



higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

T210(E)(J25)T

NATIONAL CERTIFICATE

BUILDING DRAWING N2

(8090012)

25 July 2019 (X-Paper)
09:00–13:00

REQUIREMENTS: ONE A2 drawing sheet

Calculators and drawing instruments may be used.

This question paper consists of 6 pages.

DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA
NATIONAL CERTIFICATE
BUILDING DRAWING N2
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. Use both sides of the DRAWING SHEET.
 5. Fully dimension and neatly finish off ALL drawings with descriptive titles and notes to conform to the SANS Recommended Practice for Building Drawings.
 6. Maintain a balanced layout.
 7. Use your discretion where dimensions are NOT given.
 8. Do ALL drawings to the required scale.
 9. Clearly cross out ALL work you do NOT want to be marked.
 10. Work neatly.
-

QUESTION 1: BRICKWORK

Draw, to scale 1:10, an isometric view of a one-brick wall that is THREE courses high with ONE alternate course projected upwards. The wall is 1 045 mm long and built in English bond. Show a stopped end on both sides. Label the queen closer and three-quarter bat and insert dimensions.

[15]



QUESTION 2: FOUNDATION AND FLOORS

FIGURE 1 shows a plan view of an existing four-room house and a proposed garage. The house has one-brick external walls with a one-and-a-half-brick foundation wall resting on a 630 mm × 220 mm concrete foundation. The lounge has a 100 mm thick concrete floor SIX courses above the concrete foundation and is finished off with 20 mm screed and 200 mm × 200 mm ceramic tiles. The garage has a 75 mm thick concrete floor FOUR courses above the concrete foundation finished off with 20 mm screed. The external and internal walls are plastered on both sides.



Draw, to a scale 1:10, a vertical section through A-A and clearly show following:

- 630 mm × 220 mm concrete foundation
- One-and-a-half-brick foundation wall SIX courses high
- One-brick external wall
- 100 mm concrete floor
- 75 mm concrete floor
- 150 mm hard core
- 20 mm screed
- 19 mm internal and external plaster
- 200 mm × 200 mm ceramic tiles
- PVC skirting
- DPC
- Labels of the drawing and insert dimensions of the concrete foundation

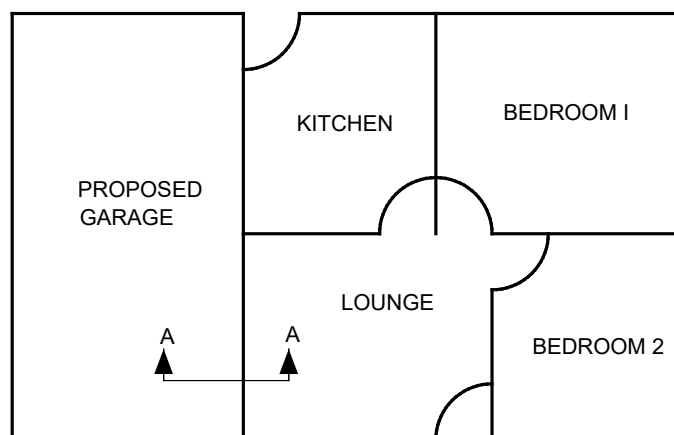


FIGURE 1



[26]

QUESTION 3: ARCHES

FIGURE 2 shows the dimensions of a proposed wall that has an opening with a soldier arch.



Use the given dimensions and draw, to scale 1:10, the front elevation of a soldier arch. Begin the arch with a splayed brick on either end of the opening. Show the surrounding brickwork built in Flemish bond with stopped ends. Label the Queen closer, soldier arch, splayed brick, three quarter bat, Jamb and include the dimensions.

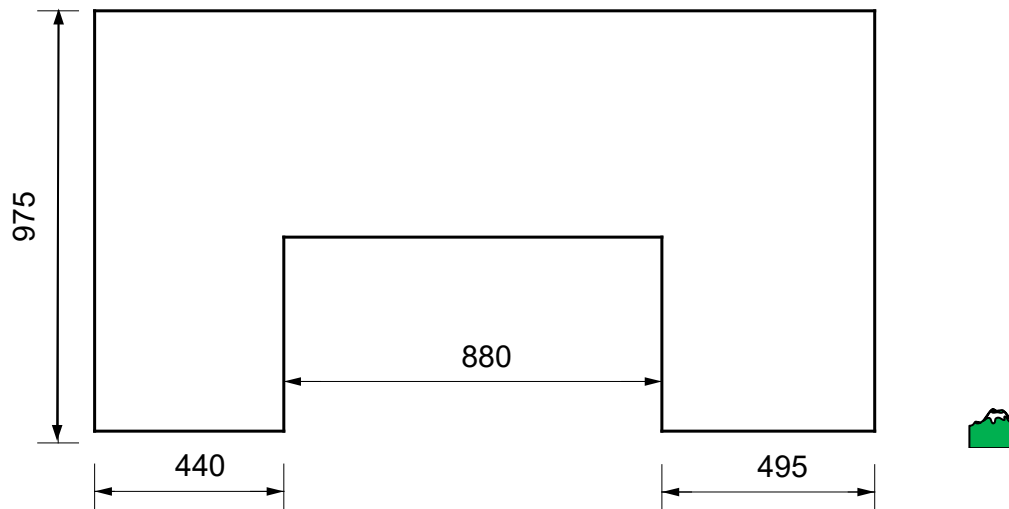


FIGURE 2

[15]

QUESTION 4: DOOR

An external half-glass door 2 032 mm high, 820 mm wide and 44 mm thick is constructed with stiles 100 mm wide. The top rail is 100 mm wide and the middle rail, 100 mm wide, is fitted 1 082 mm from the bottom of the door. The upper portion of the door has THREE frosted-glass panels horizontal positioned, separated by glazing bars. The bottom portion consists of 65 mm × 22 mm tongue and groove boarding.

Draw, to scale 1:10, the front elevation of the door and show the position of the following:

- 100 mm × 44 mm stiles
- 100 mm × 44 mm top rail
- 100 mm × 44 mm middle rail
- 65 mm × 22 mm tongue and groove boarding
- 30 mm × 44 mm glazing bar
- Frosted glass



Label and insert the dimensions of the door and position of the middle rail.

[15]

QUESTION 5: ROOFS, CEILINGS AND PLUMBING

Draw, to scale 1:10, a vertical section through a 660 mm × 660 mm chimney stack having a flue of 220 mm × 220 mm. The chimney stack projects through a pitch of 45° Marseilles-pattern tile roof.



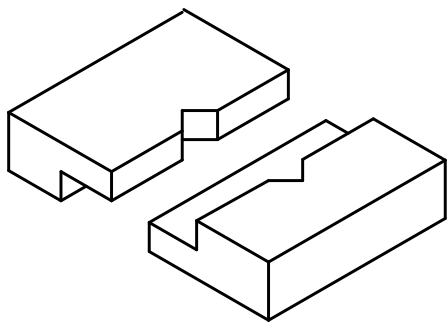
Show the position of each of the following:

- Chimney stack
- Flue
- Parging
- 420 mm x 250 mm Marseilles-pattern tiles
- Fillet
- 114 mm × 38 mm rafter
- 38 mm × 38 mm battens
- Cover flashings
- Apron flashing
- Gutter

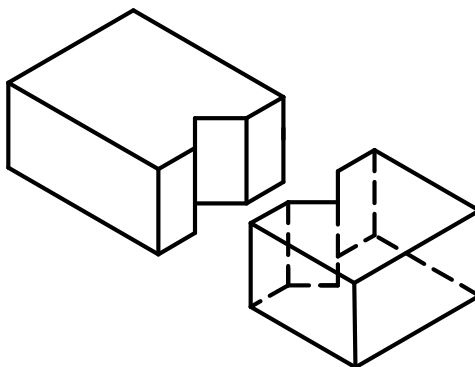


Show dimensions of the batten spacing, overhang, pitch of the roof and sprockets.

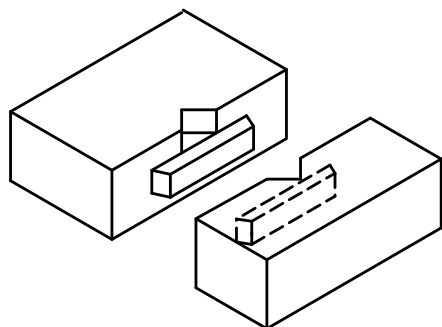
[19]

QUESTION 6: MASONRY

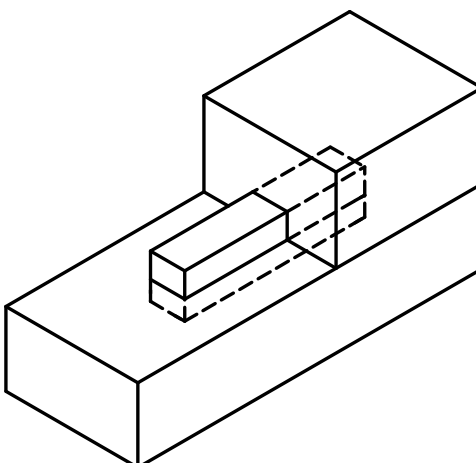
6.1



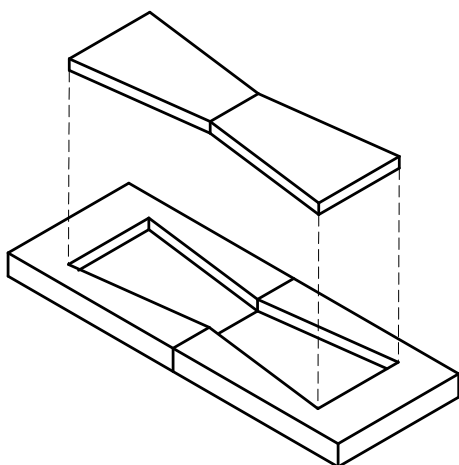
6.2



6.3



6.4



6.5



Name each of the masonry joints shown above by writing only the answer next to the question number (6.1–6.5) in the ANSWER BOOK.

(5 × 2)

[10]**TOTAL:****100**