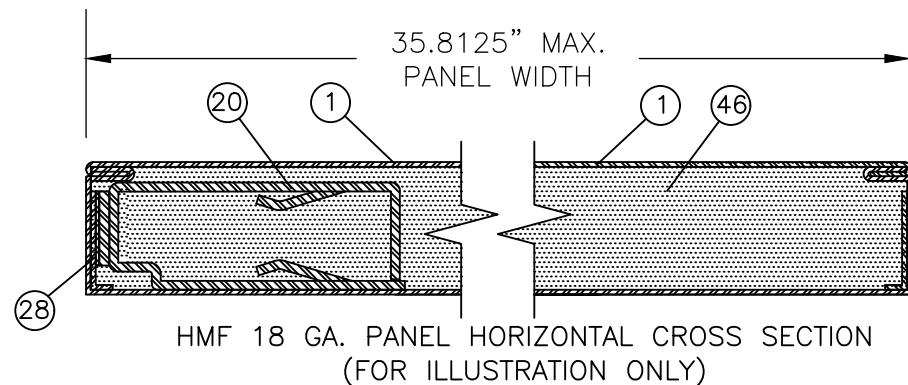
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2/27/19

HMF0005



HMF 18 GA. PANEL VERTICAL CROSS SECTION



HMF 18 GA. PANEL HORIZONTAL CROSS SECTION
(FOR ILLUSTRATION ONLY)

18 GA. DOOR PANEL CONSTRUCTION NOTE:

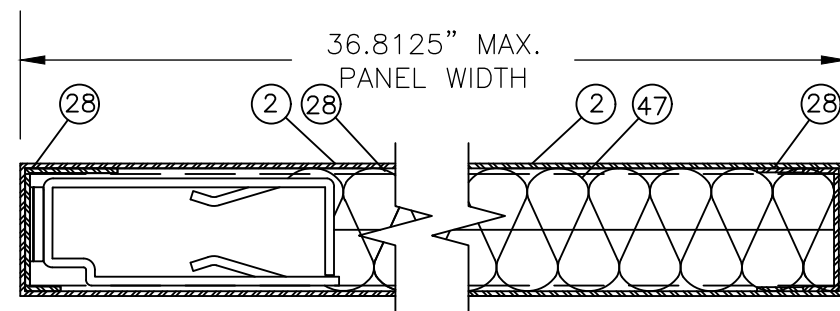
THE HMF 18 GA. PANELS ARE CONSTRUCTED FROM (2) 18 GA. (0.048" MIN.) COLD ROLLED OR A60 GALVANNEALED STEEL FACE SHEETS, ITEM #2. THE VERTICAL EDGES OF THE FACE SHEETS HAVE ROLL FORMED EDGES AND ARE PLACED TOGETHER AT PANEL CONSTRUCTION TO FORM A MECHANICAL INTERLOCK. THE VERTICAL EDGES AT THE HINGE AND LOCK STILES ARE REINFORCED WITH THE 14 GA. (0.074") "U" CHANNEL WITH OPEN END FACING INWARD. EACH FACE SHEET IS SPOT WELDED TO THE VERTICAL CHANNELS 0.430" IN FROM THE EDGE AND 2" FROM THE BOTTOM AND 4" MAX. O.C. THEREAFTER. THE HORIZONTAL EDGES ARE CUT STRAIGHT AND ARE CLOSED WITH A 14 GA.(0.074") STEEL TOP & BOTTOM "U" CHANNEL CLOSER, ITEM #28. THE TOP AND BOTTOM "U" CHANNELS ARE PLACED IN THE PANEL WITH OPEN EDGE FACING OUTWARD.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)1.0lbs. DENSITY, ITEM #46. THERE ARE THREE HINGE REINFORCEMENTS, ITEM #18, WELDED TO THE FACE SHEETS BEFORE BOTH FACE SHEETS ARE ASSEMBLED. THE REINFORCEMENT IS CONSTRUCTED FROM 7 GA. (0.179") HOT ROLLED STEEL MEASURING 1.25" X 8.5". THE REINFORCEMENTS ARE LOCATED AT 7.125", 39.375" AND 71.625" FROM TOP OF THE DOOR TO THE CENTER OF THE REINFORCEMENTS.

*HINGE LOCATIONS VARY WITH HEIGHT OF DOOR WITH MAX. 36-11/16" O.C. SPACING.

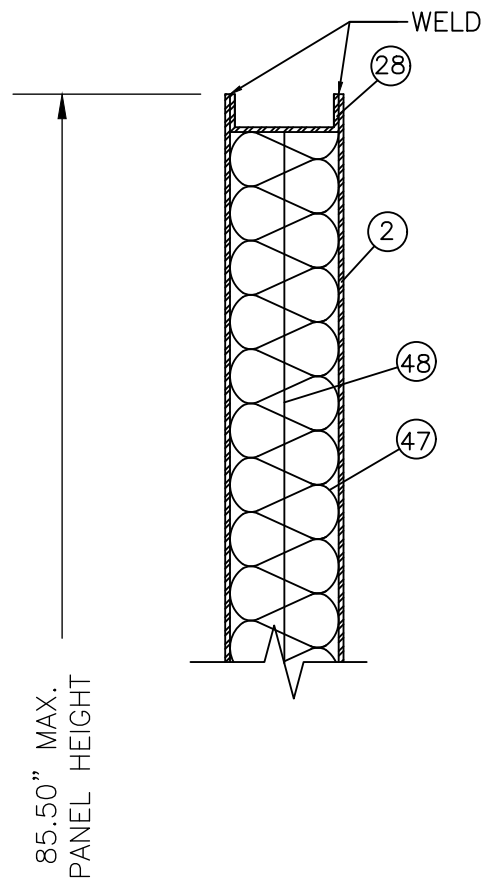
16 GA. DOOR PANEL CONSTRUCTION NOTE:

THE HMF 16 GA. STEEL STIFFENED PANELS, ARE CONSTRUCTED FROM (2) 16 GA. (0.058" MIN.) COLD ROLLED STEEL FACE SHEETS ITEM #2. THE VERTICAL EDGES OF THE FACE SHEETS ARE BENT 90° x 0.860" IN TOWARD THE CENTER. THE HORIZONTAL EDGES ARE CUT STRAIGHT. THE OUTSIDE PERIMETER OF THE PANEL, ON THE INTERIOR, IS REINFORCED WITH A 14 GA. (0.074" MIN.) STEEL "U" CHANNEL ITEM #28. THE "U" CHANNEL IS PLACED IN THE PANEL ON THE HINGE AND LOCK STILES WITH THE OPEN END FACING INWARD AGAINST THE 90 DEG. x 0.860" BEND IN THE FACE SHEETS. EACH FACE SHEET IS SPOT WELDED TO THE "U" CHANNEL 0.430" IN FROM THE EDGE AND 2.0" UP FROM THE BOTTOM AND 4.0" MAXIMUM OF CENTER. THE TOP AND BOTTOM "U" CHANNELS ARE PLACED IN THE PANEL WITH THE OPEN EDGE FACING OUTWARD. 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 PANEL IS REINFORCED ON THE INTERIOR WITH (3) 22 GA. (0.025" MIN.) STEEL STIFFENERS, ITEM #48, RUNNING VERTICAL FROM TOP TO BOTTOM. THE TWO OUTBOARD STIFFENERS ARE LOCATED 6.5" MAXIMUM IN FROM THE EDGE OF THE PANEL. THE MIDDLE STIFFENER IS LOCATED IN THE CENTER OF THE PANEL. THE THREE STIFFENERS CAN ONLY BE A MAXIMUM 6.0" APART. THE STIFFENERS ARE WELDED AT EACH SIDE OF THE STIFFENER UP 3.0" FROM THE BOTTOM AND A MAXIMUM OF 6.0" ON CENTER. THE SPACES BETWEEN THE THREE STIFFENERS AND THE EDGES OF THE PANEL ARE FILLED WITH FIBERGLASS INSULATION, ITEM #47. EACH PANEL HAS THREE STEEL HINGE REINFORCEMENTS, ITEM #18, 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.THE REINFORCEMENTS ARE LOCATED 7.125", 39.375" AND 71.625" FROM THE TOP OF THE DOOR TO THE CENTER OF THE REINFORCEMENTS.

*HINGE LOCATIONS VARY WITH HEIGHT OF DOOR WITH MAX. 36-11/16" O.C. SPACING.



HMF 16 GA. PANEL HORIZONTAL CROSS SECTION
(FOR ILLUSTRATION ONLY)



HMF 16 GA. PANEL VERTICAL CROSS SECTION

PROJECT # 420-1002

HMF EXPRESS
2501 NORTHCHASE PARKWAY SE
WILMINGTON, NC 28405

SERIES FLUSH STEEL COMMERCIAL DOOR, OUTSWING, IMPACT (XX)
18GA. & 16GA. DOOR PANEL CONSTRUCTION

PREPARED BY:

DRAWN BY: DAS

DATE: 2/27/19

DRAWING NO: HMF0005

REV: A

DESCRIPTION

DATE

BY

5 OF 15

REV

DATE

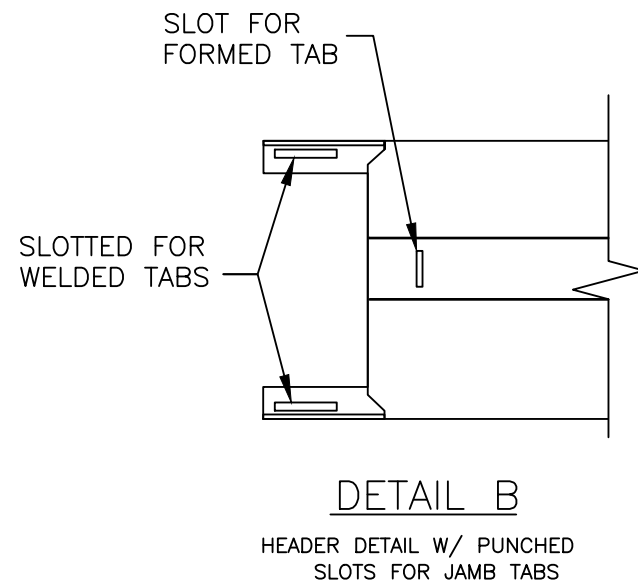
BY

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



– K.D. AND WELDED FRAME – THE HEADER, ITEM #3 AND THE SIDE JAMBS, ITEM #4 ARE A ONE-PIECE BRAKE PRESS FORMED STEEL FRAME FROM MIN. 16 GA. (0.058" MIN.) OR GREATER COLD ROLLED STEEL. THE CORNERS OF BOTH THE HEADER AND SIDE JAMBS ARE MITERED AND BUTTED. THE HEADER HAS SLOTS PUNCHED IN BOTH RETURN LEGS (SEE DETAIL B, SHEET 6) FOR THE 18 GA. (0.048" MIN.) FRAME TABS, ITEM #52 THAT ARE WELDED TO SIDE JAMBS. THE TABS ARE BENT 90° OVER THE HEADER AFTER BEING SLIPPED THROUGH THE SLOTS TO CREATE A MECHANICAL JOINT. THE HEADER ALSO HAS A PUNCHED SLOT IN THE HAT SECTION, SEE DETAIL B SHEET 6. THE SIDE JAMBS HAVE ONE FORMED TAB IN THE HAT SECTION, SEE DETAIL A SHEET 6. THE FORMED TABS ON THE SIDE JAMBS ARE SLID INTO THE PUNCHED SLOTS IN THE HEADER AND BENT OVER 90° TO CREATE A MECHANICAL LOCK. WELDED FRAME ONLY AT THE HEADER AND SIDE JAMBS ARE ASSEMBLED. THEY ARE SEEM WELDED ON THE FRAME FACE AND CONTINUOUS WELDED ON THE INTERIOR FACES.

– EACH HINGE LOCATION ON BOTH THE WELDED FRAME AND THE K.D. FRAME HAVE A 7 GA. (0.179") HOT ROLLED STEEL HINGE REINFORCEMENT, ITEM #19, WELDED TO THE FRAME. EACH SIDE JAMB HAS A 16 GA. (0.058") STEEL L-SHAPED FLOOR ANCHOR PLATE WELDED TO THE INSIDE BOTTOM OF THE FRAME. THE SYSTEM CAN BE FITTED WITH AN EXTRUDED ALUMINUM OUT-SWING ADA BUMP FACE THRESHOLD MANUFACTURED BY NATIONAL GUARD PRODUCTS #896N, ITEM #5, OR AN EXTRUDED ALUMINUM ADA PASS OVER THRESHOLD #415S BY HAGAR, ITEM #7. THE FRAME SYSTEM CAN UTILIZE A SOLID STEEL REMOVABLE MULLION BY DORMA #F1300, ITEM #8, COLD ROLLED STEEL. THE MULLION IS HELD INTO THE FRAME WITH A SOLID STEEL TOP AND BOTTOM MULLION FITTING. THE FITTING AT THE TOP IS SECURED TO THE FRAME HEADER WITH (4) 5/16" X 1/2" FHPMS, ITEM #57. THE FITTING AT THE BOTTOM IS SECURED TO THE CONCRETE FLOOR WITH (2) 3/8" X 1-3/8" DROP-IN ANCHORS INTO CONCRETE SILL, ITEM # 34.



Technical drawing of Mullion Detail A, showing a vertical section of a removable mullion. The drawing includes dimensions and labels for various components and materials.

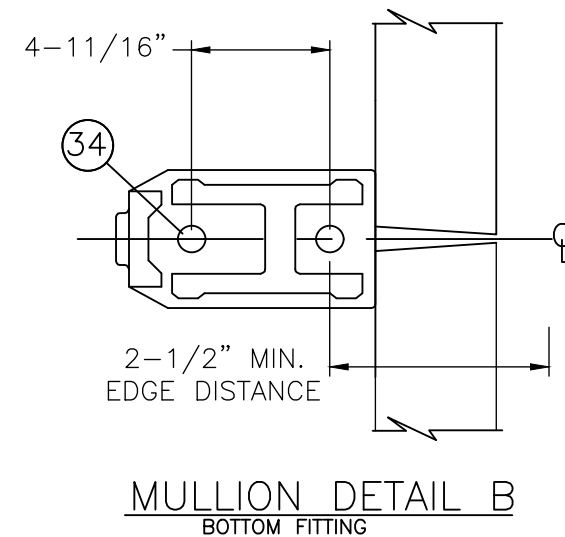
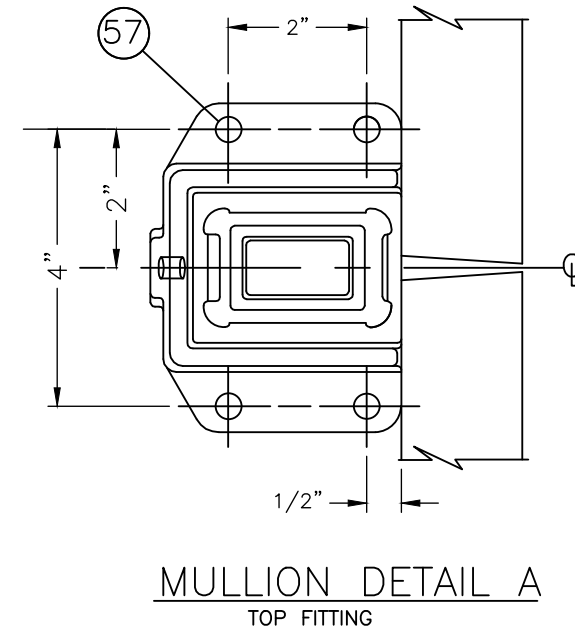
Labels and Dimensions:

- THAN 3" WIDE, BLOCKING MUST BE SUPPLIED BY OTHERS** (Top left)
- REINFORCEMENT BY FRAME MANUFACTURER** (Top right)
- 3** (Callout for blocking)
- 57X4** (Callout for reinforcement)
- 1 3/8"** (Dimension for blocking height)
- BOTTOM OF STOP** (Label for the bottom of the stop)
- 8** (Callout for the stop)
- MULLION DETAIL A** (Label for the mullion detail)
- DORMA 9300 SERIES RIM DEVICE STANDARD STRIKE** (Label for the strike)
- 35X4** (Callout for the strike)
- MULLION DETAIL A** (Label for the mullion detail)
- 59** (Callout for the mullion)
- 44"** (Dimension for the mullion length)
- MULLION LENGTH 1-15/16" LESS THAN DOOR OPENING** (Label for the mullion length)
- 2-1/2" MIN. EMBEDMENT** (Label for the embedment)
- 34** (Callout for the mullion)
- FINISHED FLOOR LINE** (Label for the floor line)
- MIN. 4" SLAB THICKNESS** (Label for the slab thickness)
- 2-1/2" MIN. EDGE DISTANCE** (Label for the edge distance)
- 4-11/16" MIN. O.C. SPACING** (Label for the spacing)

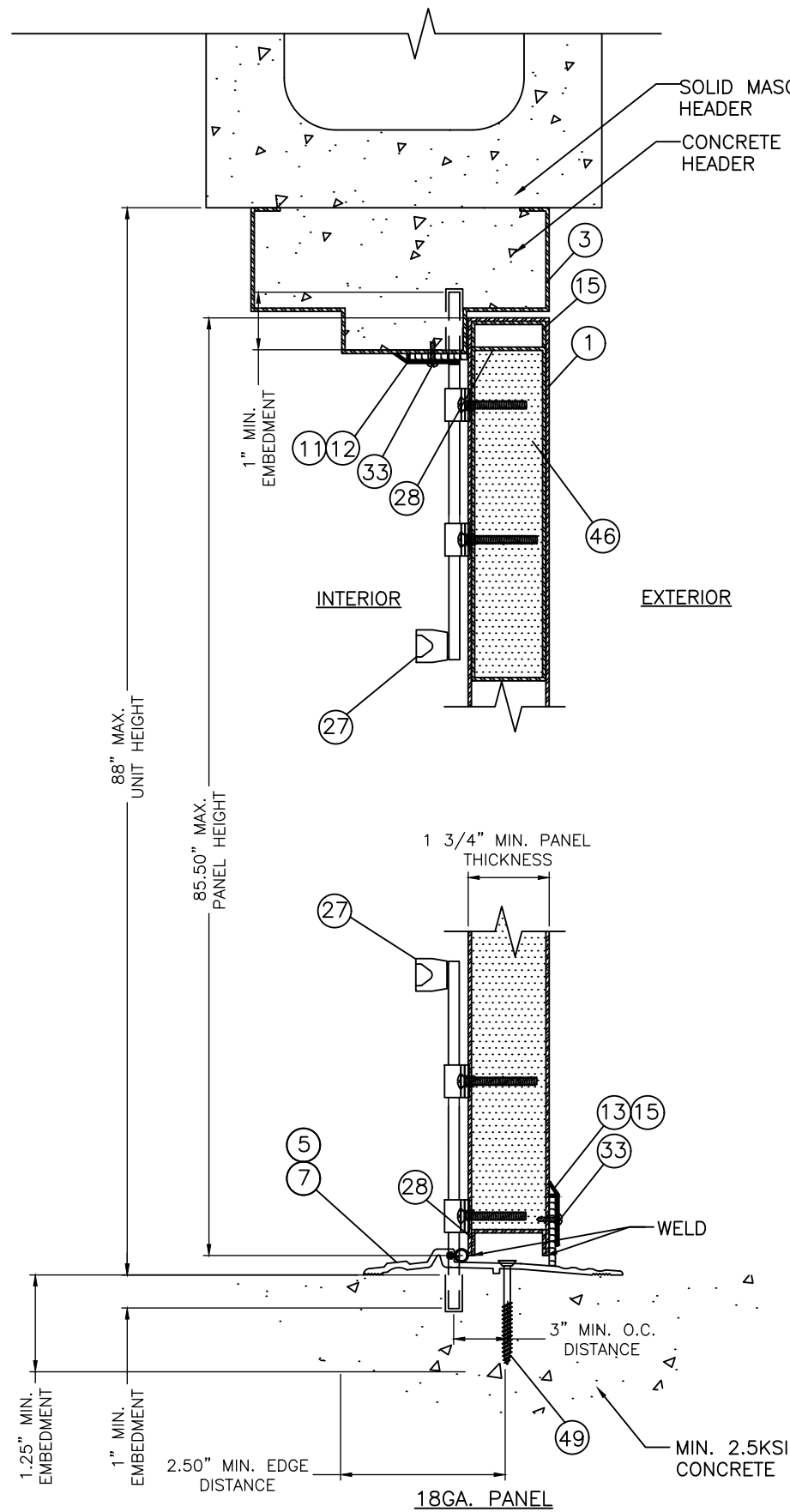
MULLION DETAIL
DORMA HC1300 REMOVABLE MULLION
VERTICAL SECTION

Technical drawing of a rectangular plate with rounded corners. The overall height is 2 inches. The overall width is 3 inches. The inner rectangular area has a width of .3125 inches.

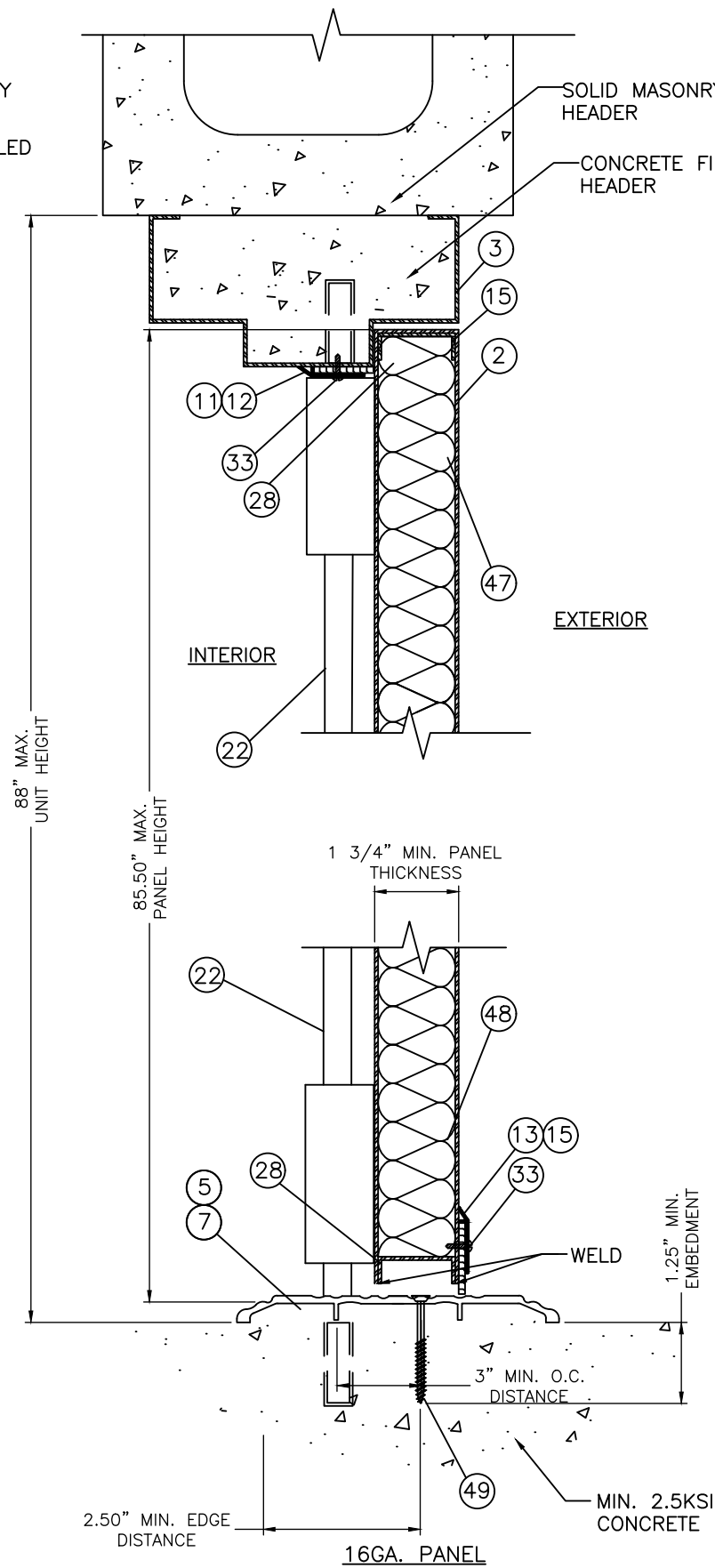
(8) DORMA HC1300 FIRE MULLION
STEEL TYPICAL WALL THICKNESS: 0.3125"



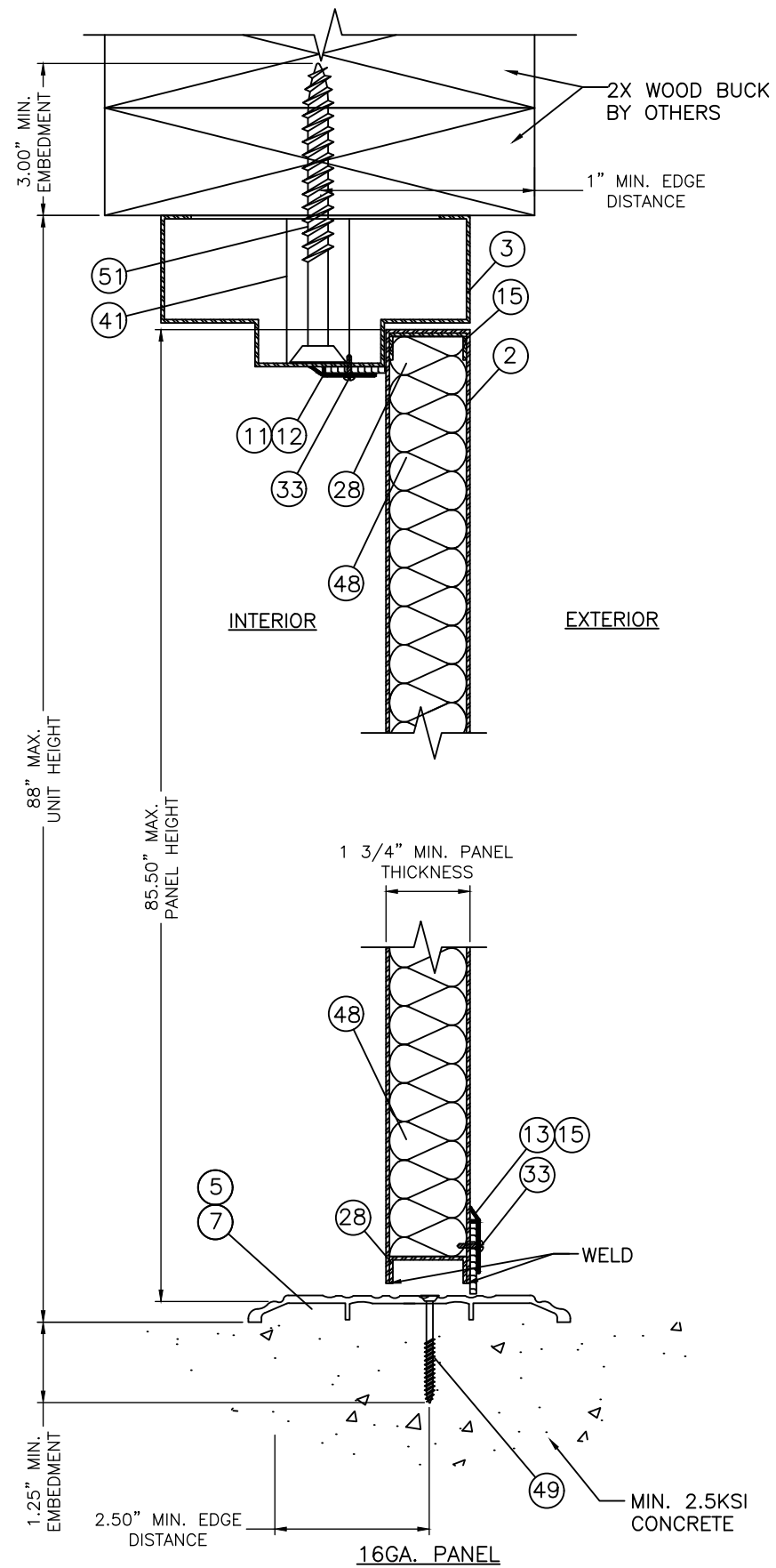
HMF EXPRESS 2501 NORTHCASE PARKWAY SE WILMINGTON, NC 28405		PROJECT # 420-1002	
SERIES FLUSH STEEL COMMERCIAL DOOR, OUTSWING, IMPACT (XX) FRAME NOTES & MULLION DETAILS			
PREPARED BY:	 PDC PRODUCT DESIGN GROUP, LLC PO BOX 520775 LONGWOOD, FLORIDA 32752 EBPE C.A. NO. 25935	DRAWN BY: DAS SCALE: N.T.S. REV: A	DATE: 2/27/19 DRAWING NO: HMF0005 SHEET: 6 OF 15
		A	UPDATE TO 2020 FBC 8/4/21 RJA
		REV	DESCRIPTION DATE BY



A VERTICAL SECTION
 7 HEAD/SILL - CONCRETE / GROUT - FILLED CMU
 (MORTISE LOCK/ CYLINDRICAL LOCK WITH SURFACE BOLTS)



B VERTICAL SECTION
 7 HEAD/SILL - CONCRETE / GROUT - FILLED CMU
 (SURFACE VERTICAL ROD)



C VERTICAL SECTION
 7 HEAD - 2X WOOD FRAME
 SILL - CONCRETE (REMOVABLE MULLION)

PROJECT # 420-1002

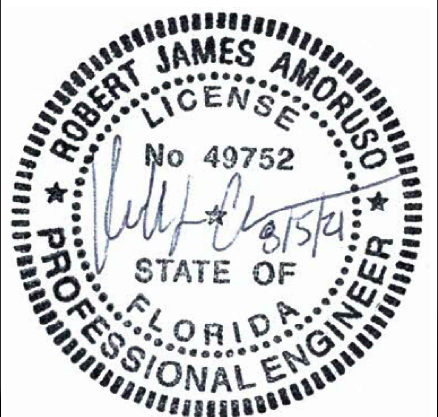
HMF EXPRESS
 2501 NORTHCASE PARKWAY SE
 WILMINGTON, NC 28405

SERIES FLUSH STEEL COMMERCIAL DOOR, OUTSWING, IMPACT (XX)
 VERTICAL SECTIONS

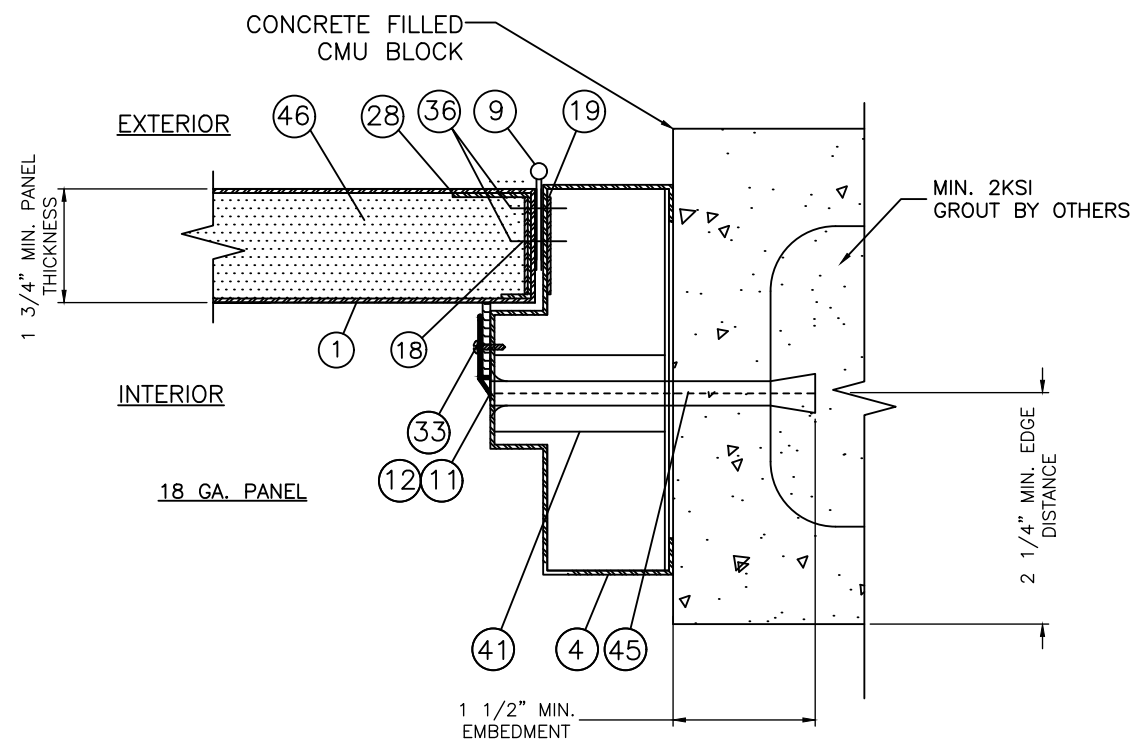
DATE:	2/27/19
DRAWING NO:	HMF0005
SCALE:	N.T.S.
REV:	A
SHEET:	7 OF 15

PREPARED BY: DAS
 PTC PRODUCT DESIGN GROUP, LLC
 PO BOX 520775
 LONGWOOD, FLORIDA 32752
 FBPE CA NO. 23385

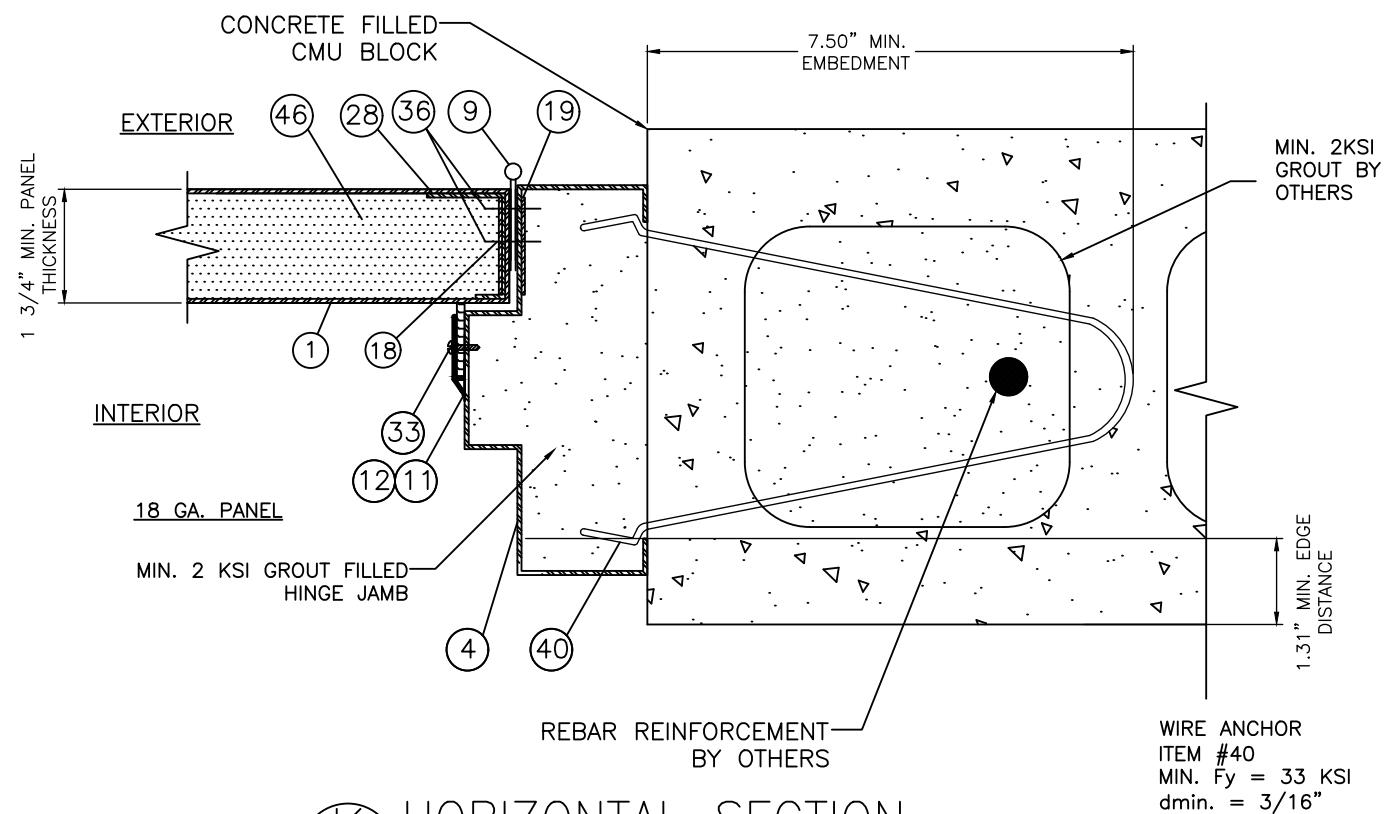
Robert J. Amoruso, P.E.
 Florida P.E. No. 49752



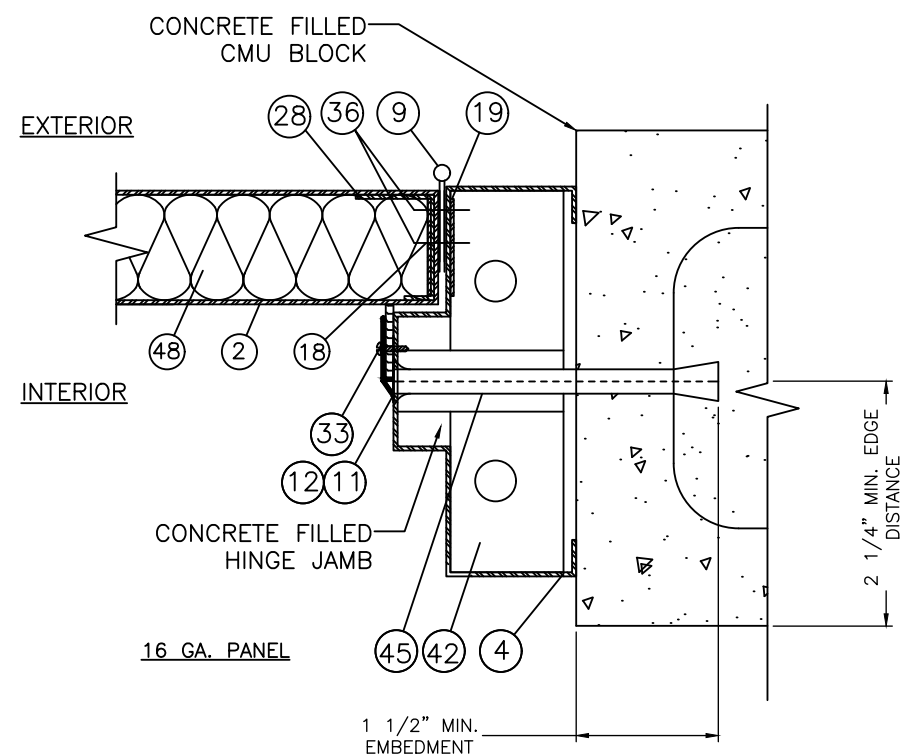




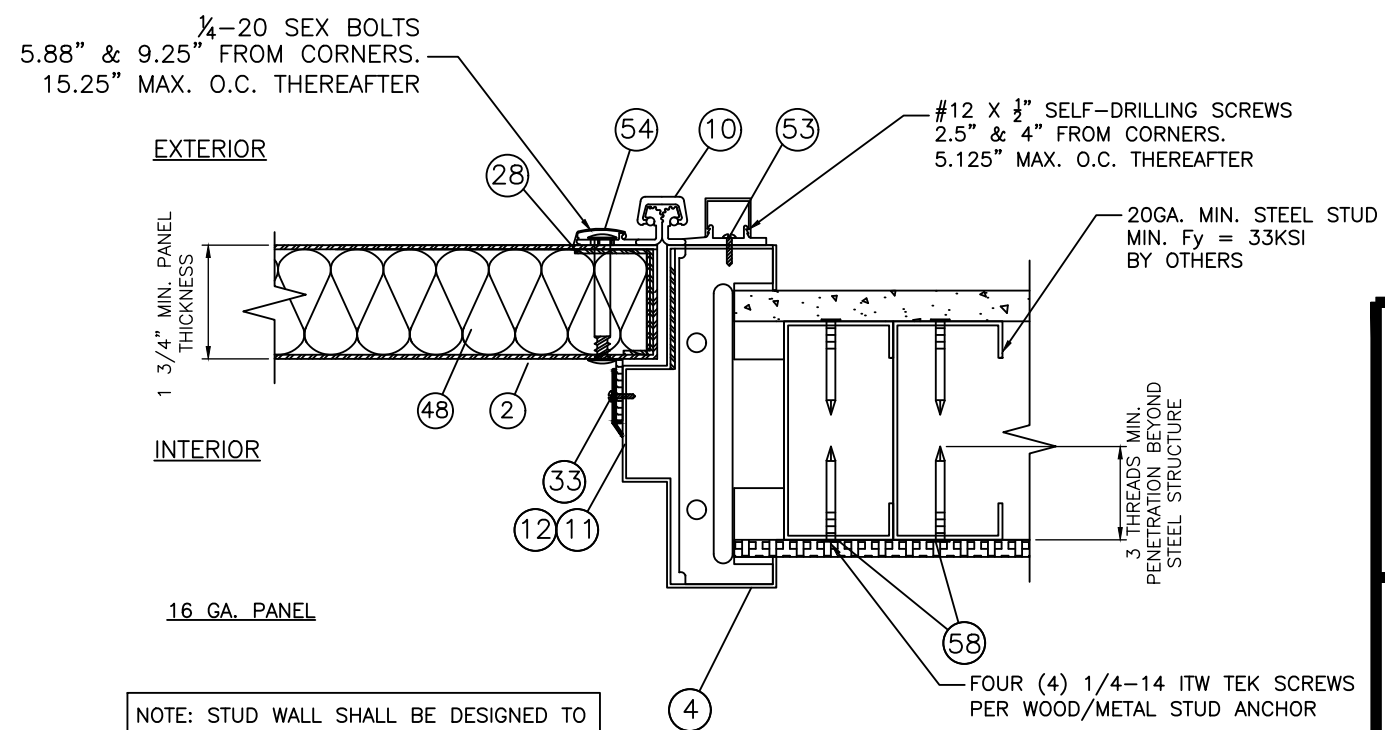
 HORIZONTAL SECTION
JAMB - CONCRETE/MASONRY
LOK-BOLT/ EMA. WELDED ANCHOR



K
9 HORIZONTAL SECTION
JAMB - CONCRETE/MASONRY
WIRE ACNCHOR/HMF 18GA PANEL

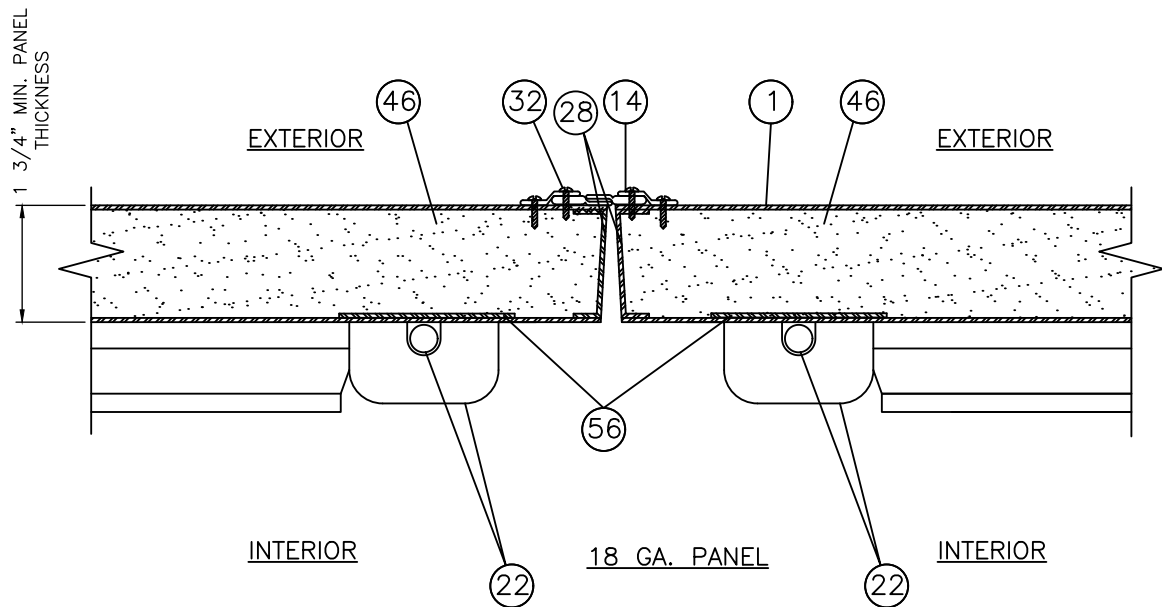


 HORIZONTAL SECTION
JAMB - CONCRETE/MASONRY
LOK-BOLT/ EMA BUTTERFLY ANCHOR

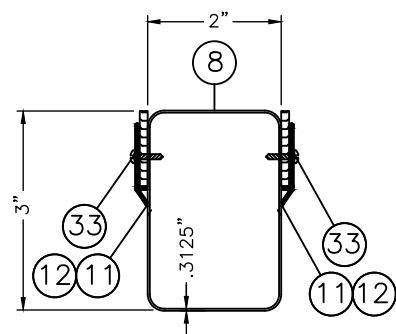


NOTE: STUD WALL SHALL BE DESIGNED TO CARRY 127 LBS./FT LOAD AND SHALL BE REVIEWED BY BUILDING OFFICIAL

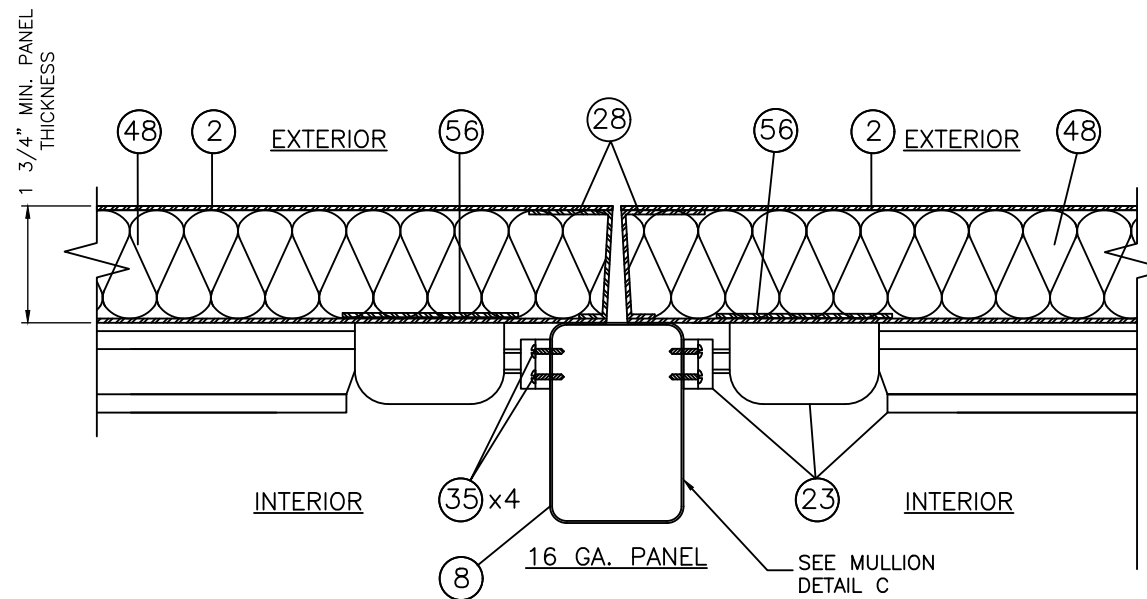
① HORIZONTAL SECTION ⑨ JAMB - CONTINUOUS HINGE



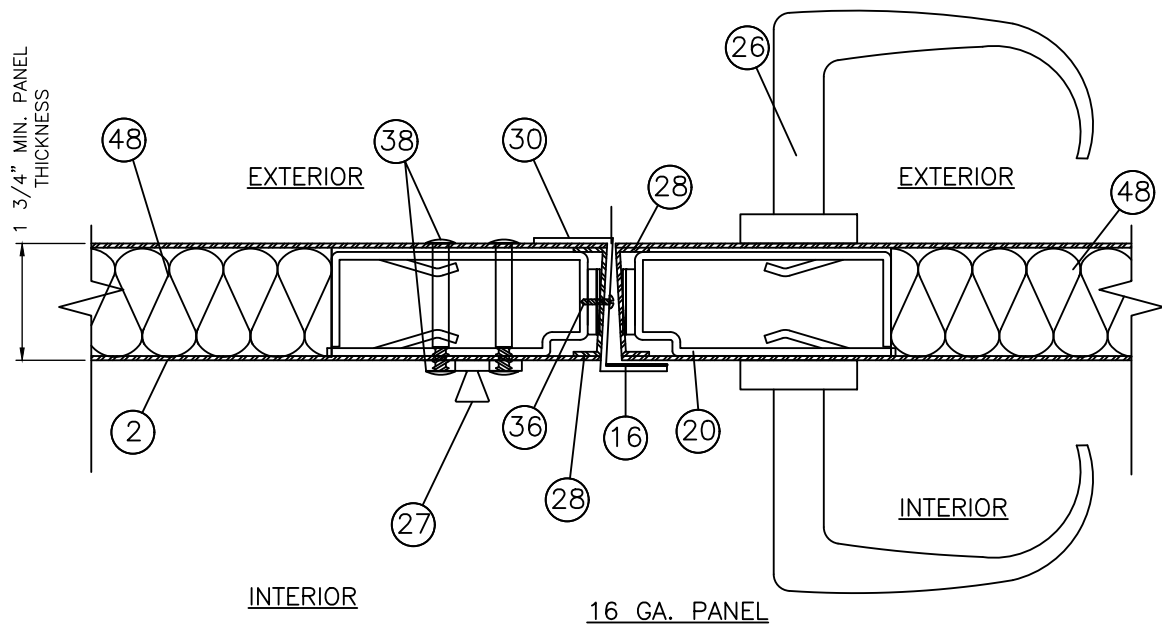
N
10 HORIZONTAL SECTION
DORMA 9400 VERTICAL RODS



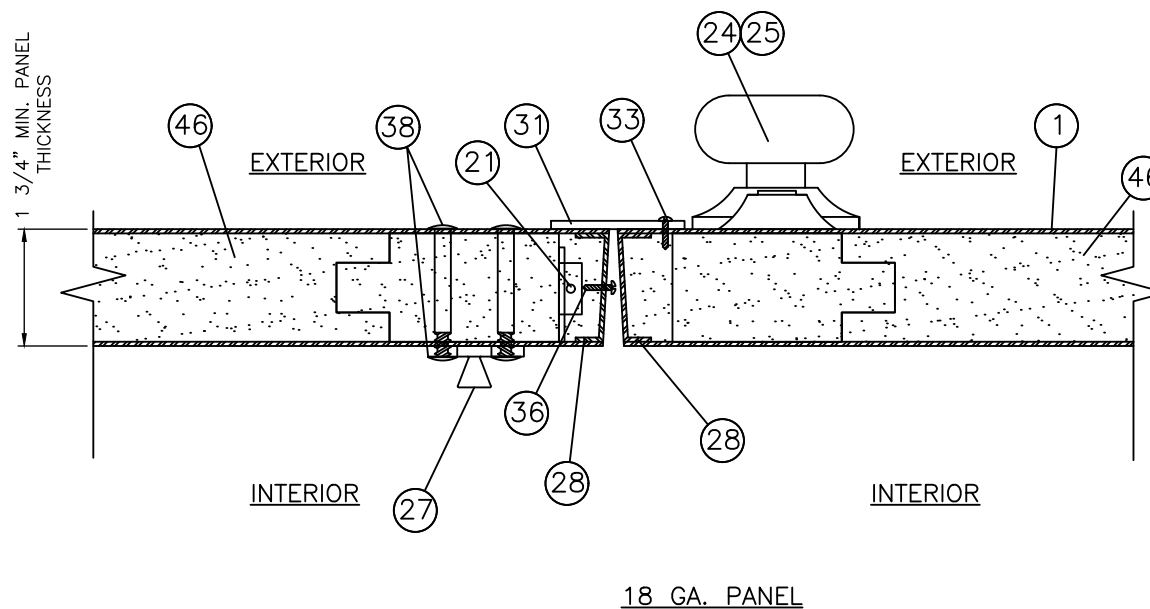
MULLION DETAIL C
DORMA HC1300 REMOVABLE MULLION
(SEE MULLION TOP & BOTTOM
INSTALLATION DETAILS, SHEET 6)



O
10 HORIZONTAL SECTION
DORMA 9300 RIM DEVICE W/ PUSH BAR



L
10 HORIZONTAL SECTION
CORBIN/RUSSWIN ML2000
MORTISE LOCKSET



M
10 HORIZONTAL SECTION
CORBIN/RUSSWIN CORB 26D
CYLINDRICAL LOCKSET W/ CYL. DEADLOCK

PROJECT # 420-1002

HMF EXPRESS
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SERIES FLUSH STEEL COMMERCIAL DOOR, OUTSWING, IMPACT (XX)
HORIZONTAL SECTIONS (III)

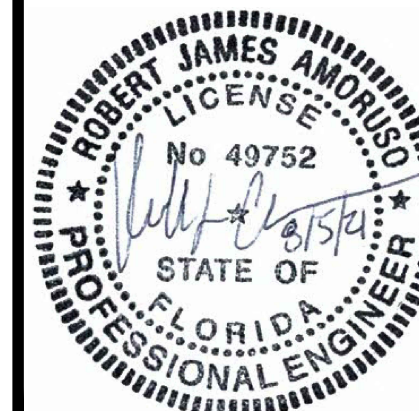
PREPARED BY: **FPE**

PTC PRODUCT DESIGN GROUP, LLC
PO BOX 520775
LONGWOOD, FLORIDA 32752
Phone: 321.690.1788
Fax: 321.690.1789
Email: info@pdc-corp.com

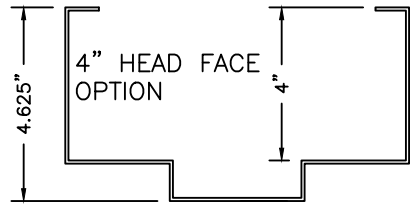
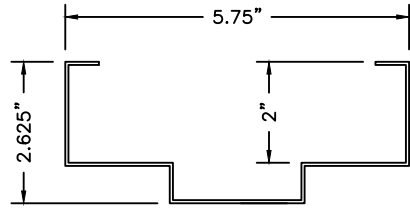
DRAWN BY:	DAS	DATE:	2/27/19
SCALE:	N.T.S.	DRAWING NO:	HMF0005
REV:	A	SHEET:	10 OF 15

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

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

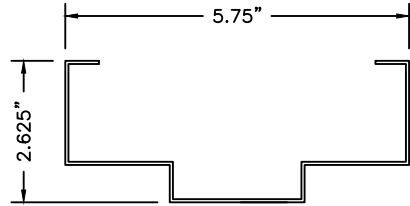


- 3 H.M.F. HEADER C.R.S.
16 GA. STEEL MIN.
TYPICAL MIN. WALL THICKNESS: 0.058" OR GREATER

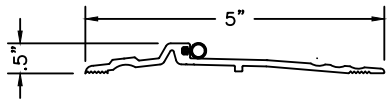


NOTE: WHEN 4" HEAD
FACE OPTION IS USED,
O.A. FRAME HEIGHT SHALL
NOT EXCEED 88"
AND DOOR PANEL HEIGHT
SHALL NOT EXCEED 83.5".

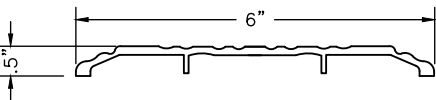
- 4 H.M.F.JAMBS C.R.S.
16 GA. STEEL MIN.
TYPICAL WALL THICKNESS: 0.058" OR GREATER



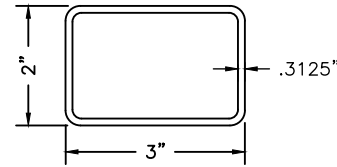
- 5 PANIC THRESHOLD NATIONAL GUARD #896N
ALUMINIUM
TYPICAL WALL THICKNESS: .125"



- 7 ADA PASS OVER THRESHOLD BY HAGER #415S
ALUMINIUM
TYPICAL WALL THICKNESS: .140"

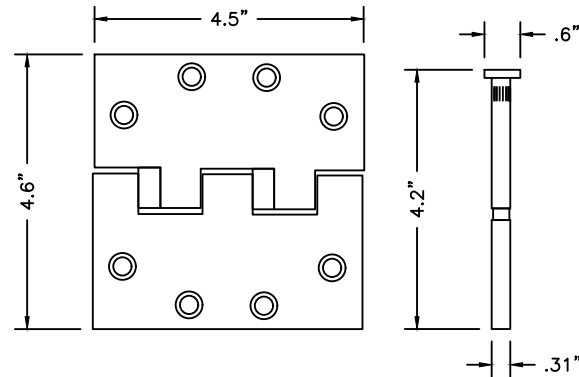


- 8 DORMA F1300 FIRE MULLION
STEEL
TYPICAL WALL THICKNESS: .3125"

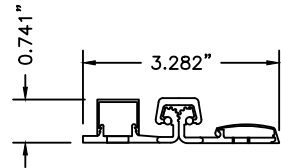


DORMA HC1300 MULLION
ASTM A500 GR. B
MIN. $F_y = 46$ KSI
 $E = 29,000$ KSI
 $I_x = 2,3800$ in. 4
 $S_x = 15900$ in. 3

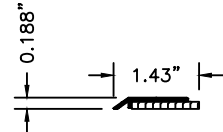
- 9 4 1/2" TEMPLATE HINGE BY HAGER
STEEL
TYPICAL WALL THICKNESS: .130"



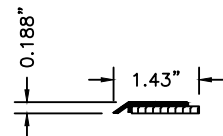
- 10 CONTINUOUS STEEL HINGE HAGER



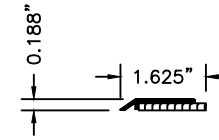
- 11 SURFACE MOUNTED FRAME WEATHERSTRIP
NATIONAL GUARD PRODUCTS #130NA



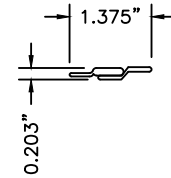
- 12 SURFACE MOUNTED FRAME WEATHERSTRIP
NATIONAL GUARD PRODUCTS #130NA



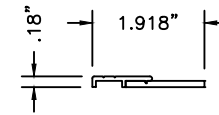
- 13 SURFACE MOUNTED DOOR BOTTOM SWEEP
NATIONAL GUARD PRODUCTS #200NA



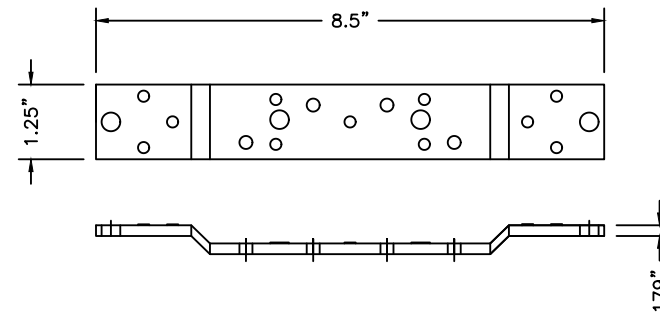
- 14 SURFACE MOUNTED DOOR MEETING STILE SEAL
NATIONAL GUARD PRODUCTS #125NA



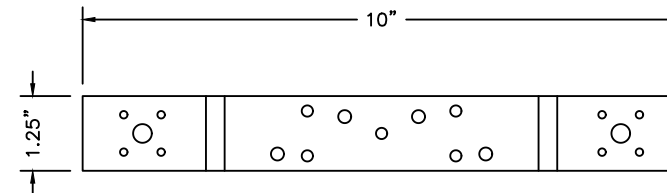
- 15 SURFACE MOUNTED DOOR BOTTOM SWEEP
PEMCO #321CN49



- 18 STEEL DOOR HINGE REINFORCEMENT
7 GA. STEEL
TYPICAL WALL THICKNESS: .179"



- 19 H.R.S. FRAME HINGE REINFORCEMENT
7 GA. STEEL
TYPICAL WALL THICKNESS: .179"



PROJECT # 420-1002

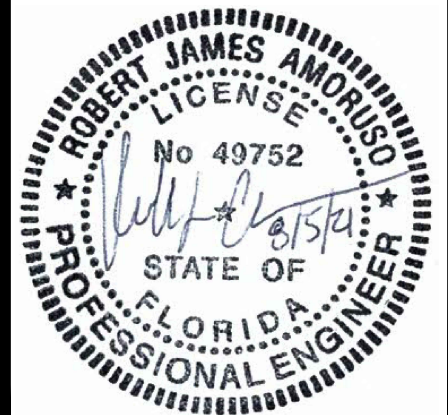
HMF EXPRESS
2501 NORTHCASE PARKWAY SE
WILMINGTON, NC 28405

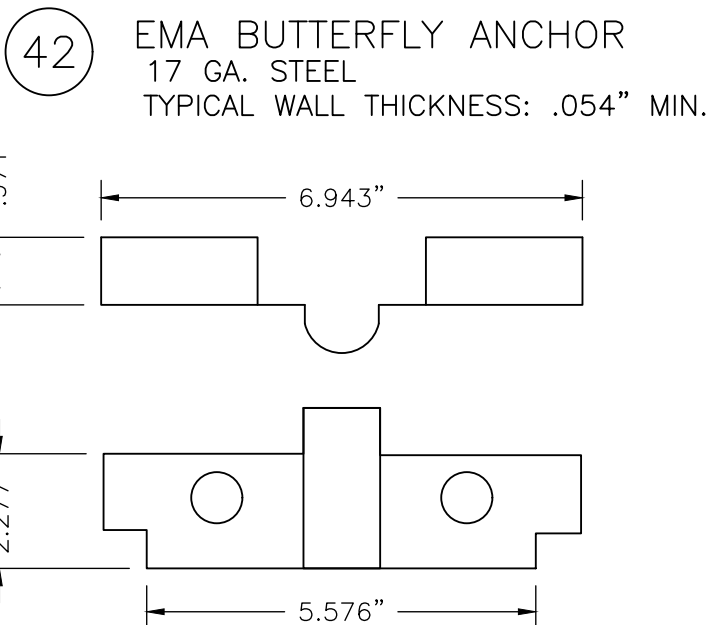
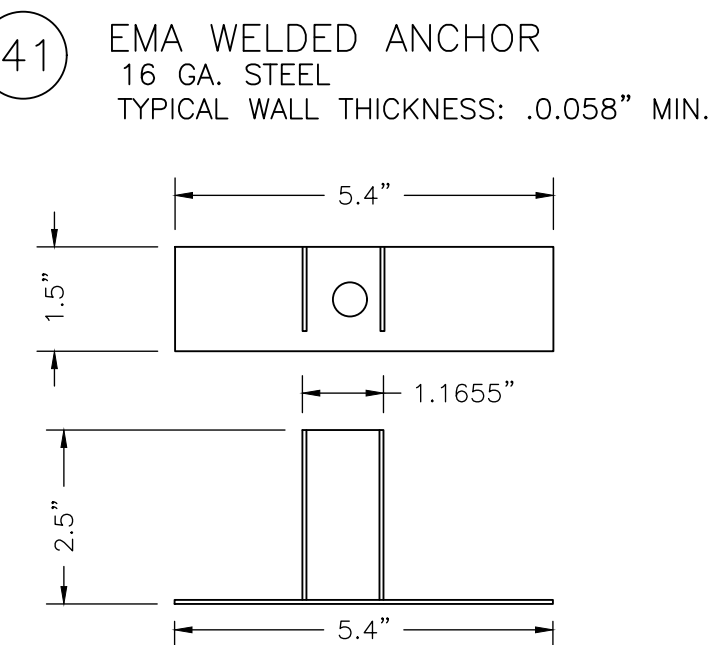
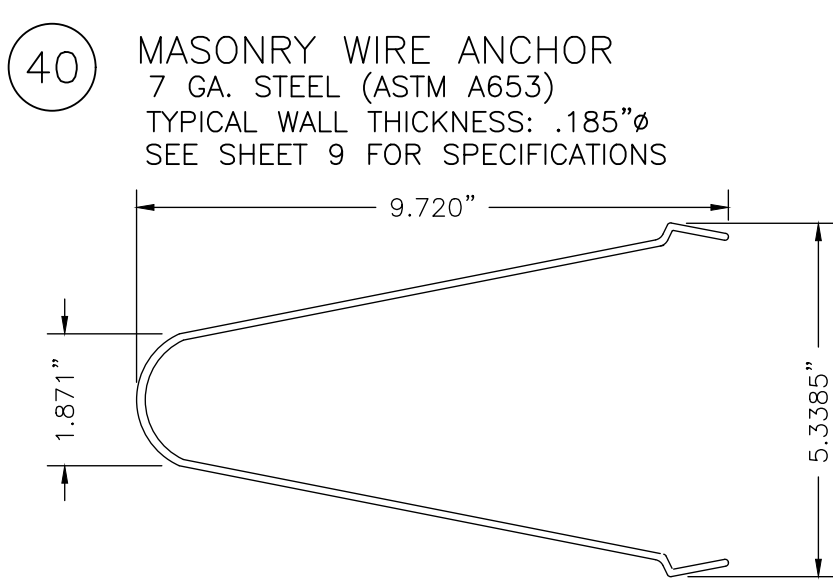
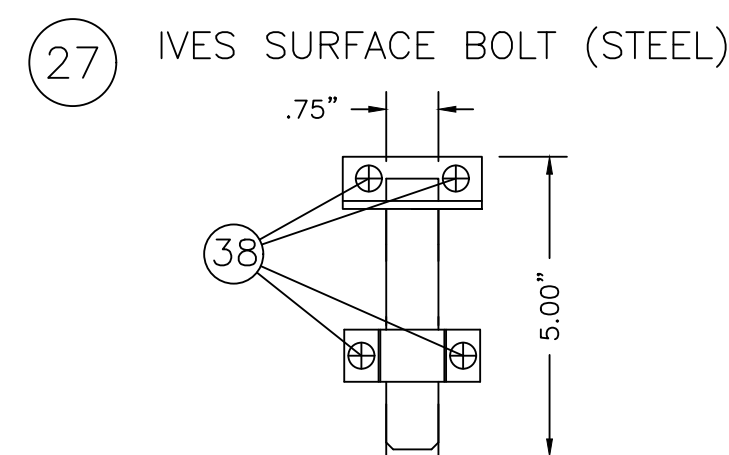
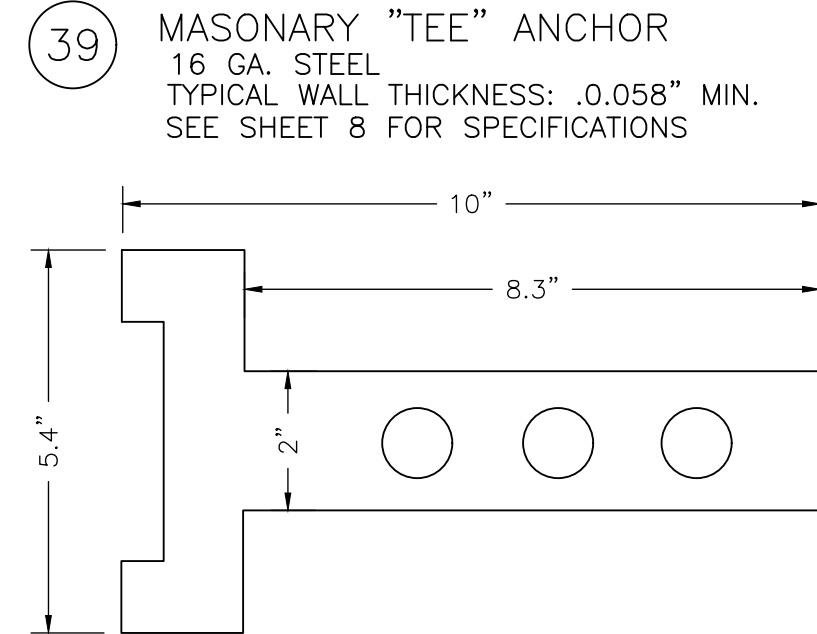
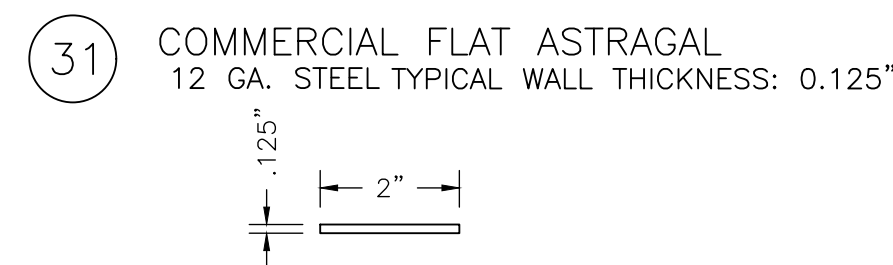
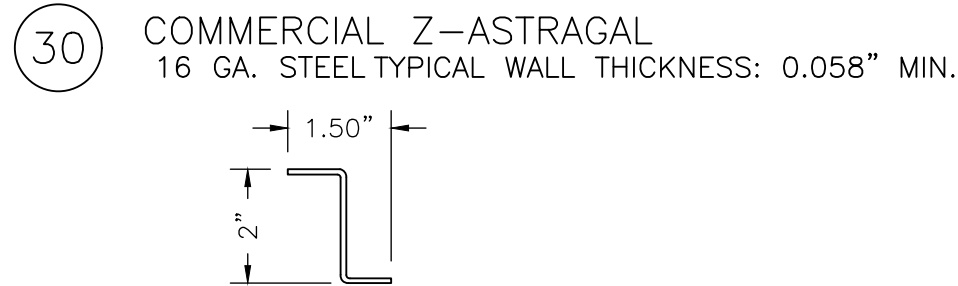
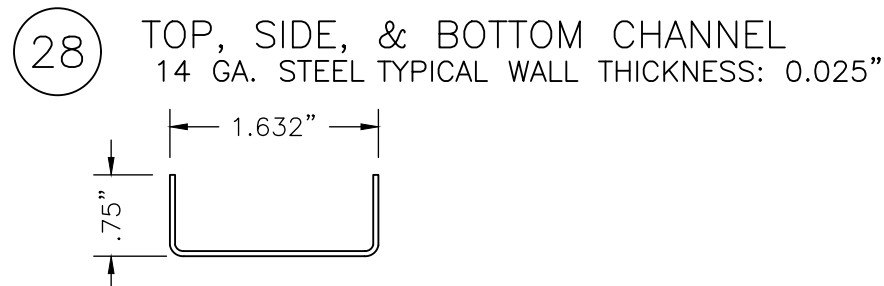
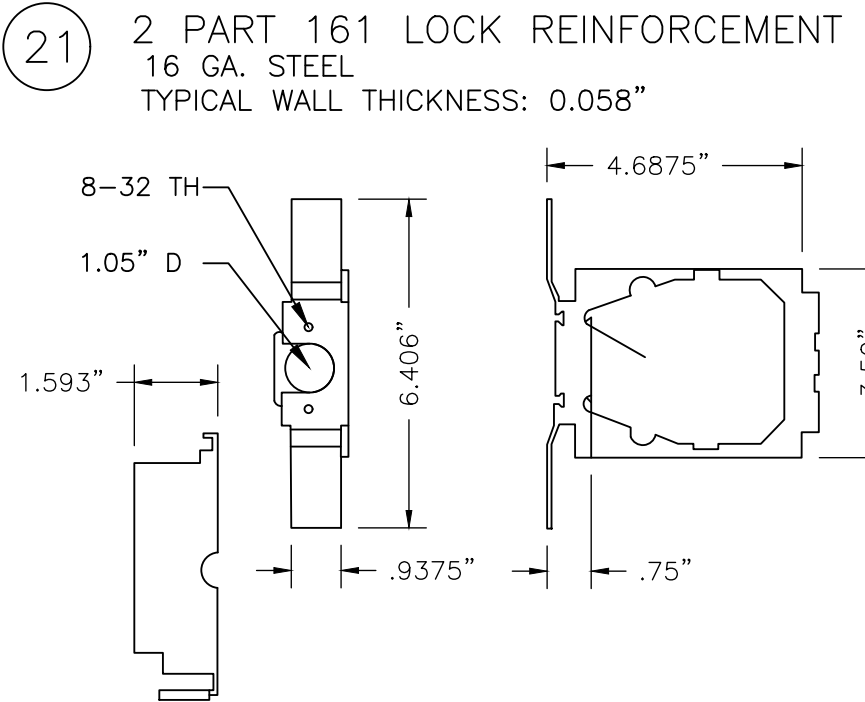
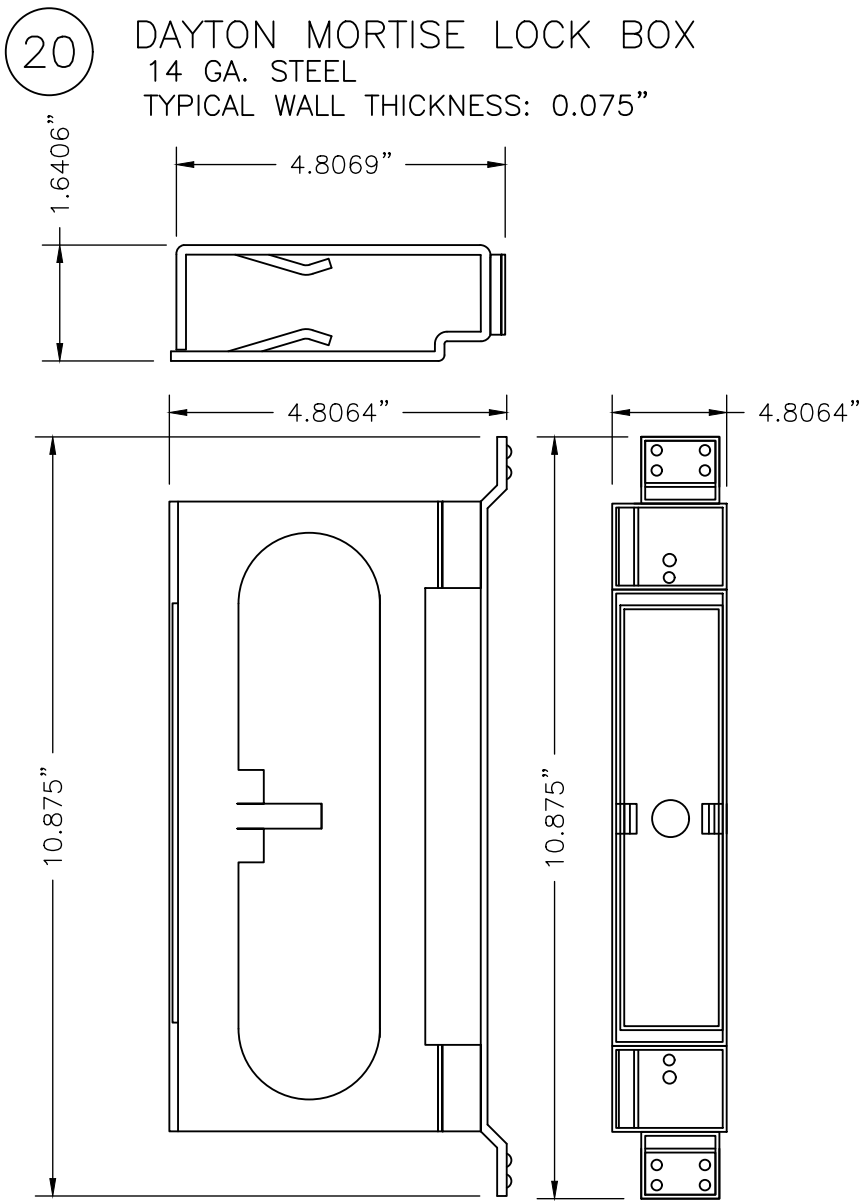
SERIES FLUSH STEEL COMMERCIAL DOOR, OUTSWING, IMPACT (XX)
COMPONENTS (I)

DRAWN BY:	DAS	DATE:	2/27/19
SCALE:	N.T.S.	DRAWING NO:	HMF0005
REV:	A	SHEET:	11 OF 15

PTC PRODUCT DESIGN GROUP, LLC
PO BOX 520775
LONGWOOD, FLORIDA 32752
Phone: 321.690.1788
Fax: 321.690.1789
Email: info@ptc-corp.com
PDP CA NO 23585

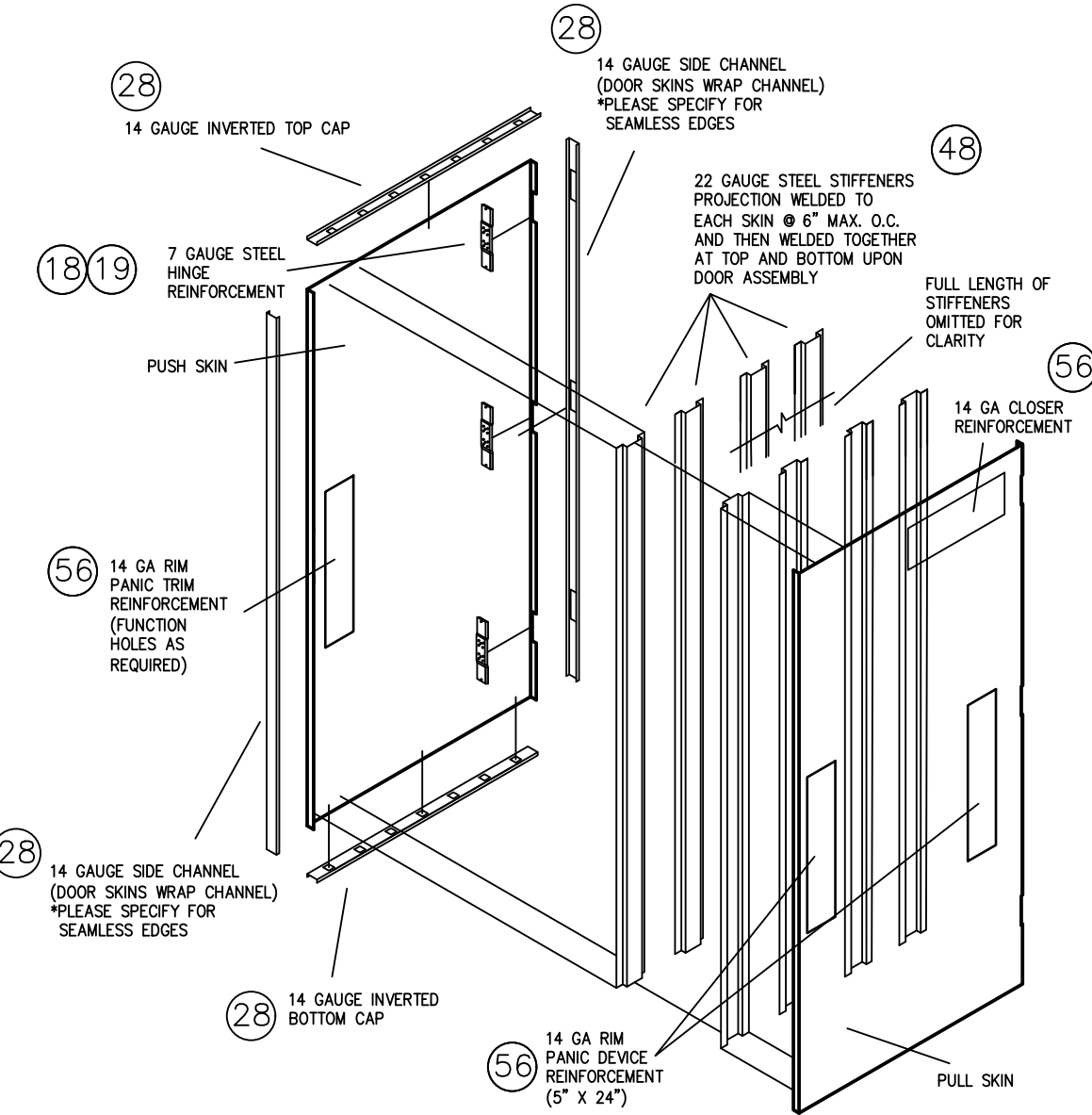
Robert J. Amoruso, P.E.
Florida P.E. No. 49752



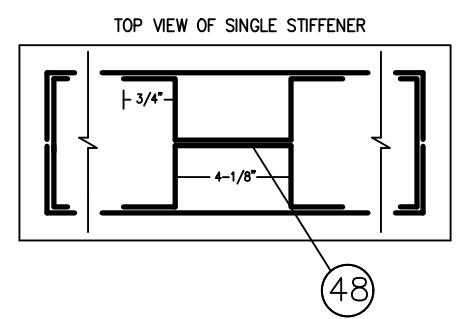


PROJECT # 420-1002		HMF EXPRESS 2501 NORTHCHASE PARKWAY SE WILMINGTON, NC 28405		DATE: 2/27/19	DRAWING NO: HMF0005	SHEET: 12 OF 15
SERIES FLUSH STEEL COMMERCIAL DOOR, OUTSWING, IMPACT (XX) COMPONENTS (II)		DRAWN BY: DAS		SCALE: N.T.S.	REV: A	
PREPARED BY: PTC		PTC PRODUCT DESIGN GROUP, LLC PO BOX 520775 LONGWOOD, FLORIDA 32752		Phone: 321.690.1788 Fax: 321.690.1789 Email: info@ptc-corp.com		

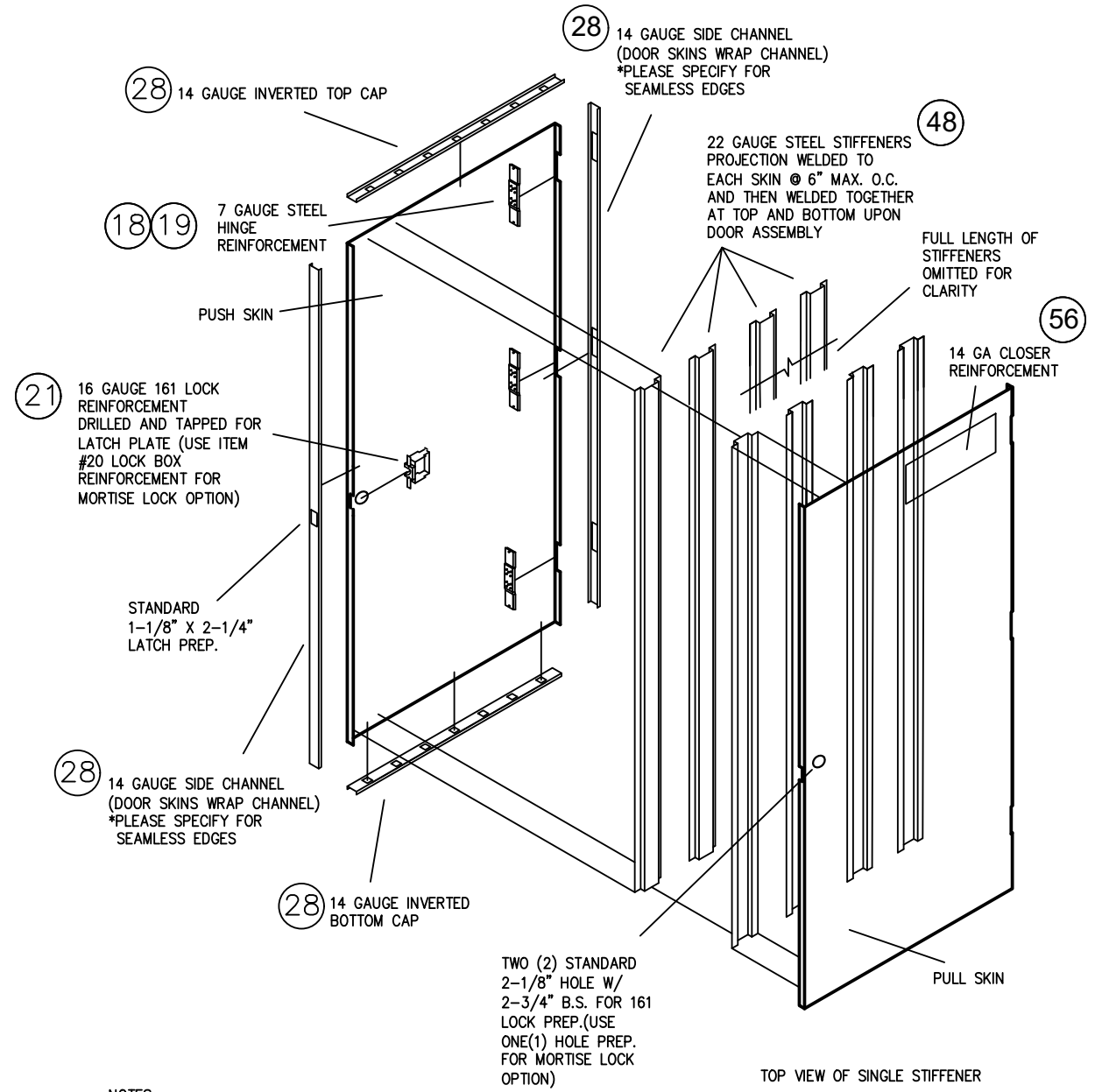
Robert J. Amoruso, P.E.
Florida P.E. No. 49752



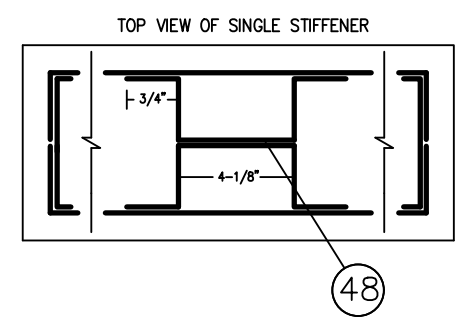
NOTES:
-35.8125 MAX DOOR WIDTH (86.8125 W/ ASTRAGAL)
-85.5 MAX DOOR HEIGHT
-ESTIMATED PERFORMANCE STC 24, R 1.17, U .855
-TESTING STANDARDS - UBC 7.2, NFPA 252, UL 10-C
-BUTT EDGE FLUSH DOORS 16 AND 18 GAUGE STEEL (CRS OR A60)
-SQUARE EDGE STANDARD/ BEVELED UPON REQUEST
-SPACES BETWEEN STIFFENERS FILLED W/ FIBERGLASS INSULATION
-MAXIMUM SPACING FOR STIFFENERS @ 6" O.C.



22GA. STIFFENER DETAIL
PANIC DEVICE



NOTES:
-35.8125 MAX DOOR WIDTH (86.8125 W/ ASTRAGAL)
-85.5 MAX DOOR HEIGHT
-ESTIMATED PERFORMANCE STC 24, R 1.17, U .855
-TESTING STANDARDS - UBC 7.2, NFPA 252, UL 10-C
-BUTT EDGE FLUSH DOORS 16 AND 18 GAUGE STEEL (CRS OR A60)
-SQUARE EDGE STANDARD/ BEVELED UPON REQUEST
-SPACES BETWEEN STIFFENERS FILLED W/ FIBERGLASS INSULATION
-MAXIMUM SPACING FOR STIFFENERS @ 6" O.C.



22GA. STIFFENER DETAIL
MORTISE/
CYLINDRICAL LOCK

PROJECT # 420-1002

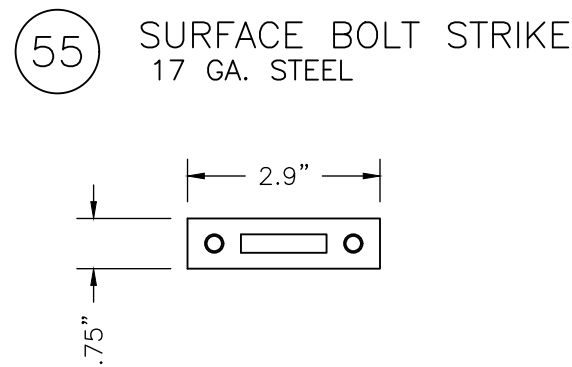
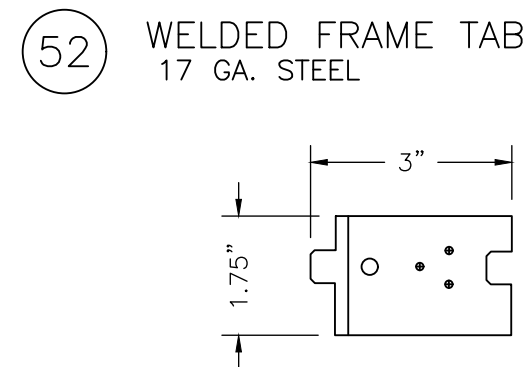
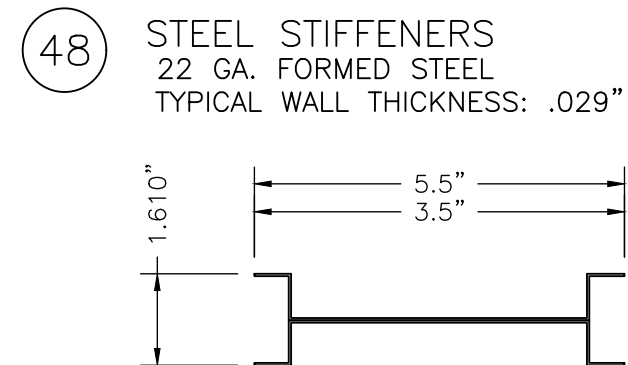
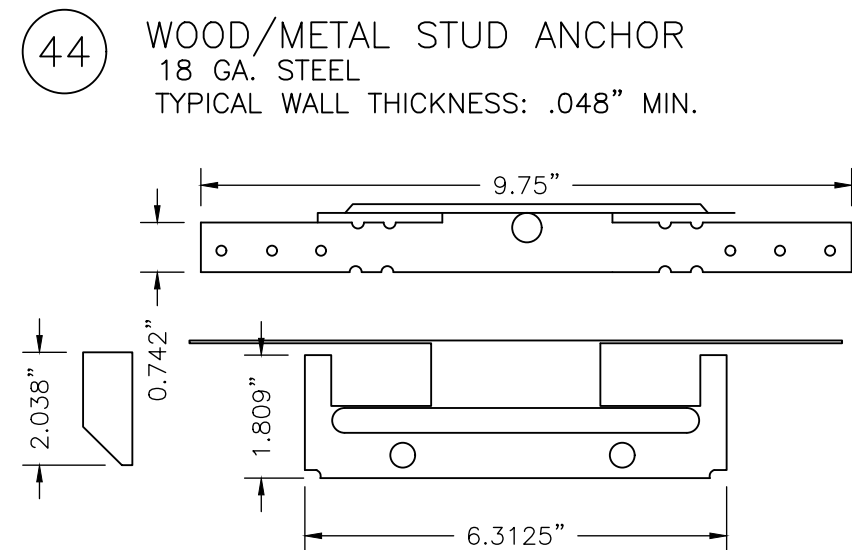
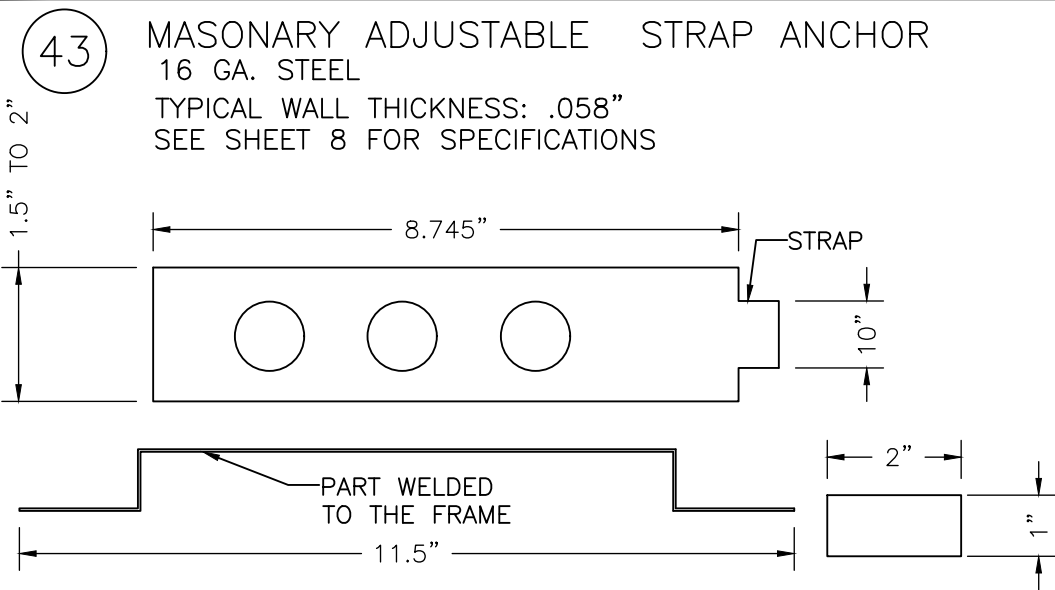
HMF EXPRESS
2501 NORTHCASE PARKWAY SE
WILMINGTON, NC 28405
SERIES FLUSH STEEL COMMERCIAL DOOR, OUTSWING, IMPACT (XX)
STIFFENER DETAILS

DATE:	2/27/19	DATE:	8/4/21	DATE:	BY
DRAWN BY:	DAS	DESCRIPTION	UPDATE TO 2020 FBC	REV	
SCALE:	N.T.S.	REVISION	A	REV	
REV:	A	SHEET:	13 OF 15	REV	
PREPARED BY:		DRAWING NO:	HMF0005	REV	

PTC PRODUCT DESIGN GROUP, LLC
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BILL OF MATERIALS				
ITEM	PART NUMBER	DESCRIPTION	MATERIAL	MANUFACTURER
1		HMF DOOR SLAB - ASTM A1008/A653	18 GA. STEEL	HMF EXPRESS
2		STIFFENED DOOR SLAB - ASTM A1008/A653	16 GA. STEEL	HMF EXPRESS
3		H.M.F. HEADER C.R.S. - ASTM A1008/A653	16 GA. STEEL	HMF EXPRESS
4		H.M.F. HINGE JAMB C.R.S. - ASTM A1008/A653	16 GA. STEEL	HMF EXPRESS
5	896N	PANIC THRESHOLD	ALUMINUM	NATIONAL GUARD PRODUCTS
6		THRESHOLD WEATHERSTRIP	VINYL	
7	415S	ADA PASS OVER THRESHOLD	ALUMINUM	HAGER
8		F1300 FIRE MULLION 21' x 3" x .116"	STEEL	DORMA
9		4 1/2" TEMPLATE HINGE	STEEL	HAGER
10		CONTINUOUS STEEL HINGE3.282" W. ROTON HINGE	STEEL	HAGER
11	137NA	SURFACE MOUNTED FRAME WEATHERSTRIP		NATIONAL GUARD PRODUCTS
12	130NA	SURFACE MOUNTED FRAME WEATHERSTRIP		NATIONAL GUARD PRODUCTS
13	200NA	SURFACE MOUNTED DOOR BOTTOM SWEEP		NATIONAL GUARD PRODUCTS
14	125NA	SURFACE MOUNTED DOOR MEETING STILE SEAL		NATIONAL GUARD PRODUCTS
15	3210119	SURFACE MOUNTED DOOR BOTTOM SWEEP		PEMKO
16	63644	ASTRAGAL FACE WEATHERSTRIP	CELLULAR RUBBER	M-D BUILDING PRODUCTS
17	2873	ASTRAGAL FACE WEATHERSTRIP	FOAM	M-D BUILDING PRODUCTS
18		DOOR HINGE REINFORCEMENT - ASTM A1008/A653	7 GA. STEEL	HMF EXPRESS
19		FRAME HINGE REINFORCEMENT - ASTM A1008/A653	7 GA. STEEL	HMF EXPRESS
20		MORTISE LOCK BOX - ASTM A1008/A653	18 GA. STEEL	HMF EXPRESS
21		2 PART 161 LOCK REINFORCEMENT - ASTM A1008/A653	STEEL	HMF EXPRESS
22	9400	VERTICAL RODS W/ PUSH BAR		DORMA HARDWARE
23	9300	RIM DEVICE W/ PUSH BAR		DORMA HARDWARE
24		CORB CK 4251 GRC 260 HEAVY DUTY CYLINDRICAL LOCKSET		CORBIN/RUSSWIN
25		CORB DL3000 260SS HEAVY DUTY CYLINDRICAL LOCKSET		CORBIN/RUSSWIN
26		CORB ML2000 SERIES MORTISE LOCKSET		CORBIN/RUSSWIN
27	454	SURFACE BOLTS 5" LONG	STEEL	IVES
28		TOP, BOTTOM, & SIDE CHANNEL - ASTM A1008/A653	14 GA. STEEL	HMF EXPRESS
29		FOAM STOPPER	FOAM	HMF EXPRESS
30		COMMERCIAL Z-ASTRAGAL 0.062" MIN. - ASTM A1008/A653	STEEL	HMF EXPRESS
31	W030317028	COMMERCIAL FLAT ASTRAGAL 0.125" - ASTM A1008/A653	STEEL	HMF EXPRESS
32		#8 X 1/2" PPH SELF TAPPING SHEET METAL SCREW (WEATHERSTRIP TO FRAME)	STEEL	
33		#10 X 3/4" PPH SELF TAPPING SHEET METAL SCREW (SWEEP TO DOOR)	STEEL	
34		3/8" X 1 3/8" DROP-IN ANCHORS (MULLION ANCHOR BRACKET TO SILL)	STEEL	PORTEOUS FASTENERS
35		#12 - 24 X 5/8" LG. MACHINE SCREW (RIM DEVICE STRIKE TO MULLION)	STEEL	
36		#12 - 24 X 1/2" MACHINE SCREW (HINGE TO FRAME & DOOR)	STEEL	
37		#12 - 24 X 1 1/2" PFH WOOD SCREW (SURFACE BOLT STRIKE TO BUCK AT SILL)	STEEL	
38		3/8" X 1 1/2" PPH SCREW W/ 3/8" SEX BOLT (SURFACE BOLT ATTACHMENT)	STEEL	
39		MASONRY "TEE" ANCHOR 0.058" MIN.	STEEL	HMF EXPRESS
40		MASONRY WIRE ANCHOR 0.185" DIA.	STEEL	HMF EXPRESS
41		EMA WELDED ANCHOR 0.058" MIN.	STEEL	HMF EXPRESS
42		EMA BUTTERFLY ANCHOR 0.048" MIN.	STEEL	HMF EXPRESS
43		MASONRY ADJUSTABLE STRAP ANCHOR 0.058" MIN.	STEEL	HMF EXPRESS
44		WOOD/METAL STUD ANCHOR 0.042" MIN.	STEEL	HMF EXPRESS
45		3/8" DYNA BOLT BY ITW RED HEAD (USED W/ EMA WELDED & EMA BUTTERFLY ANCHORS)	STEEL	ITW RED HEAD
46		EXPANDED POLYSTYRENE (EPS) FOAM CORE USED IN THE HMF 18 GA. DOOR	FOAM	
47		FIBERGLASS INSULATION CORE (USED IN THE HMF 16 GA. DOOR)	FIBERGLASS	
48		STEEL STIFFNERS	22 GA. STEEL	HMF EXPRESS
49		3/16" X 1 3/4" TAPCON ANCHOR	STEEL	ITW
50		8d COMMON BRIGHT X 2.0" NAIL	STEEL	COMMON BRIGHT
51		3/8" X 5.0" SLOTTED FLAT HEAD LAG SCREW	STEEL	
52		WELDED FRAME TAB	STEEL	HMF EXPRESS
53		#12 X 1/2" PAN HEAD SELF DRILL & TAPPING SCREW	STEEL	
54		1/4 - 20 SEX BOLT	STEEL	
55		SURFACE BOLT STRIKE	STEEL	IVES
56		RIM DEVICE/CLOSER REINFORCEMENT	14 GA. STEEL	HMF EXPRESS
57		5/16" X 1/2" FHPMS (MULLION ANCHOR BRACKET TO FRAME HEAD)	STEEL	
58		1/4-14 ITW TEK SCREWS (WOOD/METAL STUD ANCHOR TO STEEL STUD)	STEEL	ITW BUILDDEX
59		STEEL MOUNTING PLATE, 2" X 6" X 1/4" (FOR MULLION BRACKET TO CONCRETE)	STEEL	DORMA

PROJECT # 420-1002

HMF EXPRESS
2501 NORTHCHASE PARKWAY SE
WILMINGTON, NC 28405

SERIES FLUSH STEEL COMMERCIAL DOOR, OUTSWING, IMPACT (XX)
COMPONENTS, DETAILS & BILL OF MATERIALS

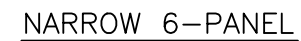
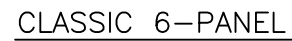
DATE: 2/27/19
DRAWING NO: HMF0005
SHEET: 14 OF 15

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

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* WHERE WATER INFILTRATION IS NOT REQUIRED OR IS PROTECTED BY OVERHANG

NOTE:
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.

