



City of Milpitas

Office of Building Safety

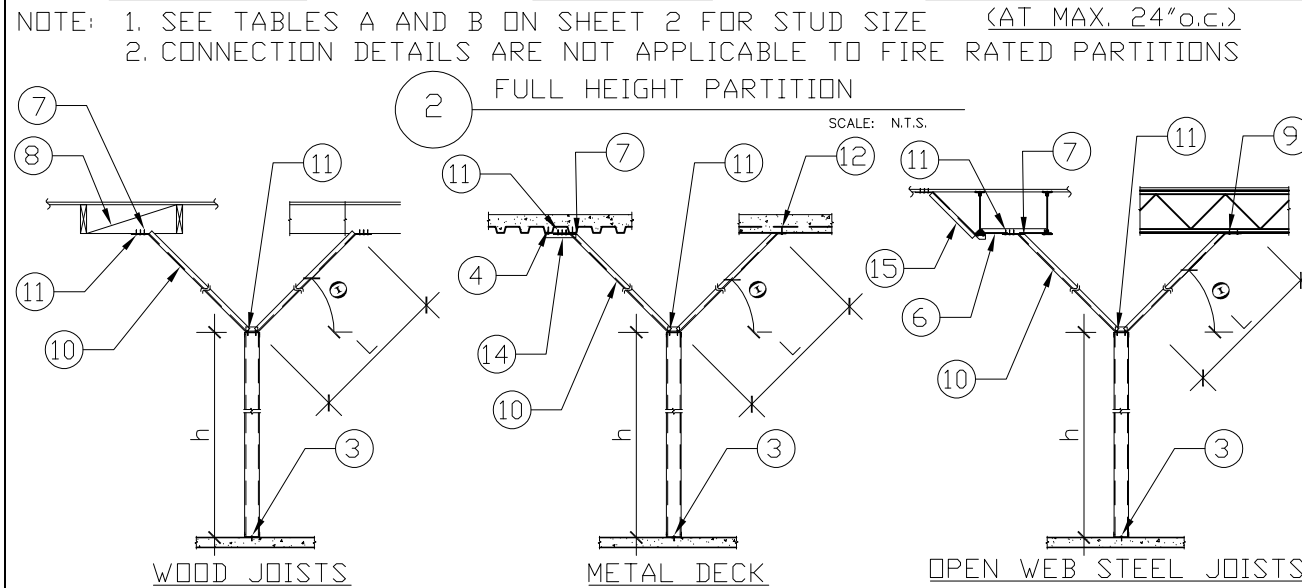
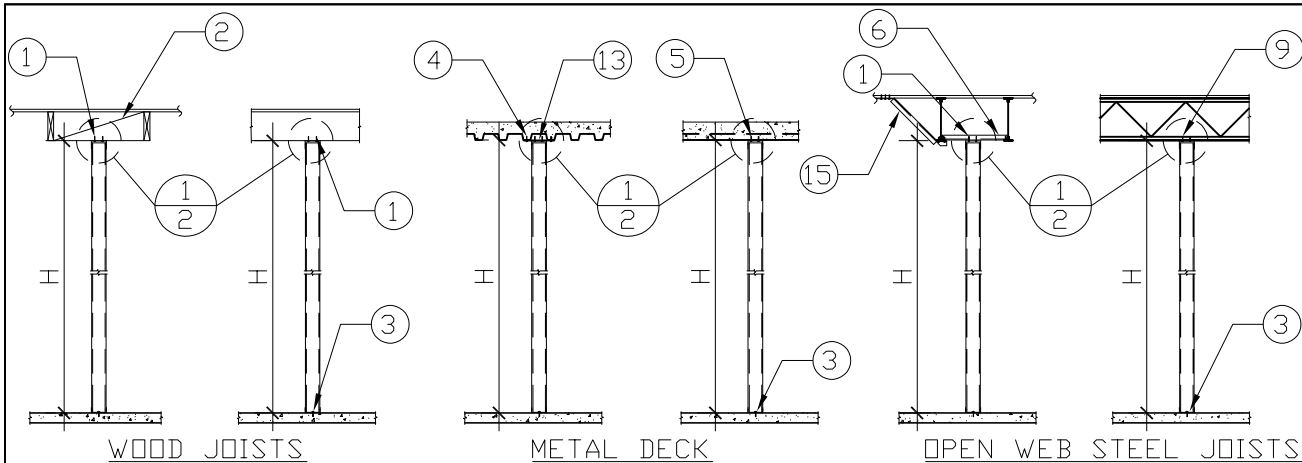
DESIGN GUIDELINE FOR INTERIOR NON-BEARING PARTITIONS



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Milpitas, CA 95035
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FEBRUARY 2023

BASED ON
2022 CALIFORNIA CODES



- NOTES:
- (2)-#8 S.M.S. FOR METAL STUDS @ 24" o.c. OR DEFLECTION CLIP AT WOOD STUDS (SEE TABLE D).
 - 2x BLKG. @ 24"o.c.
 - (1)-P.A.F. @ 16"o.c. FOR H≤14'-0" ELSE (1) CONCRETE SCREW ANCHOR @ 48"o.c. MAX. (USE (2)-16d @ 24" o.c. INTO BLOCKING OR JOIST AT WOOD FLOOR)
 - (1)-P.A.F. FOR H≤20'-0" ELSE CONCRETE SCREW ANCHOR (USE (2)-#8 S.M.S. AT ROOF DECK) AT EA. END
 - P.A.F. @ 16" o.c. FOR H≤20'-0" ELSE (1) CONCRETE SCREW ANCHOR @ 48"o.c. MAX. (USE (2)-#8 S.M.S. @ 12" o.c. AT ROOF DECK)
 - 362S137-33 BLKG. @ 24"o.c. WITH (2)-P.A.F. AT EA. END @ 2-1/2" o.c.
 - CUT FLANGE, BEND WEB AT EA. END
 - 2x BLKG.
 - (2)-P.A.F. @ 2-1/2" o.c.
 - DIAGONAL BRACE @ 4'-0" o.c. STAGG. IN EA. DIRECTION
 - (4)-#8 S.M.S. OR (2)-#8 WOOD SCREW @ 1" o.c.
 - (1)-CONCRETE SCREW ANCHOR
 - 18GA x 3"WIDE METAL STRAP @ 24"o.c. SEE NOTE 4 FOR DECK ATTACHMENT.
 - 362S137-33 BLKG. @ EA. BRACE. SEE NOTE 4 FOR DECK ATTACHMENT.
 - 362S137-33 BRACE. @ 24" o.c. WITH (1) CONCRETE SCREW ANCHOR (USE (2)-#8 S.M.S. AT ROOF DECK) AND (2)-P.A.F @ 2-1/2" o.c. AT TRUSS JOISTS

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INTERIOR NON-BEARING PARTITION
SAMPLE DETAILS

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TABLE A - VERTICAL STUDS

WOOD STUD		METAL STUD	
MAX. H	MIN. STUD SIZE	MAX. H	MIN. STUD SIZE
12'-0"	2x4 @ 16" o.c.	16'-0"	362S137-33 (3-5/8"x1-3/8"x20 ga) @ 16" o.c.
20'-0"	2x6 @ 16" o.c.	20'-0"	400S162-33 (4"x1-5/8"x20 ga) @ 16" o.c.
-	-	30'-0"	600S162-43 (6"x1-5/8"x18 ga) @ 16" o.c.

TABLE A NOTES:

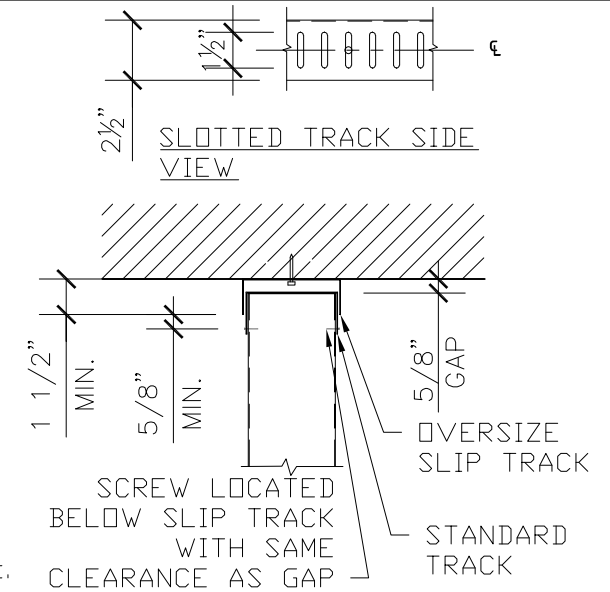
- ALL WOOD STUDS SHALL BE MIN. DOUGLAS FIR-LARCH STUD GRADE AND BLOCKED 8'-0" o.c. SILL SHALL BE 2X.
- TOP AND BOTTOM TRACK AND OVERSIZE SLIP TRACK SHALL MATCH THE GAGE OF VERTICAL METAL STUD. FLANGE WIDTH OF OVERSIZE SLIP TRACK SHALL BE 1-1/2" MIN.

TABLE B - DIAGONAL BRACE

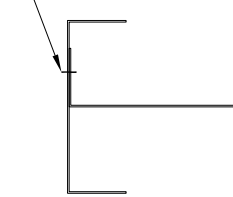
MAX. L	MIN. STUD SIZE	REMARK	MAX. h
8'-0"	(1)-362S137-33 (3-5/8"x1-3/8"x20 ga)	-	26'-0"
12'-0"	(1)-400S200-43 (4"x2"x18 ga)	-	30'-0"
13'-0"	(2)-400S162-33 (4"x1-5/8"x20 ga)	DET. A	30'-0"
20'-0"	(2)-400S162-33 (4"x1-5/8"x20 ga)	DET. B	12'-0"
20'-0"	(2)-400S162-54 (4"x1-5/8"x16 ga)	DET. B	30'-0"
27'-6"	(2)-600S162-33 (6"x1-5/8"x20 ga)	DET. B	10'-0"
27'-6"	(2)-600S162-54 (6"x1-5/8"x16 ga)	DET. B	28'-0"

TABLE B NOTE:

- BRACE ANGLE, θ , SHALL BE BETWEEN 30° MIN AND 60° MAX.

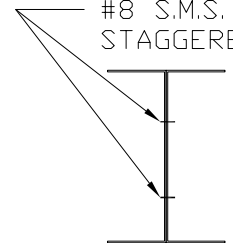


#8 S.M.S. @ 6" o.c.



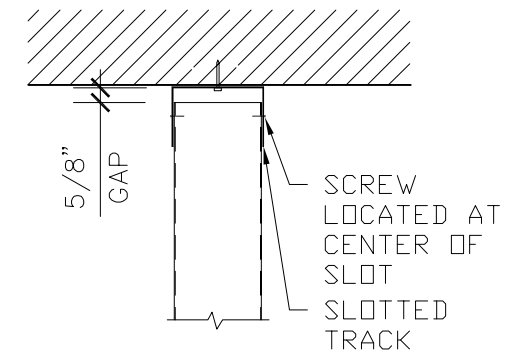
DETAIL B

#8 S.M.S. @ 12" o.c. STAGGERED



DETAIL A

OPTION 2: DOUBLE TRACK



OPTION 1: SLOTTED TRACK

NOTE: SEE SHEET 1 FOR FASTENER REQUIREMENTS

SLIP TRACK DETAILS

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SCALE: N.T.S.

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INTERIOR NON-BEARING PARTITION

DESIGN TABLES AND DETAILS

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TABLE C - FASTENER INTO CONCRETE

POWDER ACTUATED FASTENER FOR USE WITH LUMBER			
BRAND	MODEL	ESR	FASTENER DESCRIPTION
HILTI	X-CP 72	2379	0.145"Ø × 2-7/8" WITH WASHER
SIMPSON	PDPAWL-287	2138	0.157"Ø × 2-7/8" WITH WASHER
DEWALT	PDF 0.300" HEAD DRIVE PIN	2024	0.145"Ø × 3" WITH WASHER
POWDER ACTUATED FASTENER FOR USE WITH COLD FORMED STEEL			
BRAND	MODEL	ESR	FASTENER DESCRIPTION
HILTI	X-U	2269	0.157"Ø × 3/4" EMBED MIN.
SIMPSON	PPDA-XX(X)	2138	0.157"Ø × 3/4" EMBED MIN.
DEWALT	PDF 0.300" HEAD SMOOTH PIN	2024	0.145"Ø × 3/4" EMBED MIN.
CONCRETE SCREW ANCHOR			
BRAND	MODEL	ESR	FASTENER DESCRIPTION
HILTI	KH-EZ	3027	3/8"Ø × 2-1/2" EMBED
SIMPSON	TITEN HD	2713	3/8"Ø × 2-1/2" EMBED
DEWALT	SCREW-BOLT+	3889	3/8"Ø × 2-1/2" EMBED

TABLE C NOTES:

- FASTENERS SHALL BE MECHANICALLY GALVANIZED WHERE USED WITH PRESSURE TREATED LUMBER.
- FASTENERS SHALL NOT BE INSTALLED UNTIL CONCRETE HAS REACHED DESIGN STRENGTH.

TABLE D - DEFLECTION CLIP

MAX. H	MAX. CLIP SPACING†		
	1/4" GAP	1/2" GAP	1-1/4" GAP
8'-0"	32" o.c.	24" o.c.	48" o.c.
16'-0"	24" o.c.	12" o.c.	32" o.c.
20'-0"	16" o.c.	9" o.c.	24" o.c.

TABLE D NOTES:

- GAP = L/360 MIN. GAP REQUIRED SHALL BE DETERMINED BY TAKING THE SPAN (IN INCHES) OF THE JOIST OR BEAM ABOVE (FROM BEARING POINT TO BEARING POINT) AND DIVIDING BY 360.
- 1/4" GAP ALLOWABLE CLIPS
 - SIMPSON DTC - ER 280
 - MITEK (USP) TR2
- 1/2" GAP ALLOWABLE CLIPS
 - SIMPSON DTC - ER 280
- 1-1/4" GAP ALLOWABLE CLIPS
 - SIMPSON HTC4 - ER 280
 - MITEK (USP) HTC4 - ESR 4517

† SEE CONDITIONS OF USE, SHEET 4, FOR DEFLECTION CLIP INSTALLATION REQUIREMENTS.

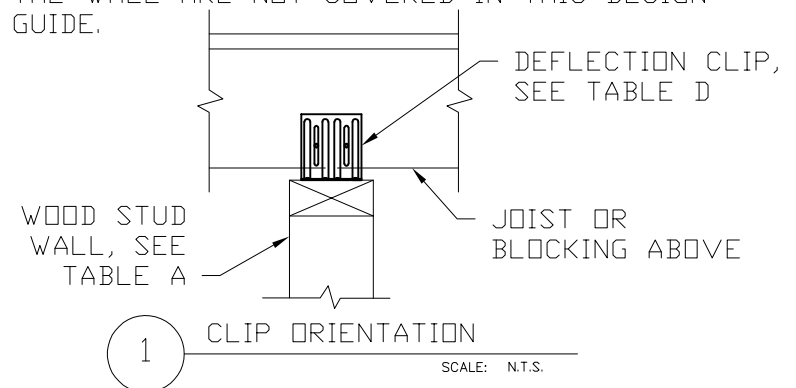
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INTERIOR NON-BEARING PARTITION
FASTENER AND CLIP NOTES

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CONDITIONS OF USE:

1. ALL WALLS SHALL BE FULLY SHEATHED WITH GYPSUM BOARD ON EACH SIDE.
2. P.A.F. CONNECTION TO CONCRETE SOFFIT
 - 2.1. CONCRETE STRENGTH f'_c = 2500 PSI MIN.
 - 2.2. EDGE DISTANCE IS 3-1/2" MIN. SPACING IS 5" MIN.
3. P.A.F. CONNECTION TO CONCRETE FILLED METAL DECK.
 - 3.1. MIN. CONCRETE THICKNESS OVER DECK SHALL BE 3-1/4" FOR 3" DECK OR 2-1/4" MIN OVER 1-1/2" DECK.
 - 3.2. CONCRETE STRENGTH f'_c = 3000 PSI MIN.
 - 3.3. EDGE DISTANCE SHALL BE 1-1/2" MIN FOR 4.5" FLUTES OR 7/8" MIN FOR 1-3/4" FLUTES.
 - 3.4. SPACING IS ALONG DECK FLUTE IS 5.1" MIN.
 - 3.5. METAL DECK SHALL BE 20 GA MIN.
4. P.A.F. CONNECTION TO STEEL.
 - 4.1. STEEL THICKNESS SHALL BE 3/16" MIN.
 - 4.2. MIN. SPACING BETWEEN ANCHOR IS 1".
5. P.A.F. CONNECTION TO WOOD.
 - 5.1. FASTENER SHALL BE SPACED 6" FROM ENDS OF SILL PLATE, ELSE SPACING PER SHEET 1.
 - 5.2. P.A.F. FOR USE WITH LUMBER SHALL BE PRE-MOUNTED WITH WASHER. SEE ESR.
6. CONCRETE SCREW ANCHOR TO CONCRETE
 - 6.2. CONCRETE THICKNESS SHALL BE 4" MIN. CONCRETE STRENGTH f'_c = 2500 PSI MIN.
 - 6.3. CRITICAL EDGE DISTANCE IS 7.68".
 - 6.4. MIN. SPACING BETWEEN ANCHORS IS 3".
7. CONCRETE SCREW ANCHOR TO CONCRETE FILLED DECK.
 - 7.1. FLUTE SPACING SHALL BE 12" MIN. FLUTE DEPTH SHALL BE 1-1/2" MIN. FLUTE WIDTH SHALL BE 4-1/2" MIN. METAL DECK SHALL BE 20 GA MIN.
 - 7.2. MIN. CONCRETE THICKNESS OVER DECK SHALL BE 3-1/4". CONCRETE STRENGTH f'_c = 3000 PSI MIN.
 - 7.3. ANCHORS IN LOWER FLUTE SHALL BE INSTALLED WITH MAX 15/16" OFFSET FROM THE CENTER OF FLUTE.
 - 7.4. MIN. ANCHOR SPACING ALONG FLUTE SHALL BE 6-3/4".
 - 7.5. SPECIAL INSPECTION SHALL BE REQUIRED.
8. DEFLECTION CLIP
 - 8.1. MAX SPAN FOR JOISTS / TRUSS ABOVE SHALL BE 37'-6". SEE GAP REQUIREMENTS FOR DEFLECTION CLIP.
 - 8.2. DEFLECTION CLIP SPACING IS GIVEN FOR THE ORIENTATION SHOWN BELOW. INSTALLATION REQUIREMENTS FOR CLIPS INSTALLED PARALLEL TO THE WALL ARE NOT COVERED IN THIS DESIGN GUIDE.



DISCLAIMER:

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CONDITIONS OF USE NOTES

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