

2306/304

**MEASUREMENT OF BUILDING
AND CIVIL ENGINEERING WORKS**

Oct./Nov. 2016

Time: 3 hours

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THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN QUANTITY SURVEYING

MEASUREMENT OF BUILDING AND CIVIL ENGINEERING WORKS

3 hours



INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

Answer booklet;

Dimension papers;

A copy of the Standard Method of Measurement of Building Works and Associated Civil Works of Eastern Africa (SMM);

A copy of the Civil Engineering Standard Method of Measurement (CESMM).

This paper consists FIVE questions in TWO sections; A and B.

Answer THREE questions choosing TWO questions from section A and ONE question from section B.

Question I carries 40 marks while the rest carry 30 marks each.

Maximum marks for each part of a question are as indicated.

Candidates should answer the questions in English.

This paper consists of 8 printed pages.

Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

SECTION A

Answer **Question 1** (compulsory) and any other **ONE** question from this section.

Use the *Standard Method of Measurement of Building Works and Associated Civil Works (SMM)*

1. Take off all the quantities for the swimming pool shown on drawing No. 01 up to and including the paved areas around the swimming pool. (40 marks)
2. Drawing No. 02 shows the plan and section of a pitched roof. Take off all quantities for the roof including rainwater goods. (30 marks)
3. Take off all quantities for the door shown in drawing No. 03 including adjustments to the opening. (30 marks)

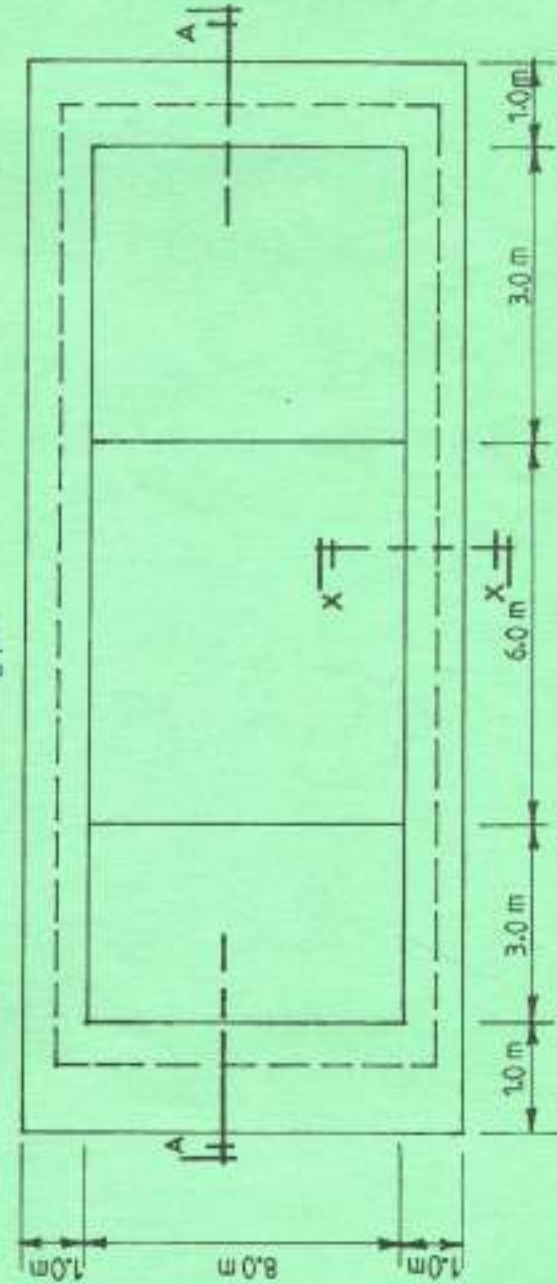
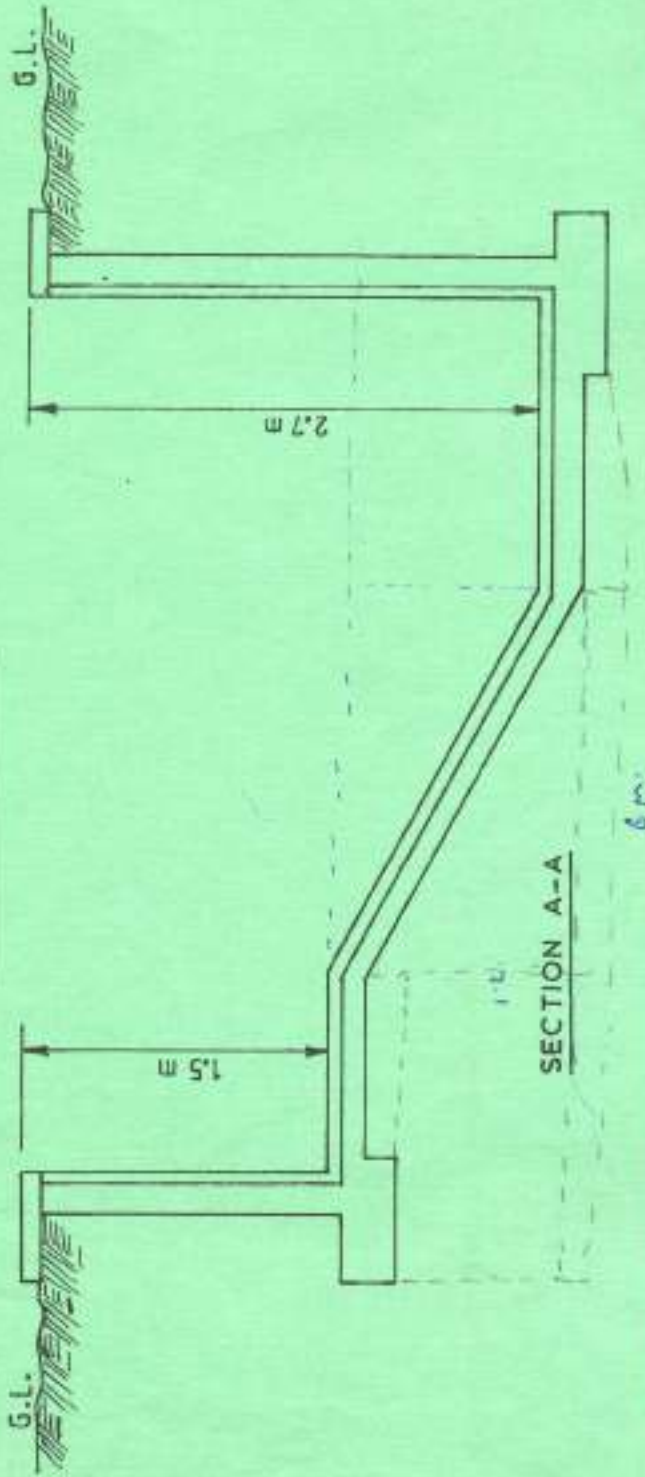
SECTION B

Answer **ONE** question from this section.

Use the *Civil Engineering Standard Method of Measurement (CESMM)* for question No. 04

4. Take off all quantities for the external works shown on drawing No. 04. (30 marks)
5. (a) Explain each of the following and illustrate their booking in a dimension paper:
 - (i) extra over items;
 - (ii) spot items. (8 marks)
- (b) Outline **four** uses of bills of quantities to each of the following parties:
 - (i) the resident engineer;
 - (ii) the general foreman. (8 marks)
- (c) Explain the importance of CESMM to the contractor and outline **two** guiding principles for its use. (5 marks)
- (d) Outline **three** objectives of Engineers Registration Board (ERB) and outline **three** of its roles. (9 marks)

SWIMMING POOL



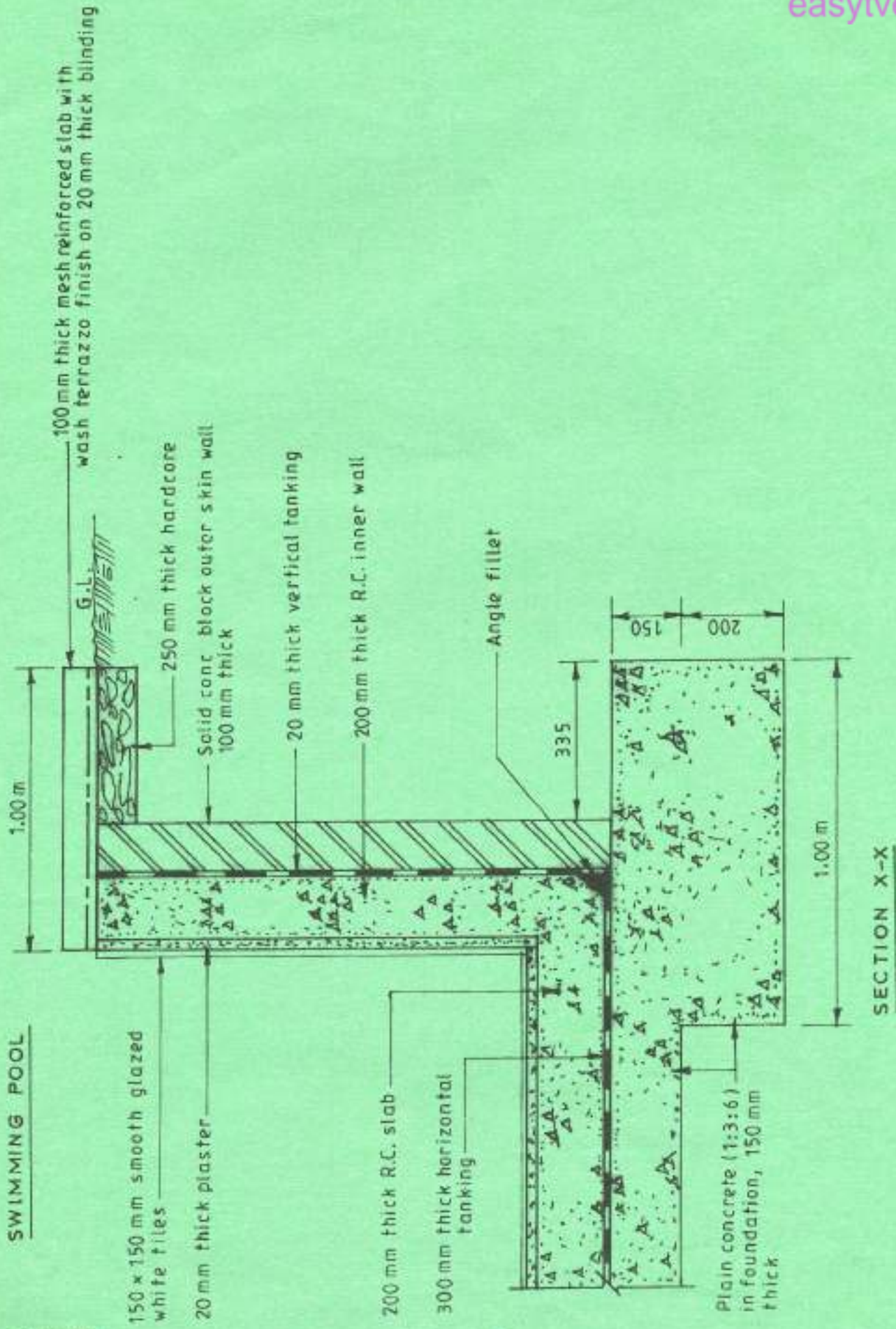
NOTES

- FLOOR TO HAVE 25 mm SCREED AND 150 x 150 x 6 mm WHITE TILES
- THE SITE IS BUSHY WITH THREE NUMBER TREES
- TOP SOIL EXCAVATION 150 mm DEEP DUMP 200 m AWAY FROM SITE
- DRAWING NOT TO SCALE

DRG. No. 1 A

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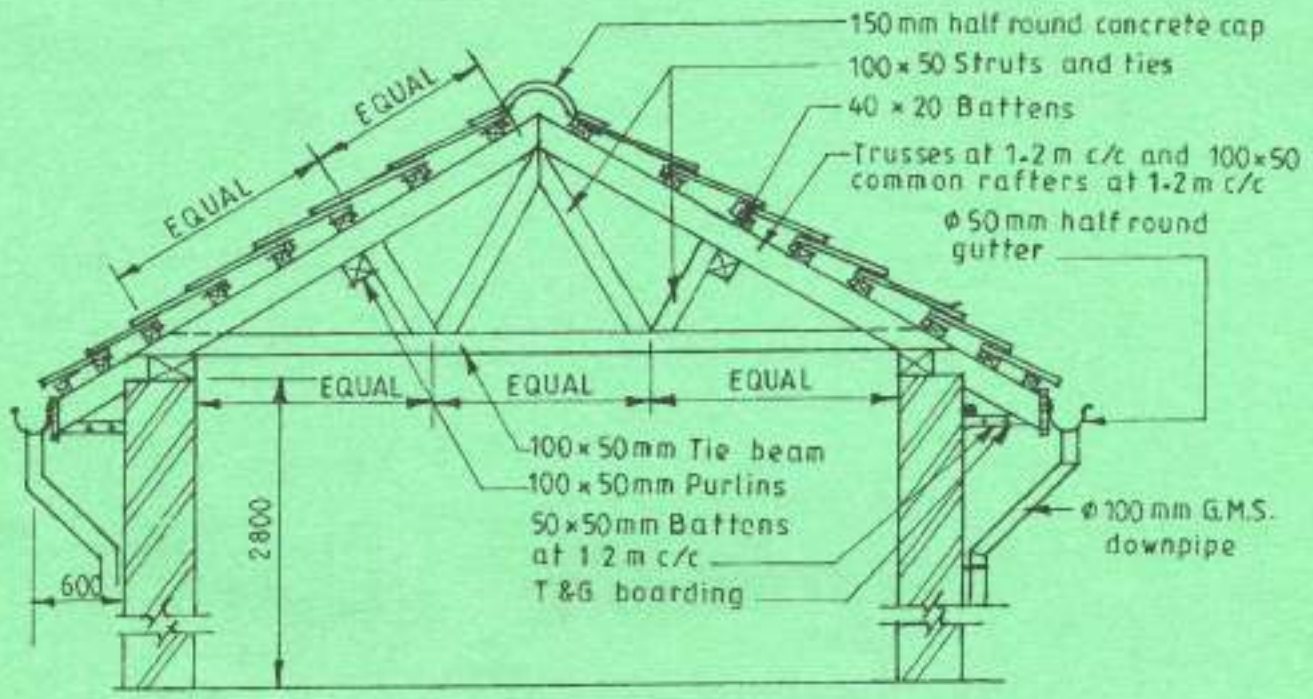
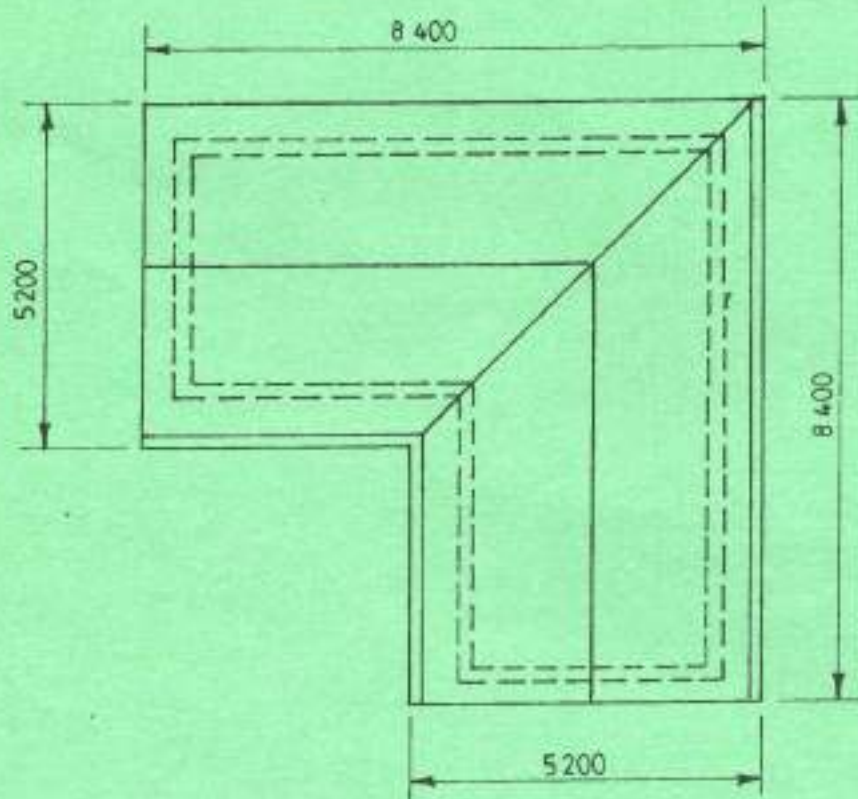
SWIMMING POOL

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DRG. No. 1 B

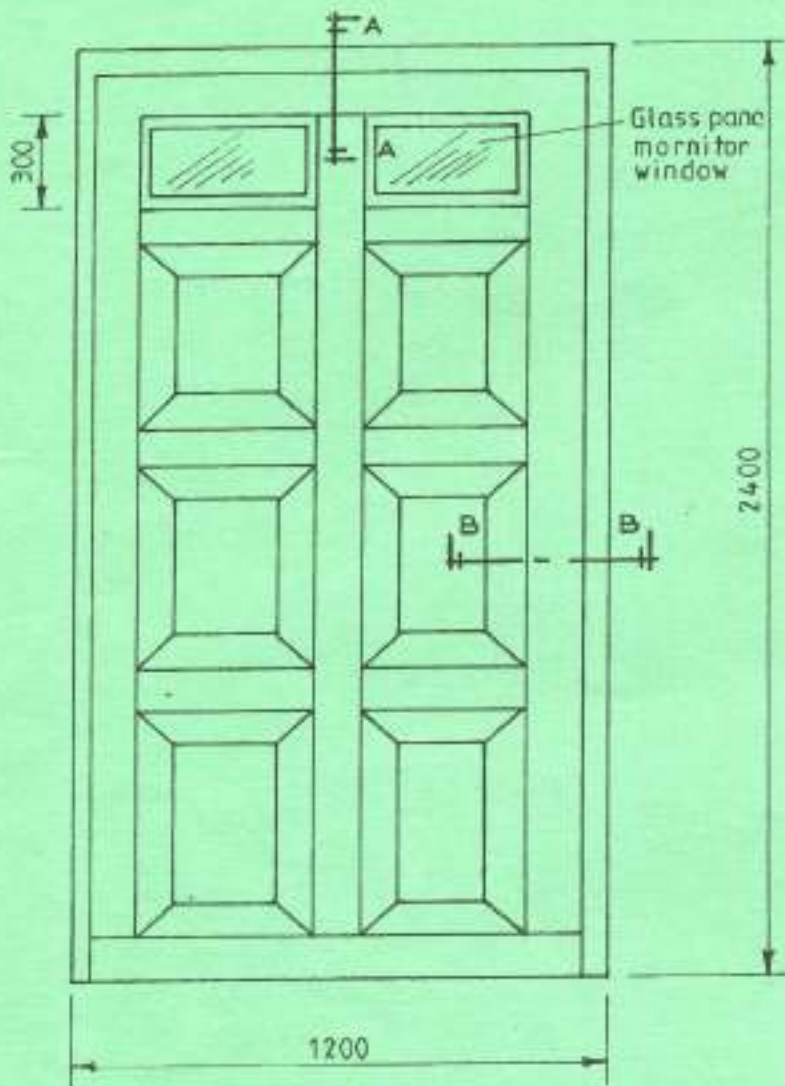
SECTION X-X

ROOF



NOTE
•Pitch of roof 30°

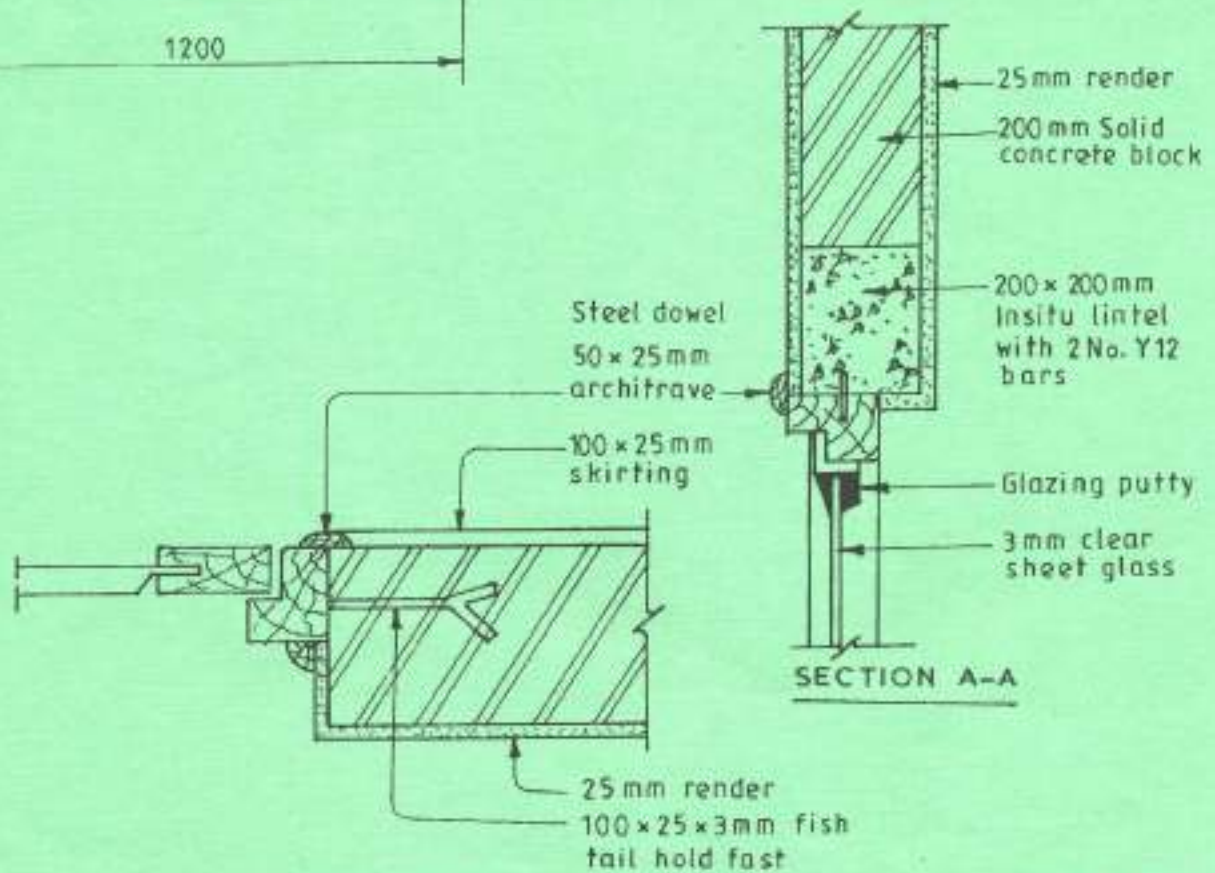
DRG. No. 02



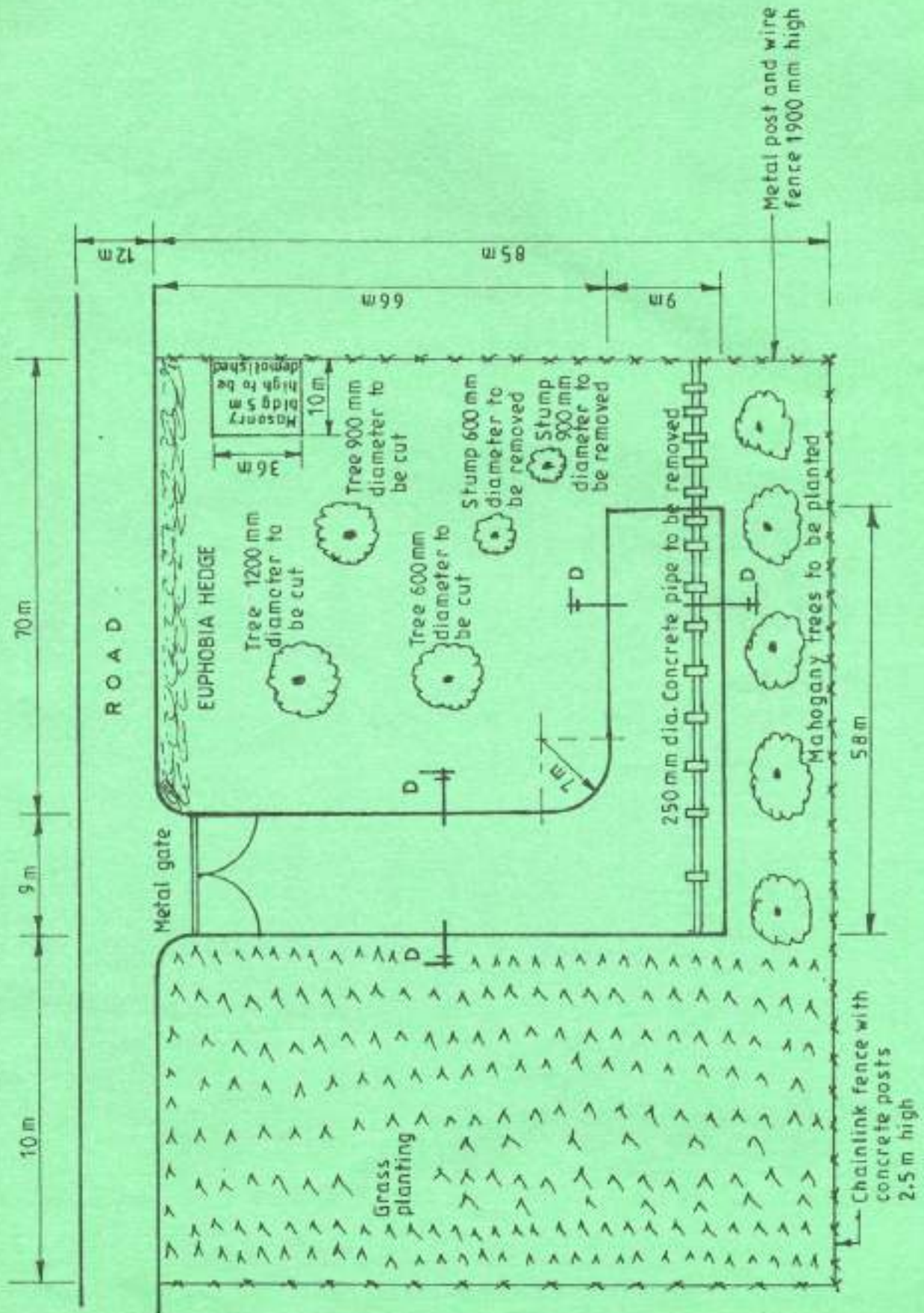
NOTES:

Provide and supply the following:

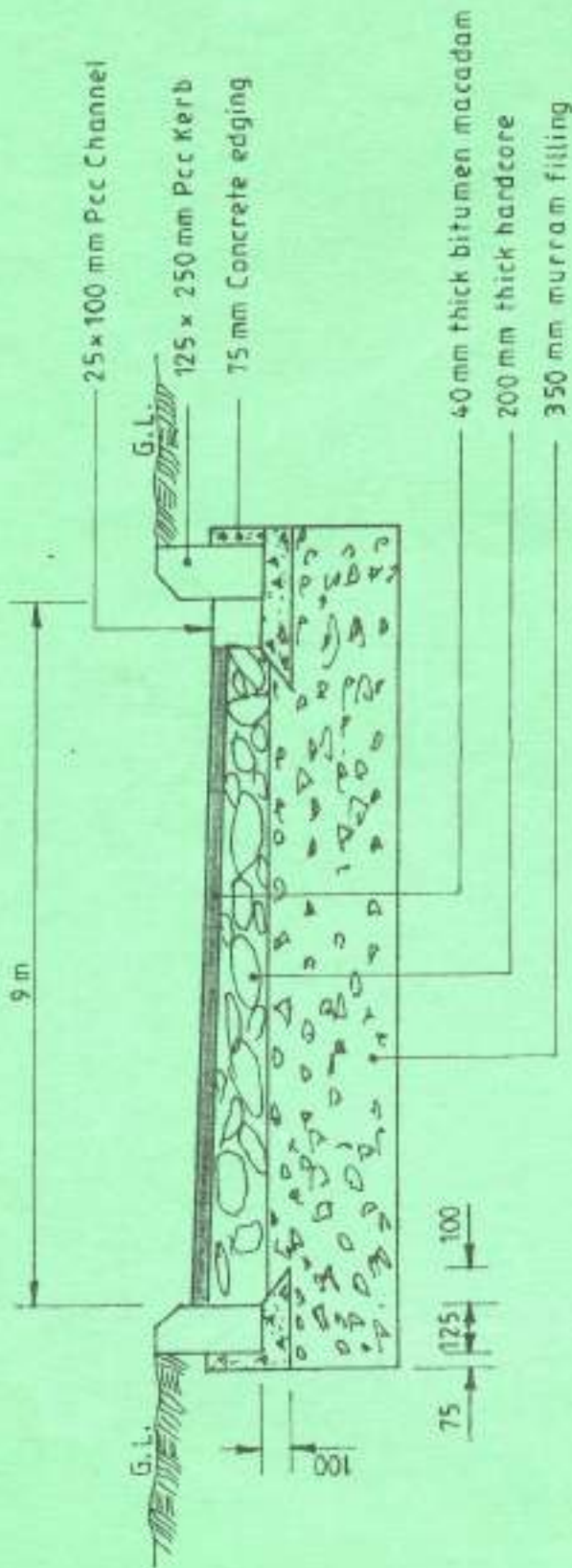
1. 3 Lever mortice lock
2. 1½ Pair heavy duty brass butt hinges.
3. 1 No. automatic door closer.
4. 25mm diameter door stopper.
5. 150 mm barrel bolt.
6. Ceramic tiles on 25 mm thick screed.



DRG. No. 3



DRG. No. 04 A



DRG. No. 04 B

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