

MANUFACTURING AND MACHINING SPECIFICATIONS

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APPLICABLE REQUIREMENTS:

CAN/ULC S104-15 (R2020)	<i>Standard Method for Fire Tests of Door Assemblies</i>
UL 10B (2020)	<i>Fire Tests of Doors Assemblies</i>
UL 10C (2021)	<i>Fire Tests of Doors Assemblies</i>
NFPA 252 - 2022	<i>Standard Methods of Fire Tests of Door Assemblies</i>

SUBJECT:

MANUFACTURING AND MACHINING SPECIFICATIONS FOR WOLMAN – 60 MINUTE
CATEGORY “C” NEUTRAL AND POSITIVE PRESSURE FIRE RATED FRAMES WITH HOSE
STREAM

60-MINUTE FIRE DOOR FRAME:

Materials:

Medium Density Fiberboard (MDF)

- Meeting ANSI A208.2
- Minimum 31 lbs./ft³ density

Hardwood

- Minimum 27 lbs./ft³ density

Proprietary Wolman Laminated Core:

Palusol SW 20-1 Core (0.3125" Thickness)
 Palusol SW 45-1 Core (0.6250" Thickness)
 Palusol SW 60-1 Core (0.6250" Thickness)

- Composite continuous core type
- Integrated edge seal

Maximum Sizes:

Swing Type:	Maximum Dimensions		Figure:
	Width:	Height:	
Single Swing	3'6" (1067 mm)	10'0" (3048 mm)	1, 2, 3
Single Swing Projecting	3'6" (1067 mm)	10'0" (3048 mm)	4
Standard Pairs	7'0" (2134 mm)	9'0" (2743 mm)	1, 2
Double Egress Pairs	Not Permitted		

Limitations:

Minimum Frame Width:	4-3/4"
Maximum Frame Width:	Equivalent to wall thickness
Minimum Frame Thickness:	5/8"
Minimum Rabbet for Door:	1-3/4"
Minimum Stop Height:	1/2" except 5/8" for 10 ft. high frames
Minimum Stop Width:	1 3/16"

Frame Components:

Proprietary Wolman Laminated Core:

- 2 layers of SW 20-1
- 3 layers of SW 20-1
- 1 layer of SW 45-1
- 1 layer of SW 60-1

Frame with concealed closer in frame:

- Multiple layers of SW 45-1 or SW 60-1 (Figure 5).

Frame with concealed TECTUS or SOSS Hinge #218:

- layers of MDF and SW20-1 (Figure 10).

Frame thickness additions (See Figure 6):

- Addition of MDF and Wolman SW 20-1 Cores to the backside of the frame cores.
- Electric strike requires the frame thickness to be built-up to fully enclose the electric strike body. Maximum mortise height 3 ½”.

Frame depth additions (See Figure 6):

- Addition of MDF or Hardwood to the frame back face to increase depth to be equivalent to the wall thickness.

Note: Frame thickness shall be increased to completely enclosed concealed closer and concealed hinge hardware.

Frame leg extension (See Figure 7)

To increase frame leg length beyond 8 ft.

Flat Laminated: Maximum Thickness on frame opening side = 1/8" hardwood veneer.

Veneer Wrapped: Maximum Thickness = 1/40" Veneer may be laminated over frame faces and opening side.

Hardwood Facings: Maximum ¼" x maximum 1" hardwood facing adhered to the face of the frame.

Stops:

Single Rabbet or Double Rabbet (applied: flat laminated or "T" Stop).

Material: MDF or Hardwood with minimum density of 27 lbs./ft³ density

Stops must be applied with a small bead of glue or silicone behind the stop and fastened with finishing nails at 12" on center. Stops may be field applied to ensure proper fit with fire door.

Adhesives:

Any PVA or PUR listed adhesives for use in 60 minute fire rated door assemblies.

Follow the adhesive manufacturers' instructions and bulletins for mixing, application rates, pressing parameters, cure temperatures, and safe use practices.

Casing / Moulding:

Material: MDF (minimum 31 lbs/ft³ density) or Solid wood (minimum 27 lbs./ft³ density),

Minimum 3/8" thick x 1-1/2" wide.

Frame casing / moulding to be applied with finishing nails at 12" on center.

Hinge and Strike Plates:

All hinges and applicable hardware must be fire rated for use in openings at or above the fire rating of the frame system being installed. Preparation of all hinges and hardware shall be made in accordance with NFPA 80, the manufacturer's installation instructions and templates.

Mortised Hinges:

Concealed TECTUS TE 526 or TE 527 or SOSS Hinge #218 allowed in the frame jamb. Pocket dimensions machining per manufacturer's instructions. [See Figure10].

Hinge jamb is constructed with 3 layers of MDF and Palusol SW 20-1 core. Minimum 1-7/8" frame thickness [See Figure 10].

Electric Raceways:

A 1/4" diameter hole is permitted anywhere below 40" above the floor on the hinge or latch frame leg. Wire can then be routed through the hole for electronically controlled hardware. The hole may be left open or sealed with silicone caulking.

Mortised Door Closer:

Concealed closer allowed in the frame header. Maximum 2-1/6" x 3-5/8" x 12" pocket dimensions lined with Interdens Type 15 on 4 sides [See Figure 8].

Header is constructed with layers of Palusol SW cores. Minimum 3/8" frame header thickness above the concealed closer pocket [See Figure 8].

Installation:

Shims need to be installed as per the drawing in Figures 1 and 2. Installation instructions and frame corner connections are shown in Figure 11. Silicone caulking applied between the jamb and rough opening on both sides of the assembly. Each hinge needs to be fastened through the shim into the frame with at least #12 x 2-1/2" screws. The frame can then be fastened at all non-hinge shim locations with 2" finishing nails. Follow NFPA 80 Installation guidelines.

Test Reports:

Test Report #	Date Issued
QAI Engineering Evaluation # F411-5-4	June 2, 2014
QAI Engineering Evaluation # F411-5-8	April 16, 2015
QAI Engineering Evaluation # F411-5-27	October 16, 2017
QAI Engineering Evaluation # F411-5-28	October 16, 2017
QAI Engineering Evaluation # T848-22b	February 27, 2018
QAI Test Report # T848-24D	April 15, 2019
QAI Test Report # T1470-3B	March 23, 2022
QAI Test Report # T1470-3F	March 28, 2022

APPENDIX

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A3-A4	10 ft. high frame designs
A5	Frame facing options
A6	Options for extending frame depth and thickness
A7	Frame leg length extension
A8	Construction details with concealed closer body in the frame
A9	Electric Strike details
A10	Construction details for use with TECTUS or SOSS Hinges
A11	Frame installation instructions and corner connections

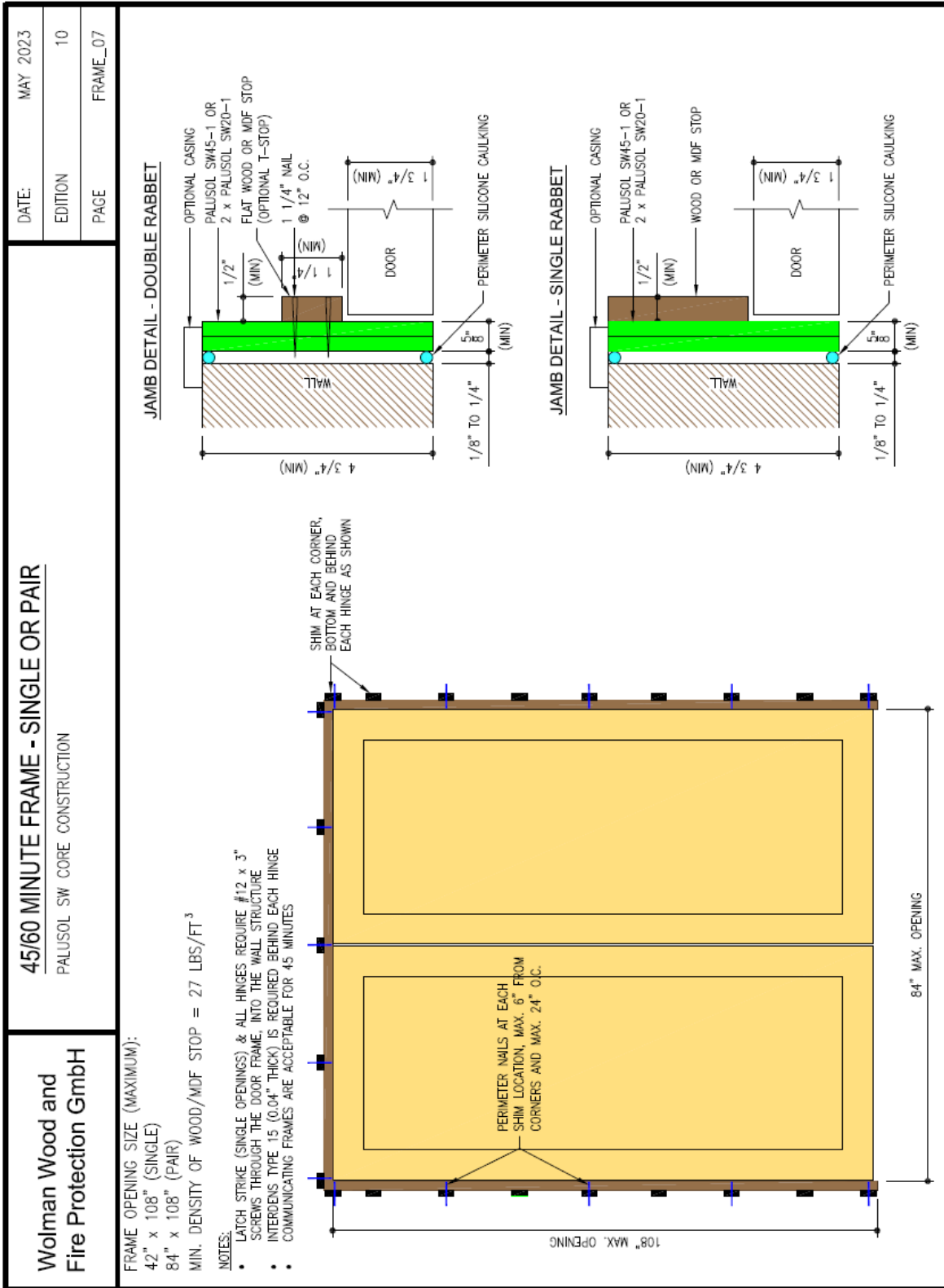


Figure 1: 60 minute rated frame assembly.

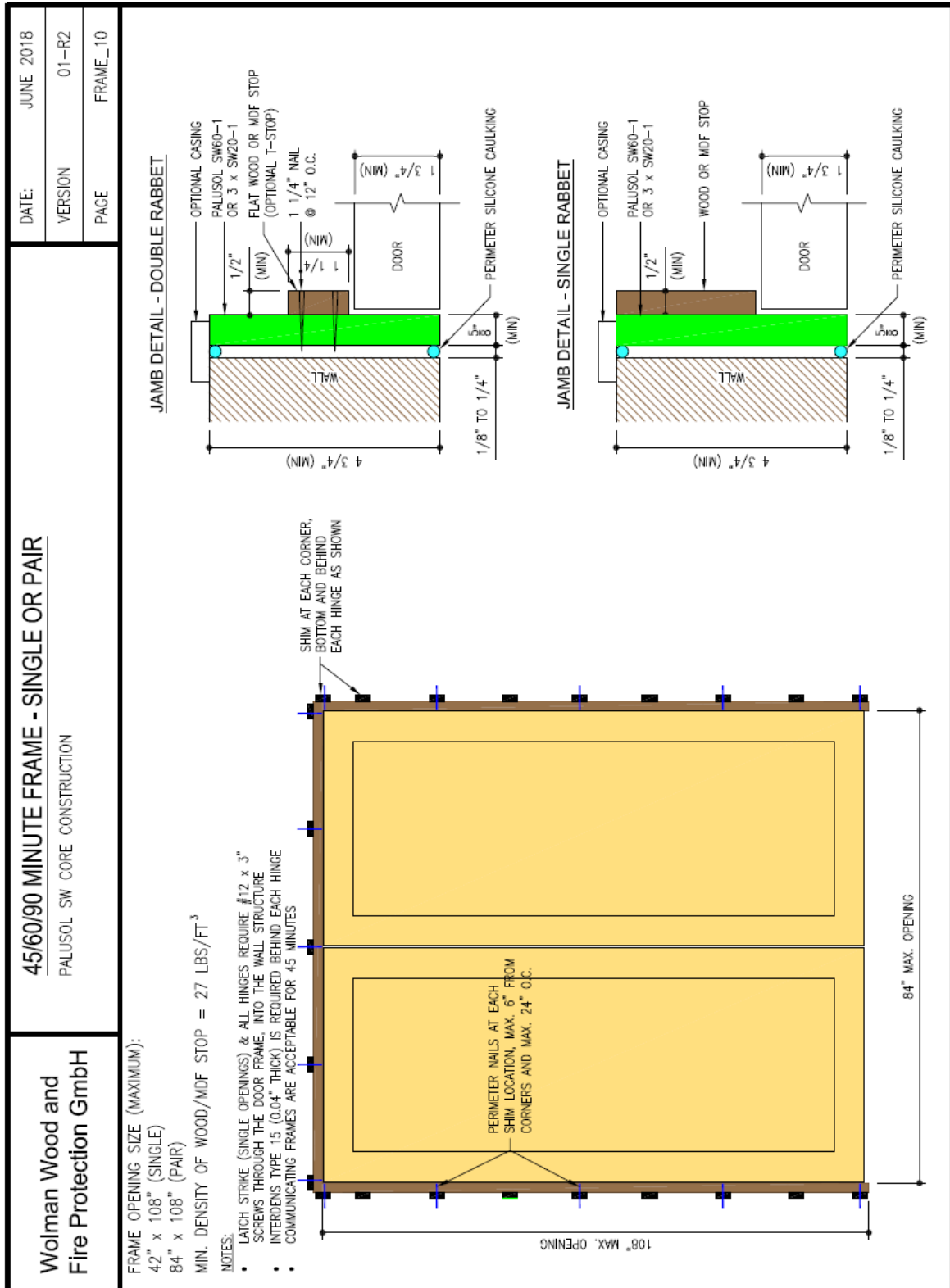


Figure 2: 60 minute rated frame alternate assembly.

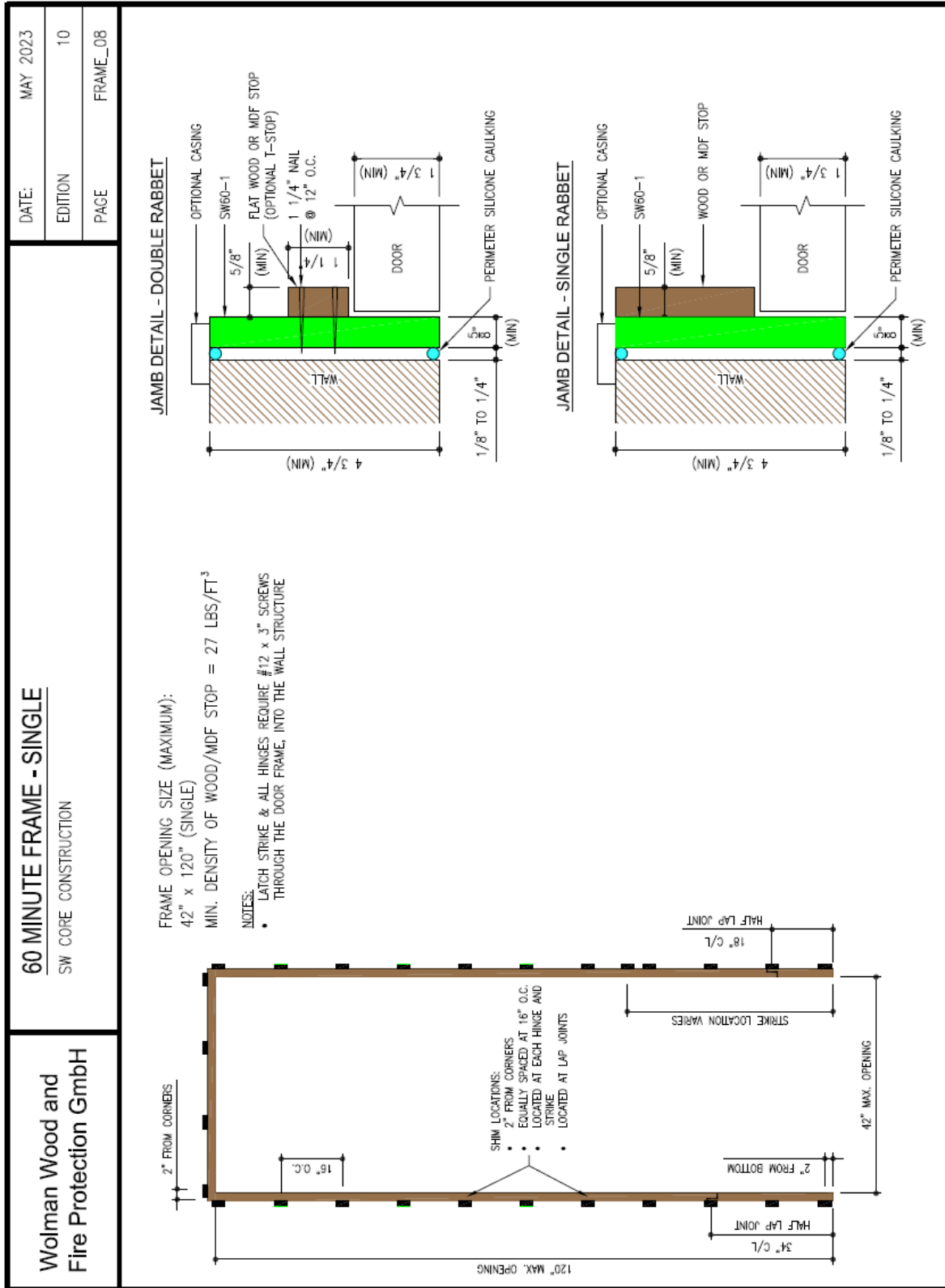


Figure 3: 10 ft. high 60 minute rated frame details.

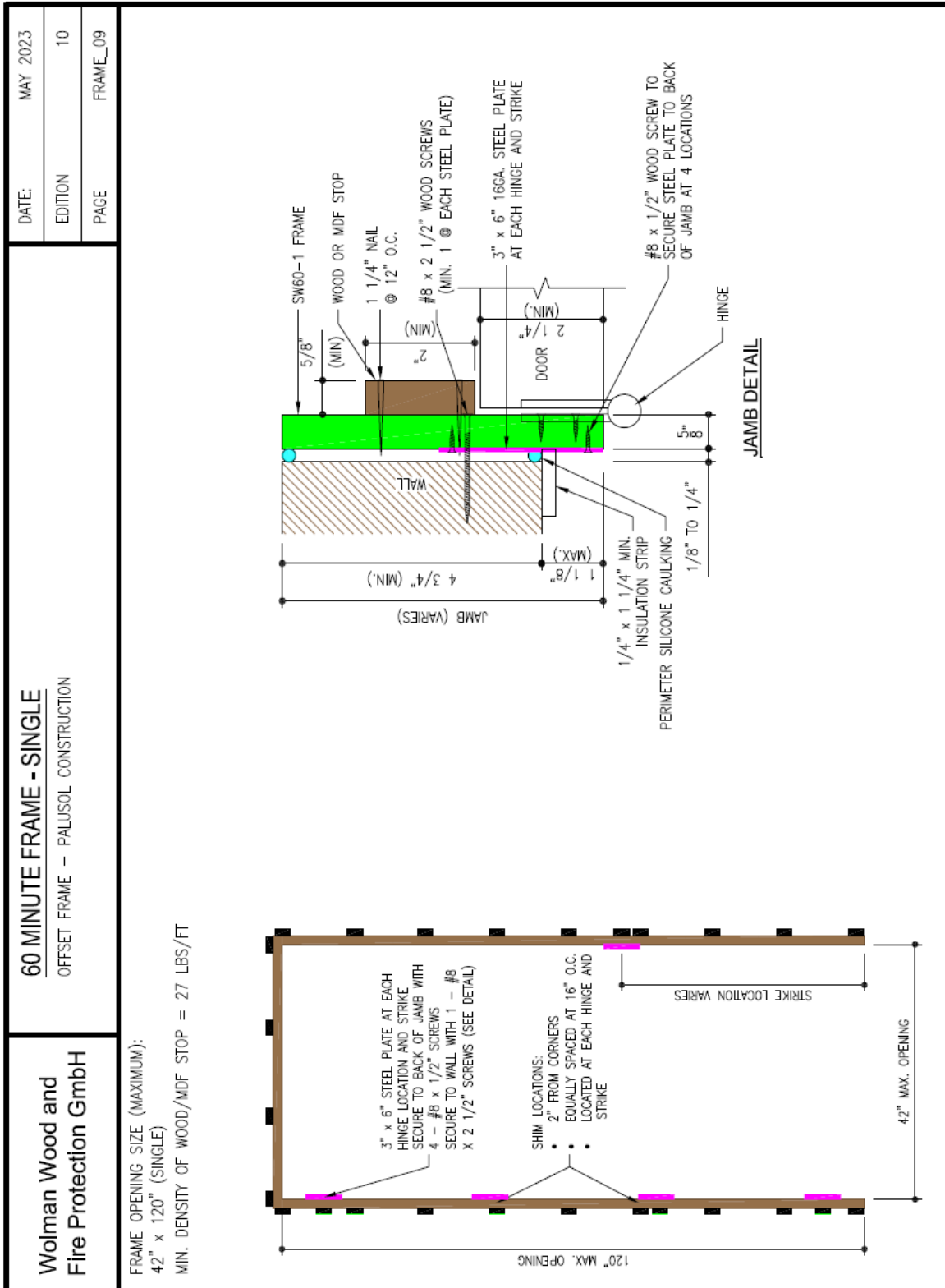


Figure 4: 10 ft. high 60 minute projecting rated frame details.

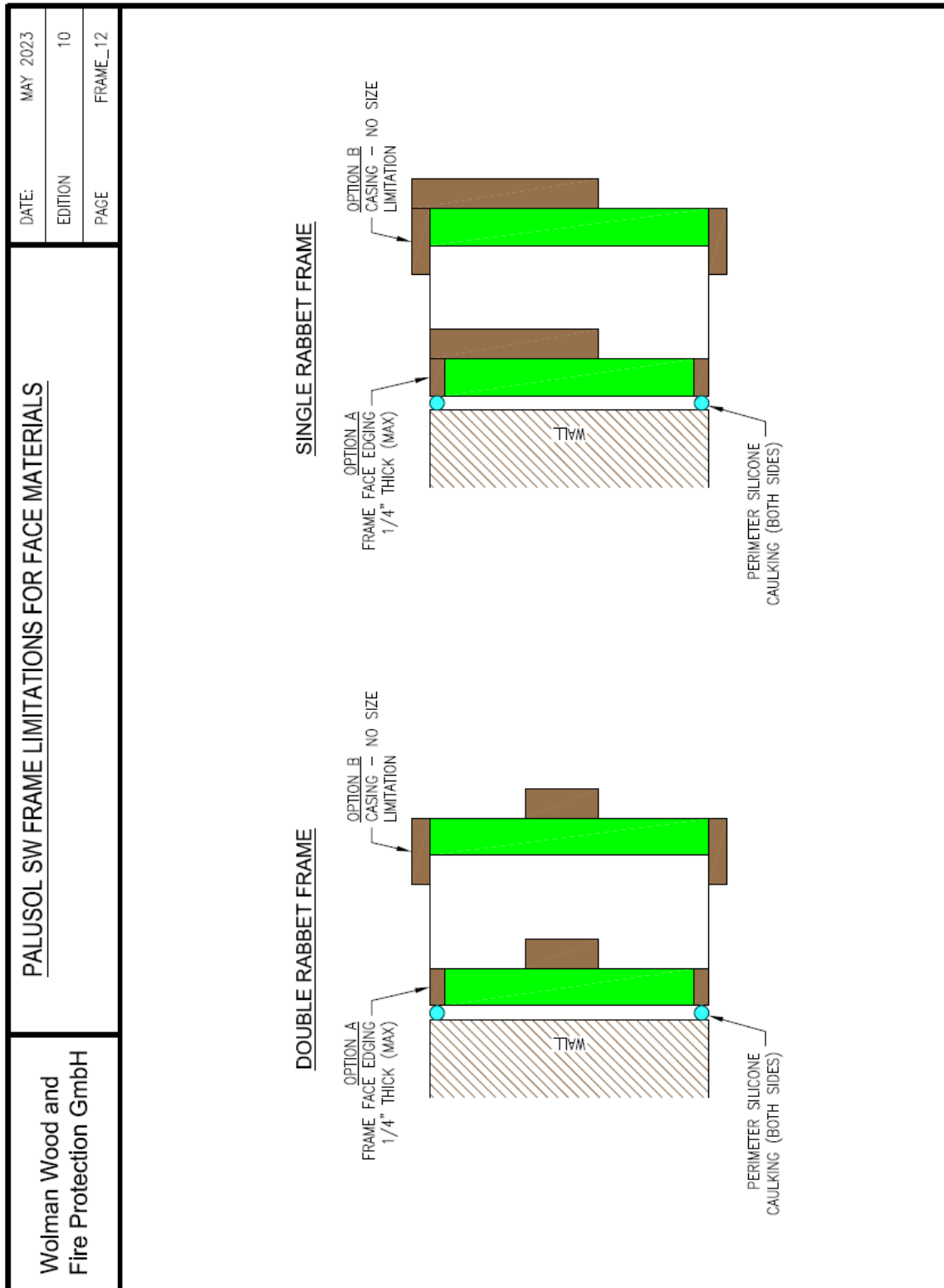


Figure 5: Frame facing options.

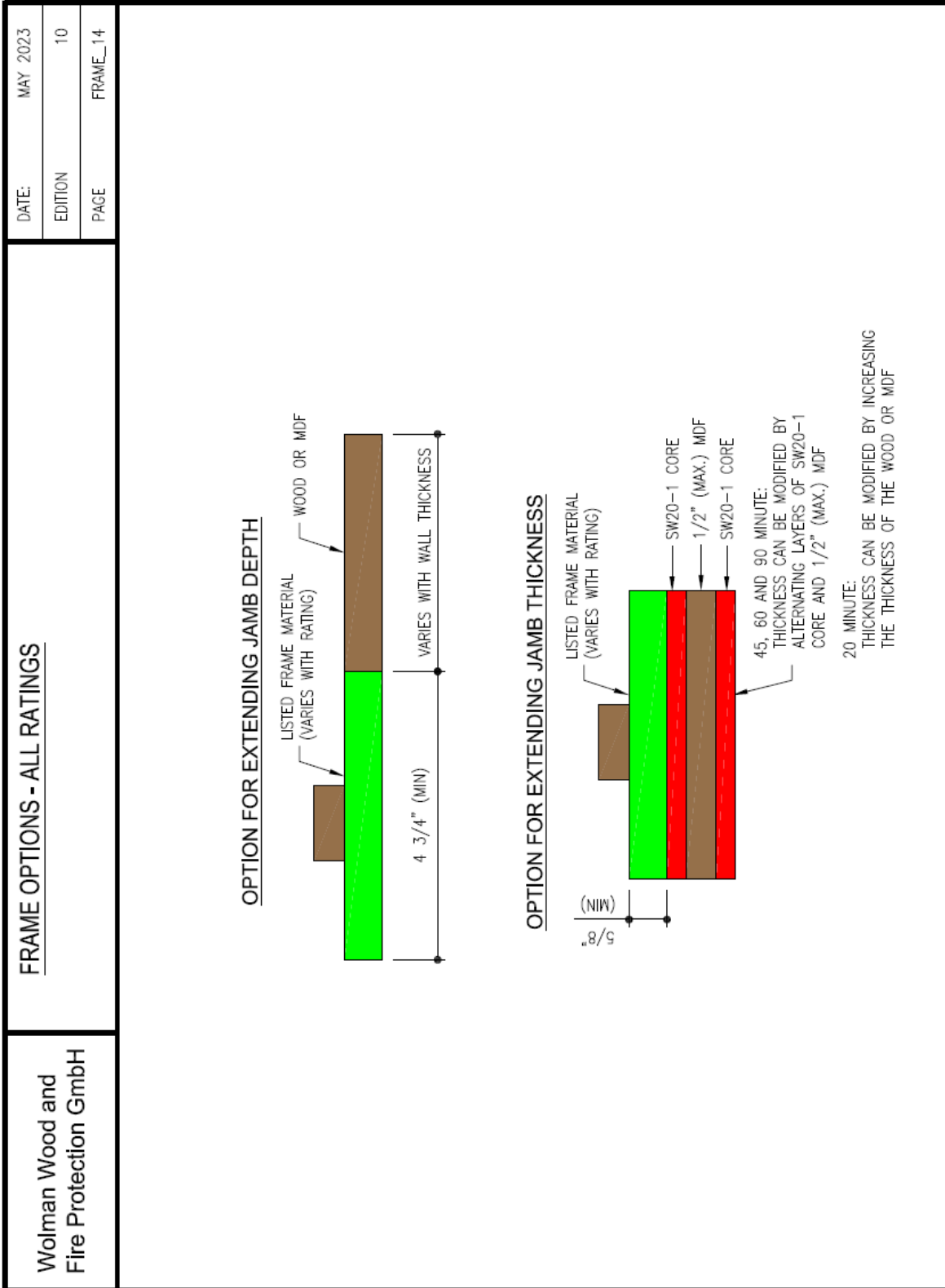


Figure 6: Options for extending jamb depth and thickness.

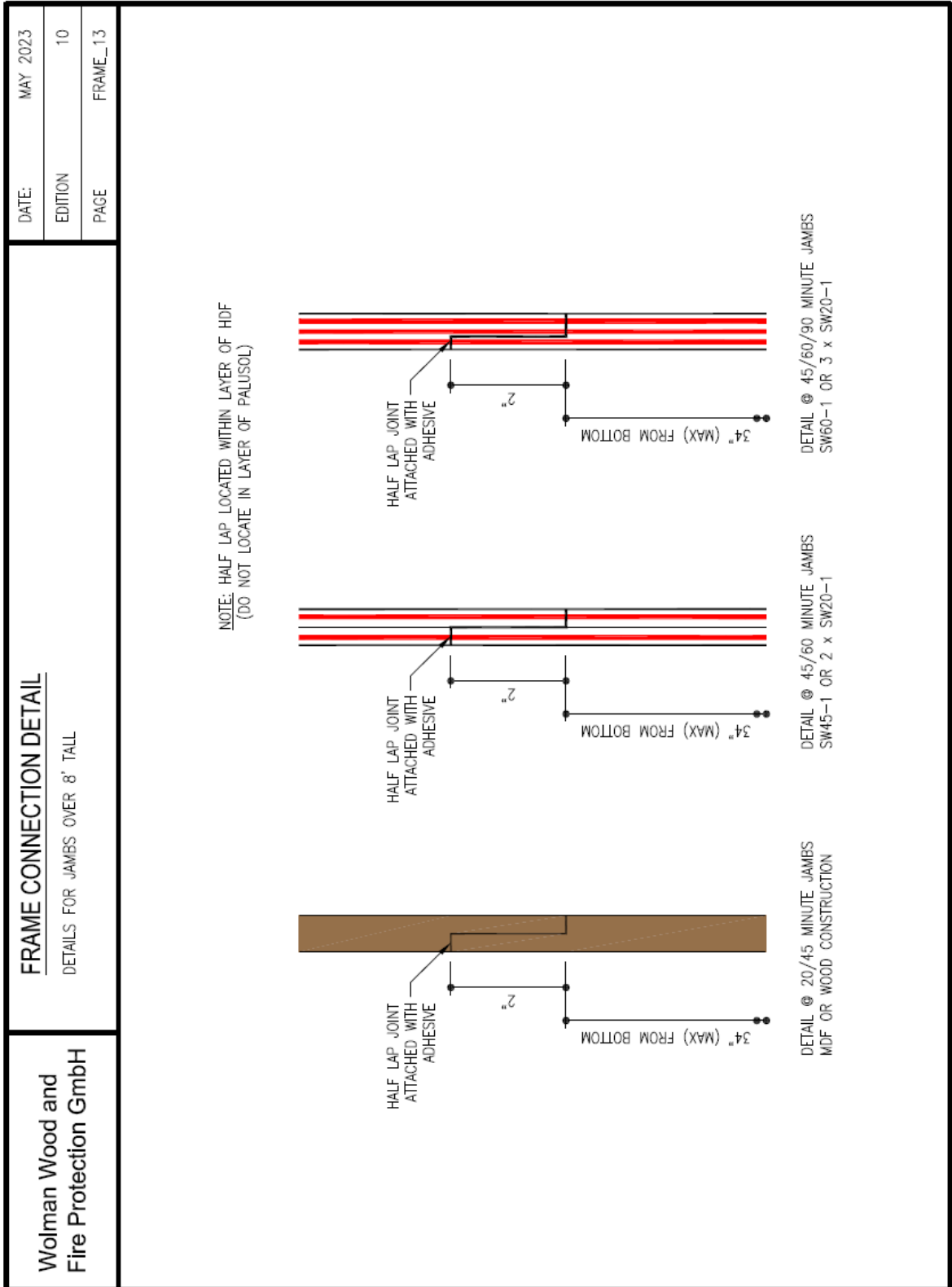


Figure 7: Options for extending jamb leg length.

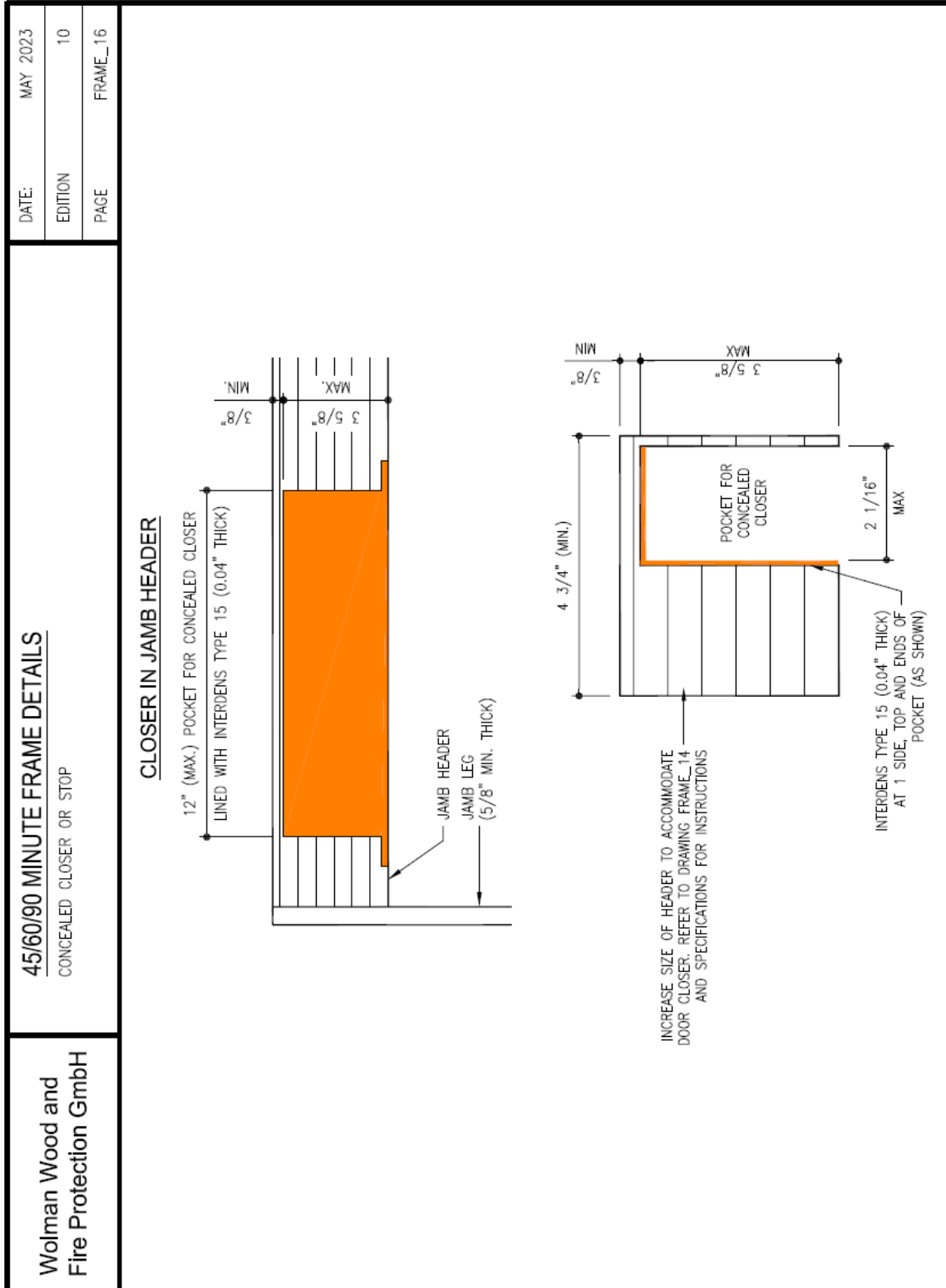


Figure 8: 45 to 90 minute frame construction details with concealed closer body in the frame.

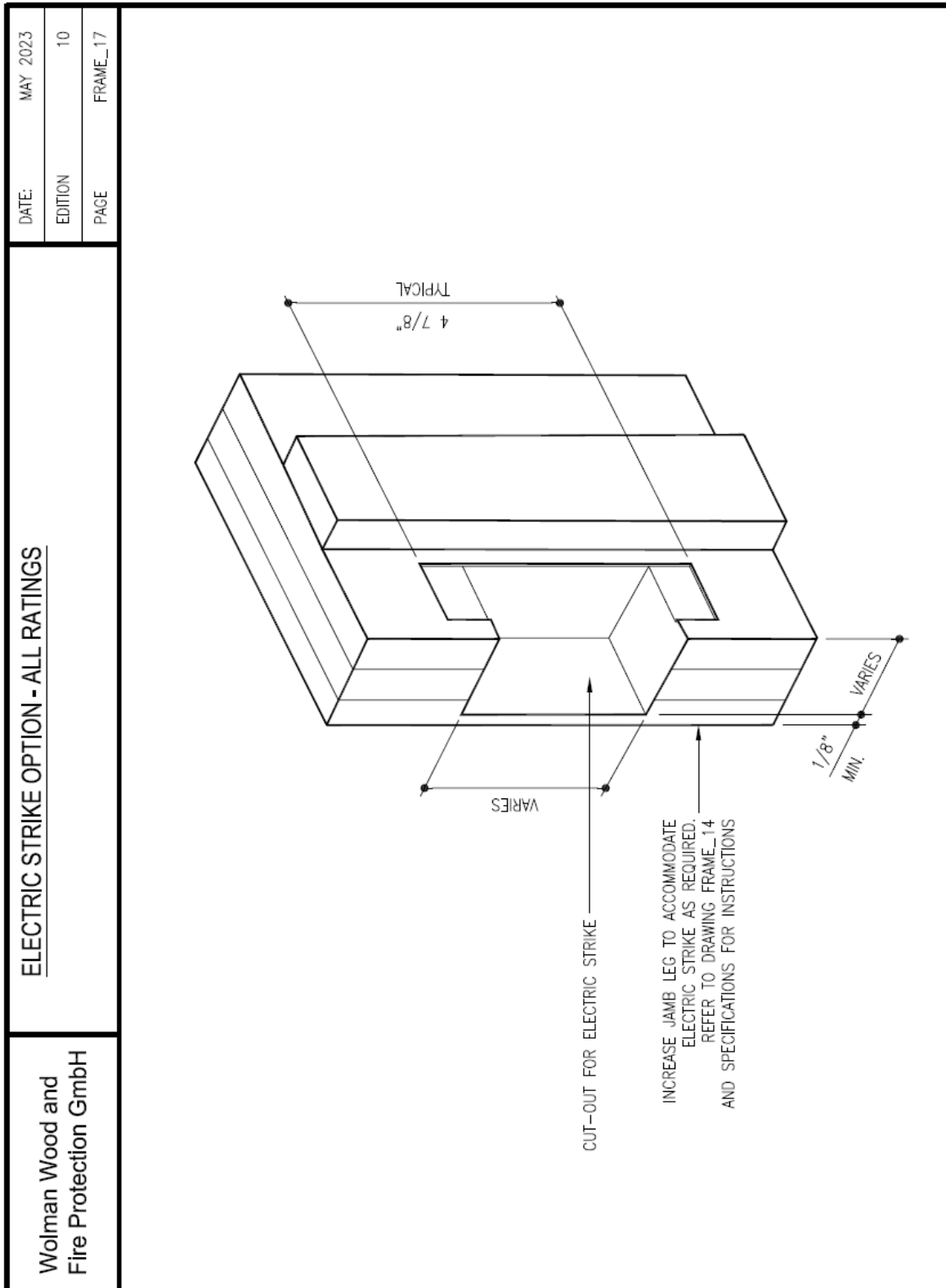


Figure 9: electric strike option.

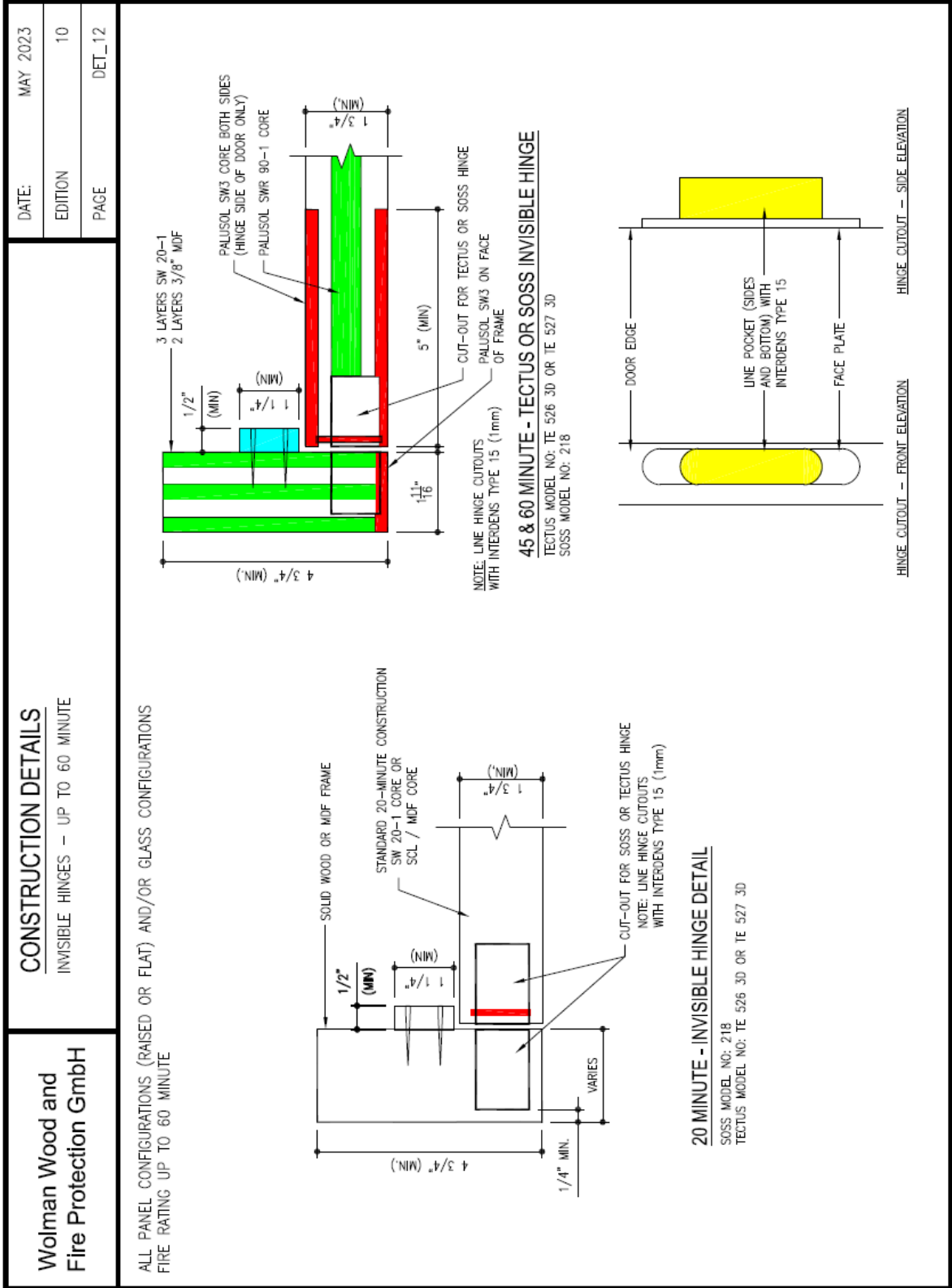


Figure 10: 60 minute frame construction details for use with TECTUS and SOSS Hinges.

<p>Wolman Wood and Fire Protection GmbH</p>	<p>FIRE RATED FRAME INSTALLATION INSTRUCTIONS</p> <p>20, 45, 60 AND 90 MINUTE FIRE RESISTANCE RATINGS</p>	<p>DATE: MAY 2023</p> <p>EDITION: 10</p> <p>PAGE: FRAME_18</p>
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A. Frame header to leg connections

Use minimum four (4) No. 8 or larger wood screws to connect frame legs to header. Screws shall penetrate at least 1" depth into header, and be evenly spaced. Pre-drill holes. For frames with depth larger than 6", add an additional screw.

B. Shim Space, Shims and Fastening Frame to Wall

Maximum 1/4" shim space. Shim at each hinge, latch and screw fastening location. Fasten frame near base and every 18" to 20" of frame leg. Shim and fasten header 3" from edge, and at the center of door leaf. For pairs of doors, this will require six fastening points per header.

Fasten frames with two (2) No. 8 or larger wood screws or finishing nails per fastening location. One screw or nail is hidden behind the stop, the other is located in the door rabbet. The screws shall be long enough to penetrate at least 1" into the wall studs.

C. Preparation for installation in steel stud wall construction

The steel stud opening shall be lined with minimum 1/2" plywood or solid wood to provide holding strength for the frame screws or nails. The wood lining shall be fastened with screws every 18" to 20" with screws installed through the back side of the steel studs and header track. The gypsum wallboard will extend to cover the exposed edge of wood lining.

D. Preparation for installation in concrete or masonry construction

The opening is lined with minimum 1 1/2" wood stud attached to the masonry with lag bolts or equivalent fastening method every 30" maximum. The exposed 1 1/2" faces of the wood lining is protected using Type X gypsum wallboard, appropriate for the wall rating, on both sides of the wall.

E. Caulk and Casing

Once the frame is installed and fastened, the shim space is sealed with 1/4" depth bead of acrylic sealant (20 minute rated frames) or silicone sealant (20 to 90 minute rated frames) on both sides of the wall.

Wood casing or molding of minimum 3/16" is attached to the frame to cover the shim space.

F. Hardware Installation and Security

The two hinge screws closest to the door stop shall be replaced with wood screws that penetrate at least 1" into the wall stud, for each hinge. The two screws for the strike plate for the latch are also required to penetrate at least 1" into the wall stud. These screws are required in all installations, for all fire resistance ratings.

Figure 11: Frame installation instructions.