

SULIT



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

JABATAN KEJURUTERAAN AWAM

PEPERIKSAAN AKHIR

SESI I : 2022/2023

DCQ30154 BUILDING WORKS MEASUREMENT 3

TARIKH : 12 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 : Slip Sort & SMM2

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:***

1. Taking off shall refer to the rules in Standard Method of Measurement of Building Works Second Edition (SMM2)

Kerja-kerja penyaringan hendaklah merujuk kepada peraturan yang terdapat di dalam Kaedah Pengukuran Piawai untuk Kerja-Kerja Bangunan Edisi Kedua (SMM2)

2. Candidates are allowed to make any assumption if the information given in the drawing is inadequate.

Calon adalah dibenarkan untuk membuat sebarang andaian sekiranya maklumat yang diberikan di dalam lukisan tidak lengkap.

3. Marks will be given based on 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 sistematik dimensi, kecukupan dan ketepatan penerangan dan dimensi.

QUESTION 1

SOALAN 1

CLO 1
C2

- (a) By referring to SMM2, explain **TWO (2)** sub-sections (S.25) which is referred to the walls and ceiling finishes.

Dengan merujuk kepada SMM2, terangkan DUA (2) sub-seksyen (S.25) yang merujuk kepada kemas dinding dan siling.

[5 Marks]

[5 Markah]

CLO1
C3

- (b) By referring to Drawing No. **DCQ30154/WALL & FLOOR FINISHES/Q1/ 01**, measure the quantity for **External Wall Finishes** for the following items:

Dengan merujuk kepada Lukisan No. DCQ30154/WALL & FLOOR FINISHES/Q1/01, ukur kuantiti untuk Kemas Dinding Luar bagi item berikut:

Item/item	Description / Keterangan	Unit / Unit
1.	Plastering / Melepa	?
2.	Painting / Mengecat	?

[10 Marks]

[10 Marks]

CLO1
C3

- (c) By referring to the Drawing No. **DCQ30154/WALL & FLOOR FINISHES/ Q1/ 01**, measure the quantity for **Internal Floor Finishes** for **Living Room** and **Dining Area ONLY** of the following items:

Dengan merujuk kepada Lukisan No. DCQ30154/WALL & FLOOR FINISHES/Q1/01, ukur kuantiti bagi Kemas Lantai Dalam bagi Ruang tamu dan Ruang Makan SAHAJA bagi item berikut:

Item/item	Description / Keterangan	Unit / Unit
1.	Bed & Backing Works/ <i>Kerja Lapisan lepa</i>	?
2.	Tiling Works/ <i>Kerja Jubin</i>	?

[10 Marks]

[10 Markah]

QUESTION 2**SOALAN 2**CLO 1
C2

- (a) Identify **FIVE (5)** items to be stated in the description of “vertical formwork to faces and edges of retaining wall”.

Kenalpasti LIMA (5) item yang perlu dinyatakan dalam item keterangan “acuan menegak bagi muka dan sisi dinding penahan”.

[5 Marks]

[5 Markah]

CLO 1
C3

- (b) By referring to Drawing No. **DCQ30154/RETAINING WALL/A2/01**, measure the quantity measurement of the following items: “**trench excavation for toe beam**” and “**backfill with granular material**”.

Merujuk kepada Lukisan No. DCQ30154/RETAINING WALL/A2/01, ukur kuantiti untuk item berikut; penggalian peparit untuk rasuk” dan menambak dengan batuan”.

[10 Marks]

[10 Marks]

- (c) Referring to Drawing No. **DCQ30154/RETAINING WALL/A2/01**, measure the quantity for **Retaining Wall**, based on items below:

*Merujuk kepada Lukisan No. DCQ30154/RETAINING WALL/A2/01, ukur kuantiti untuk **Tembok Penahan**, berdasarkan item kerja seperti di bawah:*

Item	Description	Unit
1.	Concrete in stem/wall <i>Konkrit dalam dinding</i>	?
2.	Sub-soil pipe <i>Paip bawah tanah</i>	?

[10 Marks]

[10 Marks]

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 esei . Jawab DUA (2) soalan sahaja.

QUESTION 1***SOALAN 1***

CLO 1
C3

- (a) By referring to the Drawing No. **DCQ30154/FURNITURE & FITTINGS/ SEC B/Q1/01-04** until Drawing No **DCQ30154/FURNITURE & FITTINGS/ SEC B/Q1/04-04**, measure the quantity of loose furniture and fitting works.

Dengan merujuk kepada Lukisan No. DCQ30154/FURNITURE & FITTINGS/ SEC B/Q1/01-04 hingga Lukisan No DCQ30154/FURNITURE & FITTINGS/ SEC B/ Q1/04-04, ukur kuantiti bagi item kerja perabut dan perkakasan mudah alih.

[17 Marks]

[17 Markah]

CLO 1
C4

- (b) Conclude all measured quantities in **Question 1(a)** as the bill of quantities.

Rumuskan semua kuantiti terukur dalam Soalan 1(b) sebagai senarai kuantiti

[8 Marks]

[8 Markah]

QUESTION 2**SOALAN 2**CLO 1
C3

- (a) By referring to the Drawing No. **DCQ30154/EARTHWORKS/SECB/Q2/01**, calculate the quantity measurement average depth of cutting and filling using Weighted Average Excavation Method. Coverage areas are from **grid point C3→ C4→ F4→ F2→ E2→ E3→ C3**.

Dengan merujuk kepada Lukisan No. DCQ30154/EARTHWORKS/SECB/Q2/01, kira kuantiti pengukuran purata kedalaman pemotongan dan penambakan menggunakan Kaedah Pengorekan Purata Pemberatan. Kawasan yang terlibat adalah dari titik grid C3→ C4→ F4→ F2→ E2→ E3→ C3.

[17 Marks]

[17 Markah]

CLO 1
C4

- (b) Conclude all measured quantities in **Question 2 (a)** as the bill of quantities.

Rumuskan semua kuantiti terukur dalam Soalan 2 (a) sebagai senarai kuantiti

[8 Marks]

[8 Markah]

QUESTION 3**SOALAN 3**CLO 1
C3

- (a) By referring to the Drawing No. **DCQ30154/ ROADWORKS/ SECB/Q3/01-02 & 02-02**, measure the quantity for Roadwork of the following items:

Dengan merujuk kepada Lukisan No. DCQ30154/ ROADWORKS/SECB/Q3/01-02 & 02-02, ukur kuantiti untuk Kerja-kerja Jalanraya bagi item berikut:

Item/item	Description / Keterangan	Unit / Unit
1.	Binder Course / Lapisan Pengikat jalan	?
2.	Sub-Base Course / Lapisan asas jalan	?
3.	Wearing Course / Lapisan Kemasan jalan	?
4.	Kerb / Bendul jalan	?

[17 Marks]

[17 Markah]

CLO 1
C4

- (b) Conclude all measured quantities in **Question 3(a)** as the bill of quantities.
Rumuskan semua kuantiti terukur dalam Soalan 3(a) sebagai senarai kuantiti

[8 Marks]

[8 Markah]

QUESTION 4

SOALAN 4

CLO 1
C3

- (a) By referring to Drawing No. **DCQ30154/BASEMENT/01-02 & 02-02**, measure the quantity of the following items:

Dengan merujuk kepada Lukisan No. DCQ30154/BASEMENT/01-02 & 02-02, ukur kuantiti bagi item berikut.

<i>item</i>	<i>Description</i>	<i>unit</i>
1.	Concrete for slab and wall <i>Konkrit untuk papak dan dinding</i>	?
2.	Lean concrete under slab <i>Konkrit alas bawah lantai</i>	?
3.	Hardcore <i>Hadkor</i>	?

[17 Marks]

[17 Markah]

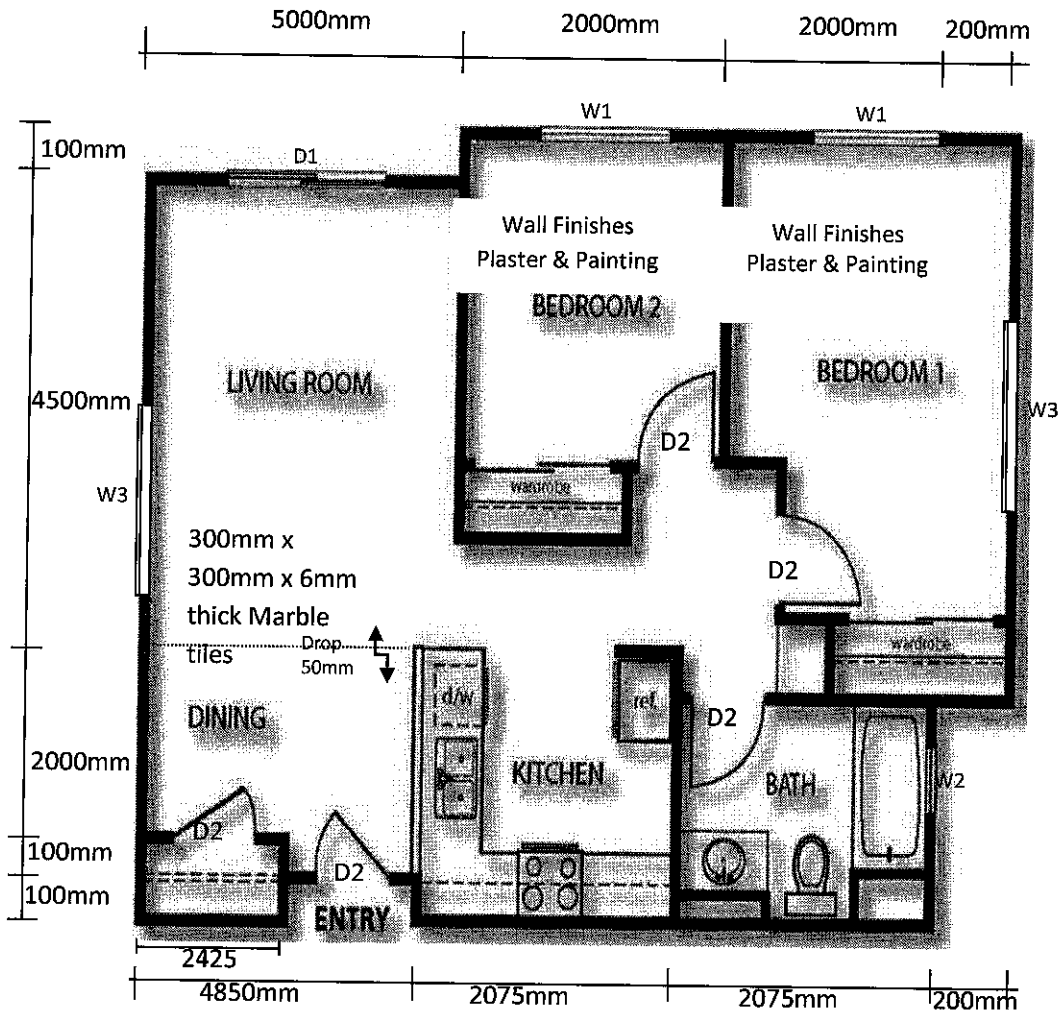
CLO 1
C4

- (b) Conclude all measured quantities in question 4(a) as the bill of quantities.
Rumuskan semua kuantiti terukur dalam soalan 4(a) sebagai senarai kuantiti

[8 Marks]

[8 Markah]

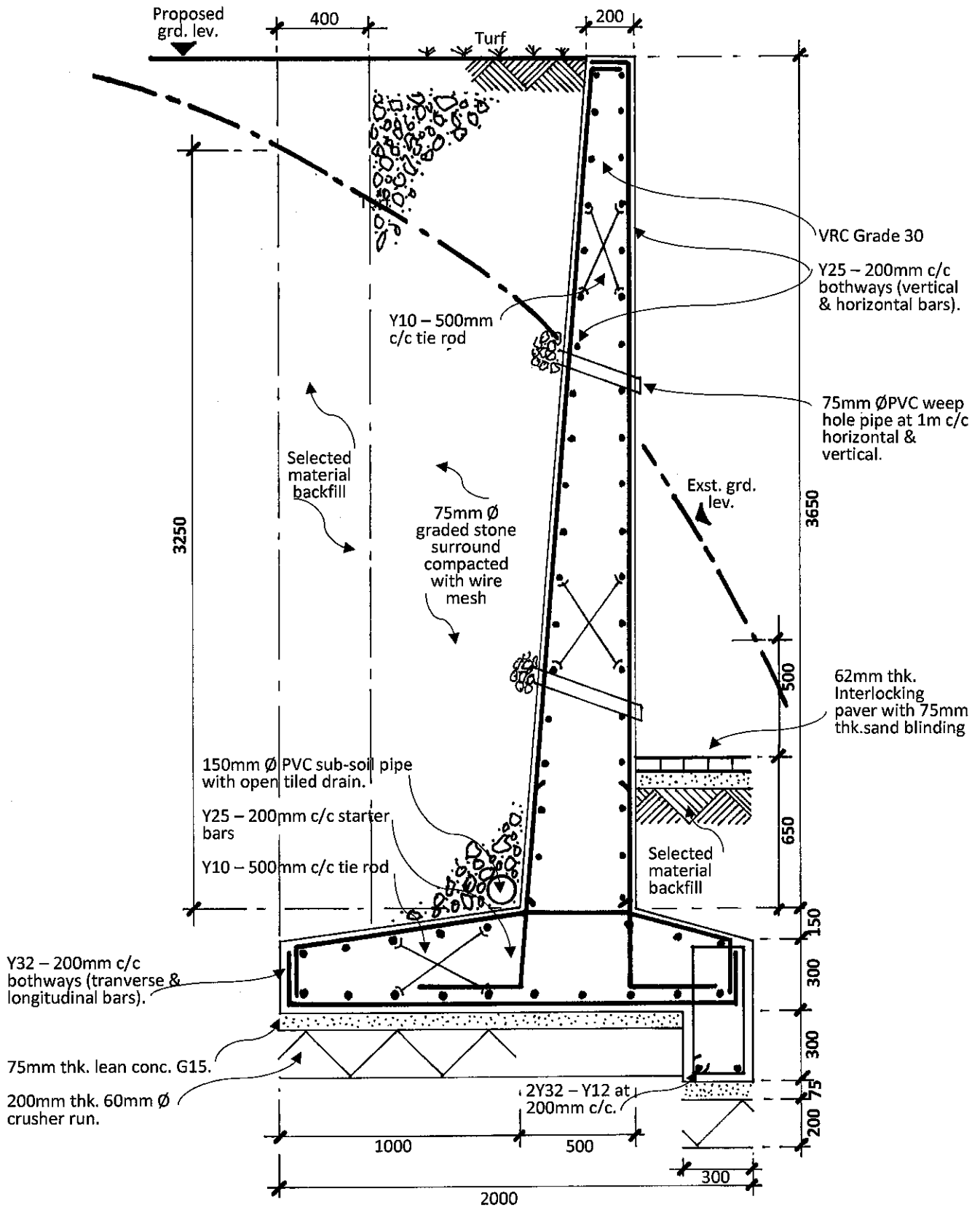
SOALAN TAMAT



NOTES:

- a) D1 (1900 x 2100mm)
- b) D2 (900 x 2100mm)
- c) W1 (1200 x 1200mm)
- d) W2 (600 x 600mm)
- e) W3 (2400 x 1200mm)
- f) Thickness of internal & external wall shall be 115mm
- g) Height of wall 3100mm

DRAWING NO: DCQ30154/WALL & FLOOR FINISHES/Q1/01
DRAWING NOT TO SCALE

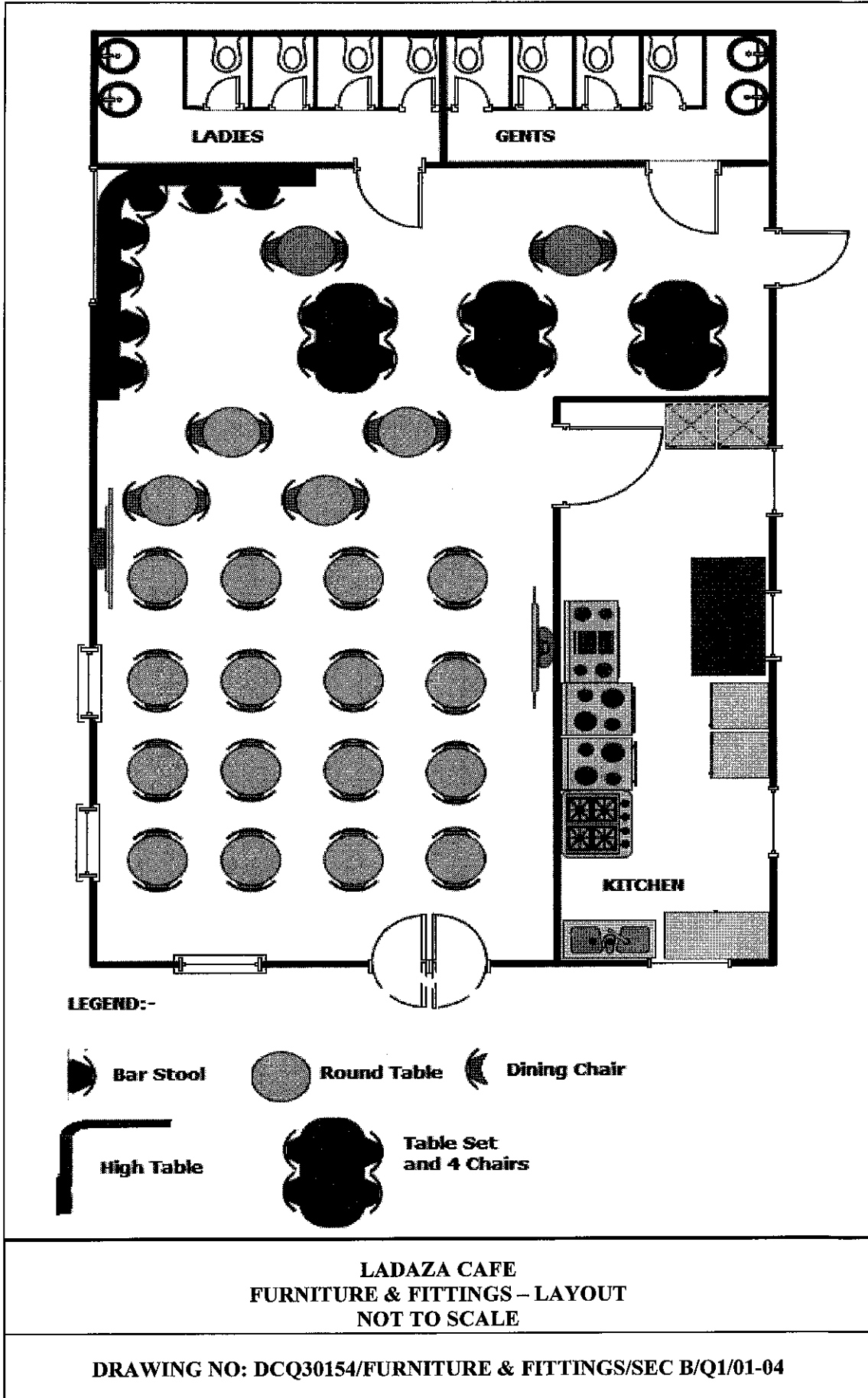


NOTES:

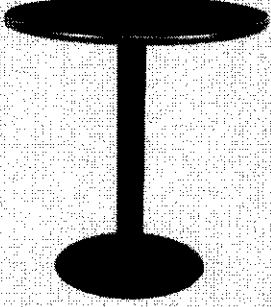
1. All dimensions in mm.
2. Length of Retaining Wall= 45m
3. No top soil to be preserved.
4. Excavated materials to be removed average 15km from the site.
5. Backfill material obtained off site.
6. Cover for bar reinforcement = 50mm

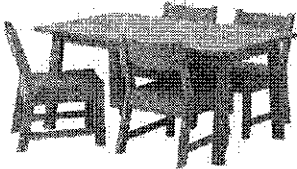
CROSS SECTION & DETAIL OF RW

DRWG. NO.: DCQ30154/RETAINING WALL/A2/01
NOT TO SCALE

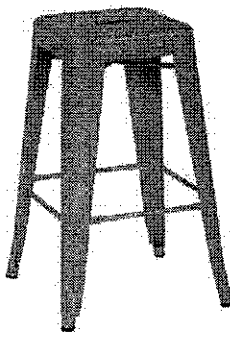


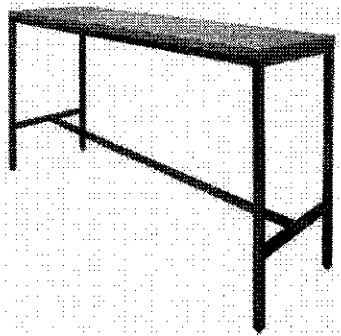
(Specification details)

Bella Tall Stool	
	Round Black Ridge Table
Product Name	
Item No	RF/11B
Specification	<ol style="list-style-type: none"> 1. Surface: Solid Veneer, Powder Coated, Eco Friendly Tops 2. Frame: Robust and Sturdy, Adjustable Feet 3. Durable Steel Finish, FIRA Tested 4. Seat up to 2 people 5. Size: 60cm x 60cm
Colour	Dark Oak
G.W(kg)	9.25
Warranty Time	5 years

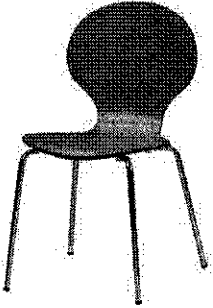
	Norraker Table and 4 Chairs
Product Name	
Item No	NT/5B
Specification	<p>Chair:</p> <ol style="list-style-type: none"> 1. Backrest: Molded layer-glued wood veneer, Stain, Clear acrylic lacquer 2. Frame: Solid Birch, Stain, Clear acrylic lacquer 3. Size; Length: 49 1/4" Width: 29 1/8" Height: 29 1/8" <p>Table:</p> <ol style="list-style-type: none"> 1. Solid birch, Clear acrylic lacquer 2. Size; Length: 125cm Width: 74cm Height: 74cm 3. Meets the requirements for safety, durability and stability
Colour	White Birch
G.W(kg)	21.50
Warranty Time	5 years

DRAWING NO: DCQ30154 FURNITURE & FITTINGS/SEC B/Q1/02-04

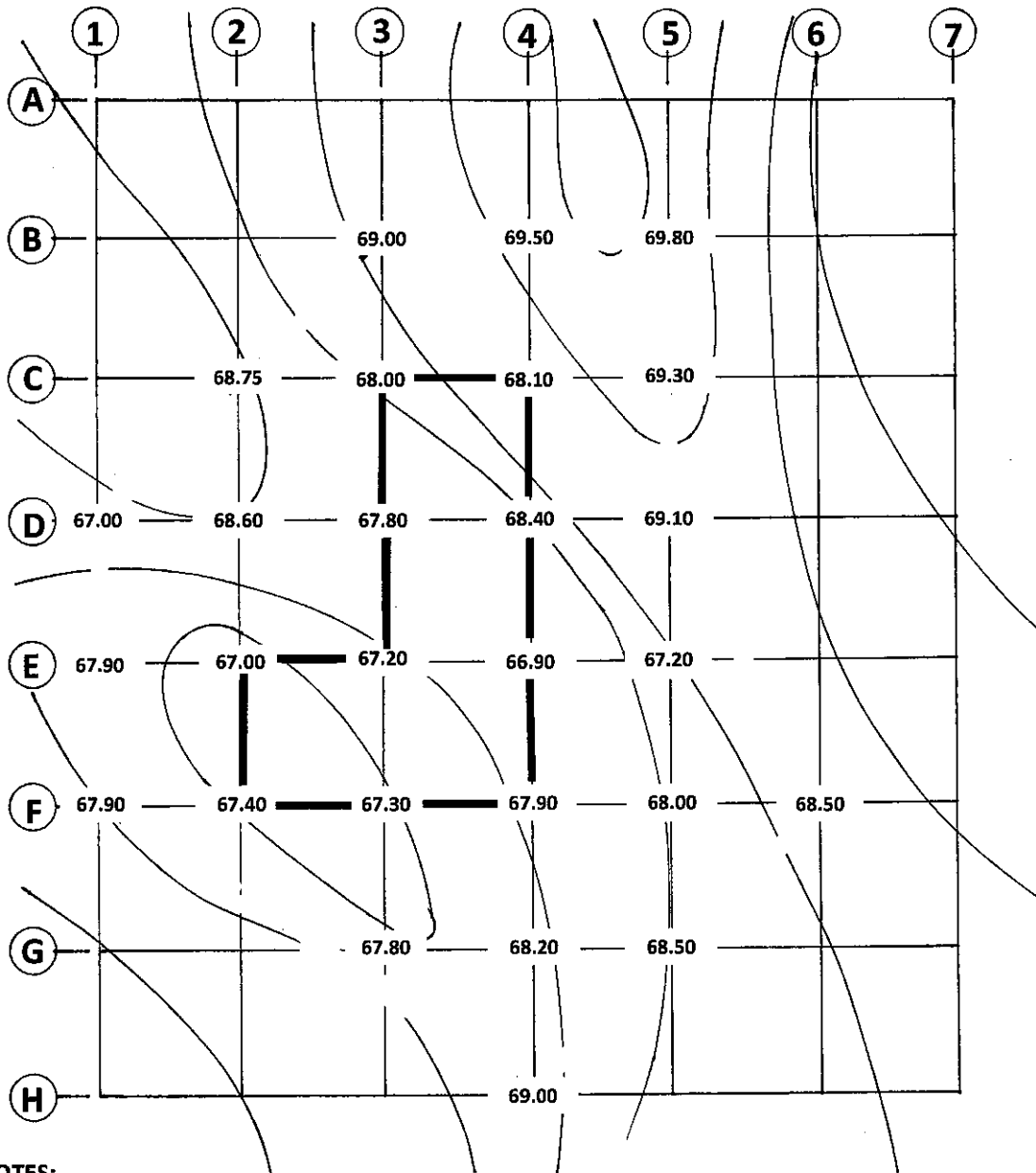
	
Product Name	
Item No	BS/21
Specification	<ol style="list-style-type: none"> 1. High quality steel, water resistant material 2. Inspired by Tolix Design 3. UV Protective coating 4. Precision welded 5. Stackable (up to 10 high) 6. Size: (Total height) 76 CM (Seat length) 30 CM (Seat wide) 30 CM
Colour	<ol style="list-style-type: none"> 1. Light Blue Colour 2. Frame Colour: Chrome
G.W(kg)	5
Warranty Time	5 Years

	Verona Counter High Bistro Table
Product Name	
Item No	HGTA732
Specification	<ol style="list-style-type: none"> 1. Table: 36"H x 60"W x 21.75"D, L-Shape Contemporary High Table 2. Table top Material: Marble, thickness : 0.98", White Finish 3. Frame: Legs Type Base, Brushed Stainless Steel Frame, antirust, strong, Plywood Subframe 4. Country of Manufacture: China
Colour	White
G.W(kg)	58.47
Warranty Time	5 years

DRAWING NO: DCQ30154 FURNITURE & FITTINGS/SEC B/Q1/03-04

	<p>Corsica Chair</p>
<p>Product Name</p>	
<p>Item No</p>	<p>CF/4L</p>
<p>Specification</p>	<ol style="list-style-type: none"> 1. Durable Melamine Seat, Smooth Surface, easy to clean 2. Frame: Heavy Duty Chrome Tube Steel Frame, Stylish Chrome Legs 3. Size: (Total height) 83 CM (Seat width) 44 CM (Seat wide) 49 CM 4. Stackable (Up to 10 high), versatile and economic
<p>Colour</p>	<p>Light Oak</p>
<p>G.W(kg)</p>	<p>4.6</p>
<p>Warranty Time</p>	<p>5 years</p>

DRAWING NO: DCQ30154 FURNITURE & FITTINGS/SEC B/Q1/04-04



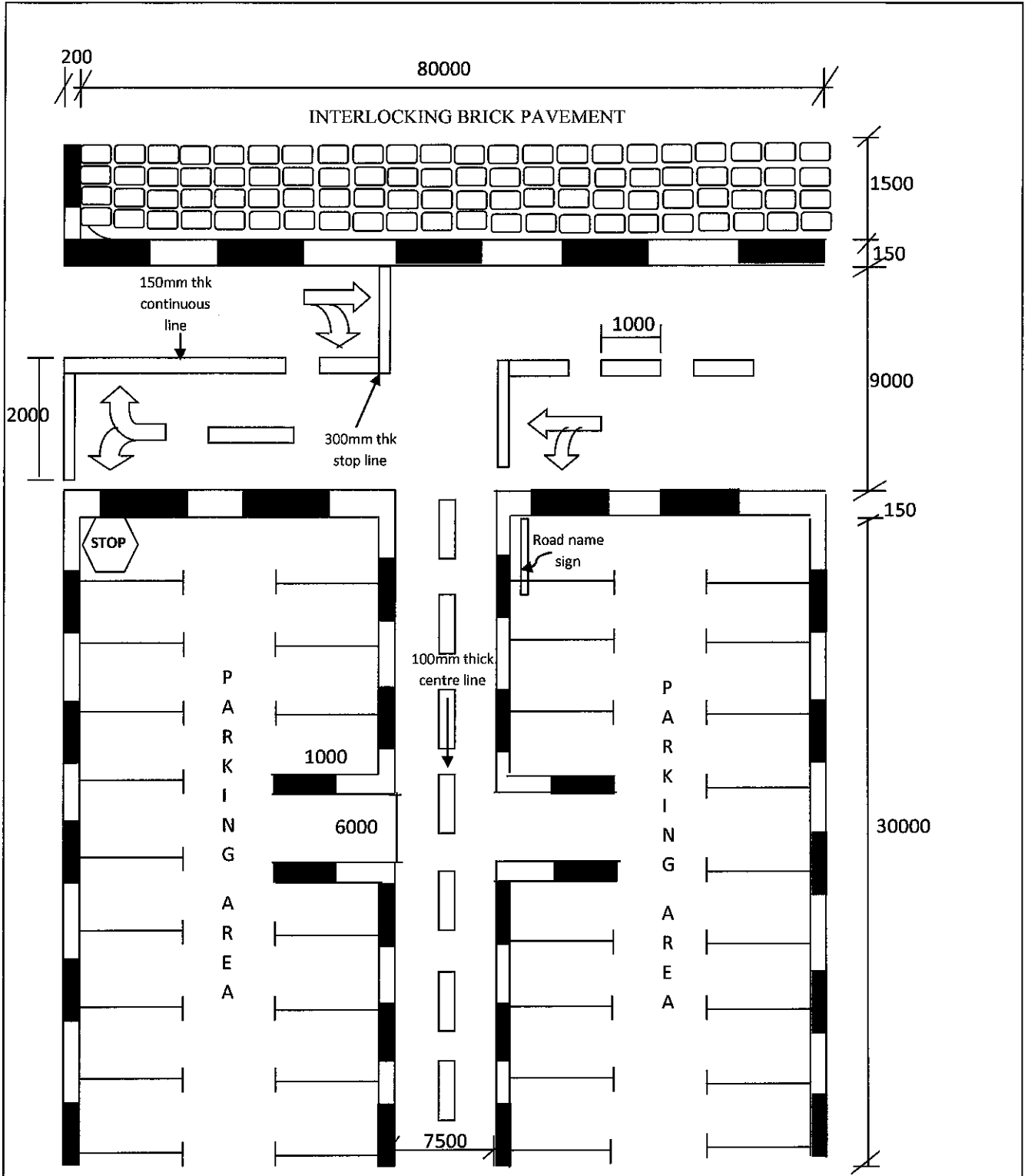
NOTES:

1. All dimensions in metres.
2. All excavation strictly within boundary **————**
3. Coverage **————** areas are from grid point **C3→C4→F4→F2→E2→E3→C3.**
4. Platform level **67.50**
5. All grid dimension = **10m x 10m.**
6. No top soil to be preserved.
7. Filling material arising from excavations which is specified to be selected or treated.
8. If volume of filling more than volume of excavating, material should be obtained off site.
9. Excavated materials to be removed in average distance 15km from the site.
10. Allow 10% for excavation in rock.

CONTOUR PLAN

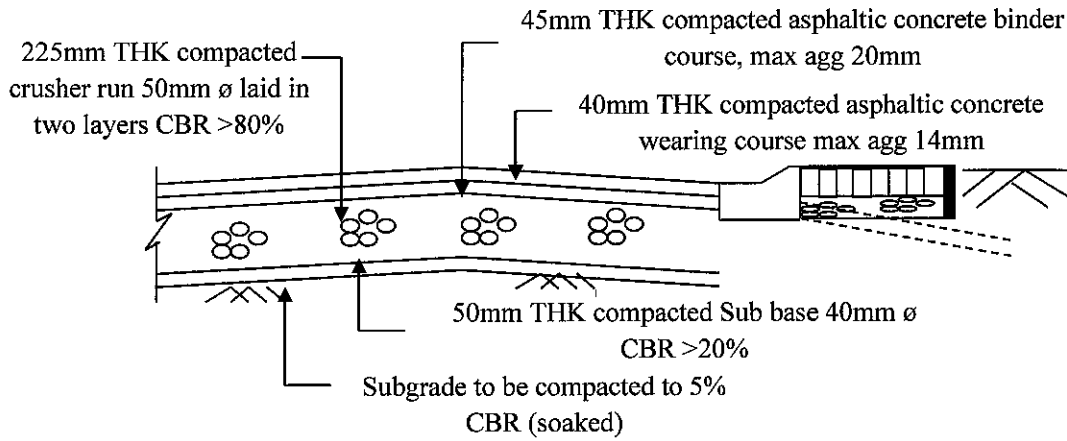
DRWG. NO.: DCQ30154/EARTHWORKS/SEC B/Q2/01

NOT TO SCALE



DRAWING NO: DCQ30154/ROADWORKS/SECB/Q3/01-02

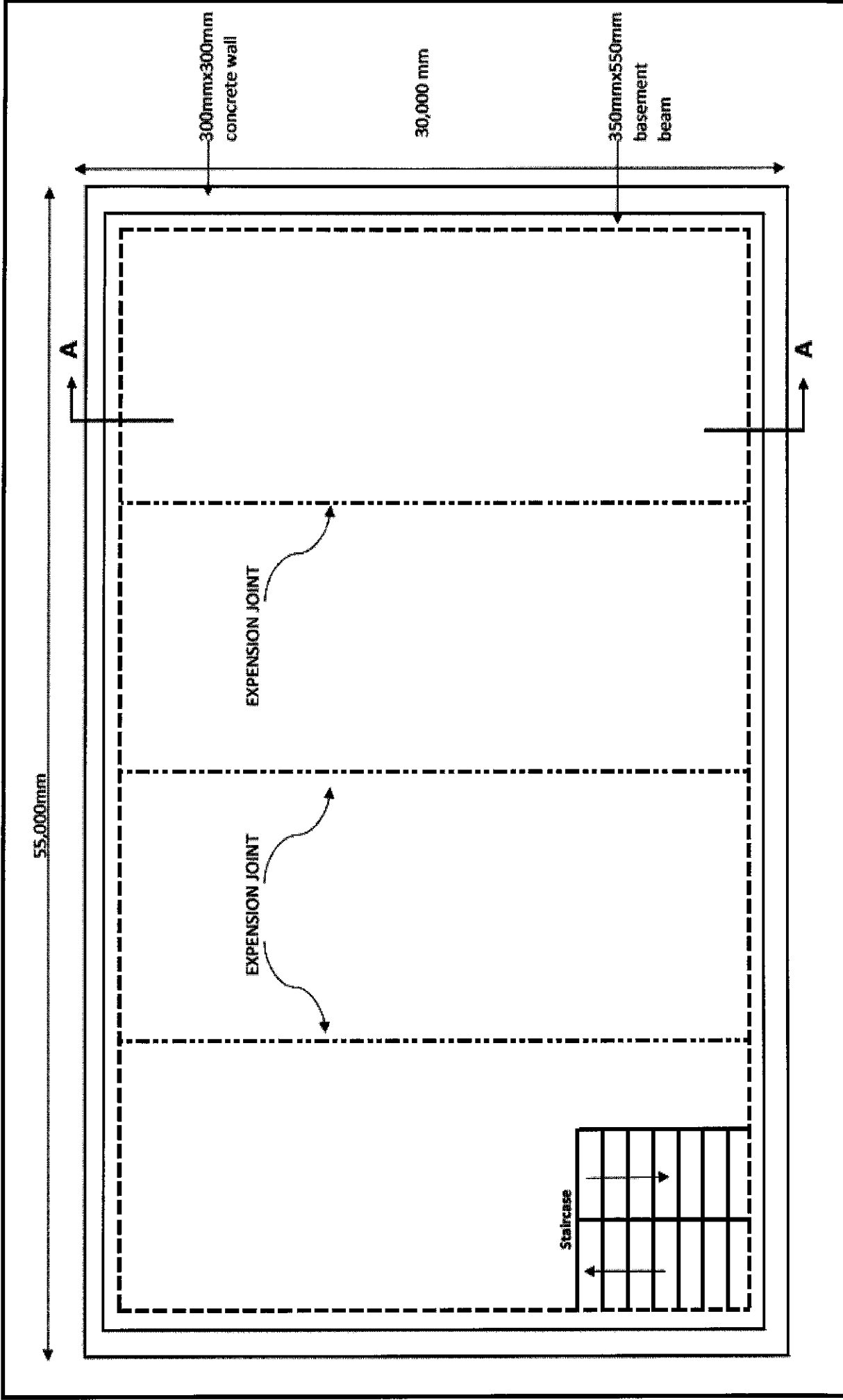
LAY OUT PLAN
NOT TO SCALE



TYPICAL ROAD CROSS SECTION

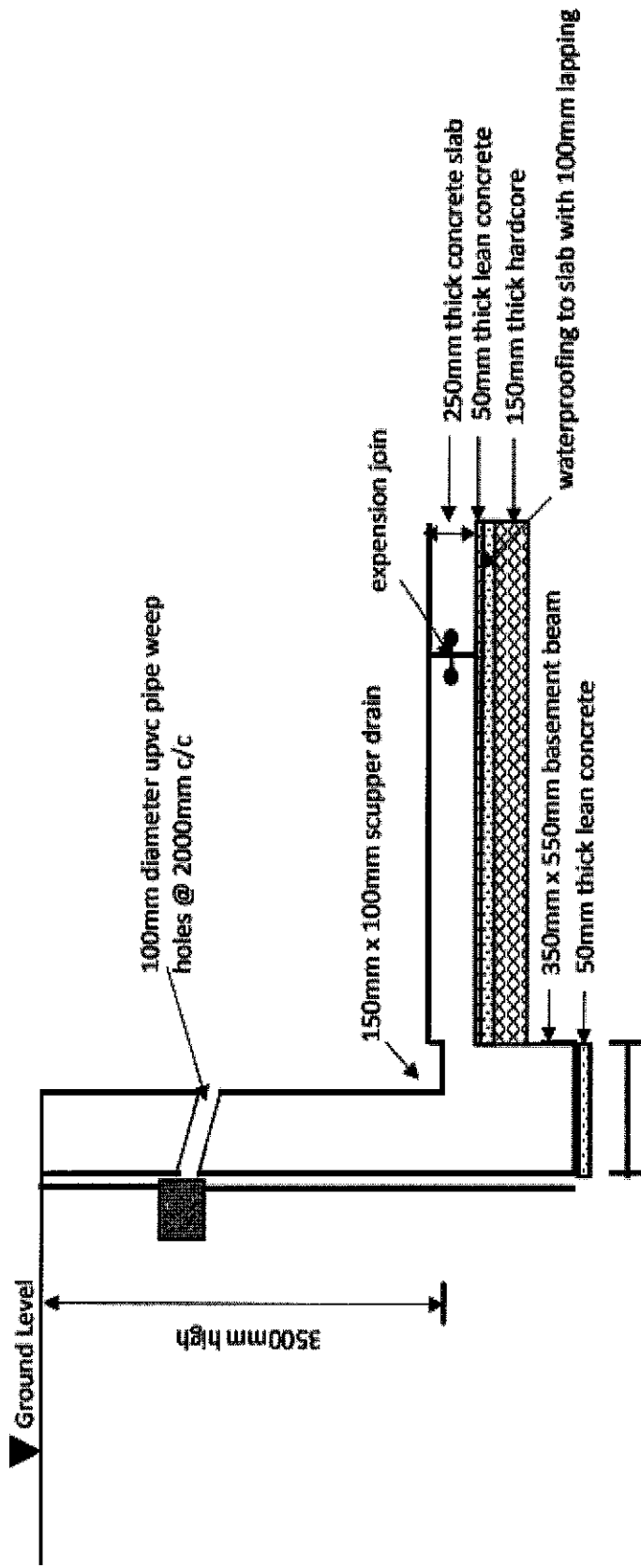
Notes:
Reduce level shall be 425mm deep

DRAWING NO: DCQ30154/ROADWORKS/SECB/Q3/02-02
DETAIL PLAN
NOT TO SCALE



BASEMENT PLAN (N.T.S)

DRAWING NO: DCQ30154/BASEMENT/01-02



NOTES:

- 1 Thickness of external concrete wall shall be 300mm thick.
- 2 All concrete works for wall & beam shall be grade 40
- 3 Concrete grade 20 for lean concrete
- 4 Expansion joint consist of sealant compound type Theflex 600 or equivalent
- 5 Profex 12 or equivalent waterproofing membrane to manufacture's spec
- 6 Internal wall Finishing shall be paint with one coat Alkaline resisting primer sealer & two coats of ICI dulux/client approval.
- 7 From bore hole investigation, site are free from ground water

SECTION A-A
TYPICAL CONCRETE WALL & SLAB DETAIL
DRAWING NO: DCQ30154/BASEMENT/02-02