

SULIT



KEMENTERIAN PENDIDIKAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

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

JABATAN KEJURUTERAAN AWAM

PEPERIKSAAN AKHIR

SESI II : 2022/2023

DCQ30154: BUILDING WORKS MEASUREMENT 3

TARIKH : 6 JUN 2023

MASA : 2.30 PTG – 4.30 PTG (2 JAM)

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

Bahagian A: Subjektif (2 soalan)

Bahagian B: Subjektif (4 soalan)

Dokumen sokongan yang disertakan : Kertas Dimensa / Kertas Billing /
Lukisan

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIARAHKAN

(CLO yang tertera hanya sebagai rujukan)

SULIT

Notes:**Nota:**

1. Taking off should refer Standard Method of Measurement of Building Works Second Edition (SMM2).

Pengukuran kuantiti hendaklah merujuk kepada Standard Method of Measurement of Building Works Second Edition (SMM2).

2. Candidate are allowed to make assumptions if the information given in the drawing is inadequate.

Calon dibenarkan untuk membuat andaian sekiranya maklumat yang diberi di dalam lukisan adalah tidak mencukupi.

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

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

ARAHAN

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

QUESTION 1**SOALAN 1**

By referring to Drawing No: **DCQ30154/FLOOR & WALL FINISHES/Q1/SA/ 01-02 & DCQ30154/FLOOR & WALL FINISHES/Q1/SA/02-02**, answer ALL the questions below:

Dengan merujuk kepada Lukisan No: DCQ30154/FLOOR & WALL FINISHES/Q1/SA/01-02 & DCQ30154/FLOOR & WALL FINISHES/Q1/SA/02-02, jawab SEMUA soalan di bawah:

CLO 1

- (a) By referring to Section S.17 & S.18, prepare a complete description for Ceiling Works (types of ceiling finishes: Fibrous Plasterboard Ceiling).

Dengan merujuk kepada seksyen S.17 & S.18, sediakan satu keterangan kerja yang lengkap bagi Kerja-Kerja Siling (jenis kemasan siling: 'Siling Kapur').

[5 Marks]

[5 Markah]

CLO1

- (b) Prepare the quantity measurement of **Internal Wall Finishes for Bedroom 4 and Bedroom 6 ONLY.**

Sediakan pengukuran kuantiti bagi Kemasan Dinding Dalam untuk Bilik Tidur 4 dan Bilik tidur 6 SAHAJA.

[10 Marks]

[10 Markah]

CLO1

- (c) Prepare the quantity measurement of **Internal Floor Finishes for Bedroom 4 and 5 ONLY**.

Sediakan pengukuran kuantiti bagi Kemasan Lantai Dalam untuk Bilik Tidur 4 dan 5 SAHAJA.

[10 Marks]

[10 Markah]

QUESTION 2**SOALAN 2**

By referring to Drawing No: **DCQ30154/RETAINING WALL/SA/Q2/01**, answer ALL questions below:

Dengan merujuk kepada Lukisan No: DCQ30154/RETAINING WALL/SA/Q2/01, jawab SEMUA soalan di bawah:

CLO 1

- (a) Explain the differences between sand blinding and concrete blinding measurement unit based on SMM2.

Terangkan perbezaan unit bagi pengukuran item alas pasir dan alas konkrit berdasarkan SMM2.

[5 Marks]

[5 Markah]

CLO1

- (b) Prepare the quantity measurement of retaining wall for the formwork items below:

Sediakan pengukuran kuantiti bagi tembok penahan untuk item papan acuan di bawah:

Item	Description	Unit
1.	Formwork for base	?
2.	Formwork to side of wall	?

[10 Marks]

[10 Markah]

CLO1

- (c) Prepare the quantity measurement of retaining wall for the concrete works items as below:

Sediakan pengukuran kuantiti bagi tembok penahan untuk item kerja-kerja konkrit seperti di bawah:

Item	Description	Unit
1.	Concrete in Wall	?
2.	Concrete for Base	?

[10 Marks]

[10 Markah]

SECTION B: 50 Marks

BAHAGIAN B: 50 Markah

INSTRUCTION

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

ARAHAN

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

QUESTION 1

SOALAN 1

CLO 1

- (a) By referring to Drawing No: **DCQ30154/CYBERCAFE FURNITURE & FITTINGS/SB/Q1(a)/01**, prepare the quantities measurement of loose furniture and fitting works item.

Dengan merujuk kepada Lukisan No: DCQ30154/CYBERCAFE FURNITURE & FITTINGS/SB/Q1(a)/01, sediakan pengukuran kuantiti bagi item kerja-kerja perabut dan perkakasan mudah alih.

[8 Marks]

[8 Markah]

CLO 1

- (b) By referring to Drawing No: **DCQ30154/OFFICE FURNITURE & FITTINGS/SB/Q1(b)/01-02 & 02-02**, conclude a bill of quantities complete with quantity measurement for the loose furniture and fittings works items as below:

*Dengan merujuk kepada Lukisan No: **DCQ30154/OFFICE FURNITURE & FITTINGS/SB/Q1(b)/01-02 & 02-02**, rumuskan satu senarai kuantiti lengkap dengan pengukuran kuantiti bagi item kerja perabut dan perkakasan seperti di bawah:*

Item	Description	Unit
1.	Single Sit Sofa (SF)	?
2.	High Back Rest Chair (CR)	?
3	L-Shape Office Table (LS)	?
4	Reception Table (RCT)	?

[17 Marks]

[17 Markah]

QUESTION 2**SOALAN 2**

By referring to Drawing No: **DCQ30154/EARTHWORKS/SB/Q2/01**, scope of work is from **grid point A2→A4→D4→D3→B3→B2→A2**. Answer ALL questions below:

*Merujuk kepada Lukisan No: **DCQ30154/EARTHWORKS/SB/Q2/01**, skop kerja adalah dari titik grid **A2→A4→D4→D3→B3→B2→A2**. Jawab SEMUA soalan di bawah:*

CLO 1

- (a) Prepare the table for quantities measurement average depth of cutting and filling using Weighted Average Excavation Method.

Sediakan jadual purata kedalaman pemotongan dan penambakan dengan menggunakan Kaedah Pengorekan Purata Pemberatan.

[8 Marks]

[8 Markah]

CLO 1

- (b) With the aid of measurement, conclude a bill of quantities complete with the quantity measurement for question 2(a).

Dengan bantuan pengukuran, rumuskan satu senarai kuantiti lengkap dengan pengukuran kuantiti bagi soalan 2(a).

[17 Marks]

[17 Markah]

QUESTION 3**SOALAN 3**

By referring to Drawing No: **DCQ30154/ ROAD WORKS/SB/Q3/01-03 until 03-03**, answer ALL questions below:

*Dengan merujuk kepada Lukisan No: **DCQ30154/ ROAD WORKS/SB/Q3/01-03 until 03-03**, jawab SEMUA soalan di bawah:*

CLO 1

- (a) Prepare the quantity measurement for **road signage** items below:

Sediakan pengukuran kuantiti untuk papan tanda jalan untuk item dibawah:

Item	Description	Unit
1.	Jalan Hang Tuah	?
2.	Jalan Hang Jebat	?

[8 Marks]

[8 Markah]

CLO 1

- (b) Conclude a bill of quantities complete with quantity measurement for **roadwork preparation only**.

Rumuskan satu senarai kuantiti lengkap dengan pengukuran kuantiti bagi lapisan penyediaan jalan sahaja.

[17Marks]

[17 Markah]

QUESTION 4**SOALAN 4**

By referring to Drawing No. **DCQ30154/BASEMENT/SB/Q4/01-02 & 02-02**, answer ALL the questionsp below:

*Dengan merujuk kepada Lukisan No. **DCQ30154/BASEMENT/SB/Q4/01-02 & 02-02**, jawab Semua soalan di bawah:*

CLO 1

- (a) Prepare the quantity measurement of **excavation for basement** and **disposal of excavated material**.

*Sediakan pengukuran kuantiti penggalian **ruang bawah tanah** dan **pembuangan tanah dari pengorekkan**.*

[8 Marks]

[8 Markah]

CLO 1

- (b) Conclude a bill of quantities complete with quantity measurement for **lean concrete laid under slab, hardcore, and concrete external wall**.

*Rumuskan satu senarai kuantiti lengkap dengan pengukuran kuantiti bagi **konkrit alas bawah lantai, hadkor, dan dinding luar konkrit**.*

[17 Marks]

[17 Markah]

SOALAN TAMAT

Notes:**Nota:**

1. Taking off should refer Standard Method of Measurement of Building Works Second Edition (SMM2).

Pengukuran kuantiti hendaklah merujuk kepada Standard Method of Measurement of Building Works Second Edition (SMM2).

2. Candidate are allowed to make assumptions if the information given in the drawing is inadequate.

Calon dibenarkan untuk membuat andaian sekiranya maklumat yang diberi di dalam lukisan adalah tidak mencukupi.

CLO1

- (c) Prepare the quantity measurement of **Internal Floor Finishes for Bedroom 4 and 5 ONLY**.

Sediakan pengukuran kuantiti bagi Kemasan Lantai Dalam untuk Bilik Tidur 4 dan 5 SAHAJA.

[10 Marks]

[10 Markah]

QUESTION 2

SOALAN 2

By referring to Drawing No: **DCQ30154/RETAINING WALL/SA/Q2/01**, answer ALL questions below:

Dengan merujuk kepada Lukisan No: DCQ30154/RETAINING WALL/SA/Q2/01, jawab SEMUA soalan di bawah:

CLO 1

- (a) Explain the differences between sand blinding and concrete blinding measurement unit based on SMM2.

Terangkan perbezaan unit bagi pengukuran item alas pasir dan alas konkrit berdasarkan SMM2.

[5 Marks]

[5 Markah]

CLO1

- (b) Prepare the quantity measurement of retaining wall for the formwork items below:

Sediakan pengukuran kuantiti bagi tembok penahan untuk item papan acuan di bawah:

Item	Description	Unit
1.	Formwork for base	?
2.	Formwork to side of wall	?

[10 Marks]

[10 Markah]

CLO 1

- (b) By referring to Drawing No: **DCQ30154/OFFICE FURNITURE & FITTINGS/SB/Q1(b)/01-02 & 02-02**, conclude a bill of quantities complete with quantity measurement for the loose furniture and fittings works items as below:

Dengan merujuk kepada Lukisan No: DCQ30154/OFFICE FURNITURE & FITTINGS/SB/Q1(b)/01-02 & 02-02, rumuskan satu senarai kuantiti lengkap dengan pengukuran kuantiti bagi item kerja perabut dan perkakasan seperti di bawah:

Item	Description	Unit
1.	Single Sit Sofa (SF)	?
2.	High Back Rest Chair (CR)	?
3	L-Shape Office Table (LS)	?
4	Reception Table (RCT)	?

[17 Marks]

[17 Markah]

QUESTION 2**SOALAN 2**

By referring to Drawing No: **DCQ30154/EARTHWORKS/SB/Q2/01**, scope of work is from **grid point A2→A4→D4→D3→B3→B2→A2**. Answer ALL questions below:

Merujuk kepada Lukisan No: DCQ30154/EARTHWORKS/SB/Q2/01, skop kerja adalah dari titik grid A2→A4→D4→D3→B3→B2→A2. Jawab SEMUA soalan di bawah:

CLO 1

- (a) Prepare the table for quantities measurement average depth of cutting and filling using Weighted Average Excavation Method.

Sediakan jadual purata kedalaman pemotongan dan penambakan dengan menggunakan Kaedah Pengorekan Purata Pemberatan.

[8 Marks]

[8 Markah]

QUESTION 4**SOALAN 4**

By referring to Drawing No. **DCQ30154/BASEMENT/SB/Q4/01-02 & 02-02**, answer ALL the questions below:

*Dengan merujuk kepada Lukisan No. **DCQ30154/BASEMENT/SB/Q4/01-02 & 02-02**, jawab Semua soalan di bawah:*

CLO 1

- (a) Prepare the quantity measurement of **excavation for basement** and **disposal of excavated material**.

Sediakan pengukuran kuantiti penggalian ruang bawah tanah dan pembuangan tanah dari pengorekkan.

[8 Marks]

[8 Markah]

CLO 1

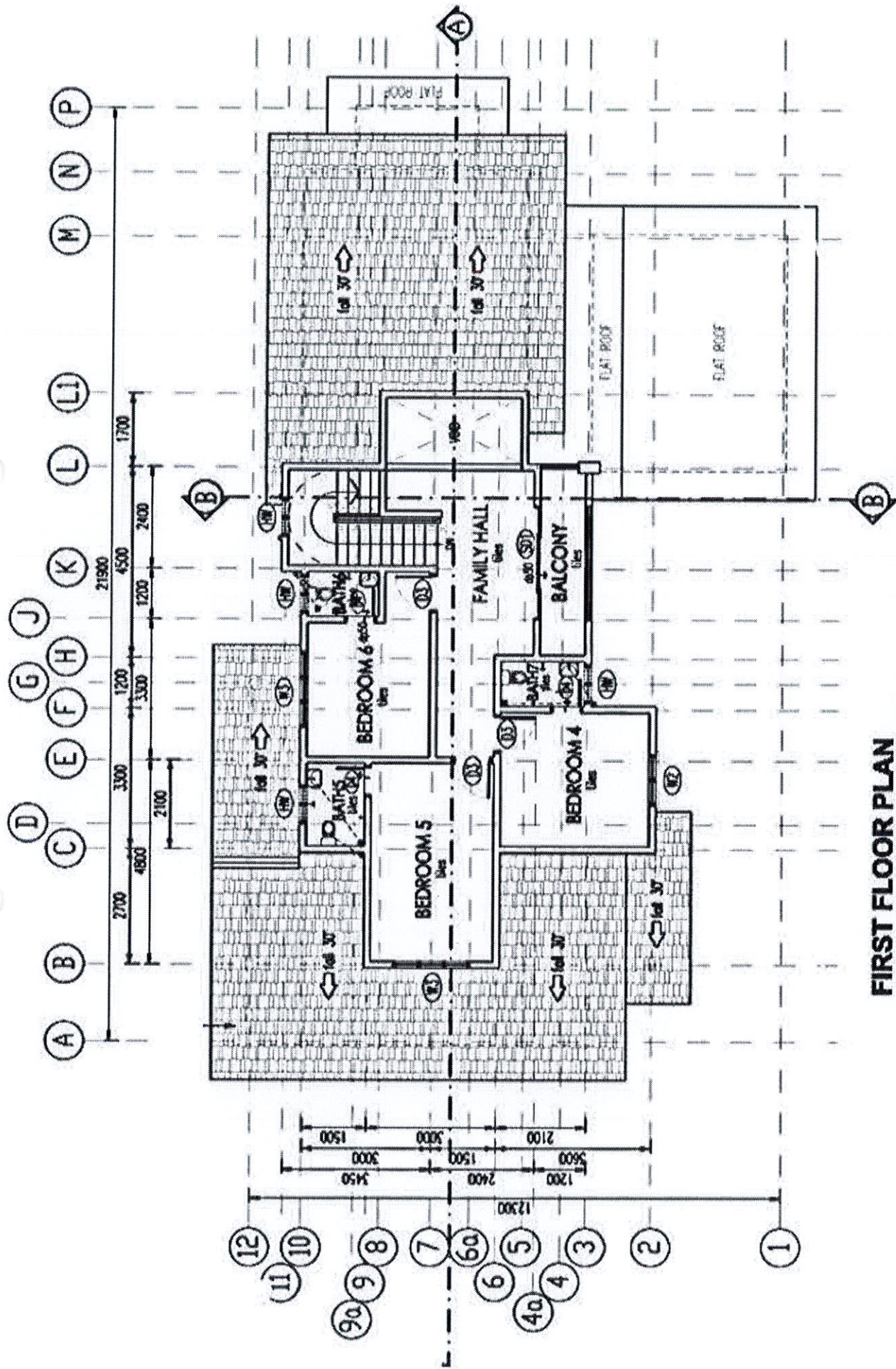
- (b) Conclude a bill of quantities complete with quantity measurement for **lean concrete laid under slab, hardcore, and concrete external wall**.

Rumuskan satu senarai kuantiti lengkap dengan pengukuran kuantiti bagi konkrit alas bawah lantai, hadkor, dan dinding luar konkrit.

[17 Marks]

[17 Markah]

SOALAN TAMAT



FIRST FLOOR PLAN

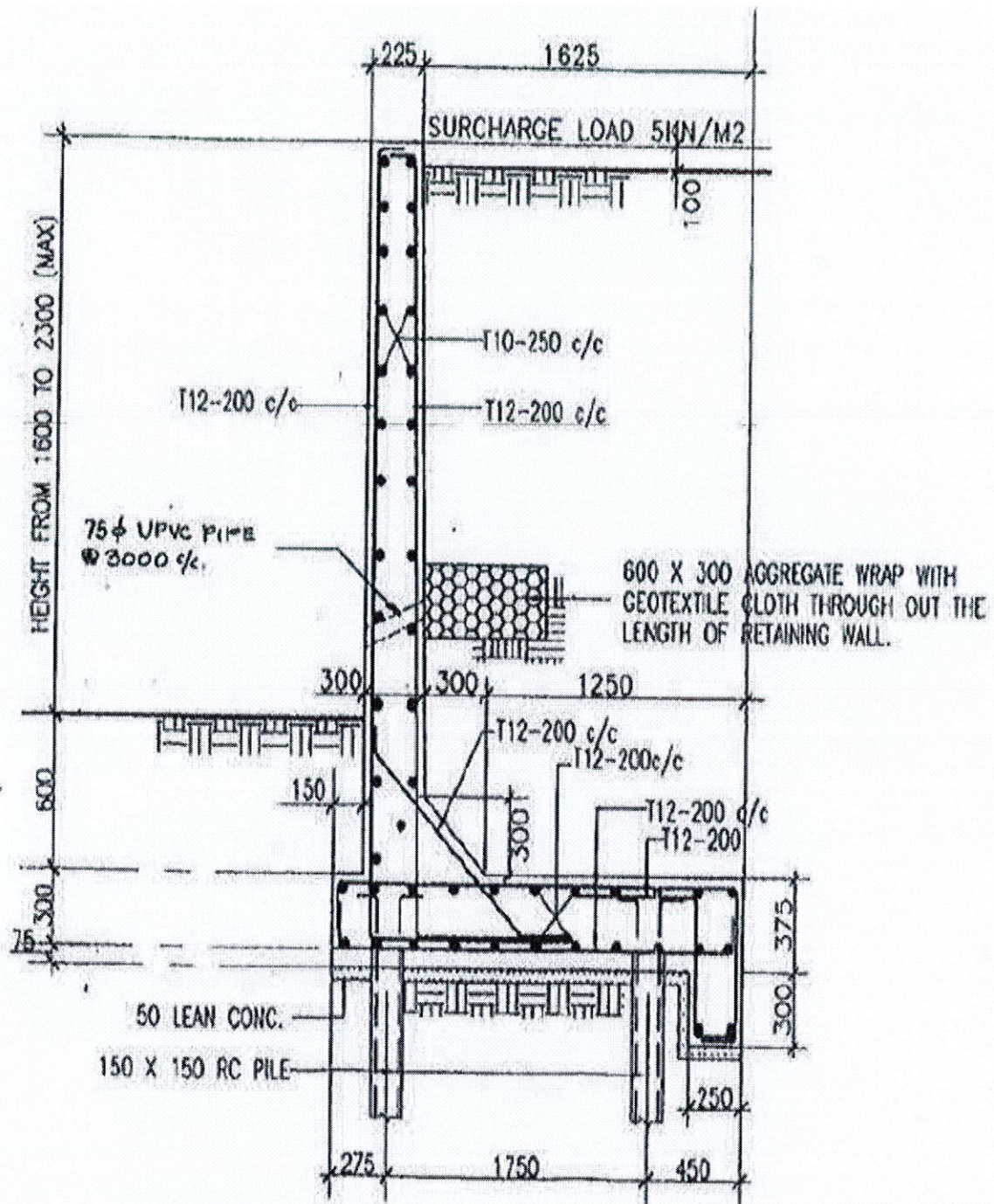
DRAWING NO: DCQ30154/FLOOR & WALL FINISHES/Q1/SA/01-02

N.T.S

TABLE OF DRAWING NOTES

WINDOW SCHEDULE		SIZE (W X H)	DOOR SCHEDULE		SIZE (W X H)
W1	TIMBER FRAME CASEMENT WINDOW WITH TOP HUNG ABOVE	600 MMX 2000MM	D1	TIMBER FRAME DOUBLE LEAF PANEL DOOR	1800MM X 2100MM
W2	TIMBER FRAME CASEMENT WINDOW WITH TOP HUNG ABOVE	1200MM X 1600MM	D2	TIMBER FRAME PANEL DOOR	900MM X 2100MM
W3	TIMBER FRAME CASEMENT WINDOW WITH TOP HUNG ABOVE	1800MM X 1600MM	D3	TIMBER FRAME CASEMENT WINDOW WITH TOP HUNG ABOVE	900MM X 2100MM
W4	TIMBER FRAME CASEMENT WINDOW WITH TOP HUNG ABOVE	900MM X 450MM	D4	PVC DOOR	750MM X 2100MM
HW	TIMBER FRAME TOP HUNG HIGH LEVEL WINDOW	900MM X 450MM	SD1	ALUMINIUM FRAME SLIDING DOOR	2400MM X 2100MM

NOTES FOR INTERNAL FLOOR FINISHES			
AREA	TYPE		SIZE TILE
BEDROOM 4,5 & 6	CERAMIC TILE		600MM X 300MM X 8MM THICK
BATH 5,6 & 7	NON-SLIP HOMOGENOUS TILE		300MM X 300MM X 8MM THICK
FAMILY HALL	MARBLE TILE		600MM X 600MM X 10MM THICK
NOTES FOR INTERNAL WALL FINISHES			
AREA	TYPE		HIGH OF WALL
BEDROOM 4,5 & 6	PLASTER & PAINT		3100MM HIGH
BATH 5,6 & 7	FULL HIGH HOMOG. WALL TILE 300MM X 300MM X 8MM THICK		
FAMILY HALL	PLASTER & PAINT		
OTEHRS: 115MM THICK Brickwall with 18mm thk Cement Plastering on Bothside			



Notes:

1. Drawing Not To Scale
2. Concrete wall shall be grade 30
3. Lean concrete shall be grade 20
4. All reinforcement used is from High Tensile Steel unless otherwise stated
5. Length of Proposed Retaining Wall is 30M

CROSS SECTION & DETAIL OF RW

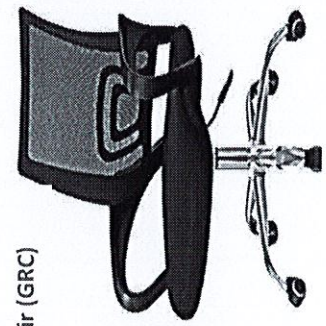
DRAWING NO: DCQ30154/RETAINING WALL/SA/Q2/01

MONALISA CYBER CAFE

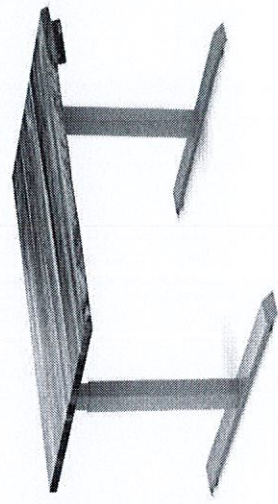


Name of product: Gaming Chair (GRC)

	COLOR	BLACK
	MATERIALS	MESH BACK WITH FABRIC SEAT
	DIMENSION	W560 X D530 X H890-980 (MM)
	MECHANISM	RECLINING MECHANISM WITH LOCKING SYSTEM
	WARRANTY	1 YEARS



Name of product: Dual Hardwood Sit Stand Desk (DK)
 Size: 1500mm x 750mm x 750mm high
 Material TableTop: Melamine
 Laminated Chipboard Oak Colour
 Leg: Aluminium & grey clour
 Warranty: 1 years

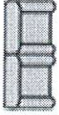


MONALISA CYBERCAFE LAYOUT PLAN & DETAIL SPECIFICATIONS OF PRODUCT
 N.T.S

DRAWING NO: DCQ30154/CYBERCAFE FURNITURE & FITTINGS/SB/Q1(a)/01

LEGEND:

SF-SINGLE SIT SOFA



CR-HIGH BACK
REST CHAIR



LS -L-SHAPE OFFICE
TABLE



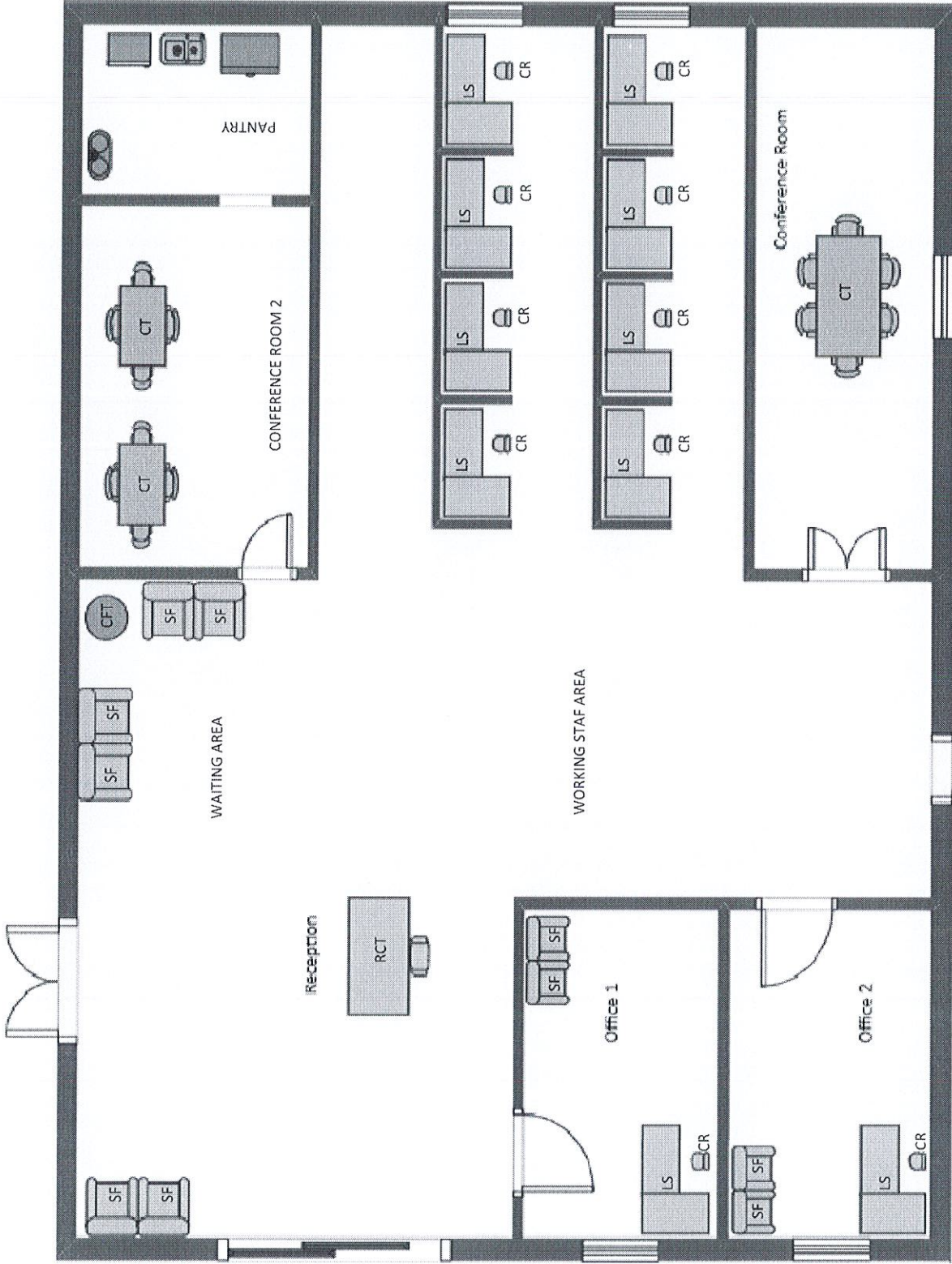
RCT -RECEPTION
COUNTER TABLE



CFT -COFEE TABLE

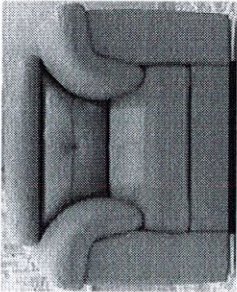
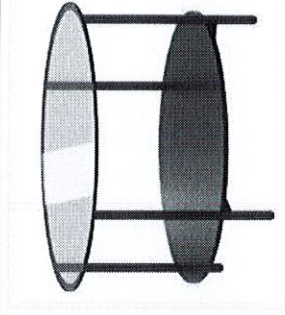
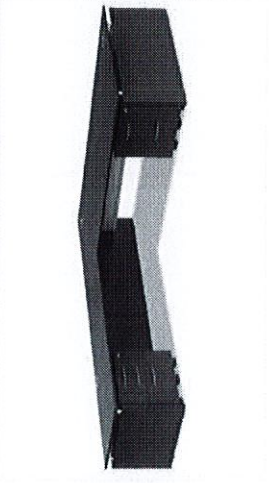
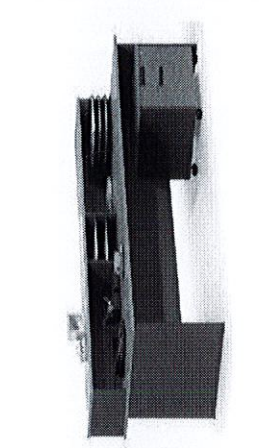
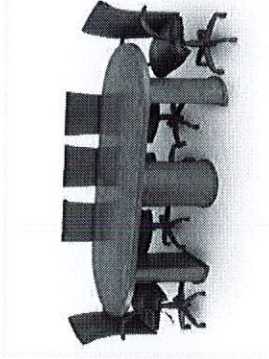


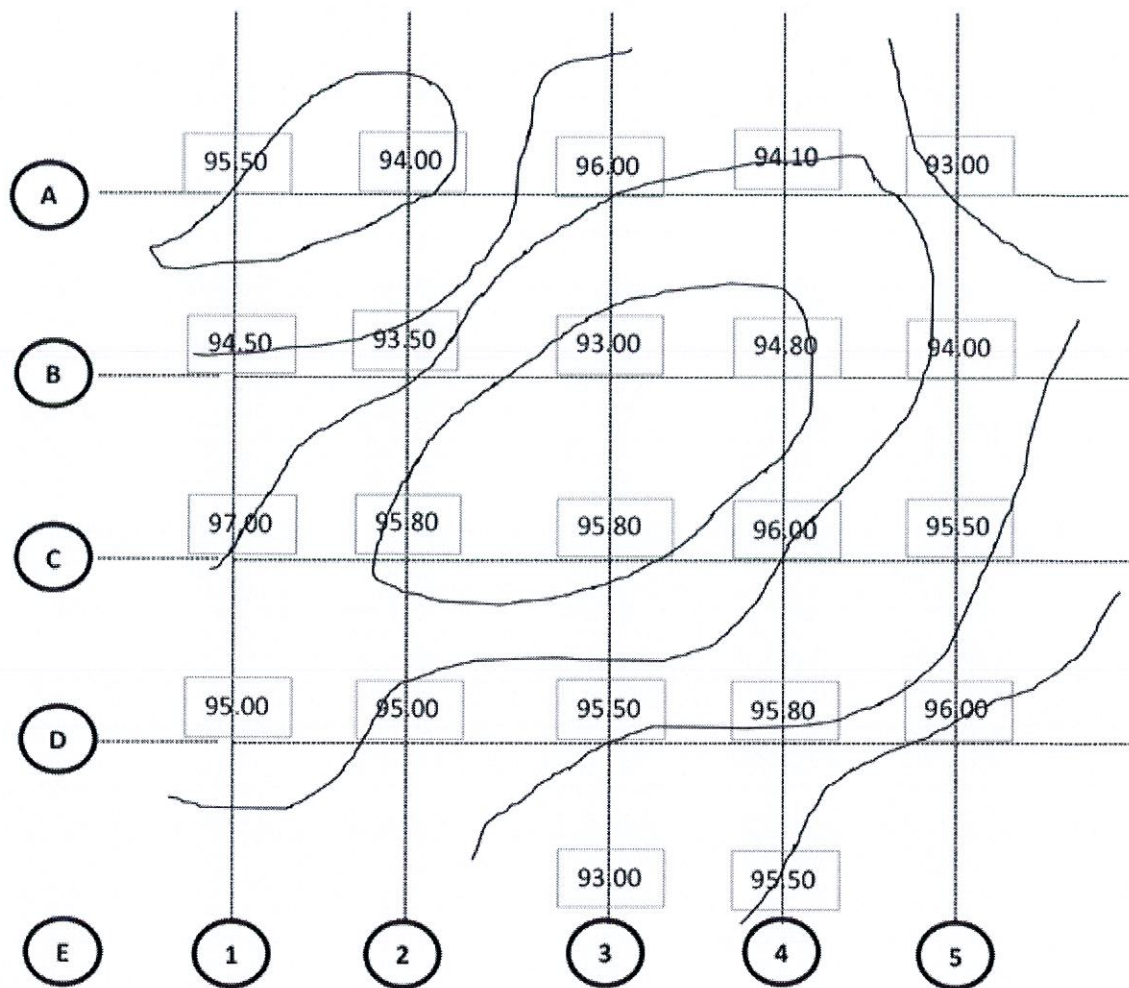
CT -CONFERENCE
TABLE



OFFICE LAYOUT PLAN-DRWG N.S.T

DRAWING NO: DCQ30154/ OFFICE FURNITURE & FITTINGS/SB/Q1(b)/01-02

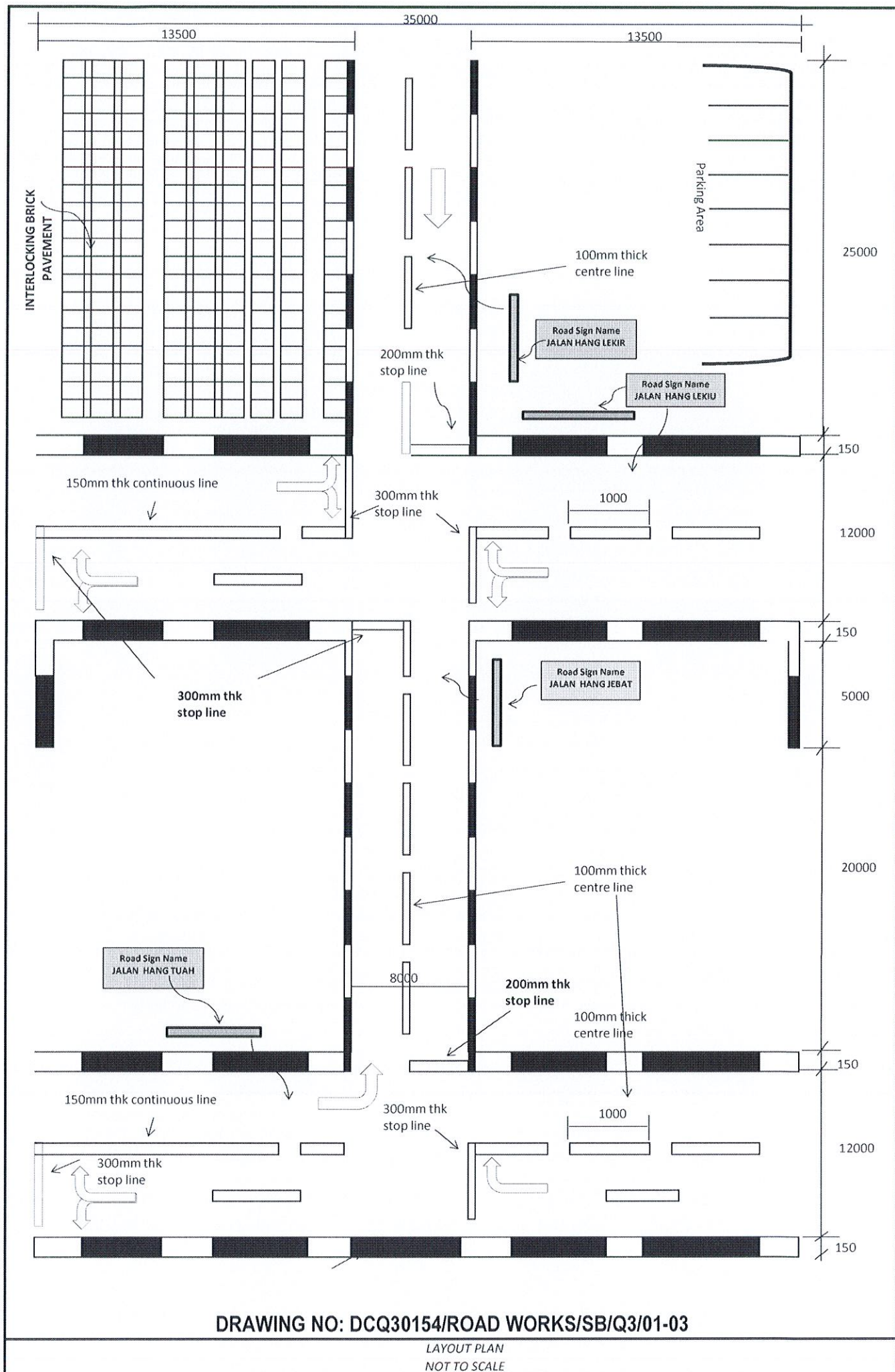
 SINGLE SIT SOFA (SF) Seat Size: Single seater-800mm x 600mm X 650mm Colour: Mustard Covering: 100% leather Frame: metal chrome	 HIGH BACK REST CHAIR (CR) Seat Size: 530mm x 530mm x 70mm thick pad Colour: Black Fabric: 100% polyester with polyurethane foam Armrest: PVC Leg: Stainless steel with gas lift height adjustment and knee tilt	 COFEE TABLE (CFT) Size: 900mm length x 600mm high Top Finish: 15mm thick Clear glass Leg & frame: Aluminum frame coating with white anodize and epoxy powder.
 L-SHAPE OFFICE TABLE (LS) Size :1800mm x 900mm x 750mm Frame: Timber frame with 5mm thick laminate melamine ply Tabletop: 40mm thick MDF board with PVC surface	 COUNTER TABLE (RCT) Size :1200mm x 730mm x 740mm Frame: Timber frame with 5mm thick laminate melamine ply Tabletop: 40mm thick MDF board with PVC surface	 CONFERENCE TABLE (CT) Size: 3000mm x 900mm x 750mm Frame: Timber frame with 5mm thick laminate melamine ply Tabletop: 40mm thick MDF board

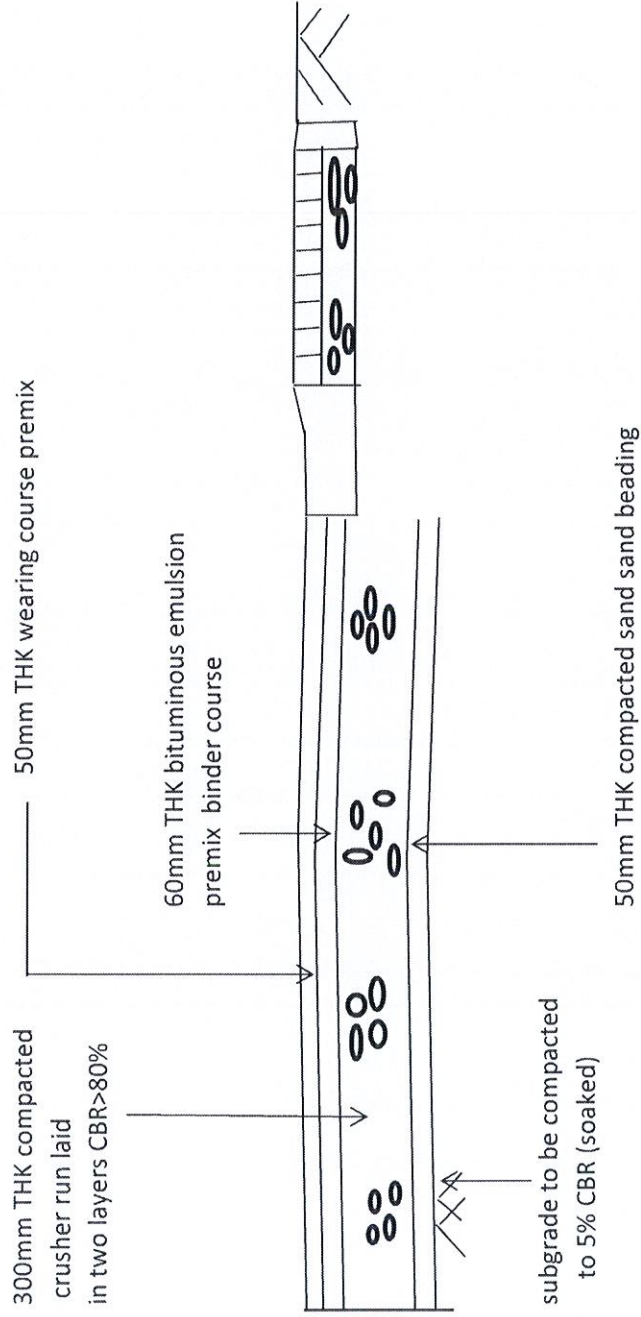


Notes:

1. All grid dimension 12m x 12m
2. Formation level: 94.50
3. Excavation topsoil is not required
4. Excavated material shall be reuse for filling work after selected and treated
5. Allow 10% for excavation in rocks
6. All excavation strictly within site boundary **—————** (Coverage area from grid point **A2→ A4→ D4→ D3→ B3→ B2→ A2**)

DRAWING NO: DCQ30154/EARTHWORKS/SB/Q2/01



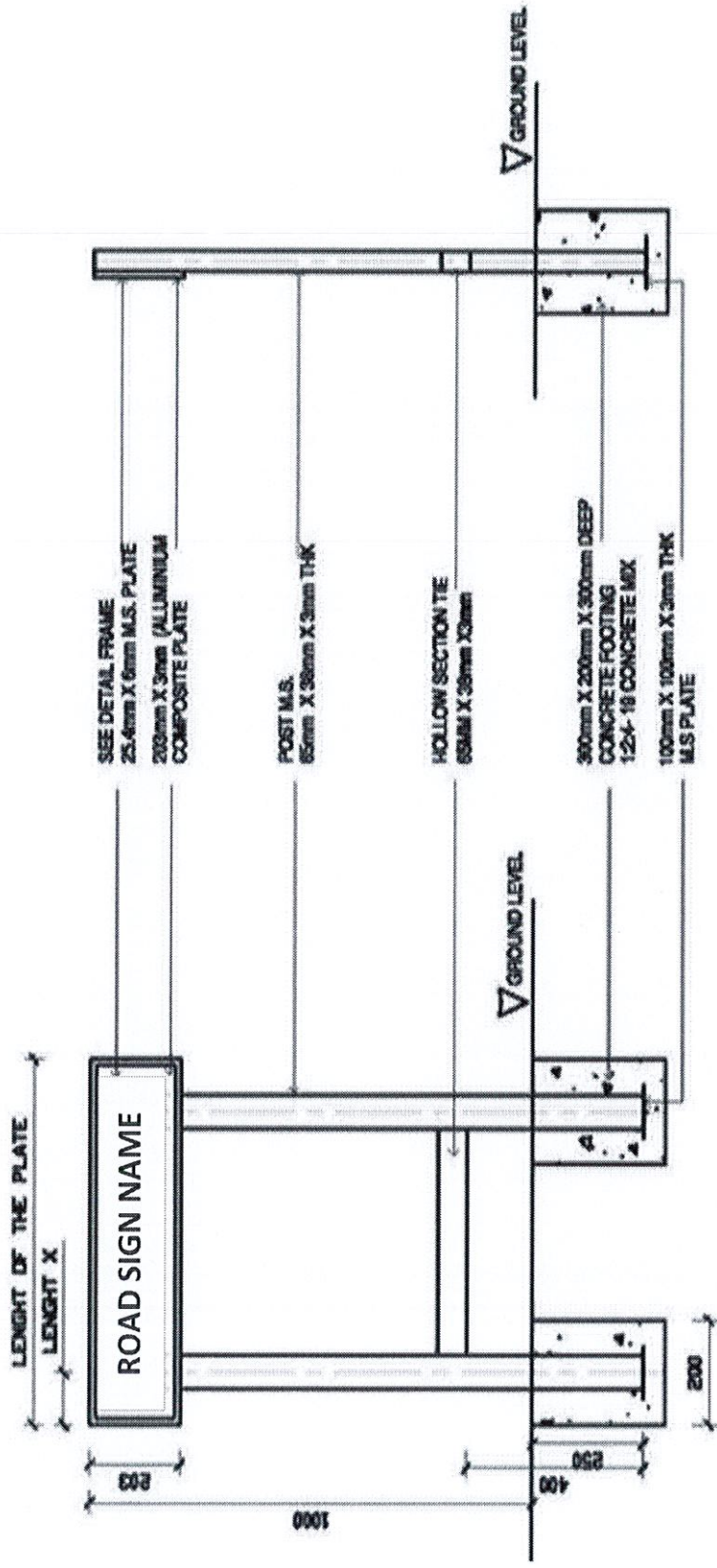


Notes:

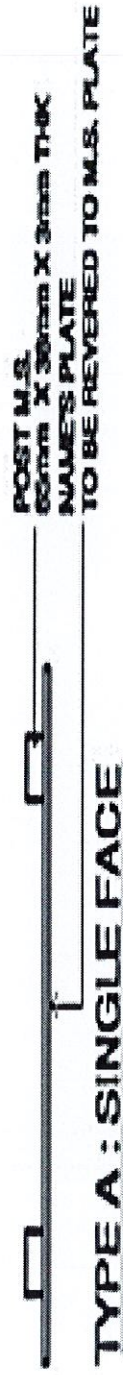
- 1) Letters, symbols, plate size and colour codes for traffic sign are defined in J.K.R "Arahan Teknik (Jalan)" 2.A/85-standard traffic sign.
- 2) All dimension and colours for temporary sign and their application principles are defined in "J.K.R Arahan Teknik (Jalan) 2C/85-Temporary sign and work zone control.
- 3) Application principles of traffic sign are defined in "J.K.R Arahan Teknik (Jalan) 2B/85.
- 4) Certain orientation of the sign should be defined on site by the S.O.

TYPICAL ROAD CROSS SECTION
NOT TO SCALE

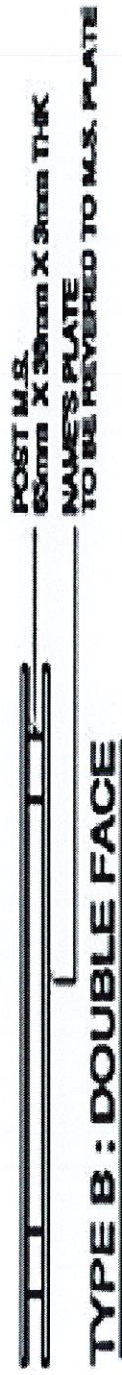
DRAWING NO: DCQ30154/ROAD WORKS/SB/Q3/02-03



FRONT ELEVATION



TYPE A : SINGLE FACE



TYPE B : DOUBLE FACE

TOP ELEVATION

DETAIL ROAD SIGNAGE

DRAWING NO: DCQ30154/ROAD WORKS/SB/Q3/03-03

