J.V. CONSULTING ENGINEERS Pty. Ltd.
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Project: 3 PONY LANE
Engineer: JOHN VARKULEVICIUS

COMPUTATIONS
Job No.: 12167
Date: JUNE 2012
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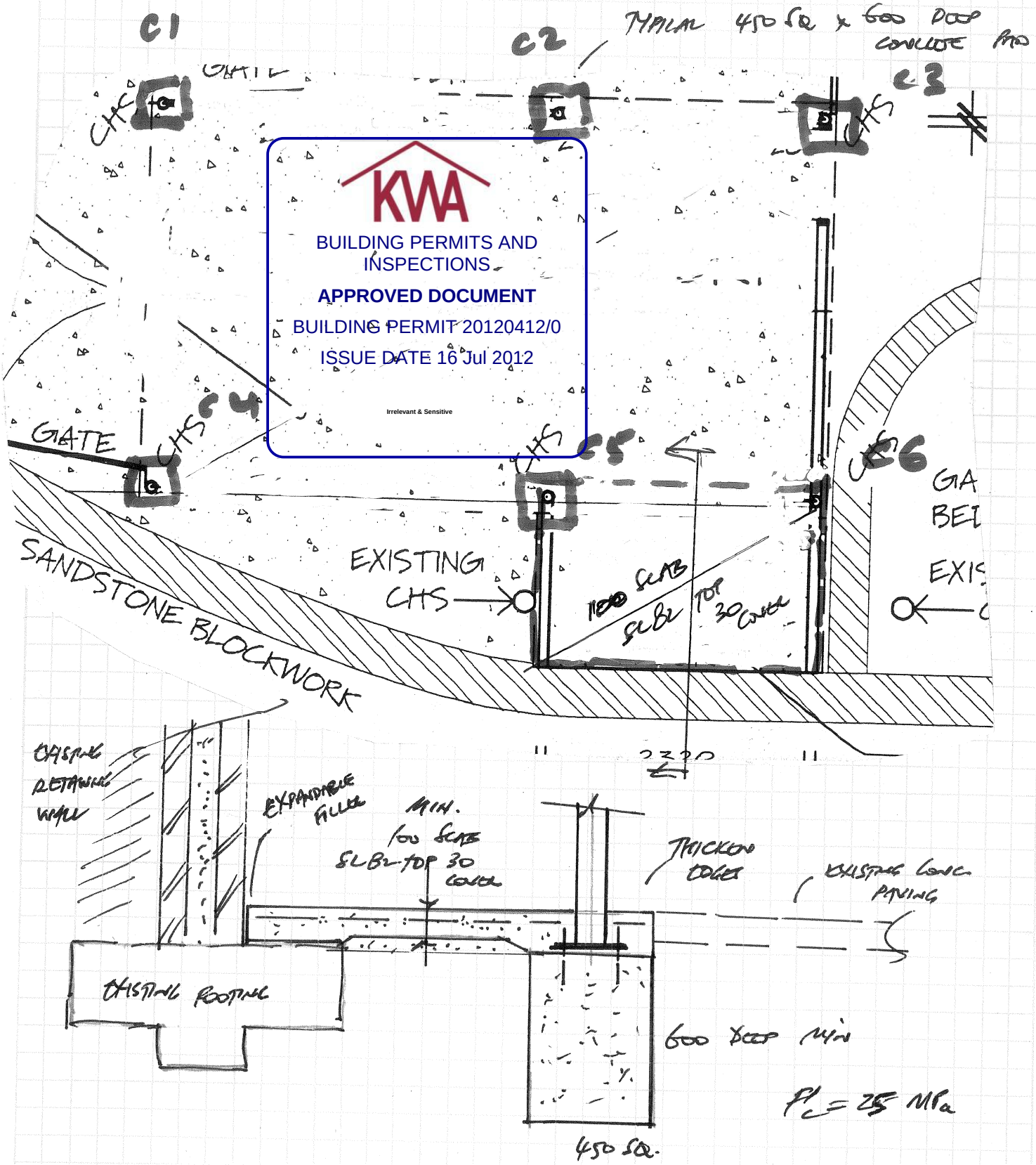
PROPOSED GARAGE



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CARPORT BEAMS

MAX SPAN = 3800

OVERHANG ROOF WIDTH = 2.0 < 0.8 / 0.5

1.3 kN/m

MAX WIND UPLIFT :— TERRAIN CAT 2

$V_z = 45 \times 0.91 \times 0.9.0 \times 1.0 = 36.8$ m/sec

$\therefore p_z = 0.6(36.8)^2 10^{-3} = 0.81$ kPa.

MAX. WIND UPLIFT = $0.81 \times 1.0 = 0.81$ kN/m² $\times 2.0$

$= 1.6$ kN/m ↑

$\therefore$ DL + W = 1.3 kN/m ↓

DL + WU = 0.8 kN/m ↑

$M_{max} = 2.3$ kNm.

290 x 45 F7 T.P. → $f_b = 3.7$ MPa OK. (240 x 45 F7 $f_b = 5.3$)

$\Delta_{ss} = 4.9 < 3.0 \times 2 = 6.0$ OK.

(240 x 45 F7 → $\Delta = 8.7 < 5.3 \times 2 = 10.6$

ie MIN. 240 x 45 F7 T.P. BEAMS OK.

TOTAL WIND FORCE ACTING CARPORT (Towards)

$= 6 \times (0.81 \times 0.9) 1.0 = 4.5$ kN

TOTAL 6 POSTS + TAKE 4

$\therefore$ LOAD/POST = 1.1 kN

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BOLT HEIGHT = 2x00

$\therefore M_{BASE} = 2.64$ kNm

101.6 ϕ x 3.2 CHS

$Z = 23.6 \times 10^3$

$F = 1.20 \times 10^6$

$f_b = 111.9$ MPa (= 0.32 f_y) OK

$d \leq \frac{1.1 \times 2 \times 10^3 \times 10^{12} \times 10^3}{3 \times 2 \times 10^8 \times 1.2 \times 10^6}$

$= 24.2 \times 0.86 = 18.2$ mm

ACCEPTABLE FOR CALCS ∴ OK.

∴ 101.6 ϕ x 3.2 CHS OK FOR BOLTS

TOTAL MAX. UPLIFT OF CALCS: = 0.8 x 6.1 x 3.5 = 17.1 kN

6 FOOTINGS → 2.85 kN = 0.119 m³

IE 600 x 450 dp. OK.

BOLTS AT 1300 PITCH ∴ BOLT LOAD = $\frac{2.64}{0.13} = 20.3/2 = 10.2$ kN

IE MIN. 4 - M16 ϕ "CHEMSET" TO BASE PLATE

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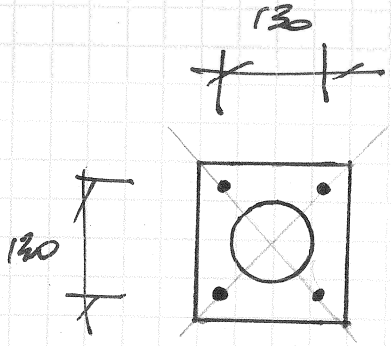
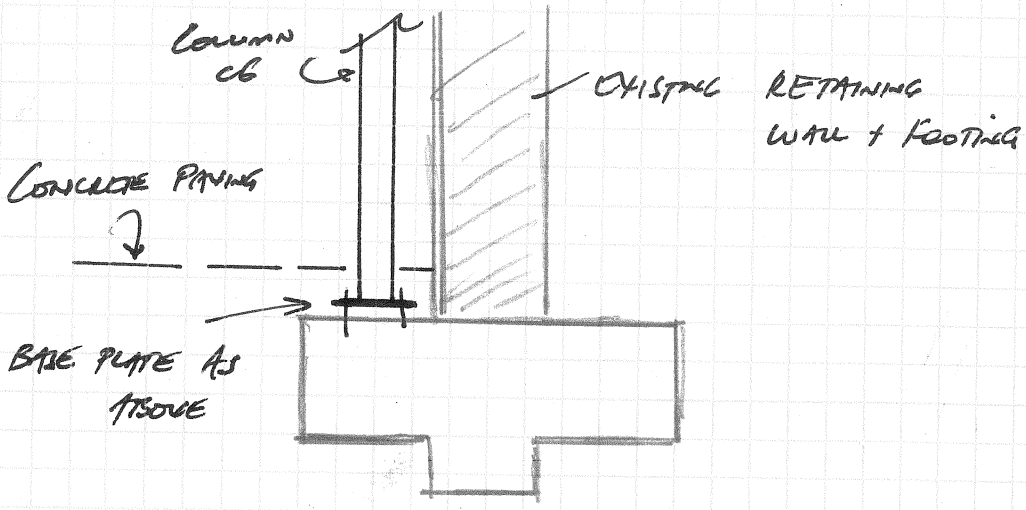


200 SQ x10 TK
BASE PLATE
6 CHS TO
101.6ø x3.6 CHS

4- M12ø
"CHEMSETS"
-MAX 20 GROUT.

TYPICAL BASE PLATE C1 – C5

C6 COLUMN FIXING — TO RETAINING WALL FOOTING



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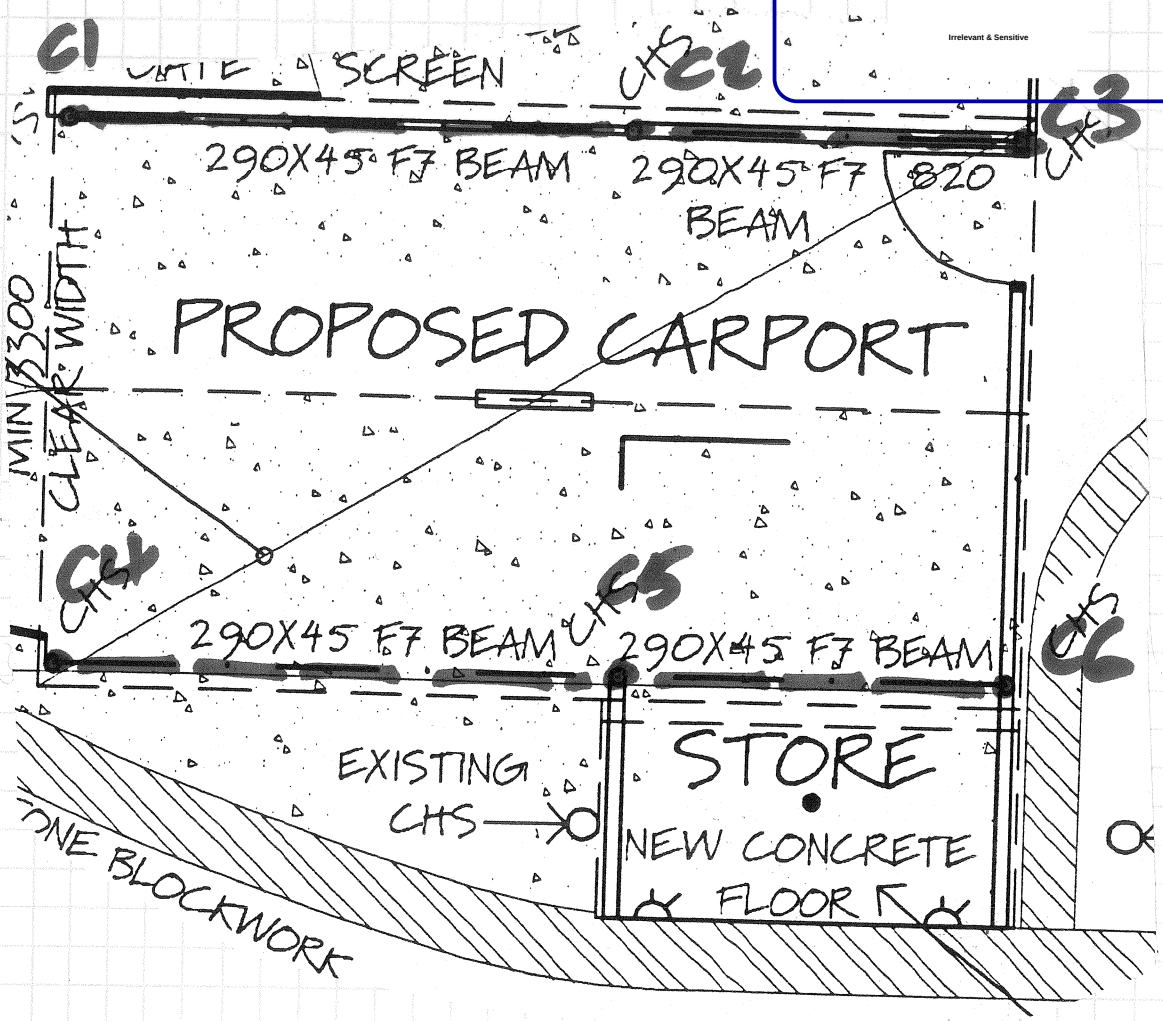

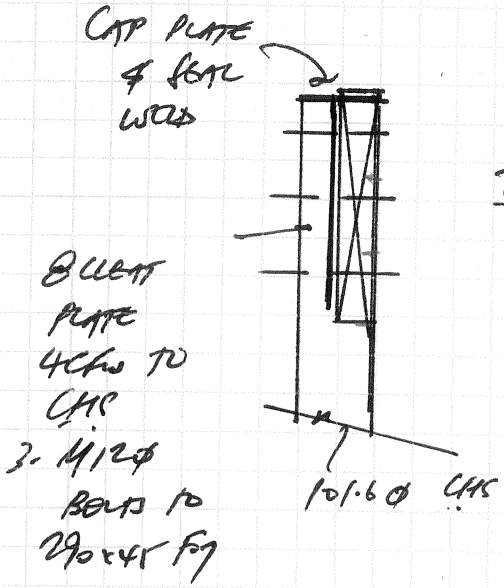

TYPICAL PURLING BEAM TO CHS

NOTE ALL STEELWORK & FITTINGS TO BE HOT DIP GALVANISED OR EQUIVALENT CORROSION PROTECTION