



NATIONAL SENIOR CERTIFICATE EXAMINATION

MAY 2023

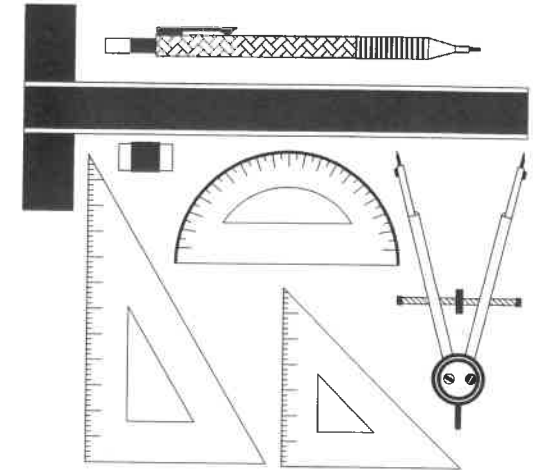
ENGINEERING GRAPHICS AND DESIGN

PAPER 1

MARKS: 200
TIME: 3 HOURS

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. This question paper consists of **6 pages** including the cover page and **4 questions**.
2. **All** questions must be answered.
3. Unless specified otherwise, all questions are in **First-Angle Orthographic Projection**.
4. Unless specified otherwise, all questions are to be completed to a **scale of 1:1**.
5. **All** answer sheets must be restapled in numerical order, even questions that have not been answered.
6. **All construction work** must be shown.
7. Print your **examination number** neatly on each page.
8. Use only the **answer sheets** provided.
9. Your drawings should reflect **neatness** and **accuracy**.
10. All dimensions or detail not given may be **assumed** in **good proportion**.
11. Your drawings should comply with SANS 10143.
12. All measurements are in millimetres (mm) unless otherwise indicated.

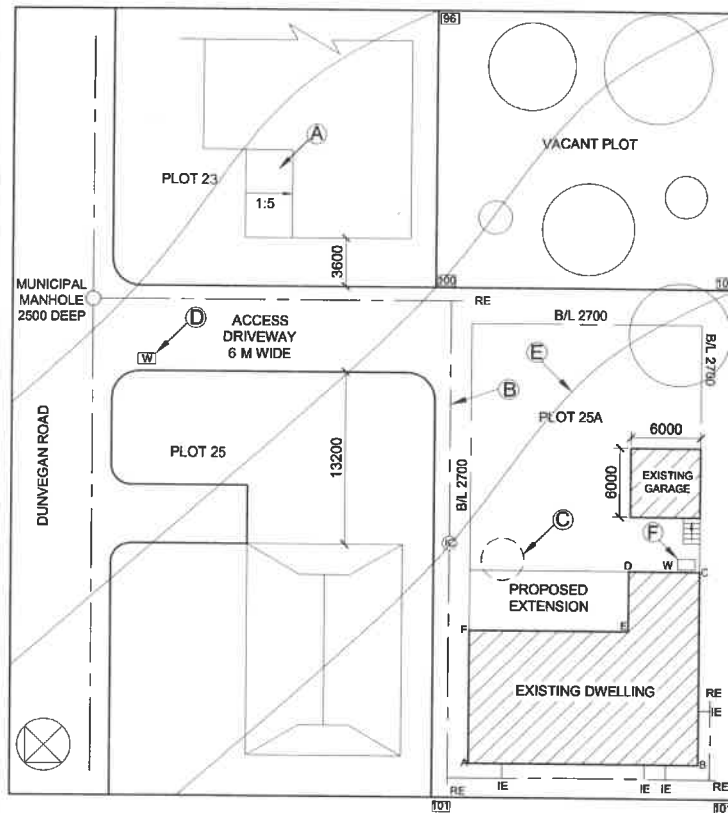


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QUESTION	SECTION	MARK			MODERATED			MAXIMUM	CODE
1	CIVIL ANALYTICAL							20	
2	INTERPENETRATION & DEVELOPMENT							40	
3	TWO-POINT PERSPECTIVE							40	
4	CIVIL DRAWING							100	
	TOTAL							200	

CHECKED BY

EXAMINATION NUMBER

[illegible]



PLEASE NOTE: THIS SITE PLAN IS NOT DRAWN TO SCALE

STUDY THE ABOVE DRAWING AND ANSWER THE QUESTIONS THAT FOLLOW.

Choose the correct answer and print the correct **LETTER** in the **ANSWER BLOCK**.

1.1 In what units are the corner heights given on this site plan?

- A CENTIMETRES B MILLIMETRES C METRES D UNKNOWN

1.2 What does feature A in plot 23 represent?

- A RAMP B DRIVEWAY C STAIRS D PORCH

1.3 What does the line at B represent?

- A STORMWATER LINE B BOUNDARY LINE C BUILDING LINE D SEWER LINE

1.4 In which direction would you be walking, if you walked up the stairs?

- A NORTHWEST B SOUTHEAST C NORTHEAST D SOUTHWEST

1.5 What does the feature at C represent?

- A TREE TO BE PLANTED B TREE TO BE REMOVED C HOT WATER CYLINDER D SPRINKLER

1.6 What does the symbol at D represent?

- A ELECTRICAL BOX B WATER METER C WATER STORAGE TANK D ELECTRICITY METER

1.7 What is the line at E called?

- A CONTOUR LINE B SLOPE LINE C BUILDING LINE D SEWER LINE

DECALA ARCHITECTS

"DESIGNING THE FUTURE TODAY"

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CHECKED BY: SIMI H
APPROVED BY: JOE S
REFERENCE: BU2022/02

PROPOSED EXTENSION FOR
MS SITA HIRALAL
DUNVEGAN ROAD
PLOT 25A
MOUNT EDGEcombe

DATE: 14 APRIL 2022

SHIRALAL

SIGNED: MS S HIRALAL

LAND SURVEYOR'S CERTIFICATE
DWELLING SIDE LENGTHS

AB = 17700, BC = 15000,
CD = 5400, DE = 4500,
EF = 12300, FA = 10500

QUESTION 1

CIVIL
ANALYTICAL

1.8 What does the symbol at F represent?

- A WASTE TANK B ELECTRICAL BOX C WATER STORAGE TANK D ELECTRICITY METER

1.9 Where is plot 25A situated?

- A SELBOURNE B GLEN ANIL C LA LUCIA D MOUNT EDGEcombe

1.10 How far, in metres, is the building line from the boundary line in plot 25A?

- A 2,7 m B 2 700 m C 2 400 m D 2,4 m

1.11 What is the perimeter, in metres, of the dwelling on plot 25A after the proposed extension has been completed?

- A 65,4 m B 65 400 m C 9,6 m D 9 600 m

1.12 What is the depth of the municipal manhole in metres?

- A 2 500 B 2 700 C 2,7 D 2,5

1.13 How many rodding eyes are there in the drawing?

- A 4 B 3 C 2 D 1

1.14 What is the distance between the 2 dwellings on plots 23 and 25?

- A 16,8 m B 22,8 m C 16 800 m D 22 800 m

1.15 What does the abbreviation IC stand for?

- A INSPECTION CHANNEL B INSPECTION CLOSET C INSPECTION CHAMBER D INSPECTION CONNECTION

1.16 What is the architect's web address?

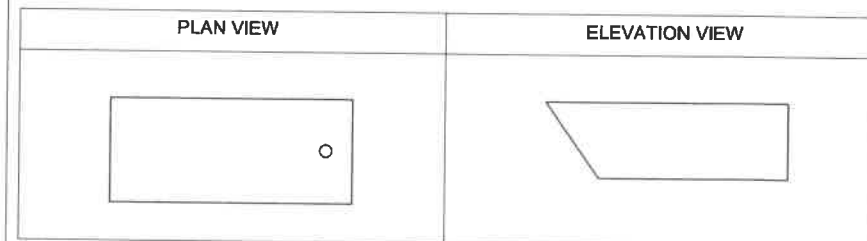
- A peter@decala.co.za B admin@decala.co.za C www.decala.co.za D www.decalaarchitects.co.za

1.17 In the space below, determine the area of the existing dwelling in metres squared (m²). Round your answer to 2 decimal places.

$$\begin{aligned} & (17,7 \times 10,5) + (5,4 \times 4,5) \\ & = 185,85 + 24,3 \\ & = 210,15 \text{ m}^2 \end{aligned}$$

Answer: 210,15 m²

1.18 In the space below, draw, in NEAT freehand, the PLAN VIEW and ELEVATION VIEW of the SANS 10143 convention for a bath.



20 MARKS

EXAMINATION NUMBER

ANSWER SHEET 1

QUESTION 3
TWO-POINT
PERSPECTIVE

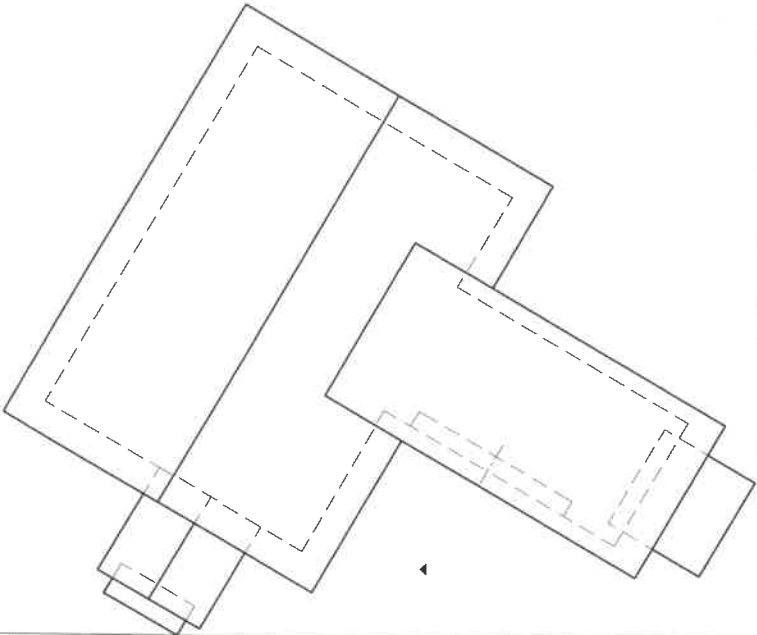
The figures show the two views of a house with a garage. Draw a neat two-point perspective view of this dwelling.

- PP - Picture Plane
HL - Horizon Line
GL - Ground Line
SP - Station Point

Determine and label the vanishing points RVP and LVP
Show the wall thickness where applicable.
NO HIDDEN DETAIL IS REQUIRED.

ASSESSMENT CRITERIA

- You will be assessed on your ability to do the following:
- determine and label the vanishing points 2
 - draw the two-point perspective view 38

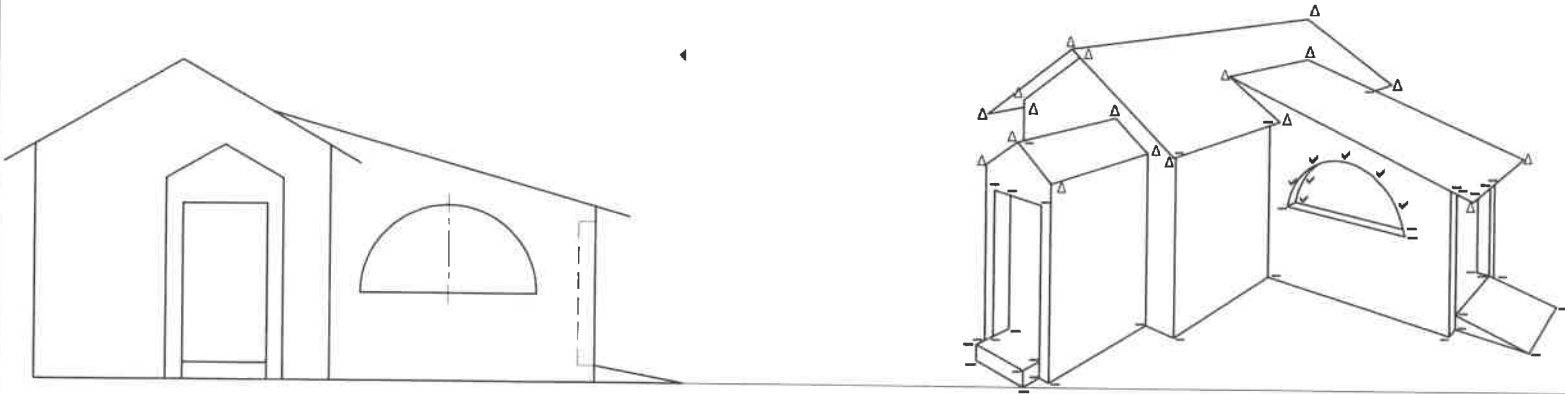


PP

LVP

HL

RVP



POINTS:

- Δ 1. ROOF:
- 2. POINTS:
TOTAL

$\frac{1}{8} = 9$
 $\frac{1}{2} = 18$
 $\frac{1}{2} = 27$

PTS
27

Con
4

Arc
7

VPS
2

GL

SP

40 MARKS

EXAMINATION NUMBER

ANSWER SHEET 3

QUESTION 4

CIVIL
DRAWING

Assessment Criteria

Sectional North Elevation

1 Ceiling Battens	2
2 Wall Plates	2
3 Ceiling Board	1
4 Truss Plates	4
5 Roof Truss	5
6 Purlins	4
7 Roof	2
8 Sectioned Walls	4
9 Sectioned Window	4
10 Floor & Foundation	8
11 DPC	2
12 Hatching	10
13 Walls - elevation	3
14 Roof Detail/Height	8
15 Labels	3
16 Outside window	4
17 Step	2
18 Sliding Door	5

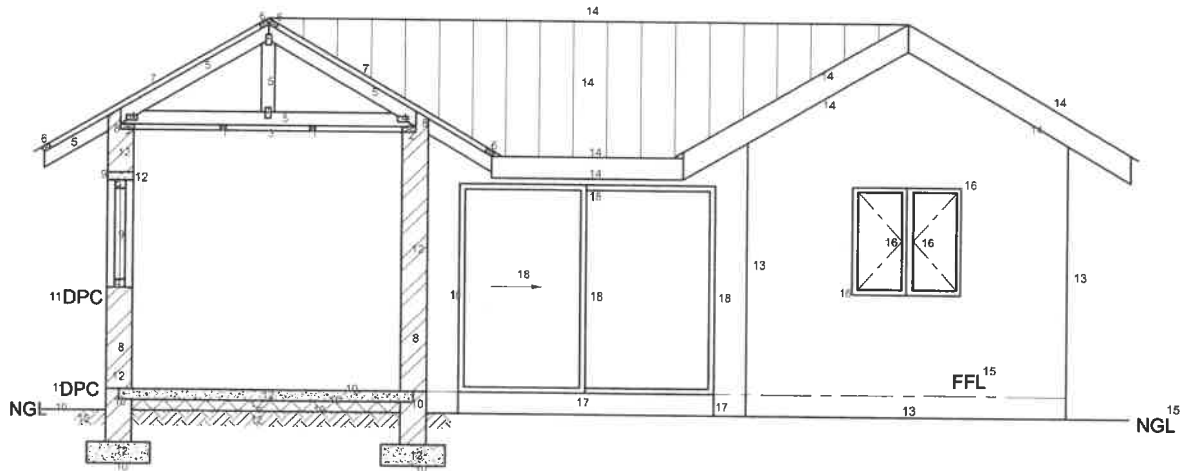
Subtotal 73

Floor Plan

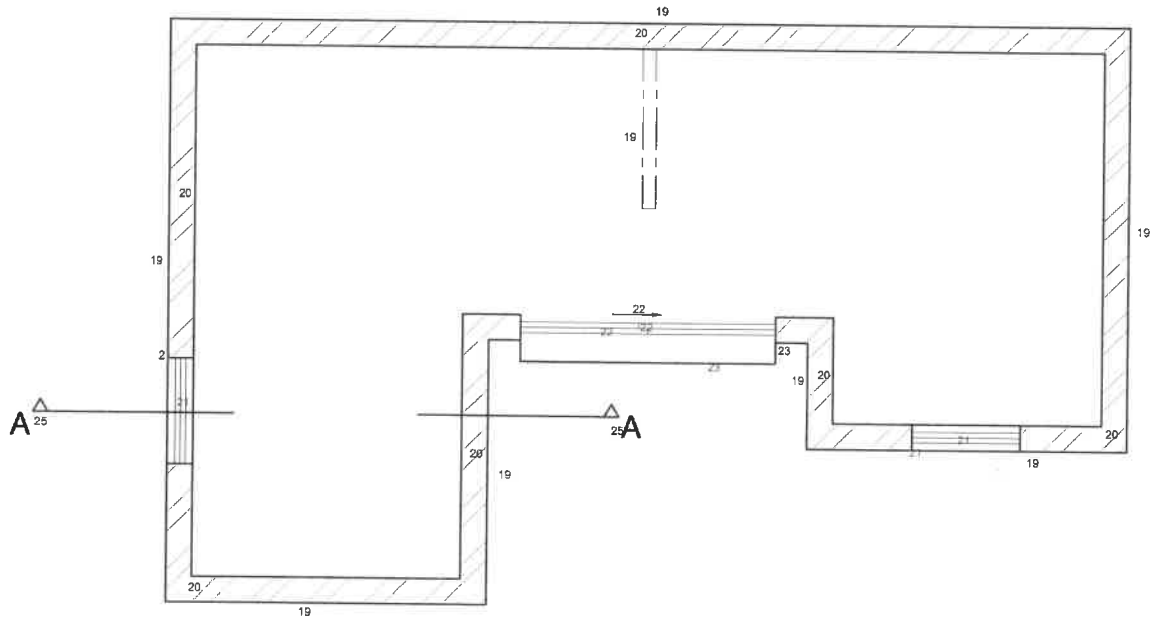
19 Walls	8
20 Hatching	6
21 Windows	4
22 Sliding Door	3
23 Step	2
24 Labels	2
25 Cutting Plane	2

Subtotal 27

TOTAL 100



SECTIONAL NORTH ELEVATION ON AA



FLOOR PLAN 24
SCALE 1:50 24

ANSWER SHEET 4

EXAMINATION NUMBER