

School Latrine

DRAWING INDEX

**Funded By: Italian Agency for
Development Cooperation**

Partner: Bureau of Education

Program/Project Name: **Eco-Friendly Latrines to Improve Sanitation in Schools of Ethiopia**

**Design & Implemented By: UNOPS, ETHIOPIA
OPERATIONAL HUB**

[illegible]

(STRUCTURAL DRAWING PACKAGE)

DATE		REG. NO.	SIGN.	DR NO.	
	Designed by UNOPS-ETOH.			ST	FIN
	Drawn by UNOPS-ETOH.			00/06	
	Checked by				
	Approved by				
MARCH 2018					

GENERAL NOTES:



All dimensions are in millimeters unless otherwise explicitly stated on the dimension.

The drawings may be scaled to fit the desired paper size.

Structural Notes:

- i) Foundation shall be placed on the natural stiff soil layer and achieve a minimum bearing capacity of 246 KN/m^2 . The top 200 mm soil shall be removed and replaced with well graded gravel material and compacted to the approval of the site supervisor. Footings shall be placed minimum depth of 1500mm from NGL
- ii) Foundation excavation to be approved by the Engineer prior to the construction of the foundation. Footings shall be placed on rock layer for those sites with shallow rock layer.
- iii) Material Specification
 - a) Grade of Structural Concrete
 - C-25 (Cube characteristics strength of 25 MPa) for columns and beams and foundations
 - b) Concrete reinforcement bar
 - Grade 400 (Characteristics yield strength of $f_y = 400 \text{ MPa}$)
- iv) Durability Requirements
 - a) Concrete Cover to Reinforcement
 - Floor slabs :25mm;
 - Beams: 38mm
 - Columns; 38mm
 - All substructure (below ground level): 50mm
 - b) Protection of Timber Work
 - Application of one coat of an approved pre-fabrication primer,
 - (e.g Copper arsenate chromate, or oil borne preservative).
 - One coat of approved primer after fabrication
 - Two coats of approved paint system
- V) Protection of soil from collapsing :

§ The contractor shall secure side walls from collapse during excavation of depth exceeding of 1.0m.
It shall provide steel struts and/or steel panels properly secured and well anchored in the firm soil to provide lateral stability . the techniques and methodology to be provided to the site supervisor's approval.
- Vi) Construction joint for concrete :

§ Whenever concrete casting is discontinued, a wrinkled concrete joint, moistened just before the next concrete, which will have to be provided to ensure continuity.
§ Construction joints shall get prior approval by the site supervisor.

KEY PLAN

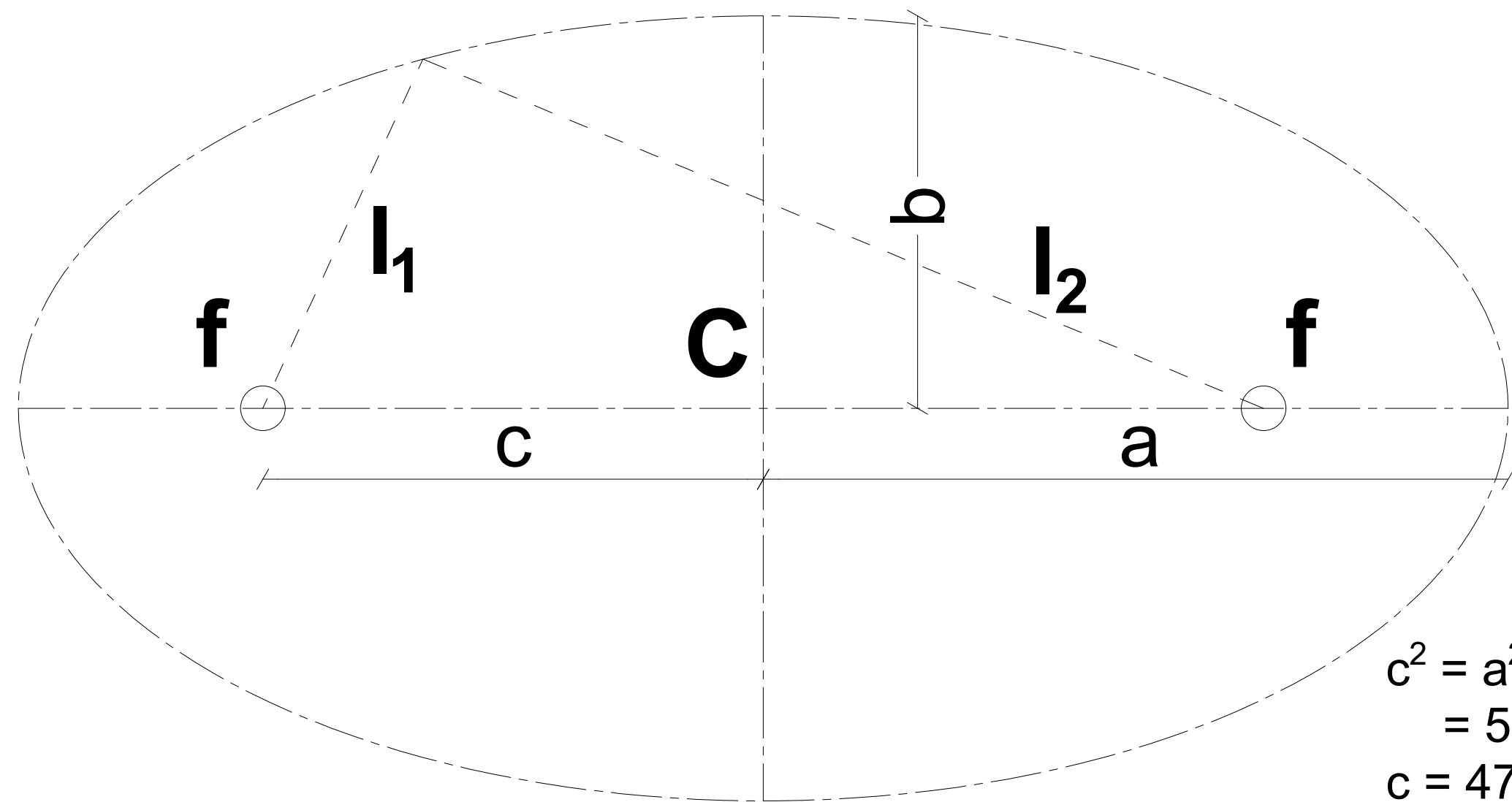
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Drawing Title:	
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GENERAL NOTES

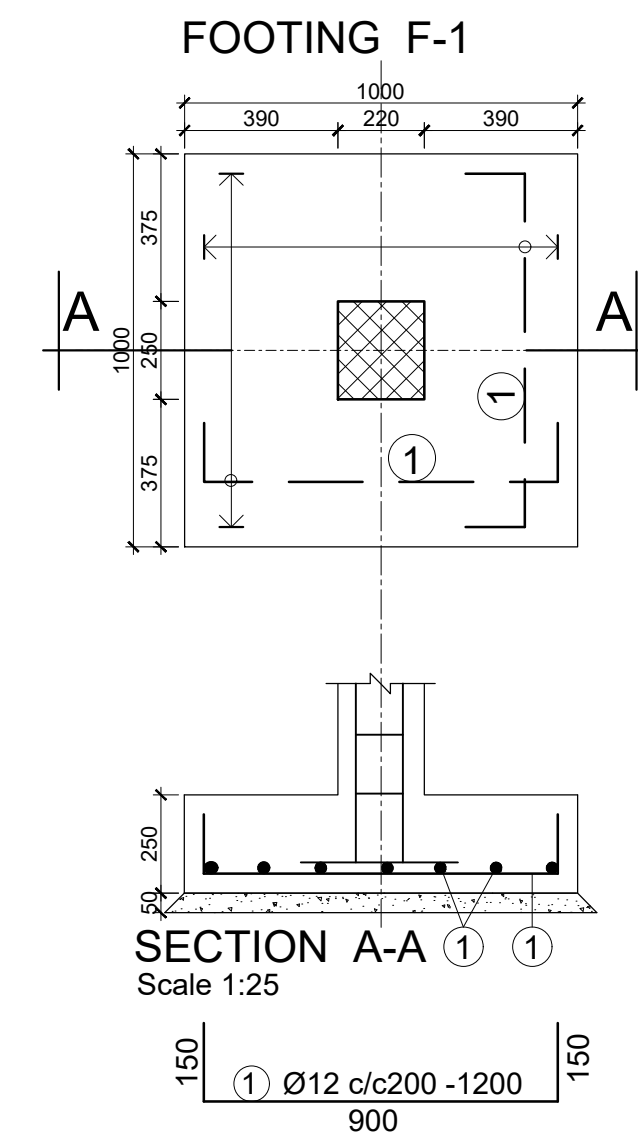
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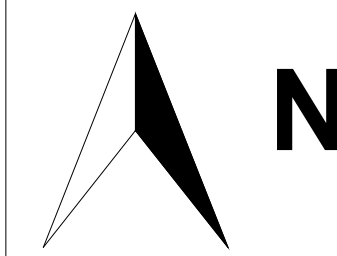
$$c^2 = a^2 - b^2$$
$$= 561^2 - 301^2$$
$$c = 473.41 \text{ cm}$$
$$L = l_1 + l_2 = 2a$$
$$L = 1122 \text{ cm}$$

Setting-out Guide

SC. 1:50



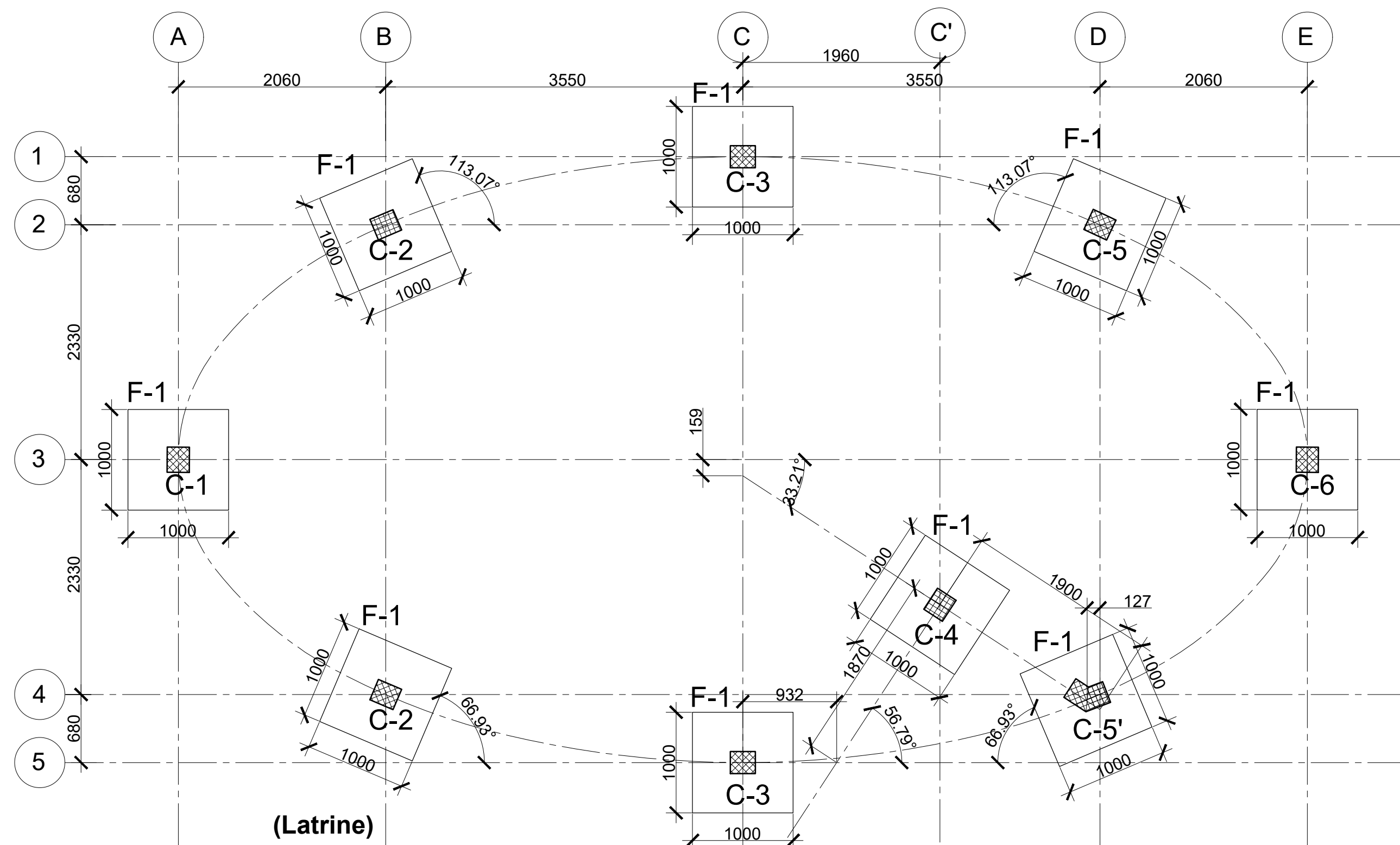
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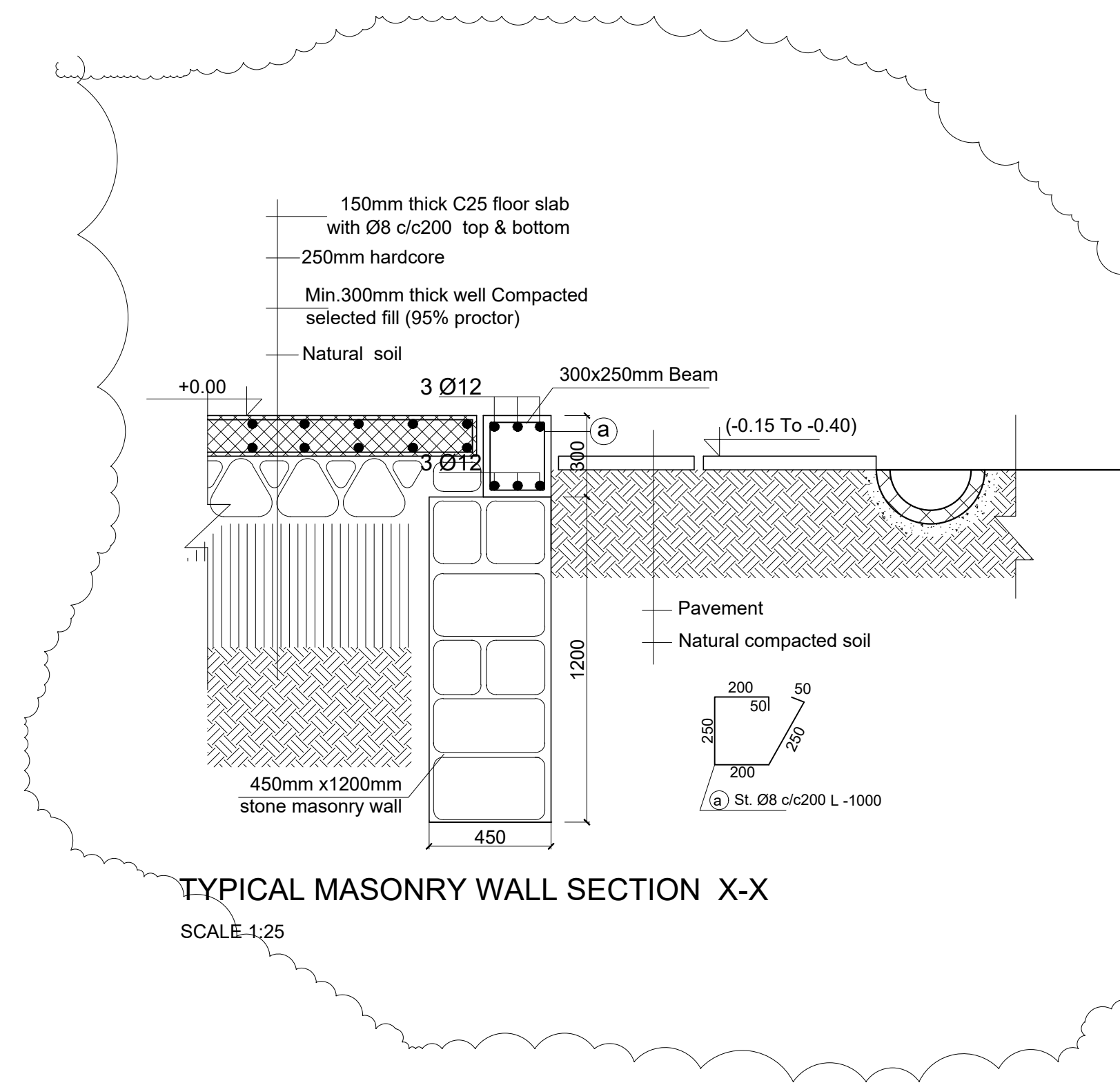
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- f** Focal point
- L** sum of lengthes from focal points to circumference
- l** Length to circumference from focal point
- a** 561 cm - major radius
- b** 301 cm - minor radius
- c** length from center to focal point



COLUMN & FOOTING LAYOUT (At -2.00 level)
Scale 1:50



TYPICAL MASONRY WALL SECTION X-X
SCALE 1:25

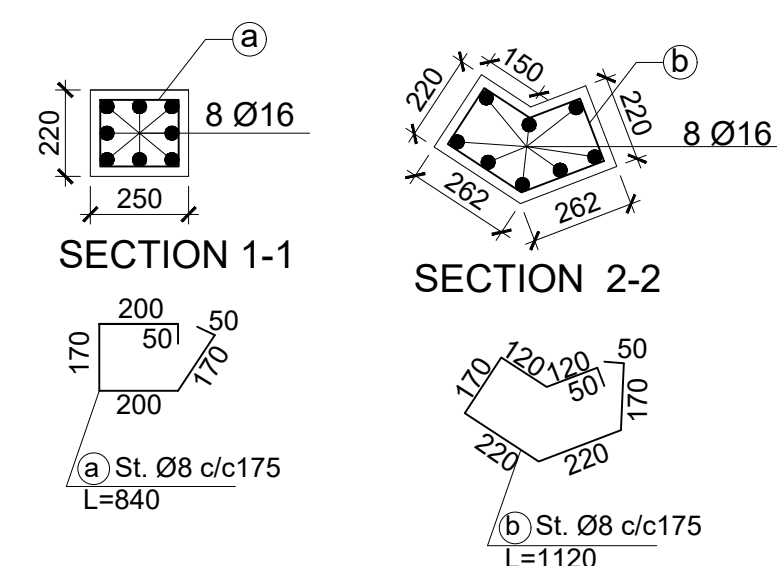
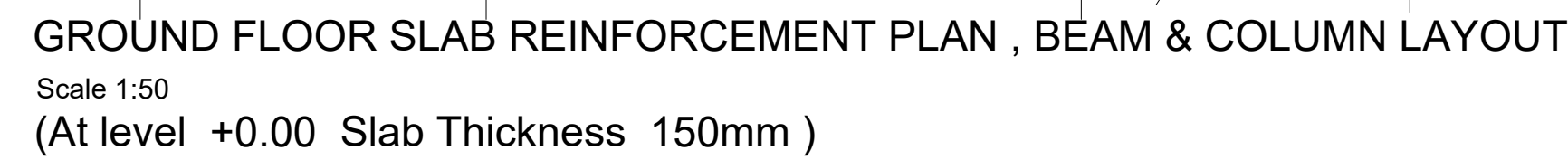
KEY PLAN

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Project Name:	Design:
Eco-Friendly Latrines to Improve Sanitation in Schools of Ethiopia	UNOPS ,ETHIOPIA OPERATIONAL HUB
Drawing Title:	(School Latrine)

COLUMN & FOOTING LAYOUT FOOTING DETAILS

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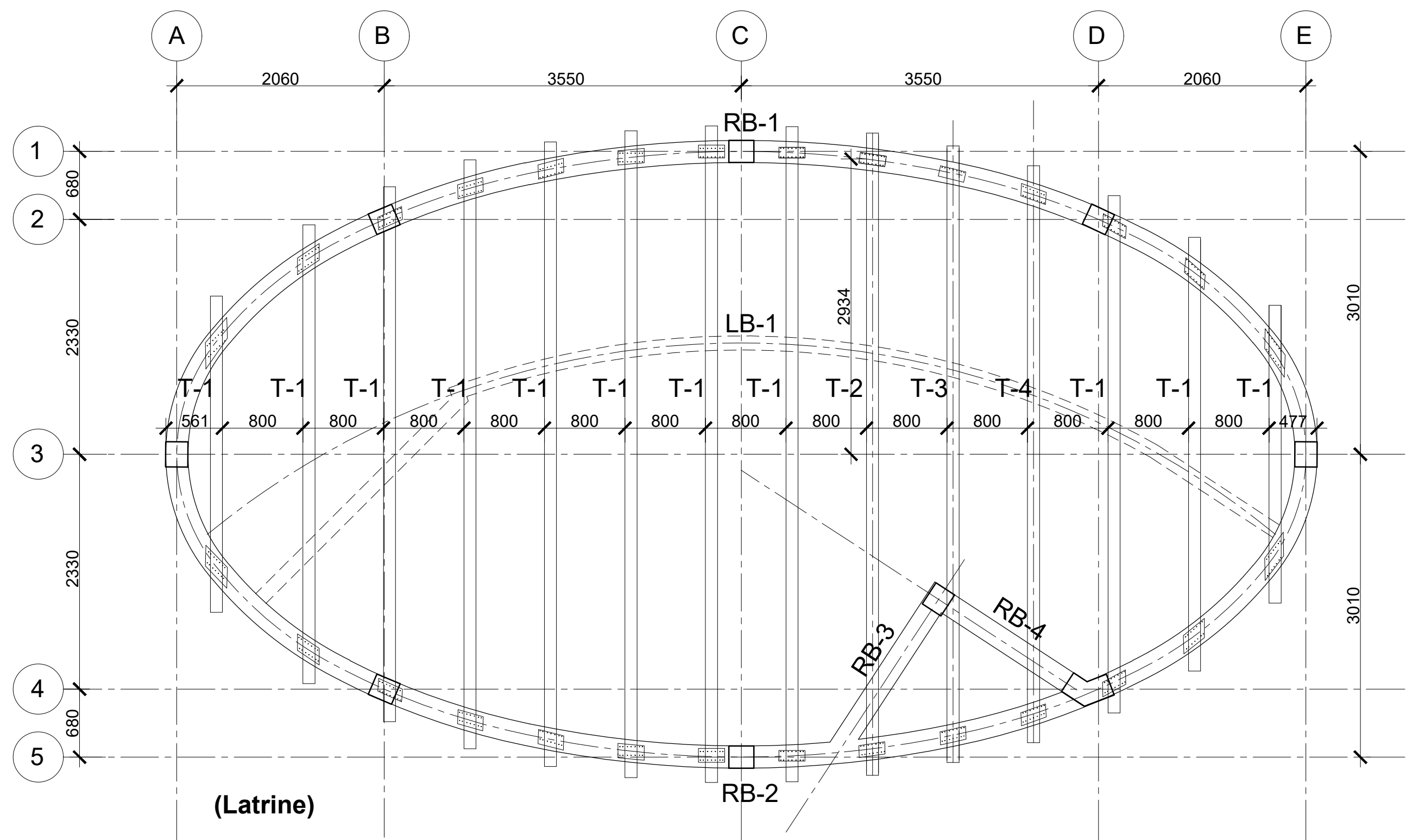
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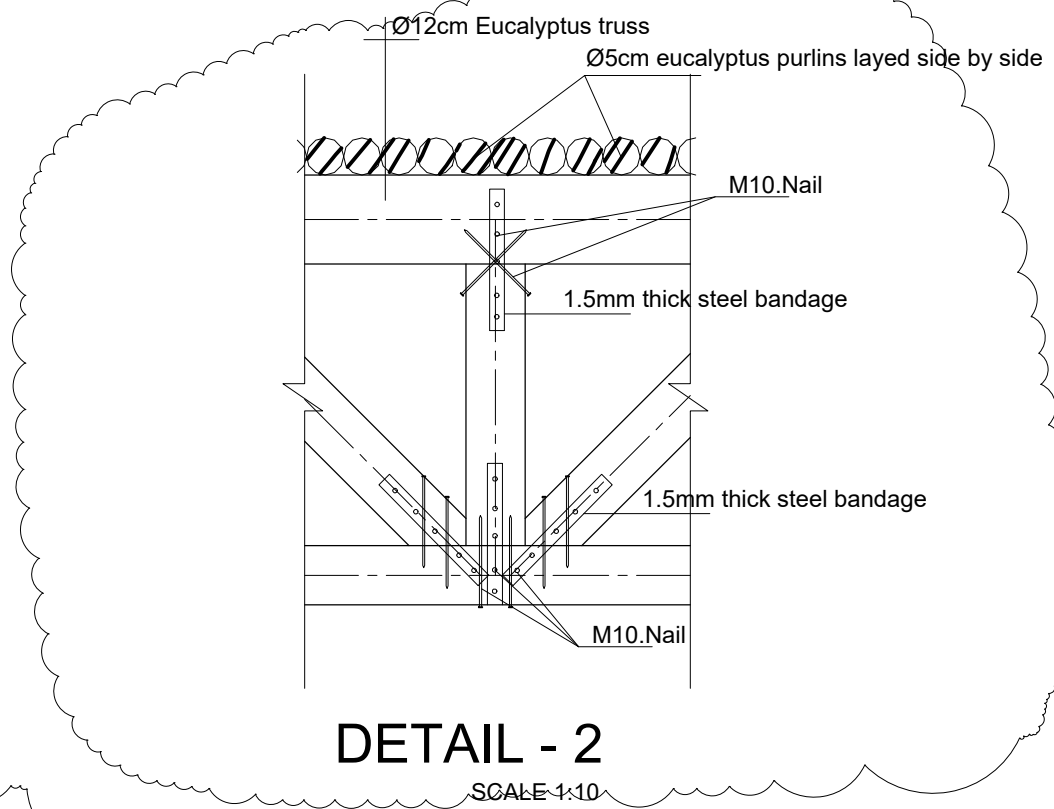
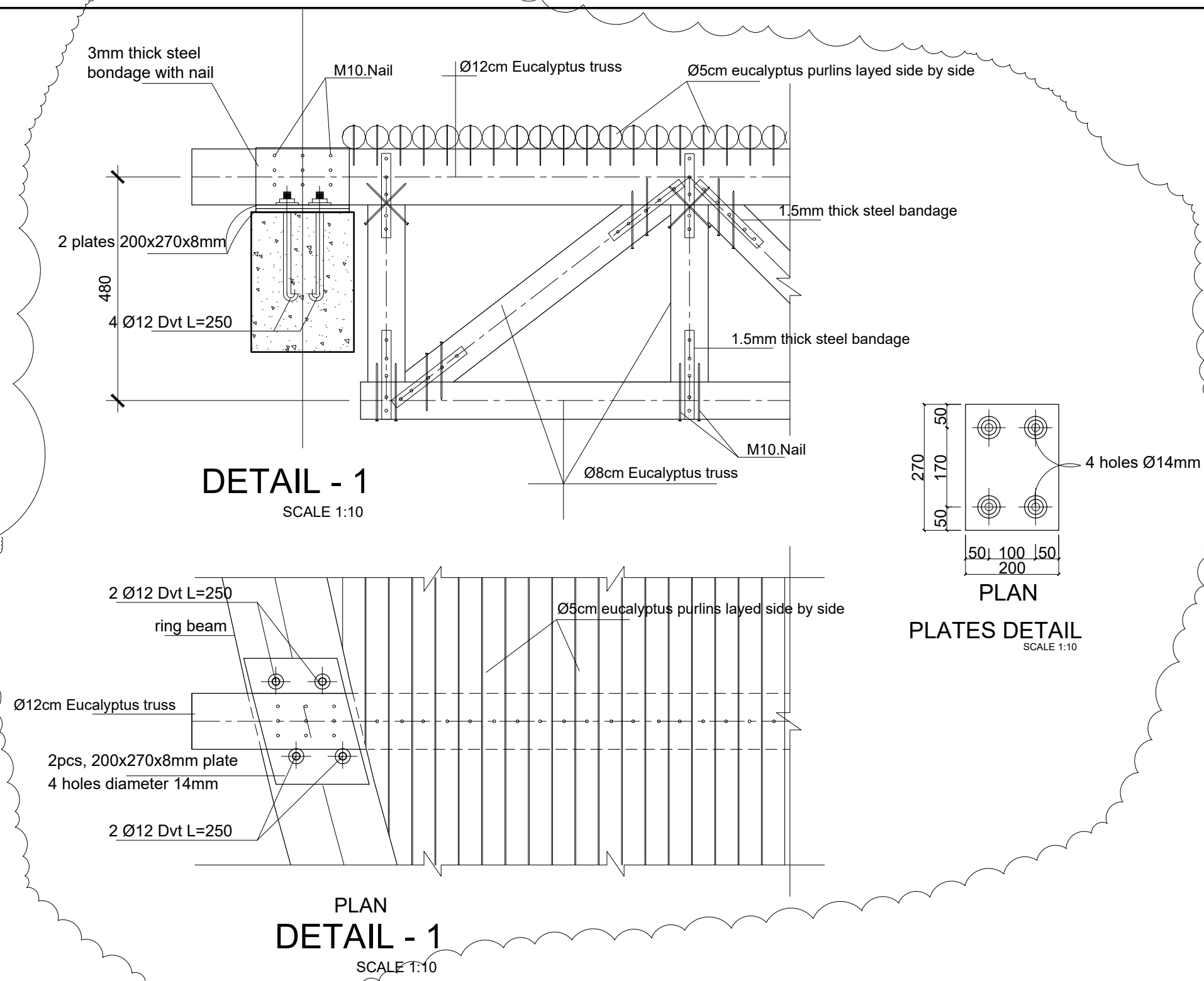
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Drawing Title:	
(School Latrine)	
GROUND FLOOR SLAB REINFORCEMENT PLAN	
COLUMN DETAILS	

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ROOF BEAM & TRUSS LAYOUT
Scale 1:50



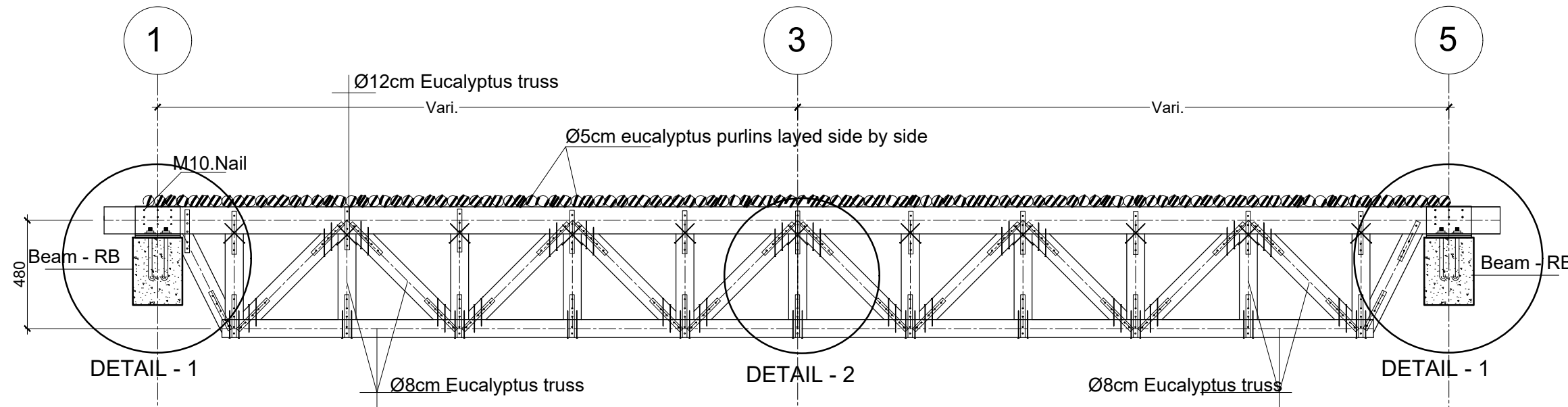
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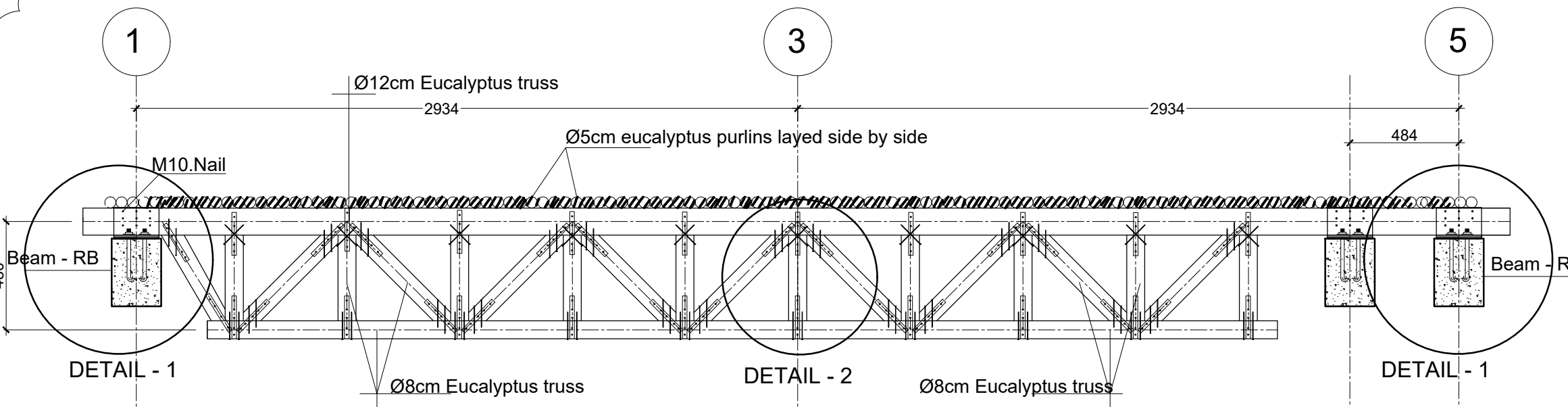
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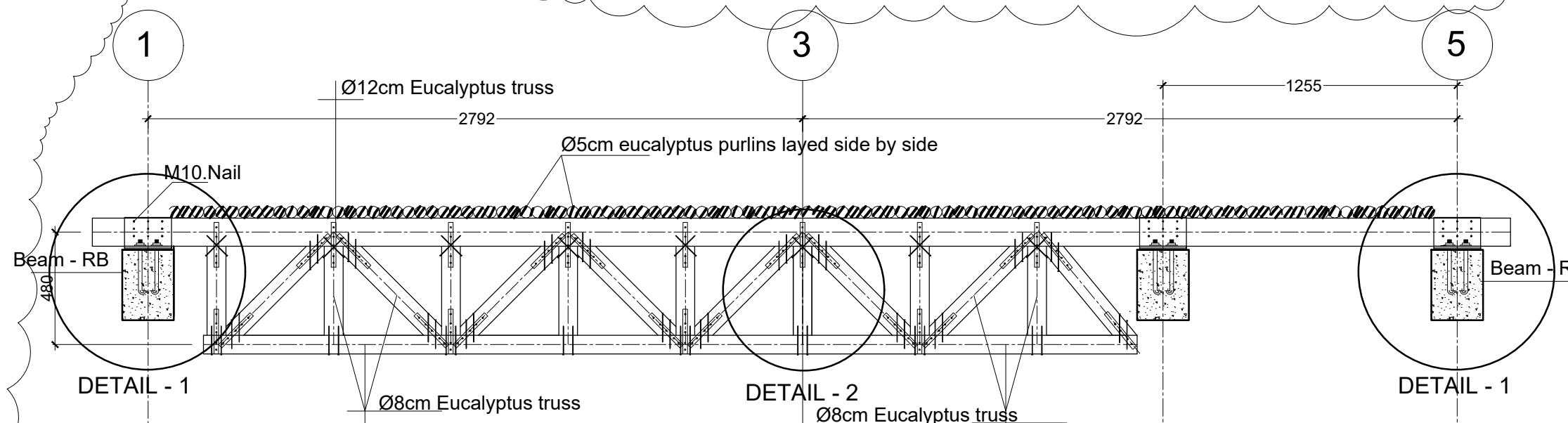
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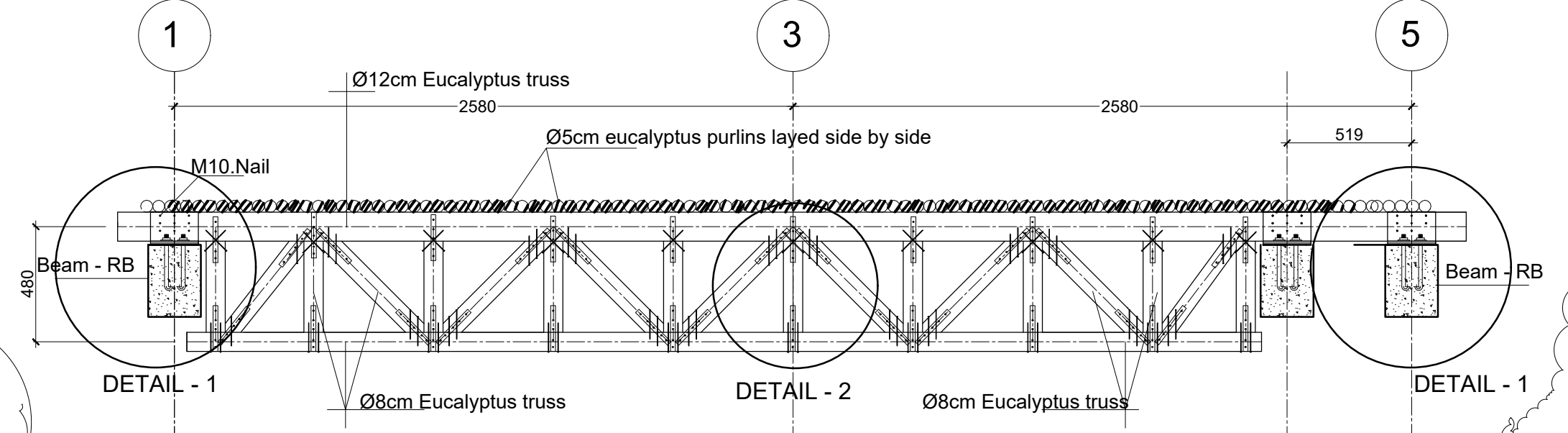
TRUSS T-1 DETAIL
SC:1.25



TRUSS T-2 DETAIL
SC:1.25



TRUSS T-3 DETAIL
SC:1.25



TRUSS T-4 DETAIL
SC:1.25

KEY PLAN


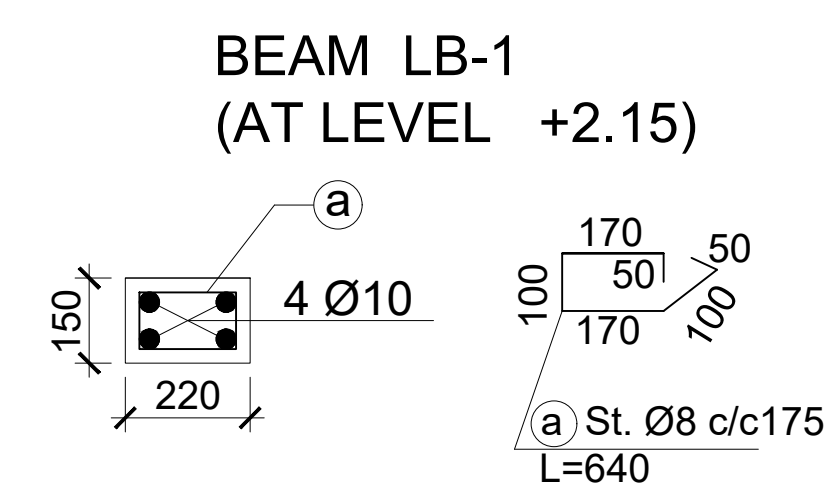
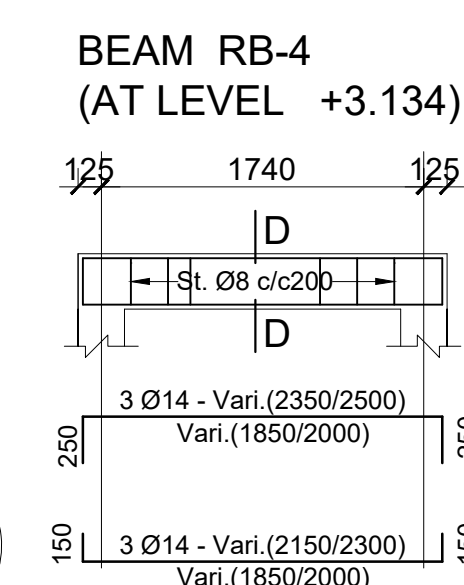
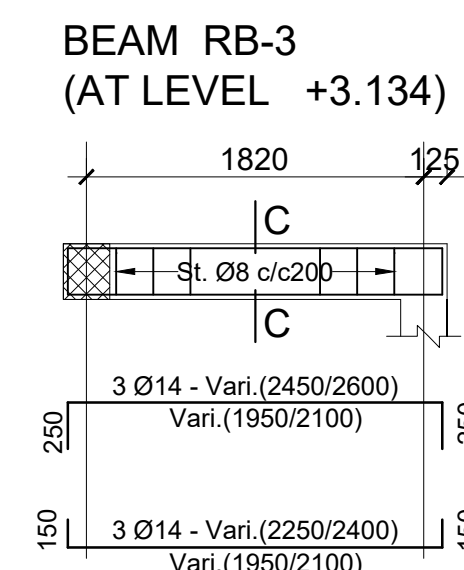
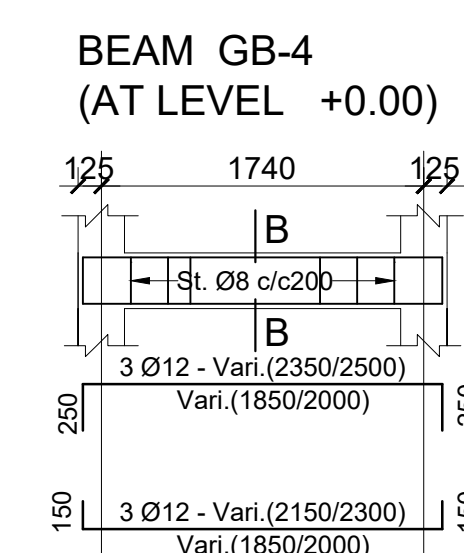
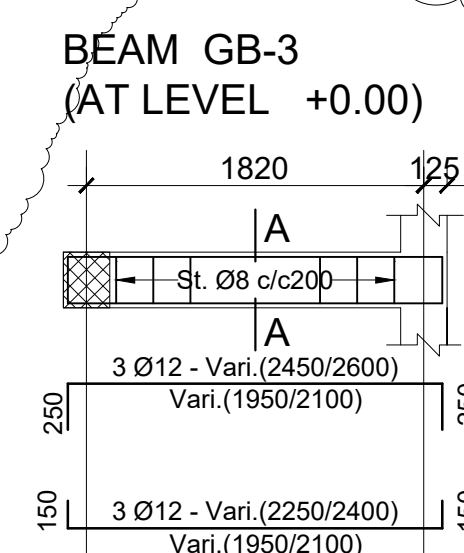
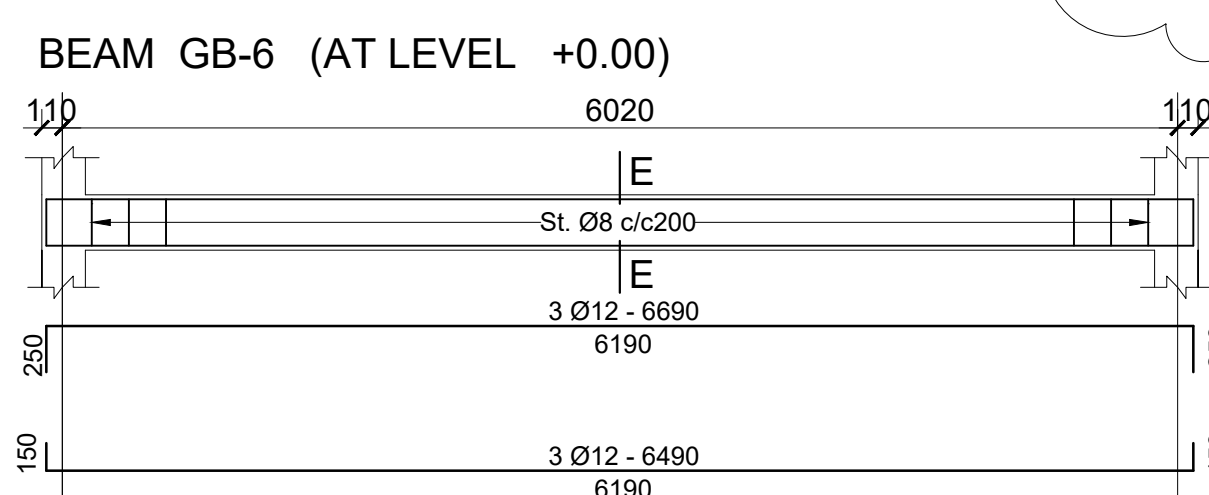
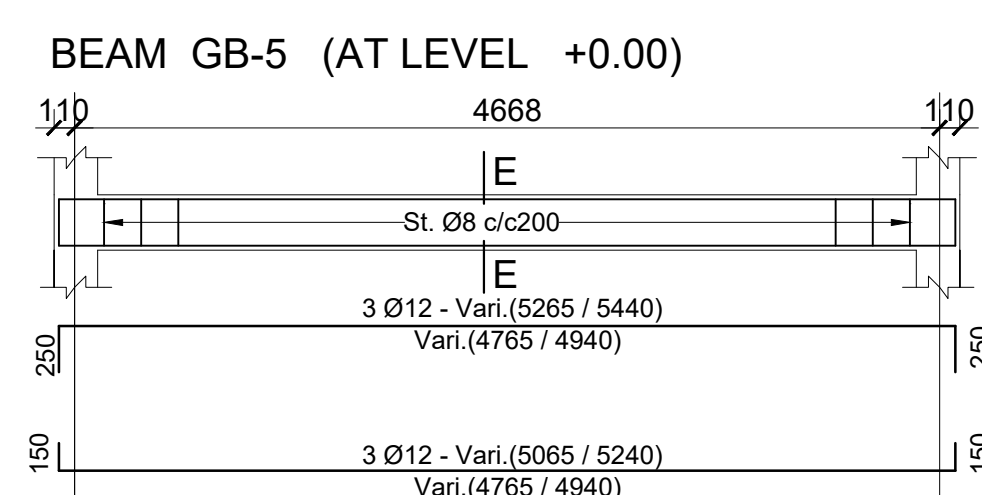
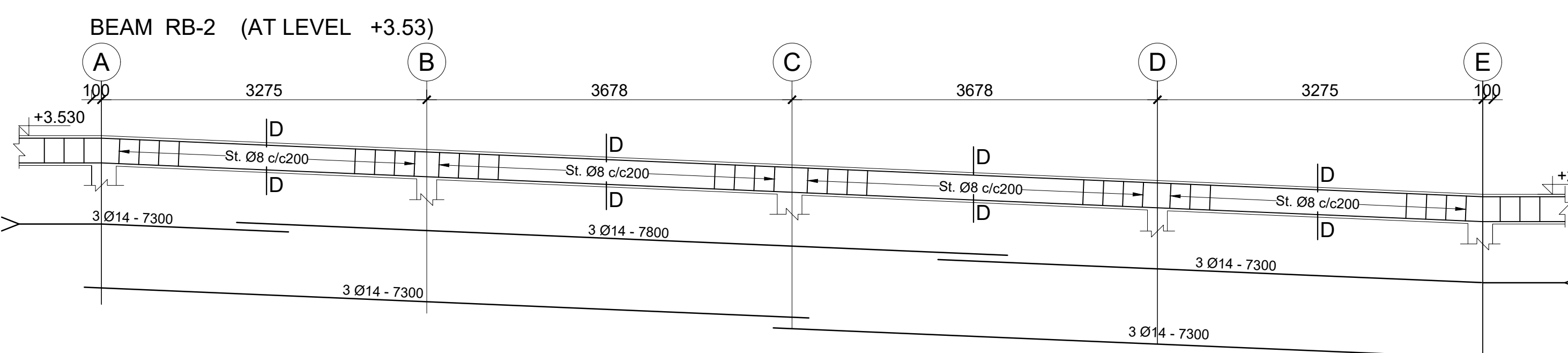
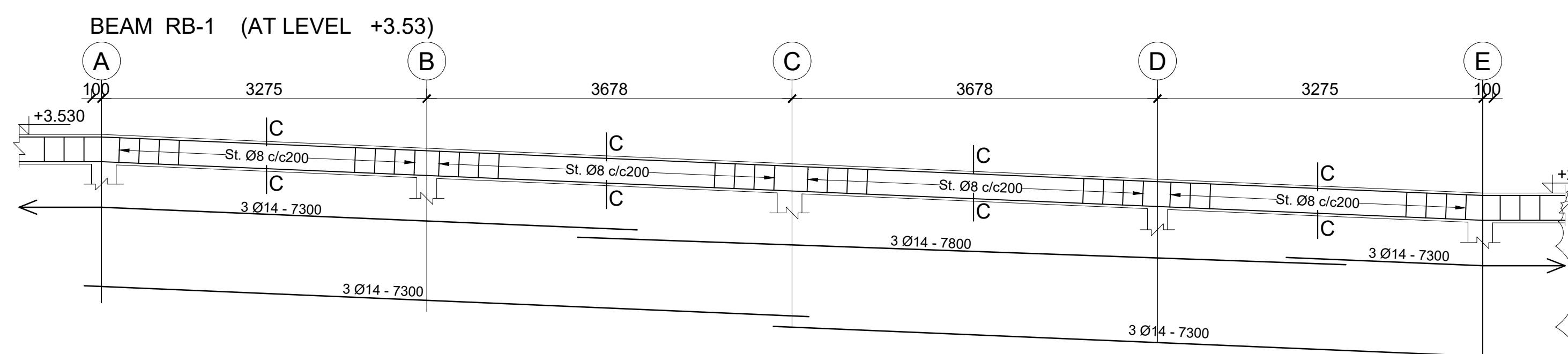
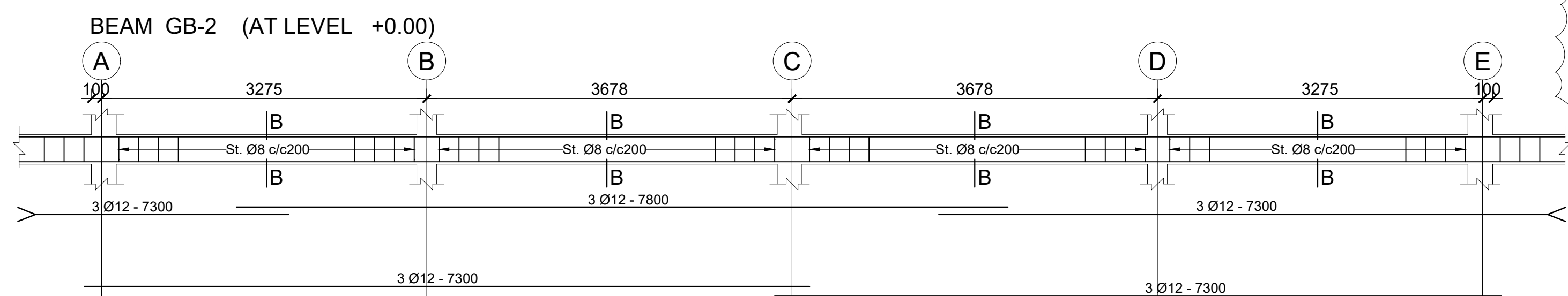
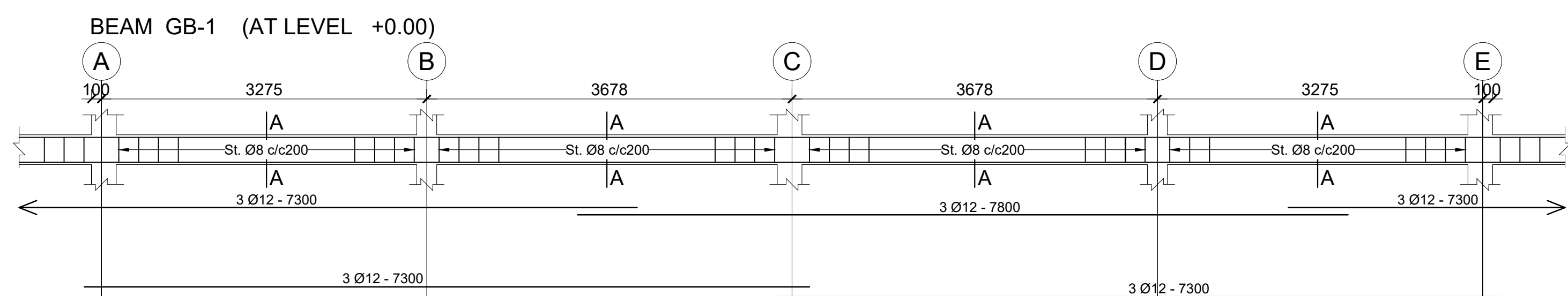
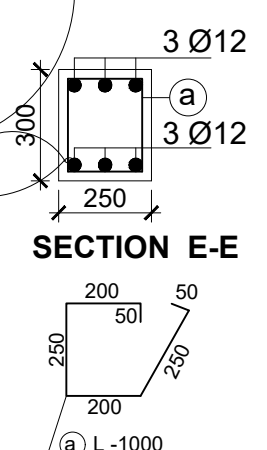
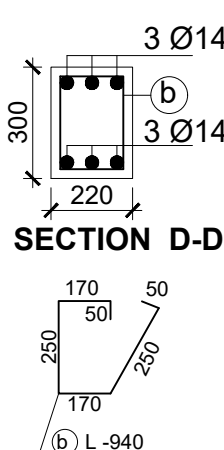
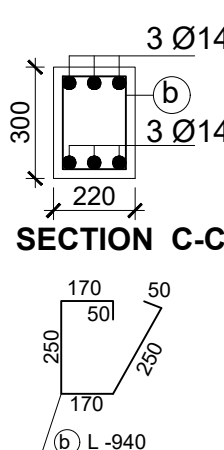
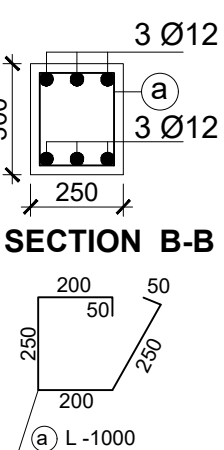
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