higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

T200**(E)**(M23)T

NATIONAL CERTIFICATE

BUILDING DRAWING N1

(8090001)

23 MARCH 2018 (X-Paper)
09:00–13:00

REQUIREMENTS: ONE A2 drawing sheet

Nonprogrammable calculators and drawing instruments may be used.

This question paper consists of 4 pages and 1 diagram sheet.

DEPARTMENT OF HIGHER EDUCATION AND TRAINING
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NATIONAL CERTIFICATE
BUILDING DRAWING N1
TIME: 4 HOURS
MARKS: 100

INSTRUCTIONS AND INFORMATION

1. Answer ALL the questions.
2. Read ALL questions carefully.
3. Number the answers according to the numbering system used in this question paper.
4. ALL drawings must be drawn to the required scale.
5. ALL drawings, as well as the candidate's information, must be done in pencil.
6. Drawings must be neat, reasonably large, in proportion and fully labelled in capital letters.
7. A balanced layout is very important and candidates will be penalised for poor planning.
8. ALL drawings must comply with the relevant SANS (SABS) recommended codes.
9. Use your own discretion where dimensions are NOT given.
10. ALL work you do NOT want to be marked must be clearly crossed out.
11. Work neatly and legibly.

QUESTION 1

Houses which are to be built have a span of 6 000 mm and an angle of 25°.

Illustrate by means of single-line drawings the difference between the following roof trusses:

1.1 Couple truss

1.2 Couple close truss

(2 × 5) **[10]**

QUESTION 2

Draw, to scale 1 : 2, an isometric view of a bevelled bat-large.

Include the dimensions but do NOT show any hidden details. **[10]**

QUESTION 3

FIGURE 1, on the DIAGRAM SHEET (attached), shows the outline of a half-brick internal corner.

Use the same dimensions and draw, to scale 1 : 10, the TWO isometric plan courses built in stretcher bond. Make sure that the views are drawn directly below each other. Label cut bricks in ALL views. **[20]**

QUESTION 4

An external raised and fielded panel door is 2 030 mm high, 820 mm wide and 44 mm thick with a high lock rail. The upper portion of the door and the bottom part of the door are divided into two equal vertical panels by a muntin. The panels consist of single raised and fielded panels.

Draw, to scale 1 : 10, the outside view of the external door using the following specifications:

- Top rail: 100 mm × 44 mm
- High lock rail: 220 mm × 44 mm (1 300 mm high)
- Bottom rail: 250 mm × 44 mm
- Stiles: 100 mm × 44 mm
- Muntin: 100 mm × 44 mm
- Raised and fielded: 50 mm thick **[20]**

QUESTION 5

Draw, to scale 1 : 10, the front elevation of a brick-on-end arch with a span of 880 mm and a rise of 225 mm. The English bond brickwork is built around the arch.

Show at least THREE courses of brickwork above the top of the arch and at least FOUR courses below the soffit of the arch. The wall should be 660 mm on both sides from the opening. Include the dimension of the span.

NB: Show stopped ends on both sides of the wall (660 mm on both sides from the opening).

Label the following:

- Extrados
- Intrados
- Key brick
- Soffit
- Span
- Stopped ends **[20]**

QUESTION 6

Draw, to scale 1 : 10, a vertical section through the foundation wall and footing showing an internal half-brick wall.

The drawing must show the following specifications:

- Concrete foundation : projecting 110 mm on both sides of the footing
- Footing: one course high
- Foundation wall: half-brick wall
- Internal wall: half-brick wall
- Depth construction line: to be shown
- Ground level: top of the ground level is four courses above the concrete foundation
- Hard core: 150 mm
- Floor slab: 100 mm
- DPM: 375 micron
- Plaster: 19 mm on both sides
- Concrete tiles: 220 mm × 220 mm × 20 mm

[20]

TOTAL: 100

DIAGRAM SHEET

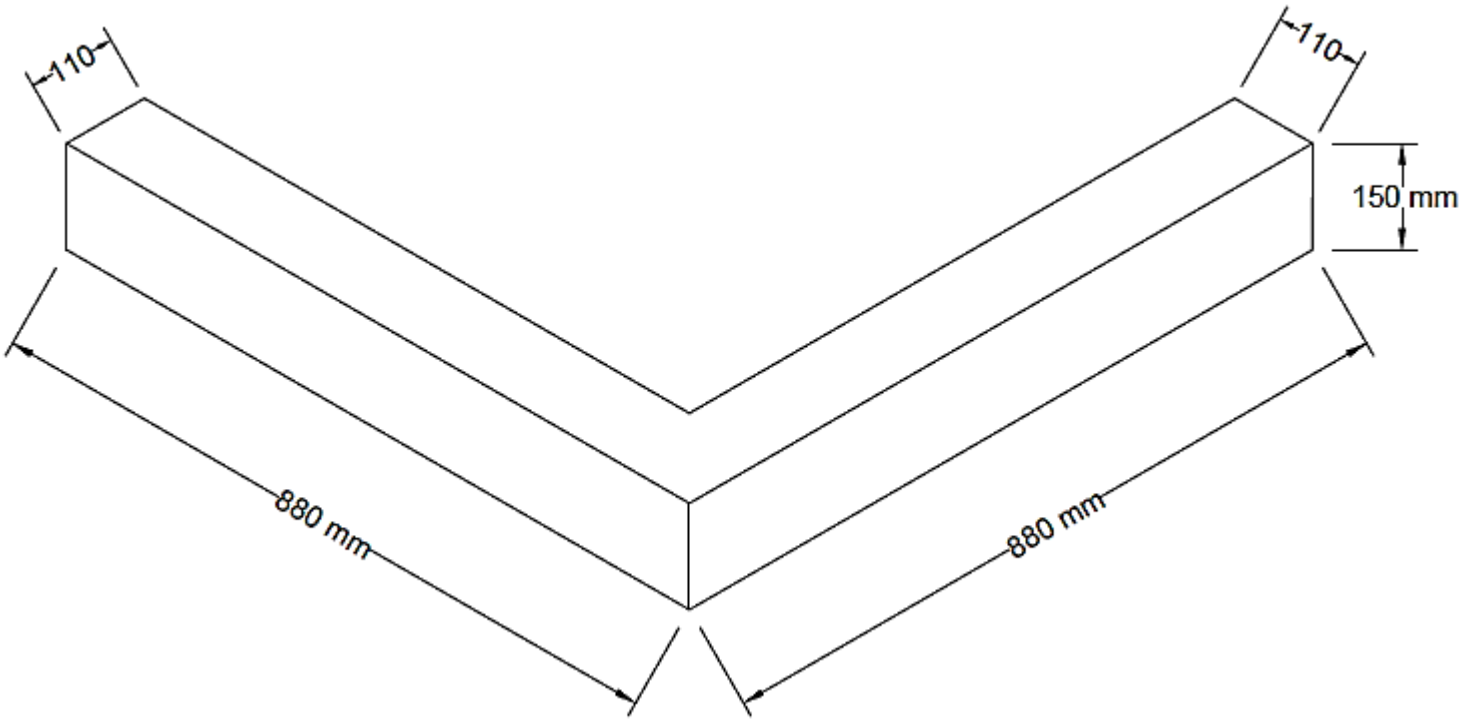

FIGURE 1