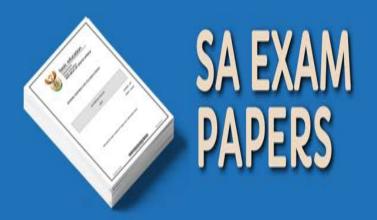


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NATIONAL SENIOR CERTIFICATE

GRADE 12

ENGINEERING GRAPHICS AND DESIGN P1

FEBRUARY/MARCH 2013

MARKS: 100

TIME: 3 hours

This question paper consists of 6 pages.



INSTRUCTIONS AND INFORMATION

- 1. This question paper consists of FOUR questions.
- 2. Answer ALL the questions.
- 3. ALL drawings are in first-angle orthographic projection, unless otherwise stated.
- 4. ALL drawings must be completed using instruments, unless otherwise stated.
- 5. ALL answers must be drawn accurately and neatly.
- 6. ALL the questions must be answered on the QUESTION PAPER as instructed.
- 7. ALL the pages must be re-stapled in numerical sequence, irrespective of whether the question was attempted.
- 8. Time management is essential in order to complete all the questions.
- 9. Print your examination number in the block provided on every page.
- 10. Any details or dimensions not given must be assumed in good proportion.

FOR OFFICIAL USE ONLY											
QUESTION	MARK	(S OBT	AINED	1/2	SIGN	MC	DERAT	ED	1/2	SIGN	
1											
2											
3											
4											
TOTAL											
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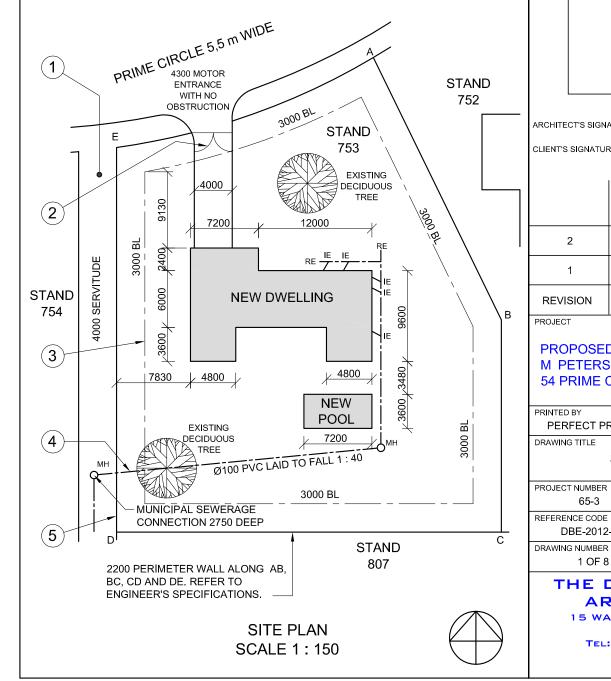
CHECKED BY

COMPLETE THE FOLLOWING:	
CENTRE NUMBER	
CENTRE NUMBER	
EXAMINATION NUMBER	
EXAMINATION NUMBER	

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Please turn over

کې		
	LAND SURVEYOR'S O SIDE LENGTHS AND ON STAND 753 PRIM SURVEYED O	CORNER HEIGHTS E CIRCLE ATHLONE.
	LENGTHS IN METRES	HEIGHTS IN METRES
	AB = 30,885	A = 66,5
	BC = 22,452	B = 65,9
	CD = 40,729	C = 64,3
	DE = 40,695	D = 64,8
	EA = 28,825	E = 65,2



NOTE:

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

20.In the space provided below, draw, in neat freehand, the front view and top view of the SABS 0143 convention for a kitchen sink.

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HITECT'S SIGNA						1	
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						1	
2	30-10-2	012	ADD PI WALL	ERIME	ETER	1	
1	23-10-2	012	MOVE	P00	L	1	
EVISION	DATI	Ε	DESCRIPTION			1	
JECT						1	
ROPOSED NEW DWELLING FOR PETERSEN ON STAND 753 AT PRIME CIRCLE ATHLONE.							
TED BY	RINT	DAT	E OF PRIN 12-12				
WING TITLE	*****		12 12	_0 12			
SITE PLAN							
JECT NUMBER		DRA	WN BY	DATE			
65-3			PIETER 14-10-201				
RENCE CODE		CHE	CKED BY	DATE		2	

QUESTION 1: ANALYTICAL (CIVIL)

A site plan for a new dwelling and swimming pool, a title panel and a table of questions. The drawing has not been prepared to the indicated scale.

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

BS 0143						
ink.		QUESTIONS	ANSWERS			
	1	On what date was the site plan printed?	1			
	2	Who checked the drawing?	1			
	3	How many revisions have been made to the drawing?	1			
	4	How wide is the driveway?	1			
	5	What is the fall of the sewerage line?	1			
	6	How high is the perimeter wall of the stand?	1			
	7	In what colour must a new dwelling on a site plan be presented?	1			
	8	How deep is the municipal sewerage connection?	1			
	9	Name the feature at 1.	1			
	10	Name the feature at 2.	1			
	11	What does the line at 3 indicate?	1			
	12	Name the line at 4.	1			
	13	Name the line at 5.	1			
PERIMETER	14	What elevation of the new dwelling faces the servitude?	2			
'E POOL	15	Which is the lowest corner on the stand?	2			
CRIPTION	16	What is the shortest distance between the dwelling and the pool?	2			
	17	With reference to the sewerage, identify and give the reason why the plan could not be approved.	2			
NG FOR) 753 AT NE.	18	Determine the length of the perimeter wall in metres. Show ALL calculations.	3			
INT 2-2012						
T	19	Determine the total area of the new dwelling in square metres. Show ALL calculations.	3			
DATE 14-10-2012		In the space provided in the title panel, draw, in neat freehand,				
DATE 14-10-2012 DATE	20	the front view and top view of the SABS 0143 convention for a kitchen sink.	3			
14-10-2012		TOTAL	30			

THE DESIGN TEAM **ARCHITECTS**

DBE-2012-01

1 OF 8

THANDI

PASSED BY

CRAIG

15 WATERKANT STREET CAPE TOWN TEL: 021 555 3434

EXAMINATION NUMBER EXAMINATION NUMBER



QUESTION 2: INTERPENETRATION AND DEVELOPMENT

Given:

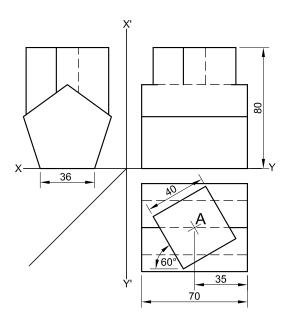
- The incomplete front view, right view and top view of a regular square prism that has been shaped to fit around a right regular pentagonal prism. The axes of both prisms lie in a common vertical plane.
- The position of point A.

Instructions:

Draw, to scale 1:1, the following views of the TWO prisms:

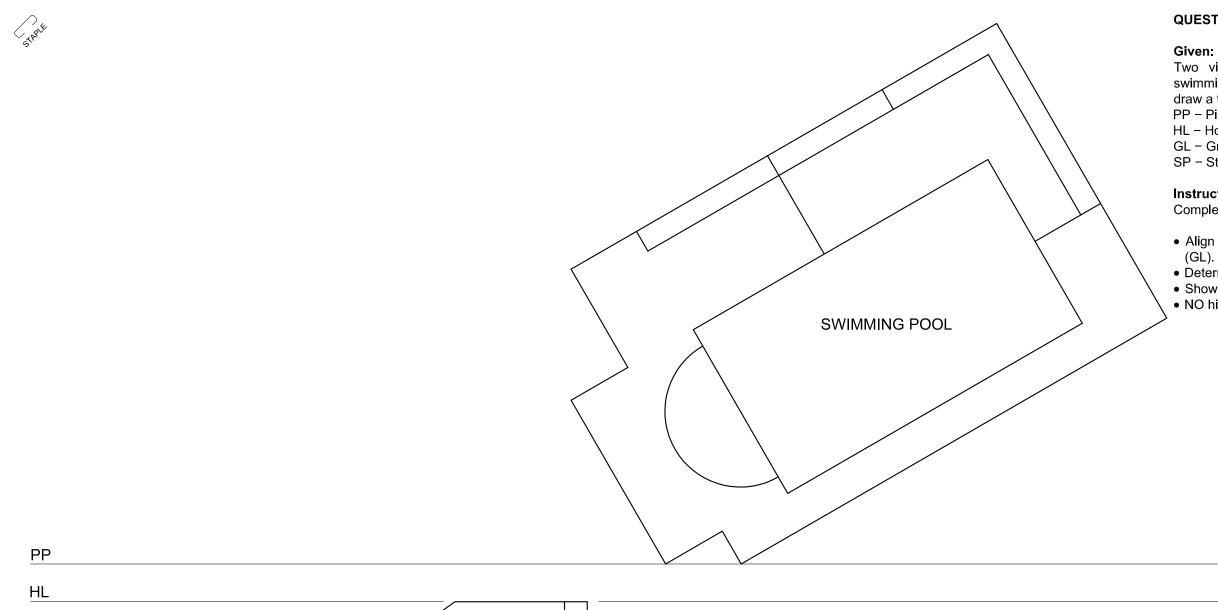
- 2.1 The given top view
- 2.2 The given right view
- 2.3 The complete front view, clearly showing the curve of interpenetration
- 2.4 Develop the surface of the square prism.

Show ALL hidden detail and fold lines. [37



	ASSESSMENT	CRITE	ERIA				
1	TOP VIEW	7					
2	RIGHT VIEW	8					
3	FRONT VIEW	13					
4	DEVELOPMENT	9					
	TOTAL	37					
	EXAMINATION	NUMBE	R				
	EXAMINATION NUMBER						





QUESTION 3: PERSPECTIVE

Two views of an entertainment area and swimming pool and 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 ground line
- Determine and label the vanishing points.
- Show ALL necessary construction.NO hidden detail is required.

[39]

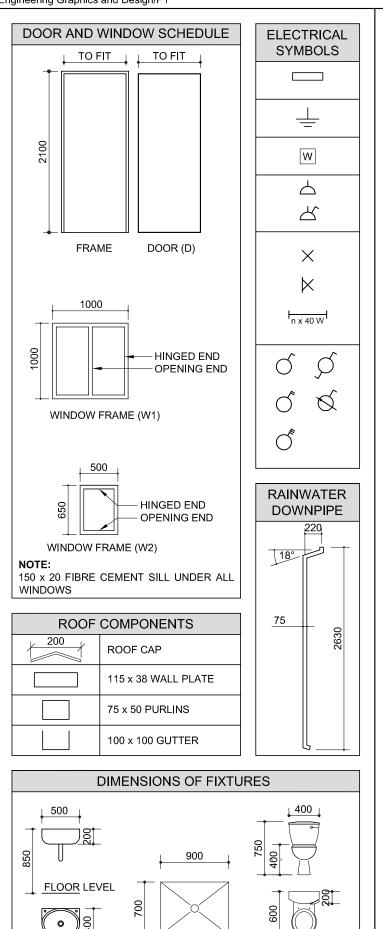
SWIMMING POOL

GL



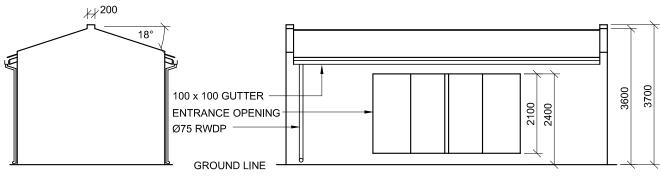
	ASSESSMENT CRITERIA								
1	CONSTRUCTION + VPs	6							
2	SURROUND	9½							
3	WALL + STEP	12							
4	SWIMMING POOL	7							
5	SEMI-CIRCLE	4½							
	TOTAL	39			·				
	EXAMINATION	NUMBE	 R						

EXAMINATION NUMBER



SHOWER (SH)

TOILET (WC)



EAST ELEVATION

INCOMPLETE SOUTH ELEVATION

FEATURES

D DOOR W1 WINDOW W2 WINDOW

FIXTURES

WC - TOILET SH - SHOWER WB - WASH BASIN

ELECTRICAL FITTINGS

- 1. LIGHT SWITCH ONE-POLE 2. LIGHT SWITCH TWO-POLE
- 3. CEILING LIGHT 4. SWITCHED SOCKET OUTLET

ROOF NOTES:

ROOF PITCH 18°

BOTH ENDS

ROOF COVER 15 mm FIBRE

CEMENT SHEET ON 75 x 50 mm

115 x 38 mm ROOF TRUSS ON

100 mm SQUARE GUTTER ON

SCHEMATIC DIAGRAM

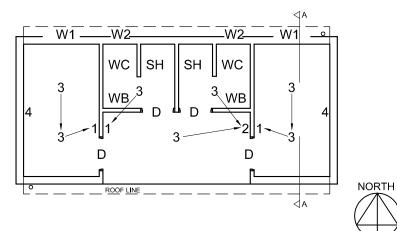
OF A ROOF TRUSS

PURLINS @ 700 mm c/c

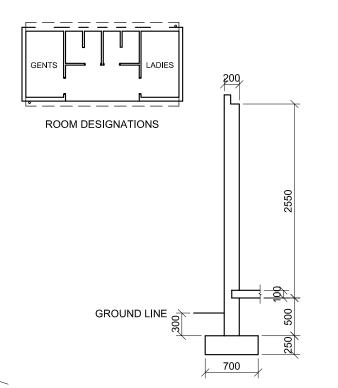
115 x 38 mm WALL PLATE

NOTE:

THE ARROW SHOWS THE LIGHT CONNECTION TO THE SWITCH.



INCOMPLETE FLOOR PLAN



INCOMPLETE FOUNDATION. SLAB AND WALL DETAIL ON A-A

QUESTION 4: CIVIL DRAWING

Given:

- The incomplete south elevation of a new change room, showing the walls, the entrance opening, the roof and
- The incomplete floor plans showing the walls, position of the doors, the windows, the fixtures, the electrical features and room designations
- The complete east elevation
- Roof notes and a schematic diagram of a roof truss
- The incomplete foundation, slab and wall detail
- A door and window schedule
- A table of electrical symbols
- A table of roof components and the rainwater downpipe
- A table of fixtures
- The incomplete plan of the new change room, drawn to scale 1 : 50, on page 6

Instructions:

- Answer this question on page 6.
- Using the given incomplete floor plan, draw in first-angle orthographic projection and to scale 1:50, the following views of the new change room:
- 4.1 The complete floor plan
- 4.2 The south elevation
- **4.3 A sectional elevation** on cutting plane A-A
- ALL drawings must comply with the **guidelines** and conventions contained in the SABS 0143.

SPECIFICATIONS:

THE FLOOR PLAN

Add the following features to the drawing:

- ALL doors and windows
- ALL fixtures as indicated by the abbreviations
- ALL electrical fittings as indicated by the numbers
- ALL hatching detail

THE SOUTH ELEVATION

Show the following features on the drawing:

- The outside walls
- The roof detail, including the gutter and rainwater down-
- The shower detail with the doors open
- The finished floor level

THE SECTIONAL ELEVATION

Show the following features on the drawing:

- The complete foundation, wall, slab and roof detail
- The window detail with a double lintel above the window
- ALL features to the west of cutting plane A-A
- ALL hatching detail

Label the following:

- The room designations and floor finish (tile)
- The south elevation and the sectional elevation
- Using the correct abbreviations, label the following features in the correct view: ground level, finished floor level and damp-proof course.

NOTE:

• ONLY the substructure hatching may be drawn in freehand. [94]

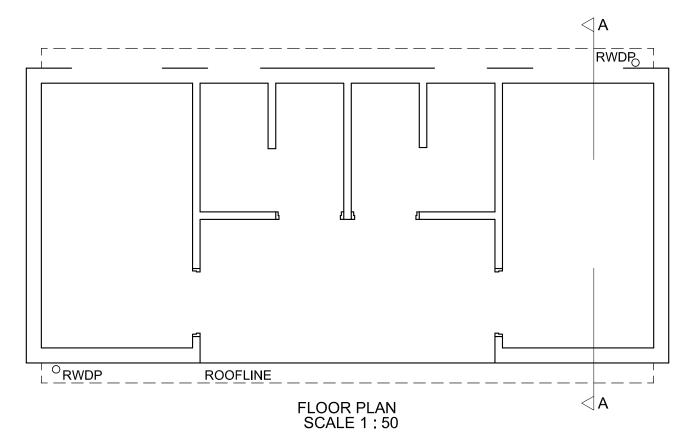


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WASH BASIN (WB)





	ASS	ESSMEN	T CRITER	RIA	
		FLOOR	PLAN		
		POSSIBLE	OBTAINED	SIGN	MODERAT
1	LABELS	2			
2	ELECTRICAL	10			
3	FIXTURES	6			
4	DOORS + WINDOWS	14			
5	HATCHING	4			
	SUBTOTAL	36			
	S	OUTH EL	EVATION	i	•
1	WALLS + FFL + DOOR + SH	11			
2	ROOF, GUTTER + RWDP	3			
3	LABELS	2			
	SUBTOTAL	16			
	SEC	TIONAL	ELEVATI	ON	•
1	ROOF	15			
2	WALLS + FLOOR + FOUNDATION	13			
3	WINDOW, DOOR + FIXTURES	5			
4	HATCHING	6			
5	LABELS	3			
	SUBTOTAL	42			
	TOTAL	94			
	E.	L XAMINATIO	N NUMBER		·

EXAMINATION NUMBER

6