FRAMING
WALL FRAMING

STUD SPACING

Maximum stud spacing for Standard or better-grade studs is shown in **Figure A.** Lower-grade 2x4 studs cannot exceed 16 in. o.c.

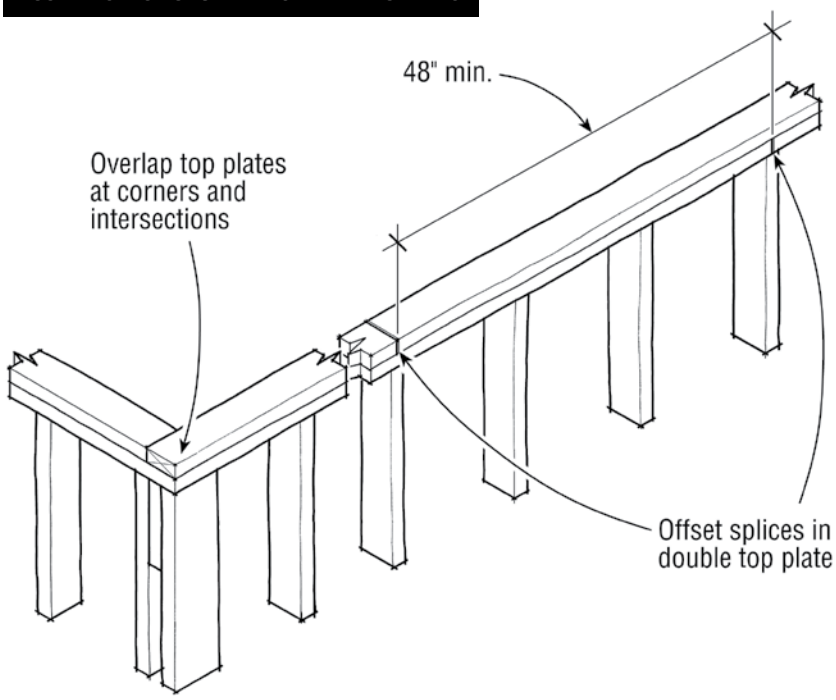
FIGURE A: MAXIMUM STUD SPACING (IN.)

Stud Size	2x4	2x6
Supporting Roof and Ceiling Only	24	24
Supporting One Floor Roof and Ceiling	16	24
Supporting Two Floors Roof and Ceiling	-	16

TOP PLATES

Most model codes require loadbearing walls to have double top plates lapped so that the splices are at least 4 ft. apart. Two 16d nails are required on each side of the splice and additional nails are required every 24 in. in the overlap area (**Figure B**). See nailing schedules (**Figure: Nailing Schedules in Nailing Rules of Thumb**).

FIGURE B: SPLICING TOP PLATES IN BEARING WALLS



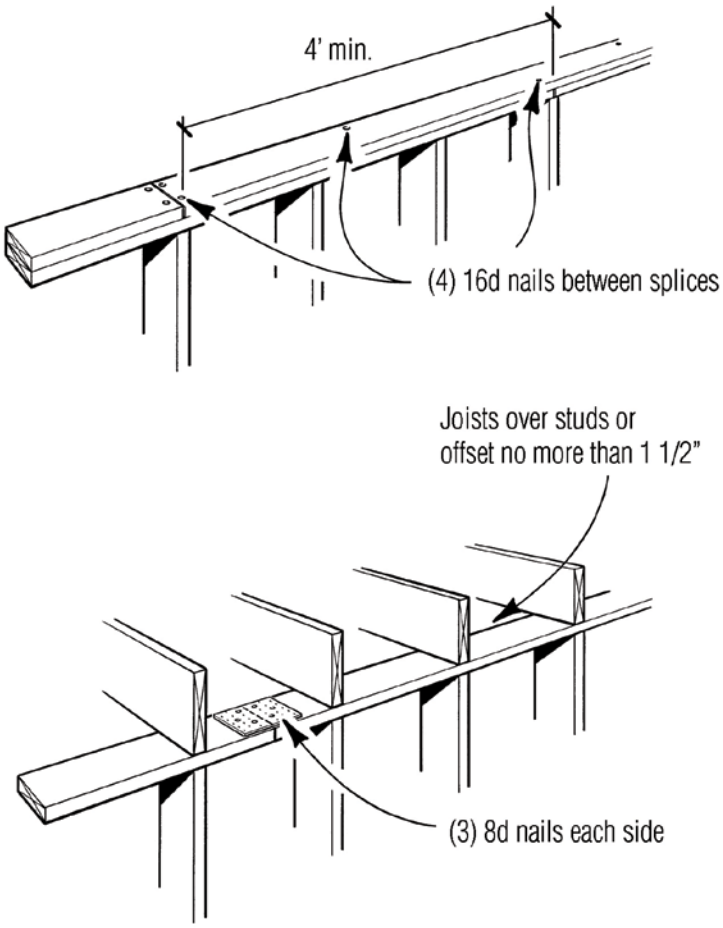
Double top plates must be lapped at corners and intersections and splices staggers. Code requires a minimum 24-in. overlap but 48-in will provide greater racking resistance. Nail off splice 8 to 12 nails each side of end joint, depending on nail type and seismic zone.

Double vs. Single Top Plates

Single top plates are considerably weaker than a traditional double top plate. However, many codes permit single top plates as long as they are joined at splices, corners, and intersecting walls with .036-in.-thick galvanized steel plates, measuring 3x6 in. Plates should be fastened with six to nine 8d nails for corners and intersecting walls (depending on seismic zone) and 12 to 18 8d nails for joints in a straight wall (depending on sesimic zone).

When using single top plates, rafters or joists must not be offset from studs by more than 1 in. (**Figure C**).

FIGURE C: DOUBLE VS. SINGLE TOP PLATE



Although some model codes allow a single top plate with steel connectors and joists lined up over studs, the traditional double top plate produces a stronger wall.

MAXIMUM STUD LENGTHS

Studs used in exterior loadbearing walls, whether 2x4 or 2x6, should not be more than 10 ft. high without being engineered.

Engineered solutions include reducing stud spacing, using wider studs, doubling the studs, and using studs made from engineered lumber.