

NATIONAL CUSTOM HOLLOW METAL DOOR & FRAMES

OUTSWING FLUSH STEEL COMMERCIAL DOOR (IMPACT)

INSTALLATION NOTES:

- ONE (1) INSTALLATION ANCHOR IS REQUIRED AT EACH ANCHOR LOCATION SHOWN.
- THE NUMBER OF INSTALLATION ANCHORS DEPICTED IS THE MINIMUM NUMBER OF ANCHORS TO BE USED FOR PRODUCT INSTALLATION.
- INSTALL INDIVIDUAL INSTALLATION ANCHORS WITHIN A TOLERANCE OF ±1/2 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.
- 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.
- FOR INSTALLATION INTO CONCRETE OR GROUT FILLED CMU, USE 3/8" DYNABOLT SLEEVE ANCHORS OF SUFFICIENT LENGTH TO ACHIEVE A MINIMUM EMBEDMENT OF 1-1/2".
- FOR INSTALLATION INTO 2X WOOD BUCK, USE 3/8" LAG SCREWS SAE GRADE 5 TYPE ANCHORS OF SUFFICIENT LENGTH TO ACHIEVE A MINIMUM EMBEDMENT OF 3".
- MINIMUM EMBEDMENT AND EDGE DISTANCE EXCLUDE WALL FINISHES, INCLUDING BUT NOT LIMITED TO STUCCO, FOAM, BRICK VENEER, AND SIDING.
- INSTALLATION ANCHORS AND ASSOCIATED HARDWARE MUST BE MADE OF CORROSION RESISTANT MATERIAL OR HAVE A CORROSION RESISTANT COATING.
- FOR 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.
- 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.
- INSTALLATION ANCHOR CAPACITIES FOR PRODUCTS HEREIN ARE BASED ON SUBSTRATE MATERIALS WITH THE FOLLOWING PROPERTIES:
 - WOOD - MINIMUM SPECIFIC GRAVITY OF 0.42.
 - CONCRETE - MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI.
 - MASONRY - CMU CONFORMS TO ASTM C-90 AND GROUT CONFORMS TO ASTM C 476

GENERAL NOTES:

- THE PRODUCT SHOWN HEREIN IS DESIGNED AND MANUFACTURED TO COMPLY WITH THE 2018 INTERNATIONAL BUILDING CODE (IBC) AND INTERNATIONAL RESIDENTIAL CODE (IRC) AND HAS BEEN EVALUATED ACCORDING TO THE FOLLOWING:
 - ASTM E 330-14
 - ASTM E1886-13a
 - ASTM E1996-17
- 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.
- 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.
- 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.
- THIS PRODUCT IS LARGE AND SMALL MISSILE IMPACT RESISTANT APPROVED IMPACT PROTECTIVE SYSTEM **IS NOT REQUIRED** ON THIS PRODUCT IN AREAS REQUIRING IMPACT RESISTANCE.
- DOOR PANEL MATERIAL: 16 GA. A60 GALVANIZED STEEL (0.063" MIN.) DOOR FRAME MATERIAL: SINGLE UNITS - 16 GA. A60 GALV. STEEL (0.063" MIN.) PAIR UNITS - 14 GA. A60 GALV. STEEL (0.078" MIN.)
- DESIGNATIONS "X" AND "O" STAND FOR THE FOLLOWING:
 - X: ACTIVE PANEL
 - O: INACTIVE PANEL

STEEL DOOR CONSTRUCTION:

THE OVERALL PANEL THICKNESS IS 1 3/4 INCH THICK. THE DOOR LEAF IS CONSTRUCTED FROM 16 GA. (0.063") A60 GALVANIZED STEEL SHEETS. VERTICAL 22 GA. STEEL HAT CHANNEL STIFFENERS ARE LOCATED 6" FROM EACH END AND 6" ON CENTER. STEEL HAT CHANNEL STIFFENERS ARE SPOT WELDED TO EACH DOOR FACE SHEET WITH ENDS OF THE STIFFENERS WELDED TOGETHER. VERTICAL EDGES OF THE DOOR LEAF SHEETS ARE SPOT WELDED BETWEEN HARDWARE REINFORCEMENTS TO 14 GA. FULL LENGTH CHANNEL AND ARE CONTINUOUSLY ARC WELDED TOGETHER. TOP AND BOTTOM CHANNELS ARE 16 GA. STEEL AND ARE WELDED TO EACH FACE SHEET 3" O.C. OPTIONAL FLUSHING CHANNELS ARE 18 GA. STEEL AND ARE LOCATED AT TOP AND BOTTOM RAILS. HINGE REINFORCEMENTS ARE LOCATED AT EACH HINGE LOCATION AND ARE 7 GA. STEEL TABS. LATCHING AND EXIT DEVICE HARDWARE REINFORCEMENTS ARE USED WHEN APPLICABLE.

FRAME CONSTRUCTION:

THE DOOR FRAMES ARE CONSTRUCTED FROM 16 GAUGE (0.063") FOR SINGLE UNITS AND 14 GAUGE (0.078") FOR PAIR UNITS A60 GALVANIZED STEEL. FRAME PIECES ARE WELDED TOGETHER IN ACCORDANCE WITH HMMA 861-06. FRAMES ARE PREPPED WITH PIPE ANCHOR STRAPS OF EQUIVALENT GAUGE THICKNESS TO THE FRAME AT EACH ANCHOR LOCATION WELDED IN PLACE. 3/16" X 10" 7 GA. HINGE REINFORCEMENT IS LOCATED AT EACH HINGE LOCATION. LOCK STRIKE REINFORCEMENTS ARE USED WHEN APPLICABLE.

DESIGN PRESSURES				
CONFIGURATION	LATCHING HARDWARE TYPE	*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
SINGLE	CYLINDRICAL LOCKSET	+/- 70 PSF	NOT APPROVED	LARGE AND SMALL MISSILE IMPACT RATED
SINGLE	MORTISE LOCKSET WITH DEADBOLT	+/- 70 PSF		
SINGLE	RIM EXIT DEVICE	+/- 70 PSF		
PAIR	CYLINDRICAL LOCK X SURFACE BOLTS	+/- 70 PSF		
PAIR	MORTISE WITH DEAD BOLT X SURFACE BOLTS	+/- 70 PSF		
PAIR	RIM EXIT DEVICES WITH REMOVABLE MULLION	+/- 70 PSF		
PAIR	CONCEALED X CONCEALED, SURFACE X SURFACE, OR CONCEALED X SURFACE VERTICAL RODS	+/- 70 PSF		

*NOTE: UNIT SHALL BE INSTALLED AT LOCATION PROTECTED BY OVERHANG SUCH THAT OVERHANG RATIO (OH) = OH LENGTH / OH HEIGHT GREATER THAN 1.

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6	HORIZONTAL SECTIONS
7	STIFFENER DETAILS & HORIZONTAL SECTION
8	BILL OF MATERIALS & COMPONENTS

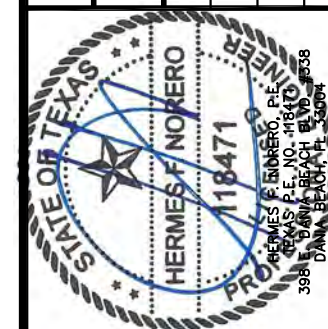
NATIONAL
CUSTOM HOLLOW METAL DOORS & FRAMES

1701 EAST 22ND ST.
LITTLE ROCK, AR 72206

PH: 501-372-3441 FX: 501-375-3070

TITLE: OS FLUSH STEEL DOOR INSTALLATION & GENERAL NOTES
PREPARED BY: BUILDING DROPS, INC.
398 E DANIA BEACH BLVD., # 338
DANIA BEACH, FL 33004
PH: (954) 399-8478 FX: (954) 744-4738

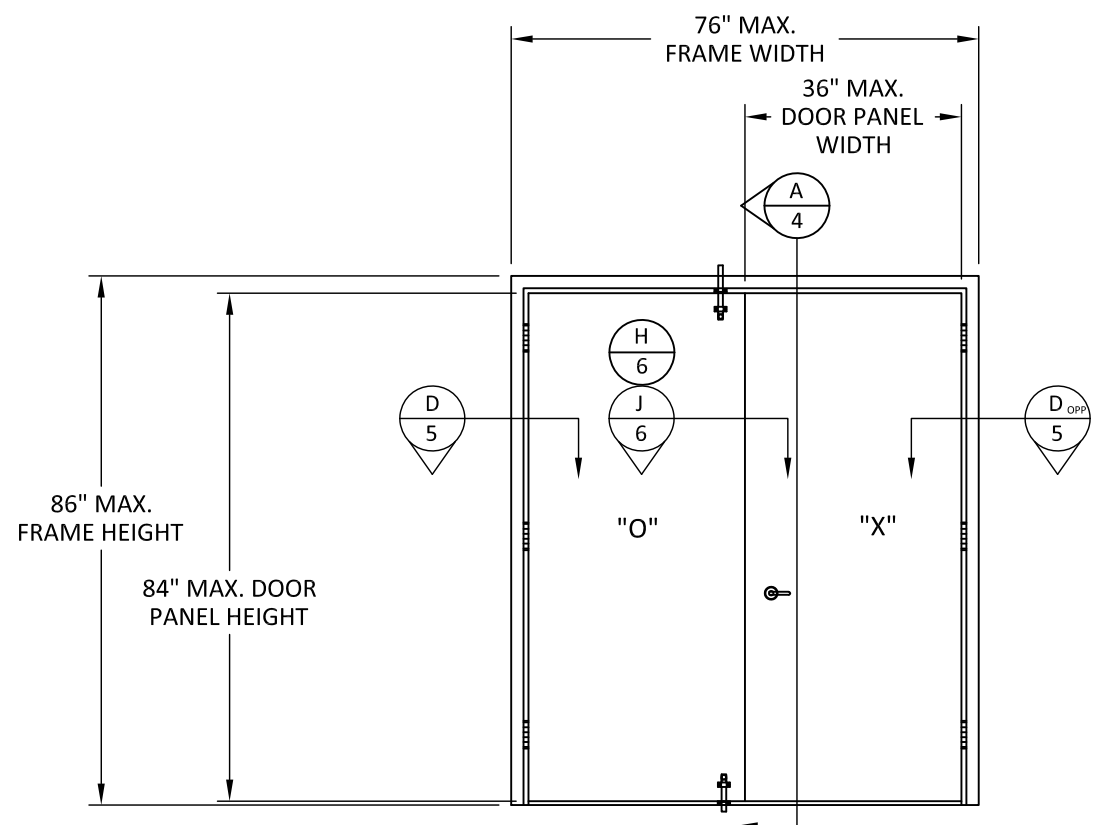
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			BY	DATE	DATE
	UPDATED TABLE OF CONTENTS	A	MS	4.25.11	
	DP TABLE HARDWARE SPECS REVISED	B	SM	12.22.15	
	2018 IBC, IRC REVISION	C	MS	09.29.20	



DATE: 4.20.11
DWN BY: MSS
CHK BY: HN
SCALE: NTS

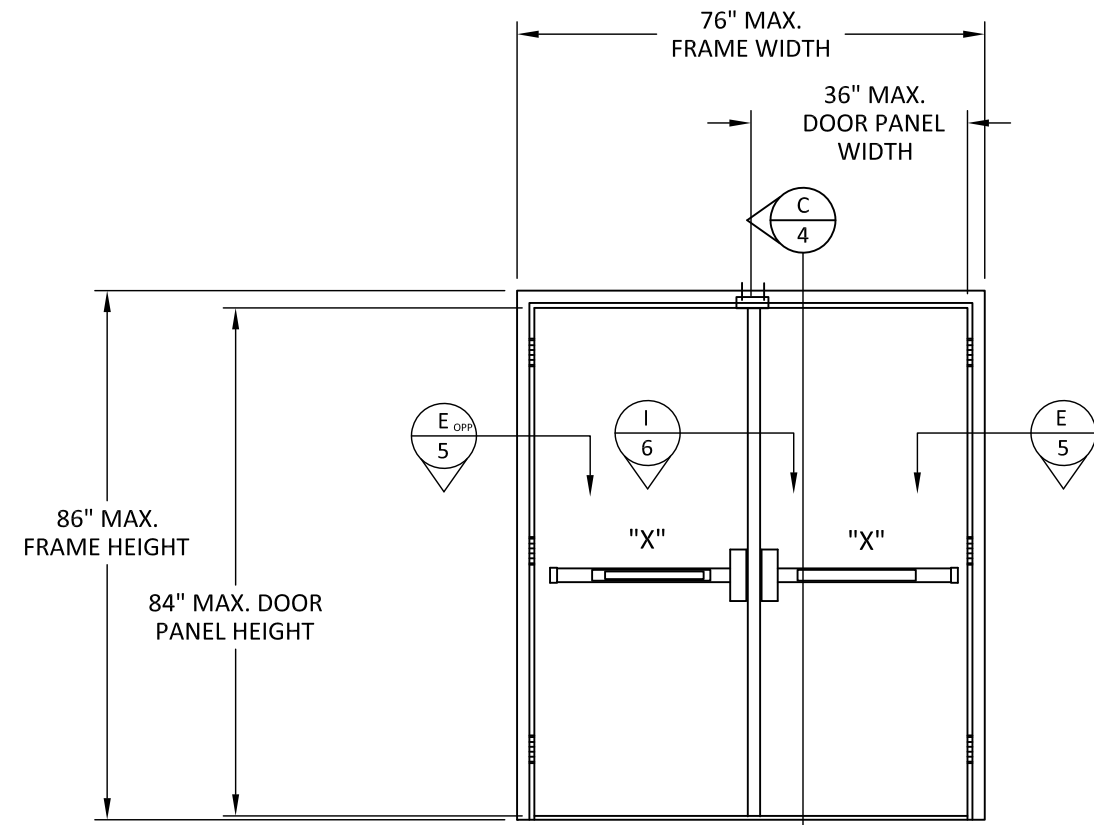
DWG #: **NCHM002**
SHEET: **1 OF 8**

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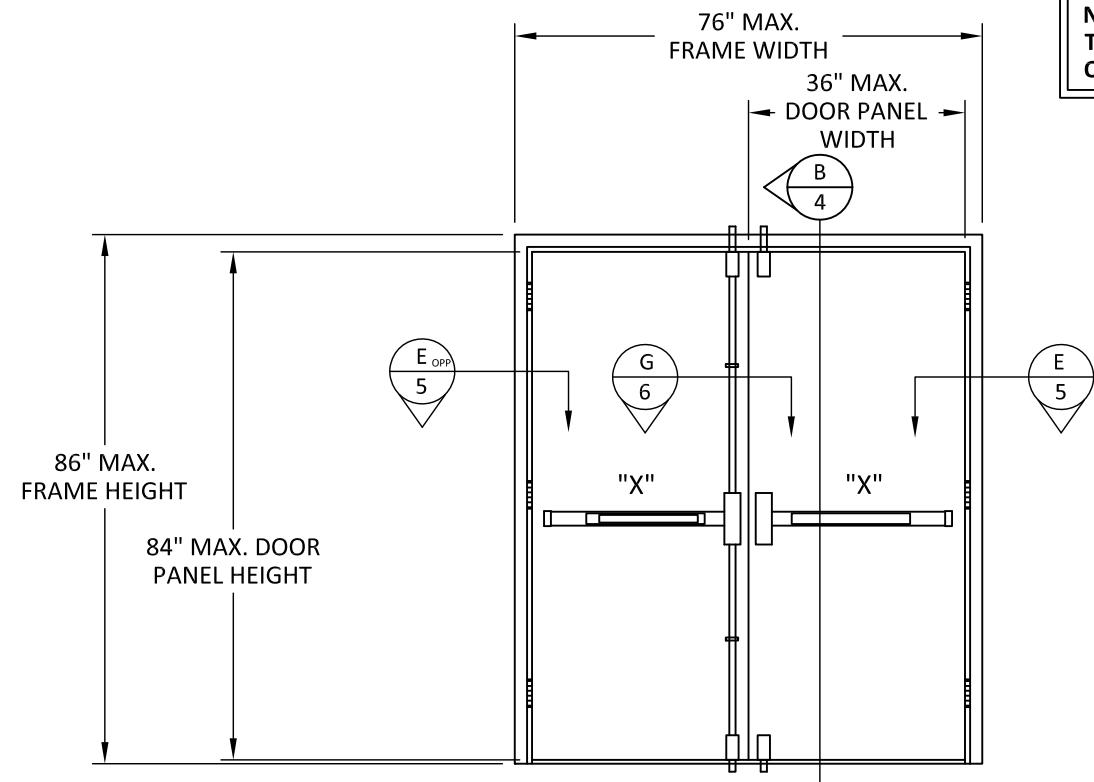
ELEVATION A

CYLINDRICAL LOCK (AS SHOWN) OR MORTISE LOCKSET
WITH DEAD BOLT (NOT SHOWN) ON ACTIVE PANEL,
SURFACE BOLTS ON INACTIVE



ELEVATION B

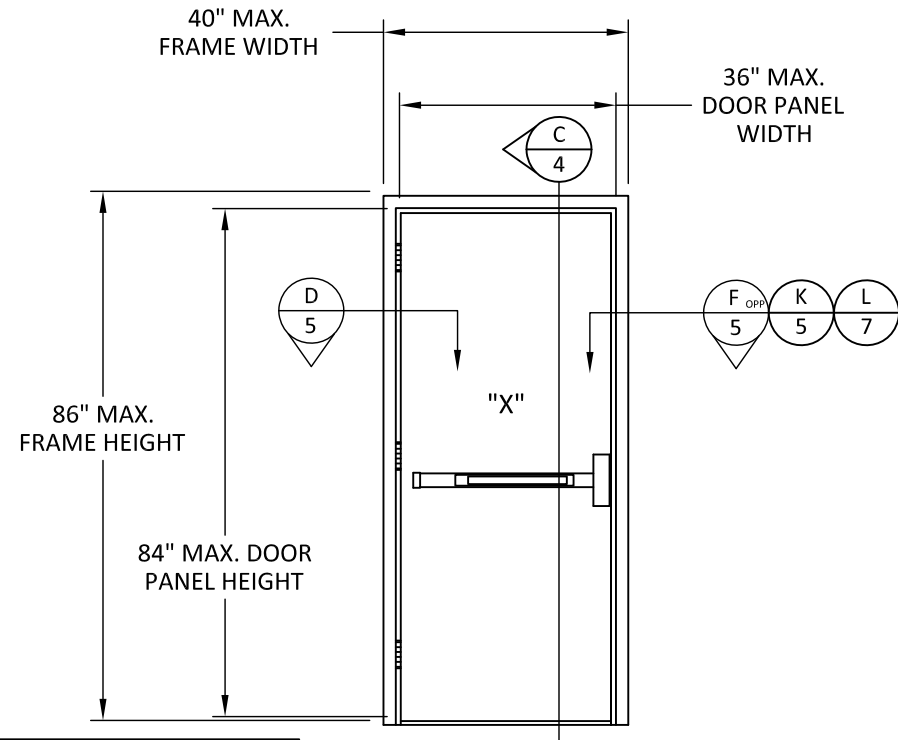
RIM EXIT DEVICES WITH
REMOVABLE MULLION



ELEVATION C

RIM EXIT DEVICES WITH CONCEALED VERTICAL
RODS OR SURFACE VERTICAL RODS

NOTE: MAXIMUM FRAME HEIGHT
TO BE 88" WHEN COMPONENT 1A,
OPTIONAL HEADER FRAME, IS USED.



ELEVATION D

RIM EXIT DEVICE

NOTE: ALTERNATE QUALIFIED SINGLE
DOOR HARDWARE OPTIONS INCLUDE
CYLINDRICAL LOCK OR MORTISE LOCKSETS
WITH DEADBOLT.

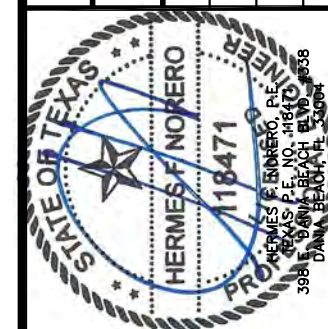
TITLE: OS FLUSH STEEL DOOR

ELEVATIONS

PREPARED BY:
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PH: (954) 399-8478 FX: (954) 744-4738

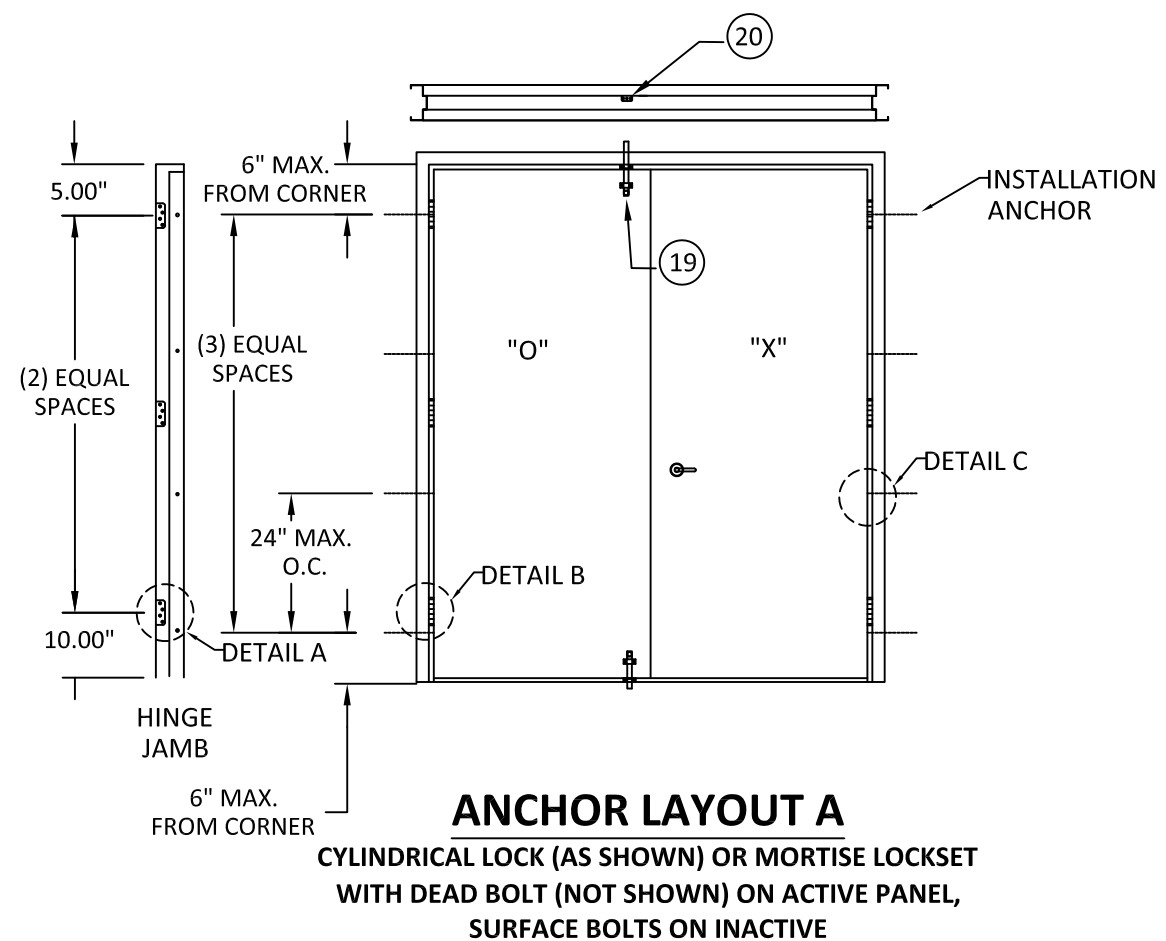
REVISIONS

NO.	DESCRIPTION	BY	DATE
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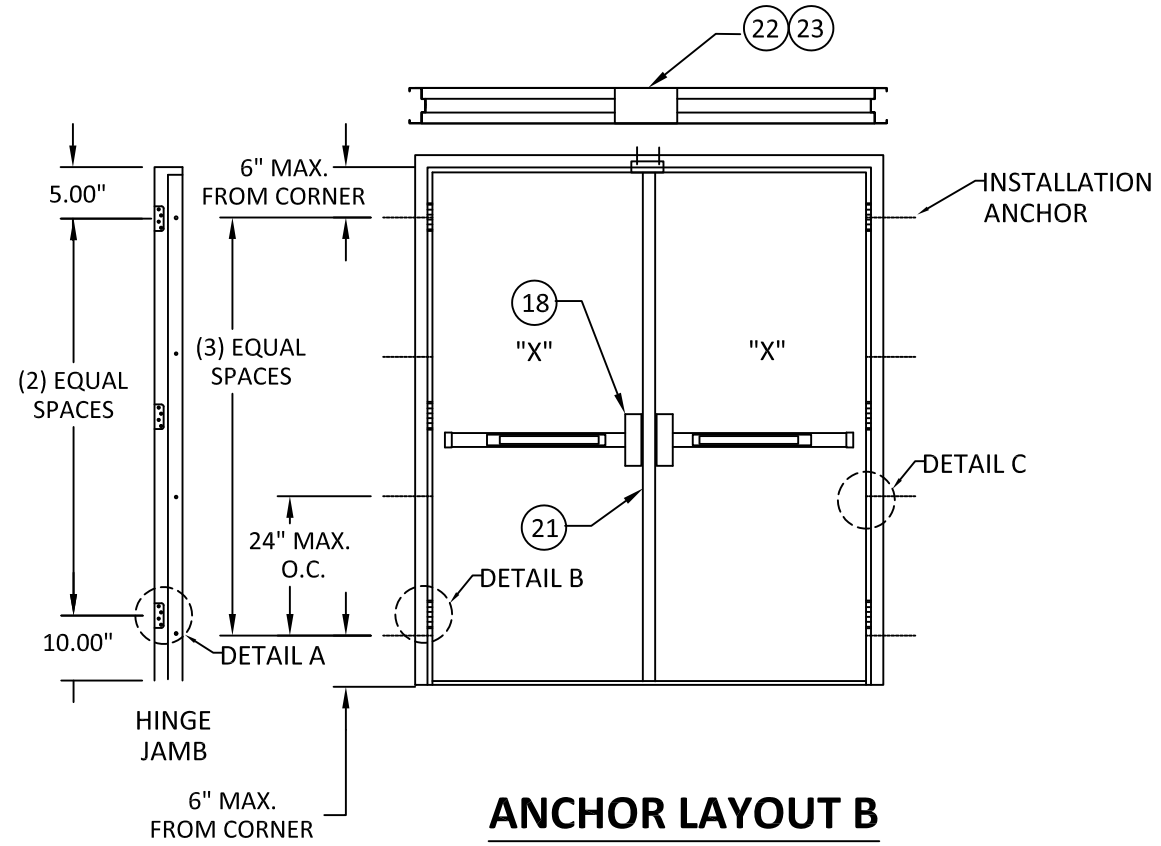


DATE:	4.20.11
DWN BY:	MSS
CHK BY:	HN
SCALE:	NTS

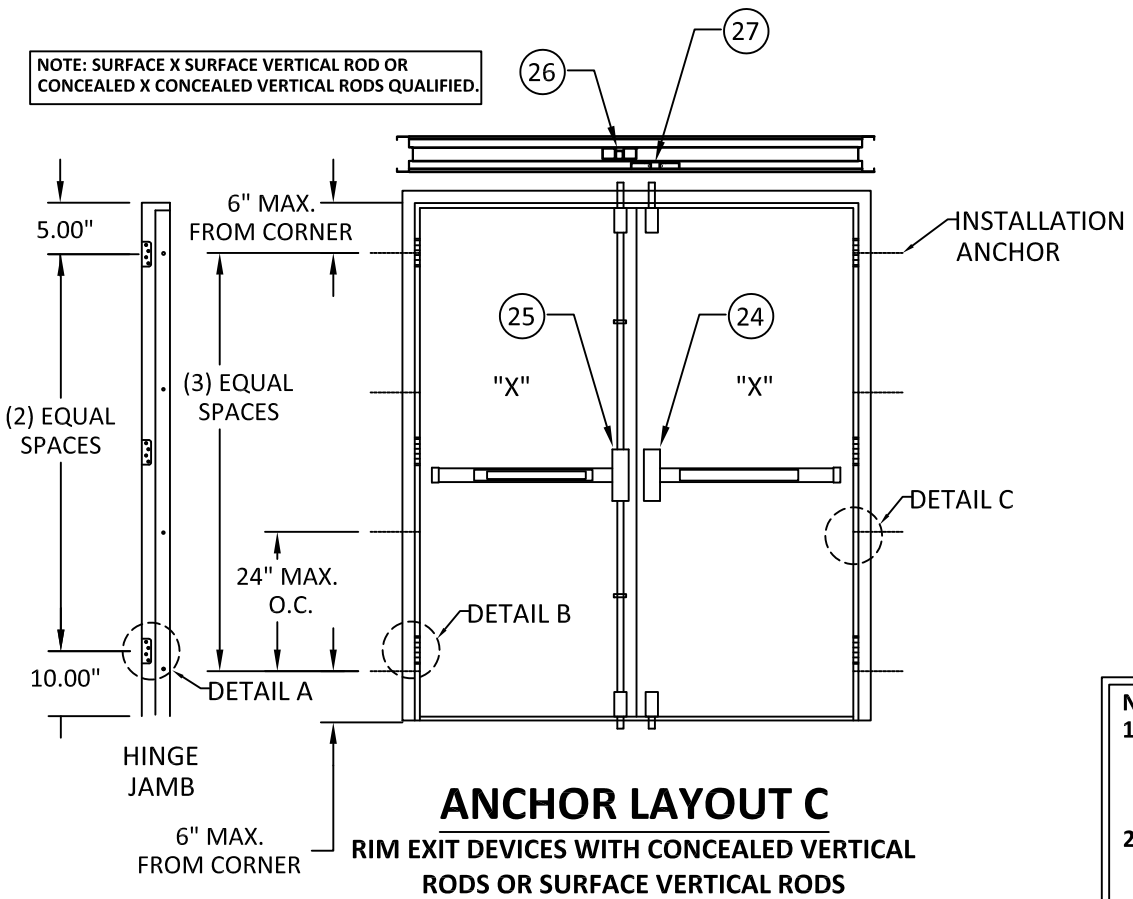
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SHEET: **2 OF 8**



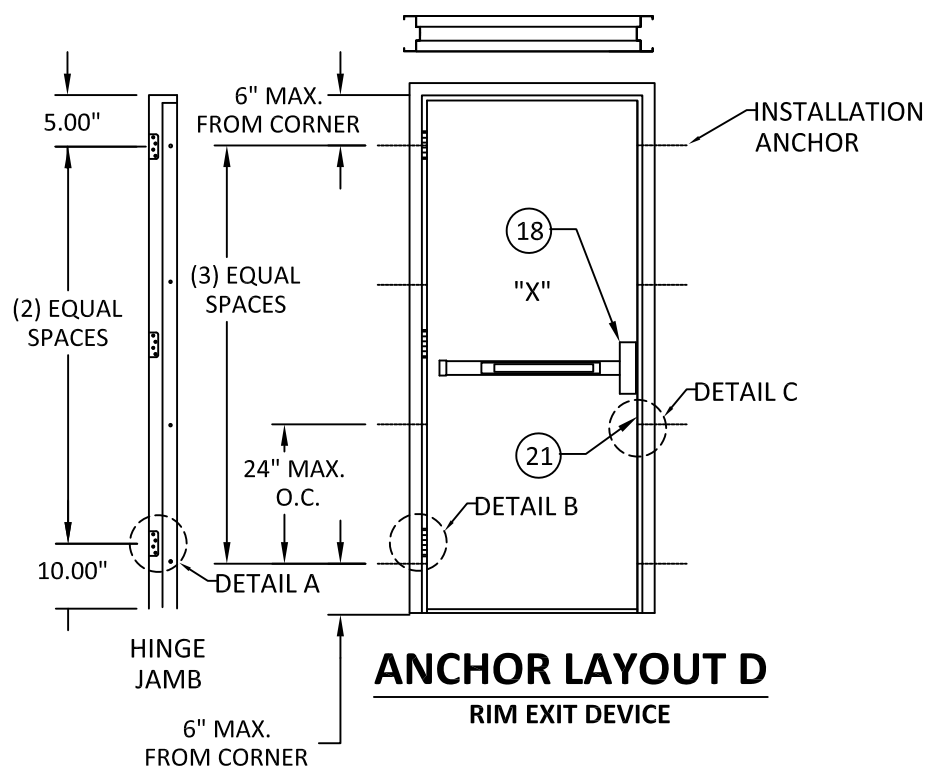
ANCHOR LAYOUT A
CYLINDRICAL LOCK (AS SHOWN) OR MORTISE LOCKSET
WITH DEAD BOLT (NOT SHOWN) ON ACTIVE PANEL,
SURFACE BOLTS ON INACTIVE



ANCHOR LAYOUT B
RIM EXIT DEVICES WITH
REMOVABLE MULLION



ANCHOR LAYOUT C
RIM EXIT DEVICES WITH CONCEALED VERTICAL
RODS OR SURFACE VERTICAL RODS



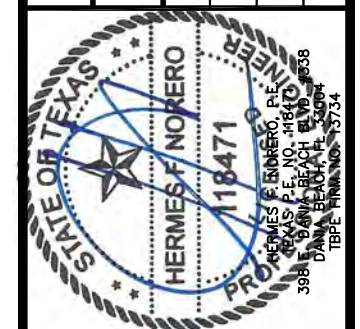
ANCHOR LAYOUT D
RIM EXIT DEVICE

- NOTES:**
- ALTERNATE QUALIFIED SINGLE DOOR HARDWARE OPTIONS INCLUDE CYLINDRICAL LOCK OR MORTISE LOCKSETS WITH DEADBOLT.
 - SINGLE DOOR ANCHOR LAYOUT SHOWN APPLIES TO INSTALLATIONS WITH CYLINDRICAL LOCK AND MORTISE LOCKSETS WITH DEADBOLT.

NOTE: SURFACE X SURFACE VERTICAL ROD OR CONCEALED X CONCEALED VERTICAL RODS QUALIFIED.

TITLE: OS FLUSH STEEL DOOR ANCHOR LAYOUTS & NOTES
PREPARED BY: BUILDING DROPS, INC.
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SCALE: NTS

DWG #: **NCHM002**
SHEET: **3 OF 8**

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TITLE: OS FLUSH STEEL DOOR

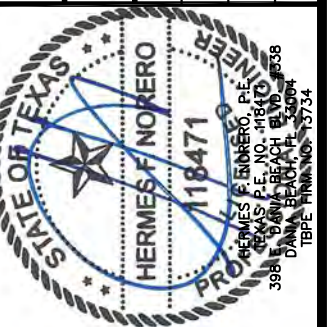
VERTICAL SECTIONS

PREPARED BY:

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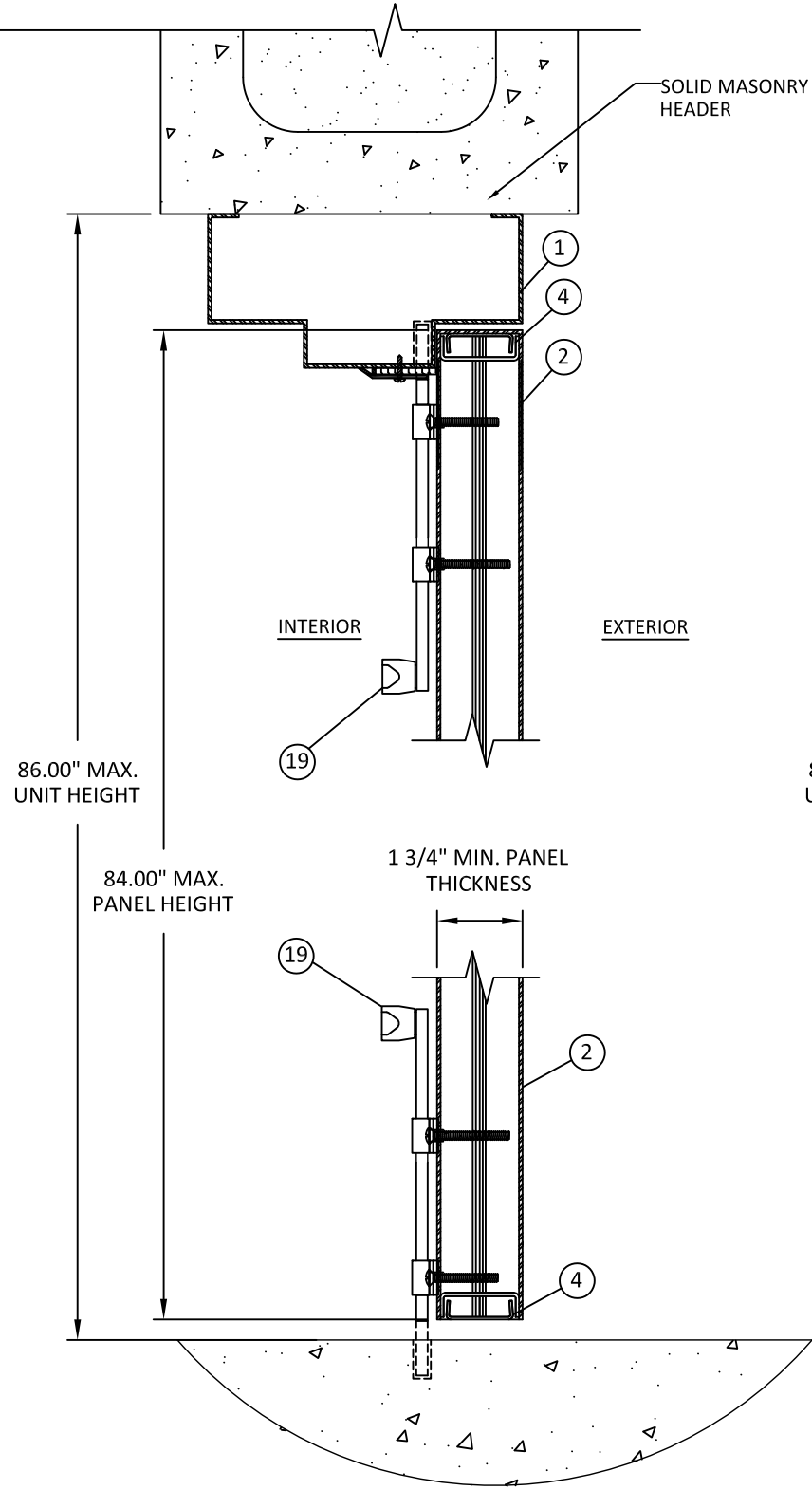
REVISIONS

NO.	DESCRIPTION	BY	DATE
A	4" HEADER DETAIL ADDED	SM	12.22.15

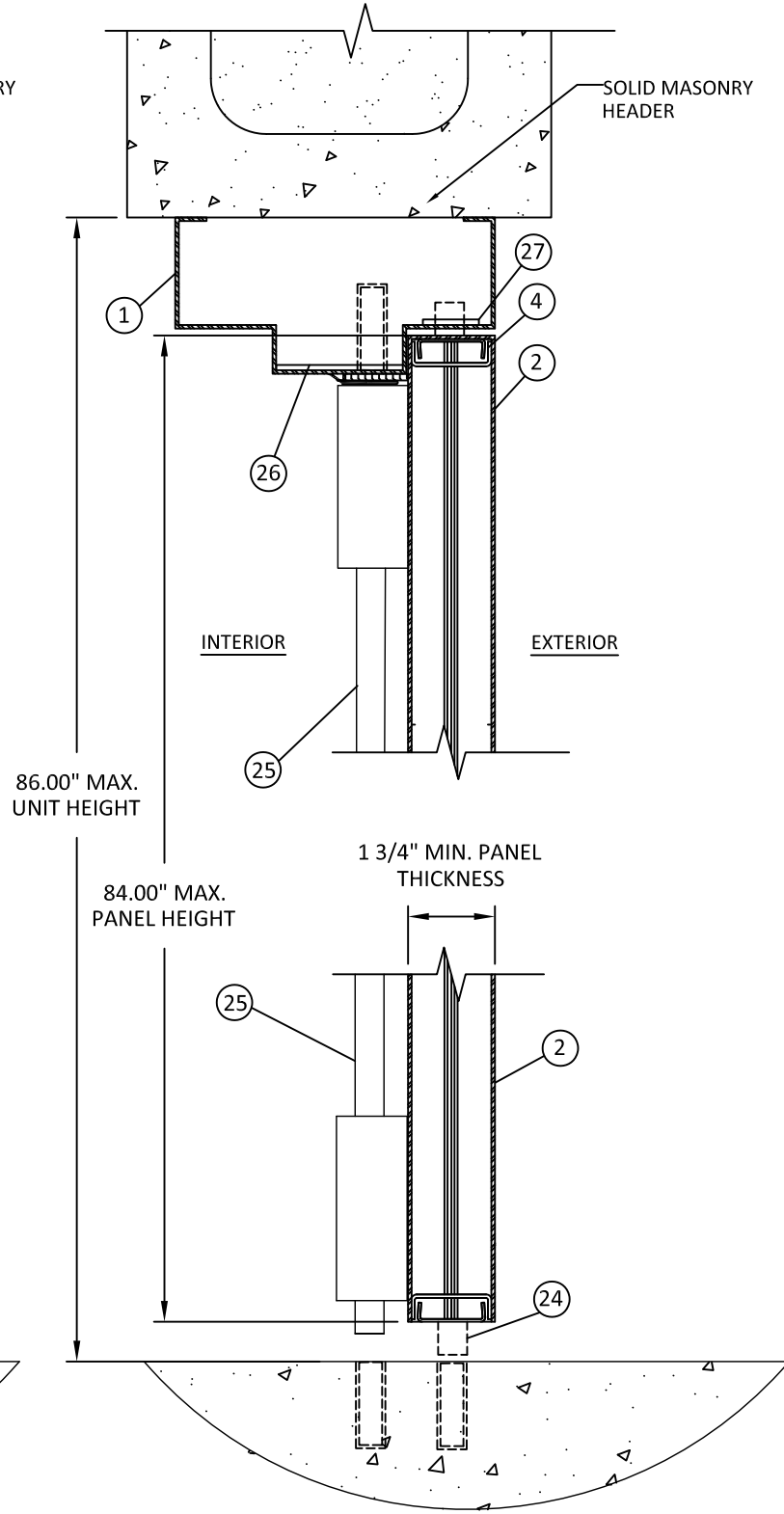


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CHK BY:	HN
SCALE:	NTS

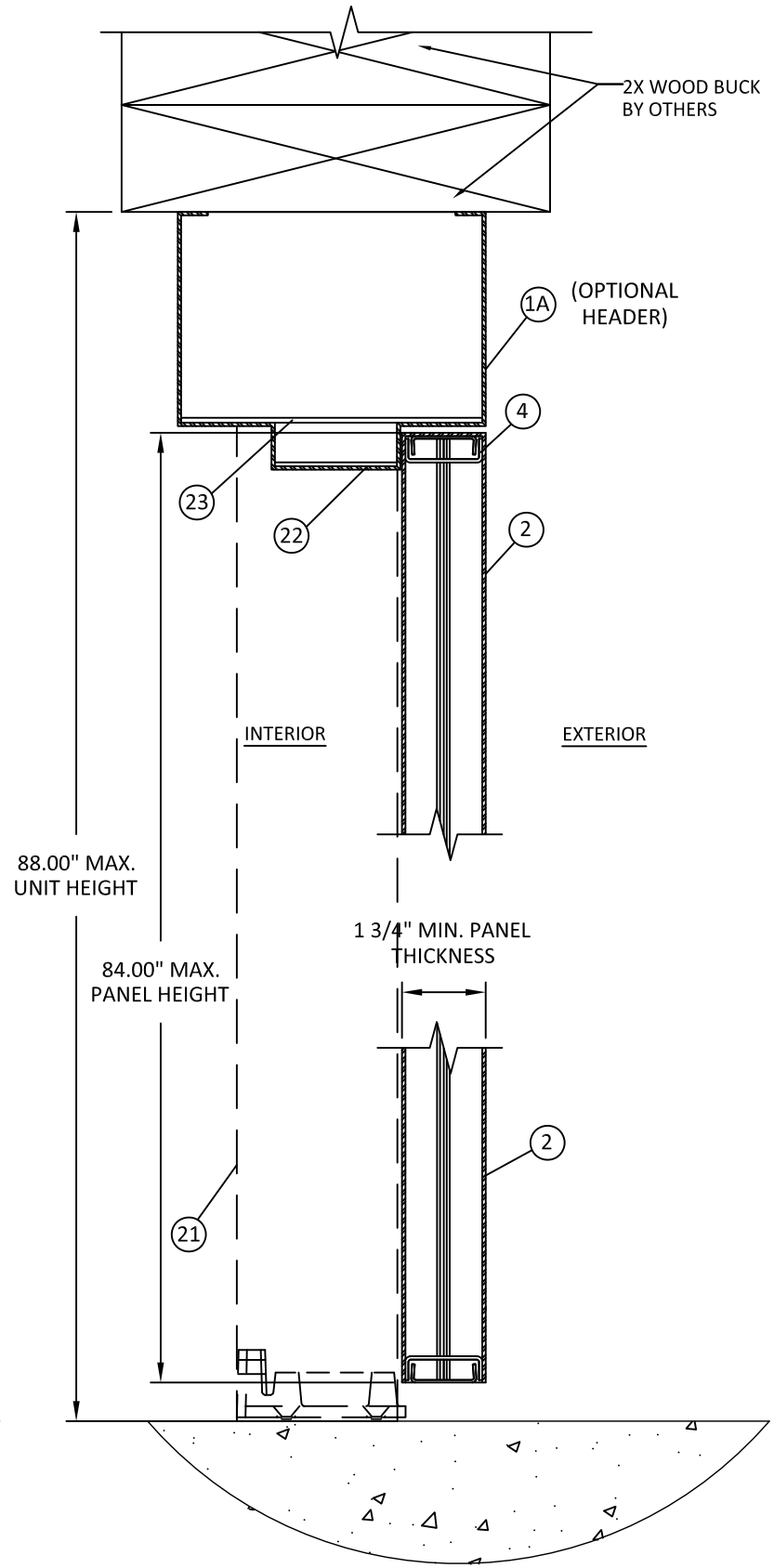
DWG #: **NCHM002**
SHEET: **4 OF 8**



A
4
VERTICAL SECTION
HEAD/SILL - CONCRETE/MASONRY
(MORTISE LOCK/
CYLINDRICAL LOCK WITH SURFACE BOLTS)



B
4
VERTICAL SECTION
HEAD/SILL - CONCRETE/MASONRY
(SURFACE OR CONCEALED VERTICAL ROD)



C
4
VERTICAL SECTION
HEAD - 2X WOOD FRAME
SILL - CONCRETE
(REMOVABLE MULLION)

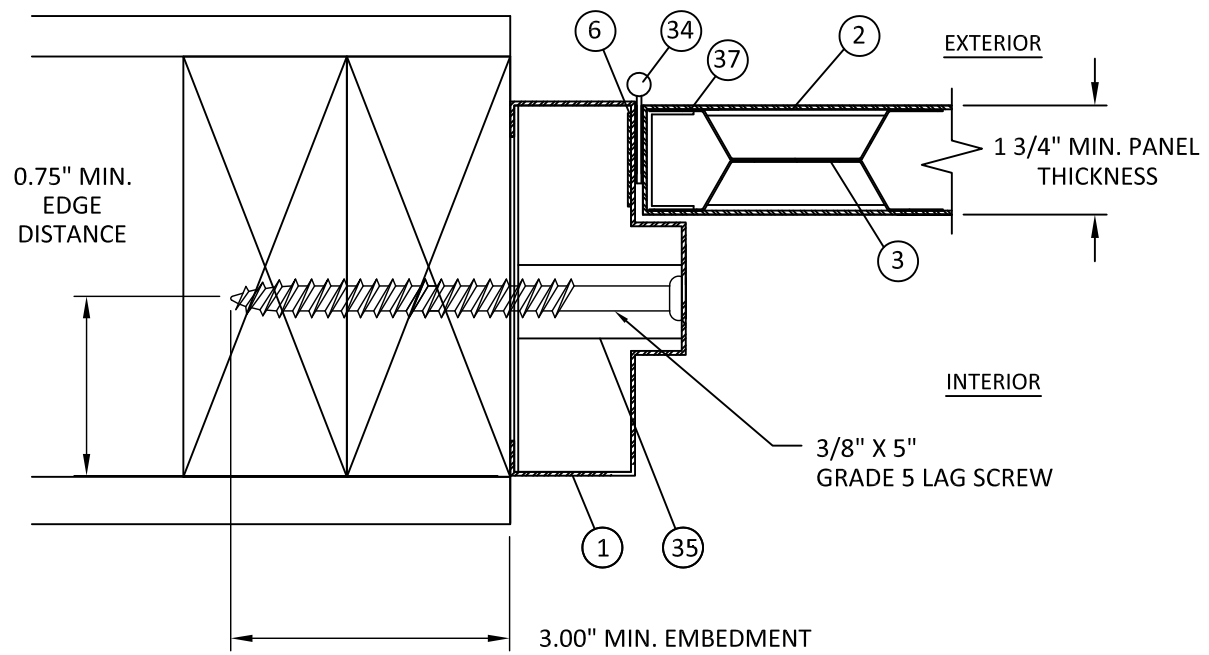
TITLE: OS FLUSH STEEL DOOR
HORIZONTAL SECTIONS
PREPARED BY:
BUILDING DROPS, INC.
398 E DANIA BEACH BLVD., # 338
DANIA BEACH, FL 33004
PH: (954) 399-8478 FX: (954) 744-4738

REVISIONS		NO.	DESCRIPTION	BY	DATE
A	SECTION K/5 ADDED	SM	12.22.15		

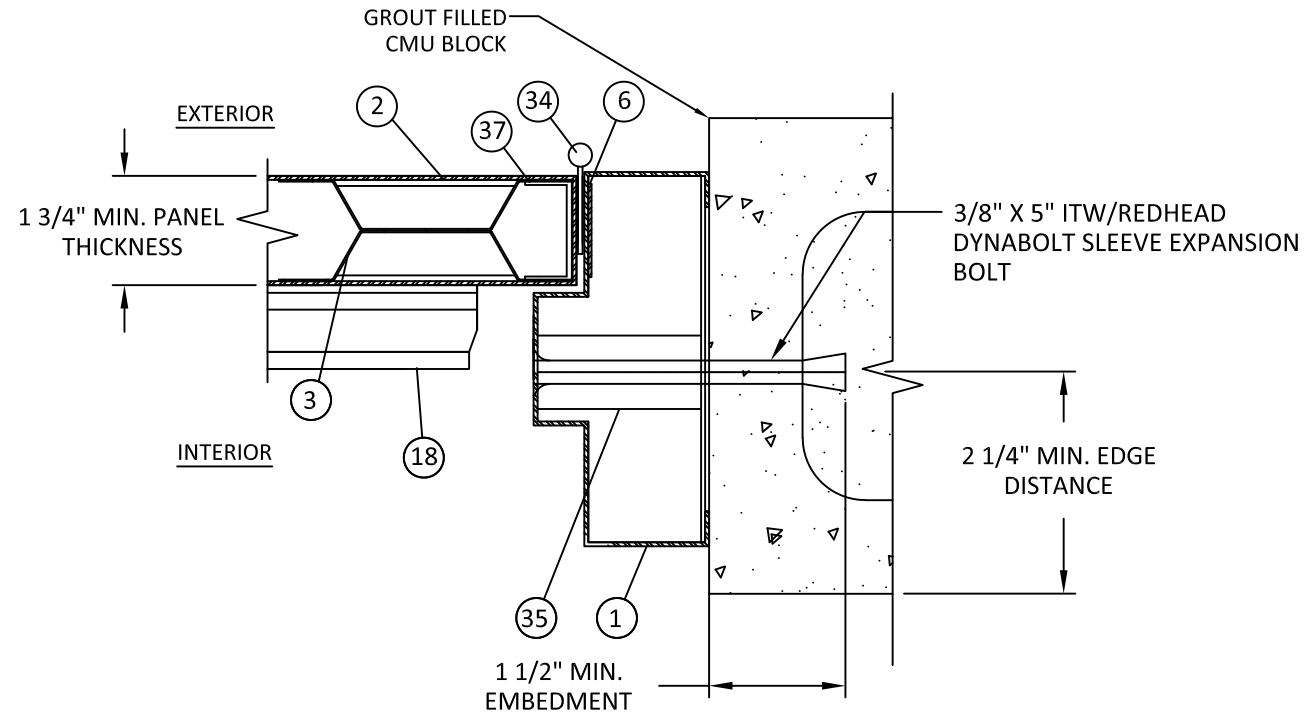


DATE: 4.20.11
DWN BY: MISS
CHK BY: HN
SCALE:

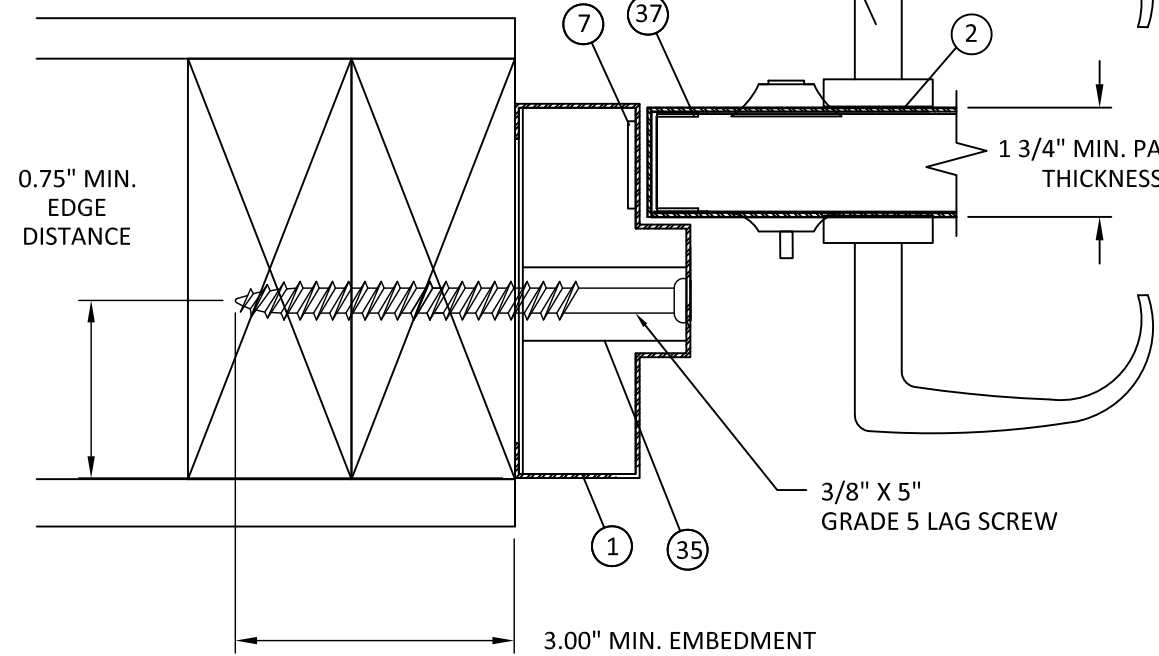
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SHEET: **5 OF 8**



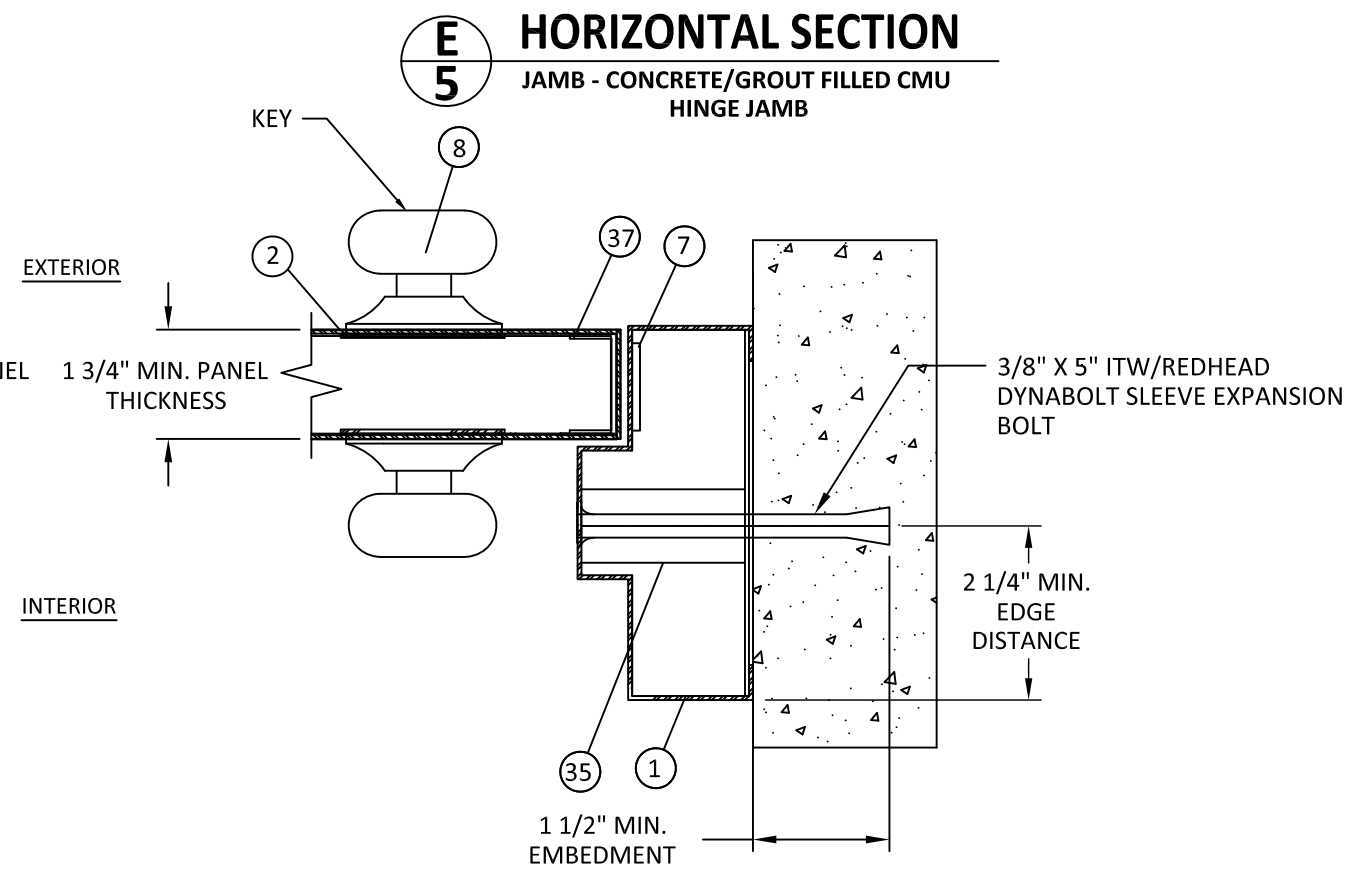
D5 HORIZONTAL SECTION
JAMB - 2X WOOD BUCK
HINGE JAMB



E5 HORIZONTAL SECTION
JAMB - CONCRETE/GROUT FILLED CMU
HINGE JAMB

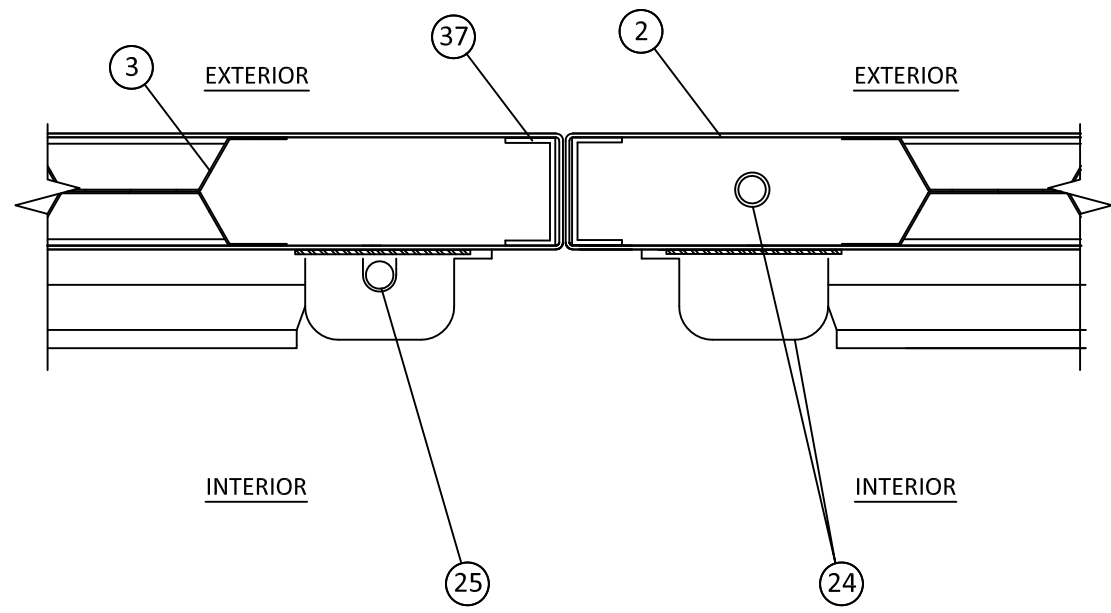


F5 HORIZONTAL SECTION
LOCK JAMB - 2X WOOD BUCK
MORTISE LOCKSET WITH DEADBOLT

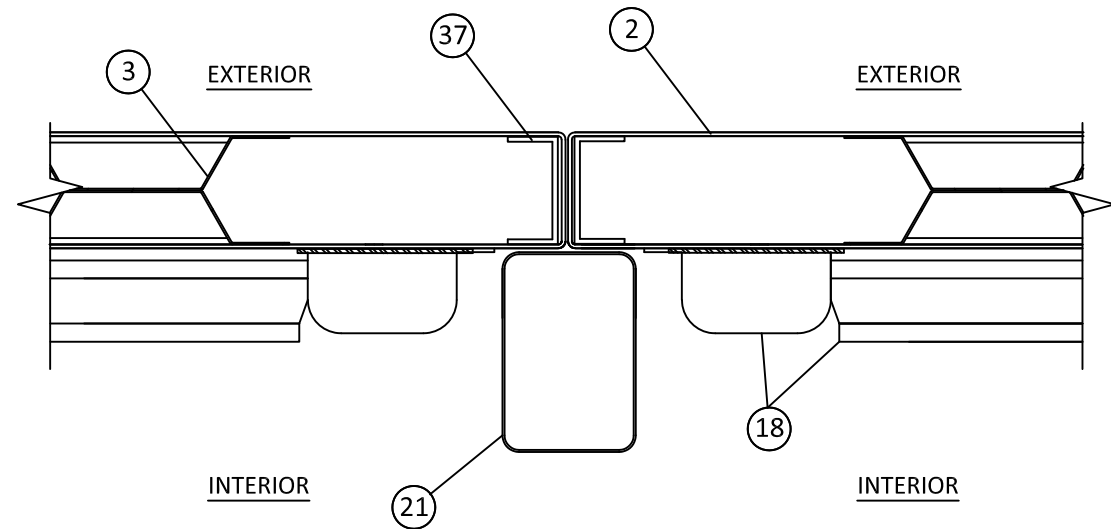


K5 HORIZONTAL SECTION
LOCK JAMB - CONCRETE
CYLINDRICAL LOCK

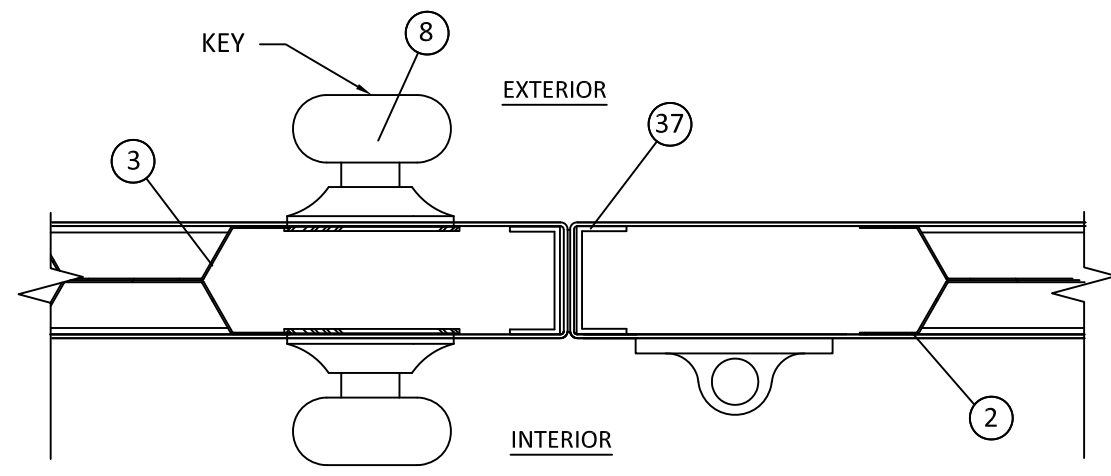
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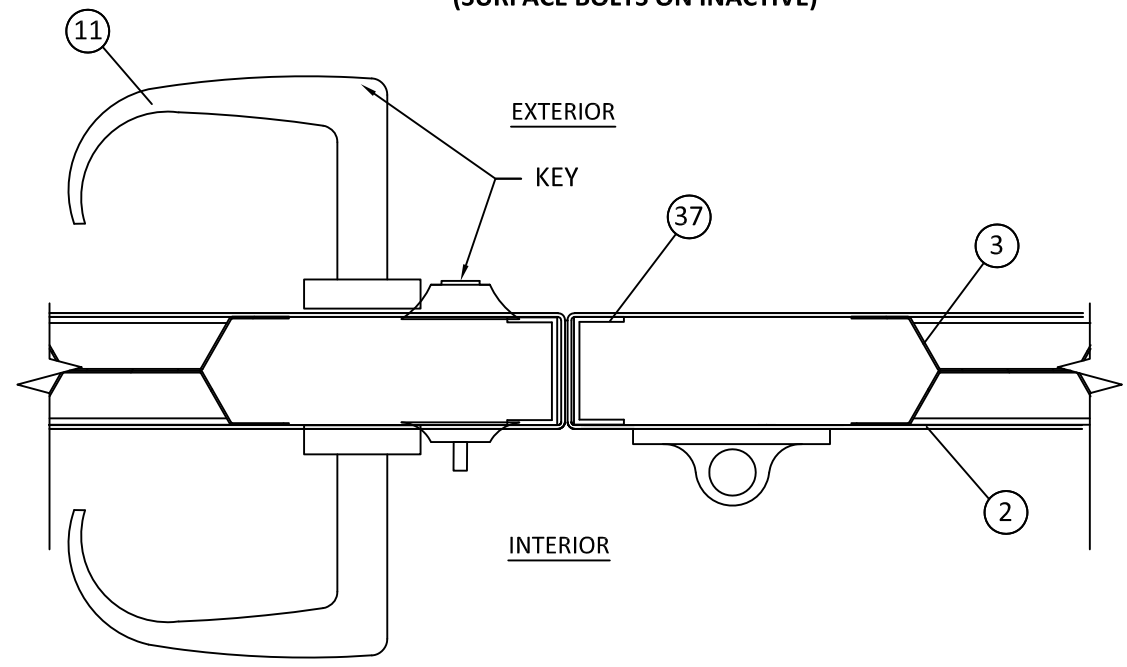
G
6 HORIZONTAL SECTION
SURFACE/CONCEALED VERTICAL ROD



I
6 HORIZONTAL SECTION
REMOVABLE MULLION



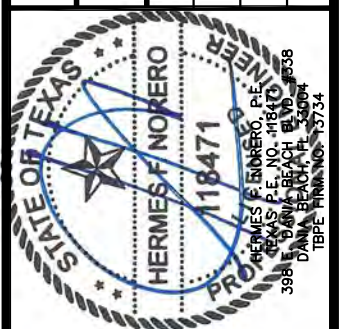
H
6 HORIZONTAL SECTION
CYLINDRICAL LOCK
(SURFACE BOLTS ON INACTIVE)



J
6 HORIZONTAL SECTION
MORTISE LOCKSET WITH DEADBOLT
(SURFACE BOLTS ON INACTIVE)

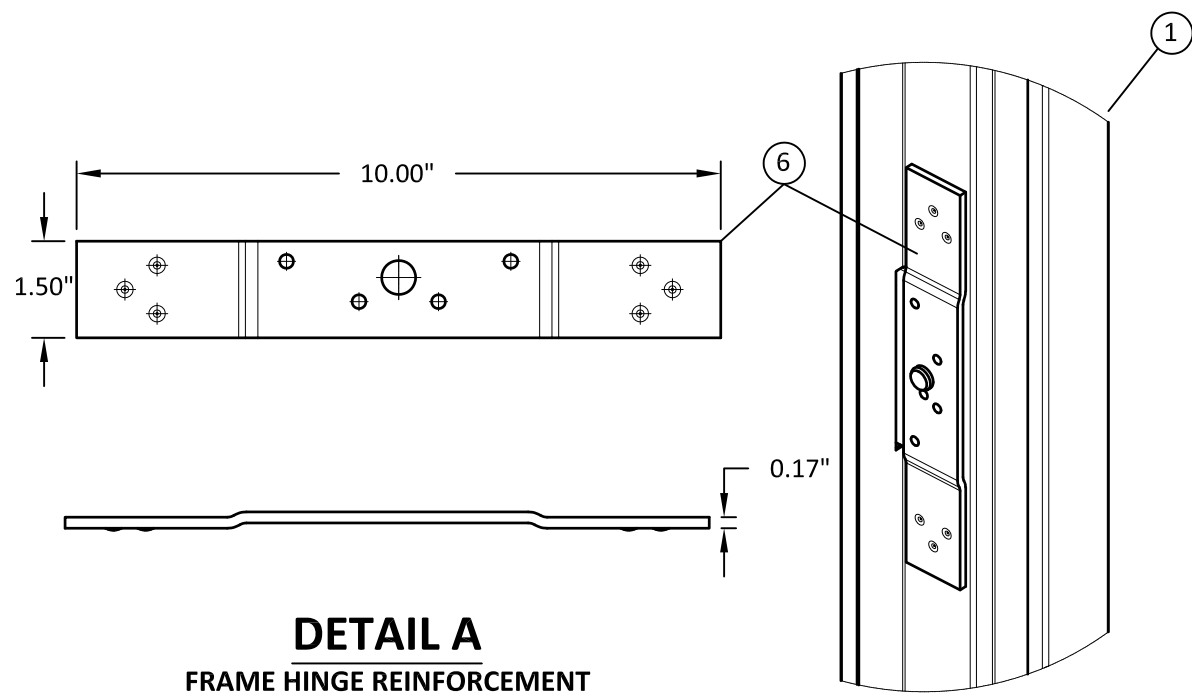
TITLE: OS FLUSH STEEL DOOR
HORIZONTAL SECTIONS
PREPARED BY:
BUILDING DROPS, INC.
398 E DANIA BEACH BLVD., # 338
DANIA BEACH, FL 33004
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A	INTERIOR KNOB ADDED TO H/6	SM	12.22.15		

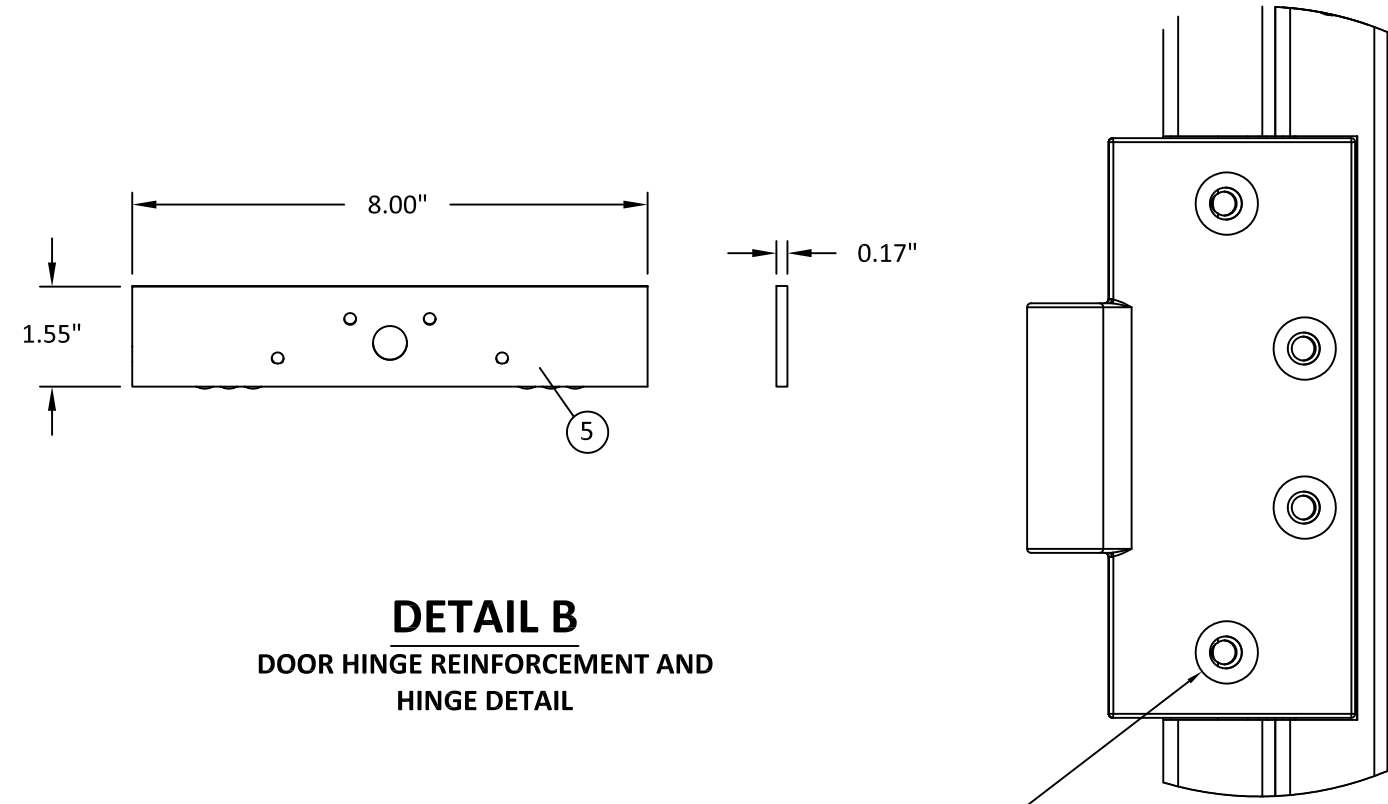


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DWN BY: MISS
CHK BY: HN
SCALE: NTS

DWG #: **NCHM002**
SHEET: **6 OF 8**

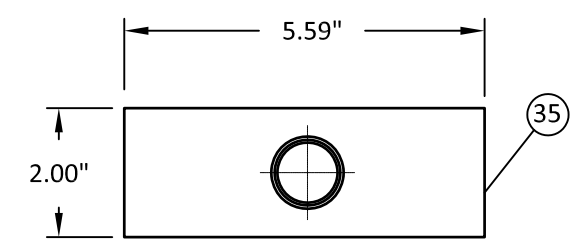


DETAIL A
FRAME HINGE REINFORCEMENT

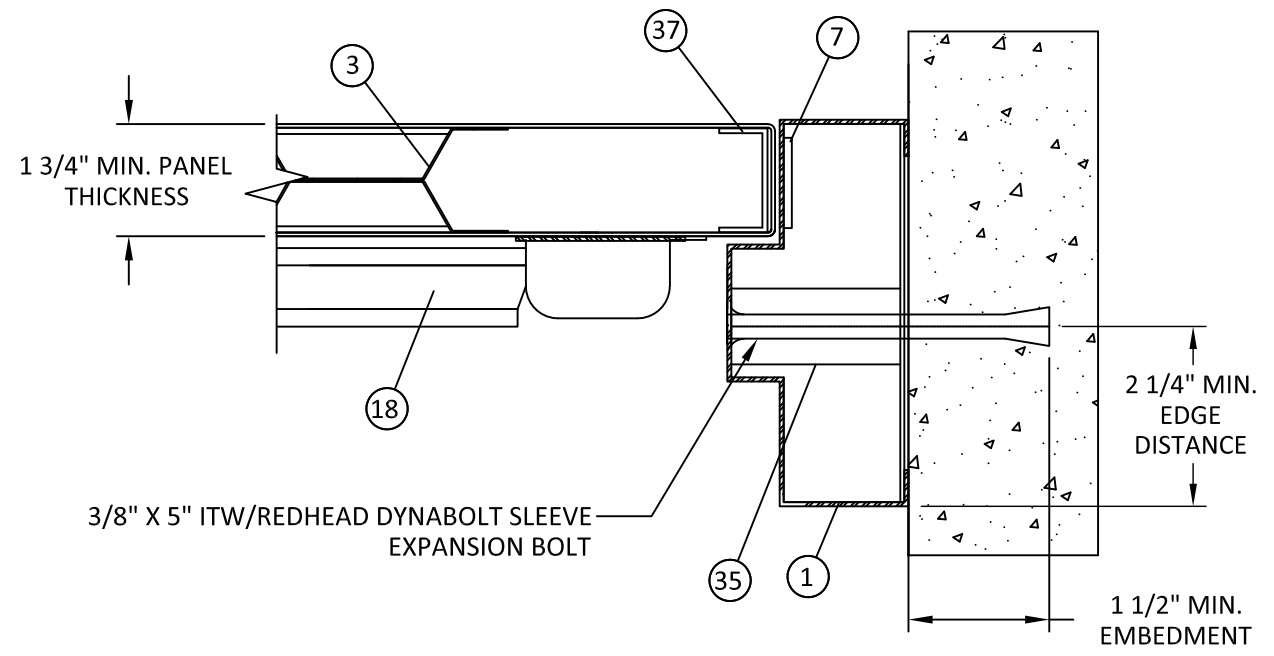
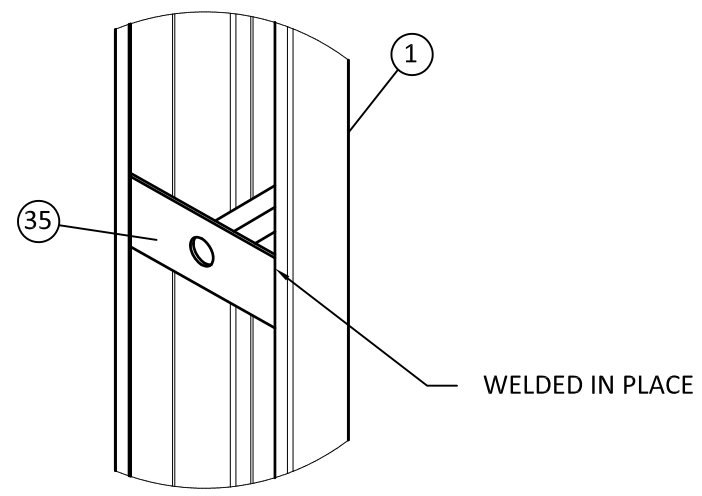


DETAIL B
DOOR HINGE REINFORCEMENT AND
HINGE DETAIL

ATTACHED WITH FOUR (4) #12 ASSEMBLY
SCREWS



DETAIL C
ANCHOR STRAP

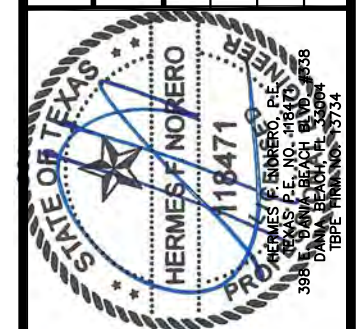


L
7 **HORIZONTAL SECTION**
LOCK JAMB - CONCRETE
RIM EXIT DEVICE

TITLE: OS FLUSH STEEL DOOR
STIFFENER DETAILS
& HORIZONTAL SECTION

PREPARED BY:
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REVISIONS		NO.	DESCRIPTION	BY	DATE
A	DETAIL L/7 ADDED	SM	12.22.15		



DATE:	4.20.11
DWN BY:	MSS
CHK BY:	HN
SCALE:	NTS

DWG #:
NCHM002
SHEET: **7 OF 8**

