

**TABLE S601.7 - UPLIFT CONNECTIONS - 140 MPH WINDS EXP "C"**  
NFCM 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" X 20 GAGE STRAP
ROOF ASSEMBLY TO WALL ASSEMBLY	16" OC	16	40T	292	152R	4
WALL ASSEMBLY TO FOUNDATION	16" OC	16	224	219	436	4

**TABLE S601.8 - SILL OR BOTTOM PLATE TO FOUNDATION CONNECTIONS RESISTING UPLIFT LOADS - 140 MPH WIND EXP "C"**  
NFCM 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

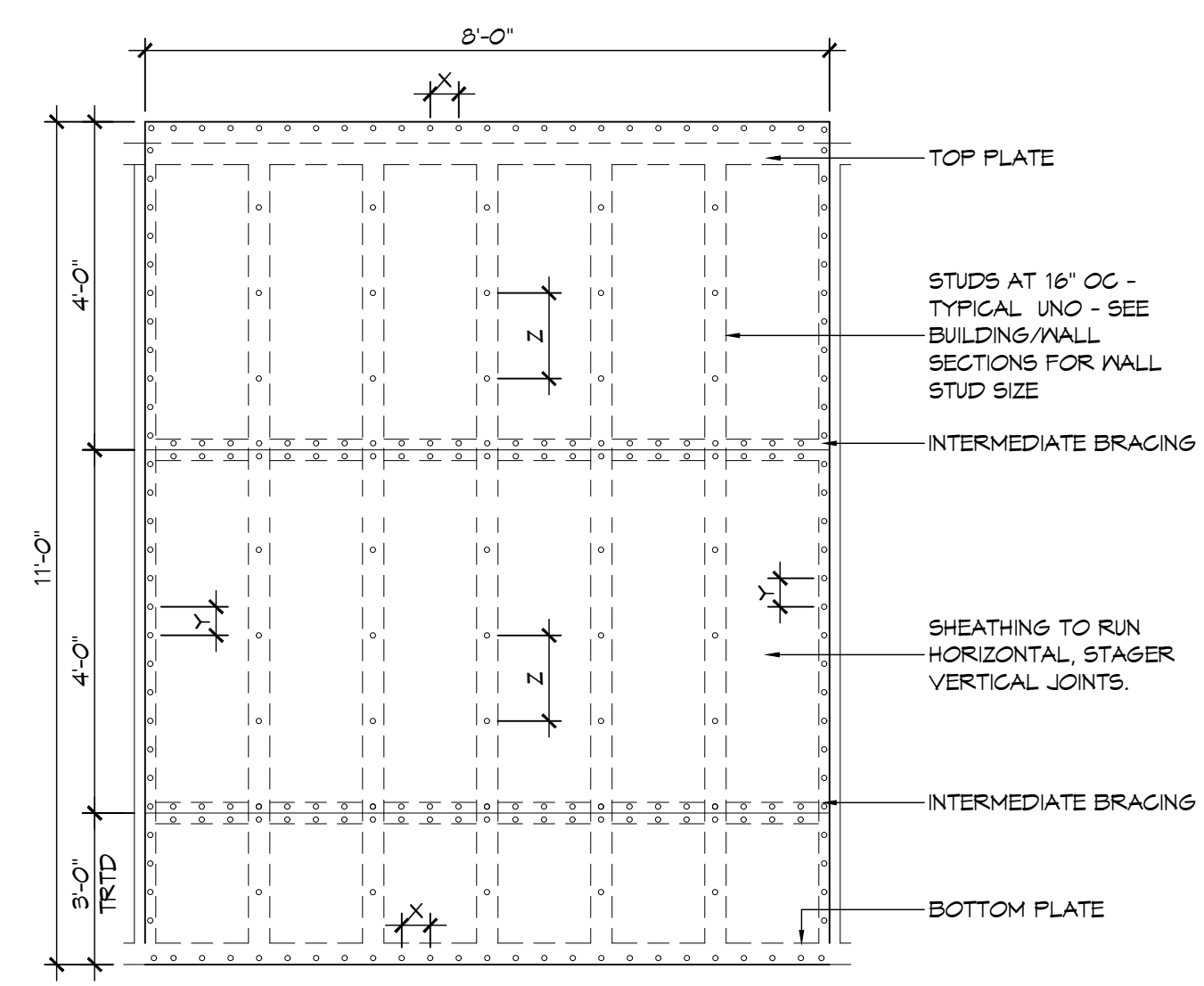
NOTE: A MINIMUM OF ONE ANCHOR BOLT SHALL BE PROVIDED WITHIN 6 TO 12 INCHES OF EACH END OF EACH PLATE

**TABLE S601.9 - SILL OR BOTTOM PLATE TO FOUNDATION CONNECTIONS RESISTING SHEAR LOADS - 140 MPH WIND EXP "C"**  
NFCM 2015 TABLE 3.2B

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

**TABLE S601.10 - FULL HEIGHT STUD REQUIREMENT FOR HEADERS OR WINDOW SILL PLATES IN EXTERIOR WALLS EXPOSURE "C"**  
NFCM 2015 TABLE 3.23C

HEADER SPAN (FEET)	WALL SPACING (INCHES)		
	12" O.C.	16" O.C.	24" O.C.
2	1	1	1
4	2	2	1
6	3	3	2
8	4	3	2



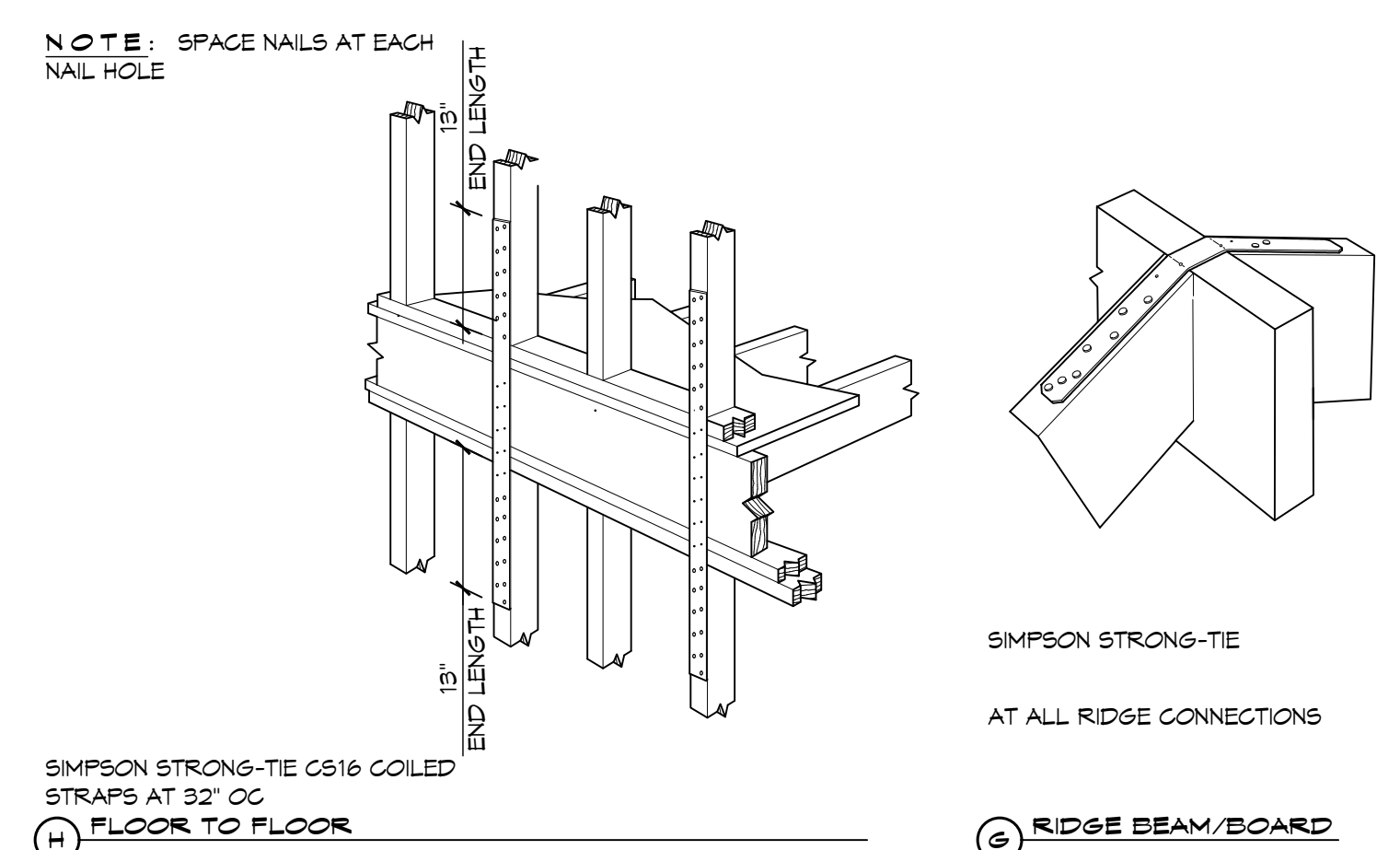
**NAIL SPACING**  
X = 4" OC  
Y = 4" OC  
Z = 12" OC

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**  
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.

**(H) SHEAR WALL EXTERIOR SHEATHING NAILING PATTERN**



**(H) FLOOR TO FLOOR (I) RIDGE BEAM/BOARD (J) TOP PLATE TO RAFTER (K) STUD TO TOP PLATE (L) FLOOR JOIST (M) DEL FLOOR JOIST (N) HIP RAFTER (O) STUD TO SILL PLATE**

**TYPICAL CONNECTION DETAILS**  
SCALE: NTS

**TABLE S601.5 - JACK STUD REQ - INT LOADBEARING WALLS**

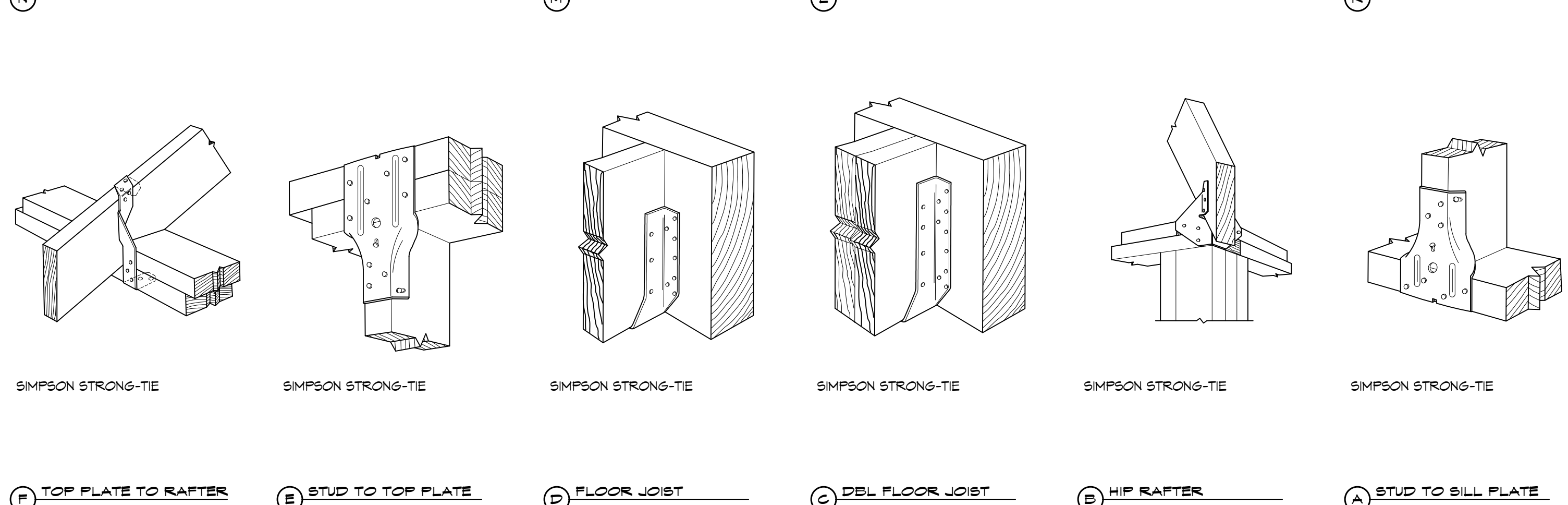
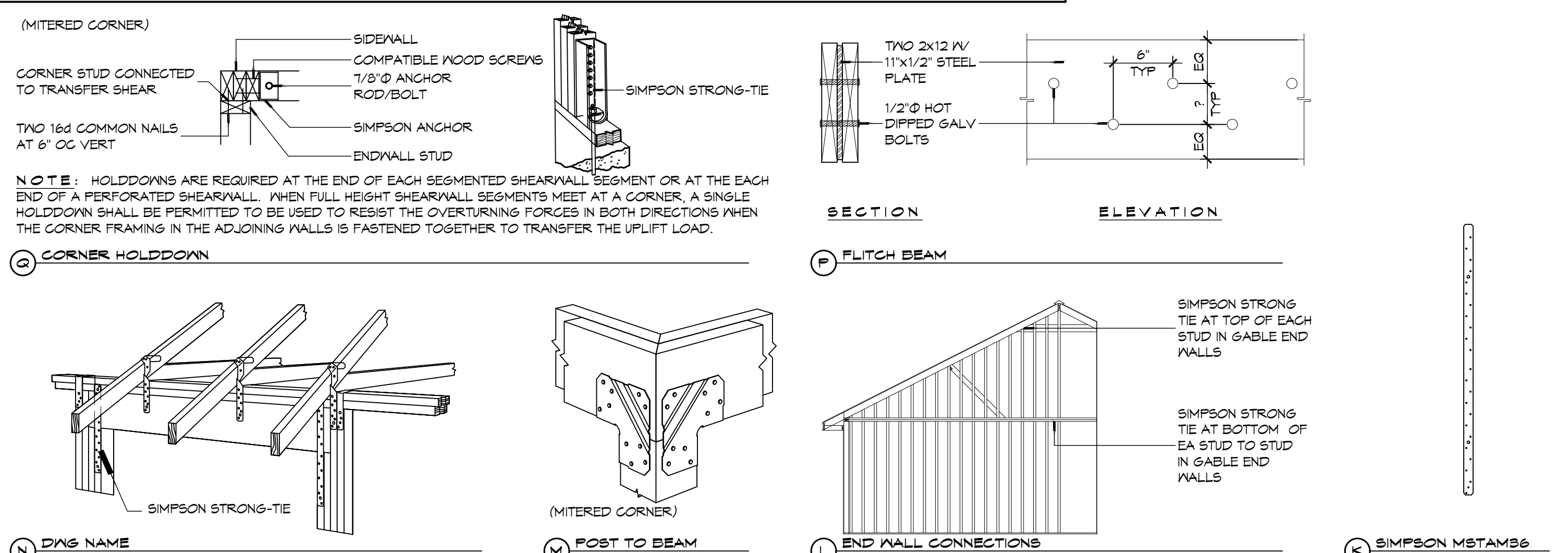
HEADER SUPPORTING	HEADER SPAN (FT)	ROOF SPAN (FEET)											
		12 FEET				24 FEET				36 FEET			
		3"	4.5"	5"	6.5"	3"	4.5"	5"	6.5"	3"	4.5"	5"	6"
ONE FLOOR ONLY (CENTER BEARING)	2	1	1	1	1	1	1	1	1	1	1	1	1
	4	1	1	1	1	1	1	1	1	1	1	1	1
	6	1	1	1	1	1	1	1	1	2	1	1	1
	8	1	1	1	1	2	1	1	1	2	2	2	1
	10	1	1	1	1	2	2	1	1	3	2	2	2
	12	1	1	1	1	2	2	2	1	3	2	2	2
TWO FLOORS (CENTER BEARING)	2	2	2	1	1	3	2	2	2	4	3	3	2
	4	1	1	1	1	1	1	1	1	2	1	1	1
	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

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

**TABLE S601.6 - JACK STUD REQ - EXTERIOR LOADBEARING WALLS**  
NFCM 2015 TABLE 3.22F

ROOF AND CEILING	HEADER SPAN (FT)	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	1
	4	1	1	1	1	1	1	1	1	1
	6	2	1	1	1	2	1	1	1	1
	8	2	2	2	1	2	2	2	1	1
	10	3	2	2	2	3	2	2	2	2
	12	3	2	2	2	3	2	2	2	2
ROOF, CEILING, AND ONE CENTER BEARING FLOOR	2	1	1	1	1	1	1	1	1	1
	4	2	1	1	1	2	1	1	1	1
	6	2	2	2	1	3	2	2	2	2
	8	3	2	2	2	3	2	2	2	2
	10	4	3	2	2	4	3	3	2	2
	12	4	3	3	2	5	3	3	3	3

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



**(N) POST TO BEAM (O) RIDGE BEAM/BOARD (P) TOP PLATE TO RAFTER (Q) STUD TO TOP PLATE (R) FLOOR JOIST (S) DEL FLOOR JOIST (T) HIP RAFTER (U) STUD TO SILL PLATE**

**TABLE S601.3 - NAILING SCHEDULE**  
NFCM TABLE 3.1

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

**TABLE S601.4 - BUILDING ENVELOPE REQUIREMENTS**

ROOFS	OPAQUE ELEMENTS	ASSEMBLY MAXIMUM	INSULATION MIN. R-VALUE
ROOFS	INSULATION ENTIRELY ABOVE DECK	U-0.040	R-20.0 c.i.
	METAL BUILDING	U-0.065	R-19
	ATTIC AND OTHER	U-0.027	R-30
WALLS, ABOVE GRADE	MASS	U-0.151	R-5.7 c.i.
	METAL BUILDING	U-0.113	R-19.0
	STEEL-FRAMED	U-0.124	R-19.0
FLOORS	WOOD-FRAMED AND OTHER	U-0.089	R-19.0
	MASS	U-0.107	R6-3 c.i.
	STEEL JOIST	U-0.052	R-19.0
SLAB-ON-GRADE	WOOD FRAMED AND OTHER	U-0.051	R-19.0
	UN-HEATED	F-0.750	NR
OPAQUE DOORS	SWINGING	U-0.700	NR
	NON-SWINGING	U-1.450	NR

**ROOF UNDERLAYMENT NOTES**

- 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:
  - APPLY A 14 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 14 INCHES, AND FASTENED SUFFICIENTLY TO HOLD IN PLACE.
- 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:
  - 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**

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

**METAL ROOF APPLICATION & FASTENING NOTES**

- INSTALL METAL ROOF PER MANUFACTURES RECOMMENDATIONS FOR 140MPH 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 S601.10.

**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 S601.11.

**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 S601.12.

**TABLE S601.1 - ROOF SHEATHING ATTACHMENT REQUIREMENT - WIND LOAD EXP "C"**

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

**TABLE S601.1 - WALL SHEATHING AND CLADDING REQUIREMENT - WIND LOAD EXP "C"**

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

**TABLE S601.1 - WALL SHEATHING AND CLADDING REQUIREMENT - WIND LOAD EXP "C"**

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

140 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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DRAWN BY: DD/KJK  
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SHEET TITLE: TYPICAL CONNECTION DETAILS, SCHEDULES, AND NOTES  
DRAWING NUMBER: **S104**  
SHEET No: 5 of 7