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EASTERN CAPE EDUCATION DEPARTMENT
OOS-KAAP ONDERWYSDEPARTEMENT

NATIONAL
SENIOR CERTIFICATE

GRADE 11

ENGINEERING GRAPHICS AND DESIGN P1

NOVEMBER 2017

MARKS: 200

TIME: 3 hours

This question paper consists of 6 pages.

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* I G R D S E 1 *

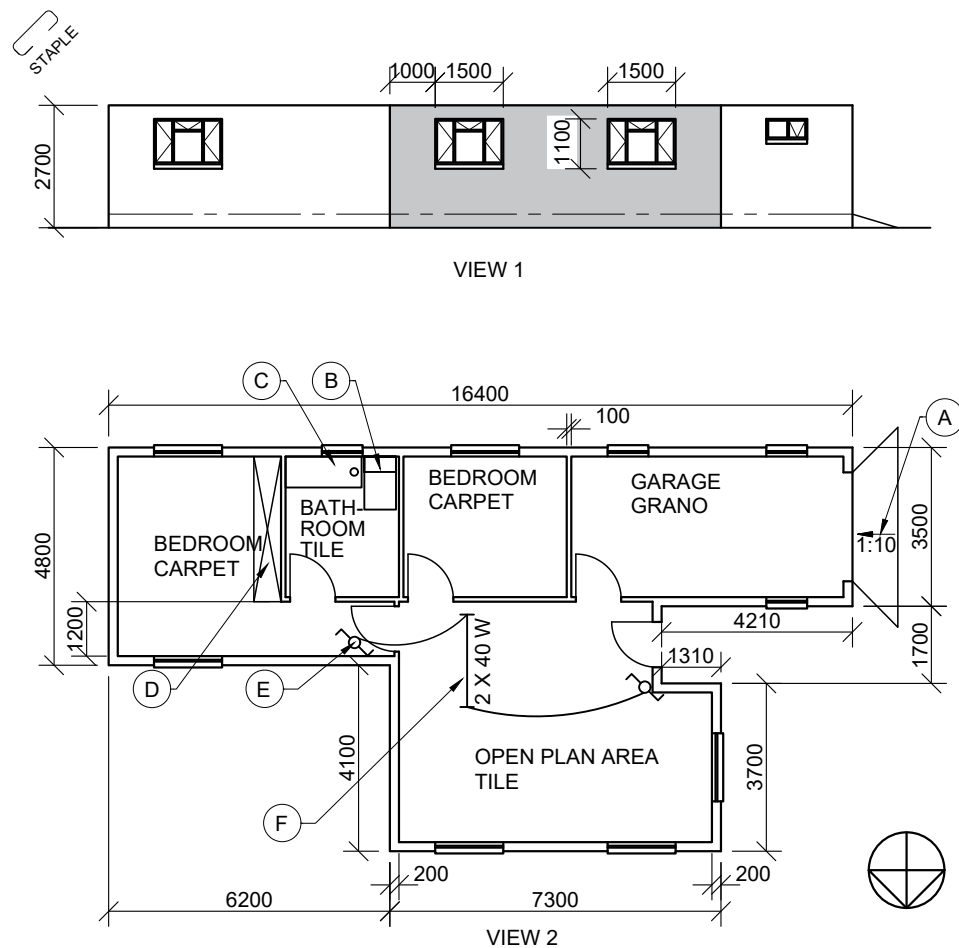
INSTRUCTIONS AND INFORMATION

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									
QUESTION	MARK OBTAINED			$\frac{1}{2}$	SIGN	MODERATED MARK			$\frac{1}{2}$
1									
2									
3									
4									
TOTAL									
	2	0	0			2	0	0	

FINAL CONVERTED MARK	CHECKED BY
100	

COMPLETE THE FOLLOWING:
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

ANSWER 17

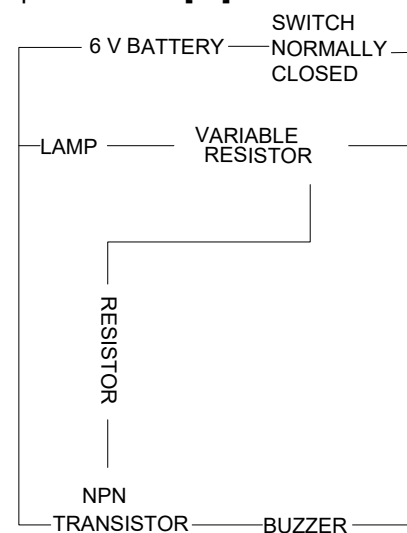
In the space provided below, draw, in neat freehand, the front view and top view of the *SANS 10143* convention for a WATER CLOSET.

[illegible]

QUESTION 1B: ELECTRONICS

Given:
A diagram with labels of electronic components.
A panel with symbols of electronic components.

Instructions:
Draw the diagram using the electronic symbols in free hand in the adjacent space provided. **[10]**

[illegible]

A	2017-11-12	HATCH WALLS
REVISION	DATE	DESCRIPTION

DREW ARCHITECTS

PO BOX 65
Mc Lear
6511

TEL: 0461234567
FAX: 0961325234
EMAIL: drewarc@mweb.co.za

PRINTED BY KWIK PRINT	DATE OF PRINT 2017-11-20
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DRAWING TITLE	HOUSE PLAN AND ELEVATION
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PROJECT
PROPOSED NEW HOUSE FOR
MR. N. NONGKAWUSE ON
STAND 862, LUSIKISIKI,
EASTERN CAPE.

PROJECT NUMBER 456PET	DRAWING NUMBER 4 OF 4
--------------------------	--------------------------

DATE	DRAWN	CHECKED	SCALE
2017-11-10	DIRK	DLABA	1 : 300

REFERENCE CODE	
FY11-2017	

QUESTION 1A: ANALYTICAL (CIVIL)

Given:

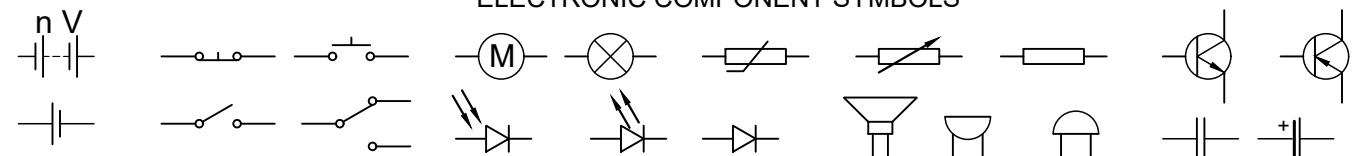
Two views of a proposed **new house**. A title panel and a table of questions. The drawing has not been prepared to the indicated scale.

Instructions:

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

QUESTIONS		ANSWERS		
1	What is the reference code for the drawing?		1	
2	Who checked the drawing?		1	
3	What scale is indicated for the drawing?		1	
4	Which drawing is this in the set of drawings?		1	
5	What floor finish will be used for the bathroom?		1	
6	What does the entire symbol at A mean?		1	
7	What feature is indicated by B?		1	
8	What feature is indicated by C?		1	
9	What feature is indicated by D?		1	
10	What electrical symbol is indicated by E?		1	
11	What electrical symbol is indicated by F?		1	
12	Which elevation is VIEW 1 ?		1	
13	What should VIEW 2 be labelled?		1	
14	In the adjacent block, in neat freehand, draw the hatching for brickwork.		1	
15	In the space provided below, determine the perimeter of the entire house in meters.		3	
16	In the space provided below, determine the total area of the wall in VIEW 1 (high lighted) in square meters.		4	
17	In the space provided in the title panel, draw, in neat freehand, the front view and top view of the SABS 10143 convention for a WATER CLOSET.		6	

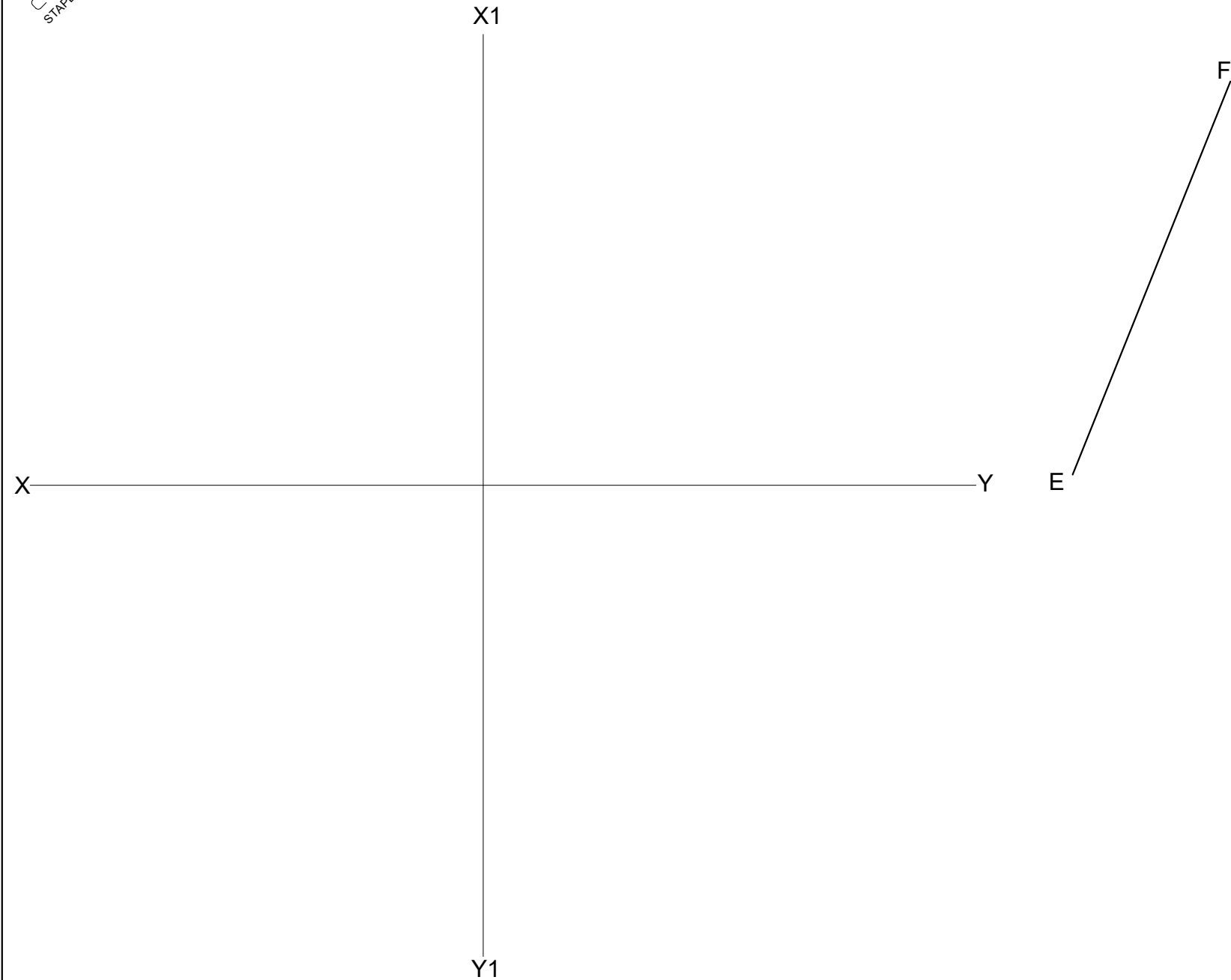
ELECTRONIC COMPONENT SYMBOLS



ANSWER 15
Show ALL calculations.

ANSWER 16
Show ALL calculations.

MARKS			
Q 1A	27		NAME
Q 1B	10		
TOT	37		NAME 2

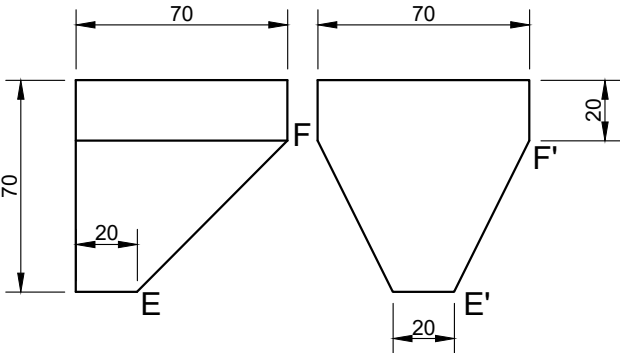


QUESTION 2: INTERPENETRATION AND DEVELOPMENT

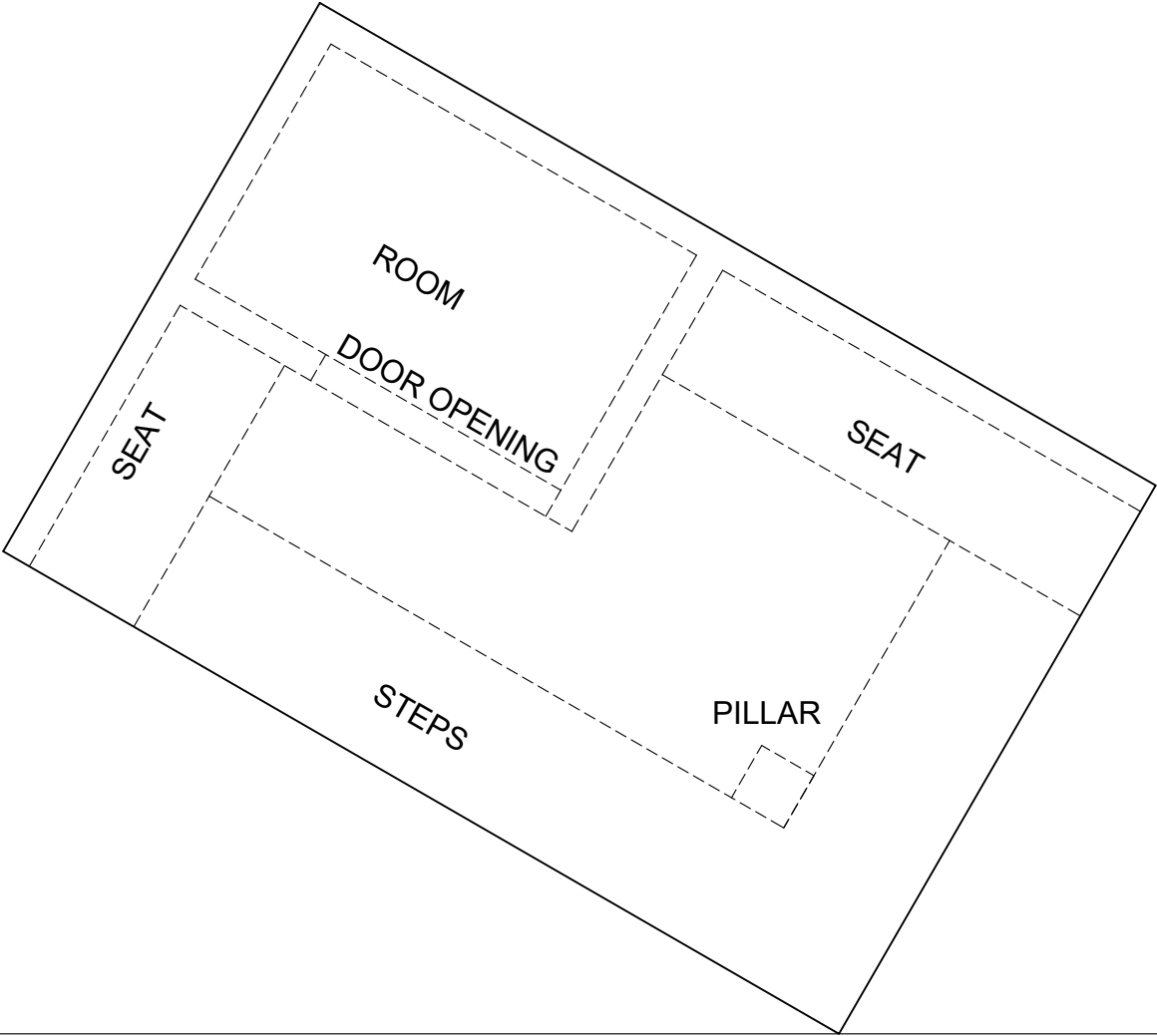
Given:
The front view and the incomplete left view of a transition piece that must be made from a single sheet of steel. The top edge of the transition piece must be welded on each of the four sides. EF is the seam.
On the answer sheet, the XY planes for the orthographic drawing and the origin EF for the development.

- Instructions:**
Draw, to scale 1 : 1, the following views of the transition piece:
- 2.1 The complete front view,
 - 2.2 The complete left view,
 - 2.3 The complete top view,
 - 2.4 Develop the surface of the transition piece.

Show ALL constructions, hidden detail and fold lines. [38]



ASSESSMENT CRITERIA					
1	FRONT VIEW	3			
2	LEFT VIEW	4			
3	TOP VIEW	4 ¹ / ₂			
4	TRUE LENGHTS	6			
5	DEVELOPMENT + CONSTRUCTION	20 ¹ / ₂			
PENALTIES (-)					
TOTAL		38			
NAME					
NAME					3



QUESTION 3: PERSPECTIVE

Given:
Two views of an entrance to a library 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.

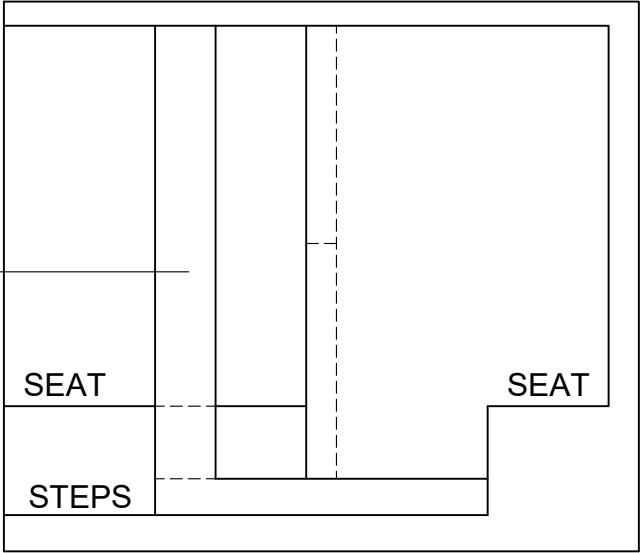
- Align the drawing sheet with the ground line (GL).
- Determine and label the vanishing points.
- Show ALL necessary construction.
- Show the wall thickness at the openings.
- NO hidden detail is required. **[40]**

ASSESSMENT CRITERIA					
1	CONSTRUCTION + VPs	8			
2	STEPS	9			
3	WALLS	13			
4	OPENINGS	4			
5	ROOF	6			
TOTAL		40			

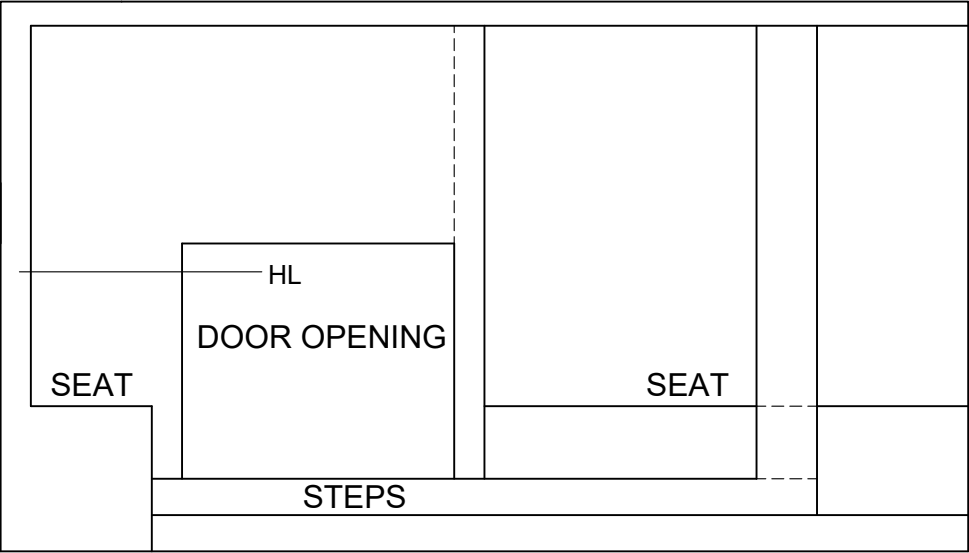
PP

HL

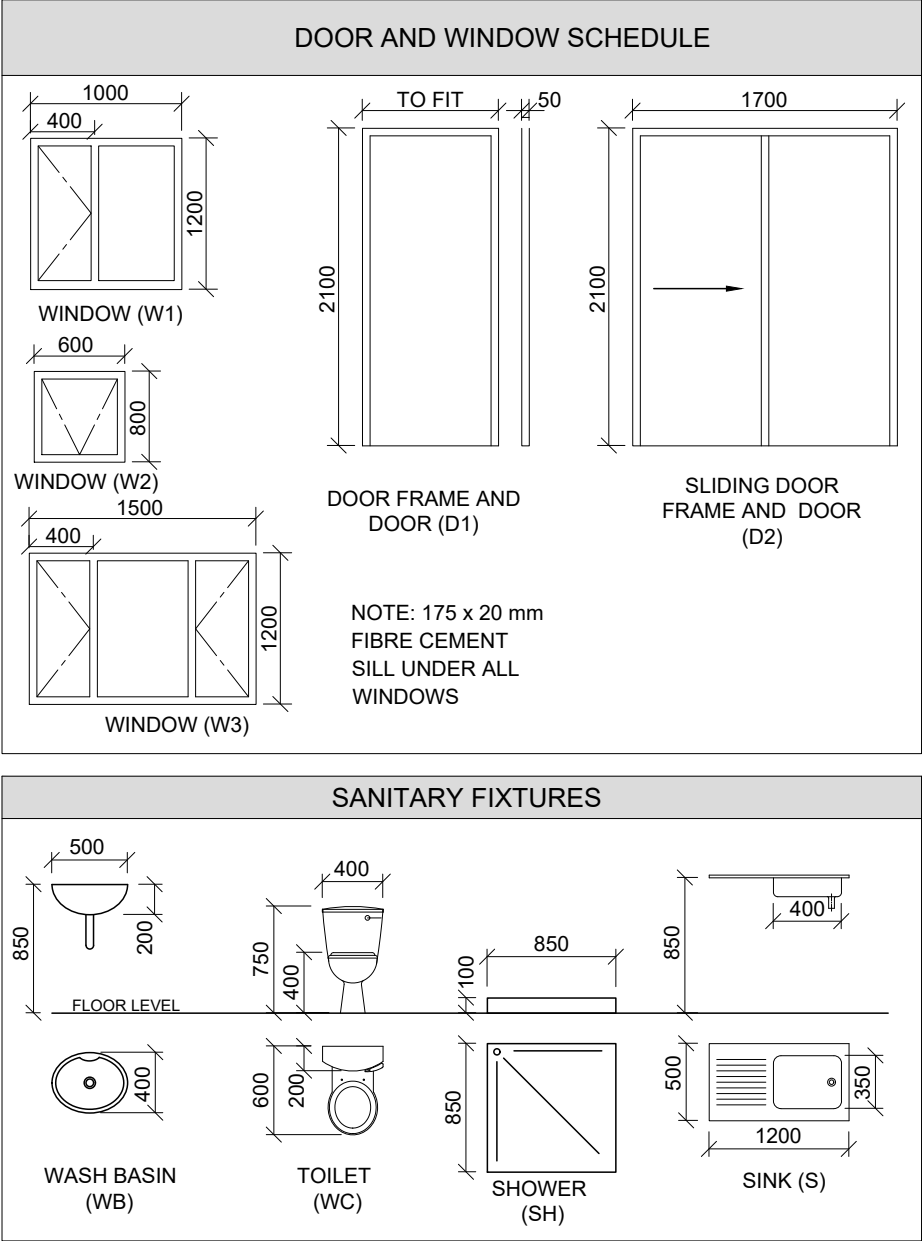
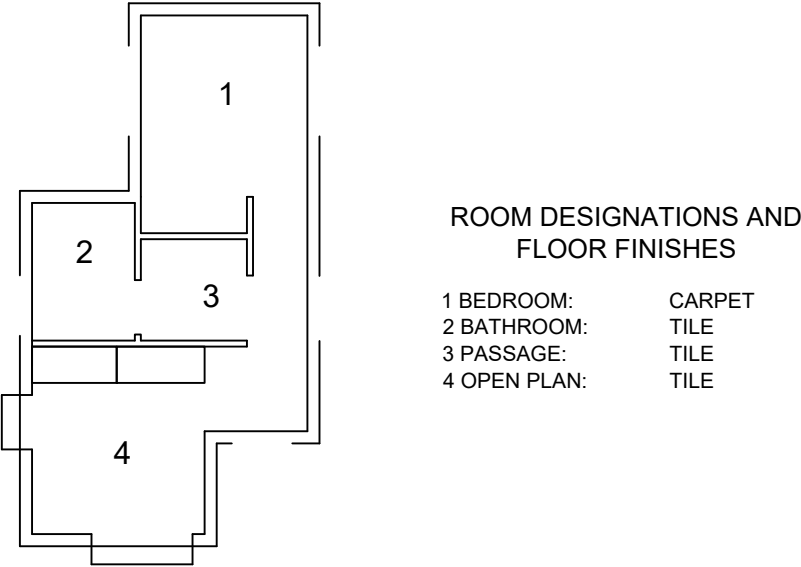
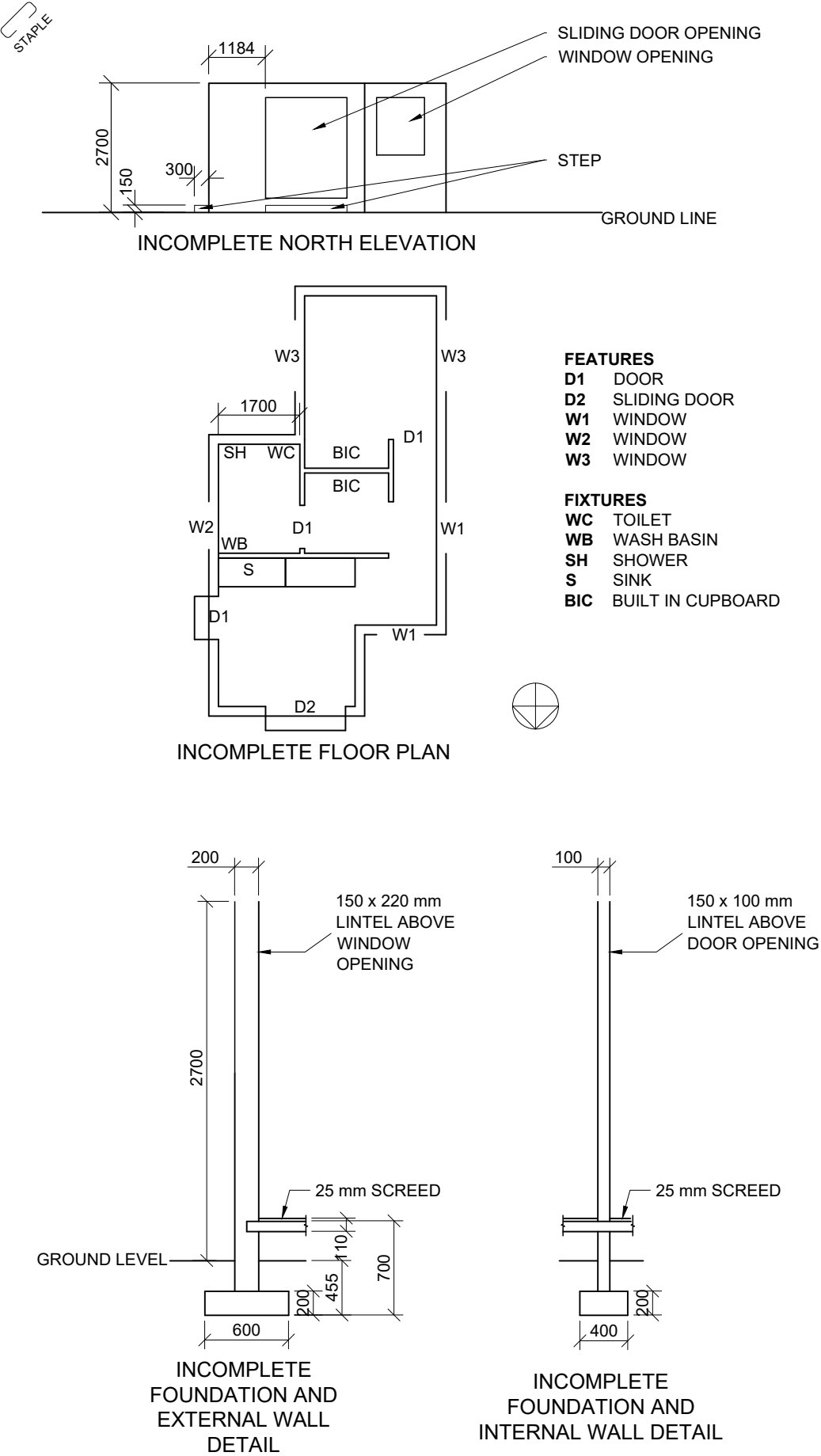
GL



+
SP



EXAMINATION NUMBER	
EXAMINATION NUMBER	4



QUESTION 4: CIVIL DRAWING

- Given:**
- The incomplete north elevation of a **proposed new flat**, showing the walls, window, steps and the door opening
 - The incomplete floor plan showing the walls, position of the doors, windows, built in cupboards 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 flat, drawn to scale **1 : 50** and the starting point for the sectional view drawn to scale **1 : 20** on page 6

Instructions:
Answer this question on page 6.

4.1 Using the given incomplete floor plan, on page 6 draw, in first-angle orthographic projection and to scale 1 : 50, the following views of the **new flat**:

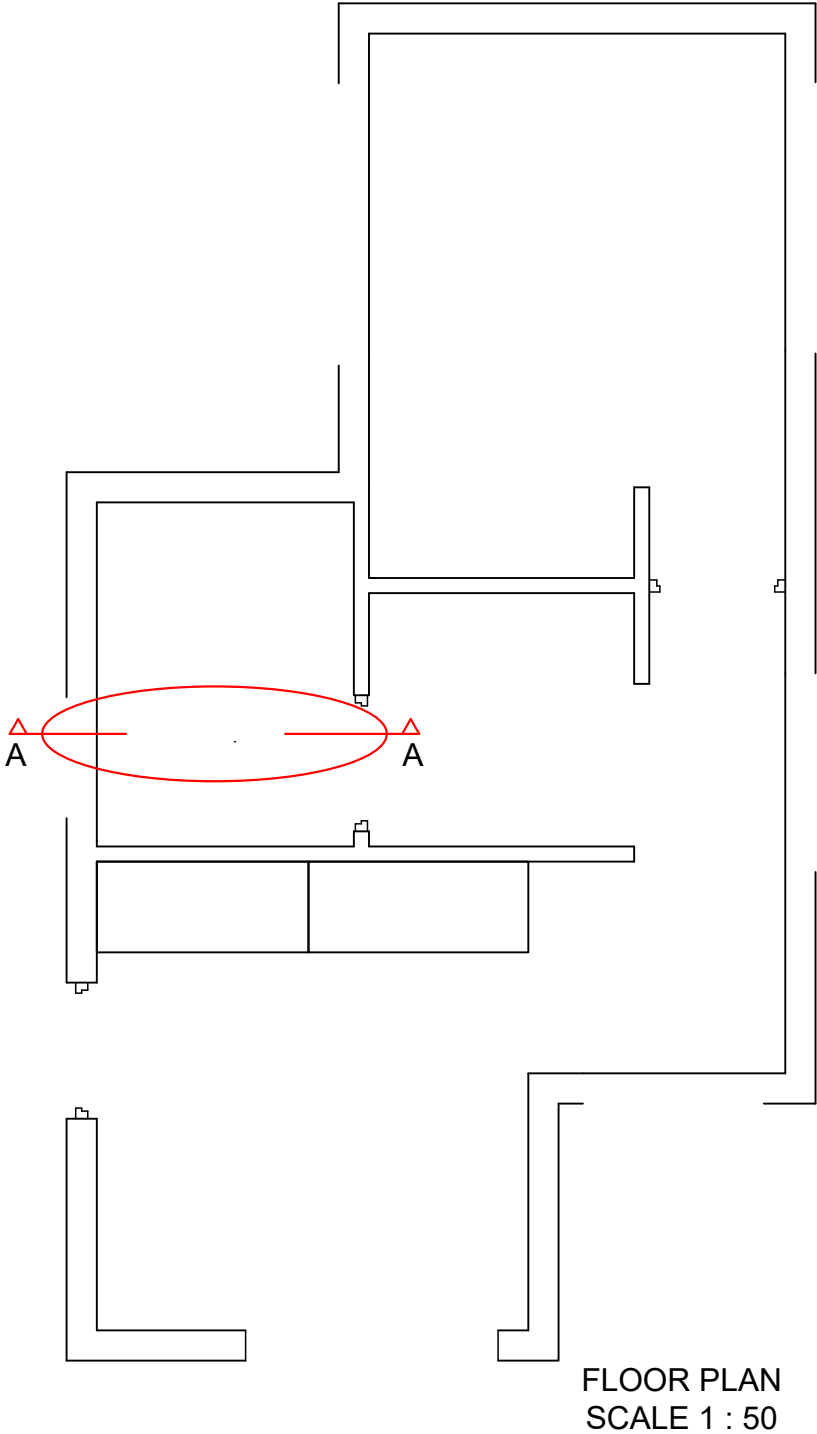
- 4.1.1 THE COMPLETE FLOOR PLAN**
Add the following features to the drawing:
- ALL doors, windows and steps
 - ALL fixtures as indicated by the abbreviations on page 5
 - ALL hatching detail

- 4.1.2 THE NORTH ELEVATION**
Show the following features on the drawing:
- The outside walls, window, steps and door detail
 - The finished floor level

- 4.2 In the space provided on page 6, draw, 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 on this view:**
- The complete foundation, external wall, and window detail
 - ALL hatching detail. ONLY the substructure hatching may be drawn in neat freehand.
 - The lintels above the door and windows
 - The complete foundation, internal wall and door detail
 - All visible sanitary fixtures

- Label the following:**
- The north elevation including the 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**. **[85]**



STARTING POINT FOR
DETAILED SECTION
(EXTERNAL WALL
FOUNDATION)

SECTION A-A
SCALE 1 : 20

OFFICIAL USE		
1	INCORRECT OVERALL SCALE	
2	INCORRECT POSITIONING OF VIEWS	
3	NON-ALIGNMENT OF VIEWS	
TOTAL PENALTIES (-)		

ASSESSMENT CRITERIA					
FLOOR PLAN					
1	DOORS + WINDOWS + STEPS	19			
2	FIXTURES	11 ¹ / ₂			
3	HATCHING	6			
4	LABELS	4			
SUBTOTAL		40 ¹ / ₂			
NORTH ELEVATION					
1	WALLS + STEPS	5 ¹ / ₂			
2	SLIDING DOOR	3			
3	WINDOW	4			
4	LABELS	2			
SUBTOTAL		14 ¹ / ₂			
DETAILED SECTION					
1	FOUNDATIONS + WALLS + SLAB + LINTELS	12			
2	DOOR + WINDOW	4			
3	HATCHING	8			
4	LABELS	2			
5	FIXTURES	4			
SUBTOTAL		30			
TOTAL		85			
PENALTIES (-)					
FINAL TOTAL					
NAME					
NAME					6