

Hillcrest High School
GRADE 11 – ENGINEERING GRAPHICS AND DESIGN EXAM
PAPER 1



November 2017

TIME: 3 hours

Examiner: Mrs Tonkin

TOTAL: 200 marks
Moderator: Mrs Moodley

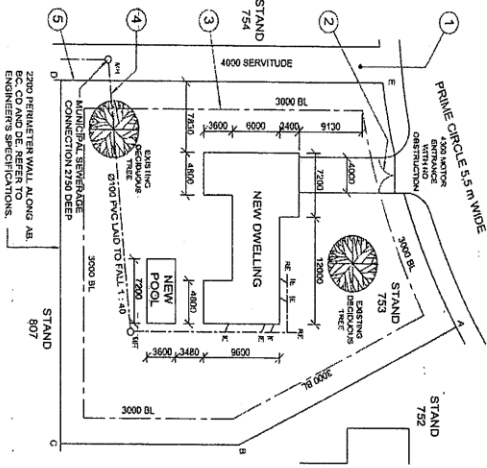
NB: READ THE INSTRUCTIONS

1. This paper consists of 6 pages, and 4 questions.
2. Answer ALL questions.
3. Take note of the mark allocation in each question.
4. The questions must be answered on the answer sheets provided.
5. All the answer sheets must be re-stapled in NUMERICAL sequence and handed in 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 in the block provided on EVERY answer sheet.
8. All answers must be drawn accurately and neatly.
9. Any details or dimensions not given must be assumed in good proportion.

Question	Learner Mark	Mark Allocation
1 Civil Analytical		30
2 Transition Piece		39
3 Perspective		36
4 Civil Drawing		95
TOTAL		200

Name: _____

LAND SURVEYOR'S CERTIFICATE OF THE STAND 754 PERIMETER WALL		SURVEYED ON 16-09-2012	
LENGTHS IN METRES			
AB = 29.85	AC = 66.5	AD = 66.5	AE = 66.5
BC = 46.129	CD = 66.3	CE = 66.3	DE = 66.3
BE = 46.695	BD = 66.4	DE = 66.4	EA = 28.825
			E = 65.2



SITE PLAN
SCALE 1 : 150

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

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

ARCHITECT'S SIGNATURE:
CLIENT'S SIGNATURE:

REVISION	DATE	DESCRIPTION
1	23-10-2012	MOVE POOL
2	30-10-2012	ADD PERIMETER WALL

PROJECT
PROPOSED NEW DWELLING FOR M
PETERSEN ON STAND 753 AT 54 PRIME
CIRCLE ATHLONE

DATE OF PRINT: 12-12-2012

DRAWING TITLE
SITE PLAN

PROJECT NUMBER	DRAWING NUMBER	DATE
65-3	PETER	14-10-2012
REFERENCE CODE	DESIGNER	DATE
DPS-2012/01	THANOU	14-10-2012
DRAWING NUMBER	DESIGNER	DATE
1 OF 8	CHANG	14-10-2012

THE DESIGN TEAM
ARCHITECTS
15 WARRINGTON STREET
DUBLIN 15
TEL: 021 555 2434

QUESTION 1 – CIVIL ANALYTICAL

Given:
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.

Instructions:
Complete the table below by neatly answering the questions, which all refer to the accompanying drawing and title panel. [30]

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

Name: _____

QUESTION 2 – TRANSITION PIECE

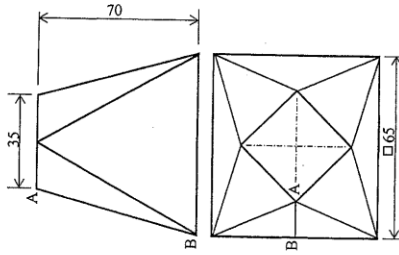
Given:

The front view and top view of a square-to-square transition piece.

Instructions:

- Draw to scale 1:1, and in first angle orthographic projection, the following views of the transition piece:
- 2.1. The top view
 - 2.2. The front view
 - 2.3. Develop the surface of the transition piece. Make the edge marked AB the seam.

Show ALL necessary construction and fold lines. [39]



ASSESSMENT CRITERIA	
TOP VIEW	2
FRONT VIEW	3
TRUE LENGTH LINES	6
CENTRE LINES	3
DEVELOPMENT	18
CONSTRUCTION AND LABELING	7
TOTAL	39

Name:

QUESTION FOUR : CIVIL DRAWING

GIVEN:

- The incomplete floor plan of a house showing the walls and the position of the windows and doors.
- The incomplete foundation and wall detail.
- A table of electrical symbols
- A door and window schedule
- A table of plumbing fixtures

INSTRUCTIONS:

- Answer this question on page 6.
- Using the given starting point draw in first angle orthographic projection and to a scale of 1 : 50 the following views of the dwelling:
 - The complete floor plan.
 - A sectional elevation on cutting plane AA, Use a scale of 1 : 20 to draw this view. Start with corner A of the foundation as shown.
 - The south west elevation.
- All drawing must comply with the guidelines and conventions contained in the SANS 10400 document

SPECIFICATIONS :

THE FLOOR PLAN

- Add the following features to your drawing:
- All doors and windows.
 - All fixtures as indicated. All electrical fittings as indicated by the numbers on the given table.
 - All hatching detail.
 - Include all room designation and a floor covering of your choice.

THE SOUTH WEST ELEVATION

Show the following features on your drawing.

- The outside walls.
- The window and door detail.
- The finished floor level and ceiling height.

THE SECTIONAL ELEVATION

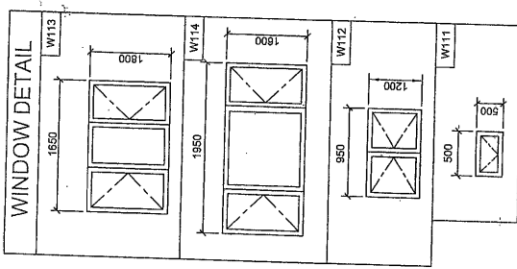
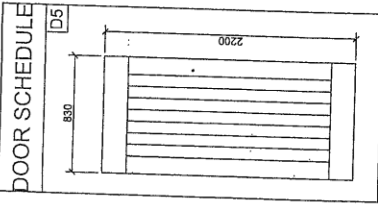
Show the following features on your drawing:

- The complete foundation and walls.
- The window detail with a double lintel above.
- All internal walls.
- All hatching detail.

Note:

- Using correct abbreviations to show and label the following features in the correct views:
 - ground level, finished floor level and damp proof course.
 - Label all elevations.
- You may draw the substructure-hatching freehand.
- All windows to be positioned in the spaces provided.

PLUMBING FIXTURES	
PLAN	FIXTURES
	ACRYLIC SHOWER BASE
	WATER CLOSET
	WASH BASIN
	KITCHEN SINK
	BATH TUB
	BUILT IN CUPBOARD



FEATURES

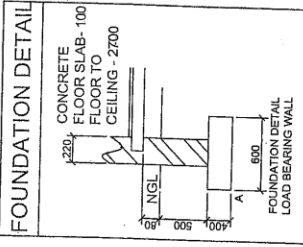
D - DOOR
SD - SLIDING DOOR
W1 - W4 - WINDOWS

FIXTURES

WC - WATER CLOSET
S - SINK
WB - WASH HAND BASIN
SH - SHOWER
B - BATH
BIC - BUILT IN CUPBOARD

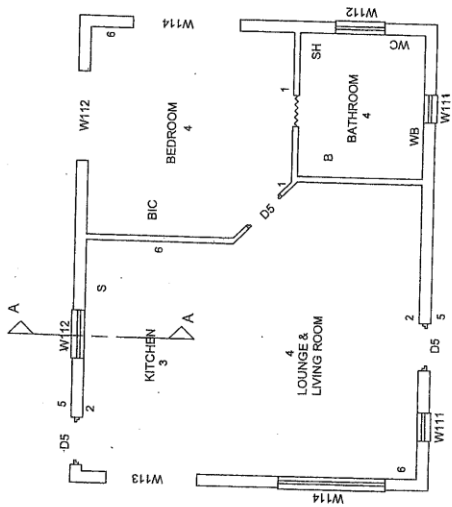
ELECTRICAL FITTINGS

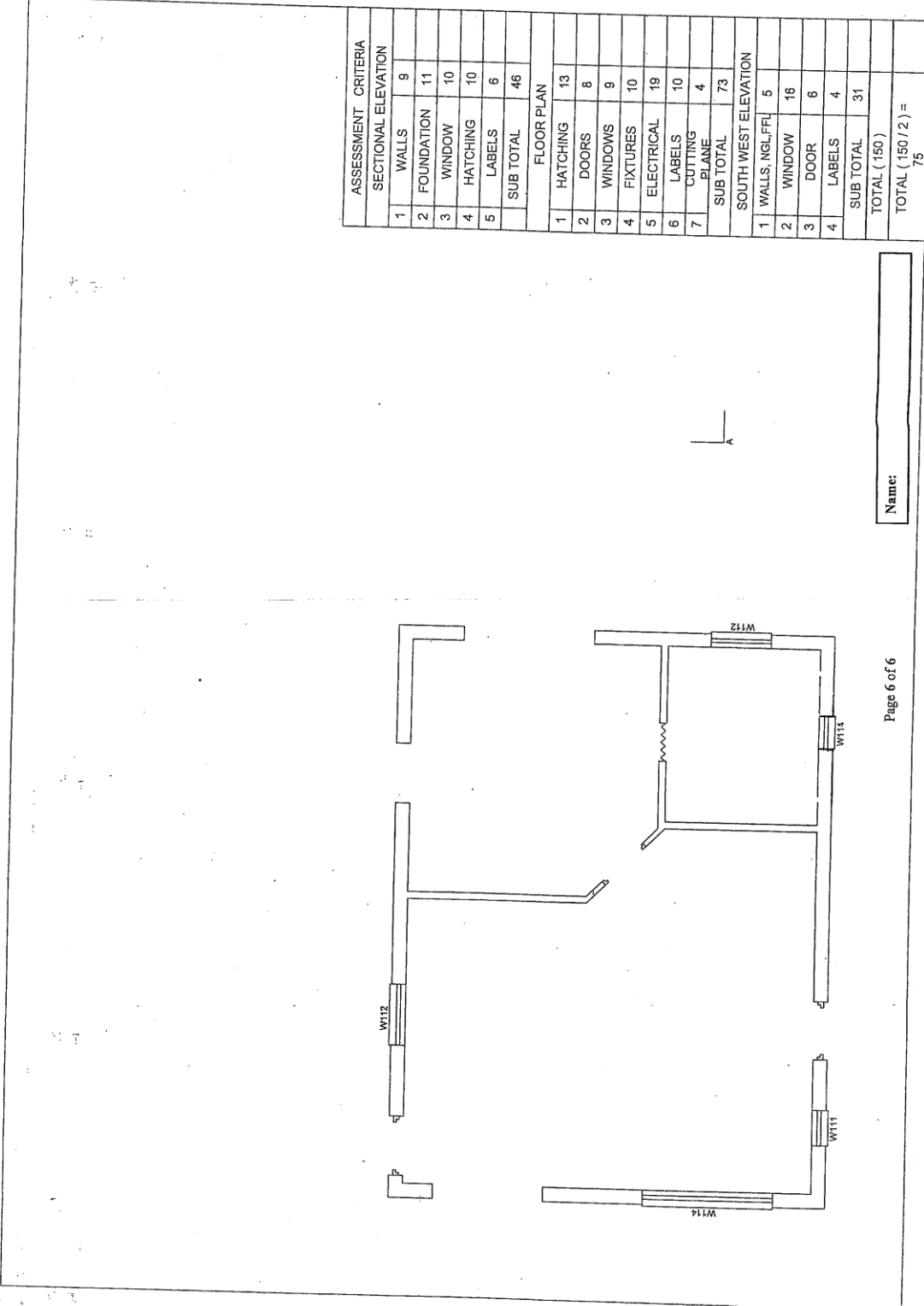
- SINGLE POLE SWITCH
- TWO POLE SWITCH
- 3 X 40W FLUORESCENT TUBES
- CEILING LIGHT
- OUTSIDE LIGHT
- SWITCHED SOCKET OUTLET



ELECTRICAL LEGEND

	SWITCHES
	LIGHTS
	OR
	OR
	SOCKET OUTLET





ASSESSMENT CRITERIA	
SECTIONAL ELEVATION	
1	WALLS 9
2	FOUNDATION 11
3	WINDOW 10
4	HATCHING 10
5	LABELS 6
	SUB TOTAL 46
FLOOR PLAN	
1	HATCHING 13
2	DOORS 8
3	WINDOWS 9
4	FIXTURES 10
5	ELECTRICAL 19
6	LABELS 10
7	CUTTING PLANE 4
	SUB TOTAL 73
SOUTH WEST ELEVATION	
1	WALLS, NGL, FFL 5
2	WINDOW 16
3	DOOR 6
4	LABELS 4
	SUB TOTAL 31
TOTAL (150) =	
75	

Name: _____