higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

# NATIONAL CERTIFICATE (VOCATIONAL)

# ARCHITECTURAL GRAPHICS AND TECHNOLOGY

(Second paper)

**NQF LEVEL 4**

(12050644)

**1 December 2020 (X-paper)**
**09:00–12:00**

**This question paper consists of 5 pages and 3 addenda.**

135Q2N2001

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**TIME: 3 HOURS**
**MARKS: 100**

## INSTRUCTIONS AND INFORMATION

1. Answer all the questions.
2. Read all the questions carefully.
3. Number the answers according to the numbering system used in this question paper.
4. All drawing work, including candidate information, must be done in pencil.
5. All drawing work must comply with the relevant SANS (SABS) recommended codes.
6. Brick sizes should be taken as 220 × 110 × 75 mm.
7. Please ensure that DRAWING SHEETS 1, 2 and 3 are handed out as attachments to this exam paper.
8. All the abbreviations and symbols must comply with the latest National Building Regulations and all relevant SANS (SABS) codes.
9. A balanced layout is very important and candidates will be penalised for poor planning.

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## QUESTION 1: ADMINISTRATION, LEGISLATION AND REGULATIONS

1.1 What does the abbreviation SACAP stand for and what important role does it play in the South African built environment? (6)

1.2 What does the abbreviation NHBRC stand for and what important role does it play in the South African built environment? (6)

1.3 Explain the function of a local authority regarding the approval of architectural building plans. (4)

1.4 Explain what is meant when the local authority requires a competent person to complete a 14 (2) form in terms of the National Building Standards Act 103 of 1977. (4)

**[20]**

## QUESTION 2: STAIRCASES AND LADDERS

2.1 Refer to DRAWING SHEET 1 (attached) where you will find a detail of a typical type of stair case – please provide the annotations and in some cases the dimensions for letters A to G.

2.1.1 A

2.1.2 B

2.1.3 C

2.1.4 D

2.1.5 E

2.1.6 F

2.1.7 G

(7 × 2) (14)

2.2 What type of typical stair detail is shown in DRAWING SHEET 1 (attached)? (2)

2.3 What is the MAX height of D? (2)

2.4 What is the MIN width of B? (2)

**[20]**

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## QUESTION 3: BUILDING PLANS

3.1 Determine the percentage coverage of the following FOUR examples and show calculations. (Round off to the nearest 1)



3.1.1 ERF SIZE 600 $m^2$ AREA of level 1 = 110 $m^2$, AREA of level 2 = 110 $m^2$, AREA of garage = 36 $m^2$. (5)

3.1.2 ERF SIZE 850$m^2$, AREA of level 1 = 225 $m^2$, AREA of level 2 = 225 $m^2$, AREA of garage = 42 $m^2$. (5)

3.1.3 ERF SIZE 950 $m^2$, AREA of single level dwelling is 275 $m^2$, AREA of outbuildings is 75 $m^2$, and AREA of garage is 36 $m^2$. (5)

3.1.4 ERF SIZE 1000 $m^2$, AREA of level 1 is 320 $m^2$, AREA of level 1 covered stoep is 12 $m^2$, and AREA of level 2 is 220 $m^2$. (5)

3.2 Refer to DRAWING SHEET 2 (attached) of a typical DRAINAGE SECTION. Calculate and provide answers for the letters A to H.

3.2.1 A (3)

3.2.2 B (3)

3.2.3 C (3)



3.2.4 D (3)

3.2.5 E (2)

3.2.6 F (2)

3.2.7 G (2)

3.2.8 H (2)

**[40]**

**QUESTION 4: QUANTITIES AND COSTING IN A BUILDING PLAN**

Refer to DRAWING SHEET 3 (attached) and provide annotations for letters A to J.

4.1 A

4.2 B

4.3 C

4.4 D

4.5 E

4.6 F

4.7 G

4.8 H

4.9 I

4.10 J

(10 × 2) **[20]**

**TOTAL: 100**

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