TABLE S103.10 - UPLIFT CONNECTIONS - 130 MPH WINDS EXP "C"

CONNECTION	FRAMING SPACING (INCHES)	ROOF SPAN (FEET)	U	L	S	NUMBER OF 8d COMMON NAILS OR 10d BOX NAILS IN EACH END OF 1 1/4"x20 GA STRAP
ROOF ASSEMBLY TO WALL ASSEMBLY	16" OC	17	386	246	109R	4
WALL ASSEMBLY TO WALL ASSEMBLY	16" OC	17	386	246	109R	4
HEADER TO HEADER (FACE NAILED)	16" OC	17	170	185	436	4

TABLE S103.11 - SILL OR BOTTOM PLATE TO FOUNDATION CONNECTIONS RESISTING UPLIFT LOADS - 130 MPH WIND EXP "B"

BOTTOM PLATE TO FOUNDATION ANCHOR BOLT CONNECTION RESISTING	FOUNDATION SUPPORTING	MAXIMUM ANCHOR BOLT SPACING	
		8' END ZONES	INTERIOR ZONES
UPLIFT LOADS	1 - 3 STORIES	28	33

TABLE S103.12 - SILL OR BOTTOM PLATE TO FOUNDATION CONNECTIONS RESISTING SHEAR LOADS - 130 MPH WIND EXP "B"

BOTTOM PLATE TO FOUNDATION ANCHOR BOLT CONNECTION RESISTING	FOUNDATION SUPPORTING	MAXIMUM ANCHOR BOLT SPACING (INCHES)	
		1/2" Φ ANCHOR BOLTS	5/8" Φ ANCHOR BOLTS
UPLIFT LOADS	1 - 3 STORIES	30	45

TABLE S103.9 - JACK STUD REQ - INTR LOADBEARING WALLS

HEADER SUPPORTING	HEADER SPAN (FT)	ROOF SPAN (FEET) 12 FEET				24 FEET				36 FEET			
		3"	4.5"	5"	6.5"	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	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	2	2	2	1
	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	1	1	1	3	2	2	2	4	3	3	2
ROOF, CEILING, AND ONE CENTER BEARING FLOOR	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	3	2
	8	2	2	1	1	3	2	2	2	5	3	3	3
	10	2	2	2	1	4	3	3	3	6	4	4	3
	12	3	2	2	2	5	3	3	3	7	5	4	4
	14	3	2	2	2	5	4	3	3	8	5	5	4
	16	4	3	2	2	6	4	4	3	9	6	5	5

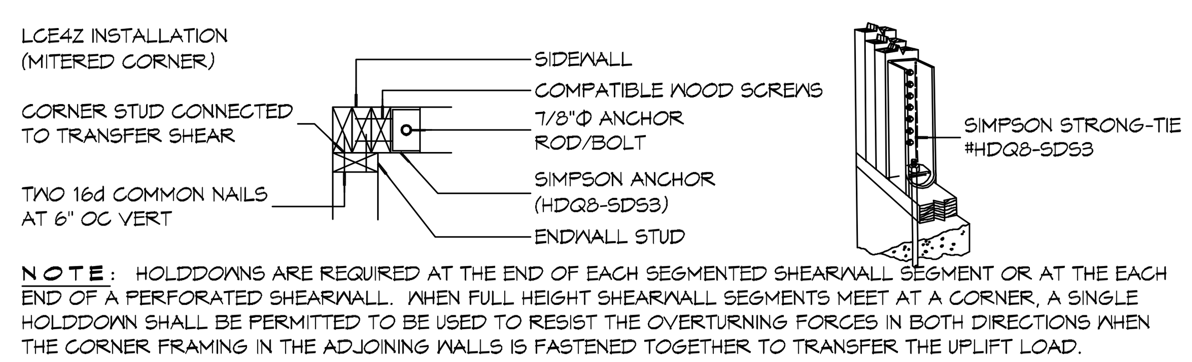
HEADER WIDTH - 3" (2-2x), 4.5" (3-2x), 5", 6.5" (4-2x) EACH W/ 1/2" PLYWOOD SPACER BETWEEN

TABLE S103.8 - THERMAL COMPONENT CRITERIA (U-VALUE FACTOR & R-VALUE

MAXIMUM GLAZING U-FACTOR	MINIMUM INSULATION R-VALUE CEILINGS	WALLS	FLOORS	BASEMENT WALLS	CRAWL SPACE WALLS
.75	R-26	R-13	R-11	R-5	R-5

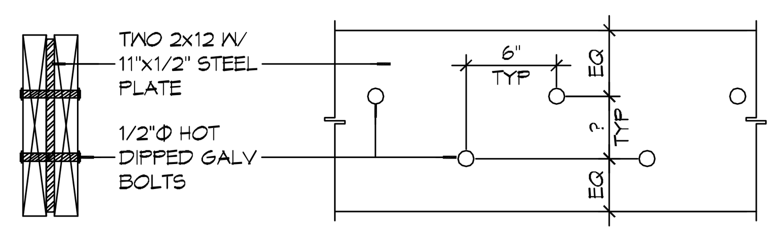
DESIGN CRITERIA

THE CONSTRUCTION FOR SAID RESIDENCE, WHERE BASIC WIND SPEED IS 130 MILES PER HOUR, WIND EXPOSURE ZONE C, IS DESIGNED IN ACCORDANCE WITH: AMERICAN FOREST AND PAPER ASSOCIATION (AF&PA) WOOD FRAME CONSTRUCTION MANUAL FOR ONE AND TWO FAMILY DWELLINGS (WFCM) 2001 EDITION AS WELL AS THE INTERNATIONAL RESIDENTIAL CODE (IRC) 2012 EDITION.

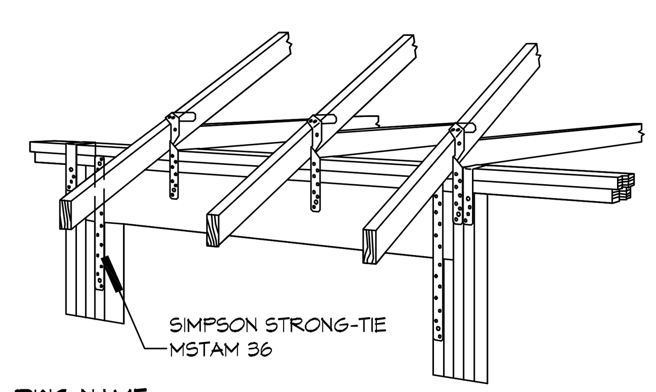


NOTE: HOLDDOWNS ARE REQUIRED AT THE END OF EACH SEGMENTED SHEARWALL SEGMENT OR AT THE EACH END OF A PERFORATED SHEARWALL. WHEN FULL HEIGHT SHEARWALL SEGMENTS MEET AT A CORNER, A SINGLE HOLDDOWN SHALL BE PERMITTED TO BE USED TO RESIST THE OVERTURNING FORCES IN BOTH DIRECTIONS WHEN THE CORNER FRAMING IN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

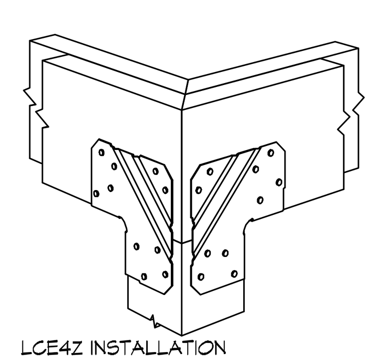
(P) CORNER HOLDDOWN



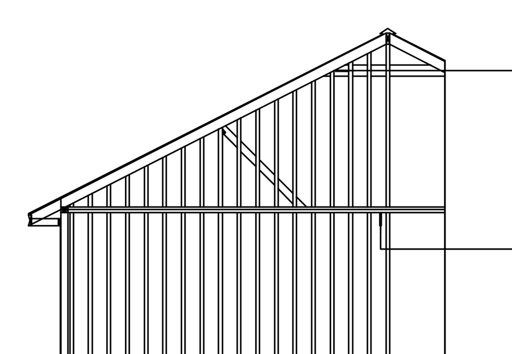
(N) FLITCH BEAM



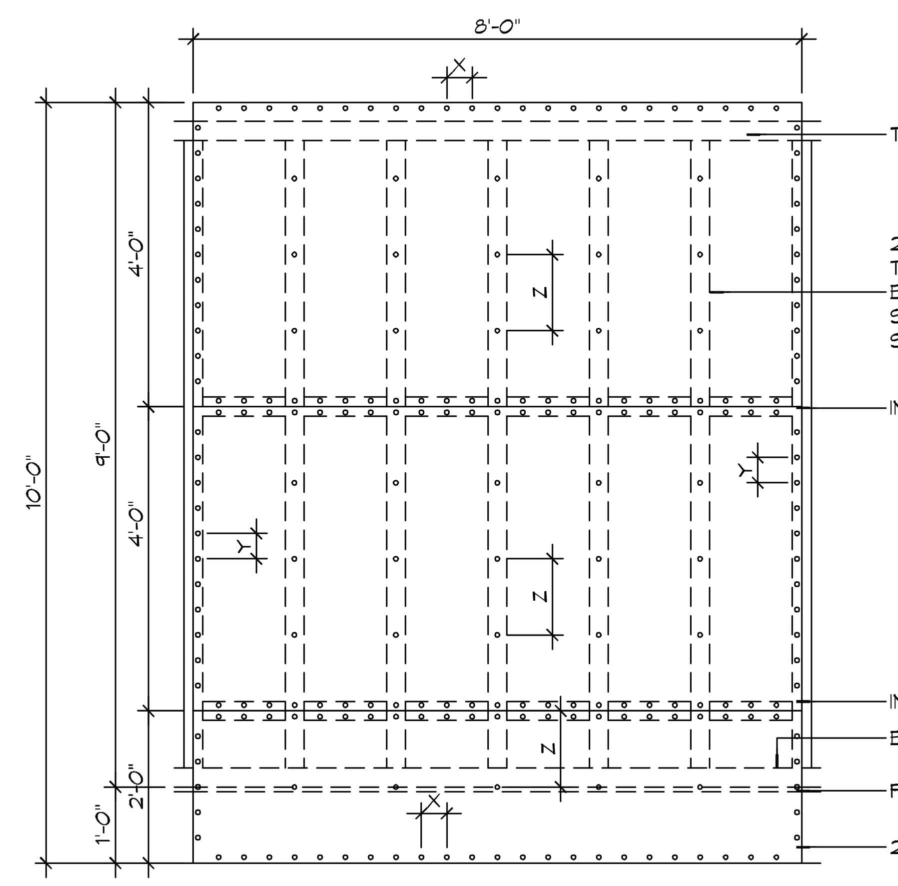
(M) DWG NAME



(L) POST TO BEAM



(K) END WALL CONNECTIONS

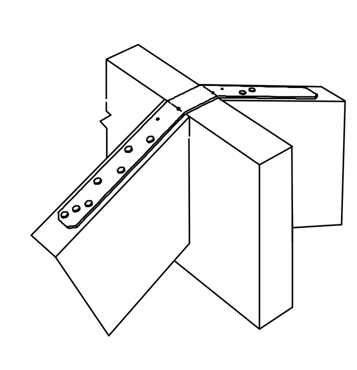


NAIL SPACING
X = 4" OC
Y = 4" OC
Z = 12" OC

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

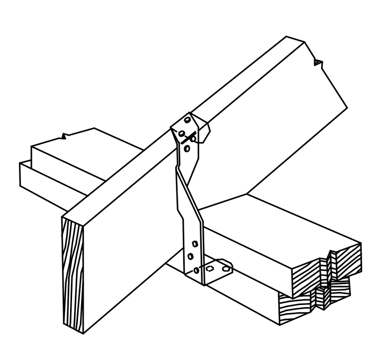
(J) EXTERIOR SHEATHING NAILING PATTERN

(H) SIMPSON MSTAM36



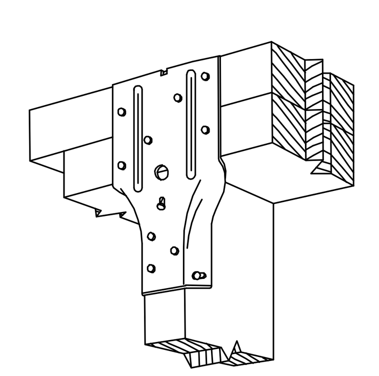
SIMPSON STRONG-TIE LSTA18
AT ALL RIDGE CONNECTIONS

(G) RIDGE BEAM/BOARD



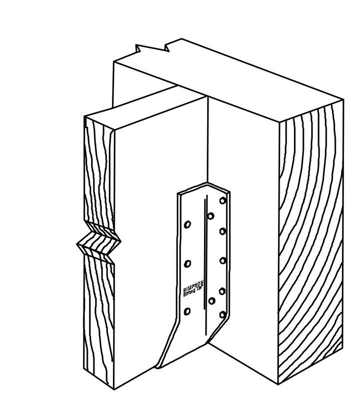
SIMPSON STRONG-TIE #LTS16

(F) TOP PLATE TO RAFTER



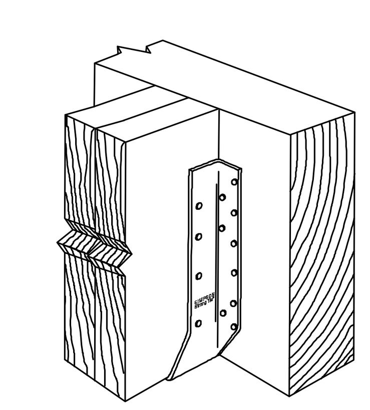
SIMPSON STRONG-TIE #SP2

(E) STUD TO TOP PLATE



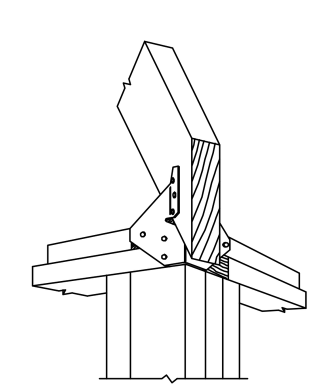
SIMPSON STRONG-TIE HU212 JOIST HANGER

(D) FLOOR JOIST



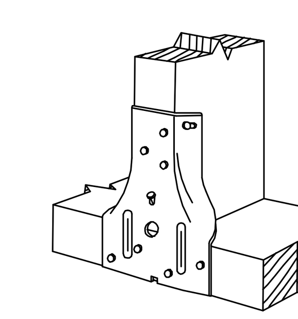
SIMPSON STRONG-TIE HUS212-2 JOIST HANGER

(C) DBL FLOOR JOIST



SIMPSON STRONG-TIE #HCP2

(B) HIP RAFTER



SIMPSON STRONG-TIE #SP1

(A) STUD TO SILL PLATE

1 S103 S103 TYPICAL CONNECTION DETAILS SCALE: NTS

TABLE S103.3 - HEADER SPANS - INTERIOR LOADBEARING WALLS

HEADER SUPPORTING	SIZE	OPENING WIDTH (FT) 12	24	36
		SPAN (FT - IN)		
ONE FLOOR (CENTER BEARING)	(2) 2x4	4'-4"	3'-1"	2'-6"
	(2) 2x6	6'-5"	4'-6"	3'-8"
	(2) 2x8	8'-1"	5'-9"	4'-8"
	(2) 2x10	9'-11"	7'-0"	5'-9"
	(2) 2x12	11'-6"	8'-1"	6'-7"
	(3) 2x8	10'-2"	7'-2"	5'-10"
	(3) 2x10	12'-5"	8'-9"	7'-2"
	(3) 2x12	14'-4"	10'-2"	8'-3"
	(4) 2x8	11'-6"	8'-3"	6'-9"
	(4) 2x10	14'-4"	10'-1"	8'-3"
	(4) 2x12	*	11'-9"	9'-7"
TWO FLOORS ONLY (CENTER BEARING)	(2) 2x4	2'-10"	2'-1"	1'-8"
	(2) 2x6	4'-2"	3'-1"	2'-6"
	(2) 2x8	5'-4"	3'-11"	3'-3"
	(2) 2x10	6'-6"	4'-9"	3'-11"
	(2) 2x12	7'-6"	5'-6"	4'-7"
	(3) 2x8	6'-8"	4'-10"	4'-0"
	(3) 2x10	8'-1"	6'-0"	4'-11"
	(3) 2x12	9'-5"	6'-11"	5'-9"
	(4) 2x8	7'-8"	5'-8"	4'-8"
	(4) 2x10	9'-4"	6'-10"	5'-8"
	(4) 2x12	10'-10"	8'-0"	6'-7"

MAXIMUM SPAN 16'-0"

TABLE S103.4 - ROOF SHEATHING OR CLADDING REQUIREMENT - WIND LOAD EXP "C"

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

130 MPH WIND - EXPOSURE "C" TYPICAL

TABLE S103.5 - WALL SHEATHING OR CLADDING REQUIREMENT - WIND LOAD EXP "C"

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

130 MPH WIND - EXPOSURE "C" TYPICAL

TABLE S103.6 - WINDBORNE DEBRIS PROTECTION FASTENING SCHEDULE FOR WOOD STRUCTURAL PANELS

FASTENER TYPE	FASTENER SPACING PANEL SPAN ≤ 4'	4' PANEL SPAN ≤ 6'	6' PANEL SPAN ≤ 8'
2 1/2" #6 WOOD SCREWS	16"	12"	9"
2-1/2" #8 WOOD SCREWS	16"	16"	12"

WINDOWS IN BUILDINGS LOCATED IN WIND BORNE DEBRIS REGIONS SHALL HAVE GLAZED OPENINGS PROTECTED FROM WINDBORNE DEBRIS. WOOD STRUCTURAL PANELS WITH A MIN. THICKNESS OF 7/16" AND A MAX. SPAN OF 8 FEET SHALL BE PERMITTED FOR OPENING PROTECTION IN ONE AND TWO STORY BUILDINGS. PANELS SHALL BE PRECUT TO COVER THE GLAZED OPENINGS WITH ATTACHMENT HARDWARE PROVIDED.

TABLE S103.7 - HEADER NAILING SCHEDULE

DESCRIPTION	NUMBER OF COMMON NAILS	NUMBER OF BOX NAILS	SPACING
HEADER TO HEADER (FACE NAILED)	8d	10d	6" OC EDGES 12" OC FIELD

ROOF UNDERLAYMENT

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.

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 S103.10.

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 S103.11.

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 S103.12.

TABLE S103.1 - HEADER SPANS - EXPOSURE "C" FOR EXTERIOR LOADBEARING WALLS

HEADER SIZE	SPAN	NUMBER FULL HEIGHT STUDS REQ AT EA END
(2) 2x4	4'-7"	TWO
(2) 2x6	5'-6"	TWO
(2) 2x8	6'-1"	THREE
(2) 2x10	6'-8"	THREE
(2) 2x12	7'-1"	THREE
(3) 2x8	7'-5"	THREE
(3) 2x10	8'-3"	THREE
(3) 2x12	8'-7"	THREE
(4) 2x8	9'-6"	THREE
(4) 2x12	10'-0"	FOUR

130 MPH WIND - EXPOSURE "C" (TYPICAL) EACH W/1/2" PLYWOOD SPACER BETWEEN

NOTE:
1. BUILDING WIDTH IS MEASURE PERPENDICULAR TO THE RIDGE. FIR WIDTHS BETWEEN THOSE SHOWN, SPANS ARE PERMITTED TO BE INTERPOLATED.
2. ALL HEADERS SHALL HAVE SOLID BLOCKING.

TABLE S103.2 - JACK STUD REQ - EXPOSURE "C" FOR EXT LOADBEARING WALLS

HEADER SUPPORTING	HEADER SPAN (FT)	HEADER WIDTH 3"	4.5"	5"	6.5"
		# JACK STUDS REQUIRED			
ROOF AND CEILING	2	1	1	1	1
	4	1	1	1	1
	6	2	1	2	2
	8	2	2	2	2
	10	3	2	2	2
	12	3	2	2	2
	14	4	3	2	2
	16	4	3	3	2
ROOF, CEILING, AND ONE CENTER BEARING FLOOR	2	1	1	1	1
	4	2	1	1	1
	6	2	2	2	1
	8	3	2	2	3
	10	4	3	2	2
	12	4	3	3	2
	14	5	3	3	3
	16	5	4	3	3

HEADER WIDTHS (2-2x), 4.5" (3-2x), 5", 6.5" (4-2x) EACH WITH 12" PLYWOOD SPACER BETWEEN

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REVISIONS #	DESCRIPTION	DATE

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JOB No: 2274	DATE: 05/12/2016
DRAWN BY: JTL	CHECKED BY: BAM

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SHEET TITLE: TYPICAL CONNECTION DETAILS, SCHEDULES, AND NOTES

DRAWING NUMBER: S103