

INSTALLATION INSTRUCTIONS

Double Car Clopay WindCode® Instructions

(For use with Insulated and Uninsulated Steel Residential Garage Door Instruction Manual)

Things to Know Before You Begin

This is a supplement to the Clopay **Steel Residential Garage Door Instructions (Steel)** and **Insulated Steel Garage Door Instructions (Insulated)** (Referred to as MANUAL). It covers important information unique to Clopay WindCode® Doors. For all other information and safety warnings concerning your Clopay WindCode® garage door, see the MANUAL. Read all of the information below before beginning installation.

WindCode® doors require additional struts and hinge attachments beyond what is required on standard doors. The installation and attachment of these struts and hinges are outlined in this manual. Specifically, these instructions cover the following hardware attachment:

- 1) Strut Installation
- 2) End Hinge Installation
- 3) Top Bracket Installation
- 4) Roller and Pushnut Installation
- 5) Jamb Configuration
- 6) Opener Reinforcement Installation

Each Clopay WindCode® door is included in one of nine categories: W1 - W9. Each category covers a different range of windload and subsequently, a specific strut configuration. (Tables 1 & 2)

Table 1

Windload Category	Test Windload (P.S.F.)	Approximate Test MPH Gust Speed
W1	16 to 23	90
W2	24 to 28	100
W3	29 to 33	110
W4	34 to 42	120
W5	43 to 54	140
W6	55 to 60	150
W7	60 to 68	155
W8	69 to 81	170
W9	81 +	180



Consumer Hotline
1-800-225-6729

Note: It is the buyer's responsibility to purchase the garage door required to meet local building codes.

Clopay WindCode® garage doors not installed with the proper reinforcement (struts, hinges, jamb brackets, track, fasteners) will not perform as designed to meet the building code requirements.

Windload reinforcement on single car doors (9'0" wide and under) is configured differently than strutting on double car doors (9'2" wide and over).

An electric impact gun is strongly recommended for installation of WindCode® doors.

To determine what door you have, locate the identification sticker found on the end of the door package. This sticker will identify the door size, door model, and windload category. (FIG. 1)

WindCode® Door Model	Door Width	Door Height
↓	↓	↓
82W5	SW	16'00 x 7'00
WXZ	25P	
WINDOWS: S3 WINDOW TRIM: F24 INSUL: F LOCK: 3	SGL STRGTH FOAM LOCK BAR	SPRINGS: EUS EXTENSION RADIUS: 12 LIFT: S MOUNT: AKR
PART # A747628 I.D. # 48397276520753 COMMENT: WINDOW PLACEMENT SPECIAL PRODUCTION INSTR. KEYING INSTRUCTIONS		

IDENTIFICATION STICKER (Located On Package)
(Example: Model 82 Windload Category W5)

Fig. 1

Strut Attachment

Struts are placed lengthwise across the door to add strength. Strut configurations vary depending on WindCode® category and door size. Table 2 shows six of the most common WindCode® doors and refers to a specific drawing in this manual. These drawings (Figures 11 to 17 in the back of this supplement) include specific strut configuration and detailed technical information for each door. After reviewing the strut configuration, turn to page 3 to begin the actual installation. For specifications and drawings for other door models please call the Clopay Consumer Hotline at 1-800-225-6729.

Table 2

Model Number	Windload Category	Door Width	Strutting* Configuration	Corresponding Figure / Drawing	Pushnuts Required
73/75/82/ 84A/90/94	W3	9'2"-16'0" (Double Car)	2 on bottom, 1 on rest	Figure 11 / 101308	Yes
2050/2051/ 4050/4051	W3	9'2"-16'0" (Double Car)	2-1-2-1**	Figure 12 / 101820	Yes
73/75/82/ 84A/90/94	W4	9'2"-16'0" (Double Car)	2-1-2-1**	Figure 13 / 101711	Yes
2400/2401/4400/ 4401/4300/4301/ 4310/HDG/HDGL	W4	9'2"-16'0" (Double Car)	2 on bottom, 1 on rest	Figure 14 / 101481	No
2400/2401/4400/ 4401/4300/4301/ 4310/HDG/HDGL	W4	16'2"-18'0" (Double Car)	2 per section	Figure 15 / 101247	No
73/75/82/ 84A/90/94	W5	9'2"-16'0" (Double Car)	2 per section	Figure 16 / 101593	Yes
2050/2051/ 4050/4051	W5	9'2"-16'0" (Double Car)	2 per section	Figure 17 / 101595	Yes

* The bottom section is considered the first section, the second section from the bottom is considered the second section, etc.

**Strut pattern is found only on doors that are four sections high (6'6" to 7'0"). A strut pattern of 2-1-2-1-2 for doors that are five sections high (7'6" to 8'0")

Bottom Section Strut Installation

Strut Attachment on Bottom of Bottom Section

Depending on the strutting configuration of the WindCode® Door, there are two possible positions that a strut can be installed. For the correct placement, see Table 2 and the corresponding Figures 11 to 17. Position bottom bracket as shown in MANUAL. Position the strut according to the correct figure for the corresponding door model. Drill one $\frac{5}{32}$ " hole at the top and one $\frac{5}{32}$ " hole at the bottom of the strut at all hinge locations. If an electric impact gun is used, no holes need to be drilled beforehand. Attach strut to door section with $\frac{1}{4}$ " x $\frac{3}{4}$ " self-tapping screws at each drilled hole. (FIG. 2A & 2B)

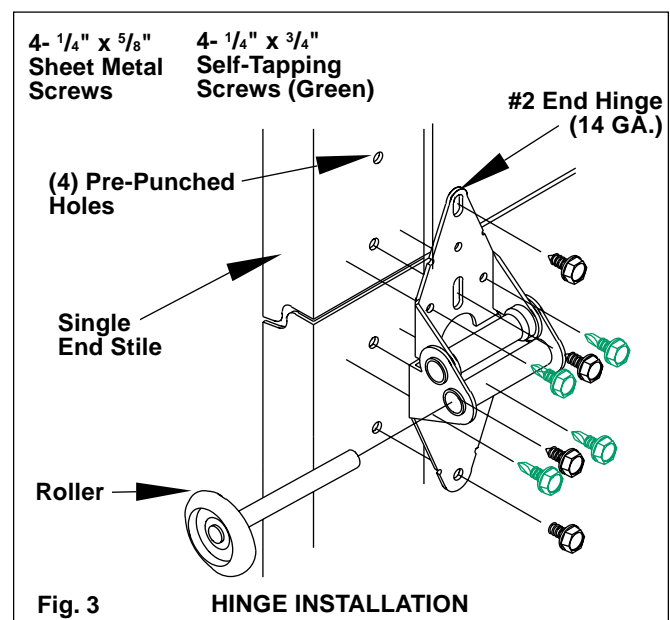
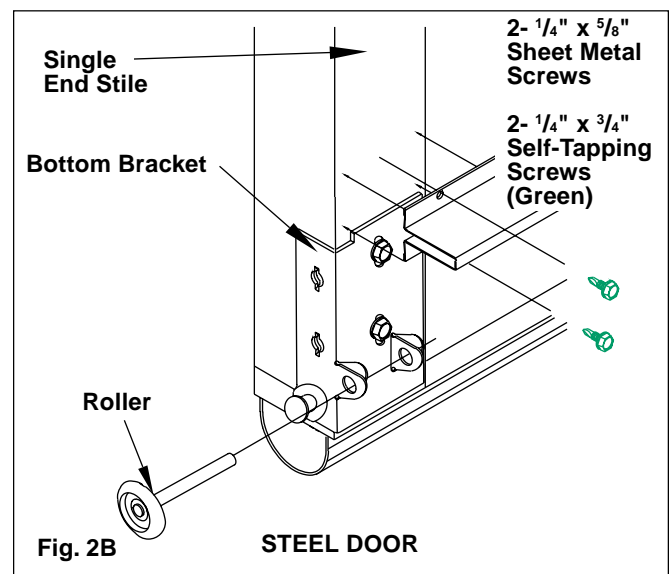
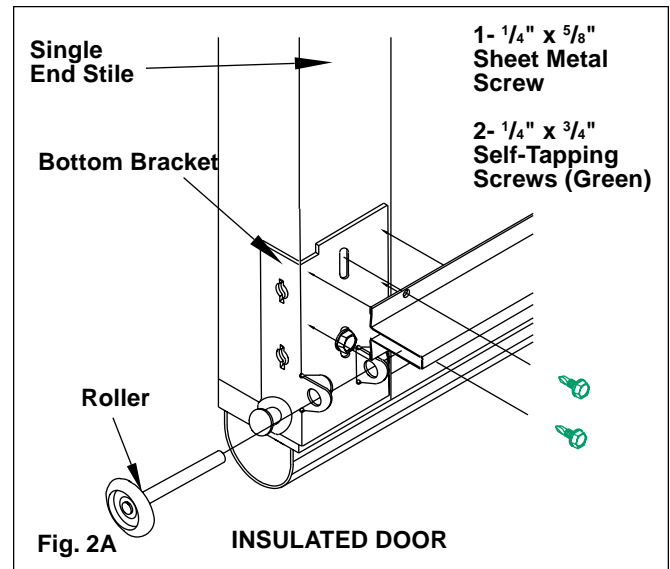
NOTE: For some models, pushnuts are required with the roller installation. Refer to Table 2 to determine which models use pushnuts. (FIG. 8)

End Hinge Installation

End Hinges

14 Gauge hinges are used at all end stile locations (for more detail see MANUAL). Insert the (4) sheet metal screws as indicated in the MANUAL. Insert the (4) $\frac{1}{4}$ " x $\frac{3}{4}$ " self-tapping screws per hinge as shown. (You may have to pilot drill $\frac{5}{32}$ " holes before installing self-tapping screws.) (FIG. 3)

NOTE: For some models, pushnuts are required with the roller installation. Refer to Table 2 to determine which models use pushnuts. (FIG. 8)



Intermediate Section Strut Installation

The strut installation for the intermediate section is different for steel and insulated doors. Refer to the appropriate section below.

Single Hinge Strut Attachment (Steel)

Depending on the strutting configuration of the WindCode® Steel Door, there are two possible positions that a strut can be installed. For the correct placement, see Table 2 and the corresponding Figures 11 to 17. To attach strut, position the strut on the door. Drill one $\frac{5}{32}$ " hole at the top and one $\frac{5}{32}$ " hole at the bottom of the strut at all hinge locations. If an electric impact gun is being used, no holes need to be drilled beforehand. Attach strut to door section with $\frac{1}{4}$ " x $\frac{3}{4}$ " self-tapping screws at each drilled hole. (FIG. 4)

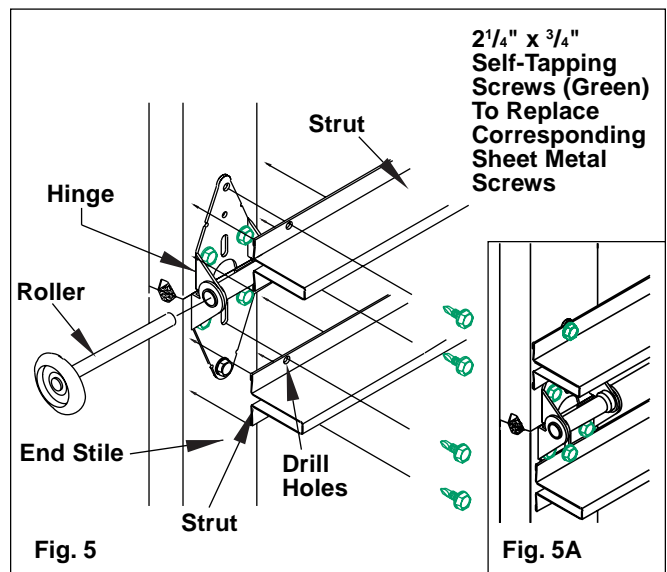
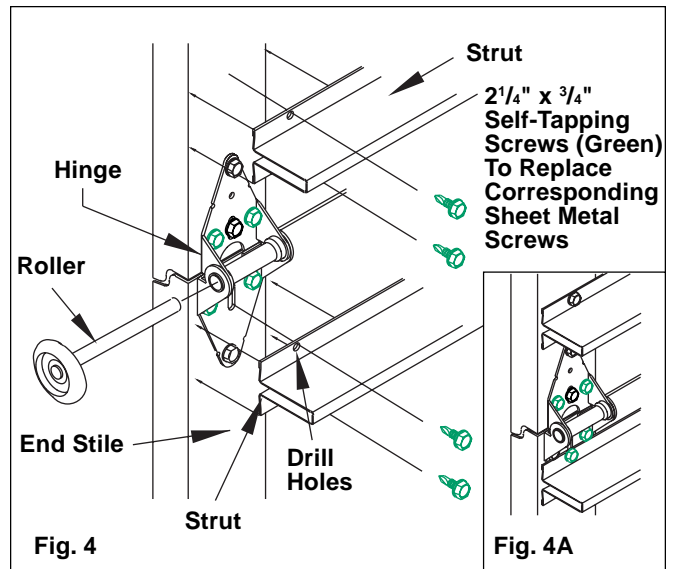
Note that the strut on the top of the section overlaps the bottom leaf of the hinge. If required, a strut mounted at the bottom of the section can be mounted above the hinge leaf. (FIG. 4A)

NOTE: For some models, pushnuts are required with the roller installation. Refer to Table 2 to determine which models use pushnuts. (FIG. 8)

Single Hinge Strut Attachment (Insulated)

Depending on the strutting configuration of the WindCode® insulated door, there are two possible positions that a strut can be installed. For the correct placement, see Table 2 and the corresponding Figures 11 to 17. For insulated doors the struts must overlap the hinge leaves on both the top and bottom. To attach strut, position the strut on the door. Drill one $\frac{5}{32}$ " hole at the top and one $\frac{5}{32}$ " hole at the bottom of the strut at all hinge locations. If an electric impact gun is used, no holes need to be drilled beforehand. Attach strut to door section with $\frac{1}{4}$ " x $\frac{3}{4}$ " self-tapping screws at each drilled hole. (FIG. 5 & 5A)

NOTE: For some models, pushnuts are required with the roller installation. Refer to Table 2 to determine which models use pushnuts. (FIG. 8)



Top Bracket Installation

Top Bracket

In most instances, WindCode® doors use a heavier gauge top bracket. Due to this, the holes in the bracket will not line up with the holes in the stiles. Install the top of the top brackets approximately 3" to 3½" below the top of the section with (4) ¼" x ¾" self-tapping screws. Once installed, the slide adjustments must be aligned so that the roller lines up with the track so the door will close flush to the door jamb. (FIG. 6)

NOTE: For some models, pushnuts are required with the roller installation. Refer to Table 2 to determine which models use pushnuts. (FIG. 8)

Top Section Strut Attachment

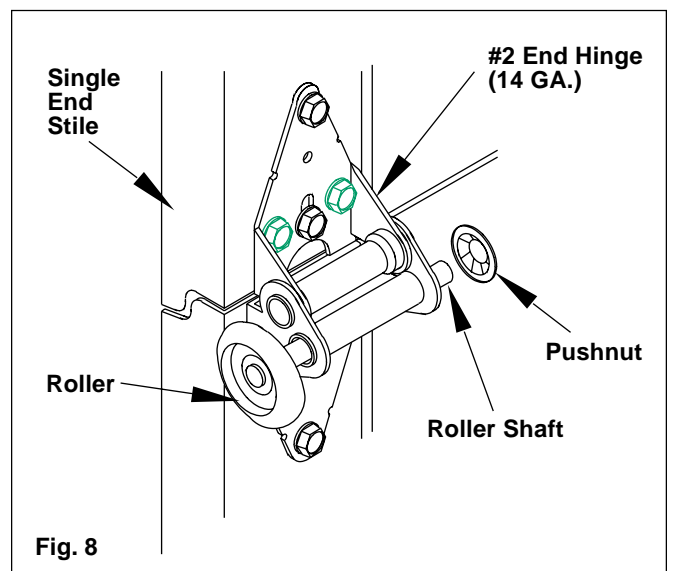
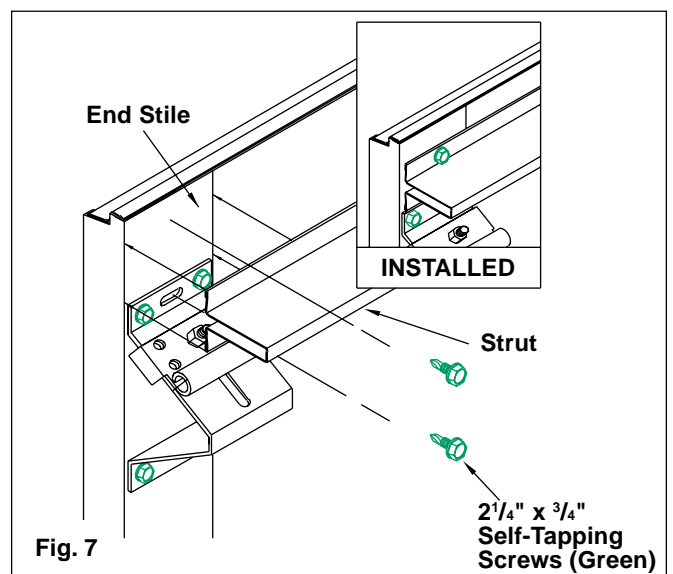
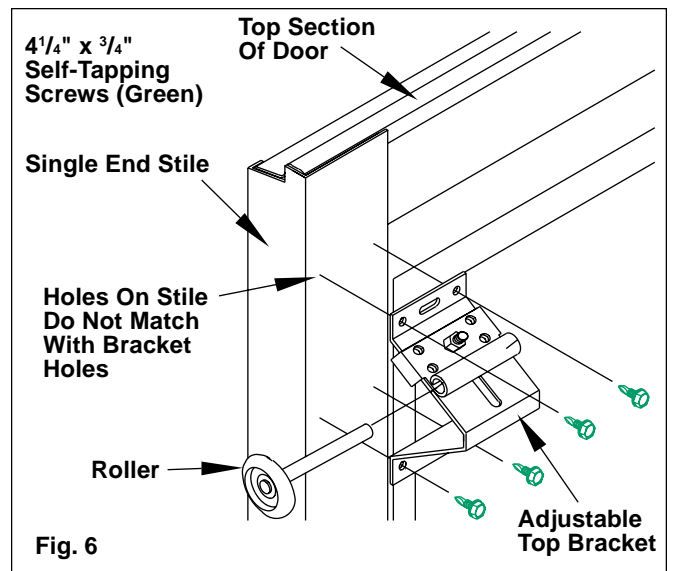
Depending on the strutting configuration of the WindCode® door, a strut may be required on the top section (See Table 2 and corresponding drawing). To attach a strut at the top of the top section it must be placed above the top roller bracket. Drill one 5/32" hole at the top and one 5/32" hole at the bottom of the strut at all hinge (or back-up plate (insulated) locations.) If an electric impact gun is used, no holes need to be drilled beforehand. Attach strut to door section with ¼" x ¾" self-tapping screws at each drilled hole. (FIG. 7)

NOTE: For some models, pushnuts are required with the roller installation. Refer to Table 2 to determine which models use pushnuts. (FIG. 8)

Roller and Pushnut

To install the pushnut roller, slide the roller into the hinge then slide the pushnut onto the shaft of the roller until it is within an 1/8" to 1/4" from the hinge. (FIG. 8)

Note: Do NOT install pushnut before installing roller into hinge. Use ½" Deep Draw socket and hammer to tap on pushnuts.



Jamb Configuration



IMPORTANT

The design of the supporting structural elements (i.e. door jamb) shall be the responsibility of the professional of record for the building or structure and in accordance with current building codes for the loads listed on the technical drawing (attached) for the specific model.

It is also important that the vertical 2 x 6 wood jambs are attached to the supporting structure in a method that is sufficient to transfer the loads exerted by the wind pressures. Some suggested vertical jamb attachment methods are included in the drawings. (FIG. 11 to 17)

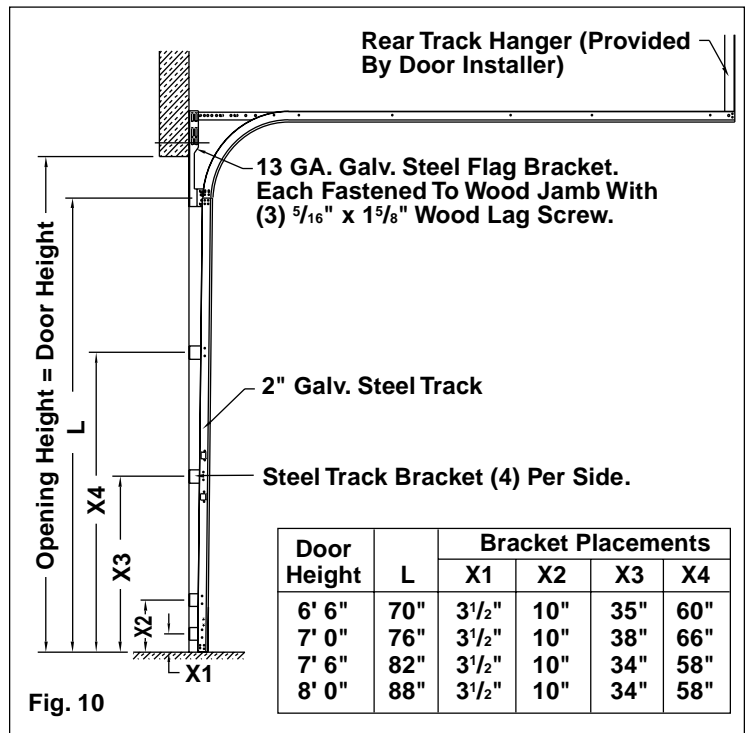
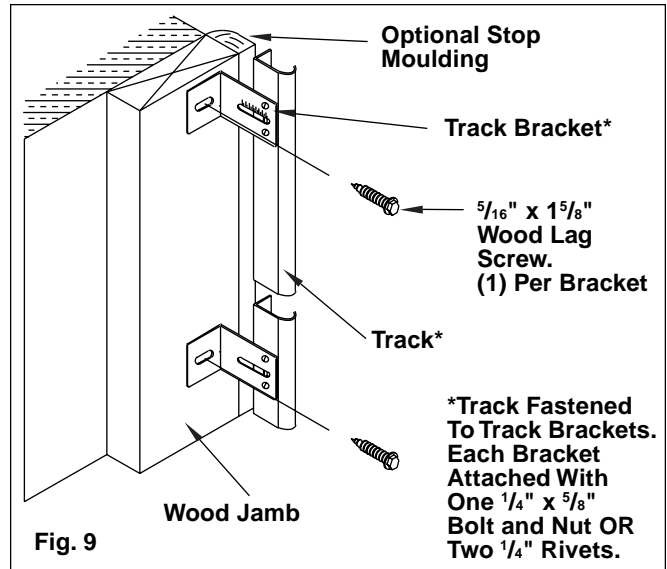
Track Bracket Placement

Track bracket placement are configured differently according to height. Typically, WindCode® doors require more track brackets than non-WindCode® doors. However, each track bracket is attached to the track and jamb using the same fasteners and method of attachment as shown in the MANUAL. (FIG. 9 & 10)

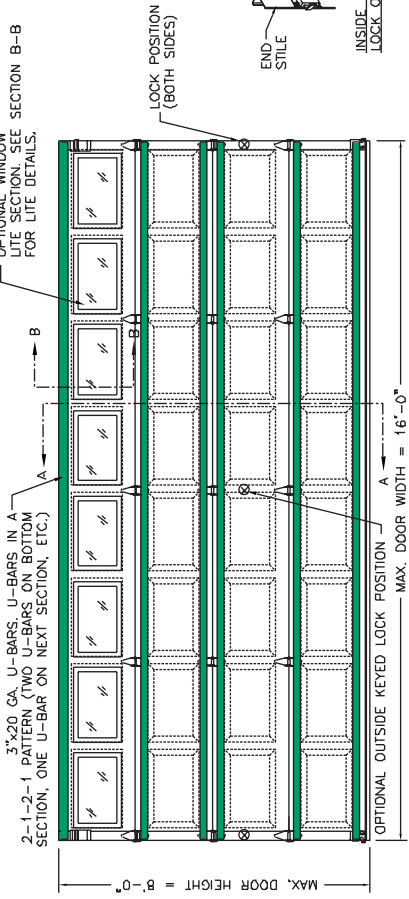
Opener Reinforcement Installation

Attachment of Opener Reinforcement

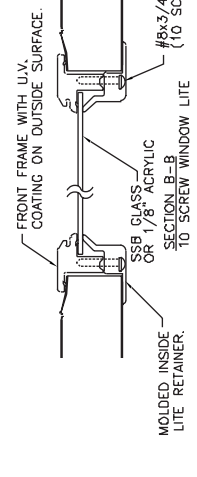
Refer to the MANUAL for installation instructions. If the Clopay WindCode® door requires a strut across the top of the top section, this takes the place of any horizontal angle iron required by the MANUAL. The vertical angle as shown in the MANUAL is still required on WindCode® Doors.



MODELS 2050, 2051, 4050, 4051



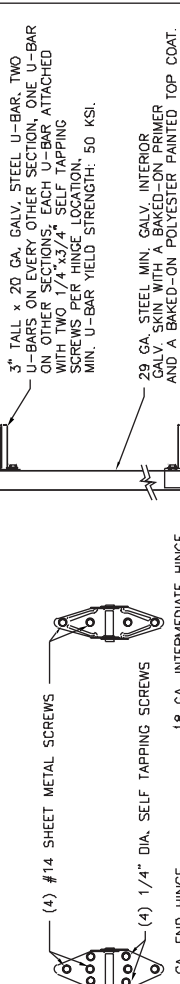
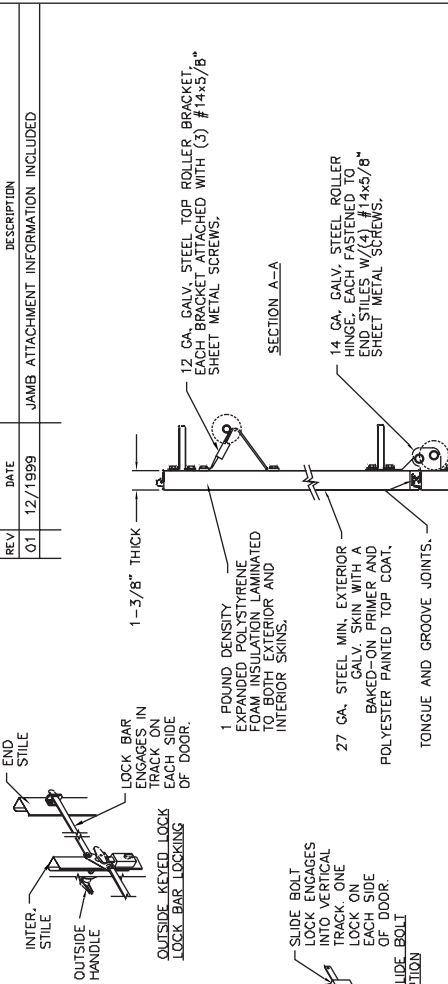
NOTE: UP TO 7'-0" HIGH CONSIST OF (4) SECTIONS (SHOWN) DOORS OVER 7'-0" HIGH CONSIST OF (5) SECTIONS (NOT SHOWN).



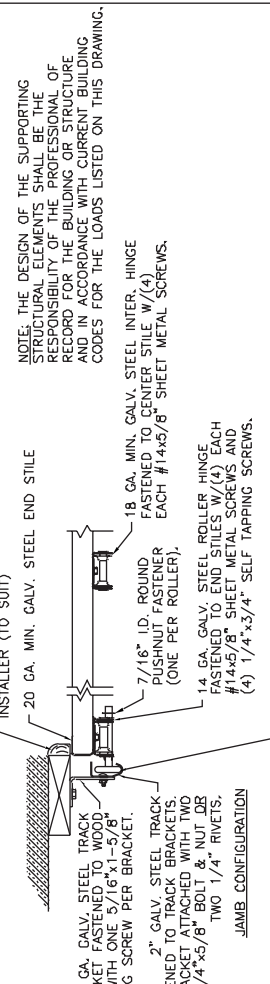
MOLDED INSIDE LITE RETAINER.
#8x3/4" PAN HEAD SCREW (8 SCREWS PER LITE)
1 1/2"x3" LAG SCREWS ON 21" CENTERS, 1-1/4" O.D. MIN. WASHER REQUIRED. LAG SCREWS MAY BE COUNTERSUNK (BUT NOT REQUIRED) TO PROVIDE A FLUSH MOUNTING SURFACE. HORIZONTAL JAMBS DO NOT TRANSFER LOAD.

DOOR HEIGHT	"
6'-6"	70"
7'-0"	76"
7'-6"	82"
8'-0"	88"

1 1/2" GALV. STEEL FLAG BRACKET. EACH FASTENED TO WOOD JAMB WITH (3) 5/16"x1-5/8" WOOD LAG SCREW.
2" GALV. STEEL TRACK. TRACK THICKNESS: .060"
TYP. 2-1/2"x12 GA. GALV. STEEL TRACK BRACKET. (4) TRACK BRACKETS PER SIDE.



(4) #14 SHEET METAL SCREWS
(4) 1/4" DIA. SELF TAPPING SCREWS
18 GA. INTERMEDIATE HINGE
14 GA. END HINGE



NOTE: THE DESIGN OF THE SUPPORTING STRUCTURAL ELEMENTS SHALL BE THE RESPONSIBILITY OF THE PROFESSIONAL RECORD FOR THE BUILDING OR STRUCTURE AND IN ACCORDANCE WITH CURRENT BUILDING CODES FOR THE LOADS LISTED ON THIS DRAWING.

DESIGN LOADS: +20.0 PSF & -21.0 PSF
TEST LOADS: +30.0 PSF & -31.0 PSF

Glopay
Building Products
Company

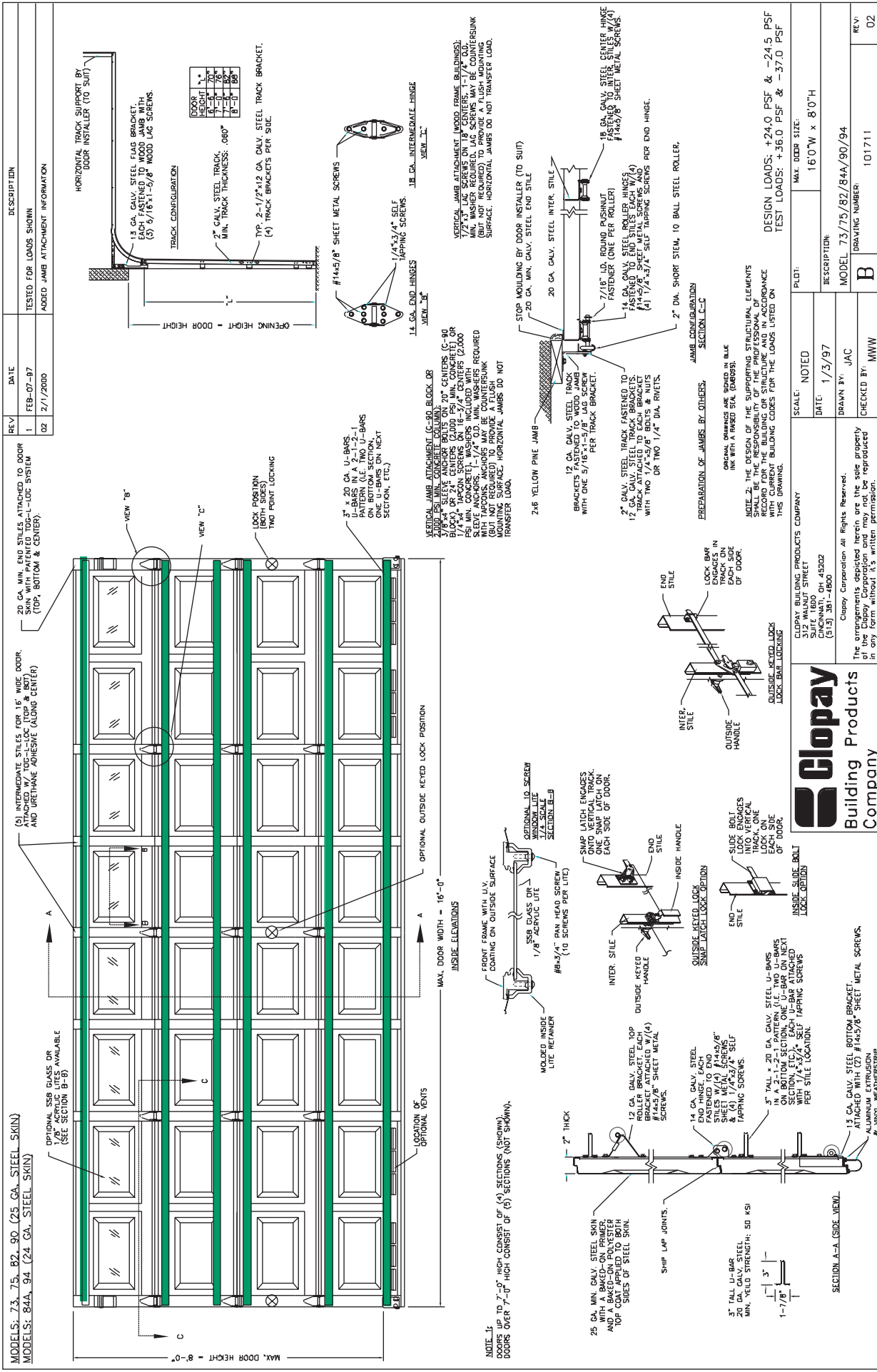
CLOPAY BUILDING PRODUCTS COMPANY
312 WALNUT STREET, SUITE 1600
CINCINNATI, OHIO 45202
(513) 381-4800

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SCALE	NOTED	PLDT.	MAX. DOOR SIZE
DATE: 4/16/98	DATE: 4/16/98	16'W x 8'H	16'W x 8'H
DRAWN BY: MWW	DESCRIPTION: 2050/4050, 16'W, +20/-21 DES.	DRIVING NUMBER: B	REV: 01
CHECKED BY:		101820	

CATEGORY: W3 MODELS: 2050, 2051, 4050, 4051
STRUT PLACEMENT SHOWN IN GREEN

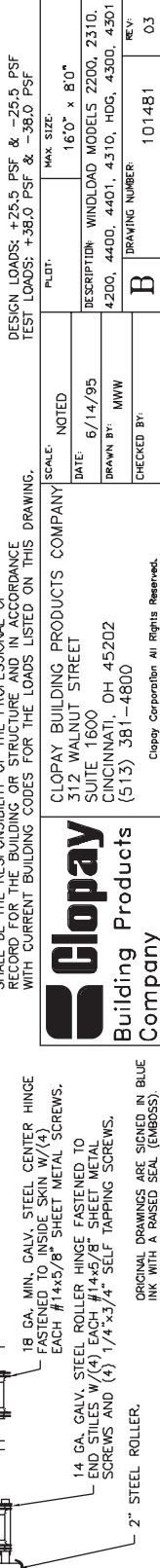
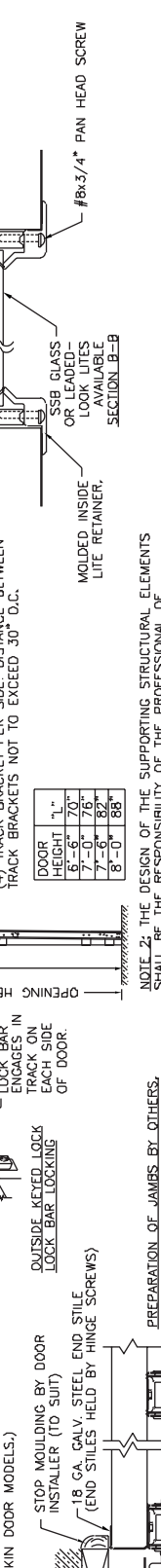
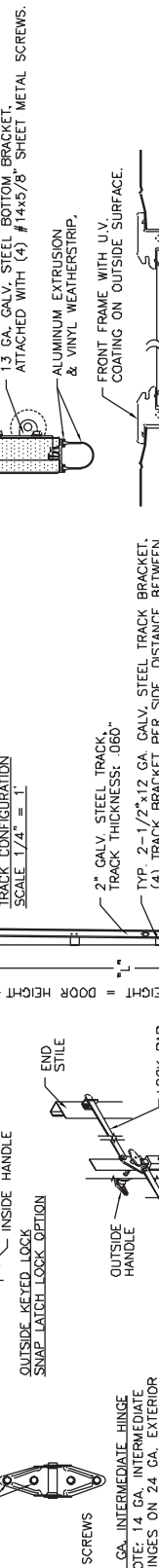
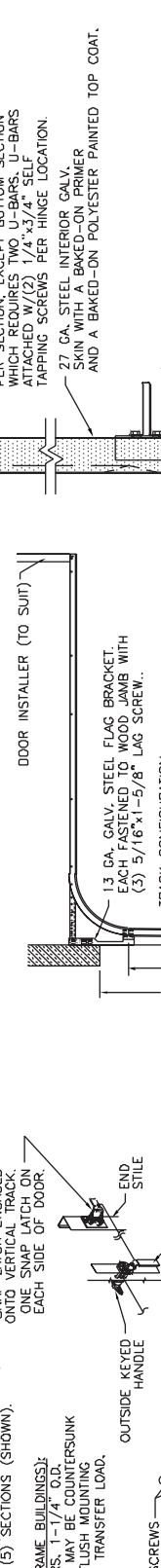
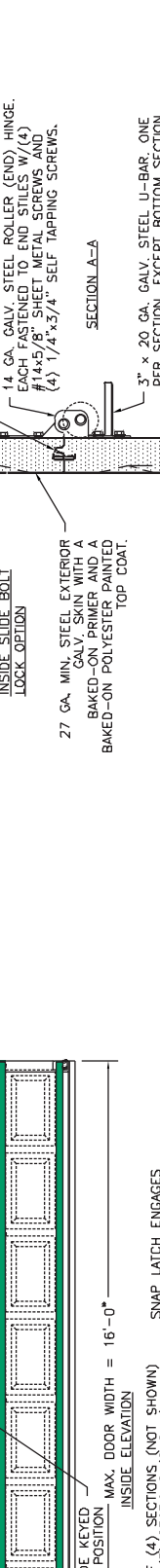
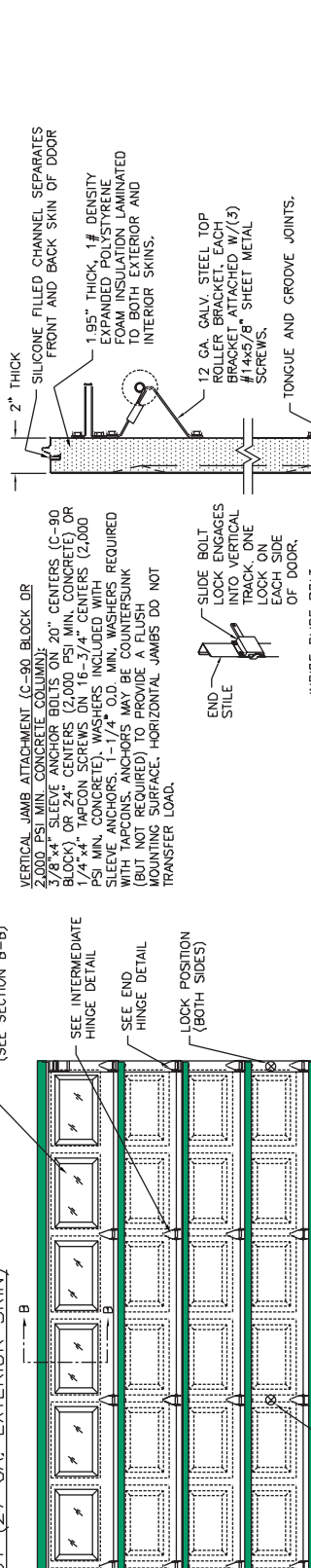
Fig. 12



CATEGORY: W4 MODELS: 73, 75, 82, 84A, 90, 94
 STRUT PLACEMENT SHOWN IN GREEN

Fig. 13

REV	DATE	DESCRIPTION
1	8/96	REDRAWN; ADDED MODEL 4310 WINDOW LITES
2	3/97	TEST LOADS WERE +36/-38; ADD M/N 2310
03	2/2000	ADDED JAMB ATTACHMENT INFORMATION



MODELS 2400, 2401, 4400, 4401 (24 GA. EXTERIOR SKIN)
 MODELS HDGL, 4310 (25 GA. EXTERIOR SKIN)
 MODELS HDG, 4300, 4301 (27 GA. EXTERIOR SKIN)

NOTE 1:
 DOORS UP TO 7'-0" HIGH CONSIST OF (4) SECTIONS (NOT SHOWN)
 DOORS OVER 7'-0" HIGH CONSIST OF (5) SECTIONS (SHOWN).

VERTICAL JAMB ATTACHMENT (WOOD FRAME BUILDINGS):
 1/2"x3" LAG SCREWS ON 18" CENTERS, 1-1/4" O.D. MIN. WASHER REQUIRED, LAG SCREWS MAY BE COUNTERSUNK (BUT NOT REQUIRED) TO PROVIDE A FLUSH MOUNTING SURFACE. HORIZONTAL JAMBS DO NOT TRANSFER LOAD.

OPTIONAL WINDOW LITES AVAILABLE IN ALL MODELS INCLUDING MODEL HDGL/4310. (SEE SECTION B-B)

VERTICAL JAMB ATTACHMENT (C-90 BLOCK OR 2000 PSI MIN. CONCRETE COLUMN):
 7/8"x4" BOLT ANCHOR BOLTS OR 20" CENTERS (C-90 BLOCK), 1/2"x3" LAG SCREWS ON 16" CENTERS (C-90 BLOCK), 1/2"x4" TAPCON SCREWS ON 16" CENTERS (2000 PSI MIN. CONCRETE), WASHERS INCLUDED WITH SLEEVE ANCHORS, 1-1/4" O.D. MIN. WASHERS REQUIRED WITH TAPCONS. ANCHORS MAY BE COUNTERSUNK (BUT NOT REQUIRED) TO PROVIDE A FLUSH MOUNTING SURFACE. HORIZONTAL JAMBS DO NOT TRANSFER LOAD.

OPTIONAL INTERMEDIATE HINGE DETAIL
 SEE END HINGE DETAIL
 LOCK POSITION (BOTH SIDES)

MAX. DOOR HEIGHT = 9'-0"
 MAX. DOOR WIDTH = 16'-0"

NOTE 2: THE DESIGN OF THE SUPPORTING STRUCTURAL ELEMENTS SHALL BE THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD FOR THE BUILDING OR STRUCTURE AND IN ACCORDANCE WITH CURRENT BUILDING CODES FOR THE LOADS LISTED ON THIS DRAWING.

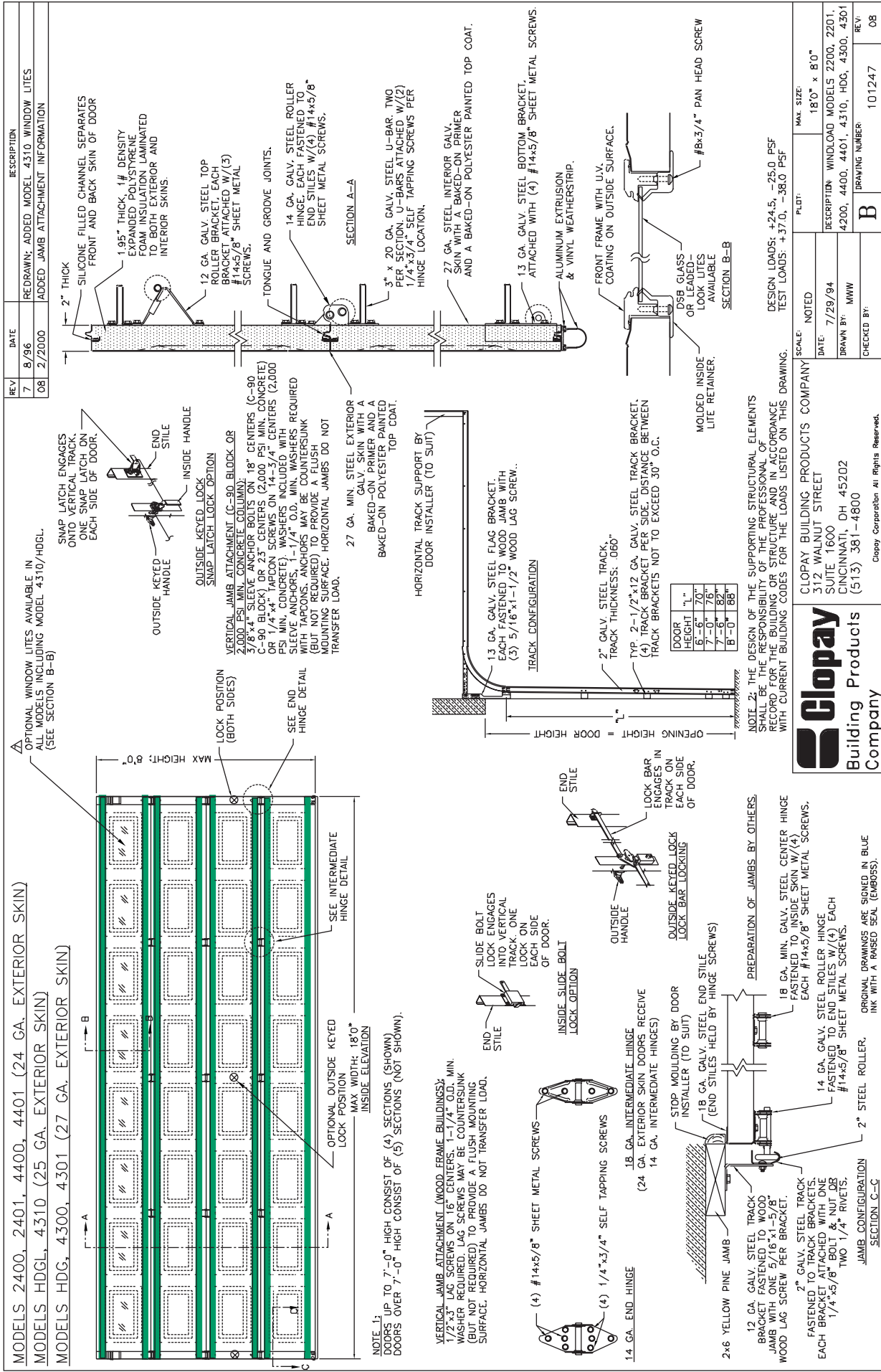
DESIGN LOADS: +25.5 PSF & -25.5 PSF
 TEST LOADS: +38.0 PSF & -38.0 PSF

SCALE: NOTED
 DATE: 6/14/95
 DRAWN BY: MWW
 CHECKED BY:
 DRAWING NUMBER: 101481
 REV: 03

CLOPY BUILDING PRODUCTS COMPANY
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Fig. 14 CATEGORY: W4 MODELS: 2400, 2401, 4400, 4401, 4300, 4301, 4310, HDG, HDGL STRUT PLACEMENT SHOWN IN GREEN



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MODELS 2400, 2401, 4400, 4401 (24 GA. EXTERIOR SKIN)
 MODELS HDGL, 4310 (25 GA. EXTERIOR SKIN)
 MODELS HDG, 4300, 4301 (27 GA. EXTERIOR SKIN)

OPTIONAL WINDOW LITES AVAILABLE IN ALL MODELS INCLUDING MODEL 4310/HDGL (SEE SECTION B-B)

OPTIONAL OUTSIDE KEYS
 LOCK POSITION
 MAX WIDTH: 18"0"
 INSIDE ELEVATION

NOTE 1:
 DOORS UP TO 7'-0" HIGH CONSIST OF (4) SECTIONS (SHOWN)
 DOORS OVER 7'-0" HIGH CONSIST OF (5) SECTIONS (NOT SHOWN).

VERTICAL JAMB ATTACHMENT (WOOD FRAME BUILDINGS):
 1/2"x3 LAG SCREWS ON 16" CENTERS. 1-1/4" O.D. MIN. WASHER REQUIRED. LAG SCREWS MAY BE COUNTERSUNK (BUT NOT REQUIRED) TO PROVIDE A FLUSH SURFACE. HORIZONTAL JAMBS DO NOT TRANSFER LOAD.

(4) #14x5/8" SHEET METAL SCREWS
 (4) 1/4"x3/4" SELF TAPPING SCREWS

14 GA. END HINGE
 18 GA. INTERMEDIATE HINGE
 (24 GA. EXTERIOR SKIN DOORS RECEIVE 14 GA. INTERMEDIATE HINGES)

STOP MOULDING BY DOOR INSTALLER (TO SUIT)
 18 GA. GALV. STEEL END STILE (END STILES HELD BY HINGE SCREWS)

2x6 YELLOW PINE JAMB
 12 GA. GALV. STEEL TRACK BRACKET FASTENED TO WOOD JAMB WITH ONE 5/16"x1-5/8" WOOD LAG SCREW PER BRACKET.
 2" GALV. STEEL TRACK FASTENED TO TRACK BRACKETS. EACH BRACKET ATTACHED WITH ONE 1/4"x5/8" BOLT & NUT OR TWO 1/4" RIVETS.
 2" STEEL ROLLER

18 GA. MIN. GALV. STEEL CENTER HINGE FASTENED TO INSIDE SKIN W/(4) EACH #14x3/8" SHEET METAL SCREWS.

PREPARATION OF JAMBS BY OTHERS.

END STILE
 LOCK BAR ENGAGES IN TRACK ON EACH SIDE OF DOOR.
 LOCK BAR LOCKING
 OUTSIDE KEYS
 INSIDE KEYS
 INSIDE SLIDE BOLT LOCK OPTION

OUTSIDE HANDLE
 OUTSIDE KEYS
 INSIDE KEYS

LOCK POSITION (BOTH SIDES)
 LOCK POSITION (BOTH SIDES)
 SEE INTERMEDIATE HINGE DETAIL

OPTIONAL OUTSIDE KEYS
 LOCK POSITION
 MAX WIDTH: 18"0"
 INSIDE ELEVATION

OPTIONAL WINDOW LITES AVAILABLE IN ALL MODELS INCLUDING MODEL 4310/HDGL (SEE SECTION B-B)

SNAP LATCH ENGAGES ONTO VERTICAL TRACK. ONE SNAP LATCH ON EACH SIDE OF DOOR.
 END STILE
 INSIDE HANDLE
 OUTSIDE KEYS
 INSIDE KEYS

OUTSIDE KEYS
 INSIDE KEYS

27 GA. MIN. STEEL EXTERIOR GALV. SKIN WITH A BAKED-ON PRIMER AND A BAKED-ON POLYESTER PAINTED TOP COAT.

HORIZONTAL TRACK SUPPORT BY DOOR INSTALLER (TO SUIT)

13 GA. GALV. STEEL FLAG BRACKET. EACH FASTENED TO WOOD JAMB WITH (3) 5/16"x1-1/2" WOOD LAG SCREW.

27 GA. GALV. STEEL TRACK BRACKET PER SIDE DISTANCE BETWEEN TRACK BRACKETS NOT TO EXCEED 50" O.C.

2" GALV. STEEL TRACK. TRACK THICKNESS: .060"

1/2" GALV. STEEL TRACK BRACKET PER SIDE DISTANCE BETWEEN TRACK BRACKETS NOT TO EXCEED 50" O.C.

MOLDED INSIDE LITE RETAINER.

DSB GLASS OR GLAZING AVAILABLE

FRONT FRAME WITH U.V. COATING ON OUTSIDE SURFACE.

ALUMINUM EXTRUSION & VINYL WEATHERSTRIP.

13 GA. GALV. STEEL BOTTOM BRACKET. ATTACHED WITH (4) #14x5/8" SHEET METAL SCREWS.

27 GA. STEEL INTERIOR GALV. SKIN WITH A BAKED-ON PRIMER AND A BAKED-ON POLYESTER PAINTED TOP COAT.

3" x 20 GA. GALV. STEEL U-BAR TWO PER SECTION. U-BARS ATTACHED W/(2) 1/4"x3/4" SELF TAPPING SCREWS PER HINGE LOCATION.

14 GA. GALV. STEEL ROLLER HINGE. EACH FASTENED TO INSIDE SKIN W/(4) 1/4"x5/8" SHEET METAL SCREWS.

TONGUE AND GROOVE JOINTS.

12 GA. GALV. STEEL TOP ROLLER BRACKET. EACH #14x5/8" SHEET METAL SCREWS.

1.95" THICK, 1# DENSITY EXPANDED POLYSTYRENE FOAM INSULATION LAMINATED TO BOTH EXTERIOR AND INTERIOR SKINS.

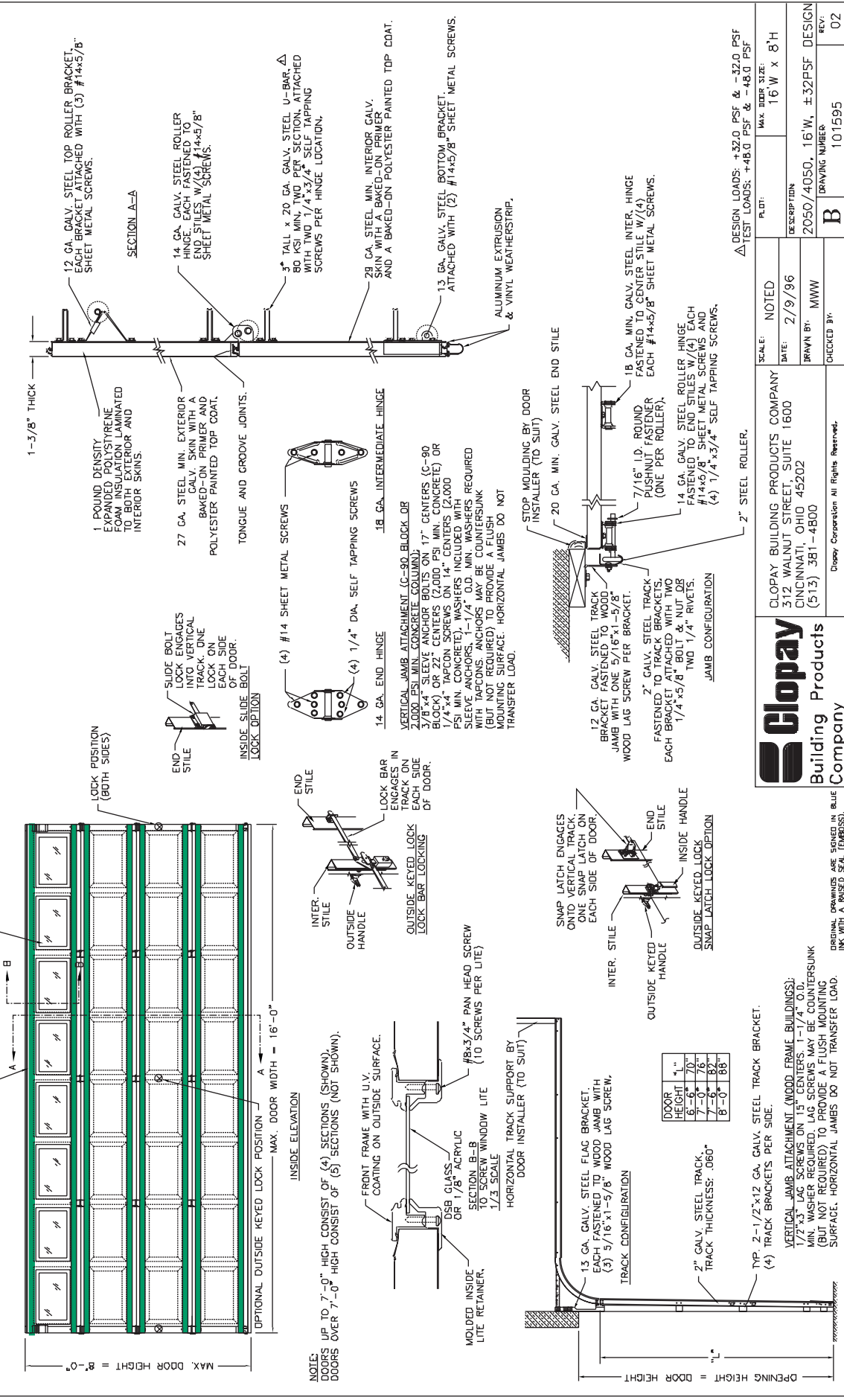
SILICONE FILLED CHANNEL SEPARATES FRONT AND BACK SKIN OF DOOR

2" THICK

Fig. 15

CATEGORY: W4 2400, 2401, 4400, 4401, 4300, 4301, 4310, HDG, HDGL
 STRUT PLACEMENT SHOWN IN GREEN

REV		DATE	DESCRIPTION
01	10/1999		32 PSF DESIGN LOADS WAS 3D PSF; 80 KSI STRUTS
02	2/2000		ADDED JAMB ATTACHMENT INFORMATION



SCALE:	NOTED
DATE:	2/9/96
DRAWN BY:	MMW
CHECKED BY:	

CLOPAY BUILDING PRODUCTS COMPANY
312 WALNUT STREET, SUITE 1600
CINCINNATI, OHIO 45202
(513) 381-4800



ORIGINAL DRAWINGS ARE STORED IN BLUE INK WITH A PAGES 605 (60555).

PLAT:	Max. OVER SIZE:
DESCRIPTION:	16 W x 8'H
TRAFFIC NUMBER:	
REV:	02

CATEGORY: W5 MODELS: 2050, 2051, 4050, 4051, STRUT PLACEMENT SHOWN IN GREEN

Fig. 17

