



ISEBE LEMFUNDO LEMPUMA KOLONI  
 EASTERN CAPE EDUCATION DEPARTMENT  
 OOS-KAAP ONDERWYSDEPARTEMENT

**NATIONAL  
 SENIOR CERTIFICATE**

**GRADE 11**



**ENGINEERING GRAPHICS AND DESIGN  
 PAPER 1  
 NOVEMBER 2018**

**MARKS: 200**

**TIME: 3 hours**

**This question paper consists of 6 pages.**

Copyright reserved

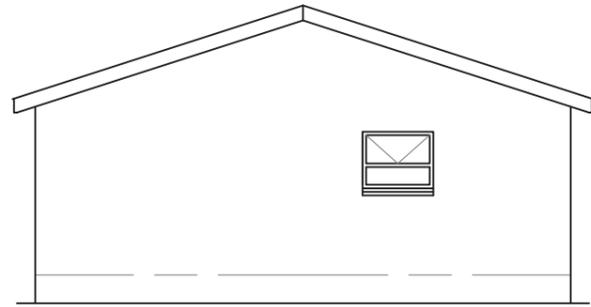
**INSTRUCTIONS AND INFORMATION**

1. The 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 answers 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 estimated in good proportion.
10. ALL drawings are in first angle orthographic projection, unless stated otherwise.

FOR OFFICIAL USE ONLY				
				MODERATED MARK
1				
2				
3				
4				
<b>TOTAL</b>				
	<b>2</b>	<b>0</b>	<b>0</b>	<b>2 0 0</b>

<b>FINAL CONVERTED MARK</b>	<b>CHECKED BY</b>
<b>100</b>	

<b>COMPLETE THE FOLLOWING:</b>
NAME
NAME
EXAMINATION CENTRE
EXAMINATION CENTRE

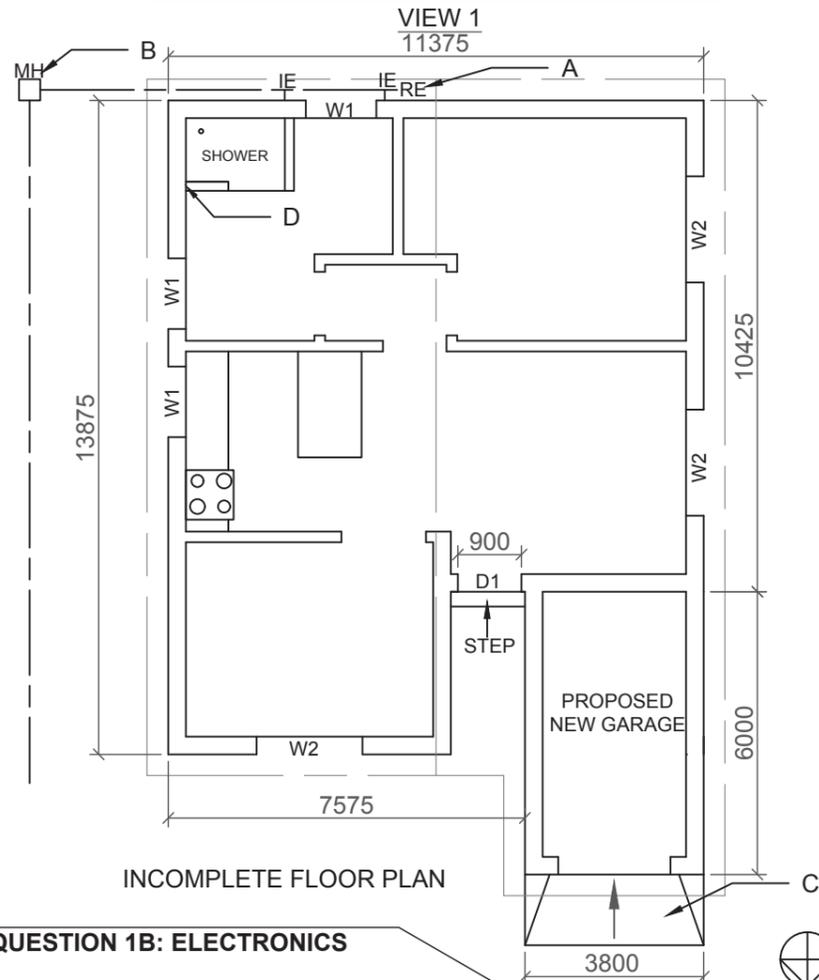


**NOTE:**

Contractors must verify all dimensions and levels on site before commencing work. Architects to be notified immediately of any discrepancies.

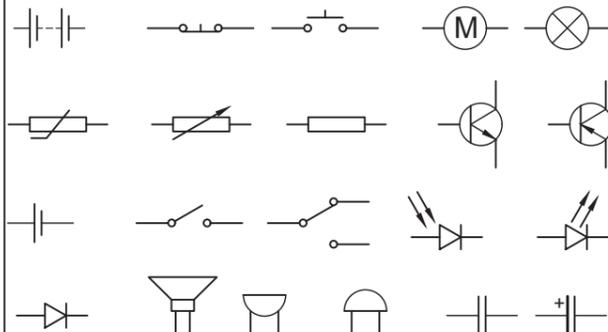
.....  
ARCHITECT'S SIGNATURE

.....  
CLIENT'S SIGNATURE



**QUESTION 1B: ELECTRONICS**

**ELECTRONIC COMPONENT SYMBOLS**



2		
1	2018-11-02	HATCH THE WALLS IN THE FLOOR PLAN
REVISION	DATE	DESCRIPTION

**XOLELWA ARCHITECTS**

11 Du Plessis street  
HUMANSDORP  
6300  
TEL: 083 978 9882  
FAX: 042 295 9882  
EMAIL: xolelwa@gmail.com

PRINTED BY OFFICE FOR YOU		DATE OF PRINT 2018-11-11	
DRAWING TITLE FLOOR PLAN WITH ELEVATION			
PROJECT PROPOSED NEW GARAGE FOR <b>MRS. H. LORDAN</b> ON STAND 13, PATENSIE, EASTERN CAPE.			
PROJECT NUMBER NM 2018 - 11		DRAWING NUMBER 1 OF 4	
DATE 2018 -10- 01	DRAWN KEAGON	CHECKED CHANEL	SCALE 1 : 150
REFERENCE CODE DOE-2018			

**QUESTION 1A: ANALYTICAL (CIVIL)**

**Given:**

Two views of a **house** with a new proposed garage. A title panel and a table of questions. The drawing has not been prepared according to the indicated scale.

**Instructions:**

Complete the table below by neatly answering the questions, which refer to the accompanying drawing and title panel. **[23]**

QUESTIONS		ANSWERS		
1	What is the name of the company that drew the additions to the original plan?	1		
2	Who checked the drawing?	1		
3	Who is the client who has to sign the drawing?	1		
4	Which drawing is this in the set of drawings?	1		
5	What does the abbreviation <b>RE</b> stand for?	1		
6	Name the feature at <b>B</b> ?	1		
7	What feature is indicated by <b>C</b> ?	1		
8	What is the meaning of the line indicated by arrow <b>D</b> ?	2		
9	What colour should be used to indicate the new addition (garage) to the plan?	1		
10	What colour should be used on the plan to indicate an existing sewer line?	2		
11	Which elevation is VIEW 1 ?	2		
12	Has the revision been applied as proposed? Explain	2		
13	What is the width of the doors in mm?	1		
14	In the space provided below, determine the perimeter of the house (without the proposed new garage) in meter.	3		
15	In the space provided below, determine the total floor area of the garage in square meter.	3		
		<b>TOTAL</b>	<b>23</b>	

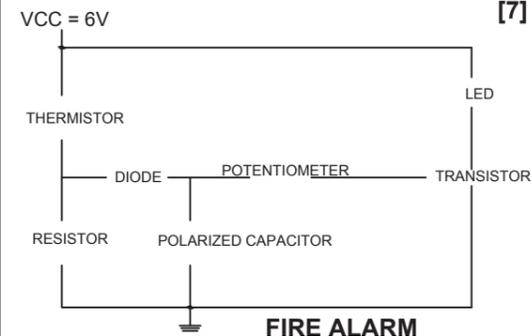
**QUESTION 1B: ELECTRONICS**

**Given:**

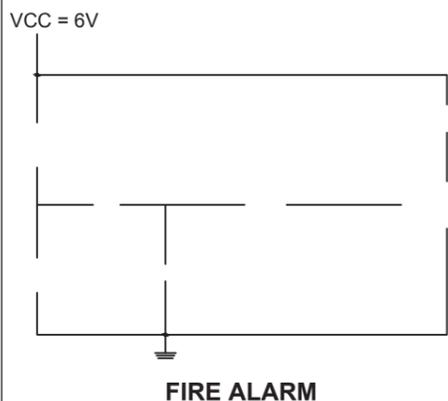
A diagram with labels of a fire alarm.  
A panel with symbols of electronic components.

**Instructions:**

Complete the adjacent diagram by drawing in the correct electronic symbols, in free hand. **[7]**



**ANSWER 1B**



**ANSWER 14**

**ANSWER 15**

MARKS	
Q 1A	23
Q 1B	7
<b>TOT</b>	<b>30</b>

NAME

NAME

2



**QUESTION 2: SOLID GEOMETRY**

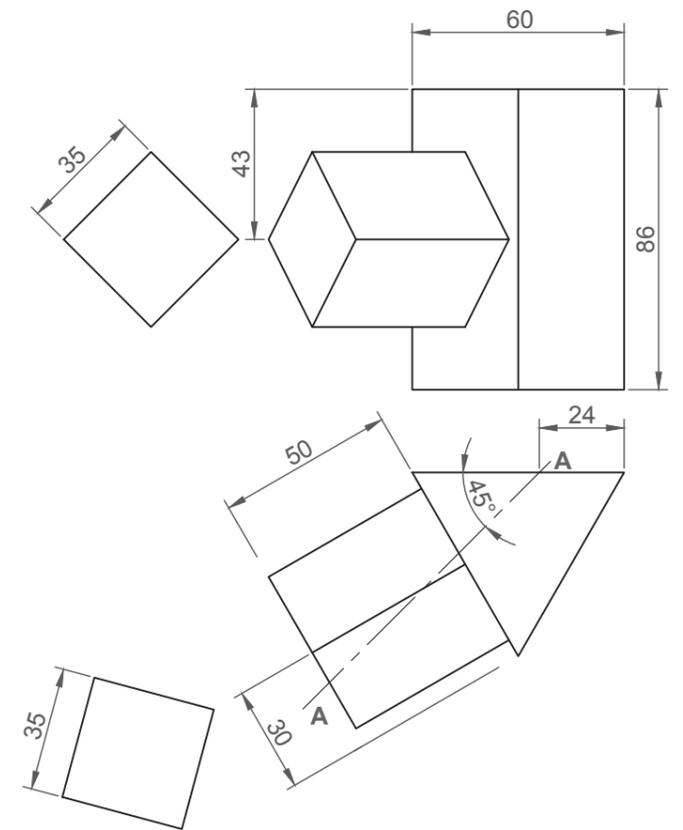
**Given:**

- The top view and front view of a regular solid square prism and regular solid triangular prism attached to one another.
- The auxiliary views of the square prism
- The incomplete cutting plane **A-A**
- An XY axis

**Instructions:**

- Draw, to scale 1 : 1, the following views of the two solids:
- 2.1 The given top view with completed cutting plane **A-A**
  - 2.2 The sectional front view on cutting line **A-A**
  - 2.3 The left view

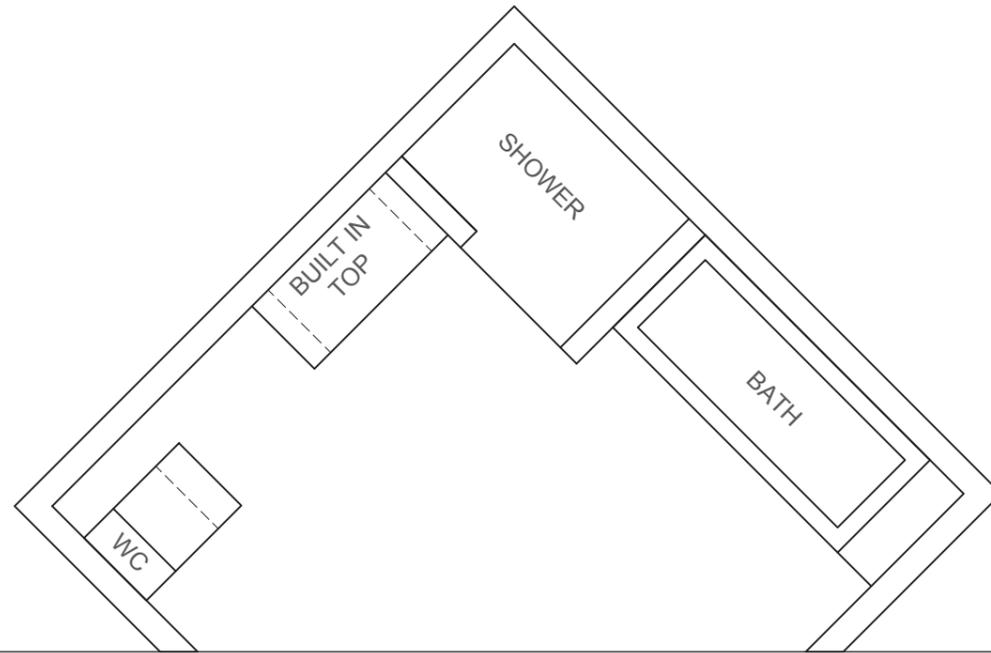
Show ALL constructions and hidden detail in **ALL** the views. **[46]**



X ————— Y

ASSESSMENT CRITERIA				
1	CONSTRUCTIONS + PLACING	4		
2	TOP VIEW	6		
3	SEC. FRONT VIEW	19		
4	HATCHING	2		
5	LEFT VIEW	15		
<b>TOTAL</b>		<b>46</b>		

<b>NAME</b>	
<b>NAME</b>	
<b>3</b>	



**QUESTION 3: PERSPECTIVE**

**Given:**

Two views of a BATHROOM and the information needed to draw a two-point perspective drawing

PP – Picture plane

HL – Horizon line

GL – Ground line

SP – Station point

**Instructions:**

Complete the perspective drawing.

- Align the drawing sheet with the ground line (GL).
- Determine and label the vanishing points.
- Show ALL necessary construction.
- NO hidden detail is required.

[36]

PP

PP

ASSESSMENT CRITERIA				
1	CONSTRUCTION + VPs	5		
2	FIXTURES	24		
3	WALLS	7		
<b>TOTAL</b>		<b>36</b>		

HL

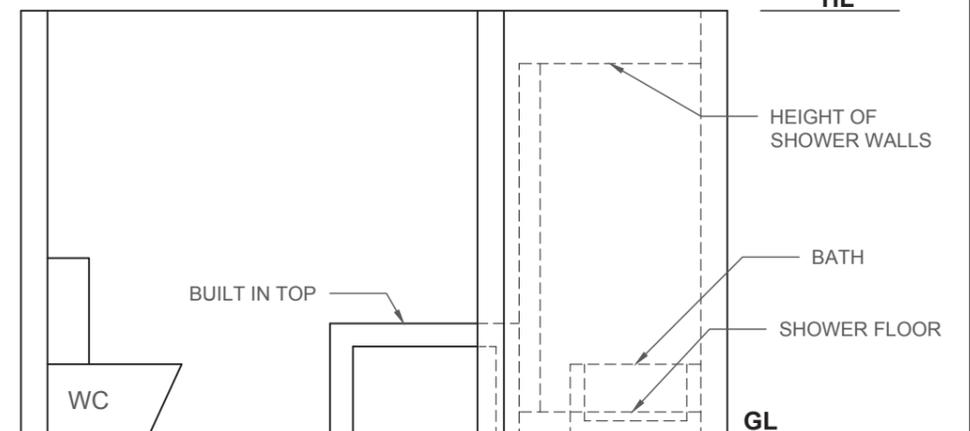
HL

GL

GL

+

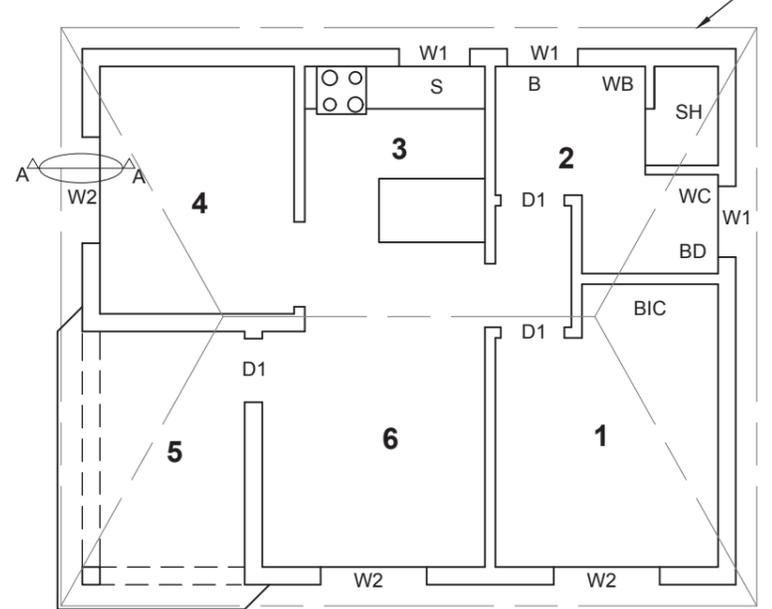
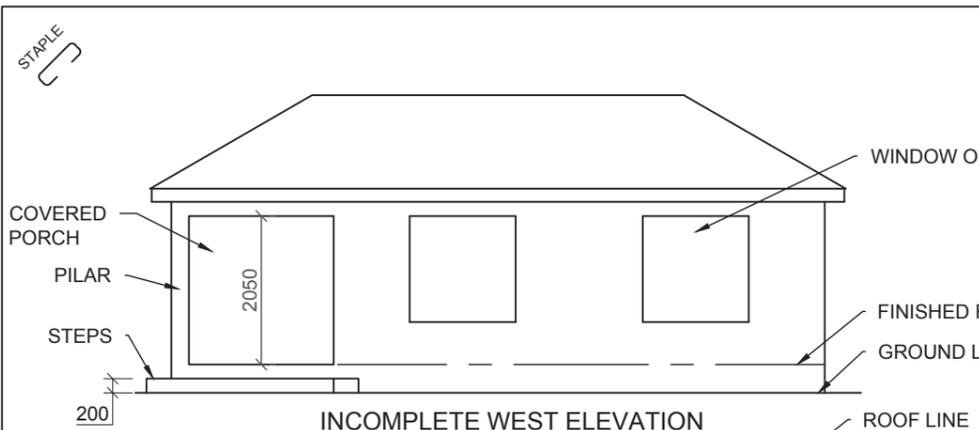
SP



NAME

NAME

4



**FEATURES**

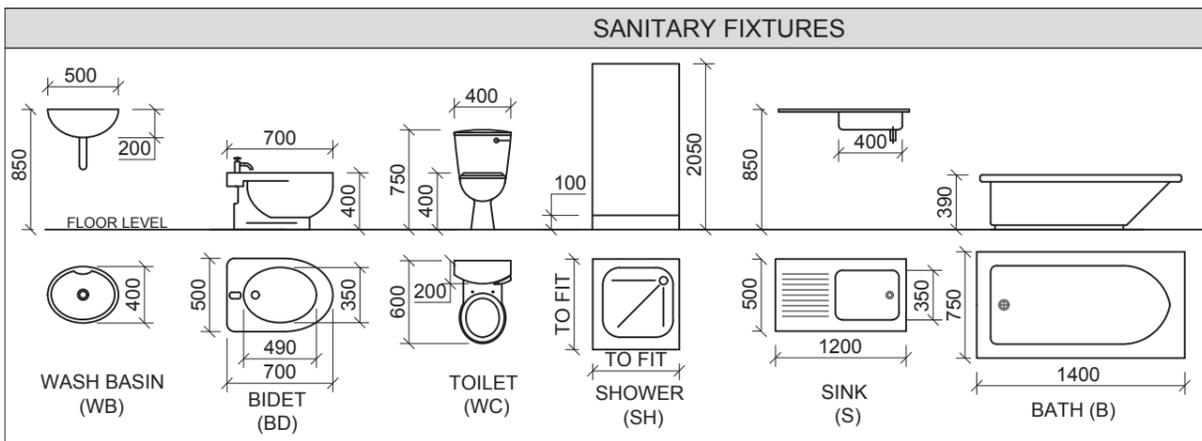
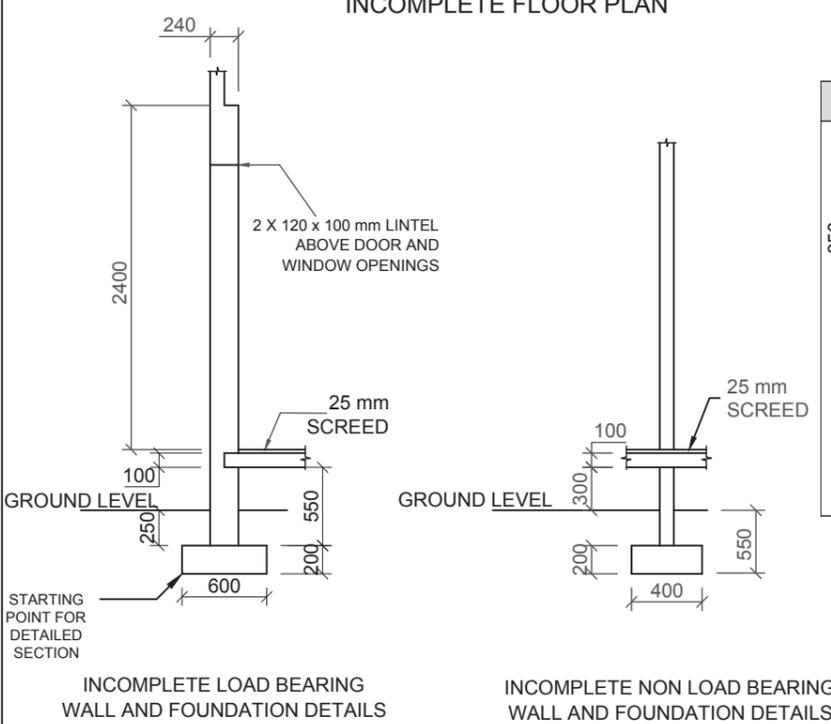
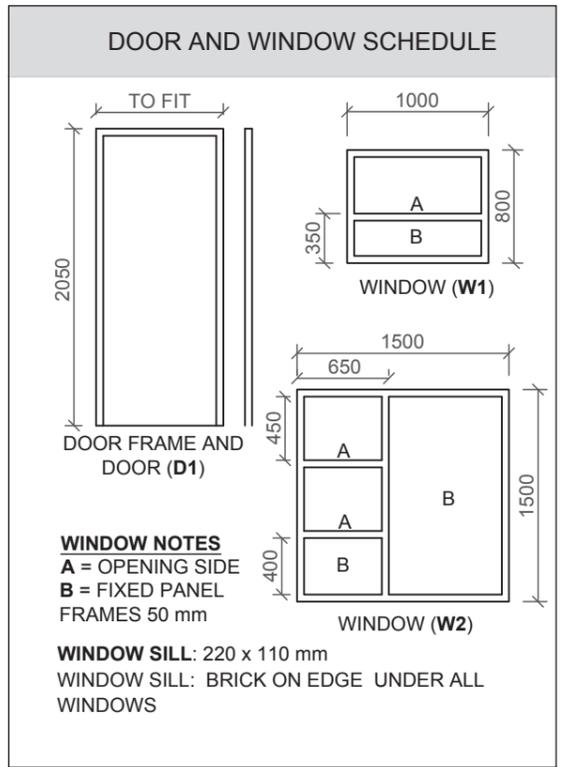
- D1 DOOR
- W1 WINDOW
- W2 WINDOW

**FIXTURES**

- WC TOILET
- BD BIDET
- B BATH
- WB WASH BASIN
- SH SHOWER
- S SINK
- BIC BUILT IN CUPBOARD

**ROOM DESIGNATIONS**

- FLOOR FINISHES**
- 1. BEDROOM CARPET
  - 2. BATHROOM TILE
  - 3. KITCHEN TILE
  - 4. DININGROOM WOOD
  - 5. PORCH TILE
  - 6. FAMILY ROOM TILE



**QUESTION 4: CIVIL DRAWING**

**Given:**

- The incomplete WEST ELEVATION of a **proposed new dwelling**, showing the roof, walls, step and window openings.
- The incomplete floor plan showing the roof line, walls, position of the doors, windows and sanitary fixtures
- The incomplete foundation and wall detail
- Room designations and floor finishes
- A door and window schedule
- A table of sanitary fixtures
- The floor plan of the new dwelling, drawn to **scale 1 : 50** and the starting point for the sectional view to **scale 1 : 20** (on page 6)

**Instructions:**

Answer this question on page 6.

4.1 Using the given incomplete floor plan, draw in first-angle orthographic projection and to scale 1 : 50, the following views of the **new dwelling**:

**4.1.1 THE COMPLETE FLOOR PLAN**

Add the following features to the drawing:

- ALL doors and windows
- ALL fixtures as indicated by the abbreviations
- ALL hatching detail

**4.1.2 THE WEST ELEVATION**

Show the following features on the drawing:

- The outside walls, step and window detail as well as the window sill on the north and south side of the elevation.
- The finished floor level.

4.2 Draw in the space provided on page 6 to **scale 1 : 20**, a **DETAILED SECTION** according to cutting plane A-A of the area in the ellipse shown on the floor plan.

Show the following features:

- The complete foundation, external wall and window detail.
- The lintels above the window.
- The window sill under the window.
- ALL hatching detail. ALL substructure hatching may be drawn neat in freehand.
- **Note:** Do not show any roof detail.

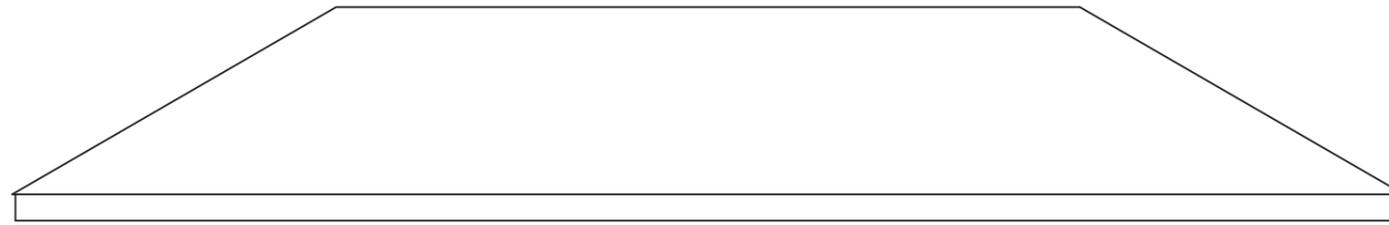
Label the following:

- The west elevation and scale
- The room designations and floor finishes
- Using the correct abbreviations, label the following features in the correct view: natural ground level, finished floor level and damp proof course

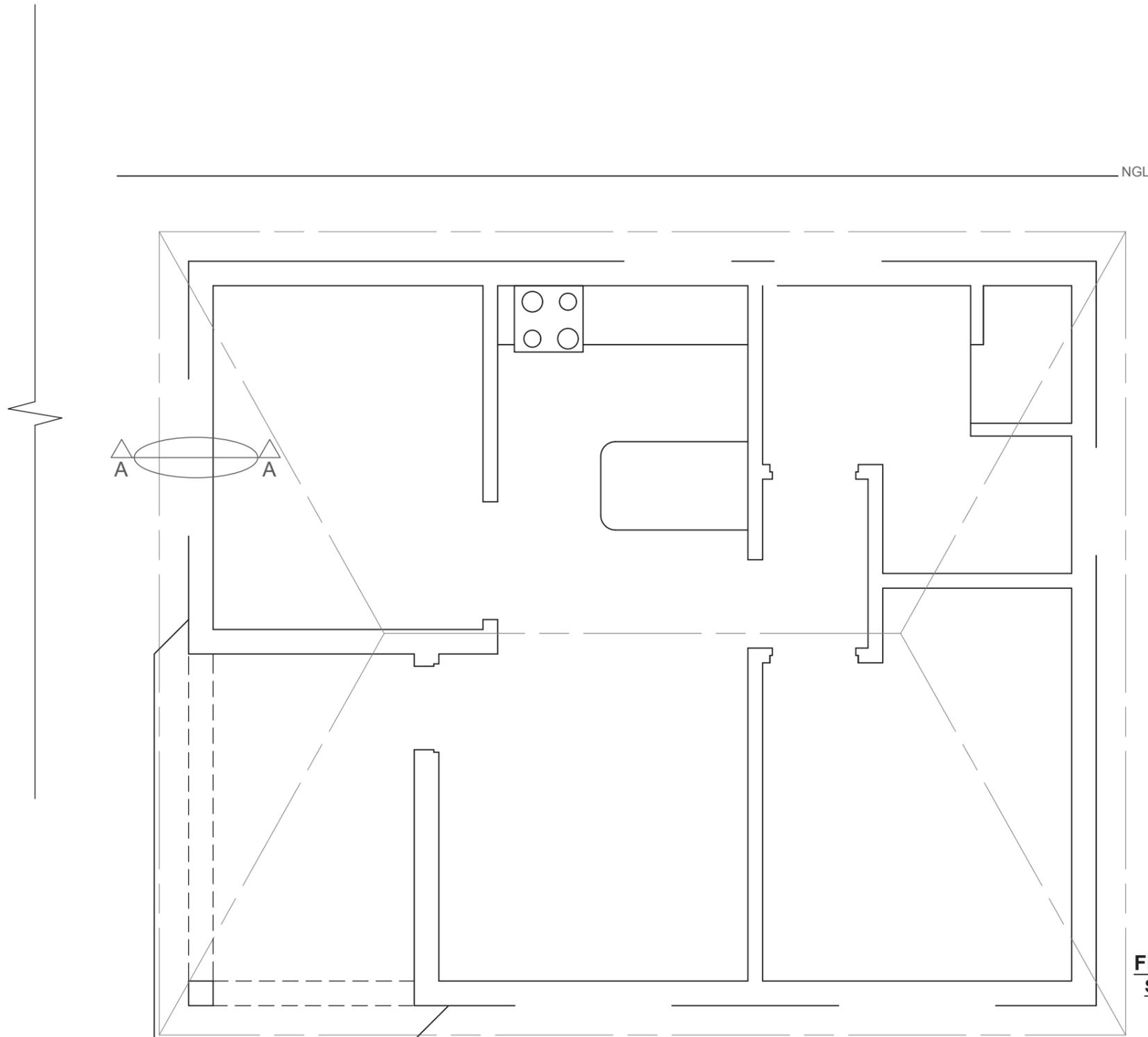
**NOTE:**

ALL drawings must comply with the **guidelines** and **graphical symbols** contained in the **SANS 10143**. [88]

<b>NAME</b>
<b>NAME</b>
<b>5</b>



PENALTIES		
1	INCORRECT OVERALL SCALE	
2	INCORRECT POSITIONING OF VIEWS	
3	NON-ALIGNMENT OF VIEWS	
<b>TOTAL PENALTIES (-)</b>		



ASSESSMENT CRITERIA				
FLOOR PLAN				
1	DOORS + WINDOWS	15		
2	FIXTURES	13		
3	HATCHING	3		
4	LABELS	6		
<b>SUB TOTAL</b>		<b>37</b>		
WEST ELEVATION				
1	WALLS + STEP + FFL	7		
2	WINDOWS	13		
3	LABELS	3		
<b>SUB TOTAL</b>		<b>23</b>		
DETAILED SECTION				
1	FOUNDATIONS + WALLS + FLOOR	8		
2	WINDOW + SILL + LINTEL	10		
3	HATCHING	6		
4	LABELS	4		
<b>SUB TOTAL</b>		<b>28</b>		
<b>TOTAL</b>		<b>88</b>		
PENALTIES (-)				
<b>FINAL TOTAL</b>				

STARTING POINT FOR DETAILED SECTION  
 DETAILED SECTION ON A-A  
 SCALE 1 : 20

**FLOORPLAN**  
 SCALE 1 : 50

<b>NAME</b>	
<b>NAME</b>	
	6