



**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.

**ENGINEERING GRAPHICS AND DESIGN**

**GRADE 12**

**PAPER 1**

**JUNE 2019**

**TIME: 3 HOURS**

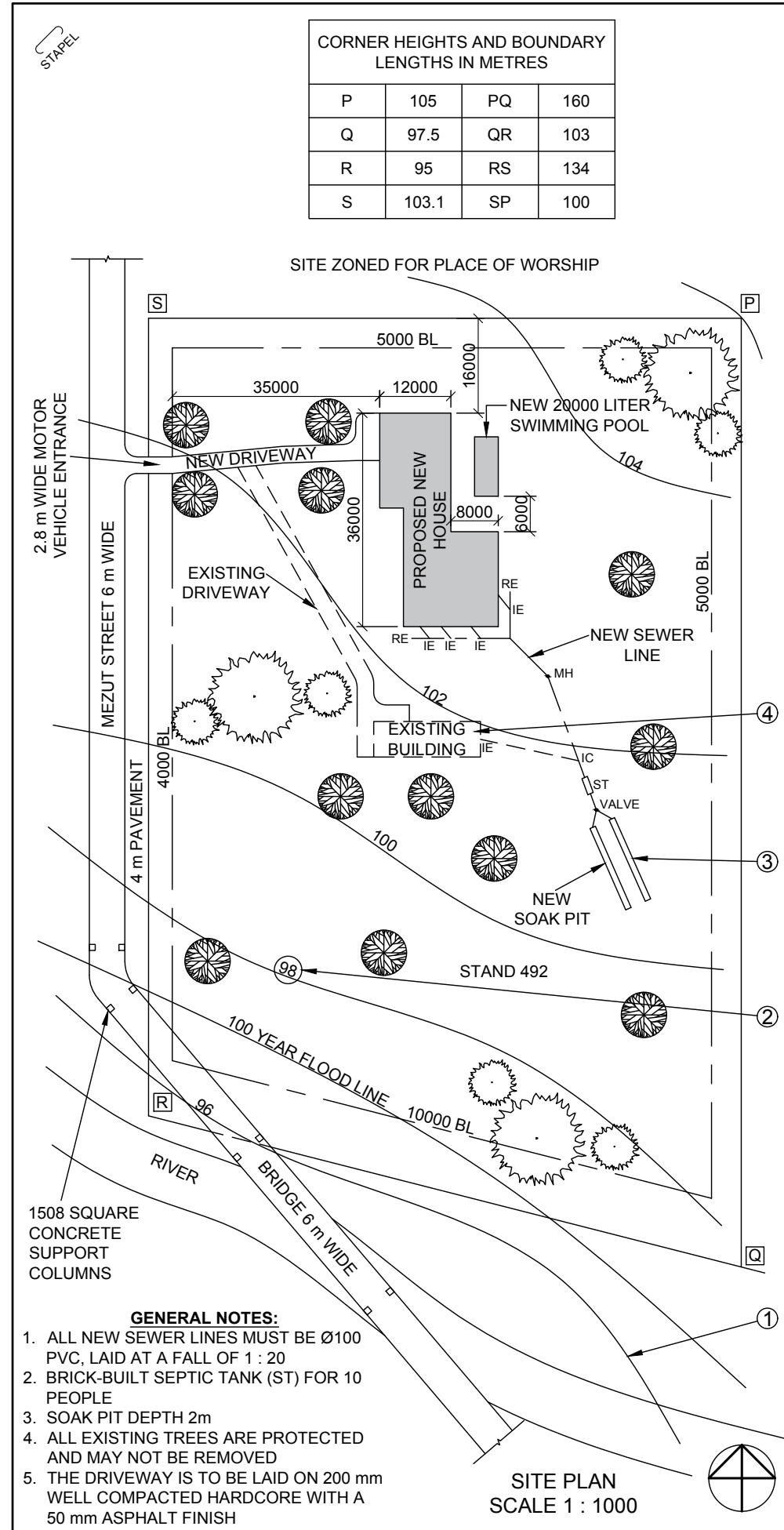
**TOTAL: 100**

This question paper consists of 6 pages

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
100	

NAME & SURNAME		GRADE		<b>1</b>
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P	105	PQ	160
Q	97.5	QR	103
R	95	RS	134
S	103.1	SP	100

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 .....

REVISION	DATE	DESCRIPTION
3		
2		
1	12-06-2017	Include a soak pit

**YURI ARCHITECTS**  
25 AGUSTA ROAD  
DURBAN  
4097  
TEL: 081 991 9692

PRINTED BY: THULA PRINTERS  
DATE OF PRINT: 10-09-2017

DRAWING TITLE:  
**SITE PLAN**

PROJECT:  
PROPOSED NEW DWELLING AND POOL FOR MR AND MRS OLIVIER OF STAND 492, 18 MEZUT STREET, HANENHEIM, PINETOWN

PROJECT NUMBER: JB-12/2017  
DRAWING NUMBER: AC 12/36/300

DATE: 2017-06-20  
DRAWN: JOHANN  
CHECKED: MORNE  
SCALE: 1 : 1000

REFERENCE CODE: P1Q1-SEPT2017

- GENERAL NOTES:**
- ALL NEW SEWER LINES MUST BE Ø100 PVC, LAID AT A FALL OF 1 : 20
  - BRICK-BUILT SEPTIC TANK (ST) FOR 10 PEOPLE
  - SOAK PIT DEPTH 2m
  - ALL EXISTING TREES ARE PROTECTED AND MAY NOT BE REMOVED
  - THE DRIVEWAY IS TO BE LAID ON 200 mm WELL COMPACTED HARDCORE WITH A 50 mm ASPHALT FINISH

**QUESTION 1: ANALYTICAL (CIVIL)**

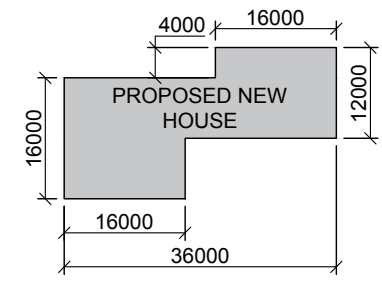
**Given:**  
The site plan for a proposed new house and swimming pool, a title panel and a table of questions. The drawing has not been prepared to the indicated scale.

**Instructions:**  
Complete the table below by neatly answering the questions, which refer to the accompanying drawing title panel. [24]

QUESTIONS		ANSWERS	
1	What type of drawing is presented?	1	
2	What architectural firm prepared the drawing?	2	
3	What is the project number?	1	
4	What is the width of the bridge in meters?	1	
5	What finishing must be applied to the driveway?	1	
6	How many new inspection eyes are indicated?	1	
7	What is the shortest distance from Mezut Street to the proposed new house?	1	
8	What is the land used for north of the property?	1	
9	What does the line at 1 indicate?	2	
10	What does the circled number on the line at 2 indicate?	1	
11	What is the depth of the feature at 3 in millimeters?	1	
12	What does the broken line at 4 indicate?	1	
13	What does the abbreviation ST stand for?	1	
14	What is the fall of the new sewerage line?	1	
15	What is the height at corner R	1	
16	Which elevation of the new house is viewed from the new driveway?	1	
17	In the space below (ANSWER 15), determine the perimeter of the proposed new house in meters.	3	
18	In the space below (ANSWER 16), determine the total area of the stand in square meters.	3	
<b>TOTAL</b>		<b>24</b>	

ANSWER 17  
Show ALL calculations.

ANSWER 18  
Show ALL calculations.





**QUESTION 2: SOLID**

**Given:**

The uncompleted front view and top view of a triangular pyramid and square prism with a square pyramid as a hole. The position of side AC.

**Instruction:**

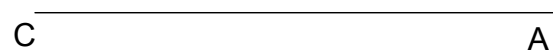
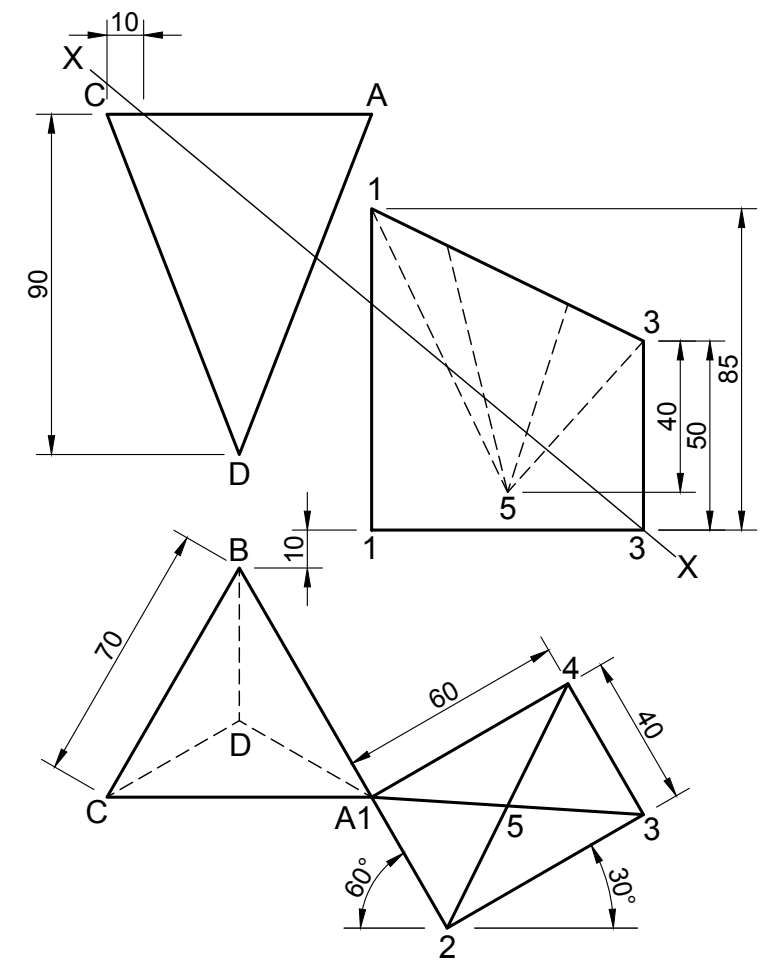
Draw to scale 1:1 the following views:

- 2.1 A sectional top view on section X-X.
- 2.2 The completed front view.
- 2.3 A section right view on section X-X.

**Note:**

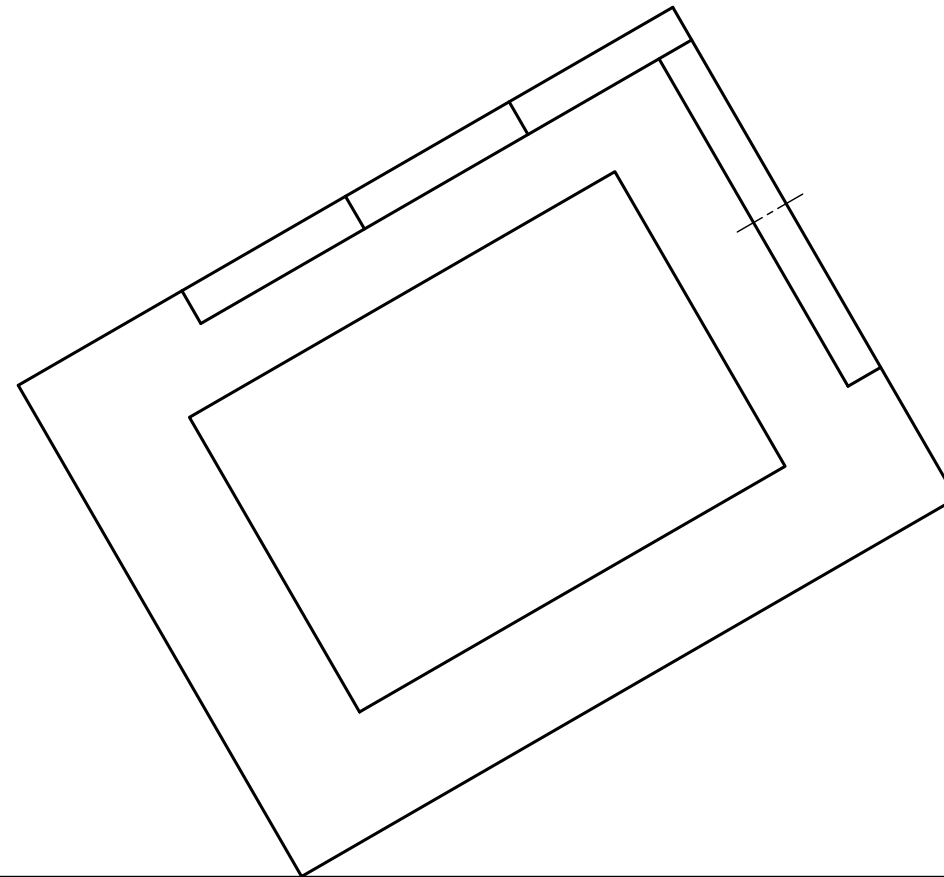
All hidden detail must be shown.

[40]



ASSESSMENT CRITERIA			
1	FRONT VIEW	16	
2	SECTIONAL TOP VIEW	11.5	
3	SECTIONAL RIGHT VIEW	12.5	
TOTAL		40	

STAPEL



**QUESTION 3: PERSPECTIVE**

**Given:**

Two views of a swimming pool area and the information needed to draw a two-point perspective drawing

PP - Picture plane

HL - Horizon line

GL - Ground Line

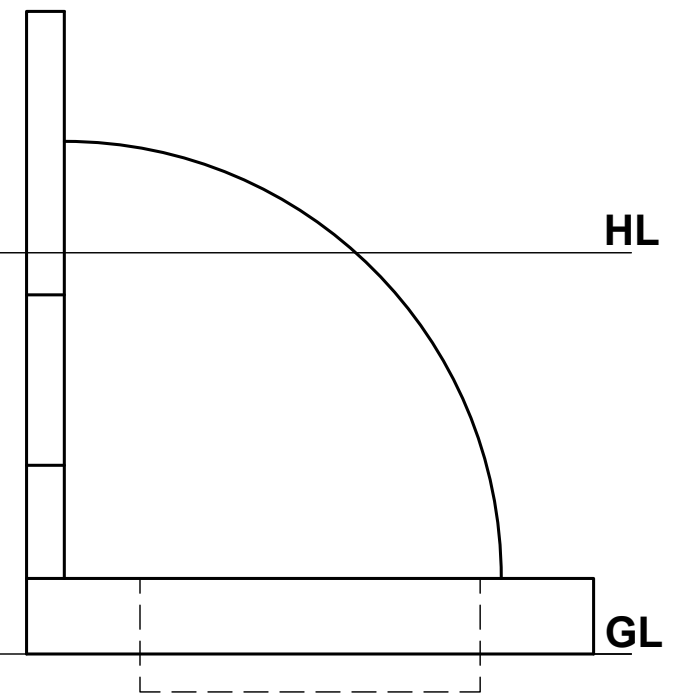
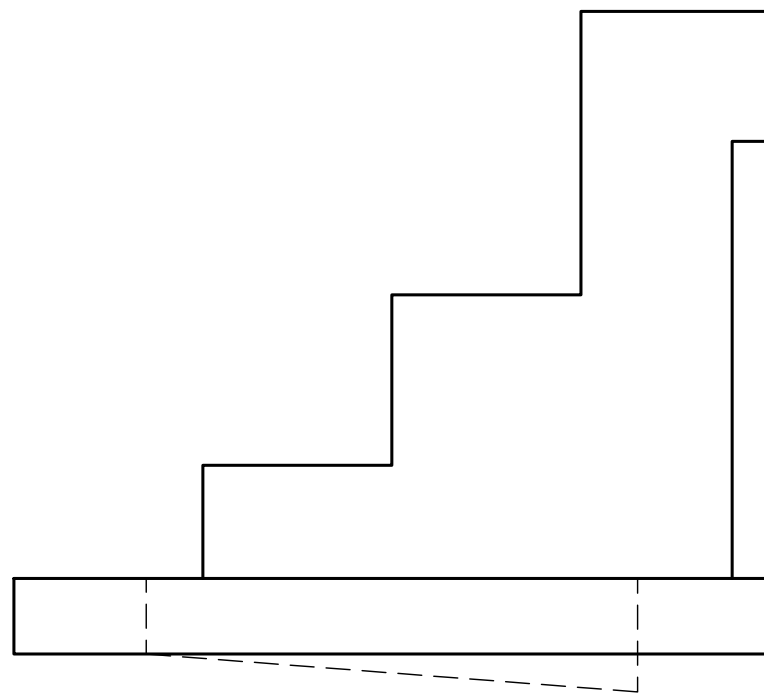
SP - Station point

**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.

(40)

**PV**



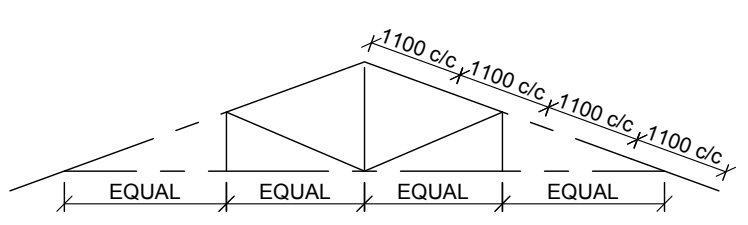
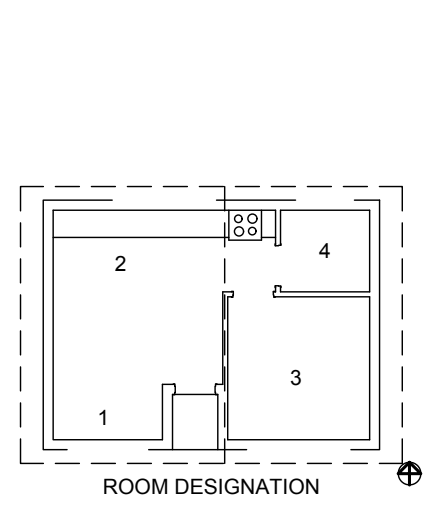
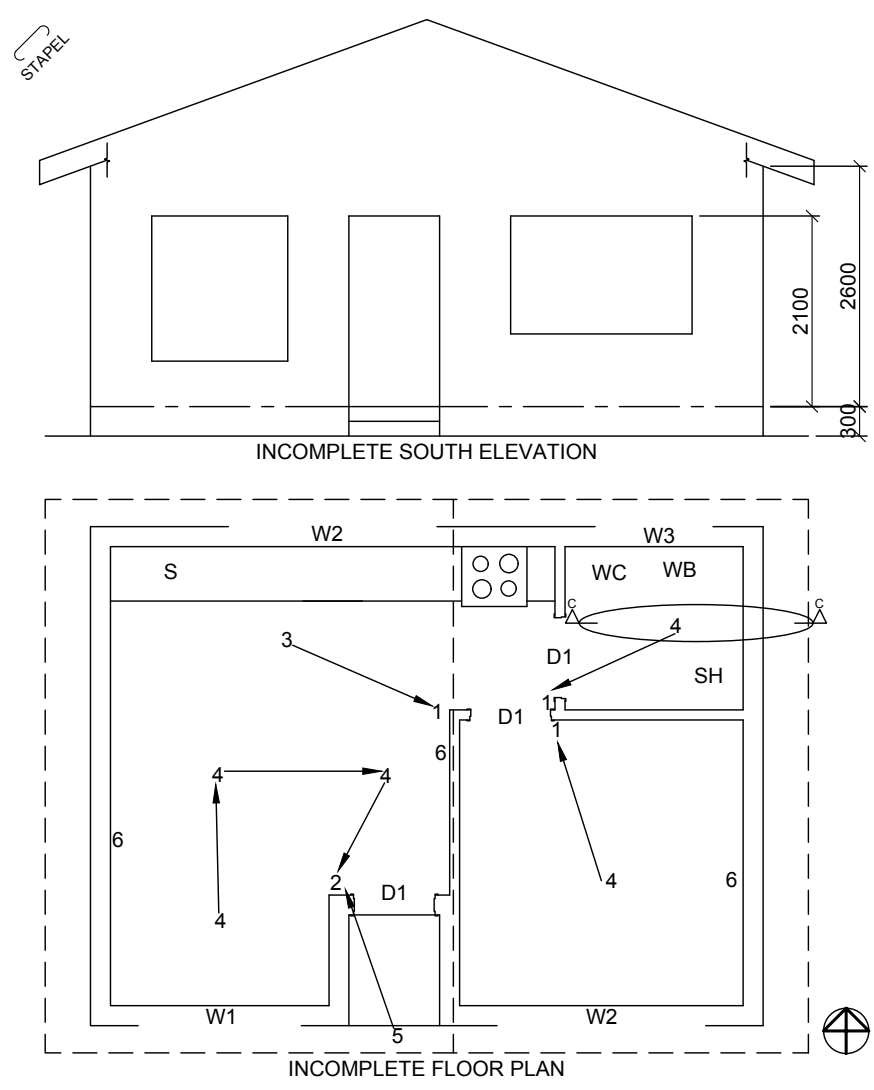
**HL**

**GL**

**+ SP**

**ASSESSMENT CRITERIA**

1	CONSTRUCTION	6		
2	FLOOR & SWINGPOOL	17		
3	WALL	9		
4	CIRCLE	8		
TOTAL		40		

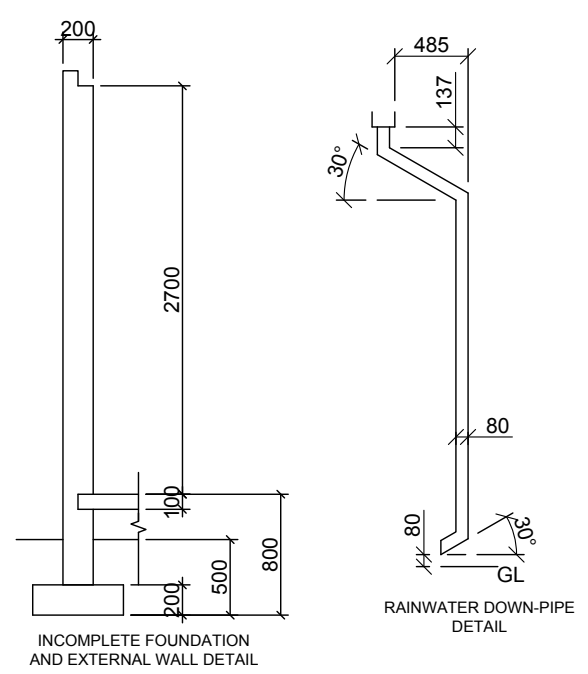


**ROOF NOTES:**  
 ROOF PITCH 20°  
 115 x 38 mm ROOF TRUSSES ON 115 x 38 mm WALL PLATES  
 ROOF OVERHANG 500 mm TO END OF ROOF TRUSSES  
 ROOF COVER 40 mm IBR SHEETING ON 75 X 50 mm PURLINS @ 1100 mm c/c  
 220 x 20 mm FASCIA BOARD ON ALL SIDES  
 100 x 150 mm GUTTERS ON ALL SIDES  
 9 mm CEILING BOARDS OP 38 x 38 mm BRANDING STRIPS @ 400 mm c/c

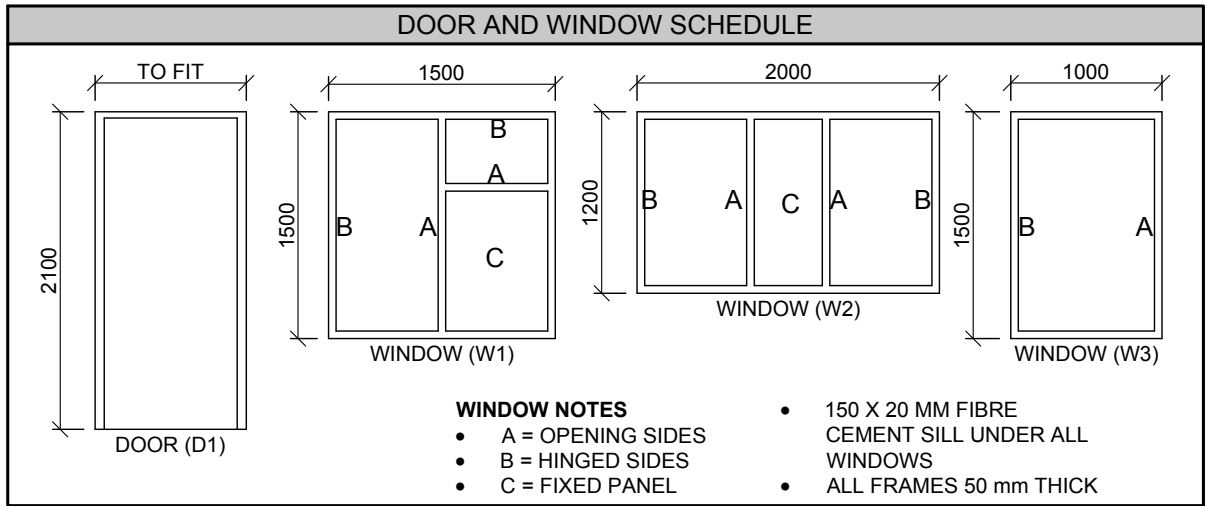
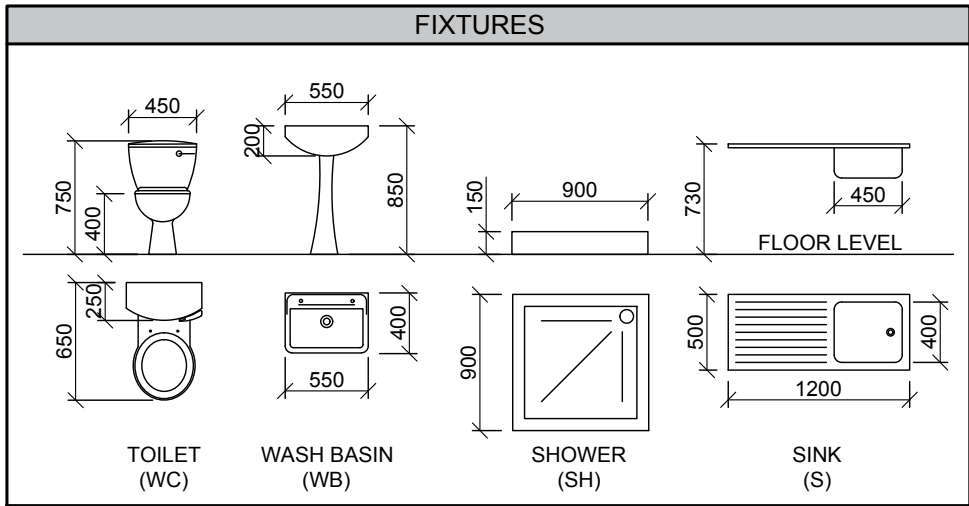
**FLOOR FINISHES**  
 1. LIVING AREA WOOD  
 2. KITCHEN WOOD  
 3. BEDROOM CARPET  
 4. BATHROOM TILE

ROOF COMPONENTS			
	114 x 38mm WALL PLATE		300 x 75 x 10 mm FIBRE CEMENT BARGE BOARD
	200 x 20 mm FASCIA BOARD		ROOF CAP

ELEKTRIESE SIMBOLE			



- FEATURES**  
 D1 DOOR  
 W1 WINDOW  
 W2 WINDOW  
 W3 WINDOW
- FIXTURES**  
 WC TOILET  
 WB WASH BASIN  
 SH SHOWER  
 S SINK
- ELECTRICAL FITTINGS**  
 1. ONE-WAY SWITCH - SINGLE POLE  
 2. ONE-WAY SWITCH - DOUBLE POLE  
 3. FLUORESCENT LIGHT 2 x 40 W  
 4. CEILING LIGHT  
 5. WALL-MOUNTED LIGHT  
 6. SWITCH SOCKET OUTLET
- NOTE:**  
 THE ARROW SHOWS THE LIGHT CONNECTION TO THE SWITCH.



**WINDOW NOTES**

- A = OPENING SIDES
- B = HINGED SIDES
- C = FIXED PANEL
- 150 X 20 MM FIBRE CEMENT SILL UNDER ALL WINDOWS
- ALL FRAMES 50 mm THICK

**QUESTION 4: CIVIL DRAWING**

- Given:**
- The incomplete floor plan showing the walls, positions of the doors, window, fixtures and electrical layout.
  - The incomplete south elevation showing the walls, window openings and roof.
  - A schematic diagram of a roof truss and roof notes
  - The incomplete foundation and external wall detail.
  - Room designations and floor.
  - The rainwater down-pipe detail.
  - A door and window schedule.
  - A table of electrical symbols.
  - A table of fixtures.
  - A table of features fixtures en electrical fittings.
  - The incomplete floor plan of the new house, drawn to scale 1: 50, and the incomplete foundation and break line of the detailed section, drawn 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 a scale 1:50, the following views of the new 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 COMPLETE SOUTH ELEVATION.**  
 Show the following features on the drawing:
- The outside walls, door and window detail.
  - The roof detail, including the fascia boards, barge boards, gutters and rainwater down-pipe.
  - The finished floor level.

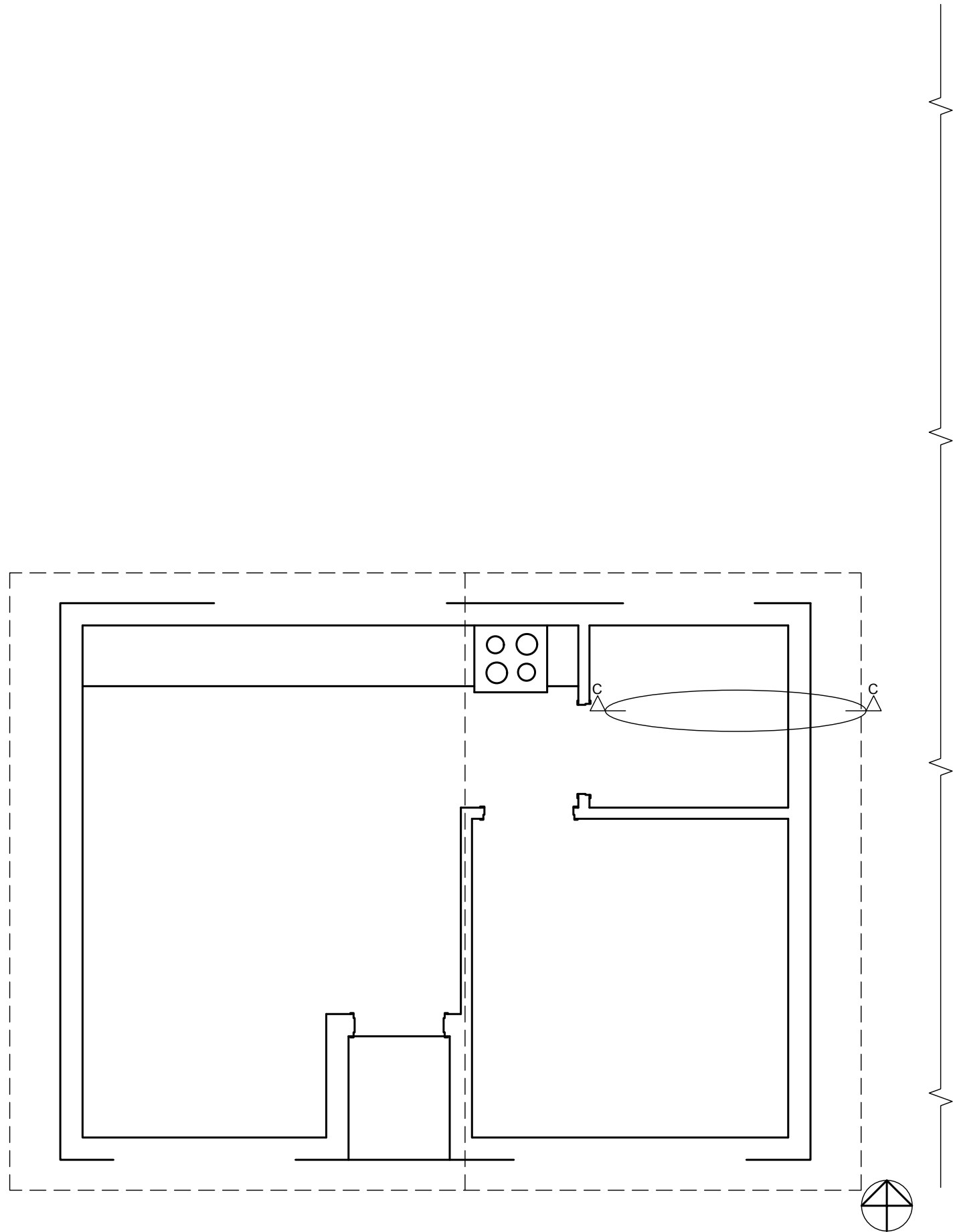
- 4.2** Using the incomplete foundation and break line on page 6, draw, to scale 1:20, a DETAILED SECTION on cutting plane C-C of the area in the ellipse shown on the incomplete floor plan.  
 Show the following features on the drawing:
- The complete detail of the foundation and walls
  - The roof detail, including the fascia board en gutter
  - ALL hatching detail. ONLY the substructure hatching may be drawn in neat free hand.

- Label the following:**
- The south elevation.
  - The room designations and floor finishes.
  - Ground level and finished floor level (use the correct abbreviations and show them on ALL the relevant views.

**NOTE:**

- ALL drawings must comply with the guidelines and graphical symbols as contained in the SANS 10143.

STAPEL



MARK ALLOCATION FOR ROOF SECTION (4.2)	
A (1)	
B (1)	
C (2)	
D (4)	
E (1)	
F (1)	
G (1)	
H (1)	
TOTAL (12)	

ASSESSMENT CRITERIA				
FLOOR PLAN				
1	DOORS + WINDOWS	11		
2	FIXTURES	9		
3	ELECTRICAL	10		
4	HATCHING	4		
5	LABELS	4		
SUB TOTAL 1		38		
SOUTH ELEVATION				
1	ROOF + RWDP	7		
2	WALLS + FFL + STEP	4		
3	DOOR + WINDOW	11		
4	LABELS	2		
SUB TOTAL 2		24		
DETAILED SECTION				
1	ROOF	12		
2	FOUNDATION + WALL + SLAB	6		
3	HATCHING	8		
4	FIXTURES + WINDOW	8		
SUB TOTAL 3		34		
GRAND TOTAL		96		

