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NATIONAL SENIOR CERTIFICATE	
GRADE 12	
DATE:	MAY/ JUNE 2024
SUBJECT:	ENGINEERING GRAPHICS AND DESIGN
PAPER:	1
MARKS:	100
TIME:	3 Hours
NUMBER OF PAGES:	6

INSTRUCTIONS AND INFORMATION

1. This paper consists of FOUR questions.
2. Answer all the questions.
3. ALL questions 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 questions, as prescribed, must be answered on the question paper.
7. ALL pages must be placed in numerical order and stapled in ONLY the TOP LEFT CORNER once complete, regardless whether the question was answered or not.
8. Time management is essential in order to complete all the questions.
9. Print your examination number in the supplied block on each page.
10. Dimension details not indicated must be estimated according to proportions.

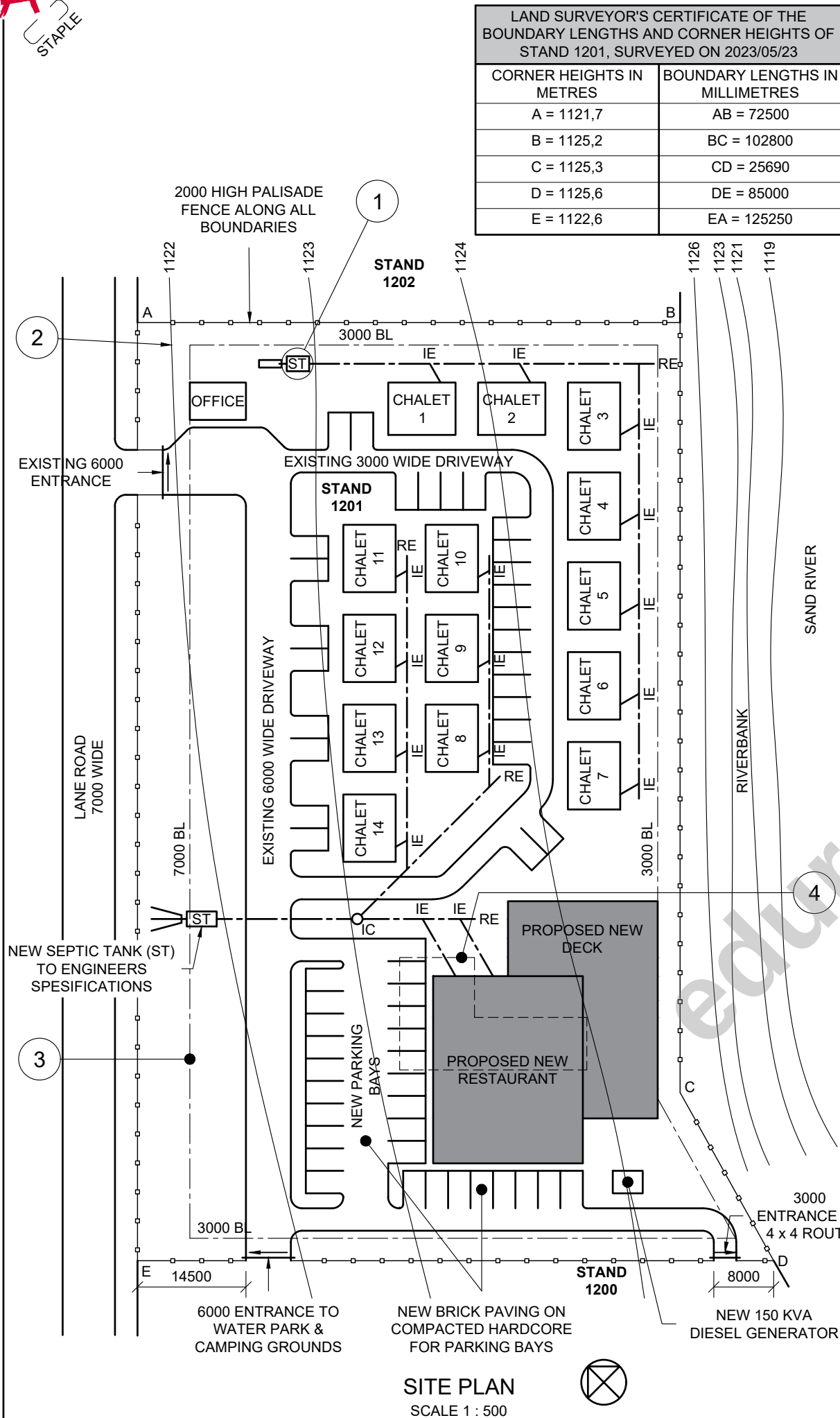
FOR OFFICIAL USE ONLY										
QUESTION	MARK OBTAINED			½	SIGN	MODERATED			½	SIGN
1										
2										
3										
4										
TOTAL:										
	2	0	0			2	0	0		

FINAL CALCULATED MARK	CHECKED
100	



SOUTH AFRICAN COMPREHENSIVE ASSESSMENT INSTITUTE
SUID-AFRIKAANSE KOMPREENSIEWE ASSESSERINGSINSTITUUT

CENTRE NUMBER	
CENTRE NUMBER	
IDENTIFICATION NUMBER	
IDENTIFICATION NUMBER	
EXAMINATION NUMBER	
EXAMINATION NUMBER	1



NOTES:
Contractors must verify all dimensions and levels on the site before commencing work.
Architects must be notified immediately of any discrepancies.

ARCHITECT SIGNATURE: _____
CLIENT'S SIGNATURE: _____

ANSWER 19
In the space below, draw, in neat freehand, the top view of the SANS 10143 graphical symbol for a ramp with a slope of 1 : 10.



2	2022/06/09	FIX CHALET'S NUMBERS
1	2022/06/05	ADD NEW SEPTIC TANK (ST) ON EXISTING SEWER LINE
REVISION	DATE	DESCRIPTION
PRINTED BY: FUTURE PRINTERS	DATE OF PRINT: 2022/06/12	

CROXLEY & CO. ARCHITECTS
1025 LYNNWOOD AVENUE
PRETORIA
TELL: 012 256 368

DRAWING TITLE:
SITE PLAN

PROJECT:
PROPOSED NEW RESTAURANT AND DECK FOR WATER PARK FUN INC. ON STAND 1201 ON LANE ROAD, MOKOPANE.

PROJECT NUMBER: EGD1B-2023	DRAWING NUMBER: 1 of 7	
REFERENCE CODE: P1BQ1-2023	DRAWN: CHUCK	CHECKED: ROB
DATE: 2023/06/01	SCALE: 1 : 500	

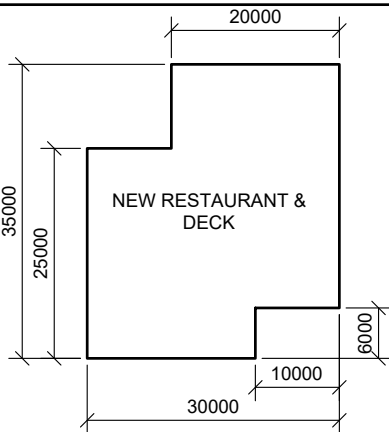
QUESTION 1: CIVIL ANALYTICAL

Given:
A site plan of a resort with a proposed new restaurant and proposed new deck, a title panel and a table of questions. The drawing is not presented to the indicated scale.

Instructions:
Complete the table below by neatly answering the questions, which all refer to the accompanying drawing, title panel and civil content.

[30]

QUESTIONS		ANSWERS		
1	What scale is indicated for the SITE PLAN?		1	
2	Who prepared the drawing?		1	
3	Who is the client?		1	
4	Which printing company was used?		1	
5	What is the last revision?		1	
6	How many new structures must be added to STAND 1201?		1	
7	What does the abbreviation ST at 1 stand for?		1	
8	How many rodding eyes are shown on STAND 1201?		1	
9	In which color could new wood be indicated on a plan or section?		1	
10	In which two metric units can dimensions on a site plan be indicated?		2	
11	What does the line at 2 indicate?		1	
12	What does the line at 3 indicate?		1	
13	What does the line at 4 indicate?		1	
14	Determine the difference between the highest and lowest corner of STAND 1201, in metres.		2	
15	What is the shortest distance between the entrance to the water park & camping ground and the entrance to the 4 x 4 route, in metres?		3	
16	Which elevation of the proposed new deck is facing Sand river?		2	
17	In the space below, ANSWER 17, determine the total area for the new restaurant, including the new deck, in square metres. Show ALL calculations.		3	
18	In the space below, ANSWER 18, determine the perimeter of STAND 1201, in metres. Show ALL calculations.		3	
19	In the space in the title panel, ANSWER 19, draw, in neat freehand, the top view of the SANS 10143 graphical symbol for a ramp with a slope of 1 : 10.		3	
TOTAL:		30		



ANSWER 17

ANSWER 18

EXAMINATION NUMBER
EXAMINATION NUMBER
2



QUESTION 2 SOLID GEOMETRY

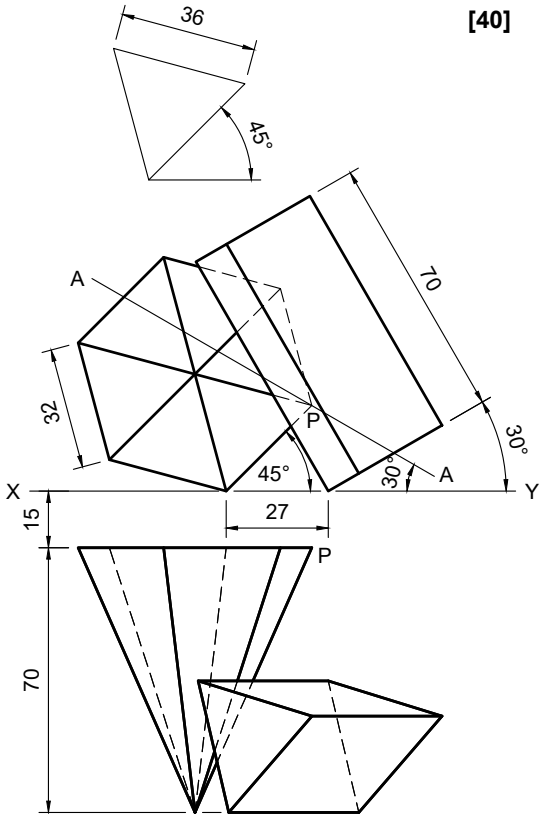
- Given:**
- The front view and top view of a right equilateral triangular prism and a right hexagonal pyramid.
 - An auxiliary view for the triangular prism
 - Cutting plane A-A

- Specifications:**
- The two solids do not touch
 - Both solids are cut by cutting plane A-A
 - The cutting plane passes through point P

- Instructions:**
- Draw, to a scale of 1 : 1, the following views of the two solids.
- 2.1. The given front view
 - 2.2. A sectional top view
 - 2.3. A sectional right view
 - 2.4. The true shape of the cut surfaces of BOTH solids

- Planning is essential.
- Show ALL hidden detail.
- Show ALL construction.

[40]



ASSESSMENT CRITERIA					
1	FRONT VIEW	10½			
2	TOP VIEW	11			
3	RIGHT VIEW	12½			
4	TRUE SHAPE	6			
PENALTIES(-):					
TOTAL:		40			
EXAMINATION NUMBER					
EXAMINATION NUMBER					3



QUESTION 3 PERSPECTIVE

Given:
Three views of a house and all the information needed to draw a two point perspective drawing
PP - Picture Plane
HL - Horizon Line
GL - Ground Line
SP - Station Point

- Instructions:**
Complete the perspective drawing.
- Align the drawing sheet with the horizon line (HL).
 - Determine and label the vanishing points.
 - Show ALL construction.
 - Show depth at the door and window.
 - No interior detail is required.
 - No hidden detail is required.

[38]

ASSESSMENT CRITERIA					
1	CONSTRUCTION & VP'S	6			
2	FLOOR + WALLS + STEP	17			
3	WINDOW + DOOR	6½			
4	ROOF + CHIMNEY	8½			
PENALTIES(-):					
TOTAL:		38			

PP

HL

GL

SP

HL

GL

EXAMINATION NUMBER

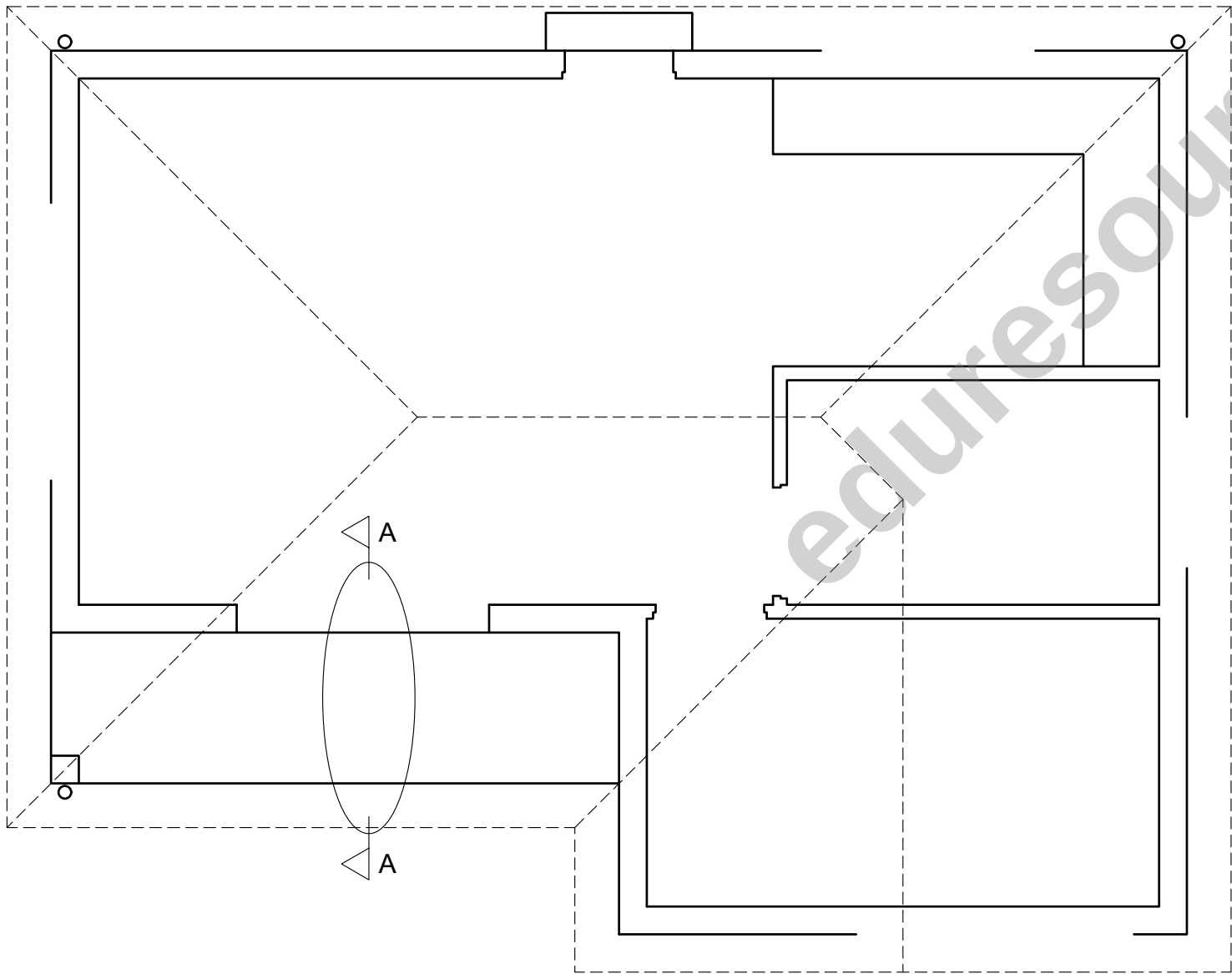
EXAMINATION NUMBER

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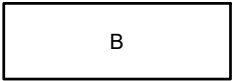




GL —



FLOOR PLAN
SCALE 1 : 50



SECTION A-A
SCALE 1 : 20

MARK ALLOCATION FOR ROOF SECTION		PENALTIES	
A		INCORRECT SCALE	
B		NON-ALIGNMENT OF VIEWS	
C		VIEWS ROTATED	
D		SECTION VIEWED INCORRECTLY	
E		INCORRECT LETTERING	
F			
G			
H			
I			
TOTAL:		TOTAL:	

ASSESSMENT CRITERIA					
FLOOR PLAN					
1	WINDOWS + DOORS	12½			
2	FIXTURES	8			
3	ELECTRICAL	9			
4	HATCHING	3			
5	LABELS	5			
SUBTOTAL:		37½			
SOUTH-WEST ELEVATION					
1	WALLS + FFL	4			
2	ROOF + GUTTER	8			
3	DOOR + WINDOW	7			
4	LABELS	1			
SUBTOTAL:		20			
DETAILED SECTION					
1	ROOF DETAIL	15			
2	WALL + SLAB	9½			
3	DOOR + LINTEL + PATIO OPENING	3			
4	HATCHING	6			
5	LABELS	1			
SUBTOTAL:		34½			
TOTAL:		92			
PENALTIES(-):					
GRAND TOTAL:					
EXAMINATION NUMBER					
EXAMINATION NUMBER					6