



HILLCREST HIGH SCHOOL

GRADE 10

**ENGINEERING GRAPHICS AND DESIGN
NOVEMBER EXAMINATIONS 2022
PAPER 1**

**MARKS : 95
TIME : 2 HOURS**

INSTRUCTIONS AND INFORMATION

1. This question paper consists of **THREE** questions and **FIVE** pages.
2. Answer **ALL** the questions.
3. **ALL** drawings are in first-angle orthographic projection, unless otherwise stated.
4. **ALL** drawings must be prepared using pencil and instruments, unless otherwise stated.
5. **ALL** answers must be drawn accurately and neatly.
6. **ALL** the questions must be answered on the **QUESTION PAPER**, as instructed.
7. **ALL** the pages, irrespective of whether the question was attempted or not, must be re-stapled in numerical sequence in the **TOP LEFT-HAND CORNER ONLY**.
8. Time management is essential in order to complete all the questions.
9. Print your name in the block provided on every page.
10. Any details or dimensions not given must be assumed in good proportion.

FOR OFFICIAL USE ONLY				
QUESTION	LEARNERS MARK	MODERATED MARK		
ONE		20		
TWO		18		
THREE		57		
TOTAL	9	5		

FINAL CONVERTED MARK	CHECKED BY
100	

01

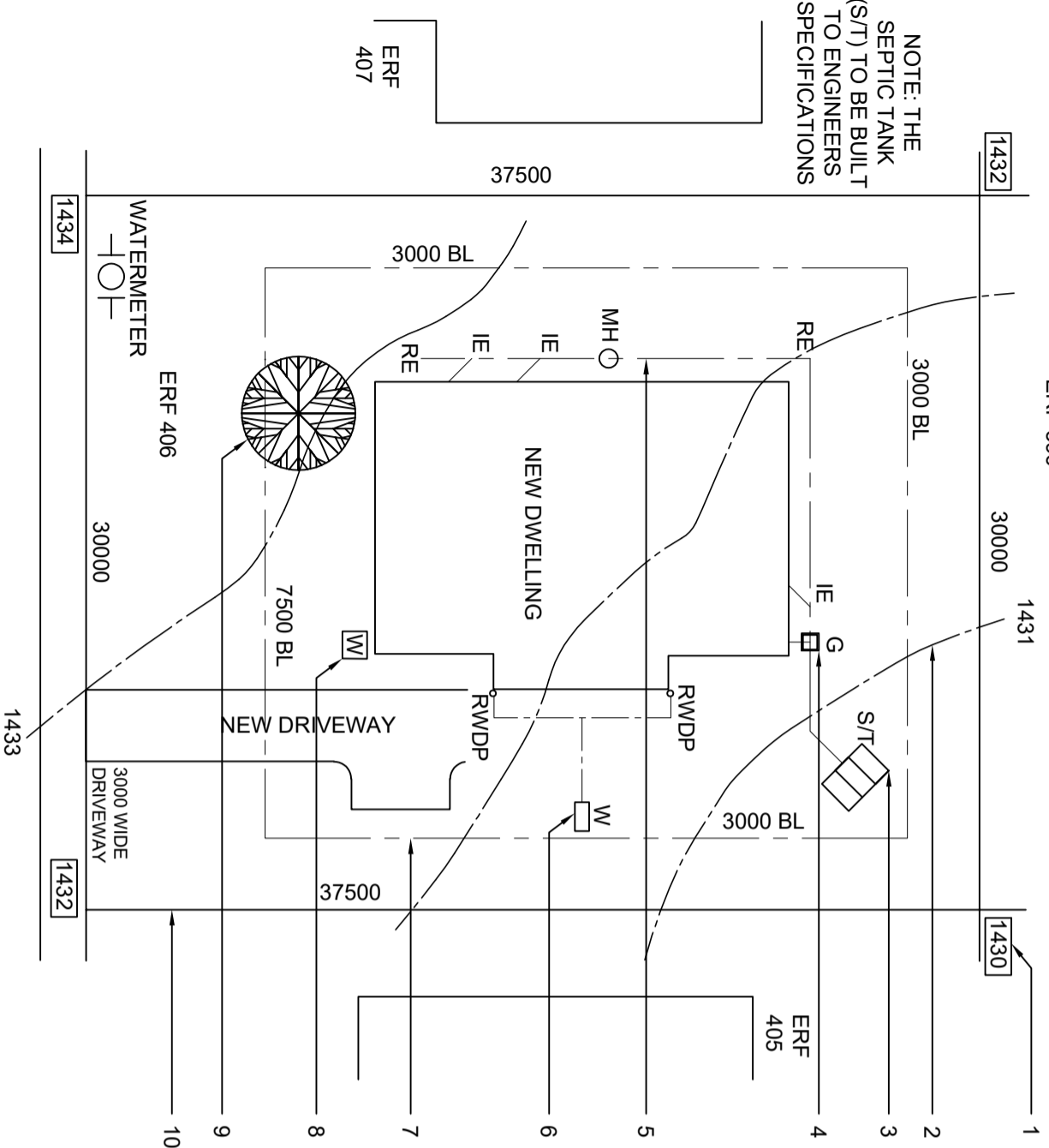
QUESTION ONE : CIVIL ANALYTICAL

GIVEN:
The site plan of a proposed new dwelling and a table of questions.

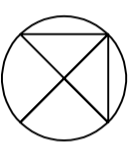
INSTRUCTIONS:

Complete the table below by neatly answering the questions, which all refer to the accompanying drawing.

[20]



**SITE PLAN
NTS**



QUESTIONS

ANSWERS

1	What is the name of the street?		1
2	How many complete stands are shown on the site plan?		1
3	What does NTS stand for?		1
4	Name the feature at 1.		1
5	Name the line at 2.		1
6	Name the feature at 3.		1
7	Name the feature at 4.		1
8	Name the line at 5.		1
9	Name the feature at 6.		1
10	Name the line at 7.		1
11	Name the feature at 8.		1
12	Name the feature at 9.		1
13	Name the line at 10.		1
14	Which elevation of the new dwelling faces Inyoni Drive?		1
15	What does RWDP stand for?		1
16	How wide, in metres , is the new driveway?		1
17	Determine the total area of the stand, in squared metres . Show ALL calculations		2
18	In the space provided draw, in neat freehand, the front and top view for a BATH.		2
TOTAL:			20

QUESTION 18

QUESTION TWO: SOLID GEOMETRY

Given:

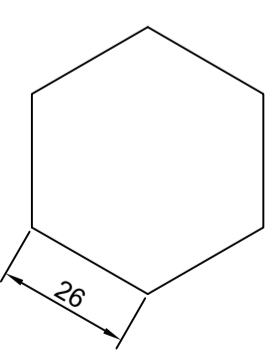
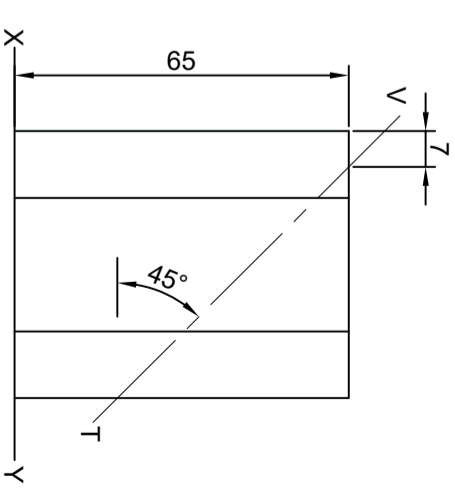
The front view and top view of a right regular hexagonal prism. The prism is being sectioned by cutting plane V-T.

Instruction:

Draw to a scale 1:1, the following views of the solid:

- 2.1. The given **front view**
- 2.2. The **sectional top view**
- 2.3. The **sectional right view**
- 2.4. The **true shape** of the cut

- Show ALL construction [25]
- Show ALL hidden detail



ASSESSMENT CRITERIA			
	POSSIBLE	OBTAINED	SIGN MODERATE
1	FRONT VIEW	4	
2	SECTIONAL TOP VIEW	4	
3	SECTIONAL RIGHT VIEW	5	
4	TRUE SHAPE	5	
TOTAL		18	

QUESTION 3: CIVIL DRAWING

Given:

- The incomplete floor plans showing the walls, position of the doors, the windows, the fixtures, the electrical features and room designations
- The incomplete foundation, slab and wall detail
- A door and window schedule
- A table of electrical symbols
- A table of fixtures
- The incomplete plan of the new **food stall**, drawn to scale 1 : 50, on page 5. And the starting point A for the sectional elevation.

Instructions:

- Answer this question on page 5.
- Using the given incomplete floor plan, in first-angle orthographic projection, the following views of the new **food stall**:
 - 3.1 The complete floor plan, scale 1 : 50.
 - 3.2 A sectional elevation on cutting plane A-A, scale 1:50.

- ALL drawings must comply with the **guidelines** and **conventions** contained in the SABS 0143.

SPECIFICATIONS:

THE FLOOR PLAN

Add the following features to the drawing:

- ALL the doors and windows
- ALL fixtures as indicated by letters
- ALL electrical features as indicated by numbers
- ALL hatching detail

THE SECTIONAL ELEVATION

Show the following features on the drawing:

- The complete foundation, wall and floor slab
- ALL hatching detail

Label the following:

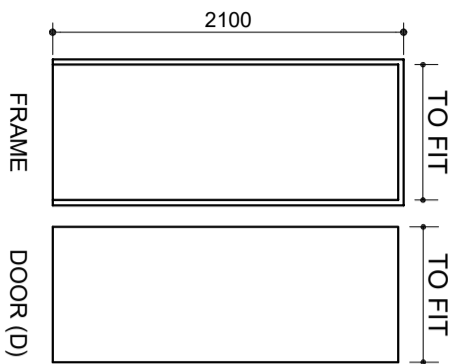
- The room designations and floor finish (tile)
- The sectional elevation on A-A
- Using correct abbreviations, label the following features in the correct view: natural ground level, finished floor level and damp-proof course.

NOTE:

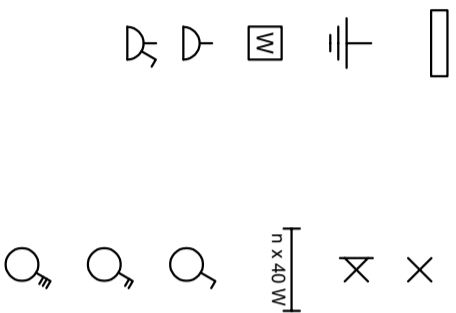
- ONLY the substructure hatching may be drawn in freehand.

[57]

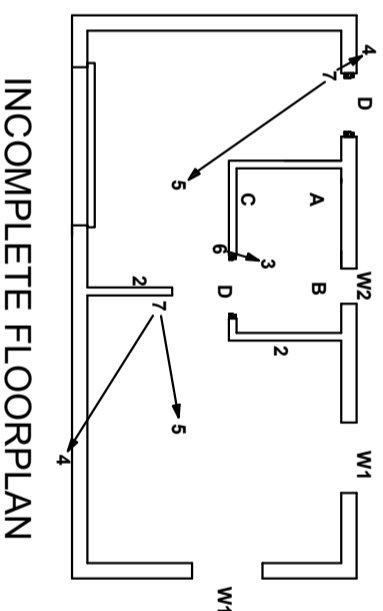
DOOR AND WINDOW SCHEDULE



ELECTRICAL SYMBOLS



POSITION OF ELECTRICAL FITTINGS AND FIXTURES



INCOMPLETE FLOORPLAN

FIGURES

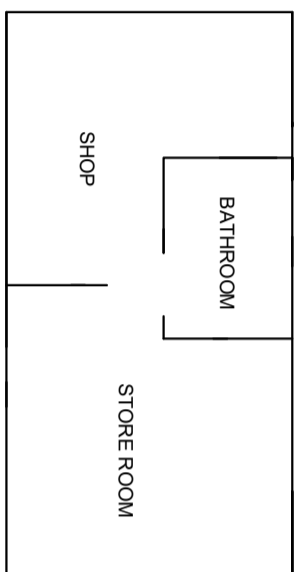
- A. SHOWER
- B. WATER CLOSET
- C. WASH HAND BASIN

FEATURES

- W1. WINDOW
- W2. WINDOW
- D. DOOR

ELECTRICAL FIXTURES

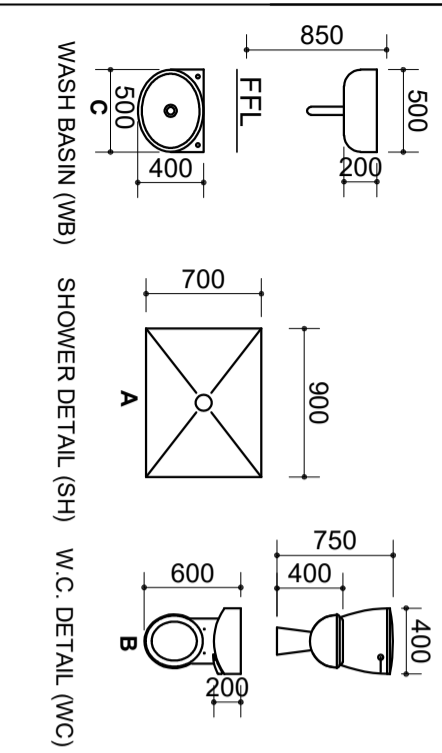
- 1. SOCKET OUTLET
- 2. SWITCHED SOCKET OUTLET
- 3. CEILING LIGHT
- 4. WALL MOUNTED LIGHT
- 5. 2 X 40W FLUORESCENT LIGHT
- 6. LIGHT SWITCH ONE POLE
- 7. LIGHT SWITCH TWO POLE
- 8. LIGHT SWITCH THREE POLE



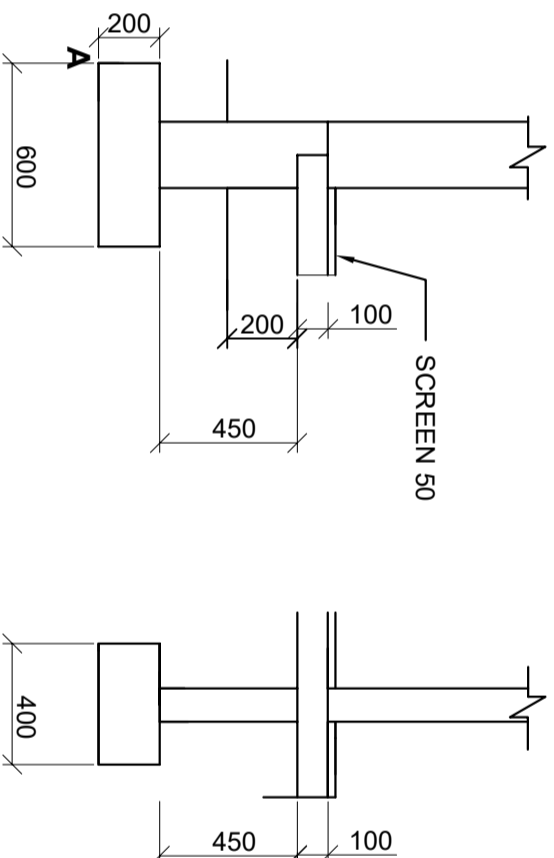
SCHEMATIC FLOOR PLAN



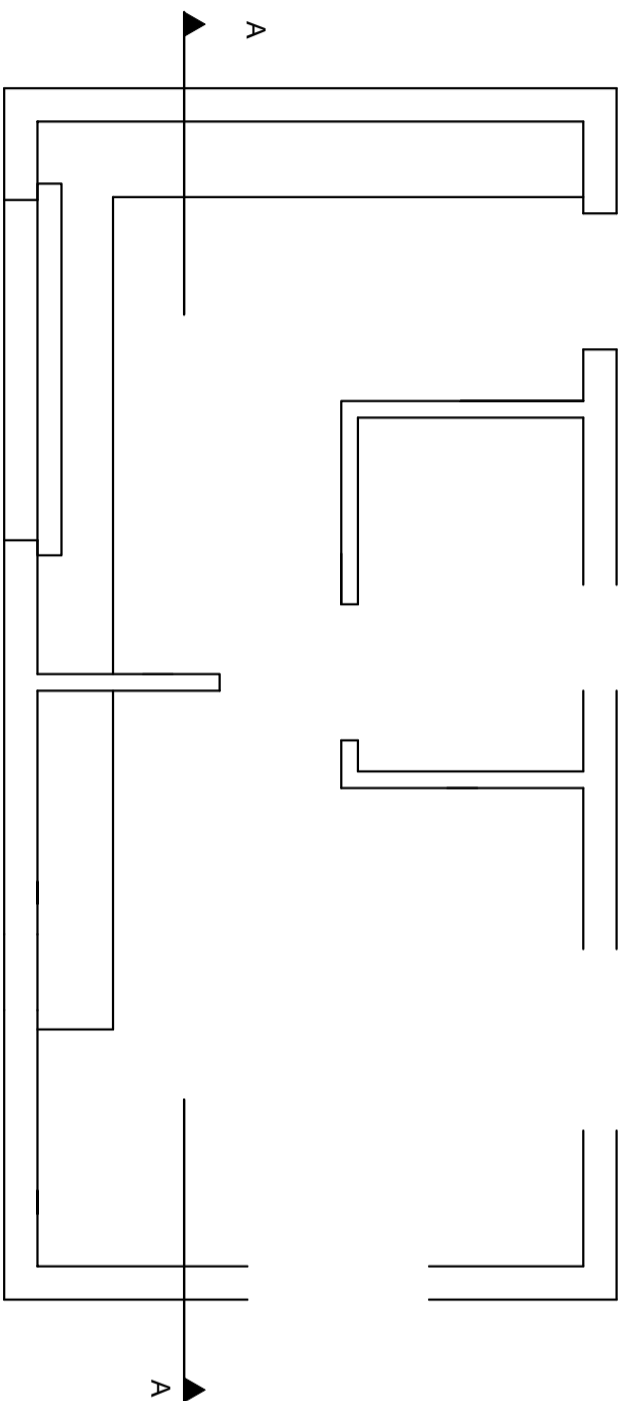
DIMENSIONS OF FIXTURES



INCOMPLETE FOUNDATION/SLAB



A



ASSESSMENT CRITERIA

PLAN		SIGN	
1	LABELS	5½	
2	ELECTRICAL	7½	
3	FIXTURES	3	
4	DOORS + WINDOWS	8	
5	HATCHING	6	
SUBTOTAL		30	
SECTIONAL ELEVATION			
1	WALLS + FOUNDATION	15½	
3	HATCHING	9	
4	LABELS	2½	
SUBTOTAL		27	
TOTAL		57	