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)

8 March 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. 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 mm × 110 mm × 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. Write neatly and legibly.

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QUESTION 1: STRIP FOOTING FOUNDATIONS

As an architectural draughtsperson working for an architect or technician you have to draw, to scale 1 : 5 on an A3 DRAWING SHEET, a sectional view of a 750 mm × 250 mm strip foundation with a 280 mm cavity wall.

The drawing must clearly show the following:

- Concrete strip foundation 750 mm × 250 mm
- Damp-proof course (DPC)
- 25 mm screed
- 75 mm concrete slab
- 150 mm compacted hard core
- Ground level (GL)
- Natural ground level (NGL)
- Damp-proof membrane (DPM)
- Weep hole
- The concrete floor and screed must abut the 280 mm cavity wall

Insert ALL the abovementioned annotations.

Print a suitable title and scale beneath the sectional view. **[20]**

QUESTION 2: BRICKWORK

A face brick wall must be built in stretcher bond.

Draw, to scale 1 : 10 on an A4 DRAWING SHEET, the alternate top view courses in stretcher bond of the following wall details:

2.1 A 110 mm brick T-junction with a 220 mm external wall (15)

2.2 A 220 mm external brick wall corner (15)

2.3 A 280 mm cavity 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 1 210 mm. Insert the dimension of the span. (15)

3.2 Draw, to scale of 1 : 10 on an A4 DRAWING SHEET, the front view of a one-brick segmental arch. It has a span of 1 593 mm and a rise of 350 mm.

Insert the following terms into the view:

- Span
- Skewback
- Springer
- Voussoirs
- Bisector
- Templet
- Key brick
- Rise
- Extrados
- Intrados

(10 × 2) (20)
[35]

TOTAL: 100

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