

Structural Computations

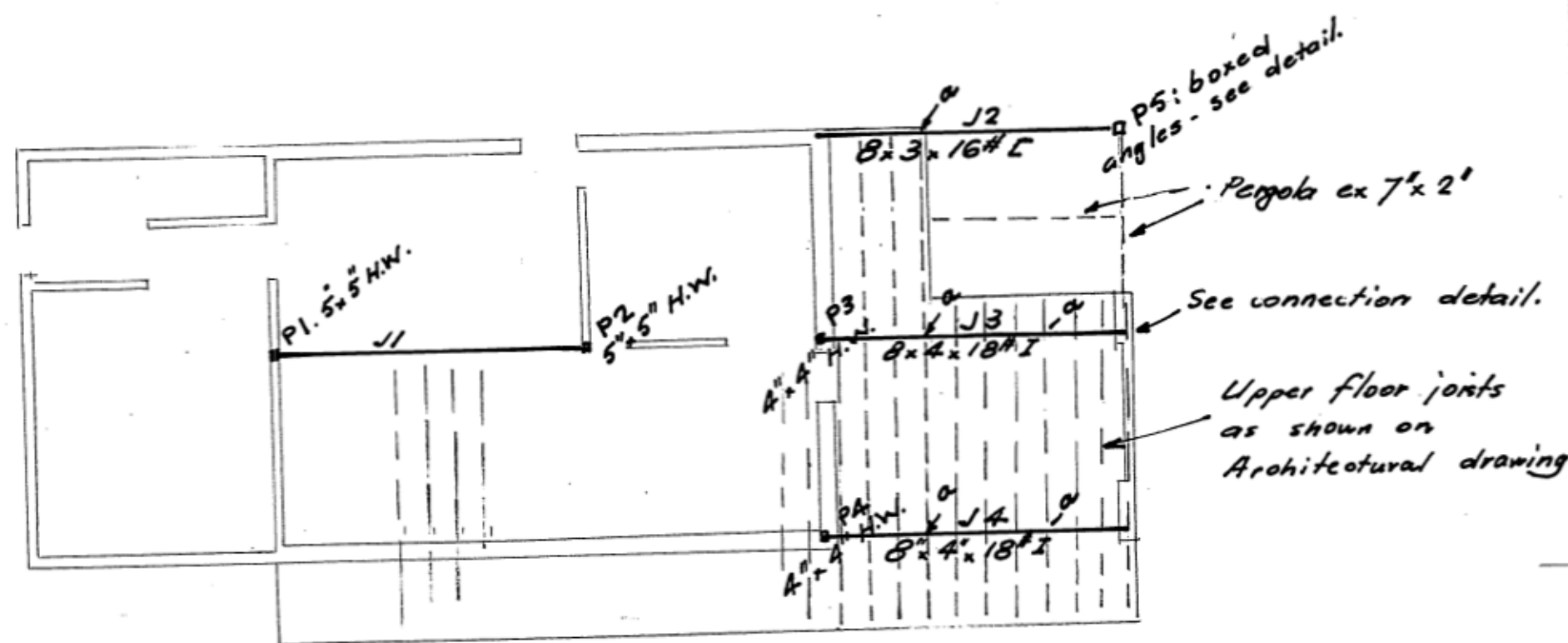
Floor member J1: 16' span.
 wall @ 7 $\frac{1}{2}$ " @ 1' 10" x 7 $\frac{1}{2}$ " = 70 $\frac{1}{2}$ " / ft.
 top @ 15 $\frac{1}{2}$ " 10' x 15 $\frac{1}{2}$ " = 150
 15 $\frac{1}{2}$ " flow. 60 $\frac{1}{2}$ " 10' x 60 $\frac{1}{2}$ " = 600

$$\frac{820}{M = 820 \times 16^2 \times 1.5 = 315,000 \text{ in-k.}}$$

Fitted beam:
 $12 \times \frac{5}{8}$ pl. $Z = 12 \times \frac{5}{8} = 15.0$
 $\therefore f = \frac{315}{15} = 21 \text{ k/ft.}$
 check $\Delta = \frac{21,000 \times 16^2 \times 1.5}{10 \times 6 \times 30 \times 10^6} = .44" \text{ O.K.}$

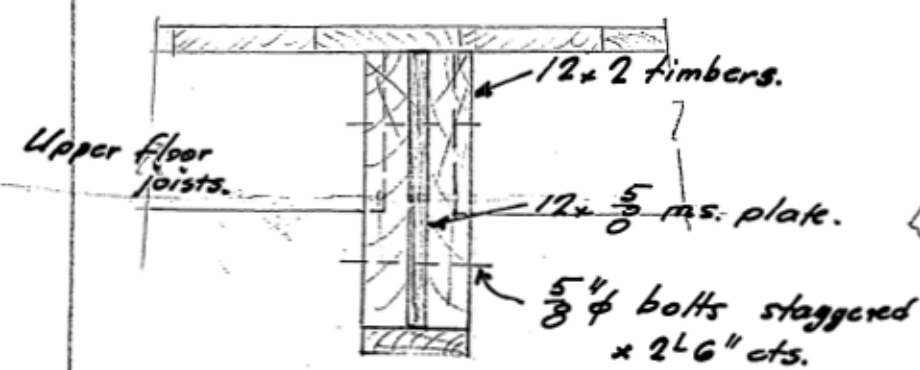
Floor member J3 J4: 15' span.

floor @ 60 $\frac{1}{2}$ "
 $10 \times 60 = 600 \frac{1}{2}$
 surf wt $\frac{30}{630 \frac{1}{2}}$
 $M = 630 \times 15^2 \times 1.5 = 212,000 \text{ in-k.}$
 R.S.J. $Z = \frac{212,000}{20,000} = 10.6$
 use $8 \times 4 \times 18 \frac{1}{2}$ I. $Z = 14$
 $f = 15,000$
 $\Delta = \frac{15,000 \times 15^2 \times 1.5}{10 \times 4 \times 30 \times 10^6} = .44" \text{ O.K.}$

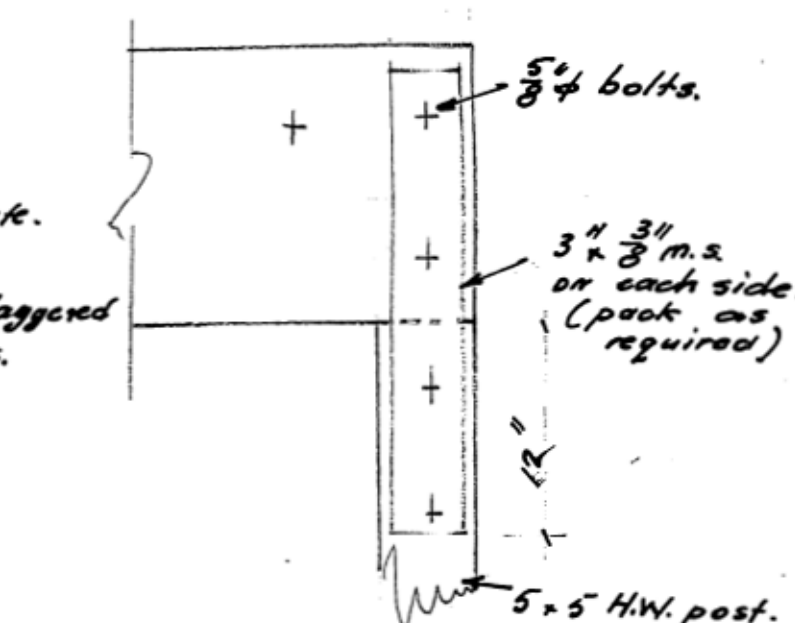


FIRST FLOOR CONSTRUCTION: $\frac{1}{8}"$ Scale.

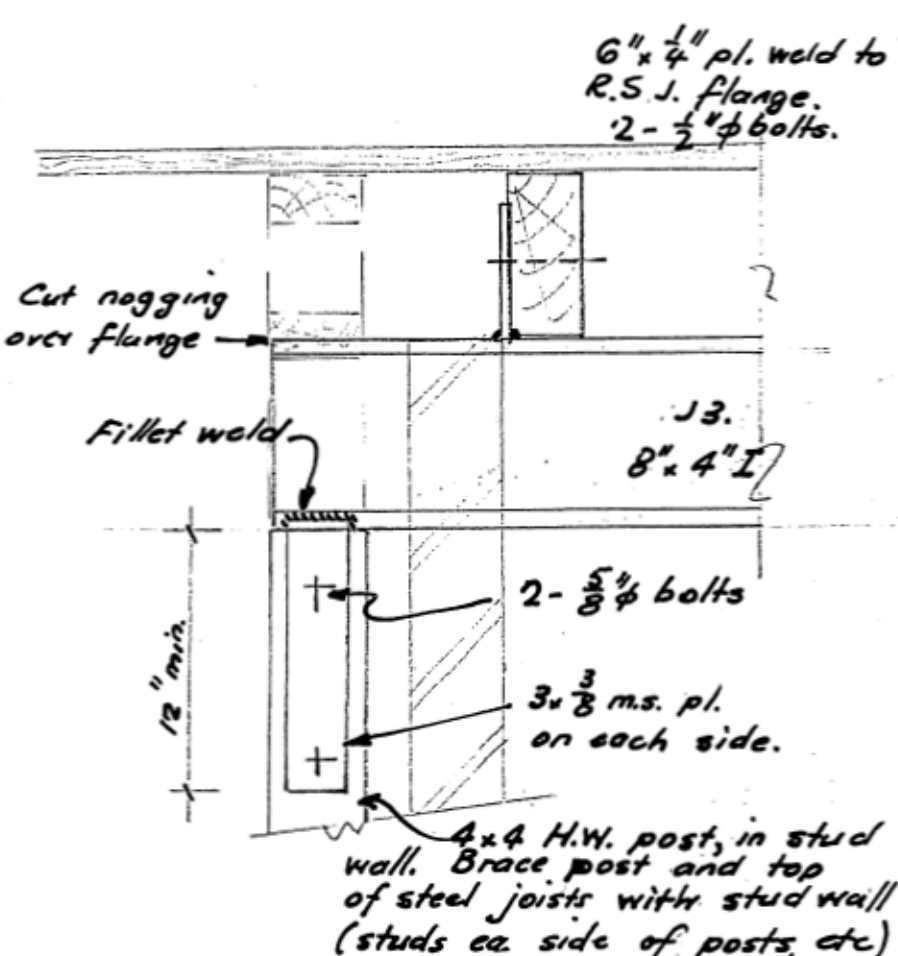
Showing walls, posts under.



Section J1.
 Note: fabricate and erect in one piece.

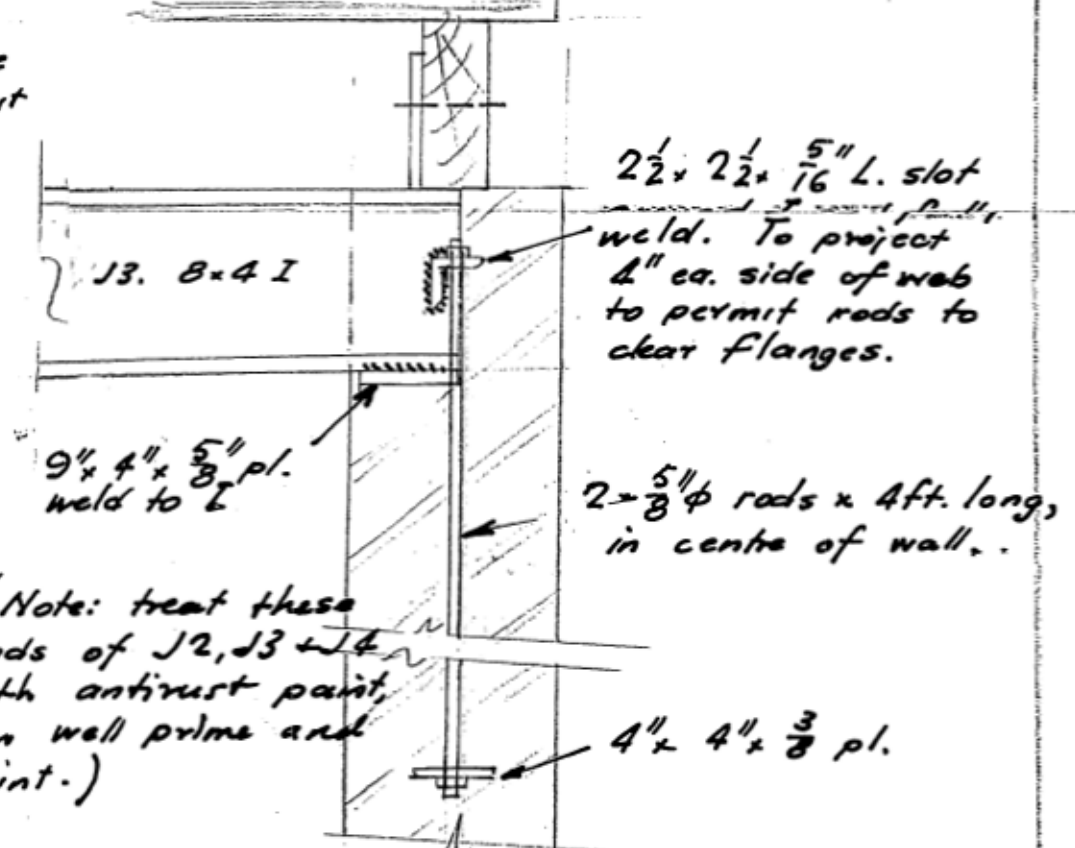


Connection J1 to P1 & P2.
 Note: P1 and P2 to be well braced by timber walls.



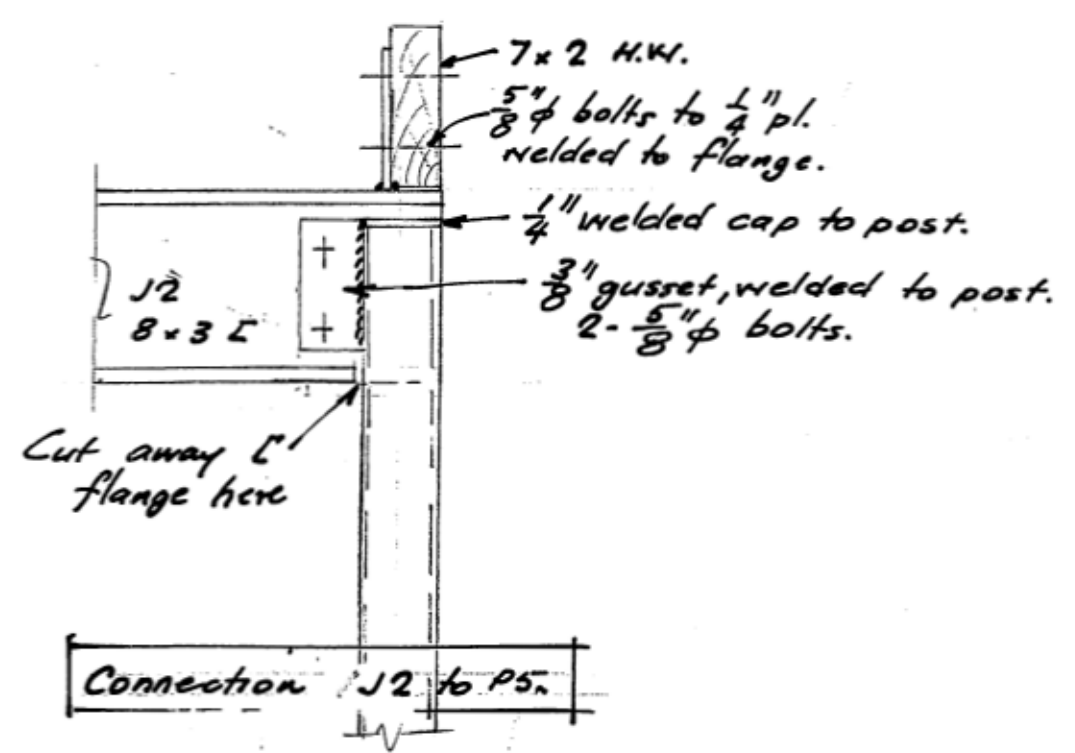
Connection J3 to P3.
 (J4 to P4 similar.)

Provide at ends of J2, J3 & J4 and at points marked "d" on plan. These are necessary to strut top flange of R.S.J.



(Note: treat these ends of J2, J3 & J4 with anti-rust paint, then well prime and paint.)

Connection J3 to wall.
 (J4 do. similar.)



Connection J2 to P5.

NOTE:
 All exposed steel to be treated with anti-rust and well primed.
 All welds to be weatherproof and in accordance with S.A.A. Welding Code.
 All structural to be in accordance with S.A.A. Steel Code.
 All work to be in accordance with Unif. Bldg. Regs. — VIC.

RAYNOR HOUSE: WARRANDYTE.

STRUCTURAL DETAILS.

ALISTAIR KNOX: DESIGNER.
 Gordon Doering: Engineer.
 3-4-62.