higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

NOVEMBER EXAMINATION

QUANTITY SURVEYING N6

30 NOVEMBER 2016

This marking guideline consists of 9 pages.

QUESTION 1

1.1
- Financial planning and cost control
- Estimates of building costs
- Drawing up of tender documents
- Obtaining tenders
- Checking of tender bill of quantities
- Drawing up of interim valuations
- Drawing up of final accounts
- Costing of and advising on variations (Any 5 × 1) (5)

1.2
- For competitive tendering
- For interim valuations
- For costing of variations
- For final account settlement
- For ordering of materials
- For settling of disputes
- It is used as a legal document (Any 5 × 1) (5)

1.3
- Signed variation orders to quantity surveyor
- Q.S. to make variations estimates (for budget)
- May be included into interim payments
- Final payment due with final certificate
- Amount to be taken from contingency sum
- Settlement with contractor/building surveyor
- Day work items to be included
- To be incorporated in final account
- Q.S. to measure variation orders in detail (site visit or site meeting minutes)
- Additions = extras
- Omissions = savings
- Item descriptions and rates taken from bill of quantities (Any 10 × 1) (10)

1.4
- Check side casts and tick
- Check waste calculations and tick
- Check figuring
- Square figuring
- Check squaring and tick
- Check final answers and tick (Any 5 × 1) (5)

[25]

QUESTION 2

				2/π/1/4/	0.46		E.o. drilling in hard rock
			Reinf. Conc. PILES		0.46		
	Item		Allow for the establishment of plant on site		0.30√		√
				6/π/1/4/	0.61		
6.2/	1√				0.61		
			Plant to be set up at √ piles		0.30√		
6.2/	10.00√		Aug. drill 455 - 610 ∅ in stable ground in L.n.e √ 10 m	2/	20.80√		30Mpa r.c in 455∅ pile 20500 300 20800√
			20500 23000 10000 10000 10500 13000 5000 5000 5500 8000 5000 5000 500 3000	6/	23.30√		Do. In 610 ∅ pile 23000 300 ✓ 23300√
6.2/	5.00√		Do. exc.. 10 m n.e 15 m √	2/π/	0.46√		Fmwk to round piles above g.l 300mm hi. A1√
				6/π/	0.61√		
6.2/	5.00√		Do. exc. 15 m n.e 20 m√				
				2/8/	21.00√		12∅ H.s reinf. A1√
2/	0.50√						
6/	3.00√		Do. exc. 20 m n.e 25 m √				
				6/8/	23.50√		16∅ Do A2 √
2/π/ 1/4/	0.46						
	0.46		E.o. drilling for c.a				
	20.50√		A1√				
6/π/1/4/	0.61						
	0.61						
	23.00√		A2				28 ANY [25]

QUESTION 3

			DRAINAGE SYSTEM (Provisional) √=1/2 ✓= 1 3.1 Pipe etc. in ground				
	2.00√ 3.00√ 0.90√ 10.00√		100 mm ∅ PVC pipes in grndincldg trenches n.e 1 m dp✓ -main				3.2 **Vent etc**
2/ 3/	1.00√ 1.00√		-branches -r.e.'s✓		0.50✓		100 mm ∅ PVC pipes incldg clamps etc -vent stock✓
			E.o 100 mm ∅ PVC pipe for plain bend				
					2✓		E.o. 100 mm ∅ PVC pipe for plain benda.b. -A.C✓
	2✓		-A.C✓				
	2✓		Do. i.e. bend				
			-B.C✓		1✓		100 mm ∅ relief valve a.u.✓
	2✓		Do. Plain junct. -A.D✓				(6)
							3.3 **Provisional Sum**
	2✓		Do. i.e. junct. -B.C✓		Item√		Allow prov. Sum for drain to be tested as descr. In PP 26.1 (a) and (b) of SABS 0400-1987√
	3✓		Rodding eye lid a.u✓				#
	1✓		100 mm Universal gulley head Wi. Granting, incldg Universal Q-trap✓				Allow for attendance √ #
			(17)				Allow for profit√ (2) **[25]**

QUESTION 4

Marks for the following:

1. SQUARING		
Side casts checked	✓	
Columns/page	✓	
Squaring	✓	
Decimals/lines	✓	
Squaring checked	✓	
Run-through	✓	(6)
2. ABSTRACTING		
Title/trade	✓	
Sub-sections	✓	
Order	✓	
Columns	✓	
Lines	✓	
Copy exactly	✓	
No ditto's	✓	
Reference and units	✓	
Reducing	✓	
Run-through	✓	
Working up	✓	
checked	✓	(12)
3. BILLING		
Heading	✓	
Unit … → …Amount	✓	
No abbrv	✓	
Ditto's	✓	
No decimals	✓	
Correct quantities	✓	
Summary	✓	(7)

[25]

TOTAL: 100

QUESTION 4 **EXAMINATION NUMBER:**

			BASEMENT NOTE: up to& incldg DPC				Excav in earth for basem. n.e. 2 m dp x2,00 2800 150 and 2950 -2000 950√
			Collections				
	Footg		6000 2/280 560√ 2/6560 =13120		7,96 7,96	63.36 √	
			6000 2/280 560 2/6560 = 13120√ 26240 -4/1000 4000√ 22240√				Ditto exc. 2.n.e. 4 m x 1,15 # E.o. excav. for c.a. surplus material X18.31
	ext girth		2/6000 12000√ 2/6000 12000√ 24000√		22,24 1,00		Excav.s.t.n.e. 2 m below basem excav. 380
	int girth		24000 -8/440 3520√ 20480√		0,23	√ 5.12	# -150 230√ E.o.excav. for c.a.a.b
	1/2BKWL		24000 -4/110 440√ 23560				# 25 Mpa conc. thicken. To edges of basem. Blindng.
	150 Mic Polyth		24000 -8/110 880 23120√		13,12 3,18	√ 41.72	R.C.C. to sides of basem.excav.exc. 1,5 m dp
	330 Conc wl		23120 -4/330 1320√ 21800√				2800 380 3180√
	Backfill		24000 4/280 1120√ 25120√				
	DPC		330 24000 110 -4/440 1760√ 22240 √				

1

QUESTION 4 **EXAMINATION NUMBER:** | | | | | | | | | | | | | |

			Excav. for wkg space 320 mm away from basem. excav. incldg f.i.ξr.n.e. 500 mm dp 2800 600 -500 -280 2300 320√ 1000 1300√				150 Mic. Polyth. Waterprfg on blindg Betw. Flrs 6000 -2/100 200 5800√ and 30 MPA r.c.in. basem. flr X.25
	26.24 0.50	√ 13.12			5.80 5.80	√ 33.64	
	26.24 1.00	√ 26.24	Do exc. 500 mm n.e. 1,5 m dp				
	26.24 1.30	√ 34.11	Do exc. 1,5 m n.e. 3 m dp		23.12		Turng up waterprfg incldg triangular grout fillet as nec
	18.24 0.23	√ 4.20	R.C.O. to basem. tr. n.e. 1,5 m dp below basem. excav. 22240 4/1000 4000 18240√		21.80 0.33 2.70	√ 19.42	30 MPA r.c. in basem. wls 2800 -150 2950 -250√ 2700√
			Int only		23.12 2.95	√ 68.20	
	Item		Risk of H_2O		20.48 2.70	55.30√ ~~23,50~~√	Fmwk to sides of conc. wls. n.e. 3,5m hi
						123.50	√
	22.24 0.22 2.80	√ 13.70	Back fill to sides of basem, incldg ramg in layers		23.12 2.95	68.20√	150 Mic. Polyth. Waterprfg. Vertical betw. Conc. wl ξ bk skin
			and		22.24 0.44	9.79√	
			Ddt E.o. excav. for c.a.a.b				DPC on wls
	7.96 7.96 0.15	√ 9.50	25 mpa. Conc. in blindg		23.56 2.95	69.50√	1/2bk ext. Skin blt wi. local bks in 1:4 cm. against conc. wl (in confined spaces
	2				3		

BASEMENT

EARTHWORKS

M³
excav. s.t n.e 2m
Basembelow excavation
5,12 1
5m³

M³
excav. in earth for
basemn.e 2m dp
63.36 1
63m³

M³
Excav.in earth for
Basem.exc 2m n.e
4m dp
18,31 1
18m³

M³
e.o. excav for c.a
surplus material
63.36 1
5,12 1
68.48
13,70 T
54.78
55m³

M²
R.o.c to basemtr
n.e. 1,5dp below
basem. Excavation
4,20 2
4 m²

m²
R.o.c to sides of
basem. excav. exc
1,5 m deep
41,72 1
42m²

m²
excav for workg space
320 mm away from
basemexcav. incldg
f.i and ram n.e
500 mm deep
13,12 2
13 m²

m²
excav. forworkg space
320 mm away from
basemexcav. incldg
f.i. and ram exc
500 m n.e 1,5 m
26,24 2
26m²

M²
excav. forworkg
space 320 mm away
from basemexcav
incldgf.i and ram
exc 1,5 m n.e 3 m
Deep
34,11 2✓
34m²

Item
Keep excav free
Of water
Item 2✓

m³
backfill to sides
of baseminclдg
ram in layers
13,70 2✓
14 m³

Ddt
13,70 2

	BASEMENT Bill no 1 Earthworks:	Unit	Qty	Rate	Amount Rand	Cent
1.	Excavate surface trenches not exceeding 2 m below basement level	M^3	5			
2.	Ditto in earth for basement not exceeding 2 m below ground level	M^3	63			
3.	Ditto,Ditto exceeding 2 m and not exceeding 4 m deep	M	18			
4.	Extra over excavation for carting away surplus materials	M^3	55			
5.	Risk of collapse to basement trenches not exceeding 1,5 m below basement excavation	M^2	4			
6.	Ditto to sides of basement excavation exceeding 1,5 m deep	M^2	42			
7.	Excavated for working space 320 mm away from basement excavation including fill in and ram not exceeding 500 mm deep	M^2	13			
8.	Ditto exceeding 500 and not exceeding 1,5 m deep	M^2	26			
9.	Ditto exceeding 1,5 and not exceeding 3 m deep	M^2	34			
10.	Keep excavation free from water	Item				
11.	Backfilling to sides of basement including ramming in layers	M^2	14			
	Earthworks: Bill NO 1 Carried to Summary			**R**		