



education

Department:
Education
KwaZulu - Natal

GRADE
12

ENGINEERING GRAPHICS AND DESIGN P1 TRIAL EXAMINATION 2012

MARKS : 200
 TIME : 3 HOURS
 This question paper consists of 6 pages.

INSTRUCTIONS AND INFORMATION

1. The question paper consists of FOUR questions.
2. Answer ALL the questions.
3. All drawings must be drawn to scale 1:1, unless otherwise stated.
4. The questions must be answered on the answer sheets provided.
5. All the answer sheets must be re-stapled in numerical sequence and handed in irrespective of whether the question was attempted or not.
6. Careful time management is essential in order to complete all the questions.
7. Print your NAME in the block provided on every answer sheet.
8. All answers must be drawn accurately and neatly.
9. Any details or dimensions not given must be assumed in good proportion.

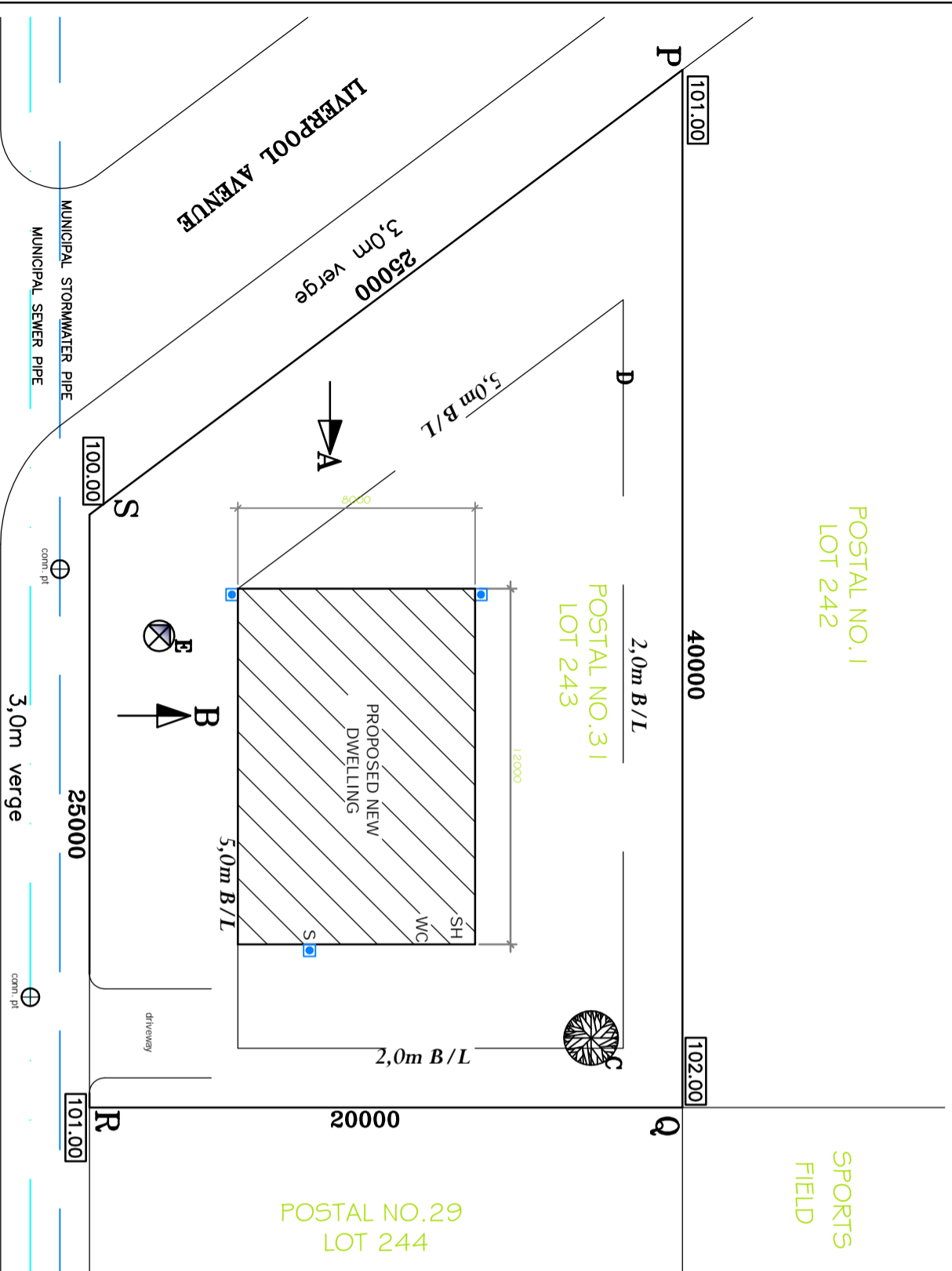
FOR OFFICIAL USE ONLY			
QUESTION	LEARNER'S MARK	MODERATED MARK	
ONE		25	
TWO		38	
THREE		37	
THREE		100	
TOTAL	200		

FINAL CONVERTED MARK	CHECKED BY
100	

NAAM
 NAME

QUESTION ONE - CIVIL ANALYTICAL

- REFER TO THE DIAGRAM GIVEN BELOW AND ANSWER THE QUESTIONS IN THE SPACES PROVIDED.
- WHERE NECESSARY SHOW ALL CALCULATIONS.
- ANSWER Q13 & 14 ON THE DIAGRAM. DRAW CLEARLY, USING THE APPROPRIATE LINETYPES - CONNECT TO THE GIVEN CONNECTION POINTS



SITE PLAN
SCALE 1:200

1. WHAT IS THE SCALE OF THE DRAWING?		1
2. WHAT IS THE STREET ADDRESS OF THE PROPOSED DEVELOPMENT?		1
3. WHAT IS THE ERF NUMBER OF THE PROPERTY ON THE SOUTH EAST SIDE?		1
4. WHICH ALPHABET REPRESENTS THE HIGHEST PART OF THE PROPERTY?		1
5. WHAT IS THE HEIGHT DIFFERENCE OF THE PROPERTY?		1
6. WHAT ELEVATION CAN BE VIEWED FROM DIRECTION OF ARROW A?		1
7. WHAT ELEVATION CAN BE VIEWED FROM DIRECTION OF ARROW B?		1
8. WHAT IS THE DISTANCE FROM THE FRONT OF THE HOUSE TO THE ROAD EDGE?		1
9. WHAT DO THE FOLLOWING ABBREVIATIONS STAND FOR?		
9.1. SH		1
9.2. WC		1
9.3. S		1
10. WHAT FEATURES ARE REPRESENTED BY:		
10.1. C		1
10.2. D		1
10.3. E		1
11. WHAT IS THE AREA OF THE PROPOSED DWELLING?(answer in metres)		2
12. WHAT IS THE PERIMETER OF THE PROPERTY?(answer in metres)		2
13. DRAW THE SEWER PIPES FROM THE PROPOSED DWELLING TO THE MUNICIPAL PIPE.(INSERT ALL LABELS)		4
14. DRAW THE STORMWATER PIPES FROM THE PROPOSED DWELLING TO THE MUNICIPAL PIPE.(INSERT ALL LABELS)		3
TOTAL		25

NAME: _____ GR. 12 _____

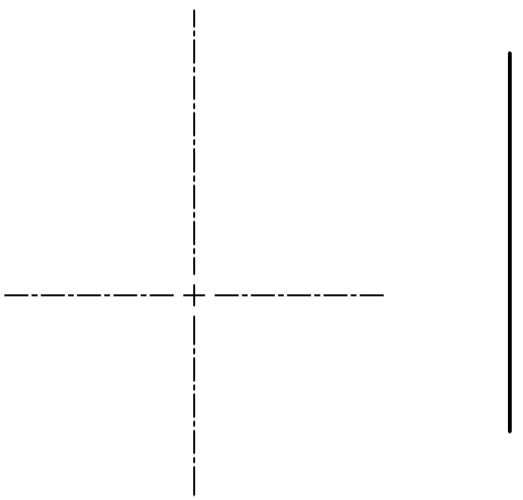
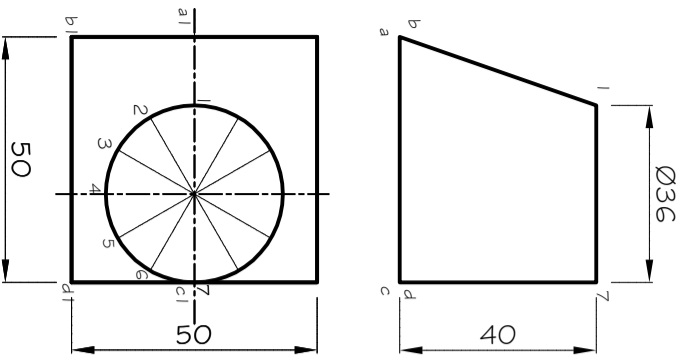
QUESTION 2 a

A top view and front view of a square to round transition piece is given.

Draw:

2.1 the given views showing the fold lines.

2.2 the development of the surfaces labelled 1/ABCD7 which is half of the given figure.



ASSESSMENT CRITERIA	
CONSTRUCTIONS	7
DEVELOPMENT	19
TOTAL	26

B _____
DEVELOPMENT _____ C

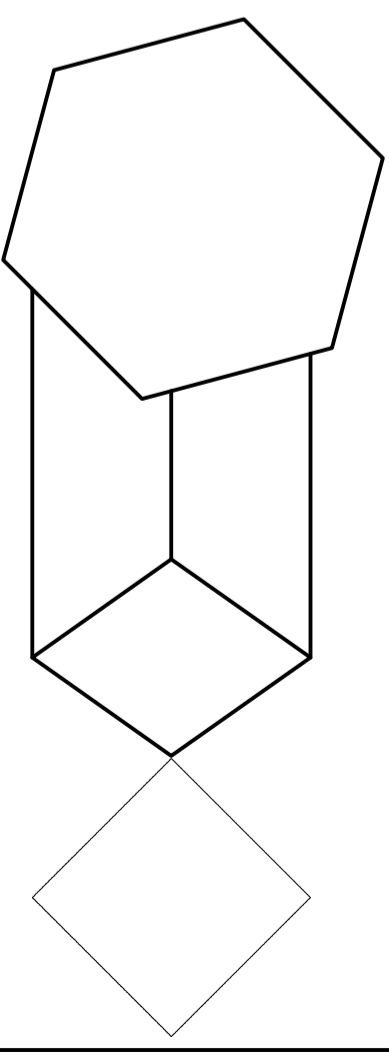
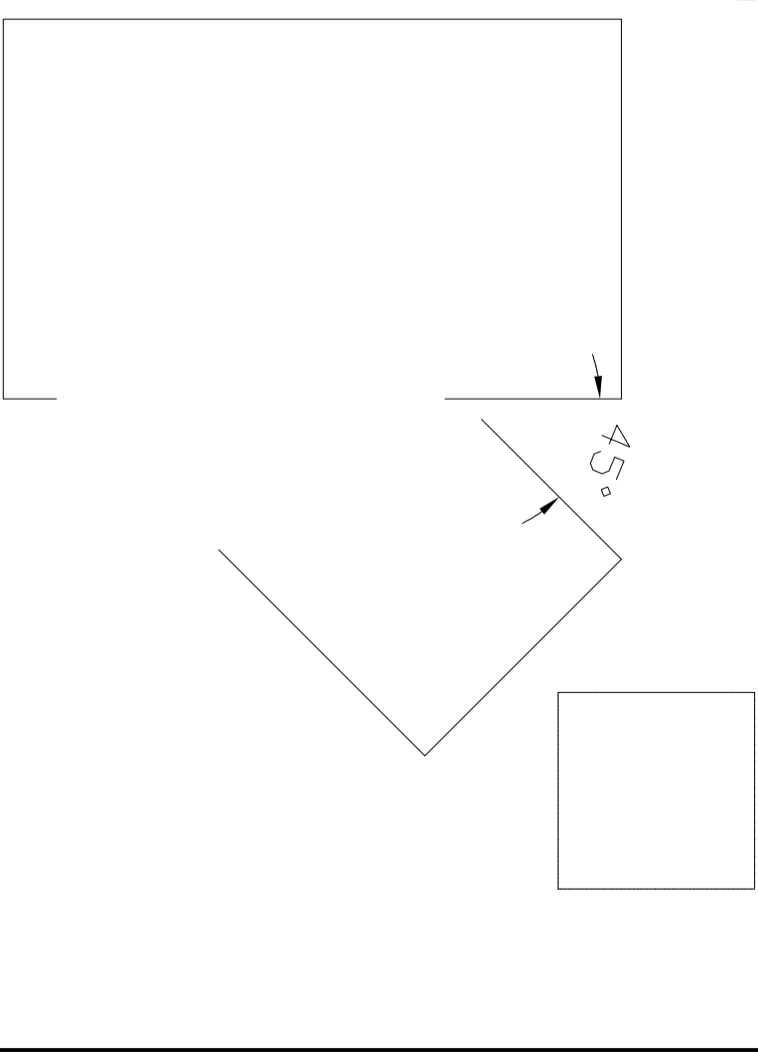
QUESTION 2 b

A top view and an incomplete front view of a hexagonal prism penetrated by a square prism is given.

Draw:

Complete the given front view and draw the curve of interpenetration between the two solids.

ASSESSMENT CRITERIA	
FRONT VIEW	4
INTERPENETRATION	8
TOTAL	12



NAME: _____

2 a	2 b	TOTAL
26	12	38

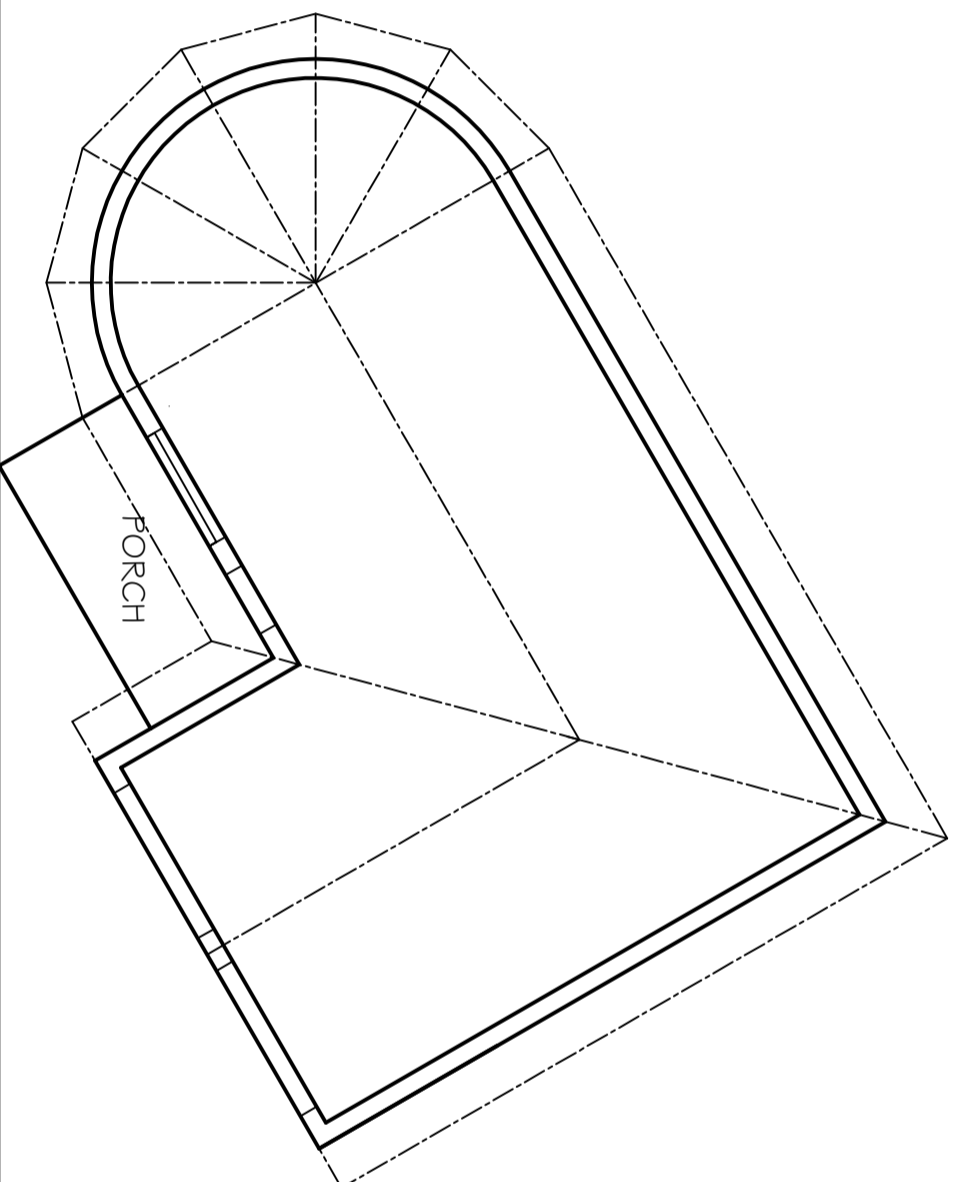
GR/DIV: 12 _____

QUESTION 3

Draw the perspective view of the given office and double garage.

Show all constructions.

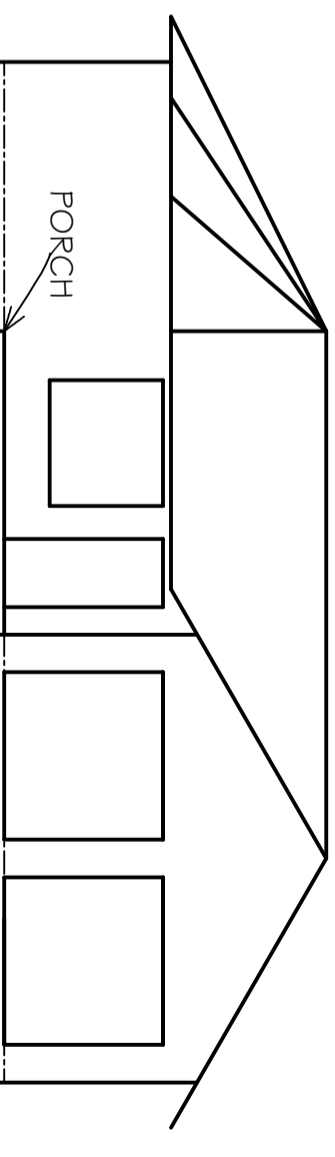
ASSESSMENT CRITERIA		
FLOOR PLAN		
CONSTRUCTION	8	
ROOF	24/2	12
WALLS, WINDOWS, DOORS	34/2	17
		37



PICTURE PLANE

HORIZON LINE

GROUND LINE



Sp

NAME: _____

GR/DIV: 12 _____

ENGINEERING GRAPHICS AND DESIGN

GRADE 12

TRIAL EXAM 2012

PAPER 1
QUESTION 4
100 MARKS

RM-595

INSTRUCTIONS

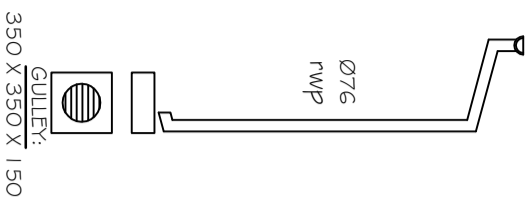
DRAW ON THE GIVEN ANSWER SHEET, TO A SCALE OF 1:50, THE FOLLOWING VIEWS:

1. THE GROUND FLOOR PLAN. (35)
 - Insert the following:
 - 1.1. ALL NECESSARY HATCHING.
 - 1.2. DOORS AND WINDOWS IN THE INDICATED POSITIONS.
 - 1.2. SANITARYWARE IN THE INDICATED POSITIONS:
 - 1 - wc 2 - shr 3 - whb 4 - kitchen sink
 - 1.3. RAINWATER PIPES AND GULLEYS
 - 1.4. ELECTRICAL DETAIL
 - light fittings in each room
 - 2x40w fluorescent fitting in the kitchen
 - 1 x 1 way switch for the bedroom
 - 1 x 2 way switch for bathroom & passage
 - 1 x 2 way switch for lounge & kitchen
 - 1 x switched socket outlet indicated by 5
 2. Draw a SECTIONAL ELEVATION on A-A. (39)
 - Show the complete details for:
 - 2.1 the foundation and floor slab
 - 2.2 walls with windows and opening
 - 2.3 roof
 - 2.4 rainwater goods - gutters and downpipes
 3. Draw the SOUTH ELEVATION showing all details. (26)
 - Label the following on all necessary views:
 - room designations
 - natural ground level
 - ceiling level
 - rainwater pipes
 - names of views
 - window codes
 - finished floor level
 - damp proof course
 - names of views
- ALL DRAWINGS MUST COMPLY WITH THE GUIDELINES AS SPECIFIED BY THE CODE OF PRACTICE SANS 10400

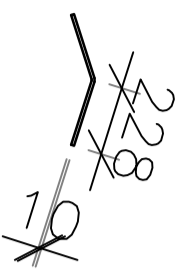
GIVEN:

FIGURE 1 SHOWS THE SCHEMATIC LAYOUT OF A BACHELOR FLAT. THE OUTER LINES OF THE BUILDING ARE GIVEN TOGETHER WITH THE CENTRE-LINES OF THE INTERNAL WALLS. THE POSITIONS OF ALL DOORS, WINDOWS AND OPENINGS ARE ALSO INDICATED. THE ROOF LINES ARE SHOWN.

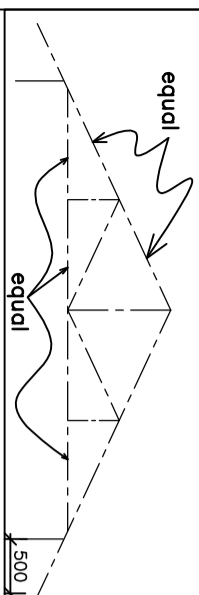
RAINWATER PIPE DETAIL



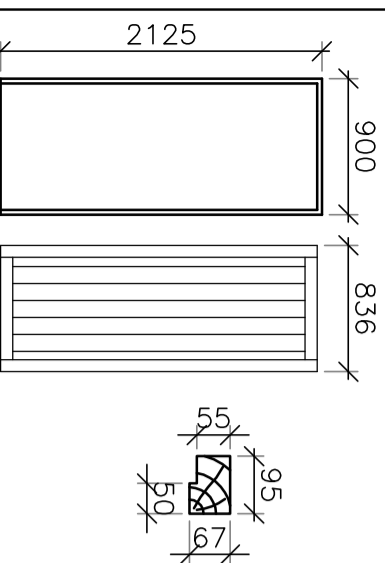
RIDGE TILE



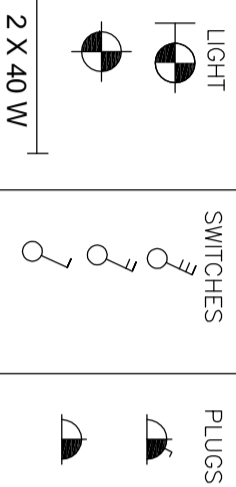
SCHEMATIC TRUSS DETAIL



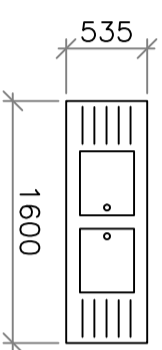
**DOOR DETAIL
STANDARD WOODEN FRAMED**



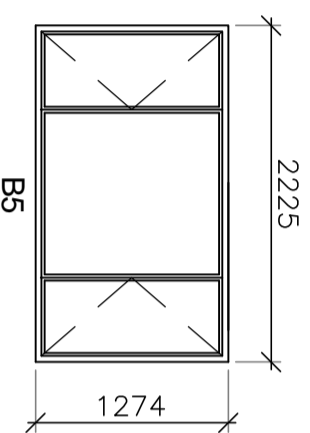
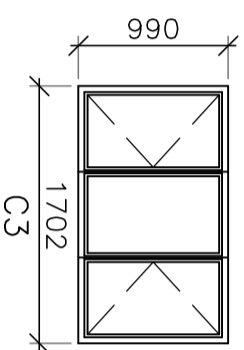
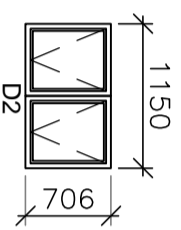
ELECTRICAL LEGEND



KITCHEN SINK DETAIL



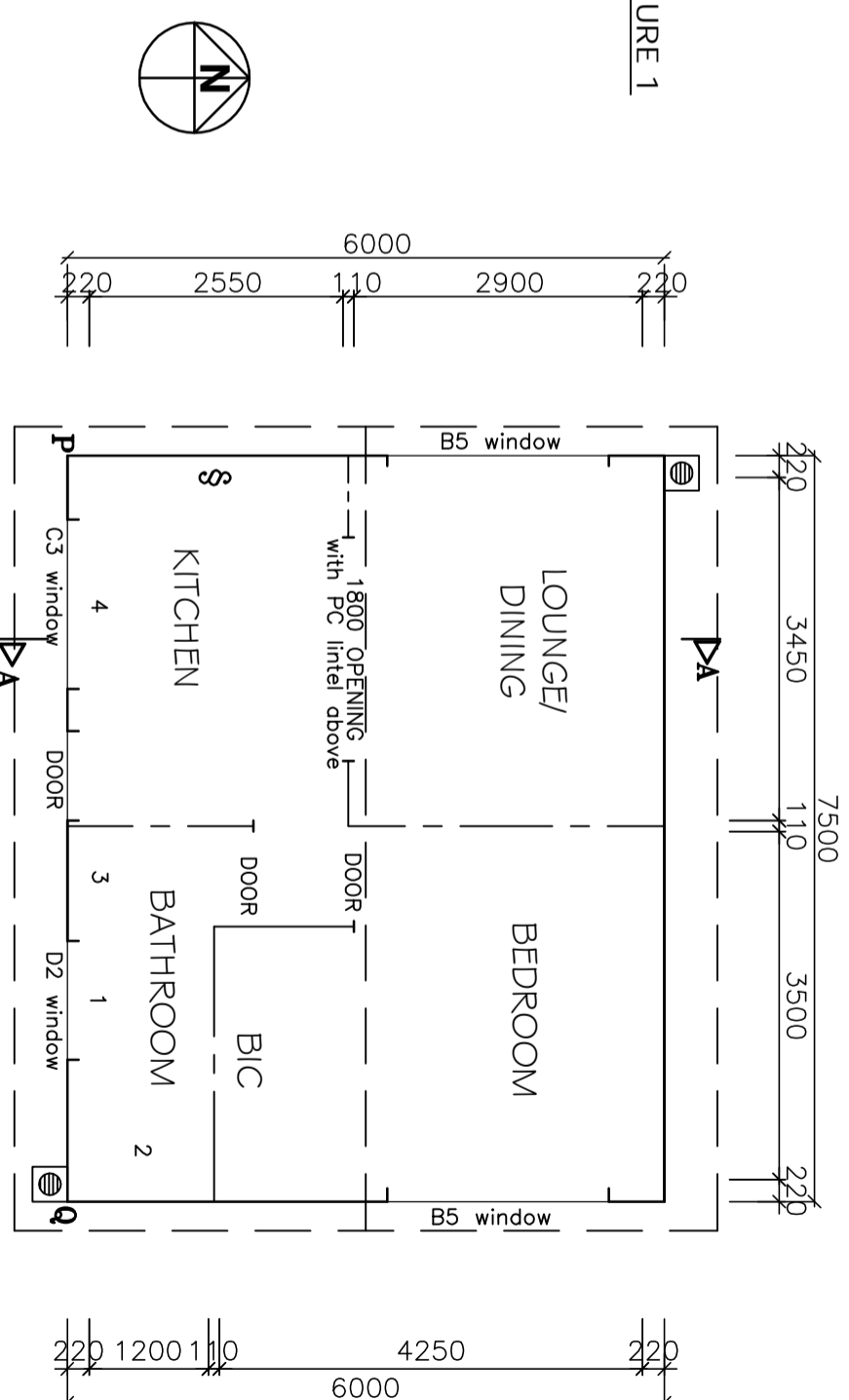
**WINDOW DETAIL
STANDARD WOODEN FRAMED**



SPECIFICATIONS:

- FOUNDATIONS:**
LOAD BEARING WALLS: 600 X 200
NON-LOAD BEARING WALLS: 400 X 200
- WALLS:**
LOAD BEARING: 220mm
NON-LOAD BEARING: 110mm
- FLOOR:**
CONCRETE SLAB: 85mm
GRANOLITHIC SCREED: 25mm
- CEILING:**
HEIGHT above FFL: 2400mm
10mm RHINOBOARD fixed to underside of tie-beams at maximum 450 c/c.
- ROOF NOTES:**
37 x 740 IBR sheets laid on 76 x 50 purlins @ max. 1250c/c on 38 x 114 ganged roof trusses
- NOTE:**
Walls above all openings to be supported by re-inforced concrete lintels.

FIGURE 1



▷A

▷A

P

Q

ASSESSMENT CRITERIA

FLOOR PLAN

WALLS & HATCHING	10
ROOF LINES	3
WINDOWS	4
DOORS	3
SANITARYWARE	4
ELECTRICAL	5
STORMWATERPIPES/GULLEYS	2
LABELS: ROOM DESIGNATION/WINDOW CODE/TITLE	4
TOTAL	35

SECTION A-A

SUBSTRUCTURE	10
WALLS & SECTION	6
ROOF & SECTION	9
WINDOW SECTION	5
RAINWATER GOODS	4
LABELS	4
SANITARYWARE	1
TOTAL	39

SOUTH ELEVATION

LEVELS(ngl/fnl/d)	3
WALLS	2
ROOF	6
WINDOWS & DOOR	8
RAINWATER GOODS	3
LABELS	4
TOTAL	26

TOTAL

100



GROUND STOREY PLAN

SCALE 1:50

NAME: _____

GR/DIV: 12 _____