

**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 : 2024/2025**

**DCQ40192: CIVIL ENGINEERING WORKS MEASUREMENT 1**

**TARIKH : 14 MEI 2025**

**MASA : 2.30 PETANG – 4.30 PETANG (2 JAM)**

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Kertas soalan ini mengandungi **SEMBILAN (9)** halaman bercetak.  
Bahagian A: Subjektif (2 soalan)  
Bahagian B: Subjektif (4 soalan)  
Dokumen sokongan yang disertakan : Buku MyCESMM2, Kertas Dimensa,  
Kertas *Billing*, Kertas *Cut & Fill*, dan Lukisan

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**JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIARAHKAN**

(CLO yang tertera hanya sebagai rujukan)

**SULIT**

**NOTES:****NOTA**

- (a) Taking off refers to the rules in the Malaysian Civil Engineering Standard Method of Measurement 2 (MyCESMM2).

*Ukur kuantiti merujuk kepada syarat-syarat dalam Malaysian Civil Engineering Standard Method of Measurement 2 (MyCESMM2)*

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

*Calon dibenarkan membuat andaian sekiranya maklumat dalam lukisan tidak lengkap.*

- (c) Marks will be awarded based on subject knowledge, systematic dimension setting, adequacy, and accuracy of descriptions and measurements.

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

**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**

- CLO1 (a) Identify **TWO (2)** applications of the digit nine '9' and digit zero '0' according to the MyCESMM2.

*Kenalpasti DUA (2) penggunaan angka sembilan '9' dan angka kosong '0' mengikut MyCESMM2.*

[5 marks]

[5 markah]

- CLO1 (b) The Malaysian Civil Engineering Standard Method of Measurement (MyCESMM2) is a comprehensive guideline developed to standardize the measurement of civil engineering works in Malaysia. Explain **FOUR (4) MEASUREMENT RULES**, and **COVERAGE RULES**.

*Kaedah Pengukuran Standard Kejuruteraan Awam Malaysia (MyCESMM2) ialah garis panduan komprehensif yang dibangunkan untuk menyeragamkan pengukuran kerja-kerja kejuruteraan awam di Malaysia. Terangkan EMPAT (4) PERATURAN PENGUKURAN, dan PERATURAN LIPUTAN.*

[8 marks]

[8 markah]

CLO1

- (c) Determine **THREE (3)** differences between building works and civil engineering works.

*Tentukan **TIGA (3)** perbezaan antara kerja bangunan dan kerja kejuruteraan awam.*

[12 marks]

[12 markah]

## QUESTION 2

### SOALAN 2

CLO 1

- (a) Identify **EIGHT (8)** coverage rules for C14 in Class F: Earthworks.

*Kenalpastikan **LAPAN (8)** peraturan liputan bagi C14 dalam Kelas F: Kerja-kerja tanah.*

[5 marks]

[5 markah]

CLO 1

- (b) Based on Drawing No. **DCQ40192/LANDSCAPING/Q2A**, prepare the quantity measurement for turfing.

*Berdasarkan Lukisan No. **DCQ40192/LANDSCAPING/Q2A**, sediakan pengukuran kuantiti bagi kerja penanaman rumput.*

[8 marks]

[8 markah]

CLO1

- (c) Based on Drawing No **DCQ40192/LANDSCAPING/Q2A**, produce a bill of quantities complete with quantity measurements for trees and hedges.

*Berdasarkan Lukisan No **DCQ40192/LANDSCAPING/Q2A**, kemukakan satu senarai kuantiti lengkap dengan pengukuran kuantiti bagi pokok dan pokok pagar.*

[12 marks]

[12 markah]

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

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

**ARAHAN:**

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

**QUESTION 1****SOALAN 1**

CLO1

- (a) Based on Table 1.0 below, produce the related items with their code numbers and units as applied in Class A: General Items.

*Berdasarkan Jadual 1.0, kemukakan item-item berkaitan beserta nombor kod dan unit sebagaimana yang diaplikasikan dalam Kelas A: Butiran Am.*

[8 marks]

[8markah]

CLO1

- (a) Based on Table 1.0, prepare a bill of quantities for General Items for the Proposed Construction of a New Bridge at Kota Tinggi, Johor.

*Berdasarkan Jadual 1.0, rumuskan satu senarai kuantiti bagi Butiran Am bagi projek Cadangan Pembinaan Jambatan Baru di Kota Tinggi, Johor.*

[17 marks]

[17 markah]

Project information:

Project Title: Proposed Construction of New Bridge at Kota Tinggi, Johor

Project Duration: 15 months

*Maklumat projek:*

*Nama Projek: Cadangan Pembinaan Jambatan Baru di Kota Tinggi, Johor*

*Tempoh Projek: 15 bulan*

**Table 1.0 / Jadual 1.0**

| Item | Project's Requirements/ <i>Keperluan projek</i>                                                                                                                                                                                                                                                                                      |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | Establish, maintain, and remove site office to be used by Superintending Officer's representative, type cabin office with a floor area of 70 m <sup>2</sup> .<br><i>Menyedia, menyelenggara, dan mengalih pejabat tapak untuk digunakan oleh wakil Pegawai Penguasa, pejabat jenis kabin dengan keluasan lantai 70m<sup>2</sup>.</i> |
| 2    | Security guard.<br><i>Pengawal keselamatan.</i>                                                                                                                                                                                                                                                                                      |
| 3    | To provide safety and health officer.<br><i>Menyediakan pegawai keselamatan dan kesihatan.</i>                                                                                                                                                                                                                                       |
| 4    | Provide and update the work program by using the Gantt Chart format.<br><i>Menyediakan dan kemaskini program kerja dengan menggunakan format carta Gantt.</i>                                                                                                                                                                        |
| 5    | Provide necessary personnel protective equipment for all workers.<br><i>Menyediakan peralatan perlindungan peribadi yang diperlukan untuk semua pekerja.</i>                                                                                                                                                                         |
| 6    | Prepare three (3) sets of progress reports.<br><i>Sediakan tiga (3) set salinan laporan kemajuan.</i>                                                                                                                                                                                                                                |

**QUESTION 2****SOALAN 2**

Based on Drawing No. **DCQ40192/DEMOLITION & SITE CLEARANCE/BQ2AB/01 & 02**, answer all the questions below:

*Berdasarkan Lukisan No. **DCQ40192/DEMOLITION & SITE CLEARANCE/BQ2AB/01 & 02**, jawab semua soalan di bawah:*

- CLO1 (a) Prepare the quantity measurement for site clearance.

*Sediakan pengukuran kuantiti kuantiti bagi pembersihan tapak.*

[8 marks]

[8 markah]

- CLO 1 (b) Produce a bill of quantities complete with the quantity measurements for all items of demolition work items (including site clearance).

*Kemukakan satu senarai kuantiti lengkap dengan pengukuran kuantiti bagi kerja-kerja perobohan (termasuk pembersihan tapak).*

[17 marks]

[17 markah]

**QUESTION 3****SOALAN 3**

Based on Drawing No. **DCQ40192/EARTHWORK/Q3B**, answer all the questions below:

*Berdasarkan Lukisan No. **DCQ40192/EARTHWORK/Q3B**, jawab semua soalan di bawah:*

- |      |                                                                                                                                                                                                                                                                                                                  |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CLO1 | <p>(a) Calculate the quantity of cutting and filling by using the Schedule of Cutting and Filling for earthworks.</p> <p><i>Kira kuantiti bagi pemotongan dan penambakan menggunakan Jadual Pemotongan dan Penambakan bagi kerja-kerja tanah.</i></p> <p style="text-align: right;">[8 marks]<br/>[8 markah]</p> |
| CLO1 | <p>(b) Produce a bill of quantities complete with quantity measurements involved in Class F: Earthworks.</p> <p><i>Kemukakan satu senarai kuantiti lengkap dengan pengukuran kuantiti dalam Kelas F: Kerja-kerja Tanah.</i></p> <p style="text-align: right;">[17 marks]<br/>[17 markah]</p>                     |

**QUESTION 4****SOALAN 4**

CLO 1

- (a) Based on Drawing No. **DCQ40192/ROADS AND PAVINGS/BQ4A /01 & DCQ40192/ROADS AND PAVINGS/BQ4A/02**, prepare the quantity measurement for **ROAD SIGNAGE**.

*Berdasarkan Lukisan No. DCQ40192/ROADS AND PAVINGS/BQ4A /01 & DCQ40192/ROADS AND PAVINGS/BQ4A/02, sediakan pengukuran kuantiti untuk PAPAN TANDA.*

[8 marks]

[8 markah]

CLO 1

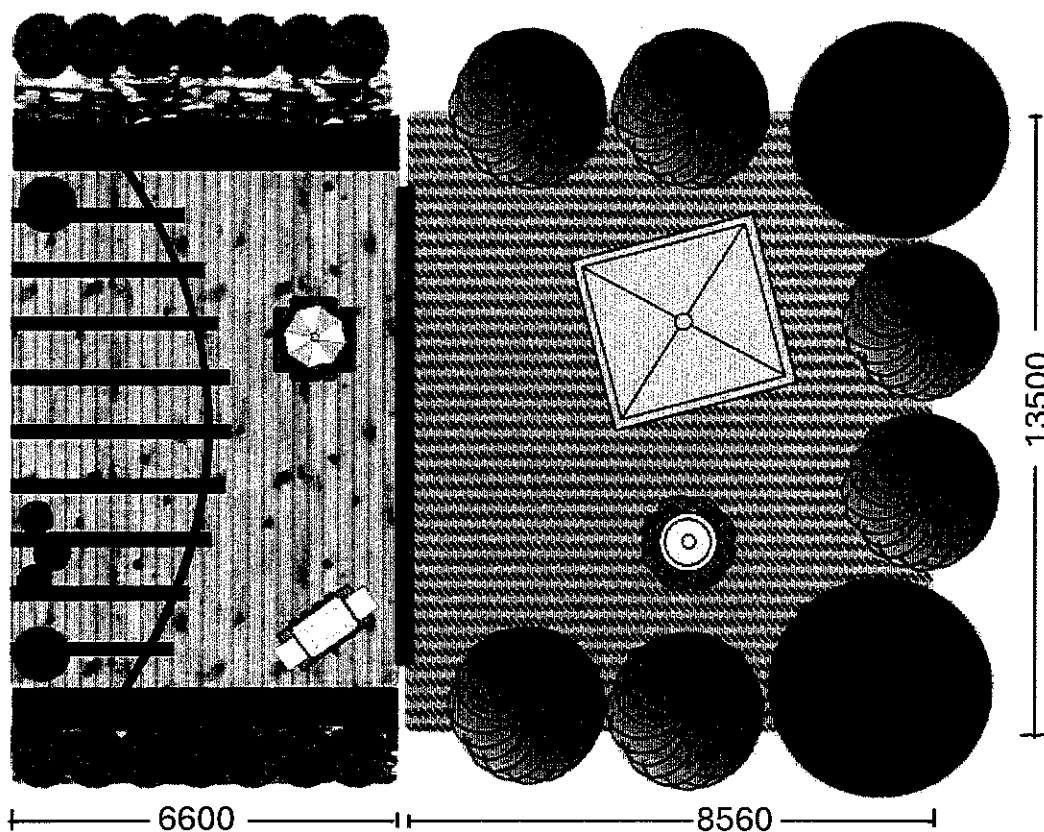
- (b) Based on Drawing No. **DCQ40192/ROADS AND PAVINGS/BQ4B/03**, prepare a bill of quantities complete with the quantity measurement for the roads and paving works.

*Berdasarkan Lukisan No. DCQ40192/ROADS AND PAVINGS/Q4B/03, kemukakan satu senarai kuantiti lengkap dengan pengukuran kuantiti bagi kerja-kerja jalan dan turapan.*

[17 marks]

[17 markah]

**SOALAN TAMAT**



Legend:

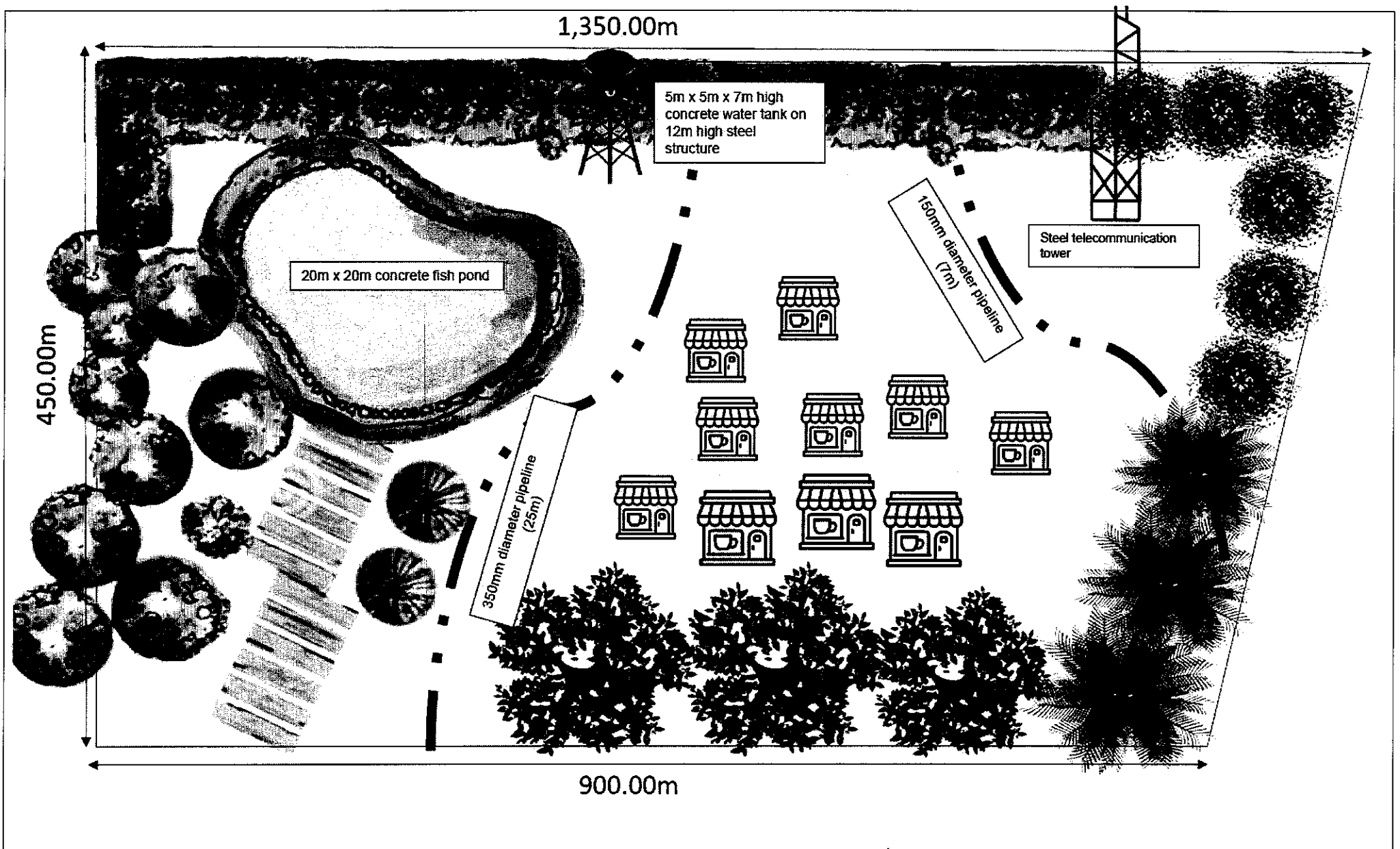
| Plant list                                                                          | Common Name   | Botanic Name              | Quantity (Nos.) | Height (mm) | Girth (mm) |
|-------------------------------------------------------------------------------------|---------------|---------------------------|-----------------|-------------|------------|
|  | Khaya         | Khaya senegalensis        | 2               | 2000        | 500        |
|  | Cempaka Hutan | Gardenia Carinata         | 6               | 1500        | 300        |
|  | Purple Flax   | Phormium tenax 'purpurea' | 14              | 1000        | 50         |
|  | Duranta       | Duranta Repens            | -               |             |            |
|  | Buffalo Turf  | 'Sir Walter' Buffalo      | -               |             |            |

Nama Projek:

Cadangan Menaiktaraf dan Merekabentuk Taman Budaya Kuala Lumpur, Jalan Tun H.S Lee, 50000 Kuala Lumpur.

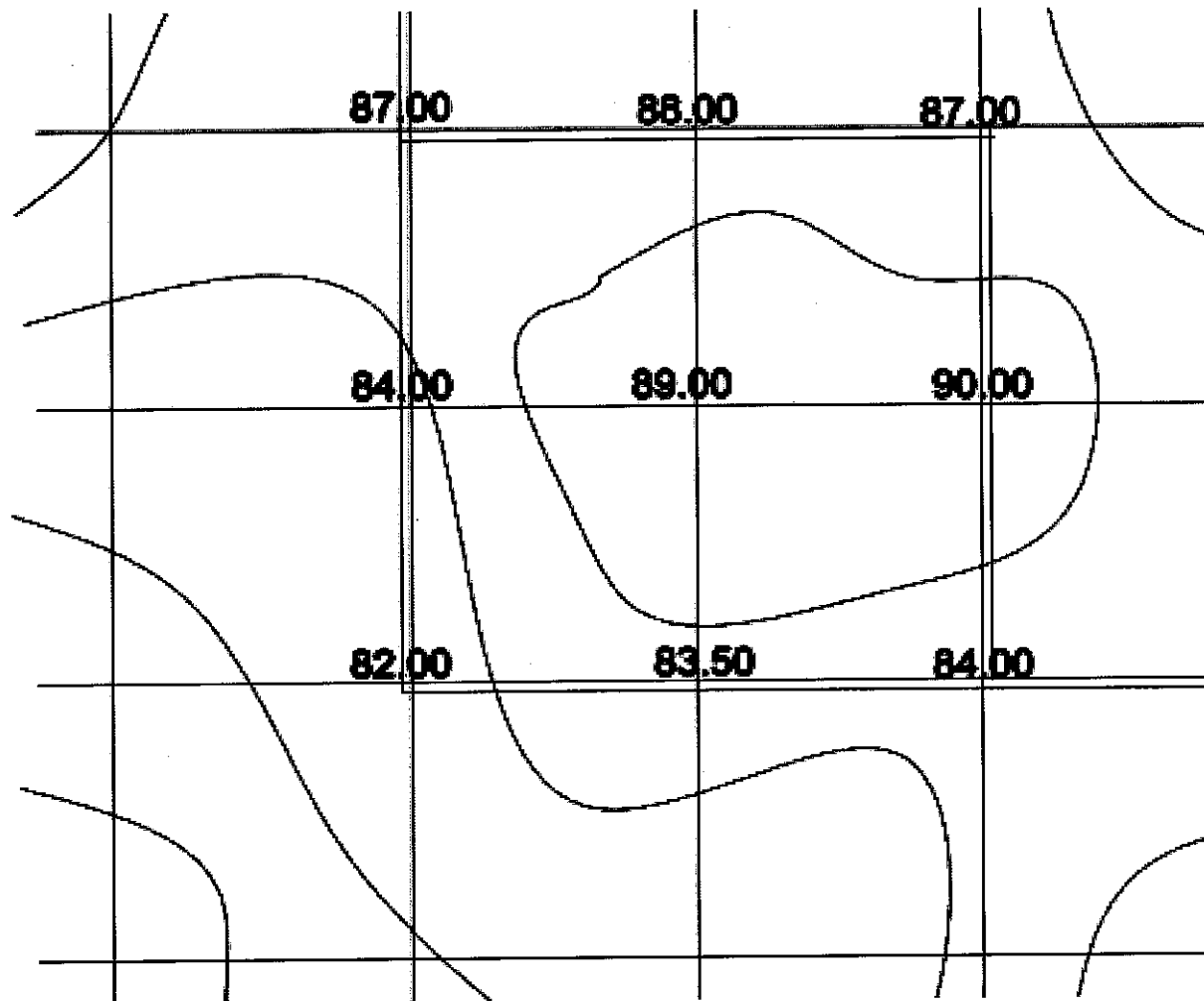
Scale:  
Not To Scale

Drawing No:  
DCQ40192//LANDSCAPING/Q2A



# LEGENDS

| NO | SYMBOL                                                                              | BOTANICAL NAME                                                     | QTY. |
|----|-------------------------------------------------------------------------------------|--------------------------------------------------------------------|------|
| 1. |    | Palm trees 750mm girth                                             | 3    |
| 2. |    | Palm trees 1500mm girth                                            | 3    |
| 3. |   | Palm trees 2500mm girth                                            | 6    |
| 4. |  | Double storey shop house brickwork and masonry 15m x 15m x 8m high | 10   |



TANDA ARAH / NORTH POINT :



PETUNJUK / LEGEND :

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**PROJECT TITLE / TAJUK PROJECT:**  
**PROPOSED EARTHWORK AT LOT 25741,**  
**MUKIM HULU LANGAT,**  
**SELANGOR DARUL EHSAN**

**SCALE:** NOT TO SCALE

**DATE:** SEPTEMBER 2023

**DRAWING NAME:**  
**LAYOUT PLAN**

**DRAWING NO:**  
**DCQ40192/EARTHWORK/Q3B**

**NOTES:**

1. All dimension in meter otherwise stated.
2. All level shown are original ground level.
3. Proposed platform level = 85.00m
4. All grid dimension = 6.00m x 6.00m
5. Excavation to commence from the original ground level.

