

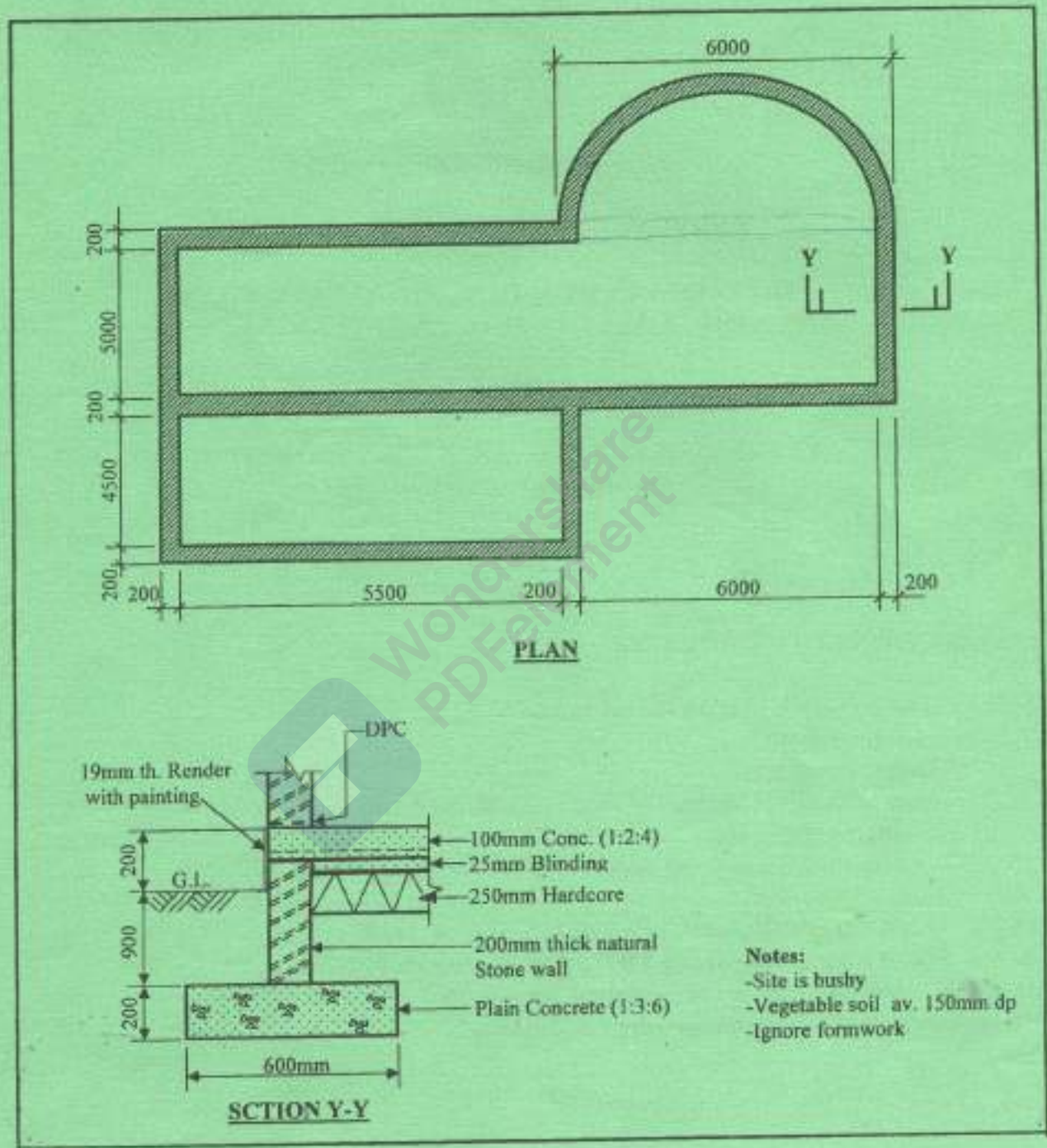




**SECTION A: MEASUREMENTS**

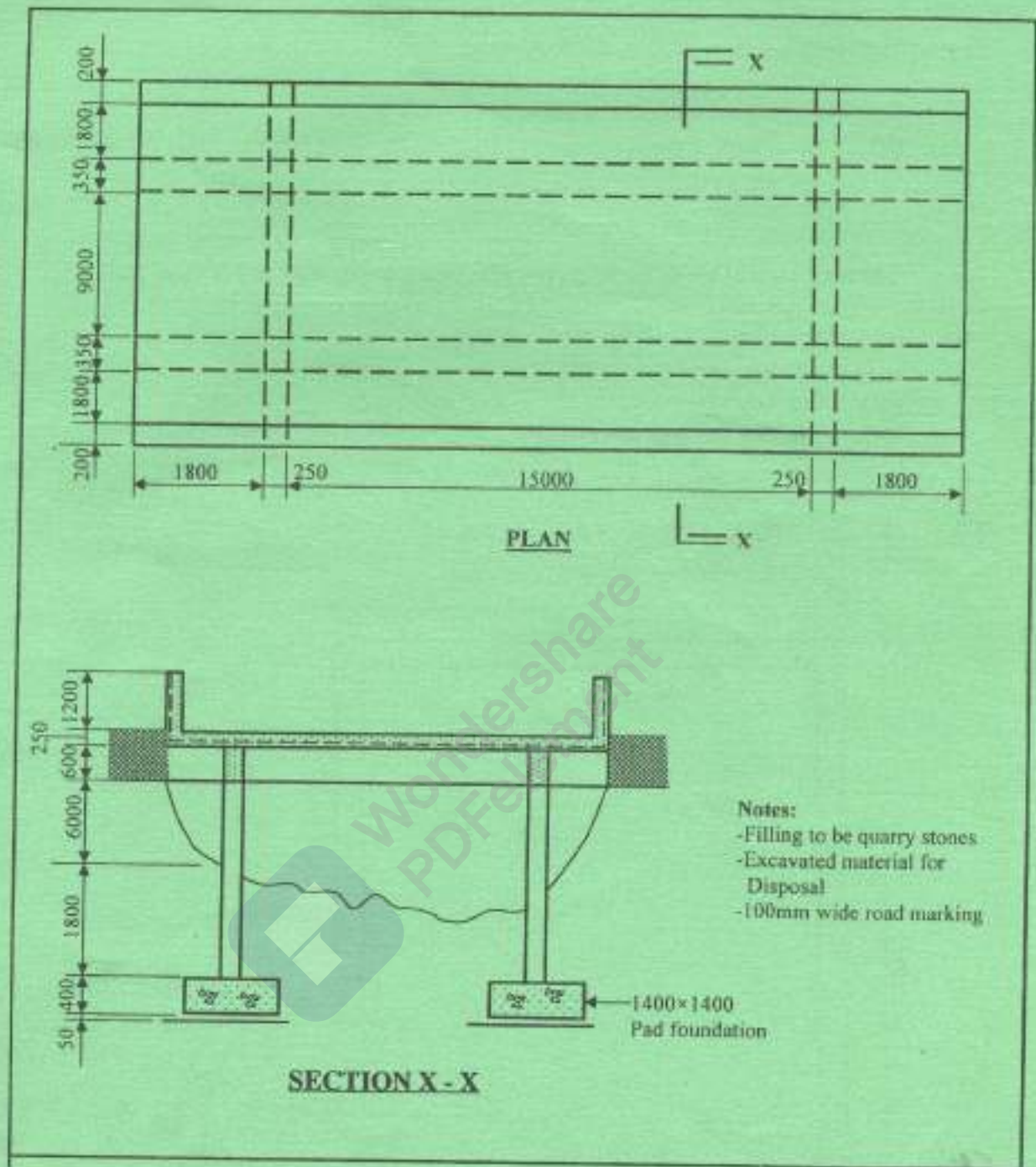
Answer any **TWO** questions from this section.

1. Take off all quantities for the substructure work shown on drawing No. 01 up to and including dump proof course. (30 marks)



Drawing No. 1

2. Take off all quantities for the bridge in drawing No. 02 (Use

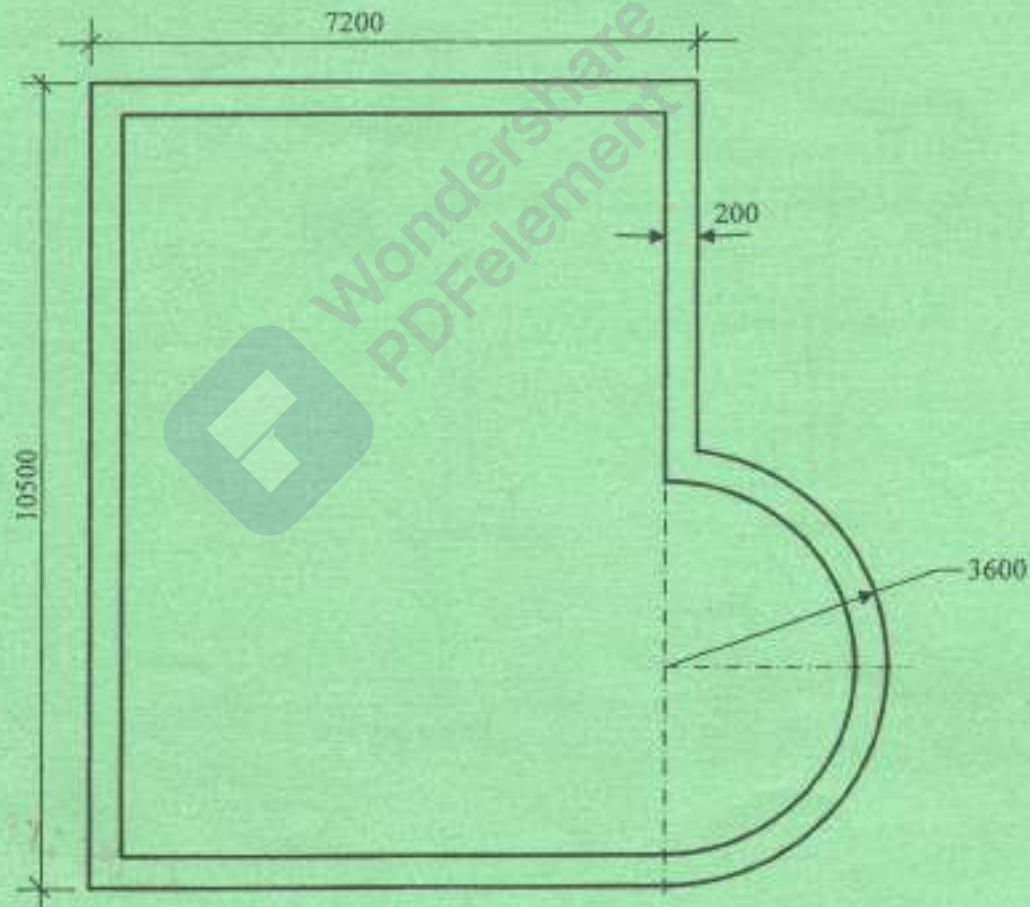


Drawing No. 2





3. (a) Explain the measurement of works in relation to spot items giving two examples. (3 marks)
- (b) Explain the role of each of the following:
- (i) nominated sub contractor;
  - (ii) nominated supplier;
  - (iii) sub-contract;
- (9 marks)
- (c) Illustrate each of the following concepts of measurements in building works:
- (i) squaring;
  - (ii) dotting;
  - (iii) bracketing;
  - (iv) running through dimensions.
- (12 marks)
- (d) Determine the mean girth of drawing No. 03. (6 marks)



Drawing No. 3

**SECTION B: ESTIMATING AND COSTING**

*Answer any TWO questions from this section.*

4. (a) List **six** sources of cost information. (3 marks)
- (b) Describe each of the following terms as used in estimating:
- (i) all in machine rate;
  - (ii) all in material rate;
  - (iii) all in labour rate;
  - (iv) man hour. (8 marks)
- (c) Explain each of the following approximate estimating methods:
- (i) cube (cubing) method;
  - (ii) functional unit method;
  - (iii) superficial method. (9 marks)
5. (a) Explain each of the following terms used in estimating:
- (i) cost plan;
  - (ii) cost planning;
  - (iii) cost study;
  - (iv) cost analysis. (8 marks)
- (b) List **six** design variables that affect the cost of a project. (6 marks)
- (c) (i) Differentiate between direct and indirect costs in estimating.
- (ii) List **four** methods of valuing variations. (6 marks)



6. **Figure 1** shows a proposed building with two basement floors. The basement is 40 m long, 20 m wide and 3.8 m high. Determine the cost of constructing the building using the storey enclosure method given that the unit cost per square meter is Ksh 16,000. (20 marks)

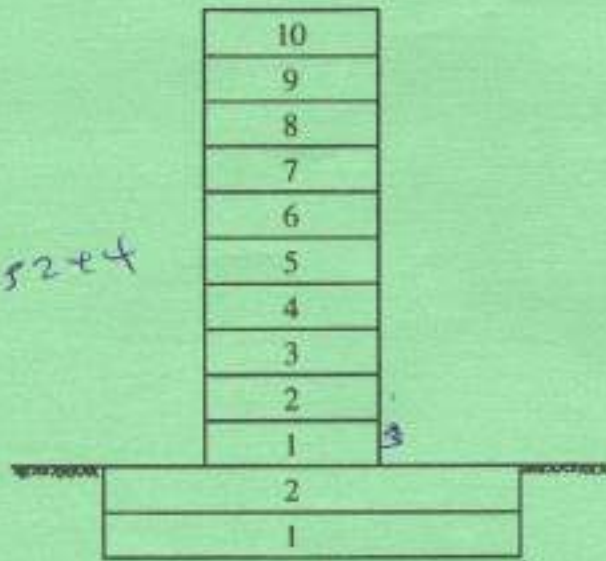
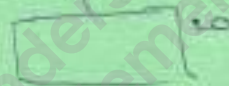


Figure 1



$$2(L+w)2L$$

$$2(Lw)$$

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