MARKING GUIDELINES

NATIONAL SENIOR CERTIFICATE EXAMINATION
2019

ENGINEERING GRAPHICS AND DESIGN
PAPER 1

MARKS: 200
TIME: 3 HOURS

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. This question paper consists of 6 pages including the cover page and 4 questions.
2. All questions must be answered.
3. Unless specified otherwise, all questions are in First-angle Orthographic Projection.
4. Unless specified otherwise, all questions are to be completed to a scale of 1:1.
5. All answer sheets must be restapled in numerical order, even questions that have not been answered.
6. All construction work must be shown.
7. Print your examination number neatly on each page.
8. Use only the answer sheets provided.
9. Your drawings should reflect neatness and accuracy.
10. All dimensions or detail not given may be assumed in good proportion.
11. Your drawings should comply with SANS 10143.

FOR OFFICIAL USE ONLY

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>SECTION</th>
<th>MARK</th>
<th>MODERATE</th>
<th>MAXIMUM</th>
<th>CODE</th>
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<tr>
<td>1</td>
<td>CIVIL ANALYTICAL</td>
<td>20</td>
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<td>2</td>
<td>INTERPENETRATION &amp; DEVELOPMENT</td>
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<td>TWO-POINT PERSPECTIVE</td>
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<td>4</td>
<td>CIVIL DRAWING</td>
<td>100</td>
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<td>TOTAL</td>
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CHECKED BY

EXAMINATION NUMBER

PLEASE TURN OVER
STUDY THE ADJACENT DRAWING AND ANSWER THE QUESTIONS THAT FOLLOW:

1.1 What type of civil drawing is shown?  SITE PLAN
1.2 Which ERF is to the NORTH EAST of the retirement complex?  5199
1.3 How many manholes are there in this drawing?  4
1.4 Which corner has the lowest elevation? (either A,B,C,D,E or F)  C
1.5 How many trees need to be removed?  5
1.6 What is the feature at 1 called?  CORNER / BEACON HEIGHT
1.7 What is the feature at 2 called?  BUILDING LINE
1.8 What is the feature at 3 called?  WATER TANK
1.9 What is the feature at 4 called?  SEWER LINE
1.10 What is indicated at feature 5?  WORK TO BE REMOVED
1.11 Has the ramp been drawn correctly?  NEE
1.12 What is the feature at 6 called?  CONTOUR
1.13 What is the feature at 7 called?  FIRE HYDRANT
1.14 What is the feature at 8 called?  SEPTIC TANK
1.15 In what colour would a proposed new unit be drawn on this plan?  RED/GREY
1.16 Is this drawing drawn to the scale indicated?  NO
1.17 What does the abbreviation IE stand for?  INSPECTION EYE
1.18 What is the closest that a new unit can be placed to ERF 5200?  5000 mm / 5 m
1.19 In the space below, determine the area of the Frail Care Centre in m²:

Area = length x breadth
      = 20 m x 20 m
      = 400 m²

Answer: 400 m²
The drawings below show the COMPLETE Top and Right View as well as the INCOMPLETE Front View of a CYLINDRICAL PIPE which has been joined together with a SQUARE DUCT and drawn in First-angle Orthographic Projection. An Auxiliary View of the square duct is also shown in the Top and Front Views.

**Draw the following:**

2.1 the complete Front View clearly showing the curve of interpenetration. Show all hidden detail.
2.2 the development of only half of the cylindrical pipe which joins with the duct, clearly showing the curve of interpenetration.

Show all construction and calculations. Do not draw the right view.

The complete Top View and an Auxiliary View have already been drawn in position.

**ASSESSMENT CRITERIA**

You will be assessed on your ability to do the following:
- draw and complete the Front View 24
- show necessary construction 2
- develop and draw the cylindrical pipe 14

<table>
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<td>Hidden Detail</td>
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<td>Construct</td>
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<td>Calculation</td>
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<td>Draw development</td>
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The figures show the three views of the inside of a tuck shop with built-in cupboards and a semi-circular serving hatch. Some walls have been removed to see inside the room.

Draw a neat two-point perspective view of the tuck shop.

**ASSESSMENT CRITERIA**

You will be assessed on your ability to do the following:
- determine and label the vanishing points 1
- draw the two-point perspective view 39