

SULIT



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

JABATAN KEJURUTERAAN AWAM

PEPERIKSAAN AKHIR

SESI II : 2021/2022

DCQ20104: BUILDING WORKS MEASUREMENT 2

TARIKH : 4 JULAI 2022

MASA : 2.30 PM – 4.30 PM (2 JAM)

Kertas ini mengandungi **ENAM (6)** halaman bercetak.
Bahagian A: Struktur (3 soalan)
Bahagian B: Esei (1 soalan)
Dokumen sokongan yang disertakan : 6 SET LUKISAN

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIARAHKAN

(CLO yang tertera hanya sebagai rujukan)

SULIT

SECTION A: 75 MARKS
BAHAGIAN A: 75 MARKAH

INTRUCTION:

This section consists of **THREE (3)** structured questions. Answer **ALL** questions.

ARAHAN:

*Bahagian ini mengandungi **TIGA (3)** soalan berstruktur. Jawab **SEMUA** soalan.*

Notes:

Nota:

- (a) Taking off shall refer to the rules and principles in Standard Method of Measurement for Building 2nd edition (SMM2).

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

- (b) Candidate is allowed to make any 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 sistematik dimensi, kecukupan dan ketepatan penerangan dan dimensi.

QUESTION 1**SOALAN 1**CLO1
C2

- (a) Explain the rules of measurement of concrete works in floor beams according to the requirement of SMM2.
Terangkan peraturan pengukuran kerja konkrit dalam rasuk lantai mengikut kehendak di dalam SMM2.

[3 marks]
[3 markah]

CLO1
C3

- (b) Based on the drawing **DCQ20104/FRAMES/01 & DCQ20104/FRAMES/02**, prepare the quantity measurement for concrete works, formwork, and bar reinforcement in (inclined) roof beam types R1 & R3 only.
*Berdasarkan lukisan **DCQ20104/FRAMES/01 & DCQ20104/FRAMES/02**, sediakan pengukuran kuantiti bagi kerja konkrit, kerja kotak bentuk dan besi tetulang pada rasuk bumbung (condong) jenis R1 & R3 sahaja.*

[14 marks]
[14 markah]

CLO1
C4

- (c) Conclude all the measured quantities in question 1(b) as a bill of quantities.
Rumuskan semua kuantiti terukur dalam soalan 1(b) sebagai senarai kuantiti.

[8 marks]
[8 markah]

QUESTION 2

SOALAN 2

CLO1
C2

- (a) Labour for forming a wrought surface on timber is required for exposed wood parts. Explain the use of this item in a roofing element.

Buruh untuk membentuk permukaan tempa kepada kayu diperlukan untuk bahagian kayu yang terdedah. Terangkan berkenaan dengan penggunaan item ini dalam Elemen Bumbung.

[3marks]
[3 markah]

CLO1
C3

- (b) Based on the drawing **DCQ20104/ROOF/01**, prepare the quantity measurement for roof tiles, heat insulation and G.I. flashing.

*Berdasarkan lukisan **DCQ20104/ROOF/01**, ukur kuantiti bagi kemas bumbung, penebat haba dan talang lurah.*

[14 marks]
[14 markah]

CLO2
C4

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

Rumuskan semua kuantiti terukur dalam soalan 2 (b) sebagai senarai kuantiti.

[8 marks]
[8 markah]

QUESTION 3**SOALAN 3**CLO1
C2

- (a) The Damp Proof Course (DPC) prevents damp from the ground rising-up to the walls and damaging your property. Explain the rules of measurement for DPC according to SMM2.

Lapisan Kalis Lembap (LKL) menghalang lembapan dari tanah naik ke atas dinding dan merosakkan harta benda anda. Terangkan peraturan pengukuran untuk LKL berdasarkan SMM2.

[3marks]
[3 markah]

CLO1
C3

- (b) Based on the drawing **DCQ20104/A/Q3/01**, **DCQ20104/A/Q3/02**, and **DCQ20104/A/Q3/03**, prepare the quantity measurement for element of external walls.

*Berdasarkan lukisan **DCQ20104/A/Q3/01**, **DCQ20104/A/Q3/02**, dan **DCQ20104/A/Q3/03**, ukur kuantiti bagi elemen dinding luar.*

[14 marks]
[14 markah]

CLO2
C4

- (c) Conclude all the measured quantities in Question 3 (b) as a bill of quantities.

Rumuskan semua kuantiti terukur dalam soalan 3 (b) sebagai senarai kuantiti.

[8 marks]
[8 markah]

SECTION B: 25 MARKS**BAHAGIAN B: 25 MARKAH****INSTRUCTION:**

This section consists of **ONE (1)** essay questions. Answer **ALL** questions.

ARAHAN:

*Bahagian ini mengandungi **SATU (1)** soalan esei. Jawab semua soalan.*

QUESTION 1**SOALAN 1**

CLO1
C2

- (a) Concrete lintels are usually required if the window openings are not located below the beams. Explain why lintels are needed in the Window.

Konkrit lintol biasanya diperlukan sekiranya bukaan tingkap tidak terletak di bawah rasuk. Terangkan kenapa lintol diperlukan dalam tingkap.

[3marks]
[3 markah]

CLO1
C3

- (b) Based on the drawing **DCQ20104/WINDOW/01**, prepare the quantity measurement for window types W1 and W2 only.

*Berdasarkan lukisan **DCQ20104/WINDOW/01**, ukur kuantiti bagi tingkap jenis W1 dan W2 sahaja.*

[14 marks]
[14 markah]

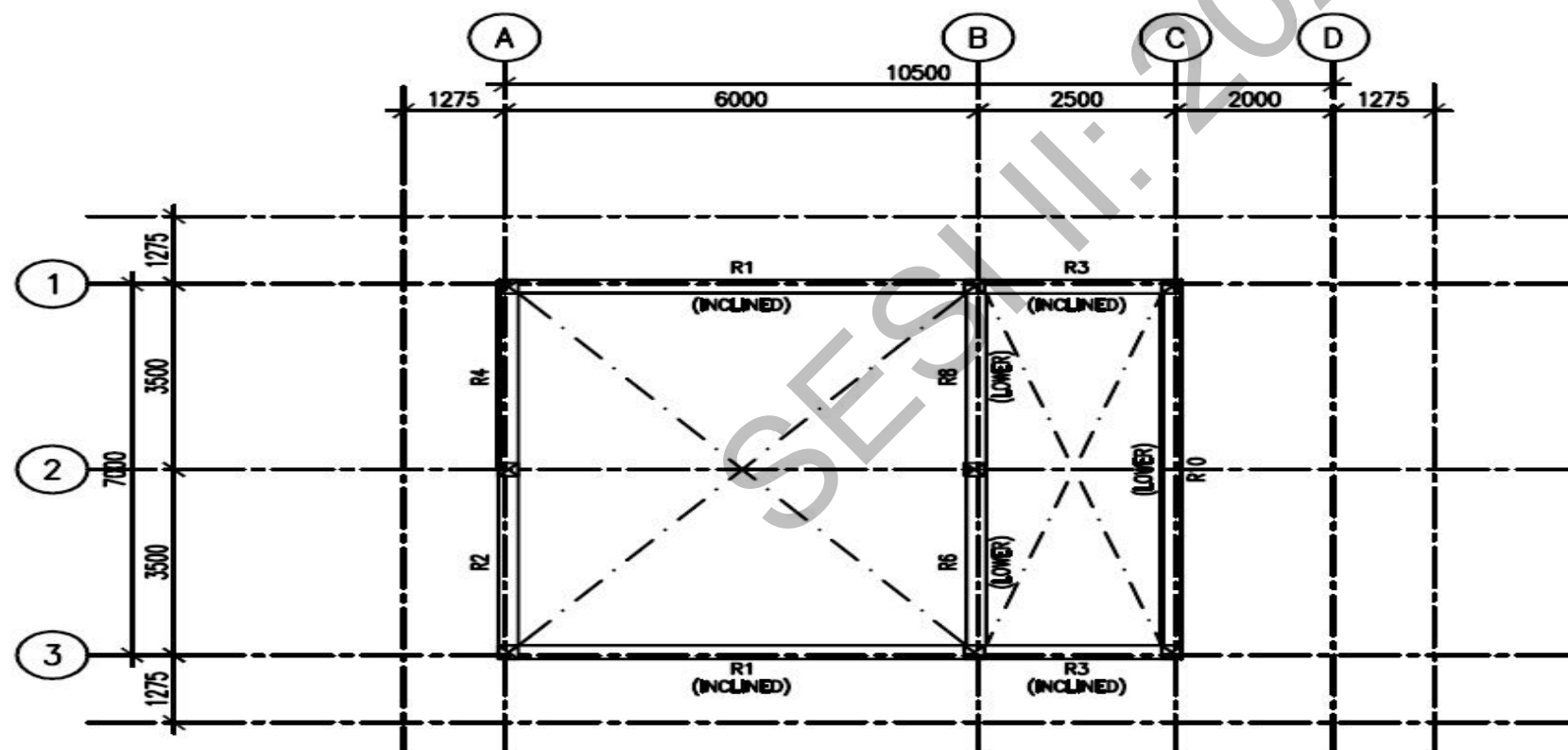
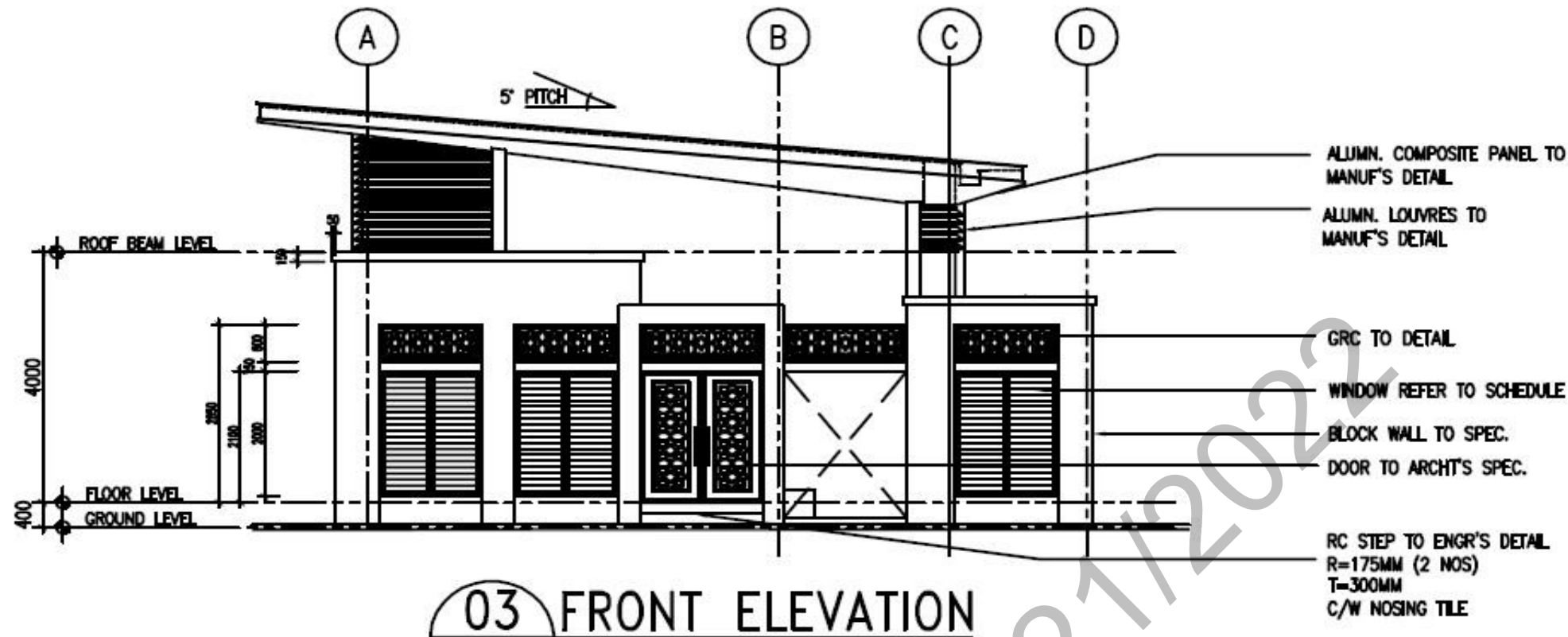
CLO2
C4

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

Rumuskan semua kuantiti terukur dalam soalan 1 (b) sebagai senarai kuantiti.

[8 marks]
[8 markah]

SOALAN TAMAT



ALL BEAMS TO BE 250X450 UNLESS STATED
NON-LOAD BEARING STIFFENERS TO BE PROVIDED
FOR EVERY 10m² OF WALL OR A MINIMUM SPACING OF 3m.
24 hrs PONDING TEST REQUIRED AT WATER-TIGHT TOILET

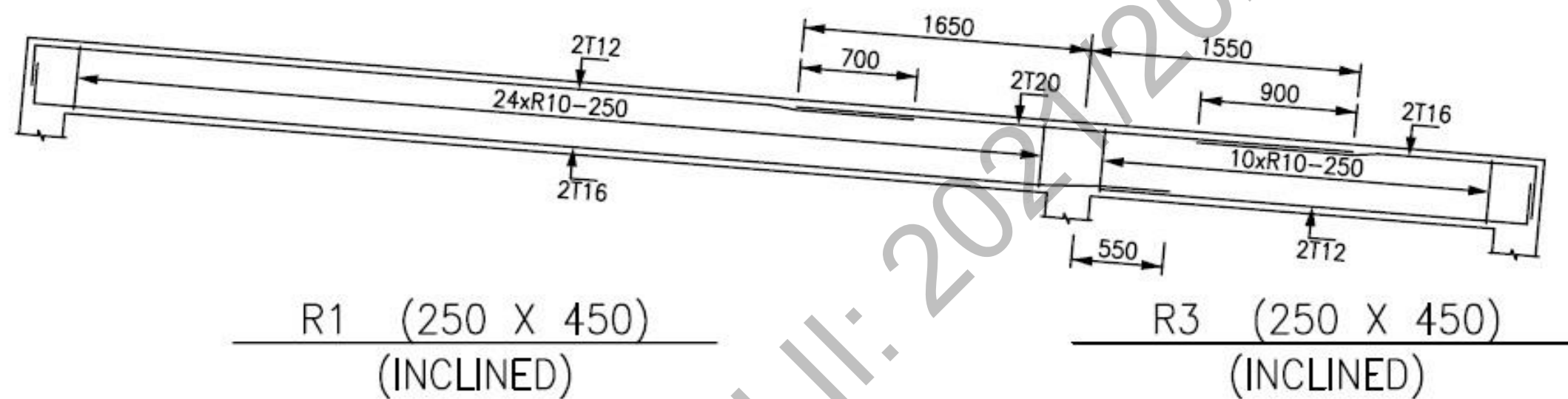
NOTES:
Concrete cover for beam is 25mm thick
Concrete to beam shall be of Grade 20 Concrete

PROJECT:
CADANGAN MEMBINA SURAH
AL-IHSAN, TAMAN SEPANGGAR
JAYA

DRAWING TITLE:
Front Elevation
Roof Plan

DRAWING NUMBER:
DCQ20104/FRAMES/01

SCALE:
Not to Scale



NOTES:

Concrete cover for
beam is 25mm thick
Concrete to beam
shall be of Grade 20
Concrete

PROJECT:

**CADANGAN MEMBINA
SURAH AL-IHSAN,
TAMAN SEPANGGAR
JAYA**

DRAWING

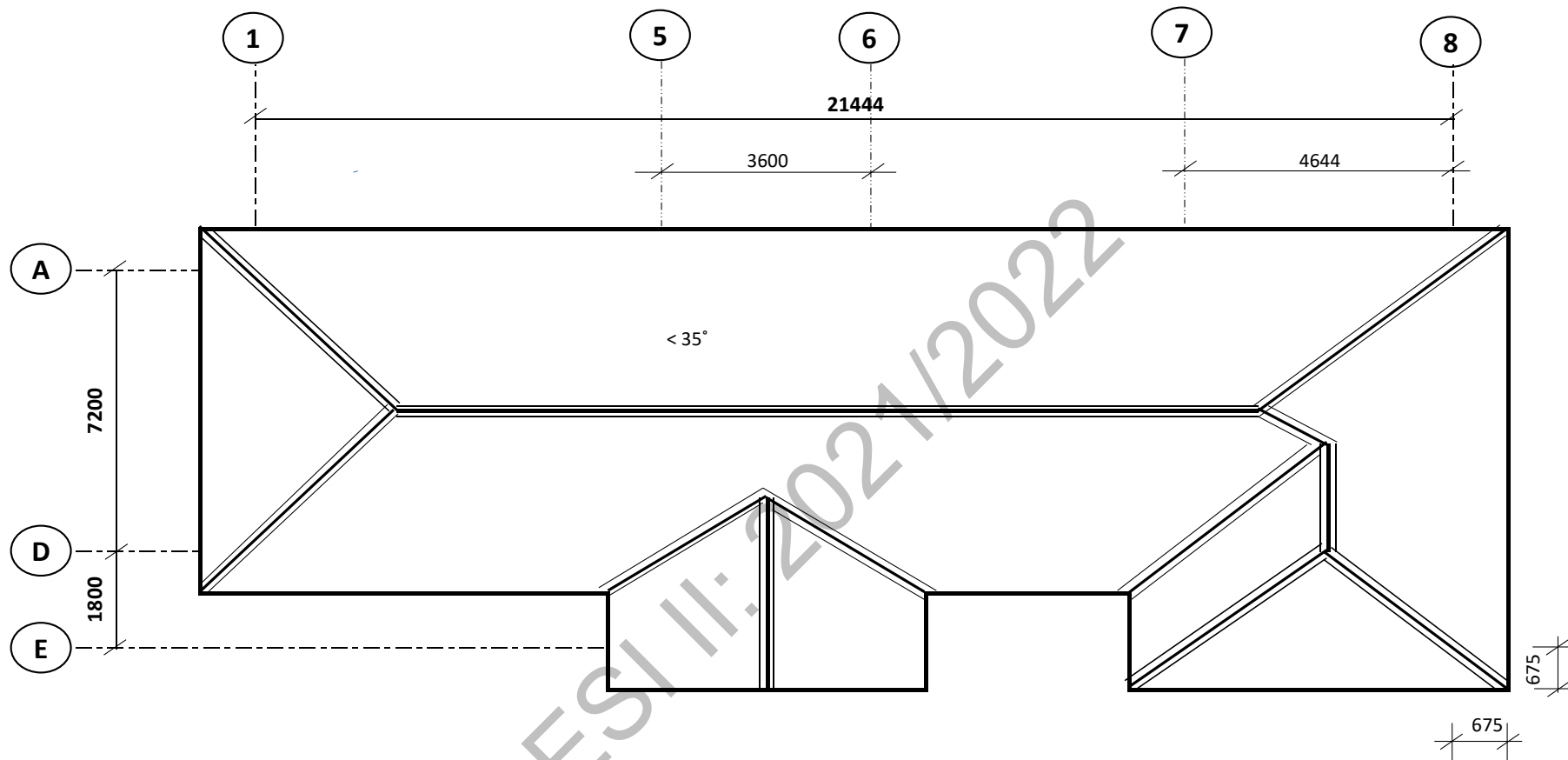
**TITLE: Beam
Detail**

DRAWING NUMBER:

DCQ20104/Frames/02

SCALE:

1 : 33 1/3



NOTES:

- 1) Concrete roof tiles at 35° pitch
- 2) Come with accessories to architect approval
- 3) Come with aluminium building foil Rockwool & chicken wire mesh (sound proofing membrane)
- 4) 24 gauge galvanised iron flashing

PROJECT:

Cadangan membina dan menyiapkan sebuah rumah banglo di Lot 998 Kampung Kok Lanas, 16450 Ketereh, Kelantan.

DRWG. TITLE:

Roof Plan

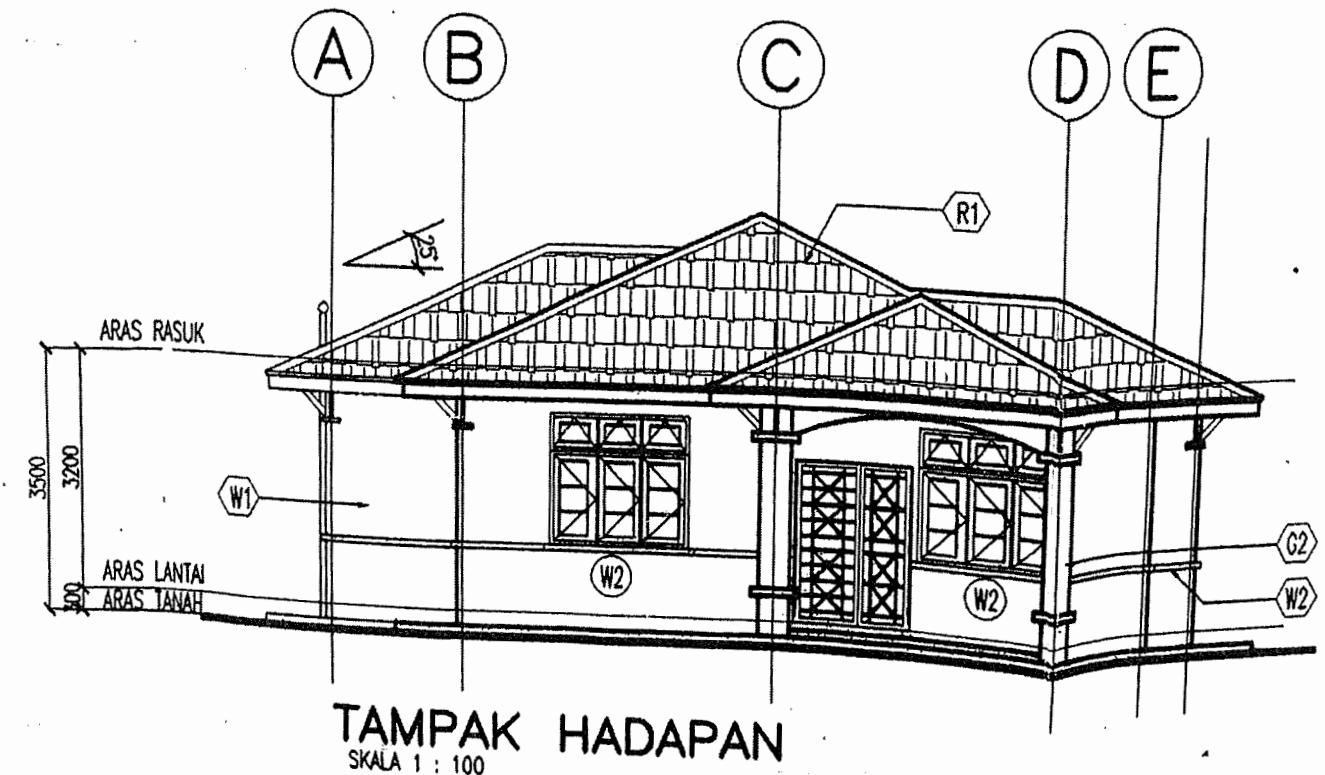
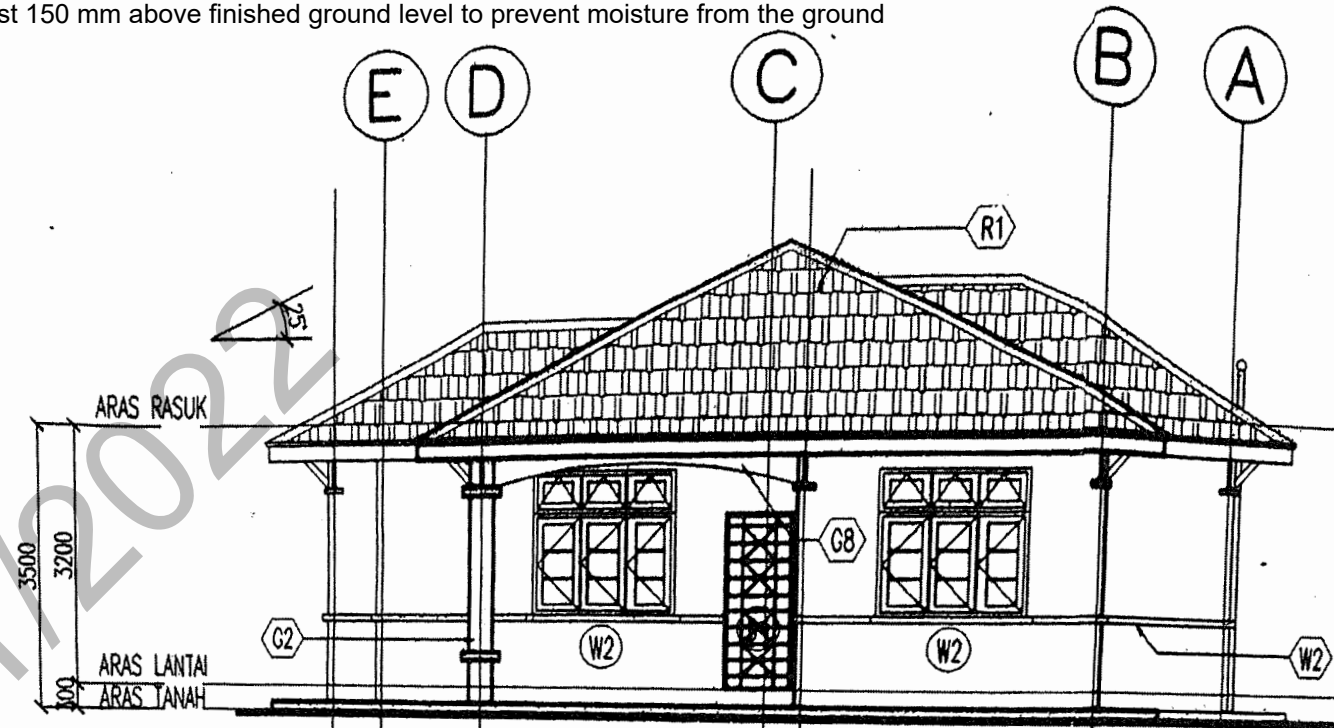
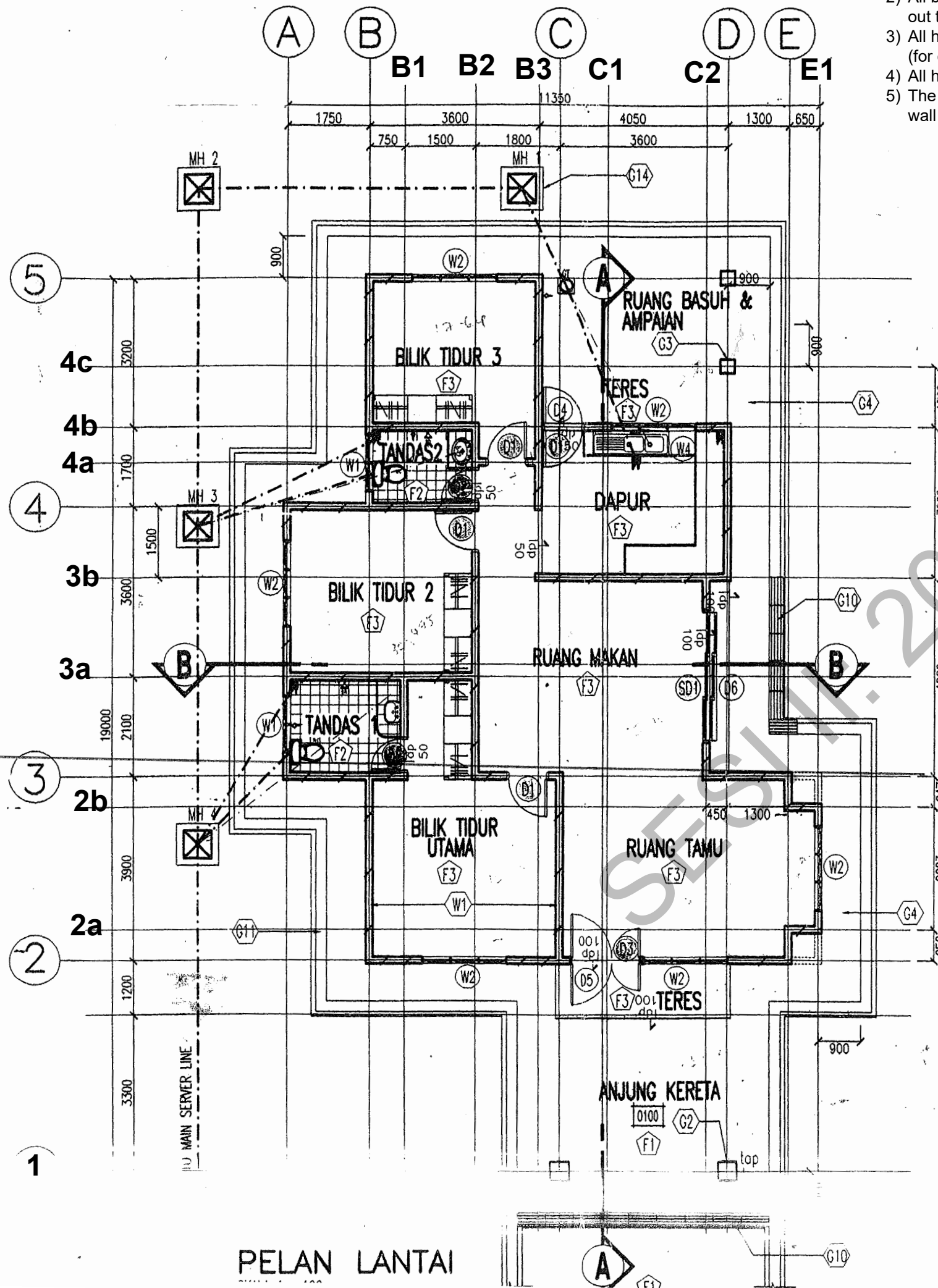
DRWG. NO.:

DCQ20104/Roof/01

SCALE:

Not to Scale

- 1) The whole of the brickwork shall be constructed with standard size clay bricks
- 2) All bricks shall be properly bedded in mortar and all joints shall be thoroughly flushed up and raked out to a depth of 13 mm as the works proceeds. No joint shall exceed 10 mm in thickness.
- 3) All half brick (113 mm) walls shall be reinforced at every fourth course with approved reinforcement (for example exmet) commencing two courses above floor level.
- 4) All half brick walls shall be built in Stretcher Bond.
- 5) The damp proof course above ground shall be continuous for the whole length and thickness of the wall and be at least 150 mm above finished ground level to prevent moisture from the ground

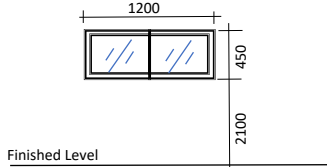
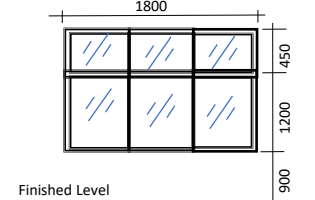


RC Stiffeners :

- 1) Reinforced concrete stiffeners shall be constructed at every minimum of 3m vertically and horizontally
- 2) Reinforced concrete stiffener columns 150mm X 150mm reinforced with 4 nos 10mm dia and 6mm stirrups 200mm c/c link shall be provided

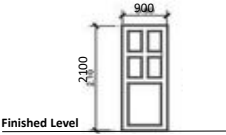
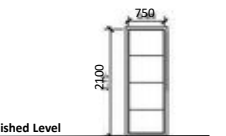
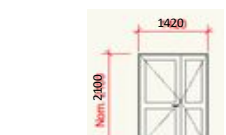
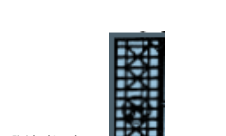
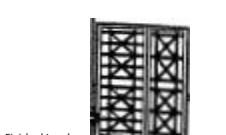
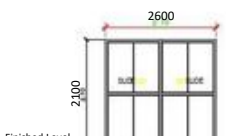
DOORS & WINDOWS SCHEDULES

Windows

TYPE	SIZE	GLAZING	FRAMES	DETAILS
W1	1200mm X 450mm	6mm Thick Green Tinted Glass	Alumunium Frame Top Hung Casement Windows	 1200 450 2100 Finished Level
W2	1800mm X 1650mm	6mm Thick Green Tinted Glass	Alumunium Frame Casement with Top Hung Above	 1800 450 1200 900 Finished Level

DOORS & WINDOWS SCHEDULES

DOORS

TYPE	SIZE	GLAZING/ FINISHING	FRAMES/ PANEL	IRONMONGERIES	LOCATION	DETAILS
D1	900mm X 2100mm	No Glazing Enamel Gloss Paint Finish	Hardwood Timber/ Hardwood Panel Door/	Standard Stainless Steel Hinges, Door Lever Lockset Sliding Door Latch	Bilik Tidur Utama Bilik Tidur 2 Bilik Tidur 3 Dapur	
D2	750mm X 2100mm	No Glazing Enamel Gloss Paint Finish	Hardwood Timber Frames/ Alumunium Doors Frame / Alumunium Composite Panel	Standard Stainless Steel Hinges, Toilet Door Knob Lockset Sliding Latch Barrel Bolt	Tandas 1 Tandas 2	
D3	1420mm X 2100mm	No Glazing Enamel Gloss Paint Finish	Hardwood Timber/ Hardwood Panel Door	Standard Stainless Steel Hinges, Door Lever Lockset, Dead Bolt	Ruang Tamu	
D4	900mm X 2100mm	NIL	Hollow Section Steel Grills	NIL	Dapur (Outdoor)	
D5	1420mm X 2100mm	NIL	Hollow Section Steel Grills	NIL	Ruang Tamu (Outdoor)	
SD1	2600mm X 2100mm	6mm Thick Green Tinted Glass Panel	Powder Coated Alumunium Frames Sliding Door	Standard Ironmongeries	Ruang makan	

DRAWING NO : DCQ20104/DOORS/01