



ENGINEERING GRAPHICS AND DESIGN

GRADE 11

PAPER 1

JUNE 2019

TIME: 3 HOURS

TOTAL: 100

This question paper consists of 6 pages

INSTRUCTIONS AND INFORMATION

1. Answer all the questions.
2. ALL drawings are in first-angle orthographic projection, unless stated otherwise.
3. ALL drawings must be drawn to scale 1:1, unless stated otherwise.
4. ALL questions must be answered on the DIAGRAM SHEET as instructed.
5. ALL the pages must be restapled in numeric sequence, irrespective of whether the question was attempted or not.
6. Time management is essential in order to complete all the questions.
7. Print your name and surname as well as the grade in the space provided on each page.
8. ALL answers must be drawn accurately and neatly.
9. ALL necessary construction and projection lines must be shown.
10. Plan each drawing carefully from the given position, which is indicated on the diagram sheets.
11. Any details or dimensions not given must be assumed in good proportion.

FOR OFFICIAL USE ONLY								
QUESTION	MARKS OBTAINED			½	MODERATED			½
1								
2								
3								
4								
TOTAL								
	2	0	0		2	0	0	

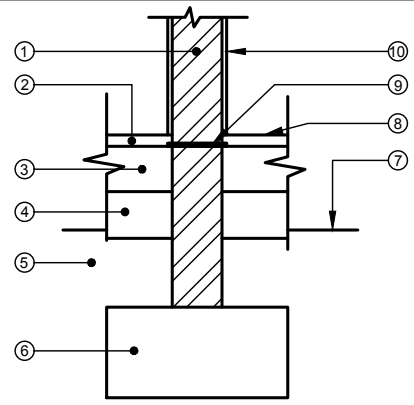
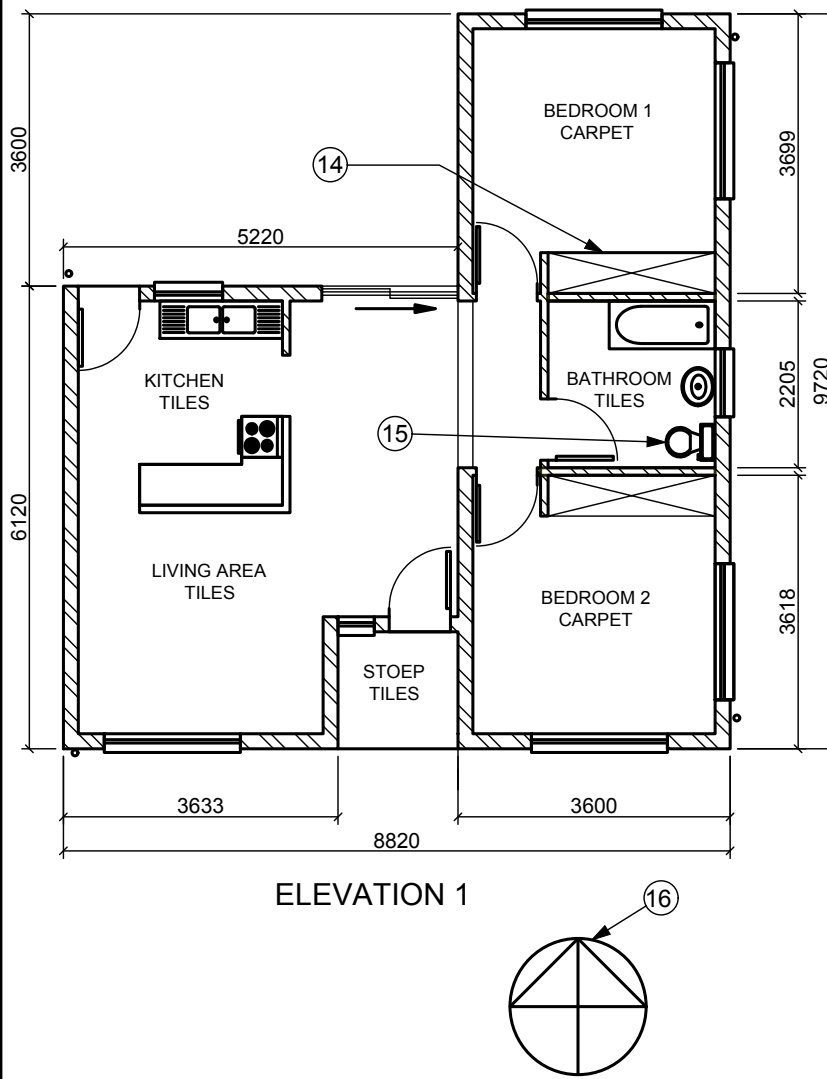
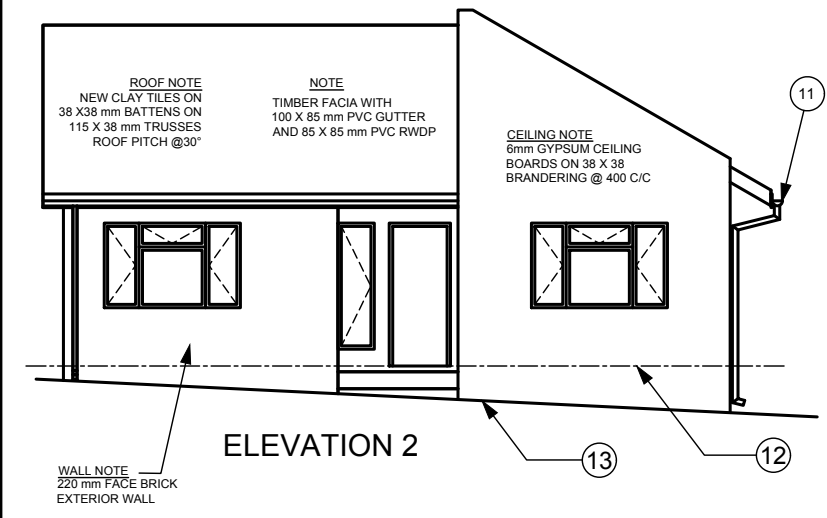
FINAL CONVERTED MARK	CHECKED BY
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NAME & SURNAME		GRADE		1
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QUESTION 1: ANALYTICAL (CIVIL)

Given:
Two elevations and a title panel are shown.

Instructions:
Complete the table by neatly answering the questions, which refer to the accompanying drawing and title panel.
PRINTING in PENCIL in the prepared column.



EAST COAST ARCHITECTS

125 MAIN ROAD
DURBAN
9876
info@eka.co.za

DATE DRAWN: 2018-09-16
DRAWN BY: JOHANNES

PRINTED BY: L & K PRINTERS
DATE PRINTED: 2018-10-08

PROPOSED NEW HOUSE FOR MR & MRS FJ DU PLESSIS ON STAND 857, DURBAN

CHECKED BY: JANNIE
DATE OF REVISION: 2018-10-20

REFERENCE CODE: Q1P1N2018
PROJECT NUMBER: NOV12018
DRAWING NUMBER: JB191018

ANSWER 12

QUESTION		ANSWERS		
1	With reference to the detailed drawing of a section through the substructure of a non-load-bearing wall, link the number on the drawing with the correct component in the column to the right of this question	INTERNAL WALL	1	
		CONCRETE SLAB	1	
		UNDISTURBED EARTH	1	
		GROUND LEVEL	1	
		DAMP PROVE COARSE	1	
		SCREED	1	
		HARDCORE	1	
		FOUNDATION	1	
		FINISHED FLOOR LEVEL	1	
2	What is the project number?		1	
3	Who drew the drawing?		1	
4	On what date was the elevations plan printed?		1	
5	Who printed the elevations?		1	
6	Who is the client?		1	
7	Name the feature indicated at number 11		1	
8	What does the line at 12 indicate?		1	
9	What does the line numbered 13 indicate?		1	
10	Name the feature numbered 14.		1	
11	What is the abbreviation for the appliance numbered 15?		1	
12	In the space provided, draw freehand, the front view and top view of the SANS convention for a bath		5	
13	In the space below (ANSWER 13), determine the perimeter of the proposed new house in meters.		4	
14	In the space below (ANSWER 14), determine the TOTAL FLOOR area of BEDROOM 1 in square meters, rounded off to 2 decimals.		5	
			TOTAL	33

ANSWER 13

ANSWER 14



QUESTION 2: SOLID

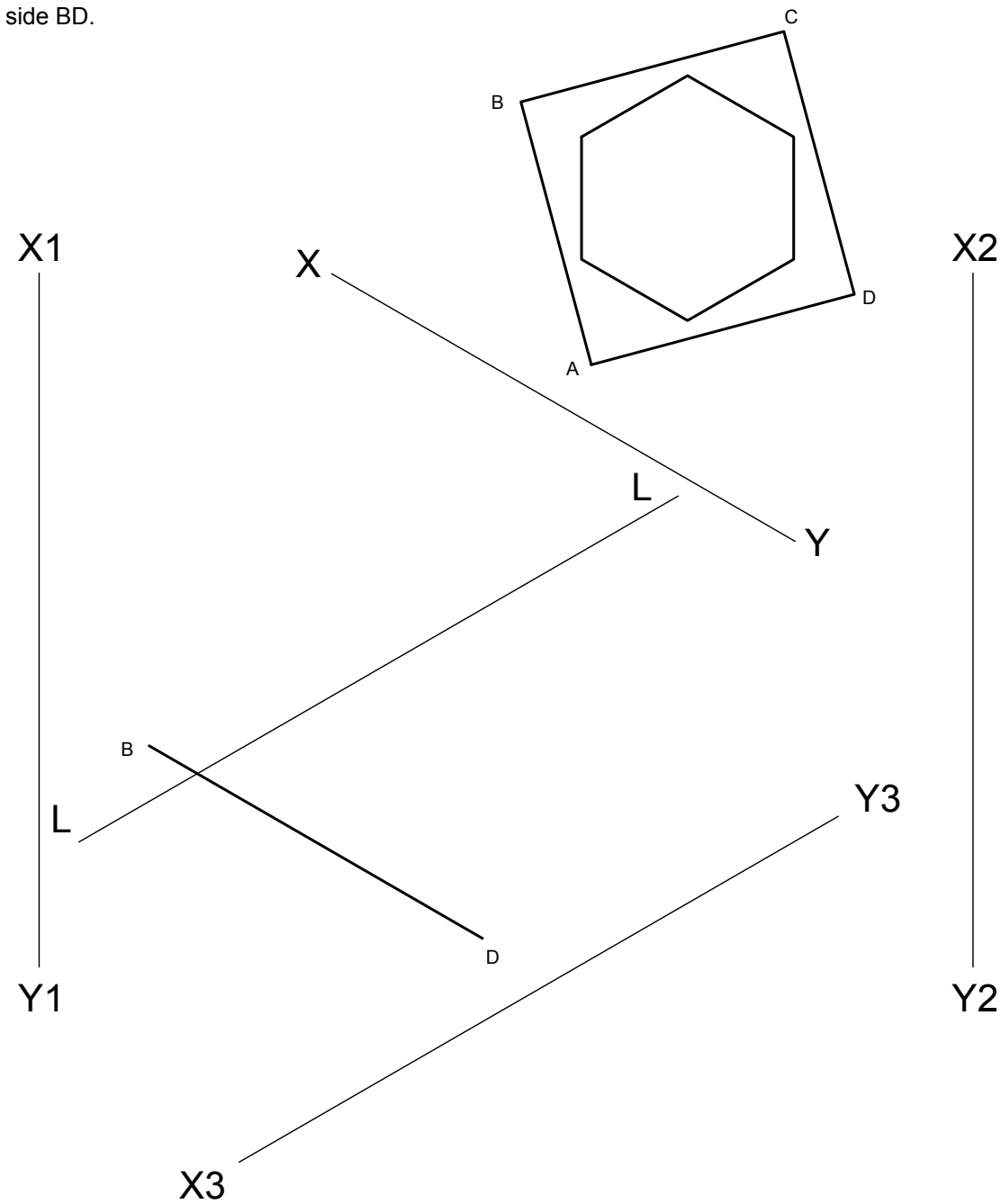
Given: The complete front view and complete auxiliary view of a square prism and hexagonal pyramid.
The incomplete auxiliary view with the position of side BD.

Instructions: Draw to scale 1:1 the following views:

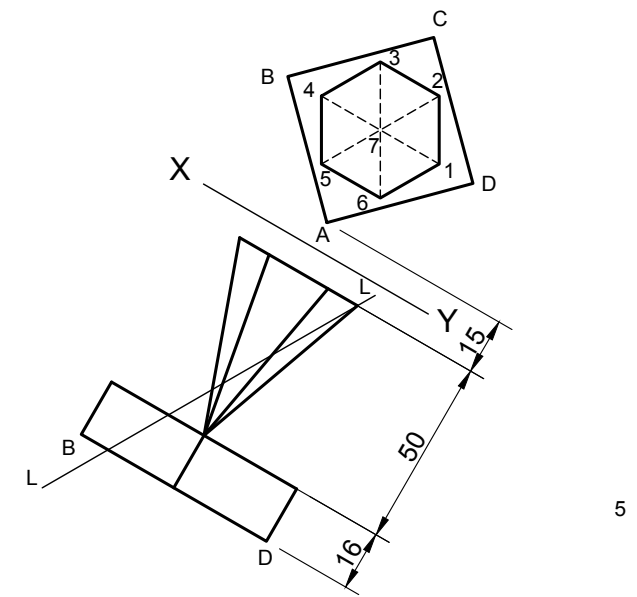
- 2.1 The complete auxiliary view
- 2.2 The front view
- 2.3 A sectional right view on cutting plane LL.
- 2.4 A left view
- 2.5 A true section on cutting plane LL.

Note:
ALL hidden detail must be shown.

(41)



ASSESSMENT CRITERIA				
1	AUXILIARY VIEW	3		
2	FRONT VIEW	5		
3	LEFT VIEW	12		
4	SECTIONAL RIGHT VIEW	15		
5	TRUE SECTION	6		
TOTAL		41		





QUESTION 3: PERSPECTIVE

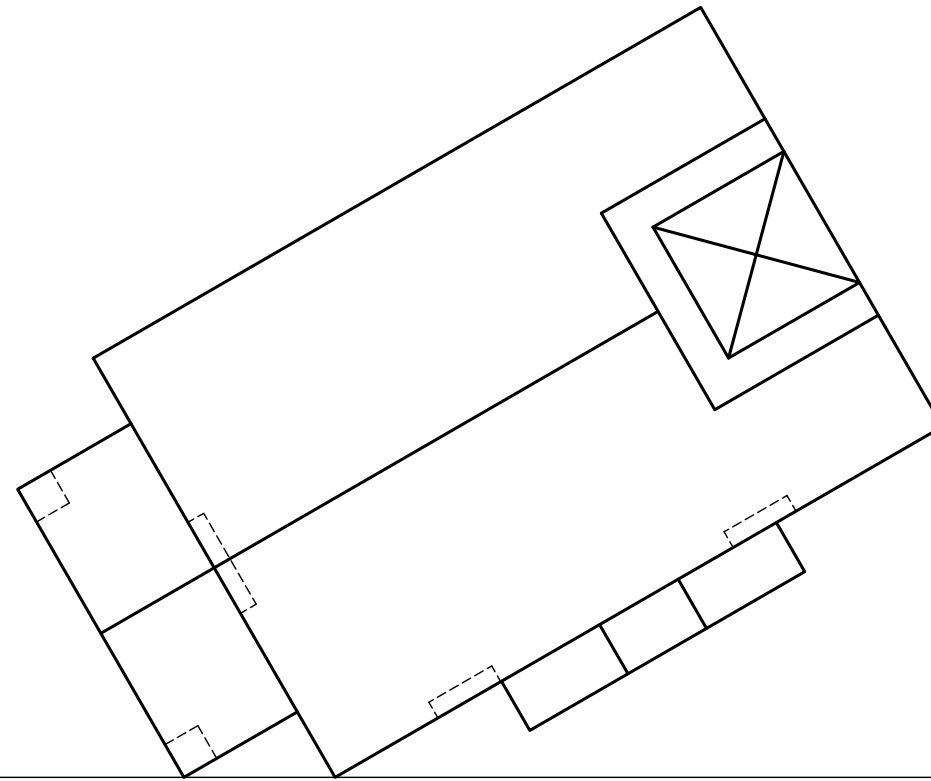
Given:

Three views of a building with the information needed to draw a two-point perspective drawing

- PP - Picture plane
- HL - Horizon line
- GL - Ground Line
- SP - Station point

Instructions:

- Use the given information and draw a neat two point perspective drawing.
- Determine and label the vanishing points.
- Show all necessary construction.
- No hidden detail is required. **(46)**



ASSESSMENT CRITERIA				
1	VP + CONST.	6		
2	WALLS	9		
3	ROOFS	10.5		
4	DOOR + WINDOWS	8.5		
5	CROSS	12		
TOTAL		46		

PV

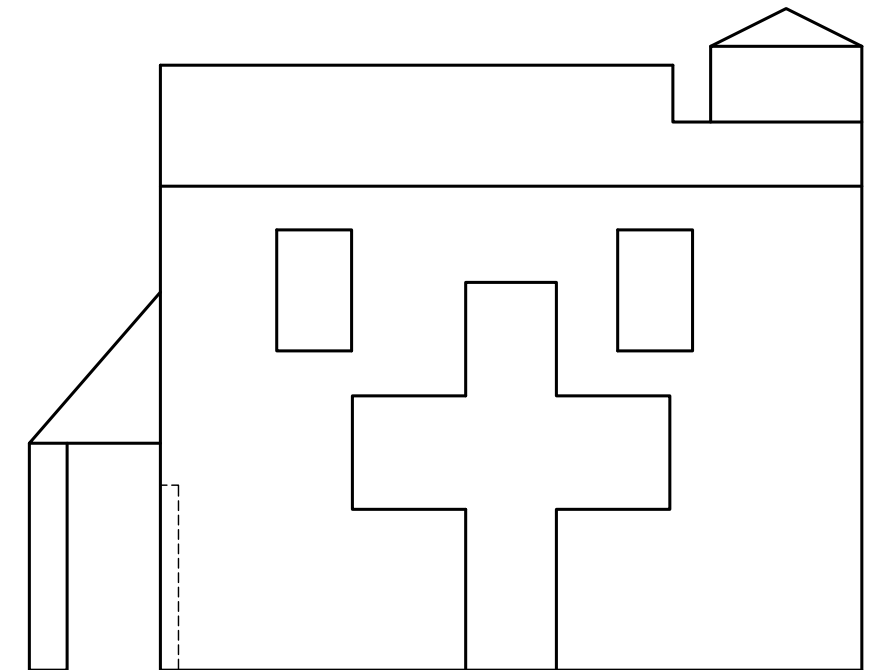
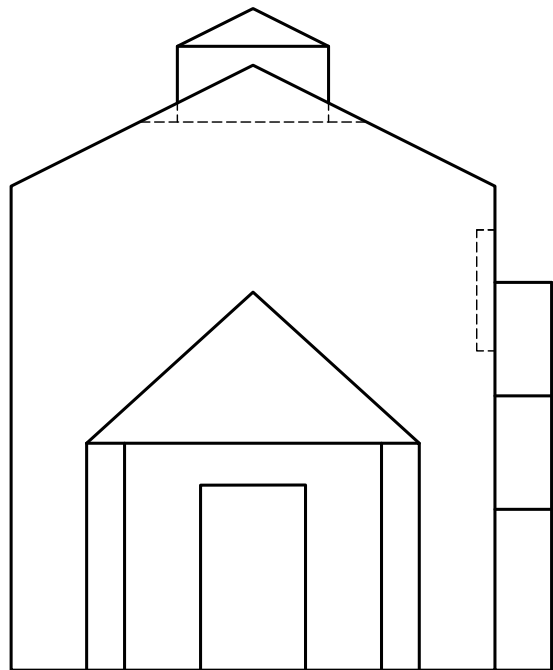
PV

HL

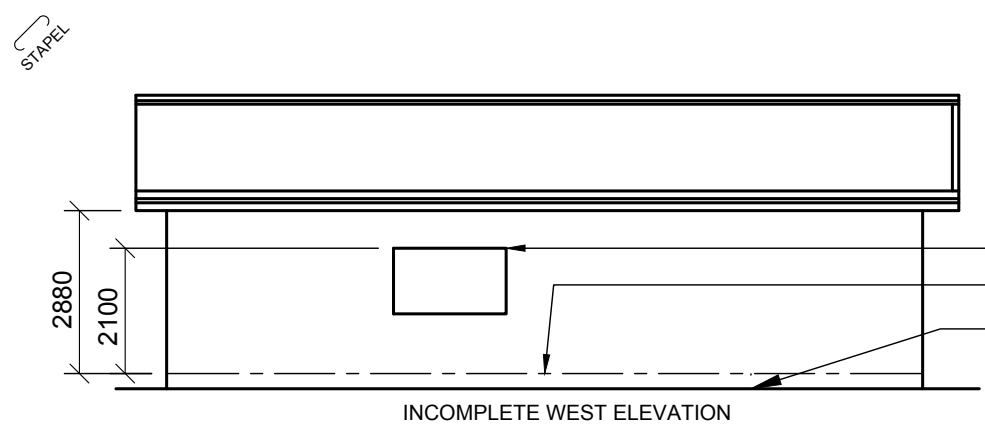
HL

GL

GL



QUESTION 4: CIVIL DRAWING



INCOMPLETE WEST ELEVATION

WINDOW OPENING
FINISHED FLOOR LEVEL
GROUND LINE

FEATURES

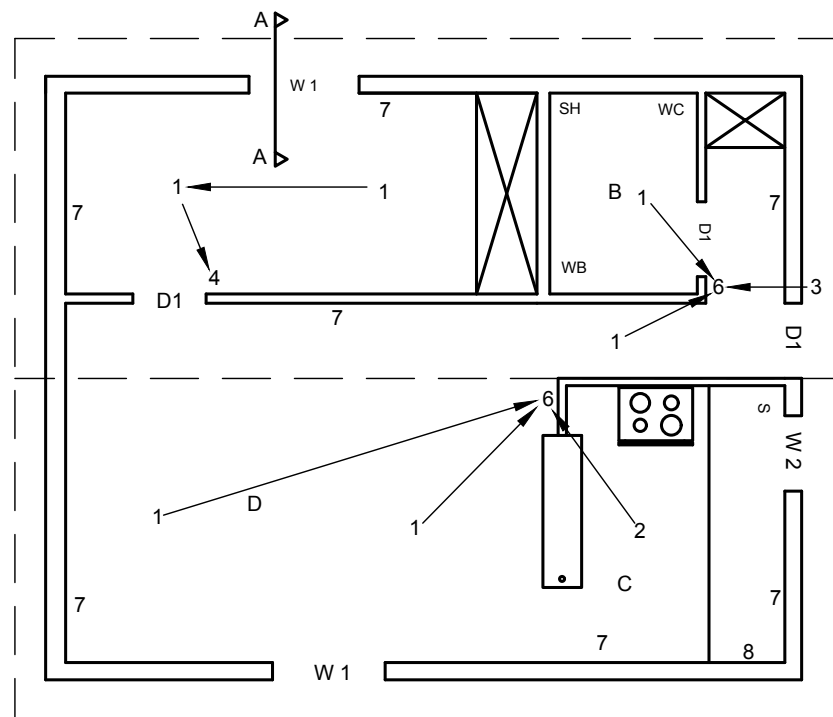
- A. BEDROOM (CARPET)
- B. BATHROOM (TILES)
- C. KITCHEN (TILES)
- D. LIVING AREA (CARPET)

FIXTURES

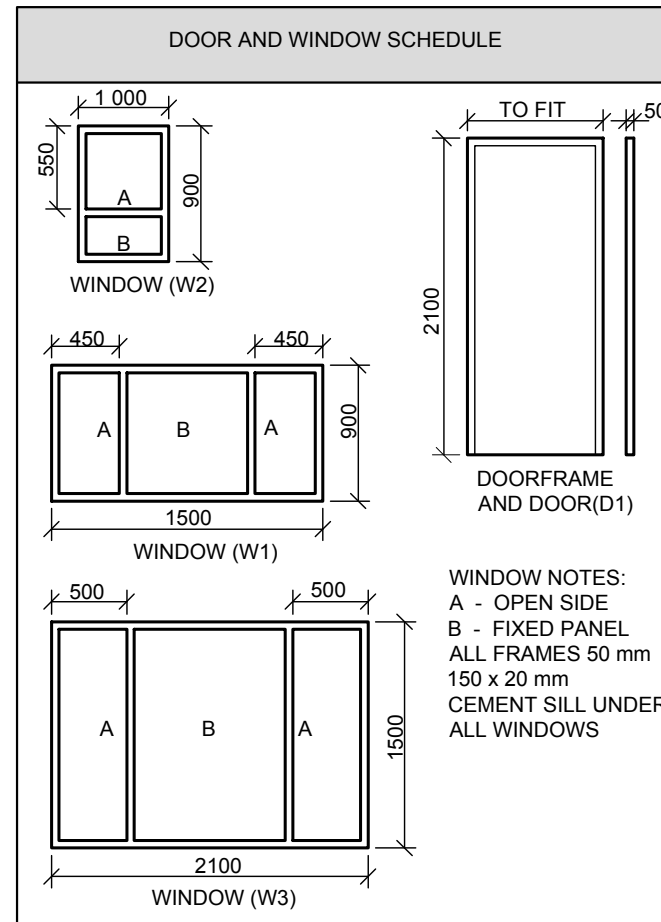
- S - SINK
- WB - WASH BASIN
- SH - SHOWER
- WC - TOILET

ELECTRICAL FEATURES

1. CEILING LIGHT
2. 2 X 40 W FLUORESCENT LIGHT
3. WALL MOUNTED LIGHT
4. LIGHT SWITCH - SINGLE POLE
5. LIGHT SWITCH - DOUBLE POLE
6. LIGHT SWITCH - TRIPLE POLE
7. SWITCH SOCKET OUTLET
8. DISTRIBUTION BOARD



INCOMPLETE FLOORPLAN
SCALE 1:100



DOOR AND WINDOW SCHEDULE

WINDOW NOTES:
A - OPEN SIDE
B - FIXED PANEL
ALL FRAMES 50 mm
150 x 20 mm
CEMENT SILL UNDER
ALL WINDOWS

Given:

- The incomplete floor plan indicating the walls, position of the doors, windows, fixtures and the electrical layout.
- The incomplete foundation- and external wall detail.
- The incomplete west elevation.
- A window and door schedule.
- A table with electrical symbols.
- A table with fixtures.
- The incomplete floor plan and west elevation of the new cottage drawn to a scale of 1:50 on page 6.
- The incomplete section view of the new cottage, drawn to a scale of 1:20 on page 6.

Instructions:

Answer the question on page 6.

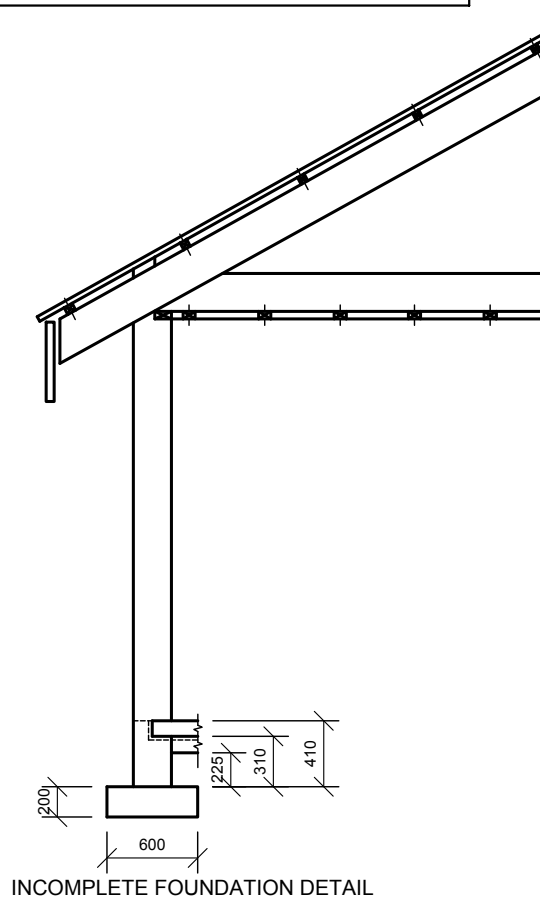
- 4.1 Use the given incomplete floor plan and draw in first orthographic projection the following views of the cottage to scale 1:50:
 - 4.1.1 **THE COMPLETE FLOOR PLAN.**
Add the following features to the drawing:
 - ALL doors and windows.
 - ALL fixtures placed as indicated by the abbreviations.
 - ALL electrical fixtures as indicated by the numbers.
 - ALL hatching detail.
 - ALL the room designations.
 - Name the view and indicate the scale.
 - 4.1.2 **THE COMPLETE WEST ELEVATION:**
Add the following features to the drawing:
 - The external walls, finished floor level and window.
 - Name the view and indicate the scale.
- 4.2 **THE SECTIONAL ELEVATION TO A SCALE OF 1:20:**
Add the following features to the drawing:
 - Complete foundation and external wall detail.
 - The window that is cut through the section.
 - ALL hatching detail. Only the sub-structure hatching may be done in freehand.
 - Name the view and indicate the scale.

Label the following:

Use the correct abbreviation and placing it to the correct elevations the NATURAL GROUND LEVEL, FINISHED FLOOR LEVEL AND DAMP PROVE COURSE.

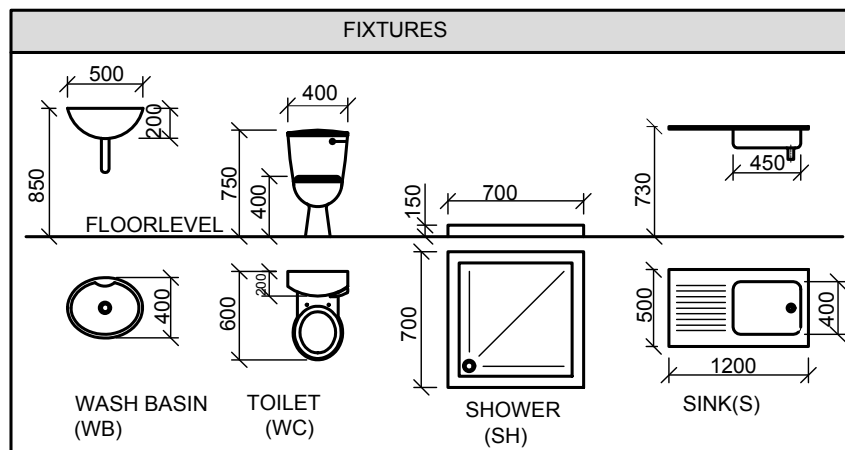
NOTE:

ALL drawings must comply with the SANS 10143.

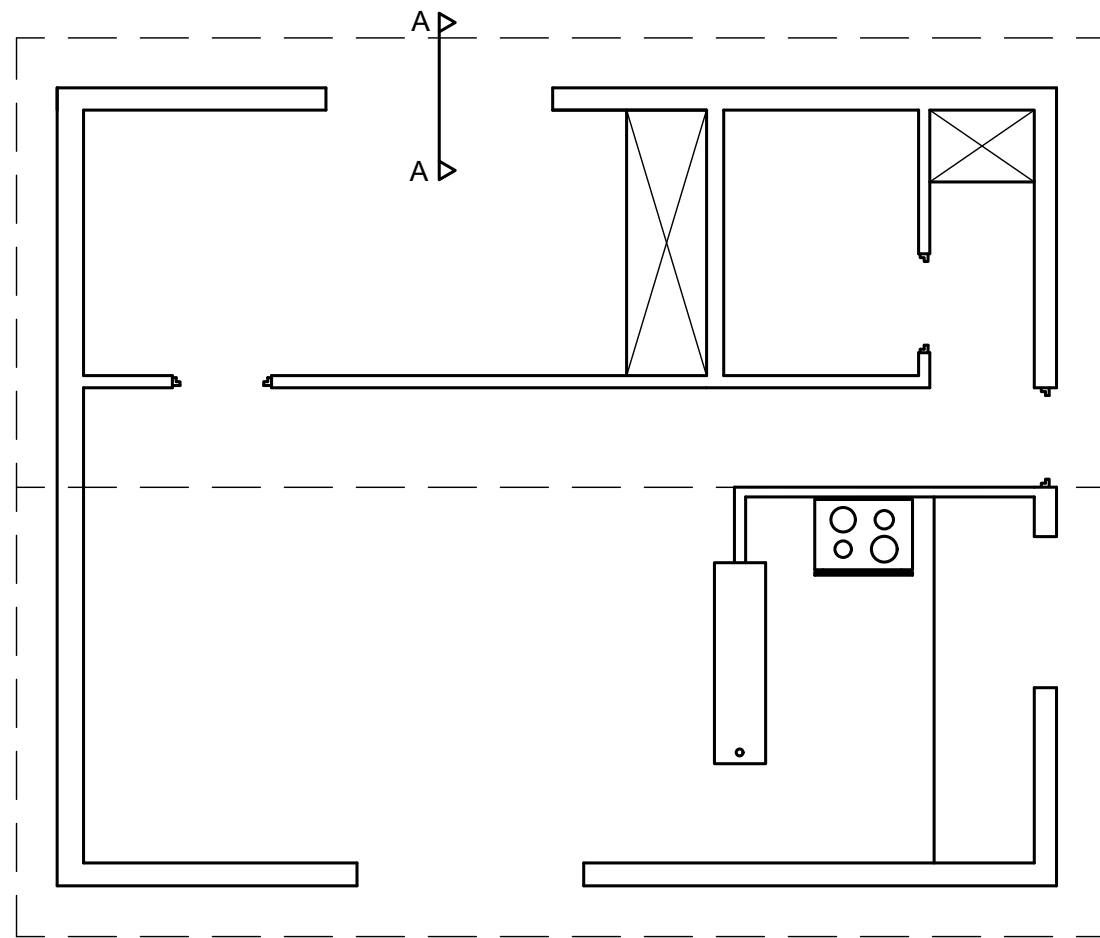
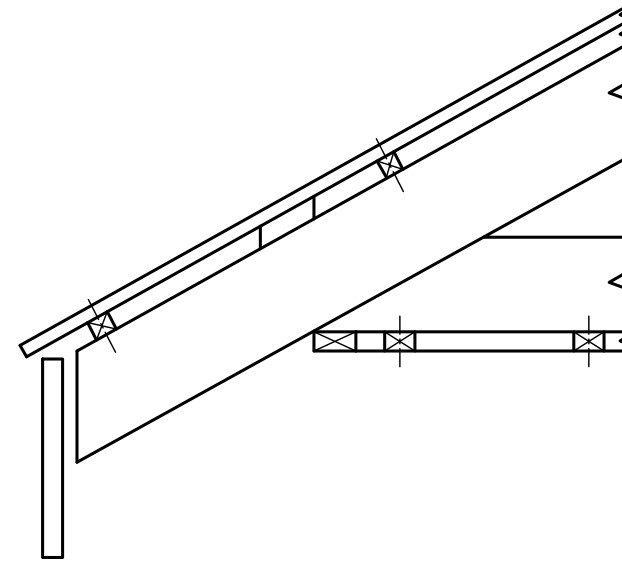


INCOMPLETE FOUNDATION DETAIL

ELECTRICAL SYMBOLS	



STAPEL



ASSESSMENT CRITERIA				
FLOOR PLAN				
1	DOORS + WINDOWS	10.5		
2	ELECTRICAL	13.5		
3	FIXTURES	9		
4	HATCHING	4		
5	LABELS	6		
SUB TOTAL 1		43		
WEST VIEW				
1	WALLS + FFL	3		
2	WINDOWS	5		
3	LABELS	3		
SUB TOTAL 2		11		
SECTIONAL ELEVATION				
1	FOUNDATION + WALL	7		
2	WINDOW	4		
3	HATCHING	10		
4	LABELS	5		
SUB TOTAL 3		26		
TOTAL		80		



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