higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

ARCHITECTURAL GRAPHICS AND TECHNOLOGY

(First Paper)

NQF LEVEL 2

(12050622)

19 November 2018 (X-Paper)
09:00–13:00

REQUIREMENTS: FIVE A4 drawing sheets
ONE A3 drawing sheet

Calculators and drawing instruments may be used.

This question paper consists of 4 pages.

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TIME: 4 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. Do ALL drawing work, including candidate information, in pencil.
5. ALL drawing work must comply with the relevant SANS (SABS) recommended codes.
6. Take brick sizes as 220 × 110 × 75 mm.
7. ALL abbreviations and symbols must comply with the latest National Building Regulations and ALL relevant SANS (SABS) codes.
8. A balanced layout is very important and candidates will be penalised for poor planning.
9. Work neatly.

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QUESTION 1: RAFT FOUNDATION

As an architectural draughtsperson you are required to draw, to scale 1 : 5, on an A3 DRAWING SHEET, a sectional view of a 280 mm cavity wall raft foundation showing a portion of the cavity wall. The steel reinforcement will be determined later by an engineer.

The drawing must clearly show the following:

1.1 Concrete raft foundation

1.2 Mass-concrete edge beam 700 mm × 350 mm

1.3 25 mm screed

1.4 Compacted hard core

1.5 Ground level (GL)

1.6 Natural ground level (NGL)

1.7 Damp-proof membrane (DPM)

1.8 Mass-concrete edge-beam splay of 230 mm

Insert ALL given annotations. Dimension a 200 mm distance from NGL to FFL. Print a suitable title and scale beneath the sectional view. **[20]**

QUESTION 2: BRICKWORK

2.1 A face-brick wall must be built in English bond.

Draw, to scale 1 : 10, on an A4 DRAWING SHEET, the alternate top-view courses of the following:

2.1.1 An English bond one-brick corner detail (15)

2.1.2 An English bond one-brick T-junction (15)

2.2 Draw, to scale 1:10, on an A4 DRAWING SHEET, the isometric view of a 280 mm-cavity face-brick stretcher-bond wall. (15)
[45]

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QUESTION 3: LINTELS AND ARCHES

3.1 Draw, to scale 1 : 10, on an A4 DRAWING SHEET, the front and cross-sectional view of a reinforced-concrete lintel with the steel in position. The span is 1 870 mm. Insert the dimension of the span. (15)

3.2 Draw, to scale 1 : 10, on an A4 DRAWING SHEET, the front view of a semicircular arch constructed in axed bricks. It has a span of 600 mm and a rise of 300 mm.

Insert the following terms on the view:

3.2.1 Span

3.2.2 Templet

3.2.3 Key brick

3.2.4 Rise

3.2.5 Extrados

3.2.6 Intrados (20)

[35]

TOTAL: 100

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