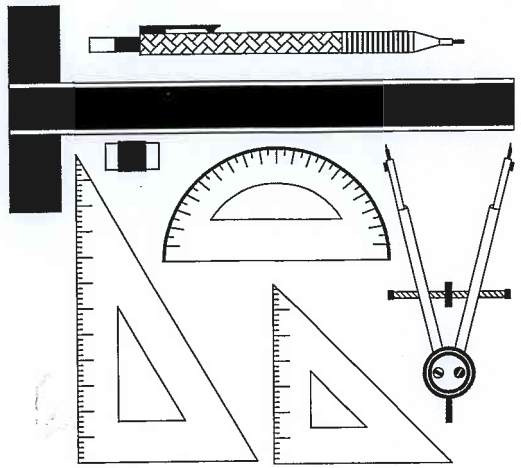
MARKING GUIDELINES



NATIONAL SENIOR CERTIFICATE EXAMINATION

2018

ENGINEERING GRAPHICS AND DESIGN

PAPER 1

MARKS: 200
TIME: 3 HOURS

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. This question paper consists of **6 pages** including the cover page and **4 questions.**
2. **All** questions must be answered.
3. Unless specified otherwise, all questions are in **First-angle Orthographic Projection.**
4. Unless specified otherwise, all questions are to be completed to a **scale of 1:1.**
5. **All** answer sheets must be restapled in numerical order, even questions that have not been answered.
6. All **construction work** must be shown.
7. Print your **examination number** neatly on each page.
8. Use only the **answer sheets** provided.
9. Your drawings should reflect **neatness** and **accuracy.**
10. All dimensions or detail not given may be **assumed** in **good proportion.**
11. Your drawings should comply with SANS 10143.

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QUESTION	SECTION	MARK	MODERATED	MAXIMUM	CODE
1	CIVIL ANALYTICAL			20	
2	INTERPENETRATION & DEVELOPMENT			40	
3	TWO-POINT PERSPECTIVE			40	
4	CIVIL DRAWING			100	
SYMBOL	TOTAL			200	
				100	

FINAL CONVERTED MARK	CHECKED BY
100	

EXAMINATION NUMBER

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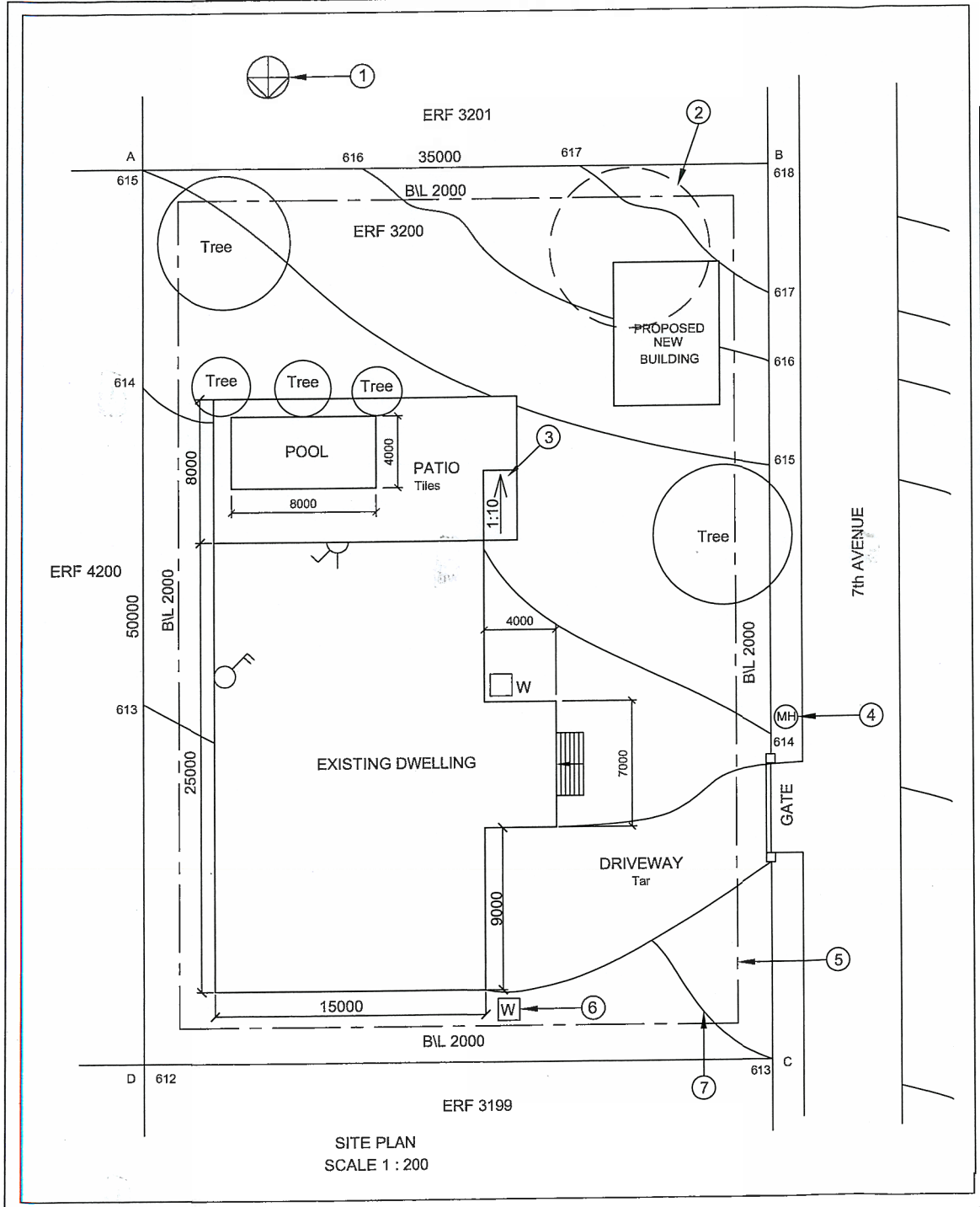

SITE PLAN
SCALE 1 : 200

QUESTION 1

CIVIL ANALYTICAL

STUDY THE ADJACENT DRAWING AND ANSWER THE QUESTIONS THAT FOLLOW:		
1.1 What is the scale of the drawing?	1 : 200	1
1.2 How close may any building be built to the property boundary?	2000 / 2 m	1
1.3 What is the ERF number of the property to the NORTH?	3199	1
1.4 How many trees are currently on this property?	6	1
1.5 What surface finish is used for the driveway?	Tar	1
1.6 What is the feature at 1 called?	NORTH POINT	1
1.7 What does the broken line at feature 2 imply?	TREE to be REMOVED	1
1.8 What is the feature at 3 called?	RAMP	1
1.9 What is the feature at 4 called? (No abbreviations)	MANHOLE	1
1.10 What is the feature at 5 called?	BUILDING LINE	1
1.11 What is the feature at 6 called?	ELECTRICITY METER	1
1.12 What is the feature at 7 called?	CONTOUR / CONTOUR LINE	1
1.13 When walking down the steps, which direction would you be facing?	WEST	1
1.14 Choose either A, B or C based on the following question: If a car were driven out of the gate and turned left onto 7th Avenue and drove along 7th Avenue, would it be driving A. downhill? B. uphill? C. on level ground?	B	1

1.15 In the space below, determine the perimeter of the existing dwelling in m. — 2

Perimeter = Sum of outer dimensions
= 25m + (2 x 15m) + (2 x 4m) + (2 x 9m) +7m
= 88 m

Answer: 88 m

1.16 In the space below, draw, in NEAT freehand, the PLAN VIEW and ELEVATION VIEW of the SANS convention for a water closet (toilet). — 2

PLAN VIEW	ELEVATION VIEW

1.17 Draw, in NEAT freehand, the following symbols in the existing dwelling: — 2

1 x double pole light switch placed on the EASTERN wall
1 x switched socket outlet placed on the SOUTHERN wall

20 MARKS

ANSWER SHEET 1

EXAMINATION NUMBER

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QUESTION 2

INTERPENETRATION & DEVELOPMENT

The figure below shows the COMPLETE Front View and the INCOMPLETE Top View of a **RIGHT REGULAR SQUARE DUCT** penetrated perpendicularly by a **CIRCULAR PIPE** and drawn in First-angle Orthographic Projection. The Auxiliary Views of the circular pipe are also shown in the Front and Top Views.

Draw the following:

2.1 the complete Top View clearly showing the curve of interpenetration. Show all hidden detail.

2.2 the development of the two surfaces of the square duct that are being penetrated, clearly showing the curve of interpenetration.
Show all construction.

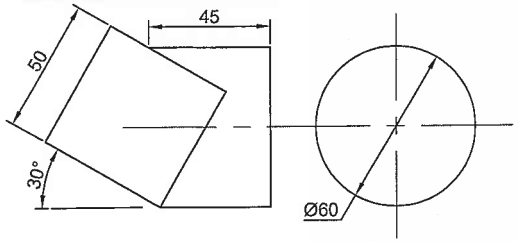
The complete Front View and an Auxiliary View as well as the Top View of the centre line of the circular pipe have already been drawn for you.

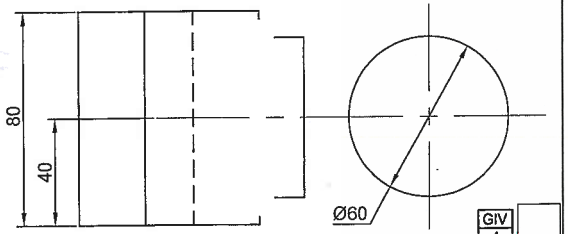
Given	●	= 4
Top View:		19
Hidden Detail	♥	= 5
Interpen	♦	=12
Pipe outer line	♠	= 2
Construct	♣	= 2
Development	✓	=15
		40

ASSESSMENT CRITERIA

You will be assessed on your ability to do the following:

• draw and complete the Top View	23
• show necessary construction	2
• develop and draw the square duct	15





GIV	4
TV	19
CON	2
DEV	15
40 MARKS	

EXAMINATION NUMBER

ANSWER SHEET 2

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QUESTION 3

TWO-POINT PERSPECTIVE

The figure shows the three views of the inside of a kitchen with built-in cupboards. Some walls have been removed to see inside the kitchen.
Draw a neat two-point perspective view of the kitchen.

PP - Picture Plane
HL - Horizon Line
GL - Ground Line
SP - Station Point

Do not move the SP. It is positioned correctly.

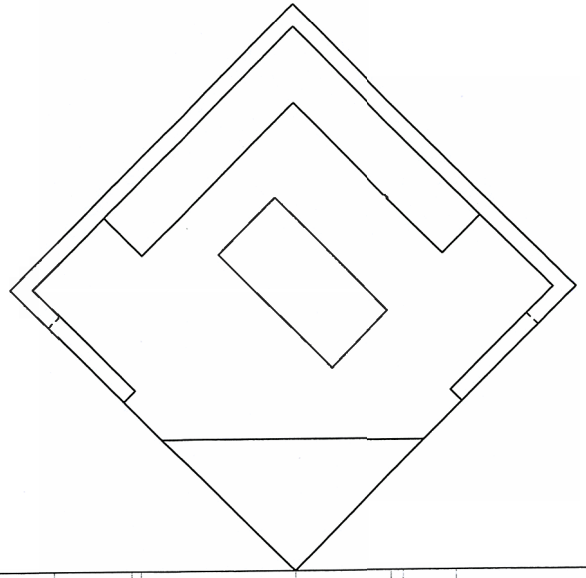
Neatly label the vanishing points RVP and LVP.
NO HIDDEN DETAIL IS REQUIRED.

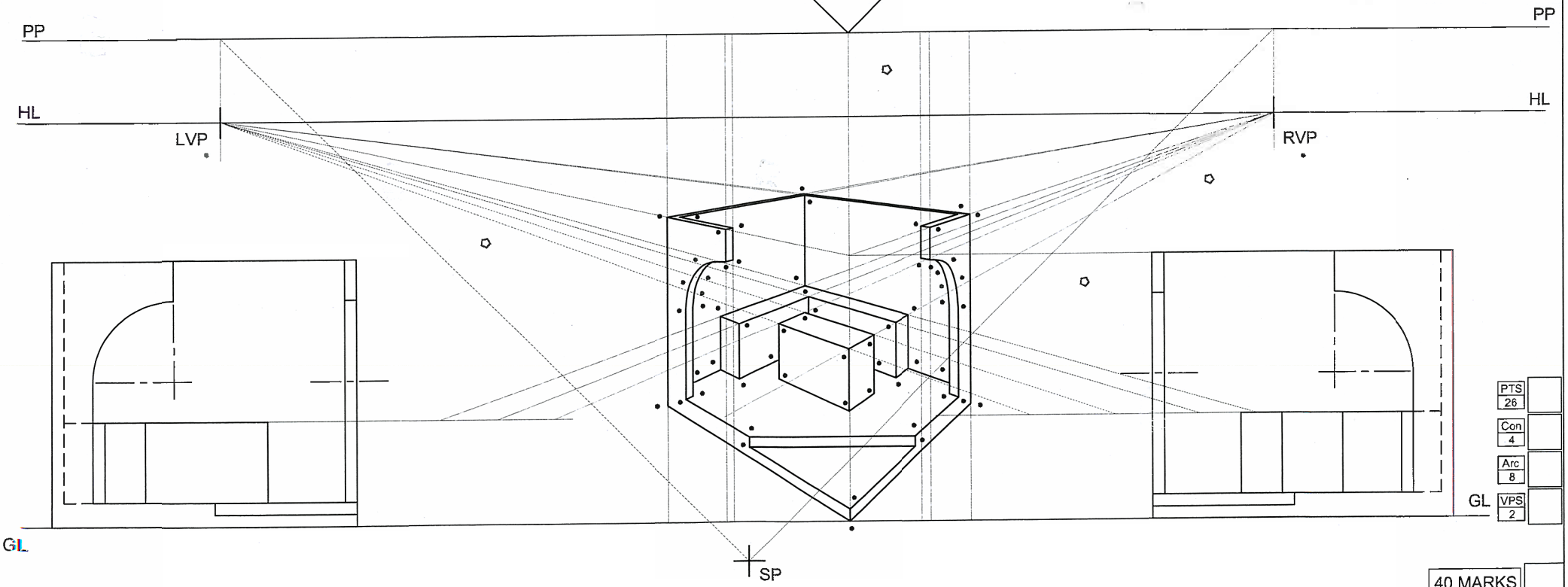
PTS • 52/2 = 26	
CON ⬡	= 4
Arcs •	= 8
VPS •	= 2
	40

ASSESSMENT CRITERIA

You will be assessed on your ability to do the following:

• determine and label the vanishing points	2
• determine the two-point perspective view	38





PTS 26	
Con 4	
Arc 8	
VPS 2	

40 MARKS

EXAMINATION NUMBER

ANSWER SHEET 3

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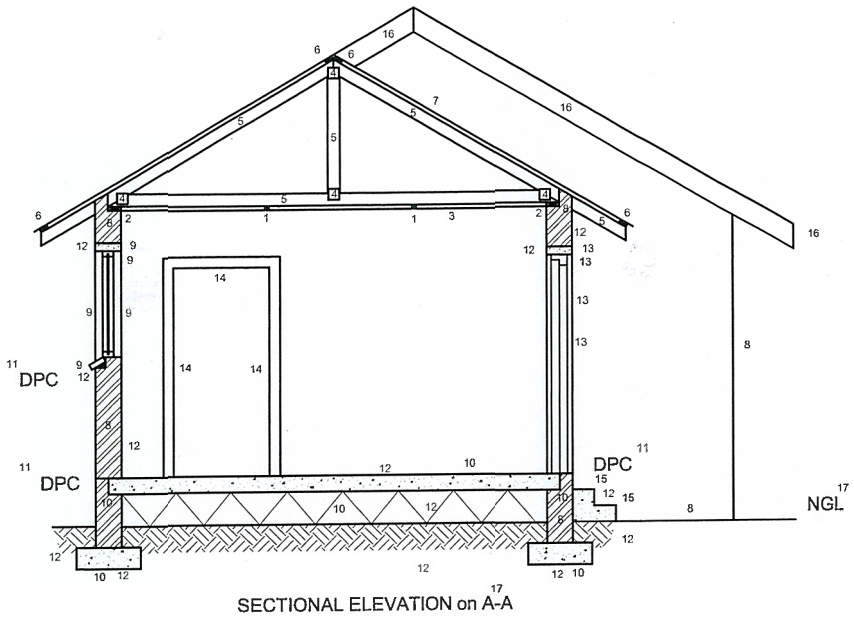
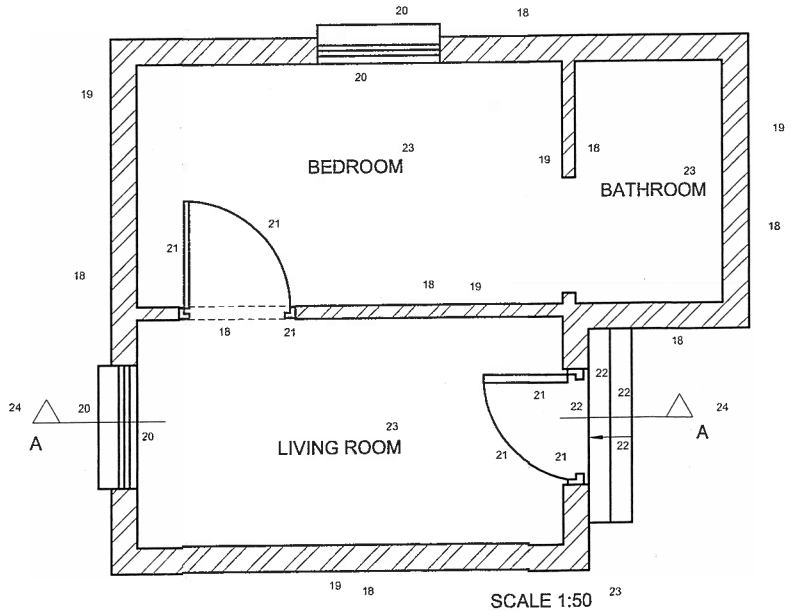
QUESTION 4

CIVIL DRAWING



SECTIONAL ELEVATION on A-A



SCALE 1:50

FLOOR PLAN

ANSWER SHEET 4

Assessment Criteria

Sectional Elevation

1	Ceiling Battens	2	
2	Wall Plates	2	
3	Ceiling Board	1	
4	Truss Plates	4	
5	Roof Truss	5	
6	Purlins	4	
7	Roof	1	
8	Walls	6	
9	Sectioned Window	5	
10	Floor & Foundation	6	
11	DPC	3	
12	Hatching	13	
13	Sectioned Door	4	
14	New Internal Door	3	
15	Step	2	
16	Barge Board	3	
17	Labels	2	
Subtotal		66	

Floor Plan

18	Walls	8	
19	Hatching	5	
20	Windows	4	
21	Doors	6	
22	Step	4	
23	Labels	5	
24	Cutting Plane	2	
Subtotal		34	
TOTAL		100	

100 MARKS

EXAMINATION NUMBER

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