education

Department:
Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

ENGINEERING GRAPHICS AND DESIGN P1

NOVEMBER 2009

MARKS: 100

TIME: 3 hours

This question paper consists of 6 pages.

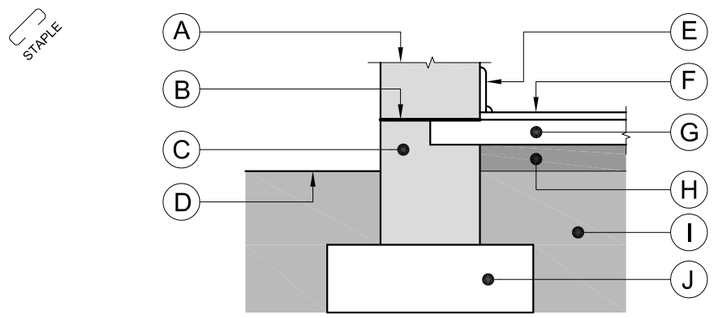
INSTRUCTIONS AND INFORMATION

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

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

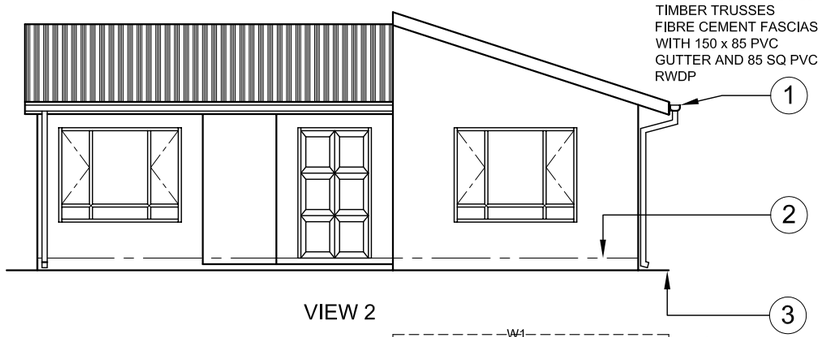
FINAL CONVERTED MARK	CHECKED BY
____ 100	

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



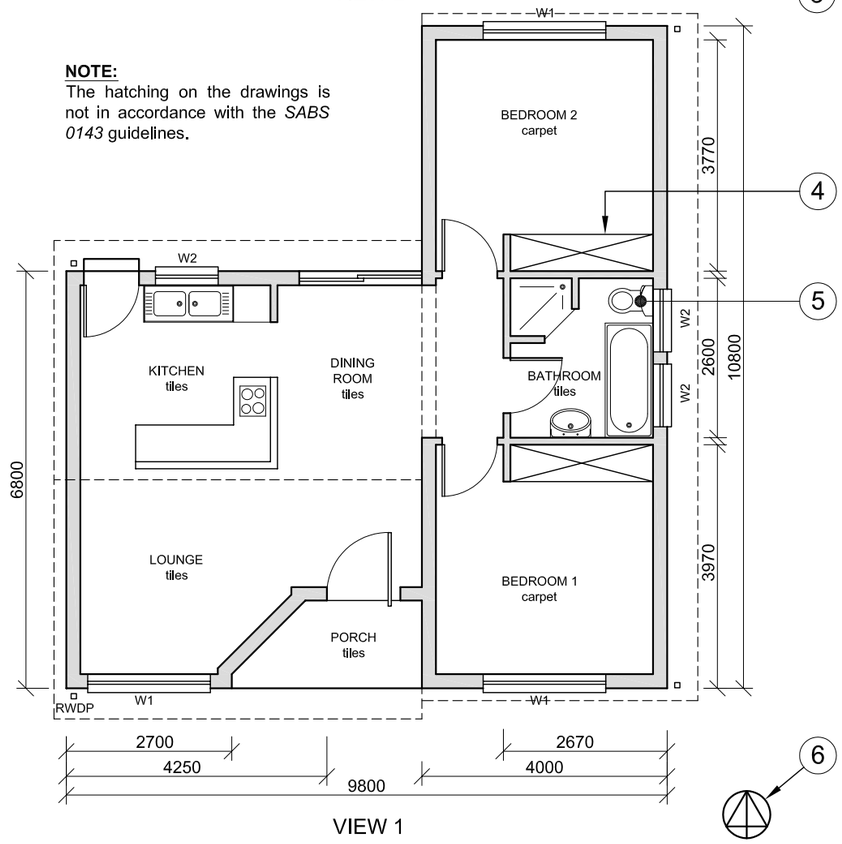
DETAILED DRAWING OF A LOAD-BEARING WALL AND FOUNDATION

ROOF NOTE:
IBR SHEETS LAID @ 18° ON 75 x 50 PURLINS ON APPROVED WATERPROOF MEMBRANE ON 115 x 38 TIMBER TRUSSES
FIBRE CEMENT FASCIAS WITH 150 x 85 PVC GUTTER AND 85 SQ PVC RWDP



VIEW 2

NOTE:
The hatching on the drawings is not in accordance with the *SABS 0143* guidelines.



VIEW 1

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

15. In the space below, draw, in neat freehand, the front view and top view of the *SABS* convention for a BATH.

ARCHITECT'S SIGNATURE .....

CLIENT'S SIGNATURE .....

EGD ARCHITECTS
188 SCHOEMAN STREET
PRETORIA 0001
Tel: 012 555 2345

REVISION	DATE OF REVISION
2	06-05-2009
PRINTED BY	DATE OF PRINT
PVDW	10-05-2009

REVISION DETAIL
ISLAND IN KITCHEN

DRAWING TITLE
PROPOSED NEW DWELLING FOR
P MSOMI ON
SUB 3 OF STAND № 49 AT
51 PLANE STREET
CENTURION

PROJECT NUMBER	DRAWING NUMBER
2009 - 351	0 0 0 1 4
REFERENCE CODE	
Q1P1-N-2009	DRAWN BY: P DIDI / CHECKED BY: S SMITH
DATE: 25-01-2009	SCALE: 1:100

QUESTION 1: ANALYTICAL (CIVIL)

Given:
The working drawings of a proposed new dwelling with a title block 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]**

	QUESTIONS	ANSWERS	
1	How many windows are shown on the plan?		1
2	What was the reason for the revision to the drawing?		1
3	What is the project number?		1
4	Who is the owner of the proposed new dwelling?		1
5	What scale has been used for the drawing?		1
6	Name the feature numbered 1.		1
7	What does the line numbered 2 indicate?		1
8	What does the line numbered 3 indicate?		1
9	Name the feature numbered 4.		1
10	What is the abbreviation for the fixture numbered 5?		1
11	What does the symbol numbered 6 indicate?		1
12	What would VIEW 1 be called?		1
13	What would VIEW 2 be called?		1
14	With reference to the detailed drawing of the load-bearing wall and foundation, match the letter on the drawing with each of the features listed.	LOAD-BEARING WALL DAMP-PROOF COURSE LINE BREAK SCREED COMPACTED HARDCORE	5
15	In the space provided in the title block, draw, in neat freehand, the front view and top view of the SABS convention for a bath.		4
16	What is the pitch (angle) of the roof?		1
17	What colour must all new window glass be on a presentation drawing?		1
18	Determine the perimeter of the dwelling in metres.		3
19	Determine the total area of the dwelling in m².		3
	TOTAL		**30**

EXAMINATION NUMBER

EXAMINATION NUMBER 2

STAPLE

S

QUESTION 2: INTERPENETRATION AND DEVELOPMENT

Given:

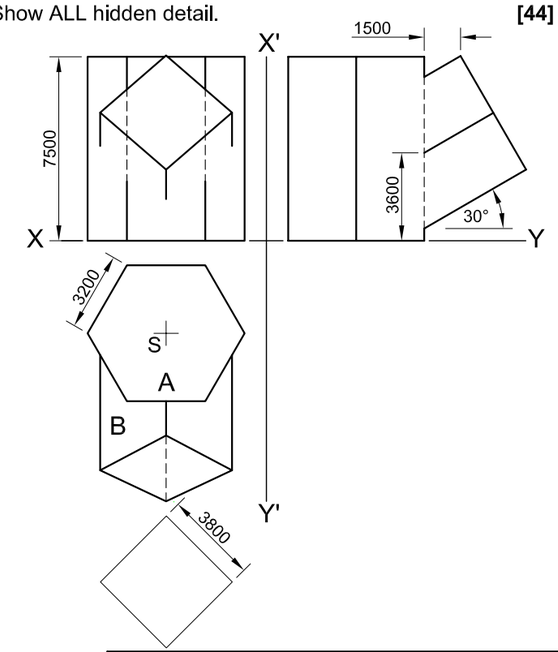
The incomplete front view, top view and the incomplete left view of an anchor used to secure an arch over a stadium. The anchor is a concrete casting in the form of a hexagonal prismatic footing (A) and a square branch piece (B), that has been shaped to fit around the footing. The axes of both pieces lie in a common vertical plane. The branch piece will be cladded with stainless steel.

Instructions:

2.1 Draw, to scale 1:100 and in first-angle orthographic projection, the following views of the complete anchor clearly showing the curve of interpenetration that will be formed between the two pieces:
- 2.1.1 The top view using point S as a reference
- 2.1.2 The complete front view
- 2.1.3 The complete left view

2.2 Develop the surface of the stainless steel cladding that will cover the branch piece B.
Label the development.

- Show ALL necessary constructions.
- Show ALL hidden detail. **[44]**

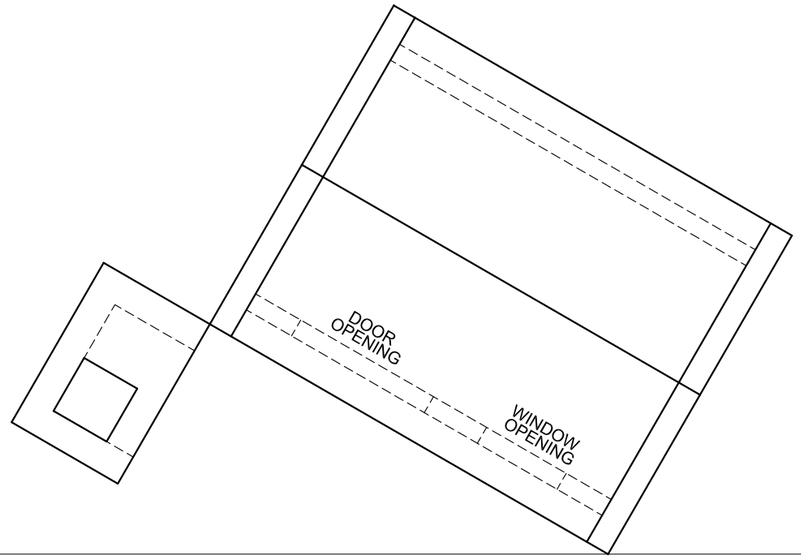


ASSESSMENT CRITERIA				
TOP VIEW & CONSTRUCTION	6½			
FRONT VIEW	17			
LEFT VIEW	10			
DEVELOPMENT	10½			
TOTAL	**44**			

EXAMINATION NUMBER

EXAMINATION NUMBER 3

STAPLE



QUESTION 3: PERSPECTIVE

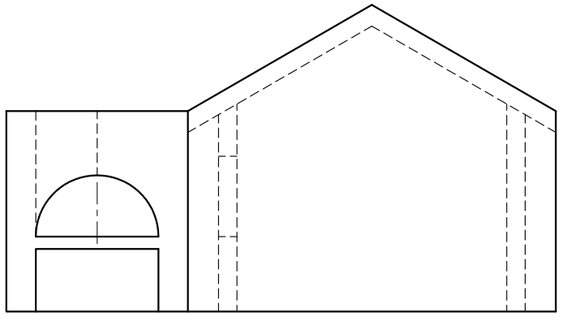
Given:
Two views of a clubhouse with a built-in braai and the information needed to draw a two-point perspective drawing.
PP – Picture Plane
HL – Horizon Line
GL – Ground Line
SP – Station Point

Instructions:
Complete the perspective drawing.

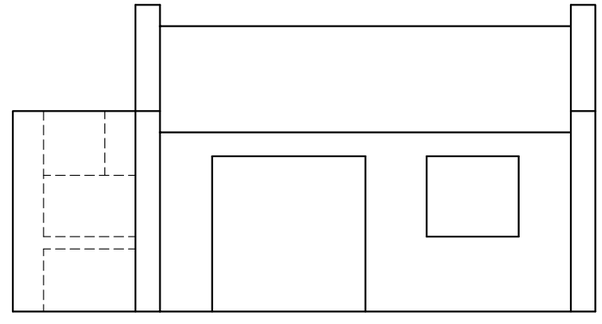
- Align the drawing sheet with the horizon line (HL).
- Locate and label the vanishing points.
- Show ALL visible detail inside the dwelling.
- NO hidden detail is required.
- Show ALL necessary constructions. **[36]**

PP

HL



GL



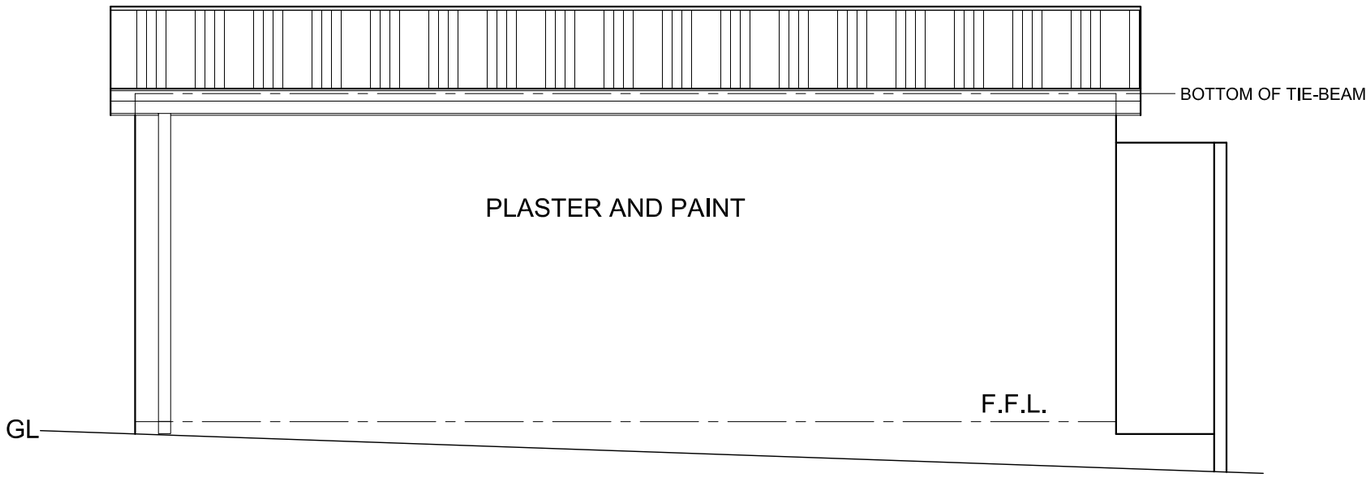
SP

ASSESSMENT CRITERIA				
CONSTRUCTION + VPs	6			
DWELLING (A)	17½			
BRAAI (B)	12½			
TOTAL	**36**			

EXAMINATION NUMBER

EXAMINATION NUMBER 4

STAPLE



SOUTH ELEVATION

ASSESSMENT CRITERIA				
PLAN				
	POSSIBLE	OBTAINED	SIGN	MODERATE
1 CORRECT SCALE	1			
2 WALLS + HATCHING	$17\frac{1}{2}$			
3 WINDOW + DOORS	7			
4 FIXTURES	5			
5 ELECTRICAL	10			
6 LABELS + C'PLANE	5			
SECTIONAL ELEVATION				
1 CORRECT SCALE	1			
2 WALLS + FOUNDATION + HATCHING	19			
3 WINDOW + DOORS	8			
4 FIXTURES	3			
5 ROOF	$10\frac{1}{2}$			
6 LABELS	3			
TOTAL	**90**			
EXAMINATION NUMBER				
EXAMINATION NUMBER				6