

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

NATIONAL
SENIOR CERTIFICATE

GRADE 12



ENGINEERING GRAPHICS AND DESIGN P1

SEPTEMBER 2010

PREPARATORY EXAMINATIONS

MARKS: 200

TIME: 3 hours

This question paper consists of 6 pages.

Copyright reserved

INSTRUCTIONS AND INFORMATION

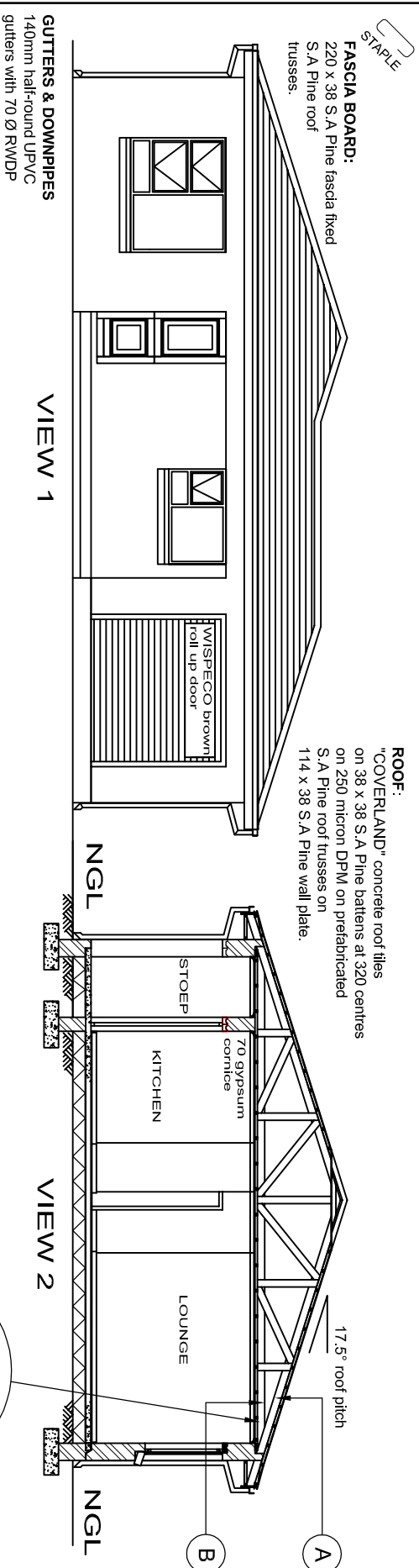
1. The question paper consists of FOUR questions.
2. Answer ALL the questions.
3. All drawings must be drawn to scale 1:1, unless otherwise stated.
4. The questions must be answered on the answer sheets provided.
5. All the answer sheets must be re-stapled in numerical sequence and handed in irrespective of whether the question was answered 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									
								MODERATED MARK	
1									
2									
3									
4									
TOTAL									
	2	0	0						

FINAL CONVERTED MARK	CHECKED BY
100	

COMPLETE THE FOLLOWING:	
NAME	
NAME	
EXAMINATION CENTRE	
EXAMINATION CENTRE	

Please turn over



QUESTION 1: ANALYTICAL (CIVIL)

Given:

- A site plan and working drawings of a new dwelling.
- A table with questions which all refer to the drawings.

Instructions:

Complete the table by neatly printing in the answers next to the questions.

QUESTIONS		ANSWERS	
1	What type of drawing is view 4?	1	
2	What is the address of the proposed new dwelling?	1	
3	What is the stand number of the property on the west side of the stand?	1	
4	What material is used for the roof?	1	
5	What is the roof pitch?	1	
6	What is feature 1 called?	1	
7	What does line 2 represent?	1	
9	What does the dashed line 3 represent?	1	
10	What is feature 4 called?	1	
11	How many washbasins are there in the house?	1	
12	Name the beam labelled A?	1	
13	Name the beam labelled B?	1	
14	How deep is the municipal sewer connection?	1	
15	What is the fall of the existing sewer line?	1	
16	What elevation is seen from the street?	1	
17	What is elevation 2 called?	1	
18	How far does the roof overhang the outside walls?	1	
19	What is the diameter of the downpipes?	1	
20	What is the total perimeter of the stand in meters?	2	
21	What is the difference between the highest and lowest point on the stand?	2	
22	What is the total area of the stand in m ² ?	2	
TOTAL		24	

NAME

NAME

2



QUESTION 2: INTERPENETRATION AND DEVELOPMENT

Given:

An incomplete front view and right view of a rainwater gutter and downpipe in third angle orthographic projection.

Instructions:

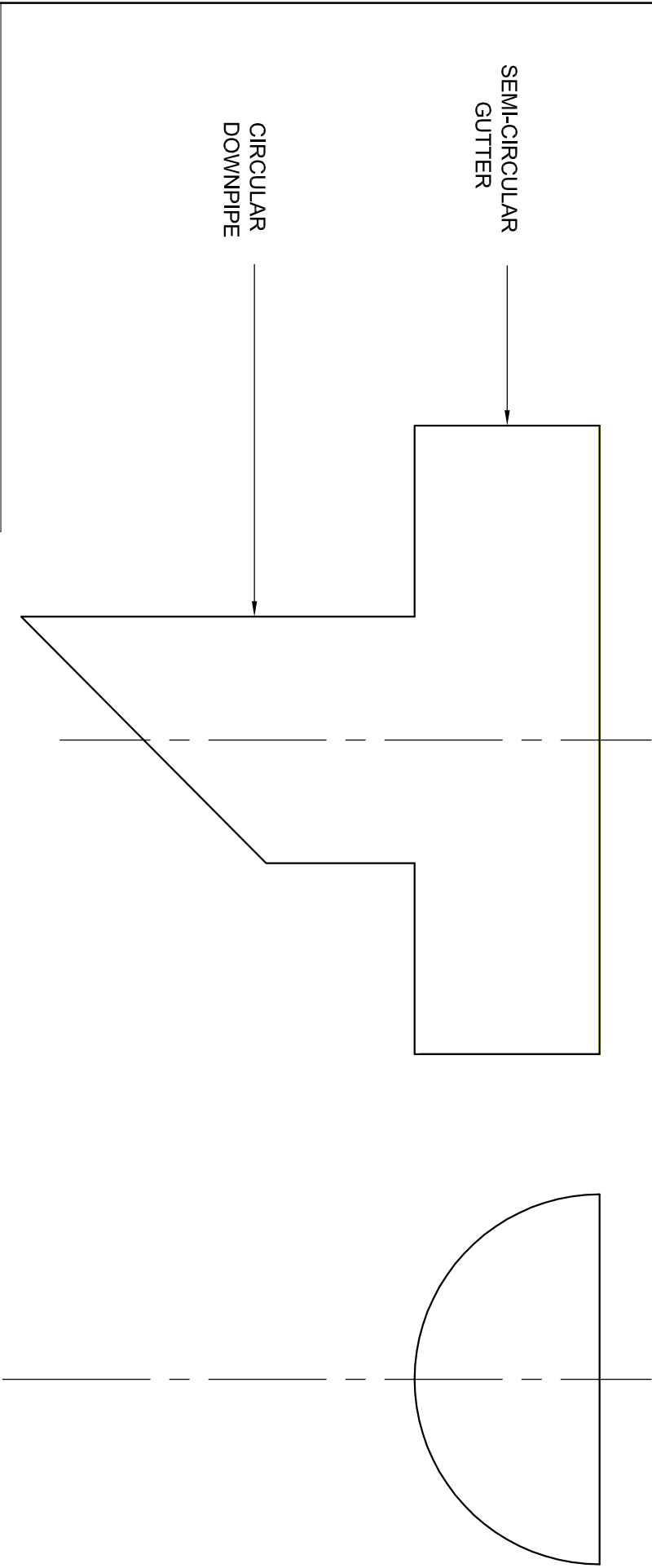
Project and draw from the given views:

- The curve of interpenetration in the front view.
- The downpipe in the right view.
- The development of the downpipe.
- The development of the gutter.

Notes:

All constructions must be shown.
No hidden detail is required.

[45]



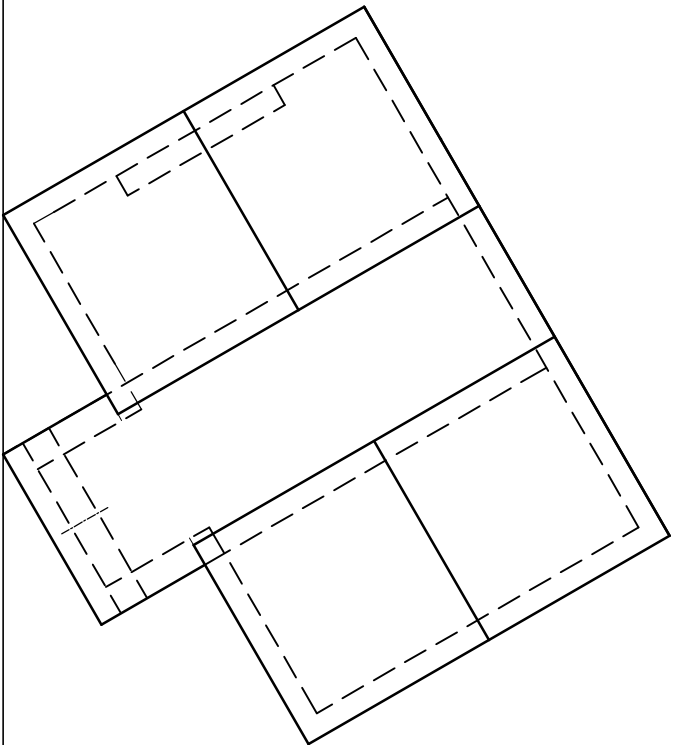
ASSESSMENT CRITERIA

Interpenetration front view	11	
Downpipe in right view	6	
Development of downpipe	18	
Development of gutter	10	
TOTAL	45	

NAME	3
NAME	



ASSESSMENT CRITERIA			
Vanishing points and labels	4		
Constructions	5		
House roof	11		
Walls and windows	15		
Arch & Porch	7		
TOTAL	42		



QUESTION 3: PERSPECTIVE

Given:

A plan and elevations of a double-storey house, as well as the Picture Plane (PP), Horizon Line (HL), Ground Line (GL) and Station Point (SP).

Instructions:

- Determine the vanishing points and label them.
- Draw the two point perspective view of the house.
- The indicated doors and windows must be shown.

Notes:

No hidden detail must be shown.
Show all the construction lines.

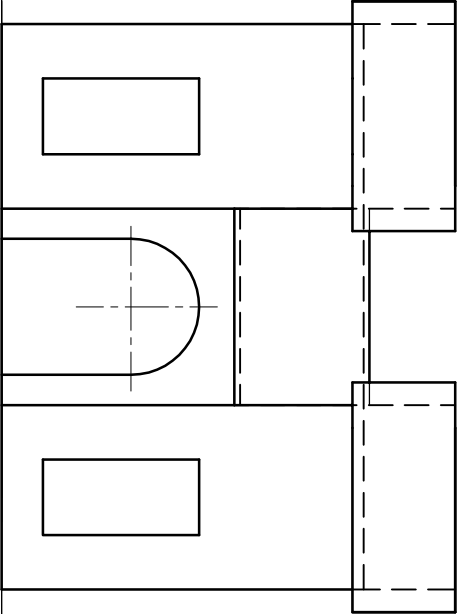
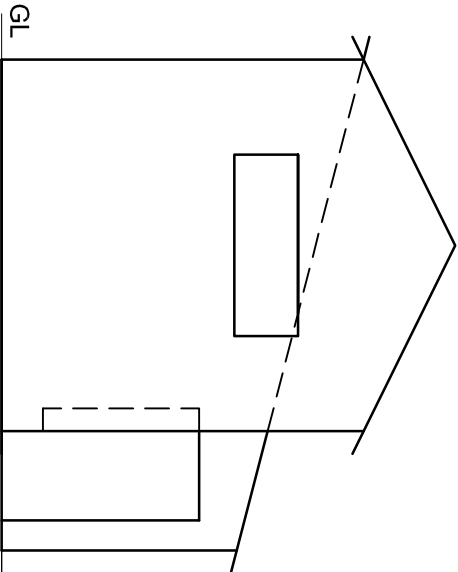
[42]

PP

PP

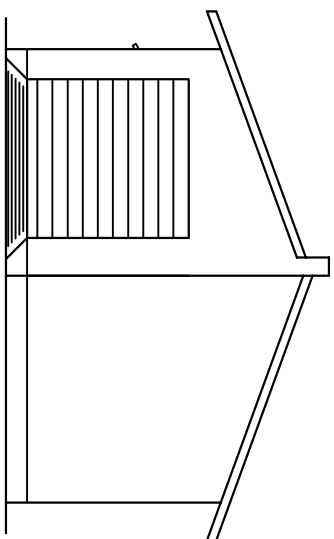
HL

HL

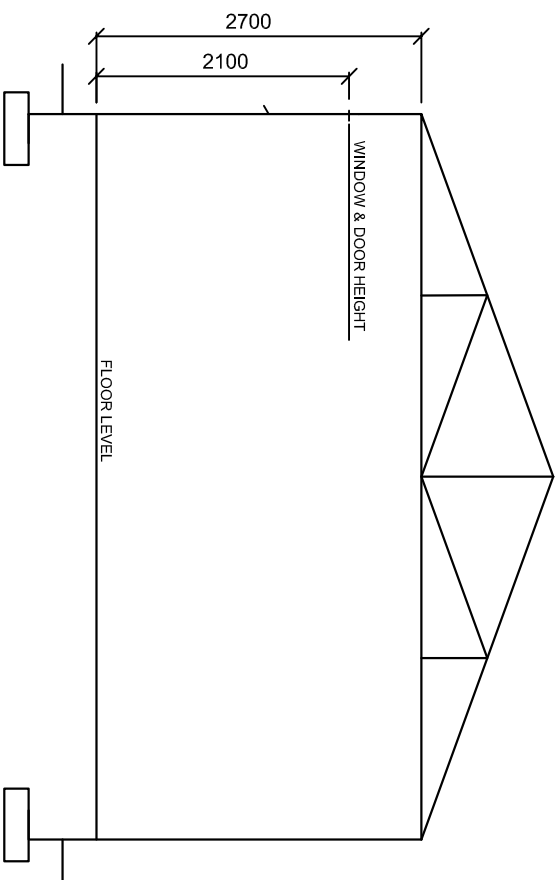


NAME

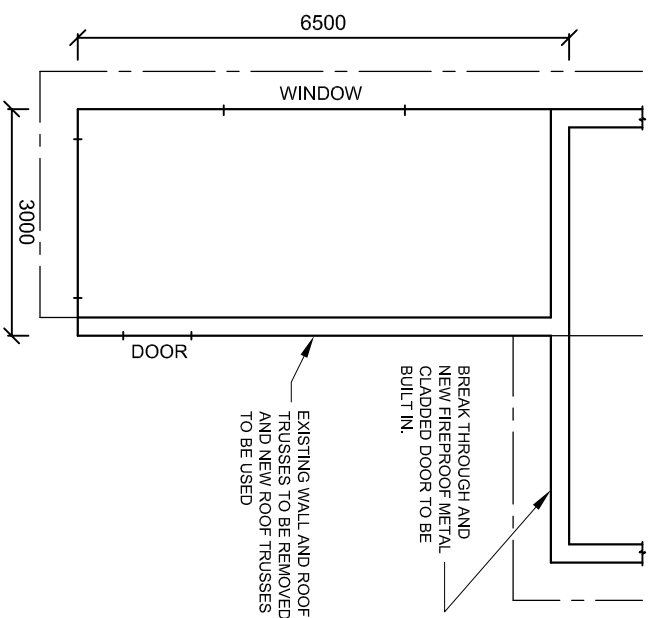
NAME












EXISTING SINGLE GARAGE

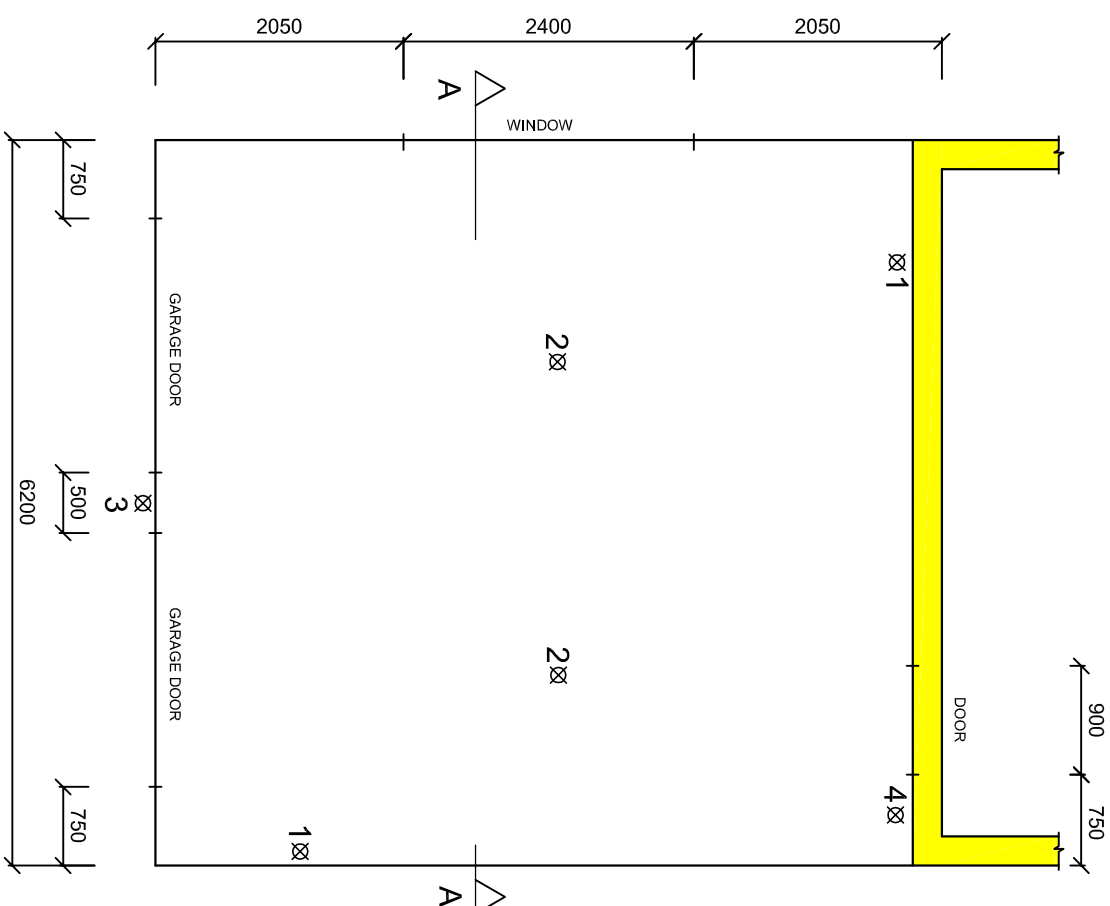
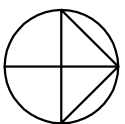


PROPOSED NEW DOUBLE GARAGE

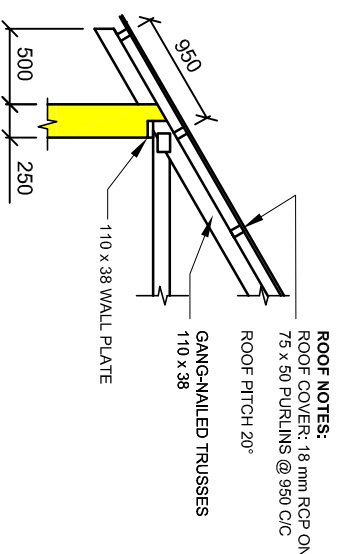


ELECTRICAL LEGENDS

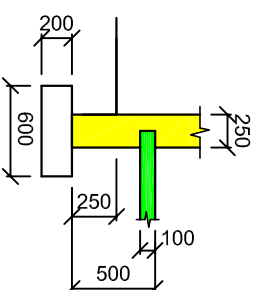
LIGHTS	SWITCHES
 OR  OF  OR  OF	   
	



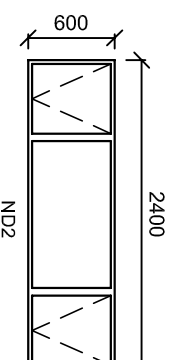
INCOMPLETE ROOF DETAIL



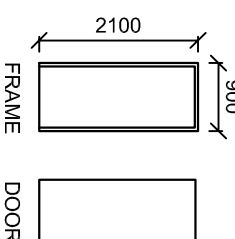
INCOMPLETE FOUNDATION DETAIL



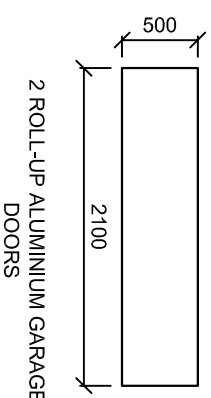
WINDOW DETAIL



DOOR FRAME
STANDARD, FIREPROOF,
METAL CLADDED HARDWOOD



GARAGE DOOR



ELECTRICAL FEATURES

1. 2 x SWITCHED SOCKET OUTLET
2. 2 x 60 FLUORESCENT TUBES
3. 1 x OUTSIDE LIGHT
4. 1 x DOUBLE POLE LIGHT SWITCH

QUESTION 4: CIVIL DRAWING

Given:

- A schematic floor plan and an elevation of an **existing single garage** attached to a house, and notes on the changes to be made to the garage.
- A schematic floor plan and a schematic sectional elevation of the outer perimeter of a **proposed new double garage**, and the position of the electrical features.
- A door and window schedule.
- Incomplete sketches of the roof and foundation detail.
- An electrical legend.
- A part west elevation on answer sheet 4.

Instructions:

- Use answer sheet 4 and the information given on page 5 to draw the required views.
- Draw, to scale 1:50, the complete floor plan and a complete sectional elevation on cutting plane AA to the given specifications.

SPECIFICATIONS:

THE FLOOR PLAN

Add the following features to the floor plan:

- ALL the walls with hatching detail
- The doors and window
- ONE wall mounted outside light
- TWO fluorescent lights inside the garage and an outside light controlled with a two pole switch
- TWO switched socket outlets on the indicated walls
- The cutting plane. Label the plane A-A.
- Label the floor plan and include the scale.

A SECTIONAL ELEVATION

Add the following features to the sectional elevation:

- The complete foundation, wall, floor slab and roof detail
 - The complete detail of the door and window
 - ALL necessary hatching
 - Label the sectional elevation:
- ### SECTIONAL ELEVATION A-A

NOTE:

- Label ONLY the following features on the correct view: natural ground level and damp proof course.
- ALL substructure hatching may be done in freehand.
- ALL drawings must comply with the guidelines contained in the *SABS 0143*. Conventions may be used.

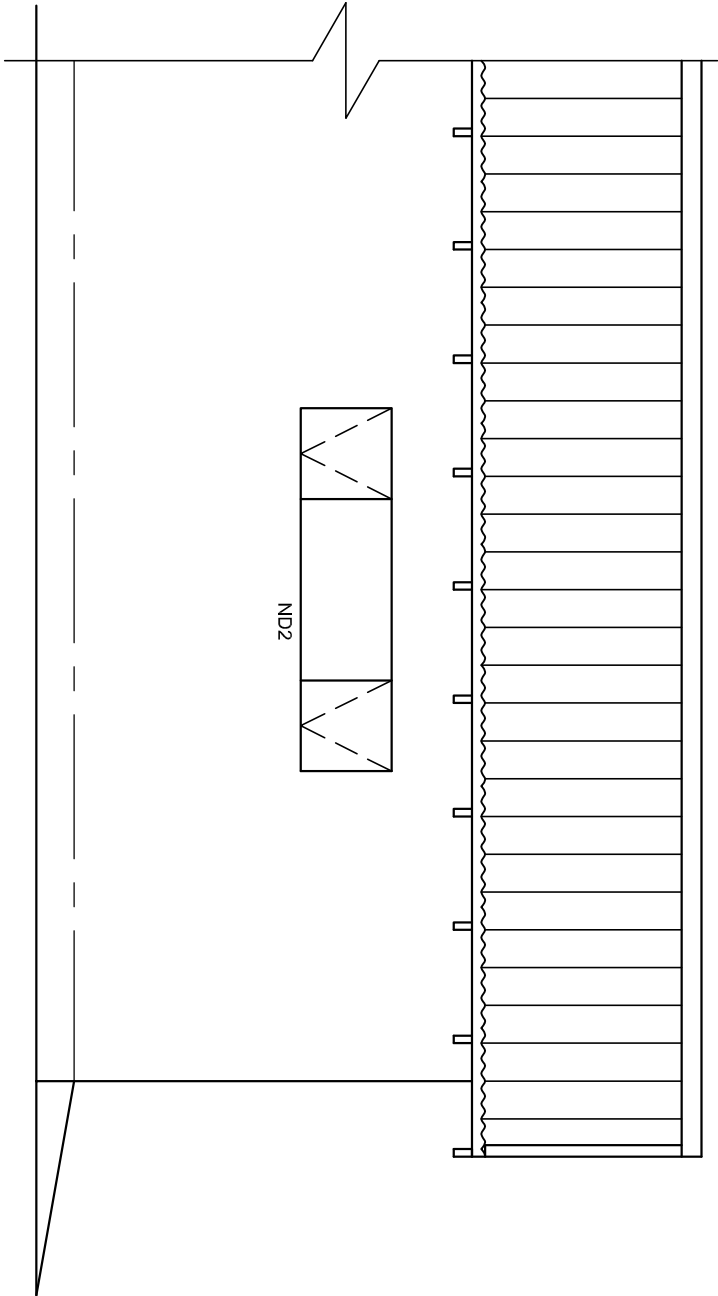
TERMINOLOGY

Schematic diagram: A diagram that shows the main features or relationships but not the details.





ANSWER SHEET 4



WEST ELEVATION

SECTIONAL ELEVATION		MARKS
1 WALLS, FOUNDATION & HATCHING	19	
2 WINDOW, DOORS, LINTELS	5	
3 ROOF, PURLINS & CAPPING	8	
4 ROOF TRUSS	14	
5 LABELS	4	
	49	
PLAN		MARKS
1 WALLS & HATCHING	12	
2 WINDOW & DOORS	8	
3 ELECTRICAL	10	
4 LABELS + CUTTING PLANE	8	
5 REMOVED WALL	2	
	40	
TOTAL	89	

NAME		6
NAME		