higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

T1610(E)(J30)T
AUGUST 2010

NATIONAL CERTIFICATE

QUANTITY SURVEYING N6

(2050026)

30 July (X-Paper)
09:00 – 13:00

REQUIREMENTS: **Answer book**
Dimension paper (BOE 8/12)
Abstract paper (BOE 8/10)
Billing paper (BOE 8/11)

SUPPLIED BY CANDIDATES:
'Standard System' of Measuring Building Work

Calculators may be used.

This question paper consists of 4 pages and 6 annexures.

DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE
QUANTITY SURVEYING N6
TIME: 4 HOURS
MARKS: 100

INSTRUCTIONS AND INFORMATION

1. Answer ALL the questions.
2. Read ALL the questions carefully.
3. Number the answers correctly according to the numbering system used in this question paper.
4. Only QUESTION 1 must be done in the ANSWER BOOK. The remainder of the work must be done on the appropriate paper.
5. Work strictly according to the question numbers. For example QUESTION 2.1 and QUESTION 2.2 may NOT be combined. Number each question correctly.
6. Start each question on a NEW sheet.
7. Loose sheets must be placed in the correct sequence in the back of the ANSWER BOOK. Do NOT use a stapler.
8. Consult the Standard System of Measuring Building Work for description criteria.
9. Do NOT use red or green ink.
10. ALL the specification notes must be incorporated in the descriptions.
11. In marking the answers, particular attention will be paid to the systematic and orderly methods of taking-off and working-up techniques, well-referenced measurements with side casts, neatness, exposition and clear description of work.
12. Write neatly and legibly.

QUESTION 1

1.1 State the unit in which each of the following items should be measured:

1.1.1 Hips for plate nailed timber roof trusses
1.1.2 Timber connectors such as toothed rings
1.1.3 Roof sheet on purlins
1.1.4 Brickwork in piers
1.1.5 Hard core fill
1.1.6 Steel roof trusses
1.1.7 Brickwork in closing cavity of hollow walls
1.1.8 Face brick arches
1.1.9 Glass panes (9)

1.2 Briefly describe ALL the steps followed by the quantity surveyor in preparing valuations for interim payments. (10)

1.3 Final accounts are done by the quantity surveyor during the post-contract period. Name FIVE items which must be taken into account for the preparation of the final account. (5)

1.4 Explain the following quantity surveying terms:

1.4.1 Contingencies (2)
1.4.2 Nominated sub-contractors (2)
1.4.3 Final Certificate (2)
[30]

QUESTION 2

ANNEXURE A (attached) shows the plan and section of a reinforced concrete structure.

Measure the quantities of ALL the concrete and formwork from above the ground level.

SPECIFICATIONS:

COLUMNS: 25 MPa concrete in columns

BEAMS: 25 MPa concrete in beams and slabs as before

FORMWORK: Formwork to underside of slab not exceeding 250 mm thick, not exceeding 3,5 metre high. **[25]**

QUESTION 3

ANNEXURE B (attached) shows a plan and sectional elevation of a morabaraba stand.

Measure the quantities of ALL work entailed in the construction of the wall and the surface bed. Do NOT keep the foundation separate.

SPECIFICATIONS:

EARTHWORKS:

- The cleaning of the site should NOT be measured
- Excavation is in ordinary earth and is to be partly filled in and rammed
- Excess material is to be carted away

CONCRETE:

- 10 MPa concrete in footings and surface bed

MASONRY:

- Brickwork in 1:4 cement mortar in stretcher bond
- Facings two courses below ground level

[25]

QUESTION 4

ANNEXURE C (attached) shows the schematic drawing of a hot and cold water pipe installation.

Make use of schedules on ANNEXURE D (attached), a summary prepared by the quantity surveyor and ANNEXURE E and ANNEXURE F (attached) are the measurements for the installation.

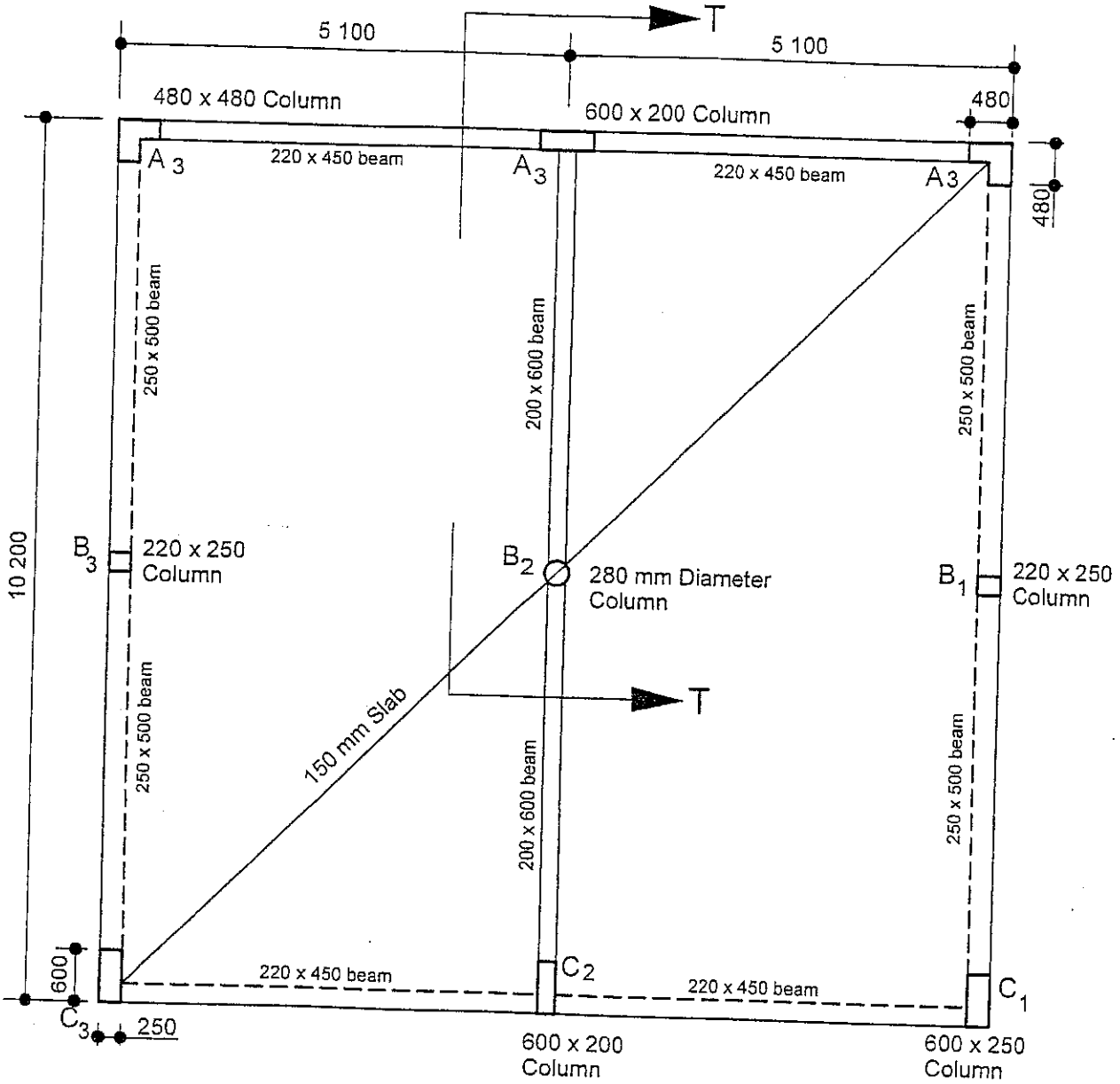
Remove ANNEXURE E and ANNEXURE F (attached), and insert your examination number and do the following:

Square, abstract and bill the measurements.

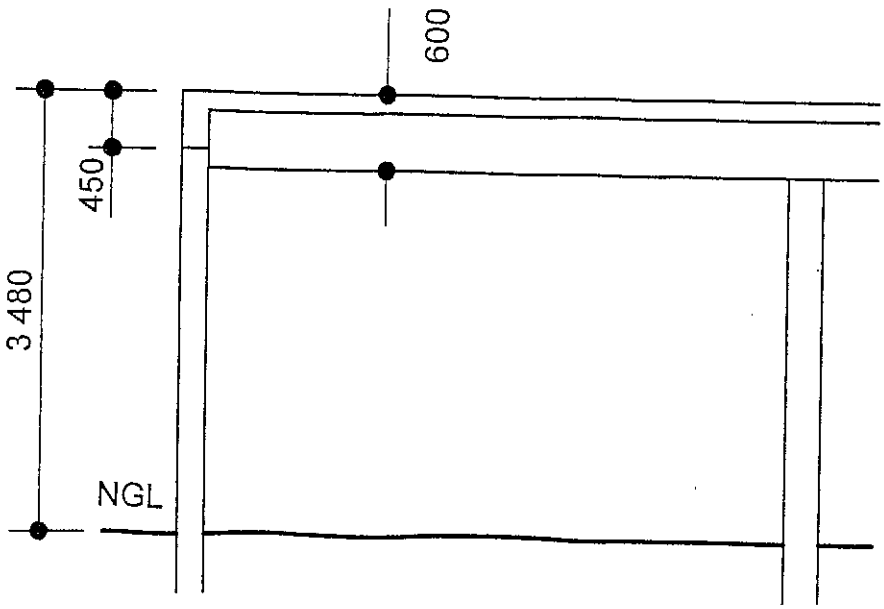
[20]

TOTAL: 100

ANNEXURE A

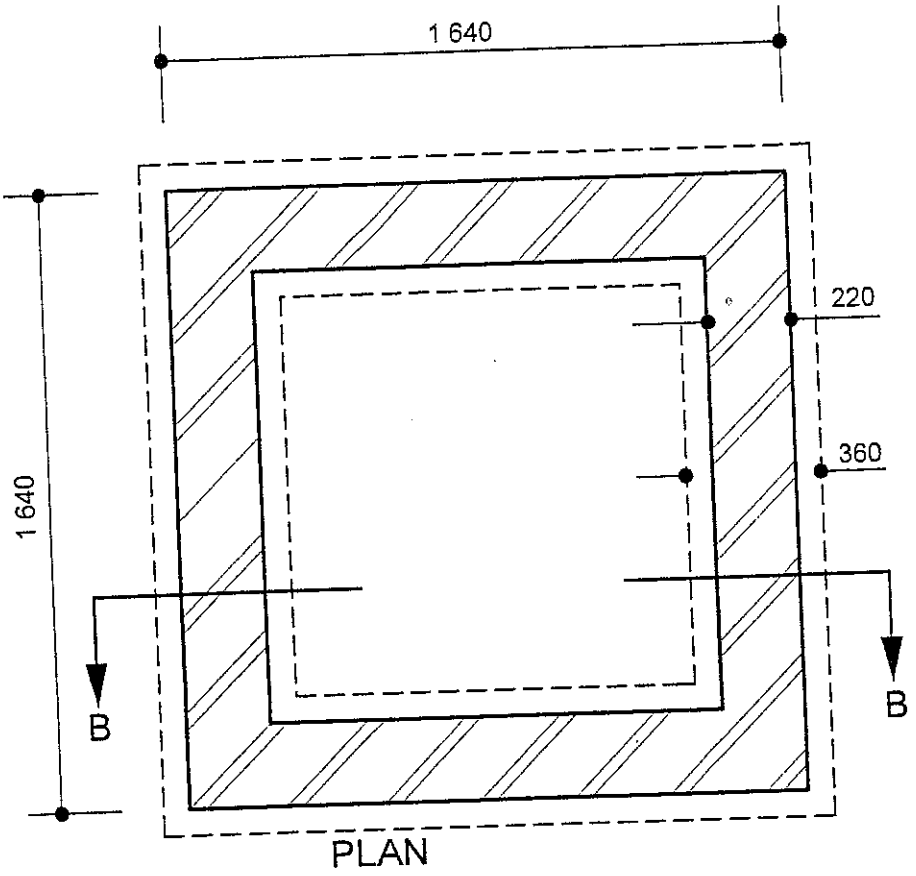


GROUND FLOOR PLAN

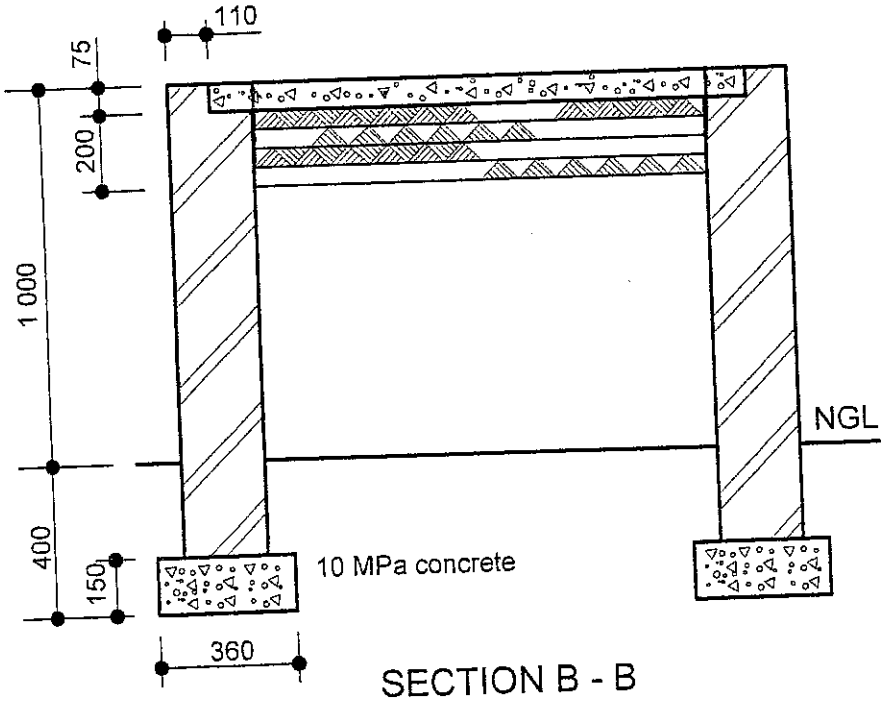


SECTION T- T

ANNEXURE B



PLAN

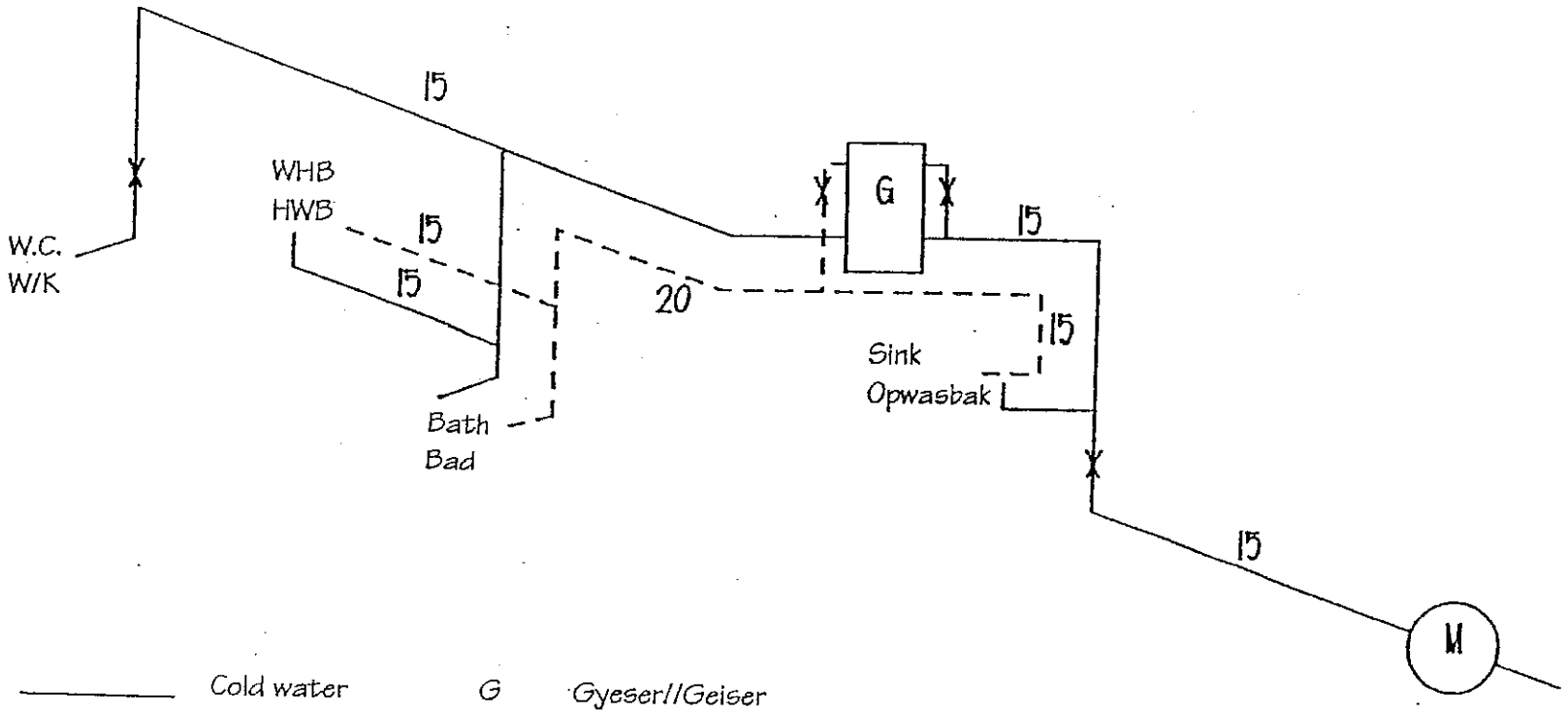


SECTION B - B

ANNEXURE C

SCHEMATIC DRAWING OF HOT AND COLD WATER INSTALLATION

SKEMATIESE TEKENING VAN WARM- EN KOUEWATER-INSTALLASIE



———	Cold water Kouewater	G	Gyeser//Geiser
		M	Water meter/Watermeter
- - - - - - - - - -	Hot water Warmwater	X	Stopcock/Afsluitkraan

ANNEXURE D

LOCATION	COPPER PIPES						Labour Bends		FITTINGS						JOINT				REMARKS
	In Ground	Fixed walls			In chase				Bend		Tee		Reducing Tee		Joint		Brass		
	15	15	20	25	15	20	15	20	15	20	15	20	15	20	15	20	15	20	Municipal connection
From meter	8,00								1						1				
Riser in trench to floor to ceiling	0,45	 0,33 3,00							1		2						1		
Branch to sink		1,00					2												Hole through wall
In roof space		2,50					2												
Branch to geyser		1,00							1		2				1		2		Geyser & drip tray
Branch W.C.		5,00							1		2								W.C.
Drop to bath basin		0,75 0,75			2,00 1,20		2 2				2				2				Bath & basin: wall, chases
Drop to W/C.		0,50			1,50		2		1						1		2		
TOTAL	8,95	14,83	-	-	4,70	-	10	-	5	-	8	0	-	-	5	-	5	-	

LOCATION	COPPER PIPES						LABOUR BENDS		FITTINGS						JOINTS				REMARKS
	In Ground	Fixed walls			In chase				Bend		Tee		Reducing tee		Joint		Brass Stopcock		
	15	15	20	25	15	20	15	20	15	20	15	20	15	20	15	20	15	20	Lagging
From geyser in roof		2,00	0,50							1				2		2		1	
Drop to sink					2,00				2										Stainless steel sink
Branch to sink		1,00					2		2						1				Lagging
From geyser to bath			3,00							2				2					
Drop basin						2,50									1				Bath
Branch to bath					1,00		2		2						1				Basin
Branch to basin		1.50			1,50		2												
TOTAL	-	4,50	3,50	-	4,50	2,50	6	-	6	3	-	-	-	4	3	2	-	1	

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ANSWER BOOK **EXAMINATION NUMBER:**

ANNEXURE E

			HOT & COLD WATER				
			Note: All work msd prov.		2,00 1,20 1,50		15 Ø Do. in chase, wrapped in 2 layers brown paper
			EXTERNAL HOT AND COLD WATER INSTALLATIONS				
	Item		Allow prov. Sum of R4500,00 for connect. to municipal water main	5. 2.2.	1 2		E.o. cu. Pipe for fittings n.e. 30 mm -bend -tee
			#		5		Ex. for adapter n.e. 30mm
			Allow for attendance				
			#	2.2.	1		15 Brass s.c.
			Allow for profit				
	8,00		15 Ø cu in ground includg excav. ξ backf.				
	0,45 0,33 3,00 1,00 2,50 1,00 5,00		15 Ø Do. to wls. etc.				
2/	0,75 0,50						

EXAMINATION NUMBER:

ANNEXURE F

			INTERNAL HOT AND COLD WATER INSTALLATIONS		3,00		Do. ar. 20 Ø pipe
	1		100*l*. electr. Comb. Geyser wi. 1,2mm galv. m.s. tray				
	2,00 1,00 1,50		15 Ø cu. to wls etc.	2.2. 2.	2 1		E.o. cu. pipe for fittings n.e. 30mm -15 bend -20 bend
				2.	2		-20 reduce
	0,50 3,00		20 Ø Do. do.				Ex. for adapter n.e. 30mm
				3/	1		-15
	2,00 1,00 1,50		15 Ø Do. in chase, wrapped in 2 layers brown paper		2		-20
					1		20 Brass s.c.
	2,50		20 Ø Do. do.				
	2,00		Expanded polysterene lagging secured wi. Adhesive tape ar. 15 Ø pipe				