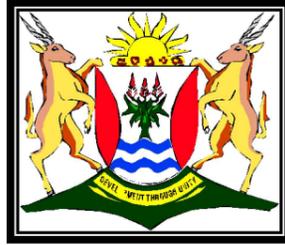


STAPLE



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

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

ENGINEERING GRAPHICS AND DESIGN P1
SEPTEMBER 2017
PREPARATORY EXAMINATION

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 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



QUESTION 2: TRANSITION PIECE

Given:

The front view, right view and the top view of a rectangular to hexagon transition piece.
 The starting point S for the top view of the hexagon and the ground line XY. The right angle labeled R as the start for the development.

Instructions:

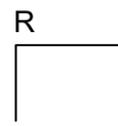
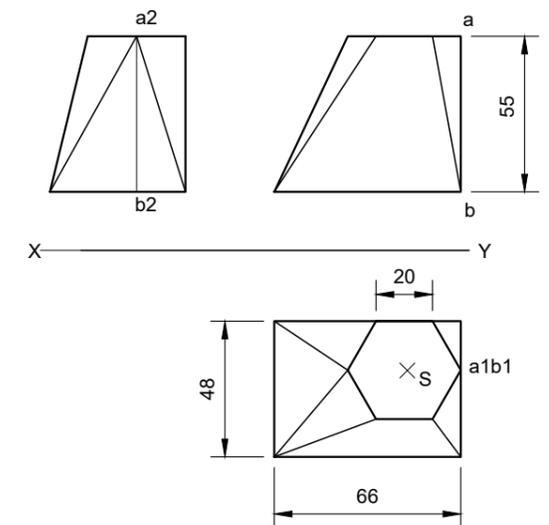
- Draw, to scale 1 : 1, the following views of the transition piece:
- 2.1 The top view
 - 2.2 The front view
 - 2.3 Develop the surface of the transition piece and make AB the seam.

Show ALL fold lines.

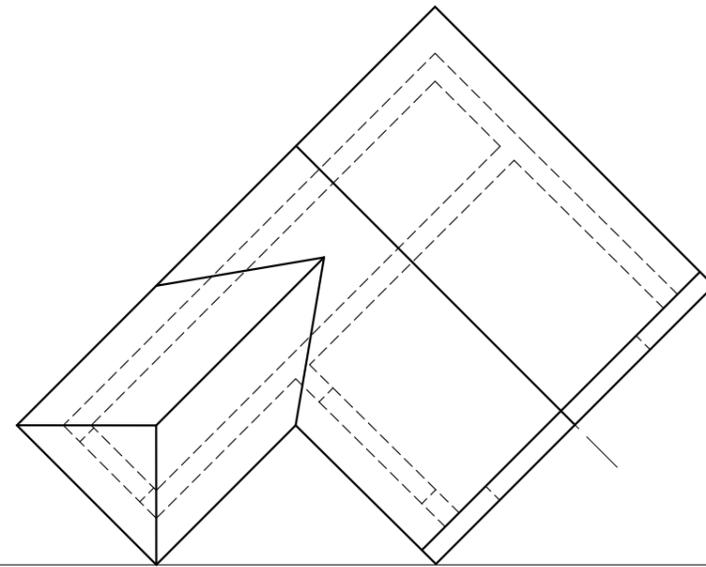
Show ALL constructions.

AB is the seam of the transition piece.

[33]



ASSESSMENT CRITERIA				
1	HEXAGON CONSTRUCTION + TOP VIEW	7		
2	FRONT VIEW	3		
3	TRUE LENGHTS	6		
4	DEVELOPMENT	17		
PENALTIES (-)				
TOTAL		33		
NAME				
NAME				3



QUESTION 3: PERSPECTIVE

Given:

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

PP – Picture plane

HL – Horizon line

GL – Ground line

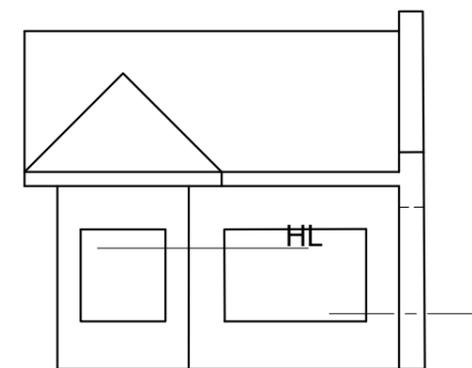
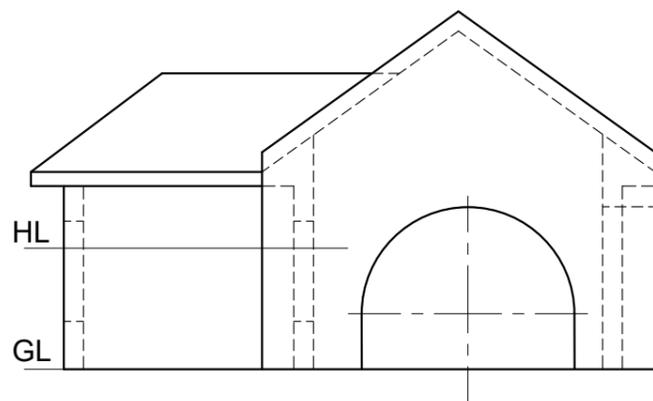
SP – Station point

Instructions:

Complete the perspective drawing.

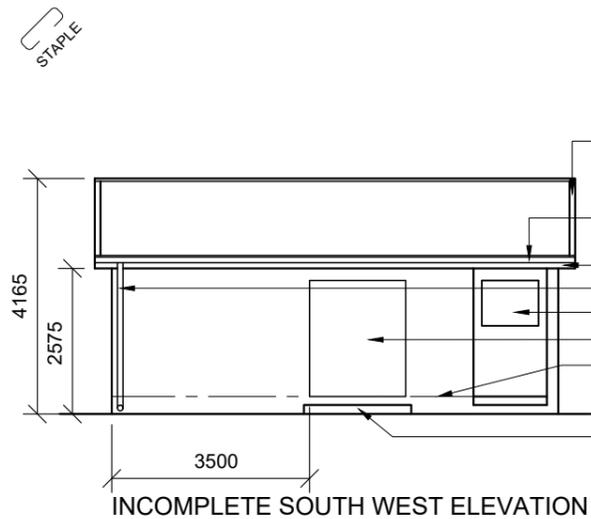
- Align the drawing sheet with the ground line (GL).
- Determine and label the vanishing points.
- Show ALL necessary construction.
- Show the wall thickness at the openings.
- NO hidden detail is required. **[40]**

PP



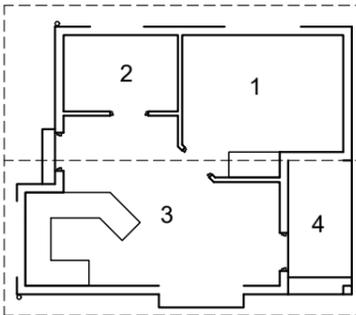
× SP

ASSESSMENT CRITERIA				
1	CONSTRUCTION + VPs	7		
2	ROOF	8		
3	WALLS	13 1/2		
4	SEMI-CIRCLE	5 1/2		
5	WINDOWS	6		
TOTAL		40		
NAME				
NAME				4



INCOMPLETE SOUTH WEST ELEVATION

FLOOR FINISHES
 1 BEDROOM: CARPET
 2 BATHROOM: TILE
 3 OPEN PLAN AREA: TILE
 4 PATIO: TILE



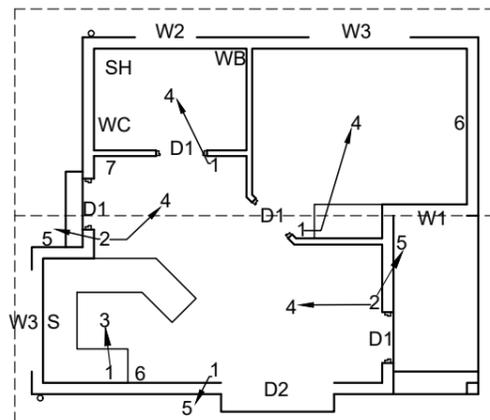
ROOM DESIGNATIONS

FEATURES
 D1 DOOR
 D2 SLIDING DOOR
 W1 WINDOW
 W2 WINDOW
 W3 WINDOW

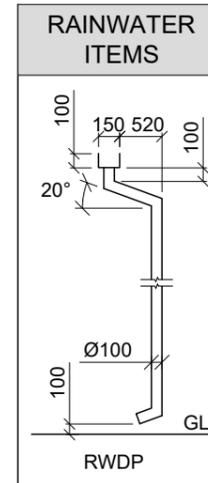
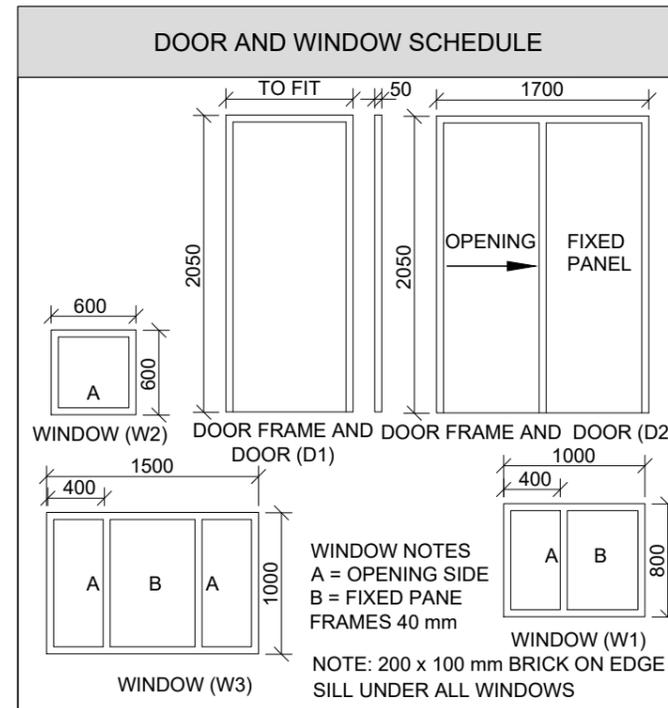
FIXTURES
 WC TOILET
 WB WASH BASIN
 SH SHOWER
 S SINK

ELECTRICAL FITTINGS
 1. LIGHT SWITCH - SINGLE-POLE
 2. LIGHT SWITCH - DOUBLE-POLE
 3. FLUORESCENT LIGHT 2 x 40 W
 4. CEILING LIGHT
 5. WALL MOUNTED LIGHT
 6. SWITCHED SOCKET OUTLET
 7. DISTRIBUTION BOARD

NOTE:
 THE ARROWS ON THE FLOOR PLAN SHOWS THE LIGHT CONNECTION TO THE SWITCH.

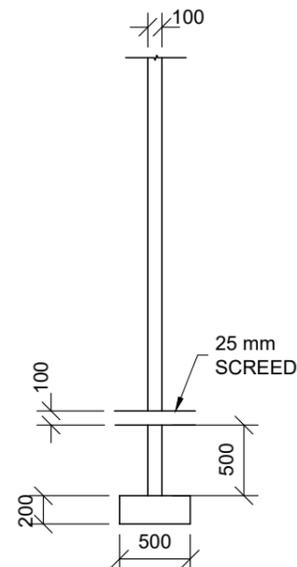


INCOMPLETE FLOOR PLAN

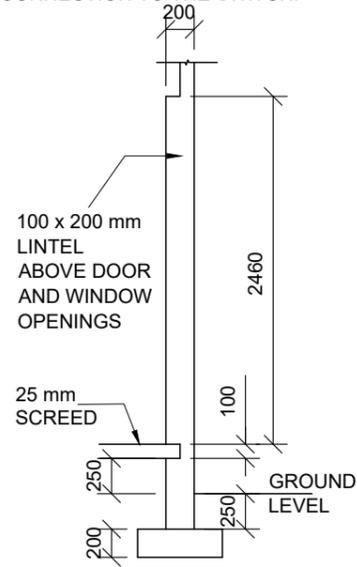


ROOF COMPONENTS	
	200 x 20 mm FASCIA BOARD
	ROOF CAP
	75 x 50 mm PURLINS
	300 x 75 mm FIBRE CEMENT BARGE BOARD

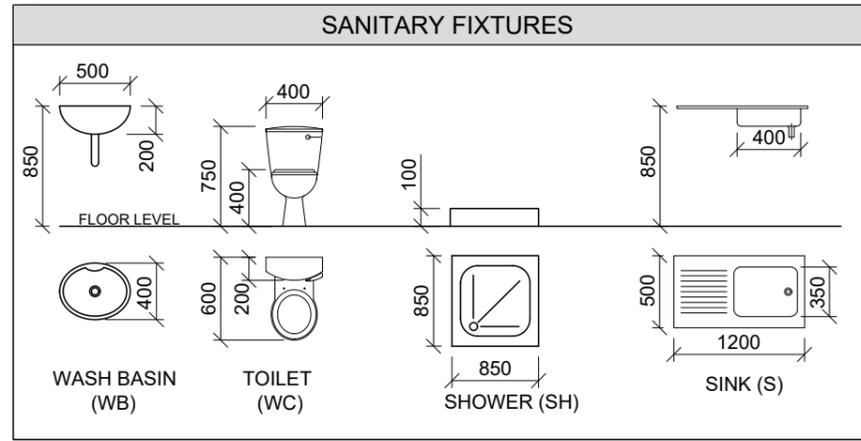
ELECTRICAL SYMBOLS	



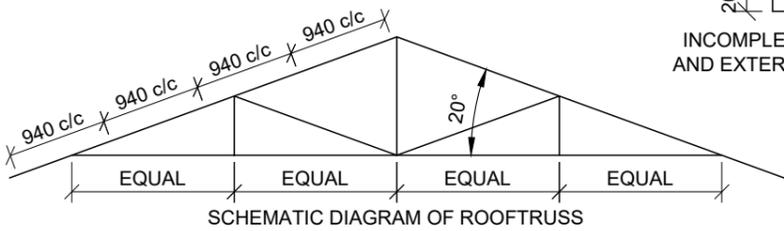
INCOMPLETE NON LOAD BEARING WALL AND FOUNDATION DETAILS



INCOMPLETE FOUNDATION AND EXTERNAL WALL DETAIL



ROOF NOTES:
 ROOF PITCH 20°
 200 x 20 mm FACIA BOARD ON SIDES
 ROOF OVERHANG 500 mm TO TRUSS END
 300 x 75 mm FIBRE CEMENT BARGE BOARDS ON ROOF ENDS
 ROOF COVER 50 mm IBR SHEET ON 75 x 50 mm PURLINS @ 940 mm c/c
 114 x 38 mm ROOF TRUSS ON 114 x 38 mm WALL PLATES
 9 mm CEILING BOARD ON 38 x 38 mm BRANDING STRIPS @ 450 mm c/c
 100 x 150 mm GUTTER ON SIDES



SCHEMATIC DIAGRAM OF ROOFTRUSS

QUESTION 4: CIVIL DRAWING

Given:

- The incomplete south west elevation of a house, showing the walls, the windows schematic diagram, the door opening, the roof and notes
- The incomplete floor plan showing the walls, position of the doors, windows, fixtures and the electrical layout
- Roof notes with a schematic diagram of the roof truss in section
- The incomplete foundation and detail of the external and internal walls
- Room designations and floor finishes
- A door and window schedule
- A table of sanitary fixtures
- A table of roof components
- A table of electrical symbols
- A table of rainwater items
- The floor plan of the house, drawn to scale 1 : 50 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 house:

4.1.1 THE COMPLETE FLOOR PLAN

Add the following features to the drawing:

- ALL doors and windows
- ALL fixtures as indicated by abbreviations
- ALL electrical fittings as indicated by numbers
- ALL hatching detail

4.1.2 THE SOUTH WEST ELEVATION

Show the following features on the drawing:

- The outside walls, windows and door detail
- The roof detail, including the fascia board, gutter, rainwater down pipe, barge board and roofcap
- The finished floor level

4.2 Using the incomplete foundation and break line 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 incomplete floor plan.

Show the following features on the drawing:

- The complete foundation, external wall with window and internal wall with door detail
- The roof detail, including the fascia board and gutter
- ALL features to the left of the section
- ALL hatching detail. ONLY the substructure hatching may be drawn in neat freehand
- Start at the given starting point

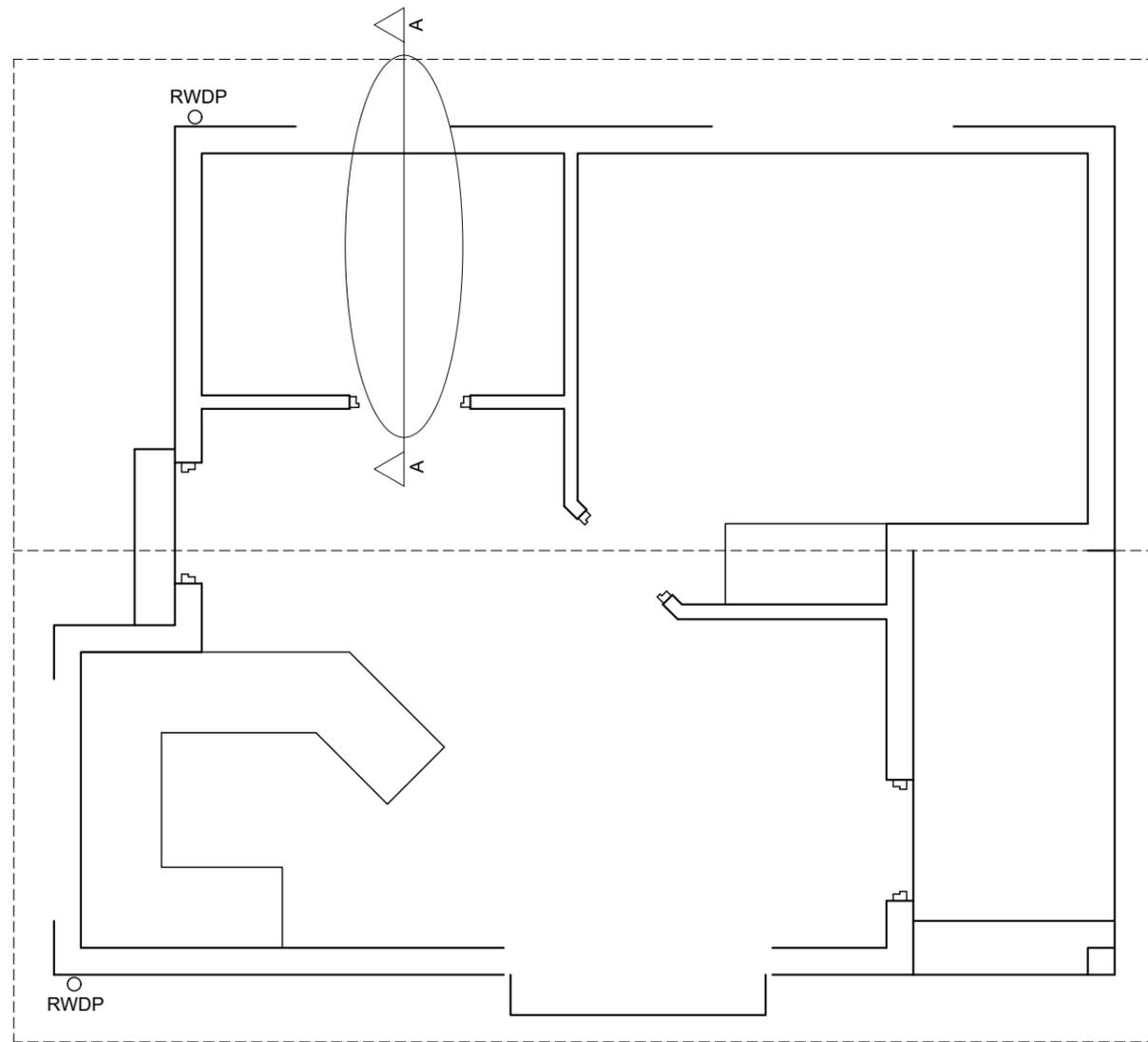
Label the following:

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

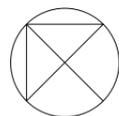
NOTE:

ALL drawings must comply with the guidelines and graphical symbols contained in the SANS 10143. [98]

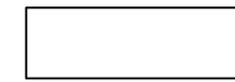
STAPLE



FLOOR PLAN
SCALE 1 : 50



SECTION A-A
SCALE 1 : 20



STARTING POINT FOR
DETAILED SECTION

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

ASSESSMENT CRITERIA				
FLOOR PLAN				
1	DOORS + WINDOWS	14 1/2		
2	ELECTRICAL	12 1/2		
3	FIXTURES	6		
4	HATCHING	5		
5	LABELS	5		
SUBTOTAL		43		
SOUTH WEST ELEVATION				
1	ROOF	3 1/2		
2	WALLS + RWDP + FFL + GULLY + STEP	6		
3	DOOR + WINDOW	7 1/2		
4	LABELS	1		
SUBTOTAL		18		
DETAILED SECTION				
1	ROOF	12		
2	FOUNDATIONS + WALLS + SLAB	8		
3	DOOR + SILL + WINDOWS + LINTELS	5		
4	WC + SHOWER	3		
5	HATCHING	7		
6	LABELS	2		
SUBTOTAL		37		
TOTAL		98		
PENALTIES (-)				
FINAL TOTAL				
NAME				
NAME				
				6