

RESIDENTIAL SPREAD FOOTING & PIER REQUIREMENTS



City of
SAN PABLO
Building Services

LAST UPDATED: 31 AUGUST 2023

THIS DRAWING DEPICTS MINIMUM CODE REQUIREMENTS PER THE 2022 CALIFORNIA CODE CYCLE - INFORMATION IS FOR REFERENCE ONLY AND IS NOT A SUBSTITUTE FOR ACCURATE DRAWINGS PREPARED FOR EACH PROPOSED CONSTRUCTION PROJECT

WALL CONSTRUCTION: 2x STUDS @ 16" O.C. WITH $\frac{3}{8}$ " MIN PLYWOOD NAILED WITH 8d OR 10d @ 6" O.C. MAX AT ALL EDGES, & 12" O.C. MAX FIELD - BLOCK ALL EDGES

THE MINIMUM *NET AREA OF VENTILATION OPENINGS SHALL BE NOT LESS THAN $1\frac{1}{2}$ "² FOR EACH 150ft² OF UNDER-FLOOR SPACE AREA - EXCEPTION: IF THE GROUND SURFACE IS COVERED BY A CLASS 1 VAPOR RETARDER MATERIAL, NET AREA OF VENTILATION SHALL BE NOT LESS THAN 1ft² FOR EACH 1,500ft² OF UNDER-FLOOR SPACE AREA - ONE SUCH OPENING SHALL BE WITHIN 3ft OF EACH CORNER OF THE BUILDING - OPENINGS SHALL BE COVERED WITH WIRE MESH (OR EQUIVALENT) WITH $\frac{1}{4}$ " MAXIMUM OPENINGS (CRC R408.2)

SILL PLATE, ANCHOR BOLT, & WASHER - SEE NOTES 6 THROUGH 12 FOR MORE INFORMATION

#4 HORIZONTAL REBAR, CENTERED IN STEM, AT TOP OF STEM AND BOTTOM OF FOOTING - WHERE STEM EXCEEDS 24" FROM TOP OF FOOTING, PROVIDE VERTICAL & HORIZONTAL REINFORCING AT 18" O.C. (CRC R403.1.3.1)

FINISHED GRADE

UNDISTURBED GRADE

WHERE THERE IS EVIDENCE THAT THE GROUND WATER TABLE RISES TO WITHIN 6" OF THE GROUND LEVEL AT THE OUTSIDE BUILDING PERIMETER, OR THAT THE SURFACE WATER DOES NOT READILY DRAIN FROM THE BUILDING SITE, THE GROUND LEVEL OF THE UNDERFLOOR SPACE SHALL BE AS HIGH AS THE OUTSIDE FINISHED GROUND LEVEL, UNLESS AN APPROVED DRAINAGE SYSTEM IS PROVIDED (CRC R408.6)

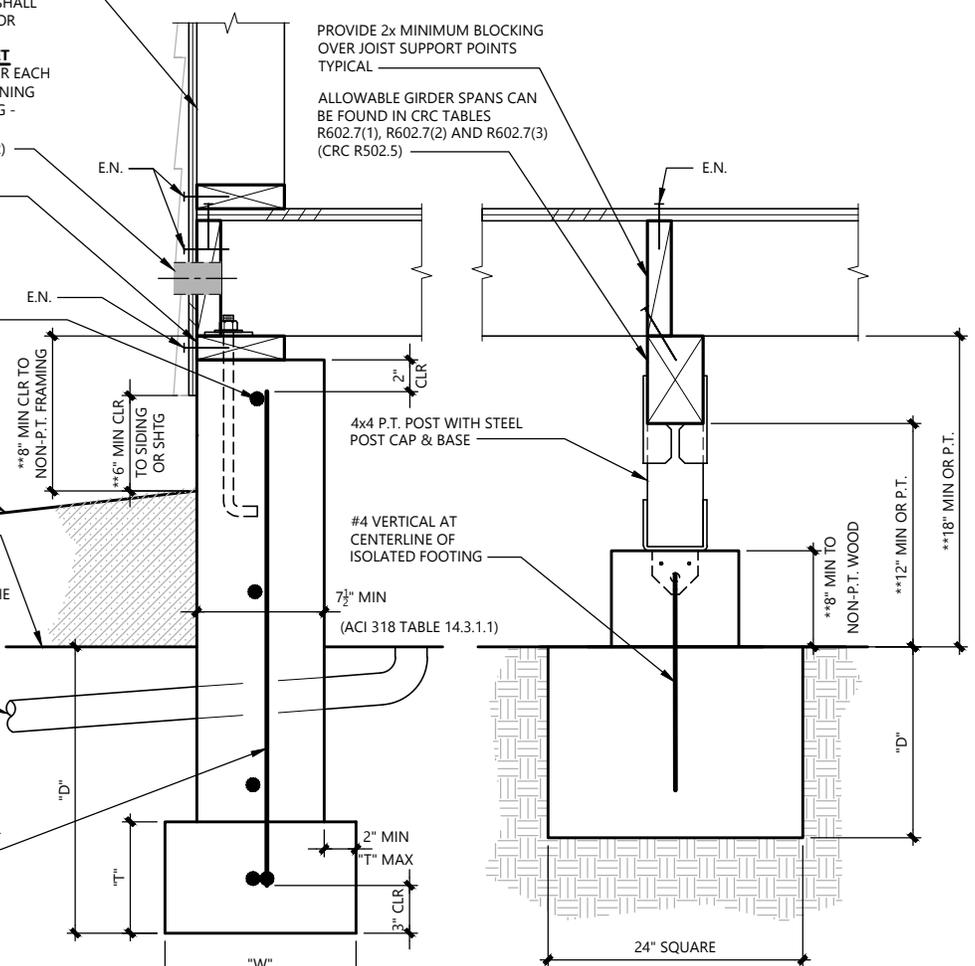
#4 VERTICAL @ 4'-0" O.C. MAX (18" O.C. RECOMMENDED) WITH STANDARD HOOK INTO FOOTING & 14" MIN EMBED INTO STEM WALL (WHERE FOOTING & STEM WALL PLACED SEPARATELY) (CRC R403.1.3.1)

*NET AREA IS THE FREE AREA REMAINING BETWEEN WIRE MESH OR METAL PLATES OF VENTS - EXAMPLE: IF A 4"x16" NOMINAL VENT IS PROVIDED, THE NET AREA IS LESS THAN 4" MULTIPLIED BY 16", AND IS OFTEN SPECIFIED BY THE VENT COVER MANUFACTURER

PROVIDE 2x MINIMUM BLOCKING OVER JOIST SUPPORT POINTS TYPICAL

ALLOWABLE GIRDER SPANS CAN BE FOUND IN CRC TABLES R602.7(1), R602.7(2) AND R602.7(3) (CRC R502.5)

**REQUIREMENTS FOR PROTECTION OF WOOD AND WOOD-BASED PRODUCTS AGAINST DECAY CAN BE FOUND IN CRC SECTION R317



MODIFIED CRC TABLE R403.1(1) CONCRETE FOOTINGS SUPPORTING WALLS OF LIGHT-FRAME CONSTRUCTION

NUMBER OF STORIES SUPPORTED BY FOUNDATION	WIDTH OF FOOTING "W" (CRC TABLE R403.1(1))	THICKNESS OF FOOTING "T" (CRC R404.1.3 & ACI 318 14.3.2.1)	DEPTH BELOW UNDISTURBED GROUND SURFACE "D" (CRC R403.1.4)
1	12"	8"	12" OR PER GEOTECHNICAL ENGINEER
2	15"	8"	12" OR PER GEOTECHNICAL ENGINEER
3	18"	8"	12" OR PER GEOTECHNICAL ENGINEER

MODIFIED CRC TABLE R403.1(2) CONCRETE FOOTINGS SUPPORTING WALLS OF LIGHT-FRAME CONSTRUCTION WITH BRICK VENEER

NUMBER OF STORIES SUPPORTED BY FOUNDATION	WIDTH OF FOOTING "W" (CRC TABLE R403.1(2))	THICKNESS OF FOOTING "T" (CRC R404.1.3 & ACI 318 14.3.2.1)	DEPTH BELOW UNDISTURBED GROUND SURFACE "D" (CRC R403.1.4)
1	15"	8"	12" OR PER GEOTECHNICAL ENGINEER
2	20"	8"	12" OR PER GEOTECHNICAL ENGINEER
3	25"	8"	12" OR PER GEOTECHNICAL ENGINEER

NOTES:

- CONCRETE SHALL BE AIR ENTRAINED WITH A TOTAL AIR CONTENT (PERCENT BY VOLUME OF CONCRETE) NOT LESS THAN 5% & NOT MORE THAN 7% (CRC TABLE R402.2, FOOTNOTE d)
- CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH (F_c) OF 3,000psi (CRC TABLE R402.2)
- REBAR SHALL HAVE A MINIMUM YIELD STRENGTH OF 60,000psi (CRC R404.1.3.3.7.1)
- THE TOP SURFACE OF FOOTINGS SHALL BE LEVEL (CRC R403.1.5)
- THE BOTTOM SURFACE OF FOOTINGS SHALL NOT HAVE A SLOPE EXCEEDING ONE UNIT VERTICAL IN 10 UNITS HORIZONTAL (10% SLOPE) (CRC R403.1.5)
- FOUNDATION SILL PLATES ARE TO BE 2x PRESSURE TREATED OR NATURALLY RESISTANT WOOD AND SHALL BE THE SAME WIDTH AS WALLS ABOVE, MINIMUM (CRC R403.1.6, R602.3.4)
- FOUNDATION SILL PLATES ARE TO HAVE A MINIMUM OF (2) ANCHOR BOLTS WITH ONE BOLT LOCATED NEITHER MORE THAN 12", NOR LESS THAN (7) BOLT DIAMETERS FROM EACH END OF THE PLATE (CRC R403.1.6)
- ANCHOR BOLTS SHALL BE $\frac{3}{8}$ " ϕ MINIMUM WITH 7" MINIMUM EMBEDMENT INTO CONCRETE & SHALL BE LOCATED IN THE MIDDLE THIRD OF THE WIDTH OF THE PLATE (CRC R403.1.6)
- ANCHOR BOLTS SHALL BE SPACED 6'-0" O.C. MAXIMUM FOR (1) & (2) STORY STRUCTURES, AND 4'-0" O.C. FOR STRUCTURES OVER (2) STORIES (CRC R403.1.6.1)
- ANCHOR BOLTS SHALL HAVE STANDARD STEEL NUTS & 3"x3"x0.229" MIN STEEL WASHERS, TYPICAL (CRC R403.1.6.1(1) & CRC R602.11.1)
- ANCHOR BOLT PLATES SHALL BE $\frac{1}{2}$ " MAXIMUM FROM FACE OF SHEATHING TO FACE OF PLATE

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ENGINEERING REQUIRED:

DEEP FOUNDATIONS MUST BE DESIGNED BY A LICENSED DESIGN PROFESSIONAL & INSTALLED ON THE BASIS OF A GEOTECHNICAL INVESTIGATION AS SET FORTH IN CBC SECTION 1803 (CBC 1810.1.1)

