

ANCHORS & METHOD OF ATTACHMENT				
ANCHOR TYPE	*LOCATION			
EO - PIPE & SLEEVE OR EWA (BUTTERFLY UP TO 3070 MAX.) WOOD BUCK 3/8" X 6" LAG SCREW	12" MAX. FROM EACH END & 19" O.C.			
EO - PIPE & SLEEVE OR EWA (BUTTERFLY UP TO 3070 MAX.) MASONRY OR STEEL BUCK 3/8" X 6" EXPANSION SHELL - MASONRY 3/8" GRADE 2 MIN.TAP-IN BOLT- STEEL	12" MAX. FROM EACH END & 19" O.C.			
MASONRY "T" - GROUTED (Head: 3/8" x 6" Expansion Shell)	16" - 24" O.C. @ GROUT JOINTS			
WIRE MASONRY - GROUTED (Head: 3/8" x 6" Expansion Shell)	16" - 24" O.C. @ GROUT JOINTS			
WOOD STUD METAL STUD (NO FLOOR ANCHORS)	6", 6" & EQUAL - 21" MAX. FOR INTERMEDIATE SPACES			
POURED IN PLACE WALL	NA			
***WELDED TO STEEL BUCK, JAMBS	4 ANCHORS @ 24" MAX. SPACING			
***WELDED TO STEEL BUCK, HEAD & SILL	2 ANCHORS,1 @ 9" EACH SIDE OF C OF HEAD & OPTIONAL SILL			

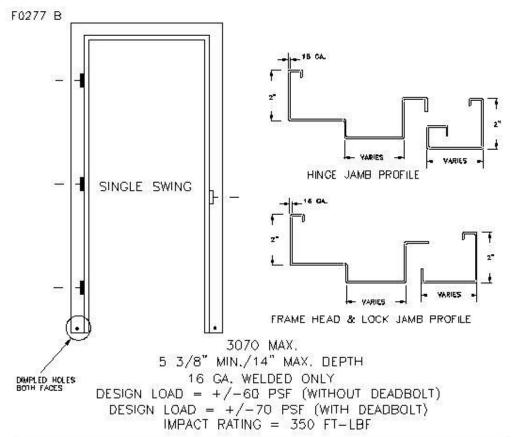
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Trio & Trio-E Opening **Sizes Over 6070 Pairs	
LOCATION	
@ Jamb:12"Max. From Each End & 19" O.C. @ Head / Sill: (4) Total Req'd, 9" Max. From Centerline of Head / Sill, 9" Max. from Each Hinge Jamb	
@ Jamb:12"Max. From Each End & 19" O.C. @ Head / Sill: (4) Total Req'd, 9" Max. From Centerline of Head / Sill, 9" Max. from Each Hinge Jamb	
@ Jamb:16"-24" O.C.@ Grout Joints @ Head / Sill:(4)Total Req'd., 9" Max. from Centerline of Head / Sill, 9" Max. From Each Hinge Jamb.	
@ Jamb:16"-24" O.C.@ Grout Joints @ Head / Sill (4)Total Req'd., 9" Max. from Centerline of Head / Sill, 9" Max. From Each Hinge Jamb.	
@ Jamb.6", 6" & Equal-21" Max for Intermediate Spaces. @ Head: (4) Total Req'd. 6" Max. From Centerline of Head, 6" Max from Each Hinge Jamb	
NA	
4 ANCHORS @ 24" MAX. SPACIN	G
2 ANCHORS,1 @ 9" EACH SIDE OF OF HEAD & OPTIONAL SILL	Ę.

^{*}FOR DOUBLE SWING FRAMES WITH 4" FACE FRAME HEADS, (2) EO ANCHORS REQUIRED WHEN INSTALLED IN MASONRY WALL OR (2) STUD ANCHORS REQUIRED WHEN INSTALLED IN STUD WALL. LOCATION OF ANCHORS TO BE 16" FROM CENTERLINE OF FRAME HEAD, OR CAN BE GROUTED FULL WITH 2000 PSI MIN. CONCRETE.

Three-Sided Frames



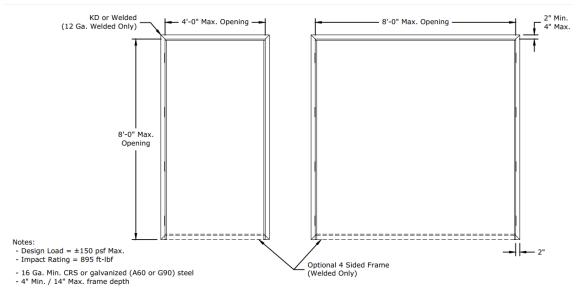
^{**}FOR SIZES 6070 OR LESS REFER TO TABLE ABOVE.



ANCHORS & METHOD	OF ATTACHMENT
ANCHOR TYPE	LOCATION
PLUMB ANCHOR & WOOD STUD SCREW OR METAL STUD SCREW	TOP PLUMB ANCHOR STD LOCATION & BTM PLUMB ANCHOR TO 18" MAX, FROM BTM OF FRAME

Two-Piece Three-Sided Frames





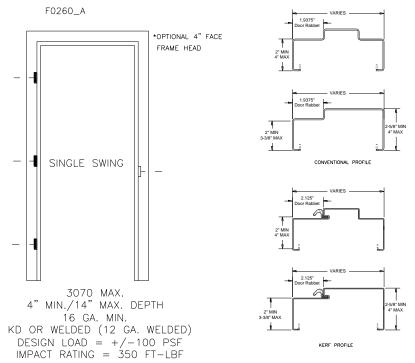
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\vdash	Head and/or Sill Anchor Locations					
ш	Opening Size	Anchor Type	Anchor Spacing			
	Up to and including 6'0" x 7'0"	Existing Wall Anchors: Powers $\frac{3}{8}$ " Lok-Bolt AS Sleeve Anchor or $\frac{3}{8}$ " SMS/Self Drilling Screw/UNC Bolt	Minimum 4 anchors. On both sides of the door meeting edge centerline at 8" and 15" from door meeting edge centerline.			
<u>د</u>	Greater than 6'0" x 7'0" and up to and including 7'0" x 7'0"	Existing Wall Anchors: Powers $\frac{2}{8}$ " Lok-Bolt AS Sleeve Anchor or $\frac{2}{8}$ " SMS/Self Drilling Screw/UNC Bolt	Minimum 6 anchors. On both sides of the door meeting edge centerline at 8", 15", and 22" from door meeting edge centerline.			
Pai	Greater than 7'0" x 7'0" and up to and including 8'0" x 8'0"		Minimum 6 anchors. On both sides of the door meeting edge centerline at 8", 15", and 24" from door meeting edge centerline.			
	Up to and including 8'0" x 8'0"	Welded to Building Structure	Minimum 3 weld locations and must weld both faces of the frame at each location. One at the door meeting edge centerline and on both sides 6" from the door meeting edge centerline.			
Singles	Up to and including 4'0" x 8'0"	N/A	None required.			

For unequal width pairs, head/sill anchor quantity/spacing for each side of the door meeting edge centerline shall be determined as though the leaf size was part of an equal width pair.

	Jamb Anchor Locations							
	Opening Size	Anchor Type	Anchor Spacing					
	Up to and including 6'0" x 7'0" Existing Wall Anchors: Powers $\frac{2}{8}$ " Lok-Bolt AS Sleeve Anchor or $\frac{2}{8}$ " SMS/Self Drilling Screw/UNC Bolt		8" max. from sill, 4" max. from head rabbet, and 24" max. on center.					
	Greater than 6'0" x 7'0" and up to and including 7'0" x 7'0"	Existing Wall Anchors: Powers $\frac{2}{8}$ " Lok-Bolt AS Sleeve Anchor or $\frac{2}{8}$ " SMS/Self Drilling Screw/UNC Bolt	8" max. from sill, 4" max. from head rabbet, and 21" max. on center.					
Pairs	Greater than 7'0" x 7'0" and up to and including 8'0" x 8'0"	Existing Wall Anchors: Powers $\frac{3}{8}$ " Lok-Bolt AS Sleeve Anchor or $\frac{3}{8}$ " SMS/Self Drilling Screw/UNC Bolt	8" max. from sill, 4" max. from head rabbet, and 18" max. on center.					
"	Up to and including 8'0" x 8'0"	Welded to Building Structure	Must weld on both faces of the frame at each location. 12" max. from sill, 10" max. from head rabbet, and 24" max. on center.					
1	Up to and including 8'0" x 8'0"	Welded 12 Ga. Masonry "T" Anchor	8" max. from sill, 6" max. from head rabbet, and 24" max. on center.					
1	Up to and including 7'0" x 7'0"	Wire Masonry Anchor	12" max. from sill, 10" max. from head rabbet, and 16" max. on center.					
	Greater than 7'0" x 7'0" and up to and including 8'0" x 8'0"	Wire Masonry Anchor	12" max. from sill, 10" max. from head rabbet, and 14" max. on center.					
	Up to and including 3'0" x 7'0" Existing Wall Anchors: Powers $\frac{3}{8}$ " Lok-Bolt AS Sleeve Anchor or $\frac{3}{8}$ " SMS/Self Drilling Screw/UNC Bolt		8" max. from sill, 4" max. from head rabbet, and 21" max. on center.					
l s	Greater than 3'0" x 7'0" and up to and including 4'0" x 8'0"	Existing Wall Anchors: Powers $\frac{3}{8}$ " Lok-Bolt AS Sleeve Anchor or $\frac{3}{8}$ " SMS/Self Drilling Screw/UNC Bolt	8" max. from sill, 4" max. from head rabbet, and 18" max. on center.					
Singles	Up to and including 4'0" x 8'0"	Welded to Building Structure	Must weld on both faces of the frame at each location. 12" max. from sill, 10" max. from head rabbet, and 24" max. on center.					
1	Up to and including 4'0" x 8'0"	Welded 12 Ga. Masonry "T" Anchor	8" max. from sill, 6" max. from head rabbet, and 24" max. on center.					
	Up to and including 3'0" x 7'0"	Wire Masonry Anchor	12" max. from sill, 10" max. from head rabbet, and 18" max. on center.					
	Greater than 3'0" x 7'0" and up to and including 4'0" x 8'0"	Wire Masonry Anchor	12" max. from sill, 10" max. from head rabbet, and 12" max. on center.					

Three-Sided Frame (150 PSF Max, Missile Level E)

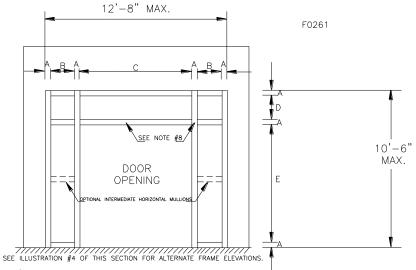




*ANCHORS & METHOD OF ATTACHMENT				
ANCHOR TYPE	*LOCATION			
EO - PIPE & SLEEVE (BUTTERFLY UP TO 3070 MAX.) WOOD BUCK 3/8" X 6" LAG SCREW	12" MAX. FROM EACH END & 19" O.C.			
EO — PIPE & SLEEVE (BUTTERFLY UP TO 3070 MAX.) MASONRY BUCK 3/8" X 6" EXPANSION SHELL	12" MAX. FROM EACH END & 19" O.C.			
MASONRY "T" - GROUTED	16" - 24" O.C. GROUT JOINTS			
WIRE MASONRY - GROUTED	16" - 24" O.C. © GROUT JOINTS			
WOOD STUD METAL STUD (NO FLOOR ANCHORS)	6", 6" & EQUAL - 21" MAX. FOR INTERMEDIATE SPACES			
Poured In Place Wall	NA			

Three-Sided Frames



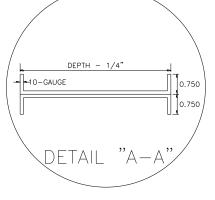


- 1. DESIGN PRESSURE = +/- 60 PSF IMPACT RATING = 350 FT-LBF
- 2. ALL FRAME PERIMETERS & HEADS OF FASTENERS SEALED WITH SILICONE.
- 3. CORNER CONSTRUCTION = WELDED ONLY
- 4. ANCHORS = SEE CHART BELOW
- 5. FRAME DEPTH = 4" MIN. / 14" MAX.
- 16 GA. MIN. 6. DOOR OPENING = 3'-0" X 8'-0" SINGLE MAX. 6'-0" X 8'-0" PAIRS MAX.
- 7. STOP HEIGHT = 5/8" MIN.
- 8. FULL HEIGHT VERTICAL & 6' HORIZONTAL MULLIONS MUST BE REINFORCED WITH (2) 10-GAUGE X 3/4" X FRAME DEPTH
 "C" CHANNELS INSTALLED BACK TO
 BACK TO FORM SIMULATED "!" BEAM.
 SEE DETAIL "A-A".

GLAZING MATERIAL	DIM. "B" MAX.	DIM. "C" MAX.	DIM. "D" MAX.	DIM. "E" MAX.	FRAME DIM. MIN.	FACES "A" MAX.
*GLASSLAM SAFETY PLUS 2 LAMINATED GLASS	36"	72"	36"	94"	2"	4"

BEDDING IS CLOSED CELL FOAM TAPE 1/8" X 1/2" AND DOW CORNING 995 STRUCTURAL SILICONE. 1 3/4" STEEL STIFFENED, HONEYCOMB, POLYURETHANE, MINERAL CORE OR POLYSTYRENE CORE PANELS (18 Go Min - 14 Go Mox) MAY BE USED IN LIEU OF GLASSLAM, PANELS ARE WELDED TO FRAME WITH WELDS LOCATED ON THE SIDES 3" MAX. FROM EACH END & 3" MAX. O.C. & ON THE TOP & BOTTOM 3" MAX. FROM EACH END & AT 12" MAX. O.C. THE WELDS ARE MIN. 1/4" WELDS X 1/2" LONG, PANELS TO BE INSTALLED IN EXTERIOR (OUTSIDE) RABBET. WELDS ARE LOCATED WHERE PANEL ABUTS FRAME SOFFIT. PANELS ARE SEALED WITH SILICONE.

SEE DETAIL A-A .				
ANCHORS & METHOD OF ATTACHMENT				
ANCHOR TYPE		LOCATION		
EO - PIPE & SLEEVE	@ JAMB	12" MAX. FROM SILL, 8" FROM HEAD & 20" O.C.		
OR BUTTERFLY WOOD BUCK	@ HEAD	**2" FROM EACH VERTICAL MEMBER & 14" O.C.		
3/8" X 6" LAG SCREW	@ SILL	2" FROM EACH VERTICAL MEMBER & @ MIDSPAN		
EO - PIPE & SLEEVE OR BUTTERFLY	@ JAMB	12" MAX. FROM SILL, 8" FROM HEAD & 20" O.C.		
MASONRY BUCK	@ HEAD	**2" FROM EACH VERTICAL MEMBER & 14" O.C.		
3/8" X 6" EXPANSION SHELLS	@ SILL	2" FROM EACH VERTICAL MEMBER & @ MIDSPAN		
WIRE MASONRY OR MASONRY "T" — GROUTED, WELDED TO STEEL HEADER, EO P&S OR BUTTERFLY — 3/8" X 6" BOLTS	@ JAMB	8" MAX. FROM EACH END & 16" O.C.		
	@ HEAD	***WELDED TO STEEL CHANNEL HEADER		
	@ SILL	2" FROM EACH VERTICAL MEMBER & @ MIDSPAN		
	@ JAMB	***5" MAX. FROM SILL & 27.5" MAX. O.C.		
WELDED TO STEEL BUCK	@ HEAD	***WELDED TO STEEL CHANNEL HEADER		
	@ SILL	2" FROM EACH VERTICAL MEMBER & @ MIDSPAN		
WOOD STUD	@ JAMB	5" MAX. FROM SILL & 27.5" MAX. O.C.		
METAL STUD (NO FLOOR ANCHORS)	@ HEAD	**2" MAX. FROM EACH VERTICAL MEMBER & 14" O.C.		
	@ SILL	2" FROM EACH VERTICAL MEMBER & @ MIDSPAN		

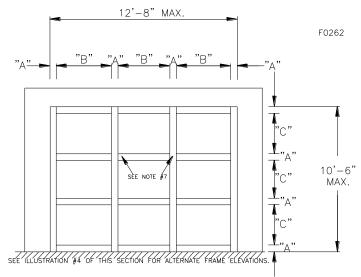


**FOR 6' & UP HEAD MEMBERS. FOR HEADS LESS THAN 6', LOCATE ANCHORS 2" MAX. FROM EACH VERTICAL MEMBER & @ MIDPOINT OF SPAN.

***1/4" THICK MAX. SHIM PLATES (2" WIDE X 7" LONG OR TO SUIT JAMB DEPTH) WELDED TO STEEL CHANNEL & FRAMES WELDED TO SHIM PLATES. SHIM PLATES TO BE 1-1/4" GREATER THAN JAMB DEPTH. HEADER WELDS LOCATED 3" FROM EACH JAMB & 3" FROM EACH SIDE OF VERTICAL MULLIONS & @ MIDPOINT OF SPAN OF HEAD ABOVE DOORS. WELDS ARE MIN. 3/16" X 1" LONG. SHIM PLATES ARE PROVIDED BY OTHERS. AFTER WELDING FRAME TO SHIMS, CAULK GAPS BETWEEN FRAME AND STRUCTURAL STEEL CHANNEL WHERE SHIM PLATES ARE VOID.

Side Lite and Transom Frames



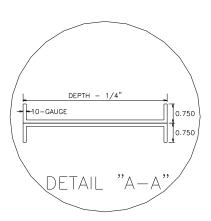


- 1. DESIGN PRESSURE = +/- 60 PSF IMPACT RATING = 350 FT-LBF
- 2. ALL FRAME PERIMETERS & HEADS OF FASTENERS SEALED WITH SILICONE.
- 3. CORNER CONSTRUCTION = WELDED ONLY
- 4. ANCHORS = SEE CHART BELOW
- 5. FRAME DEPTH = 4" MIN. / 14" MAX. 16 GA. MIN.
- 6. STOP HEIGHT = 5/8" MIN.
- 7. FULL HEIGHT VERTICAL & 6' HORIZONTAL MULLIONS MUST BE REINFORCED WITH (2) 10—GAUGE X 3/4" X FRAME DEPTH "C" CHANNELS INSTALLED BACK TO BACK TO FORM SIMULATED "I" BEAM. SEE DETAIL "A—A".

GLAZING MATERIAL	FRAME DIM. MIN.	FACES "A" MAX.	DIM. "B" MAX.	DIM. "C" MAX.	MAX. EXPOSED GLAZED AREA (in².)
*GLASSLAM SAFETY PLUS 2 LAMINATED GLASS	2"	4"	72"	94"	3384

*BEDDING IS CLOSED CELL FOAM TAPE 1/8" X 1/2" AND DOW CORNING 995 STRUCTURAL SILICONE. 1 3/4" STEEL STIFFENED, HONEYCOMB, POLYURETHANE, MINERAL CORE OR POLYSTYRENE CORE PANELS (18 Go Min – 14 Go Max) MAY BE USED IN LIEU OF GLASSLAM. PANELS ARE WELDED TO FRAME WITH WELDS LOCATED ON THE SIDES 3" MAX. FROM EACH END & 3" MAX. O.C. & ON THE TOP & BOTTOM 3" MAX. FROM EACH END & 41 12" MAX. O.C. THE WELDS ARE MIN. 1/4" WELDS X 1/2" LONG. PANELS ARE SEALED WITH SILICONE.

ANCHORS & METHOD OF ATTACHMENT				
ANCHOR TYPE		LOCATION		
EO - PIPE & SLEEVE	@ JAMB	12" MAX. FROM SILL, 8" FROM HEAD & 20" O.C.		
OR BUTTERFLY WOOD BUCK	@ HEAD	**2" FROM EACH VERTICAL MEMBER & 14" O.C.		
3/8" X 6" LAG SCREW	@ SILL	2" FROM EACH VERTICAL MEMBER & @ MIDSPAN		
EO - PIPE & SLEEVE	@ JAMB	12" MAX. FROM SILL, 8" FROM HEAD & 20" O.C.		
OR BUTTERFLY MASONRY BUCK	@ HEAD	**2" FROM EACH VERTICAL MEMBER & 14" O.C.		
3/8" X 6" EXPANSION SHELLS	@ SILL	2" FROM EACH VERTICAL MEMBER & @ MIDSPAN		
MASONRY "T" — GROUTED, WELDED TO STEEL HEADER, FO P&S OR BUTTERFLY —	@ JAMB	8" MAX. FROM EACH END & 16" O.C.		
	@ HEAD	***WELDED TO STEEL CHANNEL HEADER		
	@ SILL	2" FROM EACH VERTICAL MEMBER & @ MIDSPAN		
	@ JAMB	***5" MAX. FROM SILL & 27.5" MAX. O.C.		
WELDED TO STEEL BUCK	@ HEAD	***WELDED TO STEEL CHANNEL HEADER		
	@ SILL	2" FROM EACH VERTICAL MEMBER & @ MIDSPAN		
WOOD STUD	@ JAMB	5" MAX. FROM SILL & 27.5" MAX. O.C.		
METAL STUD	@ HEAD	**2" MAX. FROM EACH VERTICAL MEMBER & 14" O.C.		
(NO FLOOR ANCHORS)	@ SILL	2" FROM EACH VERTICAL MEMBER & @ MIDSPAN		

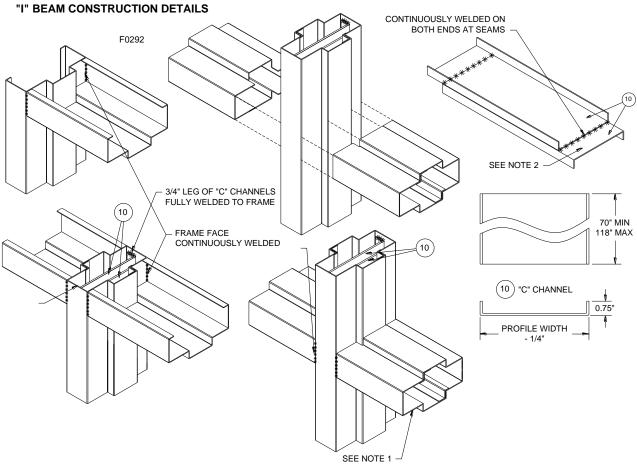


**FOR 6' & UP HEAD MEMBERS. FOR HEADS LESS THAN 6', LOCATE ANCHORS 2" MAX. FROM EACH VERTICAL MEMBER & @ MIDPOINT OF SPAN.

***1/4" THICK MAX. SHIM PLATES (2" WIDE X 7" LONG OR TO SUIT JAMB DEPTH) WELDED TO STEEL CHANNEL & FRAMES WELDED TO SHIM PLATES. SHIM PLATES TO BE 1-1/4" GREATER THAN JAMB DEPTH. HEADER WELDS LOCATED 3" FROM EACH JAMB & 3" FROM EACH SIDE OF VERTICAL MULLIONS & @ MIDPOINT OF SPAN OF HEAD ABOVE DOORS. WELDS ARE MIN. 3/16" X 1" LONG. SHIM PLATES ARE PROVIDED BY OTHERS. AFTER WELDING FRAME TO SHIMS, CAULK GAPS BETWEEN FRAME AND STRUCTURAL STEEL CHANNEL WHERE SHIM PLATES ARE VOID.

Borrowed Lite Frames



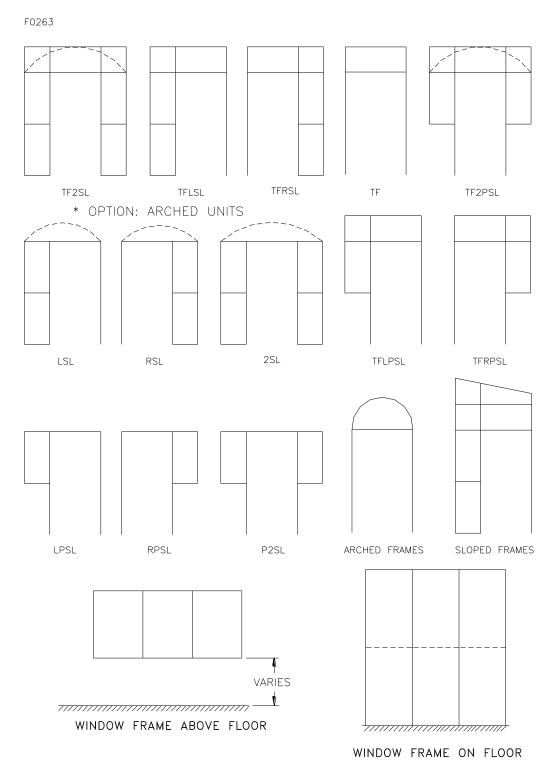


NOTE:

- 1. MULLIONS MUST RUN THROUGH HEADS, SILLS, OR JAMBS AND BE REINFORCED WITH 10 GAUGE "C" CHANNELS (ITEM 10) IF EQUAL TO OR GREATER THAN 6' IN LENGTH.
- 2. 10 GA. "C" CHANNELS MUST BE INSTALLED BEFORE WELDING TOGETHER. OFFSET 3/4" ON EACH END.
- 3. EQUALLY SPACED AT EACH END OF MULLION.

Frame Construction and Mullion Detail



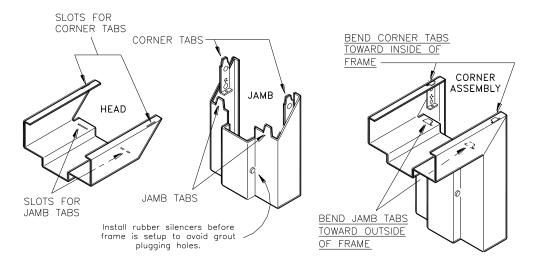


Alternate Frame Design

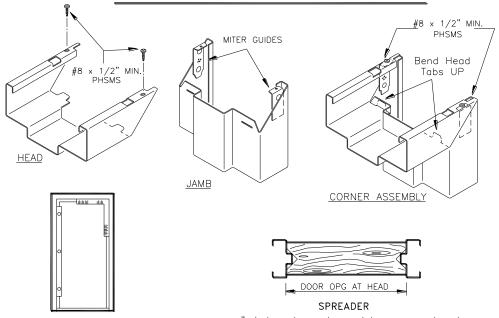


F0282

CONVENTIONAL FRAME CORNER ASSEMBLY



DRYWALL FRAME CORNER ASSEMBLY



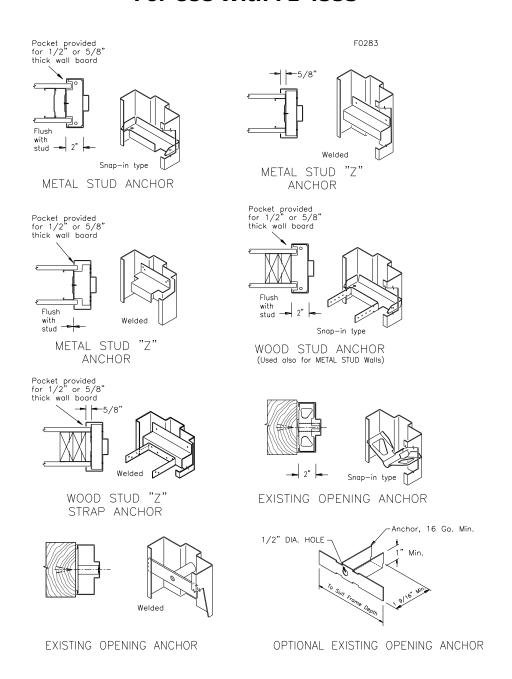
SQUARING THE FRAME

The installer should use wood spreaders, a carpenters level and a carpenters square. Set the frame in the desired location. Level head and plumb jambs. Shim under jambs if necessary.

Typical wood spreader must be square and made from lumber at least 1" thick. Length of spreader equals door opening width at the head. Cut clearance notches for frame stops as shown. Spreader must be nearly as wide as frame depth for proper installation

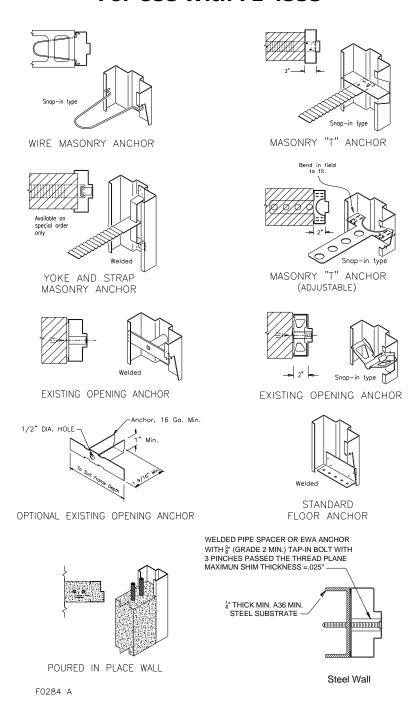
KD Frame Corners





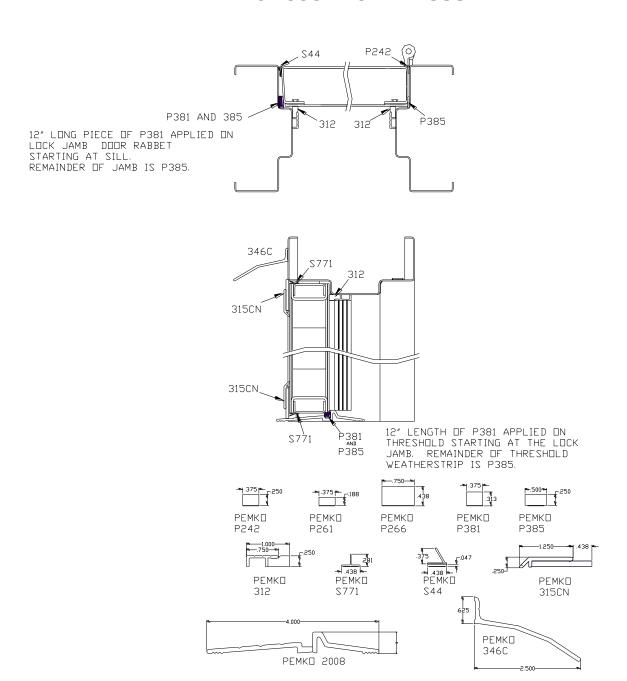
Stud Wall Frame Anchors





Masonry & Steel Wall Frame Anchors



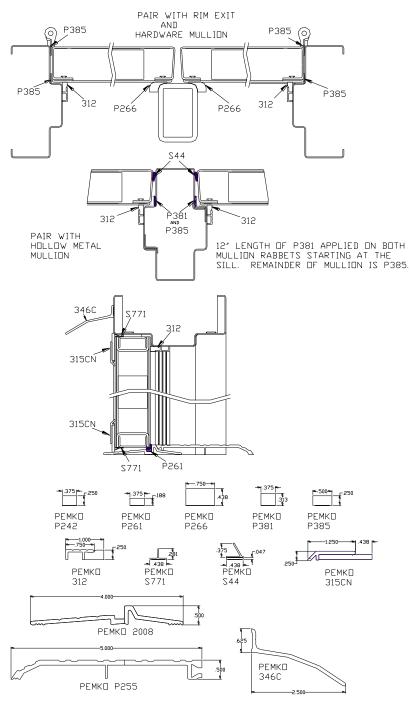


WEATHER STRIP FOR WATER INFILTRATION SINGLE DOORS PER TAS DESIGN PRESSURE 50 PSF

F0305

Water Infiltration Preparations - Single Swing





WEATHER STRIP FOR WATER INFILTRATION
PAIRS OF DOORS PER TAS 202 DESIGN PRESSURE 60 PSF

F0306

Water Infiltration Preparations - Standard Swing Pair

