

SULIT



**BAHAGIAN PEPERIKSAAN DAN PENILAIAN
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI
KEMENTERIAN PENGAJIAN TINGGI**

JABATAN KEJURUTERAAN AWAM

PEPERIKSAAN AKHIR

SESI I : 2022/2023

DCQ50244 BUILDING WORKS MEASUREMENT 5

TARIKH : 13 DISEMBER 2022

MASA : 8.30 AM – 10.30 AM (2 JAM)

Kertas ini mengandungi **LAPAN (8)** halaman bercetak.

Bahagian A: Struktur (2 soalan)

Bahagian B: Esei (4 soalan)

Dokumen sokongan yang disertakan : Lukisan Pelan

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIARAHKAN

(CLO yang tertera hanya sebagai rujukan)

SULIT

SECTION A: 50 MARKS
BAHAGIAN A: 50 MARKAH

INSTRUCTION:

This section consists of **TWO (2)** structured questions. Answer **ALL** questions.

ARAHAN:

Bahagian ini mengandungi DUA (2) soalan berstruktur. Jawab SEMUA soalan.

Notes / Nota:

- (a) Taking off shall refer to the rules and principles in Standard Method of Measurement for Building Works second edition (SMM2).

Kerja-kerja penyaringan mesti berdasarkan prinsip-prinsip yang ditetapkan dalam Kaedah Pengukuran Piawai Kerja Bangunan edisi ke-2 (SMM2.)

- (b) Candidates are allowed to make assumptions if the information given in a drawing is inadequate.

Calon dibenarkan untuk membuat andaian munasabah sekiranya maklumat atau spesifikasi dalam lukisan tidak diperuntukkan atau tidak jelas.

- (c) Marks will be given for the knowledge of the subject and systematic setting of dimensions, adequacy and accuracy of description and dimensions.

Markah akan diberikan berdasarkan pengetahuan tentang subjek dan dimensi yang sistematik, kecukupan dan ketepatan penerangan dan dimensi.

QUESTION 1**SOALAN 1**CLO1
C2

- (a) Explain with example the designation of member according to SMM2 Section N: Structural Steelwork, Clause N.4 Designation of Member: N.4.a. and N.4.b.

Terangkan dengan contoh nama komponen berdasarkan SMM2, Seksyen N: Kerja Struktur Besi, Klausula N.4 Penamaan Komponen: N.4.a dan N.4.b.

[5 marks]

[5 markah]

CLO1
C3

- (b) By referring to SMM2, identify the clause used to produce description for fencing measurement. Based on this requirement, develop an example of description for fencing.

Dengan merujuk SMM2, kenalpasti klausa yang digunakan untuk menghasilkan keterangan kerja bagi pengukuran pagar. Berdasarkan keperluan tersebut bina satu contoh keterangan kerja bagi pengukuran pagar.

[10 marks]

[10 markah]

CLO1
C3

- (c) By referring to Drawing No. **DCQ50244/FENCING & LANDSCAPE/ 01-02**, identify the requirement in SMM2 for planting work and develop the taking off list tree planting.

*Dengan merujuk kepada lukisan bernombor **DCQ50244/FENCING & LANDSCAPE/ 01-02**, kenalpasti keperluan SMM2 untuk kerja penanaman pokok dan bina satu senarai pengukuran kuantiti bagi kerja penanaman pokok tersebut.*

[10 marks]

[10 markah]

QUESTION 2**SOALAN 2**CLO1
C2

- (a) Clearly explain the terms of Take Off, Move Off, Hack Off, Cutting Opening and Make Good Finished in demolition work.

Terangkan dengan jelas istilah bagi Menanggal, Mengalih, Memecah, Membuat Bukaan dan Baikpulih Selepas Siap dalam kerja-kerja perobohan.

[5 marks]

[5 markah]

CLO1
C3

- (b) By referring to SMM2 Section V Clause V.2.4 clearly explain the clause. Based on Drawing No. **DCQ50244/ SURFACE WATER DRAINAGE/ 01**, determine the depth of excavation for drain between S1 to S2.

*Dengan merujuk kepada SMM2 Seksyen V Klausula V.2.4 terangkan dengan jelas berkenaan klausula tersebut. Berdasarkan lukisan bernombor **DCQ50244/ SURFACE WATER DRAINAGE/ 01**, tentukan kedalaman penggorekan longkang antara S1 kepada S2.*

[10 marks]

[10 markah]

CLO1
C3

- (c) By referring to Drawing No. **DCQ50244/SEWERAGE/01** carry out the quantity measurement of 100mm thick concrete base (1:2:4), sides of formwork to concrete base and BRC A9 for manhole, MH1 to MH6.

*Berdasarkan lukisan bernombor **DCQ50244/SEWERAGE/01** ukur kuantiti 100mm tebal alas konkrit (1:2:4), kotak acuan untuk alas konkrit dan BRC A9 untuk lurang, MH1 hingga MH6.*

[10 marks]

[10 markah]

SECTION B: 50 MARKS**BAHAGIAN B: 50 MARKAH****INSTRUCTION:**

This section consists of **FOUR (4)** essay questions. Answer **TWO (2)** questions only.

ARAHAN:

Bahagian ini mengandungi EMPAT (4) soalan essei. Jawab DUA (2) soalan sahaja.

QUESTION 1**SOALAN 1**

CLO1
C3

- (a) By referring to Drawing No. **DCQ50244/STURUCTURAL STEELWORK/01** measure the quantity of 150UC23 columns and 250UB31 roof beams.

Berdasarkan lukisan bernombor DCQ50244/STRUCTURAL STEELWORK/01 ukur kuantiti bagi tiang 150UC23 dan rasuk bumbung 250UB31.

[10 marks]

[10 markah]

CLO1
C4

- (b) By referring to Drawing No. **DCQ50244/ FENCING & LANDSCAPE/ 01-02**, conclude the measurement as a bill of quantities for chain link fencing.

Berdasarkan lukisan bernombor DCQ50244/ FENCING & LANDSCAPE/ 01-02, rumuskan pengukuran sebagai senarai kuantiti bagi pagar chain link.

[15 marks]

[15 markah]

QUESTION 2**SOALAN 2**CLO1
C3

- (a) By referring to Drawing No. **DCQ50244/ FENCING & LANDSCAPE/ 01-02**, measure the quantity for tree planting.

Berdasarkan lukisan bernombor DCQ50244/ FENCING & LANDSCAPE/ 01-02, ukur kuantiti bagi penanaman pokok.

[10 marks]

[10 markah]

CLO1
C4

- (b) By referring to Drawing No. **DCQ50244/ SURFACE WATER DRAINAGE/ 01**, conclude the measurement as a bill of quantities for excavation work, bed and drain.

Berdasarkan lukisan bernombor DCQ50244/ SURFACE WATER DRAINAGE/ 01, rumuskan pengukuran sebagai senarai kuantiti bagi penggalian tanah, alas dan longkang.

[15 marks]

[15 markah]

QUESTION 3**SOALAN 3**CLO1
C3

- (a) By referring to Drawing No. **DCQ50244/SEWERAGE/01**, measure the quantity for excavation works for manhole MH1 to MH6 by using schedule of sewerage work.

Berdasarkan lukisan bernombor DCQ50244/SEWERAGE/01 ukur kuantiti kerja pengaliran untuk lurang MH1 hingga MH6 menggunakan jadual kerja pembentung.

[10 marks]

[10 markah]

CLO1
C4

- (b) By referring to Drawing No. **DCQ50244/SEWERAGE/01**, conclude the measurement as a bill of quantities for brickworks.

Dengan merujuk kepada lukisan bernombor DCQ50244/SEWERAGE/01, rumuskan pengukuran sebagai senarai kuantiti bagi kerja bata.

[15 marks]

[15 markah]

QUESTION 4

SOALAN 4

CLO1
C3

- (a) By referring to Drawing No. **DCQ50244/ WATER RETICULATION SYSTEM/ 01-02**, measure the quantity for excavation, distribution pipe and fitting.

Berdasarkan lukisan bernombor DCQ50244/ WATER RETICULATION SYSTEM/ 01-02, ukur kuantiti bagi pengorekan, paip agihan dan pepasang.

[10 marks]

[10 markah]

CLO1
C4

- (b) By referring to Drawing No. **DCQ50244/ RENOVATION WORK/ 01**, conclude the measurement as a bill of quantity for renovation work for floor finishes.

Berdasarkan lukisan bernombor DCQ50244/ RENOVATION WORK/ 01, rumuskan pengukuran sebagai senarai kuantiti bagi kerja pengubahsuaian kemasan lantai.

[15 marks]

[15 markah]

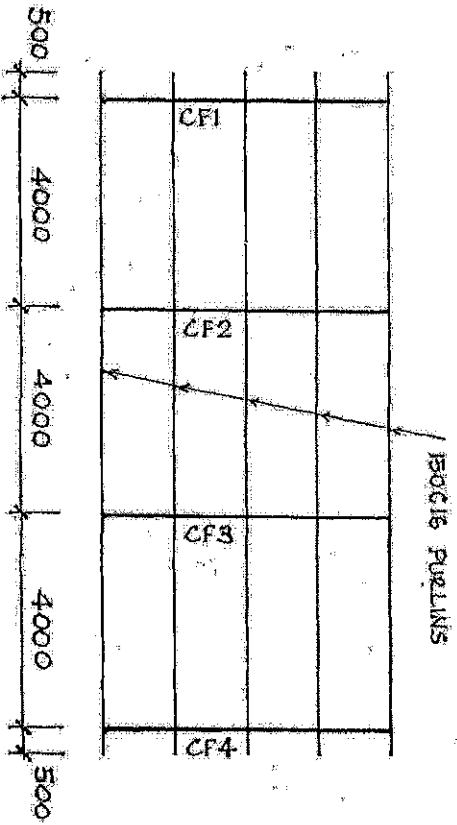
SOALAN TAMAT

SPECIFICATION NOTES
STRUCTURAL STEEL

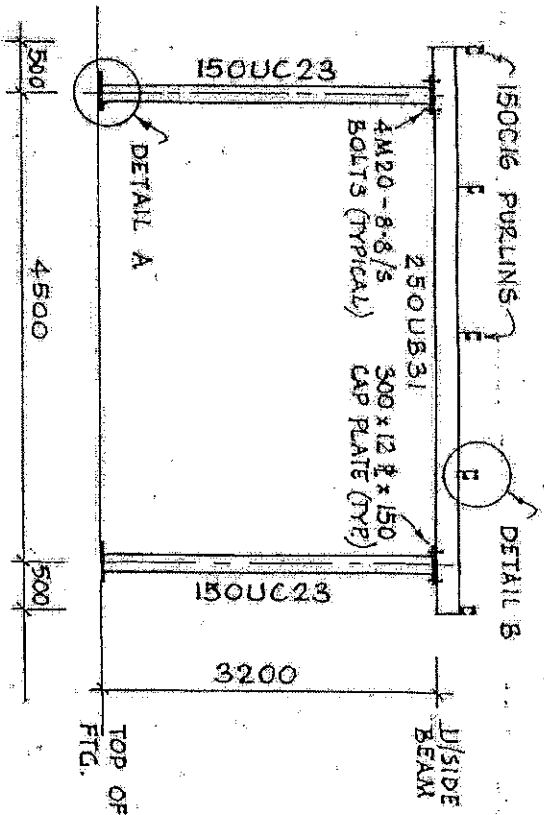
Provide and erect all steelwork including galvanized steel purlins as detailed.

All steelwork, excluding purlins, to be given a shop priming coat of R.O.Z.C. (red oxide zinc chromate) primer.

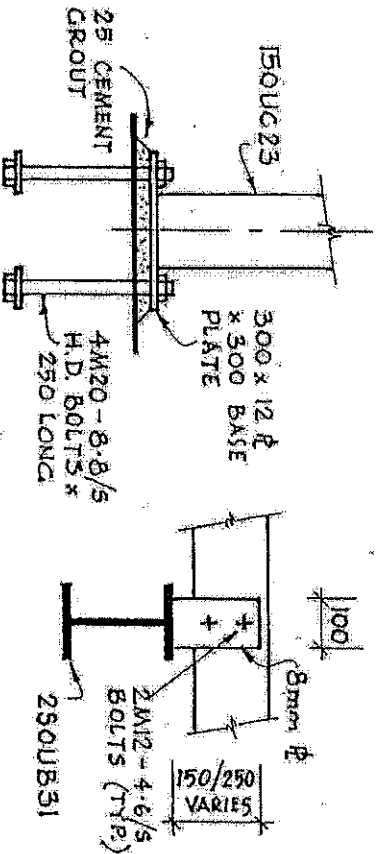
Grout up under base plates with cement grout composed of 2 parts sand to 1 part cement.



150 UC	37.2	162	154	11.5	8.1
	30.0	158	153	9.4	6.6
	23.4	152	152	8.8	6.1
250 UB	37.3	256	146	10.9	6.4
	31.4	252	146	8.6	6.1

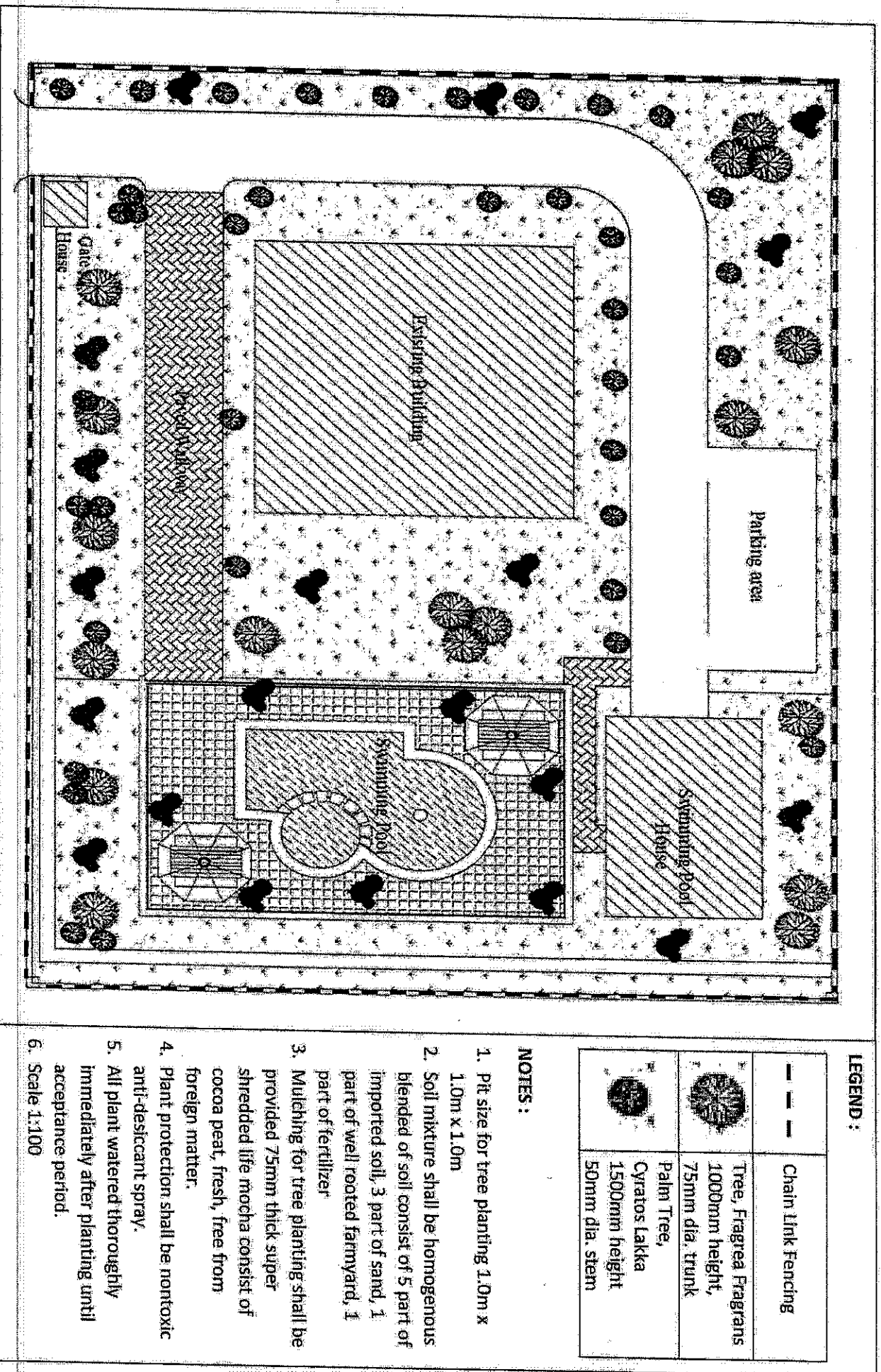


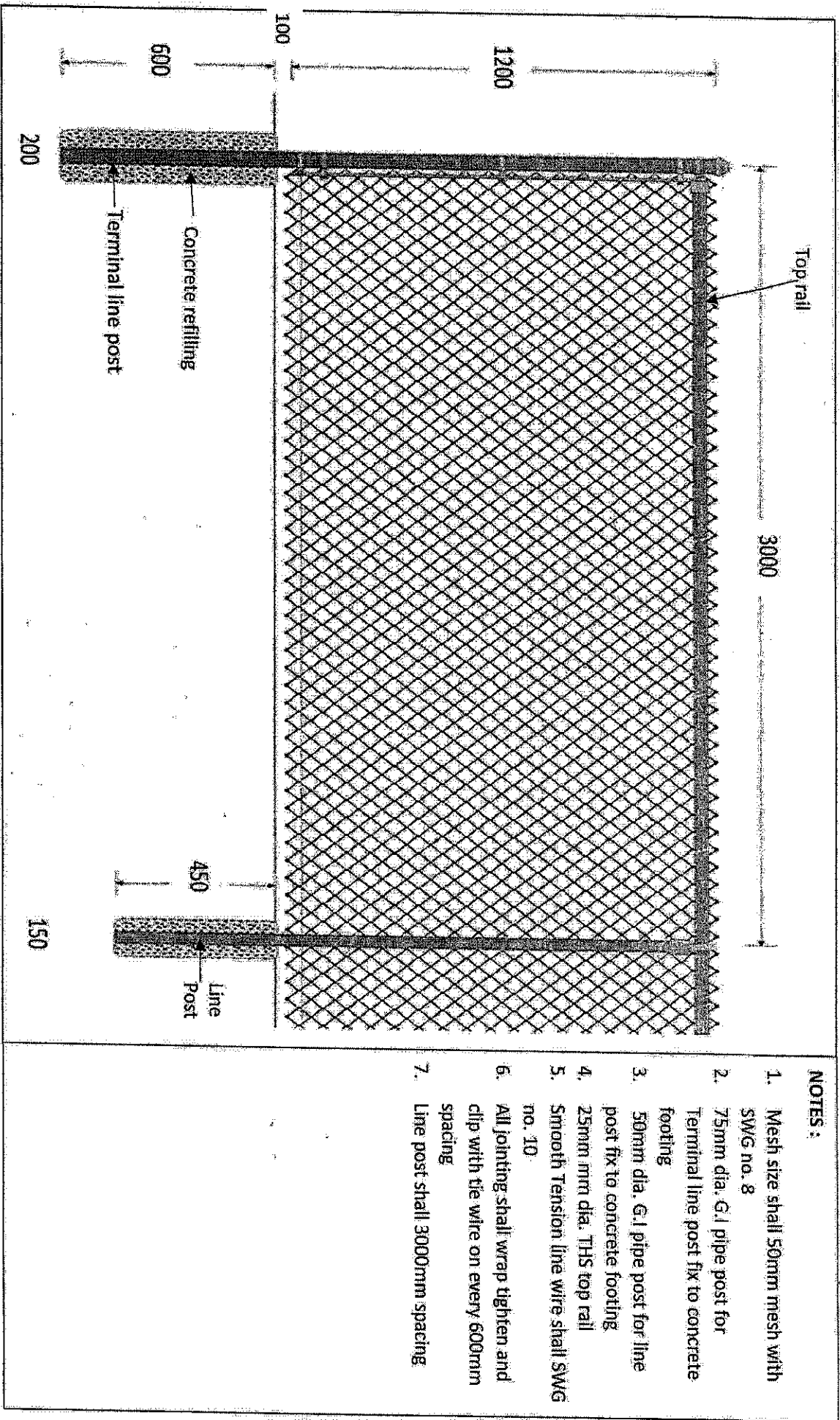
COVERED WAY FRAME C/F1
(C/F2 - C/F4 SIMILAR)



DETAIL A

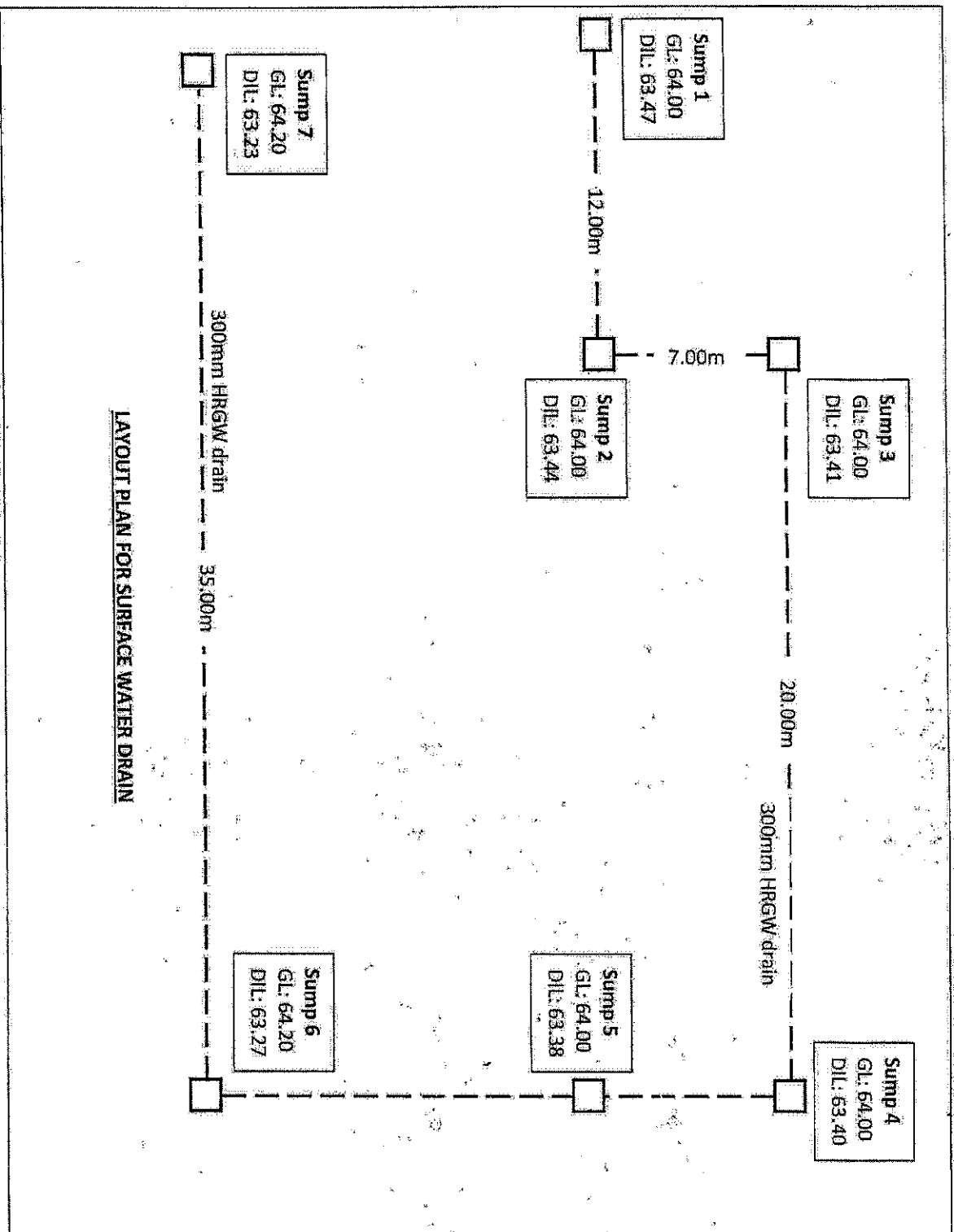
DETAIL B



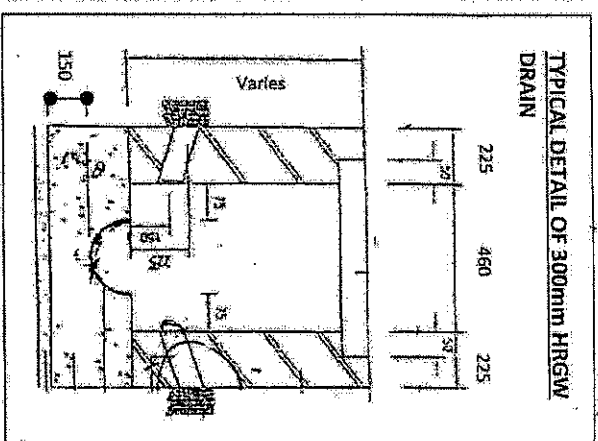


NOTES :

1. Mesh size shall 50mm mesh with SWG no. 8
2. 75mm dia. G.I pipe post for Terminal line post fix to concrete footing
3. 50mm dia. G.I pipe post for line post fix to concrete footing
4. 25mm mm dia. THS top rail
5. Smooth Tension line wire shall SWG no. 10
6. All jointing shall wrap tighten and clip with tie wire on every 600mm spacing
7. Line post shall 3000mm spacing.

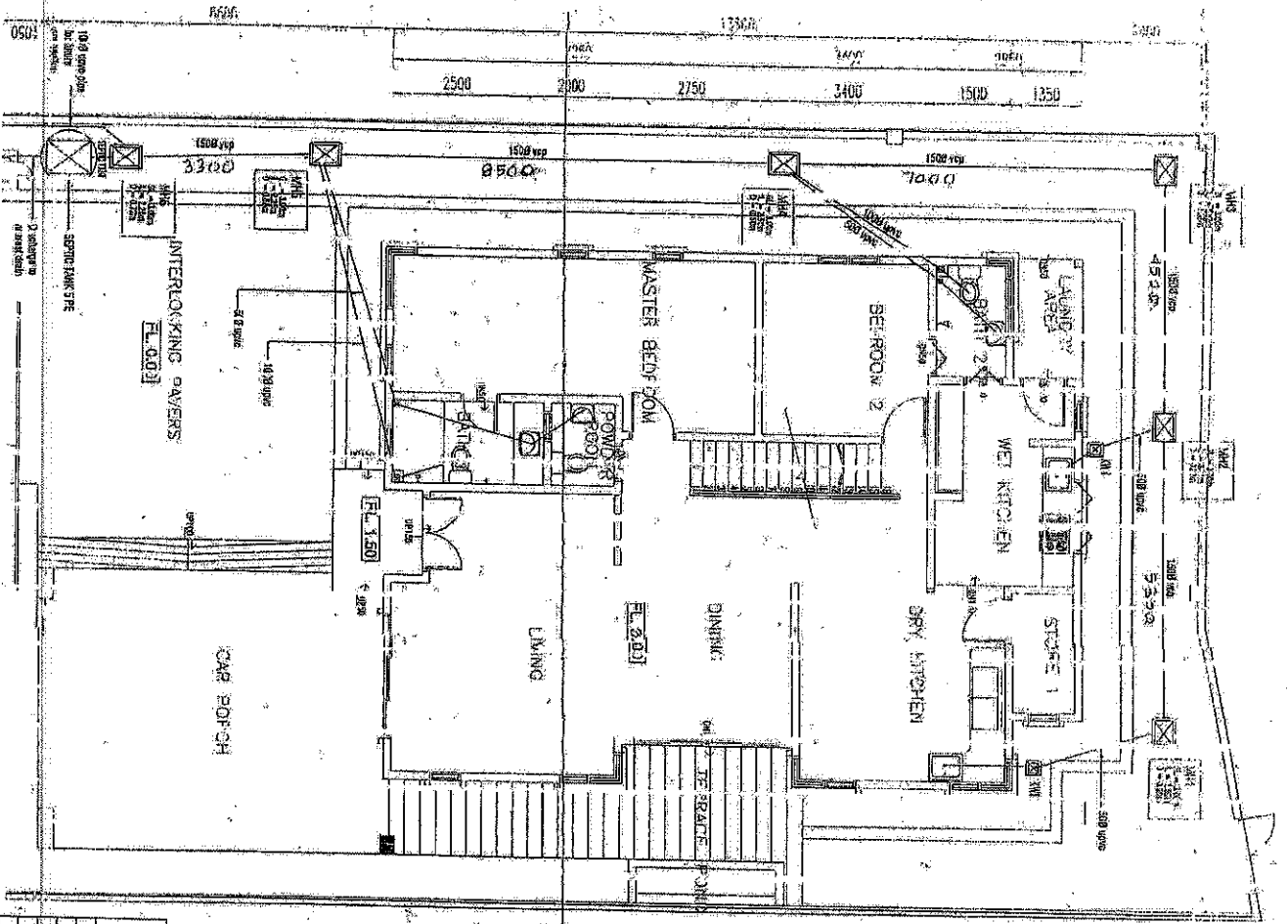


LAYOUT PLAN FOR SURFACE WATER DRAIN



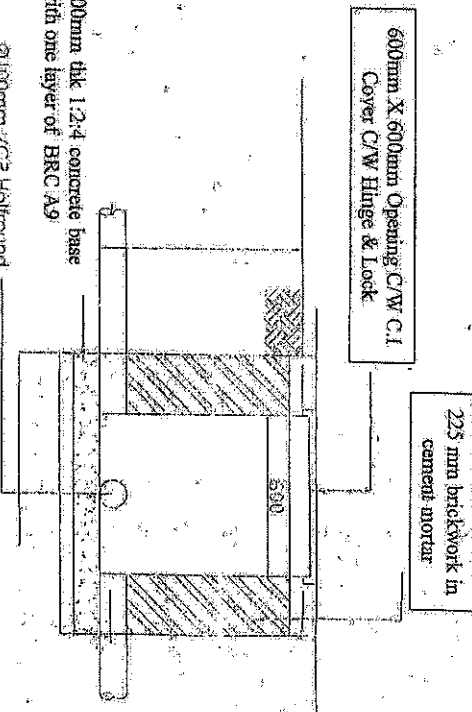
NOTES:

1. Lean concrete 50mm thickness
2. Proposed 300mm HRGW drain with 30mm thick
3. All surface water drain used 300mm HRGW drain
4. Drawing not to scale

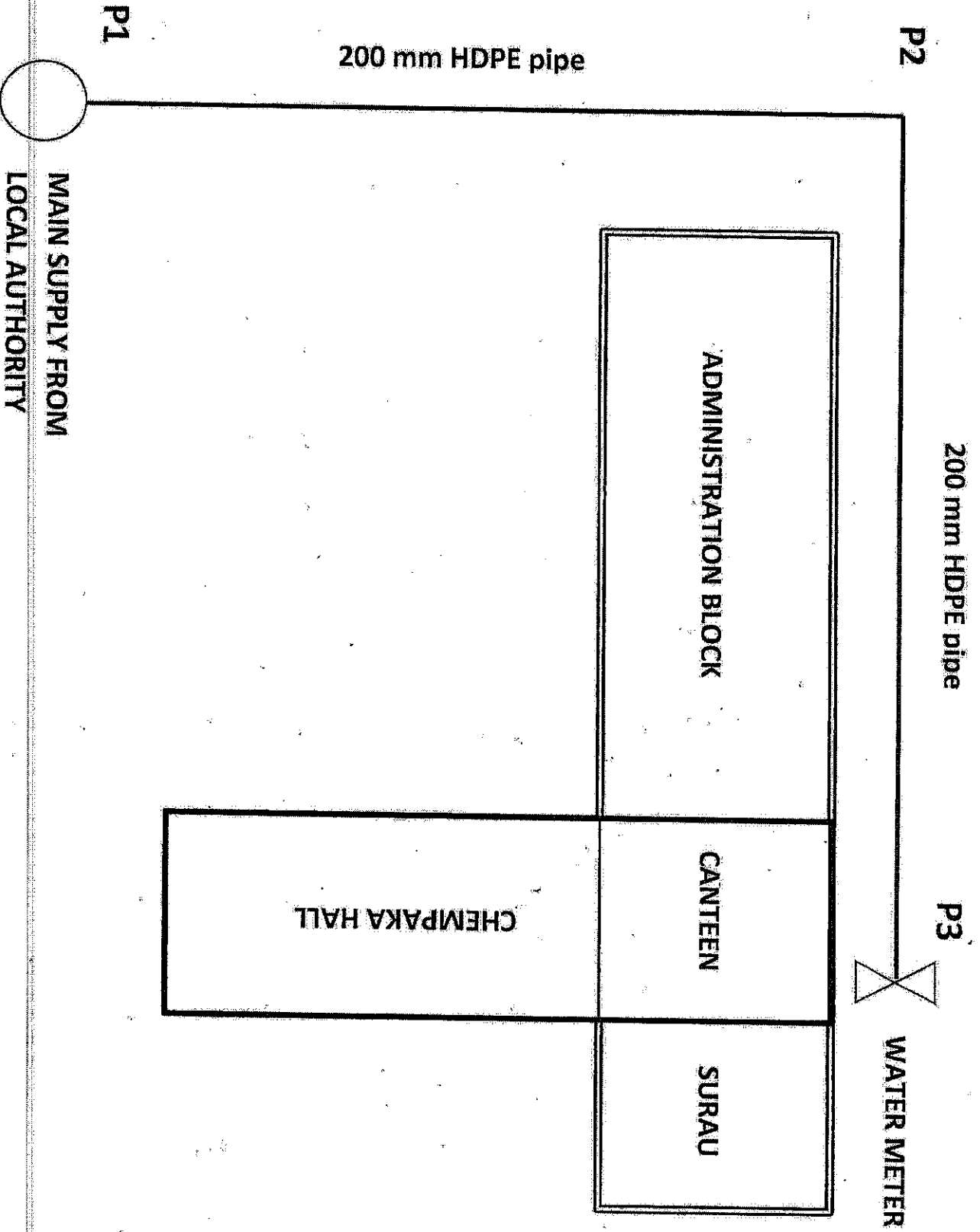


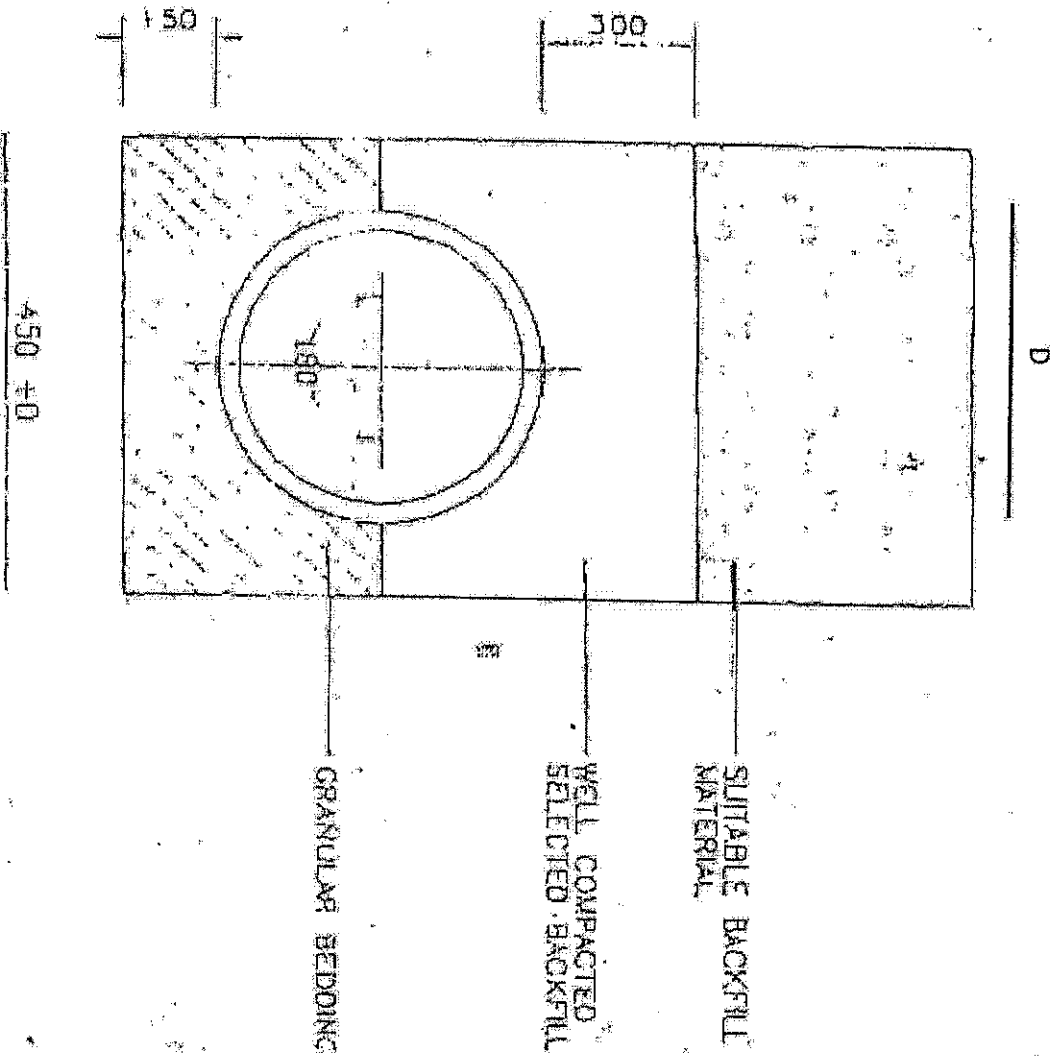
100mm thk 1:2:4 concrete base
with one layer of BRC A9

100mm VCB Halfround
sewer pipe with a gradient
of 1:50



POINT	LENGTH (mm)	GROUND LEVEL G.L.	INVERT LEVEL I.L.
MH1	MH1 to MH2 - 5500mm	3.00	2.80
MH2	MH2 to MH3 - 4500mm	3.00	2.71
MH3	MH3 to MH4 - 7000mm	3.00	2.61
MH4	MH4 to MH5 - 8500mm	3.00	2.50
MH5	MH5 to MH6 - 3300mm	3.00	2.36
MH6		3.00	2.28

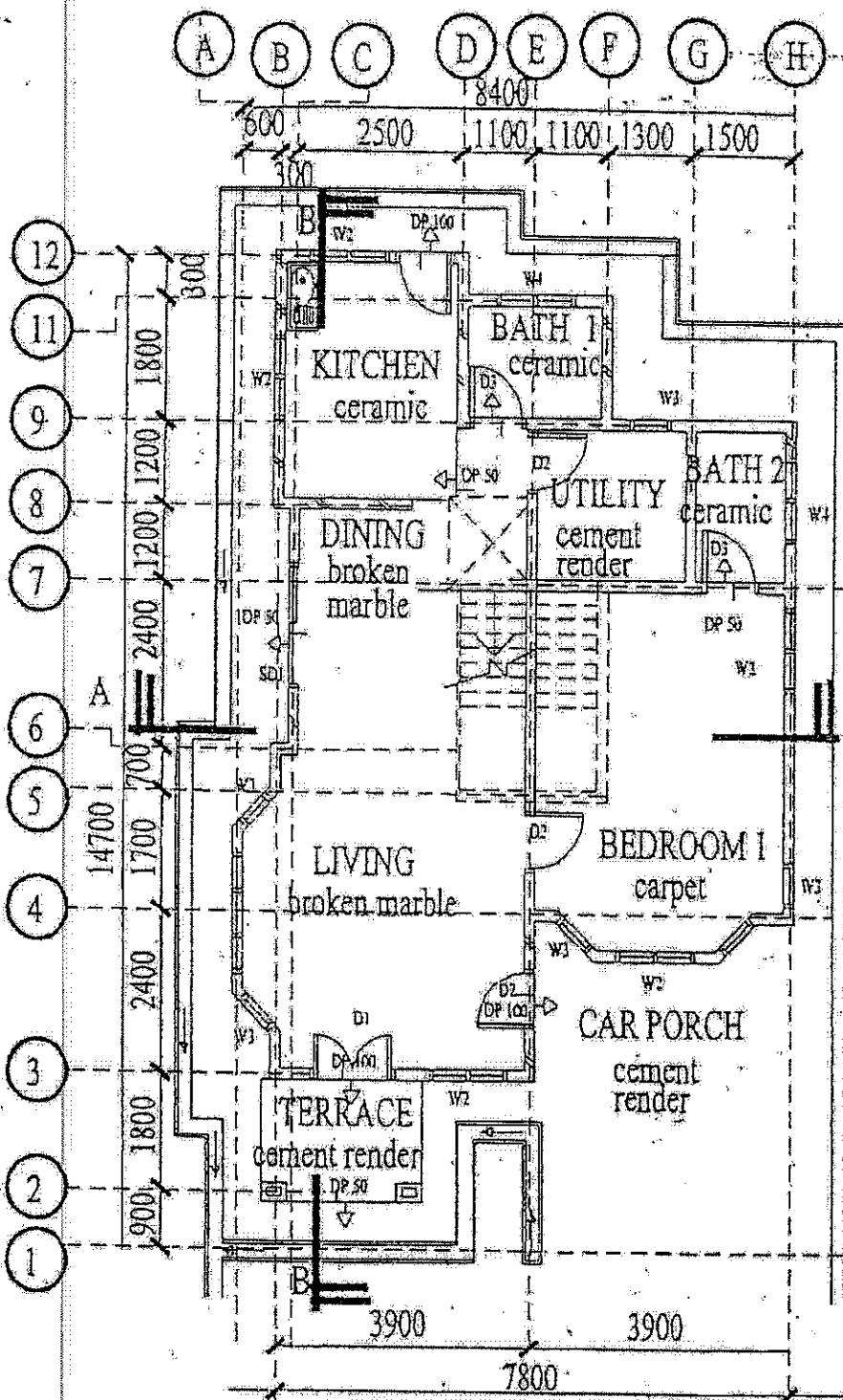




LEGEND :

PROPOSED HDPE PIPE 200 mm diameter	
FORMATION LEVEL	
P1	INVERT LEVEL 58.60
P2	INVERT LEVEL 58.80
P3	INVERT LEVEL 58.00

- Notes :**
1. Selected fill shall be uniform readily compactible material free from tree roots, vegetable matter, building rubbish and preferably excluding clay lump retained on sieve and stone.
 2. Scale 1 : 100



Element : Floor Finishes

Location :

- 1. Car Porch**
Specification: Cement renders to be removed and replace with 1200mmx 1200mmx65mm thick heavy duty homogeneous tile.
- 2. Terrace**
Specification: Cement renders to be removed and replace with 300mmx300mm x20mm thick heavy duty homogeneous tile.
- 3. Living, Dining**
Specification: Broken marble to be removing and replace with floor timber board 900mm x300mmx65mm thick.
- 4. Bedroom 1**
Specification: Carpet to be remove and replace with 150mmx150mmx8mm thick homogenous tile.

PELAN LANTAI TINGKAT BAWAH

DCQ50244/RENOVATION WORK/01