



education

Department:
Education
Kwazulu - Natal

GRADE 12

ENGINEERING GRAPHICS AND DESIGN P1 TRIAL EXAMINATION - 2010

INSTRUCTIONS AND INFORMATION

1. The 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 drawn to scale 1:1, unless otherwise stated.
5. The questions must be answered on the answer sheets provided.
6. All the answer sheets must be re-stapled in numerical sequence and handed in irrespective of whether the question was attempted or not.
7. Careful time management is essential in order to complete all the questions.
8. Print your examination number in the block provided on every answer sheet.
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			
	MAXIMUM MARK	LEARNERS MARK	MODERATED MARK
Q1	25		
Q2	30		
Q3	45		
Q4	100		
TOTAL	200		

FINAL CONVERTED MARK	CHECKED BY
100	

EXAMINER
MODERATOR
AFRIKAANS

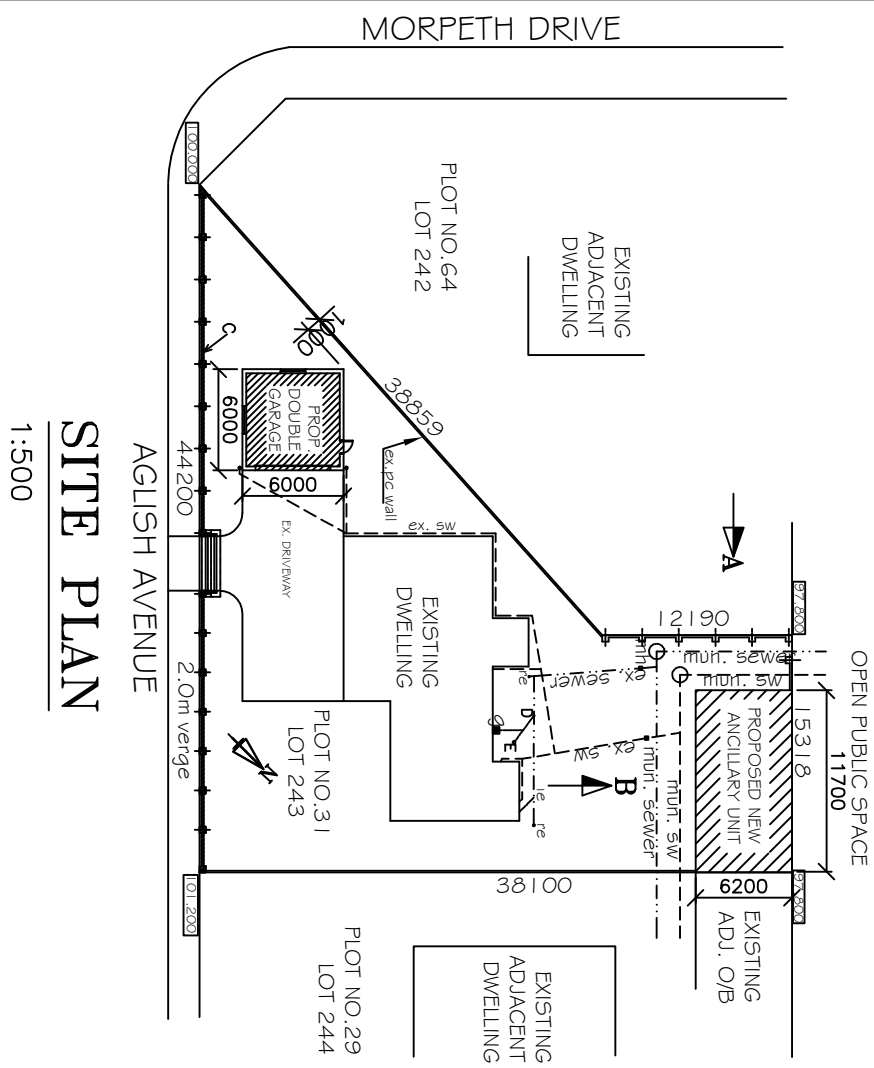
R. MOHUNLAL (SSS)
V. GOUNDEN (WHSS)
VAN VUUREN (WHS)

MARKS : 100
TIME : 3 HOURS
This question paper consists of 6 pages.

EKSAMENNOMMER
EXAMINATION NUMBER

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SCHEDULE OF AREAS	
SITE AREA	926m ²
EXISTING DWELLING	168m ²
PROP. ANCILLARY UNIT	_____m ²
PROP. GARAGE	_____m ²
TOTAL NEW AREA	_____m ²
EXISTING COVERAGE(%)	$\frac{168}{926} \times 100 = 18,14\%$
NEW COVERAGE(%)	_____%



SITE PLAN
1:500

QUESTION ONE
 Given:
 • A site plan with proposed improvements.
 Instructions:
 • Observe the given site plan and answer the questions in the spaces provided. [25]

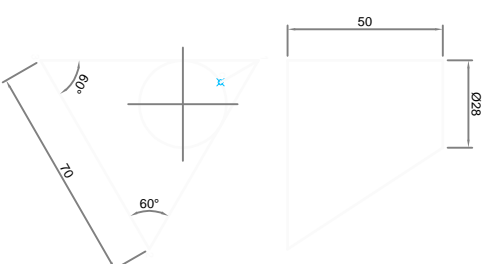
1. WHAT IS THE SCALE OF THE DRAWING?	1	
2. WHAT IS THE STREET ADDRESS OF THE PROPOSED DEVELOPMENT?	1	
3. WHAT IS THE ERF NUMBER OF THE PROPERTY ON THE EAST SIDE?	1	
4. WHAT IS THE ADDRESS OF THE PROPERTY ON THE LEFT?	1	
5. WHAT BUILDING IS SITUATED NEXT TO THE PROP. ANCILLARY UNIT?	1	
6. WHAT ELEVATION CAN BE VIEWED FROM DIRECTION OF ARROW A?	1	
7. WHAT ELEVATION CAN BE VIEWED FROM DIRECTION OF ARROW B?	1	
8. HOW WIDE IS THE VERGE?	1	
9. WHAT DO THE FOLLOWING ABBREVIATIONS STAND FOR?		
9.1. re	1	
9.2. mun. sw	1	
9.3. mh	1	
9.4. ie	1	
9.5. g	1	
10. WHAT FEATURES ARE REPRESENTED BY:		
10.1. C	1	
10.2. D	1	
10.3. E	1	
11. WHAT DOES 'IN' EX. PC WALL STAND FOR?	1	
12. WHAT IS THE AREA OF THE PROP. ANCILLARY UNIT?	2	
13. WHAT IS THE AREA OF THE PROP. GARAGE?	2	
14. WHAT TOTAL PERCENTAGE OF THE SITE WILL BE COVERED AFTER DEVELOPMENT? (show calculations)	3	
15. WHAT IS THE LENGTH OF THE FRONT BOUNDARY (in metres)?	1	
TOTAL		

LEARNER'S NAME: _____

GR. 12

QUESTION 2

THE DIAGRAM BELOW SHOWS THE FRONT AND TOP VIEWS OF A TRANSITION PIECE FROM TRIANGULAR TO ROUND. COPY THE GIVEN VIEWS FULL SIZE. SHOW ALL FOLD LINES IN THE TWO VIEWS. LABEL THE LINES. DRAW THE DEVELOPMENT OF THE TRANSITION PIECE. THE TRANSITION PIECE MUST BE OPENED FROM THE GIVEN SEAM LINE 'X'. SHOW ALL CONSTRUCTIONS, CALCULATIONS AND PROJECTIONS CLEARLY. THE DEVELOPMENT MUST BE STARTED FROM THE GIVEN LINE 'P-Q'.



3 _____
2 _____

ASSESSMENT CRITERIA		MAX MARK	LEARNERS MARK
DRAW GIVEN VIEWS	4		
FOLD LINES	4		
CONSTRUCTIONS/CALC	6		
DEVELOPMENT	16		
TOTAL	30		

NAME _____ GR. 12 _____

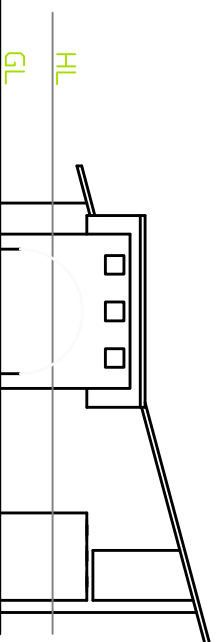
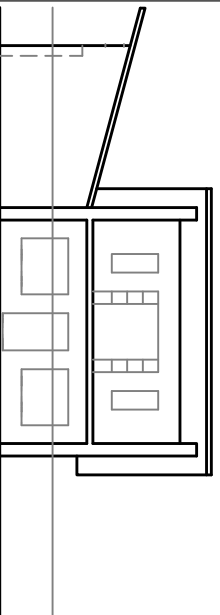
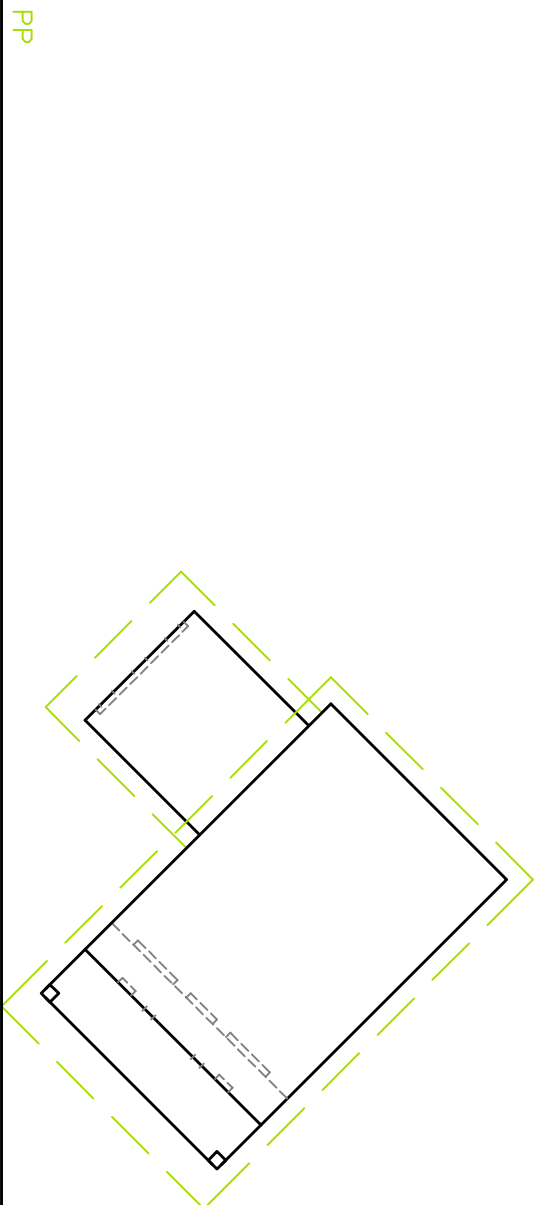
QUESTION 3

THE DIAGRAM BELOW SHOWS THE FRONT, TOP AND SIDE VIEWS OF A DWELLING IN RELATION TO THE GROUNDLINE(GL), PICTURE PLANE(PP) AND HORIZON LINE(HL).

USING THE GIVEN INFORMATION, PROJECT FROM THE STATION POINT(SP) AND DETERMINE THE VANISHING POINTS. SHOW LABELS. DRAW THE PERSPECTIVE VIEW OF THE DWELLING.

SHOW ALL NECESSARY PROJECTIONS.
SHOW ALL NECESSARY CONSTRUCTIONS.
DO NOT SHOW HIDDEN DETAILS.

[45]



ASSESSMENT CRITERIA

ASPECT	MAX. MARK	LEARNER'S MARK
POINTS & PROJECTIONS	6	
MAIN BUILDING	24	
GARAGE	15	
TOTAL	45	
LEARNER'S NAME		GR/NTV
		12----

SP

HL
GL

ENGINEERING GRAPHICS AND DESIGN

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PAPER 1
QUESTION 4
100 MARKS

RM-SSS

INSTRUCTIONS

DRAW ON THE GIVEN ANSWER SHEET
DRAW TO A SCALE OF 1:50. THE FOLLOWING VIEWS:

1. THE GROUND FLOOR PLAN.
Insert the following:
 - 1.1. All necessary HATCHING.
 - 1.2. DOORS and WINDOWS in the indicated positions.
 - 1.2. SANITARYWARE in the indicated positions:
 - 1 - wc
 - 2 - str
 - 3 - whb
 - 4 - kitchen sink
 - 1.3. RAINWATER PIPES AND GULLEYS
 - 1.4. ELECTRICAL DETAIL
light fittings in each room
light fittings outside front and back doors
2x40w fluorescent fitting in the kitchen
1 x 1 way switch for the bedroom
1 x 2 way switch for bathroom & passage
1 x 2 way switch for lounge & outside light
1 x 3 way switch for kitchen, dining room & outside light
1 x switched socket outlet indicated by §
1 x socket outlet indicated by #
2. Draw a SECTIONAL SOUTHWEST ELEVATION on A-A.
Show the complete details for:
 - 3.1 the foundation and floor slab
 - 3.2 walls with windows and door
 - 3.3 roof with sectional details
 - 3.4 rainwater goods - gutters and downpipes

SPECIFICATIONS:

FOUNDATIONS:
LOAD BEARING WALLS: 600 X 200
NON-LOAD BEARING WALLS: 400 X 200

WALLS:
LOAD BEARING: 220mm
NON-LOAD BEARING 110mm

FLOOR:
CONCRETE SLAB 85mm
GRANULITHIC SCREED 25mm

ROOF COVER:
DOUBLE ROMAN ROOF TILES 420 X 330
(to be drawn as double lines 50mm apart)
laid on 38 x 38 battens fixed to roof truss

ROOF TRUSS:
W-TRUSS/FINK TRUSS
38 x 114 ganged timber trusses @ 25° pitch
@ maximum 760 c/c.

CEILING:
HEIGHT above FFL 2400mm
10mm RHINOBOARD fixed to underside of tie-beams at maximum 450 c/c.

NOTE:
Walls above all openings to be supported by re-inforced concrete lintels.

Label the following on all necessary views:

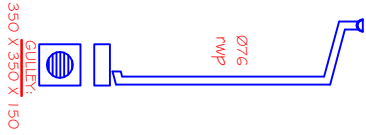
- room designations
- natural ground level
- ceiling level
- rainwater pipes
- names of views
- windrow codes
- finished floor level
- damp proof course

ALL DRAWINGS MUST COMPLY WITH THE GUIDELINES AS SPECIFIED BY THE CODE OF PRACTICE SABS 01 43

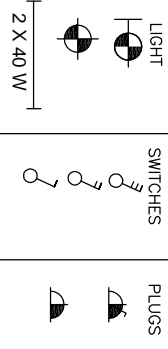
GIVEN:

FIGURE 1 SHOWS THE SCHEMATIC LAYOUT OF AN ANCILLARY UNIT. THE OUTER LINES OF THE BUILDING ARE GIVEN TOGETHER WITH THE INTERNAL WALLS. THE POSITIONS OF ALL DOORS, WINDOWS AND OPEN ARCHWAYS ARE ALSO INDICATED. THE ROOF LINES INDICATING THE POSITION OF THE GABLES, EAVES, VALLEYS AND RIDGES.

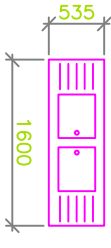
RAINWATER PIPE DETAIL



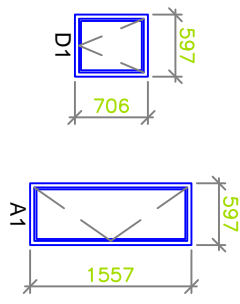
ELECTRICAL LEGEND



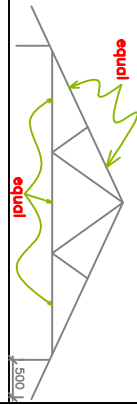
KITCHEN SINK DETAIL



WINDOW DETAIL STANDARD WOODEN FRAMED



SCHEMATIC TRUSS DETAIL



DOOR DETAIL STANDARD WOODEN FRAMED

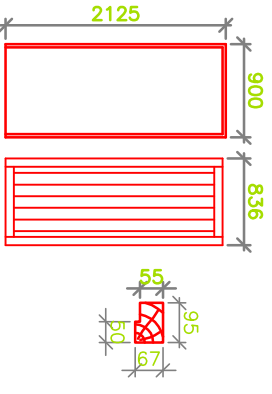
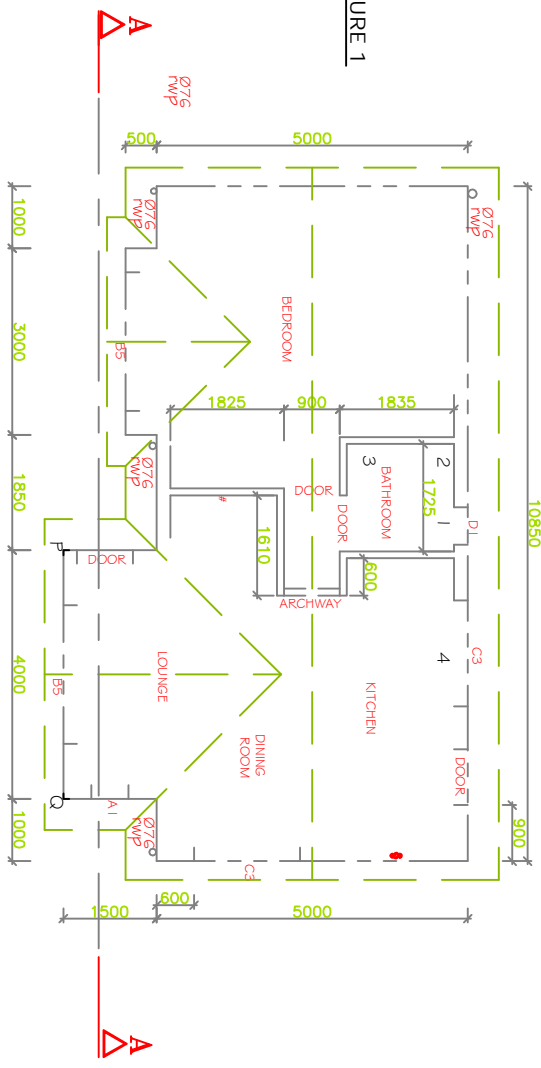


FIGURE 1



RM-SSS

ENGINEERING GRAPHICS AND DESIGN
GRADE 12
TRIAL EXAM 2010
 PAPER 1
 QUESTION 4
 100 MARKS

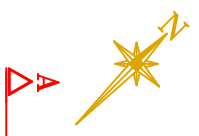
RM-SSS

_____ NGL

_____ NGL

ASSESSMENT CRITERIA

FLOOR PLAN	49	
WALLS # HATCHING	11	
ROOFLINES	5	
WINDOWS	6	
DOORS	6	
SANITARYWARE	5	
ELECTRICAL	4	
STORMWATER/PRESHGULLERS	4	
LABELS: ROOF/SANITARY/WINDOW/DOOR/ELECTRICAL	6	
SECTION A-A	51	
FOUNDATION # FLOOR SLAB	8	
WALLS # SECTION	10	
ROOF # SECTION	9	
WINDOWS # DOOR	6	
WINDOW # DOOR SECTION	7	
RAINWATER GOODS	5	
LABELS	6	
TOTAL	100	



NAME: _____

NAME: _____

GR/DIV: _____