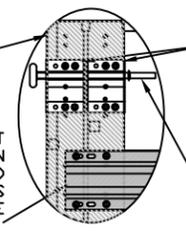


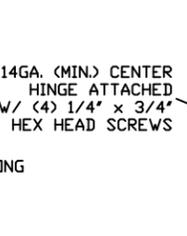
(1) 16 GA. (MIN.) GALV. COMMERCIAL DOUBLE ENDSTILE CAP ON BOTH ENDS OF EACH SECTION SHARE ATTACHMENT W/FASTENERS USED FOR HARDWARE

(1) 5.5" X 18 GA. R-TRUSS AT CENTER OF TOP SECTION ATTACHED W/(2) 1/4" X 3/4" HEX HEAD SCREWS AT EACH END AND CENTER STILE



(2) 13 GA. (MIN.) GALV. COMMERCIAL TOP ROLLER BRACKET ATTACHED W/(4) 1/4" X 3/4" HEX HEAD SCREWS PER BRACKET

2" OR 3"-10 BALL STEEL 9.5" LONG STEM HURRICANE ROLLERS W/ RETAINERS USED FOR NON THREADED SHAFTS

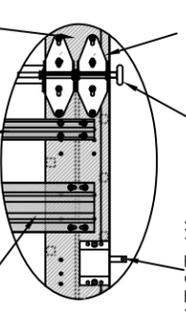


14GA. (MIN.) CENTER HINGE ATTACHED W/ (4) 1/4" X 3/4" HEX HEAD SCREWS

(1) 3" X 18 GA. STRUT BELOW HINGES ON EACH SECTION (EXCEPT TOP) ATTACHED W/(2) 1/4" X 3/4" HEX HEAD SCREWS AT EACH END AND CENTER STILE

(1) 16 GA. (MIN.) GALV. COMMERCIAL DOUBLE ENDSTILE CAP ON BOTH ENDS OF EACH SECTION SHARE ATTACHMENT W/FASTENERS USED FOR HARDWARE

(1) 3" X 18 GA. STRUT BELOW HINGES ON EACH SECTION (EXCEPT TOP) ATTACHED W/(2) 1/4" X 3/4" HEX HEAD SCREWS AT EACH END AND CENTER STILE



14 GA. (MIN.) END HINGE ROLLER CARRIERS ATTACHED W/ (4) 1/4" X 3/4" HEX HEAD SCREWS EACH

2" OR 3" -10 BALL STEEL 9.5" LONG STEM HURRICANE ROLLERS W/ RETAINERS USED FOR NON THREADED SHAFTS

SLIDE LOCK ENGAGES VERTICAL TRACK ON EACH SIDE OF SECOND FROM BOTTOM SECTION (MIN. 5/8") (SNAP LATCH, OR LOCK BAR OPTIONAL) ATTACHED W/(2) 1/4" X 3/4" HEX HEAD SCREWS



(1) 5.5" X 18 GA. R-TRUSS ATTACHED W/(2) 1/4" X 3/4" HEX HEAD SCREWS AT EACH END AND CENTER STILE

#1 14 GA. RESIDENTIAL ROLLER CARRIER ATTACHED W/(3) 1/4" X 3/4" HEX HEAD SCREWS

2" OR 3" 10-BALL STEEL 9.5" LONG STEM HURRICANE ROLLER W/ RETAINER USED FOR NON THREADED SHAFTS

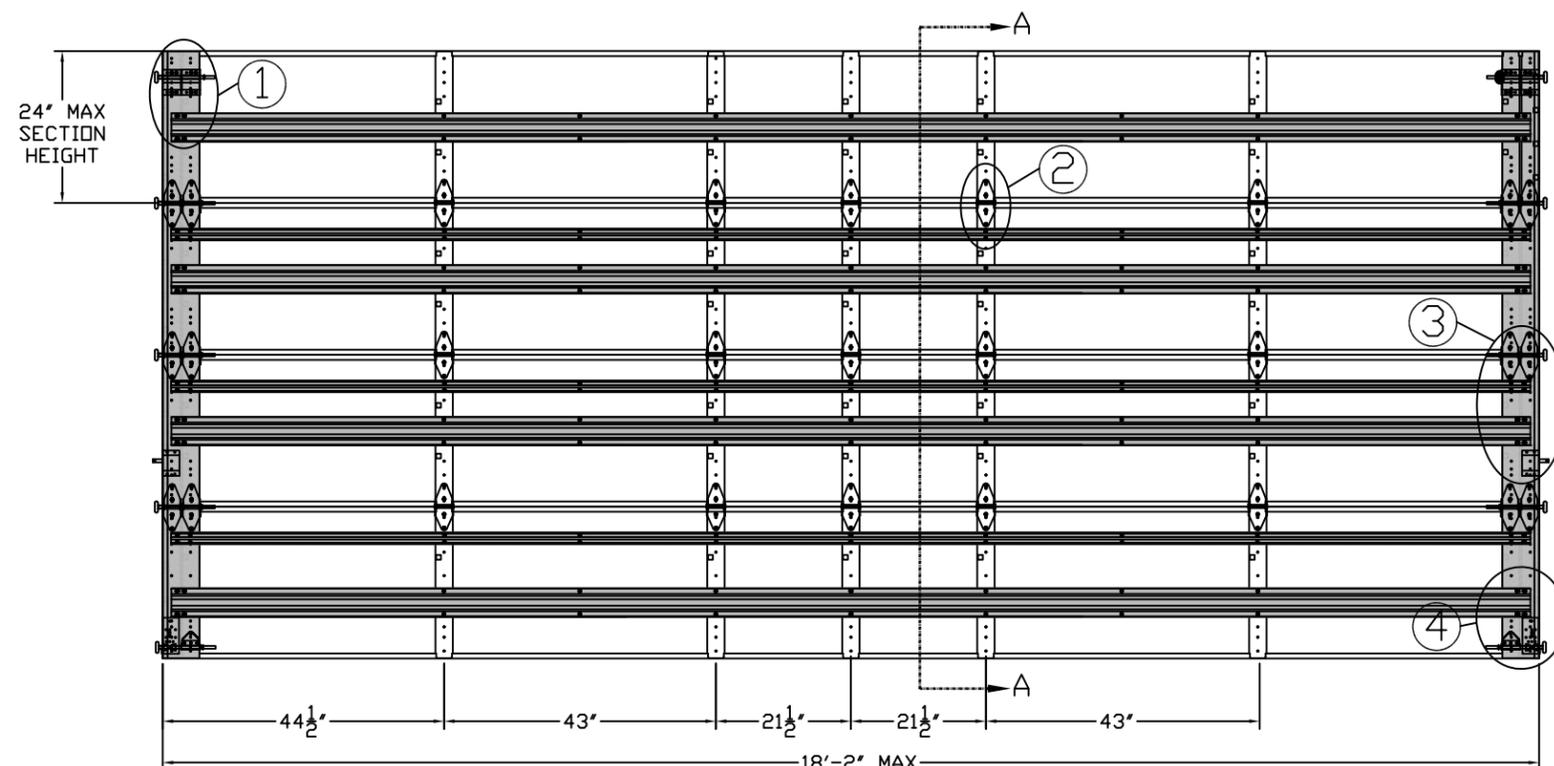
BOTTOM BRACKET 13 GA. (MIN.) ATTACHED W/(3) 1/4" X 3/4" HEX HEAD SCREWS

TYPICAL TOP FIXTURES
N.T.S. 1

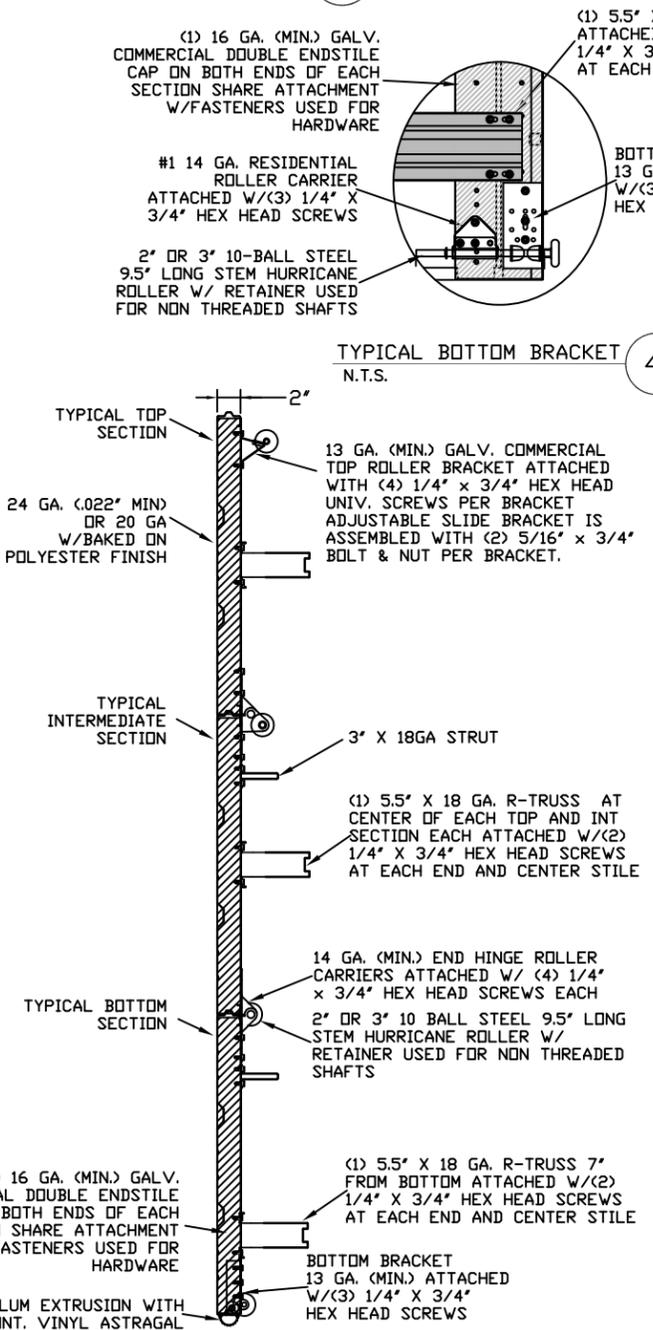
TYPICAL CENTER HINGE
N.T.S. 2

TYPICAL END HINGE
N.T.S. 3

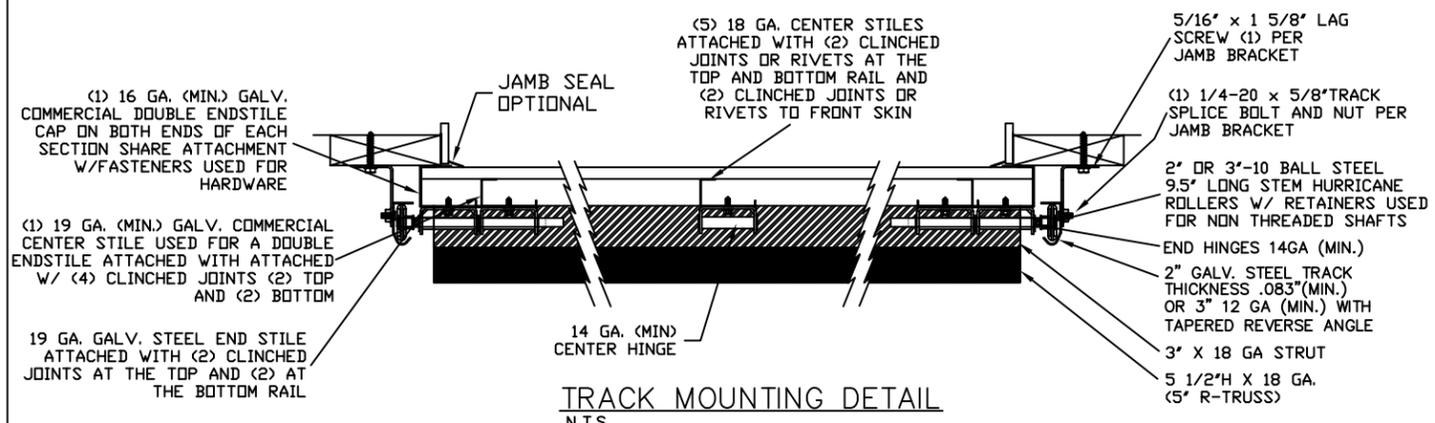
TYPICAL BOTTOM BRACKET
N.T.S. 4



INSIDE ELEVATION
N.T.S.



SECTION A-A (SIDE VIEW)



TRACK MOUNTING DETAIL
N.T.S.

EDGE OF DOOR 1" OVERLAP ON EACH SIDE

LARGE MISSILE IMPACT RESISTANCE

THE METHOD OF TESTING WAS IN SUBSTANTIAL CONFORMANCE WITH THE PROCEDURES DESCRIBED IN ASTM E330, ANSI/DASMA 108-02, ASTM E1886, ASTM E 1996-05 AND ASTM F588-04. THE PRESSURES SHOWN ON THE DRAWINGS WERE CALCULATED USING ASCE 7-98/02/05 WITH THE FOLLOWING PARAMETERS (5 FEET OF DOOR WIDTH IN END ZONE, ROOF SLOPE 10° OR LESS, AND I=1.0):

WIND SPEED (MPH)	158	143	136	130	125
EXPOSURE LEVEL	B	C	C	D	D
MEAN ROOF HEIGHT	30'	15'	25'	15'	25'

REV	DESCRIPTION OF REVISIONS	DATE	BY
A	P.E. APPROVED R/A FOR ALT. WIDTHS (PAGE 3)	5/09/08	SKW
B	UPDATED WJATS, TCDTS, ADDED ASCE MPH DETAIL	5/2/12	RLR

MAX SIZE WIDTH 18' 2" HEIGHT 24'

DESIGN LOADS +34.1 PSF -38.5 PSF

LARGE MISSILE IMPACT RESISTANCE



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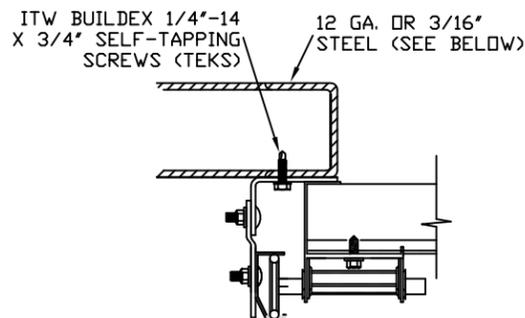
165 CARRIAGE COURT WINSTON-SALEM, N.C. 27105 WWW.AMARR.COM

MODEL 2400 (24 GA)
MODEL 2000 (20 GA)

SIZE	DRAWN BY	SKW	DATE	3/27/08	DRAWING NUMBER
B	CHECKED BY	SKW	DATE	3/27/08	IBC-2418-150-26-I

ENGINEER: THOMAS L. SHELMERDINE P.E. LIC. No. 0048579 SHEET 1 OF 3

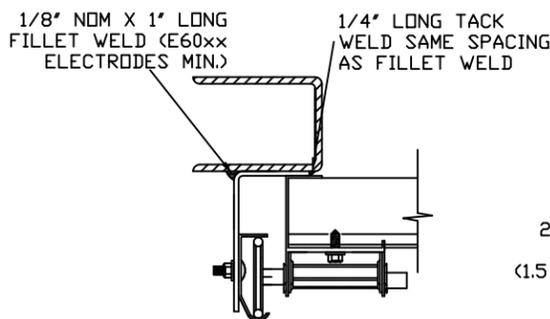
TRACK CONNECTION DIRECTLY TO STRUCTURE OPTIONS



CLIP STYLE REVERSE ANGLE MOUNT SHOWN
BRACKET, CONTINUOUS AND TAPERED ANGLE
MOUNT AVAILABLE

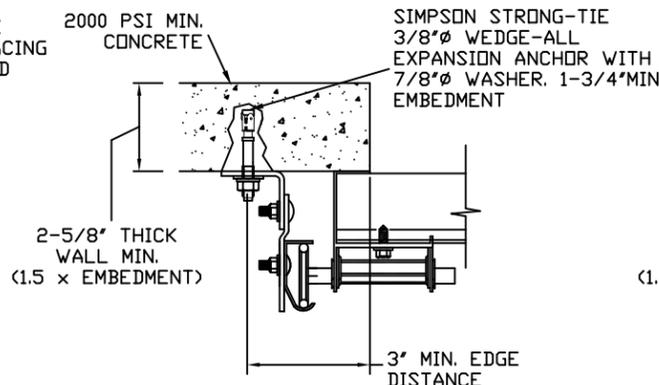
12 GA. STEEL FRAMING
232 LBS./SCREW ALLOWABLE LOAD - 3'
FROM ENDS AND 8" O.C.
REFER TO NOTES: 1, 2 AND 5

3/16" STEEL FRAMING
569 LBS./SCREW ALLOWABLE LOAD - 6'
FROM ENDS AND 18" O.C.
REFER TO NOTES: 1, 2 AND 5



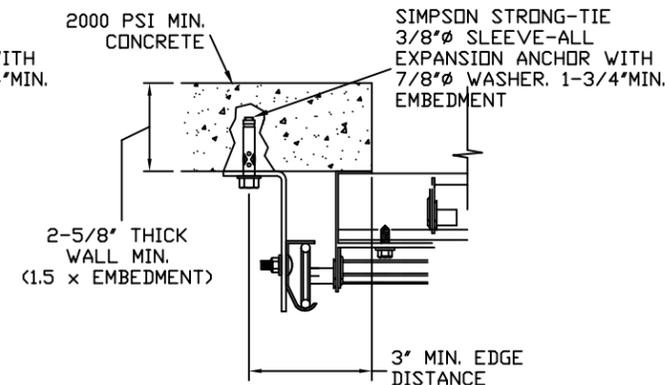
REVERSE ANGLE MOUNT SHOWN
BRACKET, CONTINUOUS AND
TAPERED ANGLE MOUNT AVAILABLE

STEEL FRAMING 12GA OR BETTER
1590 LBS./IN. ALLOWABLE LOAD -
6" FROM ENDS AND 24" O.C.
REFER TO NOTES: 1, 2, 5, 6, 7, 8
AND 9



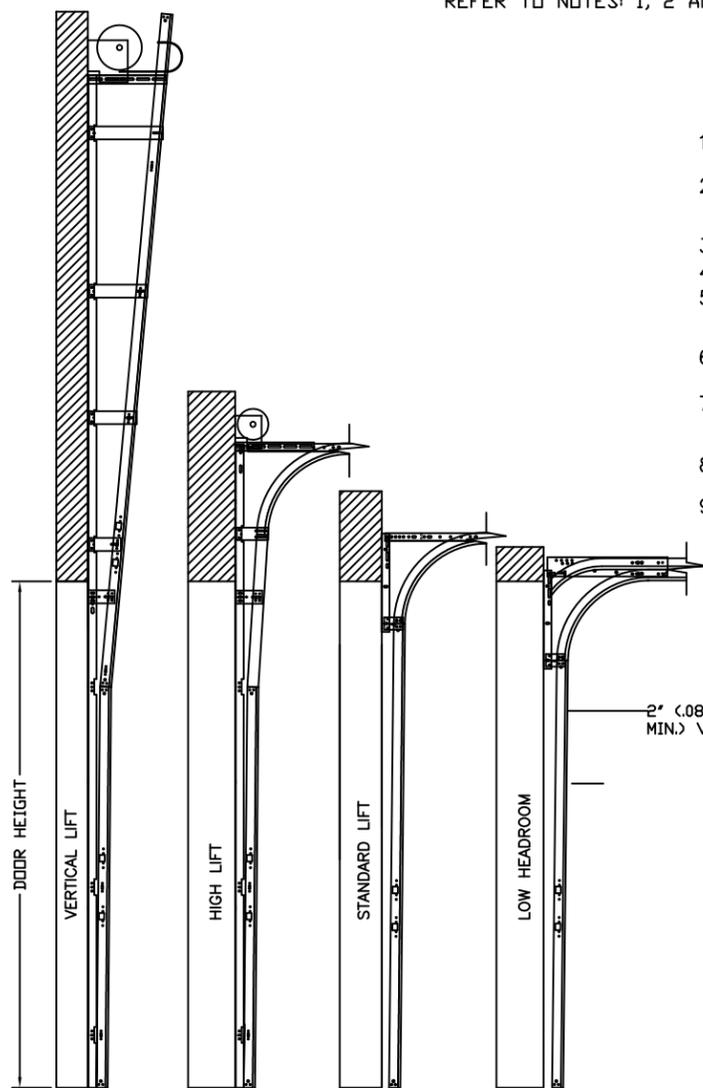
CLIP STYLE CONTINUOUS ANGLE MOUNT SHOWN
BRACKET, REVERSE AND TAPERED ANGLE MOUNT
AVAILABLE

2000 PSI CONCRETE OR GREATER
351 LBS./EXPANSION ANCHOR ALLOWABLE LOAD -
6" FROM ENDS AND 12" O.C.
REFER TO NOTES: 1, 2, 3, 4 AND 5



CONTINUOUS ANGLE MOUNT SHOWN
BRACKET, CONTINUOUS AND TAPERED ANGLE
MOUNT AVAILABLE

2000 PSI CONCRETE OR GREATER
336 LBS./EXPANSION ANCHOR ALLOWABLE
LOAD - 6" FROM ENDS AND 12" O.C.
REFER TO NOTES: 1, 2, 3, 4 AND 5



AVAILABLE TRACK CONFIGURATIONS 2" or 3"
N.T.S.

ALTERNATIVE ATTACHMENT NOTES

- ANCHORS TO BE EVENLY SPACED BETWEEN THE HEADER AND FLOOR.
- FIRST (BOTTOM) ANCHOR STARTING AT NO MORE THAN HALF OF THE MAXIMUM ON-CENTER DISTANCE. HIGHEST ANCHOR INSTALLED AT LEAST AS HIGH AS THE DOOR OPENING.
- MIN. EDGE DISTANCE OF 3" REQUIRED.
- USE WASHERS PROVIDED BY THE ANCHOR MANUFACTURER.
- SUPPORTING STRUCTURAL ELEMENTS SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER FOR WIND LOADS IN ADDITION TO OTHER LOADS.
- MOST GARAGE DOOR TRACK IS GALVANIZED STEEL. USE ALL NECESSARY PRECAUTIONS WHEN WELDING GALVANIZED STEEL.
- ALL WELDS SHOULD BE PERFORMED BY A CERTIFIED WELDER OR INSPECTED BY A CERTIFIED WELDING INSPECTOR TO VERIFY THE INTEGRITY OF THE WELD.
- FILLET WELDS TO HAVE A STRAIGHT OR CONVEX FACE SURFACE.
- TACK WELD TOE OF ANGLE AT SAME SPACING TO PREVENT ROTATION OF TRACK ANGLE.

TABLE 1

Section	Center Stile Locations (Measured from Left Edge)				
	1st (in)	2st (in)	3rd (in)	4th (in)	5th (in)
16' - 4"	50"	^76.5"	98"	^119.5"	146"
16' - 6"	51"	^77.5"	99"	^120.5"	147"
16' - 8"	52"	^78.5"	100"	^121.5"	148"
16' - 10"	53"	^79.5"	101"	^122.5"	149"
17' - 0"	39"	81"	^102"	123"	165"
17' - 2"	40"	82"	^103"	124"	166"
17' - 4"	41"	83"	^104"	125"	167"
17' - 6"	42"	84"	^105"	126"	168"
17' - 8"	43"	85"	^106"	127"	169"
17' - 10"	44"	86"	^107"	128"	170"
18' - 0"	43.5"	86.5"	^108"	129.5"	172.5"
18' - 2"	44.5"	87.5"	^109"	130.5"	173.5"

^ ADDITIONAL STILES TO BE ADDED TO STANDARD SECTIONS

TABLE 2

DOOR HEIGHT	TRACK ATTACHMENT																				SPLICE S				
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T		U	V	W	
7'	3.5"	10"	22"	34"	46"	58"																			76"
8'	3.5"	10"	22"	34"	46"	58"	70"																		88"
9'	3.5"	10"	22"	34"	46"	58"	70"	82"																	100"
10'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"																112"
11'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"															124"
12'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"														136"
13'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"	130"													148"
14'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"	130"	142"												160"
15'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"	130"	142"	154"											172"
16'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"	130"	142"	154"	166"										184"
17'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"	130"	142"	154"	166"	178"									196"
18'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"	130"	142"	154"	166"	178"	190"								208"
19'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"	130"	142"	154"	166"	178"	190"	202"							220"
20'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"	130"	142"	154"	166"	178"	190"	202"	214"						232"
21'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"	130"	142"	154"	166"	178"	190"	202"	214"	226"					244"
22'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"	130"	142"	154"	166"	178"	190"	202"	214"	226"	238"				256"
23'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"	130"	142"	154"	166"	178"	190"	202"	214"	226"	238"	250"			268"
24'	3.5"	10"	22"	34"	46"	58"	70"	82"	94"	106"	118"	130"	142"	154"	166"	178"	190"	202"	214"	226"	238"	250"	262"		280"

REV	DESCRIPTION OF REVISIONS	DATE	BY
A	P.E. APPROVED R/A FOR ALT. WIDTHS (PAGE 3)	5/09/08	SKW
B	UPDATED WJATS, TCDTS, ADDED ASCE MPH DETAIL	5/2/12	RLR

MAX. SIZE
WIDTH 18" 2"
HEIGHT 24"

DESIGN LOADS
+34.1 PSF
-38.5 PSF

LARGE MISSILE
IMPACT
RESISTANCE



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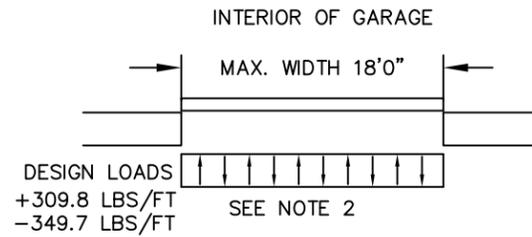
MODEL 2400 (24 GA)
MODEL 2000 (20 GA)

SIZE	DRAWN BY	SKW	DATE	3/27/08	DRAWING NUMBER
	B	CHECKED BY	SKW	DATE	

ENGINEER: THOMAS L. SHELMERDINE P.E. LIC. No. 0048579 SHEET 2 OF 3

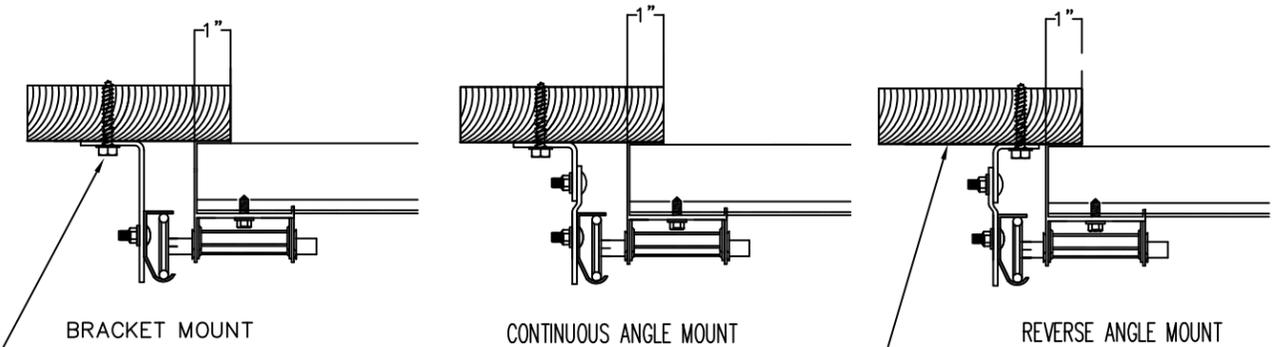
SPECIFICATIONS AND NOTES

1. ALL THE LOAD FROM THE DOOR IS TRANSFERRED TO THE VERTICAL TRACK, FROM THE TRACK THE LOAD IS TRANSFERRED TO THE VERTICAL JAMBS. THE HORIZONTAL JAMB OR HEADER RECEIVES NO PORTION OF THE LOAD TRANSFERRED FROM THE DOOR.
2. EACH VERTICAL JAMBS RECEIVES MAXIMUM DESIGN LOADS OF: +309.8 LBS/FT AND -349.7 LBS/FT
3. DOOR AND HARDWARE WILL BE DESIGNED, MANUFACTURED AND INSTALLED WITH STANDARDS AS SET FORTH BY DASMA.
4. DOOR SECTIONS SHALL BE 24 GA. (.022) MIN. EXTERIOR SKIN ROLLED FORMED, W/ BAKED ON POLYESTER FINISH
5. DOORS UP TO 24'0" HIGH USE (1) 5 1/2" R-TRUSS PER SECTION AND (1) 3" 18 GA STRUT ON BOTTOM AND INTERMEDIATE SECTIONS
6. SUPPORTING STRUCTURAL ELEMENTS SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER FOR WIND LOADS INDICATED ON THIS DRAWING IN ADDITION TO OTHER LOADINGS.



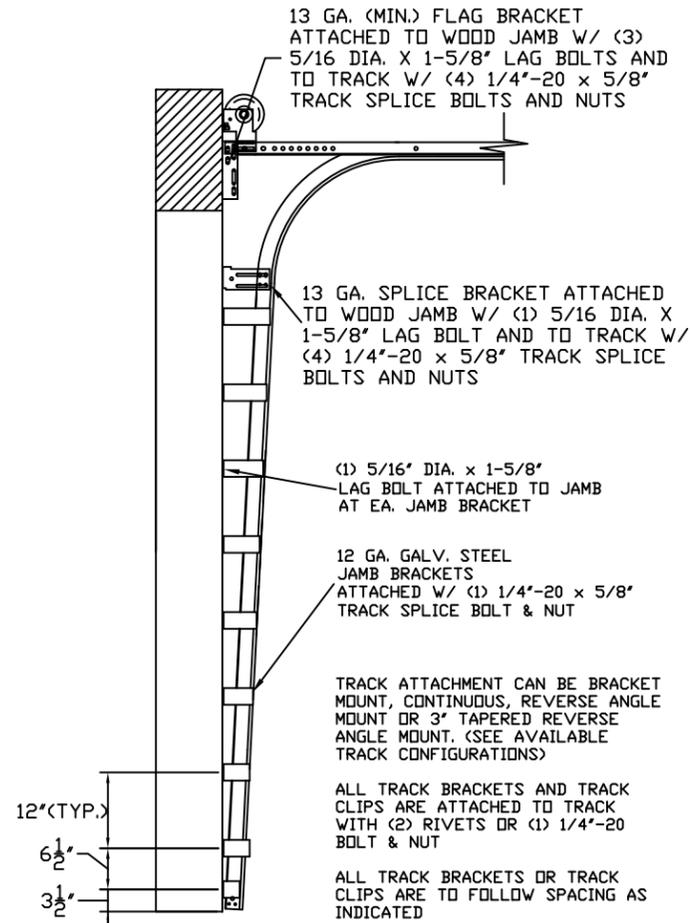
TRACK CONNECTION TO WOOD JAMB OPTIONS

FOR LAG SCREWS & BRACKET SPACING SEE TABLE 2



5/16" x 1 5/8" LAG SCREW (1)
PER JAMB BRACKET (1-1/2"
EMBEDMENT MINIMUM) (TYP.)

2x6 WOOD JAMB SYP
(NO.2) OR BETTER (TYP.)

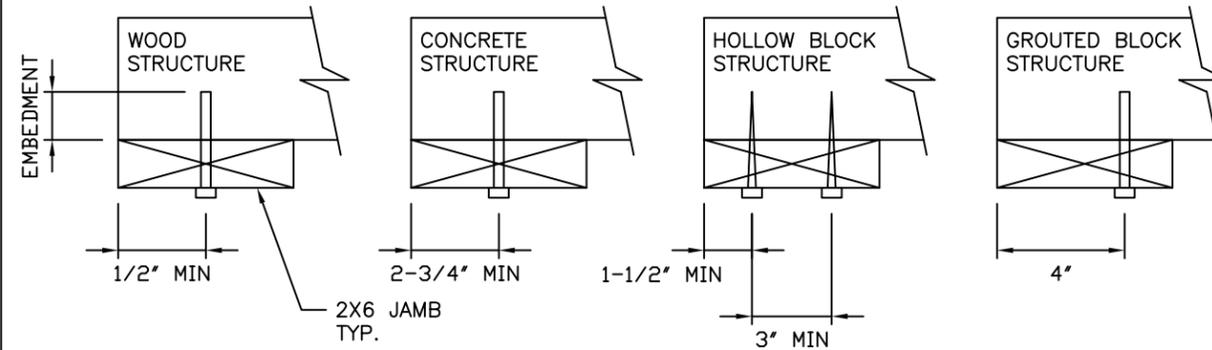


TRACK CONFIGURATION FOR UP TO 24' TALL DOORS
SEE TABLE 2 ON PAGE 2

WOOD JAMB ATTACHMENT TO STRUCTURE (OPTIONAL)

- 2 X 6 VERTICAL JAMB ATTACHMENT TO WOOD FRAME STRUCTURE
5/16" X 3" LAG SCREWS STARTING 6" FROM ENDS THEN 14" O.C. (1 1/2" EMBEDMENT)
- 2 X 6 VERTICAL JAMB ATTACHMENT TO 2,000 PSI CONCRETE
HILTI KWIK BOLT 3/8" X 4" STARTING 6" FROM ENDS THEN 24" O.C. (2 1/2" EMBEDMENT)
HILTI SLEEVE ANCHOR 3/8" X 2-3/4" STARTING 6" FROM ENDS THEN 14" O.C. (1 1/4" EMBEDMENT)
ITW/RAMSET REDHEAD (TRU-BOLT) 3/8" X 4" STARTING 6" FROM ENDS THEN 24" O.C. (2 1/2" EMBEDMENT)
- 2 X 6 VERTICAL JAMB ATTACHMENT TO HOLLOW C-90 BLOCK
SIMPSON 1/4" X 3" TITEN SCREWS STARTING 6" FROM ENDS, USE PAIRS OF FASTENERS (3" APART) AT 8" O.C. (1 1/2" EMBEDMENT)
HILTI 1/4" X 2-3/4" KWIK-CON II+ SCREWS STARTING 6" FROM ENDS, USE PAIRS OF FASTENERS (3" APART) AT 8" O.C. (1 1/4" EMBEDMENT)
- 2 X 6 VERTICAL JAMB ATTACHMENT TO GROUTED C-90 BLOCK (2000 PSI GROUT)
HILTI SLEEVE ANCHOR 3/8" X 2-3/4" STARTING 6" FROM ENDS THEN 16" O.C. (1 1/4" EMBEDMENT)
(OR, USE FASTENERS FOR HOLLOW C-90 BLOCK)

*LAGS AND BOLTS CAN BE COUNTERSUNK TO PROVIDE A FLUSH MOUNTING SURFACE.
*PREPARATION OF WOOD JAMBS BY OTHERS



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MAX. SIZE
WIDTH 18' 2"
HEIGHT 24'

DESIGN LOADS
+34.1 PSF
-38.5 PSF

LARGE MISSILE
IMPACT
RESISTANCE



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MODEL 2400 (24 GA)
MODEL 2000 (20 GA)

SIZE	DRAWN BY	SKW	DATE	3/27/08	DRAWING NUMBER
B	CHECKED BY	SKW	DATE	3/27/08	IBC-2418-150-26-I
ENGINEER: THOMAS L. SHELMERDINE P.E. LIC. No. 0048579					SHEET 3 OF 3