TABLE S107.7 - UPLIFT CONNECTIONS - 150 MPH WINDS EXP "C"

WFCM 2015 TABLE 3.2

CONNECTION	FRAMING SPACING (INCHES)	ROOF SPAN (FEET)	UPLIFT	LATERAL	SHEAR	NUMBER OF 8d COMMON NAILS OR 10d BOX NAILS IN EACH END OF 1-1/4"X20 GAGE STRAP
ROOF ASSEMBLY TO WALL ASSEMBLY	16" OC	16	407	292	152R	4
WALL ASSEMBLY TO FOUNDATION	16" OC	16	224	219	436	4

TABLE S107.8 - SILL OR BOTTOM PLATE TO FOUNDATION CONNECTIONS RESISTING UPLIFT LOADS - 150 MPH WIND EXP "C"

WFCM 2015 TABLE 3.2C

BOTTOM PLATE TO FOUNDATION ANCHOR BOLT CONNECTION RESISTING	FOUNDATION SUPPORTING	MAXIMUM ANCHOR BOLT SPACING (INCHES)	
		8' END ZONES	INTERIOR ZONES
UPLIFT LOADS	1 - 3 STORIES	25 INCHES ON CENTER	30 INCHES ON CENTER

NOTE: A MINIMUM OF ONE ANCHOR BOLT SHALL BE PROVIDED WITHIN 6 TO 12 INCHES OF EACH END OF EACH PLATE

TABLE S107.9 - SILL OR BOTTOM PLATE TO FOUNDATION CONNECTIONS RESISTING SHEAR LOADS - 150 MPH WIND EXP "C"

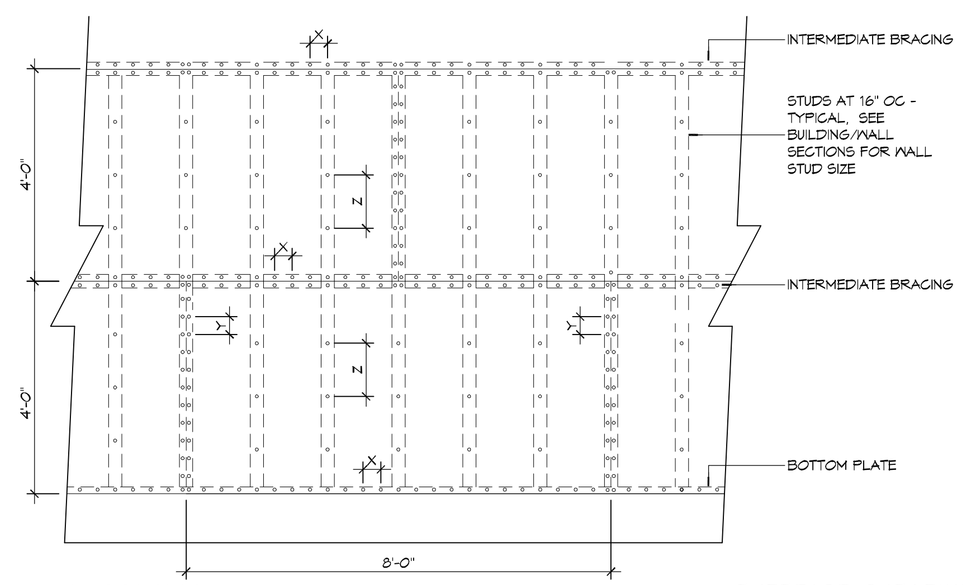
WFCM 2015 TABLE 3.2B

BOTTOM PLATE TO FOUNDATION ANCHOR BOLT CONNECTION RESISTING	FOUNDATION SUPPORTING	MAXIMUM ANCHOR BOLT SPACING (INCHES)	
			5/8" Ø ANCHOR BOLTS
UPLIFT LOADS	4 STORY		48 INCHES ON CENTER W/3X3X1/4" WASHER

TABLE S107.10 - FULL HEIGHT STUD REQUIREMENT FOR HEADERS OR WINDOW SILL PLATES IN EXTERIOR WALLS EXPOSURE "C"

WFCM 2015 TABLE 3.23C

	WALL SPACING (INCHES)		
	12" O.C.	16" O.C.	24" O.C.
HEADER SPAN (FEET)	NUMBER OF FULL HEIGHT STUD REQUIRED AT EACH END OF THE HEADER		
2	1	1	1
4	2	2	1
6	3	3	2
8	4	3	2



NAIL SPACING
X = 4" OC
Y = 4" OC
Z = 12" OC

X = PLATE EDGE NAIL SPACING
Y = LONG EDGE NAIL SPACING
Z = FIELD NAIL SPACING

INTERIOR SHEATHING
1/2"PLYWOOD EACH FACE STAGGERED 48" OC. W/8d NAILS @4"O.C. FASTENING @ PANEL EDGES 8d NAILS @12" O.C. FASTENING @ INTERMEDIATE MEMBERS.

EXTERIOR SHEATHING
5/8" DENSGLASS SHEATHING EXTERIOR FACE STAGGERED 48"O.C. FASTENING @PANEL EDGES. #10X1" TEK SCREWS @ 12"O.C. FASTENING @ INTERMEDIATE MEMBERS

H SHEAR WALL EXTERIOR SHEATHING NAILING PATTERN

TABLE S107.5 - JACK STUD REQ - INT LOADBEARING WALLS

HEADER SUPPORTING	HEADER SPAN (FT)	ROOF SPAN (FEET)											
		12 FEET				24 FEET				36 FEET			
		HEADER WIDTH											
		3"	4.5"	5"	6.5"	3"	4.5"	5"	6.5"	3"	4.5"	5"	6"
		NUMBER OF JACK STUDS REQUIRED AT EACH END OF THE HEADER											
ONE FLOOR ONLY (CENTER BEARING)	2	1	1	1	1	1	1	1	1	1	1	1	1
	4	1	1	1	1	1	1	1	1	1	1	1	1
	6	1	1	1	1	1	1	1	1	2	1	1	1
	8	1	1	1	1	2	1	1	1	2	2	2	1
	10	1	1	1	1	2	2	1	1	3	2	2	2
	12	1	1	1	1	2	2	2	1	3	2	2	2
	14	2	1	1	1	3	2	2	2	4	3	3	2
	16	2	2	1	1	3	2	2	2	4	3	3	2
TWO FLOORS (CENTER BEARING)	2	1	1	1	1	1	1	1	1	2	1	1	1
	4	1	1	1	1	2	1	1	1	3	2	2	2
	6	2	1	1	1	3	2	2	2	4	3	2	2
	8	2	2	1	1	3	2	2	2	5	3	3	3
	10	2	2	2	1	4	3	3	2	6	4	4	3
	12	3	2	2	2	5	3	3	3	7	5	4	4
	14	3	2	2	2	6	4	4	3	8	5	5	4
	16	4	3	2	2	6	4	4	3	9	6	6	5

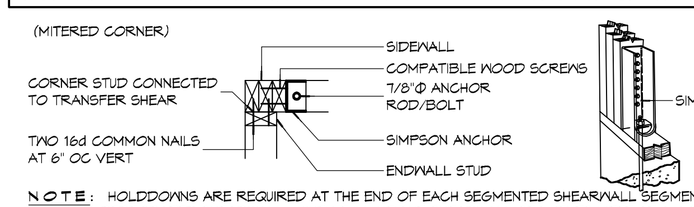
HEADER WIDTH - 3" (2-2x), 4.5" (3-2x), 5", 6.5" (4-2x) EACH W/ 1/2" PLYWOOD SPACER BETWEEN

TABLE S107.6 - JACK STUD REQ - EXTERIOR LOADBEARING WALLS

WFCM 2015 TABLE 3.22F

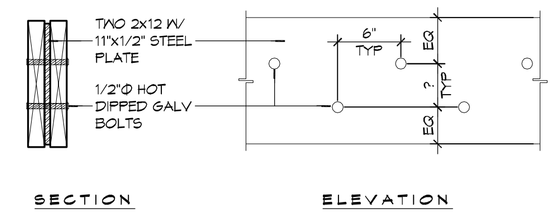
		ROOF LIVE LOAD 20 PSF				ROOF LIVE LOAD 30 PSF			
		3"	4.5"	5"	6.5"	3"	4.5"	5"	6.5"
		NUMBER OF JACK STUDS REQUIRED							
ROOF AND CEILING	2	1	1	1	1	1	1	1	1
	4	1	1	1	1	1	1	1	1
	6	2	1	1	1	2	1	1	1
	8	2	2	2	1	2	2	2	1
	10	3	2	2	2	3	2	2	2
	12	3	2	2	2	3	2	2	2
	14	4	3	2	2	4	3	2	2
	16	4	3	3	2	4	3	3	2
ROOF, CEILING, AND ONE CENTER BEARING FLOOR	2	1	1	1	1	1	1	1	1
	4	2	1	1	1	2	1	1	1
	6	2	2	2	1	3	2	2	2
	8	3	2	2	2	3	2	2	2
	10	4	3	2	2	4	3	3	2
	12	4	3	3	2	5	3	3	3
	14	5	4	3	3	5	4	3	3
	16	6	4	4	3	6	4	4	3

HEADER WIDTH - 3" (2-2x), 4.5" (3-2x), 5", 6.5" (4-2x) EACH W/ 1/2" PLYWOOD SPACER BETWEEN

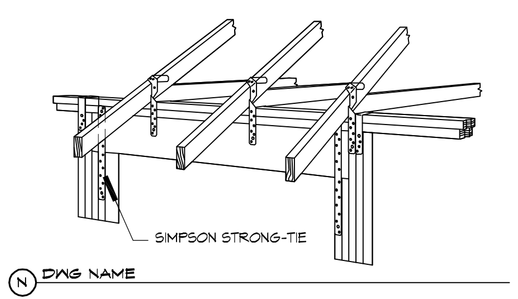


NOTE: HOLDDOWNS ARE REQUIRED AT THE END OF EACH SEGMENTED SHEARWALL SEGMENT OR AT THE EACH END OF A PERFORATED SHEARWALL. WHEN FULL HEIGHT SHEARWALL SEGMENTS MEET AT A CORNER, A SINGLE HOLDDOWN SHALL BE PERMITTED TO BE USED TO RESIST THE OVERTURNING FORCES IN BOTH DIRECTIONS WHEN THE CORNER FRAMING IN THE ADJOINING WALLS IS FASTENED TOGETHER TO TRANSFER THE UPLIFT LOAD.

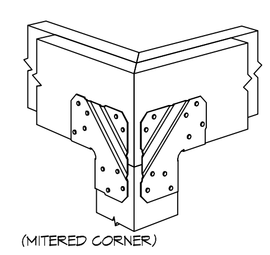
G CORNER HOLDDOWN



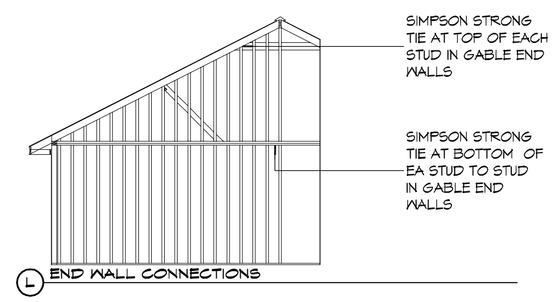
F FLITCH BEAM



N DWG NAME



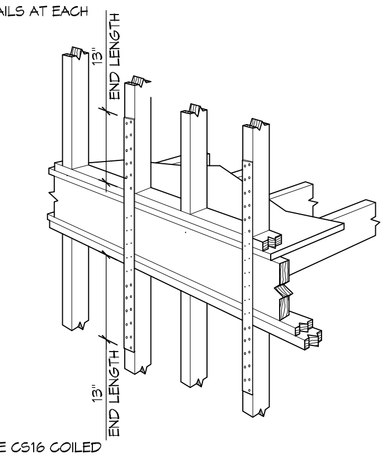
M POST TO BEAM



L END WALL CONNECTIONS

K SIMPSON MSTAM36

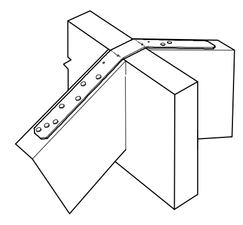
NOTE: SPACE NAILS AT EACH NAIL HOLE



SIMPSON STRONG-TIE CS16 COILED STRAPS AT 32" OC

J NOT USED

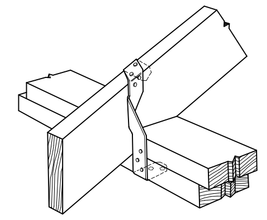
H FLOOR TO FLOOR



SIMPSON STRONG-TIE

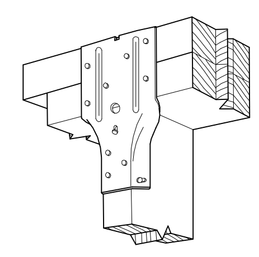
AT ALL RIDGE CONNECTIONS

G RIDGE BEAM/BOARD



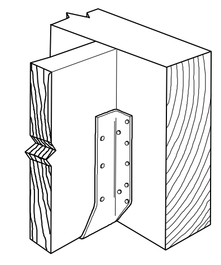
SIMPSON STRONG-TIE

F TOP PLATE TO RAFTER



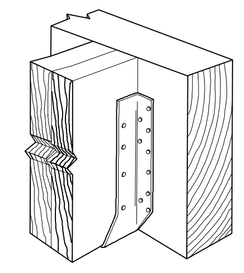
SIMPSON STRONG-TIE

E STUD TO TOP PLATE



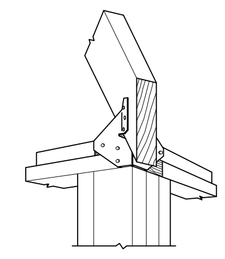
SIMPSON STRONG-TIE

D FLOOR JOIST



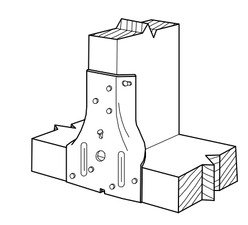
SIMPSON STRONG-TIE

C DBL FLOOR JOIST



SIMPSON STRONG-TIE

B HIP RAFTER



SIMPSON STRONG-TIE

A STUD TO SILL PLATE

1 S106 | S106 TYPICAL CONNECTION DETAILS

SCALE: NTS

TABLE S107.3 - NAILING SCHEDULE WFCM 2015 TABLE 3.1

DESCRIPTION	NUMBER OF COMMON NAILS	NUMBER OF BOX NAILS	SPACING
HEADER TO HEADER (FACE NAILED)	16d	16d	16" OC EDGES

TABLE S107.4 - BUILDING ENVELOPE REQUIREMENTS

OPAQUE ELEMENTS		ASSEMBLY MAXIMUM	INSULATION MIN. R-VALUE
ROOFS	INSULATION ENTIRELY ABOVE DECK	U-0.048	R-20.0 c.i.
	METAL BUILDING	U-0.065	R-19
	ATTIC AND OTHER	U-0.027	R-38
WALLS, ABOVE GRADE	MASS	U-0.151	R-5.7 c.i.
	METAL BUILDING	U-0.113	R-13.0
	STEEL-FRAMED	U-0.124	R-13.0
	WOOD-FRAMED AND OTHER	U-0.089	R-13.0
FLOORS	MASS	U-0.107	R6-3 c.i.
	STEEL JOIST	U-0.052	R-19.0
	WOOD FRAMED AND OTHER	U-0.051	R-19.0
SLAB-ON-GRADE	UN-HEATED	F-0.730	NR
OPAQUE DOORS	SWINGING	U-0.700	NR
	NON-SWINGING	U-1.450	NR

ROOF UNDERLAYMENT NOTES

1. FOR ROOF SLOPES FROM TWO UNITS VERTICAL IN 12 UNITS HORIZONTAL (17-PERCENT SLOPE), UP TO FOUR UNITS VERTICAL IN 12 UNITS HORIZONTAL (33-PERCENT SLOPE), UNDERLAYMENT SHALL BE TWO LAYERS APPLIED IN THE FOLLOWING MANNER:
   a. APPLY A 19 INCH STRIP OF UNDERLAYMENT FELT PARALLEL WITH AND STARTING AT THE EAVES, FASTENED SUFFICIENTLY TO HOLD IN PLACE. STARTING AT THE EAVE, APPLY 36 INCH WIDE SHEETS OF UNDERLAYMENT, OVERLAPPING SUCCESSIVE SHEETS 19 INCHES, AND FASTENED SUFFICIENTLY TO HOLD IN PLACE.
2. FOR ROOF SLOPES OF FOUR UNITS VERTICAL IN 12 UNITS HORIZONTAL (33-PERCENT SLOPE) OR GREATER, UNDERLAYMENT SHALL BE ONE LAYER APPLIED IN THE FOLLOWING MANNER:
   a. UNDERLAYMENT SHALL BE APPLIED SHINGLE FASHION, PARALLEL TO AND STARTING FROM THE EAVE AND LAPPED 2 INCHES, FASTENED SUFFICIENTLY TO HOLD IN PLACE. END LAPS SHALL BE OFFSET BY 6 FEET.

SHINGLE APPLICATION & FASTENING NOTES

1. ASPHALT STRIP SHINGLES SHALL HAVE A MINIMUM OF SIX FASTENERS PER SHINGLE WHERE THE ROOF IS IN ONE OF THE FOLLOWING CATEGORIES:
   a. THE BASIC WIND SPEED IS 110 MPH OR GREATER AND THE EAVE IS 20 FEET OR HIGHER ABOVE GRADE.
   b. THE BASIC WIND SPEED IS 120 MPH OR GREATER.
   c. SPECIAL WIND ZONES.

METAL ROOF APPLICATION & FASTENING NOTES

1. INSTALL METAL ROOF PER MANUFACTURES RECOMMENDATIONS FOR 150MPH WIND SPEED.

GENERAL UPLIFT CONNECTION NOTES

ROOF ASSEMBLY TO WALL ASSEMBLY:
UPLIFT CONNECTIONS SHALL BE FROM RAFTER OR TRUSS TO WALL STUD. WHEN RAFTERS OR TRUSSES ARE NOT LOCATED DIRECTLY ABOVE STUDS, RAFTERS SHALL BE ATTACHED TO THE WALL PLATE AND THE WALL TOP PLATE SHALL BE ATTACHED TO THE WALL STUD WITH UPLIFT CONNECTIONS. UPLIFT CONNECTIONS SHALL BE IN ACCORDANCE WITH TABLE S106.10.

WALL ASSEMBLY TO WALL ASSEMBLY:
STORY TO STORY UPLIFT CONNECTIONS FROM UPPER STORY WALL STUD TO LOWER STORY WALL STUD. WHEN UPPER STORY WALL STUDS ARE NOT LOCATED DIRECTLY ABOVE LOWER WALL STUDS, THE STUDS SHALL BE ATTACHED TO A COMMON MEMBER IN THE FLOOR ASSEMBLY BY UPLIFT CONNECTIONS. UPLIFT CONNECTIONS SHALL BE IN ACCORDANCE WITH TABLE S106.11.

WALL ASSEMBLY TO FOUNDATION:
FIRST FLOOR WALL STUDS SHALL BE CONNECTED TO THE FOUNDATION, SILL, PLATE, OR BOTTOM PLATE. A MINIMUM OF A 1-1/4" x 20 GA. ASTM A653 GRADE 33 STEEL STRAP SHALL BE NAILED TO THE WALL STUDS AND HAVE A MINIMUM EMBEDMENT OF 7 INCHES IN CONCRETE FOUNDATIONS AND SLABS-ON-GRADE, 15 INCHES IN MASONRY BLOCK FOUNDATIONS, OR BE LAPPED UNDER THE BOTTOM PLATE, 3 INCH SQUARE WASHERS SHALL BE USED ON THE ANCHOR BOLTS AND ANCHOR BOLT SPACINGS SHALL NOT EXCEED THE REQUIREMENTS. STEEL STRAPS EMBEDDED IN OR IN CONTACT WITH SLAB-ON-GRADE OR MASONRY BLOCK FOUNDATIONS SHALL BE HOT-DIPPED GALV. AFTER FABRICATION, OR MANUF. FROM G185 OR Z450 GALV. STL. CONNECTIONS SHALL BE IN ACCORDANCE WITH TABLE S106.12.

TABLE S107.1 - ROOF SHEATHING OR CLADDING REQUIREMENT - WIND LOAD EXP "C"

SHEATHING LOCATION	RAFTER / TRUSS SPACING	E	F
		MAX NAIL SPACING FOR 8d COMMON NAILS OR 10d BOX NAILS (INCHES OC)	
INTERIOR ZONE	12" OC	6	12
	16" OC	6	12
	24" OC	6	6
PERIMETER EDGE ZONE	12" OC	6	6
	16" OC	4	4
	24" OC	3	3

150 MPH WIND - EXPOSURE "C" TYPICAL
E = NAIL SPACING AT PANEL EDGES, INCHES.
F = NAIL SPACING AT INTERMEDIATE SUPPORTS IN THE PANEL FIELD, INCHES.

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#	DESCRIPTION	DATE

REVISIONS

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JOB No: 22165 | DATE: APRIL, 2016
DRAWN BY: DD/KJK | CHECKED BY: BAM

SHEET TITLE:
TYPICAL CONNECTION DETAILS, SCHEDULES, AND NOTES

DRAWING NUMBER:
S106

SHEET No: 16 of 52