higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

ARCHITECTURAL GRAPHICS AND TECHNOLOGY

(Second paper)

NQF LEVEL 3

XX February 2020

This marking guideline consists of 5 pages.

Copyright reserved

QUESTION 1

1.1
1.1.1 True
1.1.2 False
1.1.3 False
1.1.4 True
1.1.5 True
1.1.6 True
1.1.7 True
1.1.8 True
1.1.9 True
1.1.10 False

(10 × 1) (10)

1.2
- Assumptions about client needs and expectations
- Frustration, anger and conflict
- Physical barriers, such as noise
- Cultural differences and perceptions
- Language barriers (5)

[15]

QUESTION 2

2.1
2.1.1 5177
2.1.2 Simonstown
2.1.3 10311/1985
2.1.4 454 m^2
2.1.5 DJW Forsyth
2.1.6 PLS1029
2.1.7 April 2009

(7 × 1) (7)

2.2 The position and depth of the municipal sewer connection are vital pieces of information needed to connect the soil line.✓ In a rural area, it is possible that there is no sewer connection from the municipality.✓ In this case a septic tank and soakaway must be built to dispose of the waste water and sewerage.✓ (3)

[10]

QUESTION 3

3.1
A – 13
B – 8
C – 3
D – 10
E – 5
F – 2
G – 11
H – 1
I – 14
J – 9
K – 6
L – 4
M – 12
N – 7 (14)

3.2
3.2.1 E
3.2.2 A
3.2.3 D
3.2.4 B
3.2.5 C
(5 × 1) (5)

3.3
- 1:2
- 1:5
- 1:10
- 1:20
- 1:50 (5)

3.4
3.4.1 Superstructure brickwork includes walls, windows and doors that form part of a house,✓ as well as brickwork above foundations.✓

3.4.2 Foundation brickwork is part of the building or wall that supports the superstructure.

3.4.3 Backfill is the replacement of earth into a trench around and against a basement foundation.
(3 × 2) (6)

3.5 The smaller scale of larger drawings does not allow for marking dimensions✓ on the smaller features,✓ so they provide a clear view of the components within the area of the detail.✓ It is important to use these enlarged details✓ before attempting to erect the building.✓ (5)
[35]

QUESTION 4

4.1 The trusses on a double-skin cavity wall are usually supported on the inside skin of brickwork.✓ The only time the trusses need support on the outer skin of brickwork is when the pitch of the roof is very steep✓ (over 45°) and the outer skin of brickwork would be in the way of the ends of the rafters.✓ (3)

4.2 A wall plate is a timber member that is laid flat on the supporting wall.✓ The roof trusses rest on it.✓ The wall plate is used to make the bearing surface level and to spread the weight of the roof evenly over a larger area.✓ (3)

4.3 **Advantages**

- These trusses are more economical, because there are no lap joints, less timber is used and there is no wastage on site.
- Time used in construction is saved because these trusses are generally prefabricated.
- Prefabricated trusses are professionally designed and guaranteed.

Disadvantages

- These trusses can only be fabricated in factories or truss plants.
- It cannot be altered without consulting a competent person.
- It is vital that the correct specifications are supplied to the manufacturer to avoid wastage. (Any 2 + any 2) (4)

4.4

- Air-conditioning ducting and units
- Kitchen extractor canopies
- Water tanks, geysers and solar heaters
- Attic loads
- Water pipes
- Fixed or sliding portioning walls
- Theatre lights or X-ray units in hospitals
- Fixed or sliding doors (full wall) (Any 5 × 1) (5)

4.5 4.5.1 Rationally designed roofs use roof trusses designed by engineers using scientific calculations.✓ An example of a rationally designed roof is one that uses connecting plates.✓ (2)

4.5.2 Deemed-to-satisfy roof designs use trusses developed by craftsman over time, based on observation and experience.✓ It is also known as empirical design.✓ When a truss complies with the empirical rules, it will deem to satisfy.✓ (3)

4.6

- Gable-to-gable roof structure
- Hip roof structure
- Monopitch roof structure
- Flat roof structure
- Conical roof structure (5)

[25]

Copyright reserved

QUESTION 5

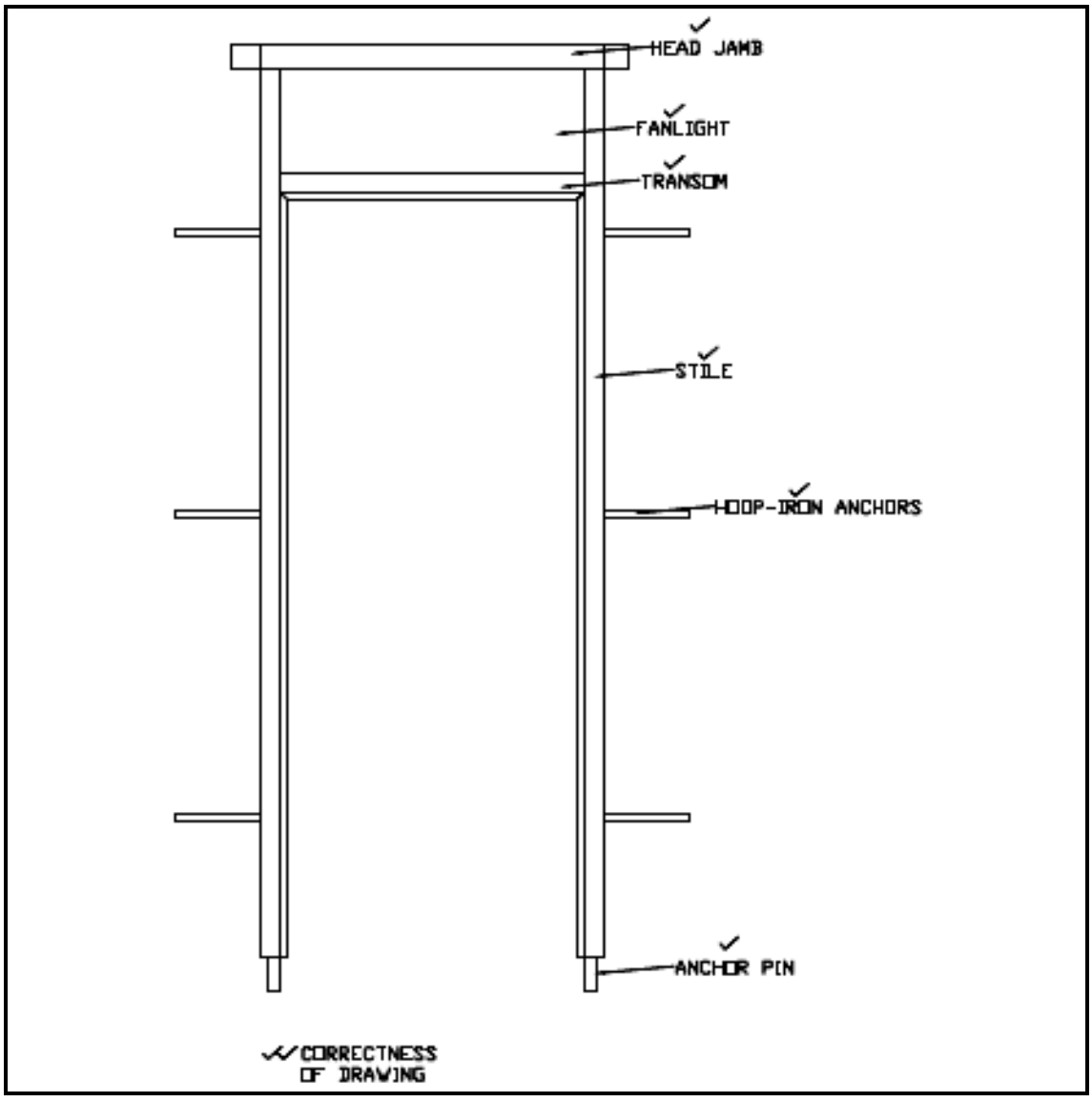
5.1 5.1.1 A pivot window is a unit with a sash that swings open or shut by revolving on pivots at either side of the sash✓ or at the top and the bottom.✓

5.1.2 A flush door is produced using two skins or faces separated by a stile and rail frame construction at the perimeter.✓ Flush doors may be produced with a hollow or solid core.✓

(2 × 2) (4)

5.2
- Allowing natural light into the room
- Protecting the room from the weather
- Keeping heat in and cold out of the room (3)

5.3



(8)

[15]

TOTAL: 100

Copyright reserved