

Architectural Project

Typical Kindergarten
for three groups
Mshvidobis street, 306, Senaki

Structural Part of the Project

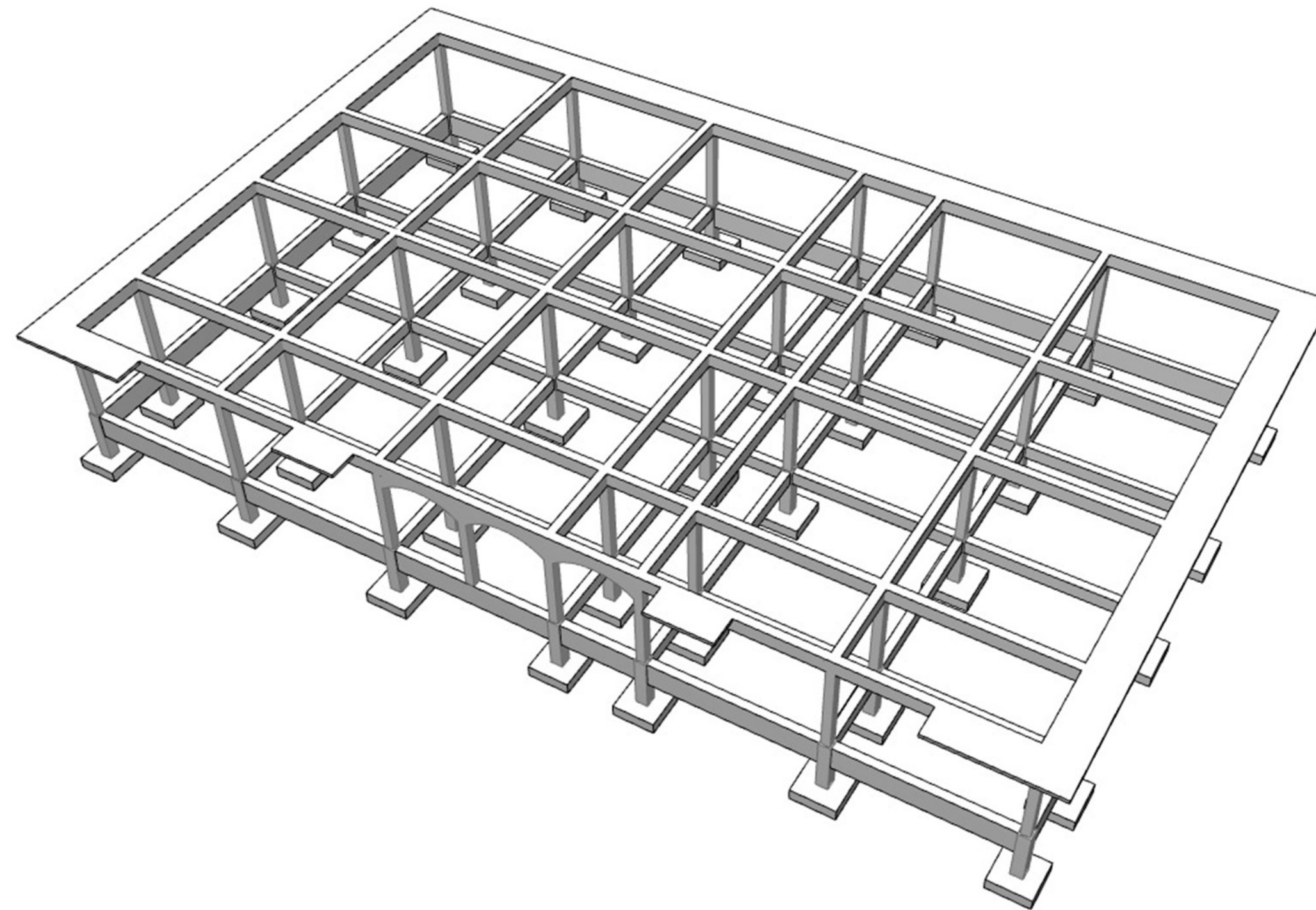


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Explanatory Letter
General Information

The construction site (cadastral code of the land plot 44.01.38.140) is located in the city of Senaki. According to the norms of "construction climatology" the climatic characteristics of the construction site are the following:

- The average annual temperature is + 14.5. C
- Absolute maximum temperature + 40 ° C
- Absolute minimal temperature - 17 ° C
- Annual precipitation -1831 mm
- Snow cover weight - 0.5 kPa
- Standard height of seasonal ground frost - 0 m
- Standard wind pressure 0.6 kPa
- The prevailing wind direction - East
- According to the map of the seismic regions, Senaki belongs to the 8-point seismic zone.
- Based on the data of the geological findings, the estimated seismicity of the construction site is 9 points.

The area allocated for construction in terms of engineering geology is in satisfactory physical condition; the geological phenomena (landslides, falls, etc.) are not observed.

-According to the geological survey (attached to the project)the first engineering-geological element is considered as the basis of the foundation - with the following technical specifications:

Engineering-geologic element I (layer #3) Clay, brown, high-plastic, saturated with water (dQiv)				
E-G Eleme nt II	Characteristics of physical-mechanical properties	Index	UoM	Numeric value
1	Density	ρ	g/cm3	1.76
2	Frame density	ρd	""	1.29
3	Solid particle density	ρs	""	2.72
4	Porosity	n	%	52.29
5	Porosity coefficient	e	particle	1.097
6	Humidity	W	%	36.05
7	Moisture at the edge of fluctuation	WL	particle	44.39
8	Moisture at the edge of plasticity	Wp	""	23.34
9	The number of plasticity	Ip		21.05
10	Angle of friction inside	φ	Degree	6.92
11	Specific traction	C	kPa	28.61
12	Deformation module	E0	mPa	6123
13	Reporting impedance	R0	kPa	150
14	Poisson's coefficient	μ		0.38

The report of the building design calculation scheme is executed in the program "LIRA".The building presented in the project is a one-storey stone building with an average floor height of 1.0 meters from the floor level. The first-floor mark 0.00 corresponds to the absolute mark 23.30The height of the floor of the building from the floor to the ceiling is 3.4 meters.

A natural sand-gravel mixture (fraction 0.5-70 mm) should be used for backfilling and arranging the embankment on the construction site. It is necessary to compact it layer by layer every 20 cm in height with a vibrating machine.

There are pad foundations designed, with a gravel pad under them.

The bearing structure of the building is a complex reinforced concrete frame, in particular, a space structure composed of monolithic reinforced concrete columns, rafters, and girders.

The filling of the external walls is done with a reinforced embankment of small pumice blocks 30 cm thick.

Partitions are made of reinforced small wall pumice block with a thickness of 10 cm.

The size of small pumice blocks is no less than M70 (volume weight 800 kg / m 3), therefore the mark of the mortar used for the embankment should be no less than M70.

Floors in bathrooms are finished with tile, and in rooms with wooden planks (deck). The thermal insulation of the floor is done with XPS tiles, and ceiling heating is done with glass.

Suspended ceilings in the kitchens are made of plastic, while in the rooms are made of gypsum boards.

The bearing structure of the roof is made of wood, while the roofing is made of painted metal sheets.

Roof and ceiling wood structures are made from second-class dried coniferous wood material.

The windows are made of double-glazed metal profiles.

The entrance doors are made of steel and iso-aluminum, PVC in the joints, and wood in the rooms (so-called MDF).

External stairs and entryways are covered with basalt tiles.

A concrete walkway is arranged around the building.

Concrete of grade B25 is used in the monolithic constructions of the frame.

Before backfilling, the outer surfaces of the foundation walls, columns, and foundation slab should be treated with bitumen mastic to a mark of 0.00, and waterproofing linoleum should be applied in two layers.

The dimensions on the drawings are given in millimeters and meters, the markings in meters. All sheets of the structural part are considered as one whole and the data of other sheets as well as architectural drawings should be taken into account when considering any sheet.

The elements of the structural reinforcement must be bent in a cold mechanical manner.

After removing the ground, the condition of the ground should be additionally assessed. It is, therefore, possible to adjust the foundation structure.

All changes made to the project during construction must be agreed with the project authors.

References:

პროექტირების დროს გამოყენებული ლიტერატურა:

- *CHuT. 2.03.01-84* * - "გეოტექნიკის და რეინჰერგირების კონსტრუქციები"

- *CHuT. II-7-81* * - "შენიშვნები სეისმურ რაიონებში"

- *CHuT. 2.01.07-85* * - "დაცეითვის და ზემოქმედება"

- *CHuT 2.02.01-83* * - "შენიშვნების და ნაგებობების ფუნქციონირება"

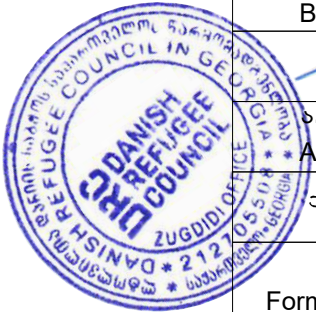
- *ГОСТ 14098-91* - "არმატურის და ლითონის ჩასატანებელი ელემენტების

შედულება რეინჰერგირების კონსტრუქციებში"

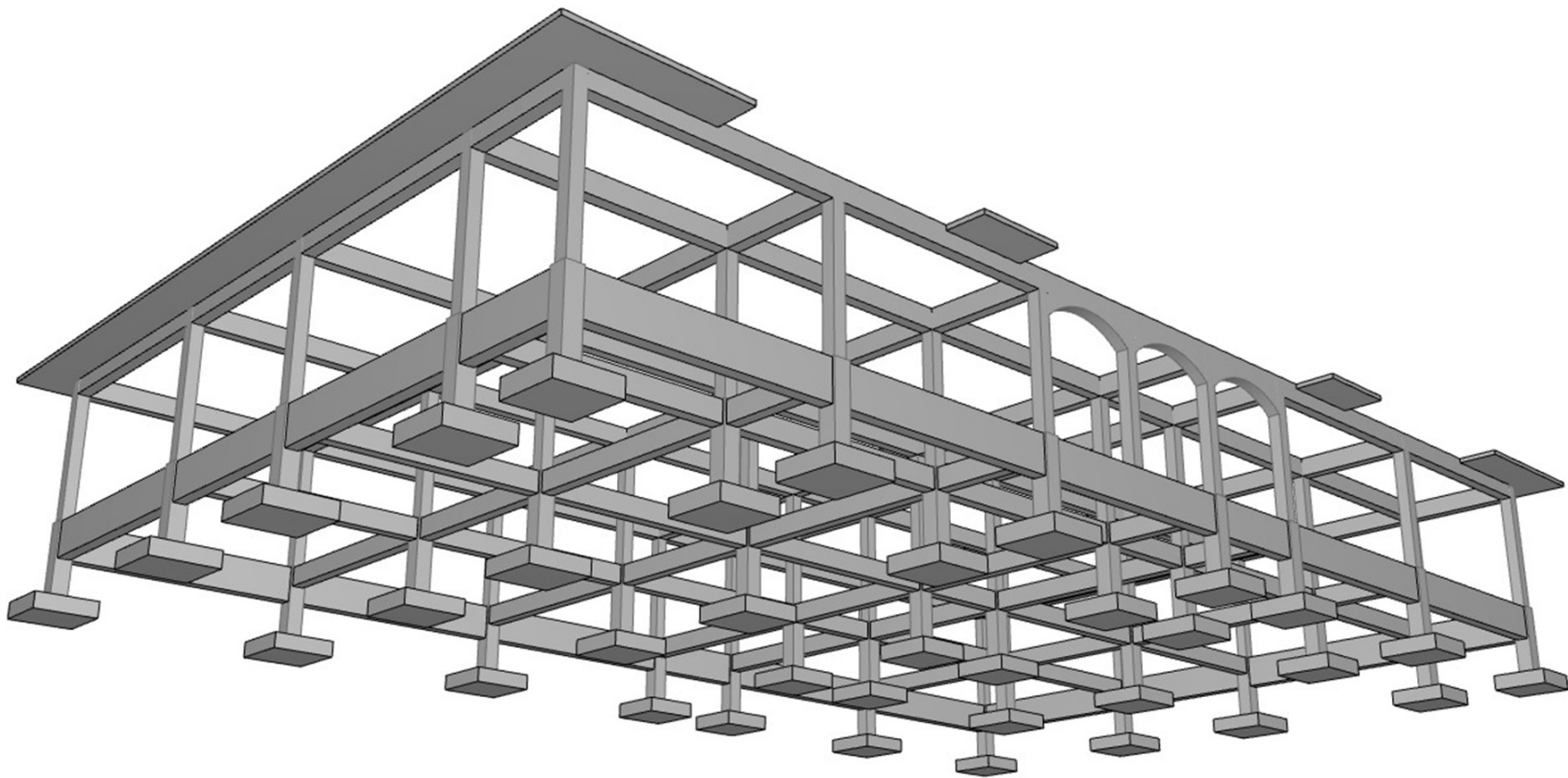
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Note: _____

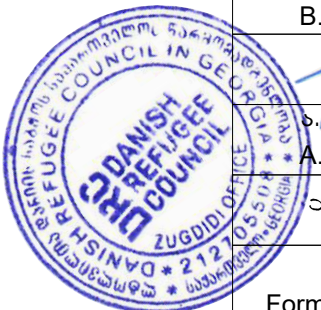
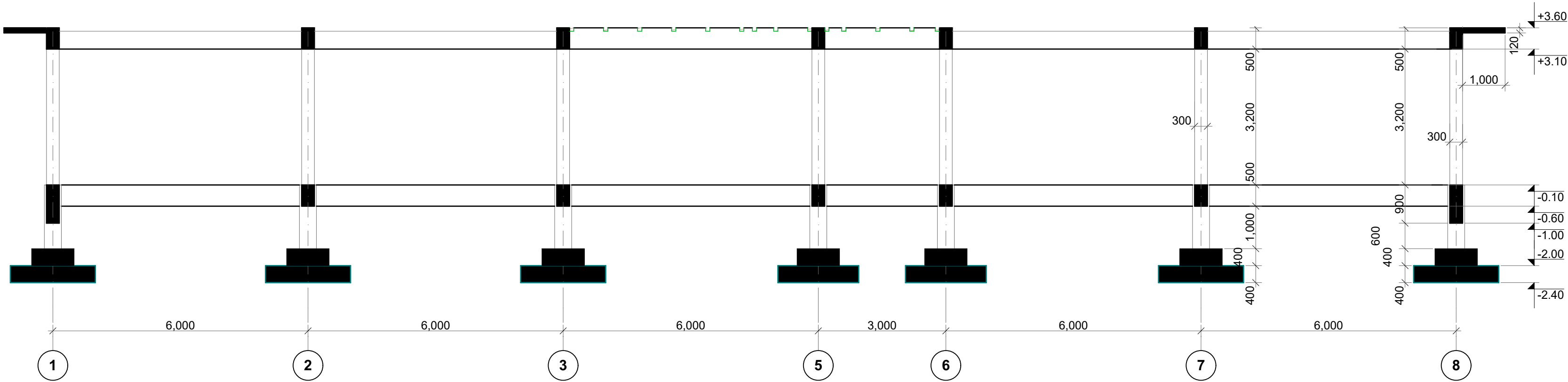
The project has been adjusted taking into account the remarks presented in the conclusion of the Levan Samkharauli Bureau of Expertise.



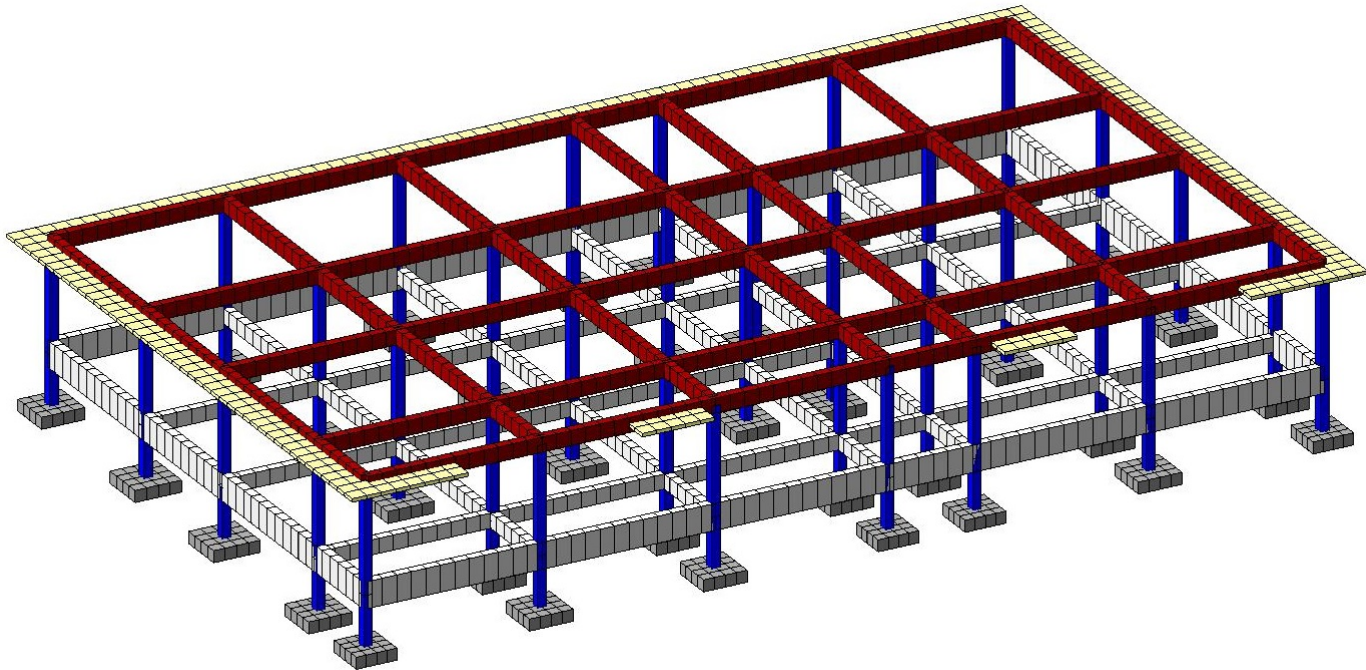
A 3D perspective view of a rectangular frame structure. The structure consists of a grid of horizontal and vertical members forming a 4x4 grid of squares. The entire grid is supported by a series of vertical legs or columns. The structure is shown from an isometric perspective, highlighting its three-dimensional nature.



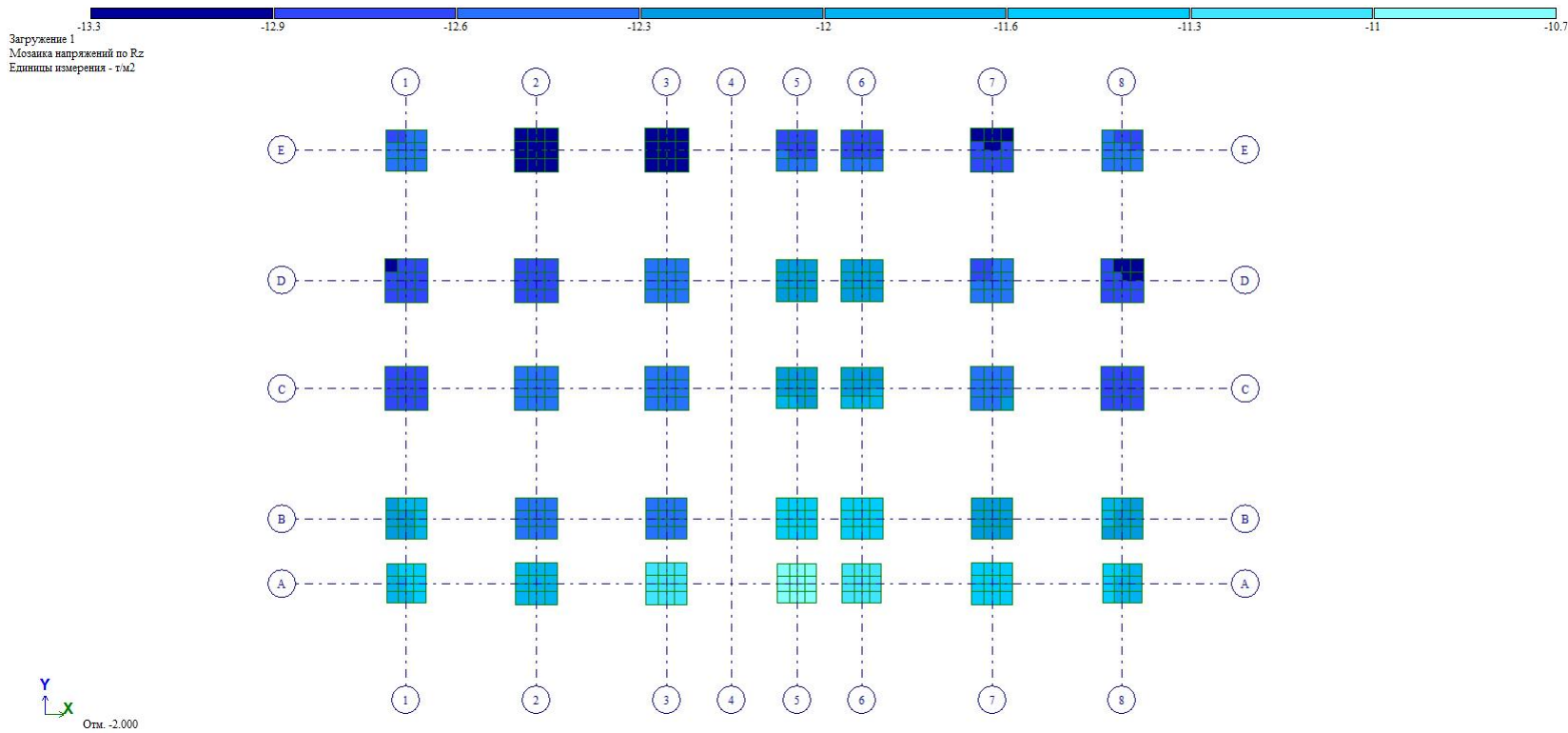
Section on the Structure



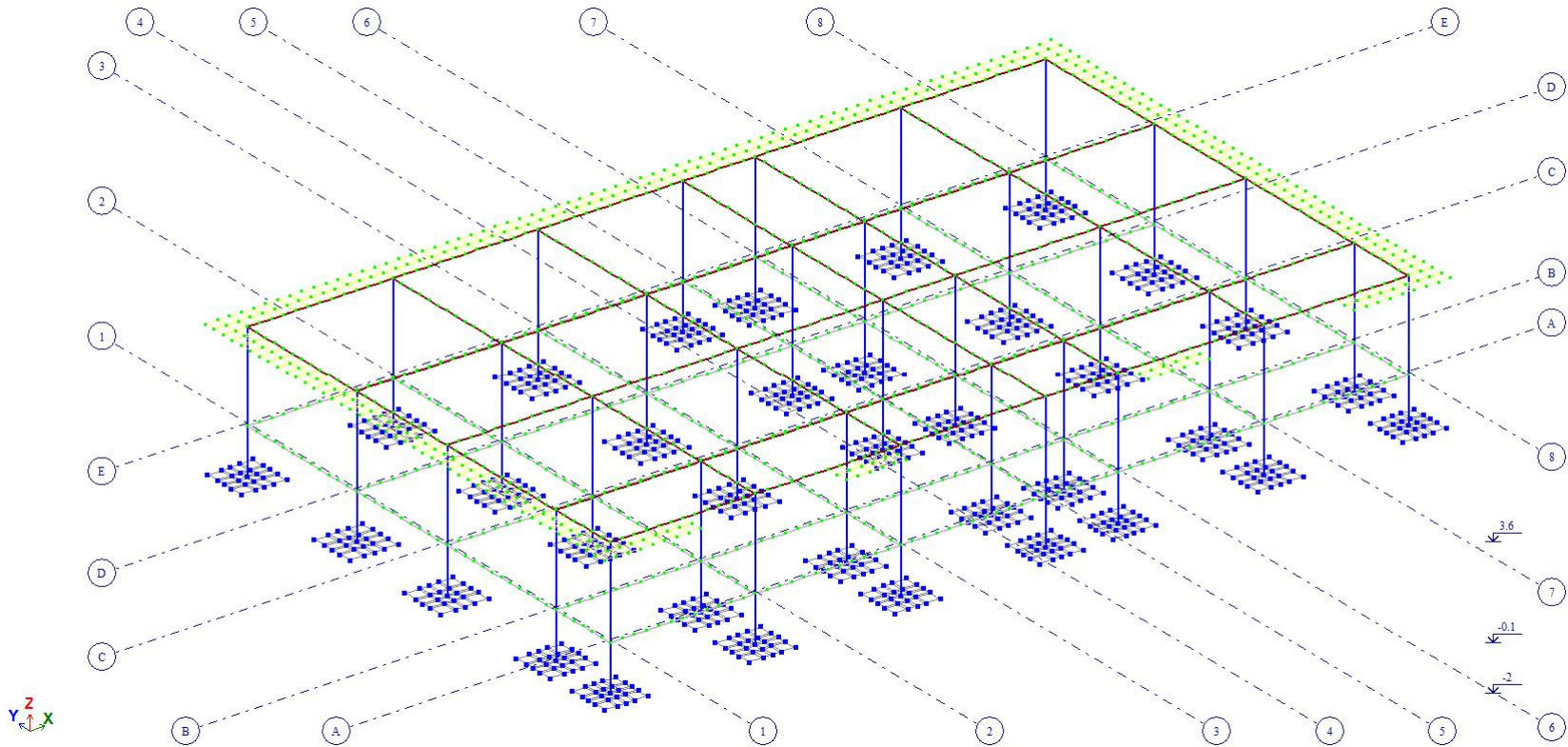
3D Model of Structure



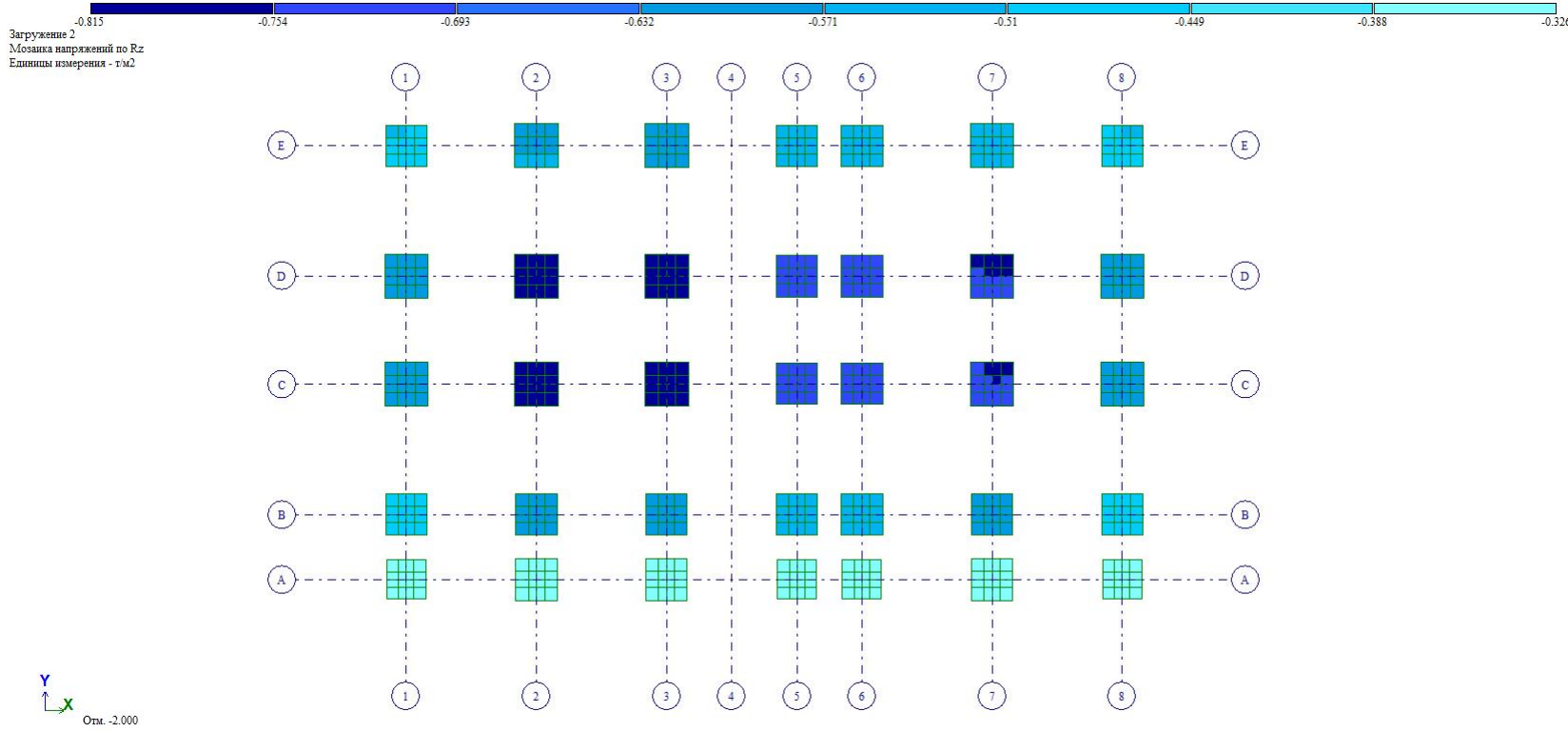
Voltages at the base from constant loads



Design Model of the Bearing Structure



Voltages at the base from temporary loads



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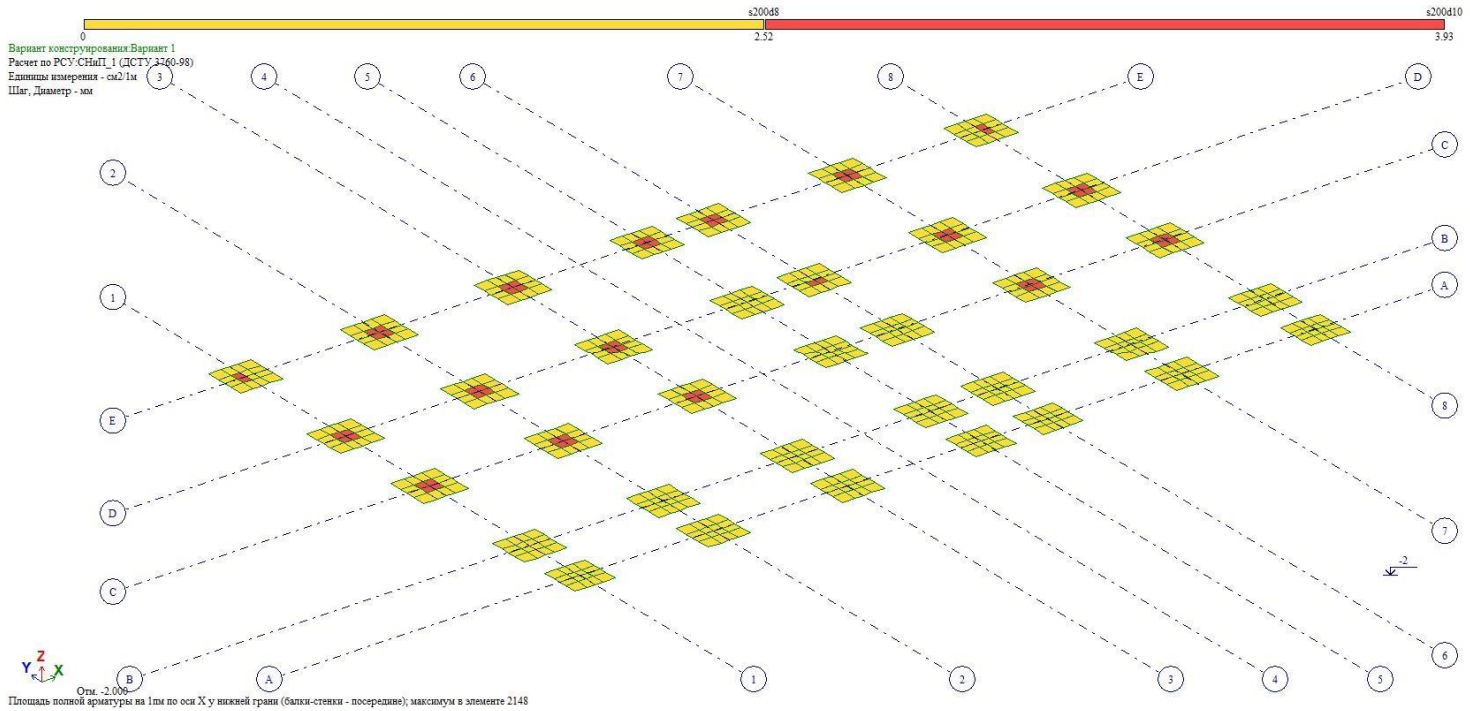
The results of the
construction
scheme report in
the program LIRA

ბ. ჯანთარიას
B. Qantaria

გერგედავა
A. Gergedava

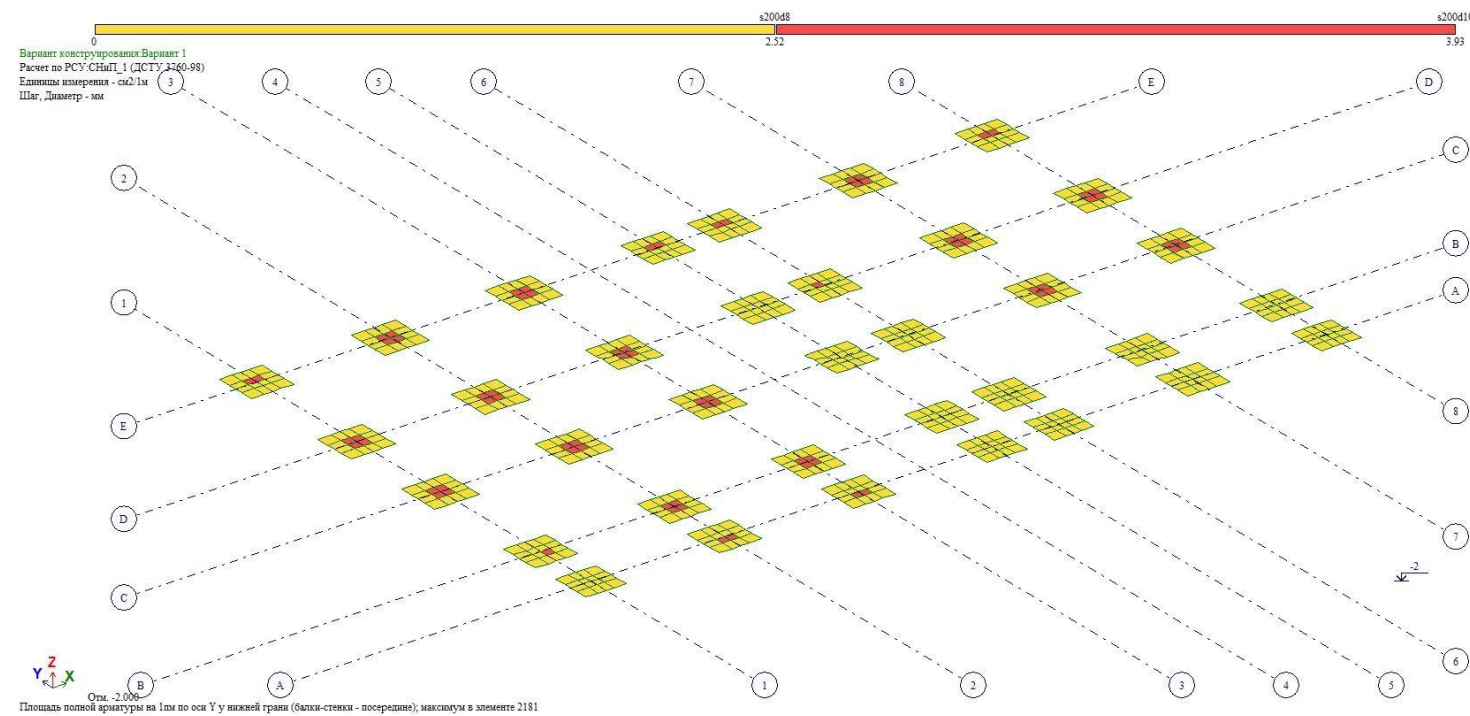
Format A - 2

Area of reinforcement of lower zones of the pad foundation in the X-direction



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Area of reinforcement of lower zones of the pad foundation in the Y-direction



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Senaki

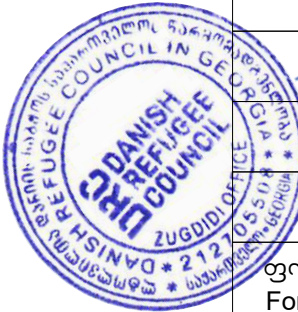
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Architectural project

The results of the
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scheme report in
the program LIRA

ბ. ჯანთარია
B. Qantaria

ა. გერგელავა
A. Gergedava

ფორმატი
Format A - 2



Вариант конструирования Вариант 1
 Расчет по ГОСТу (Метод ГОСТ 7709-98)
 Единица измерения - см.
 Шаг, диаметр - мм

0.0873 0.154 2 3.92 5.83 7.75 9.66 11.6 13.5 13.4

A B C D 1 2 3 4 5 6 7 8

3.6
Δ1
Δ2

$\begin{matrix} y \\ z \end{matrix}$
 $\begin{matrix} x \\ z \end{matrix}$

Полная полезная нагрузка А11 А12 А21 А14 А15 А31 А32 А33 А34 Среднегеометрическое значение. Максимум 15.40 в элементе 1622.

Stage:
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ბ. ქანთარია
B. Qantaria

ა. გერგედავა
A. Gergedava

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6	32

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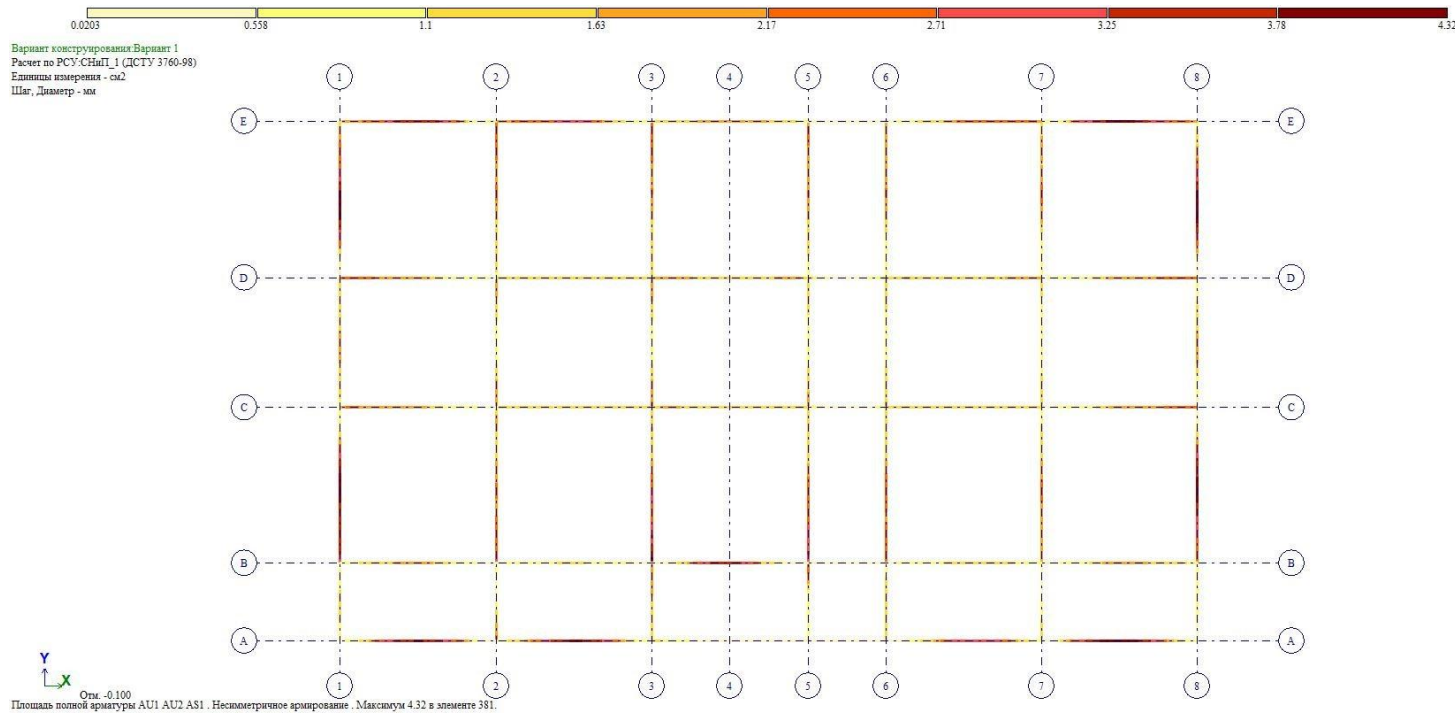
ბ. ჭანტარია
B. Qantaria

ა. გერგელავა
A. Gergedava

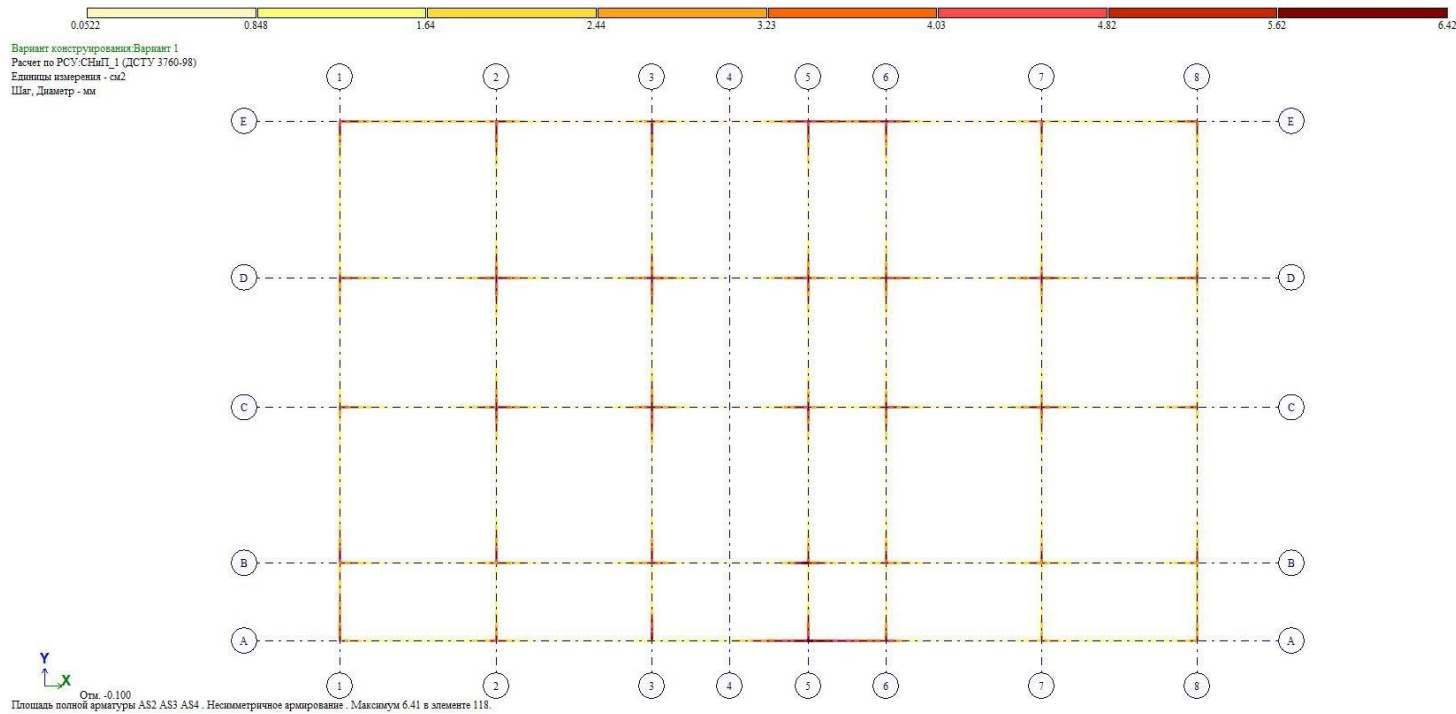
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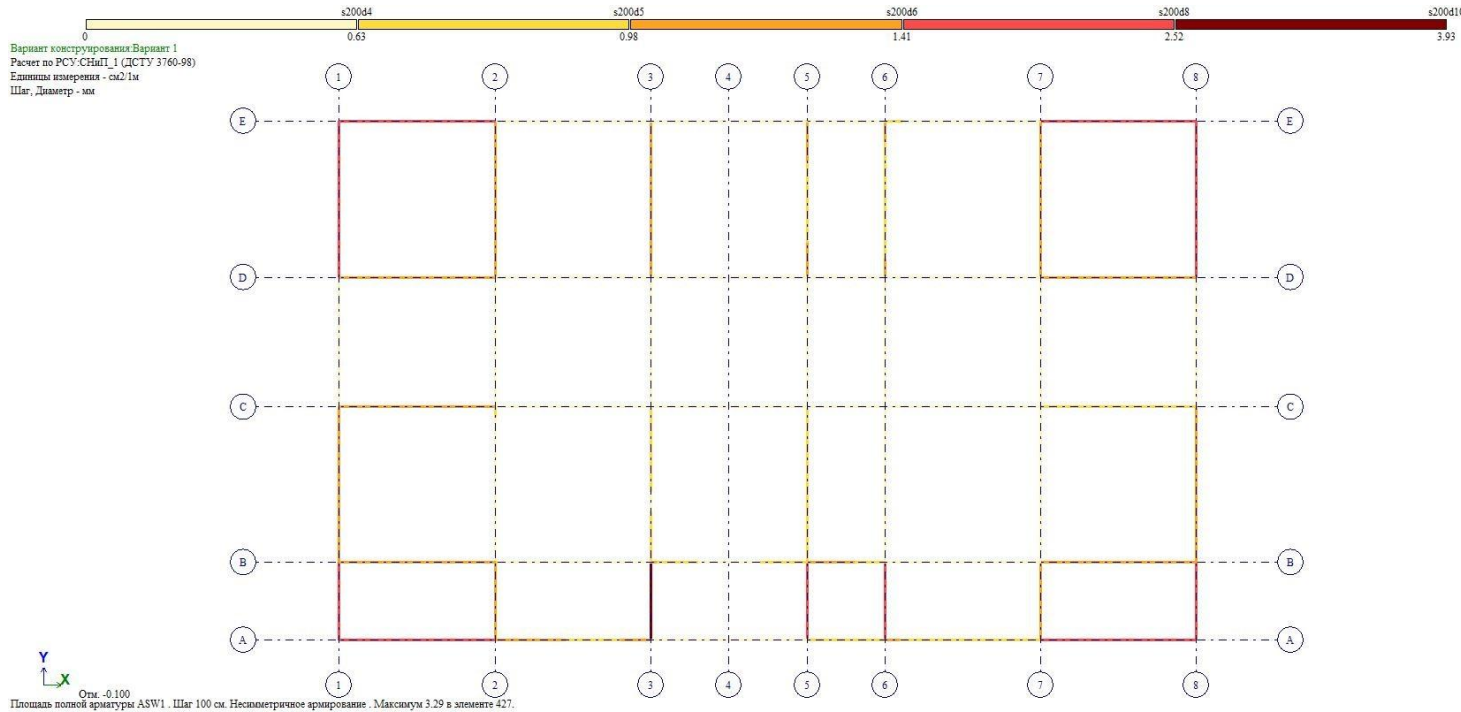
Area of reinforcement of lower zone of end-girder



Area of reinforcement of upper zone of end-girder



The area of the transverse vertical reinforcement (hanger)



The area of the transverse horizontal reinforcement (hanger)



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მისამართი:
საქართველო,
სენაკი

Project address:
Georgia,
Senaki

ეტაპი: გეგმა
პროექტი

Stage:
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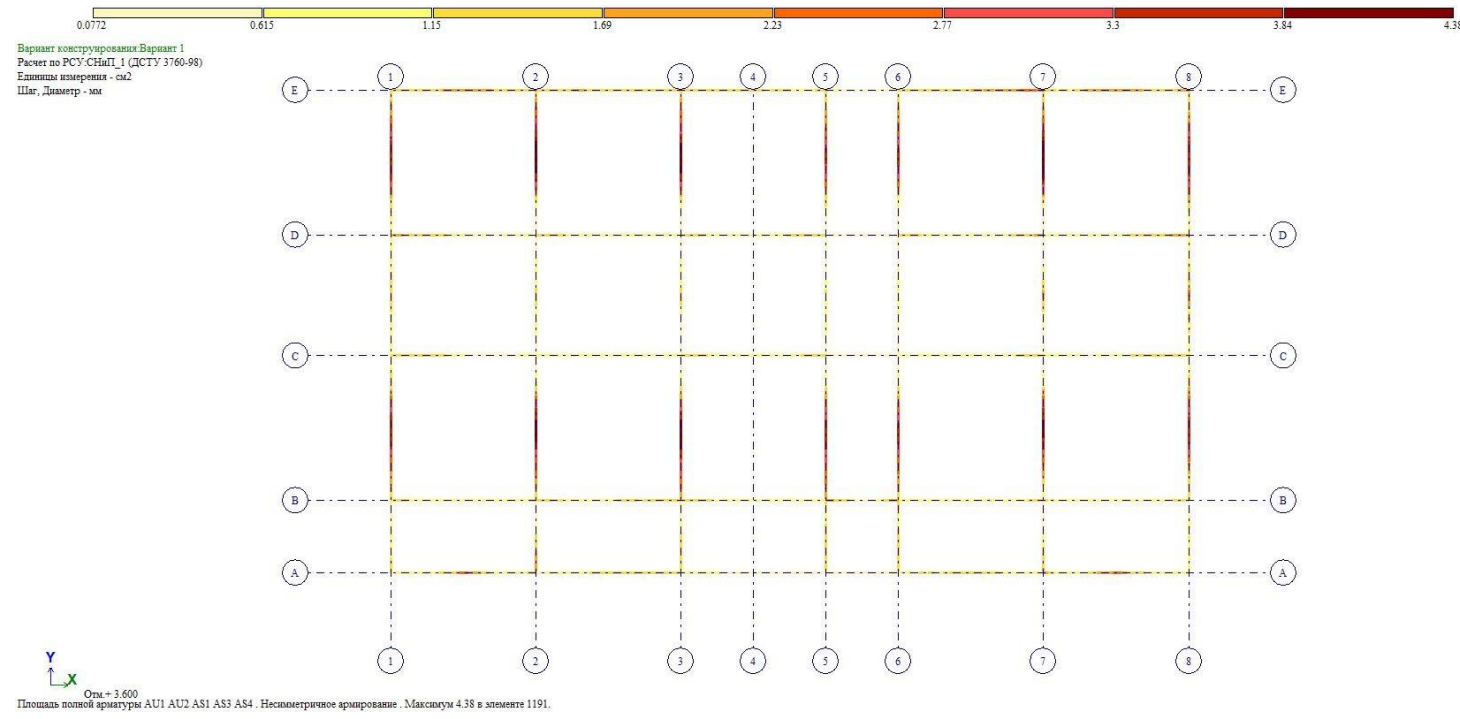
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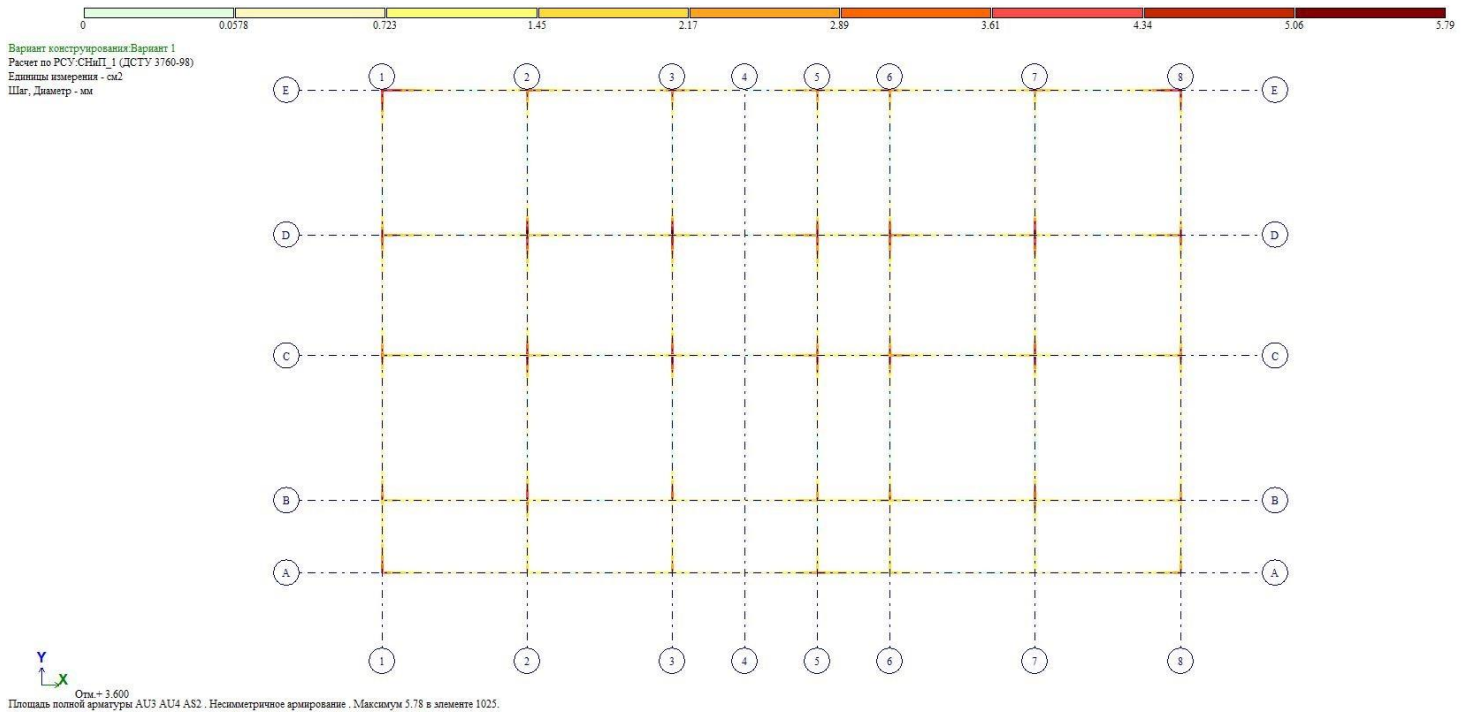
Format A - 2

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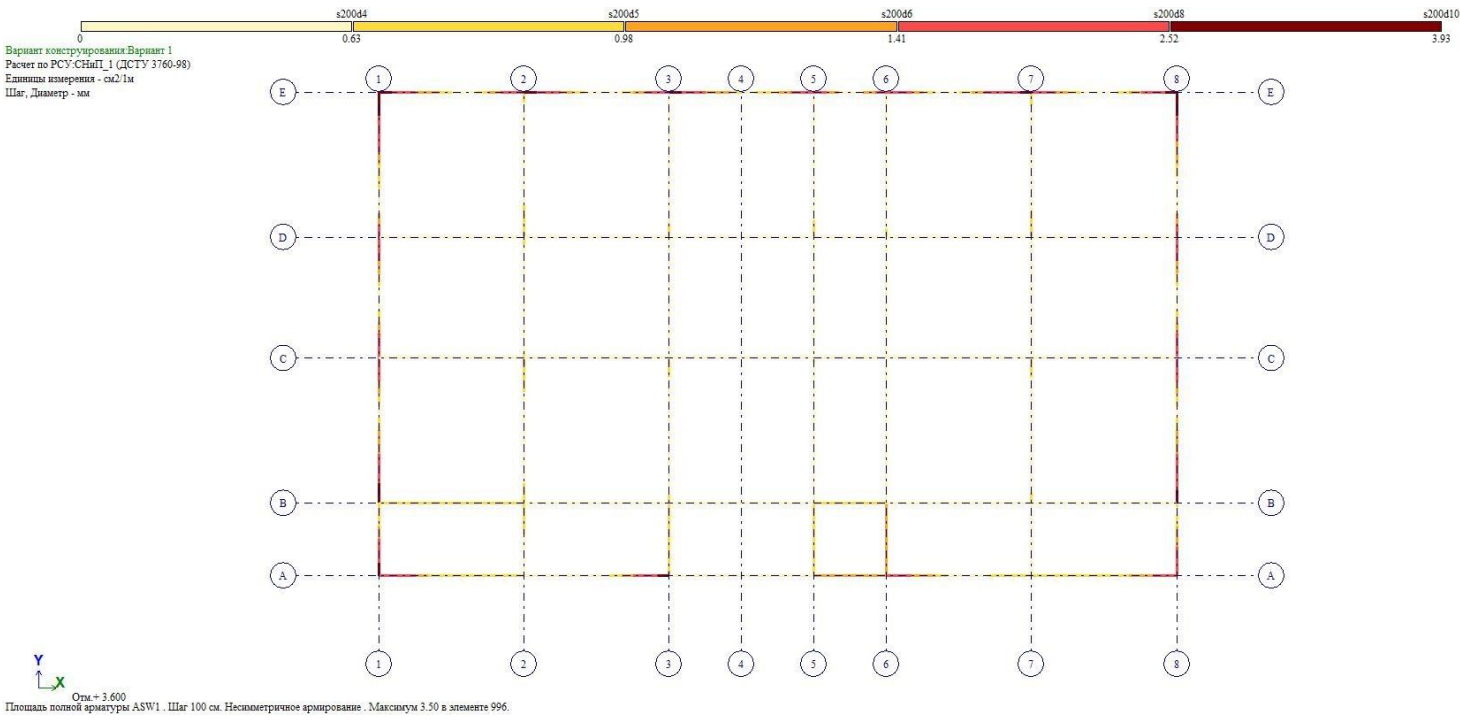
The lower reinforcement area of the girders (+3.60)



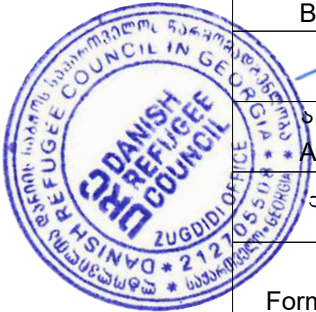
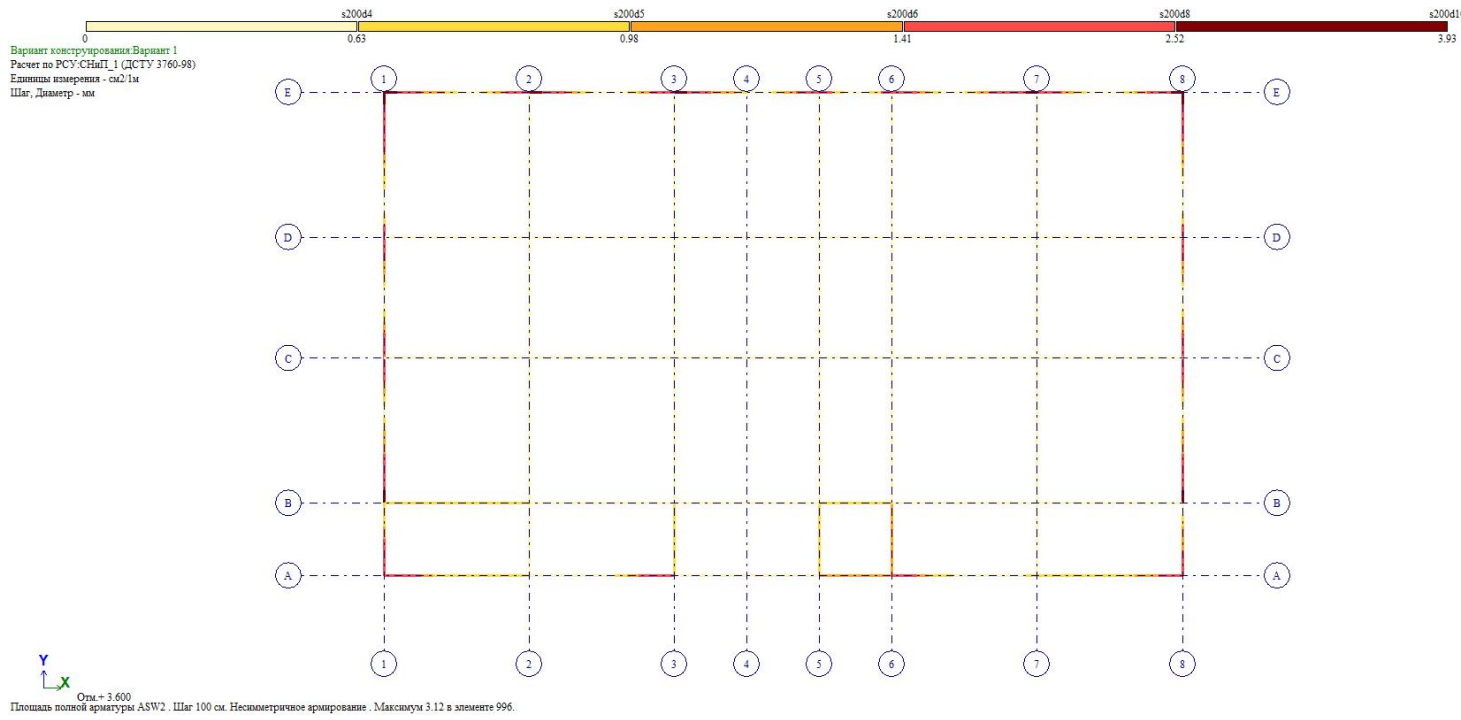
The upper reinforcement area of the girders (+3.60)



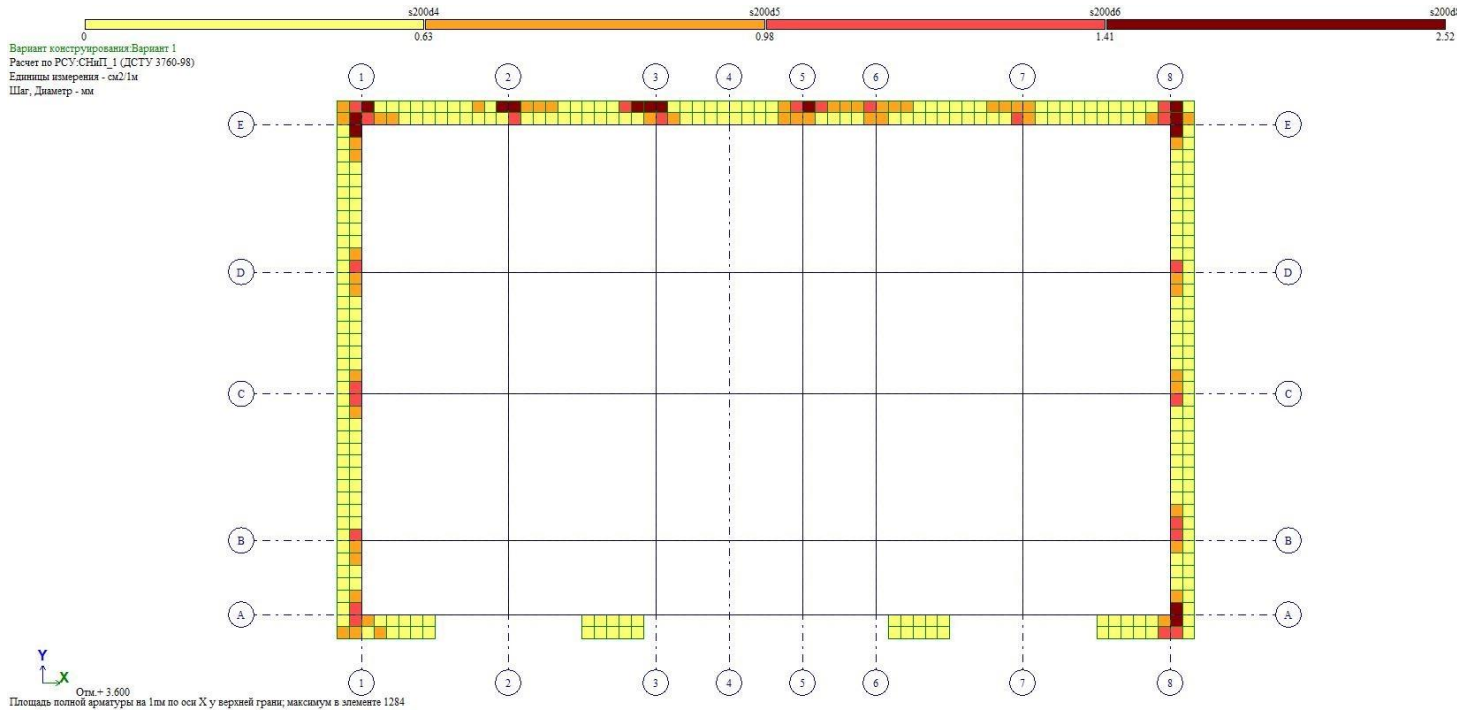
Transverse vertical reinforcement (hanger) space of girders (+3.60)



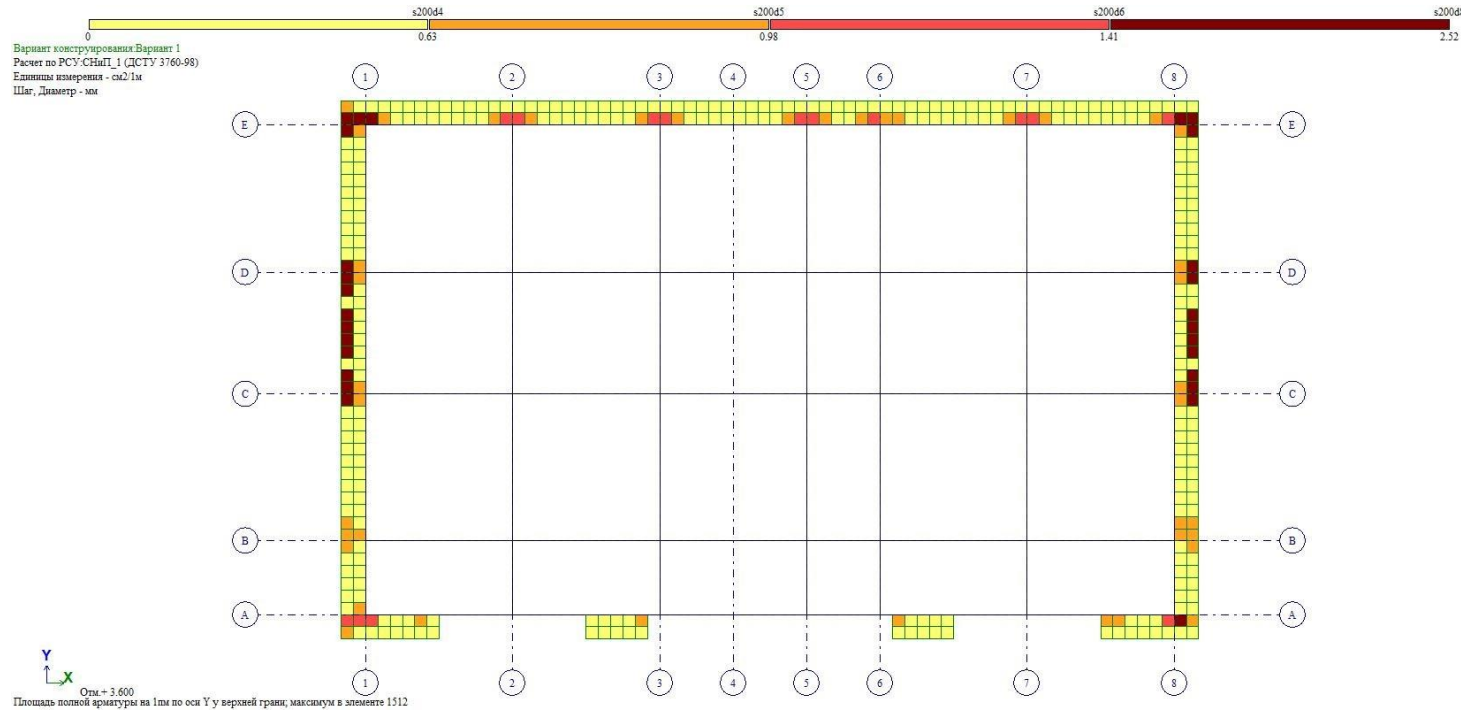
Transverse horizontal reinforcement (hanger) space of girders (+3.60)



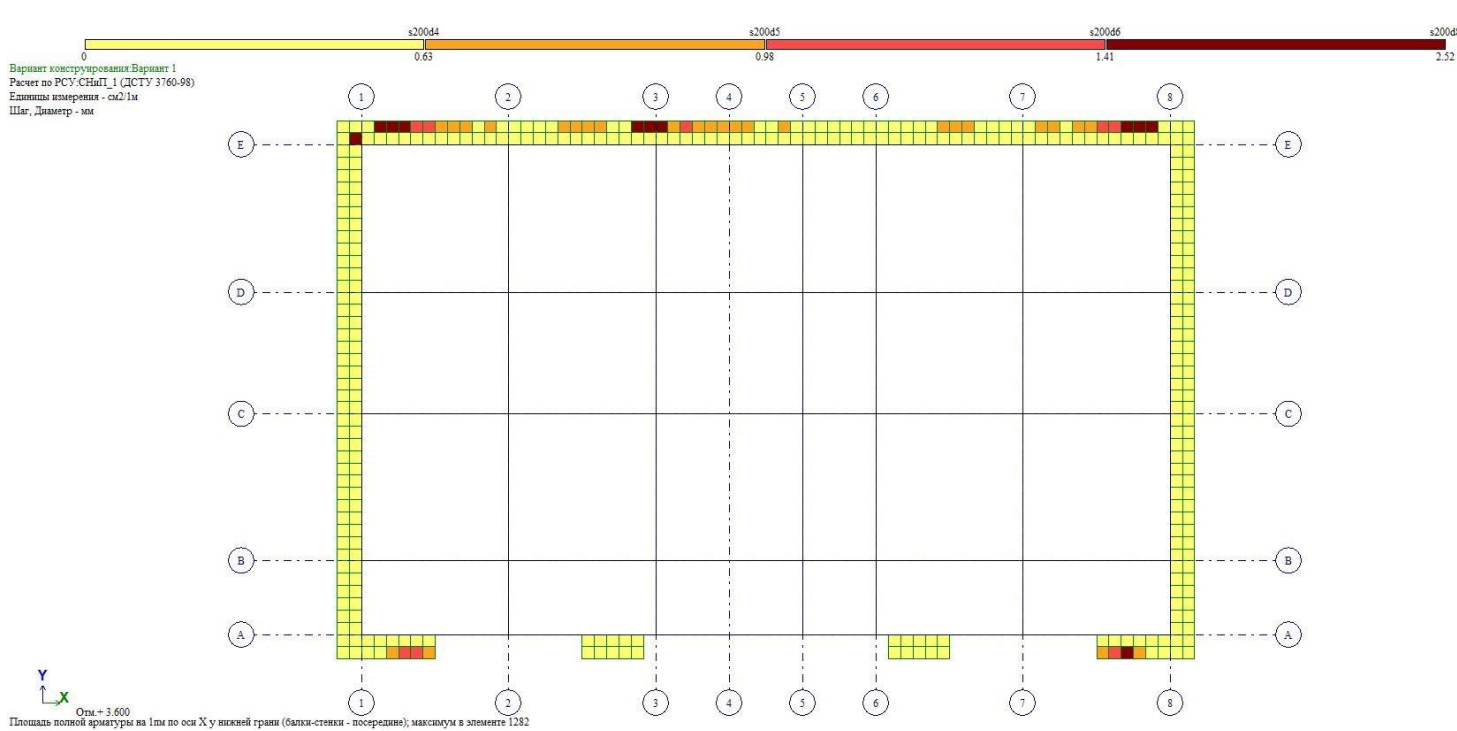
Reinforcement area of the upper zone of the cornice in the X direction



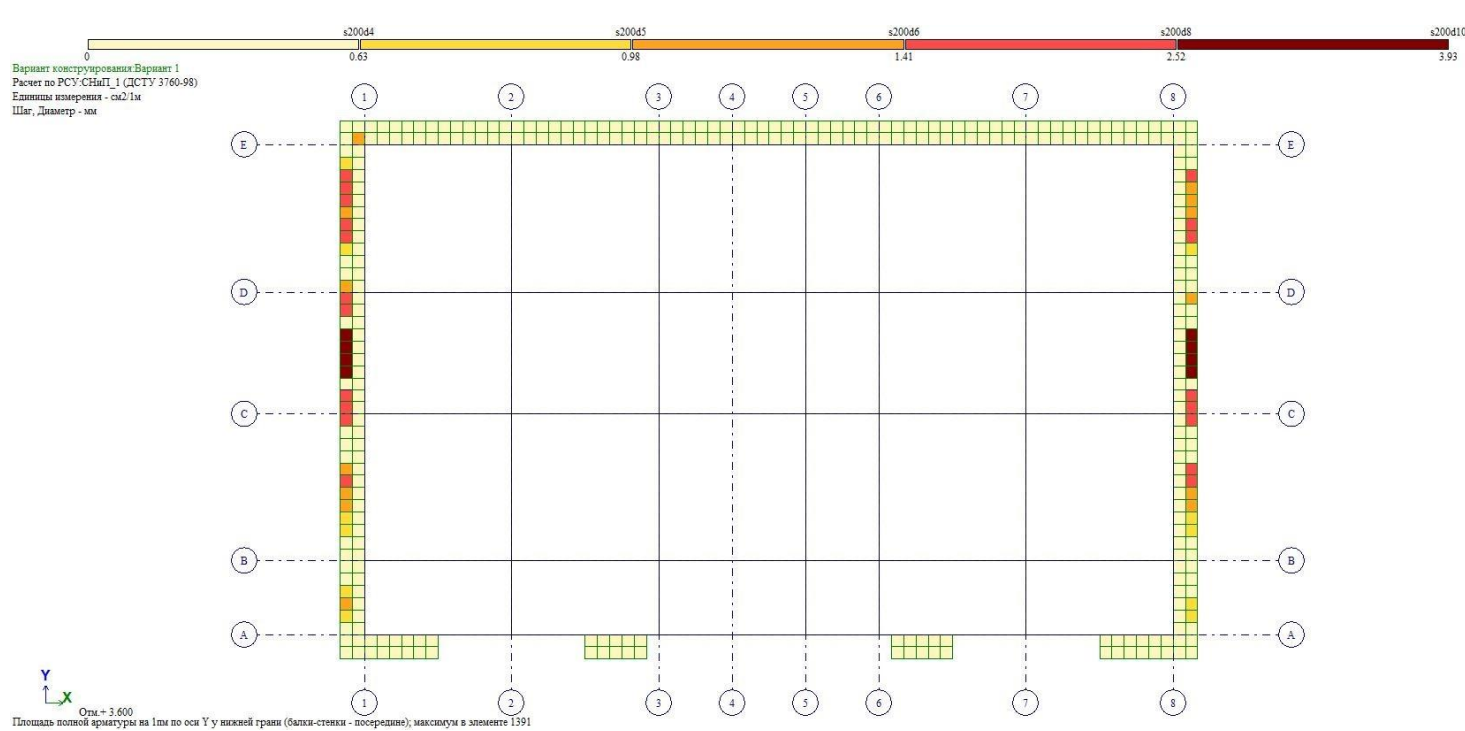
Reinforcement area of the upper zone of the cornice in the Y direction



Reinforcement area of the lower zone of the cornice in the X direction



Reinforcement area of the lower zone of the cornice in the Y direction



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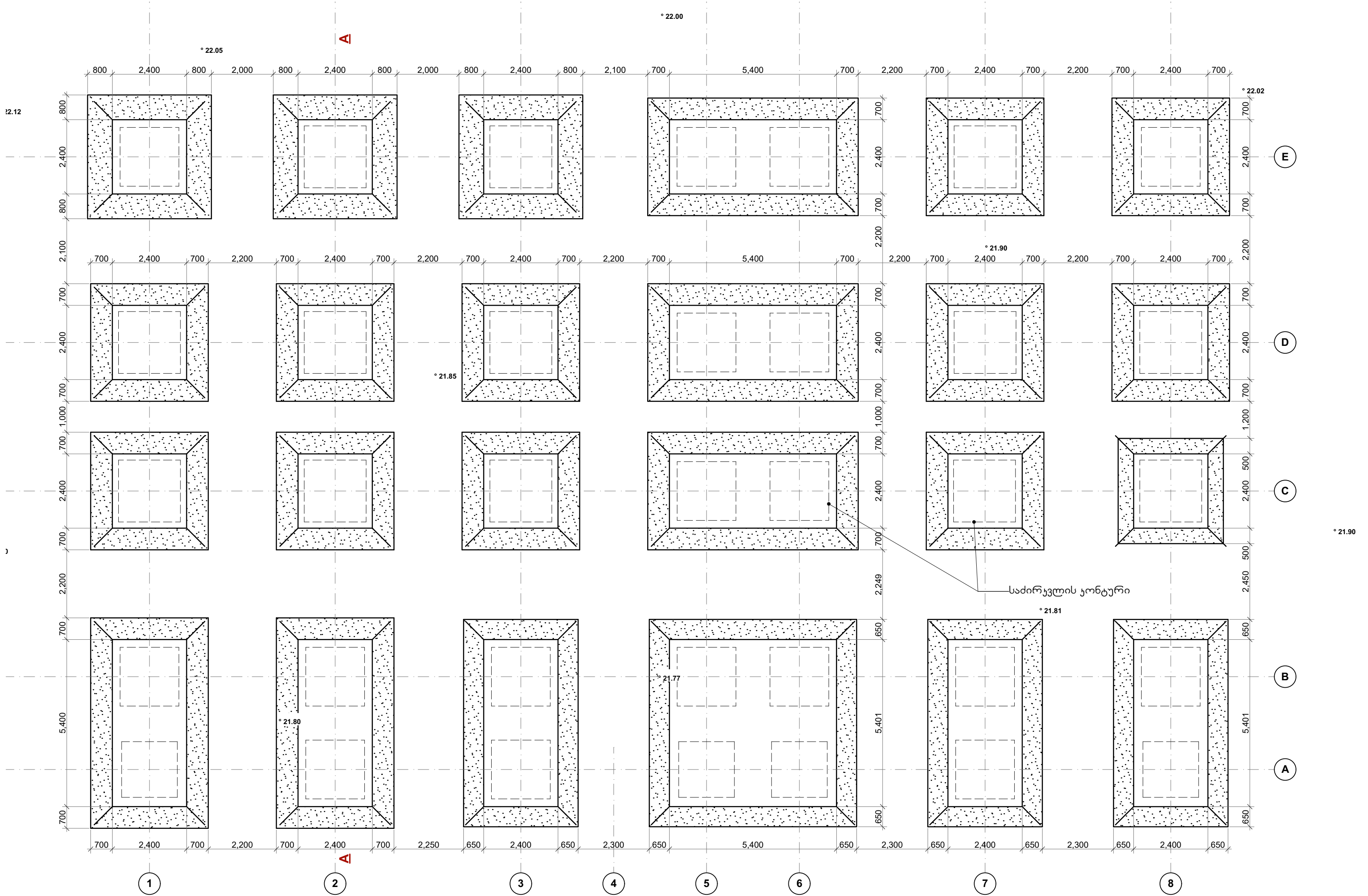
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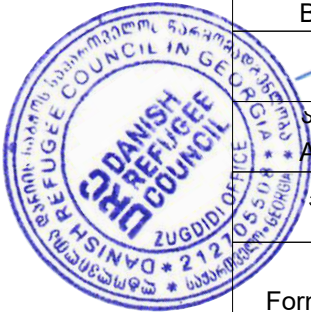
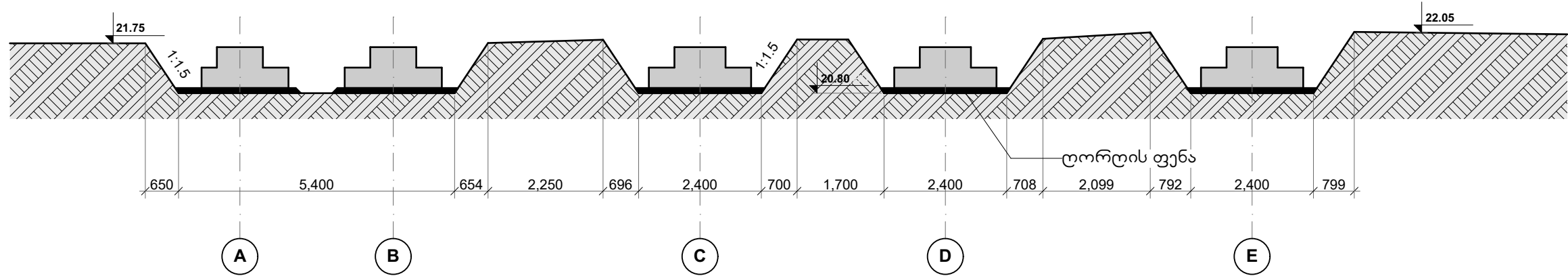
ა. გერგედავა
A. Gergedava

Format A - 2

Plan of excavation of pad foundation

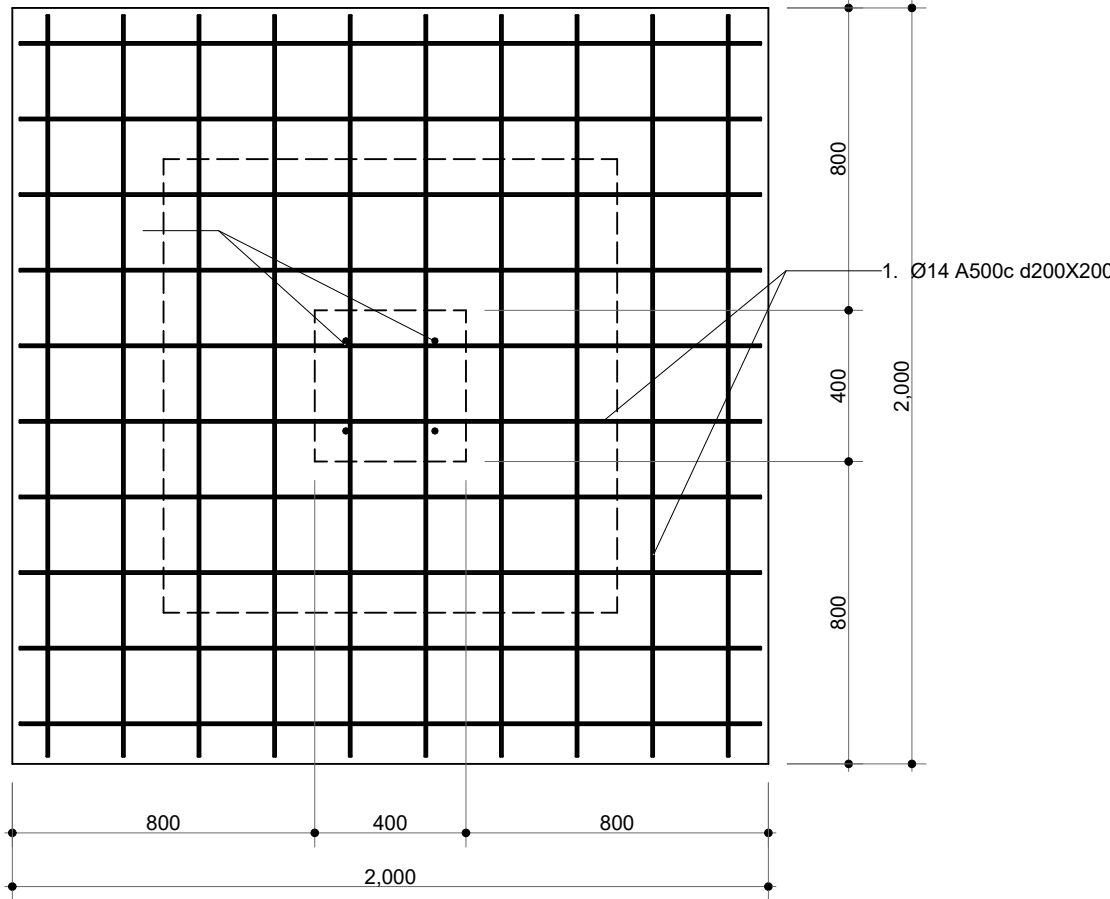


Profile A-A of Foundation Excavation



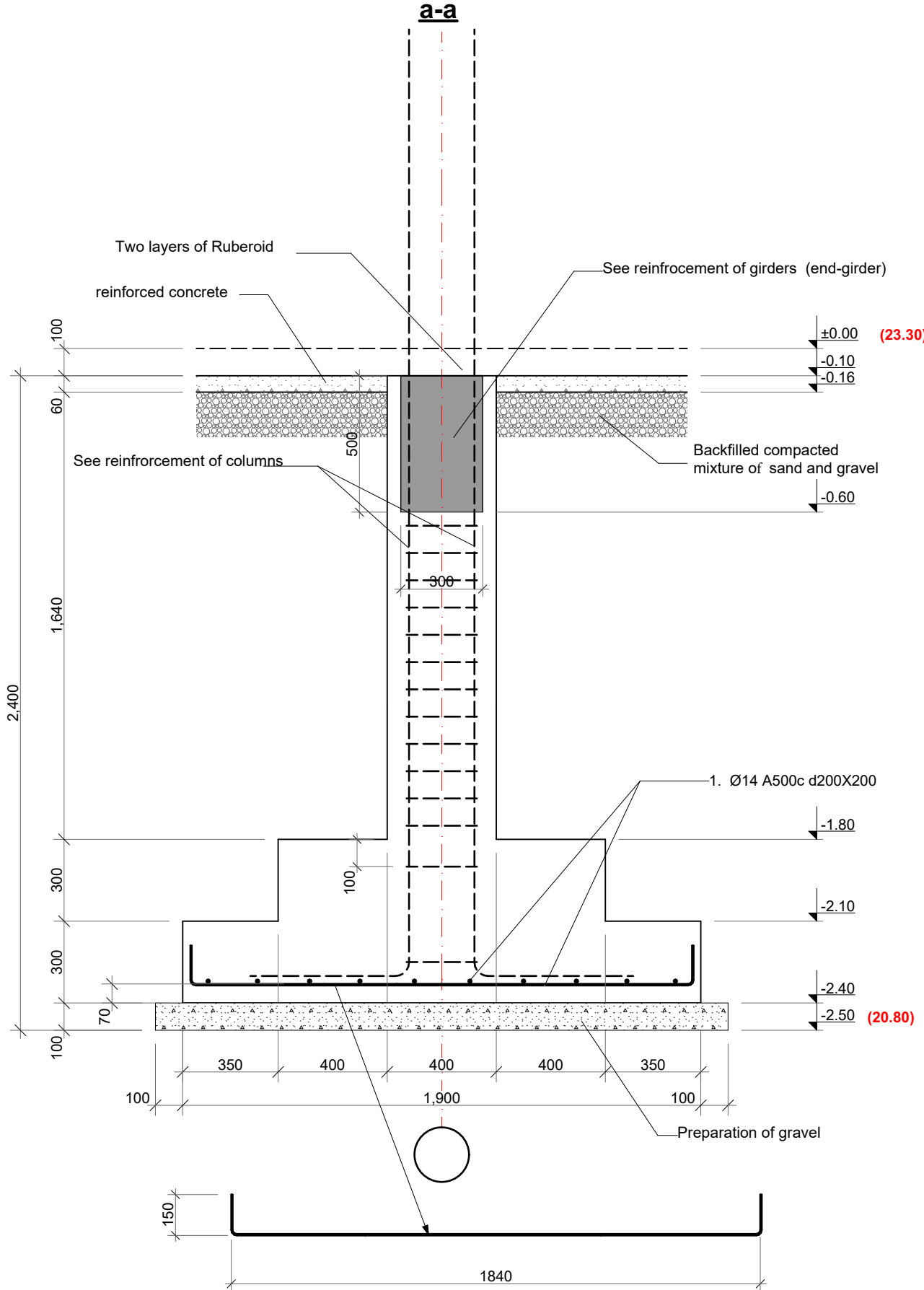
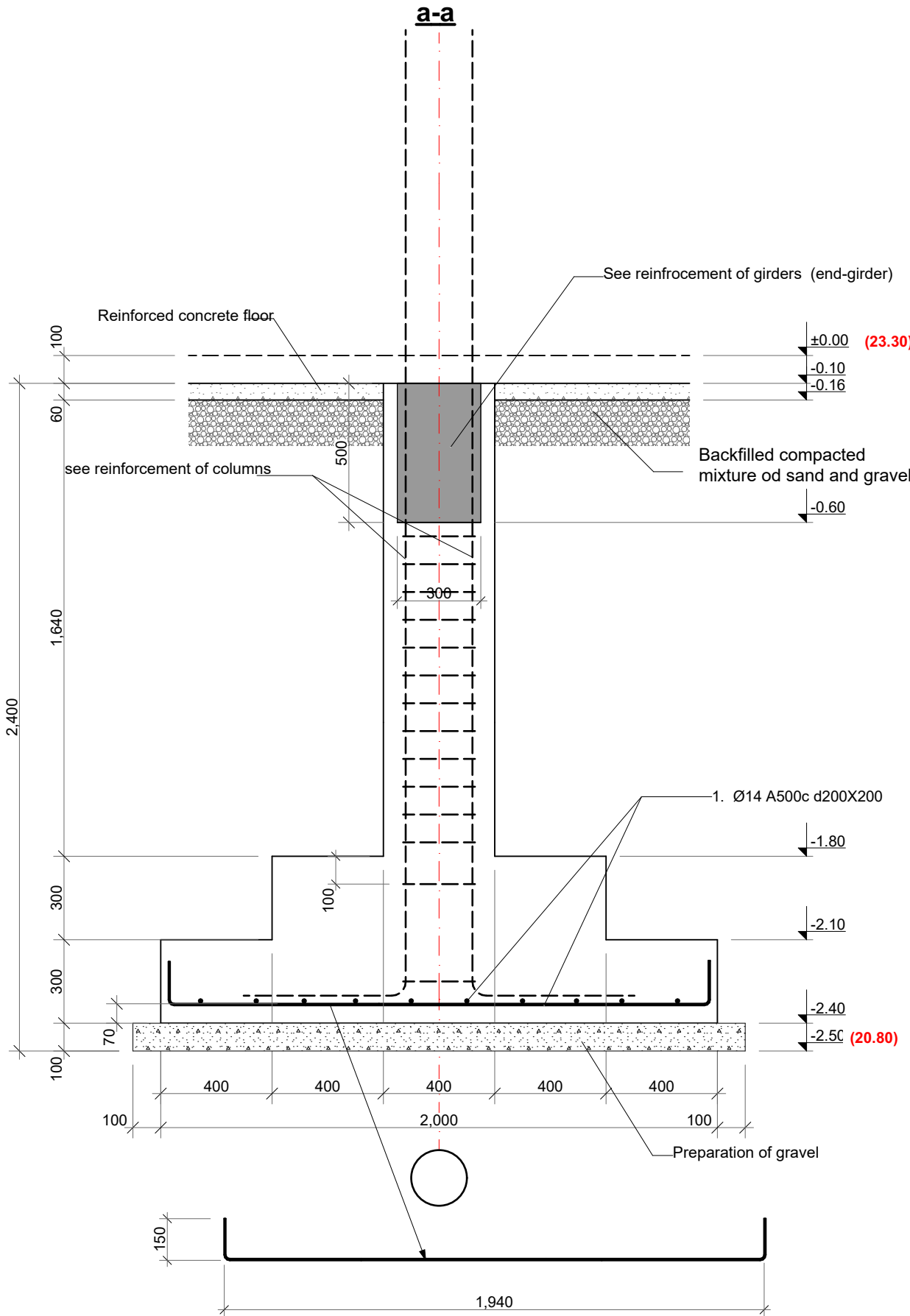
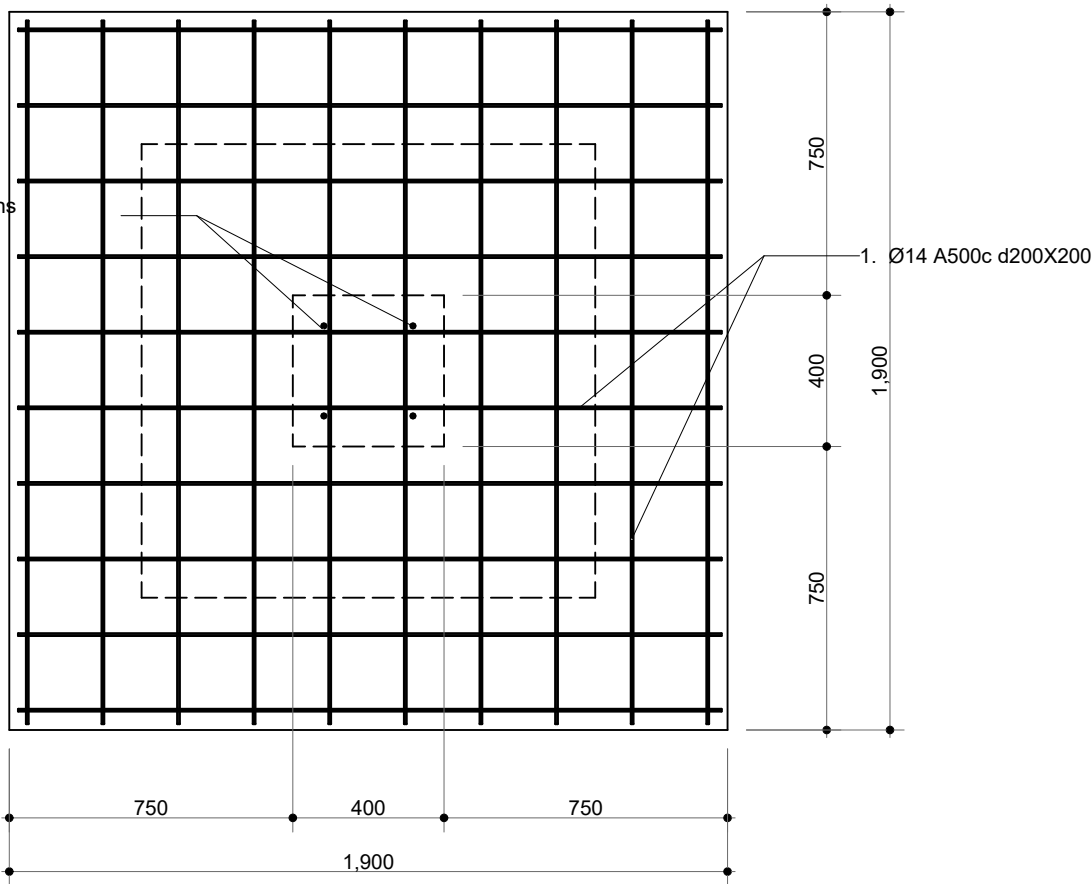
Pad foudation **ws-1**

See Reinforcement of columns



Pad foudation **ws-2**

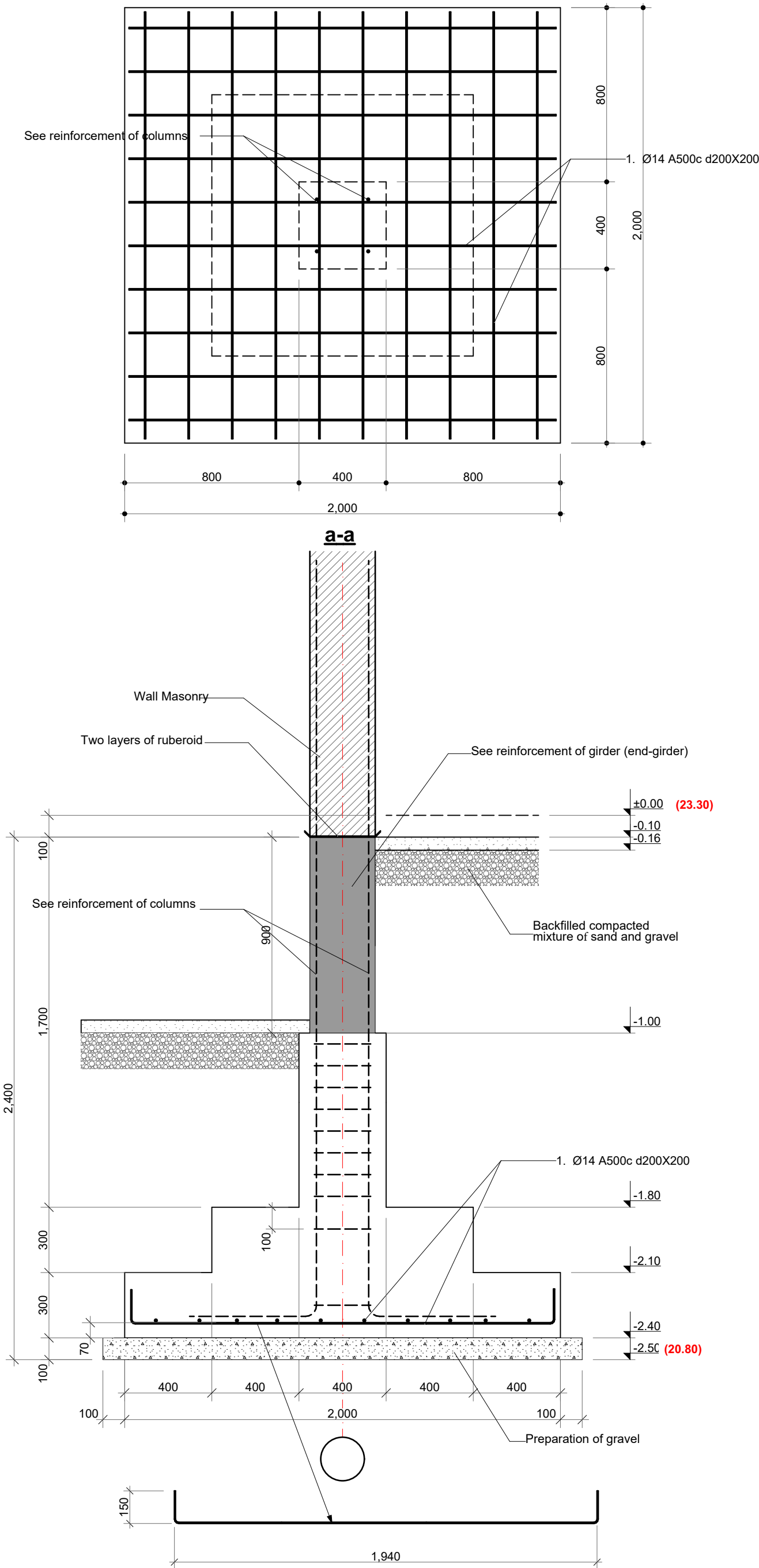
See the reinforcement of columns



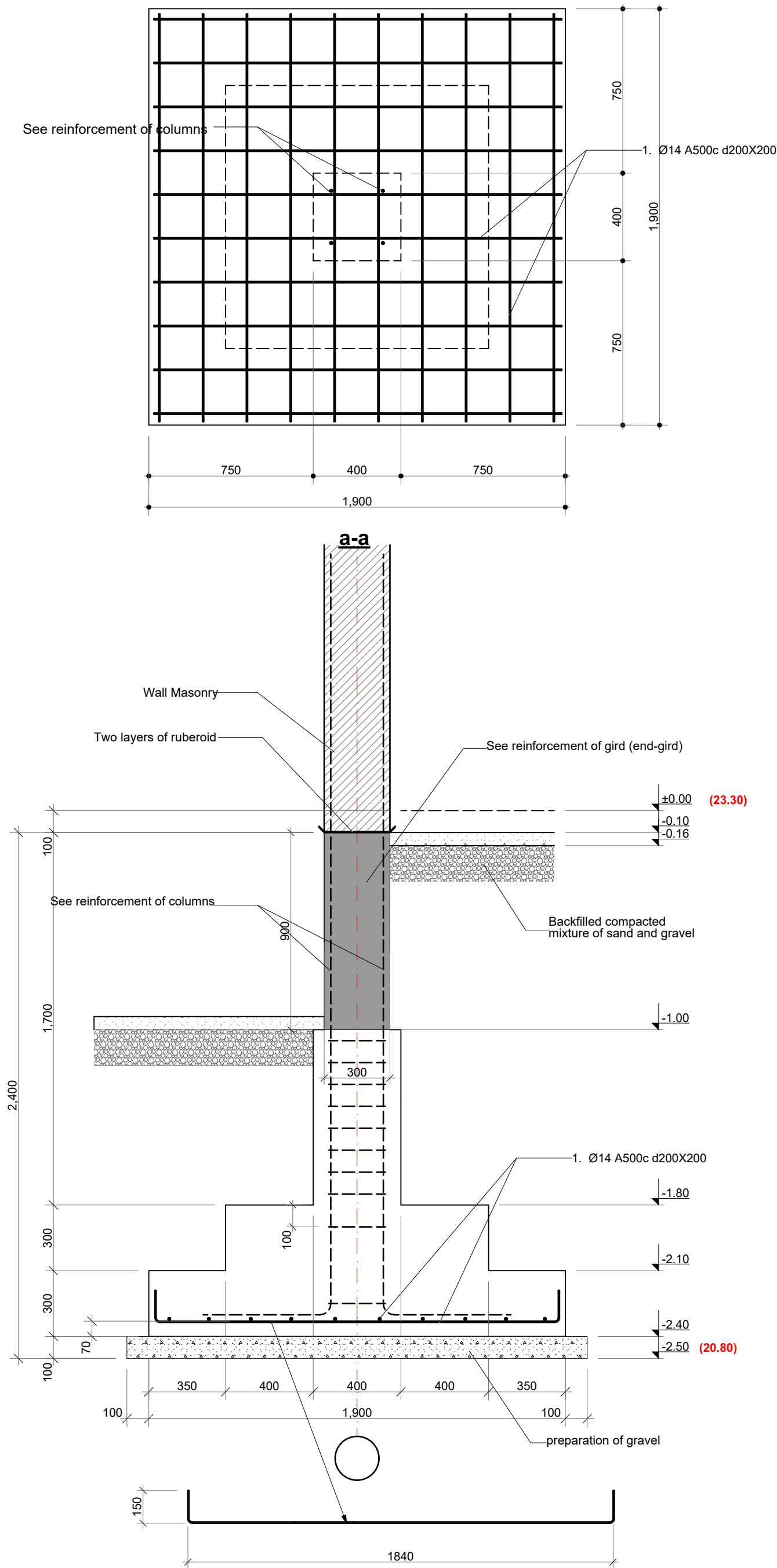
Note:
Anchor - forks in foundations should be installed in accordance
with column drawings



Pad foudation ws-1



Pad foudation ws-2



Note:

Anchor - forks of columns in foundations should be installed in accordance with column drawings



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Foundations

ბ. ქანთარია
B. Qantaria

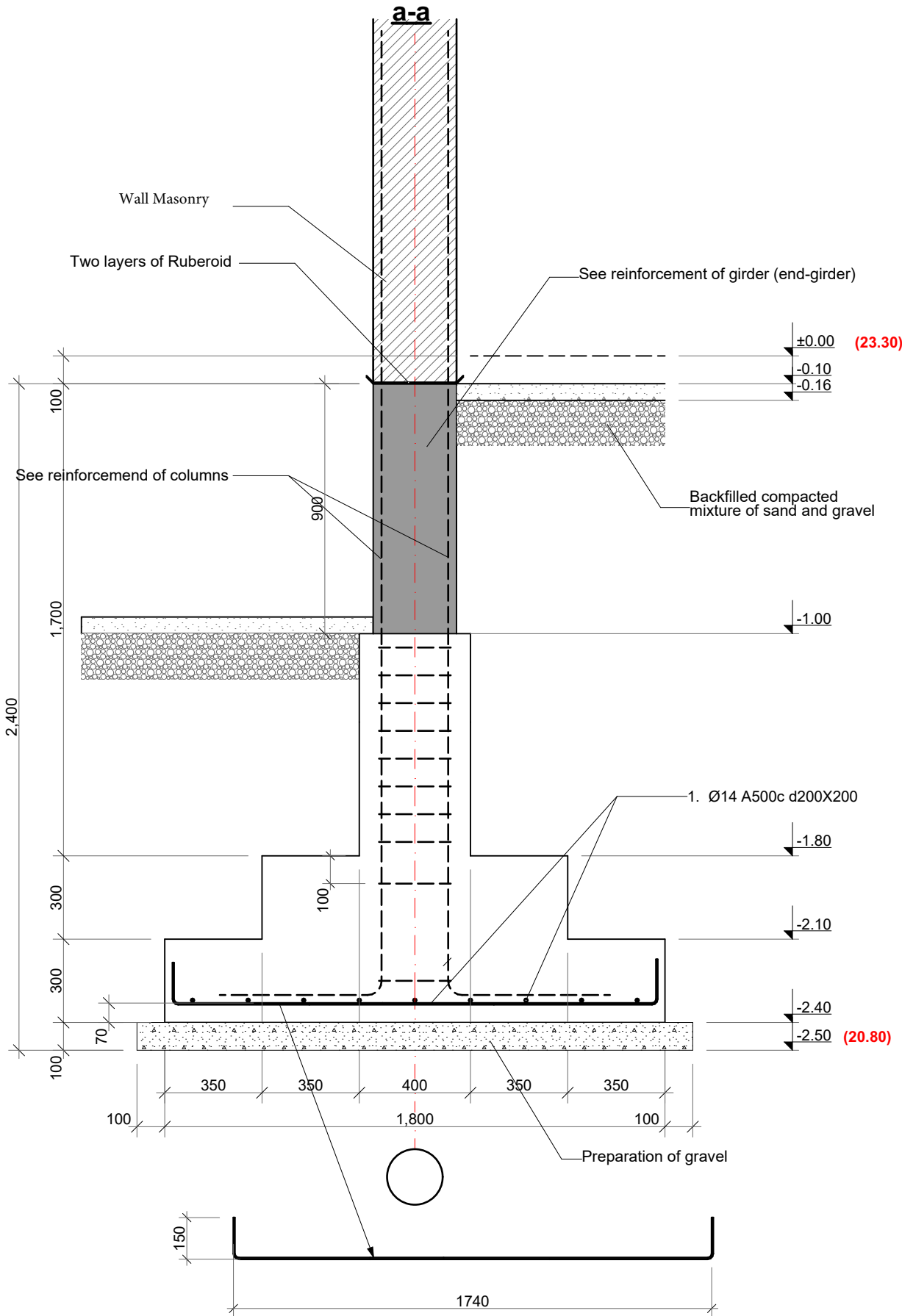
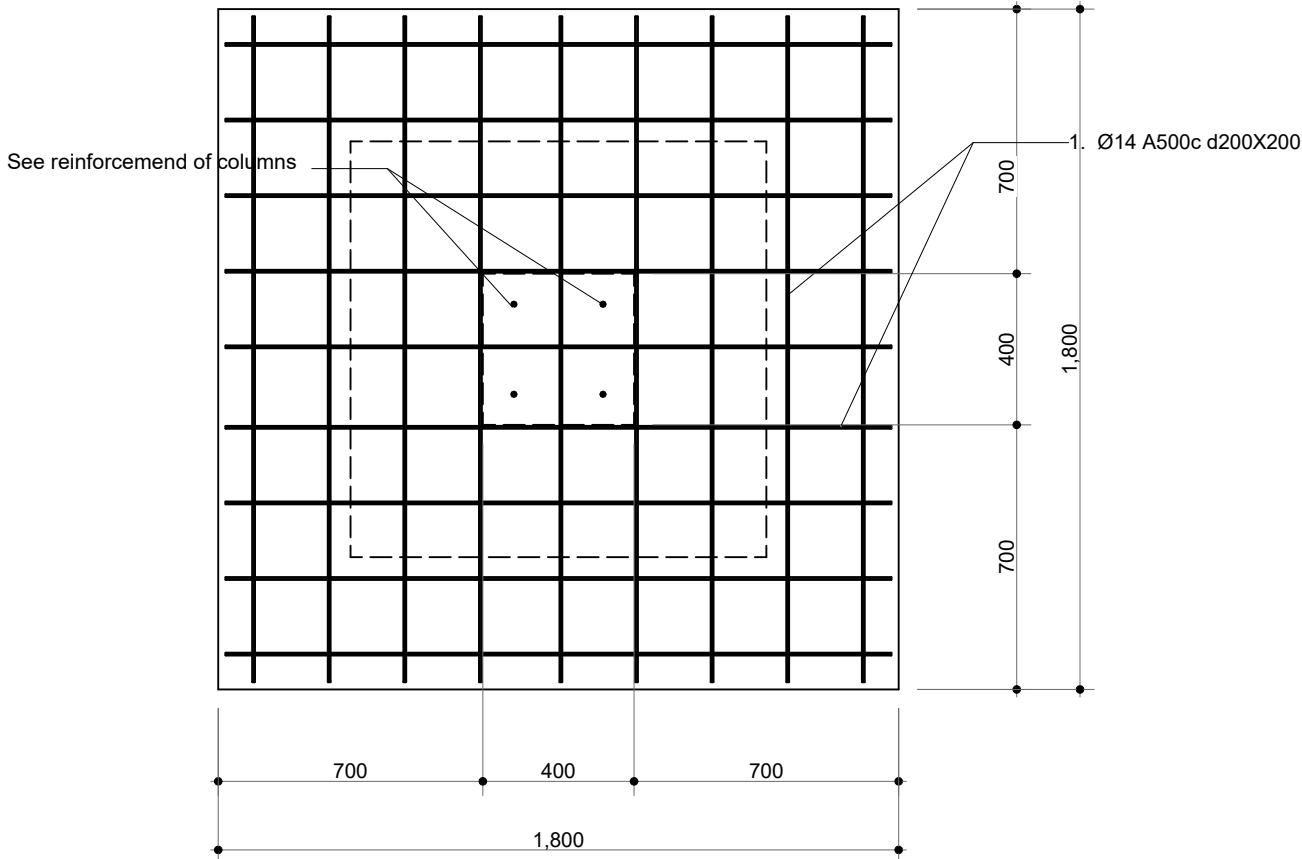
ა. გერგელავა
A. Gergedava

ფორმატი
Format A - 2

ფურცელი
Page 14

ფურცლები
Pages 32

Pad foundation ws-3'



ელემენტი Element	№	არმატურის პროფილი reinforcement profile	სიგრძე მმ Length mm	რაოდენობა Q-ty	საერთო სიგრძე მ Total length m	ბეტონი მ3 Concrete M3
წყობილობის საძირკველი Pad Foundation						
ws-1 (6 ცალი) Foundation ws-1 (6 pcs)		14 A500c	2240	120	268.80	
ws-2 (9 ცალი) Foundation ws-2 (9 pcs)		14 A500c	2140	180	385.20	
ws-1' (7 ცალი) Foundation ws-1' (7 pcs)		14 A500c	2240	140	313.60	
ws-2' (9 ცალი) Foundation ws-2' (9 pcs)		14 A500c	2140	180	385.20	
ws-3' (4 ცალი) Foundation ws-3' (4 pcs)		14 A500c	2040	72	146.88	
ბეტონი B25 m3 Concrete B25 m3						53.6

Specification of reinforcement						
არმატურის ამოკრეფა						
კვეთი Section	საერთო სიგრძე მ total length m	საერთო სიგრძე განაკვეთი მ Total length with loss	გრძელის წონა Weight of Rm	საერთო წონა Total weight, ton	საერთო წონა (კვადრატული მეტრი) Total weight per grade	
A240c	6 A240c	0.0	0.222	0.00	0.0	
	8 A240c	0.0	0.394	0.00		
A500c	6 A500c	0.0	0.222	0.00	1.9	
	8 A500c	0.0	0.394	0.00		
	10 A500c	0.0	0.616	0.00		
	12 A500c	0.0	0.887	0.00		
	14 A500c	1499.7	1574.7	1.208		
	16 A500c	0.0	1.578	0.00		
	18 A500c	0.0	1.997	0.00		
	20 A500c	0.0	2.465	0.00		
	22 A500c	0.0	2.983	0.00		
	25 A500c	0.0	3.851	0.00		
სულ Total				1.90		

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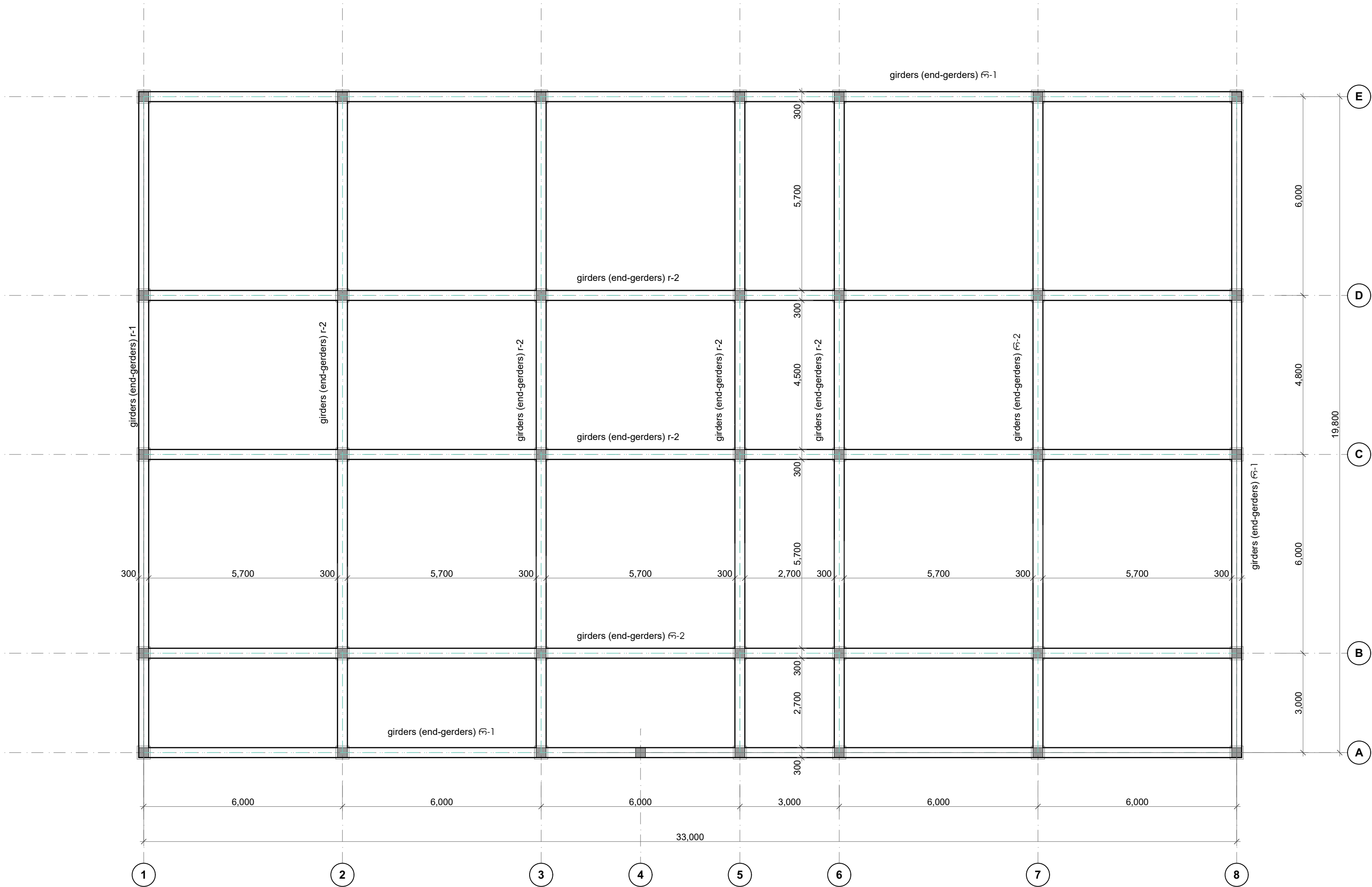
Plan of monolithic
girders (end-girders)
at -0.100 level

ბ. ჯანთარია
B. Qantaria

ა. გერგედავა
A. Gergedava

Format A - 2

Plan of monolithic girders (end-girders) at -0.100 level



Technical drawing of a reinforced concrete beam cross-section, showing the reinforcement layout. The drawing includes the following dimensions and labels:

- Overall Length:** L
- Column Line Center:** Indicated at both ends of the beam.
- Upper Longitudinal Main Reinforcement:** Labeled on the top of the beam.
- Lower Longitudinal Main Reinforcement:** Labeled on the bottom of the beam.
- Dimensions:**
 - $L/2$: Distance from the left column line center to the center of the first stirrup.
 - $L/4$: Distance from the left column line center to the center of the first stirrup.
 - $L/1$: Distance from the left column line center to the center of the first stirrup.
 - $L/2$: Distance between the centers of the first and second stirrups.
 - $L_n/2$: Distance from the center of the first stirrup to the center of the second stirrup.
 - L_n : Distance between the centers of the second and third stirrups.
 - $L/2$: Distance between the centers of the third and fourth stirrups.
 - $L_n/2$: Distance from the center of the fourth stirrup to the center of the fifth stirrup.
 - L_n : Distance between the centers of the fifth and sixth stirrups.
 - $L/2$: Distance between the centers of the sixth and seventh stirrups.
 - $L_n/2$: Distance from the center of the seventh stirrup to the center of the eighth stirrup.
 - L_n : Distance between the centers of the eighth and ninth stirrups.
 - $L/2$: Distance between the centers of the ninth and tenth stirrups.
 - $L_n/2$: Distance from the center of the tenth stirrup to the center of the eleventh stirrup.
 - L_n : Distance between the centers of the eleventh and twelfth stirrups.
 - $L/2$: Distance between the centers of the twelfth and thirteenth stirrups.
 - $L_n/2$: Distance from the center of the thirteenth stirrup to the center of the fourteenth stirrup.
 - L_n : Distance between the centers of the fourteenth and fifteenth stirrups.
 - $L/2$: Distance between the centers of the fifteenth and sixteenth stirrups.
 - $L_n/2$: Distance from the center of the sixteenth stirrup to the center of the seventeenth stirrup.
 - L_n : Distance between the centers of the seventeenth and eighteenth stirrups.
 - $L/2$: Distance between the centers of the eighteenth and nineteenth stirrups.
 - $L_n/2$: Distance from the center of the nineteenth stirrup to the center of the twentieth stirrup.
 - L_n : Distance between the centers of the twentieth and twenty-first stirrups.
 - $L/2$: Distance between the centers of the twenty-first and twenty-second stirrups.
 - $L_n/2$: Distance from the center of the twenty-second stirrup to the center of the twenty-third stirrup.
 - L_n : Distance between the centers of the twenty-third and twenty-fourth stirrups.
 - $L/2$: Distance between the centers of the twenty-fourth and twenty-fifth stirrups.
 - $L_n/2$: Distance from the center of the twenty-fifth stirrup to the center of the twenty-sixth stirrup.
 - L_n : Distance between the centers of the twenty-sixth and twenty-seventh stirrups.
 - $L/2$: Distance between the centers of the twenty-seventh and twenty-eighth stirrups.
 - $L_n/2$: Distance from the center of the twenty-eighth stirrup to the center of the twenty-ninth stirrup.
 - L_n : Distance between the centers of the twenty-ninth and thirtieth stirrups.
 - $L/2$: Distance between the centers of the thirtieth and thirty-first stirrups.
 - $L_n/2$: Distance from the center of the thirty-first stirrup to the center of the thirty-second stirrup.
 - L_n : Distance between the centers of the thirty-second and thirty-third stirrups.
 - $L/2$: Distance between the centers of the thirty-third and thirty-fourth stirrups.
 - $L_n/2$: Distance from the center of the thirty-fourth stirrup to the center of the thirty-fifth stirrup.
 - L_n : Distance between the centers of the thirty-fifth and thirty-sixth stirrups.
 - $L/2$: Distance between the centers of the thirty-sixth and thirty-seventh stirrups.
 - $L_n/2$: Distance from the center of the thirty-seventh stirrup to the center of the thirty-eighth stirrup.
 - L_n : Distance between the centers of the thirty-eighth and thirty-ninth stirrups.
 - $L/2$: Distance between the centers of the thirty-ninth and fortieth stirrups.
 - $L_n/2$: Distance from the center of the fortieth stirrup to the center of the forty-first stirrup.
 - L_n : Distance between the centers of the forty-first and forty-second stirrups.
 - $L/2$: Distance between the centers of the forty-second and forty-third stirrups.
 - $L_n/2$: Distance from the center of the forty-third stirrup to the center of the forty-fourth stirrup.
 - L_n : Distance between the centers of the forty-fourth and forty-fifth stirrups.
 - $L/2$: Distance between the centers of the forty-fifth and forty-sixth stirrups.
 - $L_n/2$: Distance from the center of the forty-sixth stirrup to the center of the forty-seventh stirrup.
 - L_n : Distance between the centers of the forty-seventh and forty-eighth stirrups.
 - $L/2$: Distance between the centers of the forty-eighth and forty-ninth stirrups.
 - $L_n/2$: Distance from the center of the forty-ninth stirrup to the center of the fiftieth stirrup.
 - L_n : Distance between the centers of the fiftieth and fifty-first stirrups.
 - $L/2$: Distance between the centers of the fifty-first and fifty-second stirrups.
 - $L_n/2$: Distance from the center of the fifty-second stirrup to the center of the fifty-third stirrup.
 - L_n : Distance between the centers of the fifty-third and fifty-fourth stirrups.
 - $L/2$: Distance between the centers of the fifty-fourth and fifty-fifth stirrups.
 - $L_n/2$: Distance from the center of the fifty-fifth stirrup to the center of the fifty-sixth stirrup.
 - L_n : Distance between the centers of the fifty-sixth and fifty-seventh stirrups.
 - $L/2$: Distance between the centers of the fifty-seventh and fifty-eighth stirrups.
 - $L_n/2$: Distance from the center of the fifty-eighth stirrup to the center of the fifty-ninth stirrup.
 - L_n : Distance between the centers of the fifty-ninth and sixty stirrups.
 - $L/2$: Distance between the centers of the sixty and sixty-first stirrups.
 - $L_n/2$: Distance from the center of the sixty-first stirrup to the center of the sixty-second stirrup.
 - L_n : Distance between the centers of the sixty-second and sixty-third stirrups.
 - $L/2$: Distance between the centers of the sixty-third and sixty-fourth stirrups.
 - $L_n/2$: Distance from the center of the sixty-fourth stirrup to the center of the sixty-fifth stirrup.
 - L_n : Distance between the centers of the sixty-fifth and sixty-sixth stirrups.
 - $L/2$: Distance between the centers of the sixty-sixth and sixty-seventh stirrups.
 - $L_n/2$: Distance from the center of the sixty-seventh stirrup to the center of the sixty-eighth stirrup.
 - L_n : Distance between the centers of the sixty-eighth and sixty-ninth stirrups.
 - $L/2$: Distance between the centers of the sixty-ninth and seventieth stirrups.
 - $L_n/2$: Distance from the center of the seventieth stirrup to the center of the seventy-first stirrup.
 - L_n : Distance between the centers of the seventy-first and seventy-second stirrups.
 - $L/2$: Distance between the centers of the seventy-second and seventy-third stirrups.
 - $L_n/2$: Distance from the center of the seventy-third stirrup to the center of the seventy-fourth stirrup.
 - L_n : Distance between the centers of the seventy-fourth and seventy-fifth stirrups.
 - $L/2$: Distance between the centers of the seventy-fifth and seventy-sixth stirrups.
 - $L_n/2$: Distance from the center of the seventy-sixth stirrup to the center of the seventy-seventh stirrup.
 - L_n : Distance between the centers of the seventy-seventh and seventy-eighth stirrups.
 - $L/2$: Distance between the centers of the seventy-eighth and seventy-ninth stirrups.
 - $L_n/2$: Distance from the center of the seventy-ninth stirrup to the center of the eightieth stirrup.
 - L_n : Distance between the centers of the eightieth and eighty-first stirrups.
 - $L/2$: Distance between the centers of the eighty-first and eighty-second stirrups.
 - $L_n/2$: Distance from the center of the eighty-second stirrup to the center of the eighty-third stirrup.
 - L_n : Distance between the centers of the eighty-third and eighty-fourth stirrups.
 - $L/2$: Distance between the centers of the eighty-fourth and eighty-fifth stirrups.
 - $L_n/2$: Distance from the center of the eighty-fifth stirrup to the center of the eighty-sixth stirrup.
 - L_n : Distance between the centers of the eighty-sixth and eighty-seventh stirrups.
 - $L/2$: Distance between the centers of the eighty-seventh and eighty-eighth stirrups.
 - $L_n/2$: Distance from the center of the eighty-eighth stirrup to the center of the eighty-ninth stirrup.
 - L_n : Distance between the centers of the eighty-ninth and ninety stirrups.
 - $L/2$: Distance between the centers of the ninety and ninety-first stirrups.
 - $L_n/2$: Distance from the center of the ninety-first stirrup to the center of the ninety-second stirrup.
 - L_n : Distance between the centers of the ninety-second and ninety-third stirrups.
 - $L/2$: Distance between the centers of the ninety-third and ninety-fourth stirrups.
 - $L_n/2$: Distance from the center of the ninety-fourth stirrup to the center of the ninety-fifth stirrup.
 - L_n : Distance between the centers of the ninety-fifth and ninety-sixth stirrups.
 - $L/2$: Distance between the centers of the ninety-sixth and ninety-seventh stirrups.
 - $L_n/2$: Distance from the center of the ninety-seventh stirrup to the center of the ninety-eighth stirrup.
 - L_n : Distance between the centers of the ninety-eighth and ninety-ninth stirrups.
 - $L/2$: Distance between the centers of the ninety-ninth and one hundred stirrups.
 - $L_n/2$: Distance from the center of the one hundred stirrup to the center of the one hundred and first stirrup.
 - L_n : Distance between the centers of the one hundred and first and one hundred and second stirrups.
 - $L/2$: Distance between the centers of the one hundred and second and one hundred and third stirrups.
 - $L_n/2$: Distance from the center of the one hundred and third stirrup to the center of the one hundred and fourth stirrup.
 - L_n : Distance between the centers of the one hundred and fourth and one hundred and fifth stirrups.
 - $L/2$: Distance between the centers of the one hundred and fifth and one hundred and sixth stirrups.
 - $L_n/2$: Distance from the center of the one hundred and sixth stirrup to the center of the one hundred and seventh stirrup.
 - L_n : Distance between the centers of the one hundred and seventh and one hundred and eighth stirrups.
 - $L/2$: Distance between the centers of the one hundred and eighth and one hundred and ninth stirrups.
 - $L_n/2$: Distance from the center of the one hundred and ninth stirrup to the center of the one hundred and tenth stirrup.
 - L_n : Distance between the centers of the one hundred and tenth and one hundred and eleventh stirrups.
 - $L/2$: Distance between the centers of the one hundred and eleventh and one hundred and twelfth stirrups.
 - $L_n/2$: Distance from the center of the one hundred and twelfth stirrup to the center of the one hundred and thirteenth stirrup.
 - L_n : Distance between the centers of the one hundred and thirteenth and one hundred and fourteenth stirrups.
 - $L/2$: Distance between the centers of the one hundred and fourteenth and one hundred and fifteenth stirrups.
 - $L_n/2$: Distance from the center of the one hundred and fifteenth stirrup to the center of the one hundred and sixteenth stirrup.
 - L_n : Distance between the centers of the one hundred and sixteenth and one hundred and seventeenth stirrups.
 - $L/2$: Distance between the centers of the one hundred and seventeenth and one hundred and eighteenth stirrups.
 - $L_n/2$: Distance from the center of the one hundred and eighteenth stirrup to the center of the one hundred and nineteenth stirrup.
 - L_n : Distance between the centers of the one hundred and nineteenth and one hundred and twentieth stirrups.
 - $L/2$: Distance between the centers of the one hundred and twentieth and one hundred and twenty-first stirrups.
 - $L_n/2$: Distance from the center of the one hundred and twenty-first stirrup to the center of the one hundred and twenty-second stirrup.
 - L_n : Distance between the centers of the one hundred and twenty-second and one hundred and twenty-third stirrups.
 - $L/2$: Distance between the centers of the one hundred and twenty-third and one hundred and twenty-fourth stirrups.
 - $L_n/2$: Distance from the center of the one hundred and twenty-fourth stirrup to the center of the one hundred and twenty-fifth stirrup.
 - L_n : Distance between the centers of the one hundred and twenty-fifth and one hundred and twenty-sixth stirrups.
 - $L/2$: Distance between the centers of the one hundred and twenty-sixth and one hundred and twenty-seventh stirrups

არეზერვოს ღრმობები \emptyset (მმ)	არეზერვოს ზაღვრება (მმ) $L_p=40^\circ D$	ზაღვრების მინიმალური პირის განიერი (მმ) $L_{\geq 1.5^\circ L_{p,ave}}$	მინიმალური "ჯ" წარმოადგენს არეზერვოს ზაღვრების მინიმალურ განიერ (მმ) $L_{\geq L_p/2}$	საბოლოო ბაზირებული მინ. ობიექტი (მმ) $L_{\geq L_p+L_{p,ave}}$
Ø16 A500C	640	960	480	1600
Ø18 A500C	720	1080	540	1800
Ø20 A500C	800	1200	600	2000
Ø22 A500C	880	1320	660	2200
Ø25 A500C	1000	1500	750	2500

Technical drawing of a U-shaped channel section. The drawing shows the cross-section of the channel with dimensions: $L1$ (horizontal length of the top flange), $L2$ (horizontal length of the bottom flange), $L3$ (vertical height of the web), B (total width of the channel), $r=5xd$ (radius of the fillet), and 30 (thickness of the web). The drawing is a half-section, indicated by the break lines and the centerline.

$\sigma(\Gamma_{30}) \quad (B=400)$ $L_{\Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta} = 40d = L_1 L_2 + L_3 = 2xL_1 \quad (38)$						
$\Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta$ $\Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta$ $\Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta$	$L_{\Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta} = 40\bar{d}$ $r = 5d \quad 38.$	$L_1 = L(\Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta) = 5 \quad (39)$ $L_2 = (5\bar{d}x2)\bar{x} \Gamma \quad (39)$ $L_3 = \frac{4}{L(\Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta)} L_1 L_2 \quad (39)$				
$\Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta$	400	80	320	126	194	
$\Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta$	720	90	360	141	219	
$\Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta \Delta$	800	100	400	157	243	

Technical drawing of a rectangular table with a glass top and a metal frame. The drawing includes a side view and a top view.

Side View Dimensions:

- Table height: 790 mm
- Table width: 200 mm
- Frame height: 780 mm
- Frame width: 300 mm
- Frame depth: 900 mm
- Frame thickness: 10 mm
- Frame material: 2. Ø20 A500c
- Frame joints: 1. 2 Ø22 A500c
- Frame joints: 4. Ø8 A240c d100;200
- Frame joints: 3. 2 Ø12 A500c
- Frame joints: 5. Ø8 A240c d400
- Frame joints: 2. 2 Ø20 A500c

Top View Dimensions:

- Table width: 200 mm
- Table depth: 900 mm
- Frame width: 300 mm
- Frame depth: 900 mm
- Frame thickness: 10 mm
- Frame material: 2. Ø20 A500c
- Frame joints: 1. 2 Ø22 A500c
- Frame joints: 4. Ø8 A240c d100;200
- Frame joints: 3. 2 Ø12 A500c
- Frame joints: 5. Ø8 A240c d400
- Frame joints: 2. 2 Ø20 A500c

Other Dimensions:

- Table height: 790 mm
- Table width: 200 mm
- Frame height: 780 mm
- Frame width: 300 mm
- Frame depth: 900 mm
- Frame thickness: 10 mm
- Frame material: 2. Ø20 A500c
- Frame joints: 1. 2 Ø22 A500c
- Frame joints: 4. Ø8 A240c d100;200
- Frame joints: 3. 2 Ø12 A500c
- Frame joints: 5. Ø8 A240c d400
- Frame joints: 2. 2 Ø20 A500c

Technical drawing of a rectangular structure, likely a component of a machine. The drawing includes a top view and a side view. The top view shows a rectangle with dimensions 300 (width) and 500 (length). The side view shows a rectangle with dimensions 390 (height) and 200 (width). The drawing includes several labels and dimensions:

- 1. 2 Ø22 A500c (Two 22mm diameter A500c bolts)
- Ø8 A240c d100;200 (8mm diameter A240c bolts, 100mm and 200mm spacing)
- 2. 2 Ø20 A500c (Two 20mm diameter A500c bolts)
- Dimensions: 100, 390, 60, 180, 300, 70 (95), 50 (25), 500, -0.10, -0.60

Diagram illustrating the connection between a Column and a Girder. The diagram shows the column on the left and the girder on the right. The grid lines are labeled 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100. The grid lines are spaced at 100 units. The column is labeled "Column" and the girder is labeled "Girder". The connection is labeled "Grid 1 spacing 100".

Ø10A500c

8060 14098-85

K3-Pp

270

90

90

90

90

90

90

90

270

Georgia,
Senaki

Stage:
Architectural project

column s-5

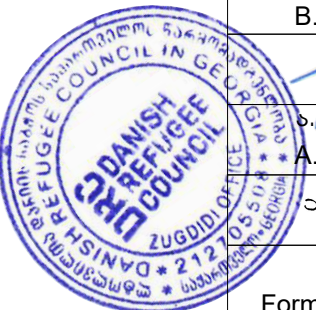
ქანთარია
Qantaria

გერგედავა
Gergedava

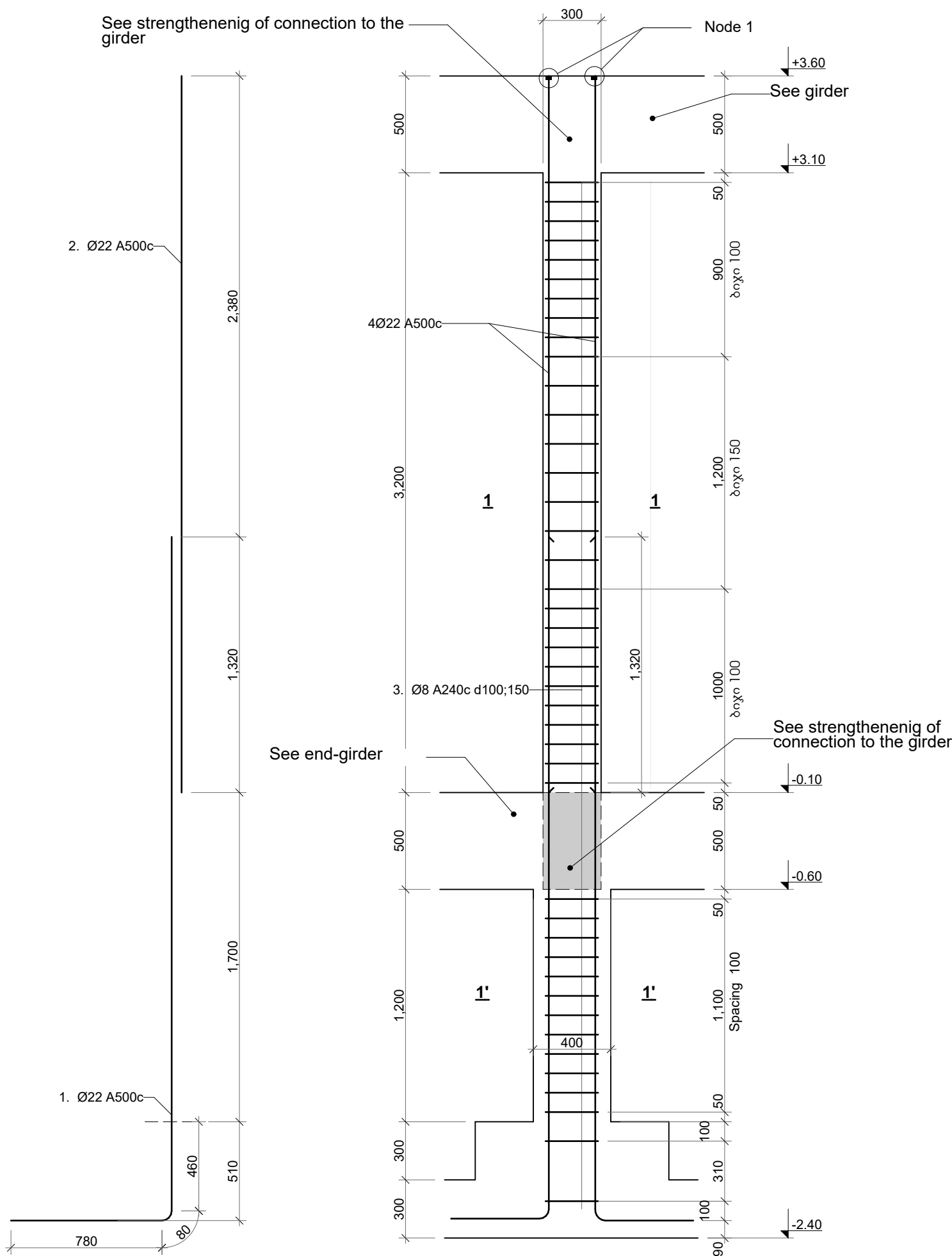
Format A - 2

The diagram illustrates a structural layout with the following dimensions and labels:

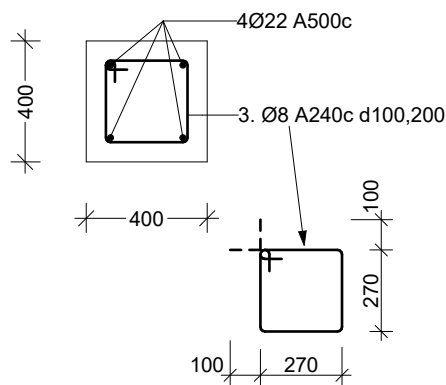
- Column Dimensions (Horizontal):**
 - Between columns 1 and 2: 6,000
 - Between columns 2 and 3: 6,000
 - Between columns 3 and 4: 3,000
 - Between columns 4 and 5: 3,000
 - Between columns 5 and 6: 3,000
 - Between columns 6 and 7: 6,000
 - Between columns 7 and 8: 6,000
- Row Dimensions (Vertical):**
 - Between rows A and B: 3,000
 - Between rows B and C: 6,000
 - Between rows C and D: 4,800
 - Between rows D and E: 6,000
- Structural Labels:**
 - s-1, s-1', s-2, s-2', s-3, s-3', s-4, s-4', s-5, s-5':** Labels for various structural elements, often accompanied by a small line drawing of a structural member.



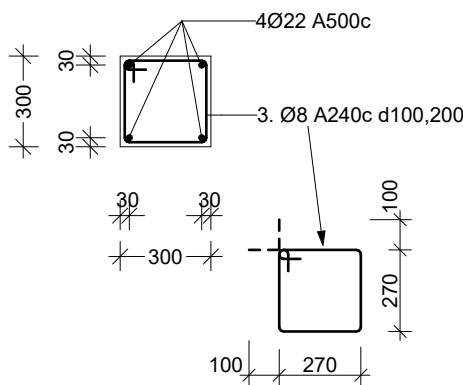
Column S-1



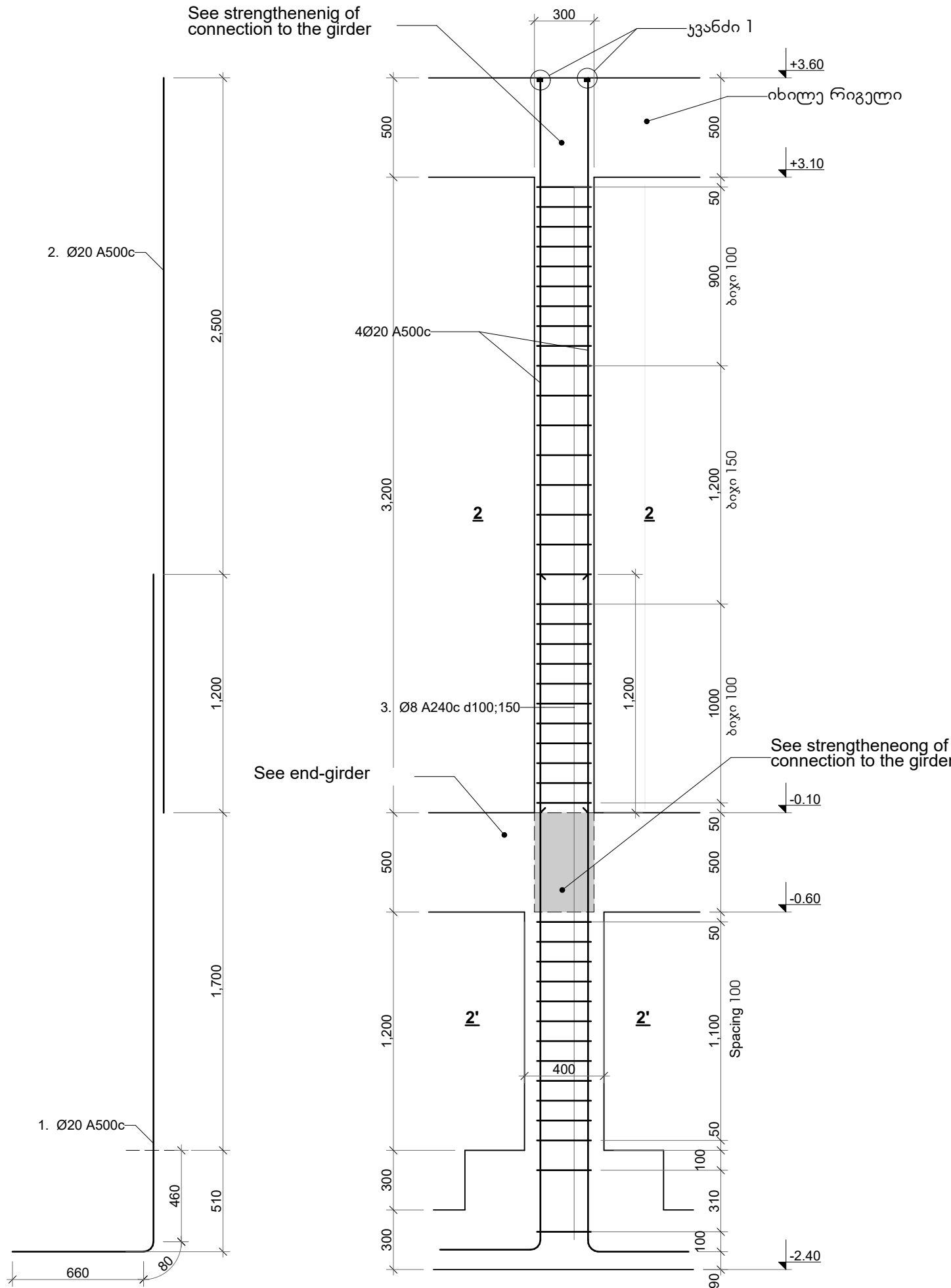
Section 1'-1'



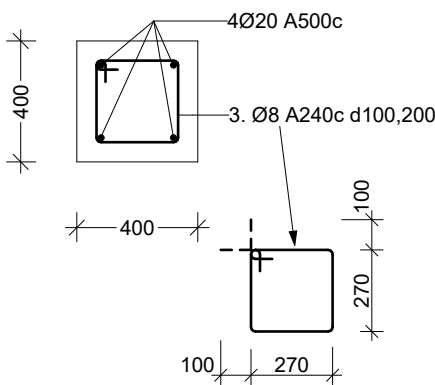
Section 1-1



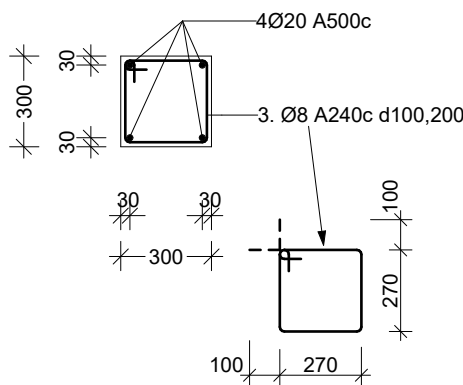
Column S-2



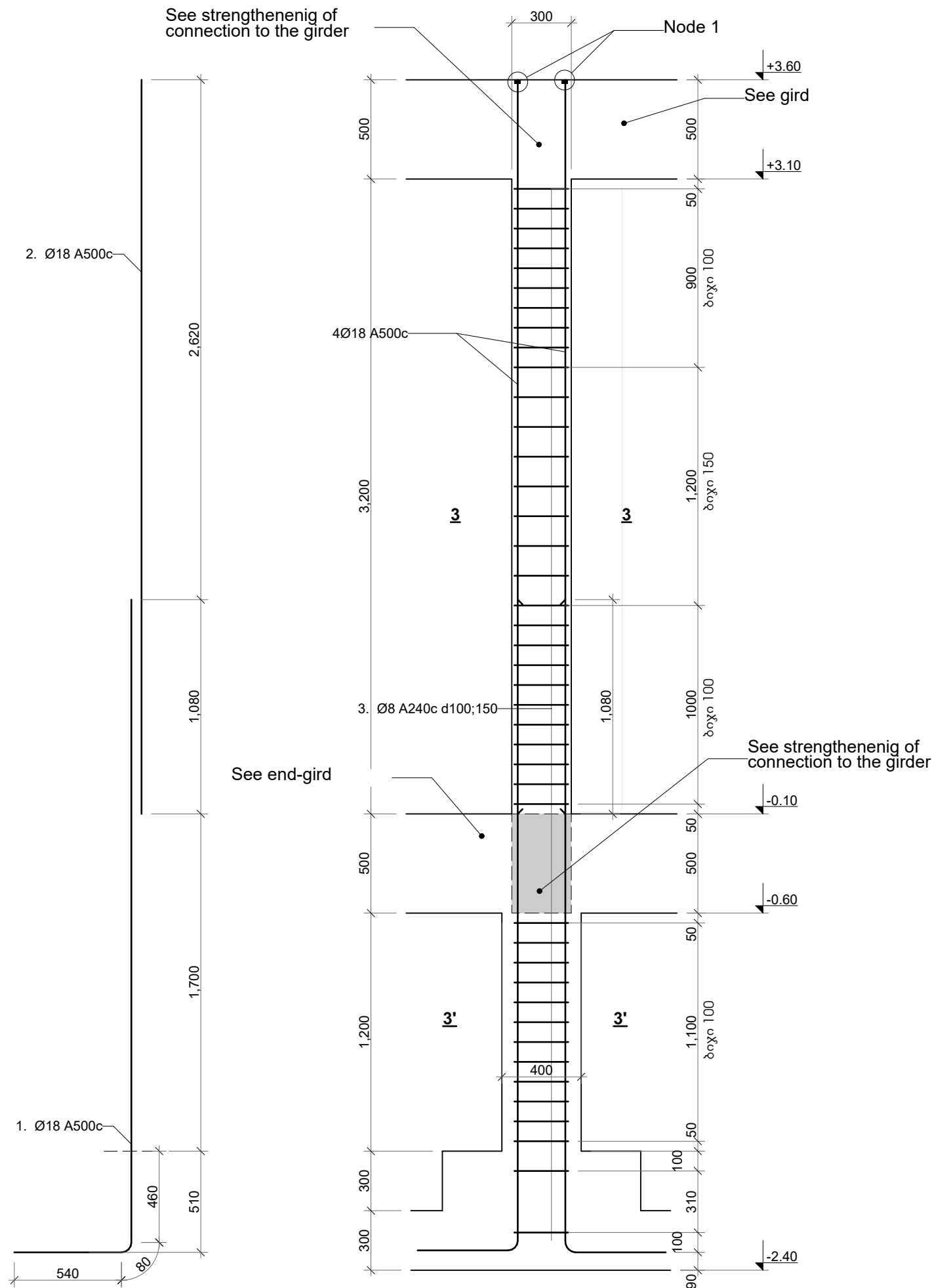
Section 2'-2'



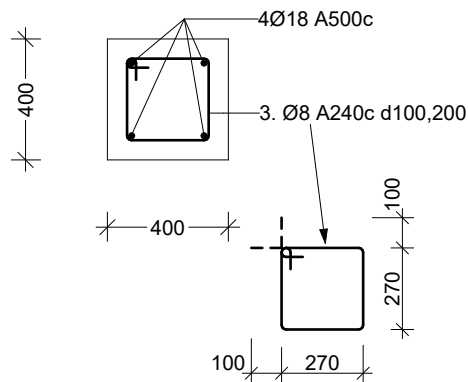
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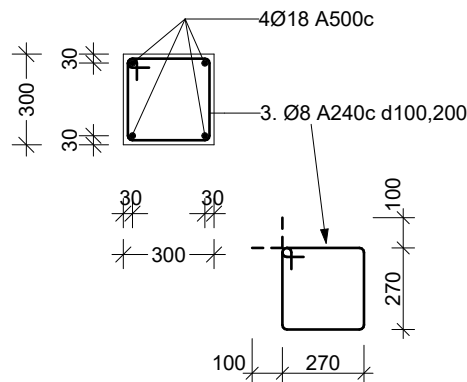
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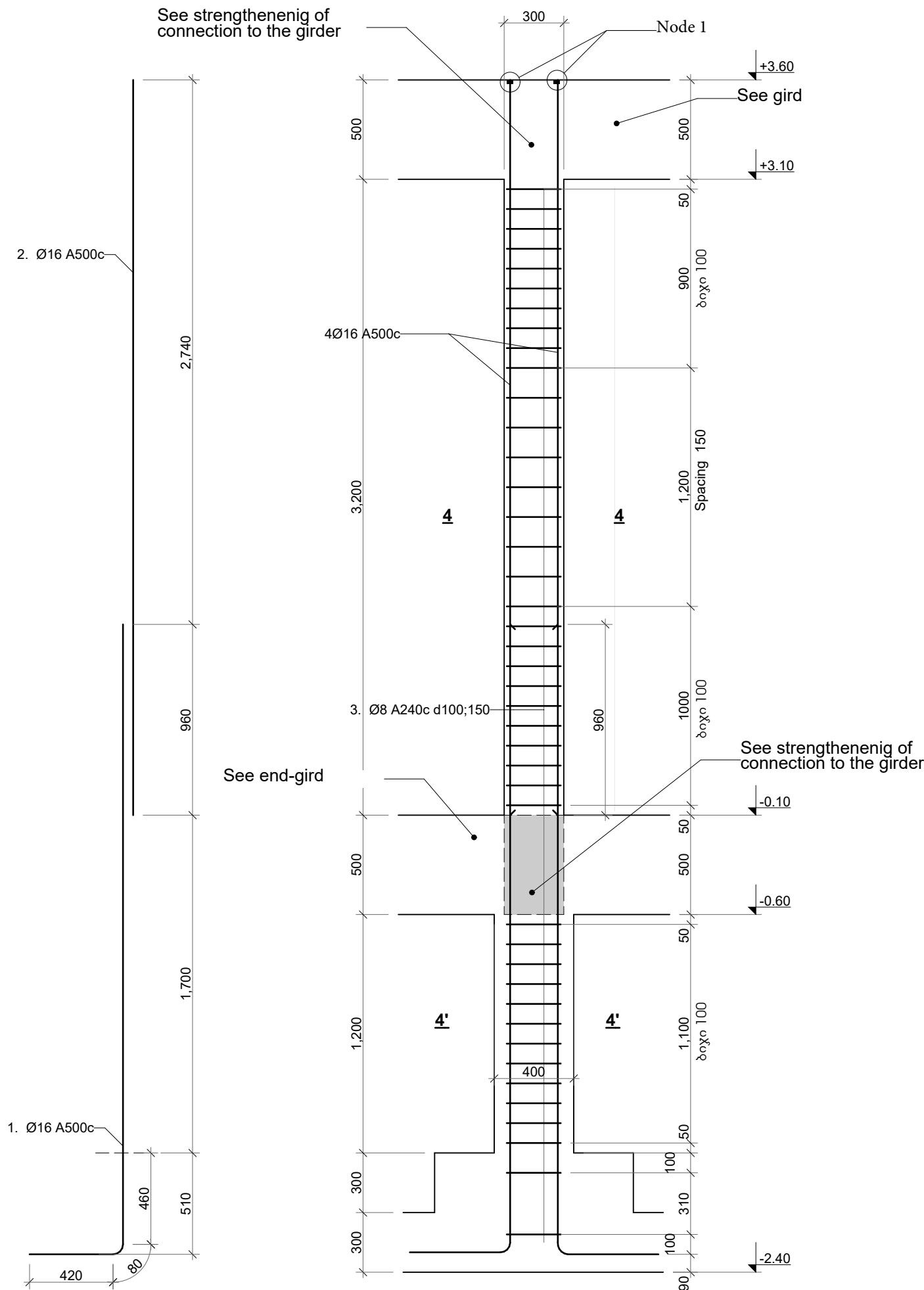
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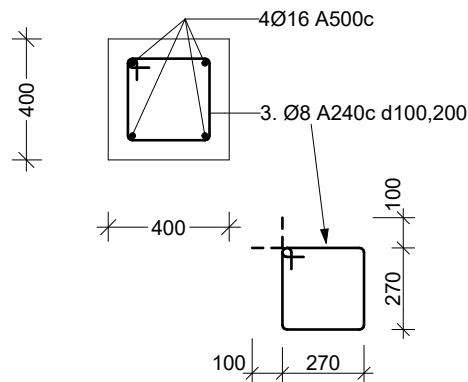
Section 3-3



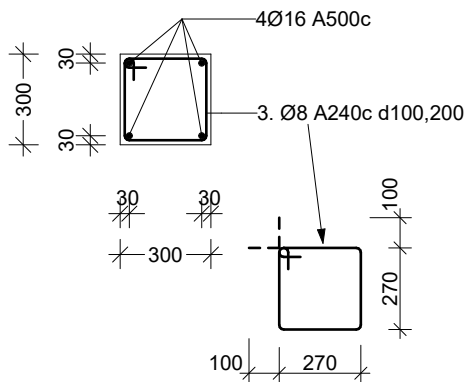
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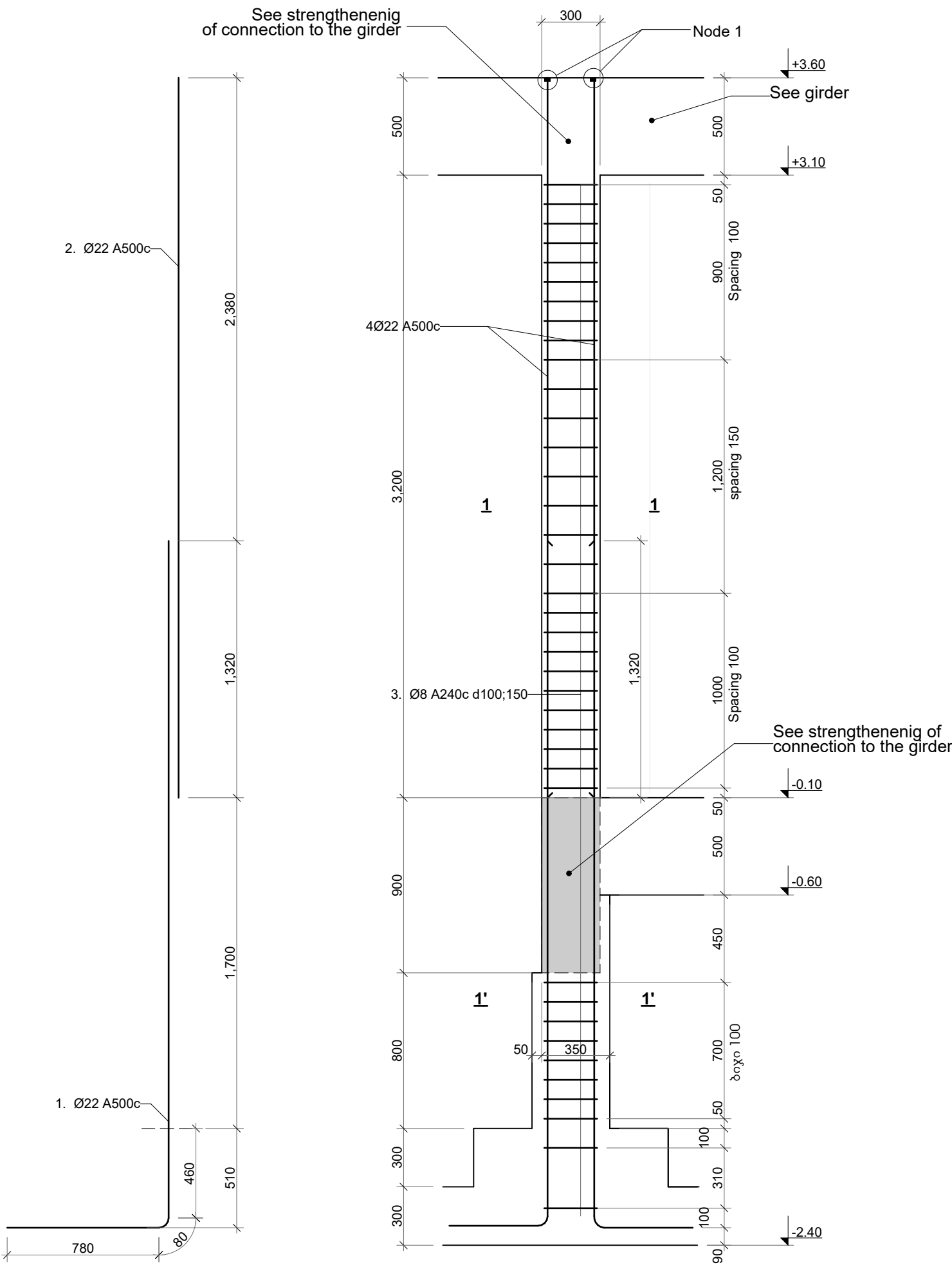
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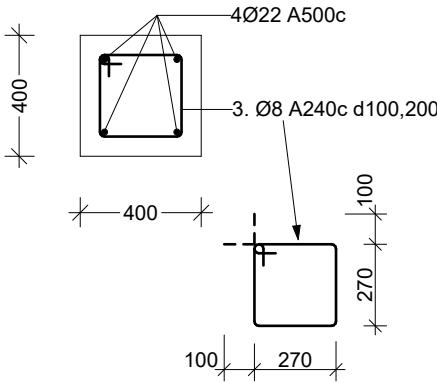
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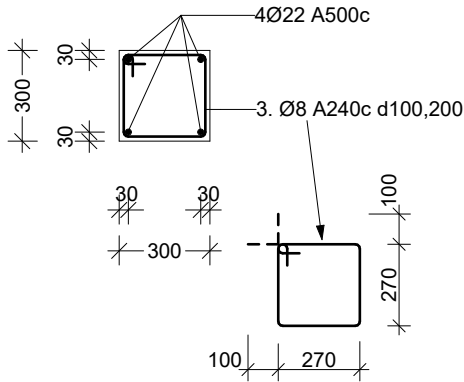
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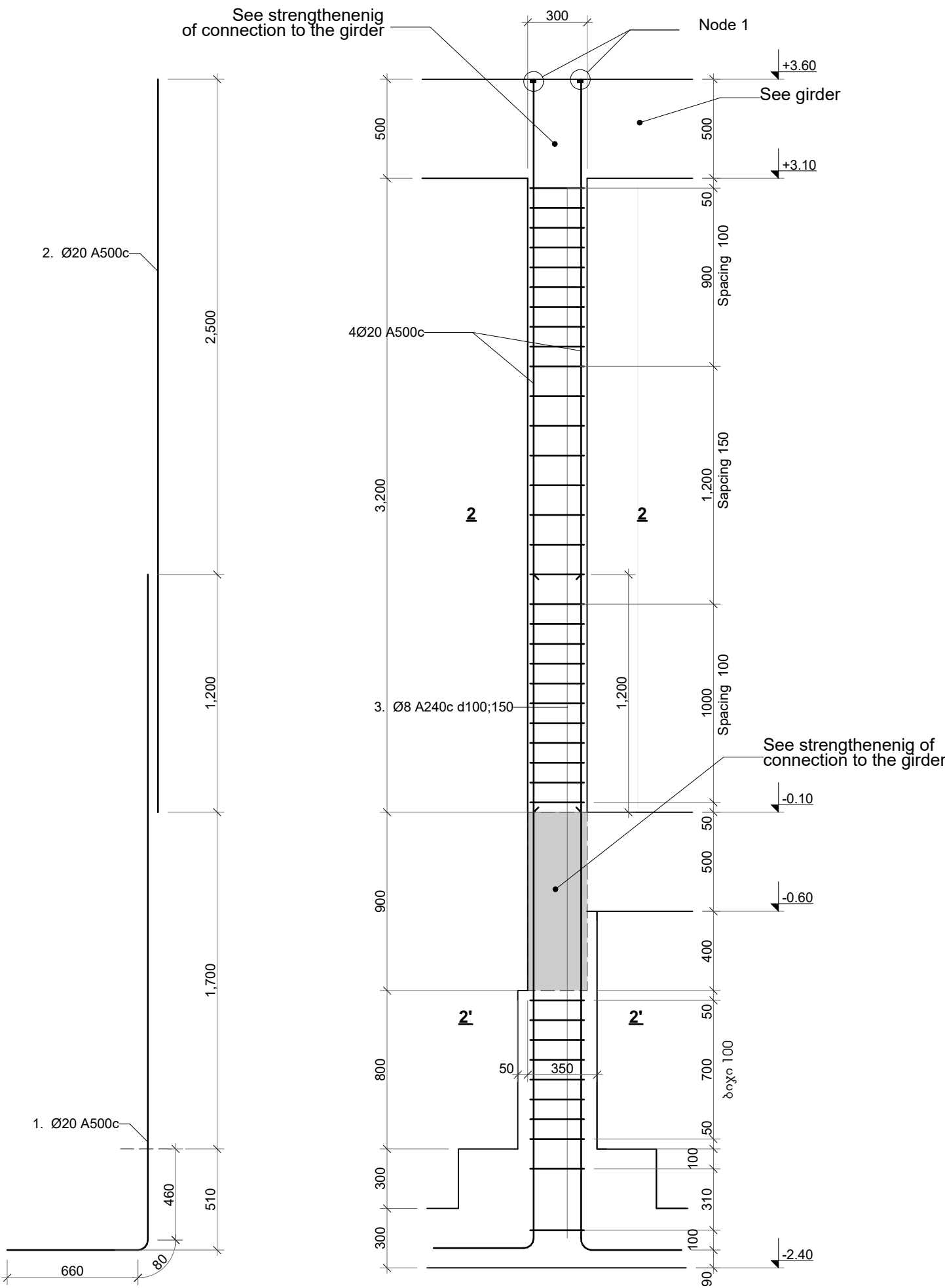
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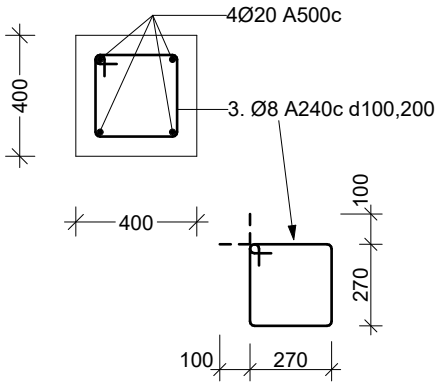
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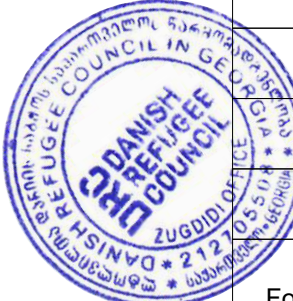
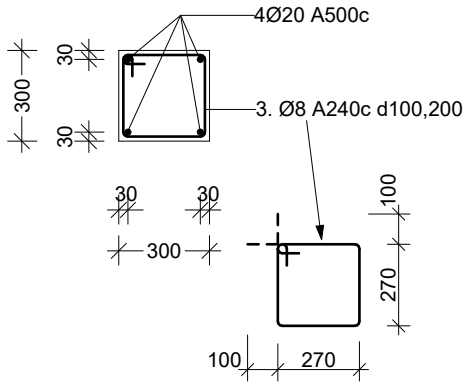
Column S-2'



Section 2'-2'



Section 2-2



Typical
Kindergarten
for three groups
Mshvidobis street,
306, Senaki

Project address:
Georgia,
Senaki

Stage:
Architectural project

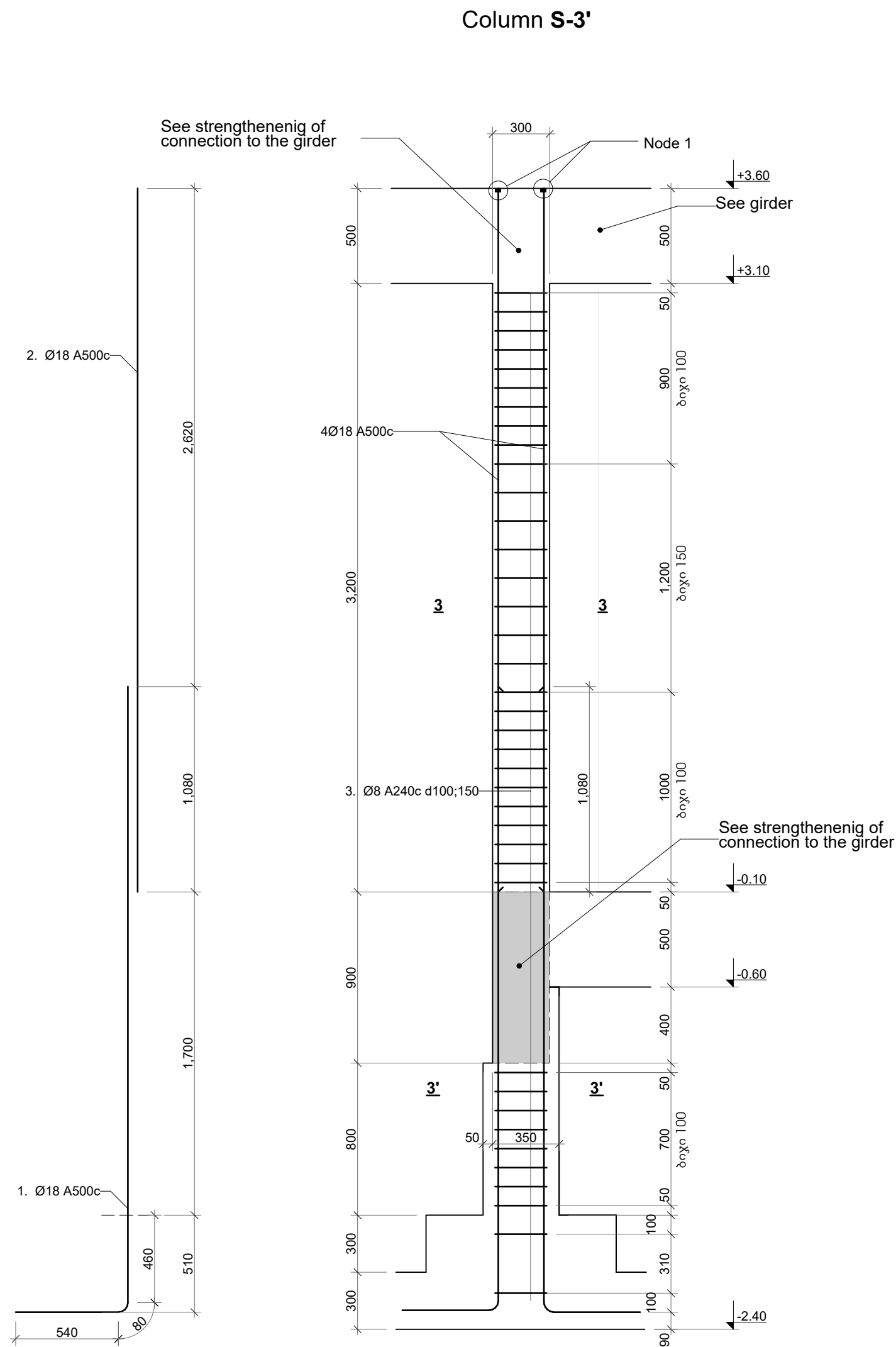
Column **S-3'**
Column **S-4'**

ბ. ქანთარია
B. Qantaria

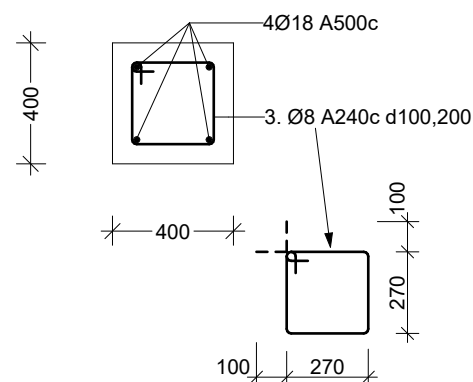
ა. გერგედავა
A. Gergedava

Format A - 2

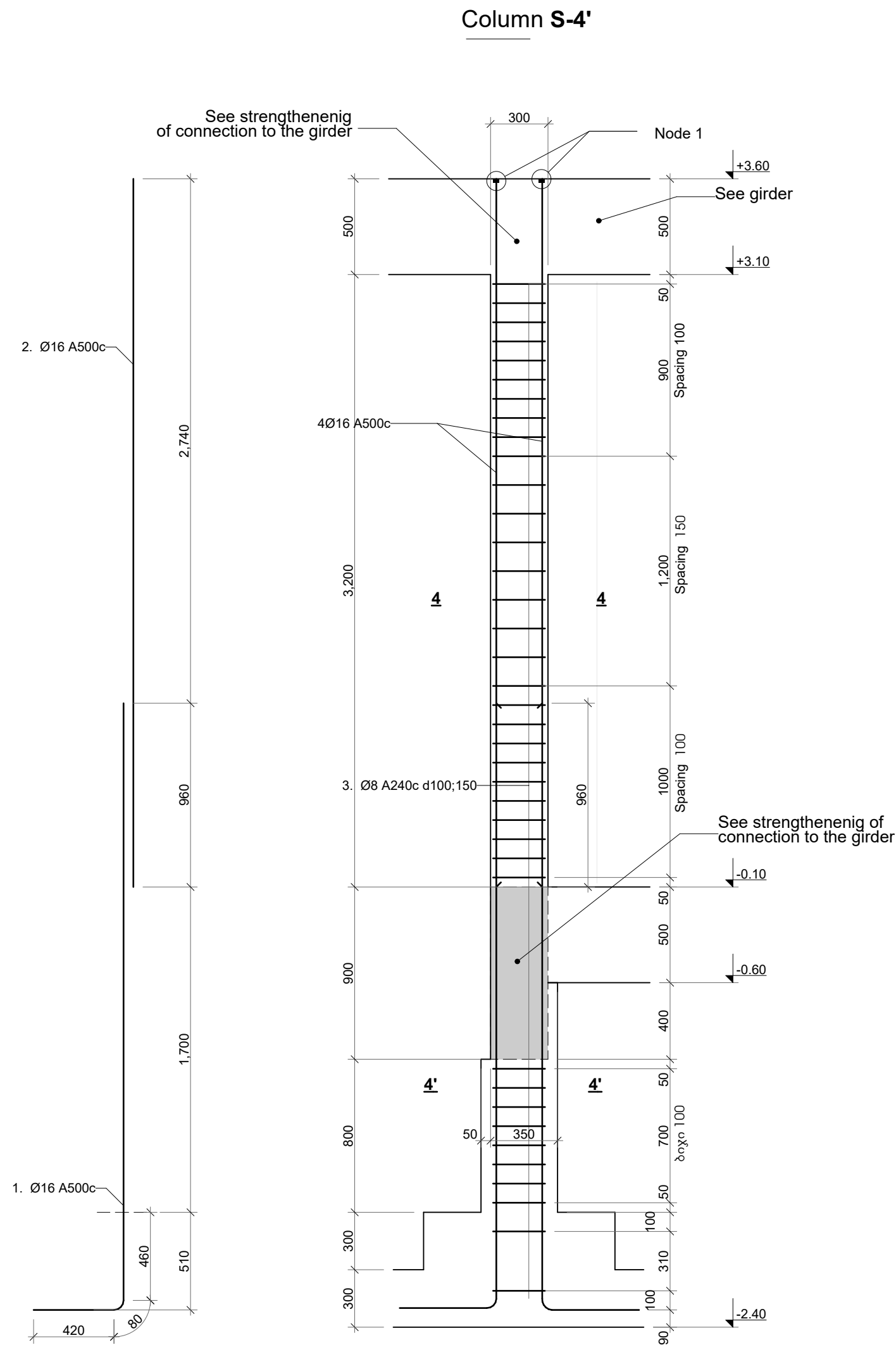
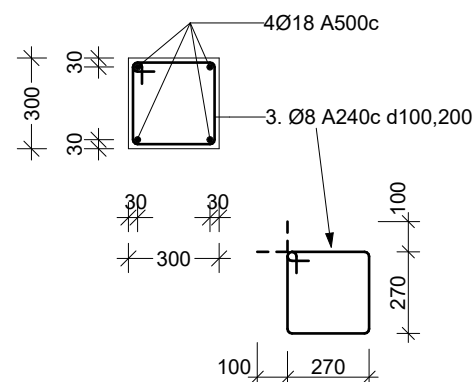
Page	Pages
21	32



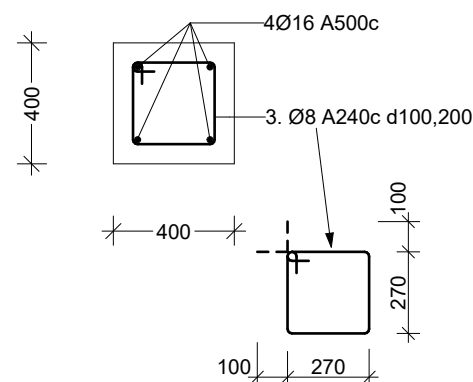
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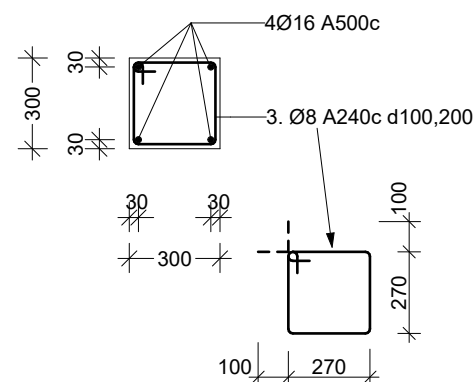
Section **3-3**



Section **4'-4'**



Section **4-4**



Typical Kindergarten for three groups Mshvidobis street, 306, Senaki

Project address: Georgia, Senaki

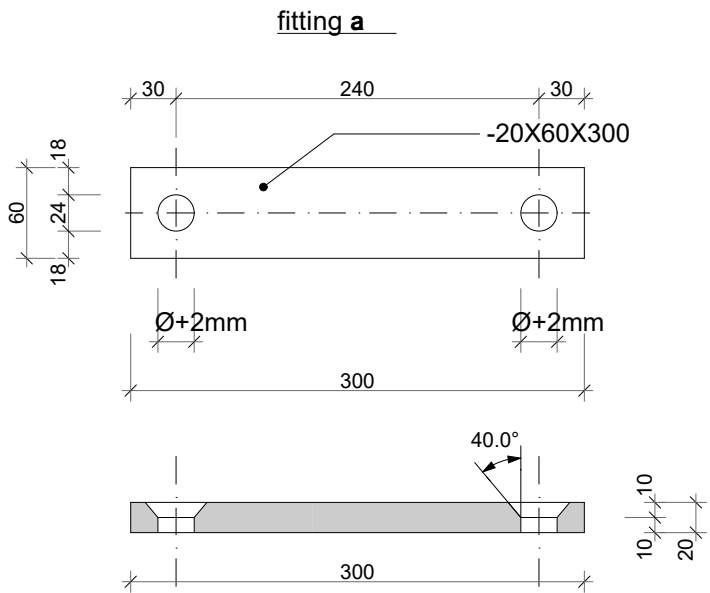
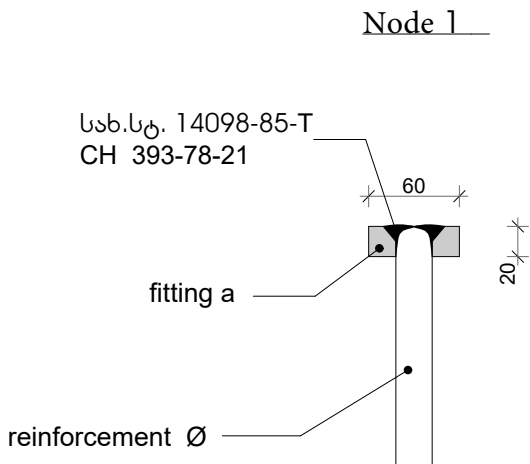
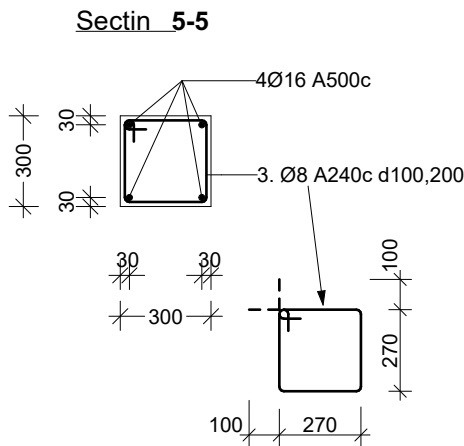
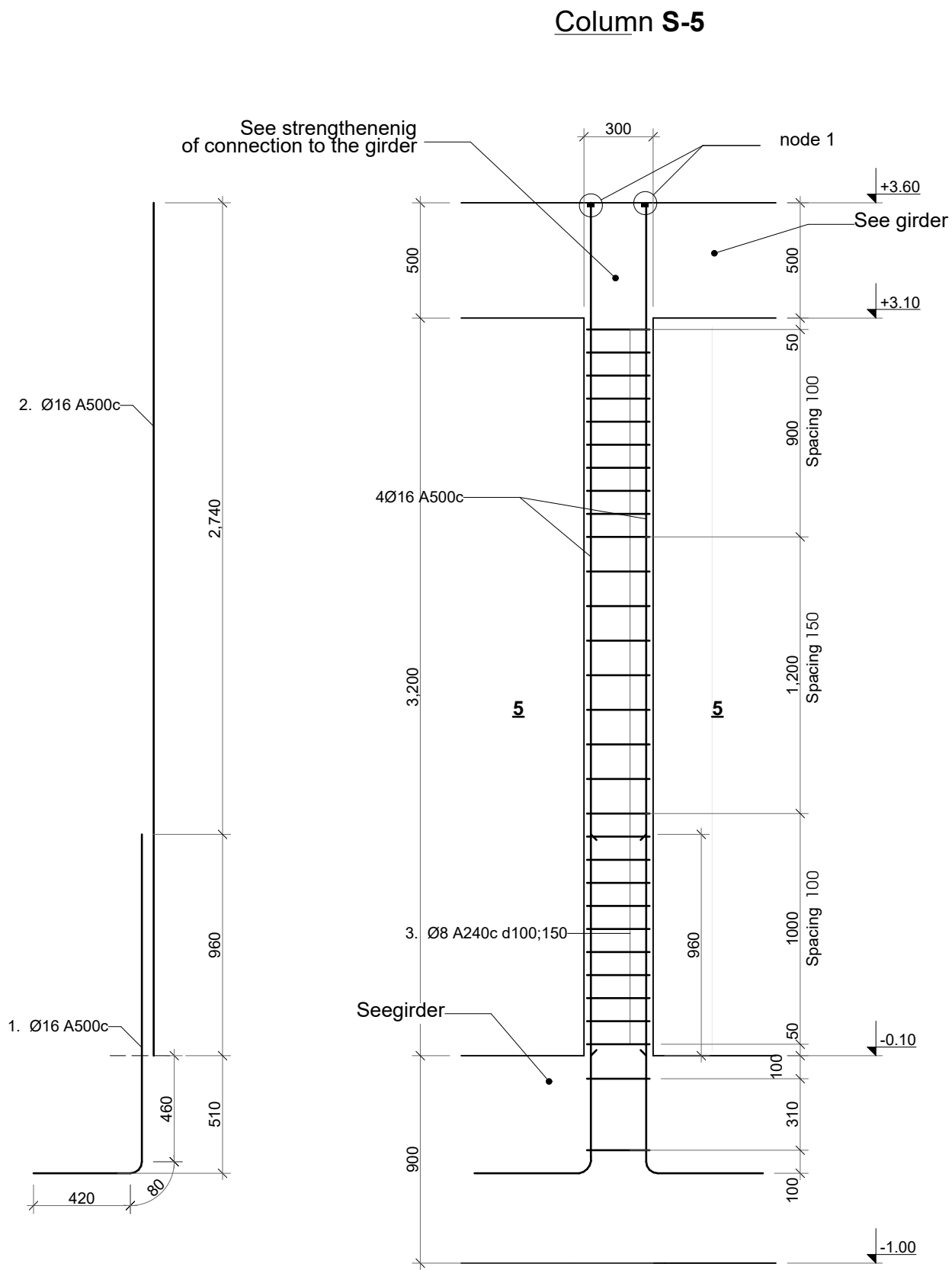
Stage: Architectural project

Column s-5

ბ. ქანთარია
B. Qantaria

ა. გერგელავა
A. Gergedava

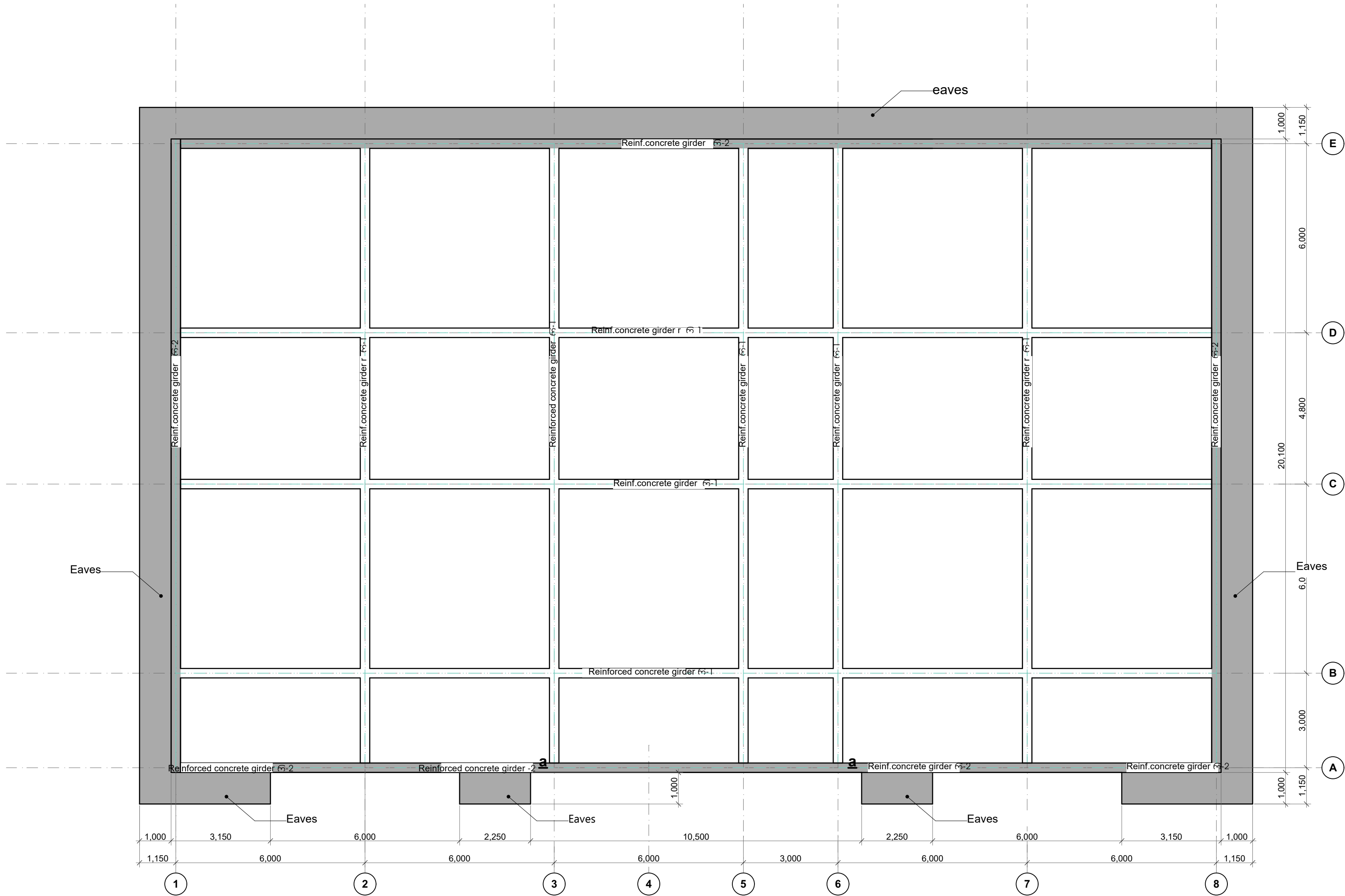
Format A - 2



Specification of reinforcement									
არმატურის სპეციფიკაცია									
კვეთი cross-section	საერთო სიგრძე მ Total length m	საერთო სიგრძე დანაკლები მ Total length with loss	გრძელის წონა Weight of R/m	საერთო წონა ტონა Total weight, tons	საერთო წონა (კვადრატული მეტრი) ტონა Total weight per grade , tons				
რკინაბეტონის სვეტები Reinforced concrete columns									
s-1 და s-1' (10 ცალი)	1	22 A500c	4340	40	173.6				
	2	22 A500c	3700	40	148				
	3	8 A240c	1280	420	537.6				
s-2 და s-2' (13 ცალი)		20 A500c	4100	52	213.2				
		20 A500c	3700	52	192.4				
		8 A240c	1280	546	698.88				
s-3 და s-3' (8 ცალი)		18 A500c	3860	32	123.52				
		18 A500c	3700	32	118.4				
		8 A240c	1280	336	430.08				
s-4 და s-4' (4 ცალი)		16 A500c	3620	16	57.92				
		16 A500c	3700	16	59.2				
		8 A240c	1280	168	215.04				
s-5 (1 ცალი)		16 A500c	1920	4	7.68				
		16 A500c	3700	4	14.8				
		8 A240c	1280	30	38.4				
რიგულთან გადაკვეთის უბნების გაძლიერება		10 A500c			1280				
ფილადაის ფურც. -20X60X300				72					
ბეტონი B25						21.2			



Plan of Girders at +3.60 level



Typical
Kindergarten
for three groups
Mshvidobis street,
306, Senaki

Project address:

Georgia,
Senaki

Stage:
Architectural project

რიგელი რ-1
ჭრილები
კვანძები

ბ. ჯანთარია
B. Qantaria

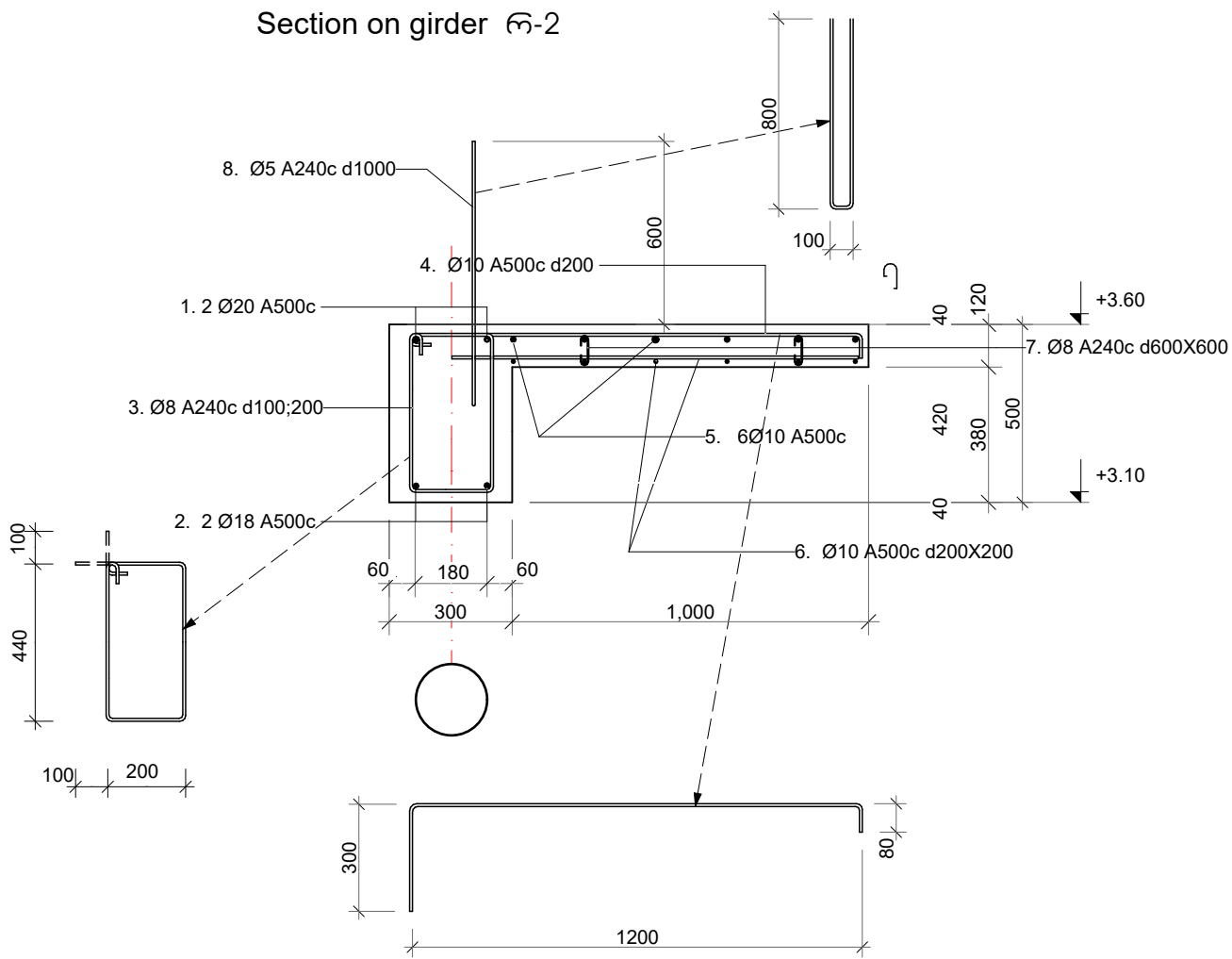
ა. გერგელავა
A. Gergedava

ფორმატი
Format A - 2

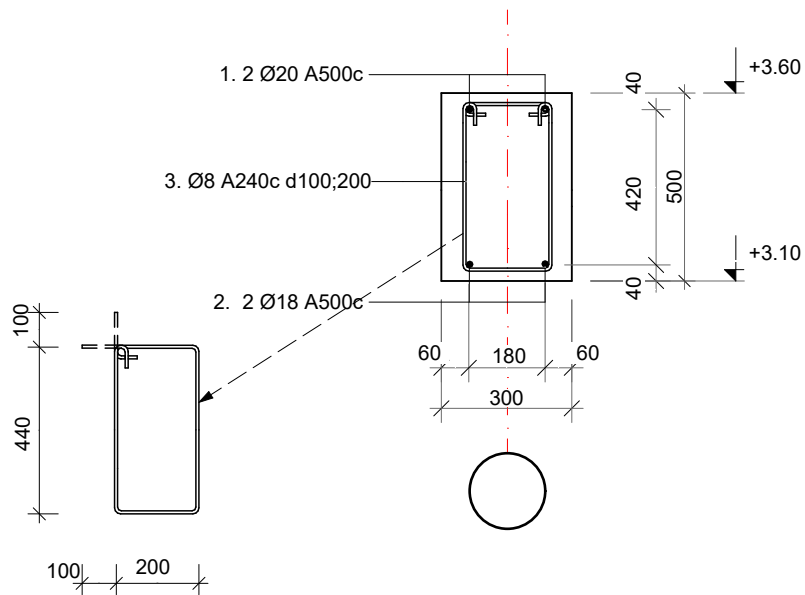
ფურცელი
Page 24

ფურცლები
Pages 32

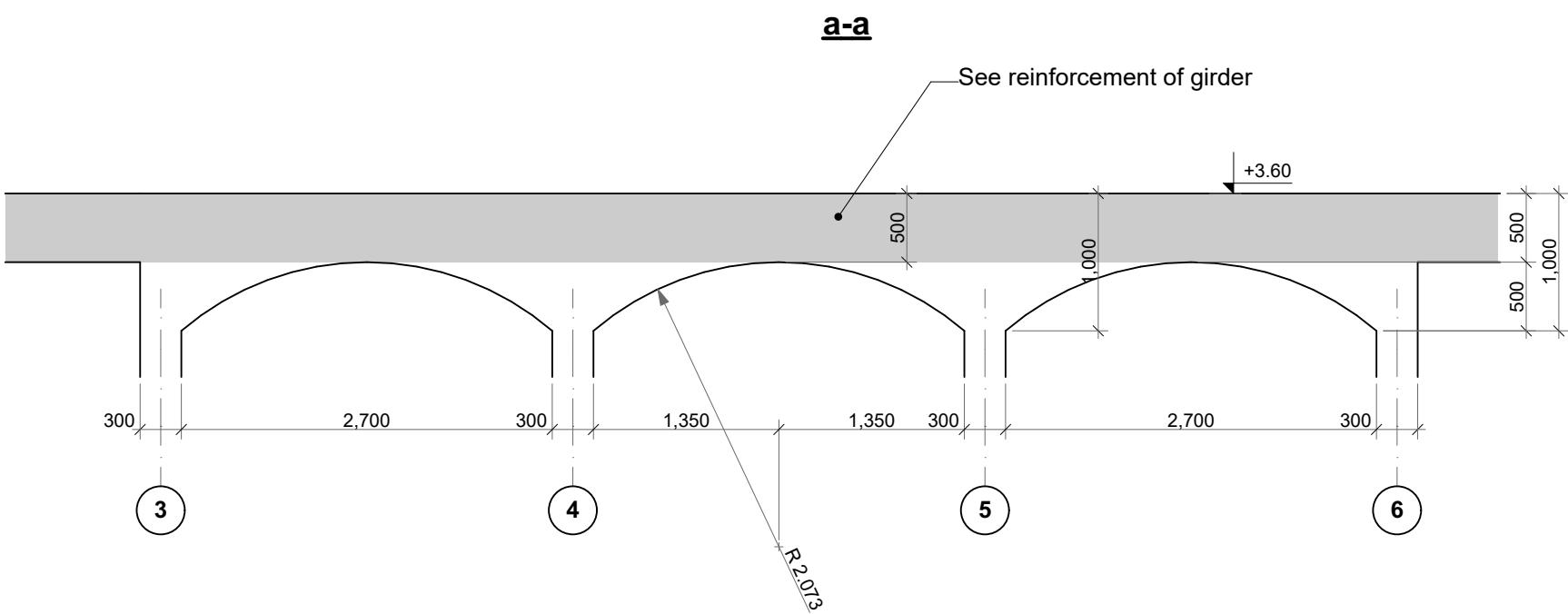
Section on girder რ-2



Section on girder რ-1

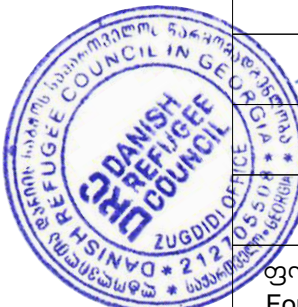


Section in arched areas

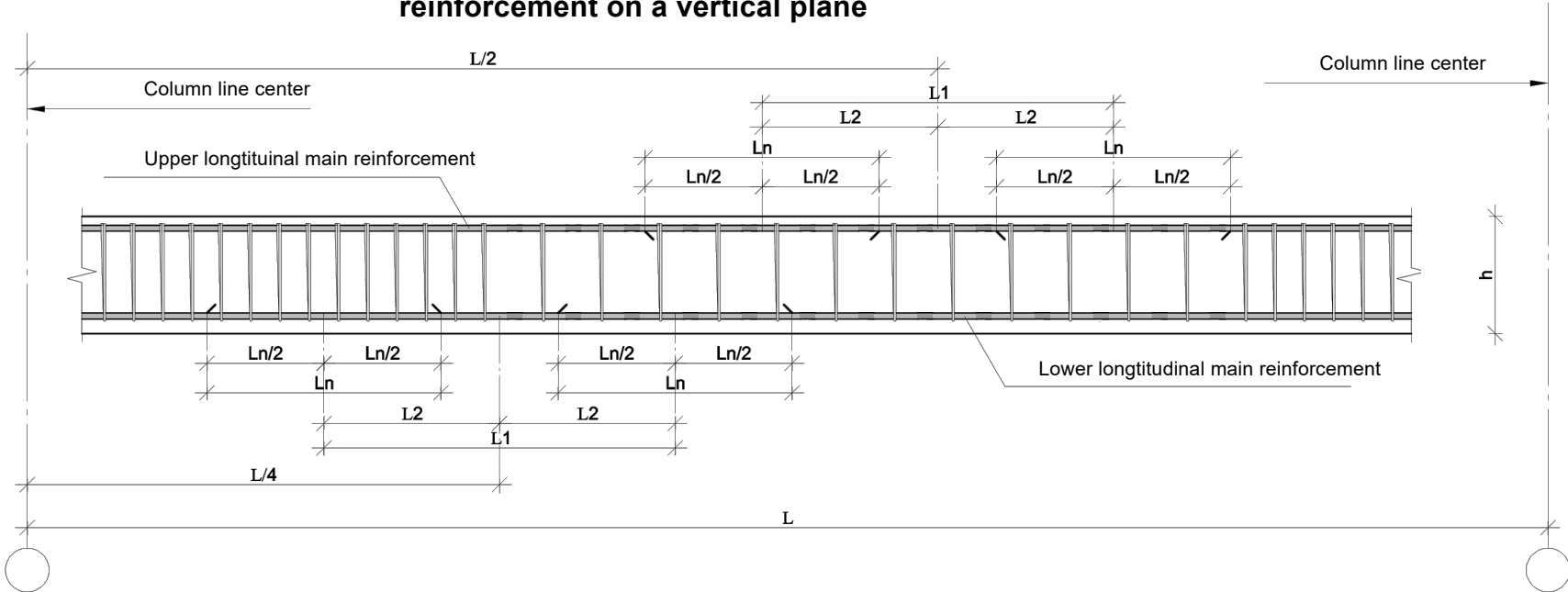


ელემენტი Element	№	არმატურის პროფილი reinforc. profile	სიგრძე მმ length mm	რაოდენობა Q-ty	საერთო სიგრძე მ Total length m	ბეტონი მ3 Concrete m3	Specification of reinforcement არმატურის აკრეფვა							total weight per class , tons
							აქვითი Section	საერთო სიგრძე მ total length m	საერთო სიგრძე დანაკრები მ Total length with loss m	გრძელის წონა weight of R/m	საერთო წონა total weight, tons	საერთო წონა (კლასის მიხედვით) ტონა		
რკინაბეტონის რიგელები +3.60 ნიშნულზე Reinforced concrete girders at +3.60														
რანდკოტი 1 End-girder 1	1	20 A500c	218900	2	437.8		A240c	6 A240c	238.0	238.0	0.222	0.05	1.3	
	2	18 A500c	214920	2	429.84			8 A240c	3085.0	3239.3	0.394	1.28		
	3	8 A240c	1480	1327	1963.5		A500c	6 A500c		0.0	0.222	0.00	4.6	
რანდკოტი 2 End-girder 2	1	20 A500c	116600	2	233.2			8 A500c		0.0	0.394	0.00		
	2	18 A500c	114480	2	229.0			10 A500c	2267.0	2380.4	0.616	1.47		
	3	8 A240c	1480	707	1046.4			12 A500c		0.0	0.887	0.00		
	4	10 A500c	1580	470	742.6			14 A500c		0.0	1.208	0.00		
	5	10 A500c	94000	6	564.0			16 A500c		0.0	1.578	0.00		
	6	10 A500c			960.0			18 A500c	659.0	692.0	1.997	1.38		
	7	8 A240c	260	288	74.9			20 A500c	671.0	704.6	2.465	1.74		
	8	5 A240c	1700	140	238.0			22 A500c		0.0	2.983	0.00		
							25 A500c		0.0	3.851	0.00			
	ბეტონი B15 m3	Concrete				55.1	სულ Total				5.92			

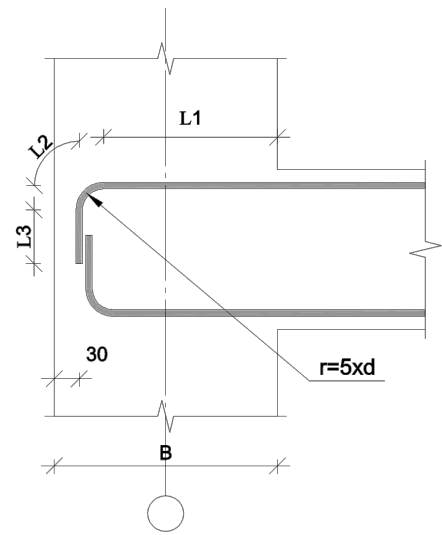
Note:
The sheet should be considered with sheet 16, in particular with the reinforcement of girders and the standard diagrams of their connection to columns.



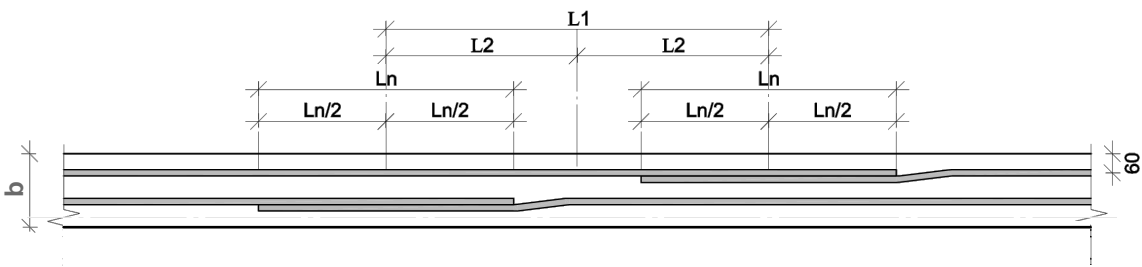
Locations of monolithic gird bonding by crossbar in the upper and lower span of the reinforcement on a vertical plane



Fixing (bending) Node of Grid in the upper and lower reinforcement column



Plan of monolithic gird bonding of crossbar in the upper and lower span of the reinforcement



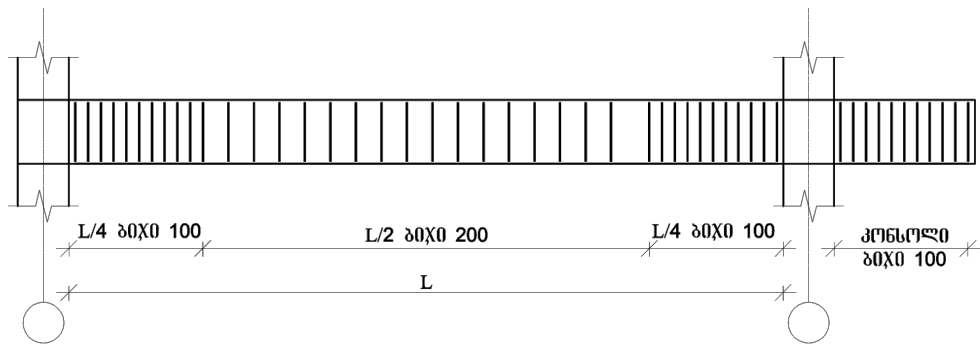
Parameters of gird bond crossbar in the upper and lower reinforcement

არმაჟურის, ფარგის Ø (მმ)	არმაჟურის ბაჟაჟი (მმ) L ₁ =40*D	ბაჟაჟის, სიგრძის მართის ბაჟაჟი (მმ) L ₂ ≥1.5*L ₁	მონტაჟის "X" მონტაჟის არმაჟურის ბაჟაჟის სიგრძის ბაჟაჟი (მმ) L ₃ ≥L ₂ /2	საბოლოო ბაჟაჟის მართის ბაჟაჟი (მმ) L ₃ =L ₁ +L ₂
Ø16 A500C	640	960	480	1600
Ø18 A500C	720	1080	540	1800
Ø20 A500C	800	1200	600	2000
Ø22 A500C	880	1320	660	2200
Ø25 A500C	1000	1500	750	2500

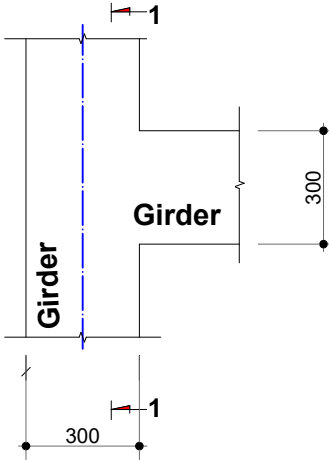
Parameters of fixing node of grid in the upper and lower reinforcement column

არმაჟურის, ფარგის Ø	L ₁ =40*D	r=5d	L ₂ =L ₁ +L ₃	L ₃ =L ₁ +L ₂
Ø16 A500C	640	80	320	126
Ø18 A500C	720	90	360	141
Ø20 A500C	800	100	400	157
Ø22 A500C	880	110	440	173
Ø25 A500C	1000	125	500	197

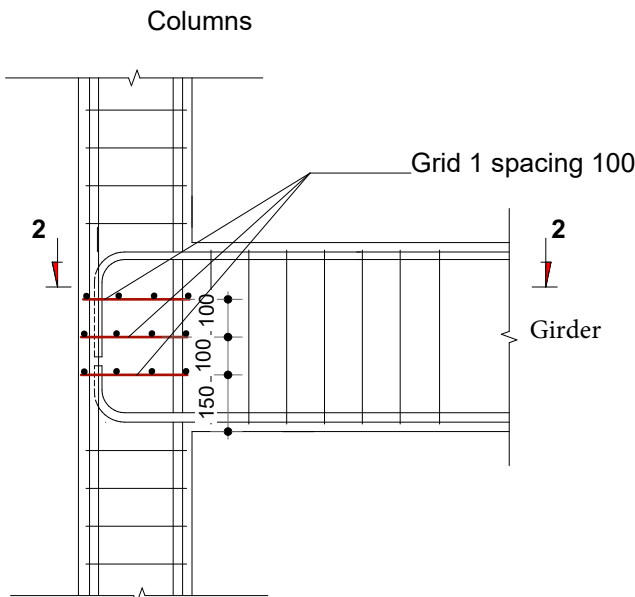
Allocation plan of gird hanger



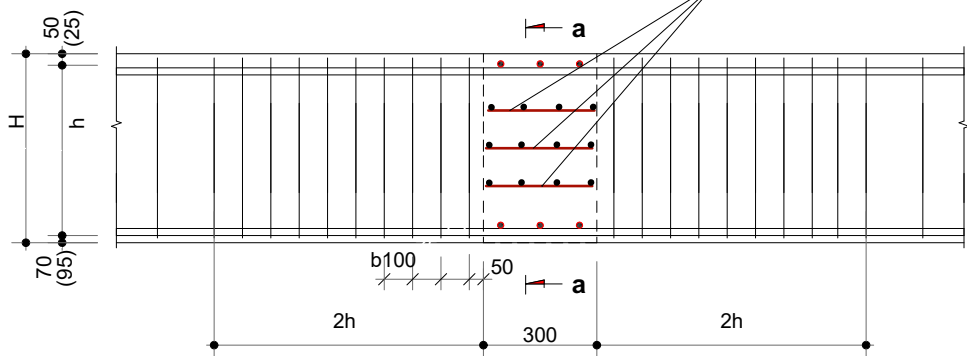
Strengthening of the Gird to Gird Connection Node



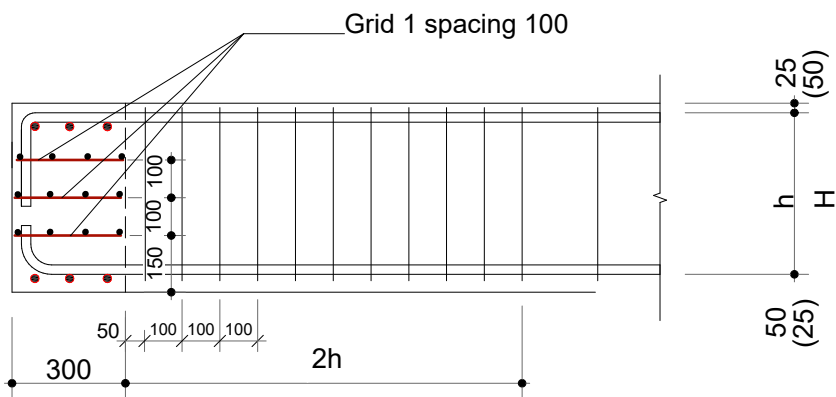
Strengthening of the intersection of grid and columns



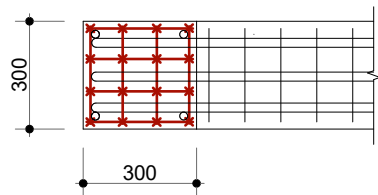
Section 1-1



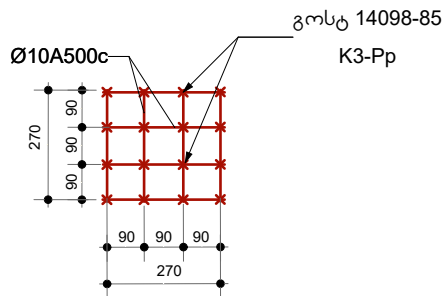
Section a-a



Section 2-2



Grid 1



Typical Kindergarten for three groups Mshvidobis street, 306, Senaki

Project address: Georgia, Senaki

Stage: Architectural project

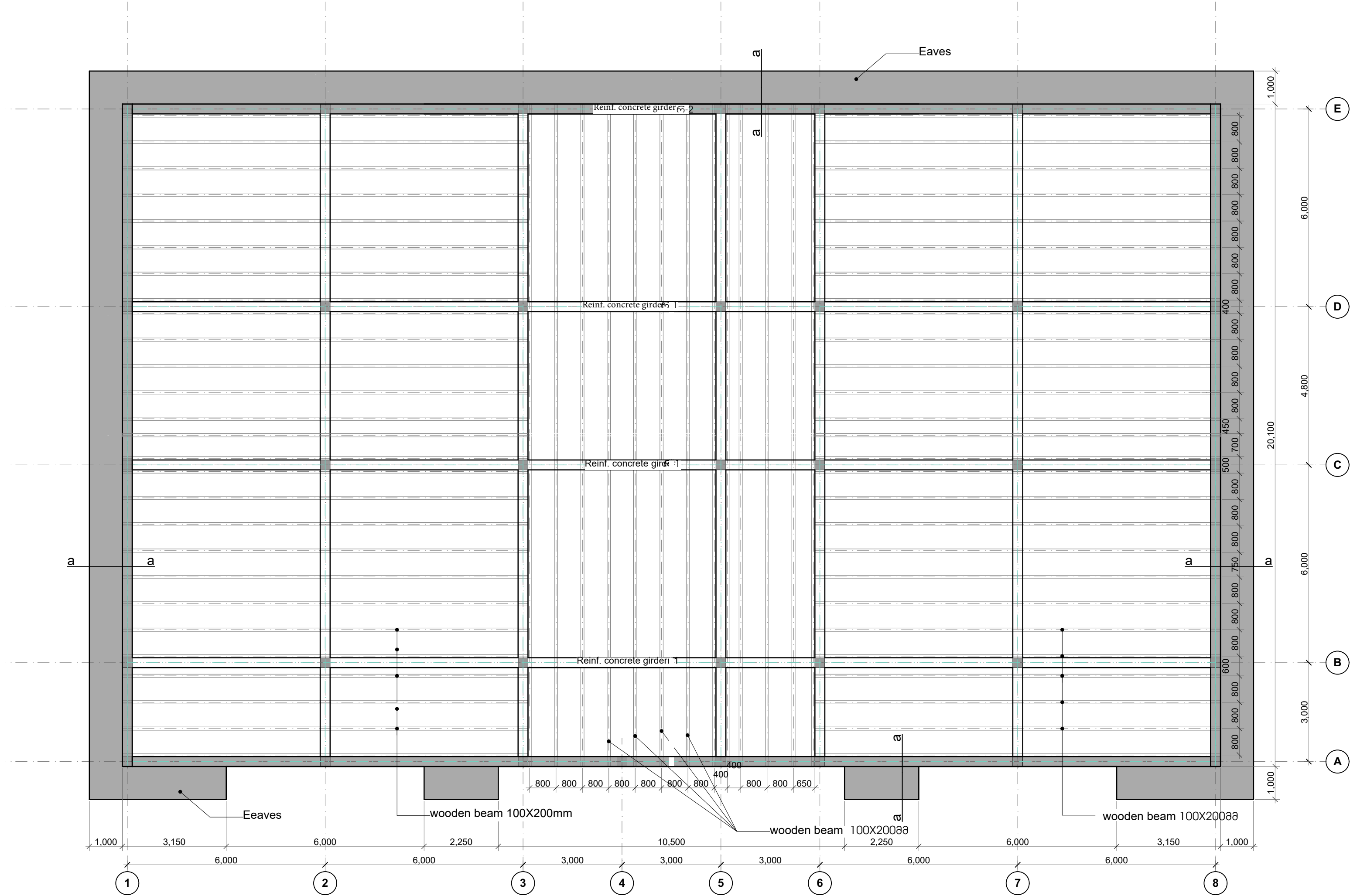
Monolith girders, strengthening of nodes

ბ. ჯანთარია B. Qantaria

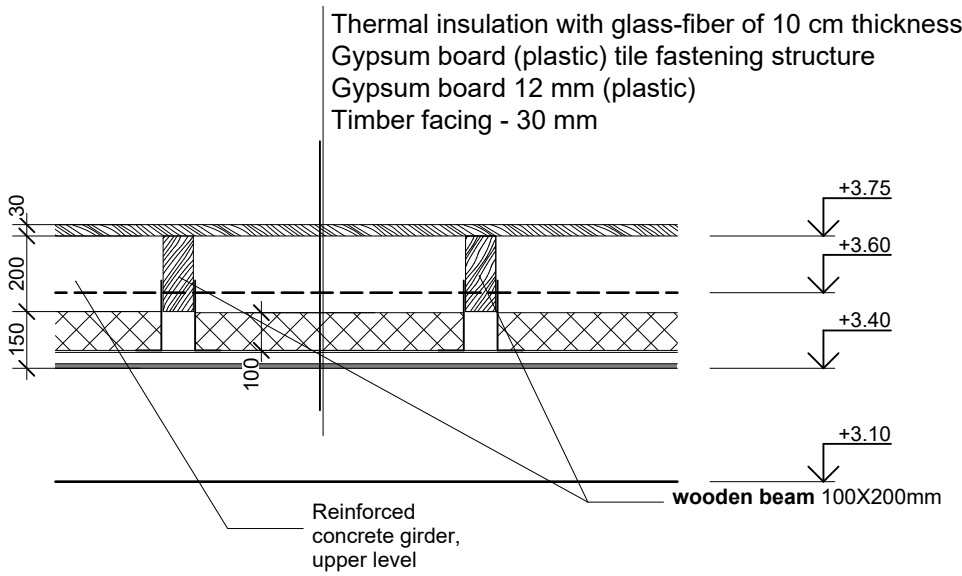
ა. გერგედავა A. Gergedava

Format A - 2

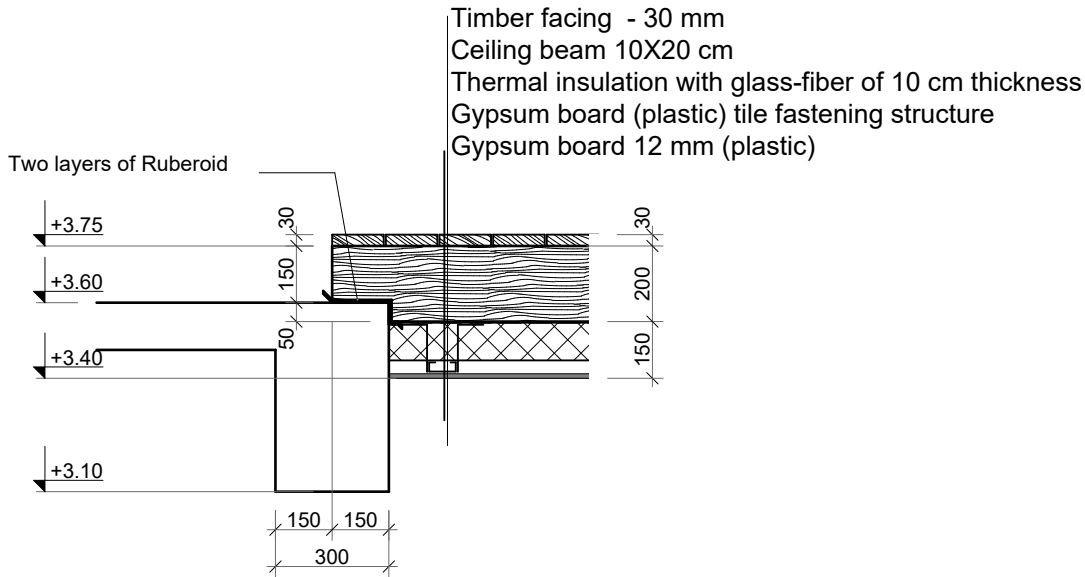
Plan of ceiling wooden beams at +3.60 level



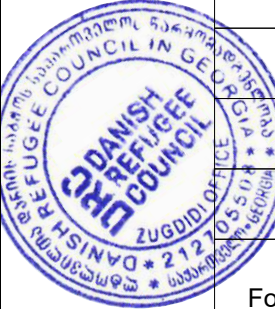
Ceiling structure



a-a



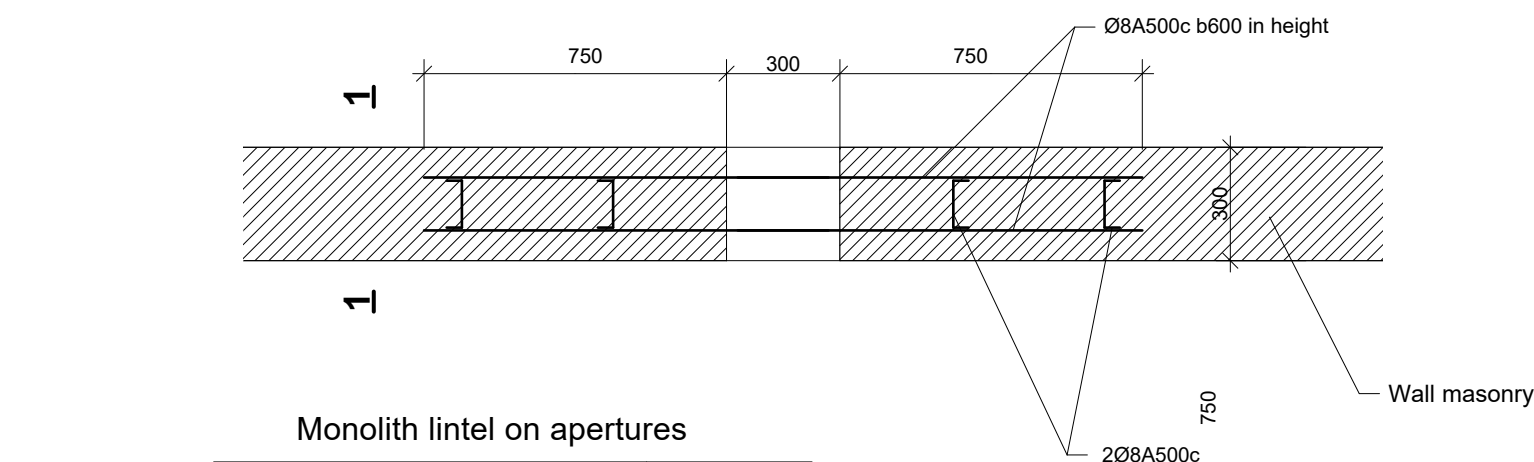
სპეციფიკაცია Specifications				
კოპის კვეთი Cross-section of beam	გრძელბ Length m	რაოდენობა Q-ty	საშ სიგრძე Total length m	მოცულობა Volume
ბის კოპი 100X200 Wooden beam 100x200	6	134	804	17.7
ბის კოპი 100X200 Wooden beam 100x200	3	13	39	0.9
ბის კოპი 100X200 Wooden beam 100x200	4.8	13	62.4	1.4
			Σ	19.9



Technical drawing showing a cross-section of a wall and floor slab connection. The drawing includes dimensions and reinforcement details:

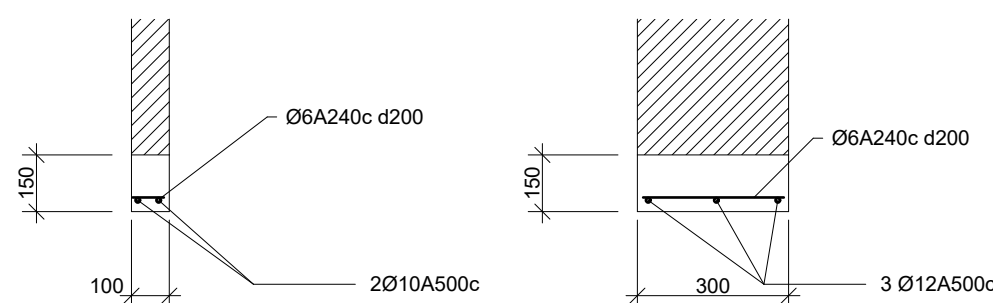
- Horizontal dimensions: 300, 750, 600.
- Vertical dimensions: 300, 750, 600.
- Reinforcement labels:
 - $\text{Ø}8\text{A}500\text{c b}600 \text{ L}0.030.030$ (top right)
 - $2\text{Ø}8\text{A}500\text{c}$ (middle right)
 - $\text{Ø}8\text{A}500\text{c b}600 \text{ in height}$ (bottom right)
- Labels: **1** (bottom left), **1** (bottom right), wall masonry (indicated by hatching).

Monolith lintel on apertures

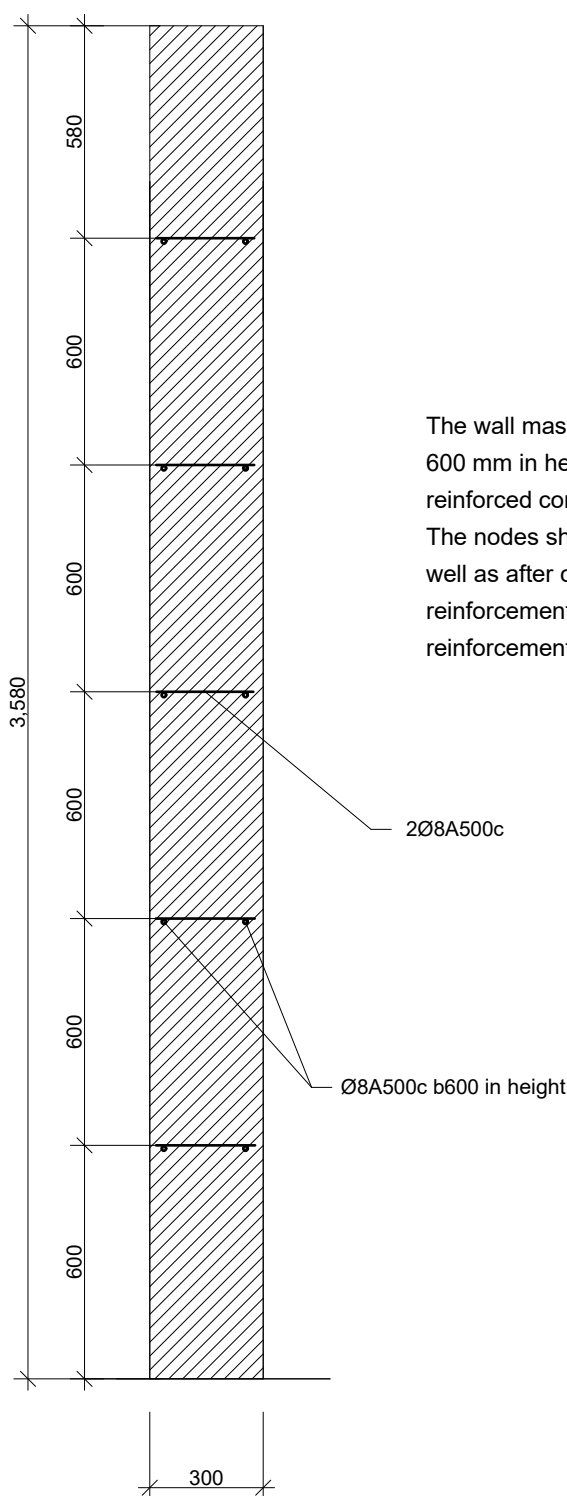


A-A
On partition

A-A
On external wall



The nodes shown in the drawing can be made by building the framed and bearing walls simultaneously, as well as after concreting. It requires perforation of the frame structure at 20 cm depth and anchor reinforcement rods by a polymer cement solution. Stone partitions should be reinforced with 2Ø6A1 reinforcement, at 600mm spacing in height, and anchored with reinforced concrete frame or wall masonry.

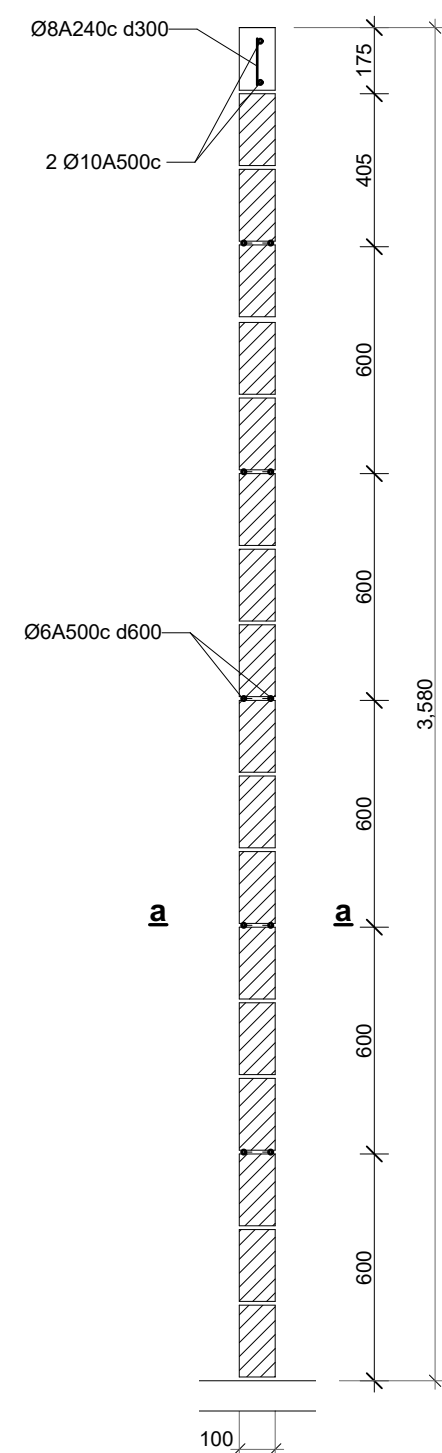


ელემენტი Element	№	არმატურის პროფილი reinforcement	სიგრძე, მმ Length m	რაოდენობა Qty	საერთო სიგრძე, მ Total length m	ბეტონი მ3 Concrete m3
ზღუდარები Lintels						
ზღუდარი გარე კედელზე Lintel on external wall	1	12 A500c			512	
	2	6 A240c			410	
ზღუდარი შიგა კედელზე Lintel on internal wall	1	10 A500c			396	
	2	6 A240c			114	
	ბეტონი B25 m3	Concrete				7.9
კედლების და ტიხრების არმირება Reinforcement of walls and partitions						
ტიხრების არმირება Reinforcement of partitions		6 A500c			3040	
გარე კედლების და ხეშტების არმირება Connections of external walls and columns		10 A500c			1360	

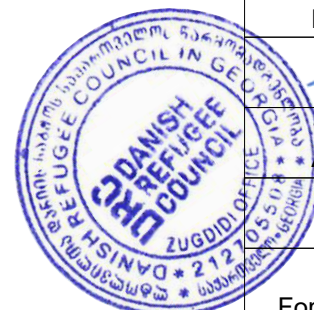
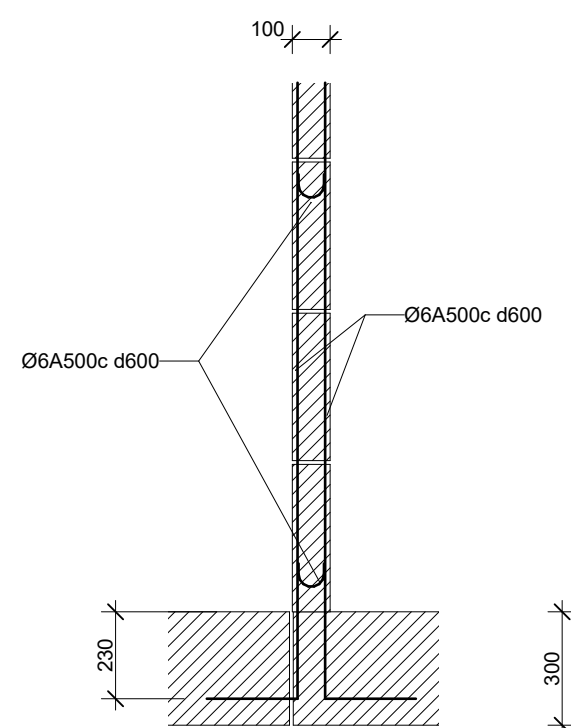
Specification of reinforcement						
არმატურის ამოცრევა						
Section	Section	Total length m	Total length with loss m	weight of r/m t	Total weight	
სეკცია	სეკცია	საერთო სიგრძე მ	საერთო სიგრძე დასაწვდომ მ	წონის წონა რ/მ-ის	საერთო წონა	საერთო წონა (კვადრატული მეტრი)
A240c	6 A240c	524.0	524.0	0.222	0.12	0.1
	8 A240c		0.0	0.394	0.00	
A500c	6 A500c	3040.0	3040.0	0.222	0.67	2.3
	8 A500c		0.0	0.394	0.00	
	10 A500c	1756.0	1843.8	0.616	1.14	
	12 A500c	512.0	537.6	0.887	0.48	
	14 A500c		0.0	1.208	0.00	
	16 A500c		0.0	1.578	0.00	
	18 A500c		0.0	1.997	0.00	
	20 A500c		0.0	2.465	0.00	
	22 A500c		0.0	2.983	0.00	
	25 A500c		0.0	3.851	0.00	
					2.40	

Total weight per class, Tons

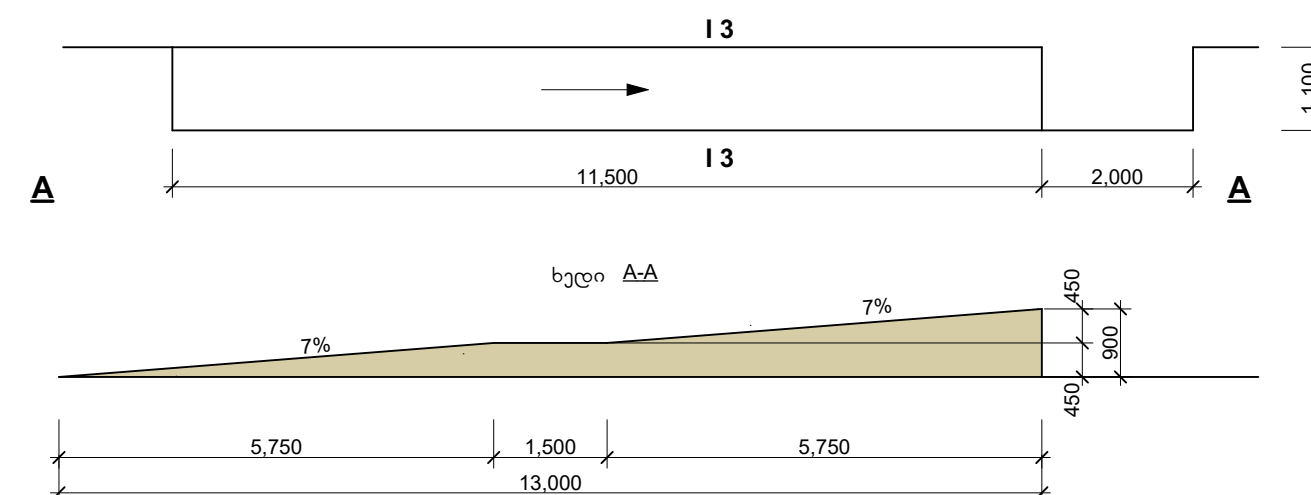
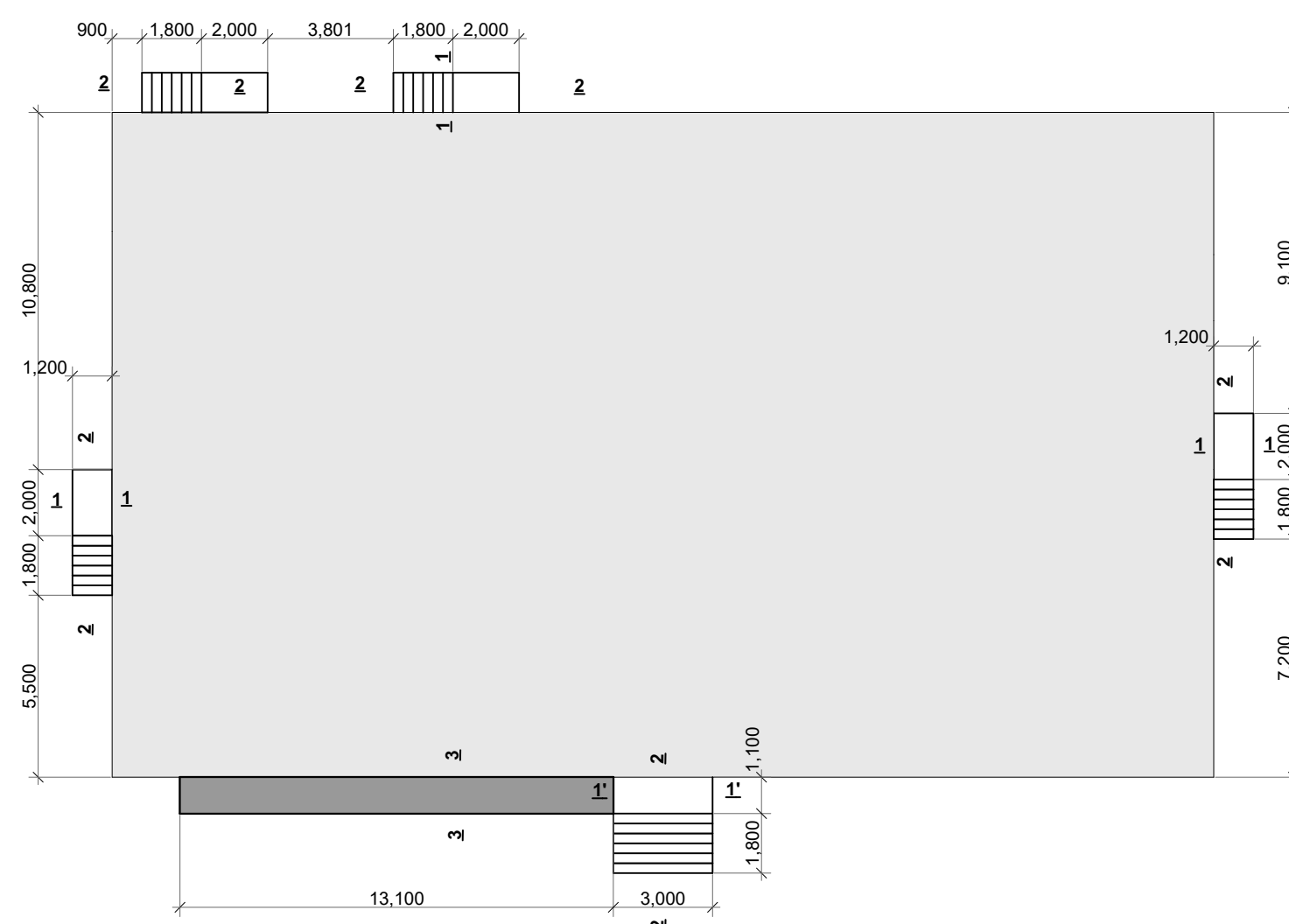
Partition reinforcement



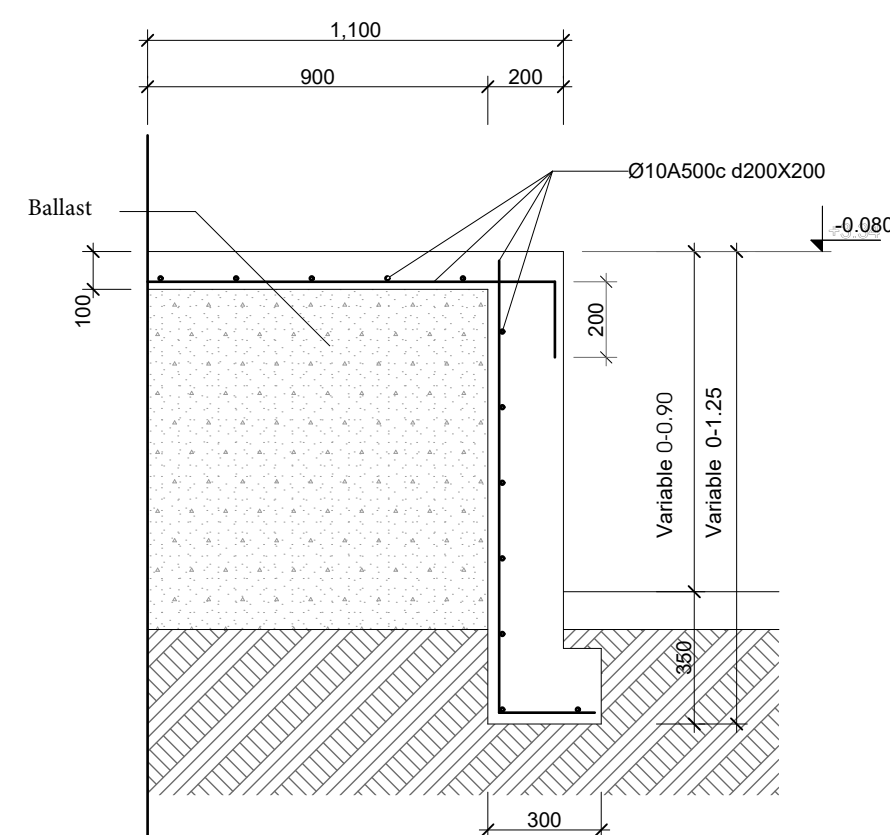
a - a



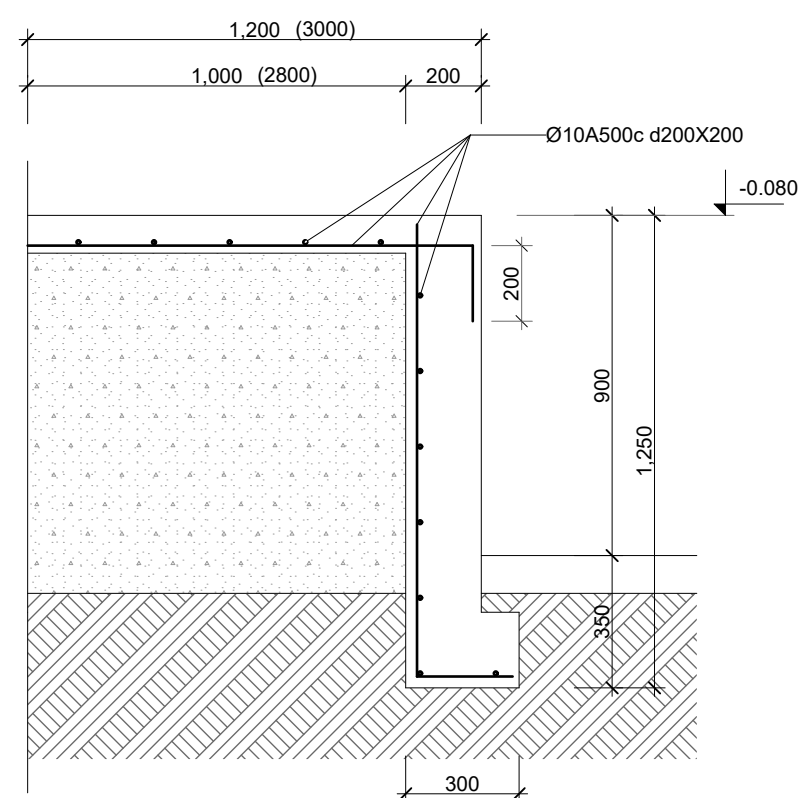
Plan of Ramp



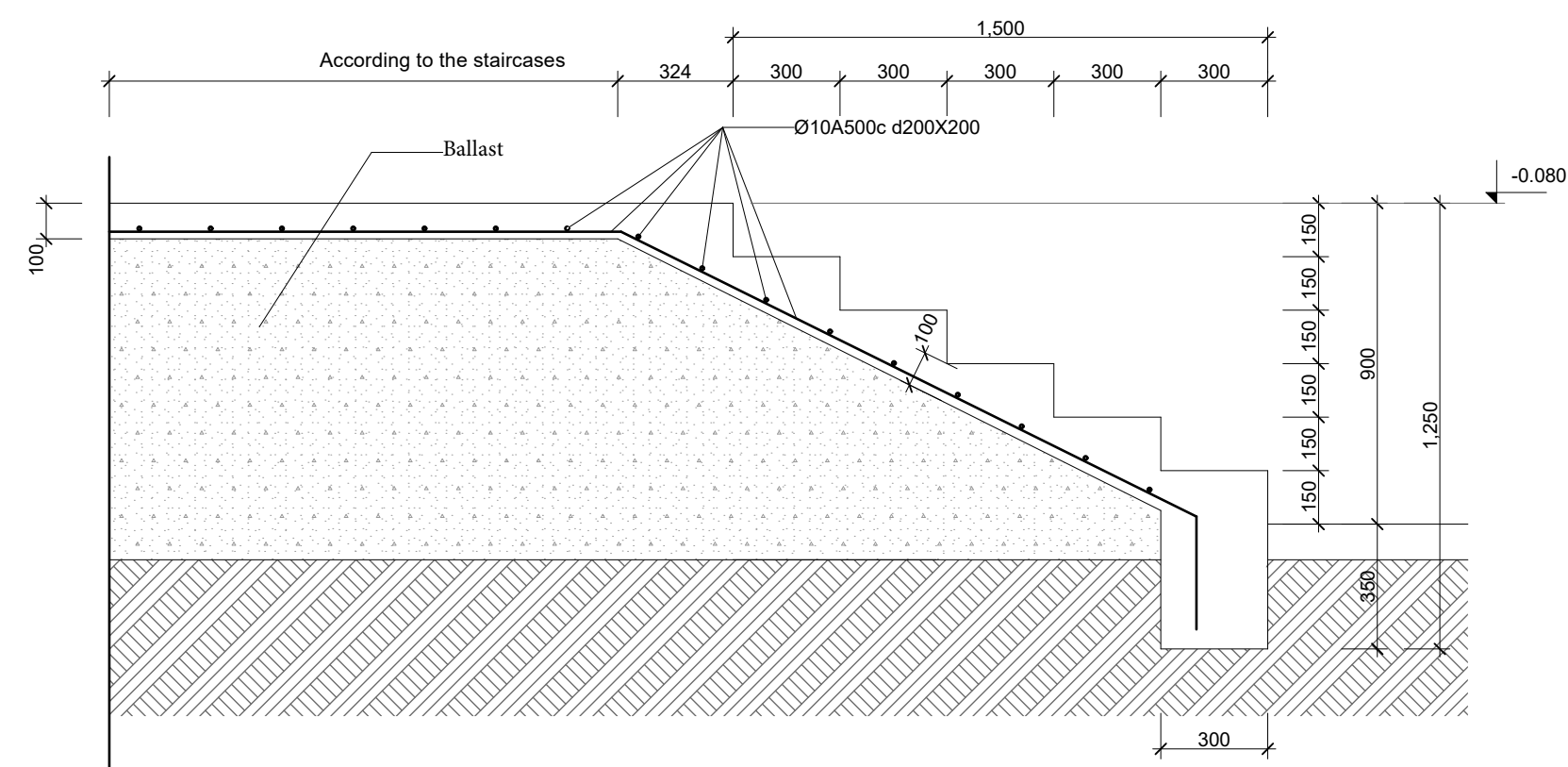
Section 3-3



Section 1-1 (1'-1')



Section 2-2

[illegible]

Plan of the Wooden structure of Roof

Typical
Kindergarten
for three groups
Mshvidobis street,
306, Senaki

Project address:
Georgia,
Senaki

Stage:
Architectural project

Plan and render
of roof wooden
structure

ბ. ჯანთარია
B. Qantaria

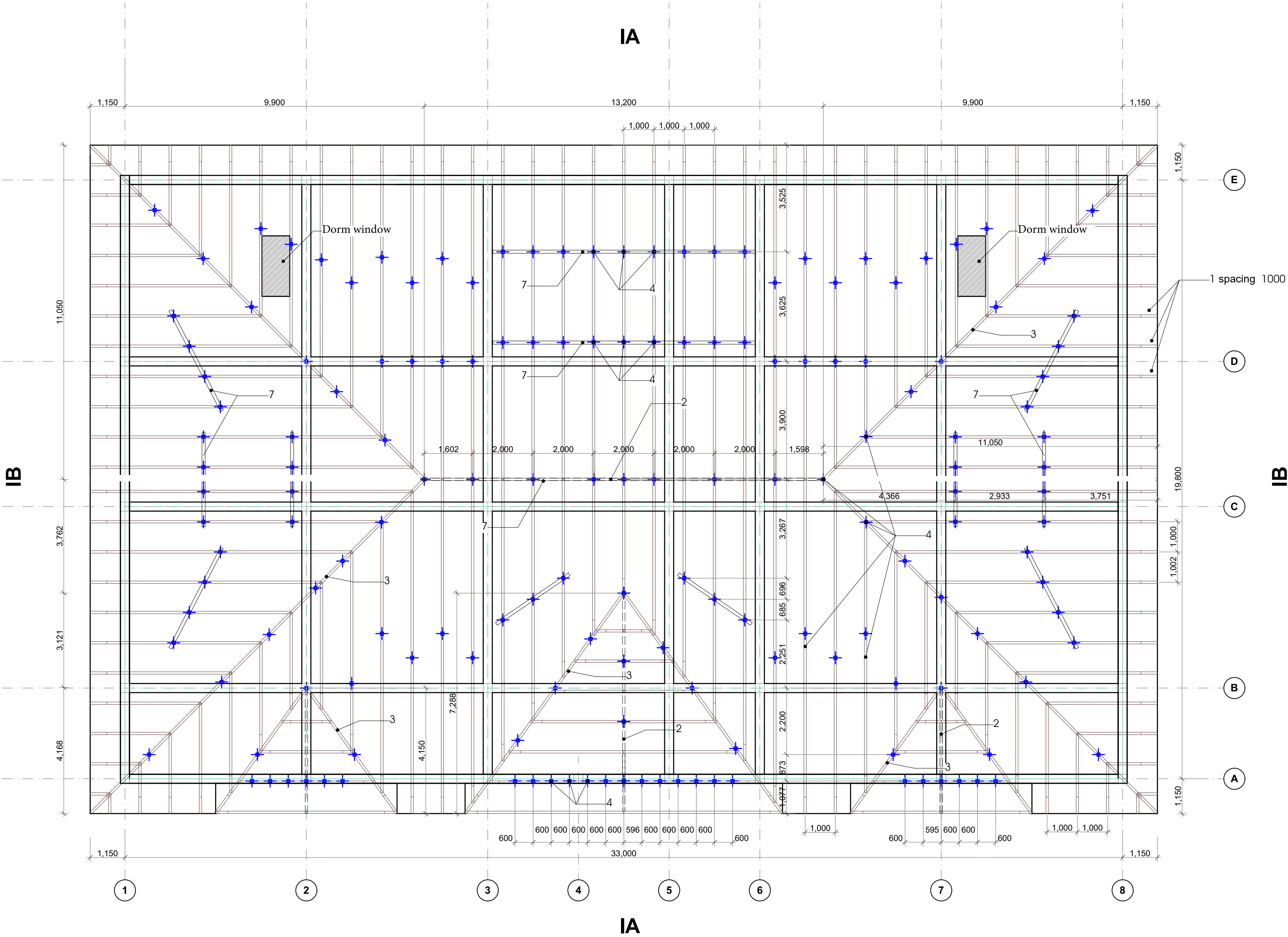
ა. გერგელავა
A. Gergedava

ფორმატი
Format A - 2

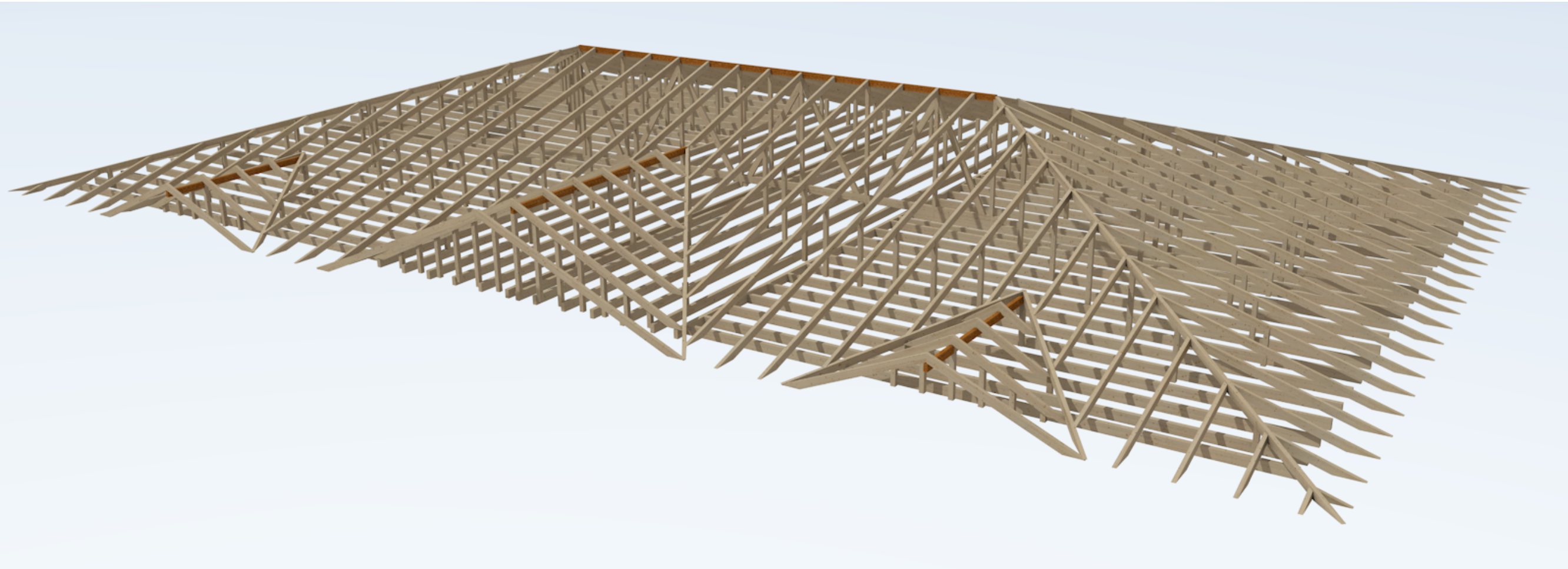
ფურცელი
Page

ფურცლები
Pages

29 32



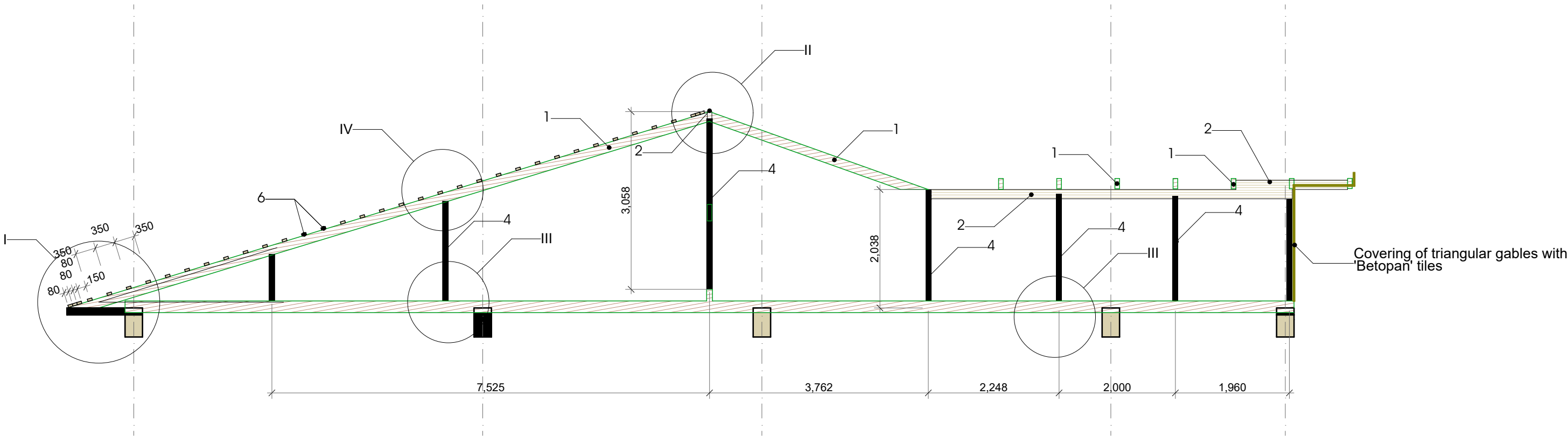
Render of the Roof Wooden Structure



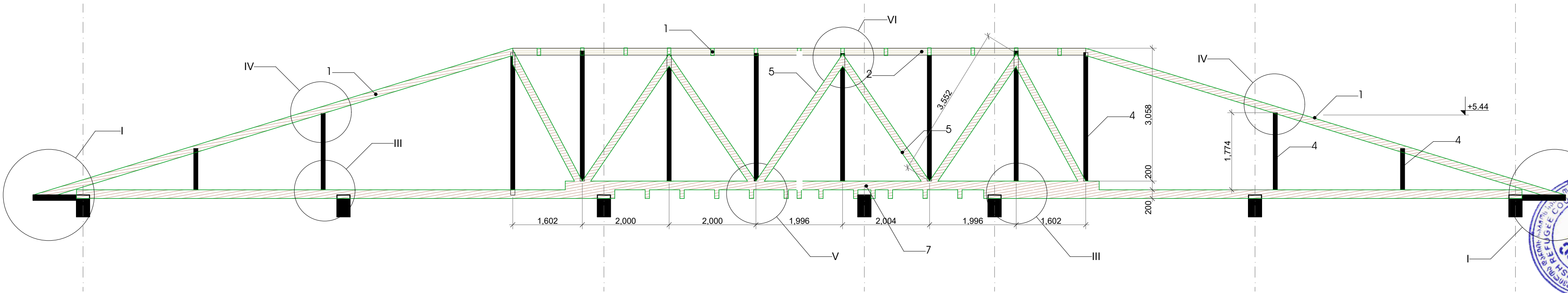
Specification of the Woden Elements					
სის პლანგნების სპეციფიკაცია					
N	პოპის სპეციფიკაცია Beam section	სიგანე მმ Width mm	სიმაღლე მმ Height mm	საერთო სიგრძე მ total length m	მოცულობა მ3 Volume m3
1	ბოჭბოჭა Rafter	80	160	840	10.75
2	პოპის პოპი Ridge beam	80	160	32	0.41
3	ბოჭბოჭა ბოჭბოჭა Diagonal Rafer	80	160	108	1.38
4	ბოჭბოჭა Pillar	100	100	304	3.04
5	ბოჭბოჭა ბოჭბოჭა ბოჭბოჭა Brace for connections	100	100	28	0.28
6	ბოჭბოჭა ბოჭბოჭა Squared timber bar	40	80	2897	9.27
7	ბოჭბოჭა ბოჭბოჭა Spreading beam	80	160		0.60
				Σ	25.73

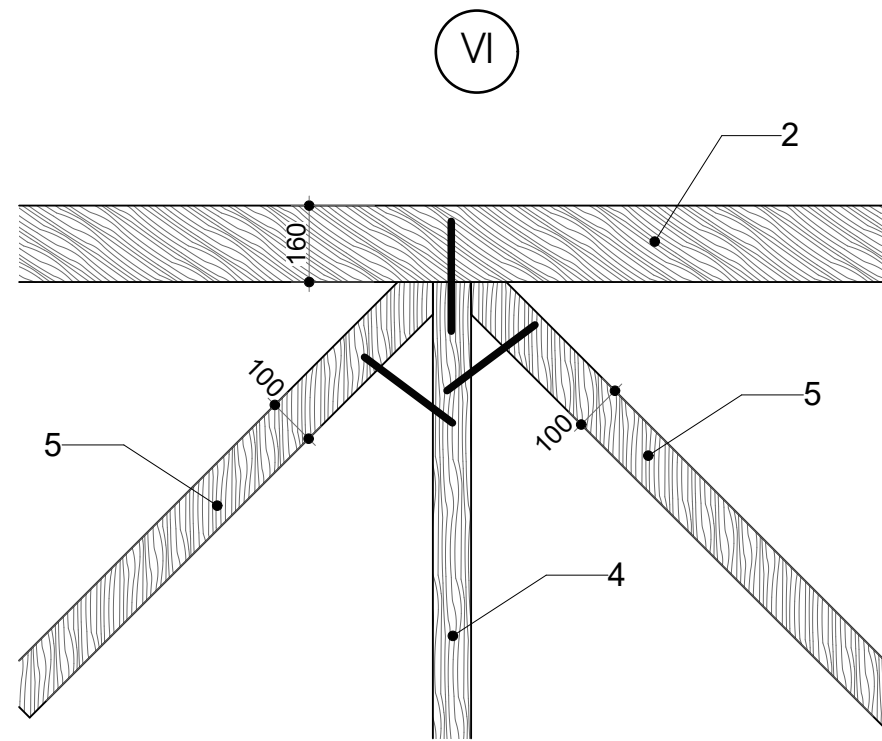
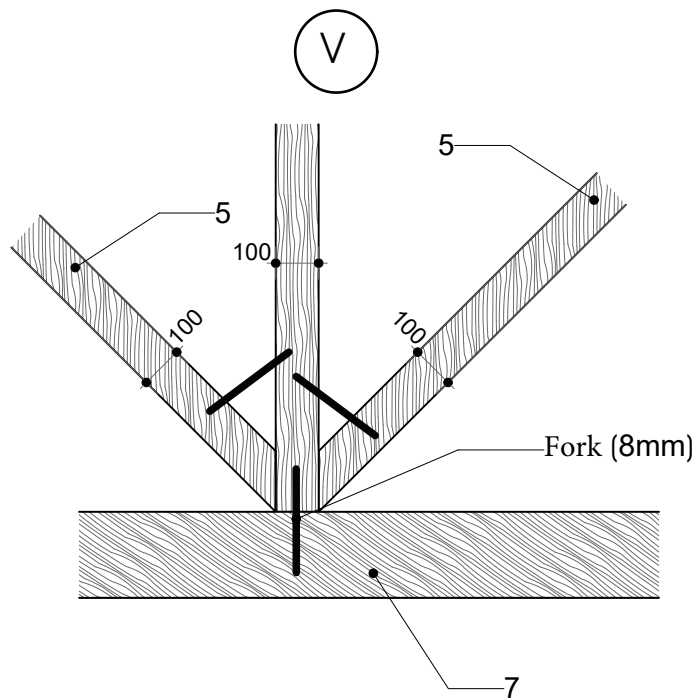
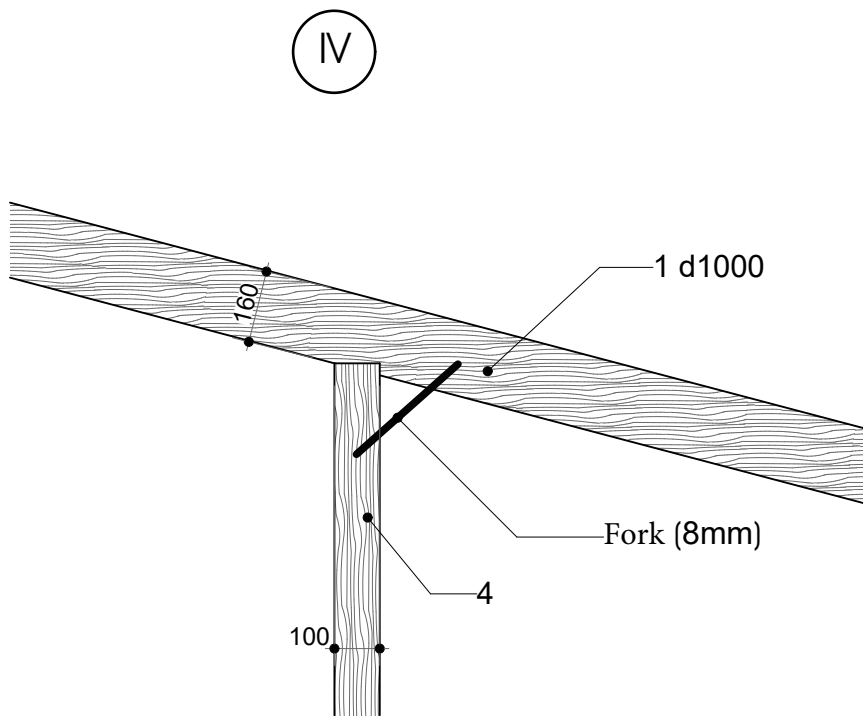
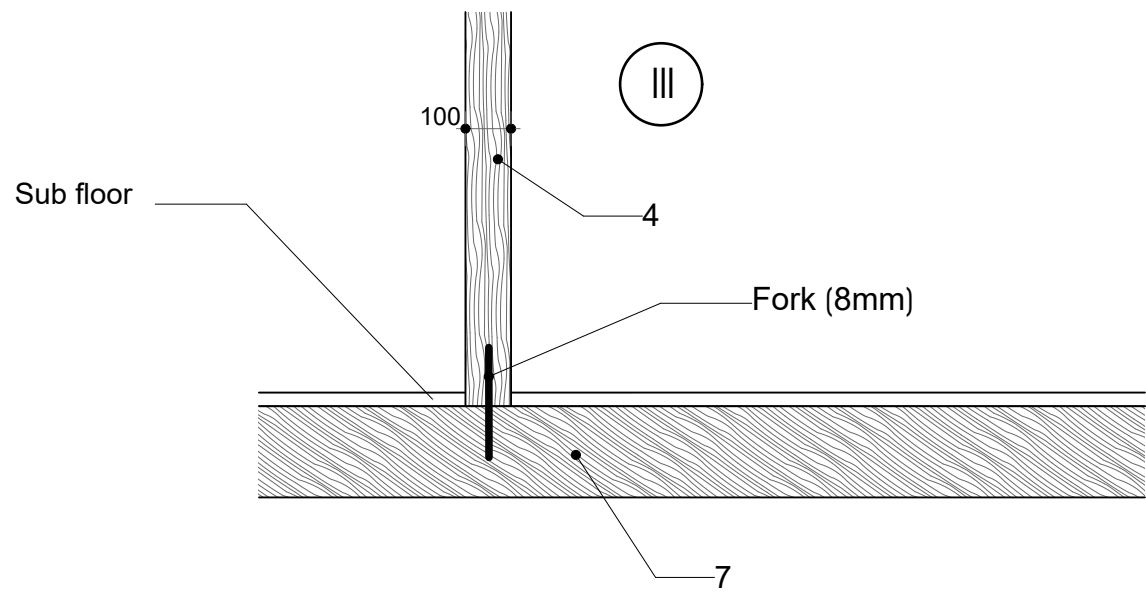
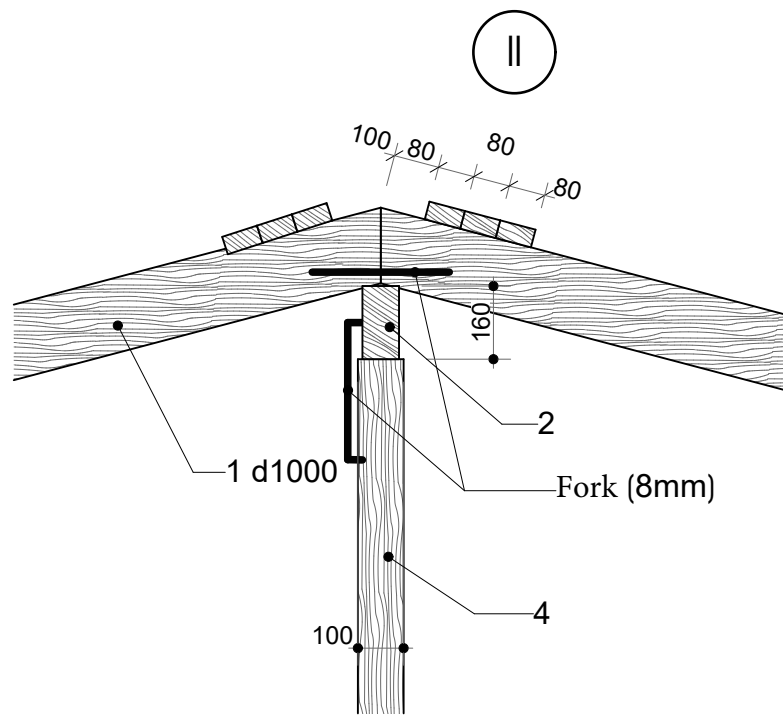
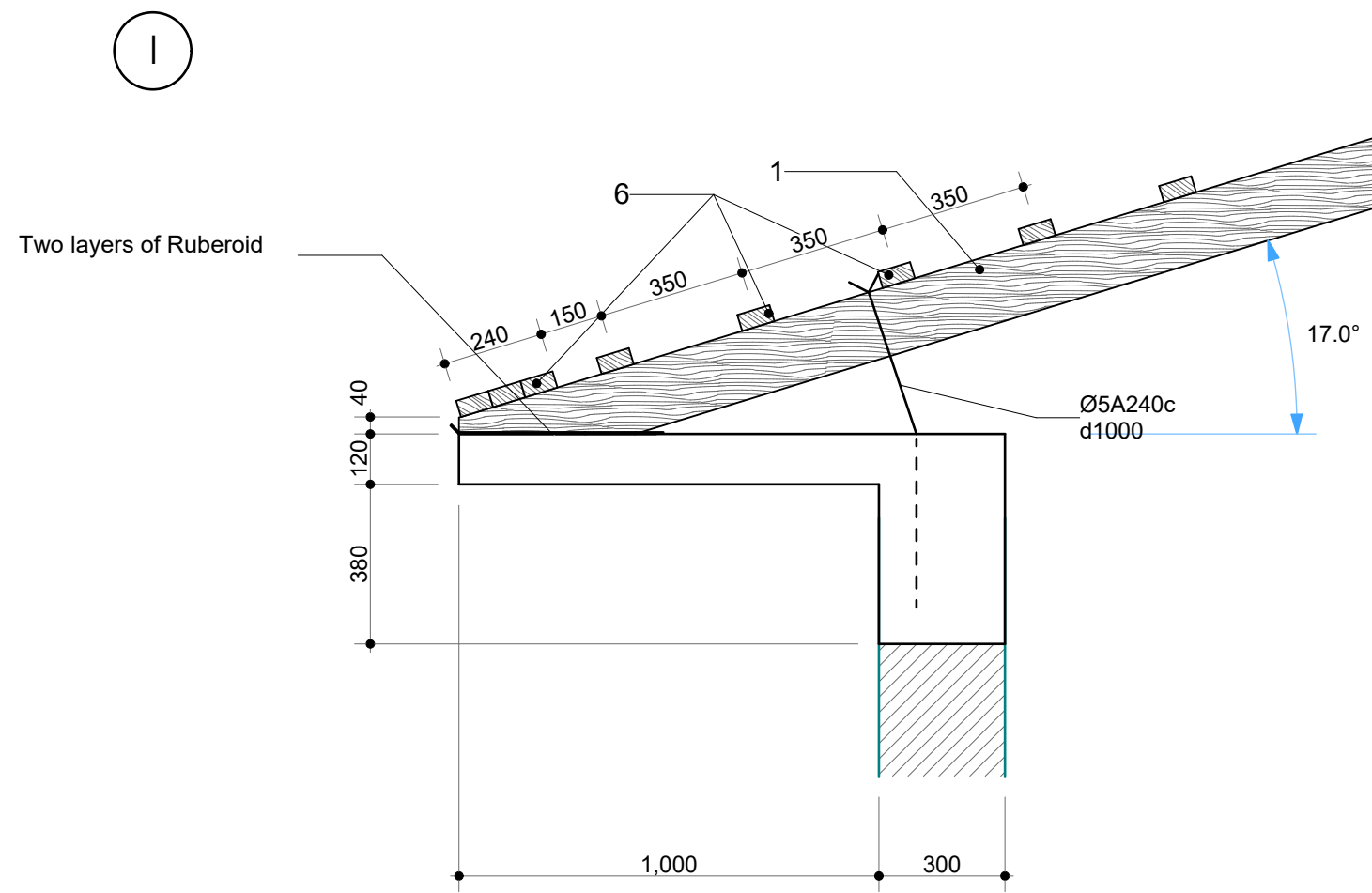
Roof and ceiling wooden structures are made from second-class dried coniferous wood material.

Section A-A



Section B-B

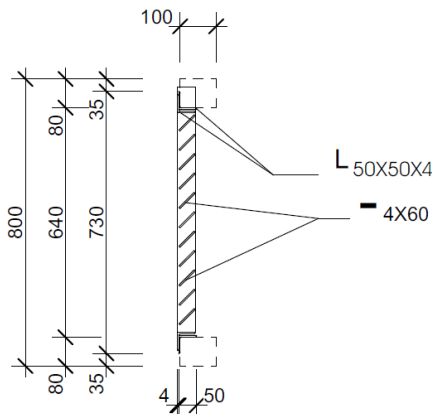
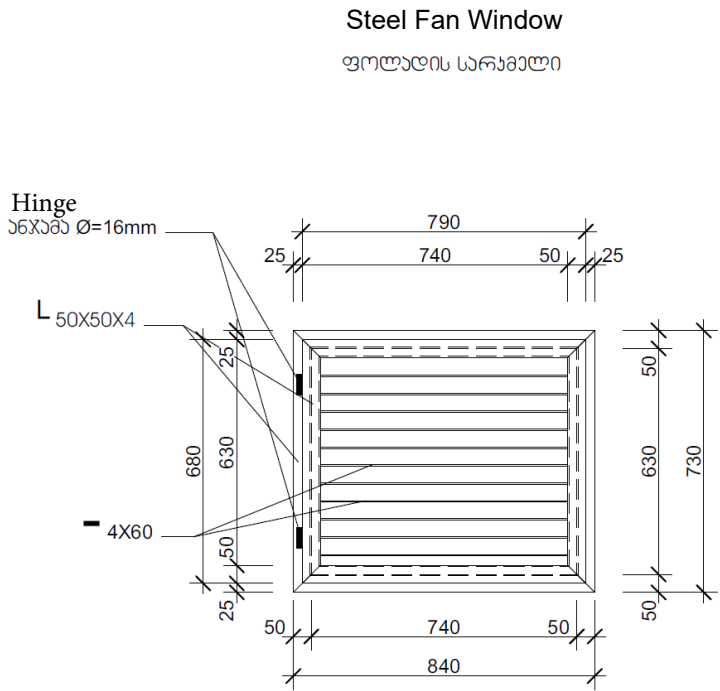
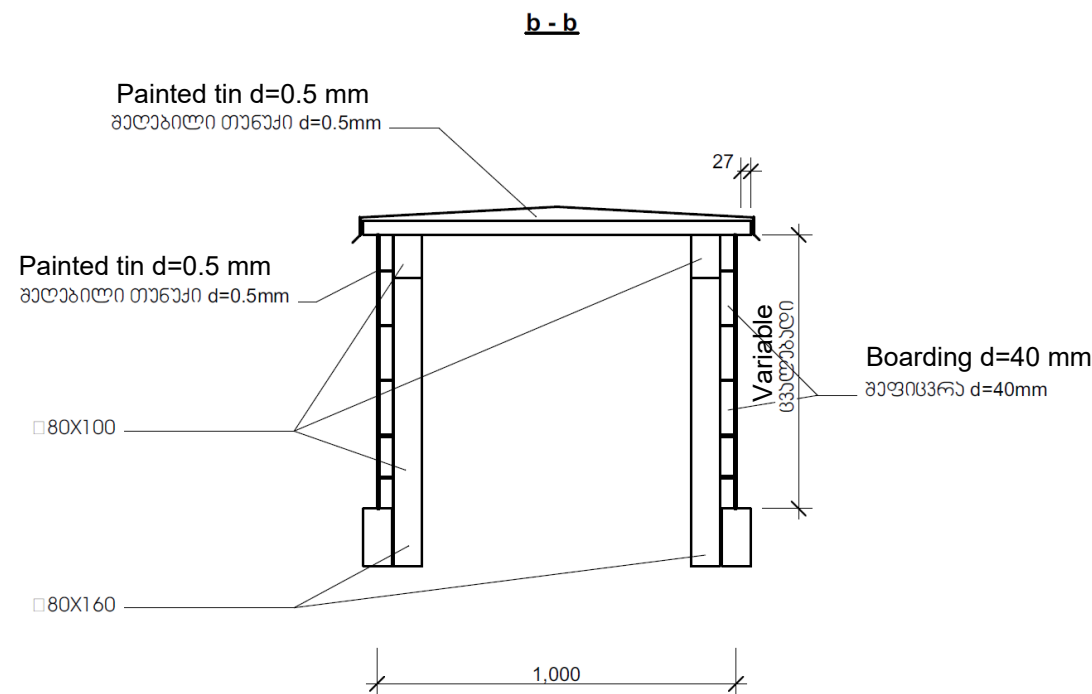
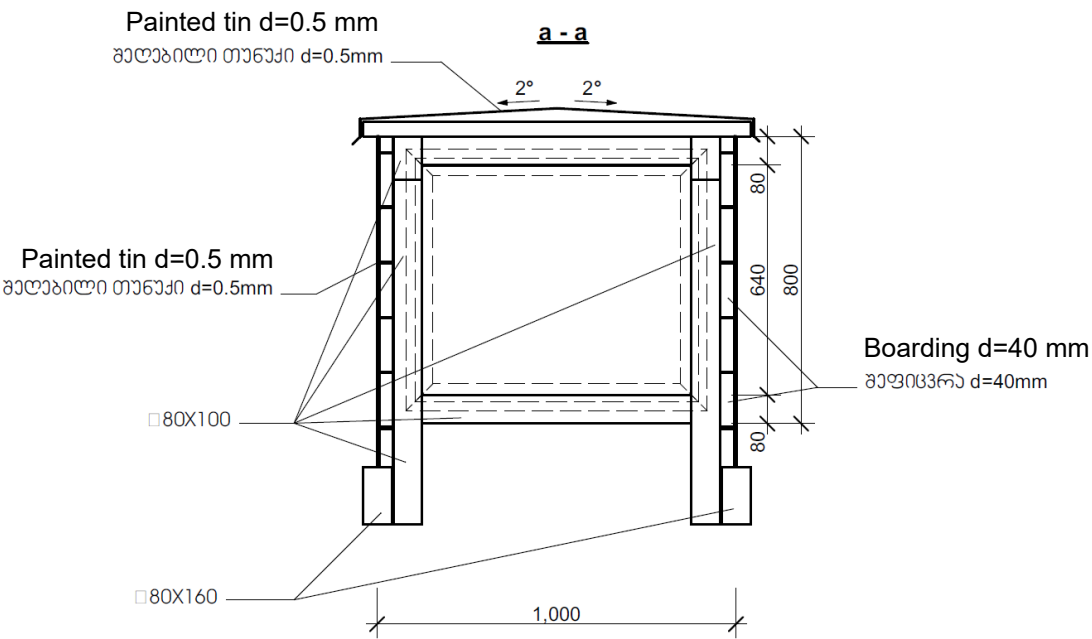
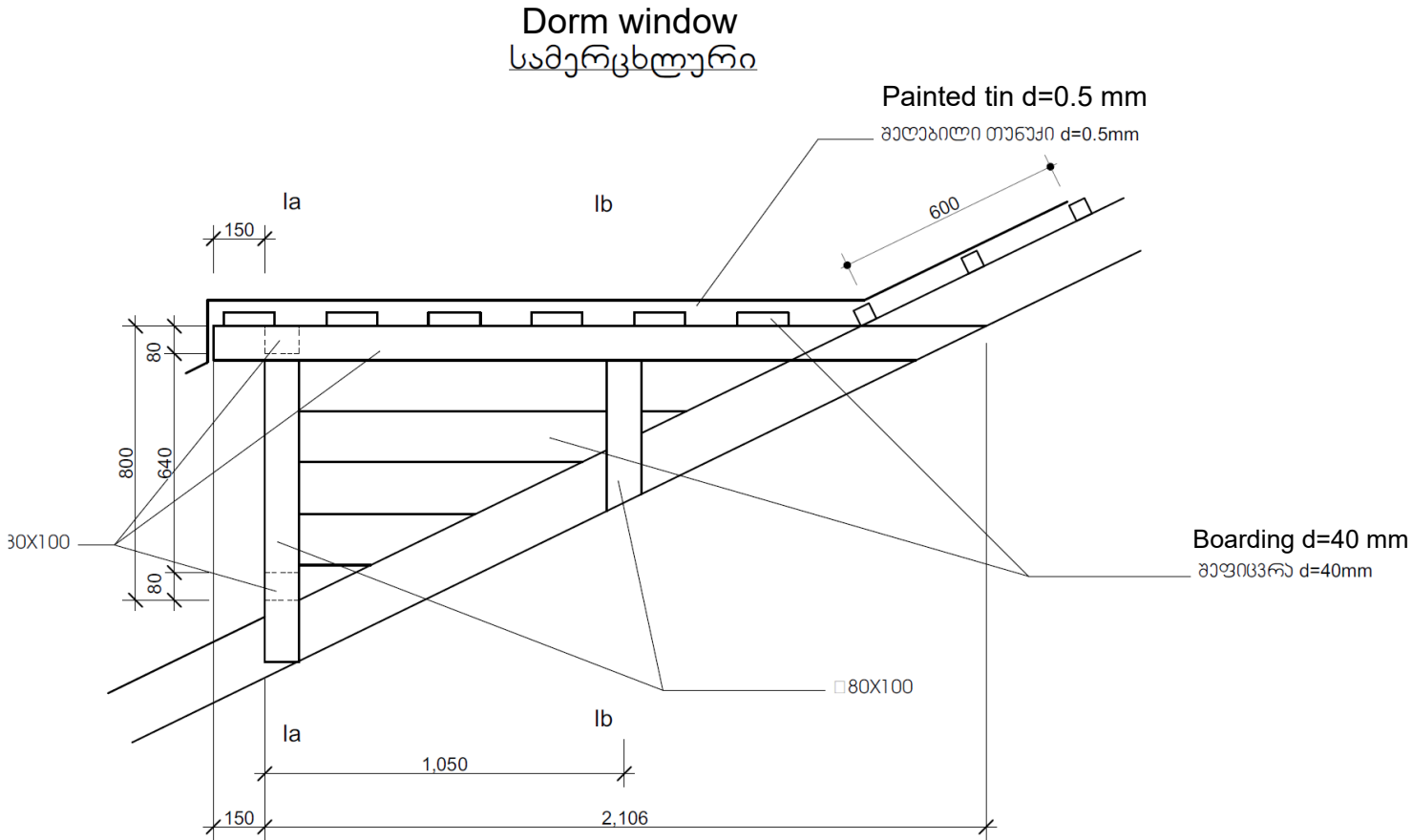




Note: _____

It is necessary to treat wooden structures with both fire-retardant solutions and antiseptics.





ფოლადის სპეციფიკაცია Specification of Steel				
კვეთი Cross-Section	სიგრძე მ Length m	რაოდენობა Q-ty	საშუალო სიგრძე მ total length m	წონა კგ weight kg
L-50X50X4	0.73	2	1.46	4.23
L-50X50X4	0.84	2	1.68	4.87
L-50X50X4	0.68	2	1.36	3.94
L-50X50X4	0.79	2	1.58	4.58
60X4	0.69	11	7.59	14.27
			Σ	31.90

