

PROJECT	43, HERD STREET.	JOB N° 14638	SHEET N° 01	REV
ELEMENT	FLOOR STRENGTHENING	DATE NOV 25	BY AN	CHECKED AN

FIRST FLOOR.

IMPOSED LOAD = 1.5 kN/m^2

BOARDING = 0.15 kN/m^2

SERVICES = 0.05 kN/m^2

JOISTS = 0.15 kN/m^2

P/B D & SKIN = 0.15 kN/m^2

TOTAL = 2.0 kN/m^2

CONSIDER NEW INFILL ZONE.

NEW JOIST

SPAN = 1.3 m MAX $w = 0.8 \text{ kN/m}$

BM = 0.17 kNm

$\sigma_{\text{allow}} = 6.0 \text{ N/mm}^2$

$Z_{\text{min}} \geq 28.2 \text{ cm}^3$

$I_{\text{min}} \geq 2.48 \text{ EG}$
 $\delta = 2 \text{ mm}$

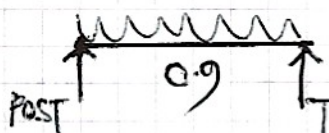
FOR DETAIL

PROVIDE $50 \times 125 \text{ OAK (OR C24)}$

TRIMMER T1

$w = 1.5 \times 2.0$
 0.2

= 3.2 kN/m



BM = 0.33 kNm

$Z_{\text{min}} \geq 54 \text{ cm}^3$ $I_{\text{min}} = 2.3 \text{ EG}$
 $\delta = 2.0$

PROVIDE $75 \times 125 \text{ OAK}$

$R_L = R_R$
= 0.52 kN

$E = 6000$

$Z_p = 130$

$I_p = 8.14$

START + FL

$R_L = R_R$
= 2.9 kN

$Z_p = 195$

$I_p = 12.2$

PROJECT	43, HERD STREET	JOB N°	14638	SHEET N°	01	REV	
ELEMENT	FLOOR BEAM	DATE	NOV/25	BY	AW	CHECKED	AW

CONSIDER EXT^E BEAM @ FIRST FL.

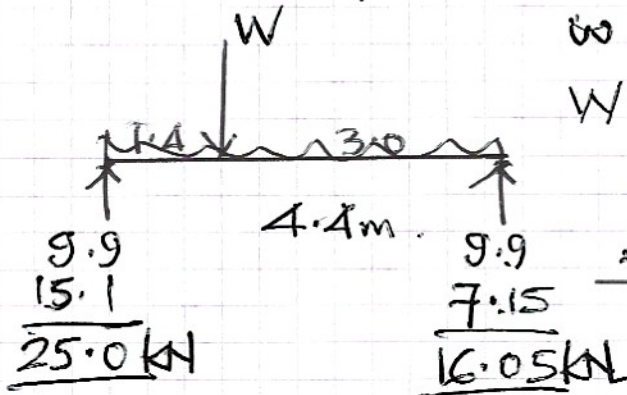
$$w = 4.5 \text{ kN/m}$$

$$W = 2.25 \text{ PART N}$$

$$11.30 \text{ ATTIC FL}$$

$$8.80 \text{ PURLIN}$$

$$= 22.35 \text{ kN}$$



$$x = 1.4 \text{ m LHE}$$

$$BM = 1.4 \times 25.0 - 1.4^2 \times 0.5 \times 4.5$$

$$= 30.59 \text{ kNm} \quad [9.2 \text{ kNm}] \quad \% \text{ DEAD} \approx 30\%$$

OAK SECTION APPROX 275x275

$$Z_{piv} \leq 3466 \text{ cm}^3 \quad I_{piv} \leq 476 \text{ EG mm}^4$$

$$\sigma_{adm} \leq 7.5 \times 1.25 \text{ SAY}$$

$$\leq 9.4 \text{ N/mm}^2$$

$$\sigma_{act} = \frac{30.6 \times 10^6}{3466 \times 10^3}$$

$$= 8.82 \text{ N/mm}^2 < 9.4 \quad \text{OK}$$

DEFLECTION $\Rightarrow$

$$\delta = \frac{4400^3}{7500 \times 476 \text{ EG}} \left[\frac{5 \times 4.5 \times 4400}{384} + \frac{22.35}{48} \left(\frac{258}{0.85} \right) \right]$$

$$= 15.32 \text{ mm} \quad \left(\frac{1}{287} \right) \quad \% = 0.32$$

EXT^E BEAM ADEQUATE