higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

ARCHITECTURAL GRAPHICS AND TECHNOLOGY
NQF LEVEL 3
(Second paper)

24 November 2023

This marking guideline consists of 6 pages.

Copyright reserved

QUESTION 1

1.1
- Communicator
- Message
- Medium
- Receiver
- Feedback (5)

1.2
- Not regularly updated
- Not always received on time by the client
- Poor distribution of documents, arriving late or not at all
- Inaccurate or outdated budget costs recorded
- Activities not scheduled correctly (5)

1.3

QUESTION	TOPIC	ADVANTAGE	DISADVANTAGE
1.3.1	Pictures and drawings	• Drawings are a form of communication, giving specifications and visuals of what the project may look like.	• Untidy and unclear to read or understand
1.3.2	Feedback and monitoring work	• Feedback and continuous monitoring on the site could serve as a good way of keeping the communication for the project on track.	• Feedback not always carried out at the right time – in most cases too late due to various delays in the project
1.3.3	Management reports	• Control of work being performed is one of the primary responsibilities of management.	• Poor planning and incomplete project schedules

(3 × 2) (6)

[16]

QUESTION 2

2.1 The bulk factor or FAR (floor area ratio) is only applicable to multistorey buildings,✓ so you do not need to include it if you are drawing a single-storey house.✓ The bulk factor might be given as 4, meaning that the total floor area of the building must not exceed four times the size of the stand.✓ The total floor area of a multistorey building is the area of all the floors (or storeys) added together.✓ (4)

2.2 Permissible ground floor size = 100 m²
200 m² of site × 8 bulk factor = 1 600 m²
1 600 m²/100 m² = 16

Thus, the building allows for 16 floors. (4)

2.3
- 1:500
- 1:200 (2)

2.4

TYPE OF ZONE	BUILDING PERMITTED
• Residential	• Houses
• Residential with flat rights	• Houses and/or flats
• Commercial	• Retail outlets (shops) and offices
• Industrial	• Factories and workshops

(Any 4 × 2 × ½) (4)
[14]

QUESTION 3

3.1
3.1.1 True
3.1.2 False
3.1.3 False
3.1.4 True
3.1.5 False
3.1.6 True
3.1.7 True
3.1.8 True
3.1.9 True
3.1.10 True

(10 × 1) (10)

3.2 The term 'construction drawings' is generic in the sense that it includes all drawings needed by the various trades people to complete a building project.✓ The architect, engineer and other specialists prepare these drawings.✓ Construction drawings include technical information showing the size, quantity, location and relationships of the building components.✓ Construction drawings graphically present as much information as possible.✓ Construction drawings consist of orthographic views, whereas general drawings consist of plans and elevations drawn to a relatively small scale.✓ Detail drawings on the other hand consist of sections and details drawn at a relatively large scale.✓ A plan view is a view of an object or area, as it would appear if projected onto a horizontal plane passed through or held above the object area.✓ The most common construction plans are site plans, foundation plans, floor plans and framing plans.✓ A site plan shows the contours, boundaries, roads, utilities, trees, structures and other significant physical features on a site.✓ Construction drawings are used to determine cost, time and labour on a project.✓ (10)

3.3
- Bending schedules for reinforcement
- Paint-finishing schedules
- Floor-finishing schedules
- Door and doorframe schedules
- Window and window frame schedules
- Joiner-fitting schedules
- Plumbing-fitting schedules (7)

3.4 Prime cost sums: During the preparation of the bill of quantities, the architect might not have decided on the specification for an item, such as a door handle.✓ He/She will therefore instruct the contractor to allow a fixed sum of money for that item in the bill when pricing.✓ Once the specification is done the amount will be replaced with the actual amount in the bill of quantities.✓

Provisional sums are used when both labour and material cannot be measured.✓ The QS then allocates an amount for a section of work, e.g.✓ electrical or mechanical services.✓ (3 + 3) (6)

[33]

QUESTION 4

4.1 4.1.1 E
4.1.2 B
4.1.3 A
4.1.4 C
4.1.5 D

(5 × 1) (5)

4.2 4.2.1
- Rational designs
- Deemed-to-satisfy requirements

(2)

4.2.2
- Truss spans
- Timber sizes and length
- Timber grades

(3)

4.3

ADVANTAGES	DISADVANTAGES
• Can be constructed without electricity, using hand tools only, which makes it easier to construct in rural or underdeveloped areas	• Larger sections needed to accommodate bolting
• Based on deem-to-satisfy requirements	• Because bolted trusses are lap-jointed or eccentric, they require more timber and are therefore more expensive. They are also heavier.

(2 + 2) (4)

4.4 4.4.1 760 mm
4.4.2 1 050 mm
4.4.3 1 350 mm

(3 × 1) (3)

4.5 4.5.1 This shape may be used where a triangular truss will not fit.✓ It is usually stubbed at the jogged exterior or at the change to a vaulted ceiling in the opposite direction.✓ (2)

4.5.2 This is a combination of a gable-end truss✓ on top of a hip truss,✓ which can be transported in two sections. It is used when a single triangular truss is too large to transport.✓ (3)

4.5.3 This flat truss is used in roofs or floors.✓ It may be designed as a top or bottom chord bearing, or for simple or multispans, which can also be cantilevered at one or both ends.✓ They can have a shallow slope to offset deflection and provide positive drainage when used for a flat roof.✓ (3)

[25]

QUESTION 5

5.1 5.1.1 Lock fitting a rectangular-shaped cavity in the edge of a door

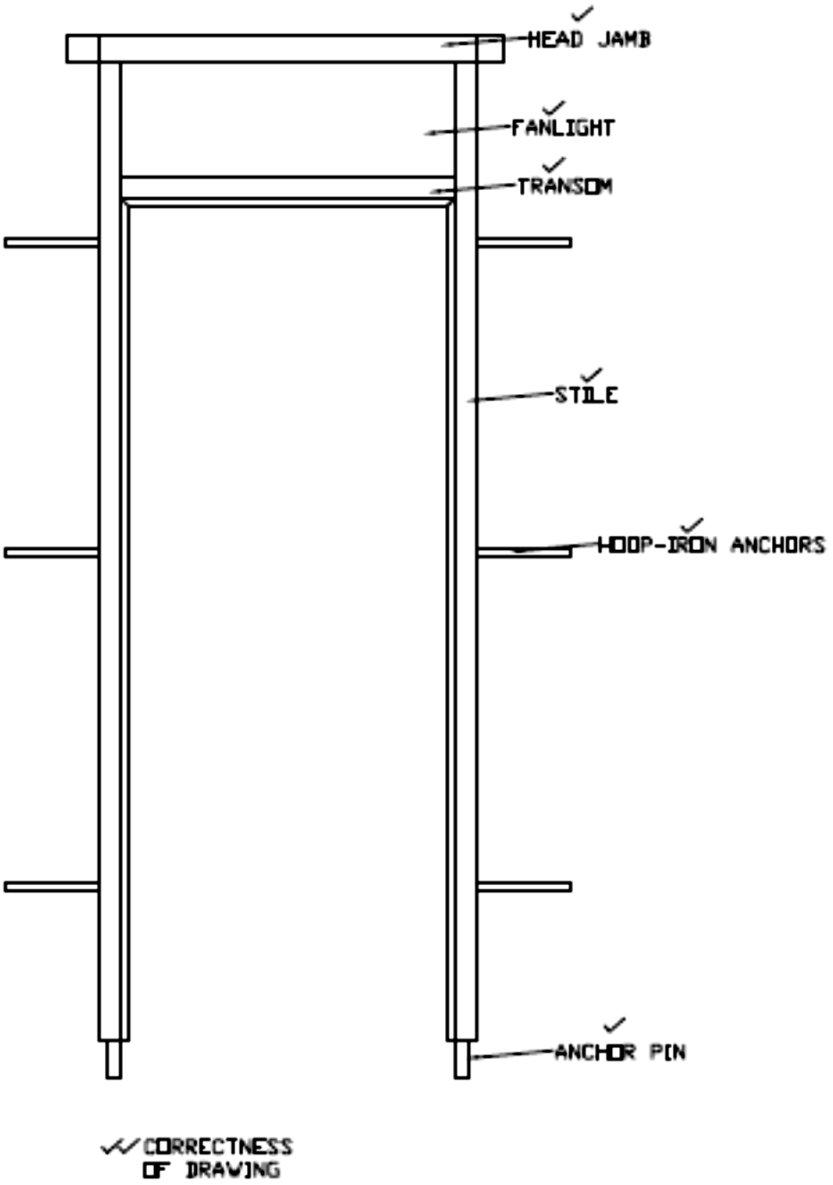
5.1.2 Component used to join two doors structurally

5.1.3 Material inserted into the frame formed by stiles, rails and mulls of a door

5.1.4 Rail located at the top of a door

(4 × 1) (4)

5.2



(6 + 2) (8)
[12]

TOTAL: 100

Copyright reserved