

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

**NATIONAL
SENIOR CERTIFICATE**

GRADE 11

**ENGINEERING GRAPHICS AND DESIGN P1
NOVEMBER 2013**

MARKS: 200

TIME: 3 hours

This question paper consists of 6 pages.

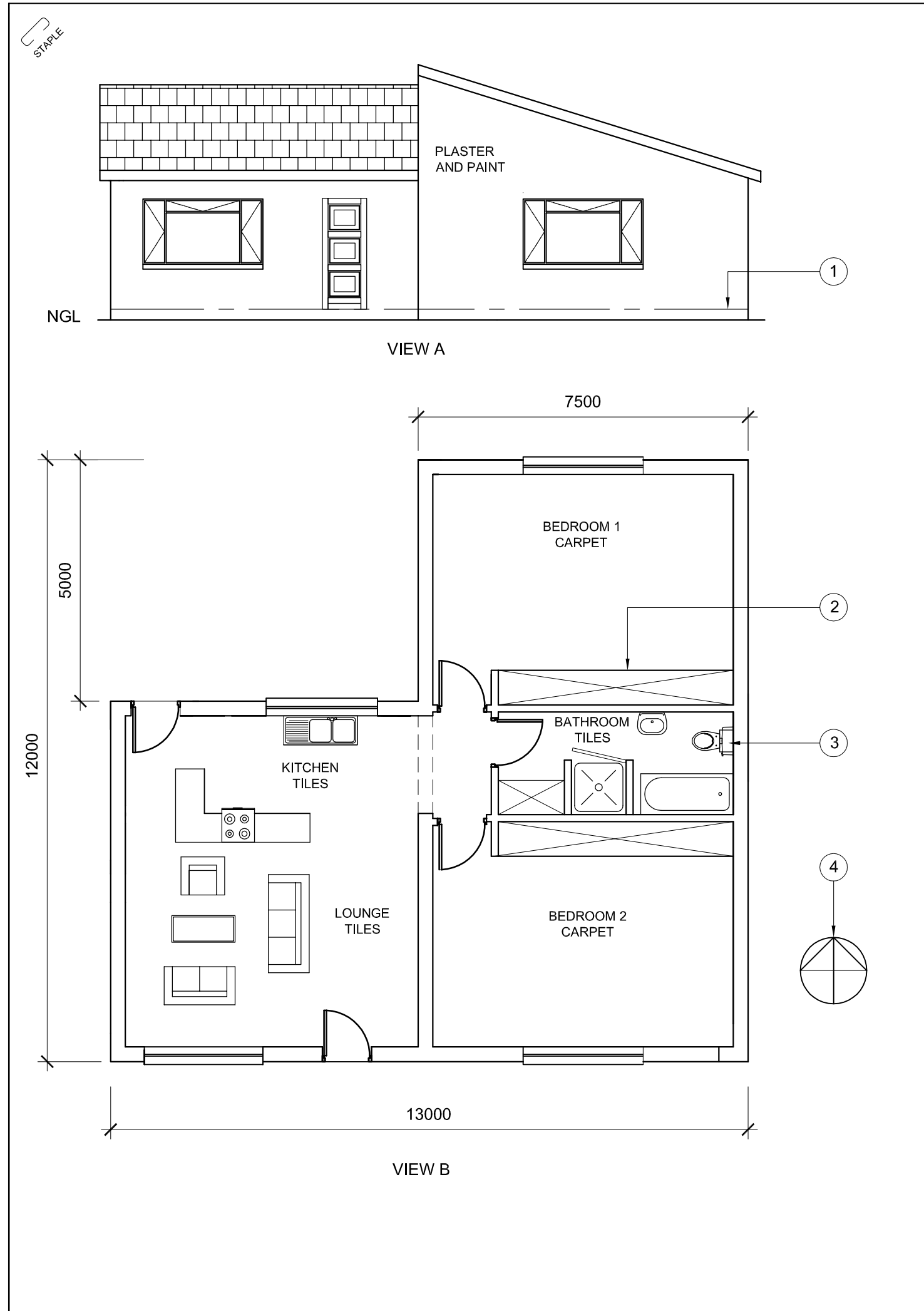
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INSTRUCTIONS AND INFORMATION

1. The question paper consists of FOUR questions.
2. Answer ALL the questions.
3. All drawings must be drawn to scale 1:1, unless stated otherwise.
4. The questions must be answered on the answer sheets provided.
5. All the answer sheets must be re-stapled in numerical sequence and handed in irrespective of whether the question was answered 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 assumed in good proportion.

FOR OFFICIAL USE ONLY				
				MODERATED MARK
1				
2				
3				
4				
TOTAL				
	2	0	0	

COMPLETE THE FOLLOWING:
NAME
NAME
EXAMINATION CENTRE
EXAMINATION CENTRE



QUESTION 1: ANALYTICAL (CIVIL)

Given:

The working drawings of a proposed new dwelling with relevant information and a table of questions.

Instructions:

Complete the table below by neatly printing the answers to the questions which all refer to the accompanying drawings and title block. **[30]**

19. In the space provided below, draw, in neat freehand, the front view and top view of item number 3, according to SABS conventions.

QUESTIONS

ANSWERS

1	What is the drawing number?	1	
2	What was the reason for the revision to the drawing?	1	
3	Who is the owner of the proposed new dwelling?	1	
4	In which city is this dwelling situated?	1	
5	Who checked the drawing?	1	
6	What is the scale of the drawing?	1	
7	On what date was the drawing revised?	1	
8	What does the line numbered 1 indicate?	1	
9	Name the feature at 2.	1	
10	What is the abbreviation for the fixture numbered 3?	1	
11	What does the symbol numbered 4 indicate?	1	
12	What would view A be called?	1	
13	What would view B be called?	1	
14	What is the floor finish in the lounge?	1	
15	What is the wall finish of the exterior walls?	1	
16	How many internal doors are there in the dwelling?	1	
17	Determine the perimeter of the dwelling in metres. Show all calculations	4	
18	Determine the area of the dwelling in metres. Show all calculations.	4	
19	In the space provided, draw a neat freehand sketch of the front view and top view of item number 3, according to SABS conventions.	6	

EAST CAPE ARCHITECTS
 786 RUDOLPH STREET
 PORT ELIZABETH 6020
 TEL: 041 555 6677

REVISION 2	DATE OF REVISION 05-07-2013
PRINTED BY EZ PRINT	DATE OF PRINT 10-07-2013
REVISION DETAIL NEW SHOWER IN BATHROOM	
DRAWING TITLE PROPOSED NEW DWELLING FOR P QABAZI ON ERF No 139 AT 14 PIER STREET SOUTH END PORT ELIZABETH	
PROJECT NUMBER EZ 542-07	
DRAWING NUMBER 00341	CHECKED BY G ZAMO 03-05-2013
DRAWN BY J SMITH 01-05-2013	
SCALE 1:100	

TOTAL 30

NAME

NAME

2



QUESTION 2: SECTIONING OF SOLIDS

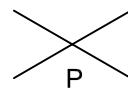
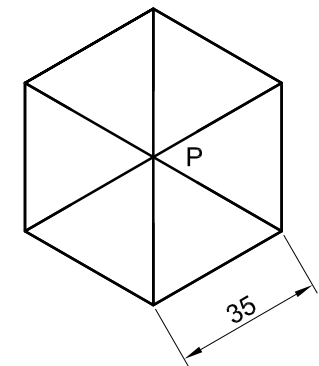
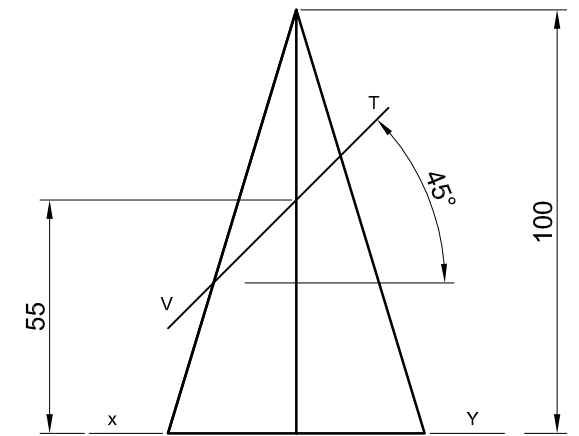
Given:

- 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.

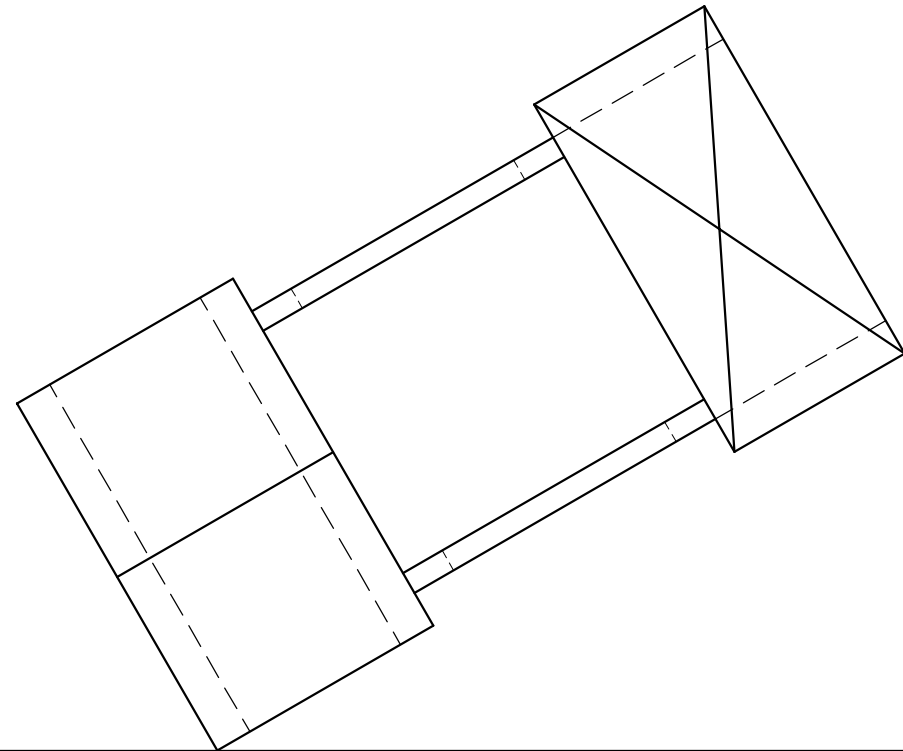
[35]



ASSESSMENT CRITERIA	
1 Front view	6
2 Sectional top view	9
3 Sectional left view	8
4 True shape	6
5 Constructions	6
TOTAL	35

NAME
NAME

3



QUESTION 3: PERSPECTIVE

Given:

A plan and elevations of a building for a carwash, as well as the Picture Plane (PP), Horizon Line (HL), Ground Line (GL) and Station Point (SP).

Instructions:

- Determine the vanishing points and label them.
- Draw a two point perspective view of the carwash building.

Note:

No hidden detail must be shown.
Show all construction lines.

[36]

PP

HL

GL

SP

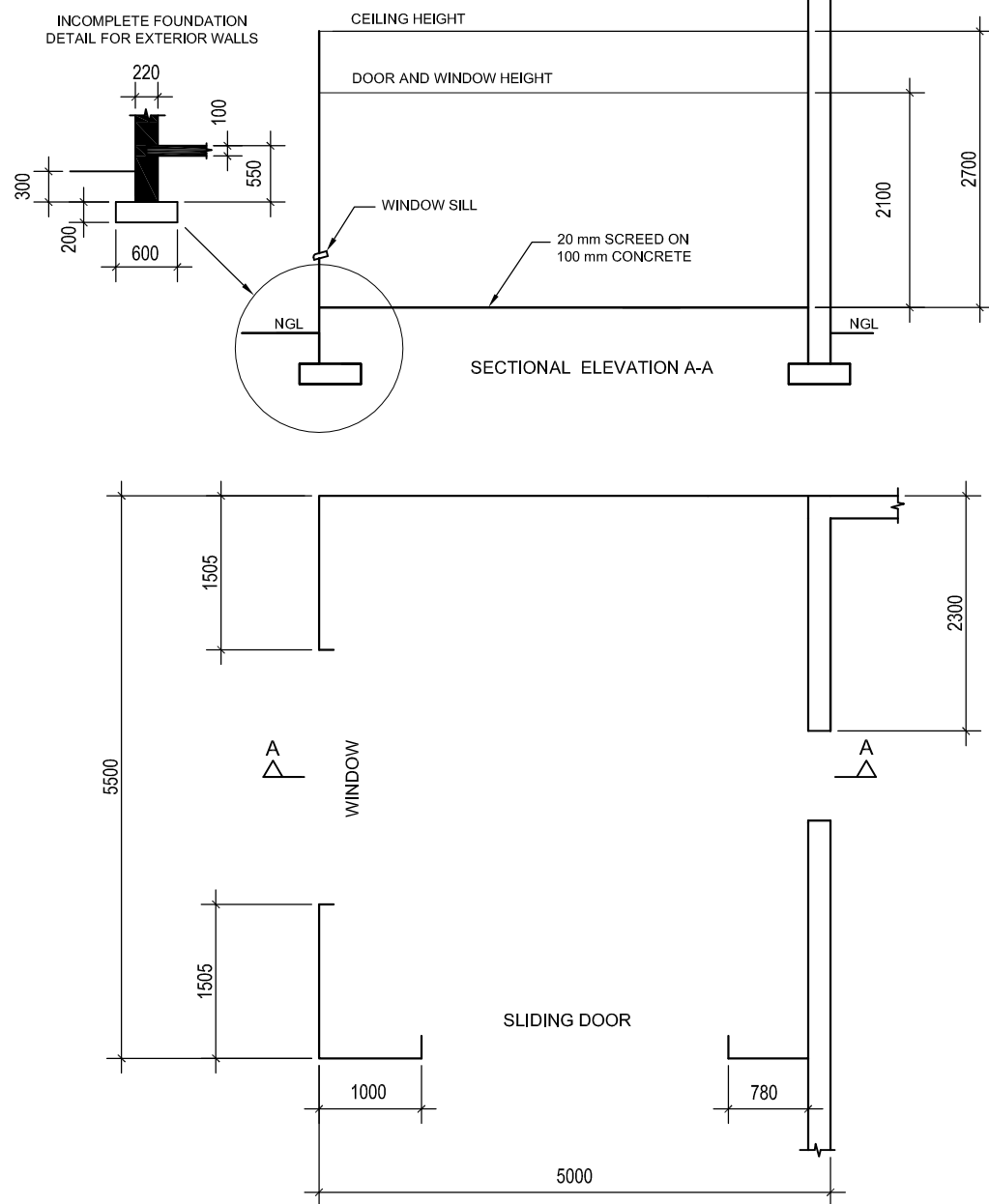
ASSESSMENT CRITERIA	
1 Vanishing points	4
2 Constructions	4
3 Roofs	10
4 Walls	18
TOTAL	36

NAME
NAME

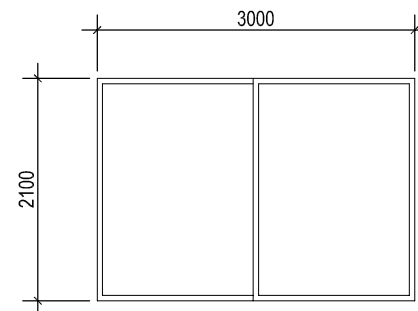
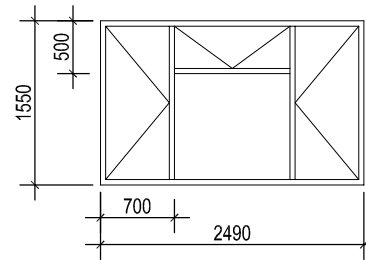
4



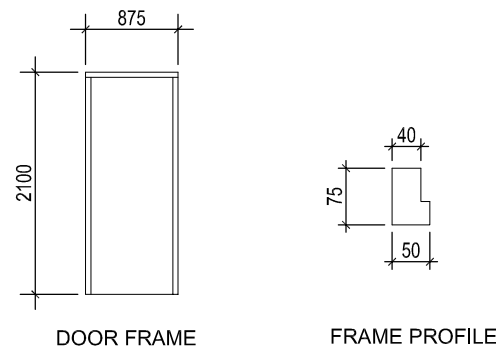
SCHEMATIC DIAGRAM OF PROPOSED HOME GYMNASIUM



DOOR AND WINDOW SCHEDULE



DOOR
ALUMINIUM SLIDING DOOR



DOOR
HOLLOW PANEL DOOR

FINISHING SCHEDULE

- FLOOR
TILES
- WALLS
PLASTER AND PAINT
- WINDOW SILL
BRICK ON EDGE, PLASTERED
- LINTEL
PRECAST CONCRETE BEAM: 110 x 65 mm

QUESTION 4: CIVIL DRAWING

Given:

- A partial floor plan and partial sectional elevation of a proposed new **home gymnasium** attached to a house, and the position of the doors and window.
- A door and window schedule
- A finishing schedule
- Incomplete sketches of the foundation detail
- An answer sheet on page 6 showing the starting points for completing the drawing

Instructions:

Use answer sheet 4 and the information on page 5 to draw to a scale of **1:50**, the following views:

- The completed **floor plan**
- The **sectional elevation** on cutting plane A-A up to ceiling height
- A **south elevation** up to ceiling height
- A **west elevation** up to ceiling height, to the given specifications below:

SPECIFICATIONS:

THE FLOOR PLAN

Add the following features to the floor plan:

- The missing walls and hatching detail
- The missing doors and window detail
- The cutting plane. Label the cutting plane A-A
- Label the floor plan and include the floor finish

THE SECTIONAL ELEVATION

Add the following features to the sectional elevation:

- The complete foundation, walls, floor slab and screed detail
- The lintels above the doors and window
- The complete door and window detail
- ALL necessary hatching
- Label the natural ground level (NGL)
- Label the damp proof course (DPC)
- Label the sectional elevation:
SECTIONAL ELEVATION A-A

THE SOUTH ELEVATION

Add the following features to the south elevation:

- The outer walls
- The ceiling height
- The sliding door
- Label the view

THE WEST ELEVATION

Add the following features to the west elevation:

- The outer walls
- The ceiling height
- The window
- Label the view

NOTE:

- ALL substructure hatching may be done in freehand
- ALL drawings must comply with the guidelines contained in the *SABS 0143*. [99]

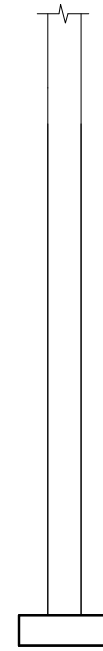
TERMINOLOGY

Schematic diagram: a diagram that shows the main features or relationships but not the details.

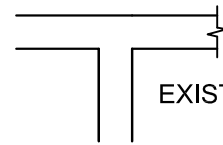
ANSWER SHEET 4



EXISTING WALL AND FOUNDATION



EXISTING WALL

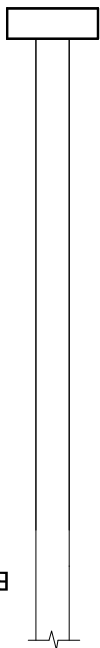
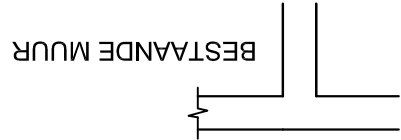


FLOOR PLAN		MARKS
1 WALLS	7	
2 DOORS AND WINDOW	14	
3 HATCHING	5	
4 LABELS AND CUTTING PLANE	5	
SUB TOTAL	31	
SECTIONAL ELEVATION		MARKS
1 FOUNDATION AND WALLS	17	
2 WINDOW, DOOR AND LINTELS	9	
3 HATCHING	10	
4 LABELS	3	
SUB TOTAL	39	
SOUTH ELEVATION		MARKS
1 EXTERIOR WALLS AND CEILING	8	
2 SLIDING DOOR	4	
3 LABEL	2	
SUB TOTAL	14	
WEST ELEVATION		MARKS
1 EXTERNAL WALLS AND CEILING	8	
2 WINDOW	5	
3 LABEL	2	
SUB TOTAL	15	
TOTAL	99	

NAME
NAME

6

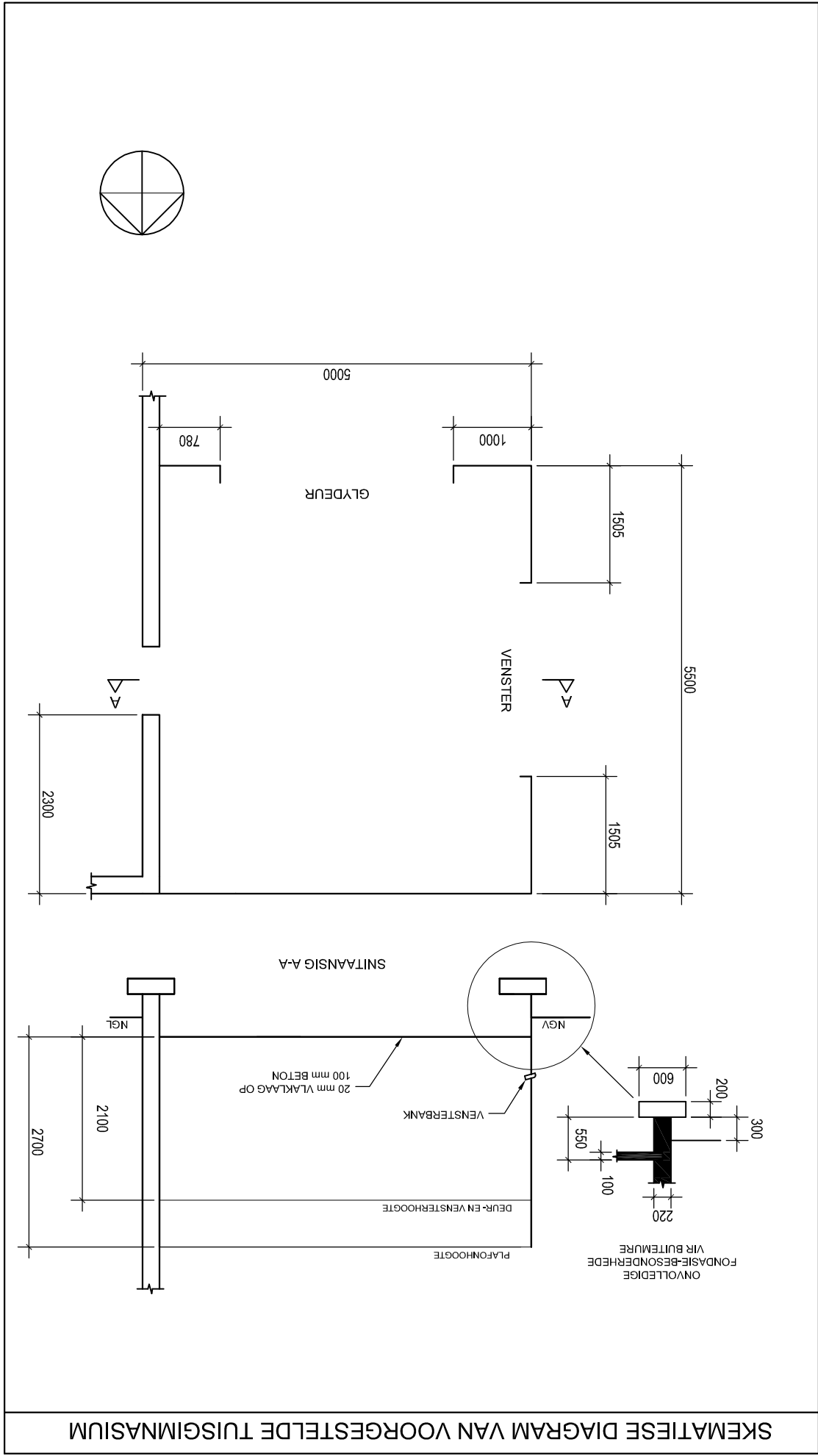
9	NAAM	
	NAAM	
	96	TOTAAL
	15	SUBTOTAAL
	2	3 BYSKRIF
	5	2 VENSTER
	8	1 BUITEMURE EN PLAFON
PUNTE	WESAANSIG	
	14	SUBTOTAAL
	2	3 BYSKRIF
	4	2 GLYDEUR
	8	1 BUITEMURE EN PLAFON
PUNTE	SUIDAANSIG	
	39	SUBTOTAAL
	3	4 BYSKRIFTE
	10	3 ARSERING
	9	2 VENSTER, DEUR EN LATEIE
	17	1 FONDASIE EN MURE
PUNTE	SNITAANSIG	
	31	SUBTOTAAL
	5	4 BYSKRIFTE EN SNYVLAK
	5	3 ARSERING
	14	2 DEURE EN VENSTER
	7	1 MURE
PUNTE	VLOERPLAN	



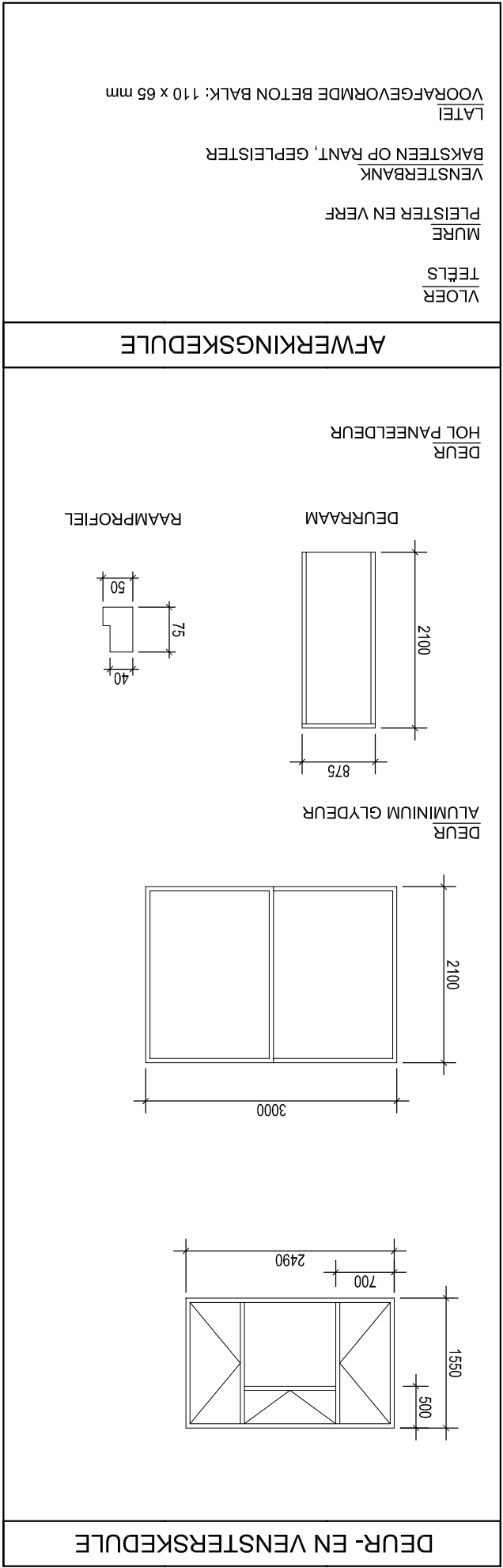
BESTAANDE MUUR EN FONDASIE

ANTWOORDBLAD 4

STABE



SKEMATIESE DIAGRAM VAN VOORGESTELDE TUISGIMNASIUM



DEUR- EN VENSTERSKEDULE

VRAAG 4: SIVIELE TEKENING

Gegee:

- 'n Gedeeltelike vloerplan en 'n gedeeltelike snitaansig van 'n **voorgestelde nuwe tuisgimnasium** vas aan 'n huis, asook die posisie van die deure en venster.
- 'n Afwerkingskedule
- 'n Onvoltooid sketse van die fondasiebesonderhede
- 'n Antwoordblad op bladsy 6 wat 'n onvoltooid plan toon

Instrukies:

- Gebruik antwoordblad 4 en die inligting op bladsy 5 om volgens 'n skaal van **1:50** die volgende aansigte te teken:
- Die **voltooid vloerplan**
- Die **snitaansig** op snyvlak A-A tot by plafonhoogte
- 'n **Suidaansig** tot by plafonhoogte
- 'n **Wesaansig** tot by plafonhoogte, volgens die gegewe spesifikasies hieronder:

SPEKIFIKASIES:

- Die **vloerplan**
- Die **vermiste mure** met arseeringsbesonderhede
- Die **vermiste deure- en vensterbesonderhede**
- Die **snyvlak**. Benoem die snyvlak A-A
- Benoem die vloerplan en sluit die vloerwerk in.

'n SNIT AANSIG

- Die **volledige fondasie-, muur-, vloerblad en vlaklaagbesonderhede**
- Die **lateie bokant die deure en venster**
- Die **volledige deur- en vensterbesonderhede**
- **ALLE** nodige arseering
- Benoem die **natuurlike grondvlak (NGV)**
- Benoem die **voegweraag (VWL)**
- Benoem die **snitaansig**:

DIE SUID AANSIG

- Die **buitemure**
 - Die **plafonhoogte**
 - Die **glydeur**
 - Benoem die **aansig**
- Voeg die volgende kenmerke by die suidaansig:**
- Die **buitemure**
 - Die **plafonhoogte**
 - Die **venster**
 - Benoem die **aansig**

TERMINOLOGIE

Skematiese diagram: 'n diagram wat die hoofkenmerke of verhoudings sonder spesifieke besonderhede toon.

SABS 0143.

- LET WEL:**
- **ALLE** substruktuurarsseering mag in vryhand gedoen word
 - **ALLE** tekenwerk moet voldoen aan die riglyne vervat in die [99]

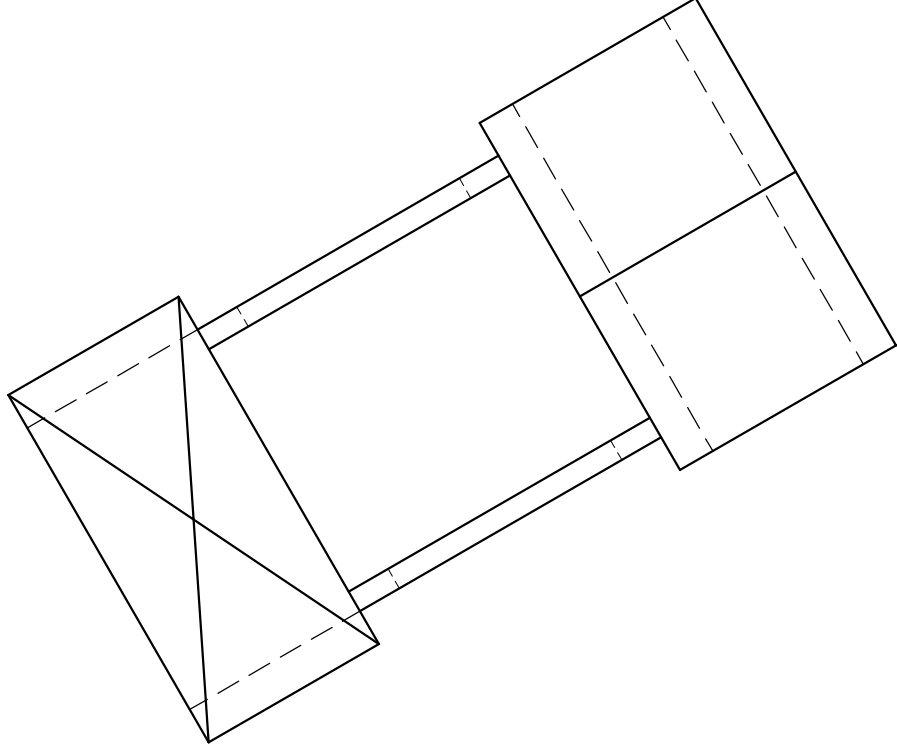
VRAAG 3: PERSPEKTIEF

Gegee:
'n Plan en aansigte van die gebou van 'n motorwassery, sowel as die Prentvlak (PV), Horisonlyn (HL), Grondlyn (GL) en Staantpunt (SP)

Instruksie:
• Bepaal die verdwynpunte en benoem hulle.
• Teken 'n tweepuntperspektief-aansig van die motorwassery gebou.

Notas:
Geen verborge besonderhede moet getoon word nie.
Toon alle konstruksielynne.

[36]



PV

HL

GL

SP

ASSESSERINGSKRITERIA

1 Verdwynpunte	4	
2 Konstruksies	4	
3 Dakke	10	
4 Mure	18	
TOTAAL	36	

NAAM

NAAM

4

VRAAG 2: SNITTE VAN VASTE LIGGAME

Gegee:

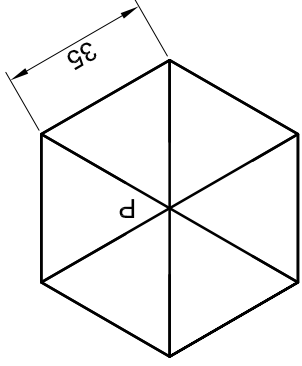
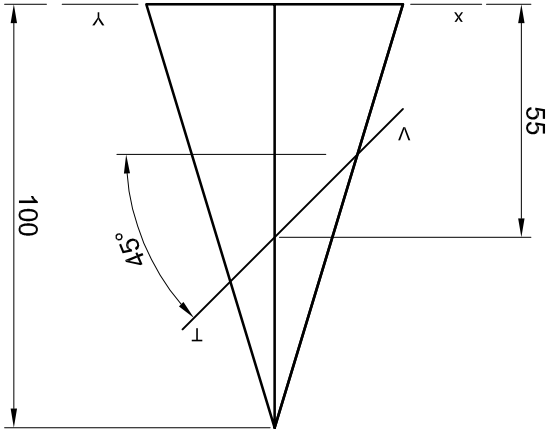
- Die voorraansig en boaansig van 'n regte reëlmatige seskantige piramide wat deur 'n hellende vlak VT gesny word.
- 'n Beginpunt P, vir die teken van die boaansig.

Instrukties:

- Teken die gegewe voorraansig.
- Teken die deursnee boaansig.
- Teken die deursnee linkeraansig.
- Projekteer die ware vorm van die gesnyde vlak.
- Toon alle konstruksies.

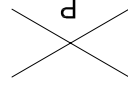
Geen verborge besonderhede word verlang nie.

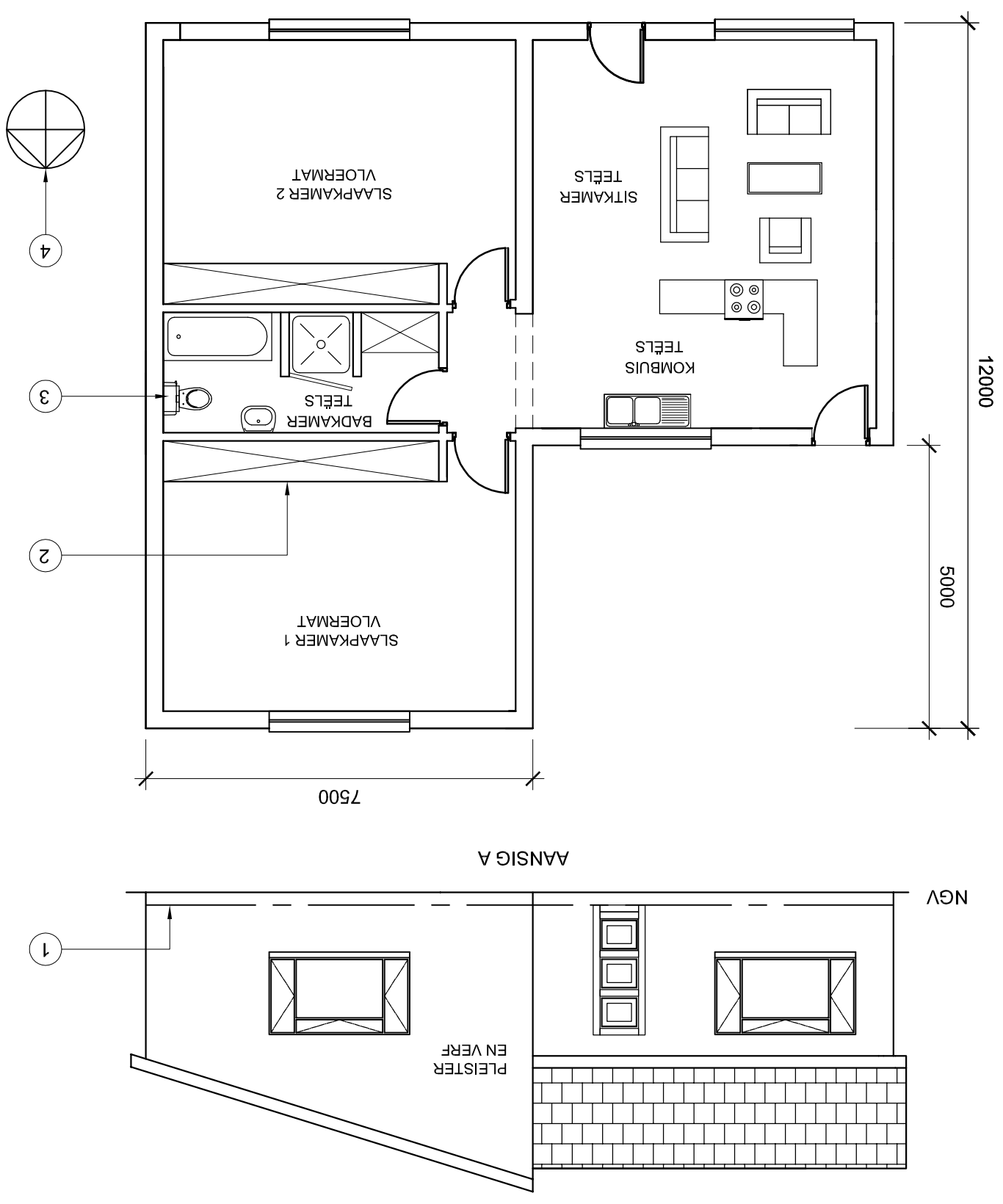
[35]



ASSESSERINGSKRITERIA	
1 Voorraansig	6
2 Deursnee-boaansig	9
3 Deursnee-linkeraansig	8
4 Ware vorm	6
5 Konstruksies	6
TOTAAL	35

3	NAAM
	NAAM



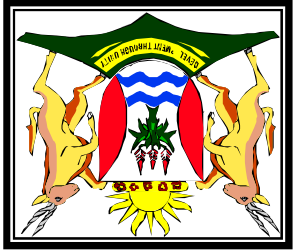


SKAAL 1:100	GETEKEN DEUR J SMITH 01-05-2013	
TEKENINGNUMMER 00341	NAGESIEN DEUR G ZAMO 03-05-2013	
PROJEKNUMMER EZ 542-07	SUIDEINDE PORT ELIZABETH PIERSTRAAT 14 P GABAZI OP ERF Nr. 139 BY VOORGESTELDE NUWE WONING VIR TEKENINGTTTEL	
HERSINNINGSDETAIL NUWE STORT IN BADKAMER	HERSININGSDATUM 05-07-2013	
HERSINING 2	GEDRUK DEUR EZ PRINT	DRUKDATUM 10-07-2013
EAST CAPE ARGITEKTE RUDOLPHSTRAAT 786 PORT ELIZABETH 6020 TEL: 041 555 6677		
19. Teken, in die spasie voorsien in die titelblok, in neëiese vryhand, die vooraansig en boaansig van item nommer 3, volgens SABS-konvensies.		

VRAAG 1 : ANALITIES (SIVIEL) Gegee: Die werkstekeninge van 'n voorgestelde nuwe woning met relevante inligting en 'n tabel met vrae. Instruksies: Voltooi die tabel hieronder deur die antwoorde van die vrae, wat almal verwy's na die bygaande tekeninge en titelblok, neëies te drukskrif. [30]		VRAE		ANTWOORDE	
1	Wat is die tekeningnummer?	1		1	
2	Wat was die rede vir die hersiening op die tekening?	1		1	
3	Wie is die eienaar van die voorgestelde nuwe woning?	1		1	
4	In watter stad is die woning geleë?	1		1	
5	Wie het die tekening nagesien?	1		1	
6	Wat is die skaal van die tekening?	1		1	
7	Op watter datum is die tekening hersien?	1		1	
8	Wat word deur die lyn genommer 1 aangedui?	1		1	
9	Benoem die kenmerk genommer 2.	1		1	
10	Wat is die afkorting vir die vaste toebehoor genommer 3?	1		1	
11	Wat word deur die simbool genommer 4 aangedui?	1		1	
12	Wat sal aansig A genoem word?	1		1	
13	Wat sal aansig B genoem word?	1		1	
14	Wat is die vloerafwerking van die sitkamer?	1		1	
15	Wat is die muurafwerking van die buitewand?	1		1	
16	Hoeveel binneure is daar in die woning?	1		1	
17	Bepaal die omtrek van die woning in meter. Toon alle berekeninge.	4		4	
18	Bepaal die oppervlak van die woning in vierkante meter. Toon alle berekeninge.	4		4	
19	Teken, in die spasie voorsien, 'n neëiese vryhand skets van die vooraansig en boaansig van item nommer 3, volgens SABS-konvensies.	6		6	
TOTAAL		30		30	
NAAM		NAAM		NAAM	

2

Blaai om asseblief



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

NASIONALE
SENIOR SERTIFIKAAT

GRAAD 11

INGENIEURSGRAFIKA EN -ONTWERP V1
NOVEMBER 2013

PUNTE: 200

TYD: 3 uur

Die vraestel bestaan uit 6 bladsye.

Kopiereg voorbehou

INSTRUKSIES EN INLIGTING

1. Die vraestel bestaan uit VIER vrae.
2. Beantwoord ALLE vrae.
3. Alle tekene moet volgens skaal 1:1 geteken word, tensy anders vermeld.
4. Alle vrae moet op die gegewe antwoordvelle beantwoord word.
5. Alle antwoordvelle moet weer in nummervolgorde vasgeklam en ingelewer word, ongeag of die vraag beantwoord is of nie.
6. Sorgvuldige tydsbeplanning is nodig om alle vrae te beantwoord.
7. Drukskryf jou naam in die blokkie voorsien op elke antwoordvel.
8. Alle antwoorde moet akkuraat en netjies geteken word.
9. Besonderhede of afmetings wat uitgelaat is, moet in goeie verhouding beraam word.

SLEGS VIR AMPTELIKE GEBRUIK			
GEMODEREERDE PUNT			
1			
2			
3			
4			
TOTAAL			
	2	0	0

VOLTOOI DIE VOLGENDE:	
NAAM	
NAAM	
EKSAMENSENTRUM	
EKSAMENSENTRUM	

Blaaï om asseblief

