higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

T1450**(E)**(A12)T

NATIONAL CERTIFICATE

QUANTITY SURVEYING N5

(2050015)

12 August 2019 (X-Paper)
09:00–13:00

REQUIREMENTS:

Dimension paper	**(OE 8/12)**
Abstract paper	**(OE 8/10)**
Billing paper	**(OE 8/11)**

Candidates may use their own unmarked Standard System of Measuring Building Work.

Calculators may be used.

This question paper consists of 6 pages and 2 addenda.

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DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE
QUANTITY SURVEYING N5
TIME: 4 HOURS
MARKS: 100

INSTRUCTIONS AND INFORMATION

1. Answer ALL the questions.
2. Read ALL the questions carefully.
3. ALL the work in SECTION A must be done on the appropriate paper.
4. ALL the work in SECTION B must be done in the ANSWER BOOK.
5. Number the answers according to the numbering system used in this question paper.
6. Red ink is NOT allowed.
7. Write neatly and legibly.

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QUESTION 1

SECTION A

ADDENDUM B shows the plan and sectional views of a reinforced concrete structure.

SPECIFICATIONS

EARTHWORKS: Clear the site 2 metres all around the concrete structure.
Excavations in firm soil.

CONCRETE: 25 MPa for slab and beams
30 MPa for bases and columns
The height of the columns are measured from the top of the concrete bases to the underside of the beams.

STEEL REINFORCEMENT: Allow a provisional sum of R30 000,00.

Measure all the concrete, formwork and steel reinforcement strictly to the measuring list as indicated in QUESTIONS 1 to 5.

NOTE: QUESTIONS 1 to 5 MUST be answered on the dimension paper provided. Work done in the ANSWER BOOK will be ignored.

QUESTION 1

1.1 Calculate the length and width dimensions of the area to be cleaned. (2)

1.2 Measure the item for the site clearance. (2)

1.3 Determine the dimension of the depth to be excavated for the bases. (2)

1.4 Measure the excavation item for the bases. (3)
[9]

QUESTION 2

2.1 Measure the item for keeping the excavations free of water. (1)

2.2 Calculate the perimeters of bases A1 and B1. (2)

2.3 Measure the item for risk of collapse. (2)

2.4 Measure the item to allow working space for the placing and removal of the formwork in the bases. (4)
[9]

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QUESTION 3

3.1 Measure the item to cast the concrete in the bases. (2)

3.2 Determine the height of the columns. (1)

3.3 Measure the item to cast the concrete in all the columns. (3)

3.4 Measure the items for the formwork to:

3.4.1 The L-shaped columns

3.4.2 The square columns

3.4.3 The circular columns

(3 × 2) (6)
[12]

QUESTION 4

4.1 Calculate the centre line of the ring beam. (3)

4.2 Measure the item to cast the concrete in all the beams. (3)

4.3 Measure the item for the formwork to the soffits of the beams. (2)

4.4 Measure the item for the formwork to the sides of the beams. (2)
[10]

QUESTION 5

5.1 Measure the item to cast the concrete in the slab. (2)

5.2 Measure the item to place the formwork on the soffits of the slab. (2)

5.3 Measure the provisional sum items for the steel rod reinforcement. (4)

5.4 Measure the item for casting and testing TWO test cubes. (2)
[10]

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QUESTION 6

You are required to prepare a bill for the EARTHWORK trade only.

NOTE: Rewrite QUESTIONS 1 and 2 to answer QUESTION 6.1.
QUESTIONS 6.2 and 6.3 must be done on the appropriate paper provided.

6.1 Do the squaring of QUESTIONS 1 and 2 only. (5)

6.2 Do the abstracting of all the items measured in QUESTIONS 1 and 2. (7)

6.3 Draw up the bill for these items. (8)
[20]

TOTAL SECTION A: 70

Answer SECTION B in the ANSWER BOOK.

SECTION B

QUESTION 7

Draw up a typical measuring list a 'taker off' will use when measuring a steel door frame and solid timber door to be built into a 270 mm thick cavity wall, faced externally and plastered and painted internally.

Additional specifications: Solid timber door and required ironmongery
100 mm thick concrete floor
30 mm thick floor screed **[5]**

QUESTION 8

Consult the trade 'Concrete, Formwork and Reinforcement' in the Standard System of Measurement. Indicate whether the following statements are TRUE or FALSE. Choose the answer and write the clause number with either 'True' or 'False' next to question number (8.1–8.5) in the ANSWER BOOK.

8.1 The volume of the concrete in beams shall be added to the volume of slabs to be described as ‘concrete in slabs inclusive of beams’.

8.2 Concrete in hollow block slabs shall be given separately.

8.3 Formwork to soffits of slab shall not be separated according to heights.

8.4 Reinforcement in beams, columns, slabs and the like shall be kept separately.

8.5 Fabric reinforcement shall be given in tons.

(5 × 2) **[10]**

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QUESTION 9

Prepare the final account for the shopping centre and calculate the final payment that is due to the contractor based on the relevant items in the summary of the Bills of Quantities as set out on ADDENDUM A (attached). The following adjustments need to be made:

- Prime cost and provisional sums must be adjusted to R162 500,00.
- Net extra on variation orders should be R40 678,00.
- Remeasurement of foundations is R105 778,89.
- Remeasurement of plumbing and drainage is R135 567,99.
- Remeasurement of site works is R122 456,06.
- Increased costs amount to R105 785,45.
- Payments previously received amount to R1 106 345. **[15]**

TOTAL SECTION B: 30
GRAND TOTAL: 100

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ADDENDUM A

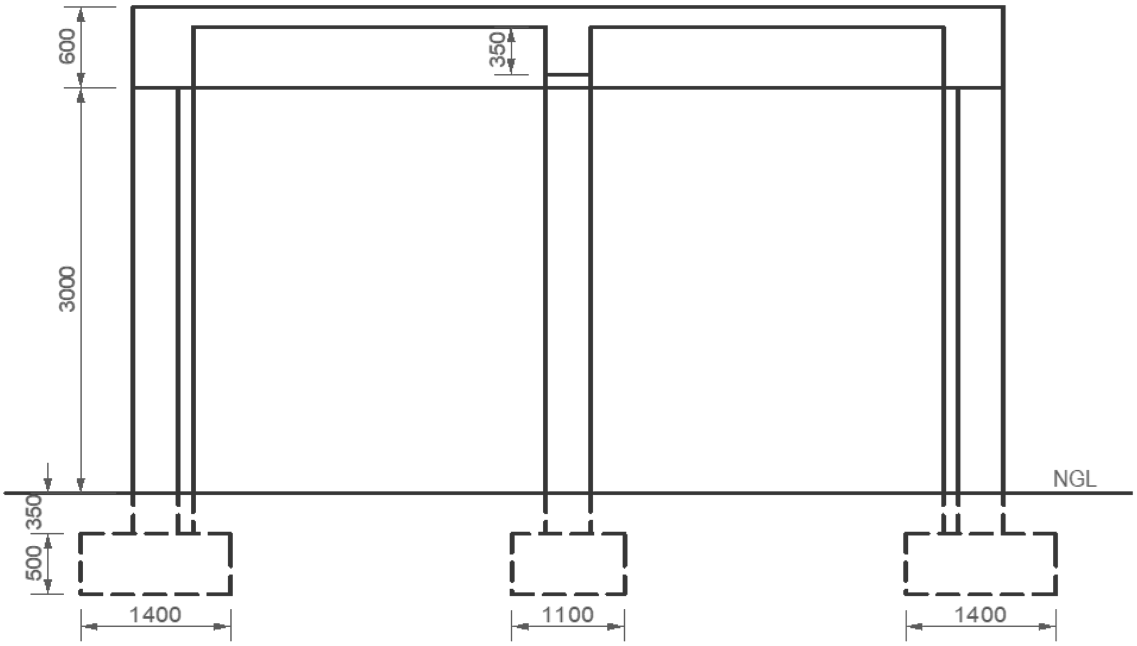
SHOPPING CENTRE

FINAL SUMMARY PAGE

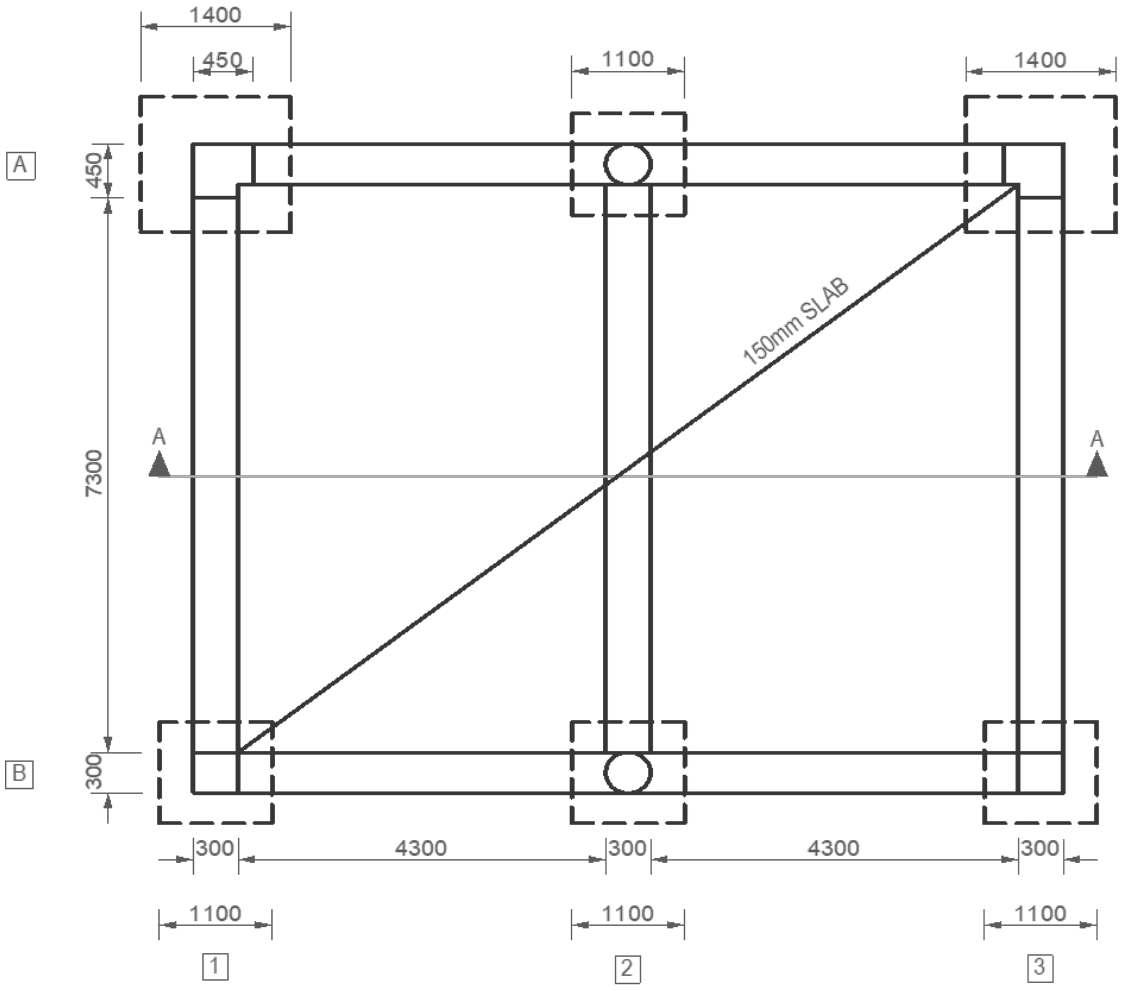
BILL NO.	DESCRIPTION	PAGE	AMOUNT
1	Preliminary and general	55	R99 450,00
2	Foundations	77	R110 450,00
3	Concrete, formwork and reinforcement	100	R452 310,00
4	Masonry	119	R205 400,00
5	Waterproofing	156	R210 315,00
6	Carpentry and joinery	123	R71 342,00
7	Floor coverings	255	R35 310,00
8	Ironmongery	162	R6 700,00
9	Metalwork	168	R72 678,78
10	Plastering	175	R45 765,00
11	Tiling	185	R4 587,00
12	Plumbing and drainage	100	R55 895,00
13	Glazing	198	R45 034,00
14	Painting	223	R20 435,87
15	Site works	203	R132 435,96
16	Prime cost and provisional sums	220	R128 259,45
17	Contingency sum		R55 000,00
	FINAL TENDER PRICE		R1 701 868,06

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ADDENDUM B



SECTION A-A



PLAN VIEW

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