



education

Department of
Education
FREE STATE PROVINCE

INGENIEURSGRAFIKA EN ONTWERP ENGINEERING GRAPHICS AND DESIGN

GRAAD 12 / GRADE 12

MAART 2017 / MARCH 2017

TYD: 2 URE / TIME: 2 HOURS

TOTAAL: / TOTAL:

INSTRUKSIES EN INLIGTING

1. Beantwoord alle vrae.
2. ALLE tekeninge is in eerstehoekse ortografiese projeksie, tensy anders aangedui.
3. ALLE tekeninge moet volgens skaal 1:1 geteken word, tensy anders aangedui.
4. AL die vrae moet soos voorgeskryf op die VRAESTEL beantwoord word.
5. AL die bladsye moet weer in nommervolgorde vasgekram word, ongeag of die vraag beantwoord is of nie.
6. Tydsbeplanning is noodsaaklik om al die vrae te voltooi.
7. Drukskryf jou naam en van asook die graad in die spasie wat voorsien is op elke bladsy.
8. ALLE antwoorde moet akkuraat en netjies geteken word.
9. Alle nodige konstruksie- en projeksielyne moet getoon word.
10. Beplan elke tekening noukeurig vanaf die beginposisie wat aangedui is op die diagramvelle.
11. Enige besonderhede of afmetings wat nie gegee is nie, moet in goeie verhouding beraam word.

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 QUESTION PAPER 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.

SLEGS VIR AMPTELIKE GEBRUIK FOR OFFICE USE ONLY						
PUNTE / MARKS				MODEREER MODERATE		
1						
2						
TOTAAL TOTAL						
	1	2	0			

FINALE PUNT FINAL MARK	NAGESIEN CHECKED
50	

NAAM & VAN NAME & SURNAME		GRAAD GRADE	
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RAINWATER ITEMS

FEATURES
D1 DOOR
W1 WINDOW
W2 WINDOW

FIXTURES
WC TOILET
WB WASH BASIN
SH SHOWER
S SINK

ELECTRICAL FITTINGS
1. LIGHT SWITCH
2. CEILING LIGHT
3. FLUORESCENT LIGHT
4. WALL LIGHT
5. SWITCHED SOCKET OUTLET

NOTE:
THE ARROW SHOWS THE LIGHT CONNECTION TO THE SWITCH

EAST ELEVATION

ROOF COMPONENTS

- 75 X 50 PURLINS @ 886 C/C
- 38 X 38 BRANDERING @ 700 C/C
- 110 X 38 WALL PLATE

ROOF NOTES:
ROOF PITCH 30° WITH 200 x 25mm FACIA BOARD ON ALL SIDES
ROOF COVER 15mm FIBRE CEMENT SHEET ON 75x 50mm PURLINS @ 886 c/c
115 x 38mm ROOF TRUSS ON 110 x 38mm WALL PLATES
9mm CEILING BOARD ON 38 x 38mm BRANDERING STRIPS @ 700mm c/c
100 x 150mm GUTTER ON ALL SIDES

QUESTION 4 (CIVIL)

Given:

- The complete east elevation of a new cottage.
- The incomplete floor plan showing the walls, positions of the doors, windows, fixtures and electrical layout.
- Roof notes with a schematic diagram of a roof truss.
- The incomplete foundation and wall detail.
- A door and window schedule.
- A table of rainwater items.
- A table of electrical symbols.
- A table of roof components.
- A table of fixtures.
- The incomplete floor plan of the new cottage, drawn to scale 1 : 50, on diagram sheet 1B.
- The complete east elevation of the new cottage, drawn to scale 1 : 50, on diagram sheet 1B.
- The incomplete foundation of the new cottage, drawn to scale 1 : 20, on diagram sheet 1B.

Instructions:
Answer the question on diagram sheet 1B.

4.1 Using the given incomplete floor plan, draw to scale 1 : 50, the following views of the new cottage:

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.

4.2 Using the given incomplete foundation, draw, to scale 1 : 20, a **DETAILED SECTION** on cutting plane A-A of the area in the ellipse that is shown.

Show the following features on the drawing:

- The complete door and window detail.
- The roof detail.
- ALL hatching detail. ONLY the substructure hatching may be drawn in neat freehand.

Label the following:

- Using the correct abbreviations, label the following features in the sectional elevation: natural ground level and damp prove course.

NOTE:
ALL drawings must comply with the **guidelines** and **graphical symbols** contained in the SANS 10143.

WINDOW HEIGHT

25mm SCREED

GROUND LEVEL

INCOMPLETE FOUNDATION AND EXTERNAL WALL

ELECTRICAL SYMBOLS

FIXTURES

TOILET (WC) WASH BASIN (WB) SINK (S) BATH (B)

STOVE (ST)

INCOMPLETE FLOOR PLAN

DOOR AND WINDOW SCHEDULE

WINDOW (W1)

WINDOW (W2)

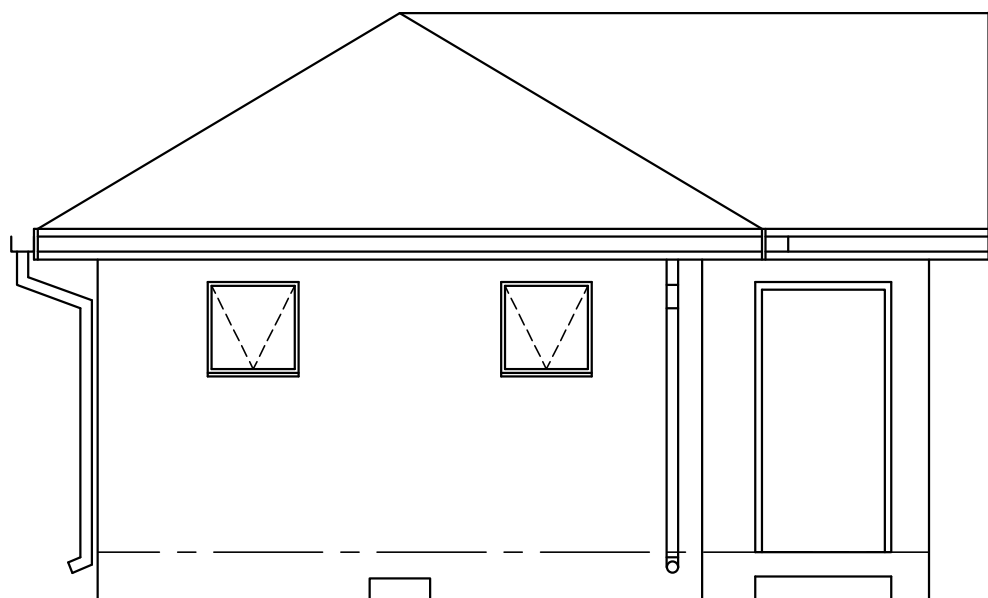
DOOR FRAME AND DOOR (D1)

WINDOW NOTE:
A = OPENING SIDE
B = FIXED PANEL

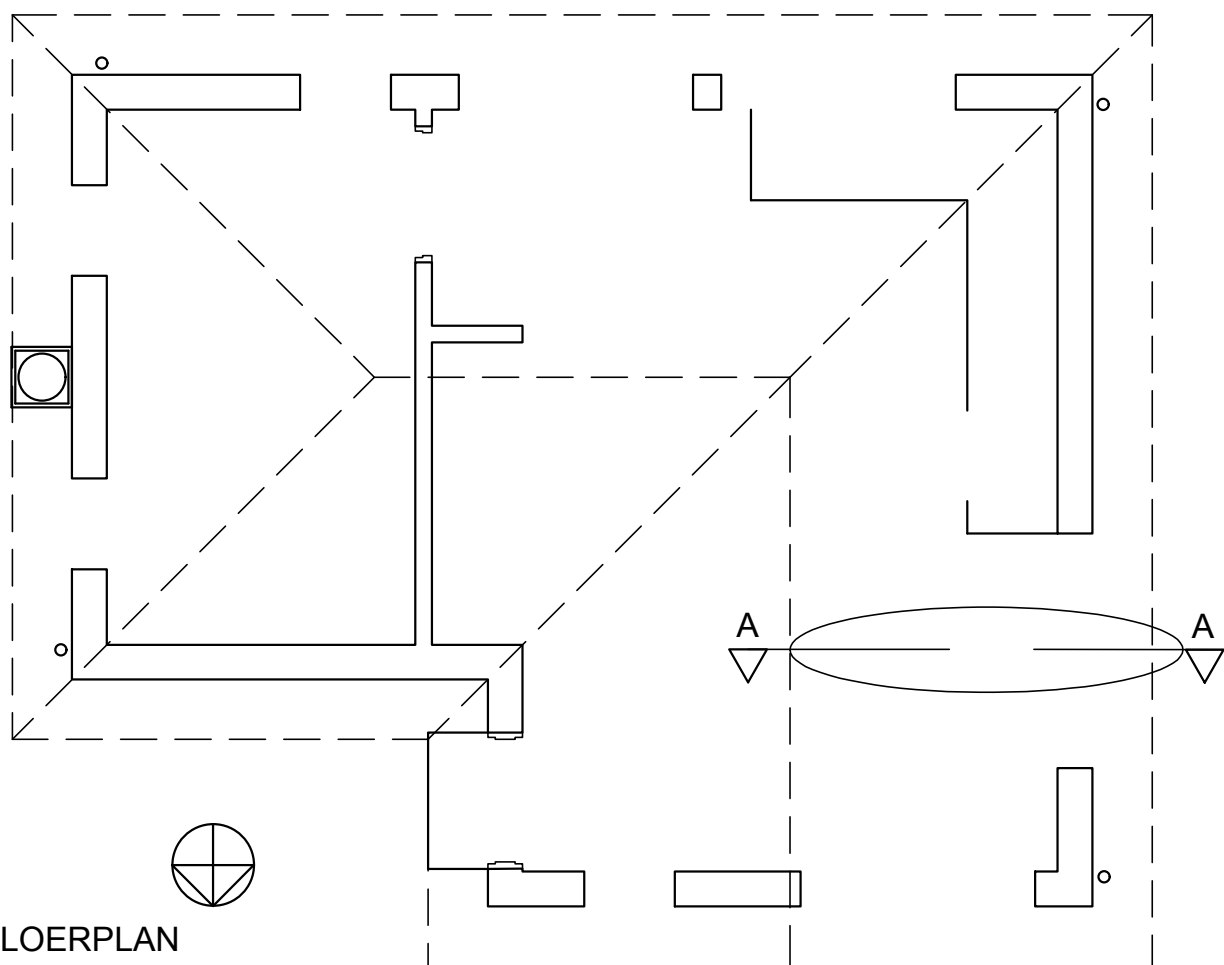
NOTE:
150 x 25mm FIBRE CEMENT SILL UNDER ALL WINDOWS
75 X 110 CONCRETE LINTEL

DIAGRAMVEL 1A DIAGRAM SHEET 1A	VRAAG 4 QUESTION 4	INGENIEURSGRAFIKA EN ONTWERP ENGINEERING GRAPHICS AND DESIGN	MAART TOETS 2017 MARCH TEST 2017	NAAM & VAN NAME & SURNAME		GRAAD GRADE
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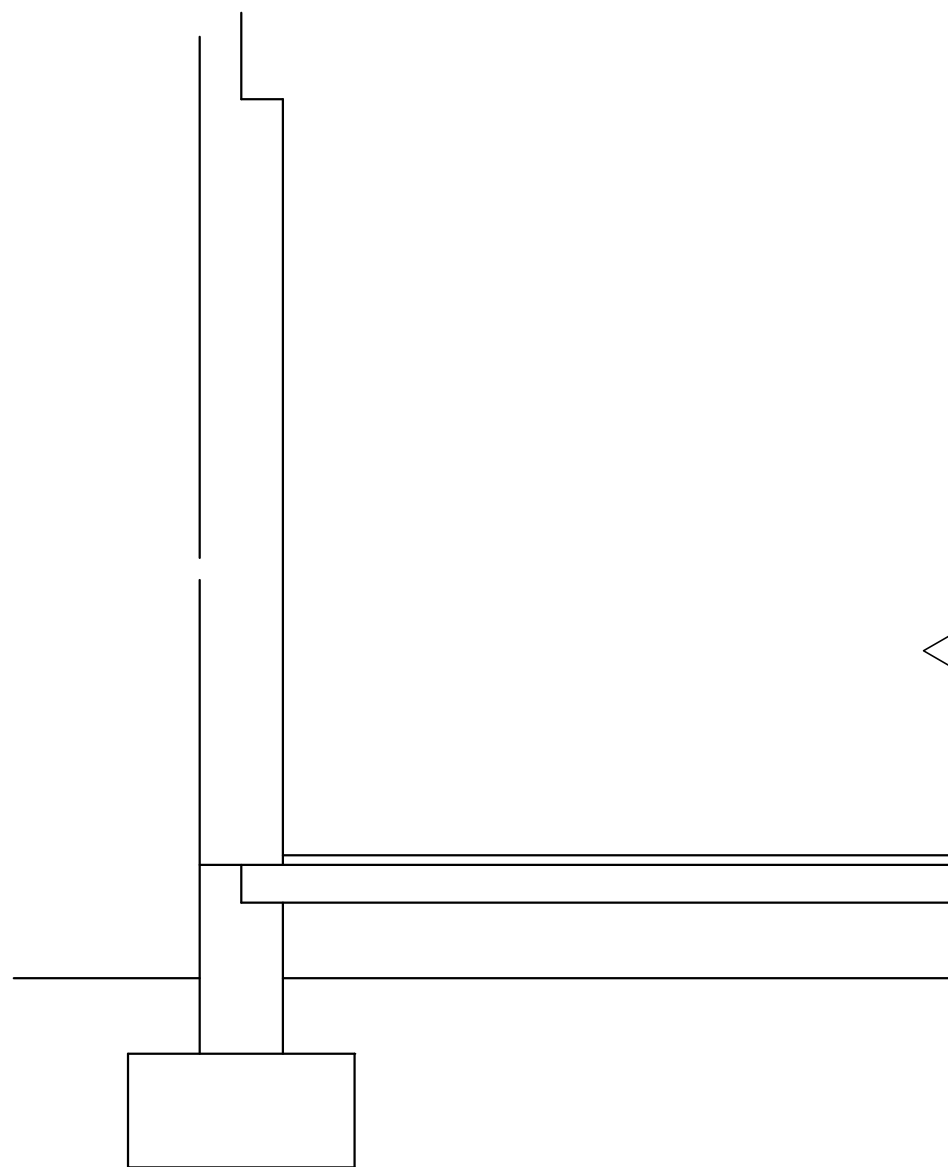
KRAM
STAPLE



OOSAANSIG
EAST ELEVATION
SKAAL 1:50 / SCALE 1:50



VLOERPLAN
FLOOR PLAN
SKAAL 1:50 / SCALE 1:50



DEURSNEEAANSIG
SECTIONAL ELEVATION
SKAAL 1:20 / SCALE 1:20

VLOERPLAN FLOOR PLAN		KOR COR	E	M
1	DEURE + VENSTERS DOORS + WINDOWS (21/2)	10.5		
2	ELEKTRIES ELECTRICAL (15/2)	7.5		
3	TOEBEHORE FIXTURES (16/2)	8		
4	ARSERING HATCHING	4		
SUB-TOTAAL SUB-TOTAL		30		

SNIT A-A SECTION A-A		KOR COR	E	M
1	MURE + VLOER + FONDASIES WALLS + FLOOR + FOUNDATIONS	8		
2	DAK ROOF	17		
3	VENSTERS + RWAP WINDOWS + RWDP	21		
4	BYSKRIFTE HATCHING	3		
SUB-TOTAAL SUB-TOTAL		49		

TOTAAL TOTAL
79

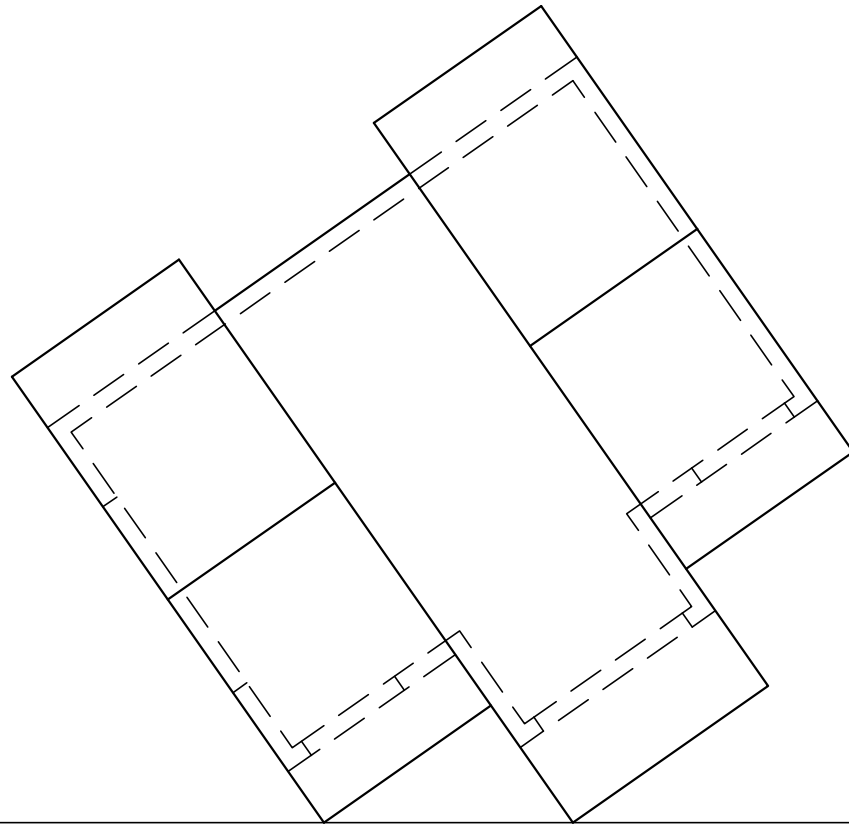


Die vooraansig en regteraansig van 'n WOONHUIS, met die nodige inligting benodig om 'n tweepunt-perspektieftekening te teken, word op diagramvel 2 getoon. Die bo-aansig is in posisie geteken vir die voltooiing van die perspektief tekening. U word gevra om 'n perspektieftekening vir 'n maatskappy te teken van die Woonhuis.

1. Bepaal die verdwynpunte en voltooi die perspektieftekening.
2. Toon alle konstruksielyste en projeksielyste.
3. Geen verborge besonderhede word verlang nie.

The front view, top view and right view of a DWELLING, and the information needed to draw a two-point perspective drawing, is shown on diagram sheet 2. The top view is drawn in position for the completion of a perspective drawing. You are required to draw a perspective drawing for a company of the Dwelling.

1. Determine the vanishing points and complete the perspective drawing.
2. Show all construction lines and projection lines.
3. No hidden detail is required.



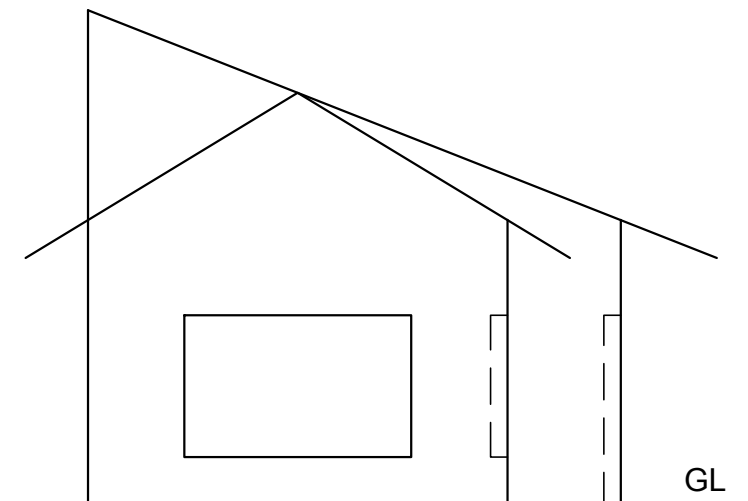
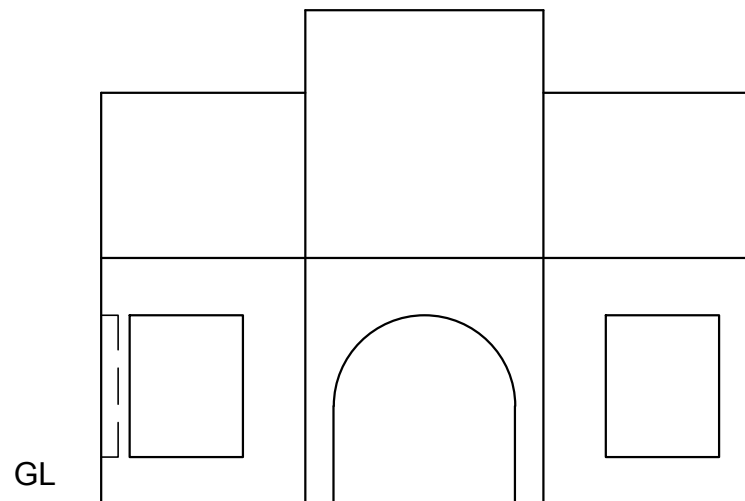
2 PUNTPERSPEKTIEF 2 POINT PERSPECTIVE		KOR COR	E	M
1	VP + KONST. VP + CONST. (13/2)	6,5		
2	MURE WALLS (19/2)	9,5		
3	DAKKE ROOFS	14		
4	DEUR & VENSTERS DOOR & WINDOWS (22/2)	11		
SUB-TOTAAL SUB-TOTAL		41		

PP /PV

PP /PV

HL

HL



+
SP

DIAGRAMVEL 2
DIAGRAM SHEET 2

VRAAG 2
QUESTION 2

INGENIEURSGRAFIKA EN ONTWERP
ENGINEERING GRAPHICS AND DESIGN

MAART TOETS 2017
MARCH TEST 2017

NAAM & VAN
NAME & SURNAME

GRAAD
GRADE