



Destinataskool  
Destinata School

**JUNIE / JUNE 2018**  
**EKSAMEN / EXAMINATION**

EKSAMINATOR/ EXAMINER: F. MARX  
MODERATOR: J. NAUDE

GR 11

**INGENIEURSGRAFIKA EN –ONTWERP V1**  
**ENGINEERING GRAPHICS AND DESIGN P1**

Totaal/ Total: 200

Tyd/ Time: 3 ure/hrs

**INSTRUKSIES EN INLIGTING**

- Beantwoord ALLE vrae.
- Alle tekene moet volgens skaal 1:1 gemaak word, tensy anders vermeld.
- Alle vrae moet op die gegewe antwoordvulle beantwoord word.
- Alle antwoordvulle moet weer in nommervolgorde vasgeklam en ingelewer word, ongeag of die vraag beantwoord is of nie.
- Sorgvuldige tydsbeplanning is nodig om alle vrae te beantwoord.
- Drukskryf jou naam in die blokkie voorsien op elke antwoordvel.
- Alle antwoorde moet akkuraat en netjies gedoen word.
- Besonderhede of afmetings wat uitgelaat is moet in goeie verhouding beraam word.

**INSTRUCTIONS AND INFORMATION**

- Answer ALL the questions.
- All drawings must be drawn to scale 1:1, unless otherwise stated.
- The questions must be answered on the answer sheets provided.
- All the answer sheets must be re-stapled in numerical sequence and handed in irrespective of whether the question was attempted or not.
- Careful time management is essential in order to complete all the questions.
- Print your name in the block provided on every answer sheet.
- All answers must be drawn accurately and neatly.
- Any details or dimensions not given must be assumed in good proportion.

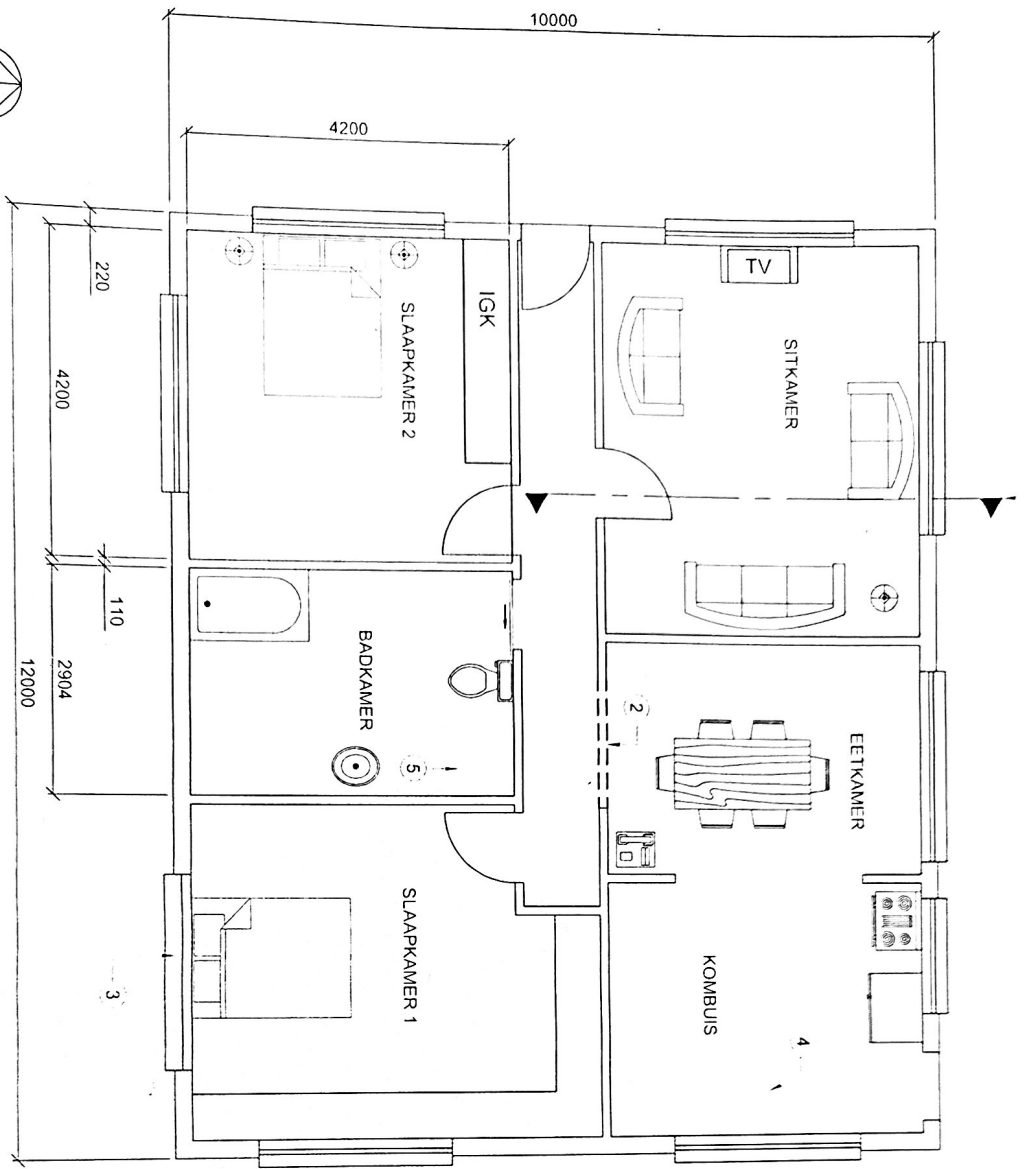
| Punt/Mark |  |
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| VOLTOOI / COMPLETE |       |
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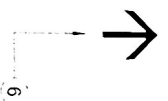
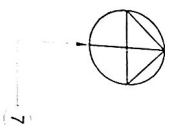
VRAAG 1: SIVIEL ANALITIES

- Gegee:
- 'n Vloerplan van 'n huis
  - 'n Tabel met vrae wat na die tekening verwys.

Instrukties:  
 Beantwoord die vrae deur die antwoorde netjies in die  
 voorsienende spasie op die tabel te drukskryf. (27)



SKAAL 1 : 50



| VRAE   | ANTWOORDE |
|--|-----------|
| 1 Identifiseer TWEE opseltlike ontwerp-foutie in die badkamer.   | 2         |
| 2 Identifiseer EEN opseltlike tekenfout in slaapkamer 2.   | 1         |
| 3 Identifiseer EEN opseltlike tekenfout in die kombuis.  | 1         |
| 4 Watter tekenkenmerk is uit al die mure op die vloerplan wegge laat?  | 1         |
| 5 Waarvoor staan I GK?   | 1         |
| 6 Benoem die tekenkenmerk by 1.  | 1         |
| 7 Wat word deur die lyne by 2 aangedui?  | 1         |
| 8 Identifiseer die tekenfout by 3.   | 1         |
| 9 Teken in die spasie voorsien by 4, op die plan, in netjiese vryhand, die grafiese simbool vir 'n dubbele kombuis-opwasbak. | 4         |
| 10 Teken in die spasie voorsien by 5, op die plan, in netjiese vryhand, die grafiese simbool vir 'n stort.                   | 3         |
| 11 Watter aansig van die huis kan gesien word in die rigting van die pyl by 6?   | 1         |
| 12 Wat is die skaal van die tekening?  | 1         |
| 13 Wat is die dikte van die lasdraende mure in mm?   | 1         |
| 14 Bepaal die vloerarea van slaapkamer 2 in m <sup>2</sup> .   | 2         |
| 15 Bereken die onttrek van die huis in meter.  | 2         |
| 16 Meet die lengte van 'n slaapkamer-verstier op die tekening en omskep hierdie lengte in meter volgens 'n skaal van 1 : 50. | 2         |
| 17 Wat dui die simbool by 7 aan?   | 1         |
| 18 Drukskryf die naam van die aansig netjies bo die skaal in die voorsienende spasie.  | 1         |
|  | 27        |

NAAM

NAAM

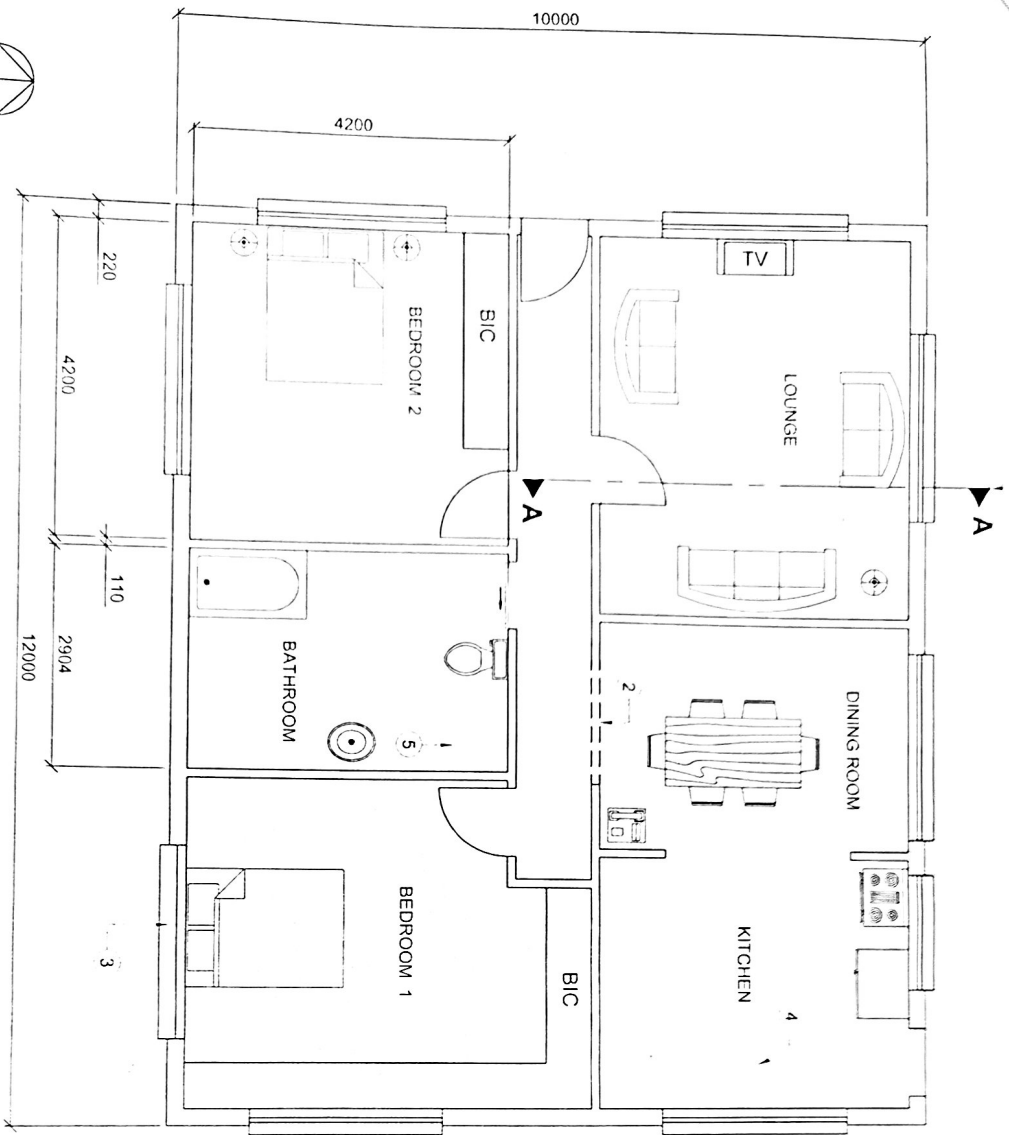
NAAM

SKAAL OM AANWYSE

**QUESTION 1: CIVIL ANALYTICAL**

- Given:**
- A floor plan of a house
  - A table with questions referring to the drawing.

**Instructions:**  
Answer the questions by neatly printing the answers in the space provided on the table. **(27)**



| QUESTIONS |  | ANSWERS |           |
|-----------|--|---------|-----------|
| 1         | Identify TWO deliberate design errors in the bathroom.   |         | 2         |
| 2         | Identify ONE deliberate drawing error in bedroom 2.  |         | 1         |
| 3         | Identify ONE deliberate drawing error in the kitchen.  |         | 1         |
| 4         | What drawing feature has been omitted from all the walls on the floorplan?   |         | 1         |
| 5         | What does BIC stand for?   |         | 1         |
| 6         | Name the drawing feature at 1.   |         | 1         |
| 7         | What do the lines at 2 indicate?   |         | 1         |
| 8         | Identify the drawing error at 3.   |         | 1         |
| 9         | In the space provided at 4, on the plan, draw neatly in freehand, the graphical symbol for a double kitchen sink.        |         | 4         |
| 10        | In the space provided at 5, on the plan, draw neatly in freehand, the graphical symbol for a shower.                     |         | 3         |
| 11        | What view of the house will be seen in the direction of the arrow at 6?  |         | 1         |
| 12        | What is the scale of the drawing?  |         | 1         |
| 13        | What is the thickness of the load bearing walls in mm?   |         | 1         |
| 14        | Determine the floor area of bedroom 2 in m <sup>2</sup> .  |         | 2         |
| 15        | Determine the perimeter of the house in meters.  |         | 2         |
| 16        | Measure the length of a bedroom window on the drawing and determine its length in meters according to a scale of 1 : 50. |         | 2         |
| 17        | What does the symbol at 7 indicate?  |         | 1         |
| 18        | Neatly print the name of the view in the space provided above the scale.   |         | 1         |
|           |  |         | <b>27</b> |

NAME \_\_\_\_\_

NAME \_\_\_\_\_

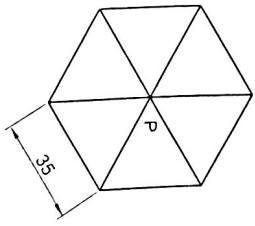
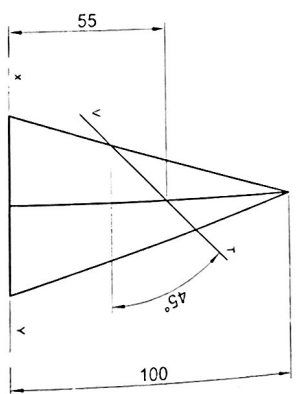
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**QUESTION 2: SECTIONING OF SOLIDS**

- Given:**
- The front view and top view of a right regular hexagonal pyramid cut by an inclined plane VT.
  - A starting point 'P', for drawing the top view.

- Instructions:**
- Draw the given front view.
  - Draw the sectional top view.
  - Draw the sectional left view.
  - Project the true shape of the cut surface.
- Show all constructions.  
No hidden detail is required.
- [35]



| ASSESSMENT CRITERIA   |           |
|-----------------------|-----------|
| 1 Front view          | 6         |
| 2 Sectional top view  | 9         |
| 3 Sectional left view | 8         |
| 4 True shape          | 6         |
| 5 Constructions       | 6         |
| <b>TOTAL</b>          | <b>35</b> |

NAME \_\_\_\_\_

NAME \_\_\_\_\_

NAME \_\_\_\_\_

**VRAAG 3: PERSPEKTIEF**

**Gegee:**

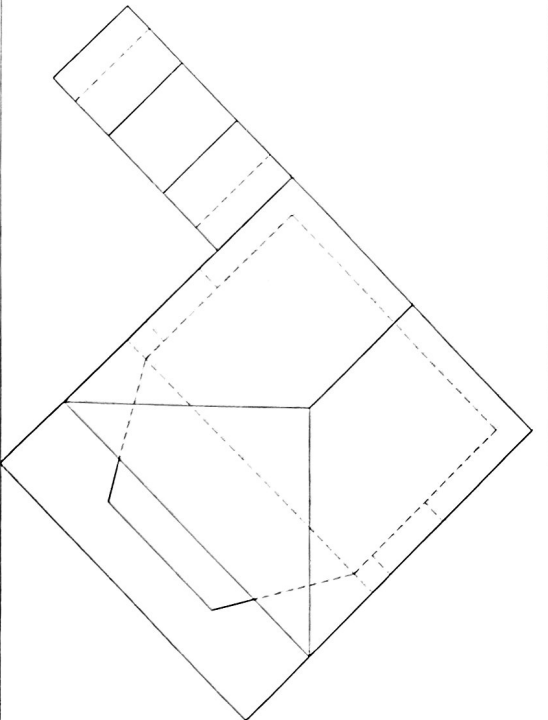
Twee aansigte van 'n buitenuurse onthaalarea en die inligting nodig vir 'n twee-puntperspektieftekening:

- PP – Prentvlak
- HL – Horisonlyn
- GL – Grondlyn
- SP – Staapunt

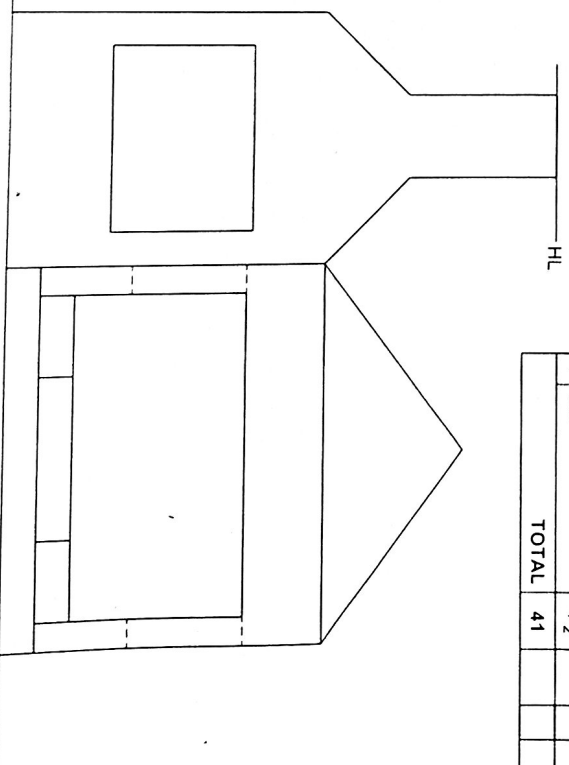
**Instruksies:**

Voltooi die twee-puntperspektieftekening.

- Belyn die tekening met die grondlyn (GL).
- Bepaal en benoem die verdwynpunte.
- Toon alle nodige konstruksies.
- **GEEN** versteekte besonderhede word verlang nie. word [41]



| ASSESSERINGSKRITERIA |                   |           |  |  |
|----------------------|-------------------|-----------|--|--|
| 1                    | KONSTRUKSIE + VPs | 8         |  |  |
| 2                    | MURE + TRAPPE     | 15 ½      |  |  |
| 3                    | OPENINGE          | 13        |  |  |
| 4                    | DAK               | 4 ½       |  |  |
| <b>TOTAL</b>         |                   | <b>41</b> |  |  |

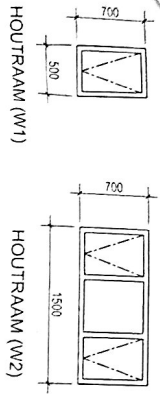


SP

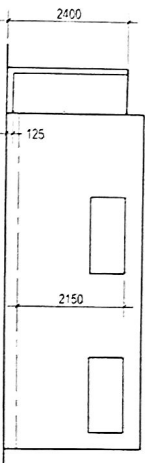
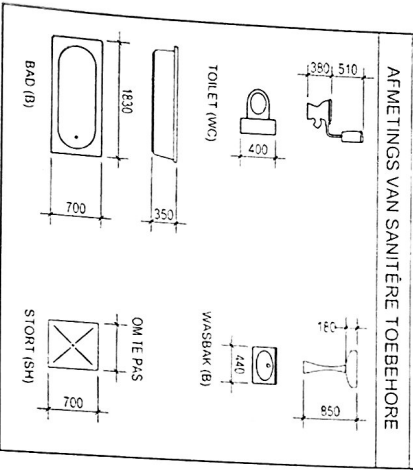
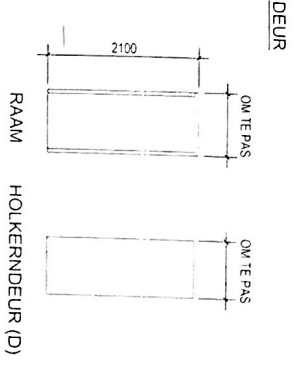
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DEUREN VENSTERSKEDULE

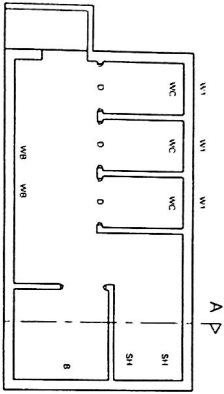


LET WEL  
140 X 50 BAKSTONE OP RAND ONDER  
VENSTERS  
LATEL  
VOORAFGEVORMDE BETON BALK: 200 X 85 mm



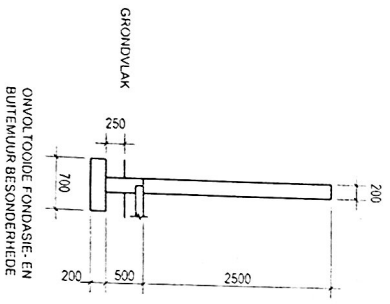
ONVOLTOOIDE SUIDAANSIG

GRONDVLAK

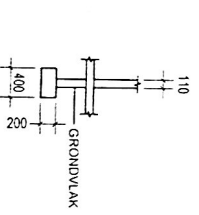


ONVOLTOOIDE VLOERPLAN

- TOEBEHORE  
D DEURE  
W1 VENSTEROPENINGE  
W2 VENSTEROPENINGE  
B BAD  
SH STORT  
WC TOILET  
WB WASSBAK



ONVOLTOOIDE FONDASIE- EN  
BUTEMUR BESONDERHEDE



ONVOLTOOIDE FONDASIE- EN  
BINNEMUR BESONDERHEDE



VRAAG 4: SIVIELE TEKENING

Gegee: (op bladsy 5)

- Die onvoltooiide suidaansig van 'n Kleedkamer vir 'n sokkerklub wat die posisie van die mure, vensters en grondlyne toon
- Die onvoltooiide vloerplan wat die mure, posisie van die deure, vensters en sanitêre toebehoore toon
- Die onvoltooiide fondasie-, en muurbesonderhede van die buite en binnemure
- 'n Deur- en vensterskedule.
- 'n Tabel met sanitêre toebehoore
- Die onvoltooiide vloerplan van die Kleedkamer, geteken volgens skaal 1:50 op bladsy 6

Instrukties:

- Gebruik antwoordblad 4 en die inligting op bladsy 5 om die volgende aansigte volgens skaal 1:50 te teken:
- Die voltooiide vloerplan
- Die suidaansig
- Die snitaansig op snyvlak A-A, volgens die onderstaande spesifikasies

SPEKIFIKASIES:

- DIE VLOERPLAN  
Voeg die volgende kenmerke by die vloerplan:
- Die ontbrekende muurarsiering
- Die ontbrekende deure en vensters met besonderhede
- Die sanitêre toebehoore soos met die atkondings aangedui
- Die snyvlak. Benoem die snyvlak A-A
- Toon die gegee sanitêre toebehoore as grafiese simbole volgens die riglyne vervat in SABS 0143

DIE SUIDAANSIG

- Voeg die volgende kenmerke by die suidaansig:
- Die buitemure
- Die vensterbesonderhede
- Die voltooiide vloervlak

DIE SNITAANSIG - SLEGS TOT PLAFONHOOGTE

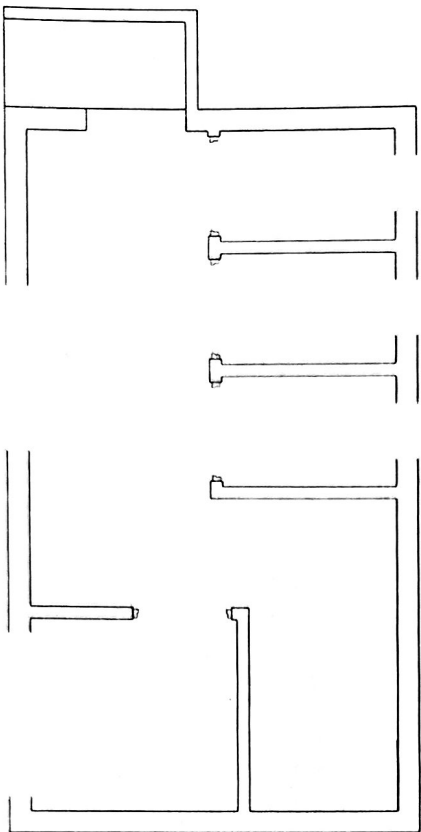
- Voeg die volgende kenmerke by die snitaansig:
- Die volledige fondasie-, muur-, en vloerpladbewonderhede.
- Die venster, met 'n enkele lateel bokant die venster
- Die elevasie van die bad geteken as 'n grafiese simbool
- Alle nodige arsering.
- Benoem die snitaansig: SNITAANSIG A-A

LET WEL:

- Benoem SLEGS die aangevraagde kenmerke op die toepaslike aansigte
- ALLE substruktuurarsiering kan in vyfhand gedoen word.
- ALLE tekenwerk moet voldoen aan die riglyne vervat in SABS 0143.

[97]



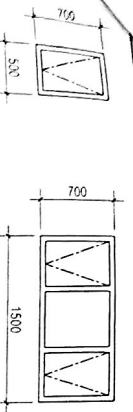


| VLOERPLAN             |    | PUNTE |
|-----------------------|----|-------|
| 1 ARSERING            | 9  |       |
| 2 DEURE EN VENSTERS   | 14 |       |
| 3 SANITÊRE TOEBEHORE  | 16 |       |
| 4 SMYVLAK             | 4  |       |
| SUBTOTAAL             | 43 |       |
| SUIDAANSIG            |    | PUNTE |
| 1 BUITEMURE EN PLAFON | 7  |       |
| 2 VENSTERS            | 8  |       |
| 3 VVV                 | 1  |       |
| SUBTOTAAL             | 16 |       |
| SNITAAKSIG            |    | PUNTE |
| 1 FONDAASIE EN MURE   | 15 |       |
| 2 VENSTER EN LATEI    | 6  |       |
| 3 ARSERING            | 11 |       |
| 4 SANITÊRE TOEBEHORE  | 4  |       |
| 5 BYSKRIFTE           | 2  |       |
| SUBTOTAAL             | 38 |       |
| TOTAAL                | 97 |       |

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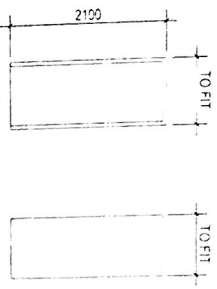
DOOR AND WINDOW SCHEDULE



WOODEN FRAME (W1)  
WOODEN FRAME (W2)

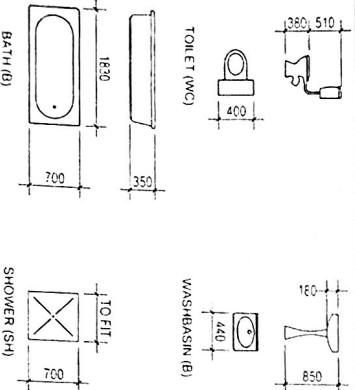
NOTE  
140 X 50 BRICKS ON EDGE SILL BELOW  
LINTEL  
PRECAST CONCRETE BEAM: 200 x 65 mm

DOOR



FRAME  
HOLLOW CORE DOOR (D)

DIMENSIONS OF SANITARY FIXTURES



QUESTION 4: CIVIL DRAWING

- Given: (on page 5)
- The incomplete south elevation of a changing room for a soccer club showing the position of the walls, windows and ground line.
  - The incomplete floorplan showing the walls, position of the doors, windows and sanitary fixtures
  - The incomplete foundation and wall detail of the external and internal walls
  - A door and window schedule
  - A table of sanitary fixtures
  - The incomplete floor plan of the new changing room, drawn to a scale of 1:50, on page 6

Instructions:

- Use answer sheet 4 and the information on page 5 to draw the following views to a scale of 1:50
- The completed floor plan
- The south elevation
- The sectional elevation on cutting plane A-A, to the given specifications below

SPECIFICATIONS:

THE FLOOR PLAN

Add the following features to the floor plan:

- The missing wall sectioning
- The missing doors and windows with detail
- The sanitary fixtures as indicated with the abbreviations
- The cutting plane: Label the cutting plane A-A
- Insert all the given bathroom fixtures as graphical symbols according to the SABS 0143 code of practice

THE SOUTH ELEVATION

Show the following features on the drawing:

- The outside walls
- The window detail
- The finished floor level

THE SECTIONAL ELEVATION - UP TO CEILING HEIGHT ONLY

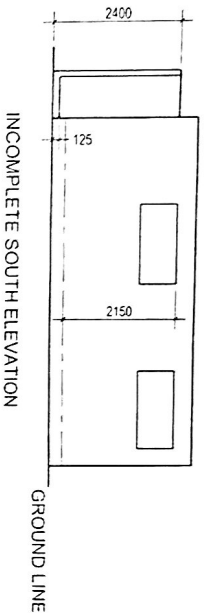
Add the following features to the sectional elevation:

- The complete foundation, wall, and floor slab detail
- The window, with a single lintel above the window
- The elevation of the bath drawn as a graphical symbol
- ALL necessary hatching
- Label the sectional elevation: SECTIONAL ELEVATION AA

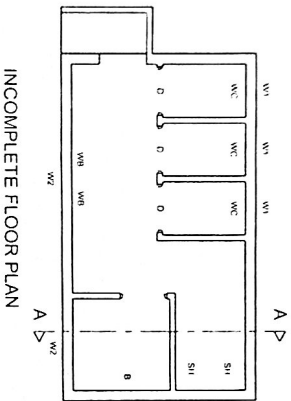
NOTE:

- Label ONLY the requested features on the respective views
- ALL substructure hatching may be done in freehand.
- ALL drawings must comply with the guidelines contained in the SABS 0143.

[97]

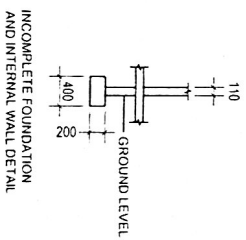
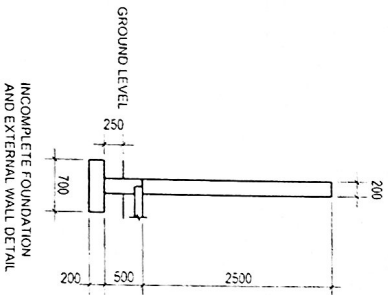


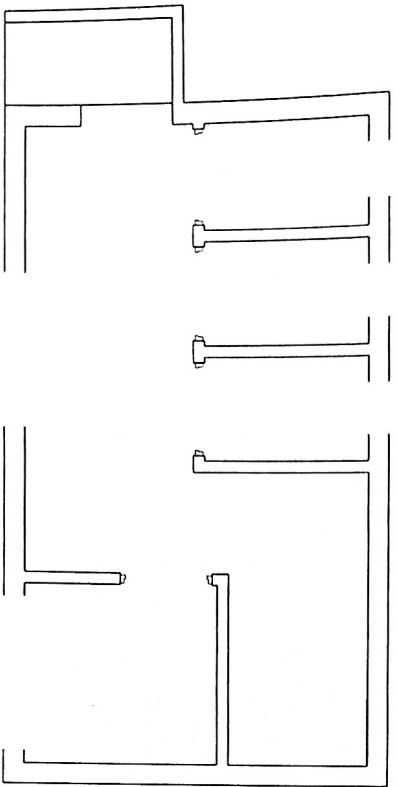
INCOMPLETE SOUTH ELEVATION



INCOMPLETE FLOOR PLAN

- FIXTURES  
D DOORS  
W1 WINDOW OPENINGS  
W2 WINDOW OPENINGS  
B BATH  
SH SHOWER  
WC TOILET  
WB WASH BASIN





| FLOOR PLAN                   |    | MARKS |
|------------------------------|----|-------|
| 1 HATCHING                   | 9  |       |
| 2 DOORS AND WINDOWS          | 14 |       |
| 3 SANITARY FIXTURES          | 16 |       |
| 4 CUTTING PLANE              | 4  |       |
| SUB TOTAL                    | 43 |       |
| SOUTH ELEVATION              |    | MARKS |
| 1 EXTERIOR WALLS AND CEILING | 7  |       |
| 2 WINDOWS                    | 8  |       |
| 3 FFL                        | 1  |       |
| SUB TOTAL                    | 16 |       |
| SECTIONAL ELEVATION          |    | MARKS |
| 1 FOUNDATION AND WALLS       | 15 |       |
| 2 WINDOW AND LINTELS         | 6  |       |
| 3 HATCHING                   | 11 |       |
| 4 SANITARY FIXTURES          | 4  |       |
| 5 LABELS                     | 2  |       |
| SUB TOTAL                    | 38 |       |
| TOTAL                        | 97 |       |

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