

STRUCTURAL DRAWINGS INDEX

DRAWING INDEX

World Bank

FDRE - Ministry of Finance UNOPS - ETMCO

Response -Recovery-Resilience for conflict affected communities in Ethiopia

SEREGNA PRIMARY SCHOOL

[illegible]

Structural Notes:


- i) Building shall be founded on isolated footings having a minimum depth of 1500mm from the floor finish level with bottom of excavation compacted prior to laying the foundation.
- ii) Foundation shall be placed on the natural normal soil and achieve a minimum bearing capacity of 250 KN/m². The top 300 mm soil shall be removed and replaced with well graded gravel material and compacted to the approval of the site supervisor.
- iii) Foundation trench excavation to be approved by the Engineer prior to the construction of the foundation.
- iv) Material Specification
 - a) Grade of Structural Concrete
 - C20/25 for columns, floor slab and beams;
 - fck (MPa) = 20 (Cylinder characteristics strength);
 - fck, cube (MPa) = 25 (Cylinder characteristics strength);
 - b) Concrete reinforcement bar

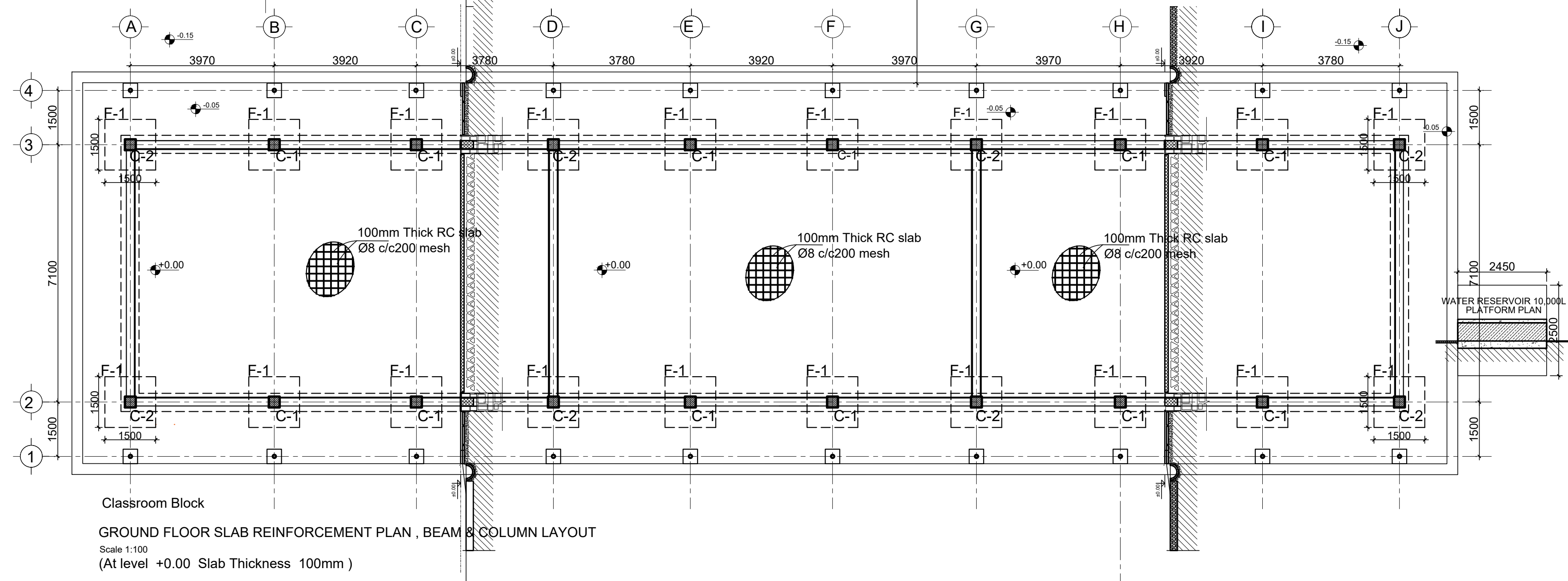
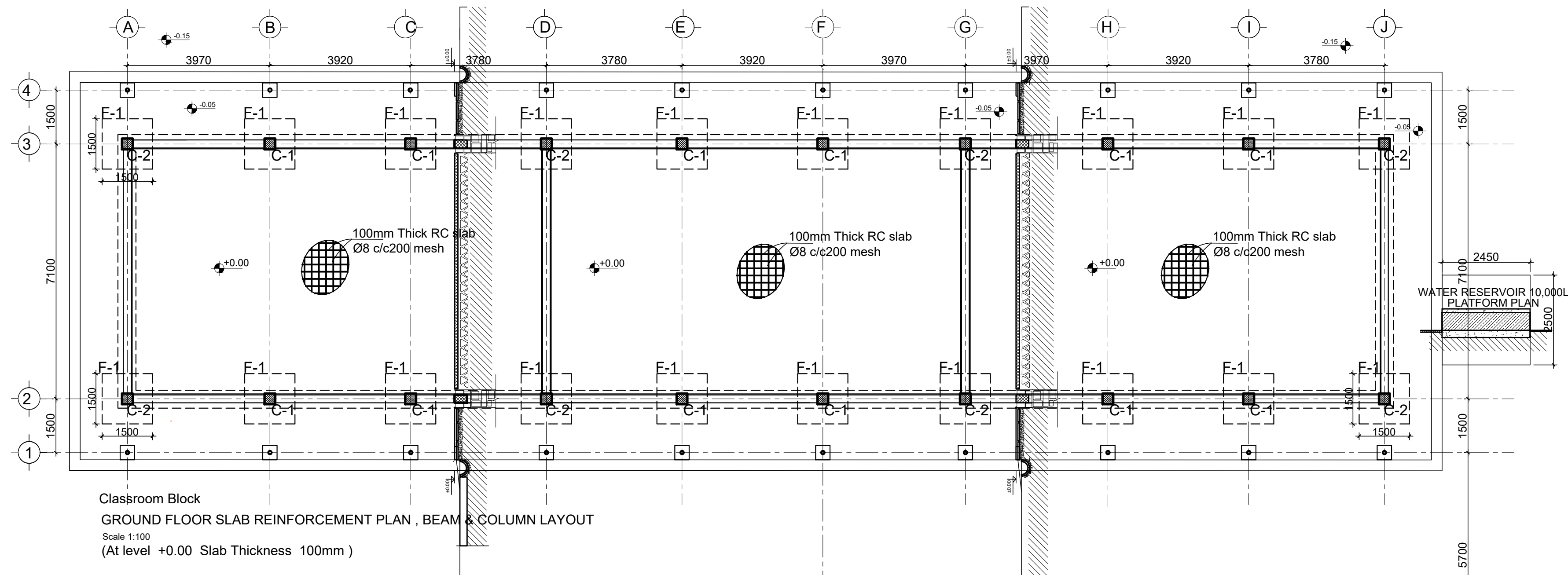
All steel reinforcement bars shall comply with the requirements of ES EN 1992:2105 Class B.

 - Characteristics yield strength of $f_{yk} = 460 \text{ MPa}$
 - Minimum value of " $k = f(t/f_y)k$ " > 1.08)
 - Characteristics Tensile strength of $f_{tk} > 500 \text{ MPa}$
 - Characteristics strain at maximum force > 5%)
 - c) Steel hollow section for roofing system , verandah column and plates
 - Grade-C : Tensile Strength = 415 Mpa
Yield Strength = 275 Mpa
 - d) Grade of Bolts
 - Grade 4.6: Yield Strength = 240 Mpa
Tensile Strength = 400 Mpa
- v) Durability Requirements
 - ❖ Concrete Cover to Reinforcement
 - Floor slabs :25mm;
 - Beams: 38mm
 - Columns; 38mm
 - All substructure (below ground level): 50mm
 - ❖ Protection of Steelwork
 - Surface preparation by blast cleaning, pickling process or where approved by wirebrushing;
 - Application of one coat of an approved pre-fabrication primer e.g. Zinc chromate;
 - Application of one coat of approved primer after fabrication;
 - Two coats of an approved paint system to be proposed by the Architect, one applied in the shop and the other applied on site after erection.
- vi) Steel Truss manufacturing inspection, by visual examination, must cover most aspects: bending, groove preparation, alignment before and after welding, welding process, penetration, tolerances for circumference, straightness and circularity, - double sided welds, heat treatment, small diameter welds around the nozzles, detecting of undercut, excessive convexity, distortions, etc. Defects acceptance criteria shall be in accordance with ES ISO 5817:2014

- Vii) 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.
- Viii) 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.
- ix) Site Welding :
 - Site welding should be carried out by qualified specialist with proof of training and experience. A method statement for site welding shall be prepared and submitted to the UNOPS Engineer for approval.
- x) Shop Drawings for Steel Structure:
 - Shop Drawings for the structural parts of the steel truss and purlins shall be prepared by the Contractor before commencement and submitted to the UNOPS Site Engineer for approval. The shop drawing shall clearly indicate detail of fabrication including plates and connections, welding, bolts, cutting dimensions and angles including the method statement for assembling and mounting.

GENERAL NOTES:

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Rev.:	Date:	Description:		Approved	
KEY PLAN					
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World Bank	FDRE- Ministry of Finance				
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Response -Recovery-Resilience for conflict affected communities in Ethiopia	FDRE - Ministry of Finance UNOPS - ETMCO				
Project Name:	Design:				
SEREGNA PRIMARY SCHOOL	UNOPS-ETMCO				
					
Drawing Title:					
STRUCTURAL NOTES					
Designed by		Discipline:	Dr. No:	Tot. No:	Rev No:
NK		ST	01	10	R0
Drawn:	Checked:	Approved:	Size:	Scale:	Date:
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					Rev.: 0




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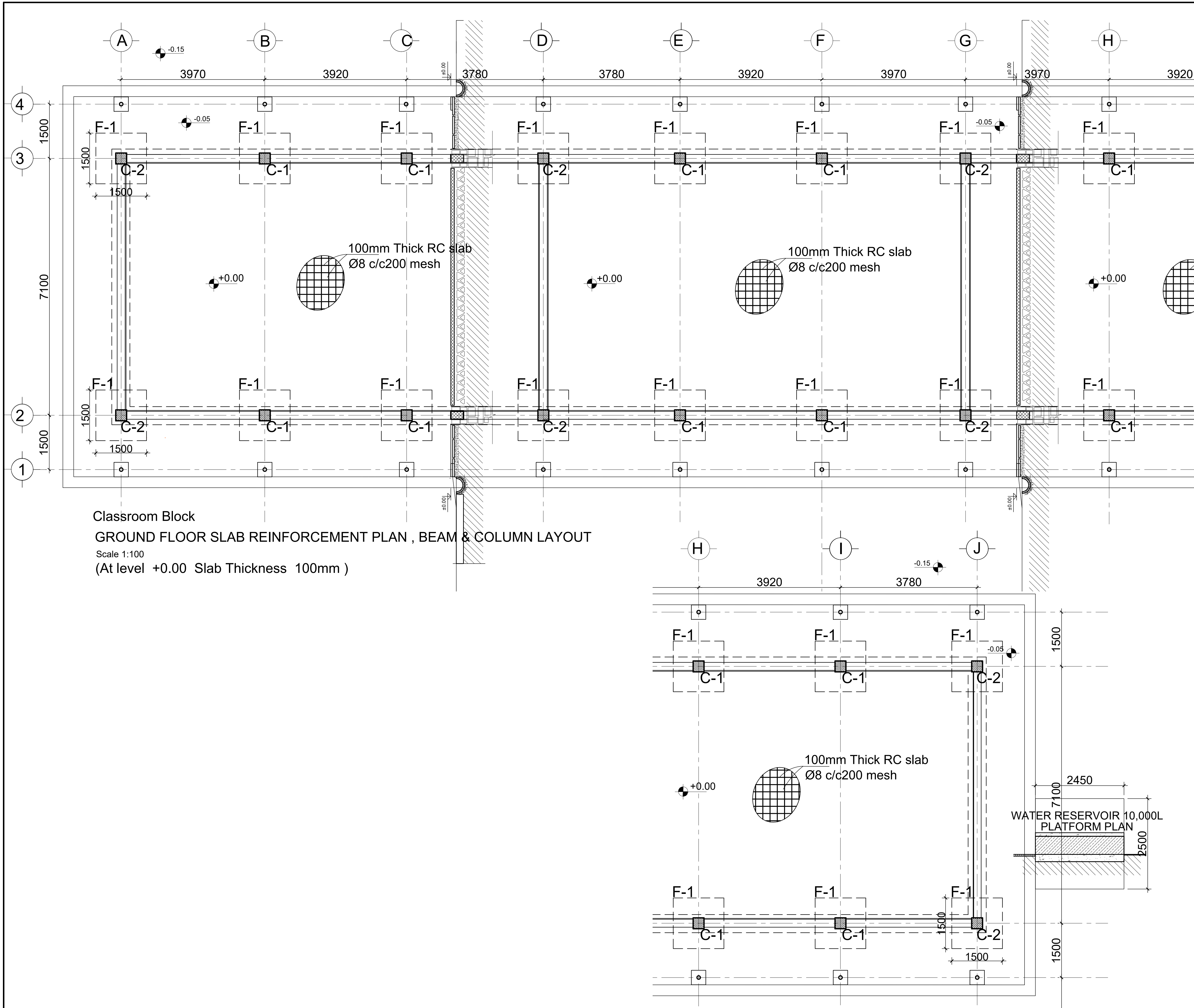
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Project Name:	Design:
SEREGNA PRIMARY SCHOOL	UNOPS-ETMCO 

Drawing Title:
(CLASS ROOM)
GROUND FLOOR & FOOTING LAYOUT - FULL LAYOUT

Designed by	Discipline:	Dr. No:	Tot. No:	Rev. No:
NK	ST	02	10	R0
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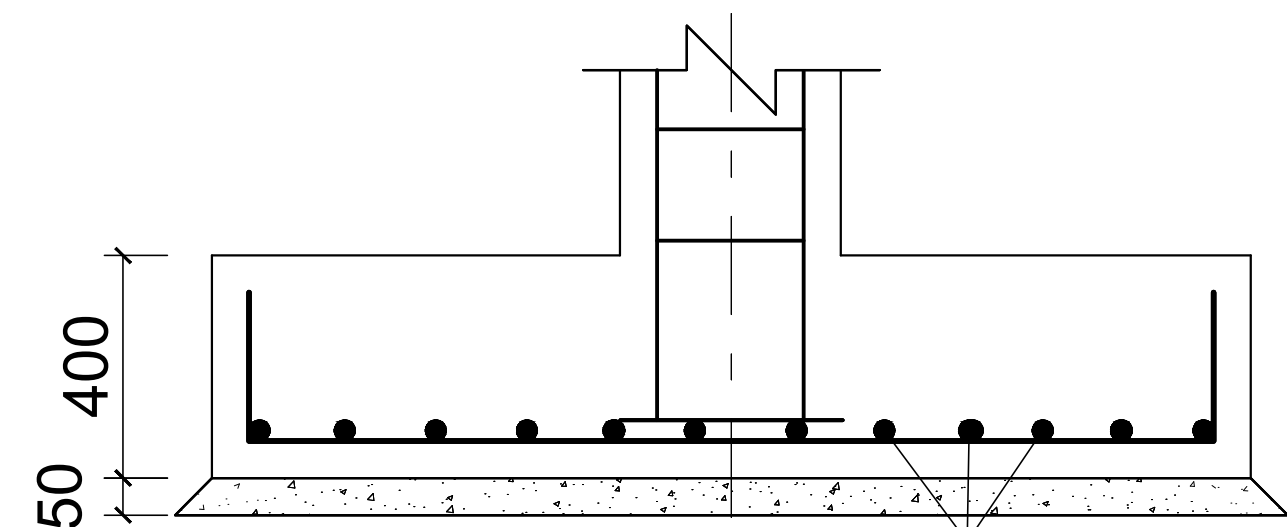
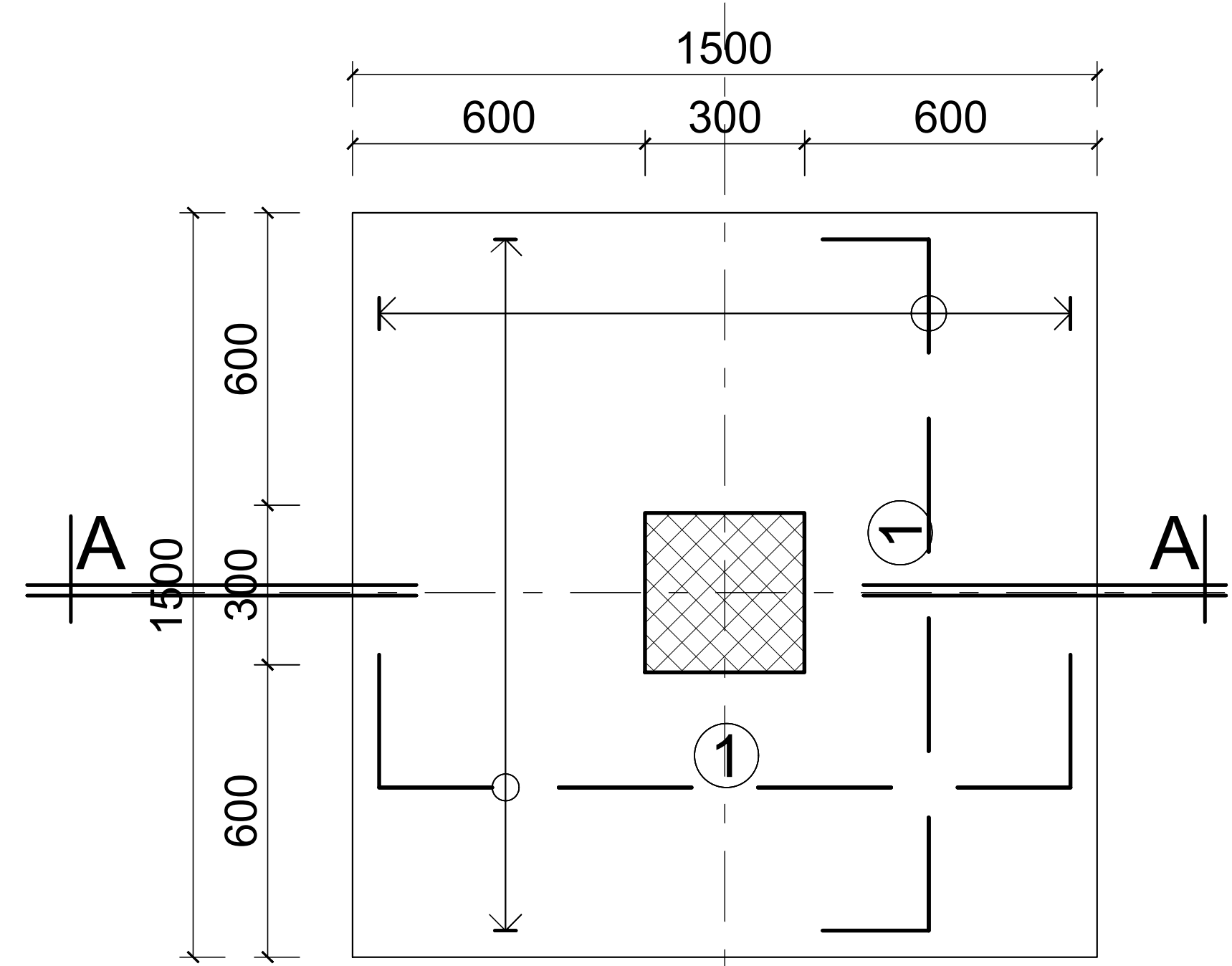
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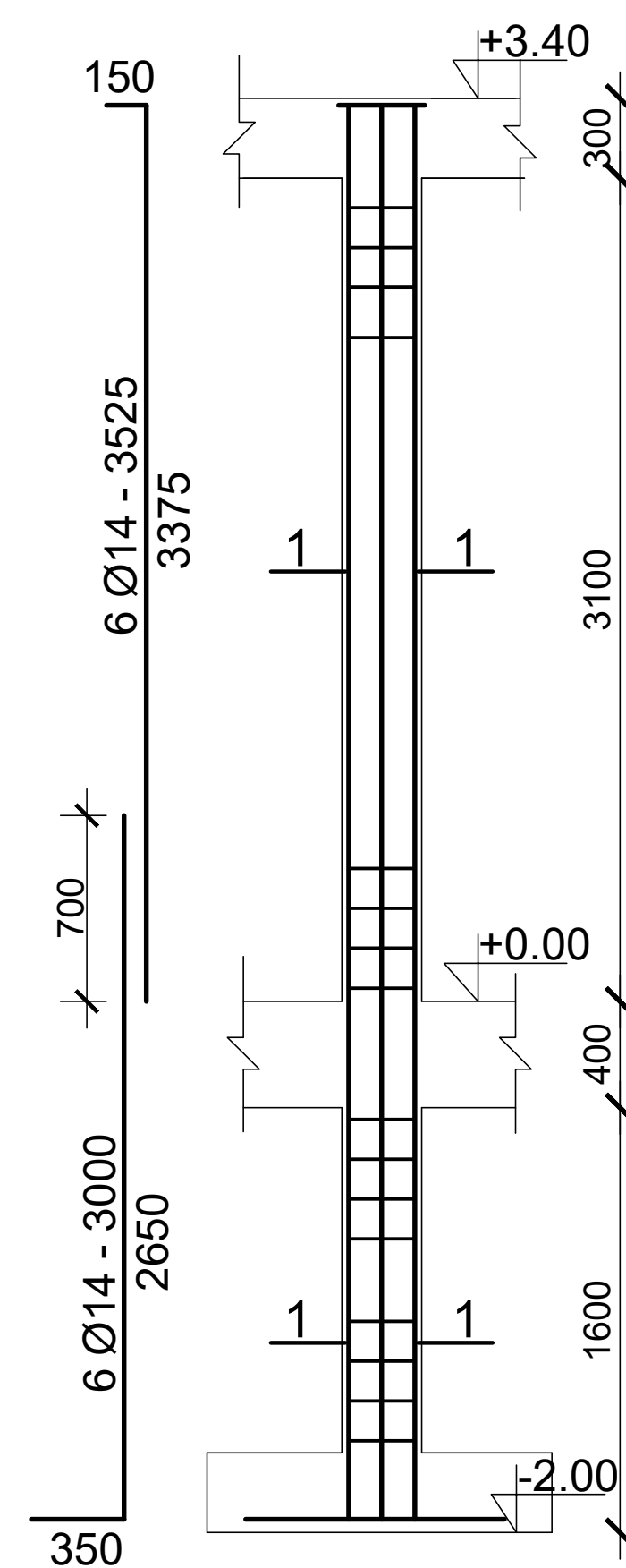
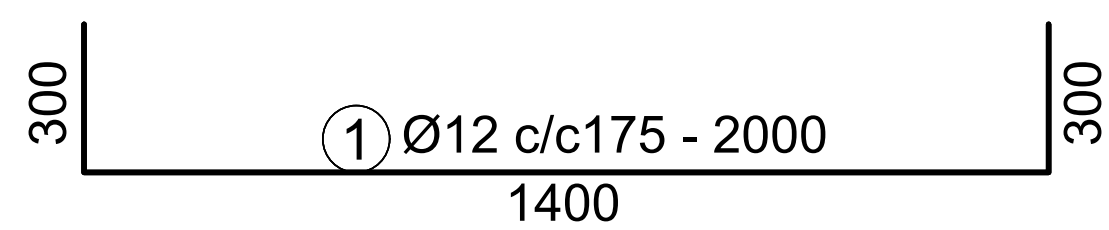
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FOOTING & GROUND FLOOR LAYOUT - PARTIAL LAYOUT

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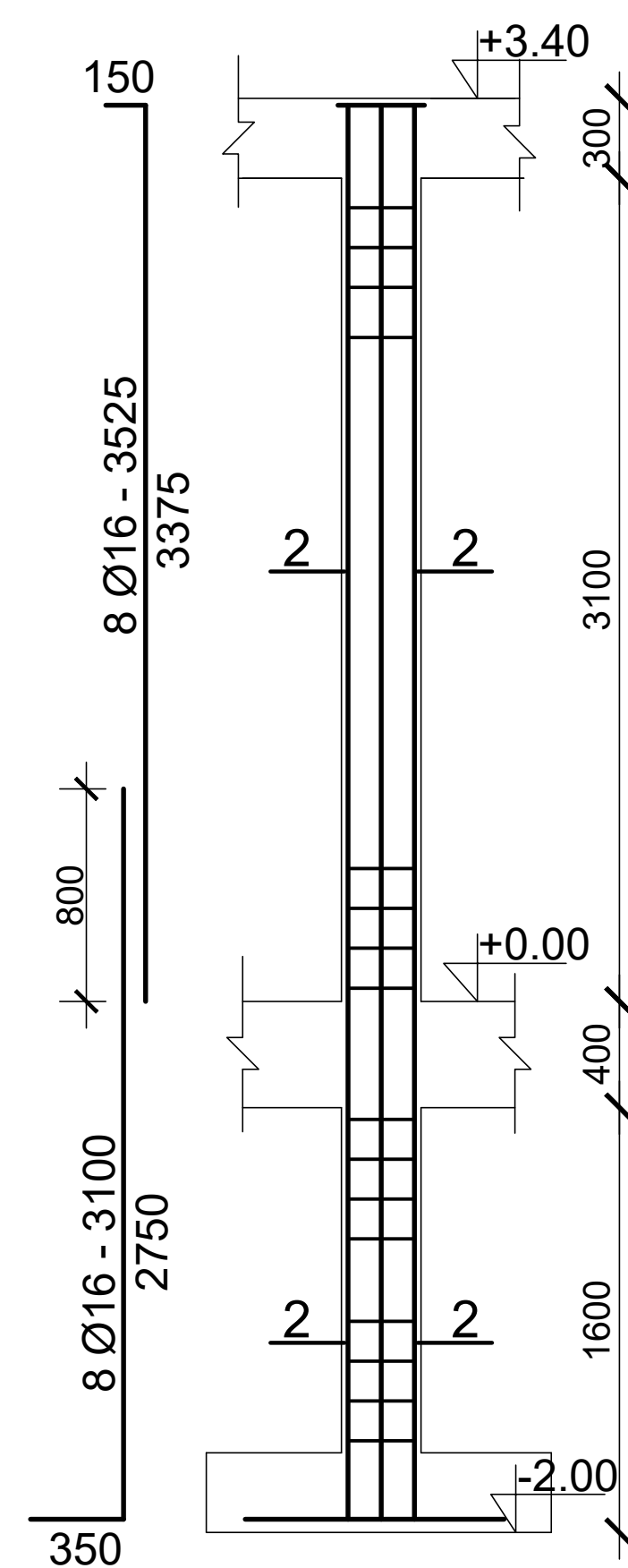
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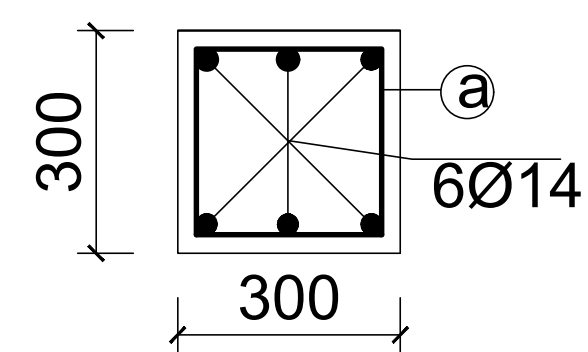
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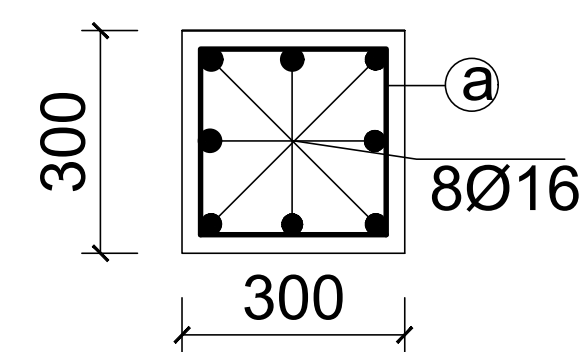
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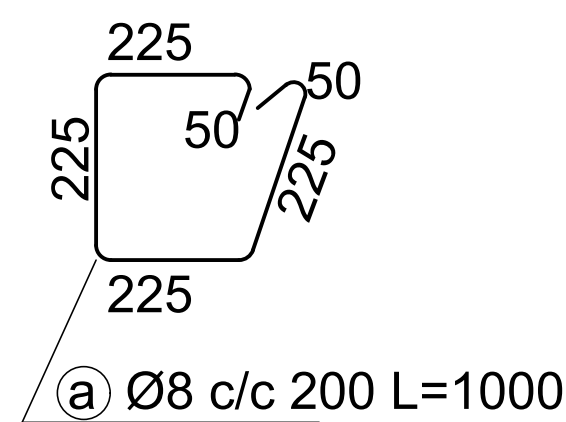
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SECTION 1-1
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SECTION 2-2
SCALE 1:10



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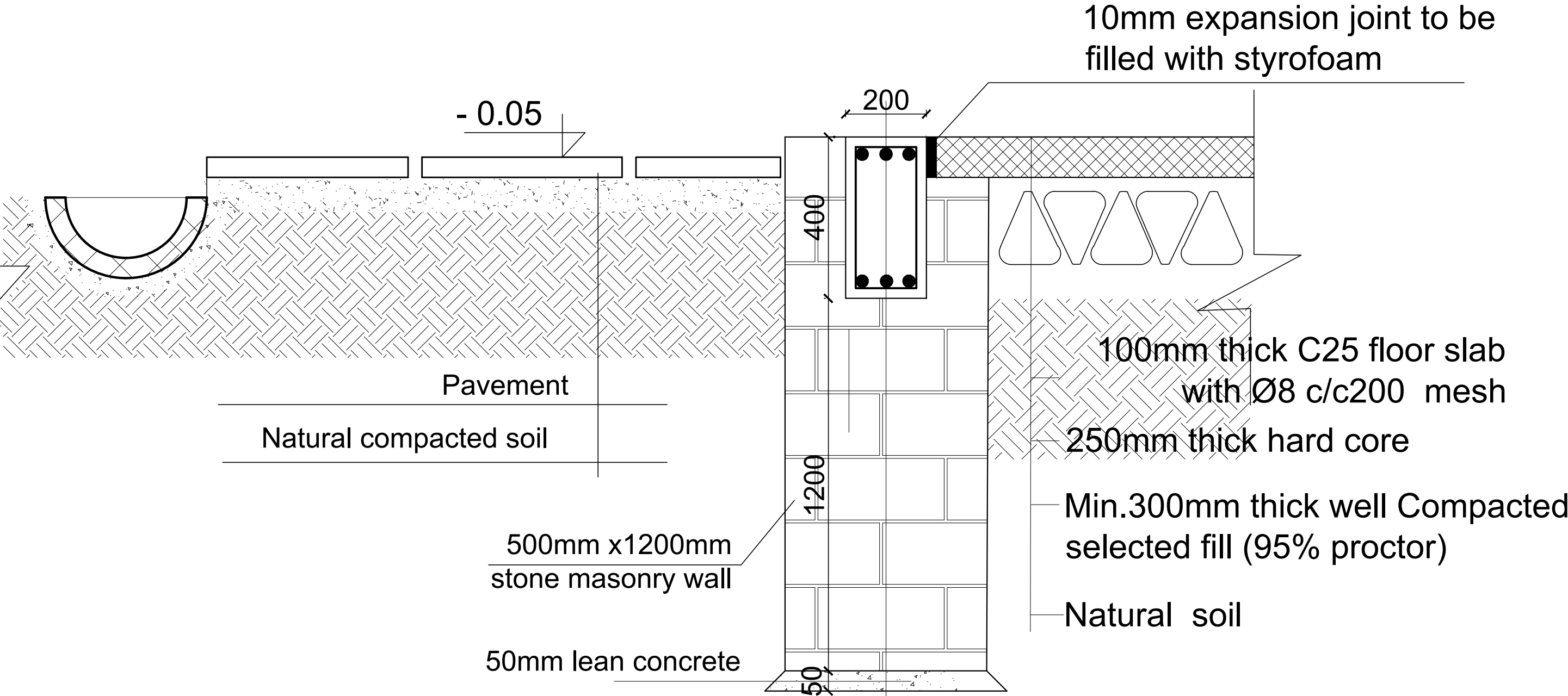


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02 /06 /2023				0

Typical Ground Floor Slab Section & Strip Masonry Foundation

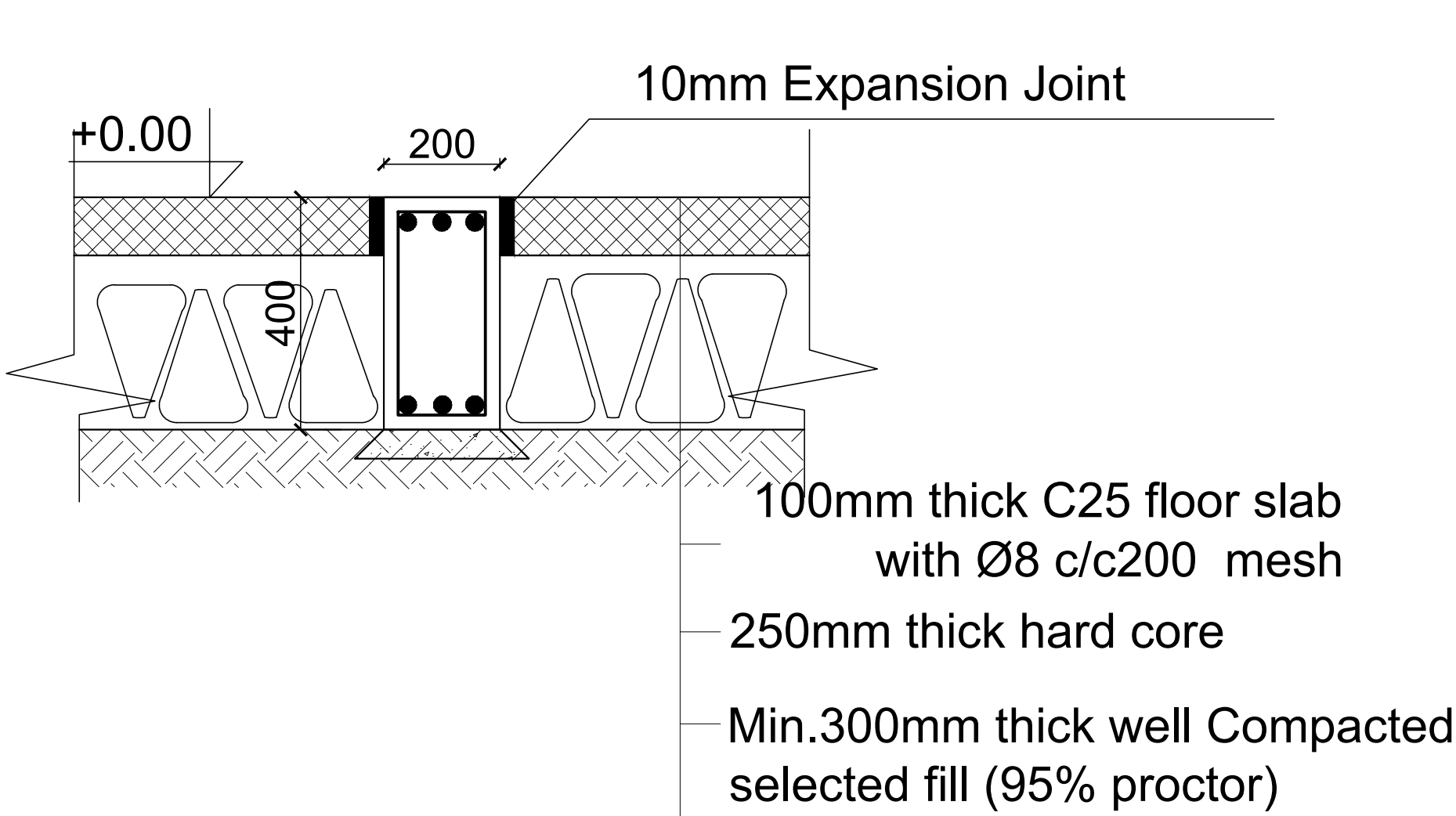
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10mm expansion joint to be filled with styrofoam



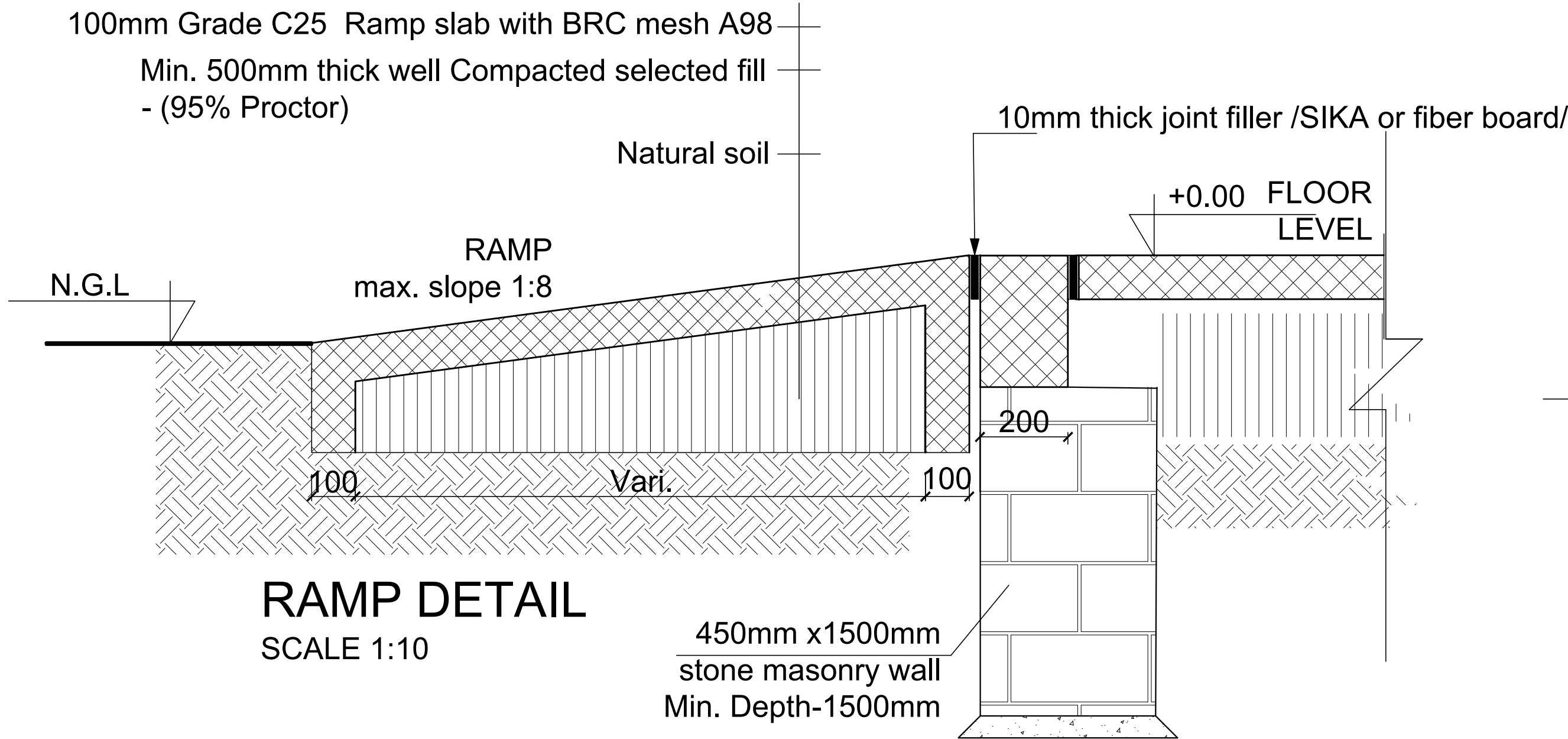
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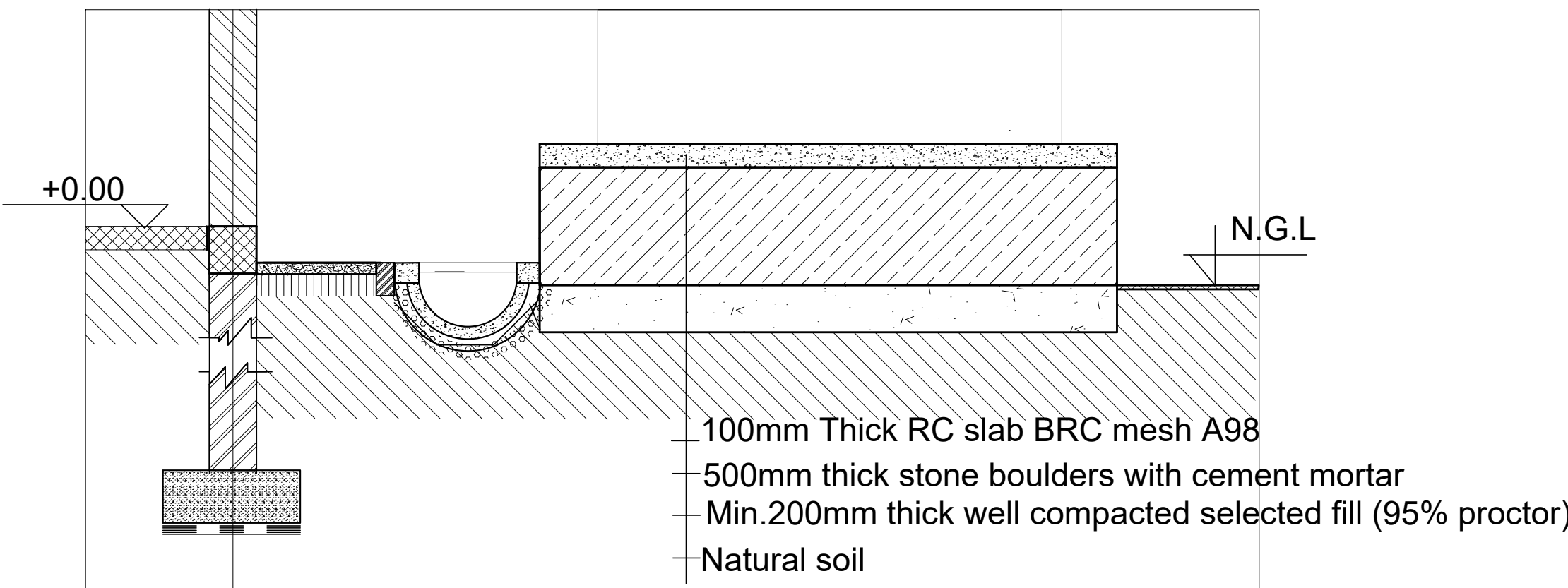
Internal Section

SCALE 1:10



RAMP DETAIL

SCALE 1:10



WATER RESERVOIR DETAILS SECTION

Sc. 1:25

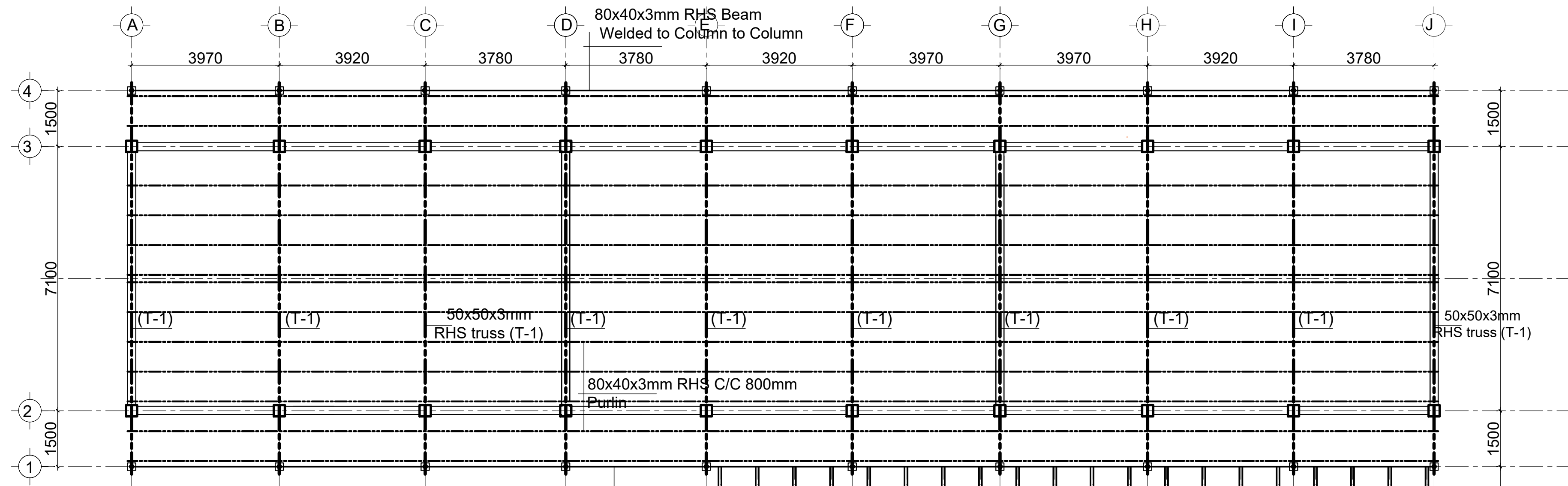
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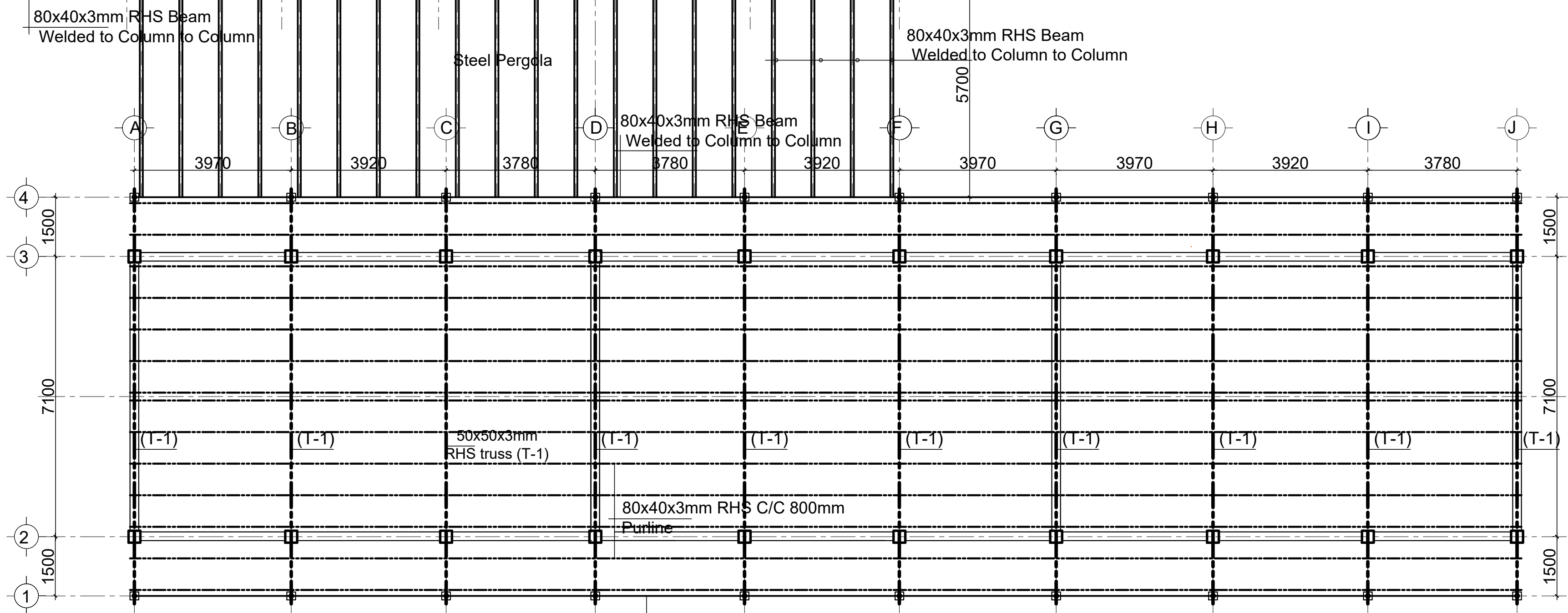
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Drawing Title:			
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(CLASS ROOM)				
INTERNAL & EXTERNAL, RAMP SECTION DETAILS				
Designed by	Discipline:	Dr. No:	Tot. No:	Rev No:
NK	ST	05	10	R0
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Classroom Block
ROOF BEAM & TRUSS LAYOUT
Scale 1:100
(At level +3.40)



Classroom Block
ROOF BEAM & TRUSS LAYOUT
Scale 1:100
(At level +3.40)

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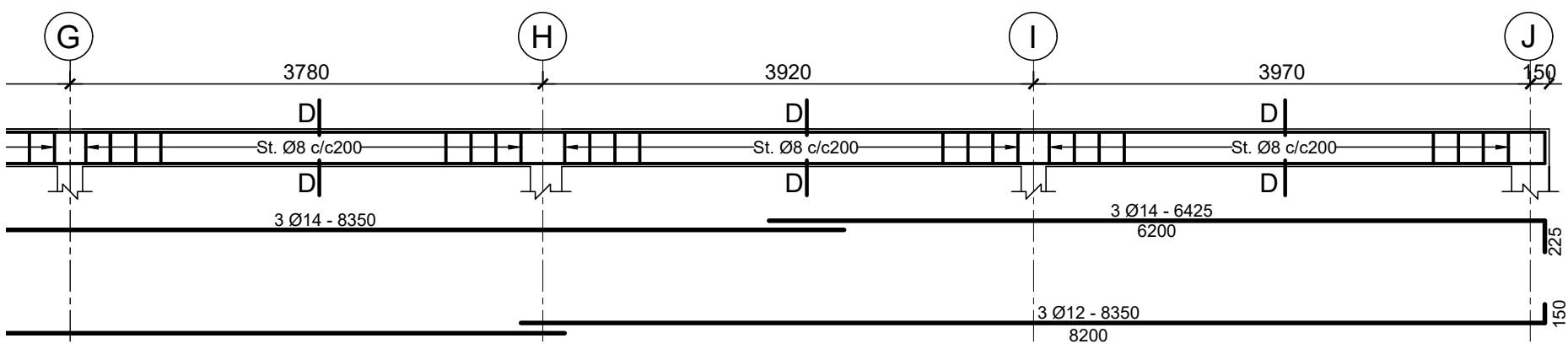
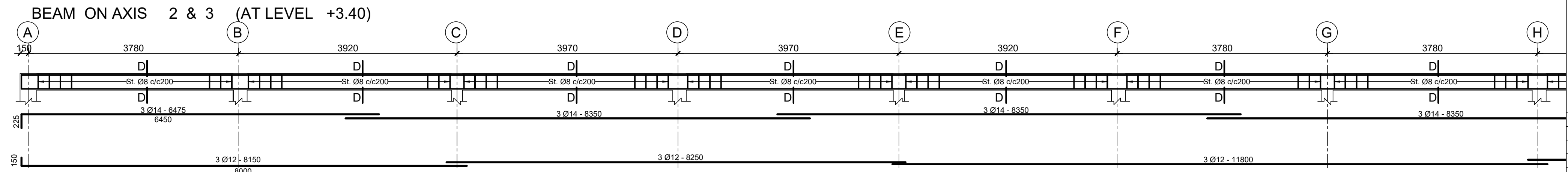
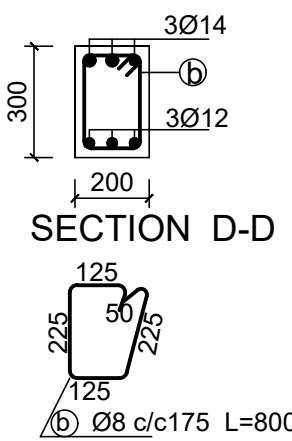
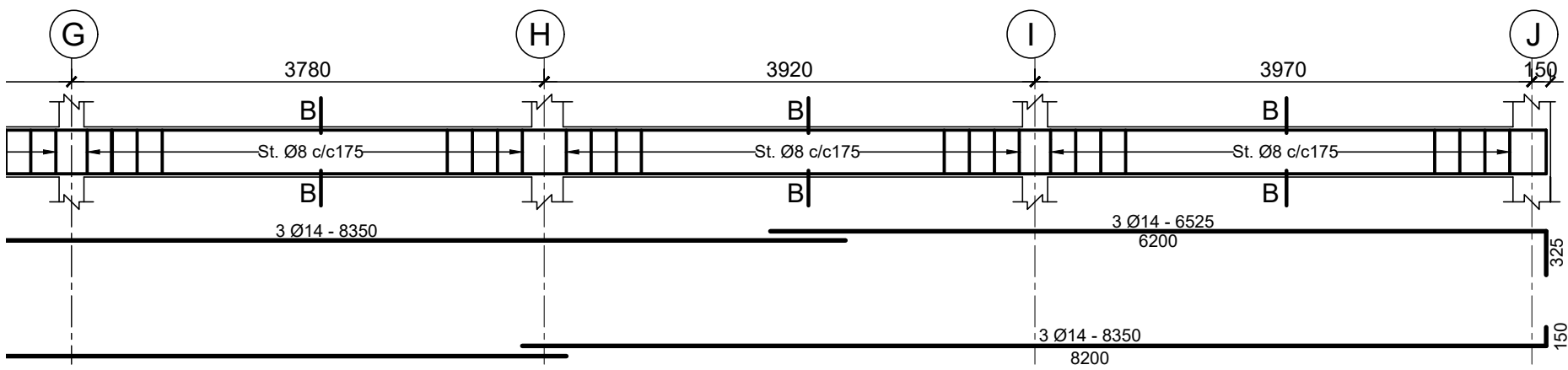
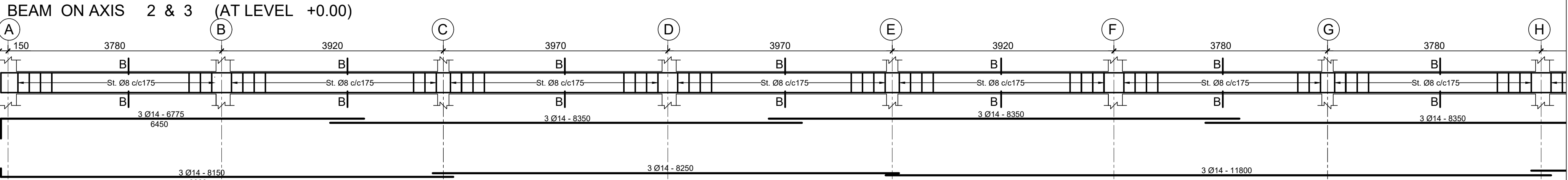
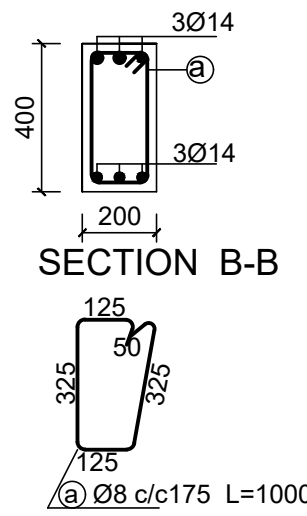
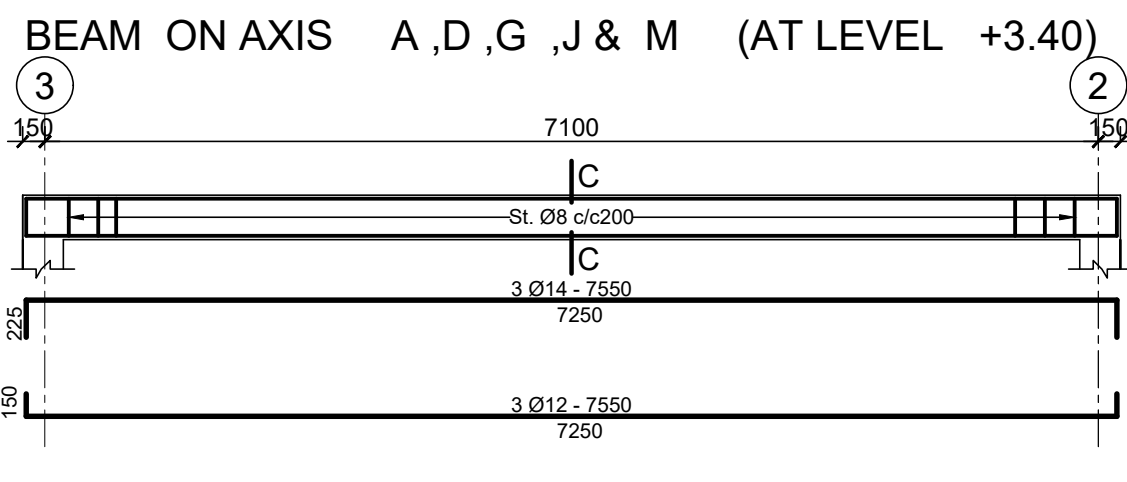
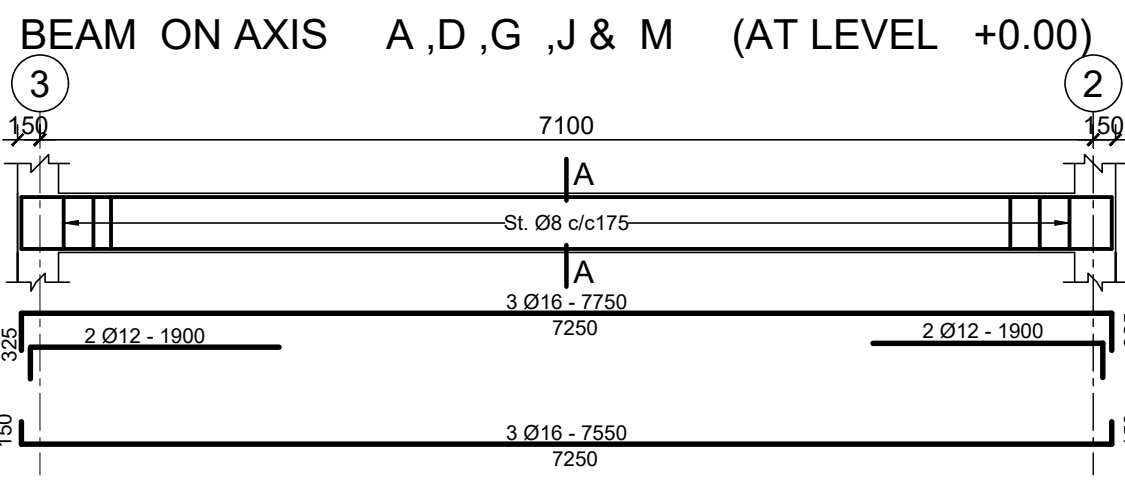
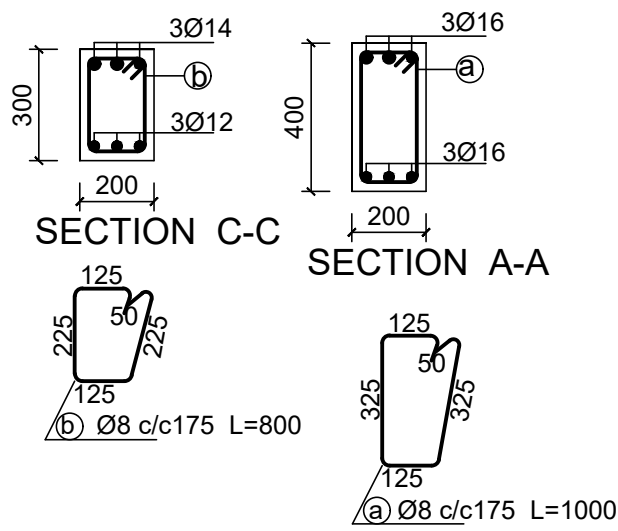
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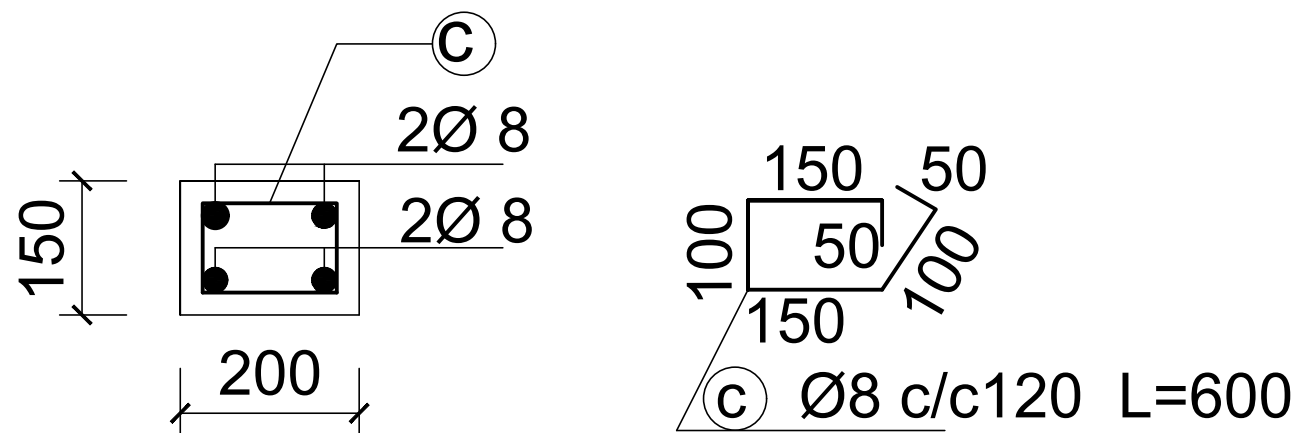
Drawing Title:

(CLASS ROOM)
- ROOF BEAM & TRUSS LAYOUT

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TYPICAL LINTEL BEAM SECTION



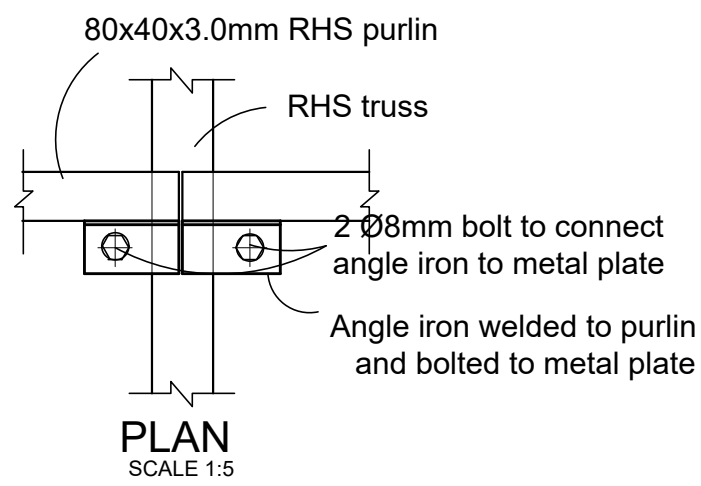
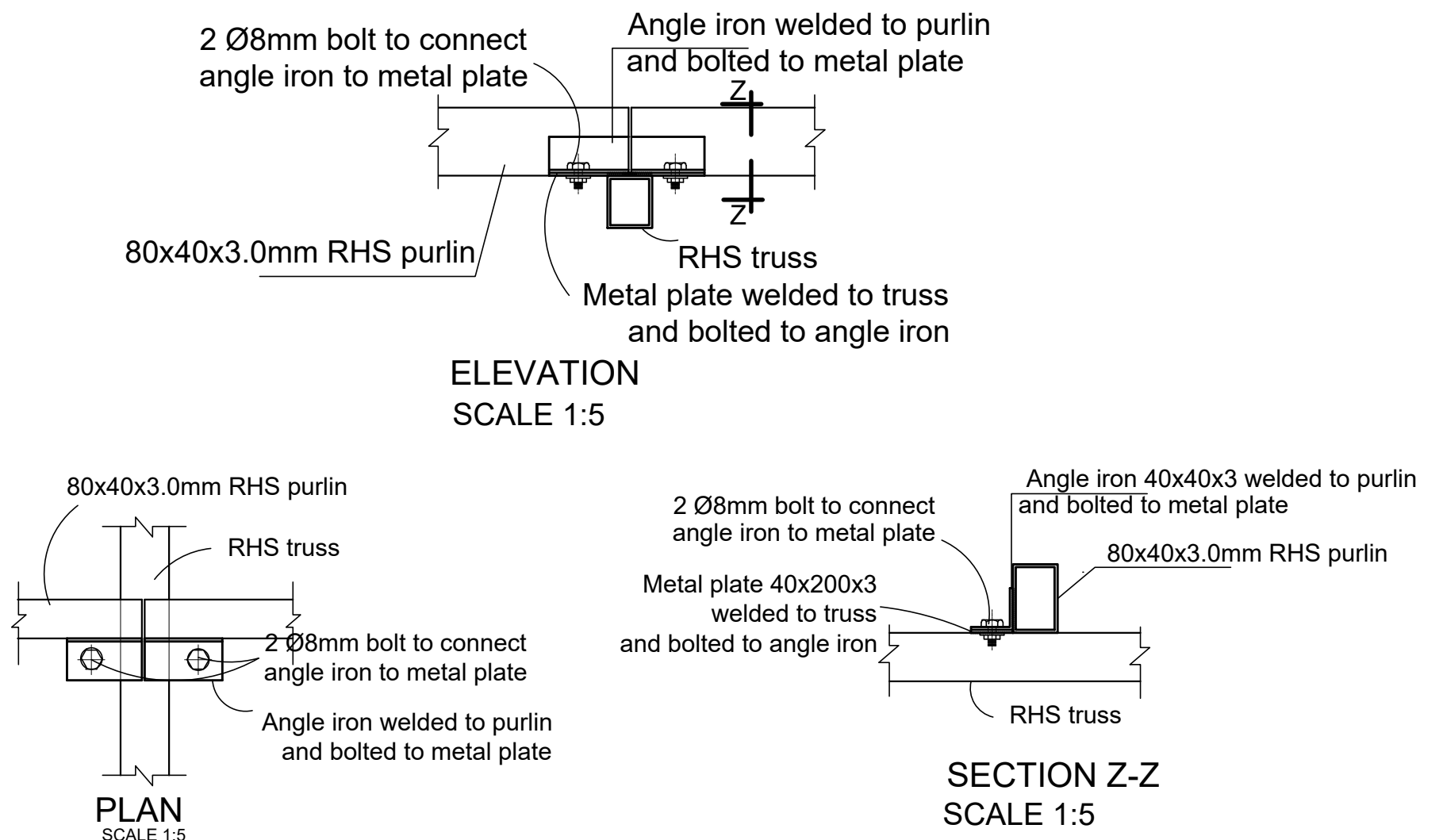
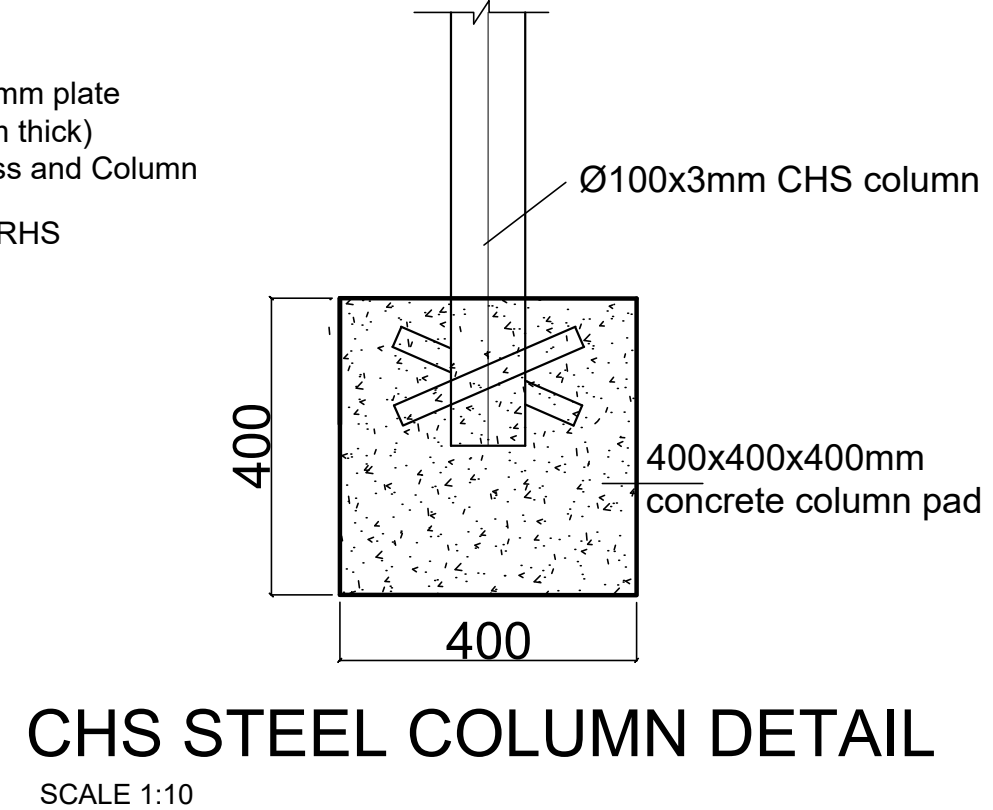
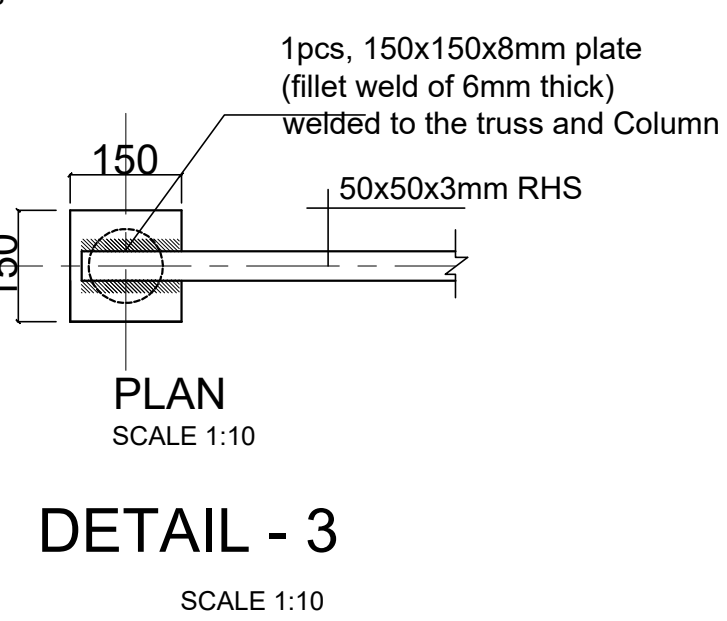
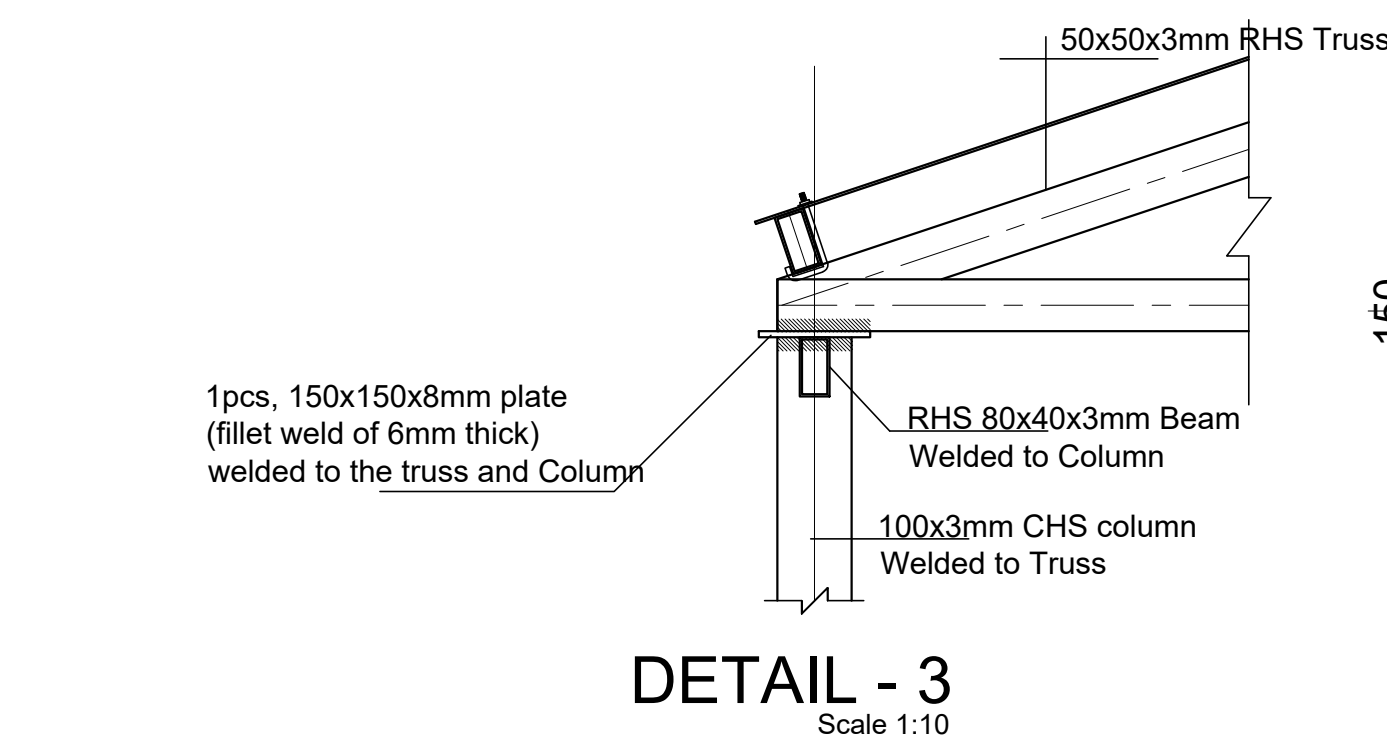
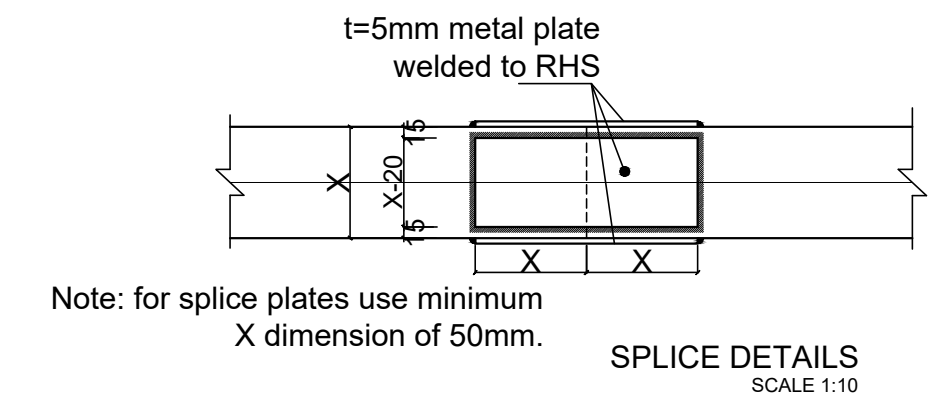
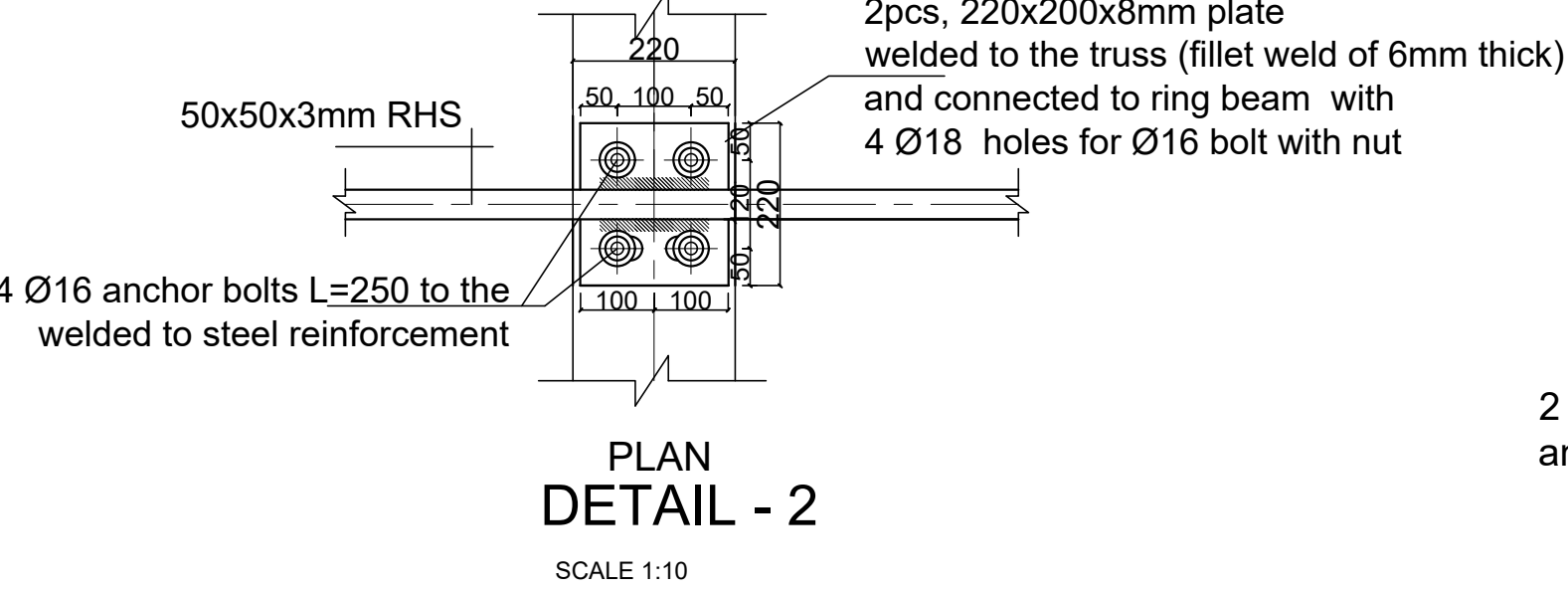
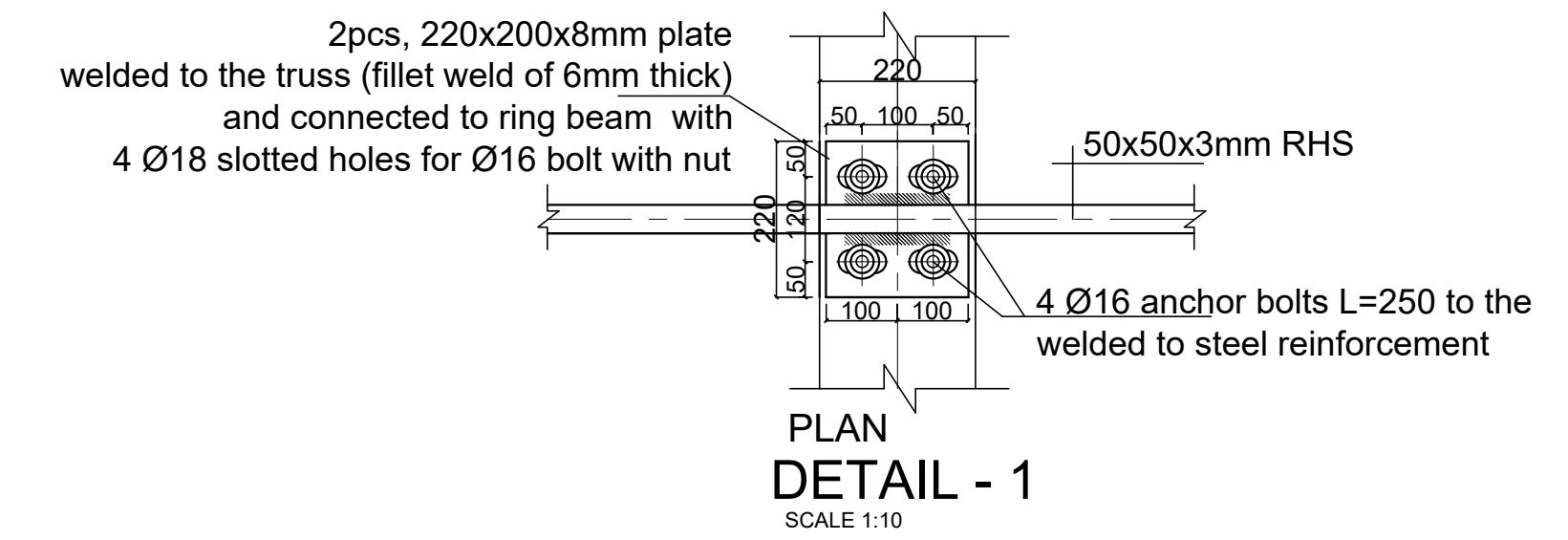
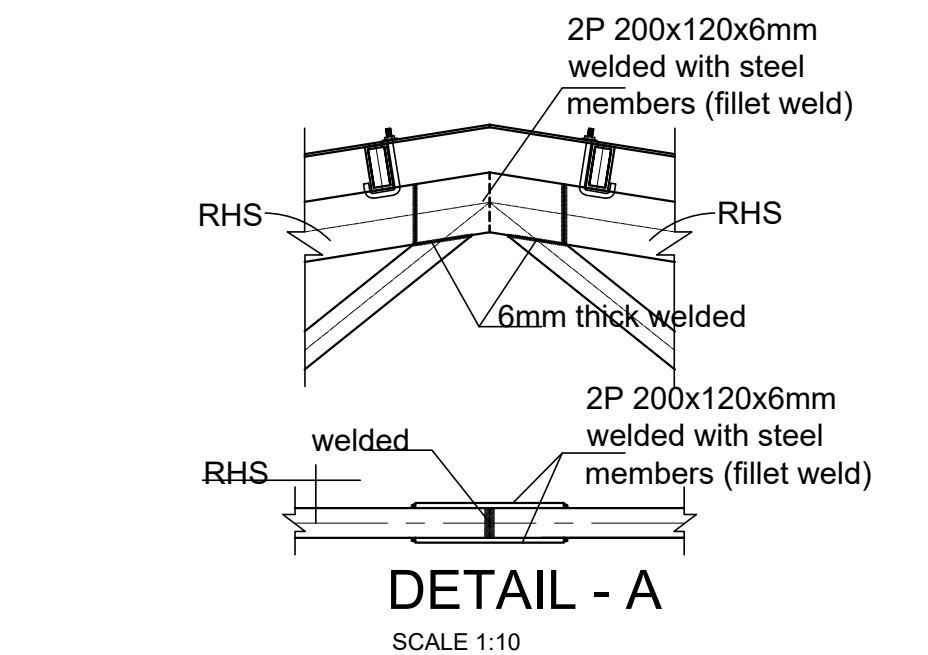
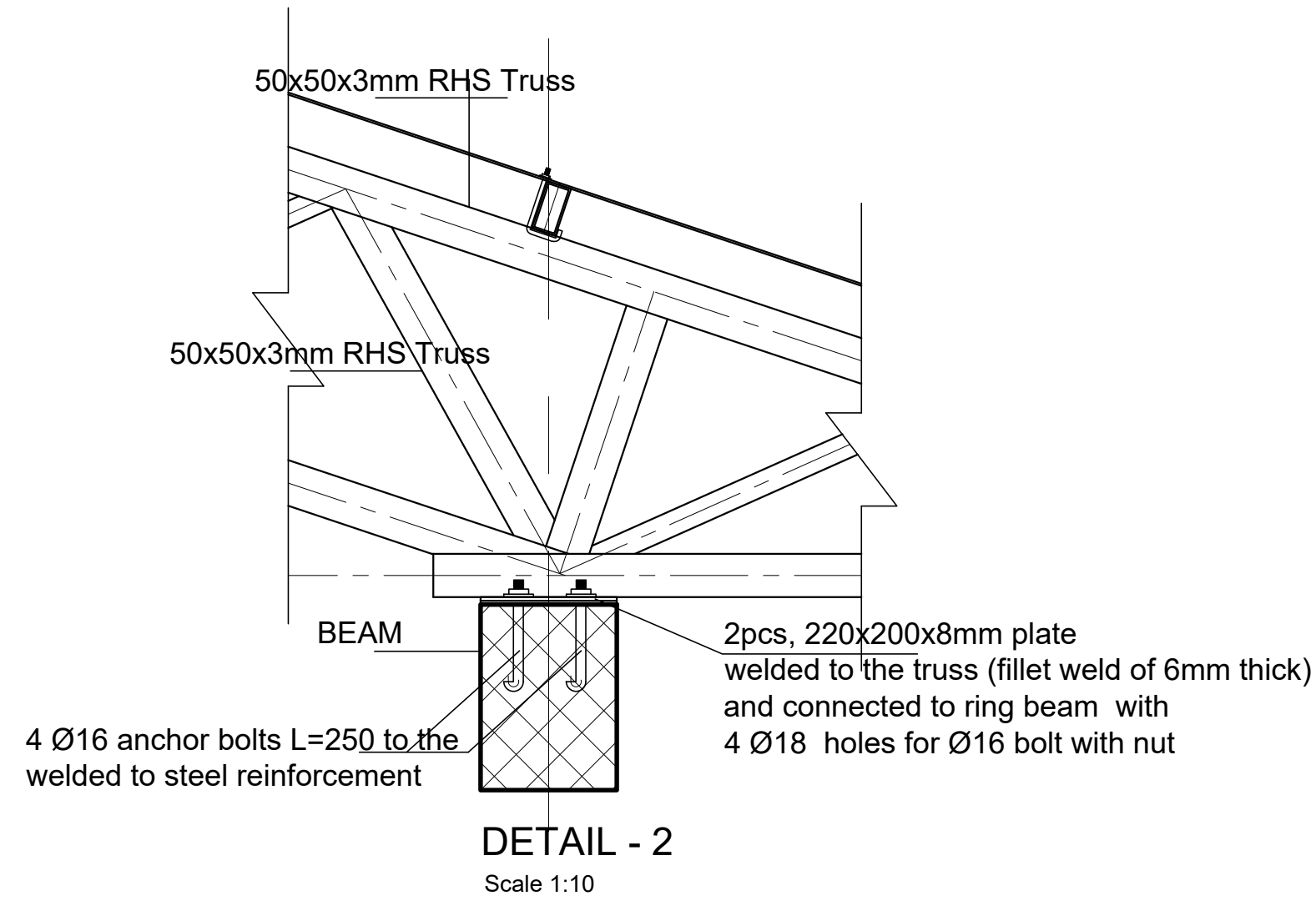
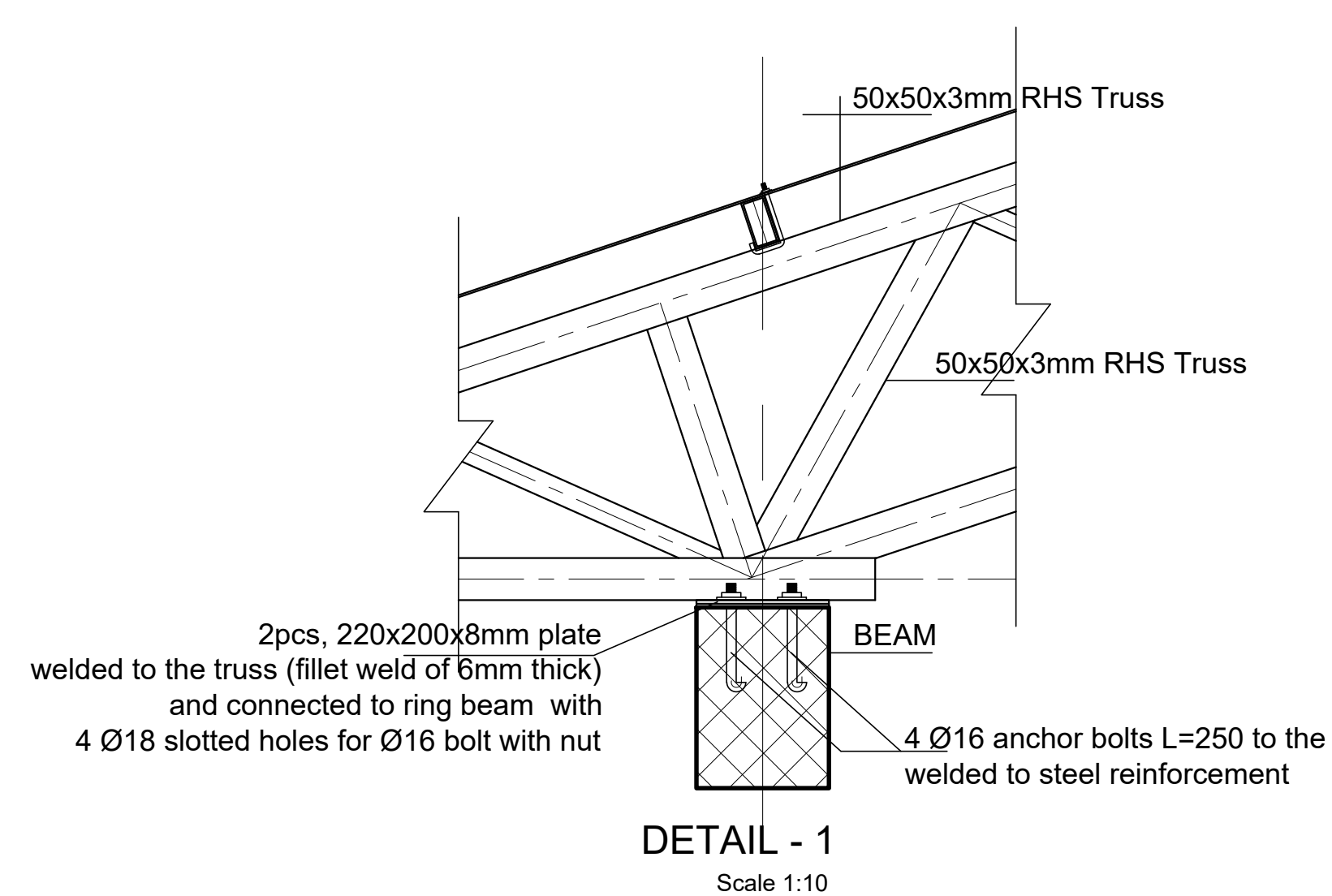
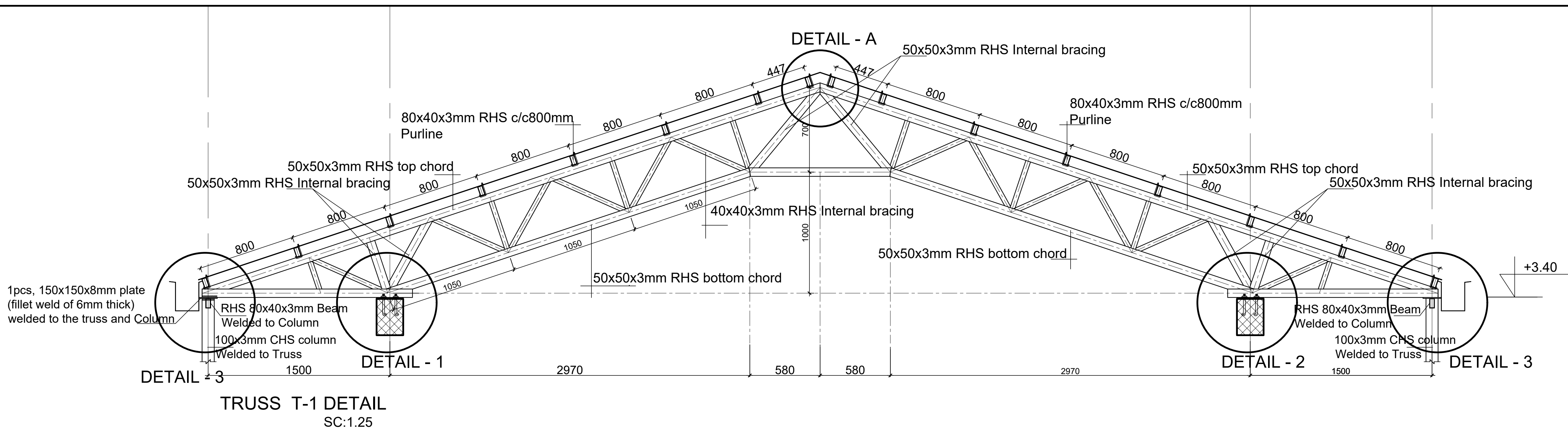
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World Bank	FDRE- Ministry of Finance
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Project Name:	Design:
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Drawing Title:				
(CLASS ROOM) BEAM REINFORCEMENT DETAILS				
Designed by	Discipline:	Dr. No:	Tot. No:	Rev No:
NK	ST	07	10	R0
Drawn:	Checked:	Approved:	Size:	Scale:
FM	AE	SH	A1	1:50, 1:25
Date:				Rev.:
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TRUSS & PURLIN CONNECTION DETAILS
SCALE 1:5

GENERAL NOTES:

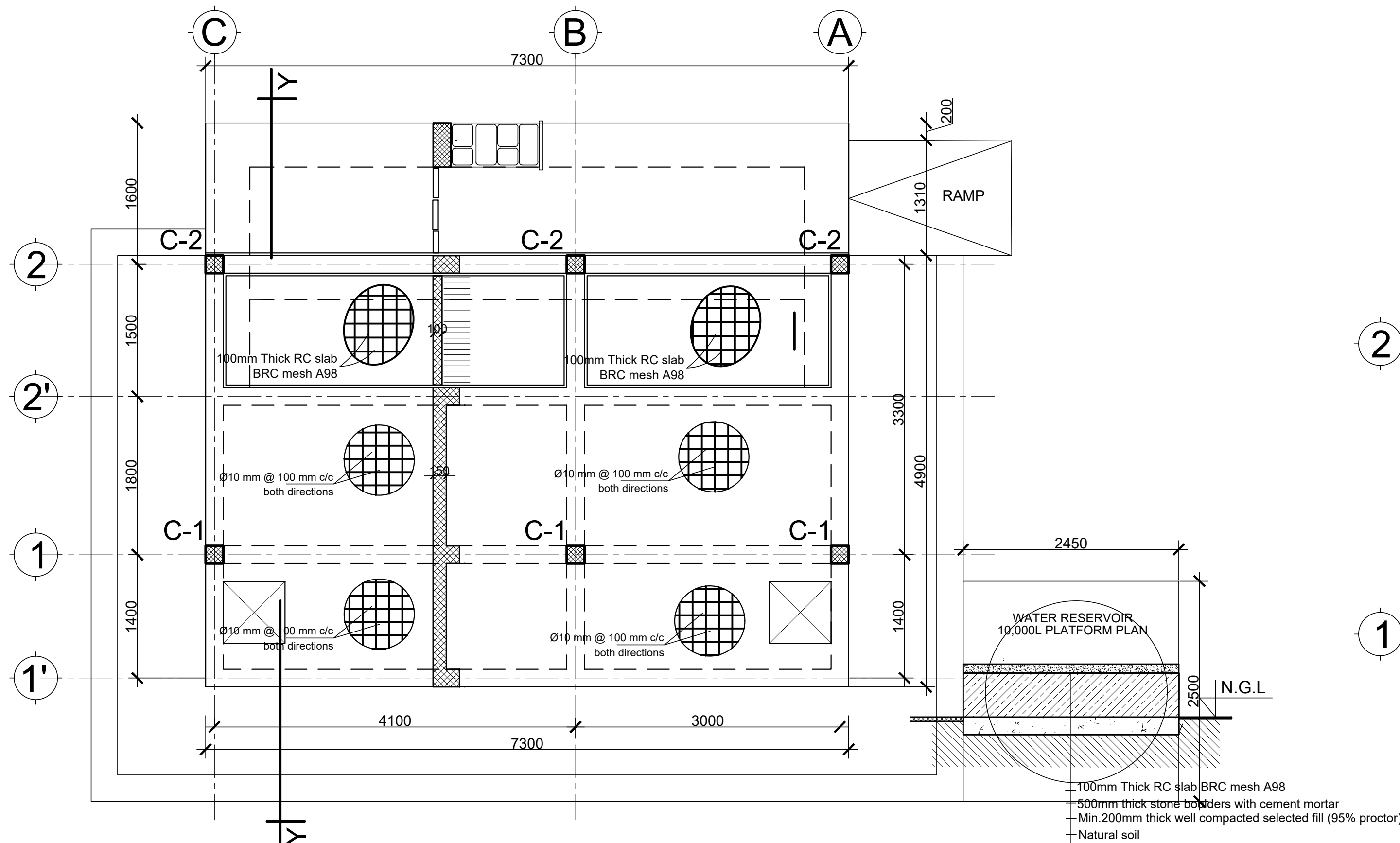
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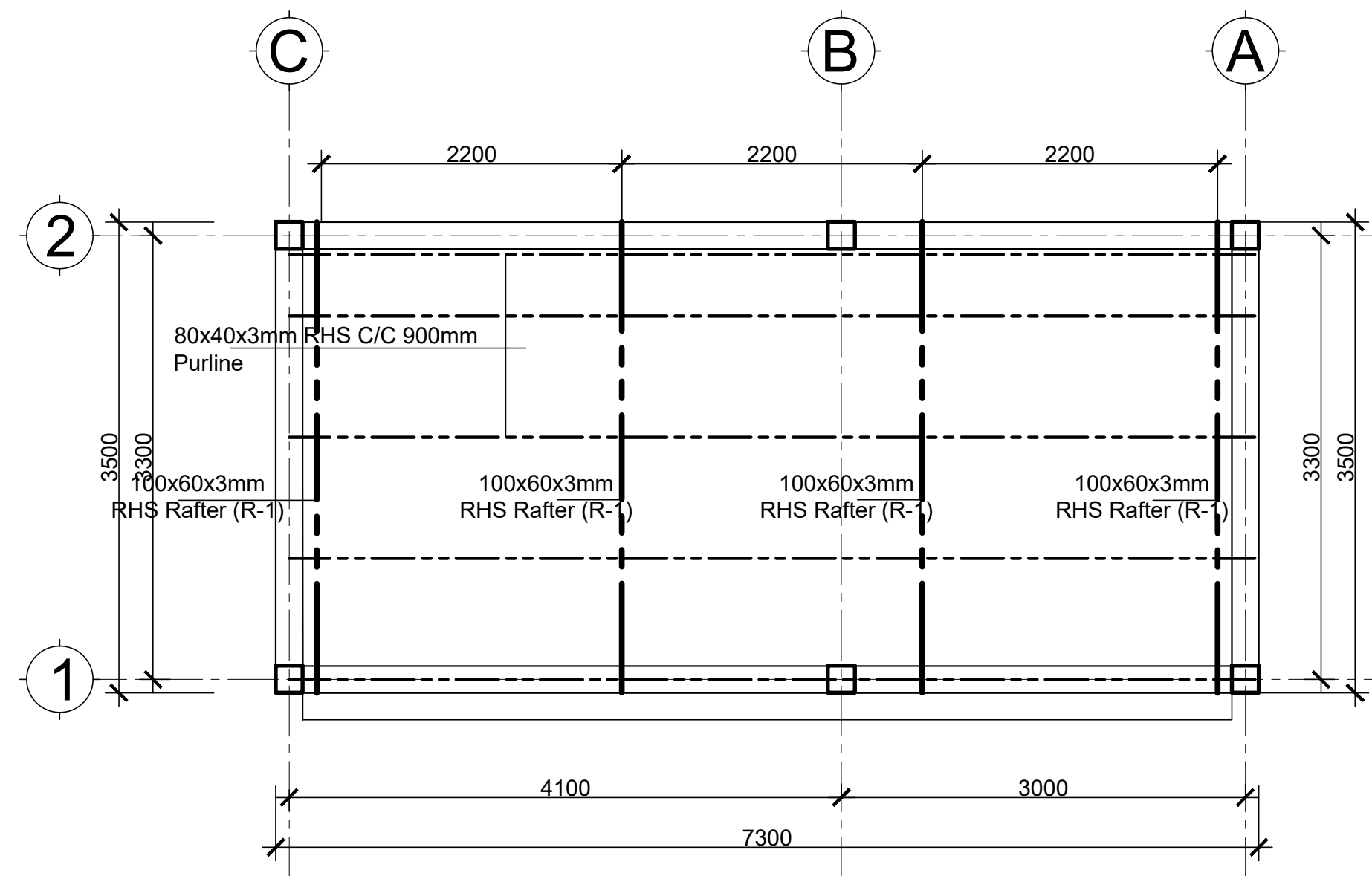
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STEEL TRUSS DETAILS

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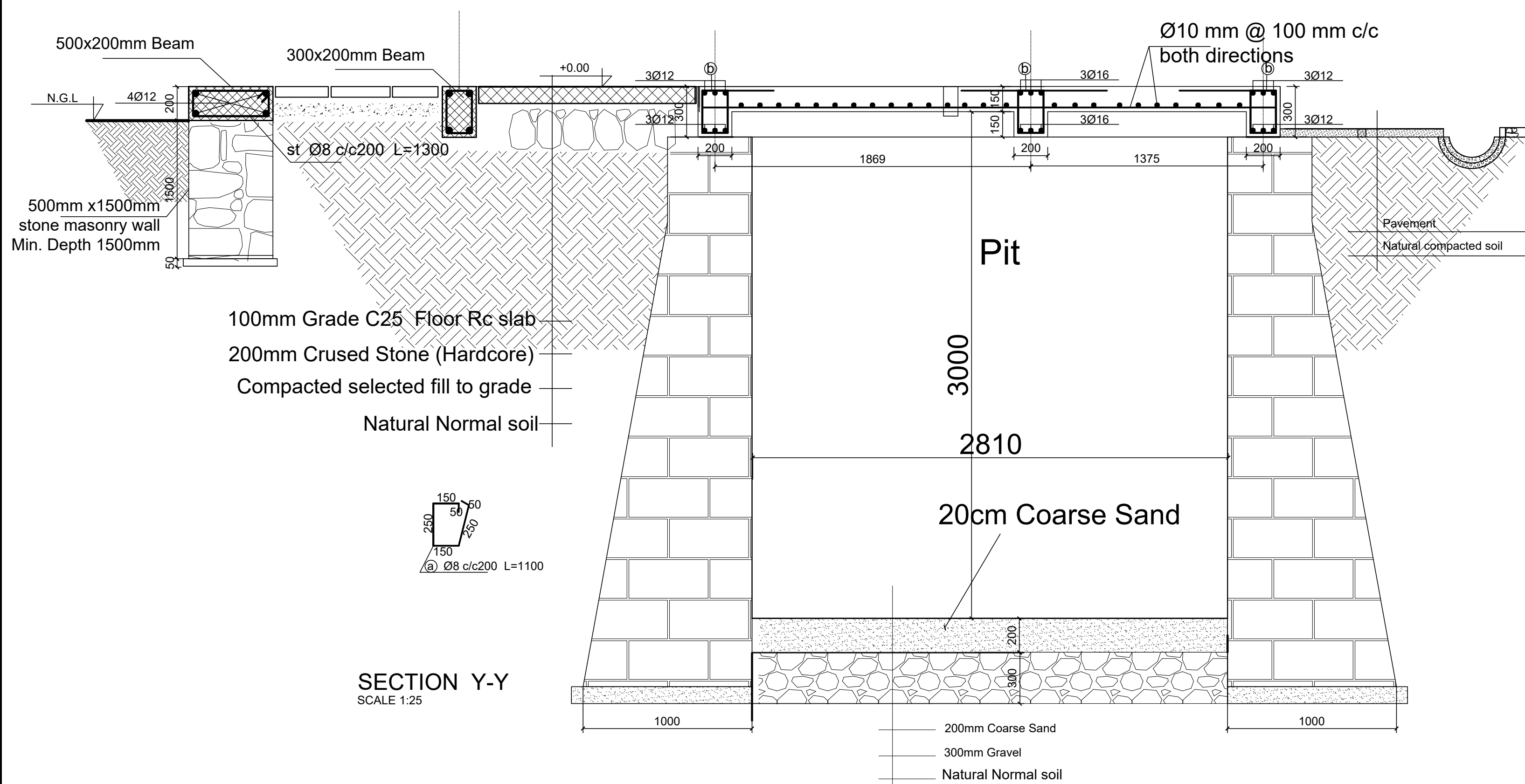


(TOILET)

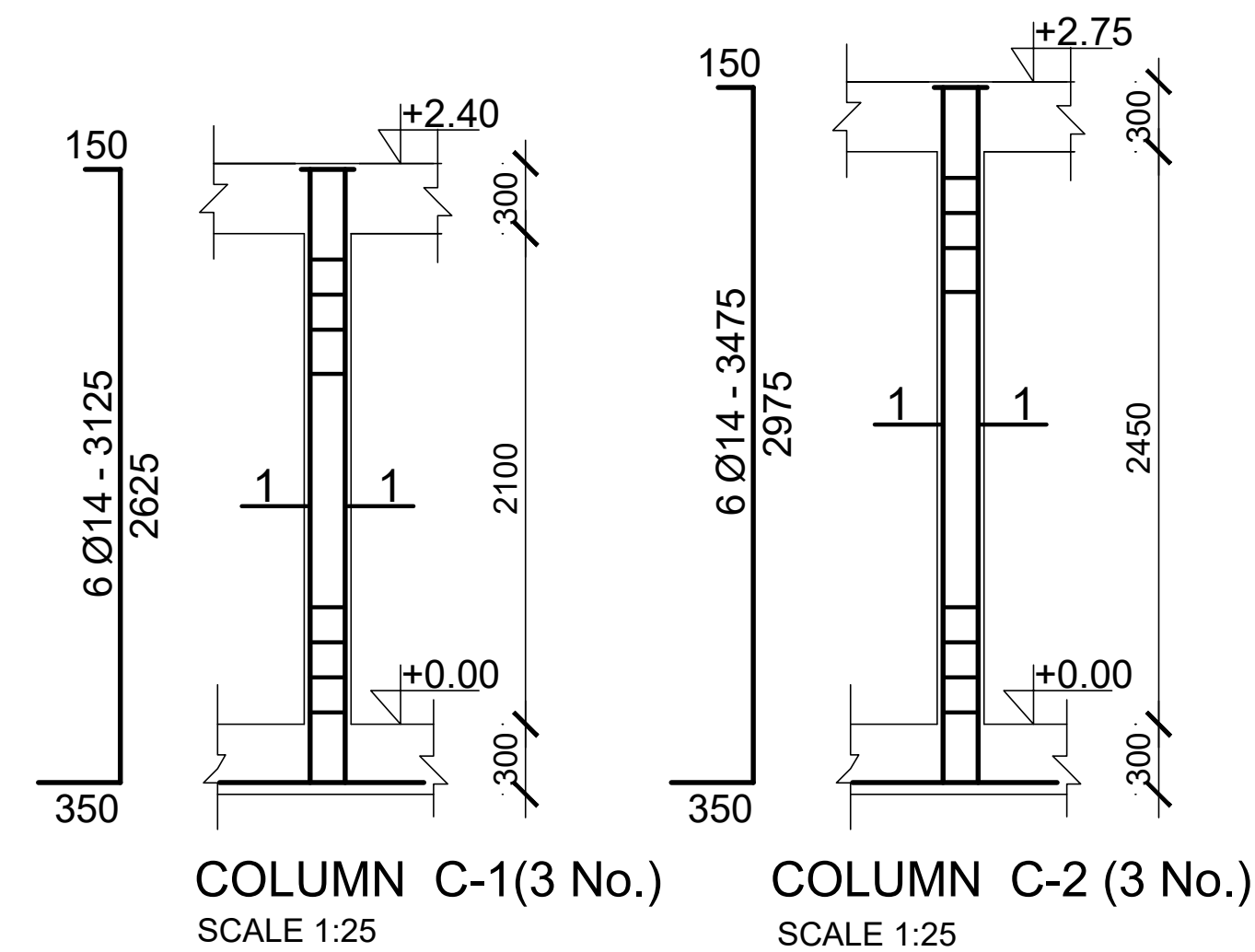
GROUND FLOOR SLAB REINFORCEMENT , STRIP FOUNDATION, BEAM
& COLUMN LAYOUT SCALE 1:50
(slab thickens =100mm & 150mm)



(TOILET)
ROOF BEAM AND TRUSS LAYOUT
SCALE 1:50

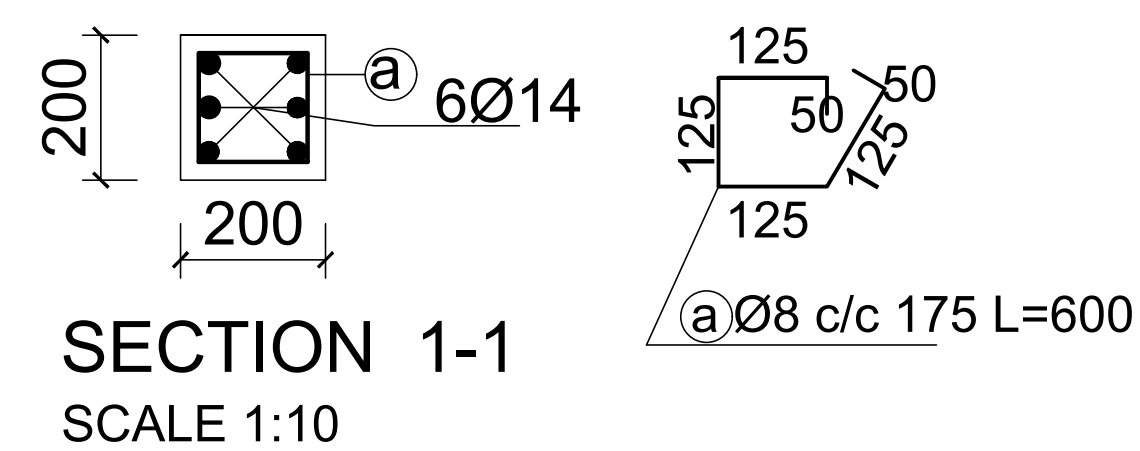


SECTION Y-Y
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COLUMN C-1(3 No.)
SCALE 1:25

COLUMN C-2 (3 No.)
SCALE 1:25



SECTION 1-1
SCALE 1:10

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Drawing Title:				
TOILET GROUND FLOOR SLAB REINFORCEMENT , STRIP FOUNDATION, BEAM & COLUMN LAYOUT, ROOF BEAM & TRUSS LAYOUT				
Designed by	Discipline	Dr. No.	Tot. No.	Rev No.
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TOILET BEAM & TRUSS DETAILS											
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