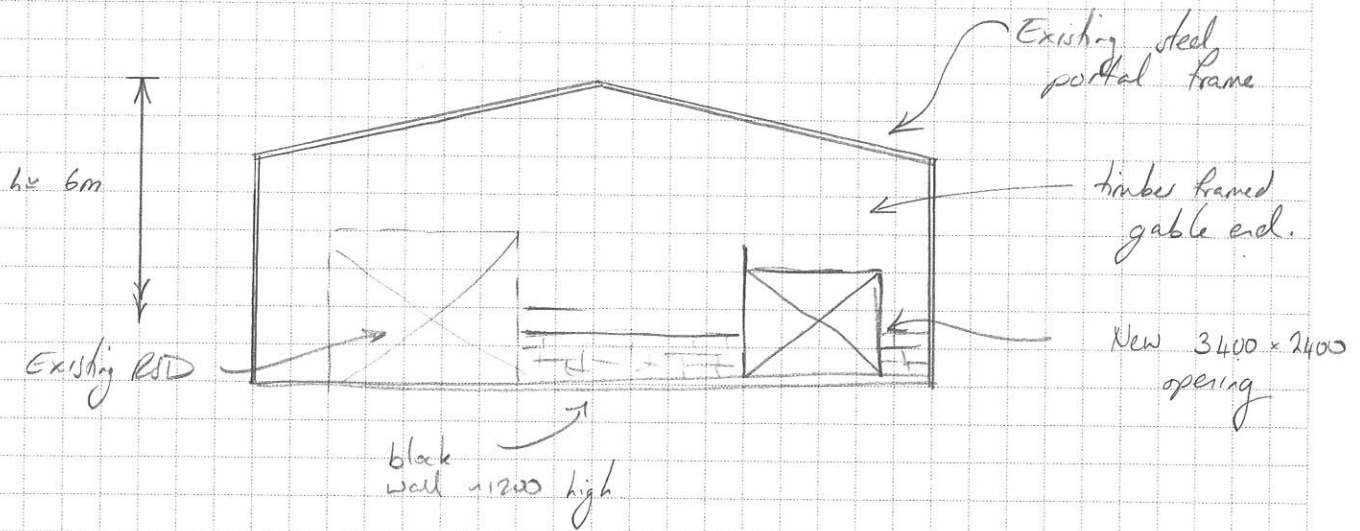


Existing warehouse wall;



- Lateral bracing provided by portal frame - unaffected by alterations.
- Gravity supports - gable framing only + corrugated cladding

$$w = 0.12 \text{ kPa (framing @ 600cs)} + 0.1 \text{ kPa (cladding)} \\ = 0.22 \text{ kPa}$$

average height of wall above 3.5m (6 - 2.4 = 3.6m)

$$w_{ULS} = 0.22 \text{ kPa} \times 1.35 \times 3.5 \text{m} \\ = 1.2 \text{ kN/m}$$

$$N_{ULS} = 0.88 \text{ kN/m}$$

$$\text{span/300} = 11 \text{mm}$$

At span of 3.4m

$$M^* = 1.73 \text{ kNm}$$

$$V^* = 2.04 \text{ kN}$$

$$A_{gs} = 1.53 \text{ kNm}^3 / EI$$

$$E = 67 \text{ GPa}$$

SG8 190 x 45

$$Z = 0.271 \times 10^6 \text{ mm}^3$$

$$I = 25.7 \times 10^6 \text{ mm}^4$$

$$\Delta = \frac{5(0.88 \text{ kN/m})(3.4 \text{m})^4}{384(67 \text{ GPa})(25.7 \times 10^6 \text{ mm}^4)} = 8.9 \text{ mm}$$

$$45 \times 240 \quad \Delta = 4.4 \text{ mm} \times 2 = 8.8 \text{ mm OK}$$

$$\phi M_n = 2.9 \text{ kNm} \times 0.8 = 2.32 \text{ kNm} \rightarrow \text{OK } 90 \times 240 \text{ Lintel}$$

PROJECT 80 Byron St

DATE 01/08/2017

REF RFI's - B1-016 part 8.

FILE HV5604

BY JL