higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

QUANTITY SURVEYING N4

8 AUGUST 2018

This marking guideline consists of 10 pages.

SECTION A

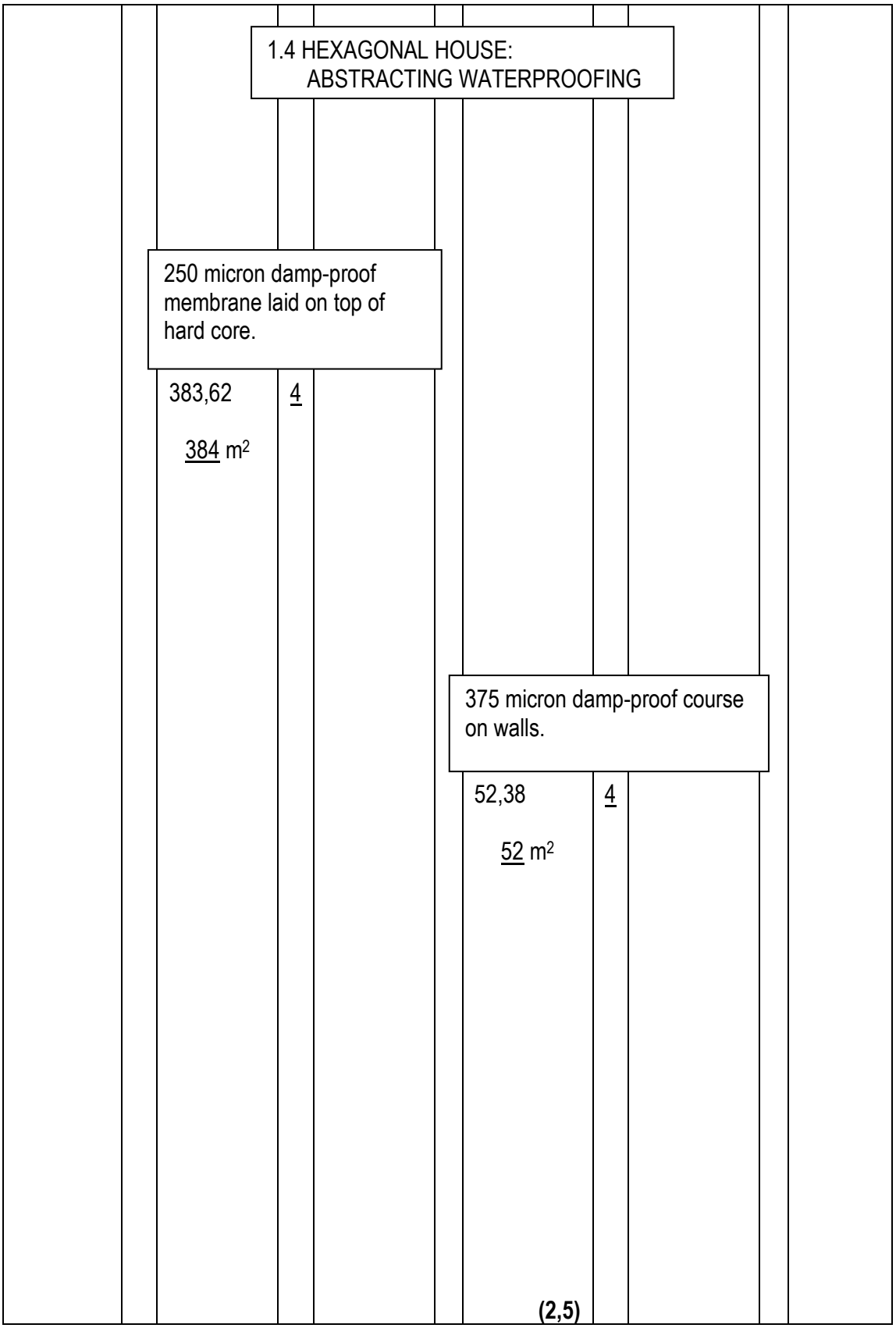
QUESTION 1

HEXAGONAL HOUSE

			1.1 COLLECTIONS Length of 1 brick wall and footing 3842 4096 7938÷2 = 3969/6✓ = 23 814 MG✓ Length of half-brick wall in lining Tanθ = x/y = 110/Tan60° = 63,51 mm✓ 4096 – 63,51 = 4032,49 mm✓ 6/4032,49 = 24 195 MG✓ **(5)** **1**	10/	23,81 0,76 0,73	✓	1.2 TAKING OFF Foundation measuring list ➢ Excavation ➢ R.O.C. ➢ Dewatering ➢ Concrete footing ➢ Brickwork (fnds) ➢ Backfilling ➢ Hardcore filling ➢ DPM ➢ DPC ➢ Mesh reinforcing ➢ Concrete slab ➢ Half brick in lining ➢ E.O. excavation / Excavate in ordinary earth for surface trench excavation not exceeding 2 m deep. ✓ 425 300 725 depth \ **2**

			/				/
10/2/	23,81 0,73	✓	Risk of collapse of sides of trench excavation n.e. 1,5 m deep.✓	10/	24,20 0,08	✓	Half-brick foundation wall in local stock bricks, built in 1:4 cement mortar. ✓
			\				\
			/				/
10/	Item	✓	Allow keeping excavations free from water. ✓	10/6/½/	3,84 3,33 0,07	✓	Hard-core filling under surface bed.✓
			\				Cosθ = x/r Cos60º = 1921/r r = 1921/Cos60º = 3842 mm✓
			/				
10/	23,81 0,76 0,30	✓	15 MPa concrete cast against excavation surfaces. ✓				Sinθ = y/r Sin60º = y/3842 Y = Sin60º x 3842 = 3327,27 mm✓
			\				
			/				
10/	23,81 0,50	✓	One-brick foundation wall in local stock bricks, built in English bond in 1:4 cement mortar. ✓ 425 75 500 height				\
			\				/
			/	10/6/½/	3,84 3,33	383,62	250 micron damp-proof membrane laid on top of hard core.✓
10/2/	23,81 0,27 0,43	✓	Backfilling to trench excavations with selected material from excavations. ✓ 760 -220 540 ÷ 2 = 270 width				\
			\	10/	23,81 0,22	52,38	/ 375 micron damp-proof course on walls. ✓
							\
			3				**4**

10/6/½/	3,84 3,33	✓	/ Mesh reinforcement Ref. 175 to surface bed. ✓ \				
10/ 10/	23,81 0,22 0,43 23,81 0,76 0,30	✓ ✓	/ Extra over excavation for loading and cart away excess material from excavations to the nearest dump 2 km away from site. ✓ \ **(Any 28 ticks) (28)**				
			1.3 SUPERSTRUCTURE BRICKWORK				
10/	23,81 2,50	✓	/ One-brick superstructure wall in local stock bricks, built in English bond in 1:4 cement mortar.✓ \ **(2)** **5**				


1.4 HEXAGONAL HOUSE:
ABSTRACTING WATERPROOFING
250 micron damp-proof membrane laid on top of hard core.
383,62 4
384 m2
375 micron damp-proof course on walls.
52,38 4
52 m2
(2,5)

HEXAGONAL HOUSE

ITEM NO.	DESCRIPTION	UNIT OF MEASUREMENT	QUANTITY	RATE	AMOUNT	
					R	C
	Bill No. 7 waterproofing					
1	375 micron damp-proof course on walls.	m^2	52		---	---
2	375 micron damp-proof course on walls.	m^2	384		---	---
	Bill No. 7 waterproofing carried to summary		**(2,5)**			

[40]

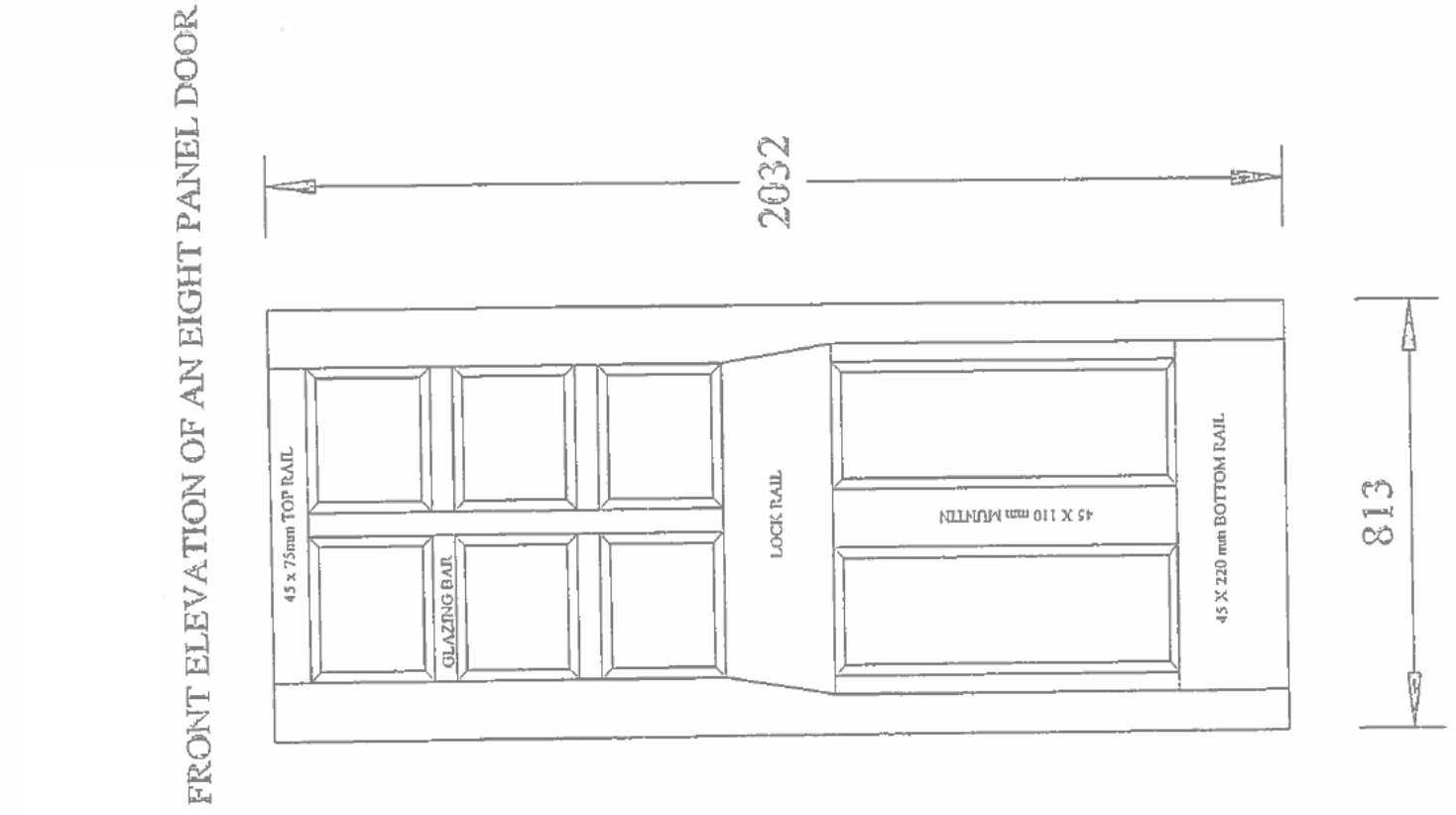
TOTAL SECTION A: 40

SECTION B

QUESTION 2

2.1

MARKS ALLOCATION		
TITLE	1	
SCALE	1	
DIMENSIONS	2	
LINEWORK	1	
NEATNESS	1	
LABELLING	2	
CORRECTNESS	2	
TOTAL	10	



(10)

2.2 2.2.1 False
2.2.2 False
2.2.3 True
2.2.4 False
2.2.5 True
2.2.6 True
2.2.7 True
2.2.8 True
2.2.9 True
2.2.10 False

(10 × ½) (5)

2.3 2.3.1
- He designs public utilities, roads, bridges and sewers.
- He supervises their construction and maintenance.
- Construction of roads, waterways, bridges, excavations, earthworks and other structures rather than buildings. Also civil engineering works. (Any ONE)

2.3.2
- He is responsible for building design and construction discipline encompassing heating, water supply, drainage and ventilation.
- He is responsible for mechanical work, e.g. lifts, air conditioning and fire equipment.
- He provides apparatus and equipment to operate the heating, water supply and ventilation requirements of a building. (Any ONE)

2.3.3
- He determines the budget and quantities.
- He is responsible for project budget control.
- He advises and assists to prepare contract documentation. (Any ONE)

2.3.4
- He investigates the structural viability/design.
- He takes responsibility for structural issues.
- He supervises structural work. (Any ONE)

2.3.5
- He defines site and sets out plots as designed/laid out by the town planner.
- He draws up a surveyed diagram of the site.
- He identifies corner pegs for sites. (Any ONE)

(5 × 1) (5)
[20]

QUESTION 3

3.1 The Standard System is an agreed method of measurement of all items of builders' work. It is designed to lay down principles of measurement with the object of making it comprehensive and adaptable to all those using it. (4)

3.2 3.2.1
- Item number
- Description
- Quantity
- Rate
- Amount (5 × 1) (5)

3.2.2
- Horizontal at right angles to the line of sight
- Horizontal parallel to the line of sight
- Vertical (3 × 2) (6)

3.3
3.3.1 Ceilings, partitions and access flooring
3.3.2 Earthworks
3.3.3 Structural timbers
3.3.4 Waterproofing
3.3.5 Roof coverings. etc.
3.3.6 Floor coverings, wall linings, etc.
3.3.7 Concrete, formwork and reinforcement
3.3.8 Roof coverings, etc.
3.3.9 Brickwork
3.3.10 Brickwork/masonry

(10 × ½) (5)
[20]

QUESTION 4

4.1
4.1.1 Purpose-made
4.1.2 Both sides
4.1.3 Raking, cutting and waste
4.1.4 Prime cost
4.1.5 Clear sheet glass

(5 × 1) (5)

4.2 4.2.1 Arbitration is an accepted procedure for settling disputes outside the courts but with legal force, using independent persons acceptable to both parties in dispute.

4.2.2 Interim payment in contract administration is a payment made at any given stage of construction, for work carried out up to that point.

4.2.3 Cost estimate is an estimation of the cost of a construction project based on designs, often undertaken by a quantity surveyor at an early stage in design work.

4.2.4 Variations are changes in the nature or the extent, conditions or programming of construction work from that stipulated in a building contract, agreed and billed by a contractor extra to the contract.

4.2.5 Ditto is a term used to save repeating long descriptions in writing which is similar to the previous description.

(5 × 1) (5)

4.3
- The bill of quantities contract
- The schedule of rates contract
- The lump sum contract
- The cost-plus contract
- The labour-only contract
- The direct-labour contract
- The packaged-deal contract (Any 5 × 1) (5)

4.4
- Financial control to the benefit of all parties concerned
- Reduction of risk
- Tenders are fully competitive.
- Tenderers are enabled to obtain competitive tenders from subtrades.
- Machinery provided for adjustments and causes of disputes are greatly reduced.
- Provides contingency to cover risks which would normally have been carried by the contractor.
- Provides a service to the client which he formerly had to pay for but did not receive. (Any 5 × 1) (5)

[20]

TOTAL SECTION B: 60
GRAND TOTAL: 100