

SULIT



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

JABATAN KEJURUTERAAN AWAM

PEPERIKSAAN AKHIR

SESI I : 2022/2023

DCQ40192 CIVIL ENGINEERING WORKS MEASUREMENT 1

TARIKH : 28 DISEMBER 2022

MASA : 2.30 PM – 4.30 PM (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

NOTES:**NOTA:**

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

Ukur kuantiti merujuk kepada syarat-syarat dalam Malaysian Civil Engineering Standard Method of Measurement – Edisi Kedua (MyCESMM2).

- b) Candidate is allowed to make assumptions if the information in the drawing is inadequate.

Calon dibenarkan membuat andaian jika maklumat dalam lukisan tidak lengkap.

- c) Mark 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.

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.

QUESTION 1**SOALAN 1**

CLO1
C2

- (a) Malaysian Civil Engineering Standard Method of Measurement - Second Edition (MyCESMM2) is used as a reference for measurement and bill of quantities preparation. Identify the purposes of the bill of quantities in MyCESMM2.

Malaysian Civil Engineering Standard Method of Measurement – Edisi Kedua (MyCESMM2) digunakan untuk rujukan pengukuran dan penyediaan senarai kuantiti. Kenal pasti tujuan senarai kuantiti dalam MyCESMM2.

[5 marks]

[5 markah]

CLO1
C2

- (b) Method Related Charge is a sum for an item inserted in the Bill of Quantities by a tenderer. Explain the types of Method Related Charge.

Caj Berkaitan Kaedah adalah sejumlah wang untuk item yang dimasukkan ke dalam Senarai Kuantiti oleh petender. Terangkan jenis-jenis Caj Berkaitan Kaedah.

[8 marks]

[8 markah]

CLO1
C3

- (c) The Bill of Quantities consist of Preamble, Work Items, Daywork Schedule and Grand Summary. Interpret each item clearly.

Senarai kuantiti mengandungi Preamble, Work Items, Daywork Schedule and Grand Summary. Tafsirkan dengan jelas untuk setiap item tersebut.

[12 marks]

[12 markah]

QUESTION 2**SOALAN 2**CLO1
C2

- (a) Interpret with appropriate example of Additional Description Rules A5 and A18 in Class F: Earthworks.

Tafsirkan dengan contoh yang sesuai Peraturan Keterangan Tambahan A5 dan A18 dalam Kelas F: Kerja-Kerja Tanah.

[5 marks]

[5 markah]

CLO1
C3

- (b) By referring to Drawing No. DCQ40192/EARTHWORKS/01, measure the quantities for all items in Class F: Earthworks.

Dengan merujuk kepada Lukisan No. DCQ40192/EARTHWORKS/01, ukur kuantiti untuk semua item di dalam Kelas F: Kerja-kerja Tanah.

[14 marks]

[14 markah]

CLO1
C3

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

Sediakan semua kuantiti terukur dalam soalan 2(b) sebagai Senarai Kuantiti.

[6 marks]

[6 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 esei. Jawab DUA (2) soalan sahaja.

QUESTION 1**SOALAN 1**

CLO 1
C3

- (a) By referring to **Table B1(a)**, measure all the items with their code numbers and units applied in Class A: General Items.

Dengan merujuk kepada Jadual B1(a), ukur semua item beserta dengan nombor kod dan unit yang digunakan dalam Kelas A: Butiran Am.

[17 marks]

[17 markah]

Table B1(a) : Proposed Construction of New Road Jeli to Dabong, Kelantan.

Jadual B1(a) : Cadangan Pembinaan Jalan Baharu Jeli ke Dabong, Kelantan.

Project Duration: 12 months <i>Tempoh Projek : 12 bulan</i>	
ITEM ITEM	PROJECT NEEDS KEHENDAK PROJEK
1	Allow cost for Performance bond. <i>Memperuntukkan kos untuk Bon pelaksanaan.</i>
2	Allow cost in providing insurance of works. <i>Memperuntukkan kos dalam penyediaan insuran kerja.</i>
3	Provide Engineer's representative transport vehicle (to be reverted to employer after completion). <i>Menyediakan kenderaan pengangkutan kepada wakil Jurutera (dikembalikan kepada pihak majikan selepas penyiapan kerja).</i>
4	Provide monthly progress reports. <i>Menyediakan laporan kemajuan bulanan.</i>

5	Testing of materials; concrete test cube; sample and method of testing as per Specifications Clause S5. <i>Pengujian bahan, ujian kiub concrete, contoh dan kaedah ujian seperti dalam Spesifikasi Klausu S5.</i>
6	Provision for Licensed Surveyor for initial setting out. <i>Menyediakan Jurukur Berlesen untuk pacang tanda awalan.</i>
7	Routine maintenance of temporary road diversion. <i>Penyelenggaraan secara rutin untuk lencongan jalan sementara.</i>
8	Provide the safety signage in the site for the safety of workers. <i>Menyediakan papan tanda keselamatan di tapak untuk keselamatan pekerja.</i>

CLO 1
C3

- (b) Prepare all the measured quantities in Question 1(b) as a Bill of Quantities.

Sediakan semua kuantiti terukur dalam soalan 1(b) sebagai Senarai Kuantiti.

[8 marks]

[8 markah]

QUESTION 2
SOALAN 2CLO 1
C3

- (a) By referring to the Drawing No:
- DCQ40192/DEMOLITION & SITE CLEARANCE/01**
- , measure the quantities for the demolition and site clearance items.

*Dengan merujuk kepada Lukisan No: **DCQ40192/DEMOLITION & SITE CLEARANCE/01**, ukur kuantiti untuk item kerja-kerja perobohan dan pembersihan tapak.*

[17 marks]

[17 markah]

CLO 1
C3

- (b) Prepare all the measured quantities in Question 2(a) as a Bill of Quantities.

Sediakan semua kuantiti terukur dalam soalan 2(a) sebagai Senarai Kuantiti.

[8 marks]

[8 markah]

QUESTION 3**SOALAN 3**CLO1
C3

- (a) By referring to Drawing No: **DCQ40192/LANDSCAPING/01 & 02**, measure the quantities for all items of Landscaping Works.

Dengan merujuk pada lukisan No: DCQ40192/LANDSCAPING/01 & 02, ukur kuantiti untuk semua item bagi Kerja-kerja Lanskap.

[17 marks]

[17 markah]

CLO1
C3

- (b) Prepare all the measured quantities in Question 3(a) as a bill of quantities for all items in Class F: Earthworks (Landscape).

Sediakan semua kuantiti terukur dalam Soalan 3(a) sebagai senarai kuantiti untuk semua item dalam Kelas F: Kerja-Kerja Tanah (Lanskap).

[8 marks]

[8 markah]

QUESTION 4**SOALAN 4**CLO1
C3

- (b) By referring to Drawing No. **DCQ40192/Roads&Pavings/Q4-01**, measure the quantities for the item involved in road and paving CH2800 - CH3000.

Dengan merujuk kepada Lukisan No. DCQ40192/Roads&Pavings/Q4-01, ukur kuantiti untuk item yang terlibat dalam kerja jalan dan turapan CH2800 – CH3000.

[17 marks]

[17 markah]

CLO1
C3

- (c) Prepare all the measured quantities in Question 4(a) as a Bill of Quantities.
Sediakan semua kuantiti terukur dalam soalan 4(a) sebagai Senarai Kuantiti.

[8 marks]

[8 markah]

- SOALAN TAMAT -

NOTES:**NOTA :**

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

Ukur kuantiti merujuk kepada syarat-syarat dalam Malaysian Civil Engineering Standard Method of Measurement – Edisi Kedua (MyCESMM2).

- b) Candidate is allowed to make assumptions if the information in the drawing is inadequate.

Calon dibenarkan membuat andaian jika maklumat dalam lukisan tidak lengkap.

- c) Mark 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.

CLO1
C3

- (c) The Bill of Quantities consist of Preamble, Work Items, Daywork Schedule and Grand Summary. Interpret each item clearly.

Senarai kuantiti mengandungi Preamble, Work Items, Daywork Schedule and Grand Summary. Tafsirkan dengan jelas untuk setiap item tersebut.

[12 marks]

[12 markah]

QUESTION 2**SOALAN 2**CLO1
C2

- (a) Interpret with appropriate example of Additional Description Rules A5 and A18 in Class F: Earthworks.

Tafsirkan dengan contoh yang sesuai Peraturan Keterangan Tambahan A5 dan A18 dalam Kelas F: Kerja-Kerja Tanah.

[5 marks]

[5 markah]

CLO1
C3

- (b) By referring to Drawing No. **DCQ40192/EARTHWORKS/01**, measure the quantities for all items in Class F: Earthworks.

*Dengan merujuk kepada Lukisan No. **DCQ40192/EARTHWORKS/01**, ukur kuantiti untuk semua item di dalam Kelas F: Kerja-kerja Tanah.*

[14 marks]

[14 markah]

CLO1
C3

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

Sediakan semua kuantiti terukur dalam soalan 2(b) sebagai Senarai Kuantiti.

[6 marks]

[6 markah]

5	Testing of materials; concrete test cube; sample and method of testing as per Specifications Clause S5. <i>Pengujian bahan, ujian kiub concrete, contoh dan kaedah ujian seperti dalam Spesifikasi Klausu S5.</i>
6	Provision for Licensed Surveyor for initial setting out. <i>Menyediakan Jurukur Berlesen untuk pacang tanda awalan.</i>
7	Routine maintenance of temporary road diversion. <i>Penyelenggaraan secara rutin untuk lencongan jalan sementara.</i>
8	Provide the safety signage in the site for the safety of workers. <i>Menyediakan papan tanda keselamatan di tapak untuk keselamatan pekerja.</i>

CLO 1
C3

- (b) Prepare all the measured quantities in Question 1(b) as a Bill of Quantities.

Sediakan 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: **DCQ40192/DEMOLITION & SITE CLEARANCE/01**, measure the quantities for the demolition and site clearance items.

*Dengan merujuk kepada Lukisan No: **DCQ40192/DEMOLITION & SITE CLEARANCE/01**, ukur kuantiti untuk item kerja-kerja perobohan dan pembersihan tapak.*

[17 marks]

[17 markah]

CLO 1
C3

- (b) Prepare all the measured quantities in Question 2(a) as a Bill of Quantities.

Sediakan semua kuantiti terukur dalam soalan 2(a) sebagai Senarai Kuantiti.

[8 marks]

[8 markah]

CLO1
C3

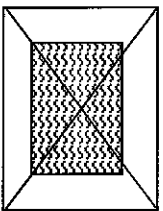
- (c) Prepare all the measured quantities in Question 4(a) as a Bill of Quantities.
Sediakan semua kuantiti terukur dalam soalan 4(a) sebagai Senarai Kuantiti.

[8 marks]

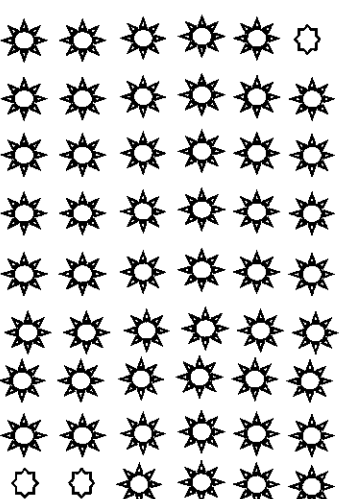
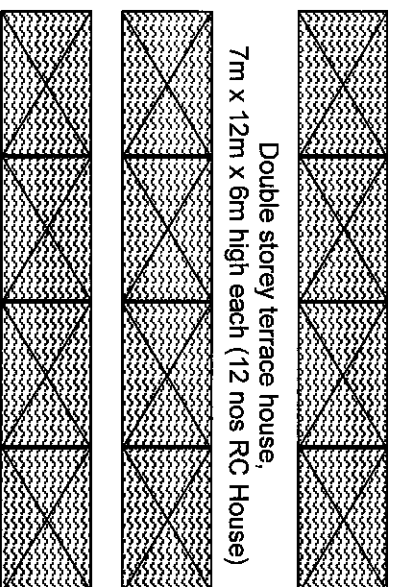
[8 markah]

- SOALAN TAMAT -

Double storey shophouse,
RC Building
16m x 16m x 7m high

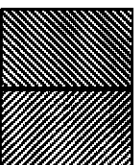


Double storey terrace house,
7m x 12m x 6m high each (12 nos RC House)



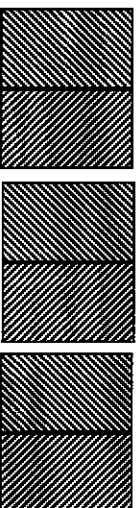
Palm Tree 1100mm girth

Existing Road (to Maintain)

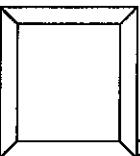


250mm diameter
G.I. pipe

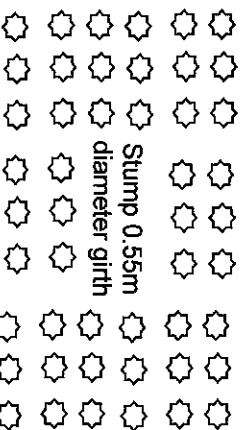
Double storey Wooden house 10m x
10m x 6.2m high (5 nos)



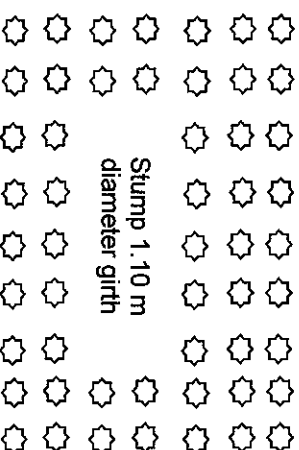
250mm diameter pipeline



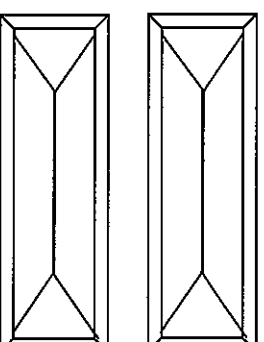
4m x 4m x 6m high steel water
tank on 9m high steel structure



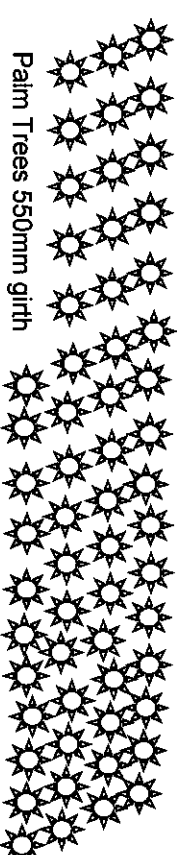
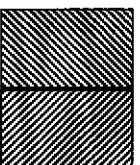
Stump 0.55m
diameter girth



Stump 1.10 m
diameter girth



35m x 12m x 6m high steel
structure warehouse (2
nos)



Palm Trees 550mm girth

700.00 m

300.00 m

250.00 m



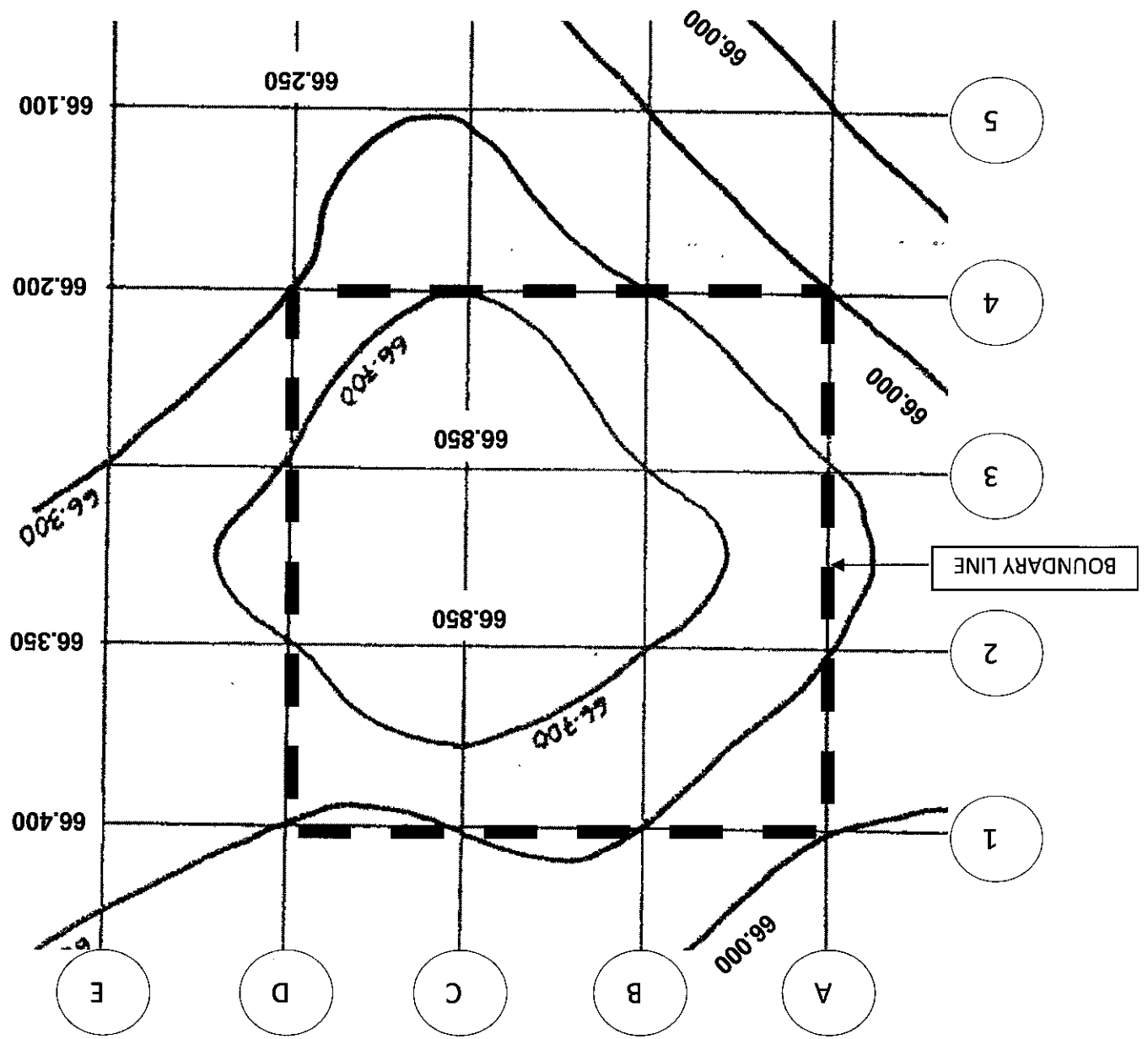
PROJECT TITLE :

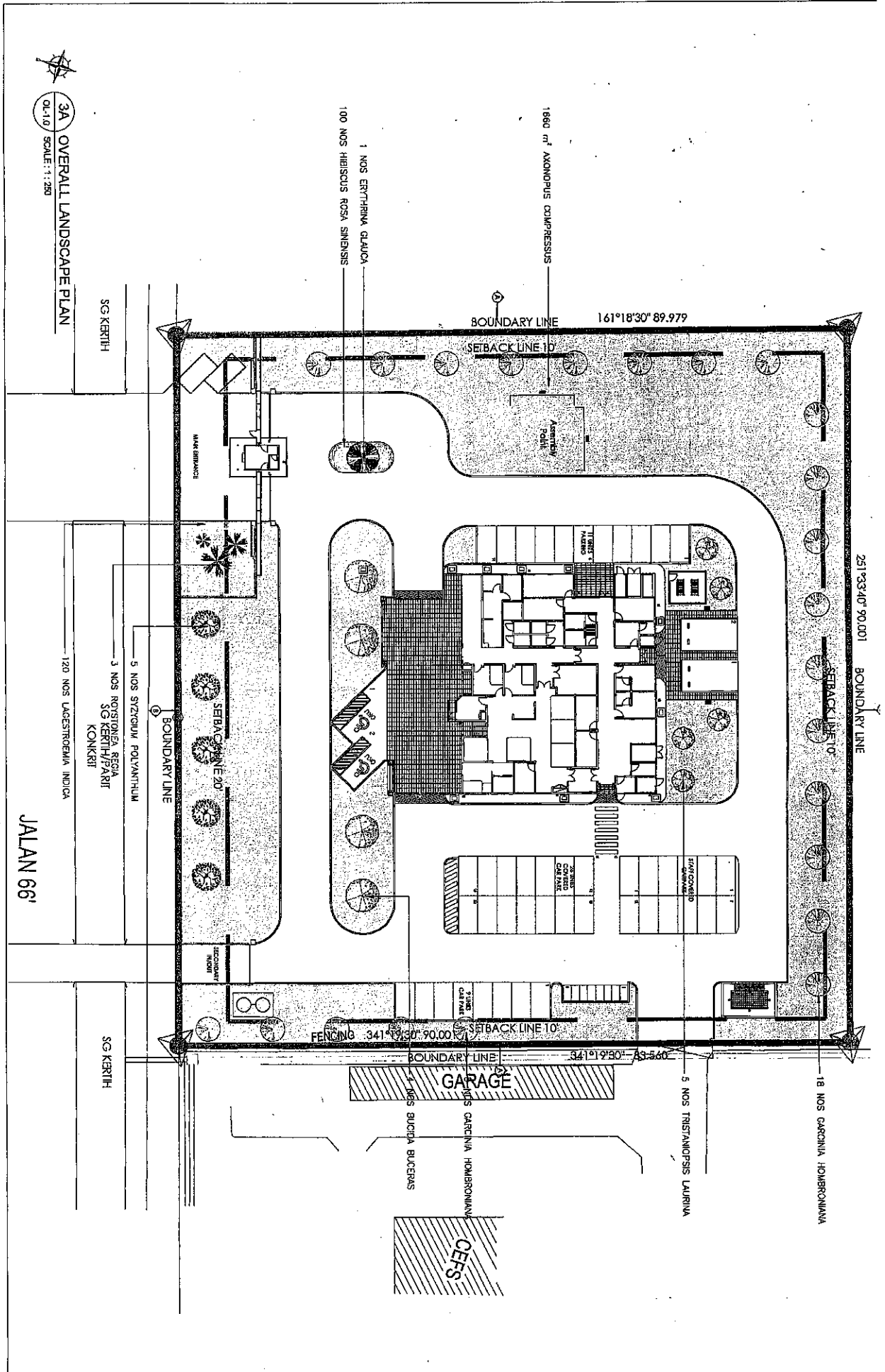
PROPOSED CONSTRUCTION OF NEW ROAD JELI TO
DABONG, JELI, KELANTAN.
(EARTHWORKS PACKAGE).

Drawing No. :

DCQ40192/EARTHWORKS/01

NOTE : - Each grid size 10m x 10m
- The site is to be leveled at 66.50m





3A OVERALL LANDSCAPE PLAN
OL-1/0 SCALE: 1:1250

JALAN 66'

DRAWING NO.: DCGA0192/LANDSCAPING/01

SOFTSCAPE

NO	SYMBOL	BOTANICAL NAME	COMMON NAME	OVERALL HEIGHT (m)	TRUNK HEIGHT Ø (mm)	DISTANCE OF TREES (m)	QUANTITY	NOTES
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TREES

1		Bucida Buceras	Black Olive	3.0	25	8.0		
2		Garcinia Hombroniana	Seashore Mangosteen	2.0	25	8.0		
3		Tristaniaopsis Laurina	Water Gum	2.0	30	5.0		
4		Erythrina Glauca	Coral Bean	3.5	50	-		
5		Syzygium polyanthum	Indian Bayleaf	2.0	25	-		

PALM

1		Roystonea Regia	Royal Palm	5.0	150	3.0		
2		Roystonea Regia	Royal Palm	3.0	100	3.0		
3		Roystonea Regia	Royal Palm	2.0	75	3.0		

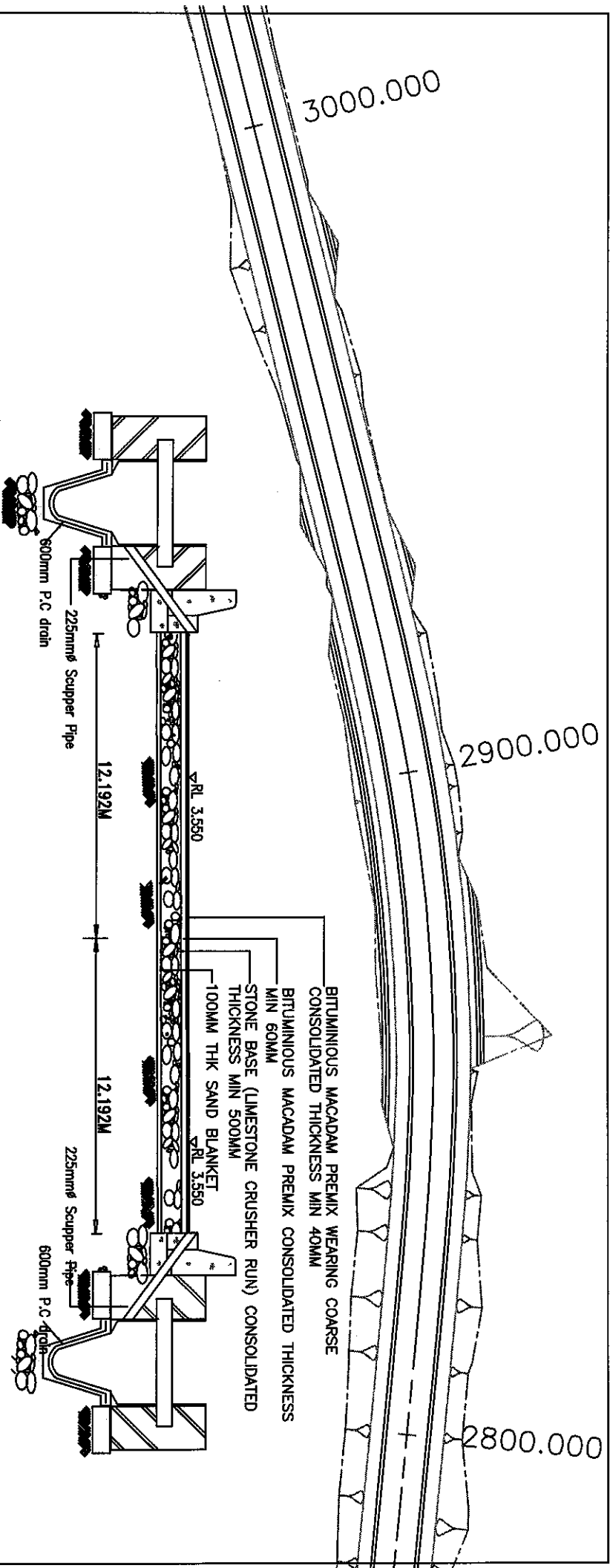
SHRUB

1		Lagerstroemia Indica	Red Henna	0.3	-	0.3		
2		Hibiscus Rosa Sinensis	Hibiscus	0.3	-	0.3		

TURFING

1		Axonopus Compressus	Cow Grass	-	-	-	3051 m²	
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DRAWING NO.: DCQ40192/LANDSCAPING/02



PROJEK TITLE :
Proposed Construction of New Road Jeli to Dabong, Kelantan

DRAWING NO.:
DCQ40192/Roads&Pavings/Q4-01