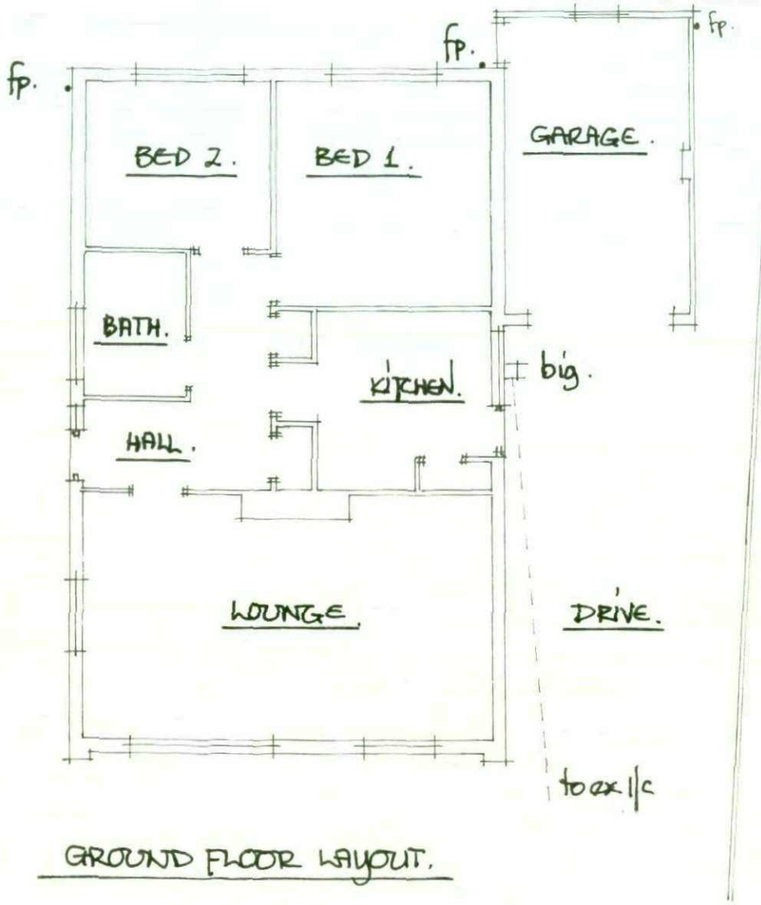
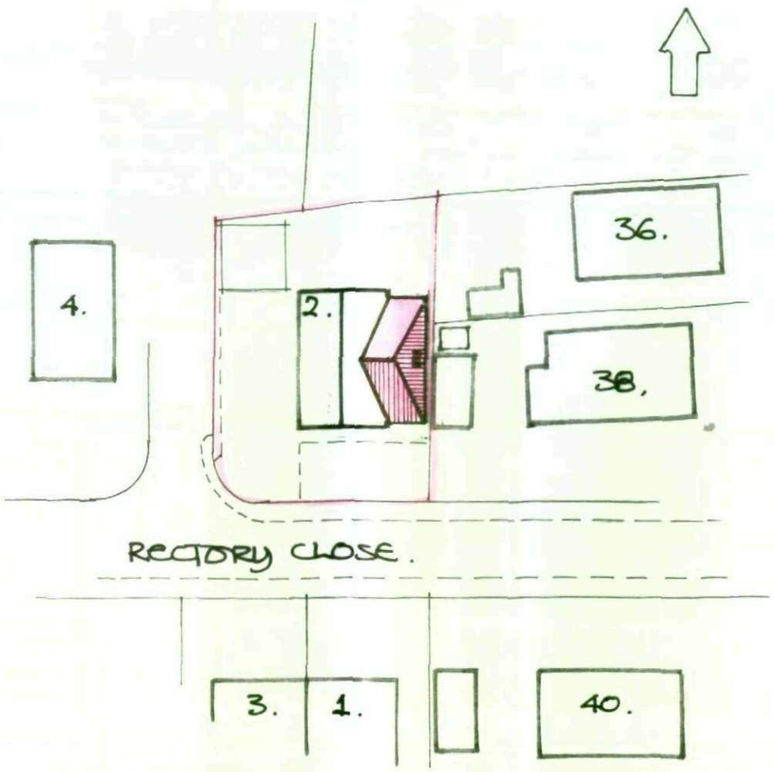


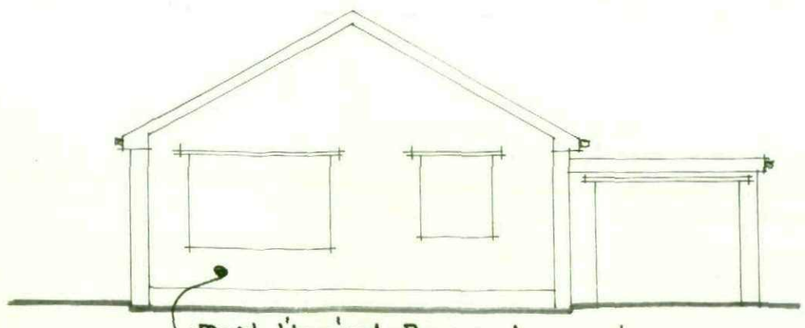
GROUND FLOOR LAYOUT.

DRAINAGE TO BE INVESTIGATED & TO BE DISCUSSED WITH LOCAL BCO @ EXCAVATION STAGE.

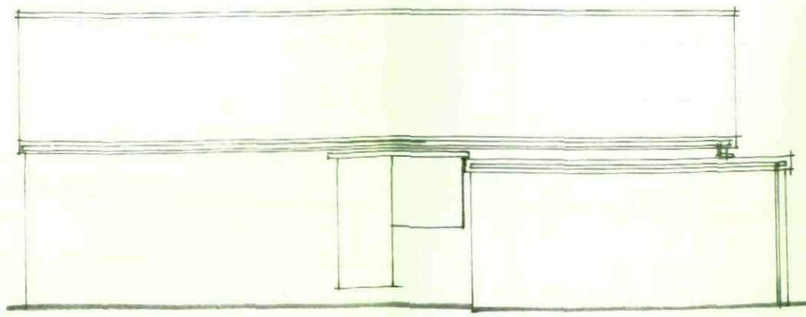
SITE PLAN SCALE 1:500m.



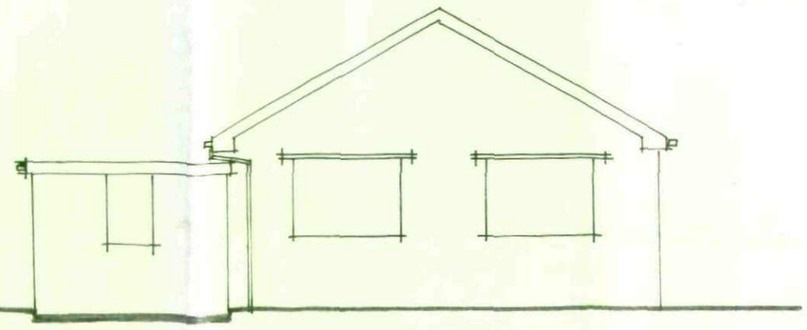
FRONT VIEW.



SIDE VIEW.



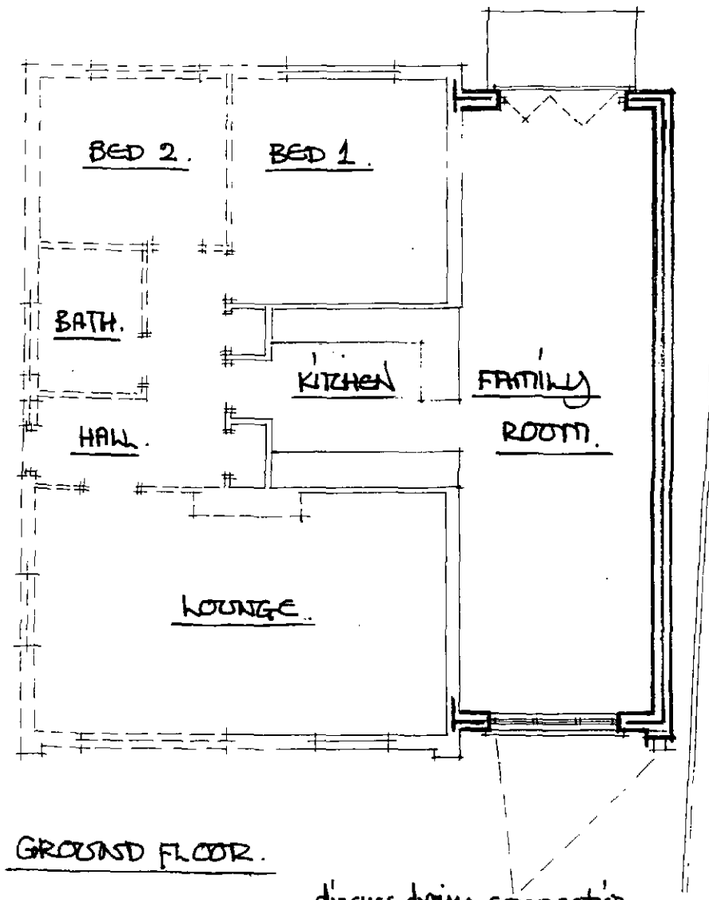
REAR VIEW.



SURVEY SCALE 1:100m.

* revised april 2010 to TCP requirements *

PROVIDE SCREWED DOWN AIRTIGHT PLATE WITH WASTE CONNECTION FROM SINK UNIT etc BELOW FLOOR TO EX. BIG - ENSURE ACCESS HATCH CONSTRUCTED IN FLOOR FOR MAINTENANCE.



GROUND FLOOR.

discuss drain connection or soakaway with local BCO

BEAM CHECK TO KITCHEN SPAN 3.00m

LOADING UDL

ROOF = 3.00 X 1.75 X 1.90 = 9.98

CEILING = 3.00 X 1.75 X 0.50 = 2.63

TOTAL = 12.61 KN.

$M_{BM} = WL/8 = \frac{12.61 \times 3}{8} = 4.73$ KNM.

TRY 178X102X19Kg UB

$STRESS = M/Z = \frac{4.73 \times 10^6}{153 \times 10^3} = \frac{4.73}{0.153} = 30.93 N/mm^2$

$D/T = 177.8/7.90 = 22.50$

L/R_{yy} WHERE L = 3+0.15+0.178+0.178 X 1.20 = 4.21

$= \frac{4.21 \times 100}{2.39} = 176.03$

FROM TABLE 3a BS 449 pcb = 84 N/mm² ∴ OK

CHECK DEFLECTION

ALLOWED = $L/360 = \frac{3 \times 1000}{360} = 8.33$ MM

ACTUAL = $\frac{5WL^3}{384EI} = \frac{5 \times 12.61 \times 3^3 \times 10^{12}}{384 \times 210{,}000 \times 1360 \times 10^4}$

$= \frac{1703}{1096.7} = 1.55 N/MM$ ∴ OK

USE IND 178X102X19Kg UB BELOW EX WALL PLATE.

CHECK PADSTONES

LOAD = 12.61/2 + 13.75 = 20.06

P/S PLAN = 350 X 250 = $\frac{20.06 \times 10^3}{350 \times 250} = \frac{20060}{87500} = 0.23 N/mm^2$

∴ USE 350L X 250W X 150 DEEP CONC. PADSTONES.

BEAM CHECK TO PROVIDE SUPPORT TO NEW ROOF SPAN 3.15m

POINT LD PURLIN = 3.10 X 4.00 X 1.90 = 23.56

UDL CEILING = 3.15 X 2.50 X 0.50 = 3.94.

$M_{BM} = WL/8 + WL/4 = \frac{3.94 \times 3.15}{8} + \frac{23.56 \times 3.15}{4} = 1.55 + 18.55 = 20.10$ KNM

TRY 203X133X25Kg UB's

$STRESS = M/Z = \frac{20.10 \times 10^6}{231.9 \times 10^3} = \frac{20.10}{0.2319} = 86.70 N/mm^2$

$D/T = 203.20/7.80 = 26.06$

L/R_{yy} WHERE L = 3.15+0.15+0.204+0.204 X 1.20 = 4.45

$= \frac{4.45 \times 100}{3.10} = 144.$

FROM TABLE 3a BS 449 pcb = 98 N/mm² ∴ OK.

CHECK DEFLECTION

ALLOWED = $L/360 = \frac{3.15 \times 1000}{360} = 8.75$ MM

ACTUAL = $\frac{5WL^3}{384EI} + \frac{1WL^3}{48EI} = \frac{5 \times 3.94 \times 3.15^3 \times 10^{12}}{384 \times 210{,}000 \times 2356 \times 10^4} + \frac{1 \times 23.56 \times 3.15^3 \times 10^{12}}{48 \times 210{,}000 \times 2356 \times 10^4}$

$= \frac{616}{1099.88} + \frac{737}{257.48} = 0.52 + 3.10 = 3.42$ MM

∴ OK.

∴ USE 203X133X25Kg UB AS SHOWN.

CHECK PADSTONES

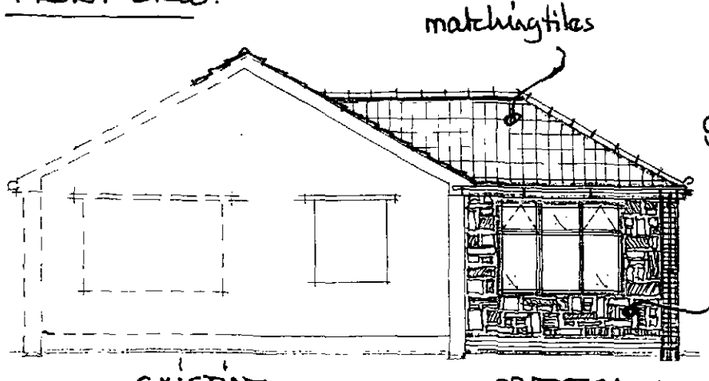
LOAD = 23.56 + 3.94 = 27.50/2 = 13.75 KN

P/S PLAN = 600 X 100 ∴ LOAD = $\frac{13.75 \times 10^3}{600 \times 100} = 0.23 N/mm^2$

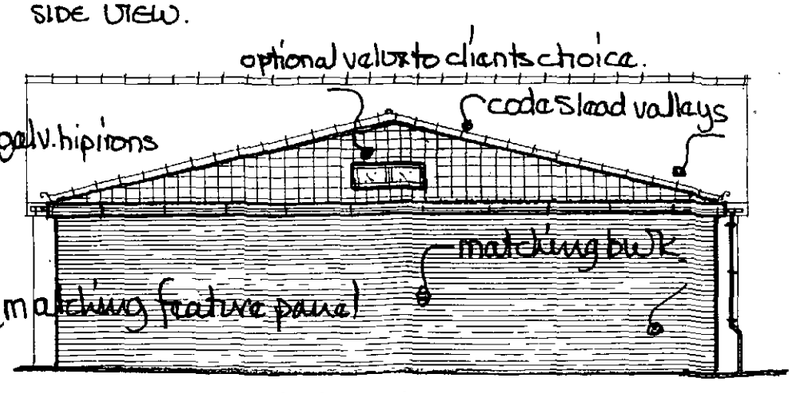
∴ USE 600L TAYLOR R6 R/F CONCRETE LINTOLS AS PADSTONE TO EXTERNAL WALL.

AS ALT USE 18MM MILD STEEL PLATE SAME PLAN SIZE

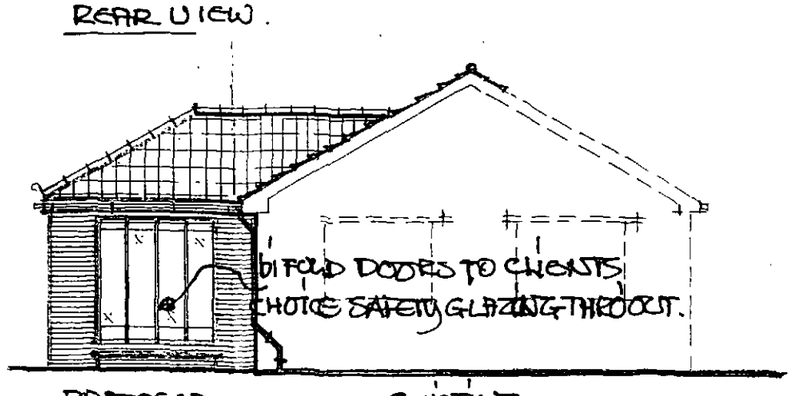
FRONT VIEW.



SIDE VIEW.



REAR VIEW.



revised April 2010 to TSCP requirements