

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

DCQ20104: BUILDING WORKS MEASUREMENT 2

TARIKH : 21 JUN 2023

MASA : 8.30 PG – 10.30 PG (2 JAM)

Kertas ini mengandungi **ENAM (6)** halaman bercetak.

Bahagian A: Subjektif (2 soalan)

Bahagian B: Subjektif (4 soalan)

Dokumen sokongan yang disertakan : *Drawing*

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIARAHKAN

(CLO yang tertera hanya sebagai rujukan)

SULIT

Nota:

1. Taking off refers to the rules stated in the Malaysian Standard Method of Measurement of Building Works Second Edition (SMM2).
Pengukuran Kuantiti hendaklah merujuk kepada peraturan Kaedah Pengukuran Piawaian Malaysia bagi Kerja-kerja Bangunan Edisi Kedua (SMM2).
2. Candidate is allowed to make any assumption if the information given in the drawing is inadequate.
Calon dibenarkan membuat andaian sekiranya maklumat yang diberikan tidak mencukupi.

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

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

ARAHAN:

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

QUESTION 1**SOALAN 1**

CLO1

- (a) List down taking off list for column.
Senaraikan "taking off list" bagi tiang.

[5 marks]

[5 markah]

CLO1

- (b) Based on Drawing No. **DCQ20104/FRAME**, calculate the quantities measurement for concrete work and formwork of column.
Berdasarkan lukisan no. DCQ20104/FRAME, hitungkan pengukuran kuantiti untuk kerja konkrit dan kerja acuan konkrit untuk tiang.

[8 marks]

[8 markah]

- CLO1 (c) Conclude the measured quantities (b) as the bill of quantities.
Rumuskan kuantiti terukur bagi (b) sebagai senarai kuantiti.

[12 marks]

[12 markah]

QUESTION 2**SOALAN 2**

- CLO1 (a) By referring to SMM2, describe the measuring guidelines for formwork slab edges using SMM2.
Merujuk kepada SMM2, kenalpasti peraturan pengukuran bagi kerja acuan untuk sisi lantai.

[5 marks]

[5 markah]

- CLO1 (b) Based on Drawing No. **DCQ20104/UPPERFLOOR**, prepare quantity measurements for concrete work and formwork slab edges.
*Berdasarkan lukisan no. **DCQ20104/UPPERFLOOR**, sediakan pengukuran kuantiti untuk kerja konkrit dan kerja acuan konkrit untuk sisi lantai.*

[8 marks]

[8 markah]

- CLO1 (c) Conclude the measured quantities (b) as the bill of quantities.
Rumuskan kuantiti terukur bagi (b) sebagai senarai kuantiti.

[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 Drawing No. **DCQ20104/STAIRCASE**, prepare quantity measurement for concrete work in staircase.

*Berdasarkan lukisan no **DCQ20104/STAIRCASE**, sediakan pengukuran kuantiti bagi kerja konkrit di tangga.*

[8 marks]

[8 markah]

CLO1

- (b) Based on Drawing No. **DCQ20104/STAIRCASE**, conclude a bill of quantities complete with quantity measurement for raking open string formwork and the formwork for the soffit of the staircase.

*Berdasarkan lukisan no **DCQ20104/STAIRCASE**, rumuskan satu senarai kuantiti lengkap dengan pengukuran kuantiti bagi kerja acuan bagi sisi tangga dan papak tampang bawah tangga.*

[17 marks]

[17 markah]

QUESTION 2**SOALAN 2**

CLO1

- (a) Based on Drawing No. **DCQ20104/ROOF**, prepare the quantity measurement for fascia board and roof finishes (interlocking concrete tiles).

Berdasarkan lukisan no. DCQ20104/ROOF, sediakan pengukuran kuantiti untuk kemasan bumbung (jubin konkrit kekunci) dan papan cantik untuk bumbung.

[8 marks]

[8 markah]

CLO1

- (b) Based on Drawing No. **DCQ20104/ROOF**, conclude a bill of quantities complete with quantity measurement for wall plate and hip rafter.

Berdasarkan lukisan no DCQ20104/ROOF, rumuskan satu senarai kuantiti lengkap dengan pengukuran kuantiti bagi plat dinding dan kasau miring.

[17 marks]

[17 markah]

QUESTION 3**SOALAN 3**

CLO1

- (a) Based on Drawing No. **DCQ20104/WALL**, prepare the quantity measurement for internal wall at gridline 2/C-F.

Berdasarkan lukisan no. DCQ20104/WALL, sediakan pengukuran kuantiti bagi dinding dalam di garis grid 2/C-F.

[8 marks]

[8 markah]

CLO1

- (b) Based on Drawing No. **DCQ20104/WALL**, conclude a bill of quantities complete with quantity measurement of concrete and formwork for the stiffener in the internal wall.

*Berdasarkan lukisan no **DCQ20104/WALL**, rumuskan satu senarai kuantiti lengkap dengan pengukuran kuantiti bagi kerja konkrit dan kerja acuan konkrit untuk pengukuh tiang di dinding dalam.*

[17 marks]

[17 markah]

QUESTION 4**SOALAN 4**

CLO1

- (a) Based on Drawing No. **DCQ20104/DOOR**, prepare the quantity measurement for door frame and architrave (Door Type D1)

*Berdasarkan lukisan no **DCQ20104/DOOR**, sediakan pengukuran kuantiti untuk kerangka pintu dan hias jenang (Jenis Pintu D1).*

[8 marks]

[8 markah]

CLO1

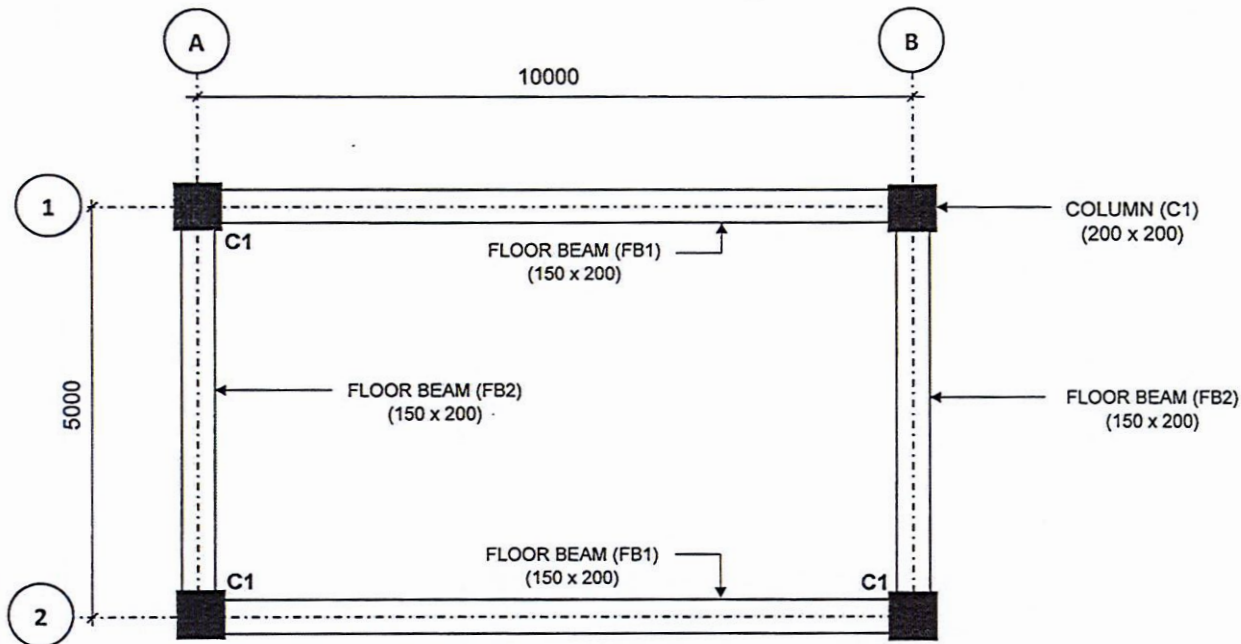
- (b) Based on Drawing No. **DCQ20104/WINDOW**, conclude a bill of quantities complete with quantity measurement for window framing and concrete lintel (Window Type W7).

*Berdasarkan lukisan no **DCQ20104/WINDOW**, rumuskan satu senarai kuantiti lengkap dengan pengukuran kuantiti bagi kerangka tingkap dan lintol konkrit (Jenis Tingkap W7).*

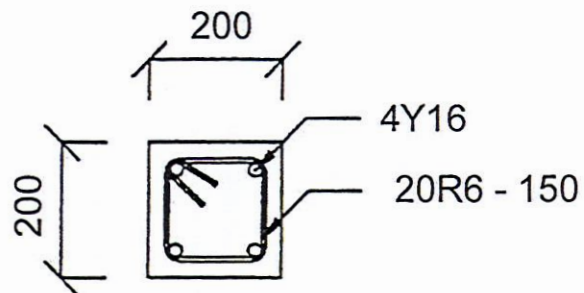
[17 marks]

[17 markah]

SOALAN TAMAT



GROUND FLOOR PLAN
NOT TO SCALE



SECTION OF COLUMN
NOT TO SCALE

NOTES:

1. Concrete for Floor Beam and Column shall be Grade 25.
2. Concrete cover – 25mm.
3. Height for column shall be 3000mm.



NOTES:

YOU CAN MAKE ALL THE NECESSARY AND REASONABLE ASSUMPTIONS WHERE APPLICABLE.

PROJECT TITLE:

CADANGAN MEMBINA SEBUAH STOR DI SEKOLAH MENENGAH KEBANGSAAN CONVENT, IPOH, PERAK.

DRAWING TITLE:

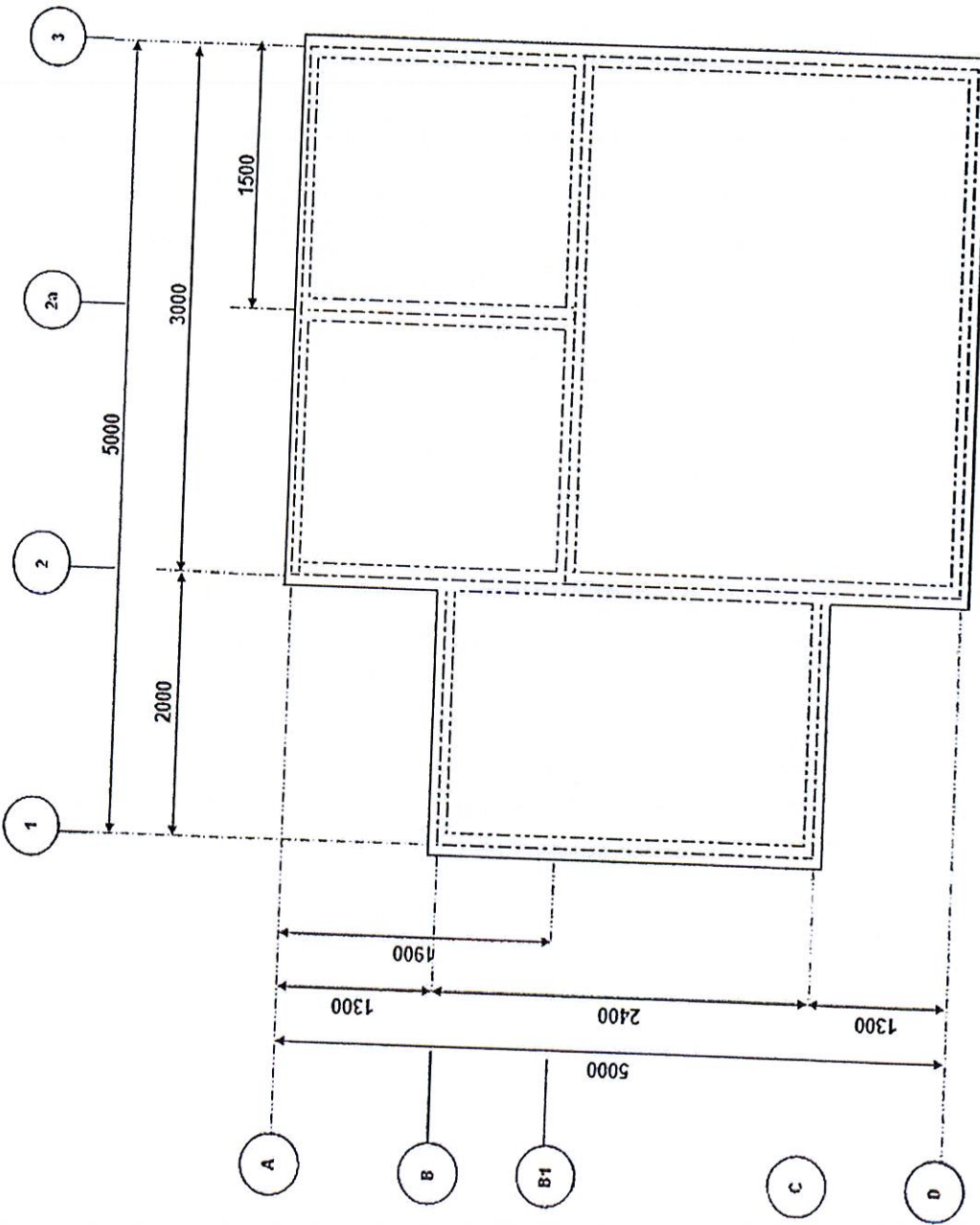
FIRST FLOOR PLAN
SECTION OF COLUMN

SCALE:

NOT TO SCALE

DRAWING NO:

DCQ20104/FRAME



FIRST FLOOR SLAB PLAN

SCALE : NOT TO SCALE

NOTES:

1. All concrete shall be in Grade 25.
2. All slab thickness 125mm thick.
3. All beam size shall be in 175 x 350.



NOTES:

YOU CAN MAKE ALL THE NECESSARY AND REASONABLE ASSUMPTIONS WHERE APPLICABLE.

PROJECT TITLE:

CADANGAN MEMBINA SEBUAH RUMAH DI LOT 2453, KAMPUNG MERDEKA, JASIN, MELAKA.

DRAWING TITLE:

FIRST FLOOR SLAB PLAN

SCALE:

NOT TO SCALE

DRAWING NO:

DCQ20104/UPPERFLOOR

NOTES:

YOU CAN MAKE ALL THE NECESSARY
AND REASONABLE ASSUMPTIONS
WHERE APPLICABLE.

NOTES:

1. All dimensions are in millimeters unless otherwise stated.
2. All concrete shall be Grade 25.
3. Concrete cover – 25mm.
4. Landing slab shall be 125 mm thick.
5. Waist shall be 125 mm.
6. Tread shall be 225 mm.
7. Riser shall be 180 mm.

PROJECT TITLE:

CADANGAN MEMBINA SEBUAH RUMAH
DUA TINGKAT DI TUMPAT, KELANTAN.

DRAWING TITLE:

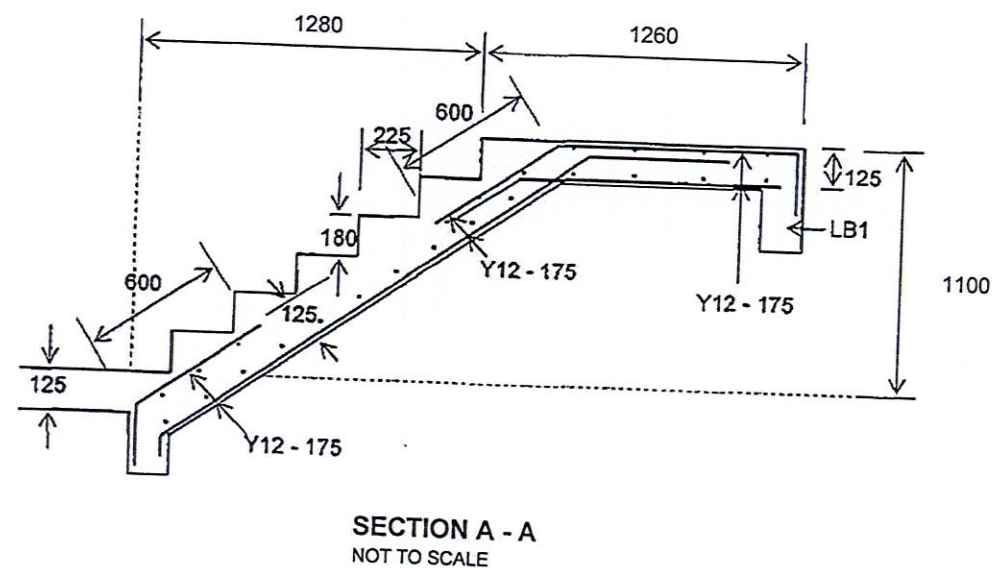
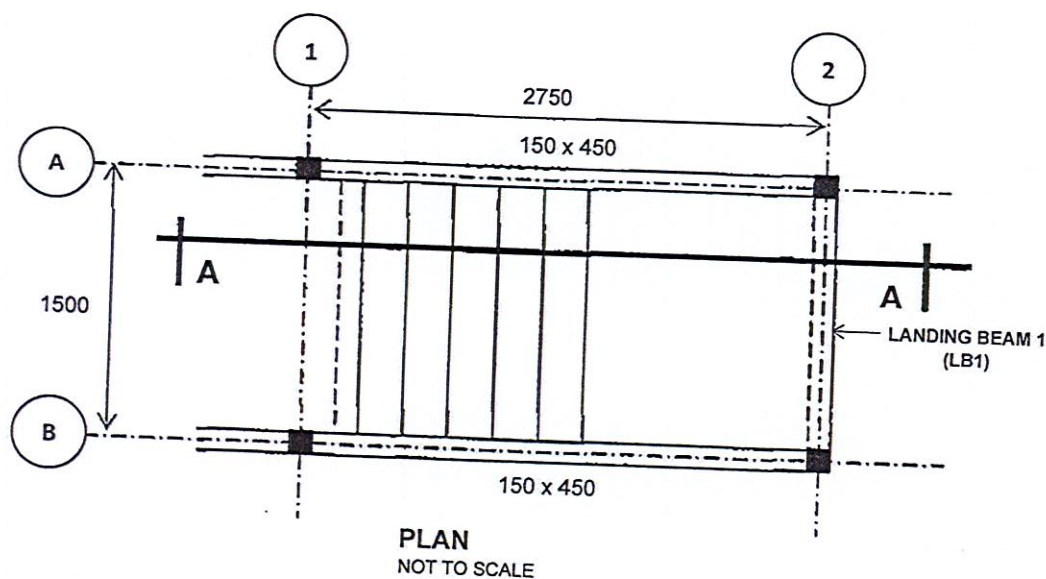
PLAN
SECTION A - A

SCALE:

NOT TO SCALE

DRAWING NO:

DCQ20104/STAIRCASE



NOTES:

YOU CAN MAKE ALL THE NECESSARY AND REASONABLE ASSUMPTIONS WHERE APPLICABLE.

- All timber shall be Grade B.
- 175mm x 38mm s.p.t ridge board
- 125mm x 50mm s.p.t rafters – 600mm c/c
- 150mm x 50mm s.p.t hip rafter
- 125mm x 50mm s.p.t strut – 600mm c/c
- 100mm x 50mm s.p.t wall plate
- 250mm x 25mm w.p.t fascia board

PROJECT TITLE:

CADANGAN MEMBINA SEBUAH BLOK AKADEMIK DI SEKOLAH KEBANGSAAN TAMAN MULIA JAYA, IPOH, PERAK.

DRAWING TITLE:

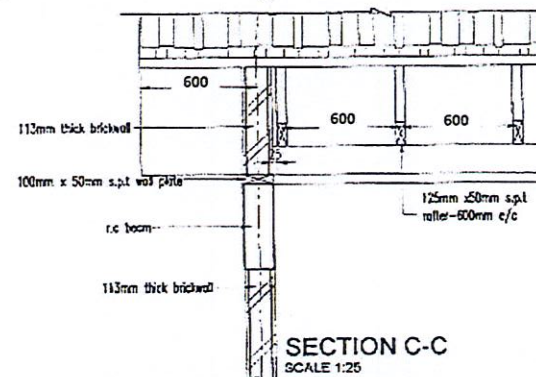
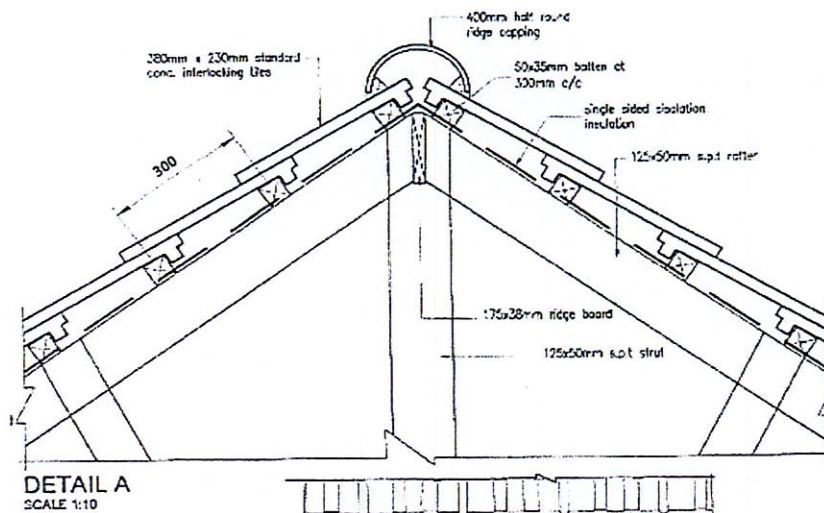
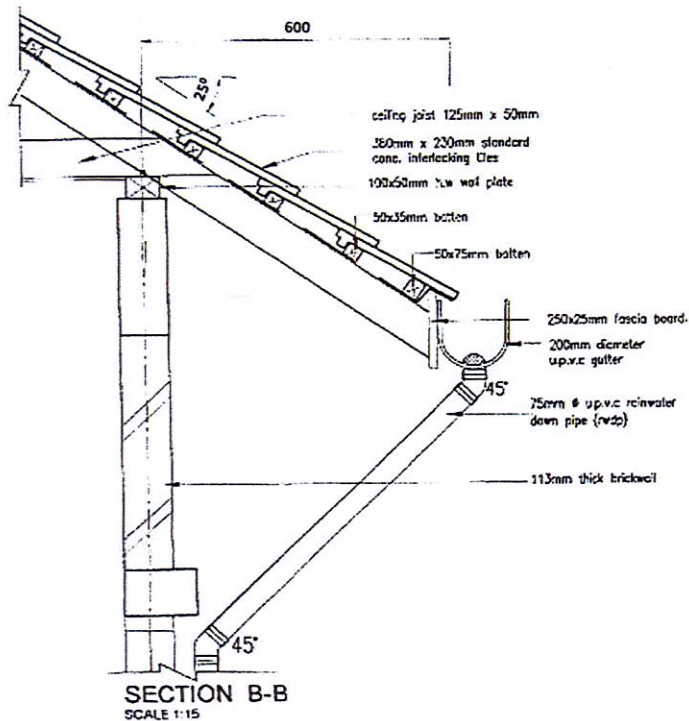
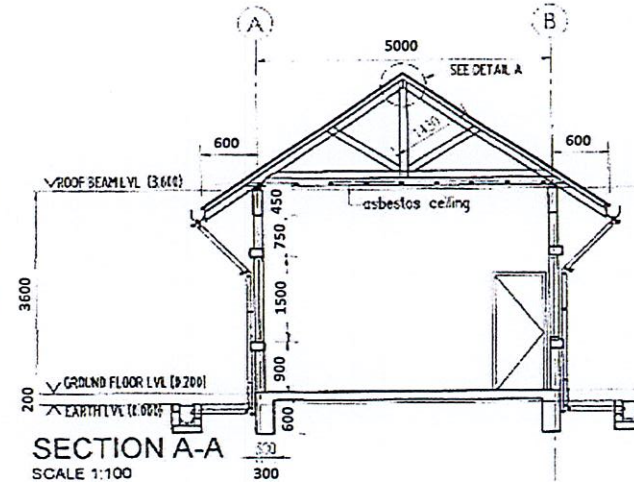
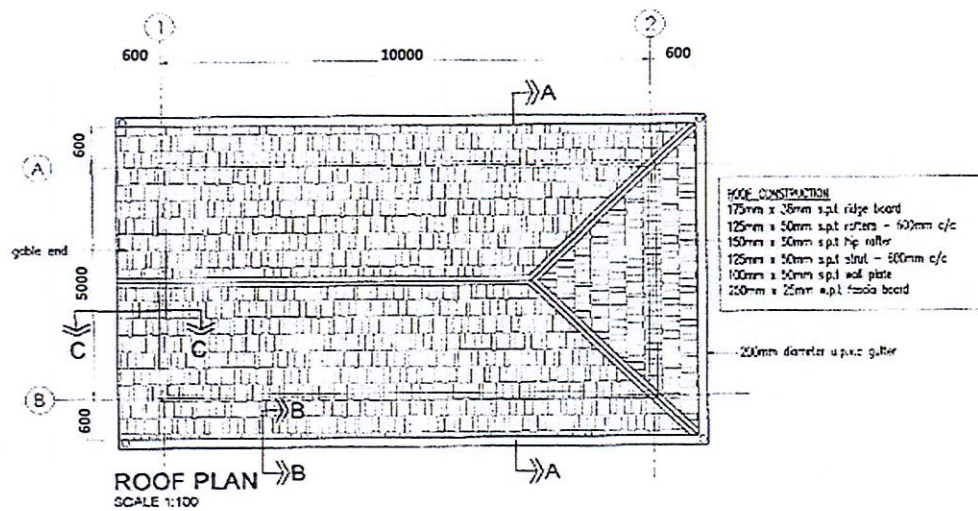
ROOF PLAN DETAILS

SCALE:

NOT TO SCALE

DRAWING NO:

DCQ20104/ROOF



NOTES:

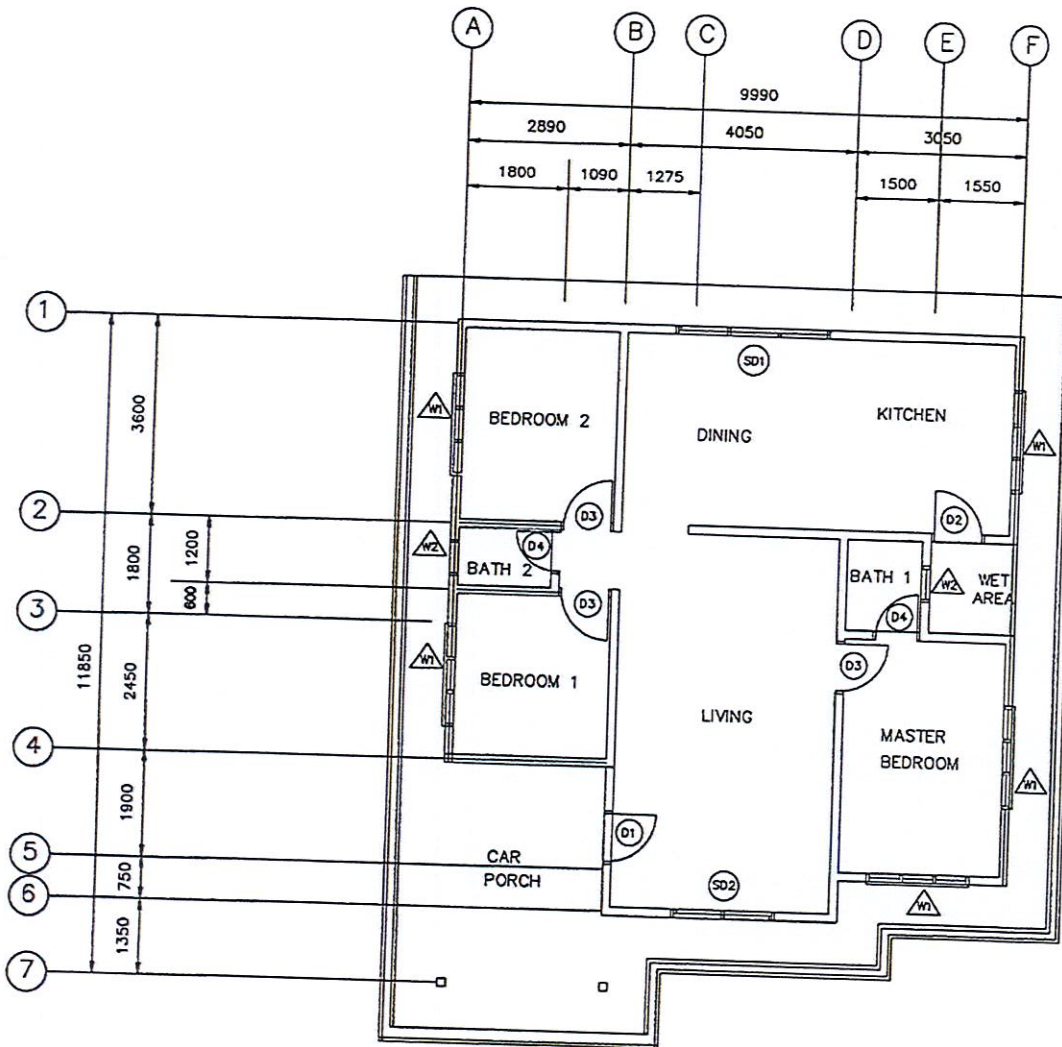
YOU CAN MAKE ALL THE NECESSARY
AND REASONABLE ASSUMPTIONS
WHERE APPLICABLE.

NOTES:

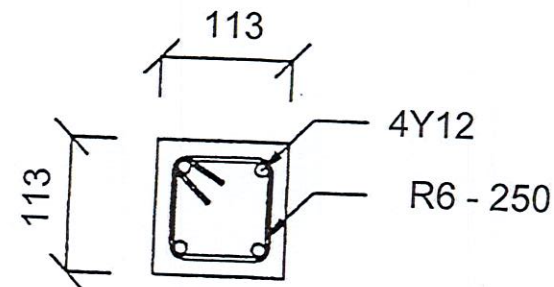
1. External wall shall be 225 mm thick.
2. Internal wall shall be 113 mm thick.
3. Height of wall shall be 3200 mm.
4. 19 mm thick cement and sand plaster (1:6) trowelled smooth on all external and internal surfaces.
5. All concrete shall be Grade 25.
6. Concrete cover shall be 25 mm thick.

Details of Door and Window:

1. Size of D1 900x2100
2. Size of D2 750x2100
3. Size of D3 1200x2100
4. Size of D4 1000x2100
5. Size of SD1 3600x2600
6. Size of SD2 1800x2600
7. Size of W1 1800x600
8. Size of W2 600x600



GROUND FLOOR PLAN
NOT TO SCALE



TYPICAL STIFFENER DETAILS
NOT TO SCALE

PROJECT TITLE:

CADANGAN MEMBINA SEBUAH RUMAH
KAKITANGAN DI POLITEKNIK KOTA
KINABALU, SABAH.

DRAWING TITLE:

GROUND FLOOR PLAN
SECTION OF STIFFENER

SCALE:

NOT TO SCALE

DRAWING NO:

DCQ20104/WALL



NOTES:

YOU CAN MAKE ALL THE NECESSARY AND REASONABLE ASSUMPTIONS WHERE APPLICABLE.

- Nos of D1 - 4

PROJECT TITLE:

CADANGAN MEMBINA SEBUAH RUMAH DI TAMAN SAUJANA, JITRA, KEDAH.

DRAWING TITLE:

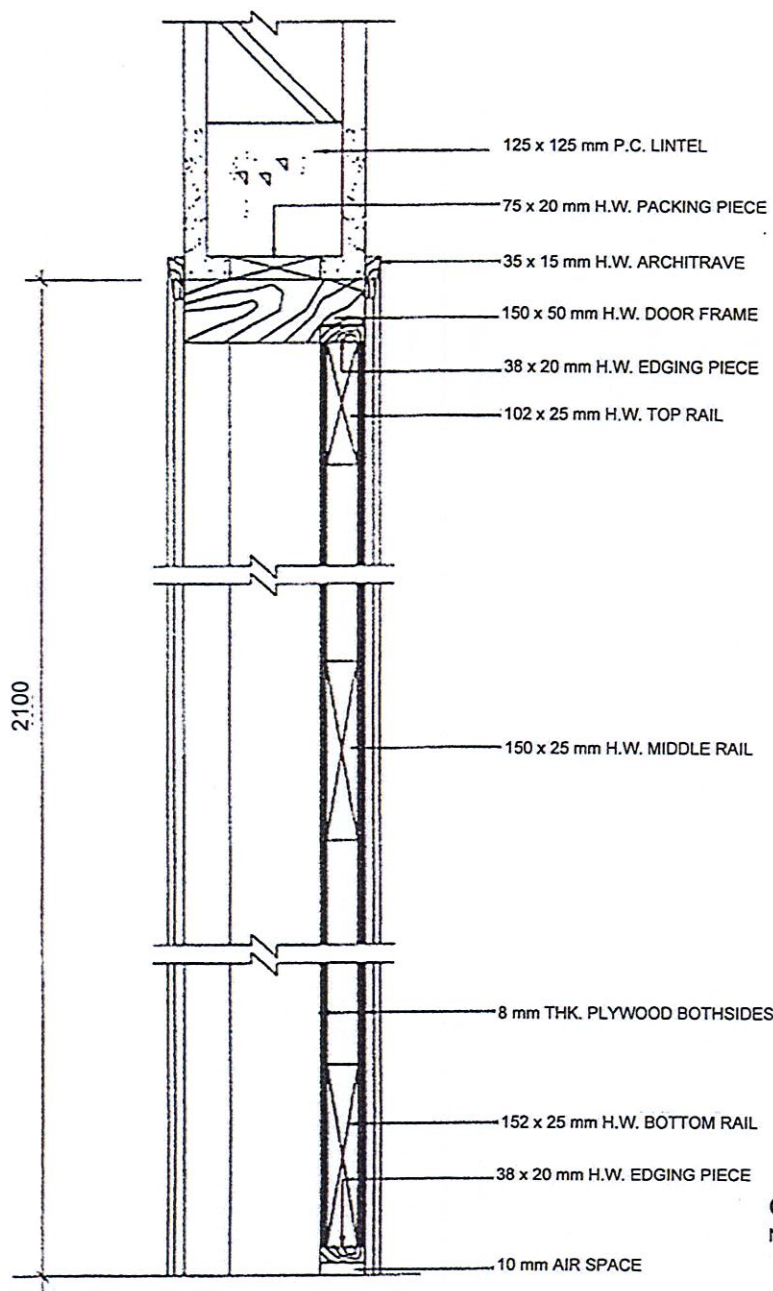
PLYWOOD FLUSH DOOR
SECTION X - X
SECTION Y - Y

SCALE:

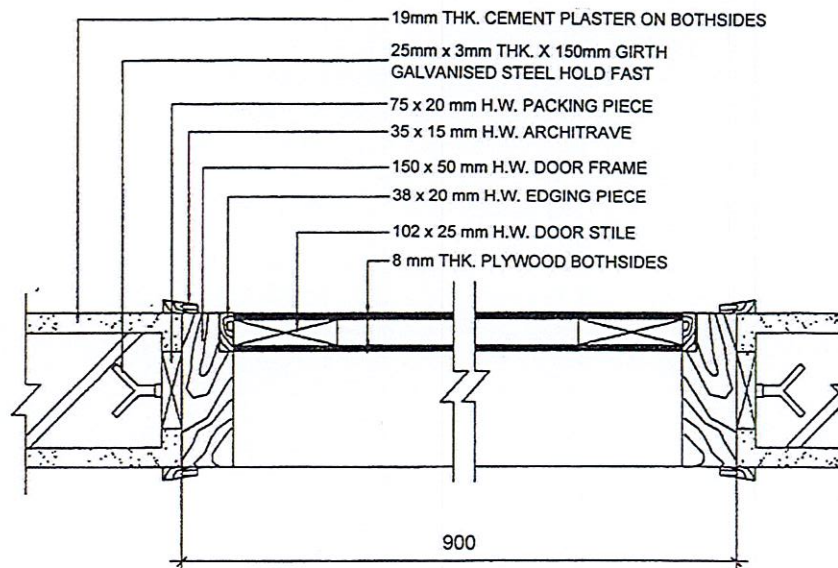
NOT TO SCALE

DRAWING NO:

DCQ20104/DOOR

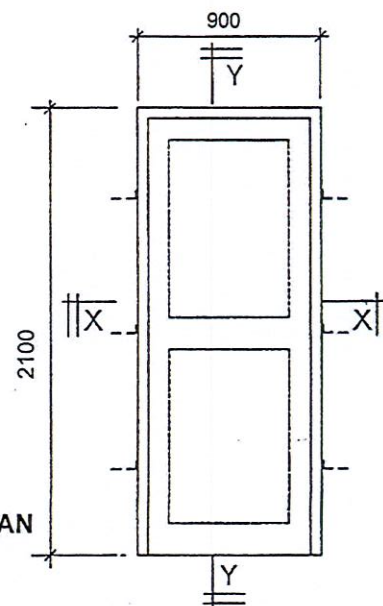


SECTION Y - Y
NOT TO SCALE



SECTION X - X
NOT TO SCALE

GROUND FLOOR PLAN
NOT TO SCALE



PLYWOOD FLUSH DOOR (D1)
NOT TO SCALE



NOTES:

YOU CAN MAKE ALL THE NECESSARY
AND REASONABLE ASSUMPTIONS
WHERE APPLICABLE.

PROJECT TITLE:

CADANGAN MEMBINA SEBUAH RUMAH
DI TAMAN SAUJANA, JITRA, KEDAH.

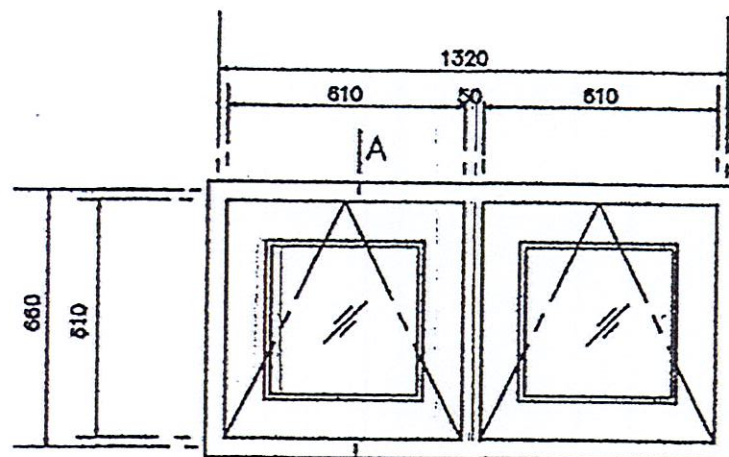
DRAWING TITLE:

DETAIL W7
DETAIL A

SCALE: 1 : 25
1 : 12.5

DRAWING NO:

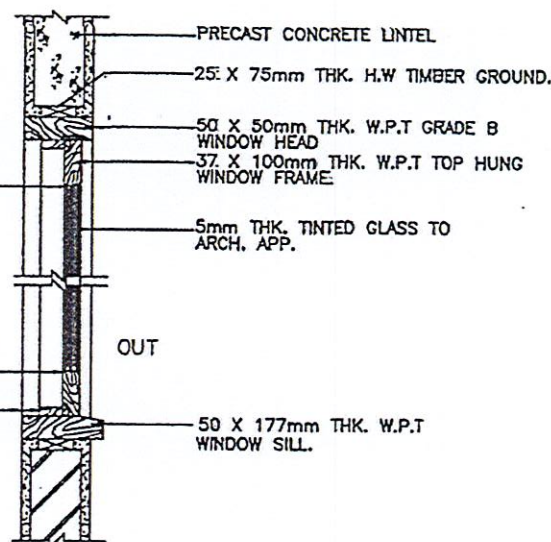
DCQ20104/WINDOW



DETAIL W7
(4 NOS)
SCALE 1 : 25

12.7 X 12.7mm THK. W.P.T.
BEADING: ALL ROUND.

37 X 100mm THK. W.P.T.
WINDOW FRAME.
H.W STOP 19 X 50mm.



DETAIL A
SCALE 1 : 12.5

PRECAST CONCRETE LINTEL

25 X 75mm THK. H.W TIMBER GROUND.

50 X 50mm THK. W.P.T GRADE B

WINDOW HEAD
37 X 100mm THK. W.P.T TOP HUNG
WINDOW FRAME

5mm THK. TINTED GLASS TO
ARCH. APP.

50 X 177mm THK. W.P.T
WINDOW SILL.