TABLE R602.3(1A) FASTENER SCHEDULE FOR STRUCTURAL MEMBERS			
ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENERa, b, c	SPACING OF FASTENERS
Roof			
1	Blocking between joists or rafters to top plate, toe nail	3-8d (2½" × 0.113")	—
2	Ceiling joists to plate, toe nail	3-8d (2½"× 0.113")	—
3	Ceiling joists not attached to parallel rafter, laps over partitions, face nail	3-10d	—
4	Collar tie rafter, face nail or 1¼" × 20 gage ridge strap	3-10d (3" × 0.128")	—
5	Rafter to plate, toe nail	2-16d (3½" × 0.135")	—
6	Roof rafters to ridge, valley or hip rafters:		
	toe nail	4-16d (3½" × 0.135")	—
	face nail	3-16d (3½" × 0.135")	—
Wall			
7	Built-up corner studs	10d (3" × 0.128")	24" o.c.
8	Built-up header, two pieces with 1/2" spacer	16d (3½" × 0.135")	16" o.c. along each edge
9	Continued header, two pieces	16d (3½" × 0.135")	16" o.c. along each edge
10	Continuous header to stud, toe nail	4-8d (2½" × 0.113")	—
11	Double studs, face nail	10d (3" × 0.128")	24" o.c.
12	Double top plates, face nail	10d (3" × 0.128")	24" o.c.
13	Double top plates, minimum 24-inch offset of end joints,	8-16d (3½"× 0.135")	—
	face nail in lapped area		24" o.c.
14	Sole plate to joist or blocking, face nail	16d (3½" × 0.135")	16" o.c.
15	Sole plate to joist or blocking at braced wall panels	3-16d (3½" × 0.135")	16" o.c.
16	Stud to sole plate, toe nail	3-8d (2½" × 0.113")	—
		or	16" o.c.
		2-16d 3½" × 0.135")	—
17	Top or sole plate to stud, end nail	2-16d (3½" × 0.135")	—
18	Top plates, laps at corners and intersections, face nail	2-10d (3" × 0.128")	—
19	1" brace to each stud and plate, face nail	2-8d (2½" × 0.113")	—
		2 staples 13/4"	—
20	1" × 6" sheathing to each bearing, face nail	2-8d (2½" × 0.113")	—
		2 staples 1¾"	—
21	1" × 8" sheathing to each bearing, face nail	2-8d (2½" × 0.113")	—
		3 staples 13/4"	—
22	Wider than 1" × 8" sheathing to each bearing, face nail	3-8d (2½" × 0.113")	—
		4 staples 1¾"	—
Floor			
23	Joist to sill or girder, toe nail	3-8d (2½" × 0.113")	—
24	1" × 6" subfloor or less to each joist, face nail	2-8d (2½" × 0.113")	—
		2 staples 1¾"	—
25	2" subfloor to joist or girder, blind and face nail	2-16d (3½" × 0.135")	—
26	Rim joist to top plate, toe nail (roof applications also)	8d (2½" × 0.113")	6" o.c.
27	2" planks (plank & beam - floor & roof)	2-16d (3½" × 0.135")	at each bearing
28	Built-up girders and beams, 2-inch lumber layers	10d (3" × 0.128")	Nail each layer as follows:
			32" o.c. at top and bottom and staggered. Two nails at ends
			and at each splice.
29	Ledger strip supporting joists or rafters	3-16d (3½" × 0.135")	At each joist or rafter

TABLE R602.3(1B) FASTENER SCHEDULE FOR STRUCTURAL MEMBERS				
ITEM	DESCRIPTION OF BUILDING MATERIALS	DESCRIPTION OF FASTENERb, c, e	SPACING OF FASTENERS	
			Edges (inches)i	Intermediate supportsc, e (inches)
Wood structural panels, subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing				
30	⅜" - ½"	6d common (2"×0.113") nail (subfloor wall)	6	12g
		8d common (2½"×0.131") nail (roof)f		
31	19/32" - 1"	8d common nail (2½"×0.131")	6	12g
32	1⅛" - 1¼"	10d common (3"×0.148") nail or	6	12
		8d (2½"×0.131") deformed nail		
Other Wall Sheathingh				
33	½" structural cellulosic fiberboard sheathing	1½" galvanized roofing nail, 7/16" crown or 1"	3	6
		crown staple 16 ga., 1¼ "long		
34	25/32" structural cellulosic fiberboard sheathing	13/4 " galvanized roofing nail, 7/16" crown or 1"	3	6
		crown staple 16 ga., 1½" long		
35	½" gypsum sheathingd	1½ " galvanized roofing nail; staple galvanized,	7	7
		1½" long; 11/4 screws, Type W or S		
36	⅝" gypsum sheathingd	1¾" glavanized roofing nail; staple galvanized,	7	7
		1⅝ "long; 1⅝ "screws, Type W or S		
Wood structural panels, combination subfloor underlayment to framing				
37	¾" and less	6d deformed (2" × 0.120") nail or	6	12
		8d common (2½" × 0.131") nail		
38	⅞ "- 1"	8d common (2½" × 0.131") nail or	6	12
		8d deformed (2½" × 0.120") nail		
39	1⅛ "- 1¼ "	10d common (3" × 0.148") nail or	6	12
		8d deformed (2½" × 0.120") nail		

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s; 1ksi = 6.895 MPa.

a. All nails are smooth-common, box or deformed shanks except where otherwise stated. Nails used for framing and sheathing connections shall have minimum average bending yield strengths as shown: 80 ksi for shank diameter of 0.192 inch (20d common nail), 90 ksi for shank diameters larger than 0.142 inch but not larger than 0.177 inch, and 100 ksi for shank diameters of 0.142 inch or less.
b. Staples are 16 gage wire and have a minimum 7/16-inch on diameter crown width.
c. Nails shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater.
d. Four-foot-by-8-foot or 4-foot-by-9-foot panels shall be applied vertically.
e. Spacing of fasteners not included in this table shall be based on Table R602.3(2).
f. For regions having basic wind speed of 110 mph or greater, 8d deformed (2-1/2"×0.120) nails shall be used for attaching plywood and wood structural panel roof sheathing to framing within minimum 48-inch distance from gable end walls, if mean roof height is more than 25 feet, up to 35 feet maximum.
g. For regions having basic wind speed of 100 mph or less, nails for attaching wood structural panel roof sheathing to gable end wall framing shall be spaced 6 inches on center. When basic wind speed is greater than 100 mph, nails for attaching panel roof sheathing to intermediate supports shall be spaced 6 inches on center for minimum 48-inch distance from ridges, eaves and gable end walls; and 4 inches on center to gable end wall framing.
h. Gypsum sheathing shall conform to ASTM C 1396 and shall be installed in accordance with GA 253. Fiberboard sheathing shall conform to ASTM C 208.
i. Spacing of fasteners on floor sheathing panel edges applies to panel edges supported by framing members and required blocking and at all floor perimeters only. Spacing of fasteners on roof sheathing panel edges applies to panel edges supported by framing members and required blocking. Blocking of roof or floor sheathing panel edges perpendicular to the framing members need not be provided except as required by other provisions of this code. Floor perimeter shall be supported by framing members or solid blocking.

TABLE R602.3(2) ALTERNATE ATTACHMENTS			
NOMINAL MATERIAL THICKNESS (inches)	DESCRIPTIONa, b OF FASTENER AND LENGTH (inches)	SPACINGc OF FASTENERS	
		Edges (inches)	Intermediate supports (inches)
Wood structural panels subfloor, roof and wall sheathing to framing and particleboard wall sheathing to framingf			
up to ½	Staple 15 ga. 1¾	4	8
	0.097 - 0.099 Nail 2¼	3	6
	Staple 16 ga. 1¾	3	6
19/32 and ⅝	0.113 Nail 2	3	6
	Staple 15 and 16 ga. 2	4	8
	0.097 - 0.099 Nail 2¼	4	8
23/32 and ¾	Staple 14 ga. 2	4	8
	Staple 15 ga. 1¾	3	6
	0.097 - 0.099 Nail 2¼	4	8
	Staple 16 ga. 2	4	8
1	Staple 14 ga. 2¼	4	8
	0.113 Nail 2¼	3	6
	Staple 15 ga. 2¼	4	8
	0.097 - 0.099 Nail 2½	4	8
NOMINAL MATERIAL THICKNESS (inches)	**DESCRIPTIONa,b OF FASTENER AND LENGTH (inches)**	**SPACINGc OF FASTENERS**	
		Edges (inches)	**Body of paneld (inches)**
Floor underlayment; plywood-hardboard-particleboardf			
Plywood			
¼ and 5/16	1¼ ring or screw shank nail-minimum	3	6
	12½ ga. (0.099") shank diameter		
	Staple 18 ga., ⅞, 3/16 crown width	2	5
11/32, ⅜, 15/32, and ½	1¼ ring or screw shank nail-minimum	6	8e
	12½ ga. (0.099") shank diameter		
19/32, ⅝, 23/32 and ¾	1½ ring or screw shank nail-minimum	6	8
	12½ ga. (0.099") shank diameter		
	Staple 16 ga. 1½	6	8
Hardboardf			
0.200	1½ long ring-grooved underlayment nail	6	6
	4d cement-coated sinker nail	6	6
	Staple 18 ga., ⅞ long (plastic coated)	3	6
Particleboard			
¼	4d ring-grooved underlayment nail	3	6
	Staple 18 ga., ⅞ long, 3/16 crown	3	6
⅜	6d ring-grooved underlayment nail	6	10
	Staple 16 ga., 1⅛ long, ⅜ crown	3	6
½, ⅝	6d ring-grooved underlayment nail	6	10
	Staple 16 ga., 1⅝ long, ⅜ crown	3	6

For SI: 1 inch = 25.4 mm.

a. Nail is a general description and may be T-head, modified round head or round head.
b. Staples shall have a minimum crown width of 7/16-inch on diameter except as noted.
c. Nails or staples shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater. Nails or staples shall be spaced at not more than 12 inches on center at intermediate supports for floors.
d. Fasteners shall be placed in a grid pattern throughout the body of the panel.
e. For 5-ply panels, intermediate nails shall be spaced not more than 12 inches on center each way.

TABLE R602.3(3) REQUIREMENTS FOR WOOD STRUCTURAL PANEL WALL SHEATHING USED TO RESIST WIND PRESSURESa,b,c									
MINIMUM NAIL		MINIMUM WOOD STRUCTURAL PANEL SPAN RATING	MINIMUM NOMINAL PANEL THICKNESS (inches)	MAXIMUM WALL STUD SPACING (inches)	PANEL NAIL SPACING		MAXIMUM WIND SPEED (mph)		
Size	Penetration (inches)				Edges (inches o.c.)	Field (inches o.c.)	Wind exposure category		
							B	C	D
6d Common (2.0" × 0.113")	1.5	24/0	3/8	16	6	12	110	90	85
8d Common (2.5"× 0.131")	1.75	24/16	7/16	16	6	12	130	110	105
				24	6	12	110	90	85

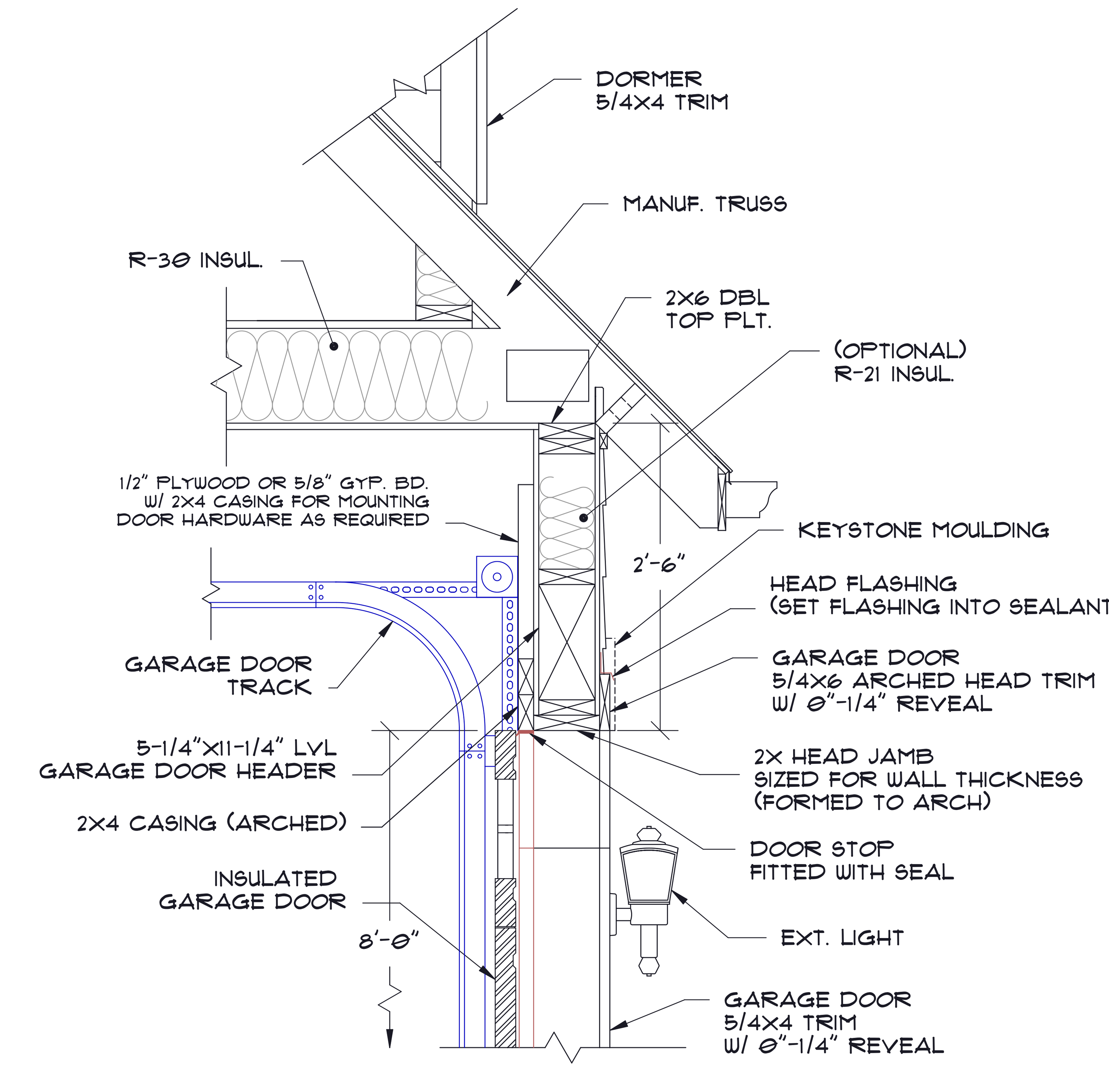
For SI: 1 inch = 25.4 mm, 1 mile per hour = 0.447 m/s.

a. Panel strength axis parallel or perpendicular to supports. Three-ply plywood sheathing with studs spaced more than 16 inches on center shall be applied with panel strength axis perpendicular to supports.
b. Table is based on wind pressures acting toward and away from building surfaces per Section R301.2. Lateral bracing requirements shall be in accordance with Section R602.10.
c. Wood Structural Panels with span ratings of Wall-16 or Wall-24 shall be permitted as an alternate to panels with a 24/0 span rating. Plywood siding rated 16 oc or 24 oc shall be permitted as an alternate to panels with a 24/16 span rating. Wall-16 and Plywood siding 16 oc shall be used with studs spaced a maximum of 16 inches on center.

TABLE R602.3(4) ALLOWABLE SPANS FOR PARTICLEBOARD WALL SHEATHINGa			
THICKNESS (inch)	GRADE	STUD SPACING (inches)	
		When siding is nailed to studs	When siding is nailed to sheathing
3/8	M-1 Exterior glue	16	-
1/2	M-2 Exterior glue	16	16

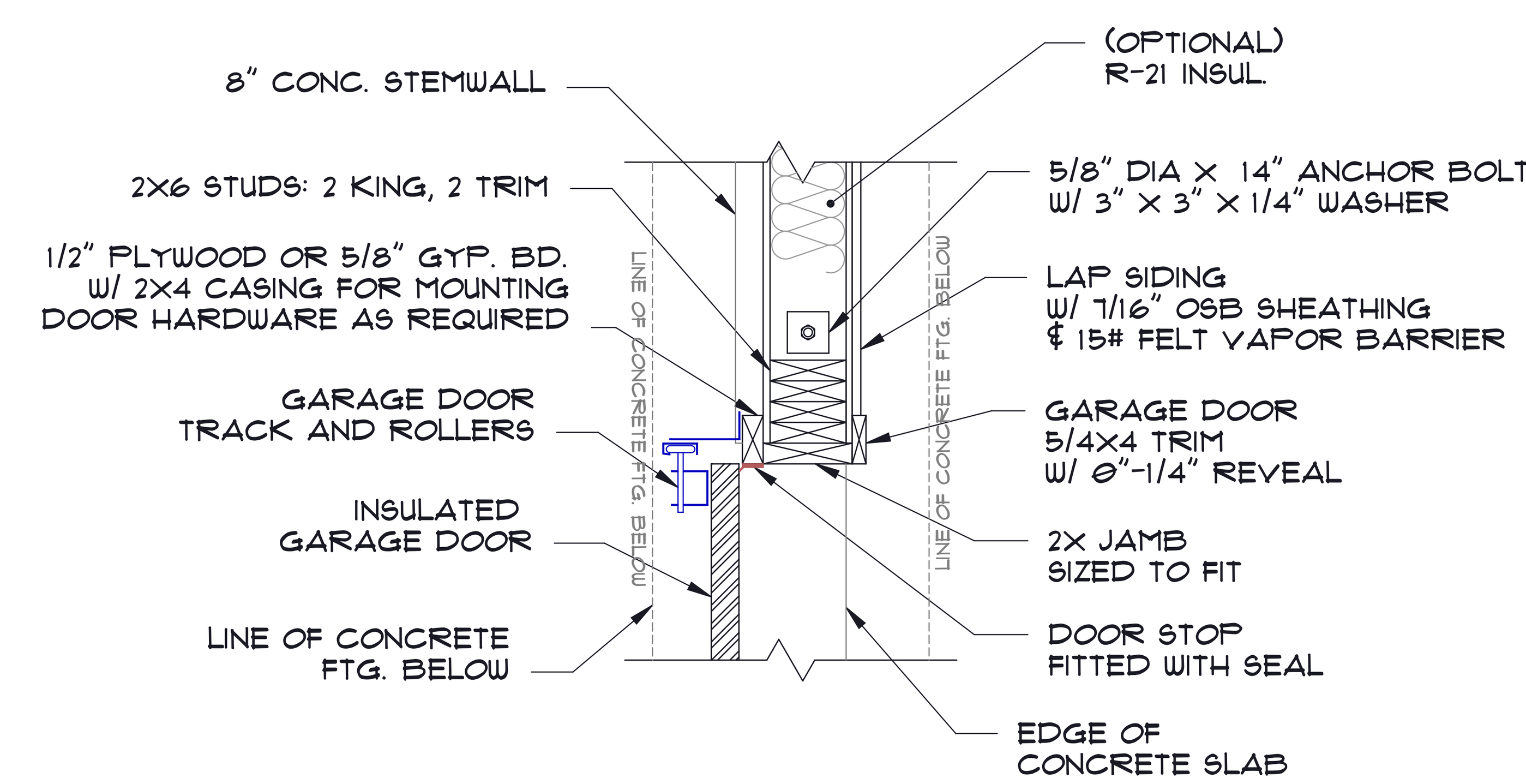
For SI: 1 inch = 25.4 mm.

a. Wall sheathing not exposed to the weather. If the panels are applied horizontally, the end joints of the panel shall be offset so that four panels corners will not meet. All panel edges must be supported. Leave a 1/16-inch gap between panels and nail no closer than 3/8 inch from panel edges.



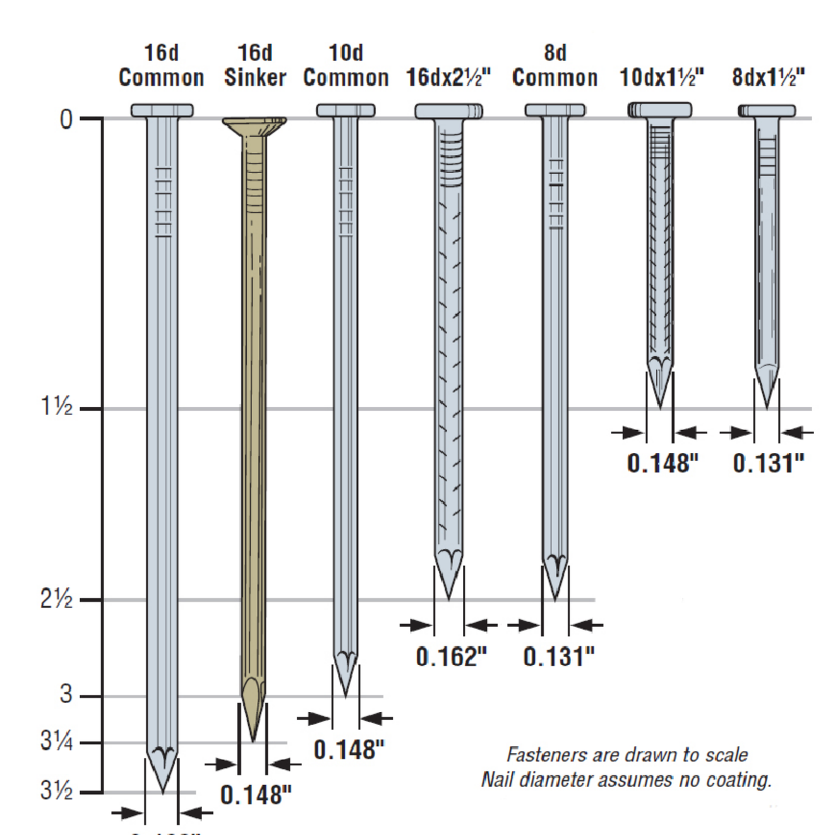
1 GARAGE DOOR HEAD DETAIL

SCALE: 1"=1'-0"



2 GARAGE DOOR JAMB DETAIL

SCALE: 1"=1'-0"



3 NAIL SIZES

MEDEEK DESIGN Inc.
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THIRD ANGLE PROJECTION

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PLAN NO.: GARAGE4828B-A6D-3

SCALE: 1:1 REVISION: A.1

DESIGNED BY: NPW

DATE: 5/1/2013

SHEET CONTENTS: FASTENING REQUIREMENTS

REVISION HISTORY:

CUSTOMER:

LOCATION:

SHEET 15 OF 19

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