A Division of Overhead Door Corporation

Jamb Connection Supplement

Fastener allowable loads comply with:
ACI 318-14 (and prior versions)
AWC NDS-2018 (and prior versions)

JOHN E. SCATES
LICENSE
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PROFESSIONAL ENGINEER

Digitally signed by John E. Scates, P.E.
Date: 2020.09.03 14:48:21 -05'00'

This document provides a series of connection schedules and basic detailing concepts for the connection of garage door jambs to building frames with the use of various fasteners. DASMA Technical Data Sheet TDS-161 may be used as an alternate to this document.

SCHEDULE 1
5/16" DIAMETER LAG SCREWS

	MAXIMUM SPACING OF LAG SCREWS PER JAMB (IN)		
	MAIN SUPPORT MEMBER SPECIES		
	SYP	DOUGLAS FIR	SPF
LOAD PER JAMB (LB/FT)[NOTE 3]	SPECIFIC GRAVITY - 0.55	SPECIFIC GRAVITY - 0.46	SPECIFIC GRAVITY - 0.42
100	24	24	24
120	24	24	24
140	24	24	24
160	24	24	24
180	24	24	24
200	24	24	24
220	24	24	22
240	24	24	20
260	24	22	19
280	24	20	17
300	24	19	16
320	22	18	15
340	21	16	14
360	20	16	13
380	19	15	13
400	18	14	12
420	17	13	11
440	16	13	11
460	15	12	10
480	15	12	10
500	14	11	10
520	14	11	9
540	13	10	9
560	13	10	8
580	12	9	8
600	12	9	8
620	11	9	8
640	11	9	7
660	11	8	7
680	10	8	7
700	10	8	7
720	10	8	6
740	9	7	6
760	9	7	6
780	9	7	6
800	9	7	6

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1. BASED ON 5/16" DIAMETER LAG SCREWS WITH 1-1/2" O.D. WASHERS WITH A 1-9/32" THREAD PENETRATION INTO SEASONED DRY WOOD SUPPORTING STRUCTURE.
2. PROVIDE QUANTITY OF LAG SCREWS AS REQUIRED TO MAINTAIN MAXIMUM SPACING AS SHOWN IN TABLE WITH A MINIMUM OF THREE (3) LAG SCREWS PER JAMB. LAG SCREWS AT TOP AND BOTTOM OF JAMB SHALL BE PLACED A MAXIMUM OF 6" FROM THE END OF THE JAMB.
3. LOAD PER JAMB CALCULATED BY TAKING DESIGN LOAD (PSF) TIMES DOOR WIDTH (FT) DIVIDED BY 2.

EXAMPLE: DESIGN LOAD = 30psf
DOOR WIDTH = 16ft
LOAD PER JAMB = 30psf x 16ft/2 = 240lb/ft

4. CHART IS BASED ON 6'-6" MINIMUM AND 24'-0" MAXIMUM DOOR HEIGHT.
5. ADDED DOOR JAMB TO BE 2x4 OR LARGER GRADE 2 SYP (SPECIFIC GRAVITY >=0.55) LUMBER OR BETTER MOUNTED TO SUPPORT STRUCTURE.
   IF MOUNTING OVER DRYWALL, INCREASE FASTENER LENGTH TO ACHIEVE MINIMUM REQUIRED PENETRATION.
6. DESIGN OF THE SUPPORT STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE BUILDING DESIGNER AND SHALL BE DESIGNED FOR THE JAMB LOAD LISTED IN ABOVE TABLE AS CALCULATED PER NOTE 3.
7. MINIMUM EDGE DISTANCE SHALL BE 1/2", MINIMUM FASTENER SPACING SHALL BE 1-1/2", AND ALL HOLES SHALL BE PRE-DRILLED TO PREVENT SPLITTING.
8. LAG SCREWS SHALL CONFORM TO ANSI / ASME STANDARD B18.2.1.

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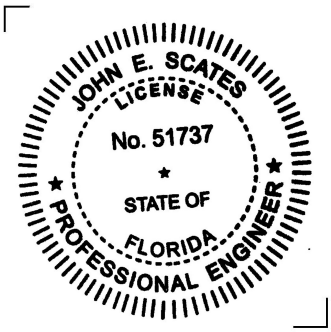
SCHEDULE 2
16d COMMON WIRE NAILS AND 16d THREADED HARDENED-STEEL NAILS

	MAXIMUM NAIL SPACING PER JAMB (IN)		
	MAIN SUPPORT MEMBER SPECIES		
LOAD PER JAMB (LB/FT)[NOTE 3]	SYP SPECIFIC GRAVITY - 0.55	DOUGLAS FIR SPECIFIC GRAVITY - 0.46	SPF SPECIFIC GRAVITY - 0.42
100	24	24	19
120	24	20	16
140	21	17	14
160	18	15	12
180	16	13	10
200	15	12	9
220	13	11	8
240	12	10	8
260	11	9	7
280	10	8	7
300	10	8	6
320	9	7	6
340	8	7	n/a
360	8	6	n/a
380	7	6	n/a
400	7	6	n/a
420	7	n/a	n/a
440	6	n/a	n/a
460	6	n/a	n/a
480	6	n/a	n/a
500	6	n/a	n/a
520	n/a	n/a	n/a
540	n/a	n/a	n/a
560	n/a	n/a	n/a
580	n/a	n/a	n/a
600	n/a	n/a	n/a
620	n/a	n/a	n/a
640	n/a	n/a	n/a
660	n/a	n/a	n/a
680	n/a	n/a	n/a
700	n/a	n/a	n/a
720	n/a	n/a	n/a
740	n/a	n/a	n/a
760	n/a	n/a	n/a
780	n/a	n/a	n/a
800	n/a	n/a	n/a



1. BASED ON 16d COMMON WIRE NAILS (0.162"x3-1/2") OR 16d THREADED HARDENED-STEEL NAILS (0.148"x3-1/2") WITH A MINIMUM PENETRATION OF 2" INTO SIDE GRAIN OF MAIN MEMBER.
2. NAILS SHALL BE PROVIDED IN PAIRS AT A MAXIMUM SPACING AS SHOWN IN TABLE WITH A MINIMUM OF THREE (3) PAIRS OF NAILS PER JAMB. NAILS AT TOP AND BOTTOM OF JAMB SHALL BE PLACED A MAXIMUM OF 6" FROM THE END OF THE JAMB.
3. LOAD PER JAMB CALCULATED BY TAKING DESIGN LOAD (PSF) TIMES DOOR WIDTH (FT) DIVIDED BY 2.

EXAMPLE: DESIGN LOAD = 30psf
DOOR WIDTH = 16ft
LOAD PER JAMB = 30psf x 16ft/2 = 240lb/ft

4. CHART IS BASED ON 6'-6" MINIMUM AND 24'-0" MAXIMUM DOOR HEIGHT.
5. ADDED DOOR JAMB TO BE 2x4 OR LARGER GRADE 2 SYP (SPECIFIC GRAVITY >=0.55) LUMBER OR BETTER MOUNTED TO SUPPORT STRUCTURE. IF MOUNTING OVER DRYWALL, INCREASE FASTENER LENGTH TO ACHIEVE MINIMUM REQUIRED PENETRATION.
6. DESIGN OF THE SUPPORT STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE BUILDING DESIGNER AND SHALL BE DESIGNED FOR THE JAMB LOAD LISTED IN ABOVE TABLE AS CALCULATED PER NOTE 3.
7. EDGE DISTANCES, END DISTANCES AND SPACINGS SHALL BE SUFFICIENT TO PREVENT SPLITTING OF THE WOOD.

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SCHEDULE 3
3/8"Ø A307 HEADED OR HOOKED ANCHOR BOLTS IN NORMAL WEIGHT CONCRETE

	MAXIMUM SPACING OF ANCHOR BOLTS PER JAMB (IN)	
LOAD PER JAMB (LB/FT)[NOTE 3]	2500 PSI CONCRETE	3000 PSI CONCRETE
100	24	24
120	24	24
140	24	24
160	24	24
180	24	24
200	24	24
220	24	24
240	24	24
260	24	24
280	24	24
300	24	24
320	24	24
340	24	24
360	24	24
380	24	24
400	24	24
420	24	24
440	23	24
460	22	24
480	21	24
500	20	24
520	20	24
540	19	23
560	18	22
580	18	21
600	17	20
620	16	20
640	16	19
660	15	19
680	15	18
700	14	17
720	14	17
740	14	16
760	13	16
780	13	16
800	13	15

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1. BASED ON 3/8"Ø A307 HEADED OR HOOKED (1.69" MIN. HOOK LENGTH) ANCHOR BOLTS WITH A 2" O.D. WASHER WITH A MINIMUM EMBEDMENT DEPTH OF 3" AND A MINIMUM EDGE DISTANCE OF 3".
2. PROVIDE QUANTITY OF ANCHOR BOLTS AS REQUIRED TO MAINTAIN MAXIMUM SPACING AS SHOWN IN TABLE WITH A MINIMUM OF THREE (3) ANCHOR BOLTS PER JAMB. ANCHOR BOLTS AT TOP AND BOTTOM OF JAMB SHALL BE PLACED A MAXIMUM OF 6" FROM THE END OF THE JAMB.
3. LOAD PER JAMB CALCULATED BY TAKING DESIGN LOAD (PSF) TIMES DOOR WIDTH (FT) DIVIDED BY 2.

EXAMPLE: DESIGN LOAD = 30psf
DOOR WIDTH = 16ft
LOAD PER JAMB = 30psf x 16ft/2 = 240lb/ft

4. CHART IS BASED ON 6'-6" MINIMUM AND 24'-0" MAXIMUM DOOR HEIGHT.
5. ADDED DOOR JAMB TO BE 2x6 OR LARGER GRADE 2 SYP (SPECIFIC GRAVITY >=0.55) LUMBER OR BETTER MOUNTED TO SUPPORT STRUCTURE.
IF MOUNTING OVER DRYWALL, INCREASE FASTENER LENGTH TO ACHIEVE MINIMUM REQUIRED PENETRATION.
6. DESIGN OF THE SUPPORT STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE BUILDING DESIGNER AND SHALL BE DESIGNED FOR THE JAMB LOAD LISTED IN ABOVE TABLE AS CALCULATED PER NOTE 3.

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SCHEDULE 4
3/8"Ø SIMPSON TITEN HD SCREW ANCHORS

	MAXIMUM SPACING OF ANCHORS PER JAMB (IN)		
LOAD PER JAMB (LB/FT)[NOTE 4]	2500 PSI CONCRETE[NOTE 1]	4000 PSI CONCRETE[NOTE 1]	2000 PSI GROUT FILLED CMU[NOTE 2]
100	24	24	24
120	24	24	24
140	24	24	24
160	24	24	24
180	24	24	24
200	24	24	24
220	24	24	24
240	24	24	24
260	24	24	16
280	24	24	16
300	24	24	16
320	24	24	16
340	24	24	16
360	24	24	16
380	24	24	8
400	24	24	8
420	24	24	8
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540	24	24	8
560	23	24	8
580	22	24	8
600	21	23	8
620	21	22	8
640	20	22	8
660	19	21	8
680	19	20	8
700	18	20	8
720	18	19	8
740	17	19	N/A
760	17	18	N/A
780	16	18	N/A
800	16	17	N/A

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1. BASED ON 3/8"Ø SIMPSON TITEN HD SCREW ANCHOR WITH A 1-3/4" O.D. WASHER INTO NORMAL WEIGHT UNCRACKED CONCRETE WITH A MINIMUM EMBEDMENT DEPTH OF 2-3/4" AND A MINIMUM EDGE DISTANCE OF 2-3/4".
2. BASED ON 3/8"Ø SIMPSON TITEN HD SCREW ANCHOR WITH A 1-3/4" O.D. WASHER INTO GROUT FILLED CMU WITH A MINIMUM EMBEDMENT DEPTH OF 2-3/4", A MINIMUM EDGE DISTANCE OF 4", AND A MINIMUM END DISTANCE OF 4". CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90 AND GROUT SHALL CONFORM TO ASTM C476.
3. PROVIDE QUANTITY OF SCREW ANCHORS AS REQUIRED TO MAINTAIN MAXIMUM SPACING AS SHOWN IN TABLE WITH A MINIMUM OF THREE (3) SCREW ANCHORS PER JAMB. SCREW ANCHORS AT TOP AND BOTTOM OF JAMB SHALL BE PLACED A MAXIMUM OF 6" FROM THE END OF THE JAMB.
4. LOAD PER JAMB CALCULATED BY TAKING DESIGN LOAD (PSF) TIMES DOOR WIDTH (FT) DIVIDED BY 2.

EXAMPLE: DESIGN LOAD = 30psf
DOOR WIDTH = 16ft
LOAD PER JAMB = 30psf x 16ft/2 = 240lb/ft

5. CHART IS BASED ON 6'-6" MINIMUM AND 24'-0" MAXIMUM DOOR HEIGHT.
6. ADDED DOOR JAMB TO BE 2x6 OR LARGER GRADE 2 SYP (SPECIFIC GRAVITY >=0.55) LUMBER OR BETTER MOUNTED TO SUPPORT STRUCTURE.
IF MOUNTING OVER DRYWALL, INCREASE FASTENER LENGTH TO ACHIEVE MINIMUM REQUIRED PENETRATION.
7. DESIGN OF THE SUPPORT STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE BUILDING DESIGNER AND SHALL BE DESIGNED FOR THE JAMB LOAD LISTED IN ABOVE TABLE AS CALCULATED PER NOTE 4.
8. SCREW ANCHORS SHALL BE INSTALLED PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

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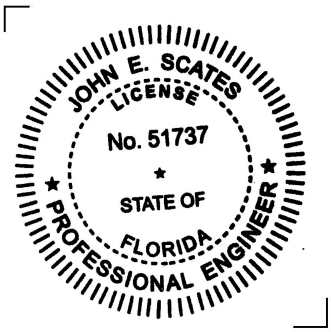
SCHEDULE 5
3/8"Ø HILTI KWIK BOLT 3 EXPANSION ANCHOR

	MAXIMUM SPACING OF ANCHORS PER JAMB (IN)		
LOAD PER JAMB (LB/FT)[NOTE 4]	2500 PSI CONCRETE[NOTE 1]	4000 PSI CONCRETE[NOTE 1]	2000 PSI GROUT FILLED CMU[NOTE 2]
100	24	24	24
120	24	24	24
140	24	24	24
160	24	24	24
180	24	24	24
200	24	24	24
220	24	24	24
240	24	24	24
260	24	24	24
280	24	24	24
300	24	24	24
320	24	24	16
340	24	24	16
360	24	24	16
380	24	24	16
400	24	24	16
420	24	24	16
440	24	24	16
460	24	24	16
480	24	24	8
500	24	24	8
520	24	24	8
540	24	24	8
560	24	24	8
580	24	24	8
600	23	23	8
620	22	22	8
640	22	22	8
660	21	21	8
680	20	20	8
700	20	20	8
720	19	19	8
740	19	19	8
760	18	18	8
780	18	18	8
800	17	17	8



1. BASED ON 3/8"Ø HILTI KWIK BOLT 3 EXPANSION ANCHOR WITH A 1-3/4" O.D. WASHER INTO NORMAL WEIGHT UNCRACKED CONCRETE WITH A MINIMUM EMBEDMENT DEPTH OF 2-1/2" AND A MINIMUM EDGE DISTANCE OF 3".
2. BASED ON 3/8"Ø HILTI KWIK BOLT 3 EXPANSION ANCHOR WITH A 1-3/4" O.D. WASHER INTO GROUT FILLED CMU WITH A MINIMUM EMBEDMENT DEPTH OF 2-1/2" AND A MINIMUM EDGE DISTANCE OF 4".
   ONLY ONE ANCHOR PER MASONRY UNIT
   CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90 AND GROUT SHALL CONFORM TO ASTM C476.
3. PROVIDE QUANTITY OF ANCHORS AS REQUIRED TO MAINTAIN MAXIMUM SPACING AS SHOWN IN TABLE WITH A MINIMUM OF THREE (3) ANCHORS PER JAMB. ANCHORS AT TOP AND BOTTOM OF JAMB SHALL BE PLACED A MAXIMUM OF 6" FROM THE END OF THE JAMB.
4. LOAD PER JAMB CALCULATED BY TAKING DESIGN LOAD (PSF) TIMES DOOR WIDTH (FT) DIVIDED BY 2.

EXAMPLE: DESIGN LOAD = 30psf
DOOR WIDTH = 16ft
LOAD PER JAMB = 30psf x 16ft/2 = 240lb/ft

5. CHART IS BASED ON 6'-6" MINIMUM AND 24'-0" MAXIMUM DOOR HEIGHT.
6. ADDED DOOR JAMB TO BE 2x6 OR LARGER GRADE 2 SYP (SPECIFIC GRAVITY >=0.55) LUMBER OR BETTER MOUNTED TO SUPPORT STRUCTURE.
   IF MOUNTING OVER DRYWALL, INCREASE FASTENER LENGTH TO ACHIEVE MINIMUM REQUIRED PENETRATION.
7. DESIGN OF THE SUPPORT STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE BUILDING DESIGNER AND SHALL BE DESIGNED FOR THE JAMB LOAD LISTED IN ABOVE TABLE AS CALCULATED PER NOTE 4.
8. SCREW ANCHORS SHALL BE INSTALLED PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

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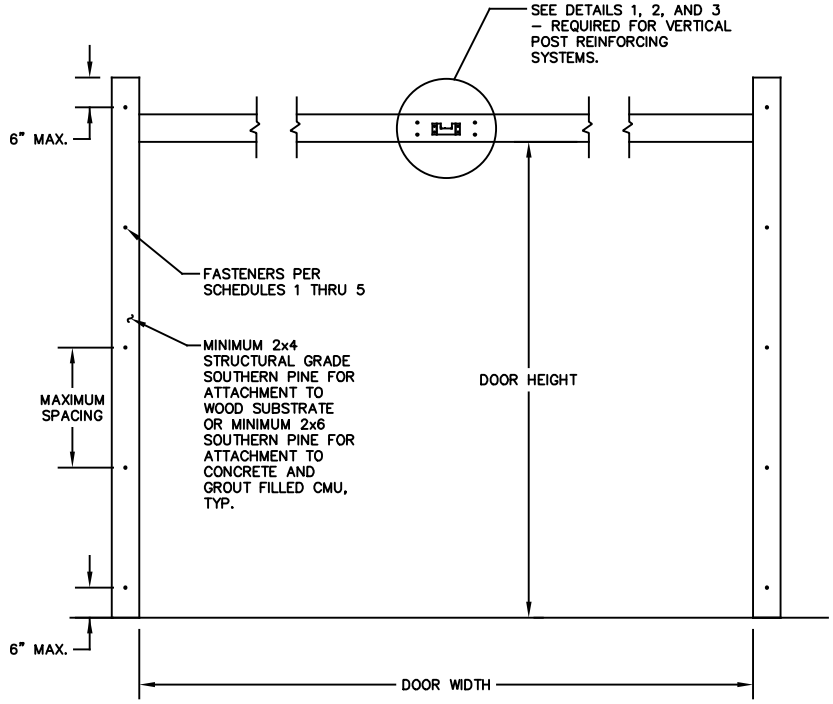
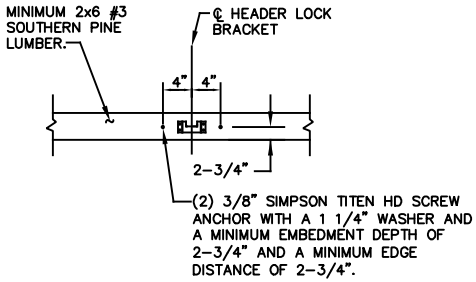
REVISIONS

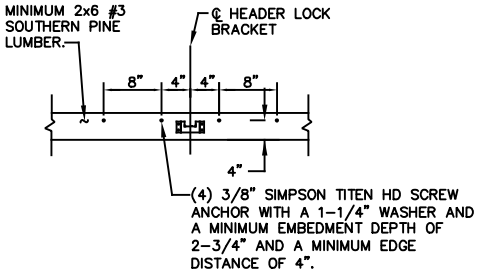
P00 NEW DRAWING, ER31052 ESC 8/6/18

P01 NOTES REVISION JQ 2/27/2020

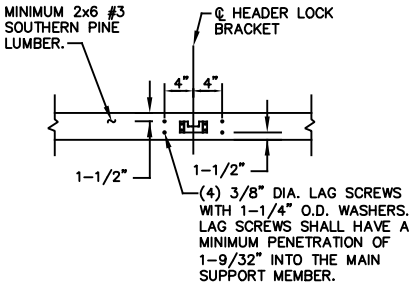




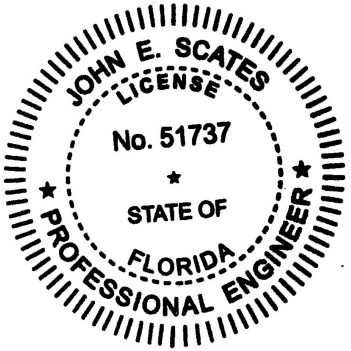
DETAIL 1
MINIMUM 2500 PSI CONCRETE
NOTE: MAXIMUM DESIGN LOAD CAPACITY OF 2085 LBS.



DETAIL 2
MINIMUM 2000 PSI GROUT FILLED CMU
NOTE: MAXIMUM DESIGN LOAD CAPACITY OF 2400 LBS.



DETAIL 3
WOOD SUPPORT STRUCTURE
NOTE: MAXIMUM DESIGN LOAD CAPACITY OF 2430 LBS.



PROFESSIONAL ENGINEER'S SEAL PROVIDED ONLY FOR VERIFICATION OF WINDLOAD CONSTRUCTION DETAILS.

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	DATE	NAME
DRAWN	8/6/18	ESC
CHECKED		

SHEET 1 OF 2

JAMB CONNECTION SUPPLEMENT

DRAWING PART NO. 363342

REV. P01

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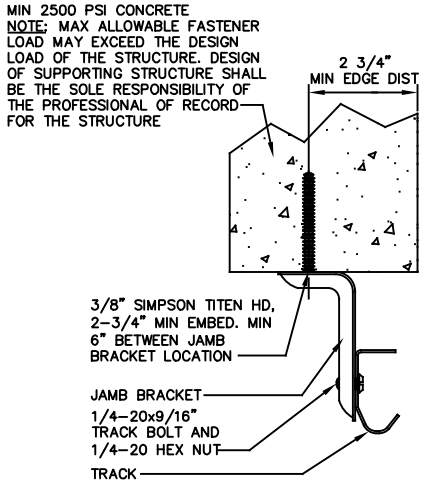
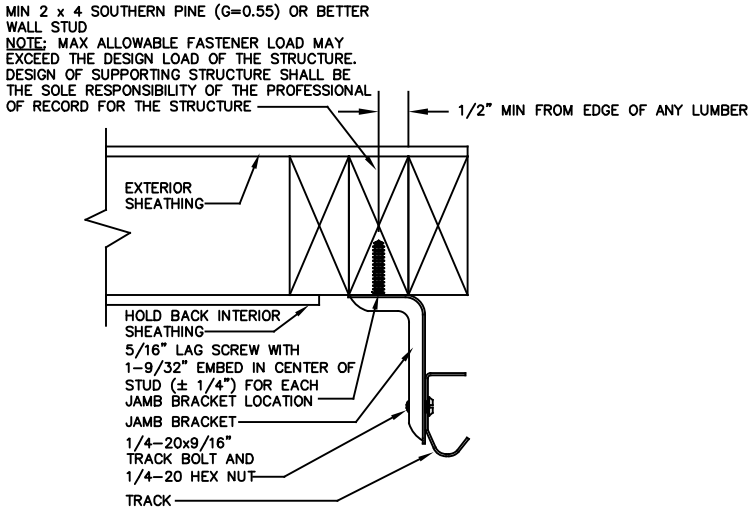
REVISIONS

P00 NEW DRAWING, ER31052 ESC 8/6/18

P01 NOTES REVISION JQ 2/27/2020



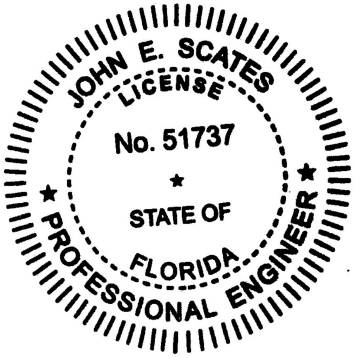
DIRECT CONCRETE MOUNTING DETAIL



DIRECT WOOD MOUNTING DETAIL

TRACK BRACKET LOCATIONS AND SPACING PER THE WINDLOAD DOOR DRAWING

IF JAMBS ARE NOT SOUTHERN PINE, MUST ATTACH A SOUTHERN PINE 2X6 PER SCHEDULE 1. IF 2X6 WILL NOT FIT, MAY USE 2X4.



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	DATE	NAME
DRAWN	8/6/18	ESC
CHECKED		

SHEET 2 OF 2

JAMB CONNECTION SUPPLEMENT

DRAWING PART NO. 363342

REV. P01