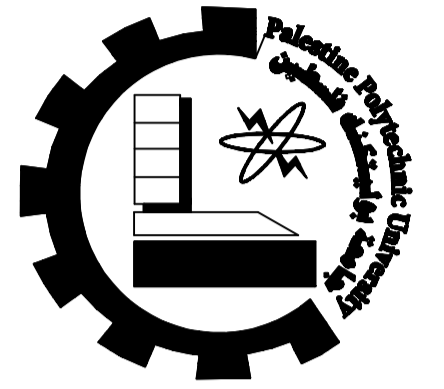


# PROJECT INDEX

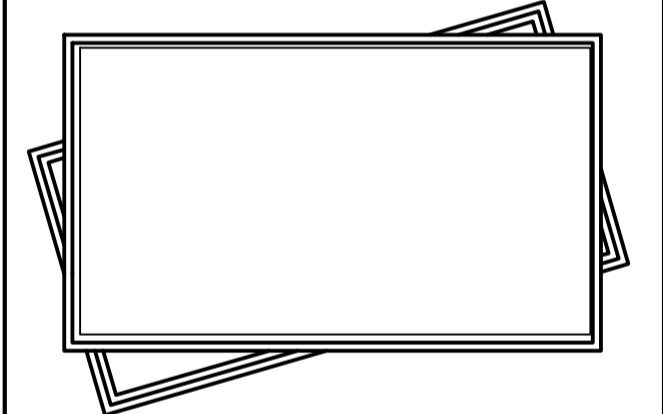
## LIST OF DRAWINGS

<b>A00</b>	<b>Project Index</b>
<b>A01</b>	<b>Site Plan</b>
<b>A02</b>	<b>Basement 3th &amp; 4th Floor dimension plan</b>
<b>A03</b>	<b>Basement First dimension plan</b>
<b>A04</b>	<b>Ground Floor Dimensions Plan</b>
<b>A05</b>	<b>First Floor Dimensions Plan</b>
<b>A06</b>	<b>Second Floor Dimensions Plan</b>
<b>A07</b>	<b>Third Floor Dimensions Plan</b>
<b>A08</b>	<b>Fourth Floor Dimensions Plan</b>
<b>A09</b>	<b>Five Floor Dimensions Plan</b>
<b>A10</b>	<b>Basement 3th &amp; 4th Floor Furniture plan</b>
<b>A11</b>	<b>Basement First Furniture plan</b>
<b>A12</b>	<b>Ground Floor Furniture Plan</b>
<b>A13</b>	<b>First Floor Furniture Plan</b>
<b>A14</b>	<b>Second Floor Furniture Plan</b>
<b>A15</b>	<b>Third Floor Furniture Plan</b>
<b>A16</b>	<b>Fourth Floor Furniture Plan</b>
<b>A17</b>	<b>Five Floor Furniture Plan</b>
<b>A18</b>	<b>South Elevation</b>

<b>A19</b>	<b>South West Elevation</b>
<b>A20</b>	<b>North Elevations</b>
<b>A21</b>	<b>East Elevation</b>
<b>A22</b>	<b>WEST Elevation</b>
<b>A23</b>	<b>Section A-A</b>
<b>A24</b>	<b>Section B-B</b>
<b>S01</b>	<b>Design Requirments</b>
<b>S(02-S03)</b>	<b>Columns Center Plan(قريزن غلا)</b>
<b>S (04-6A)</b>	<b>isolated footing Detail's</b>
<b>S (6A-7)</b>	<b>Combined footing details</b>
<b>S (8-11)</b>	<b>Mat footing</b>
<b>S12</b>	<b>Strip footing &amp;basement wall</b>
<b>S (13-17)</b>	<b>Columns details(sections)</b>
<b>S (18-23)</b>	<b>Columns details(elevation)</b>
<b>S (24-34)</b>	<b>Shear wall's Reinforcement Detail's</b>
<b>S(35-S36)</b>	<b>Stair's Reinforcement Detail's</b>
<b>S(37-53)</b>	<b>Slab's Reinforcement Detail's</b>
<b>S54</b>	<b>Ramp Reinforcement Detail's</b>
<b>S55-S58</b>	<b>Stirrups Punching Reinforcement Detail's</b>



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Proposed  
Commercial Cplx

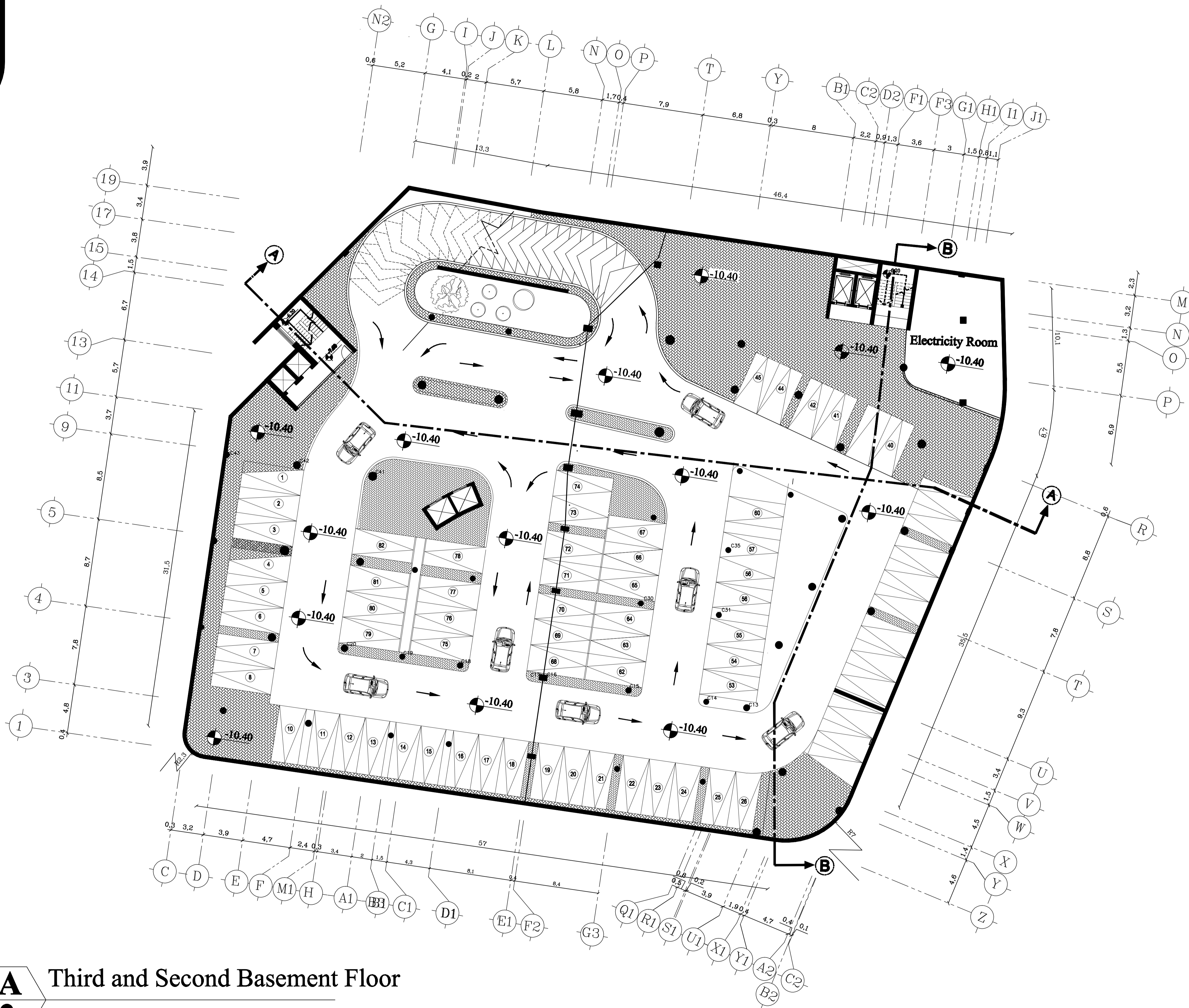
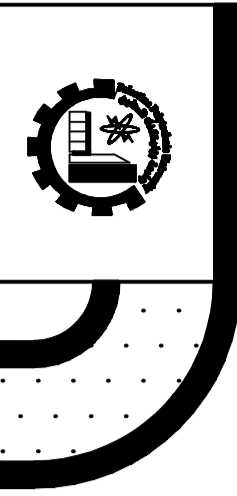
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Drawing :  
PROJECT INDEX

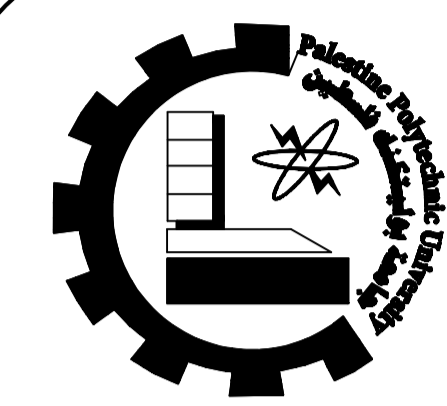
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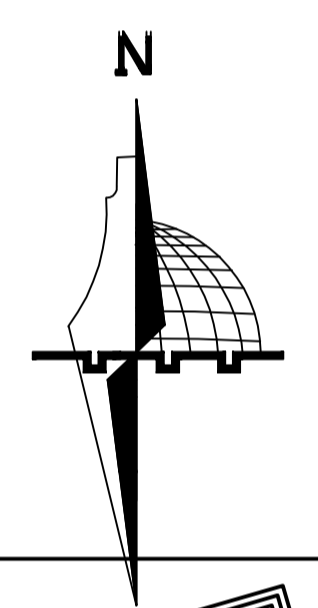




**A** Third and Second Basement Floor  
**2** SCALE 1/200



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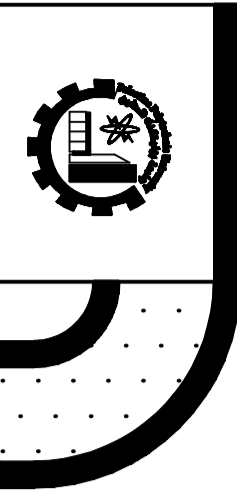
Project: Structural Design For  
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 Commercial Complex

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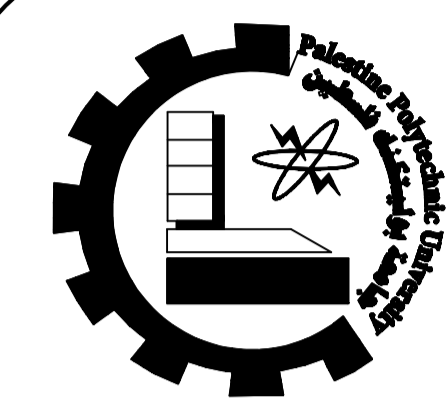
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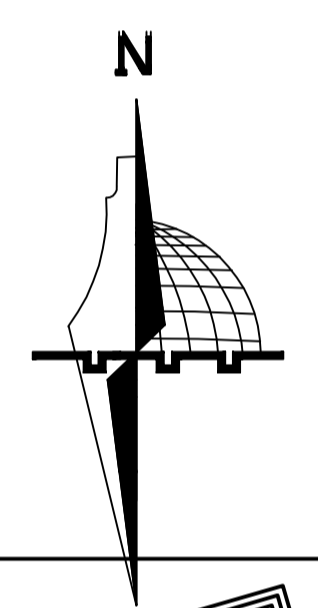
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**A** First Basement Floor  
**3** SCALE 1/200



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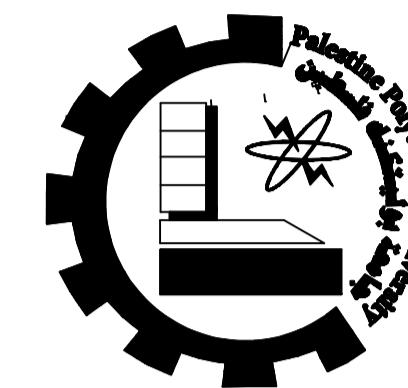
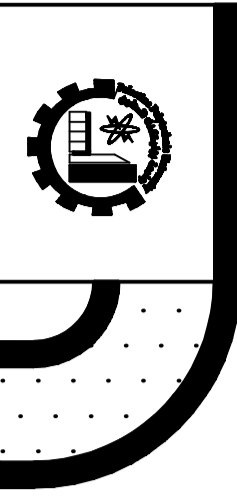
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In:  
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Drawing :  
 First Basement Floor Dimension

NO: A(03)

Scale : 1:200 Date : Dec-2019



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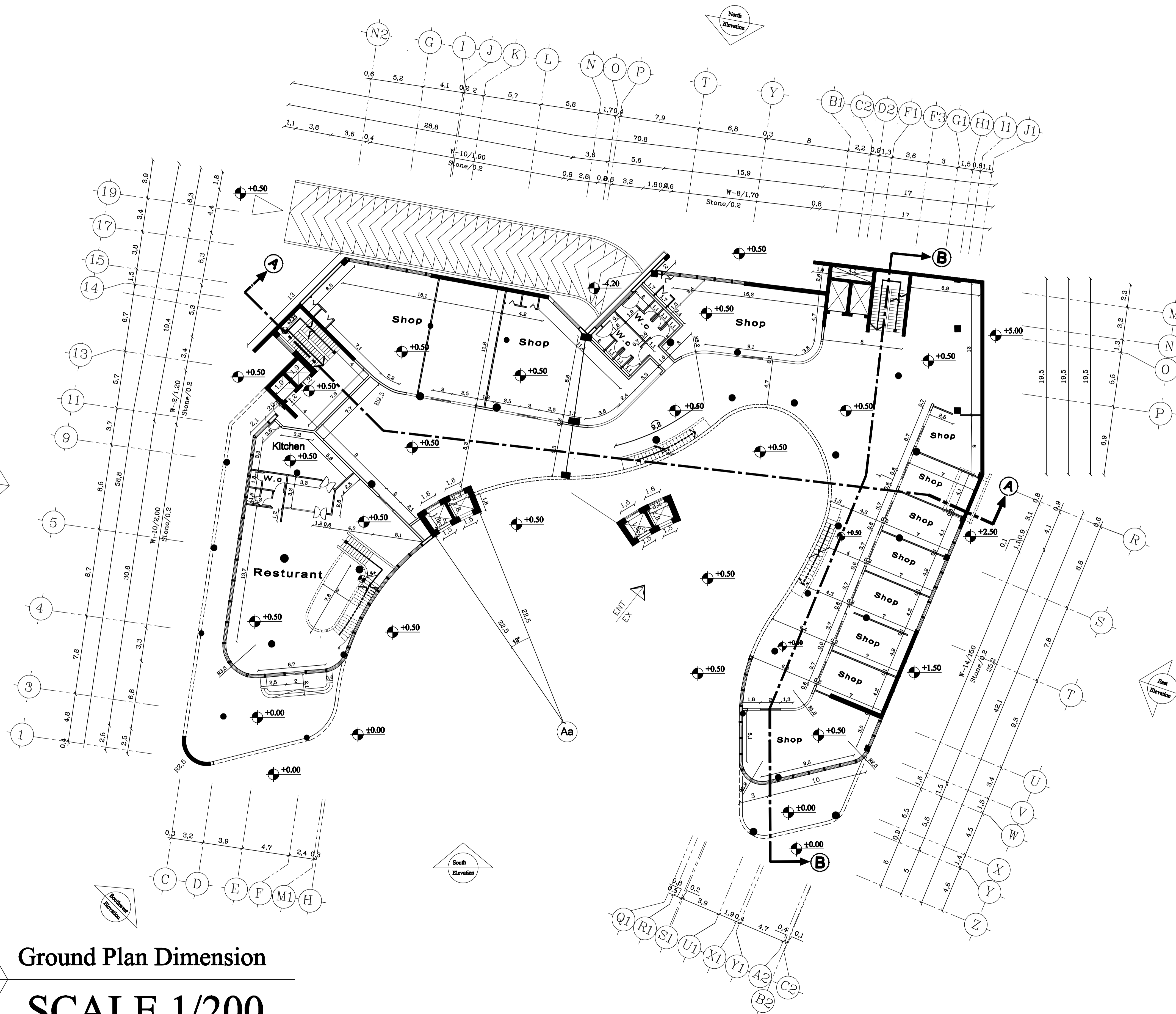
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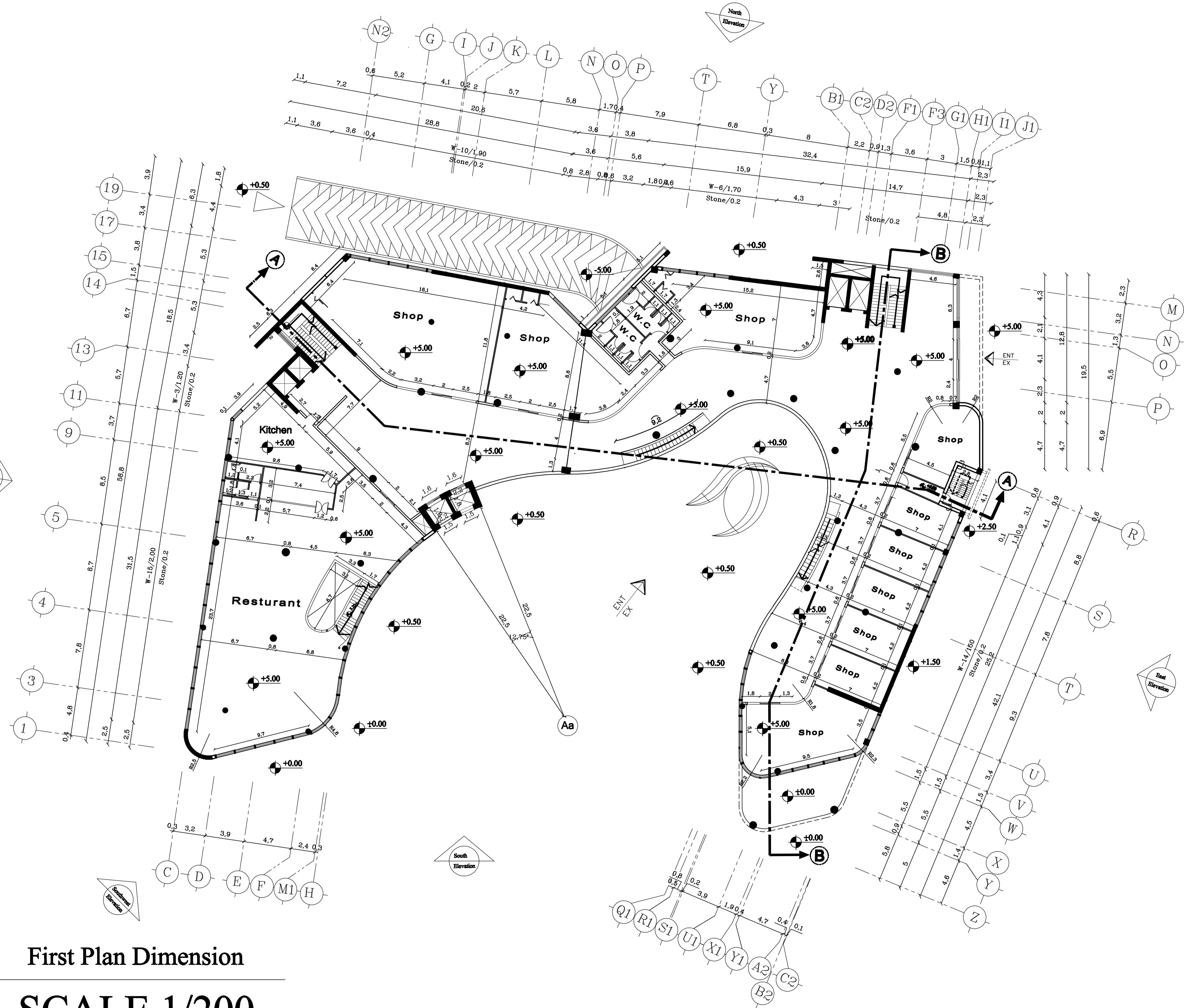
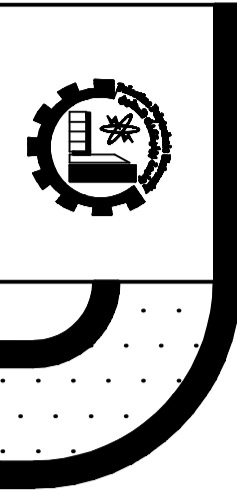
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Master Ground Plan

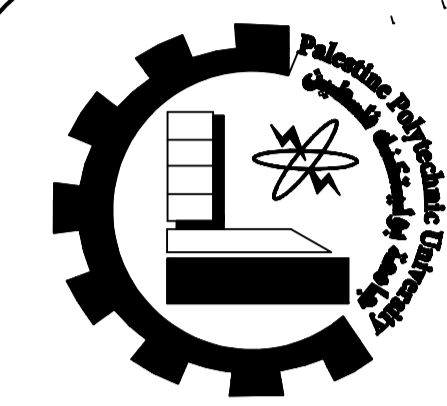
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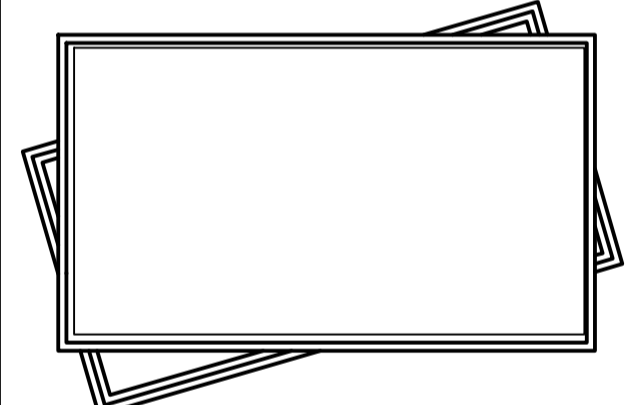
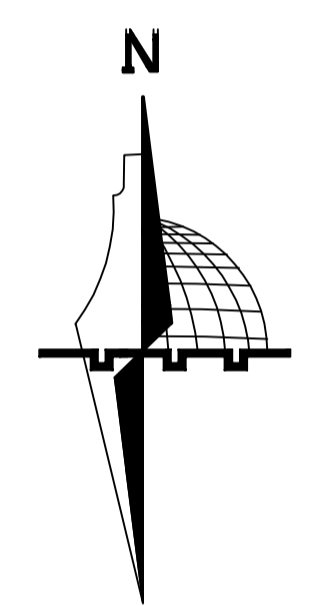
**A**  
**4** Ground Plan Dimension  
**SCALE 1/200**



**A**  
**5** First Plan Dimension  
**SCALE 1/200**



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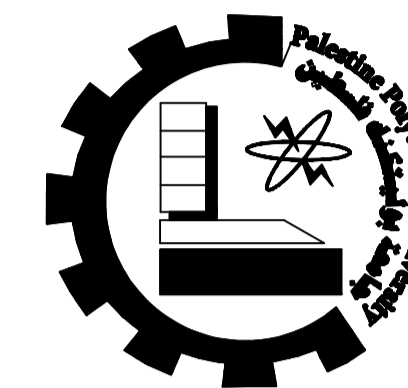
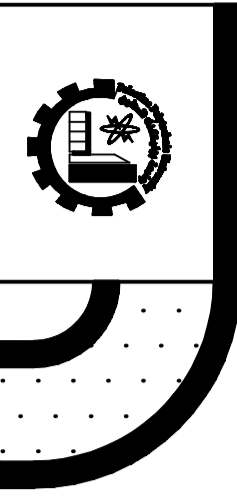
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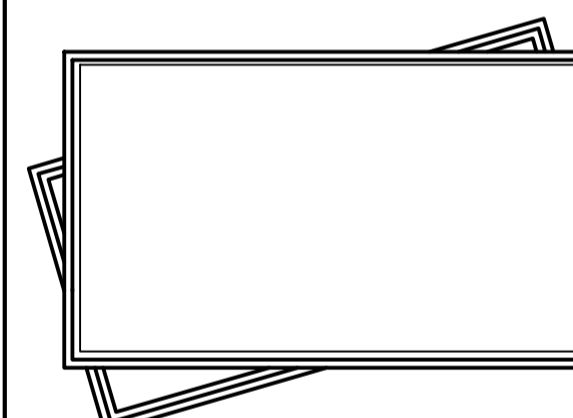
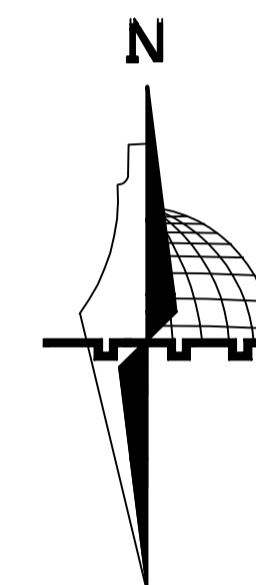
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First Plan Dimension

**NO:** A(05)

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**Date :** Dec-2019



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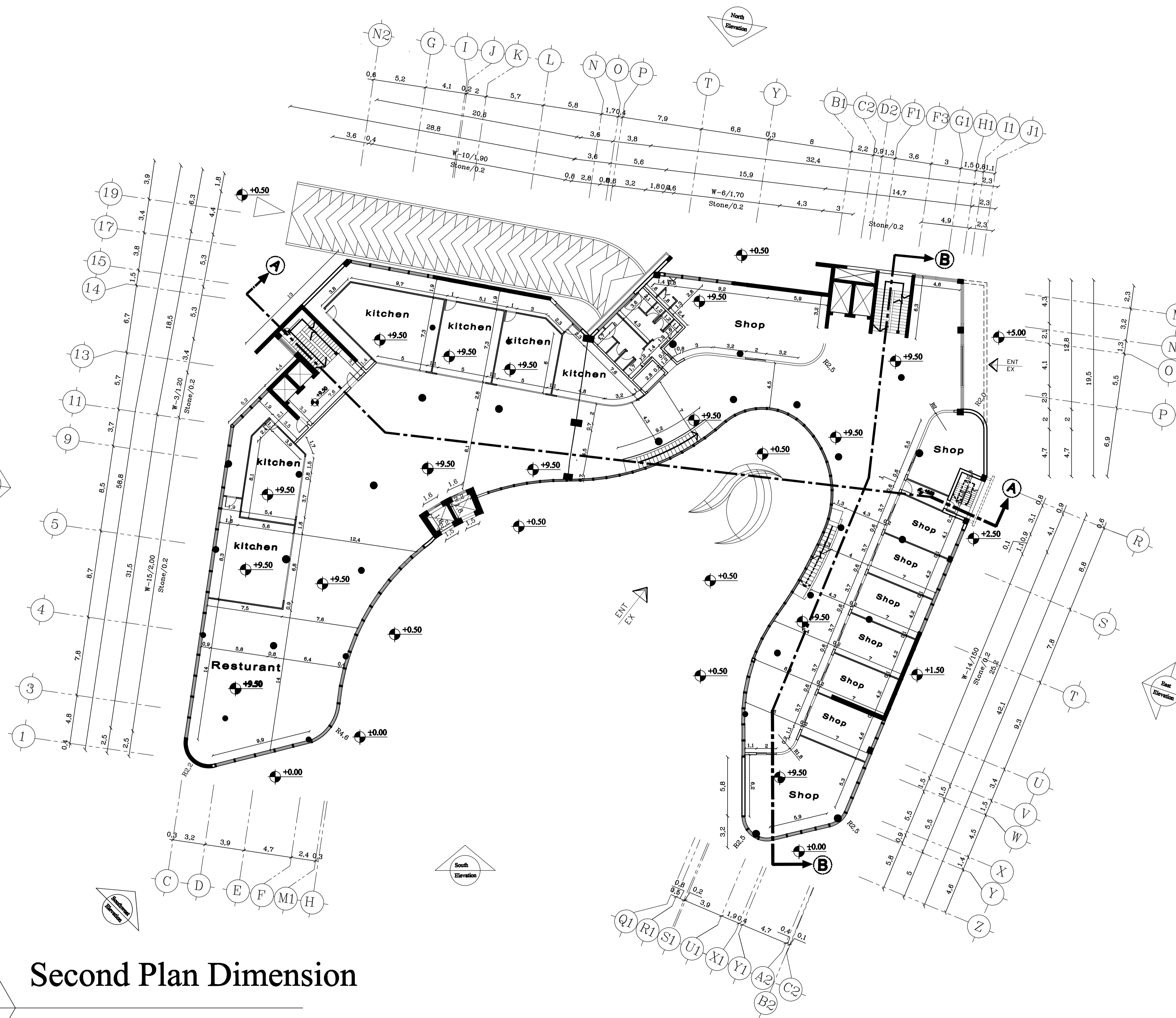
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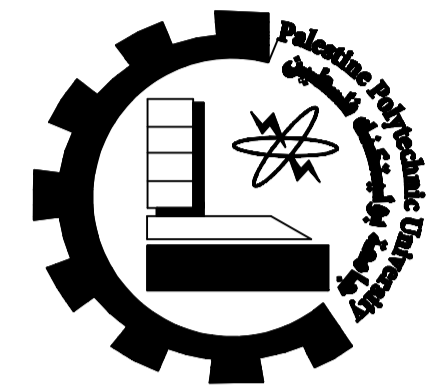
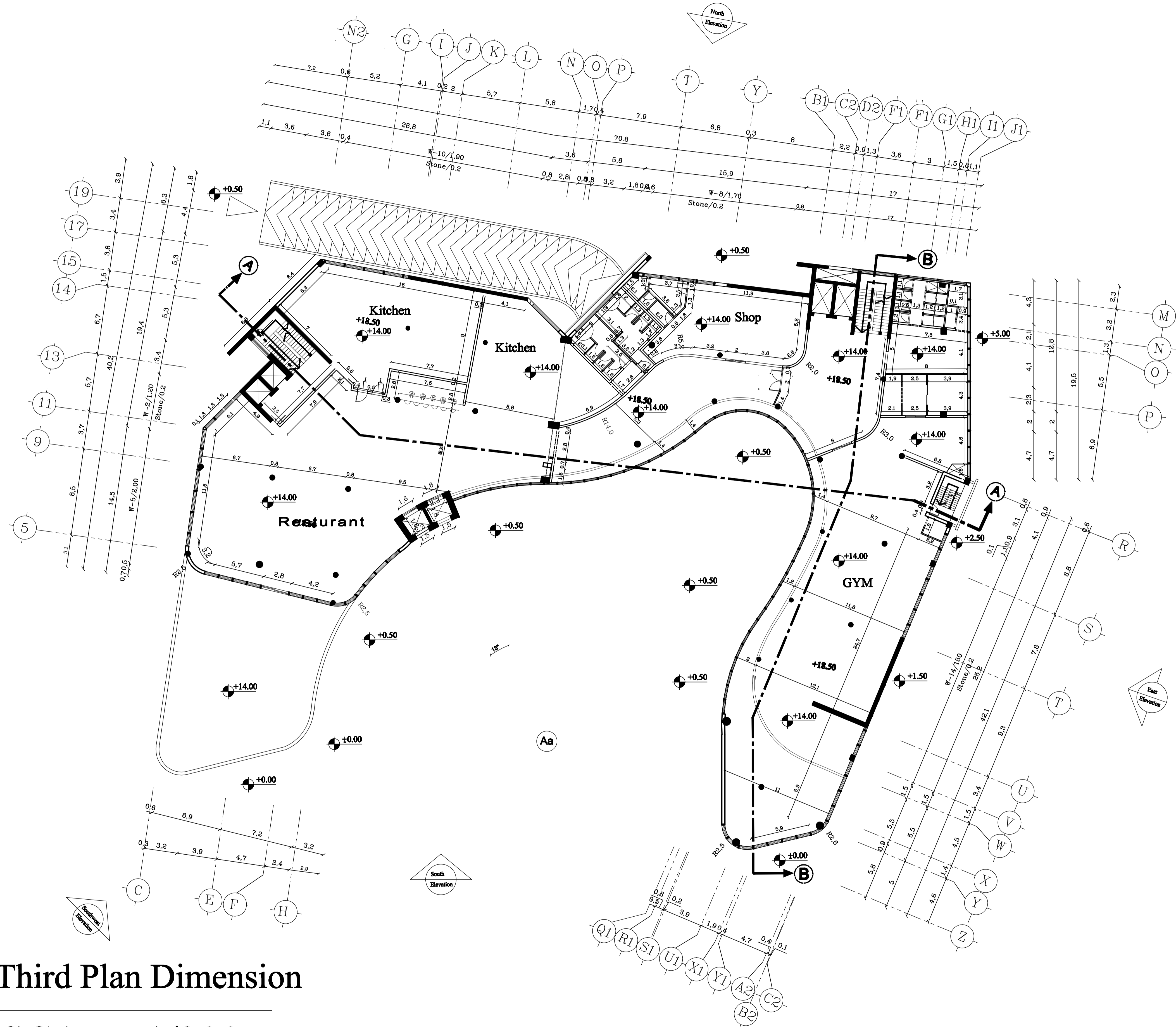
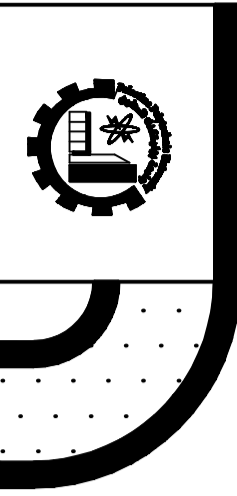
Drawing :  
 Second Plan Dimension

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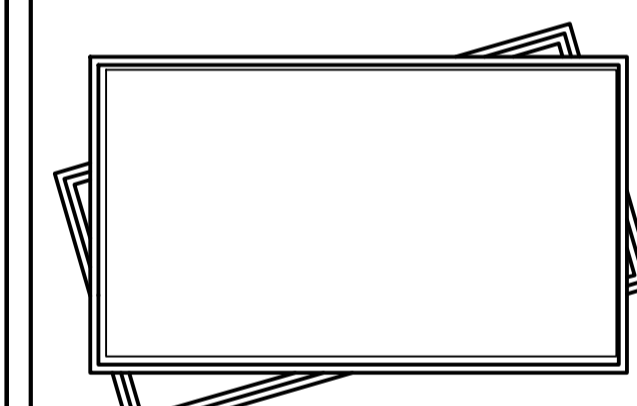
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**A**  
**6** Second Plan Dimension  
 SCALE 1/200



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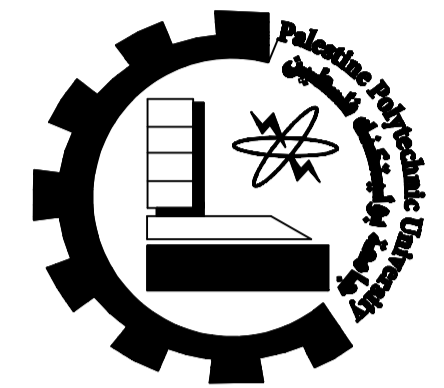
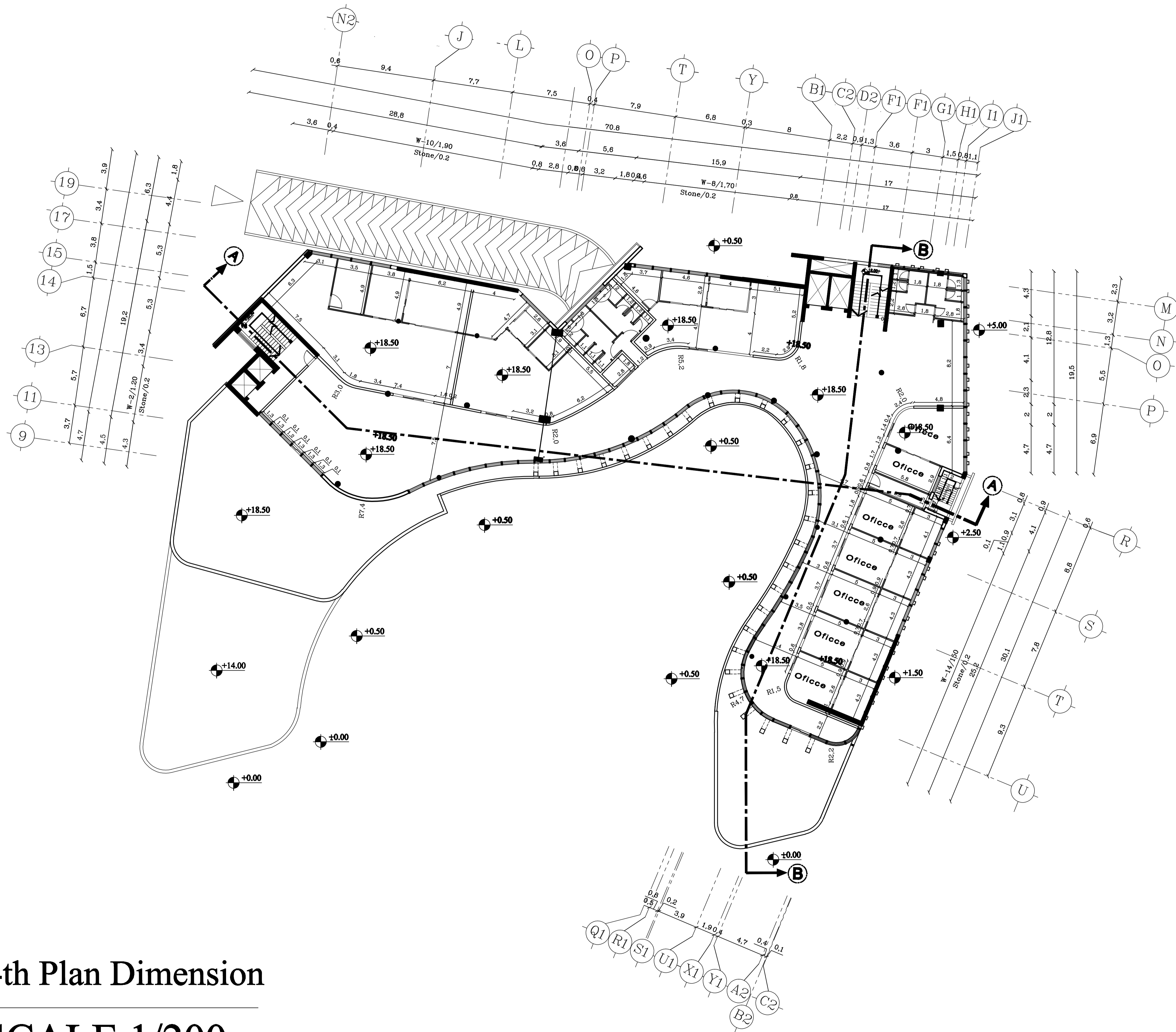
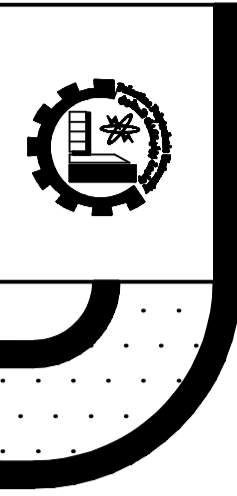
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Drawing :  
 Third Plan Dimension

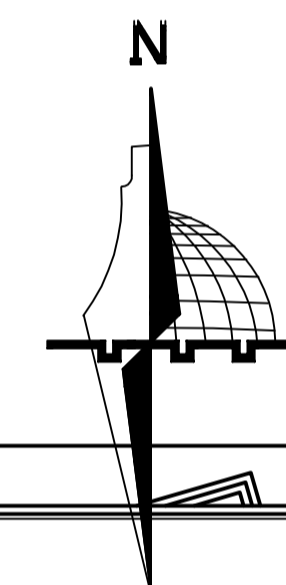
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**A**  
**7**  
 Third Plan Dimension  
 SCALE 1/200



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In:  
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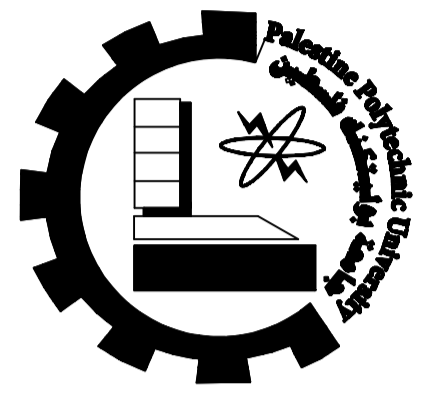
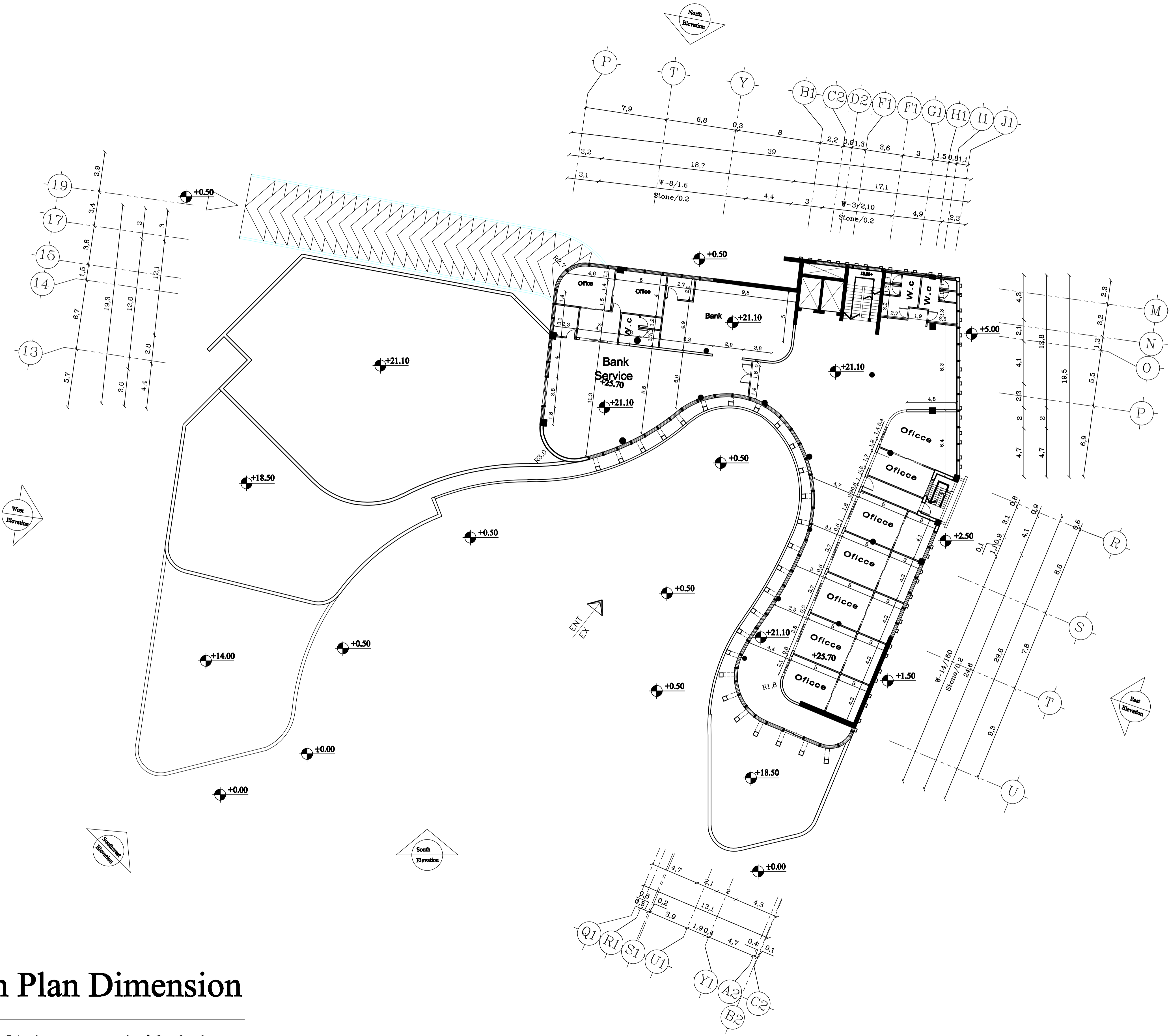
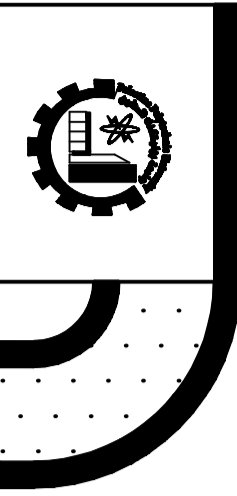
Drawing :  
 Fourth Plan Dimension

NO: A(08)

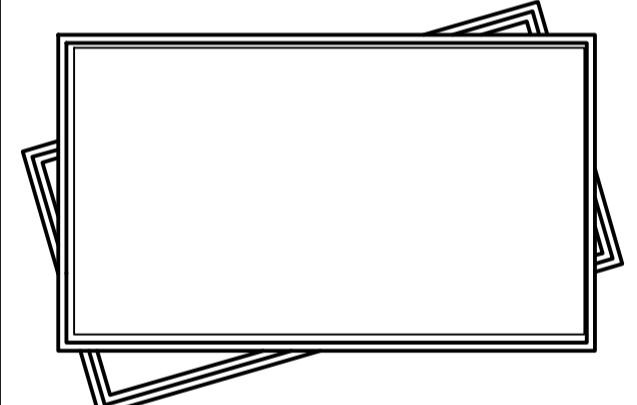
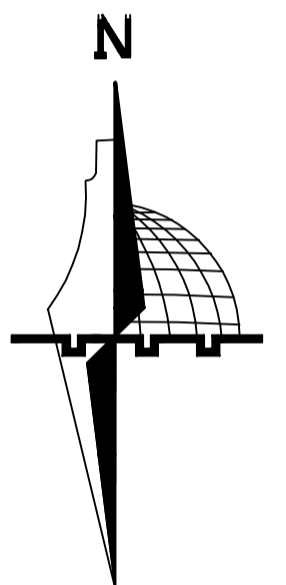
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A  
8

4th Plan Dimension  
 SCALE 1/200



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Project: Structural Design For  
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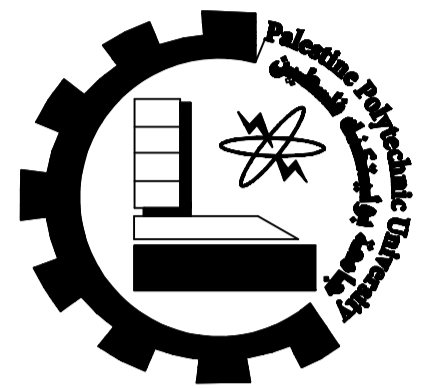
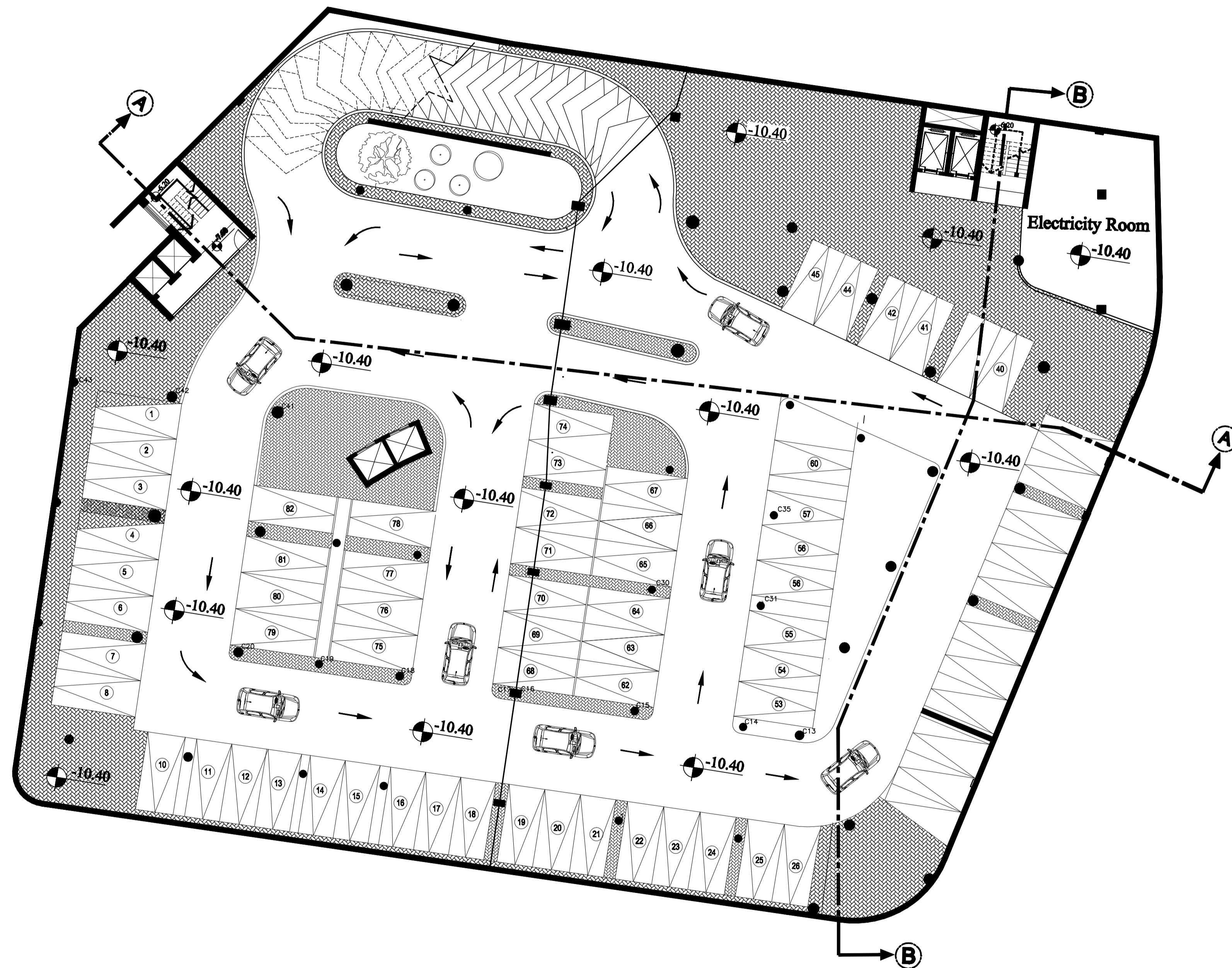
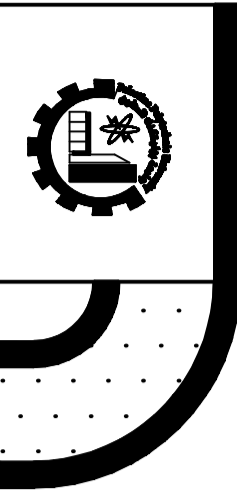
Drawing :  
 Five Plan Dimension

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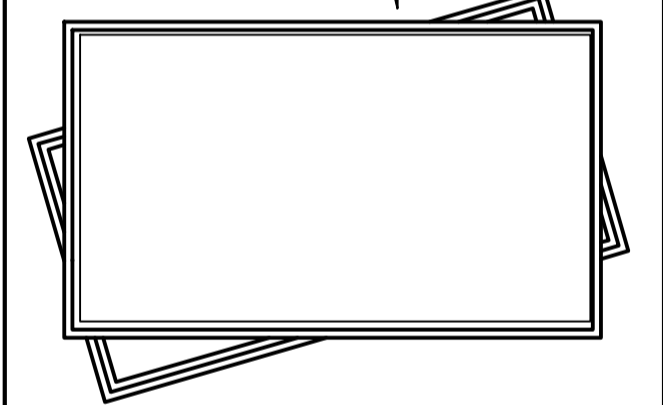
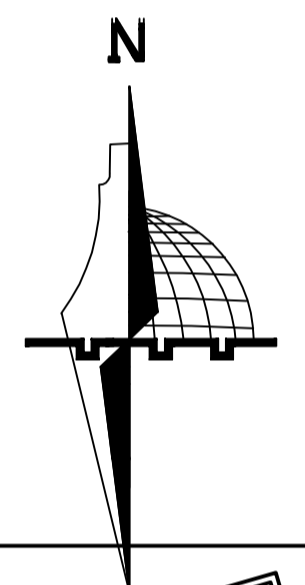
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A  
9

5th Plan Dimension  
 SCALE 1/200



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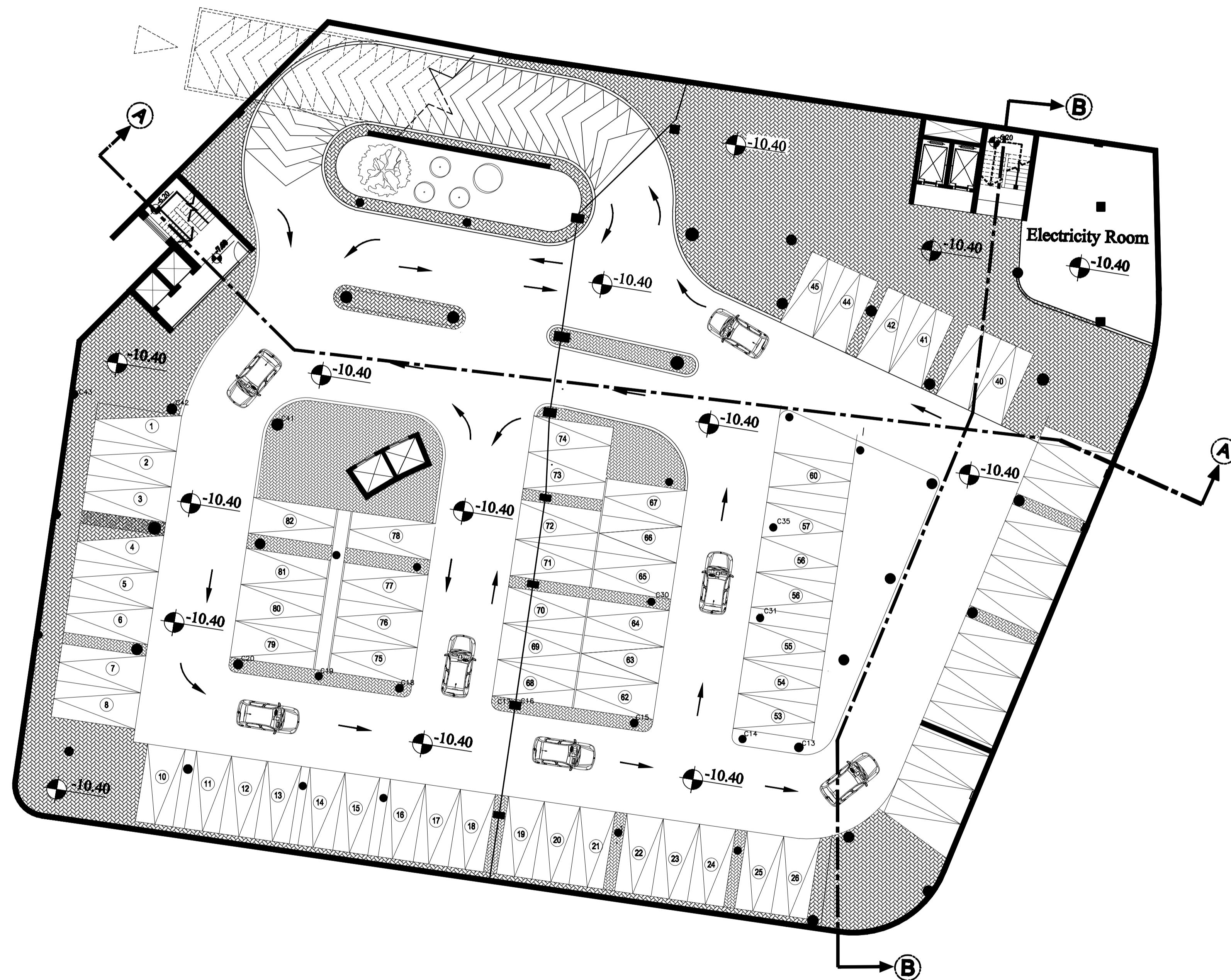
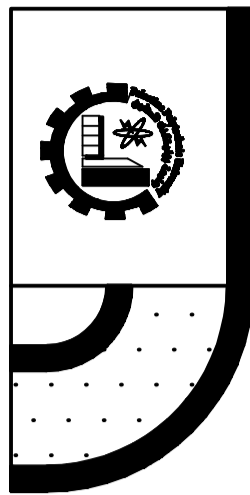
Project: Structural Design For  
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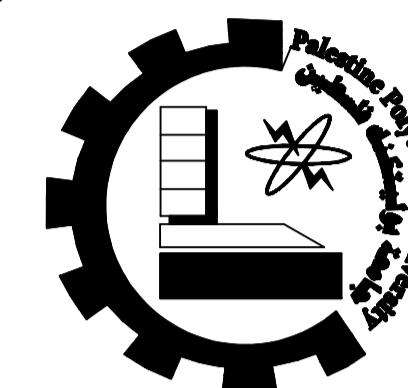
Drawing :  
 Third & Second Basement Plan Furniture

NO: A(10)  
 Third and Second Basement Floor  
 Scale: 1:200  
 Date: Dec-2019

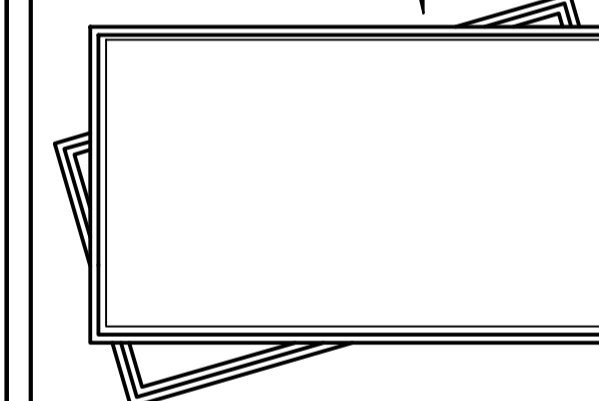
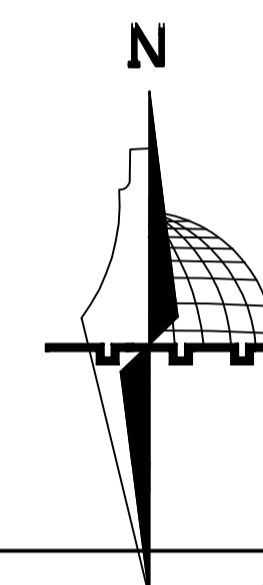
**A** Third and Second Basement Floor  
**10** SCALE 1/200



**A** First Basement Floor  
**11** SCALE 1/200



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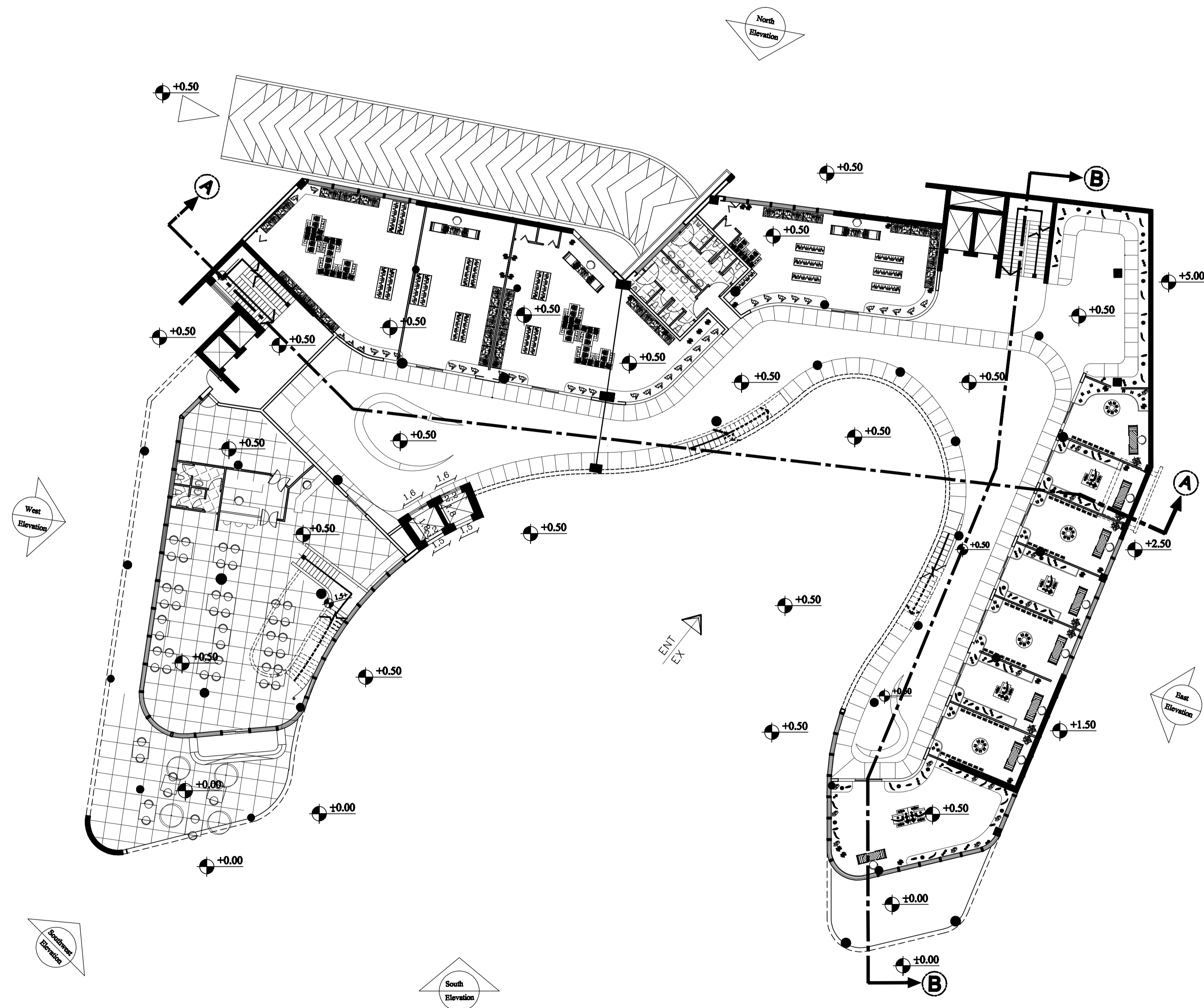
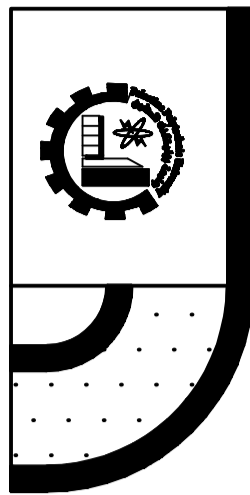
Project: Structural Design For  
 Proposed  
 Commercial Complex

In:  
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Drawing :  
 First Basement Plan Furniture

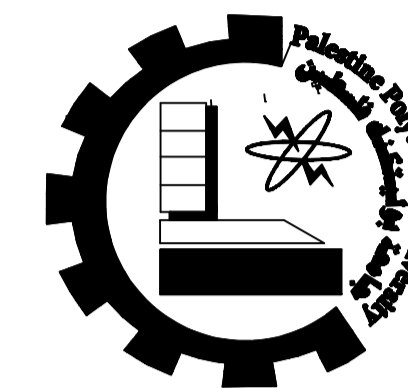
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Third and Second Basement Floor  
 Scale: 1:200  
 Date: Dec-2019

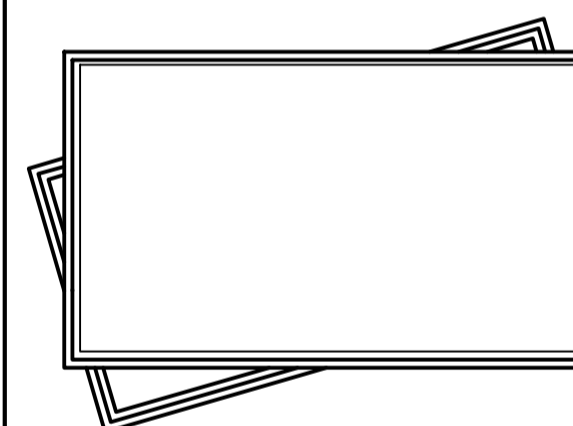
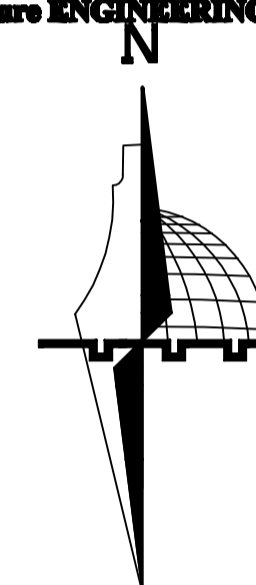


**A**  
**12**

**Ground Plan Furniture**  
**SCALE 1/200**



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**Supervisor:**

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**Project: Structural Design For Proposed Commercial Complex**

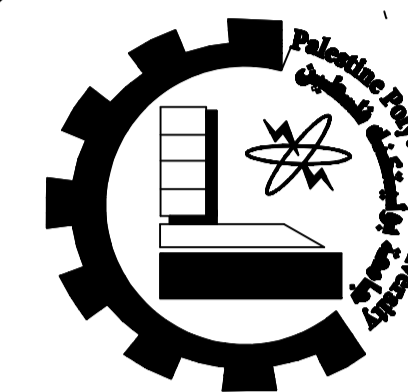
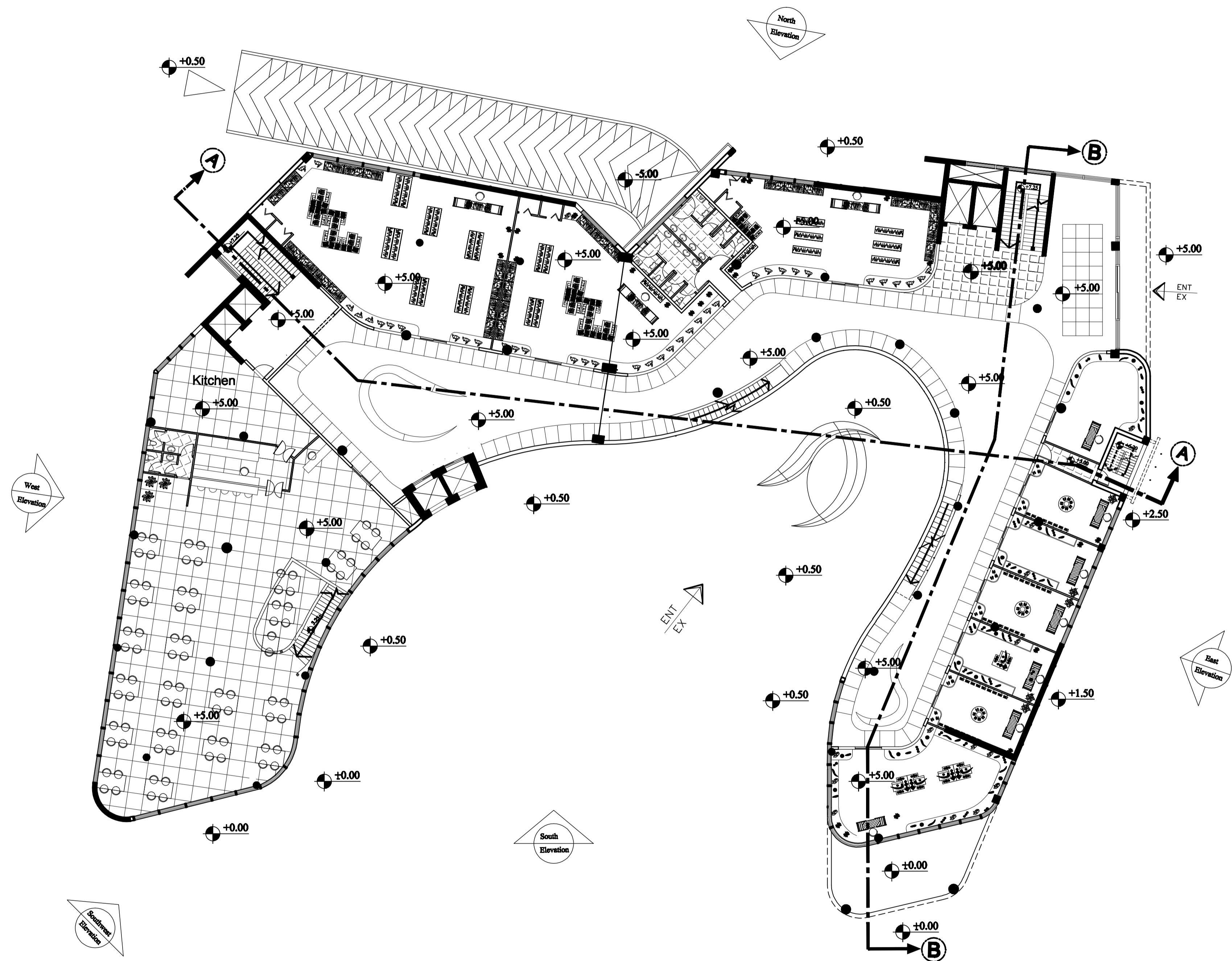
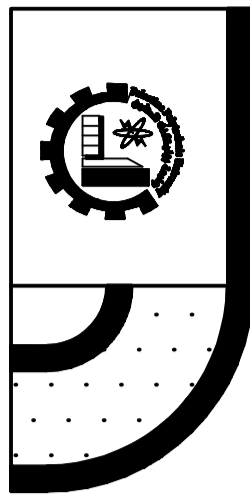
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**Drawing : Ground Plan Furniture**

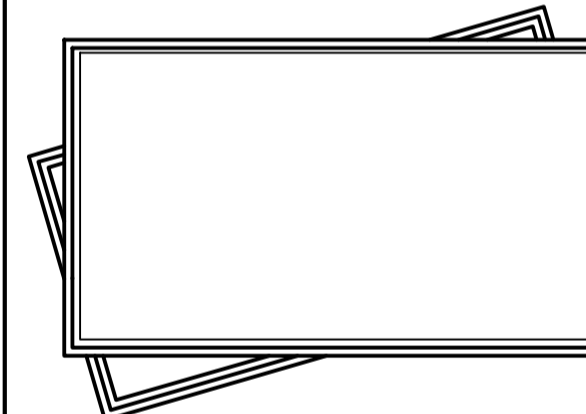
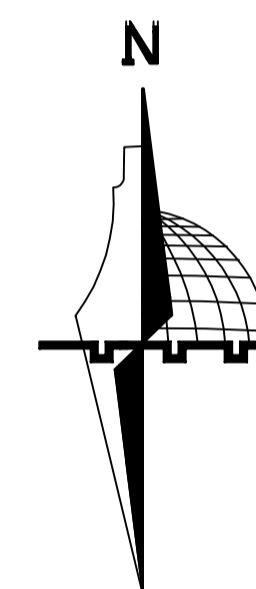
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**Scale : 1:200**      **Date : Dec-2019**

Master Ground Plan



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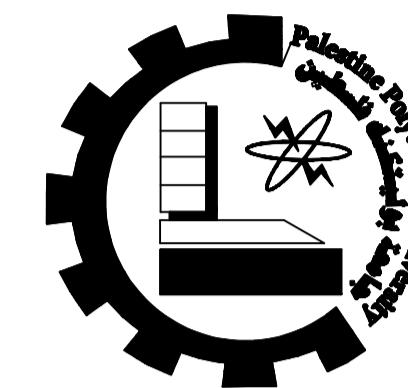
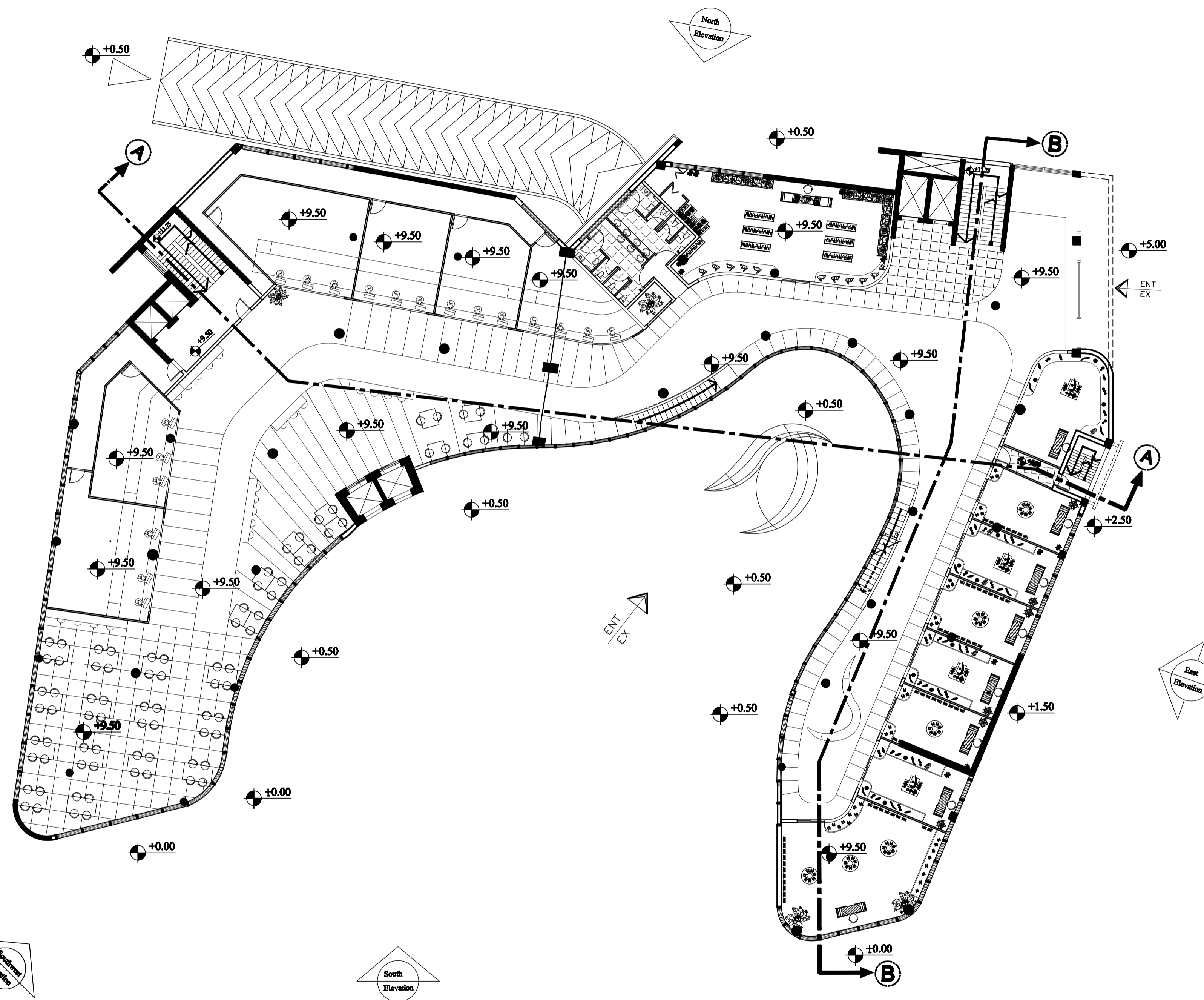
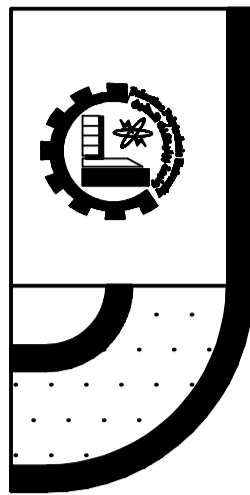
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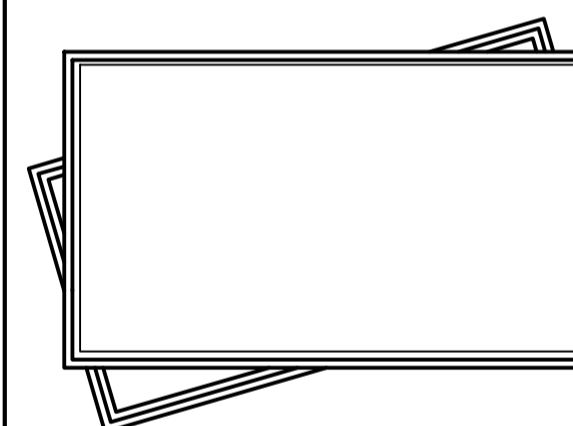
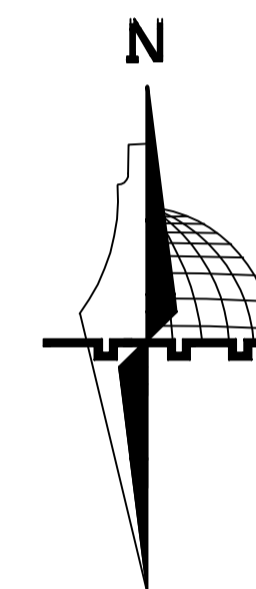
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**13**

First Plan Furniture  
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Drawing :  
 Second Plan Furniture

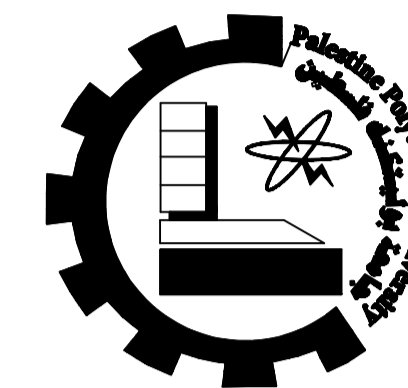
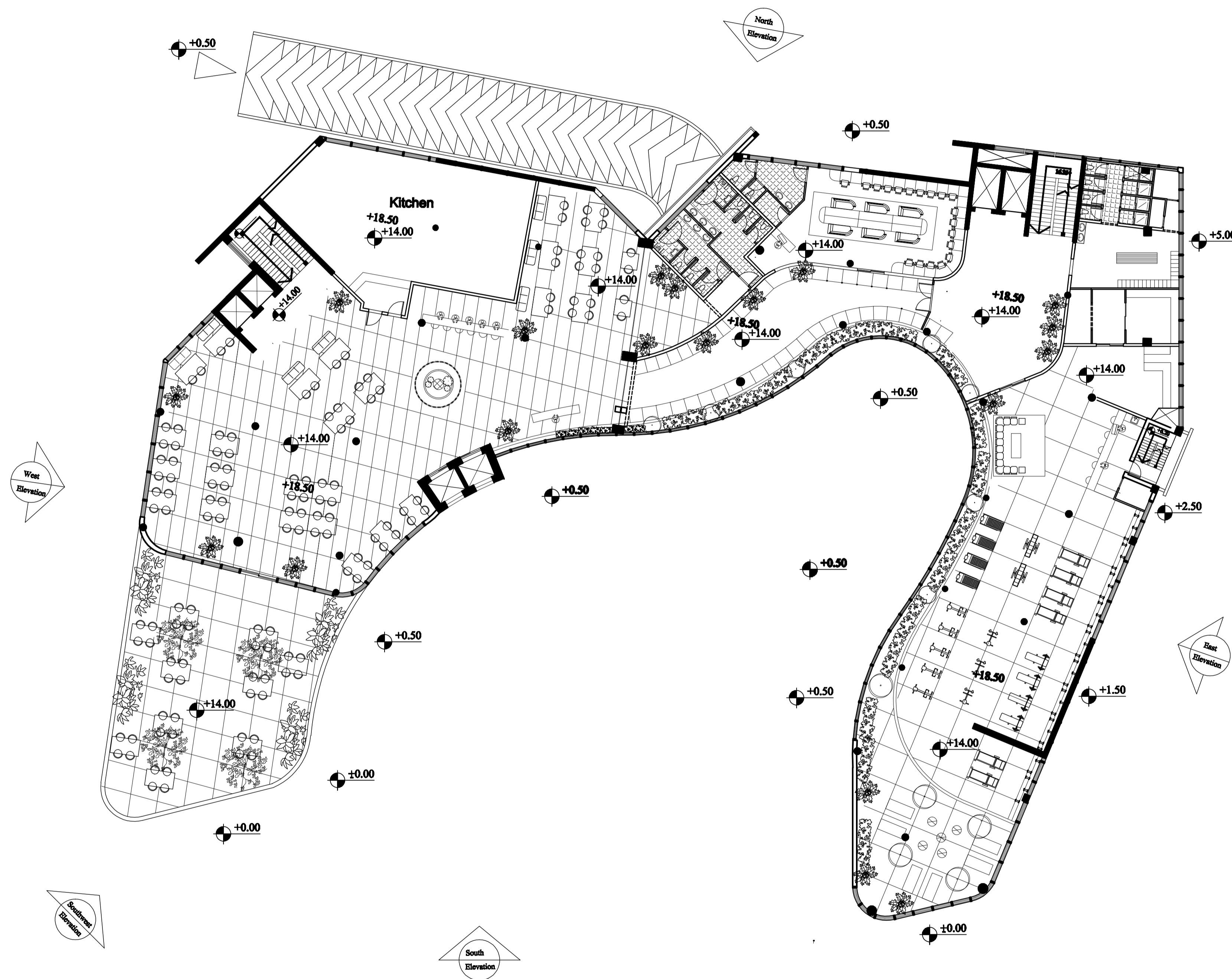
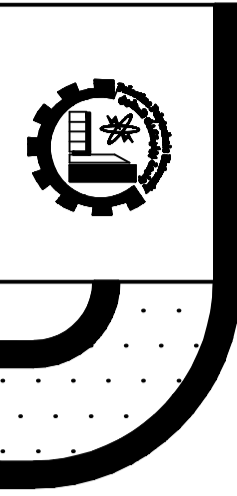
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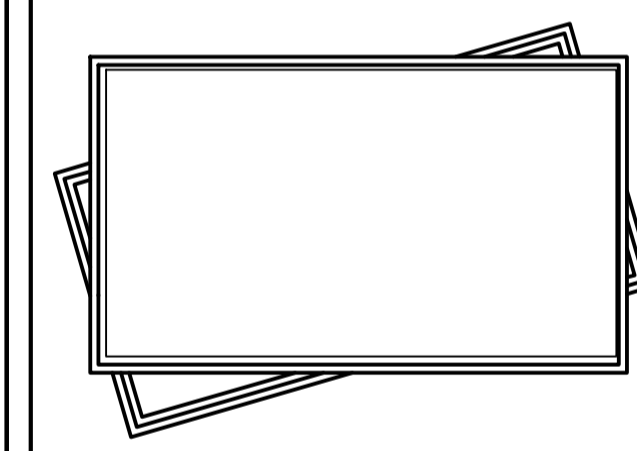
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Second Plan Furniture

SCALE 1/200



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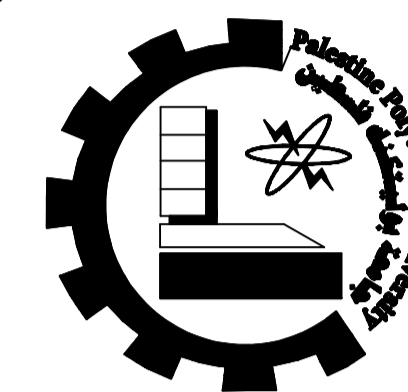
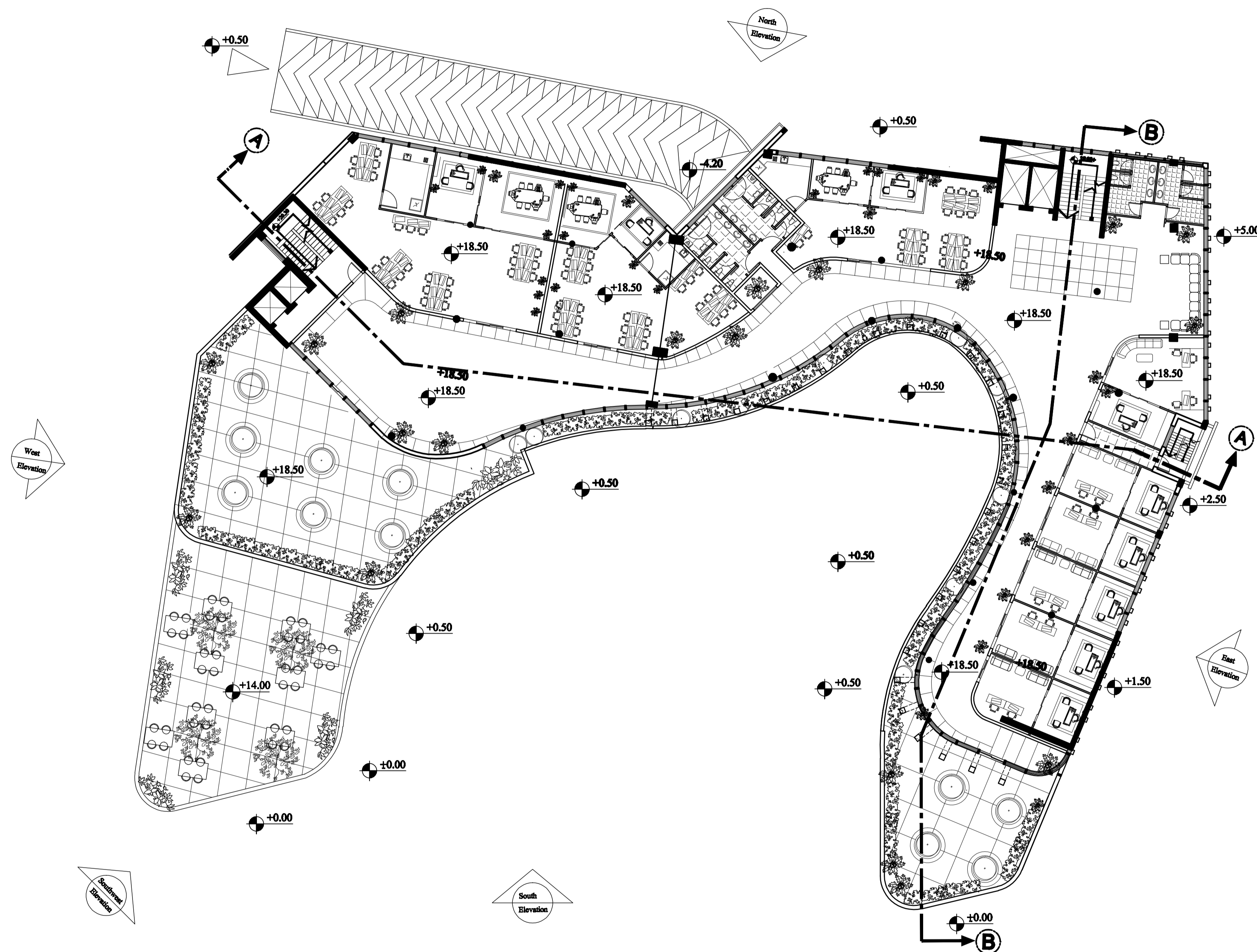
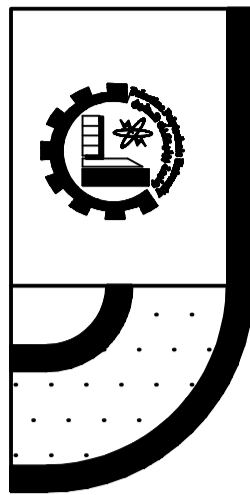
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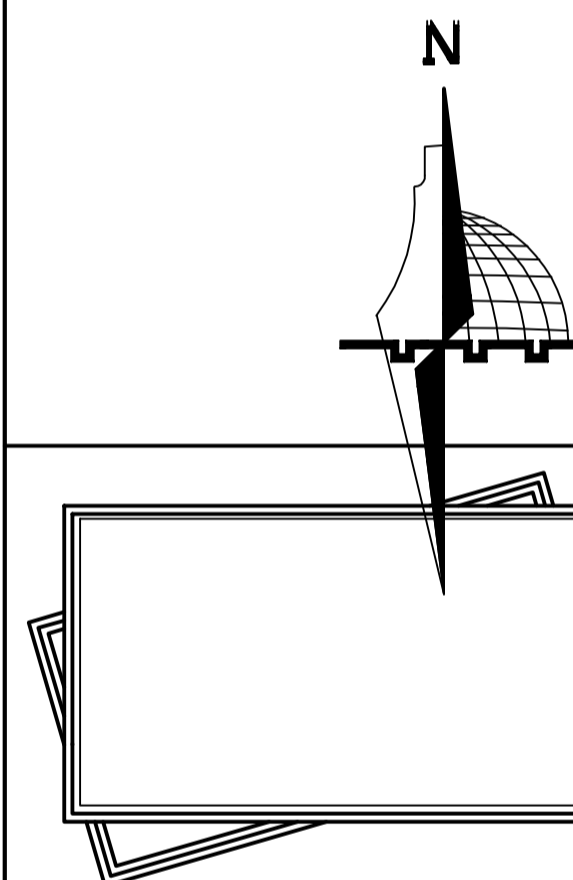
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**15**  
 Third Plan Furniture  
 SCALE 1/200



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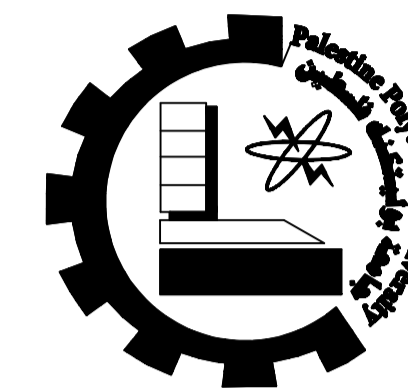
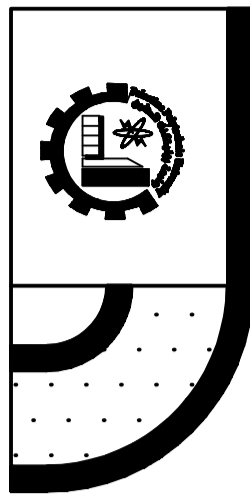
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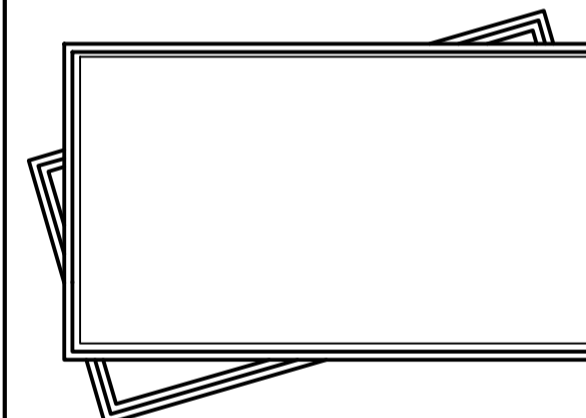
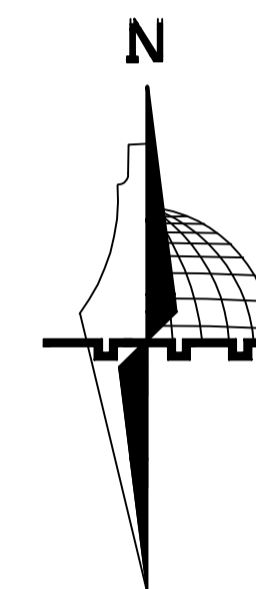
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4th Plan Furniture  
 SCALE 1/200



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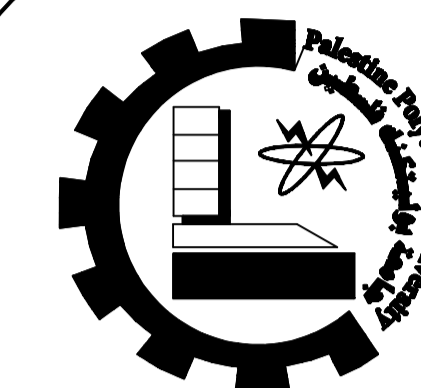
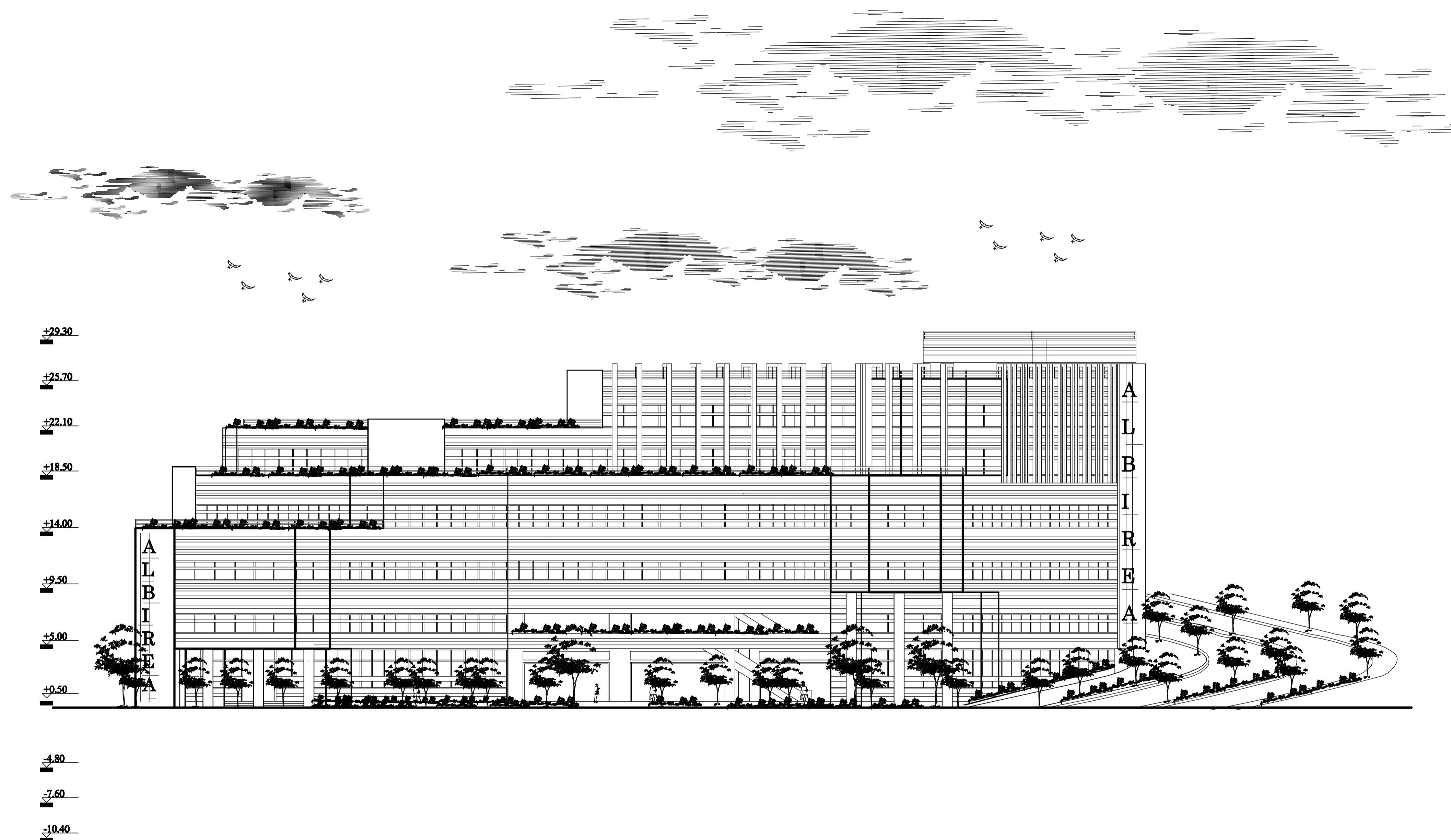
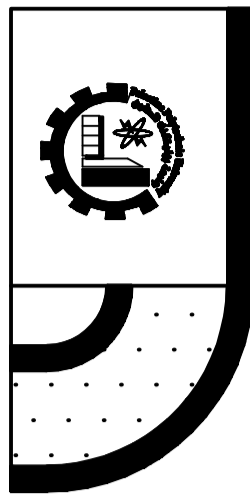
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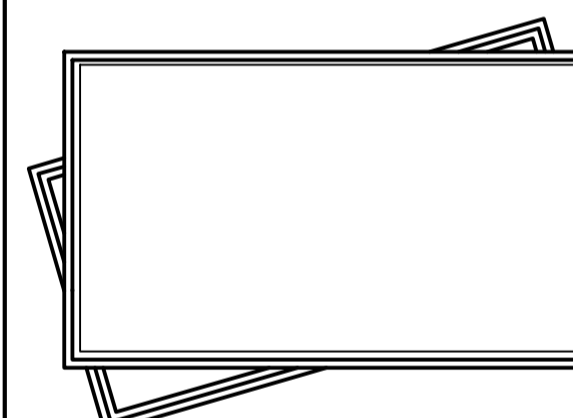
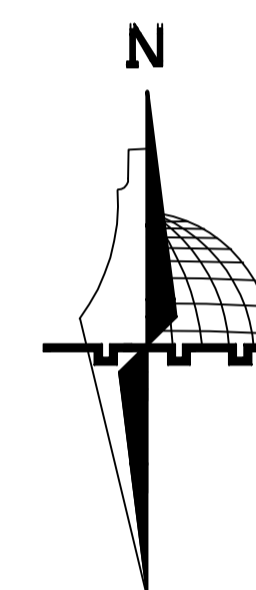
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5th Plan Furniture  
 SCALE 1/200



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In:  
 ALBERE

Drawing :  
 South Elevation

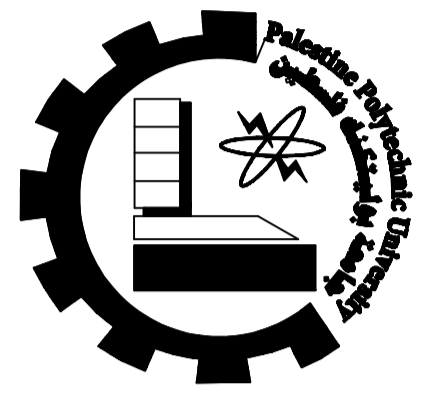
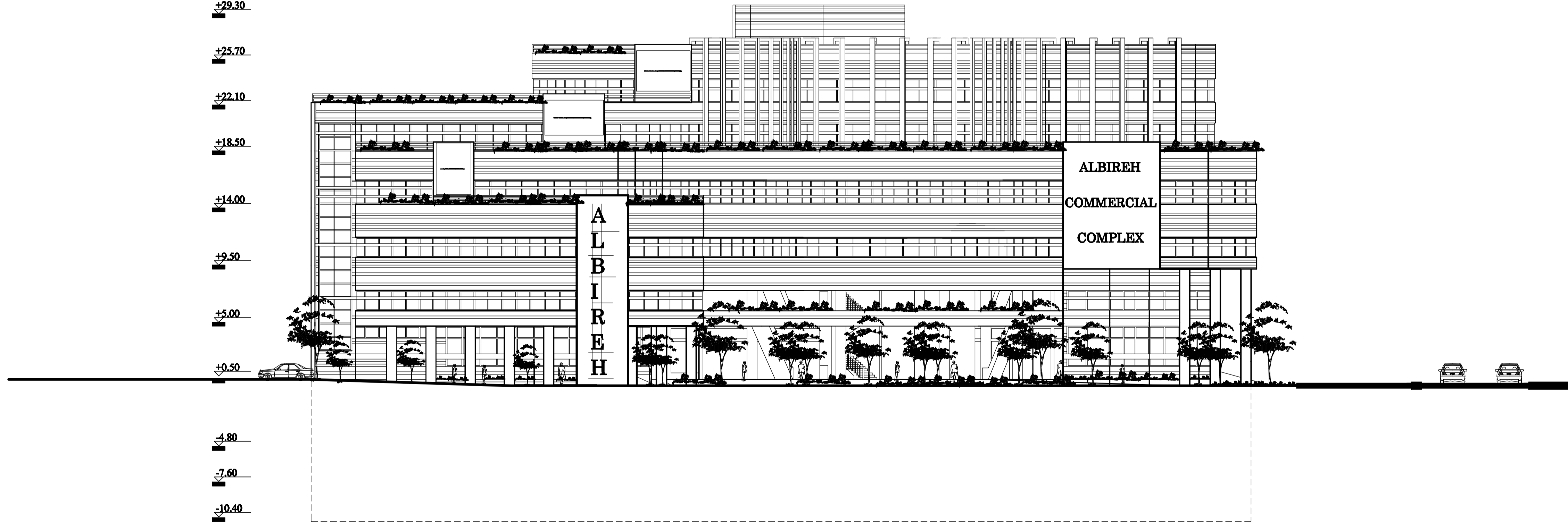
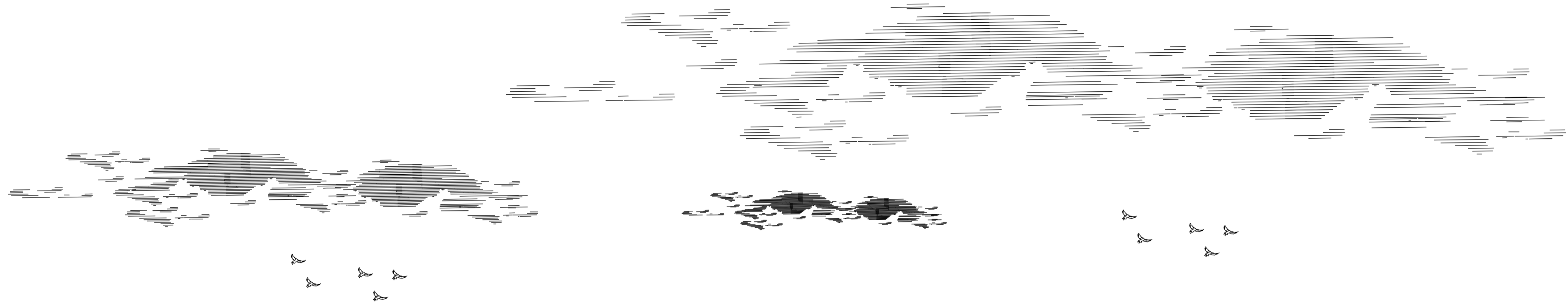
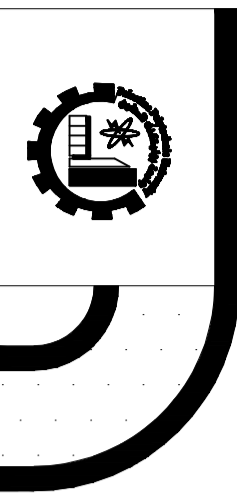
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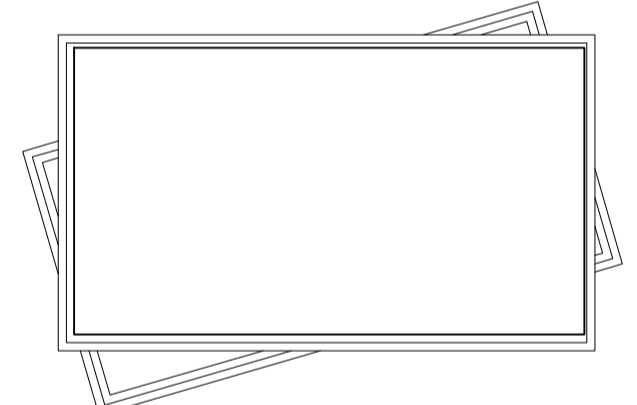
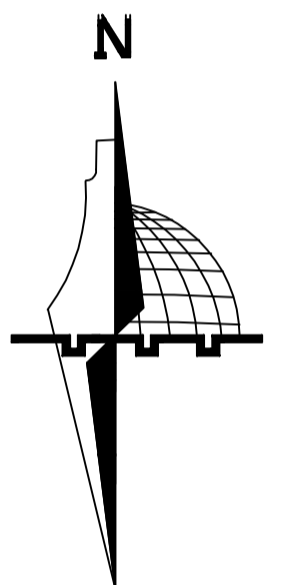
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**A**  
**18**

South Elevation  
 SCALE 1/200



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 Comercial Cpmplex

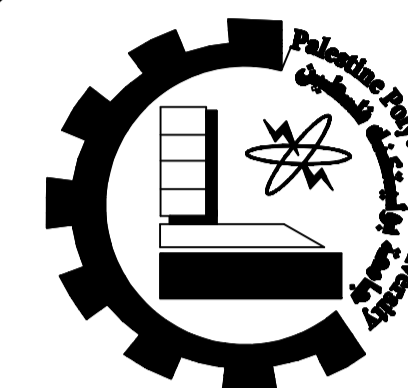
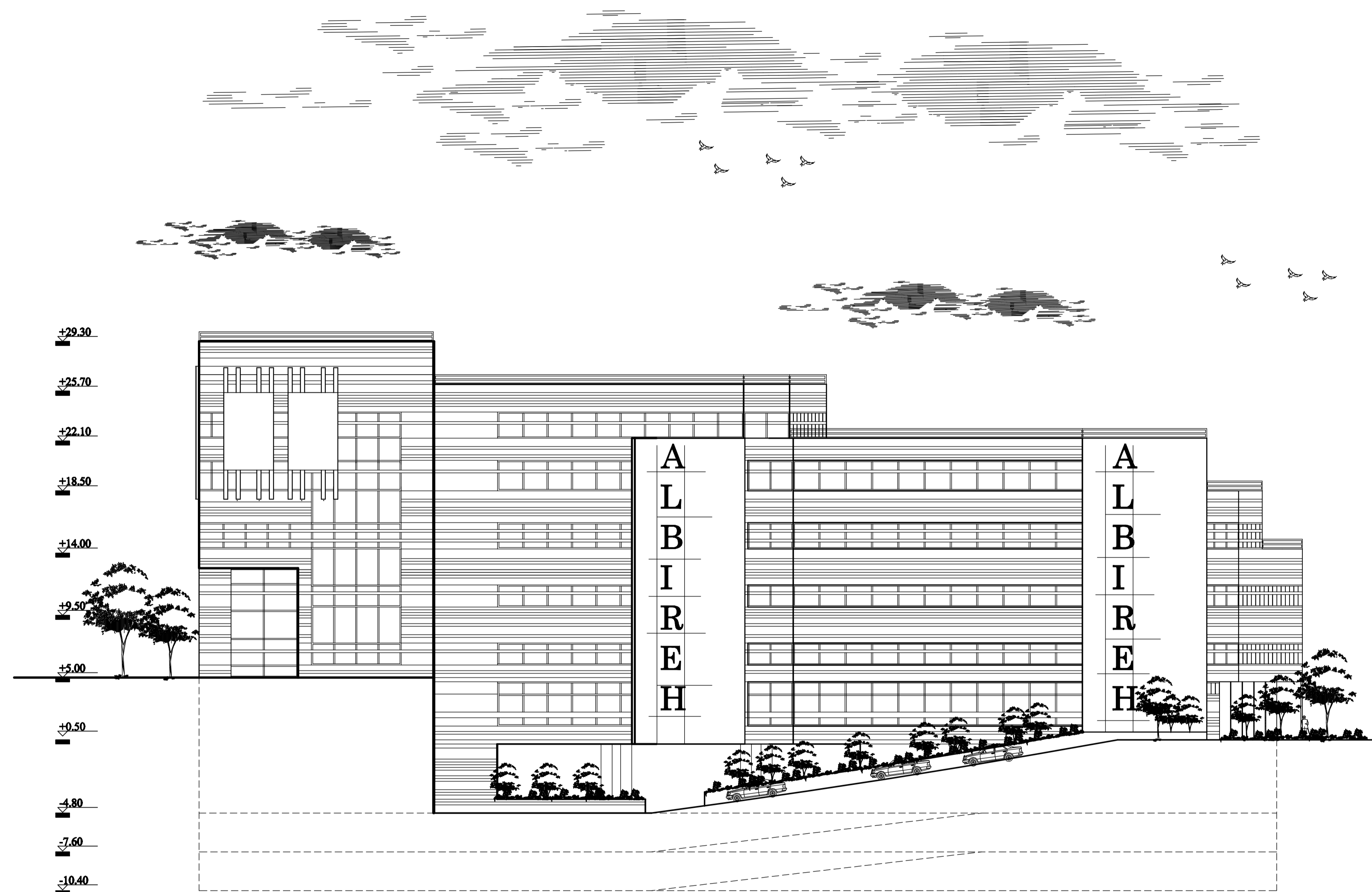
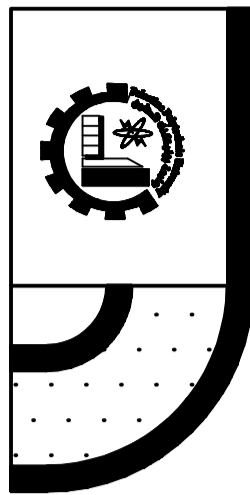
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Drawing :  
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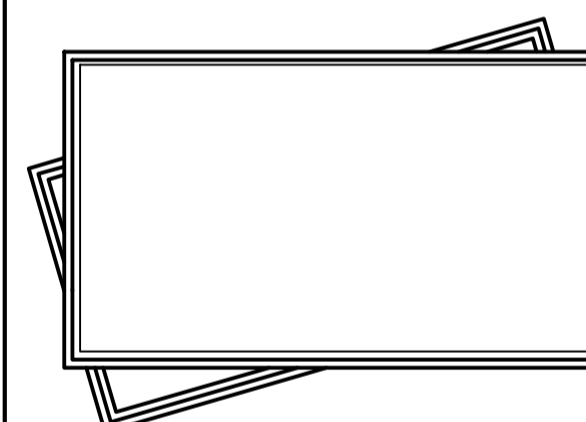
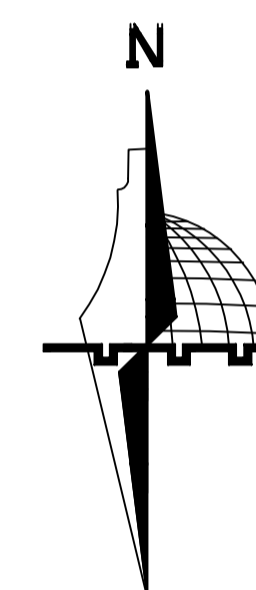
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**19**      Southwest Elevation  
 SCALE 1/200



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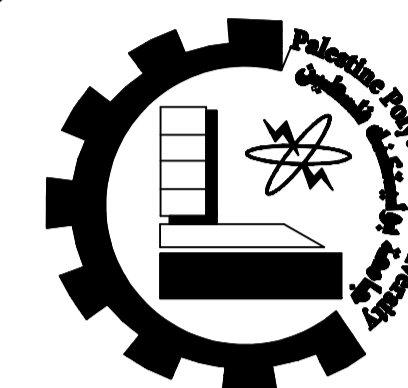
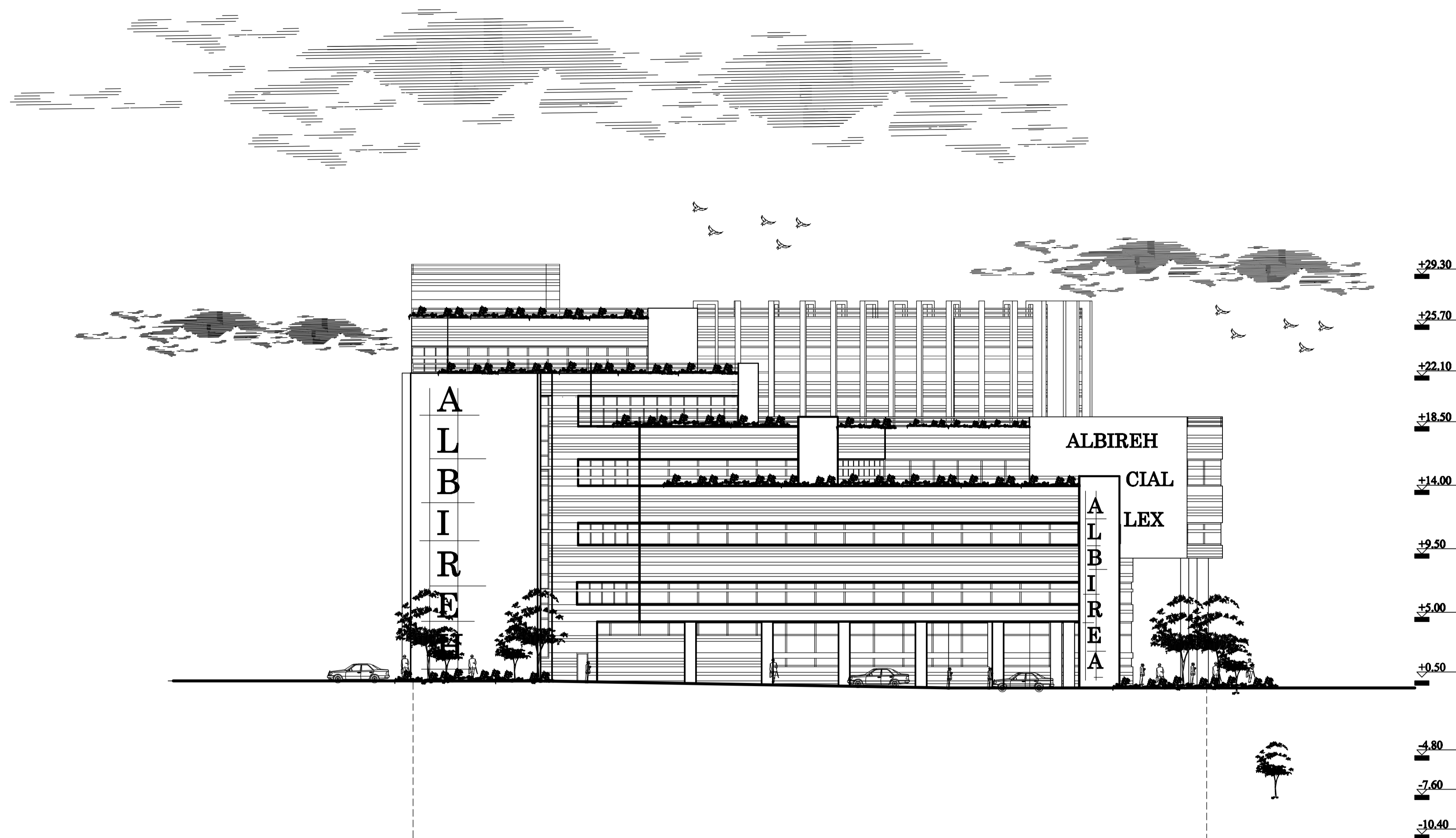
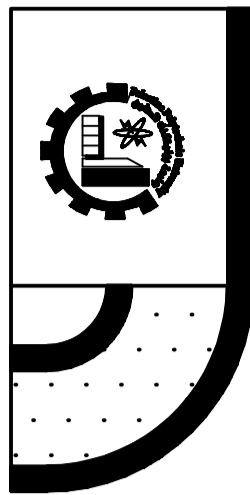
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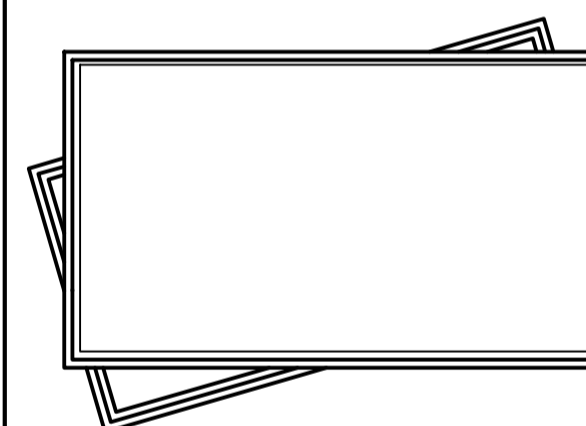
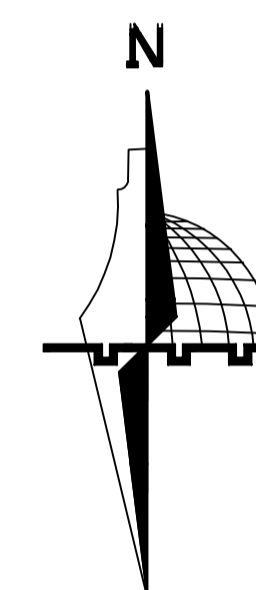
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**A**  
**20**

North Elevation  
 SCALE 1/200



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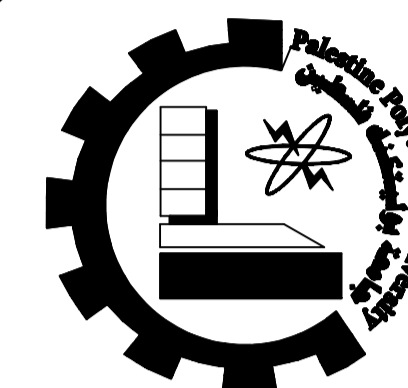
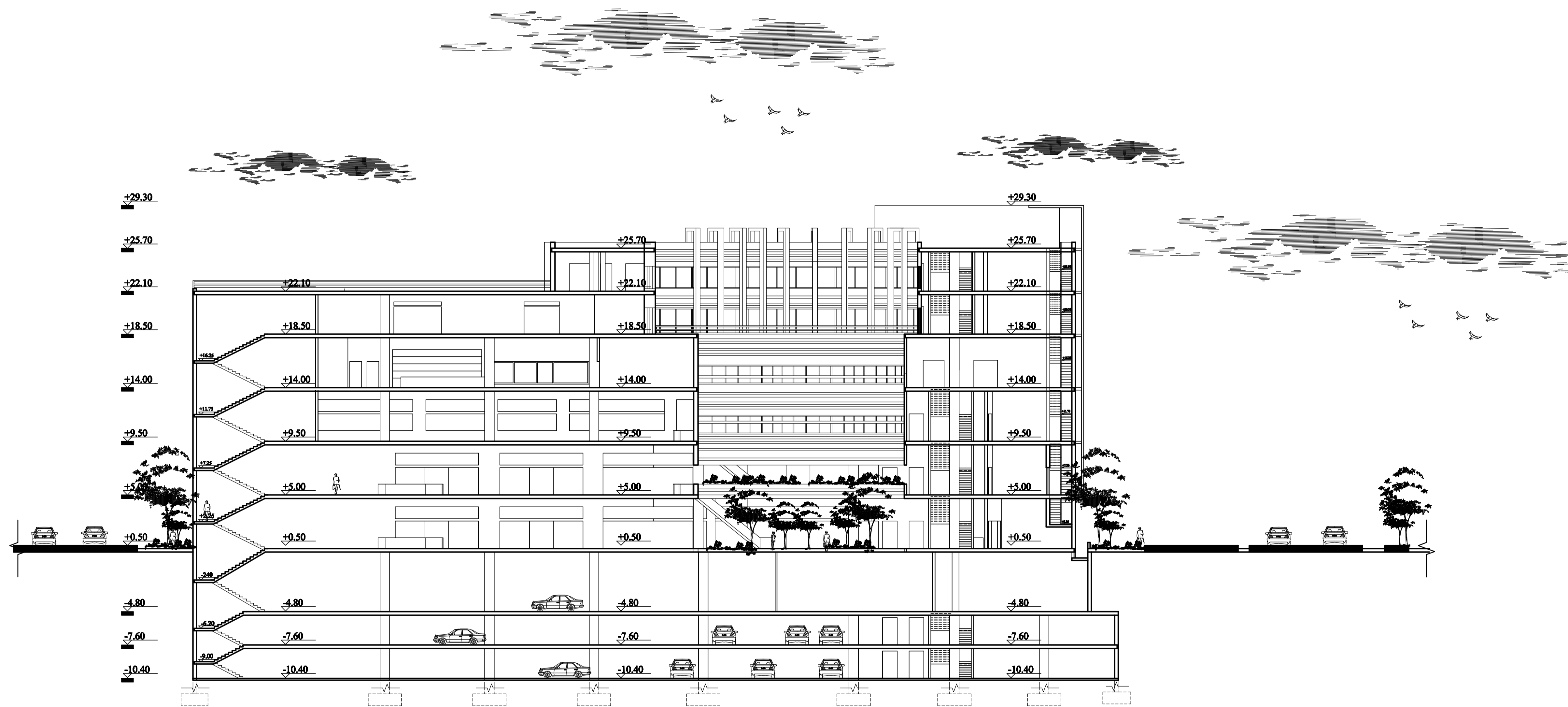
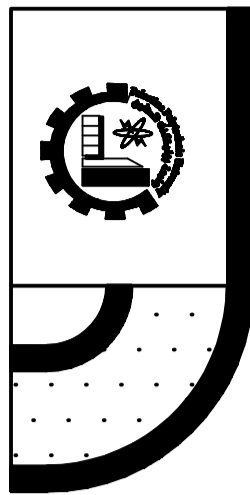
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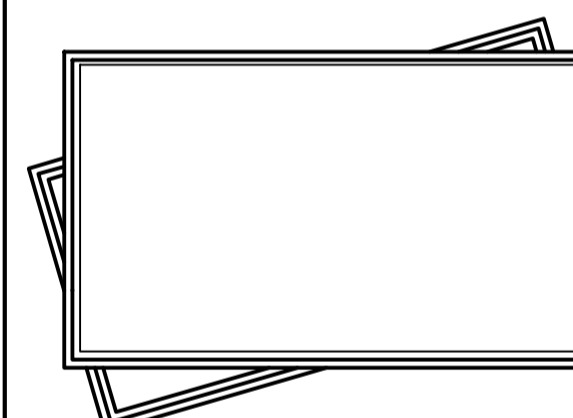
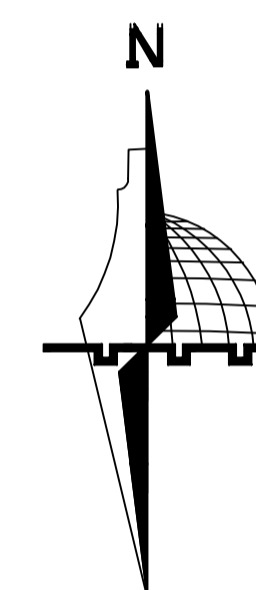
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**22** West Elevation  
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Drawing :  
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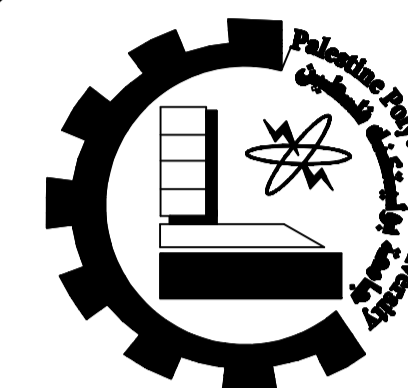
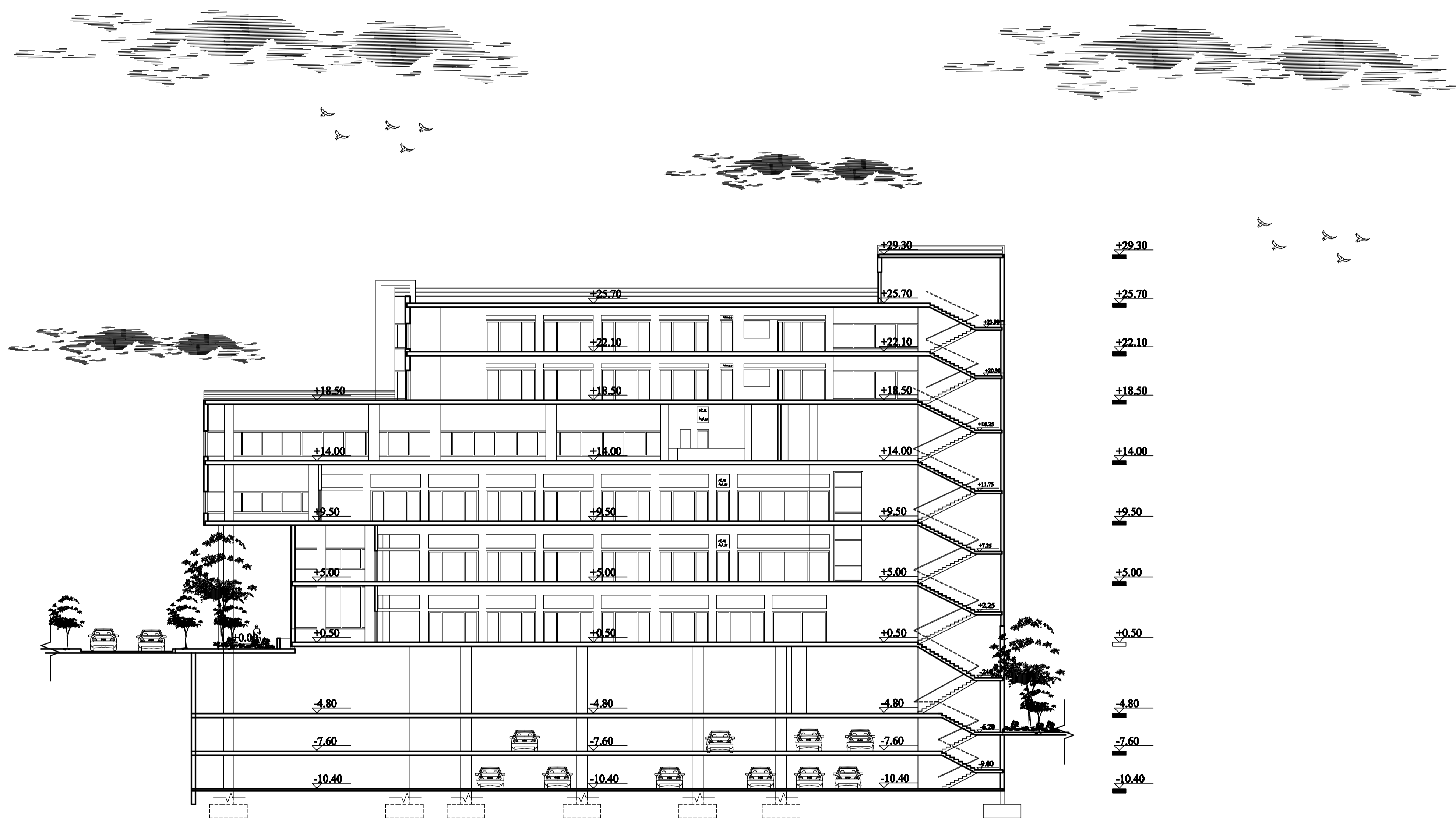
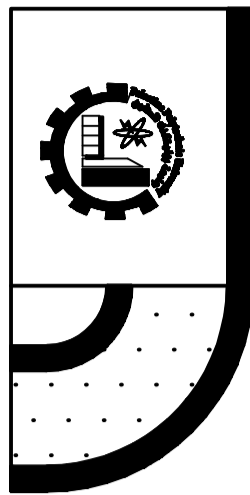
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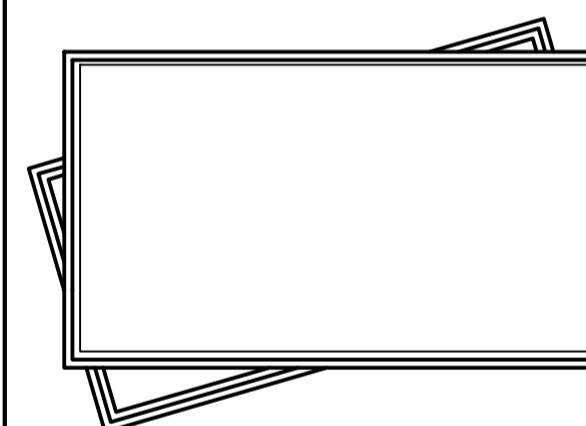
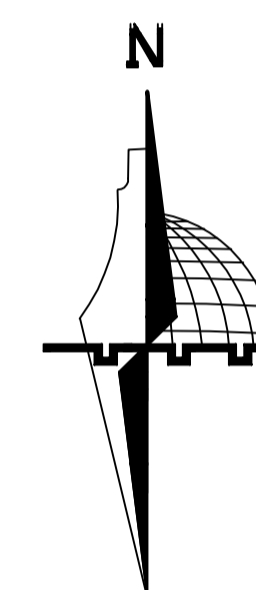
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 SCALE 1/200



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Drawing :  
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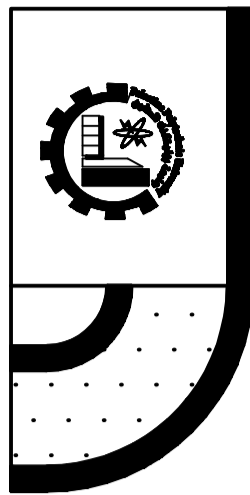
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Sec: B-B  
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# Structural Design Criteria & Specifications & Construction Requirements

## GENERAL NOTES

### 1. CODE OF PRACTICE

Detailing and workmanship shall be according to ACI 318-08, and the technical specifications provided. Approved equivalent international codes shall be accepted. Design for concrete done according to ACI 318-08 Uniform Building Code (UBC) For the definition of lateral Seismic Loading.

### 2. DIMENSIONS

- GRAVITY LOADS ESTIMATION ARE IN ACCORDANCE OF JORDAN
- UNLESS OTHERWISE INDICATED ON DRAWINGS ELEVATIONS ARE IN METERS, DISTANCES AND DIMENSIONS IN cm., REINFORCEMENT BAR SIZES IN mm.

### 3. DRAWINGS

- Structural drawings shall be read in conjunction with Architectural.
- Sleeves and openings smaller than 200x200mm are not shown on the Structural drawings. For required openings refer to Architectural, Mechanical and Electrical drawings.
- Contractor shall prepare working drawings and bar bending schedules for reinforcement in a format agreed with the engineer.
- Contractor shall supply detailed drawings and calculations for all support and temporary works and propping systems as applicable and all other relevant information subject to the Engineer's approval prior to commencement of construction.

### 4. REINFORCEMENT

- Reinforcement shall be deformed high strength steel bars of characteristic strength of 420 Mpa complying with ASTM standards or equivalent for diameters 10mm & above.
- Reinforcement shall be deformed steel bars of characteristic strength of 420 MPa complying with ASTM standards Or equivalent for diameters 8mm & above.
- Contractor to provide bar bending schedule.
- Where bar length is not specified, longest practicable bar length shall be employed with staggered lap splices. Lap length shall be 30 times bar diameter.

### 5. REINFORCED CONCRETE

The following two types of reinforced concrete shall be employed:

B400 - Grade 400 for all reinforced concrete members except architectural fair faced concrete facades. Characteristic Strength as defined by a 150 mm cube at age of 28 days shall be:

B400 -  $40 \cdot 0.8 = 32$  MPa (Because it is rectangular section)  
Minimum cement content, per cubic meter, shall be:  
B400 - 400 kilograms

### 6. PLAIN CONCRETE

The following type of plain concrete shall be employed:

B150 - Grade 150 concrete of characteristic cube strength equal to 15 MPa, minimum cement content of 150 kilograms per cubic metre, and a maximum water:cement ratio of 0.70 to be used for blinding concrete under foundations.

### 7. AGGREGATES

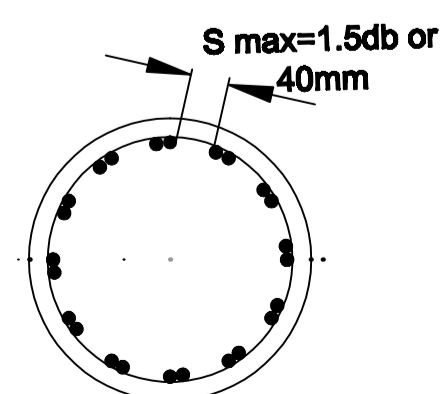
Maximum aggregate size shall be 25 mm.

### 8. FOUNDATIONS

- Contractor shall adhere strictly to the geotechnical report for this project. He shall be responsible to determine strata characteristics at the appropriate levels:
- Allowable Bearing capacity = 300 KN/m<sup>2</sup>.
- Foundations are designed for three floors.

### 9. Column

Lap Splice of longitudinal bar of column must be as shown below



## GENERAL RULES

### 9. BACK Fill

All back fill material shall conform to specifications and shall be properly tested. No back filling is permitted around.

### 10. DESIGN LOADING

Basement walls prior to pouring of framing slabs.  
Design Live Loads are as follows:  
Live Load = 5.0 KN/m<sup>2</sup>

### 1. NOTATION

T.B=TOP BARS  
B.B=BOTTOM BARS  
S= SPACING.  
Ø= DIAMETER FOR STEEL BARS.  
⊙ OR / = INDICATES THAT THE FOLLOWING NUMBER IS THE SPACING BETWEEN BARS.

### 2. COVER

Clear concrete cover to reinforcement shall be:

50mm for concrete below grade for non salty soils  
20mm for ribs 40mm for beams 40mm for columns  
20mm for walls, slabs and joists.

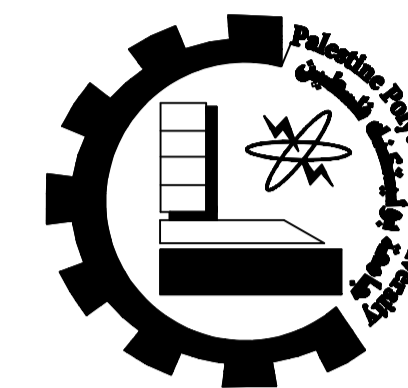
Reinforcing bars of girder shall be anchored over the center line of column.  
And reinforcing bars of sub-beam shall be anchored over the center line of girder.

### 3. Min. Bar Spacing

Unless otherwise shown below, sub-beam and cantilever beam shall be conformed  
Bar spacing "a" shall be not less than the greatest in the following three cases:  
1) 25 mm  
2) 1.5 d  
3) 1.25 times the max. size of coarse aggregate.

### Standard Hook Details and Bar Bends

End position				Intermediate position			
Hook details	Secondary Steel	Main Steel	Application	Hook details	Secondary Steel	Main Steel	Application
	D	4d	5d		D	3d and over	Hoop and stirrup
	1e	12d	14d		D	4d and over	16mm dia. bar and smaller
	D	4d	--		D	5d and over	Main bars less than 30mm in column and girder
	1e	12d	--		D	8d	8d
	1e	8d	--				
	1e	10d	--				
			Spacer bar				



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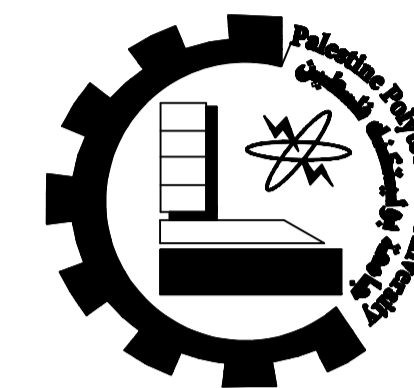
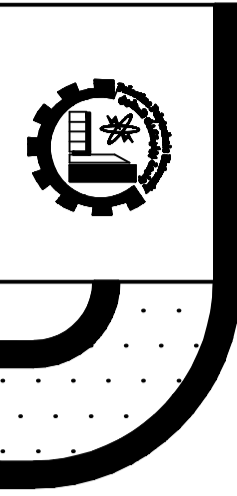
Project: Structural Design For Proposed Commercial Complex

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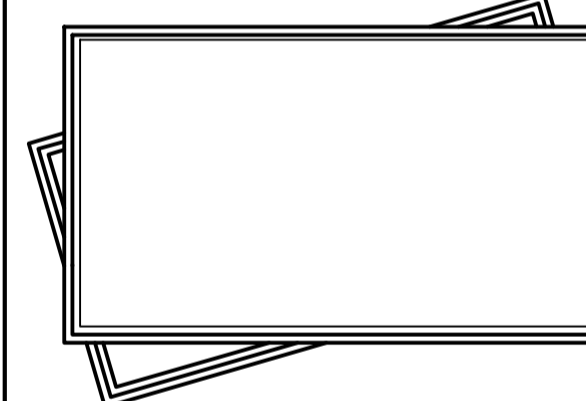
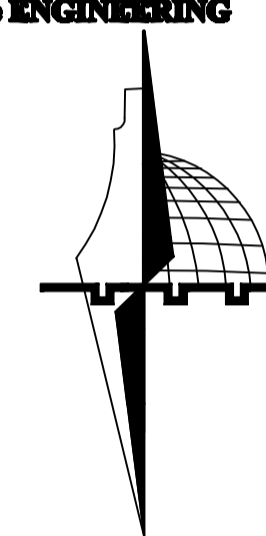
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NO: S(00)

Scale: 1:200 Date: Dec-2019



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 Montaser Qazzaz  
 Mohammad Talahmah  
 Ammar AL-rjoub

Supervisor:  
 Eng. Mona AL-Shaar

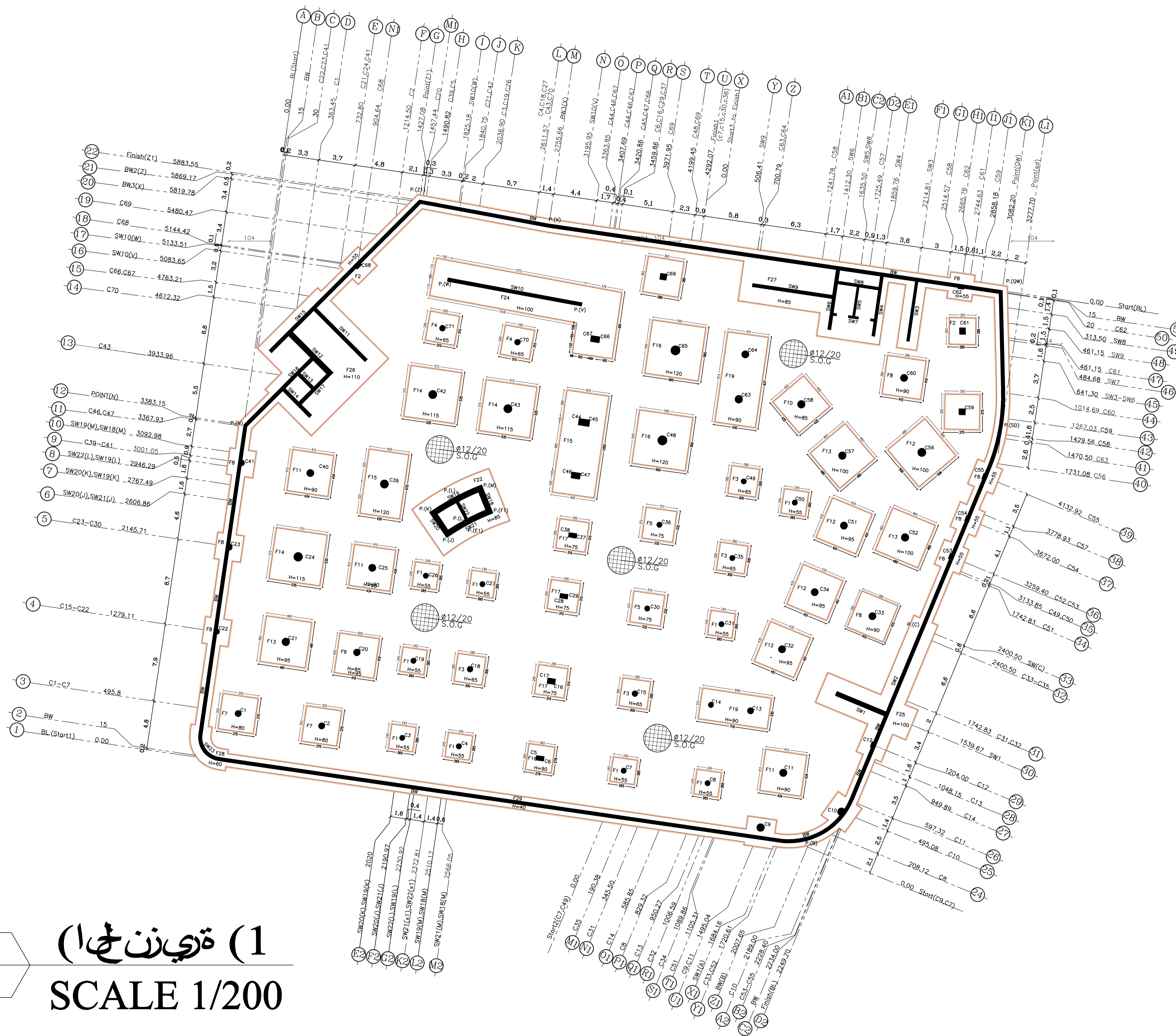
Project: Structural Design For  
 Proposed  
 Commercial Complex

In:  
 ALBERRE

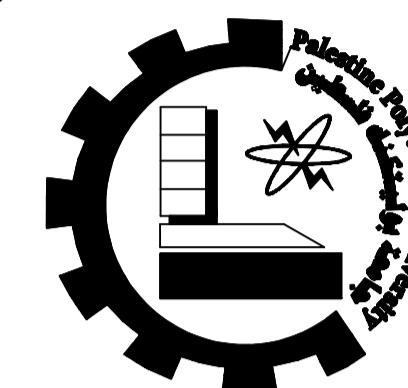
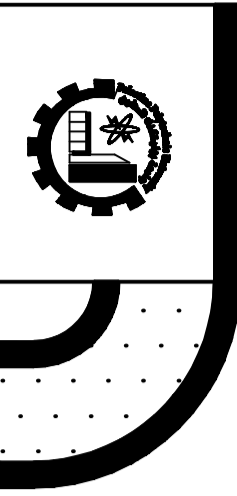
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NO: S(01)

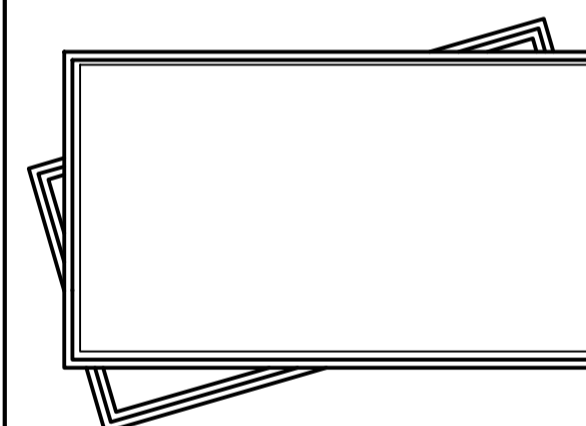
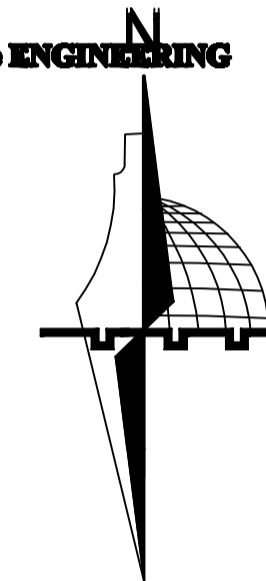
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S  
 1  
 (1 قوينة لجا)  
 SCALE 1/200



PALESTINE POLYTECHNIC UNIVERSITY  
 COLLEGE OF ENGINEERING  
 CIVIL & ARCH. ENG. DEPARTMENT  
 Architecture ENGINEERING



Designed by:

Natheer Talahmah  
 Montaser Qazzaz  
 Mohammad Talahmah  
 Ammar AL-rjoub

Supervisor:

Eng. Mona AL-Shaar

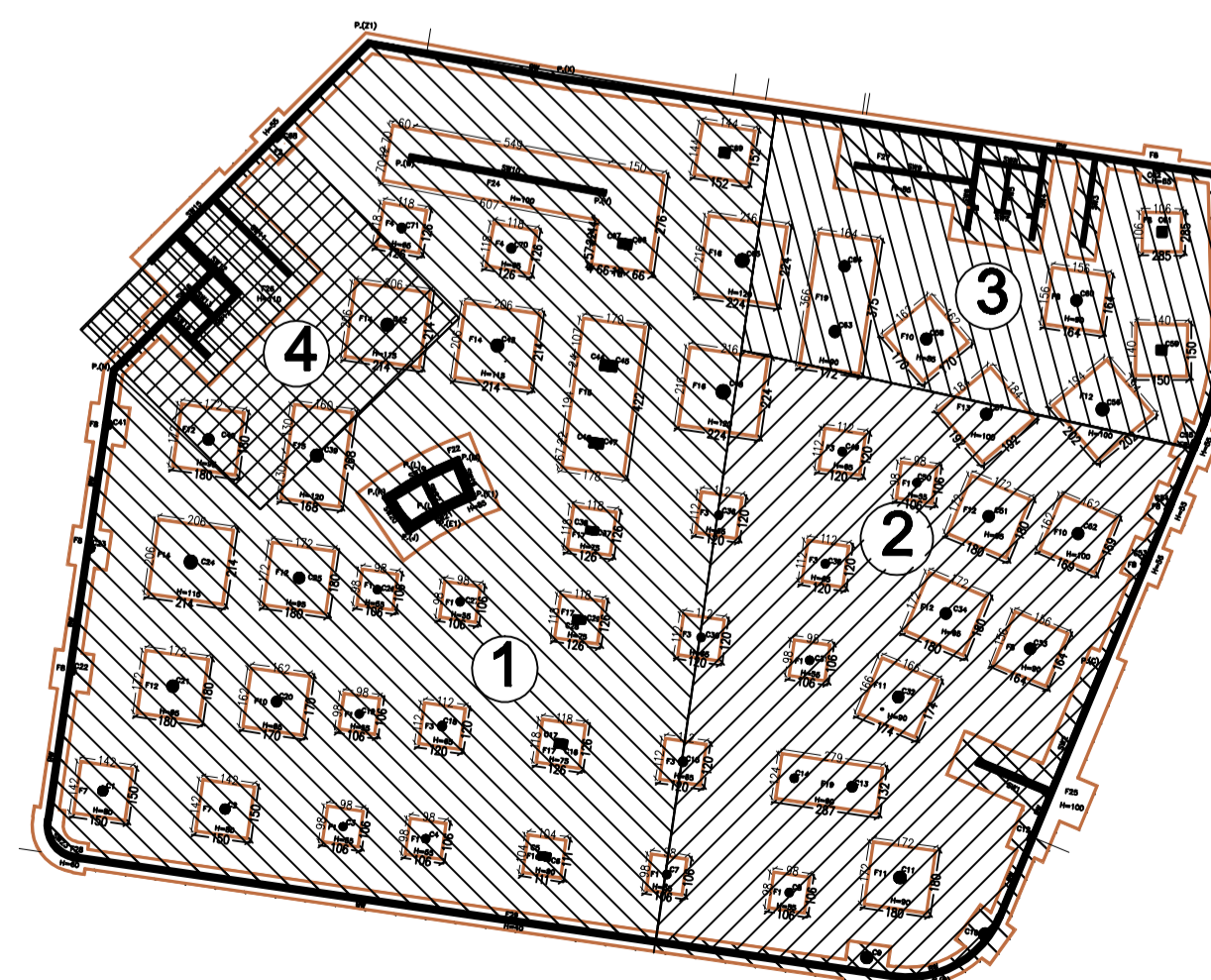
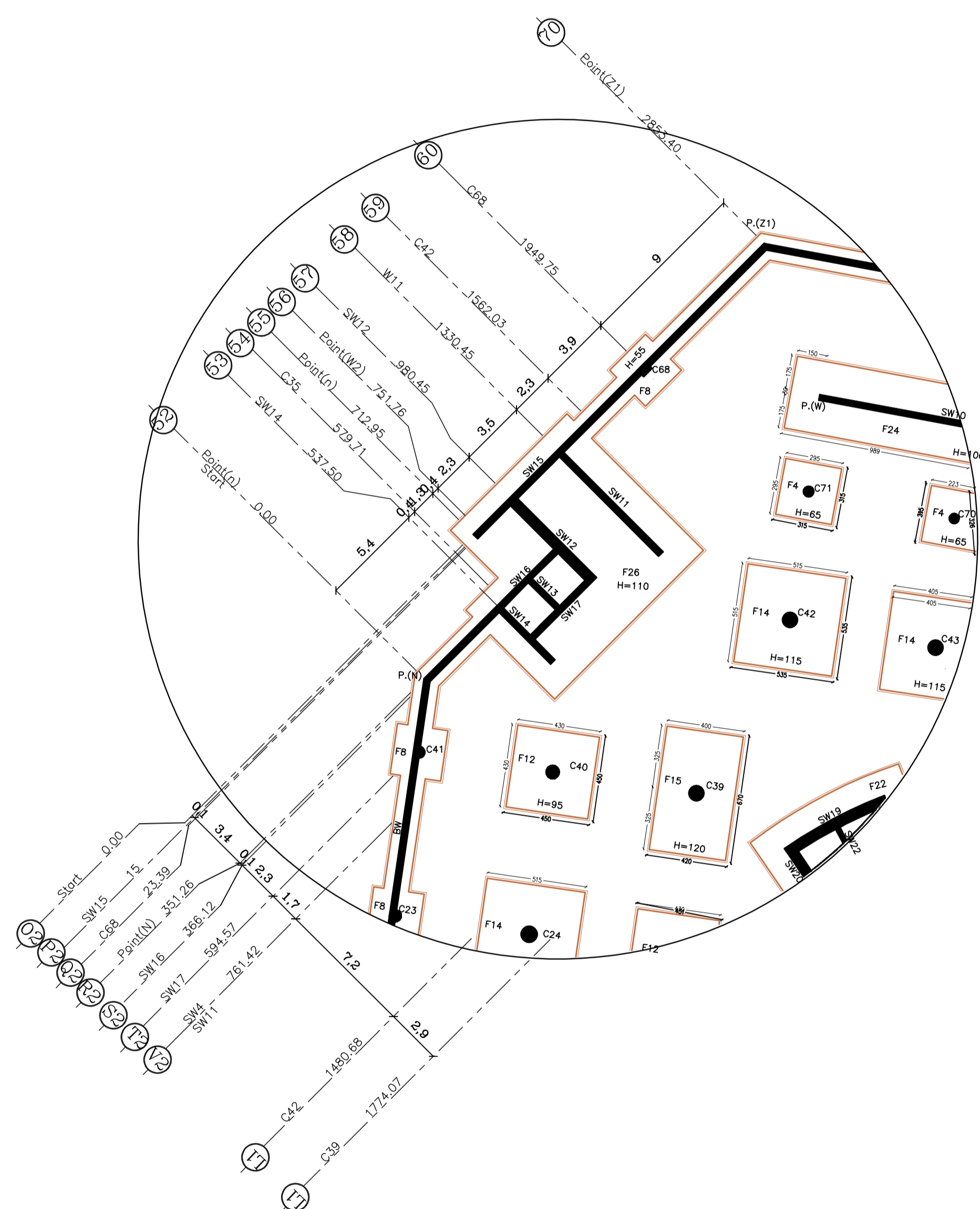
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 Proposed  
 Commercial Complex

In:  
 ALBERE

Drawing :  
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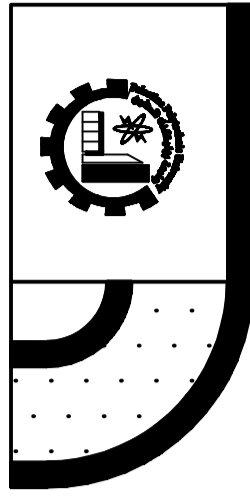
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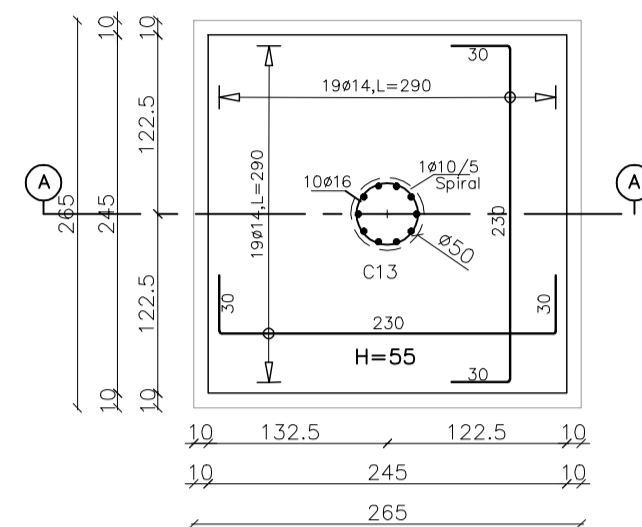
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(2) توزيع الخيا  
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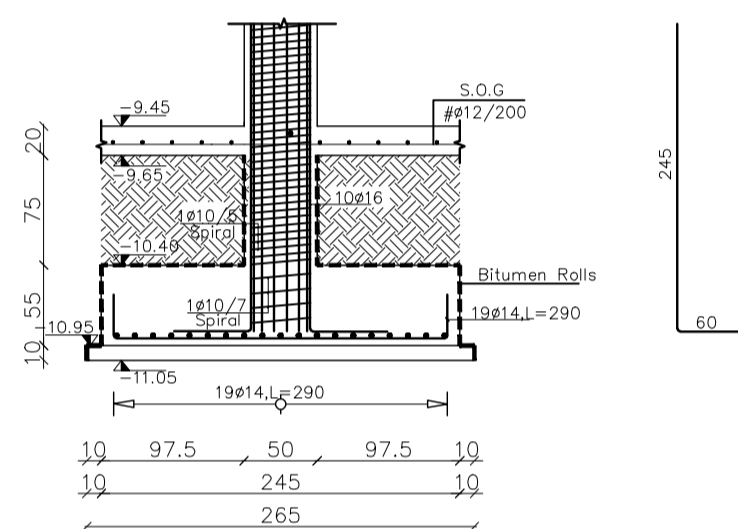


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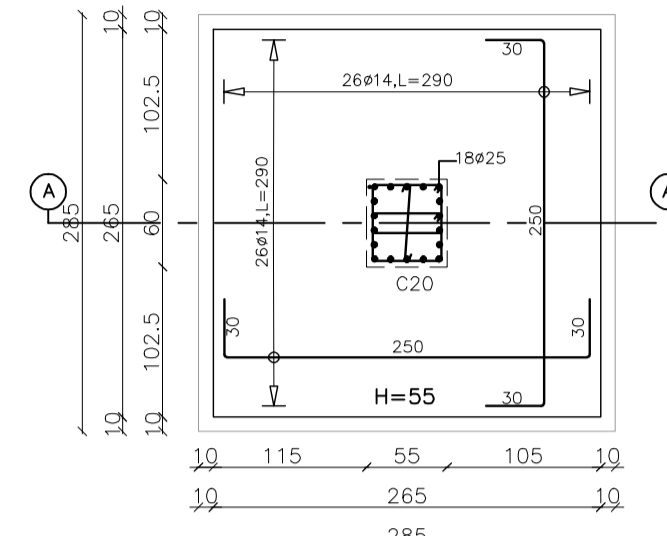
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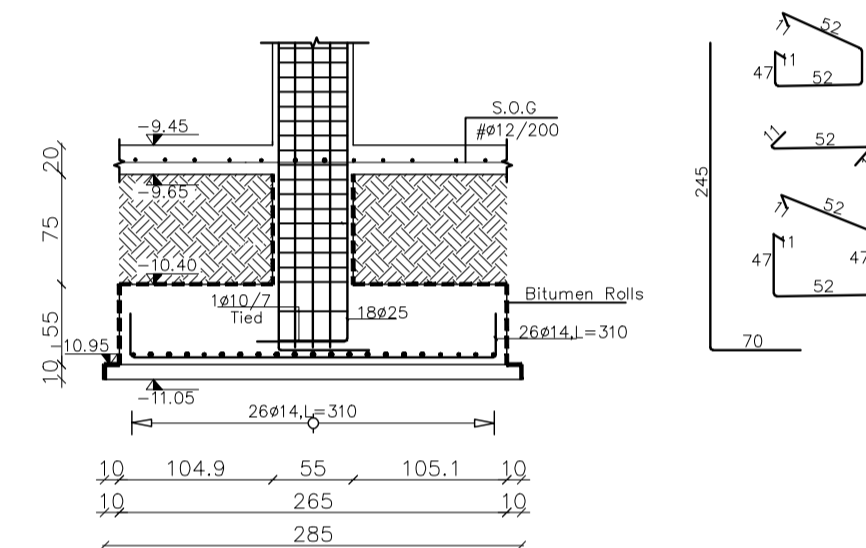
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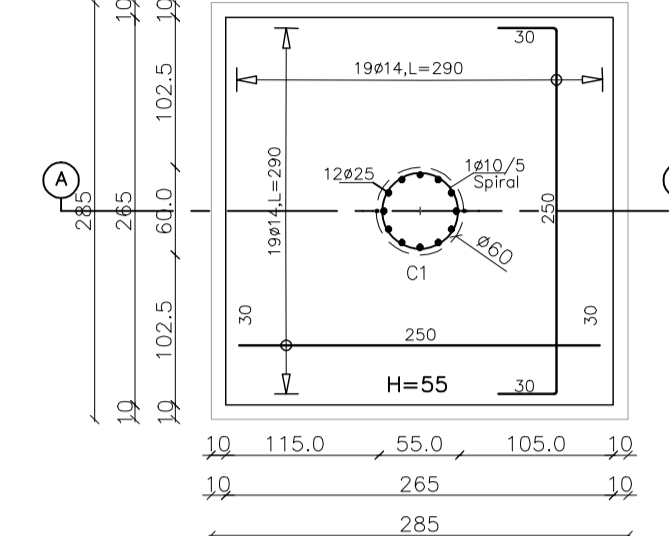
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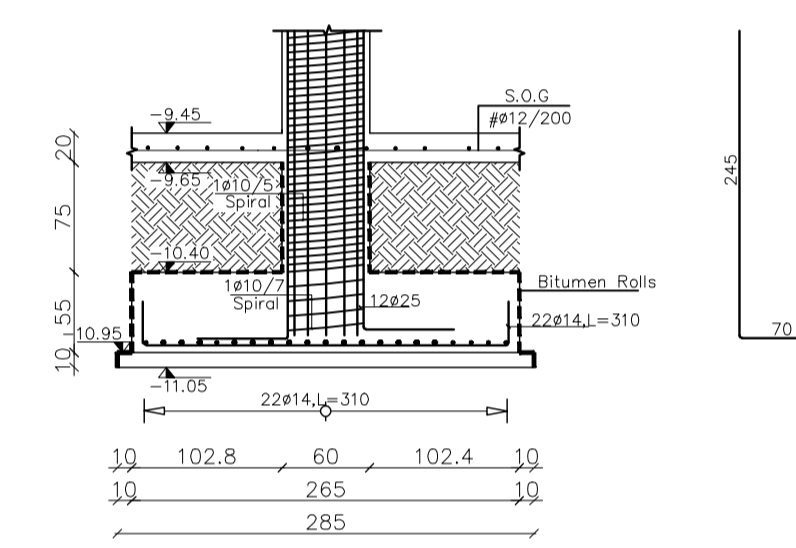
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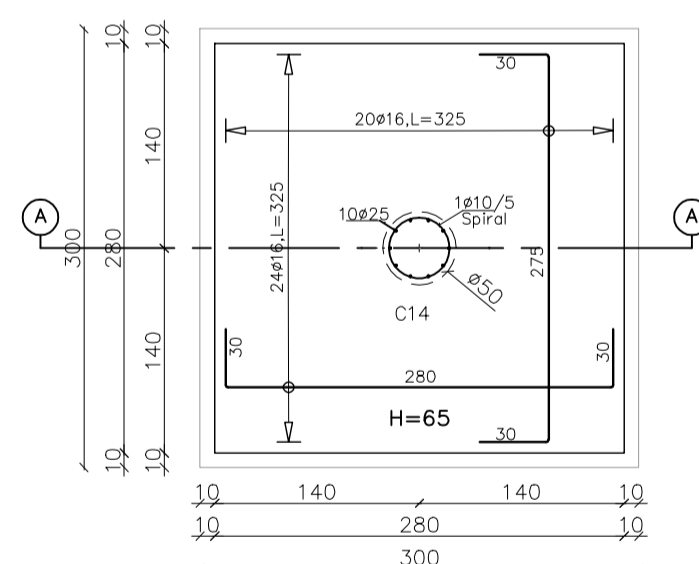
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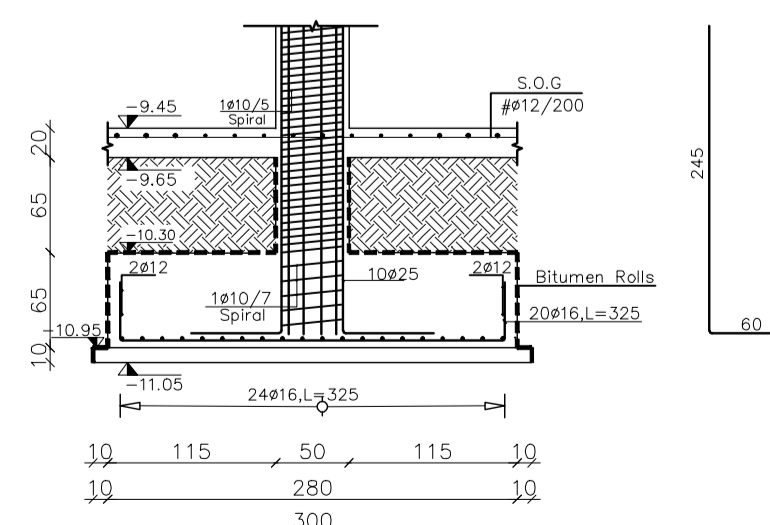
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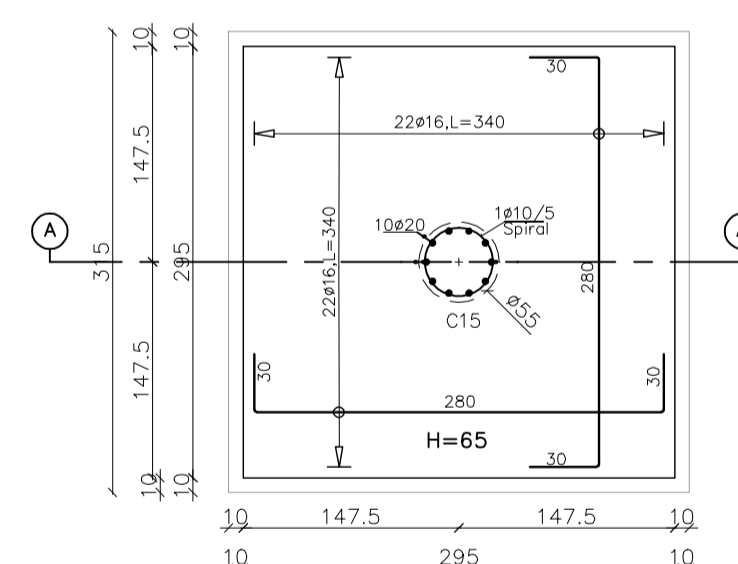
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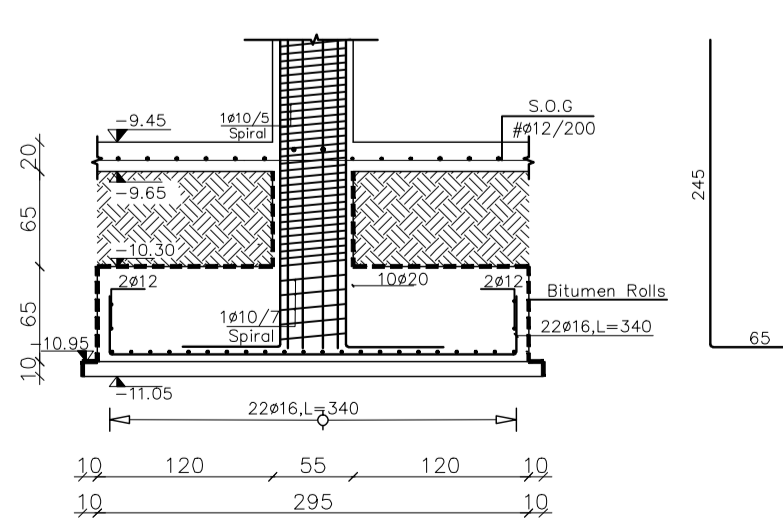
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Scale 1:50



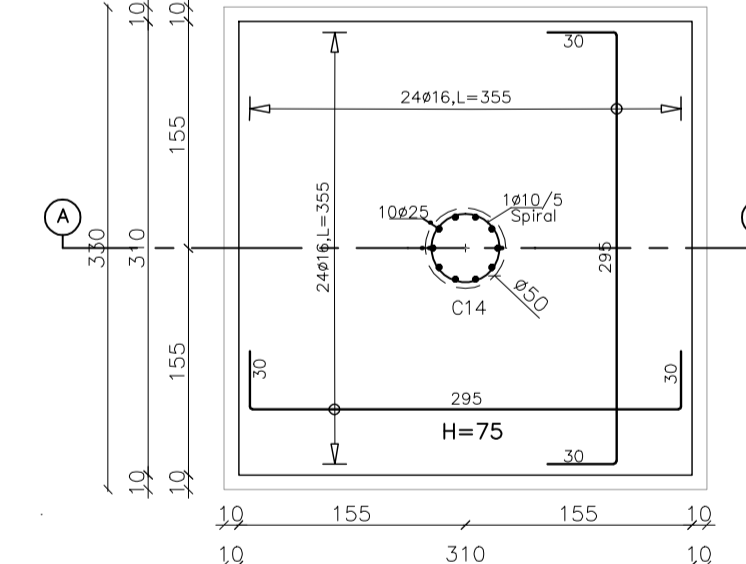
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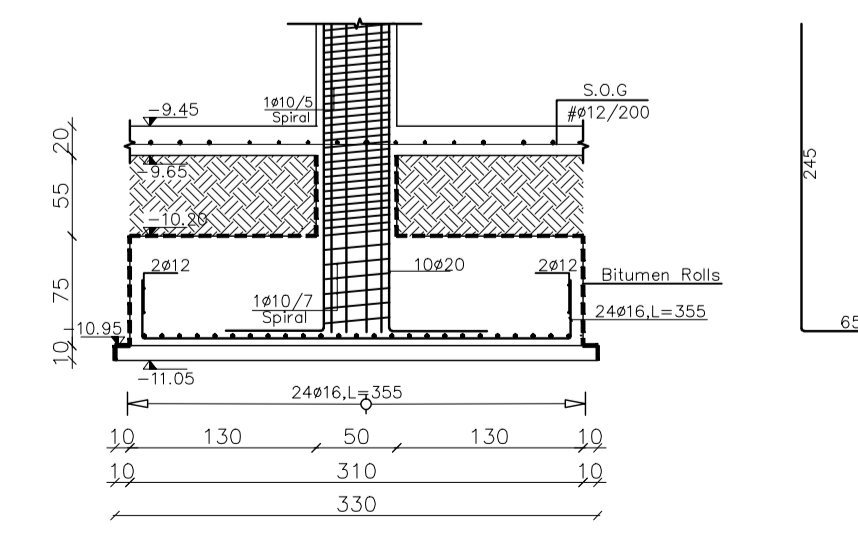
Section A-A

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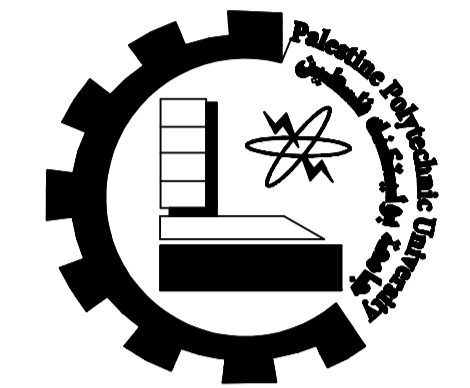
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Plan



Section A-A



PALESTINE POLYTECHNIC UNIVERSITY  
COLLEGE OF ENGINEERING  
CIVIL & ARCH. ENG. DEPARTMENT  
Architecture ENGINEERING

Designed by:

Natheer Talahmah  
Montaser Qazzaz  
Mohammad Talahmah  
Ammar AL-rjoub

Supervisor:

Eng. Mona AL-Shaar

Project: Structural Design For  
Proposed  
Commercial Complex

In:  
ALBERE

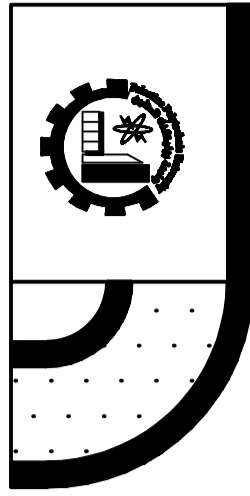
Drawing:

Foundation Details

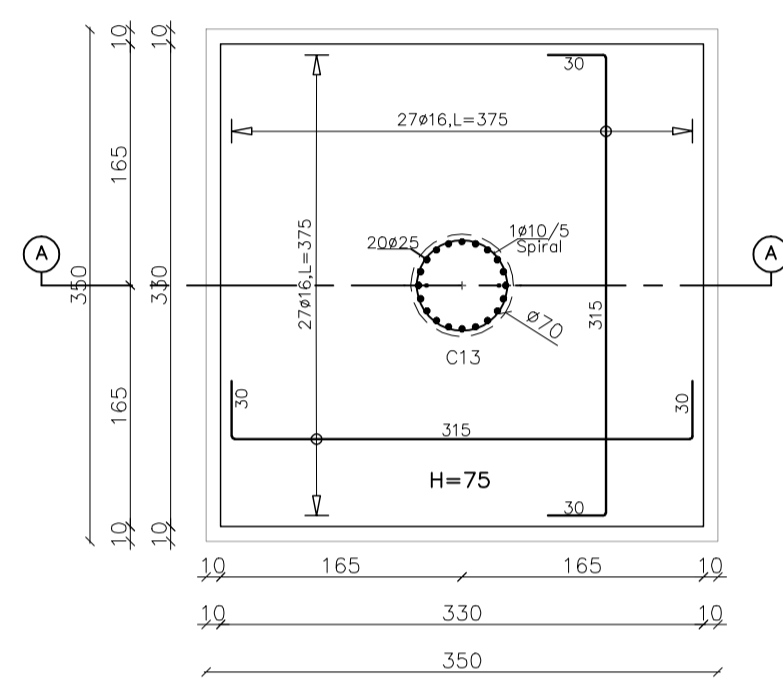
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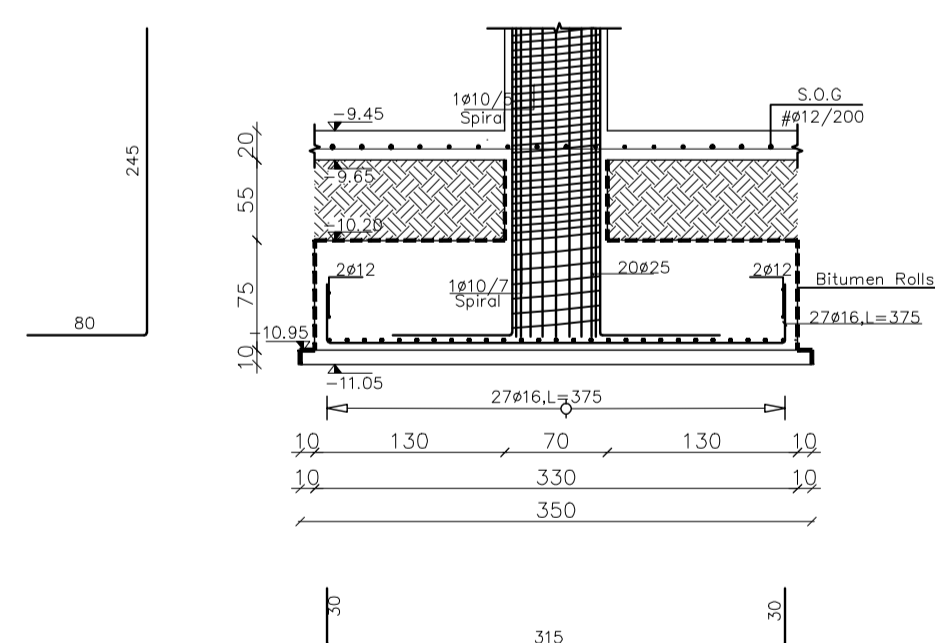
Date:  
Dec-2019



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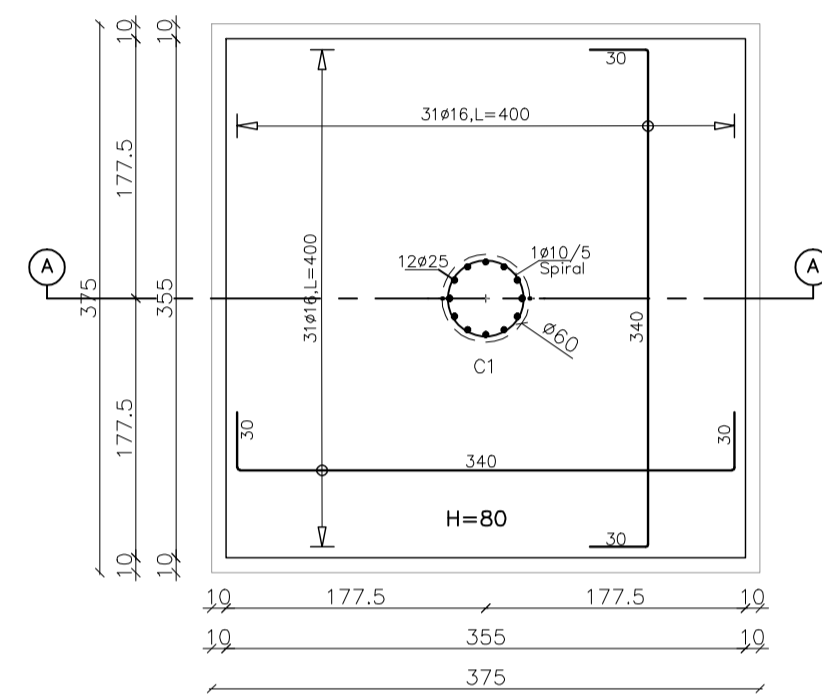


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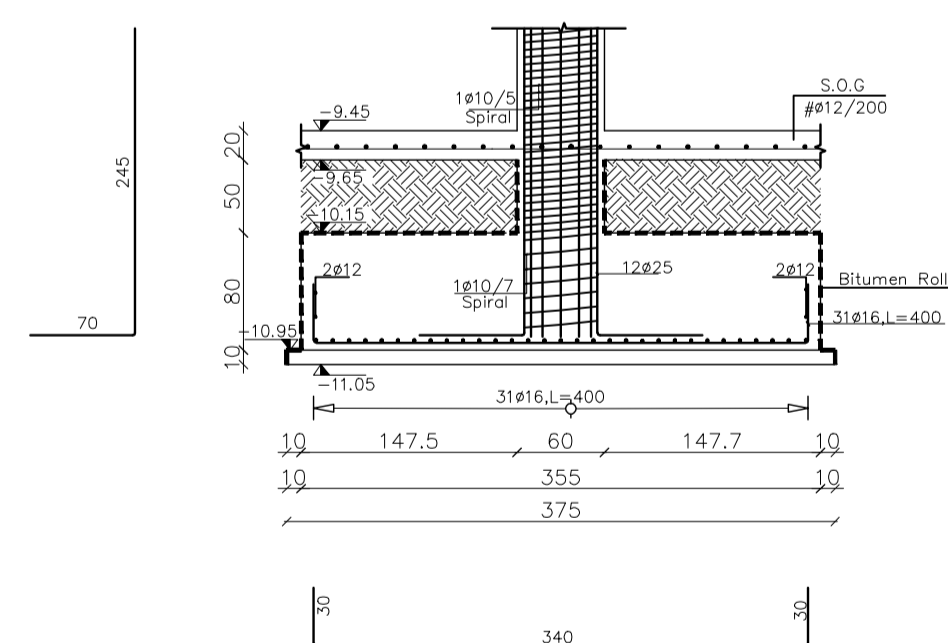


Section A-A

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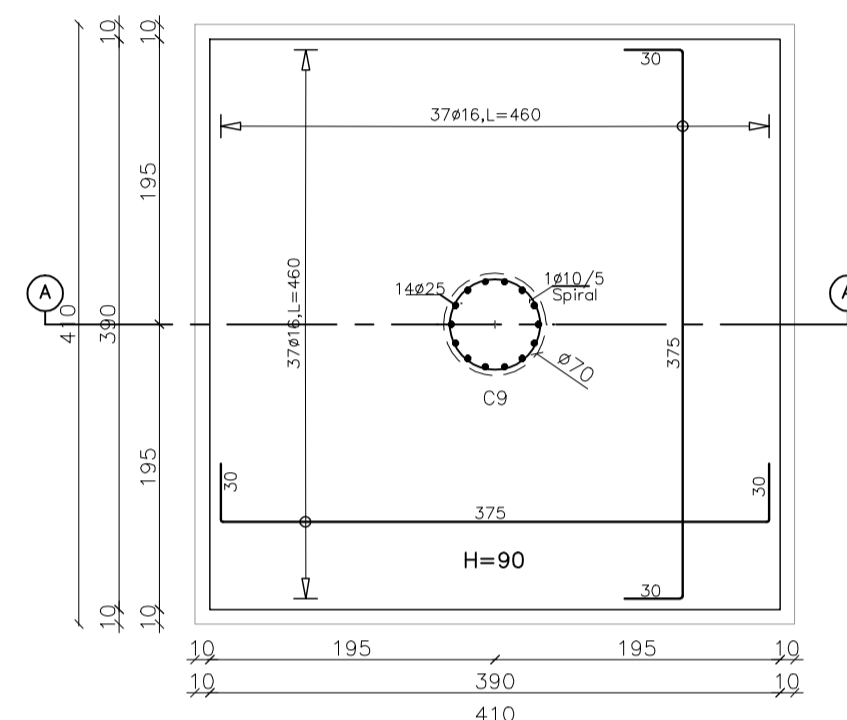


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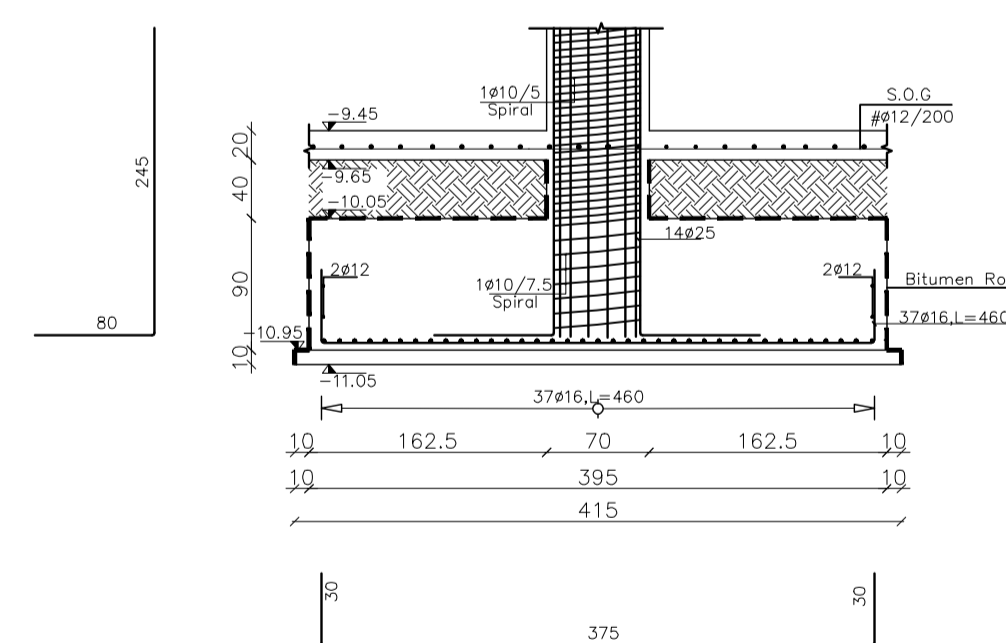


Section A-A

I.Footing F8,C9  
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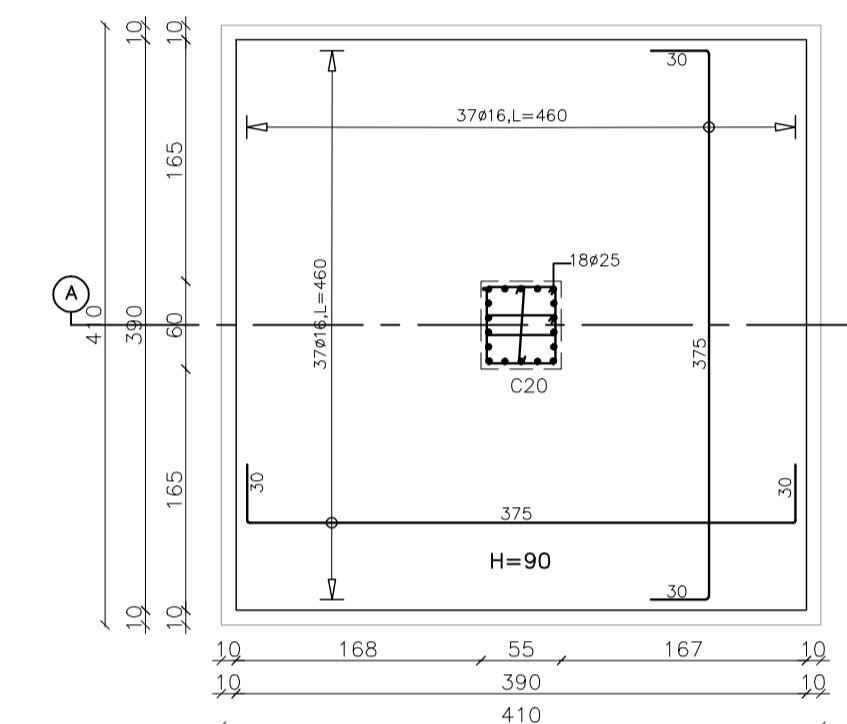


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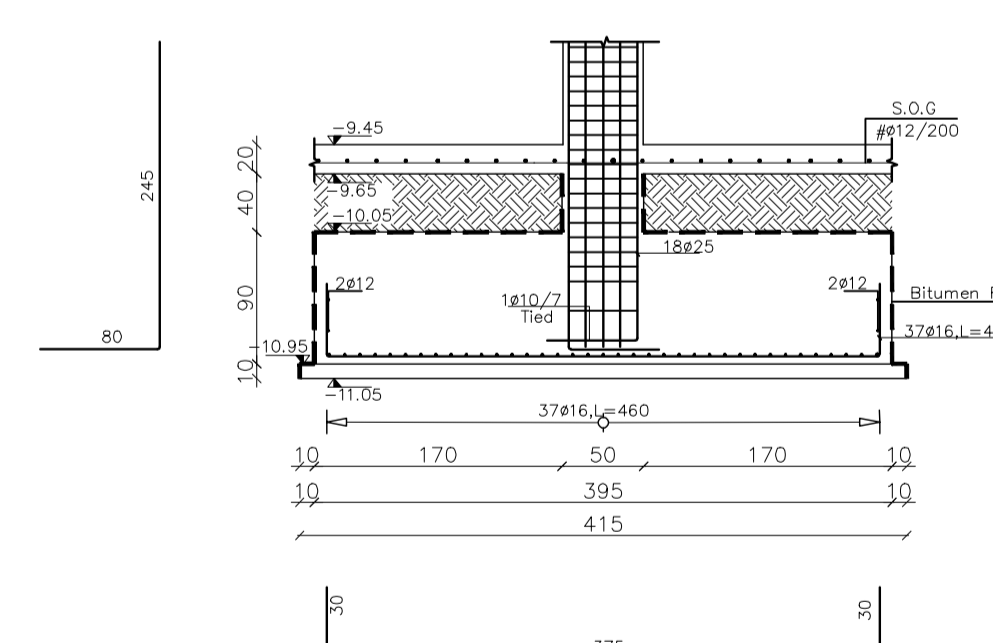


Section A-A

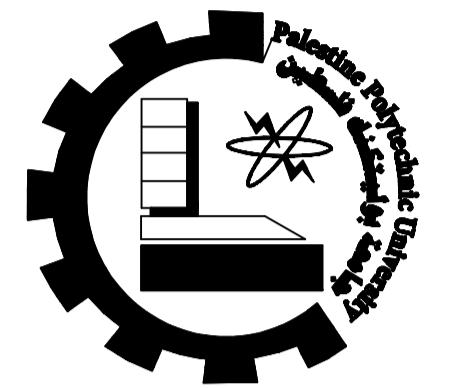
I.Footing F8,C20  
Scale 1: 50



Plan



Section A-A



PALESTINE POLYTECHNIC UNIVERSITY  
COLLEGE OF ENGINEERING  
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Natheer Talahmah  
Montaser Qazzaz  
Mohammad Talahmah  
Ammar AL-rjoub

Supervisor:  
Eng. Mona AL-Shaar

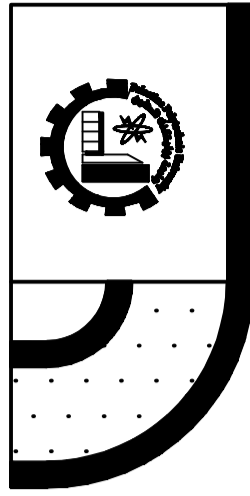
Project: Structural Design For  
Proposed  
Commercial Complex

In:  
ALBERG

Drawing :  
Foundation Details

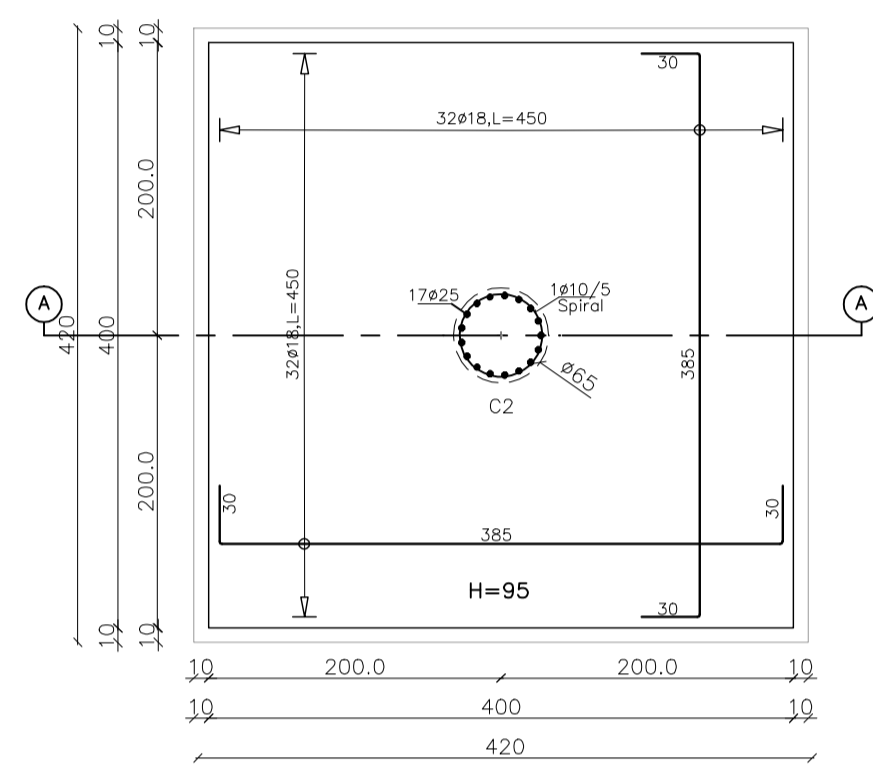
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Scale : 1:200 Date : Dec-2019

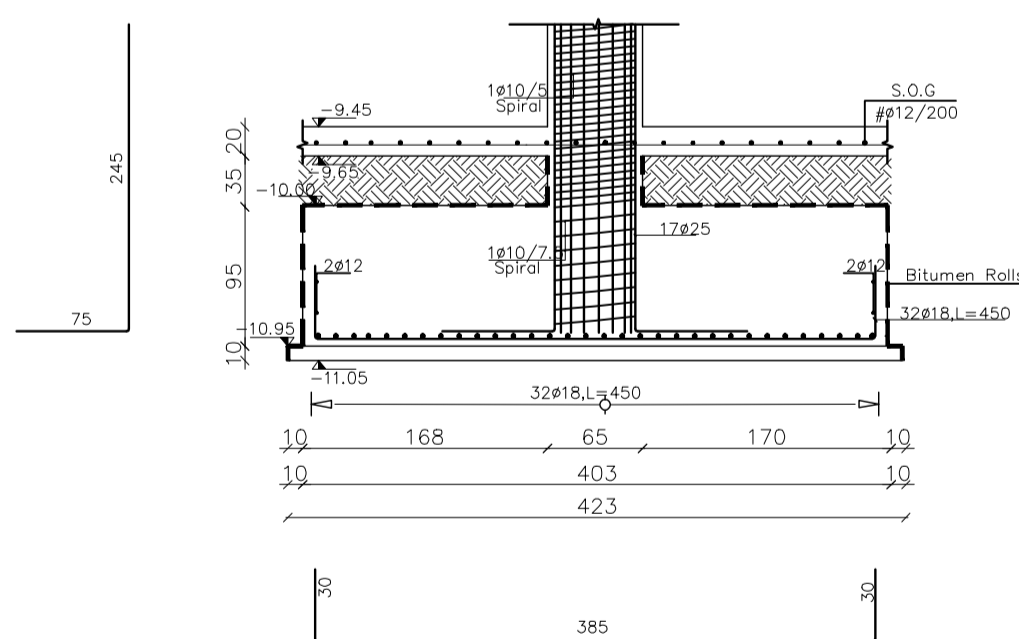


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Scale 1: 50



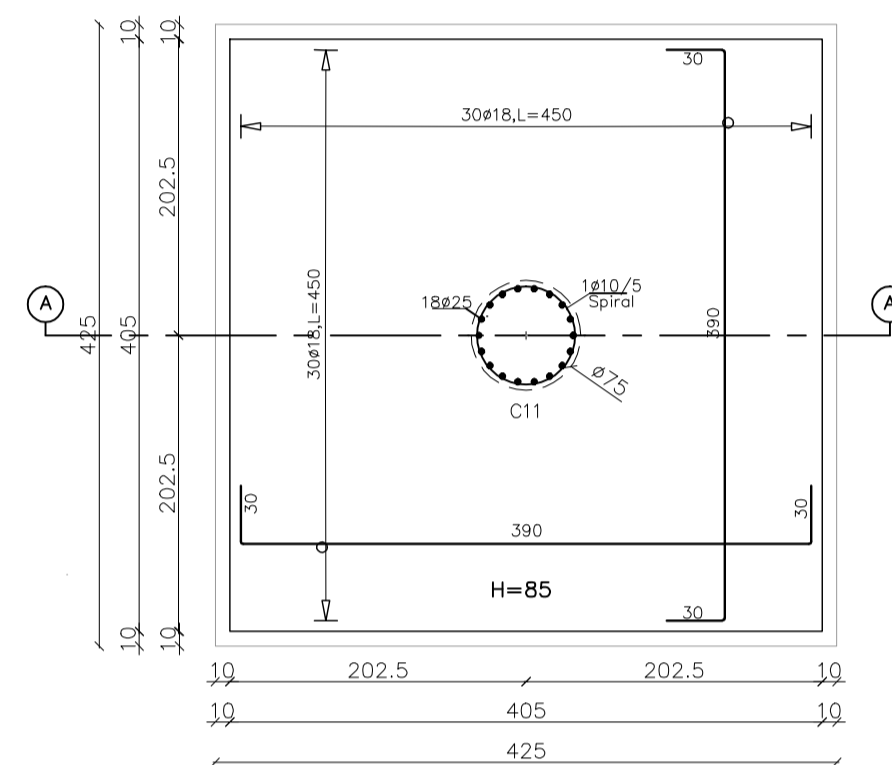
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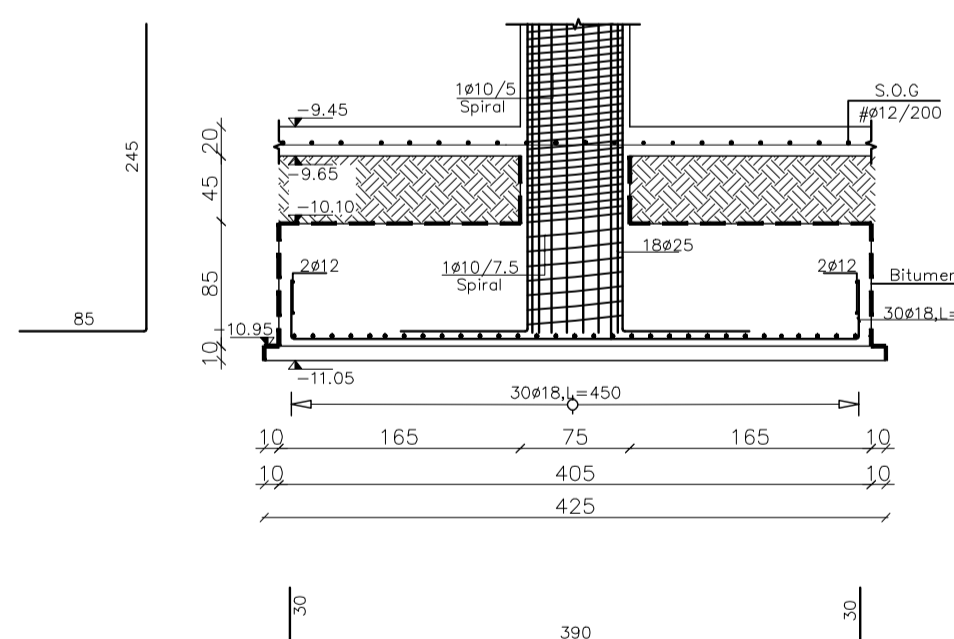
Section A-A

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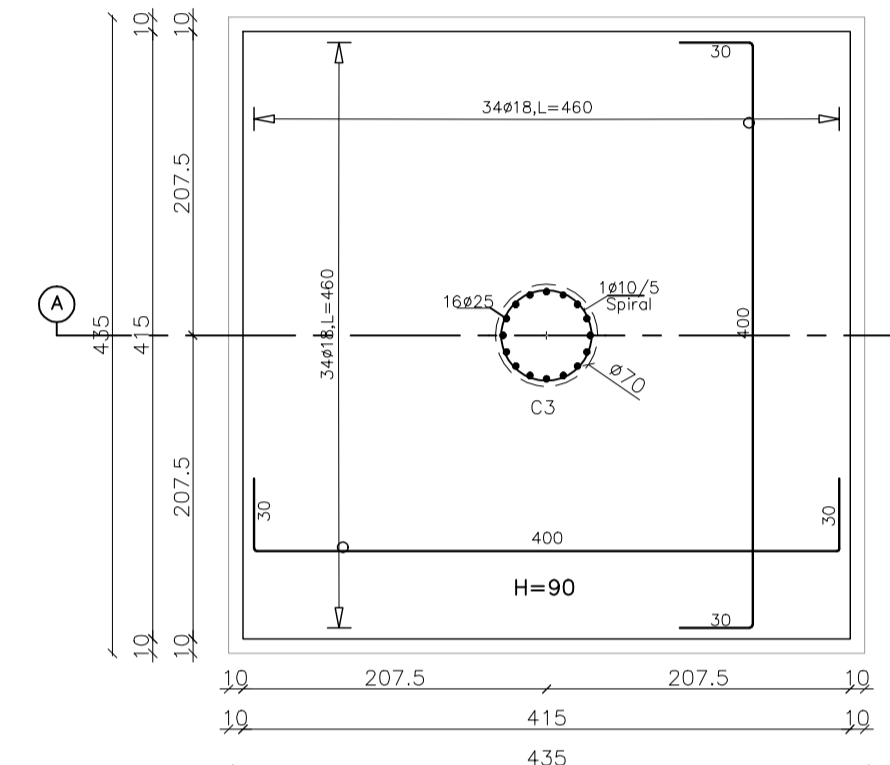
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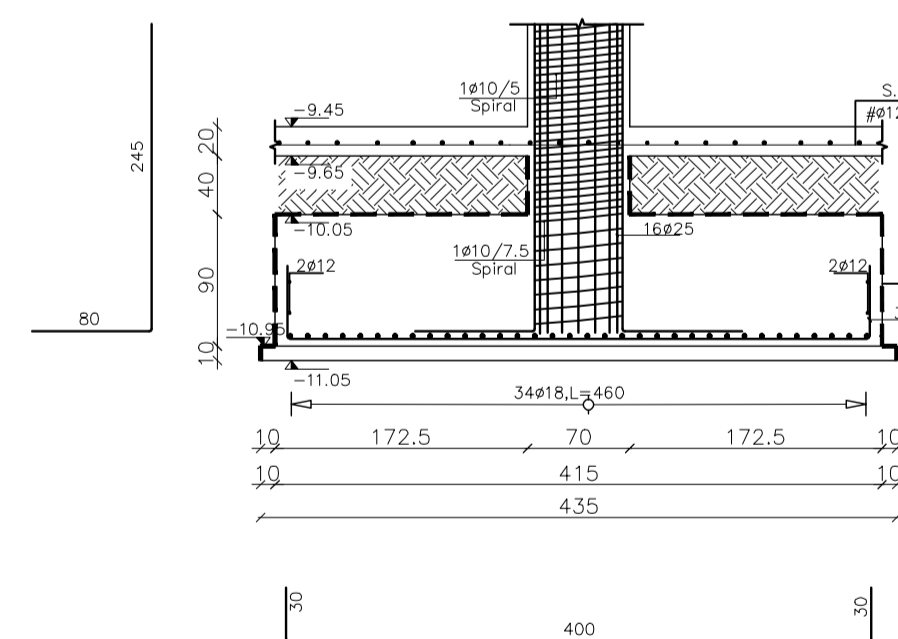
Section A-A

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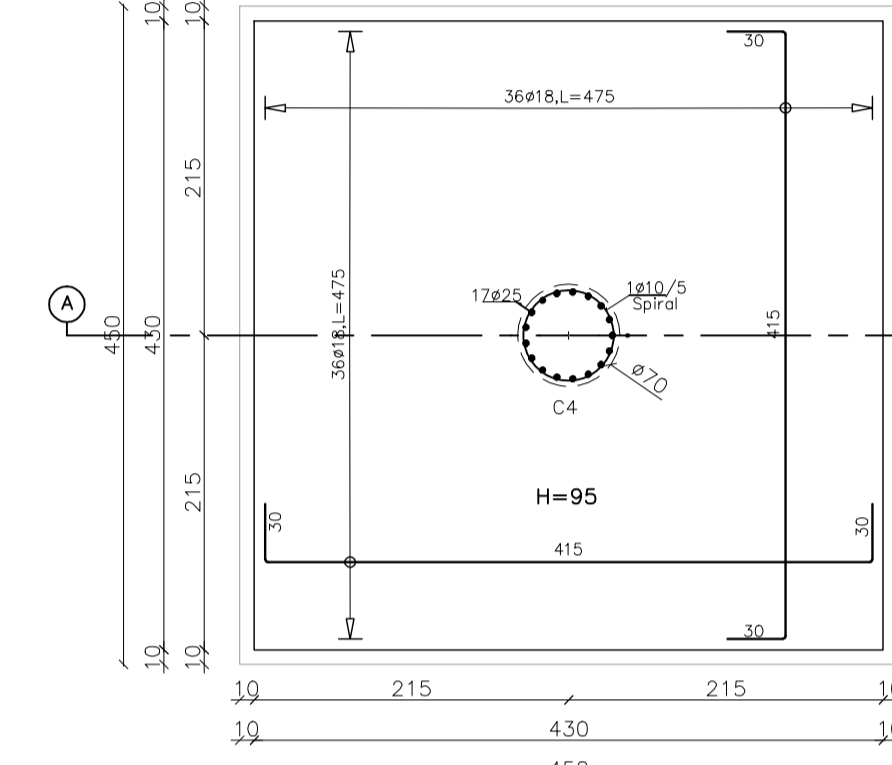
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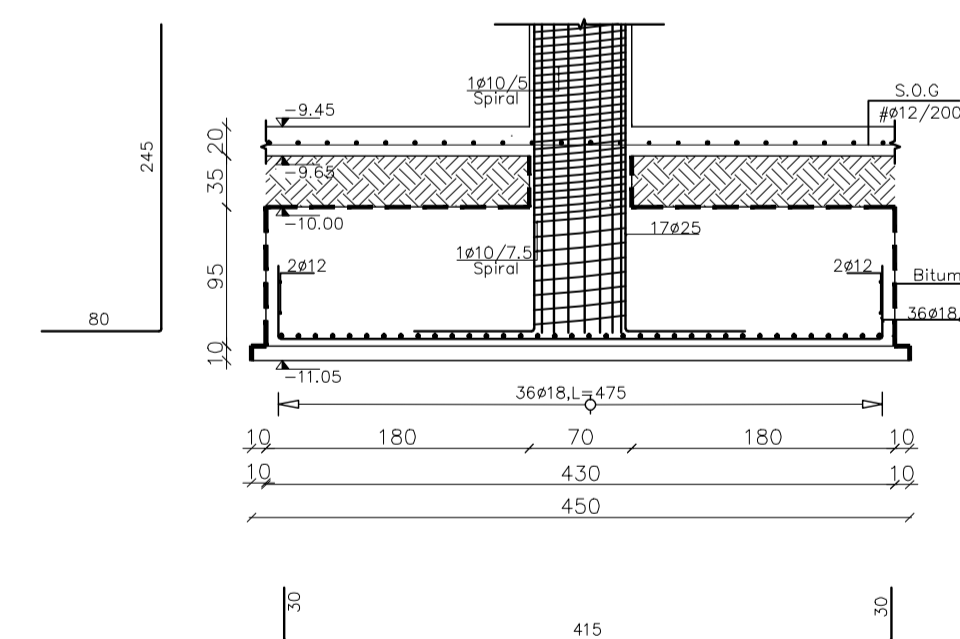
Section A-A

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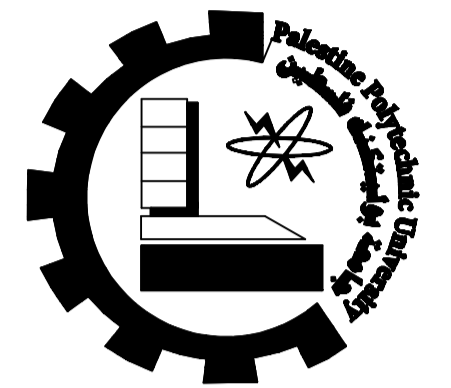
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Plan



Section A-A



PALESTINE POLYTECHNIC UNIVERSITY  
COLLEGE OF ENGINEERING  
CIVIL & ARCH. ENG. DEPARTMENT  
Architecture ENGINEERING

Designed by:  
Nathier Talahmah  
Montaser Qazzaz  
Mohammad Talahmah  
Ammar AL-rjoub

Supervisor:  
Eng. Mona AL-Shaar

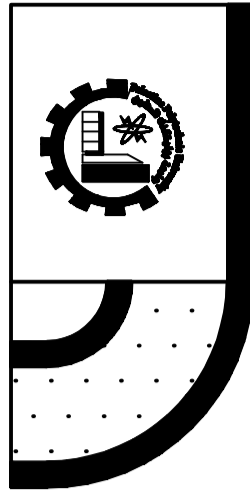
Project: Structural Design For  
Proposed  
Commercial Complex

In:  
ALBERE

Drawing :  
Foundation Details

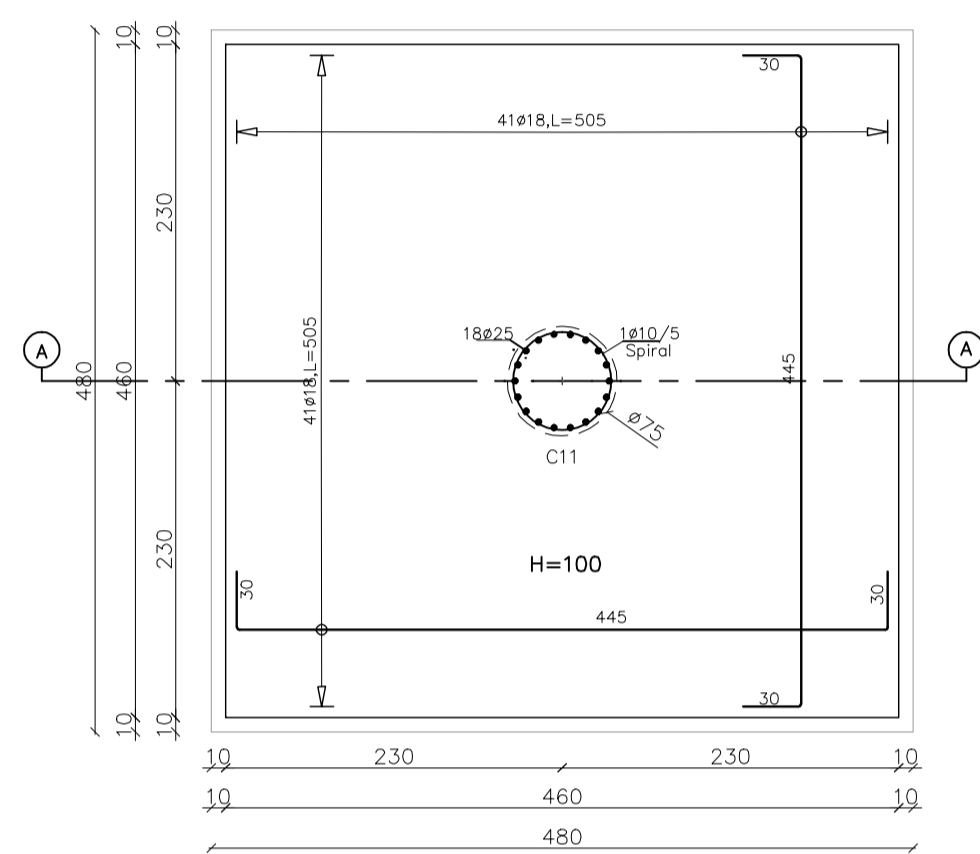
NO: S(05)

Scale : 1:200 Date : Dec-2019



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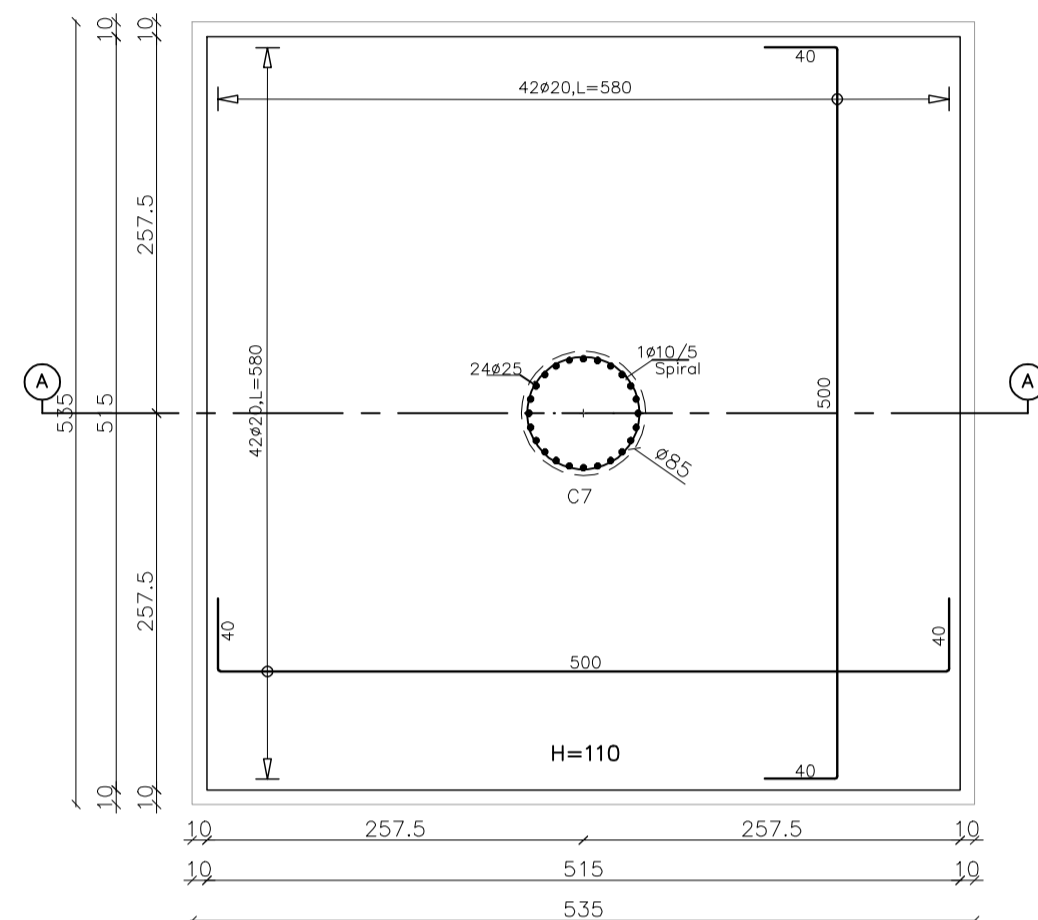
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Plan

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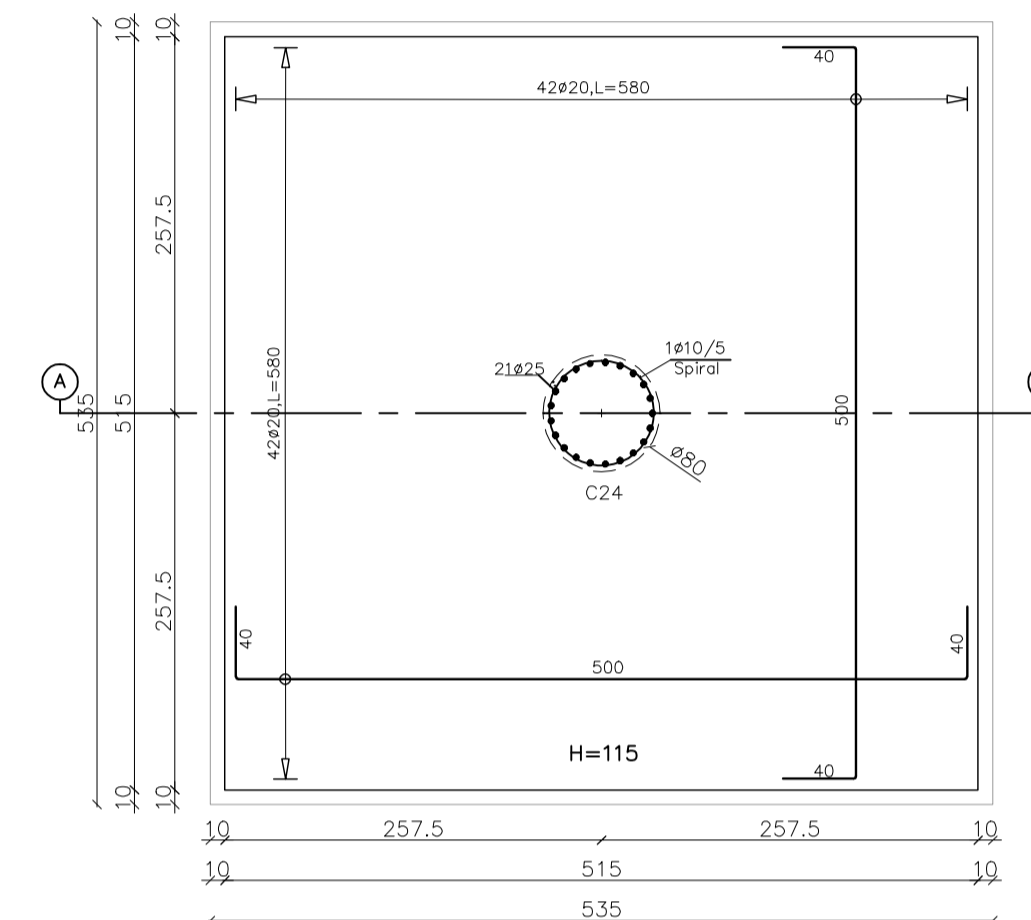
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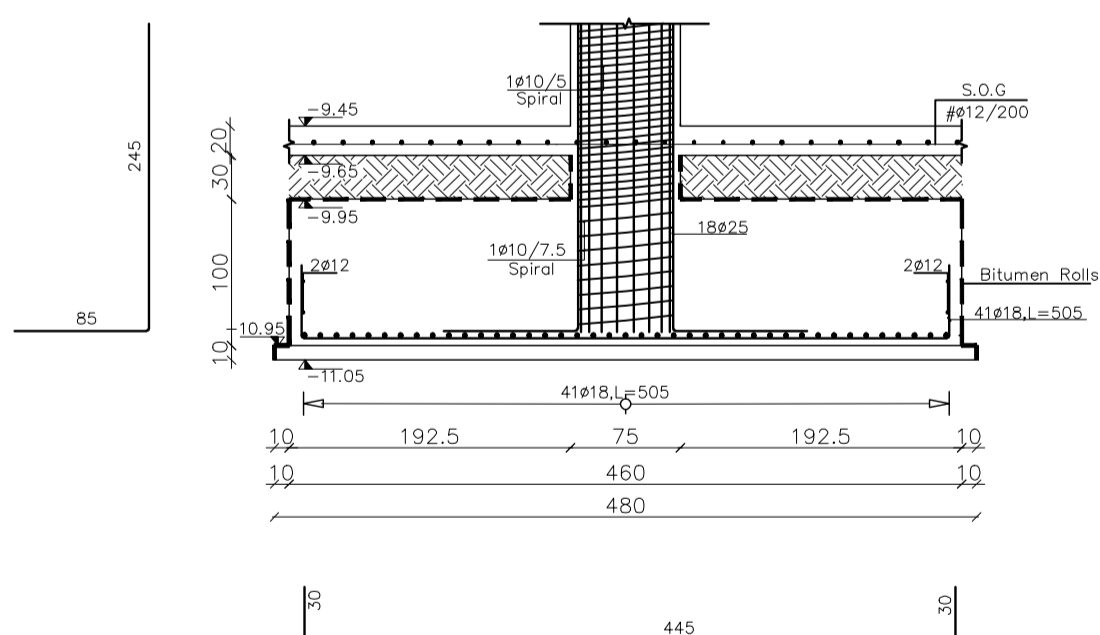
Plan

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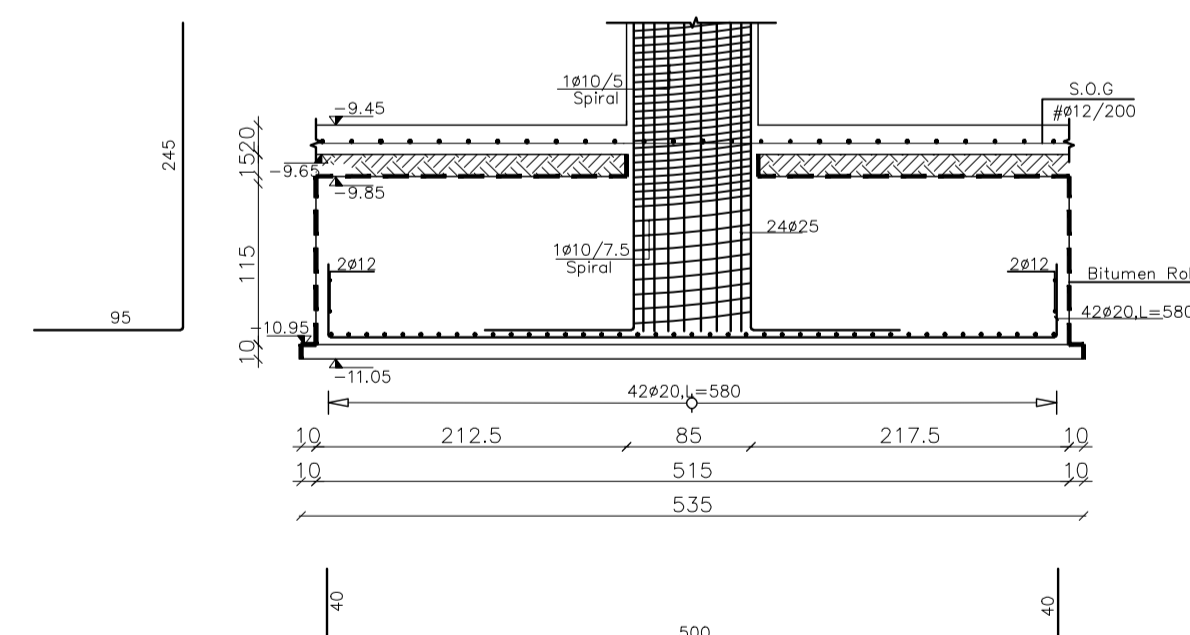
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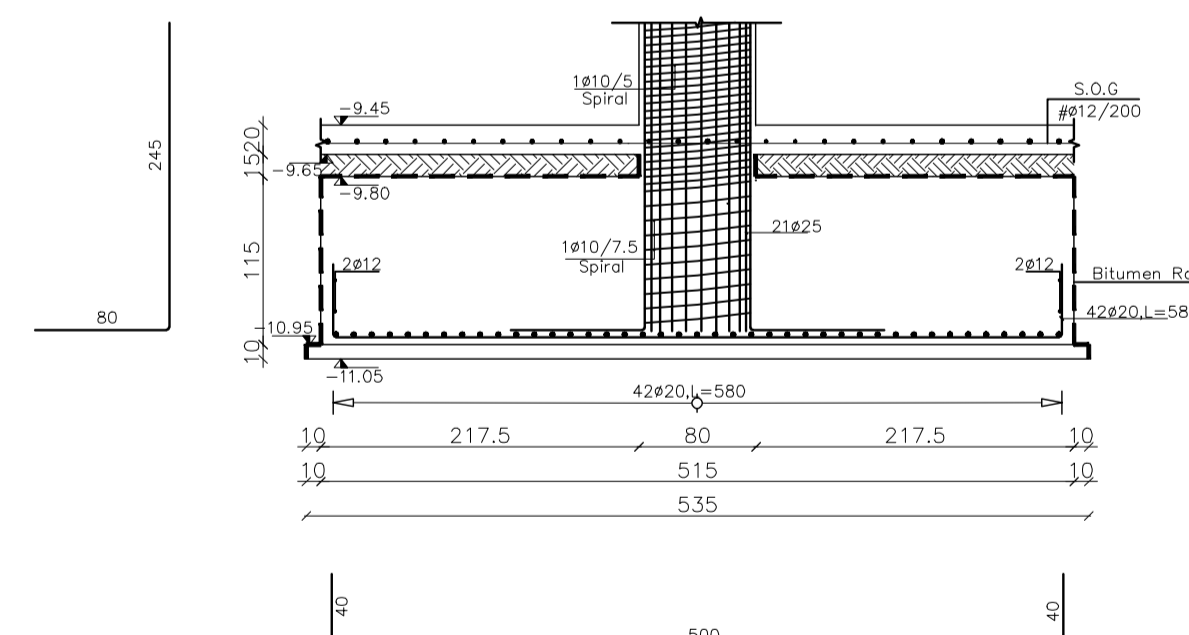
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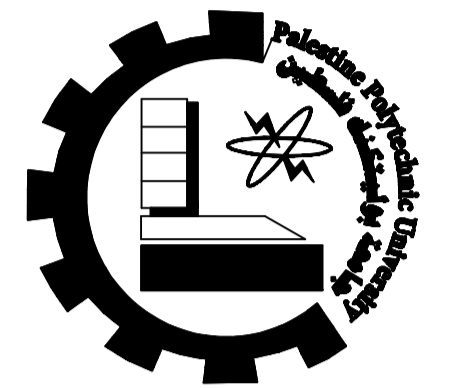
Section A-A



Section A-A



Section A-A



PALESTINE POLYTECHNIC UNIVERSITY  
**COLLEGE OF ENGINEERING**  
**CIVIL & ARCH. ENG. DEPARTMENT**  
**Architecture ENGINEERING**

Designed by:  
**Nathier Talahmah**  
**Montaser Qazzaz**  
**Mohammad Talahmah**  
**Ammar AL-rjoub**

Supervisor:  
**Eng. Mona AL-Shaar**

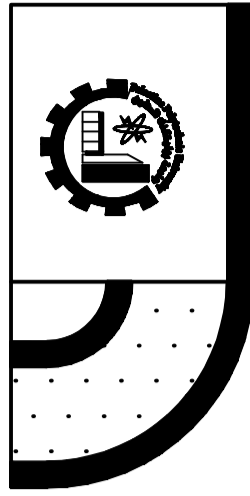
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In: **ALBERE**

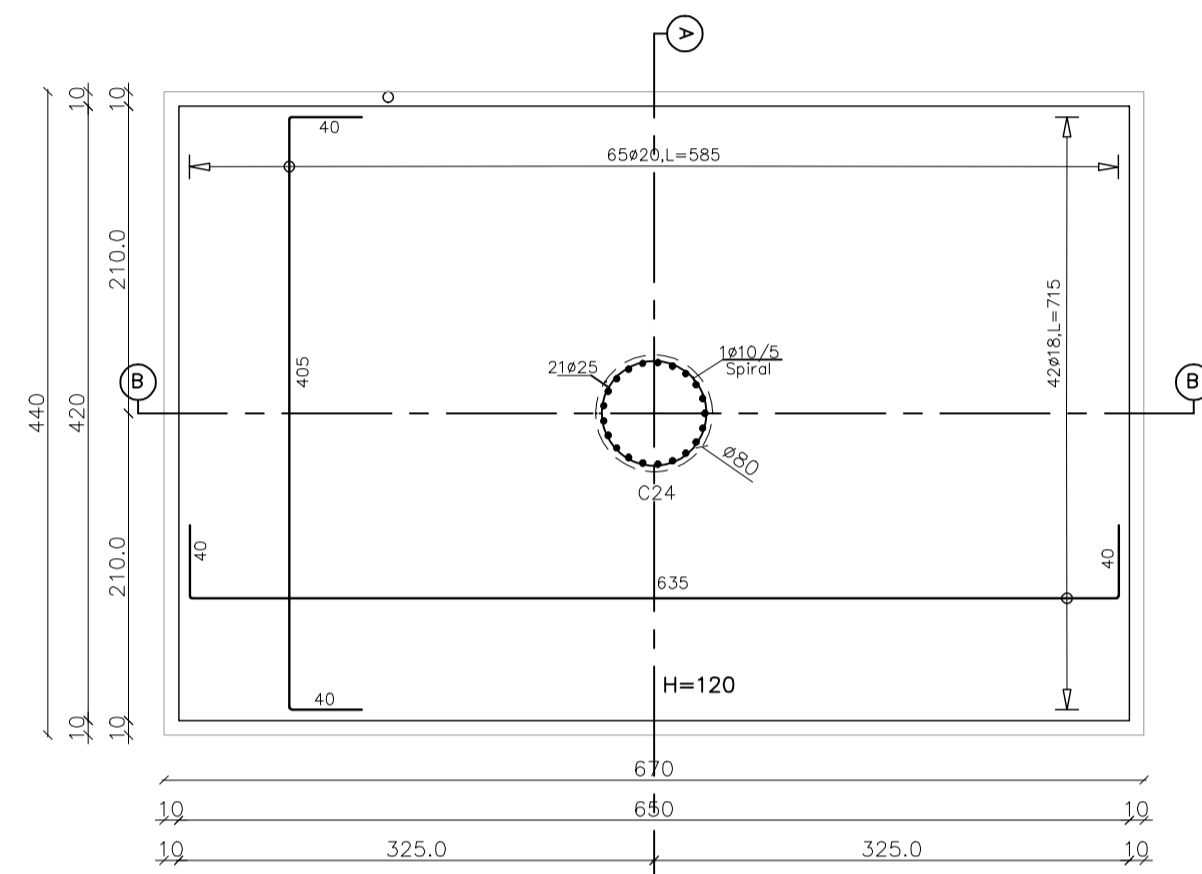
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NO: **S(06)**

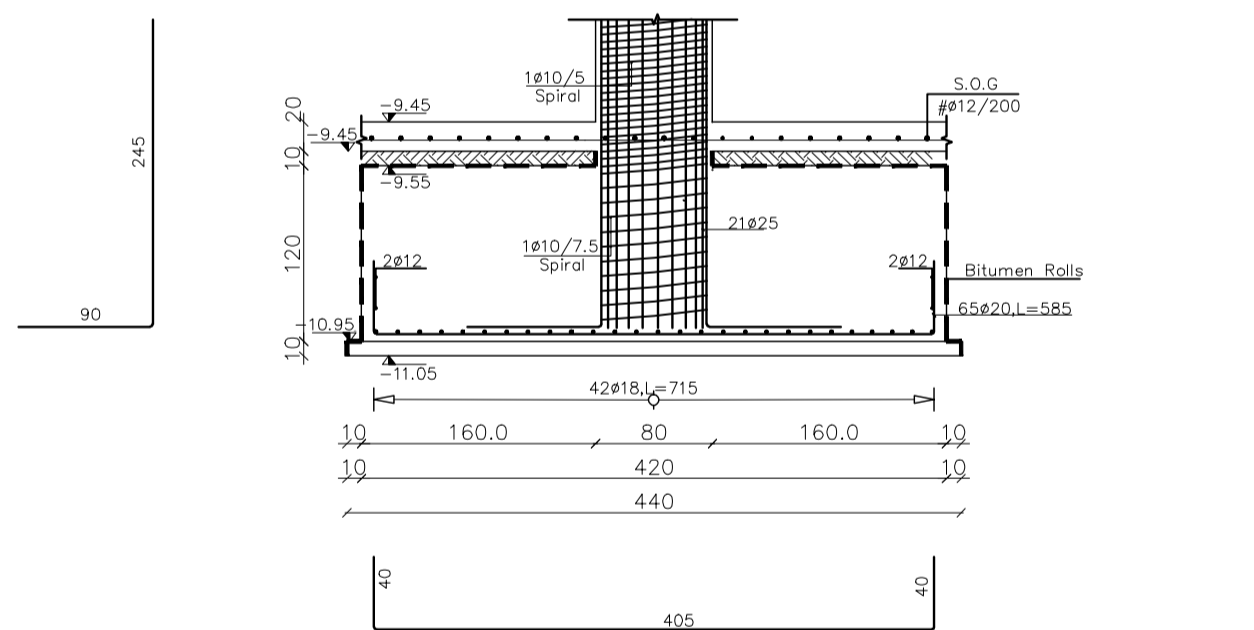
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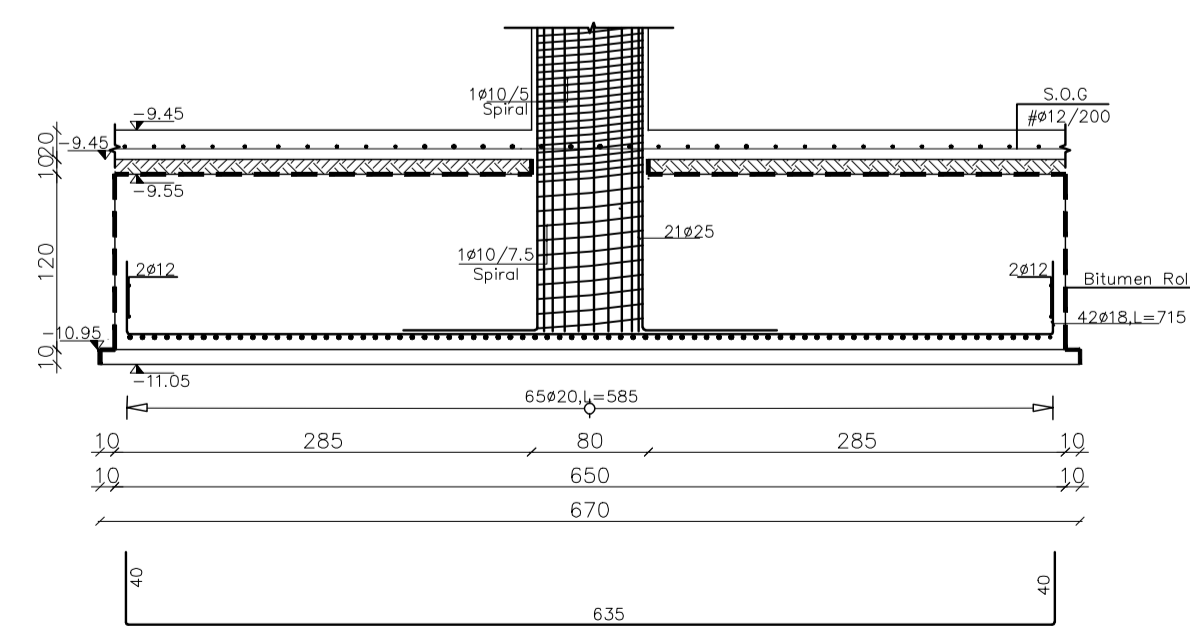
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Plan

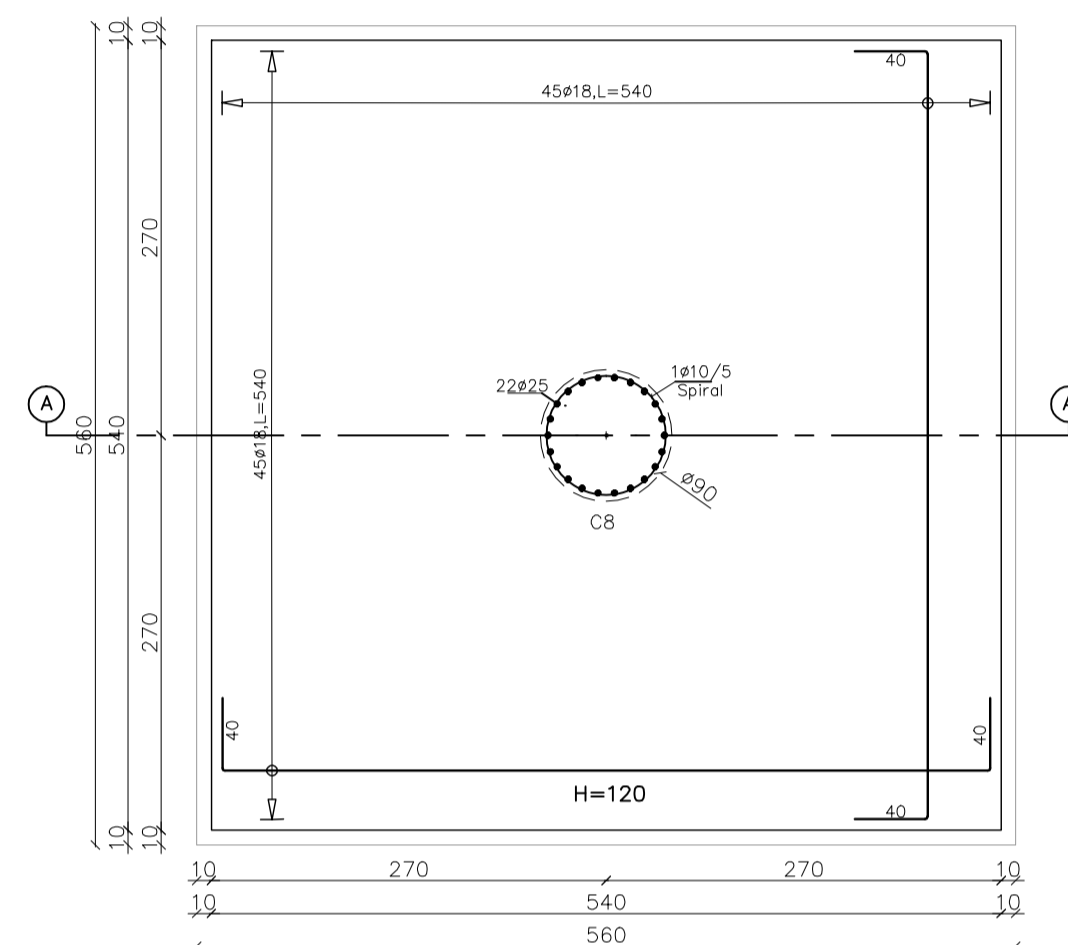


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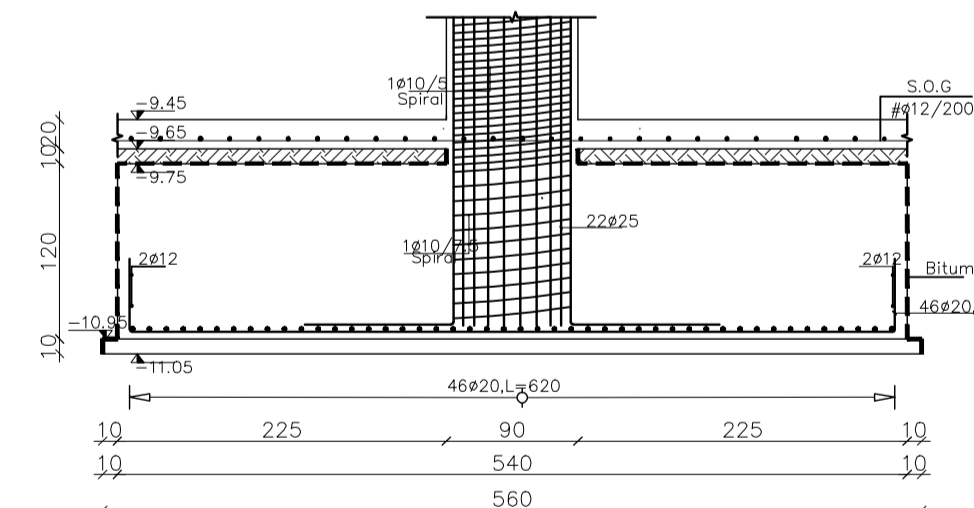


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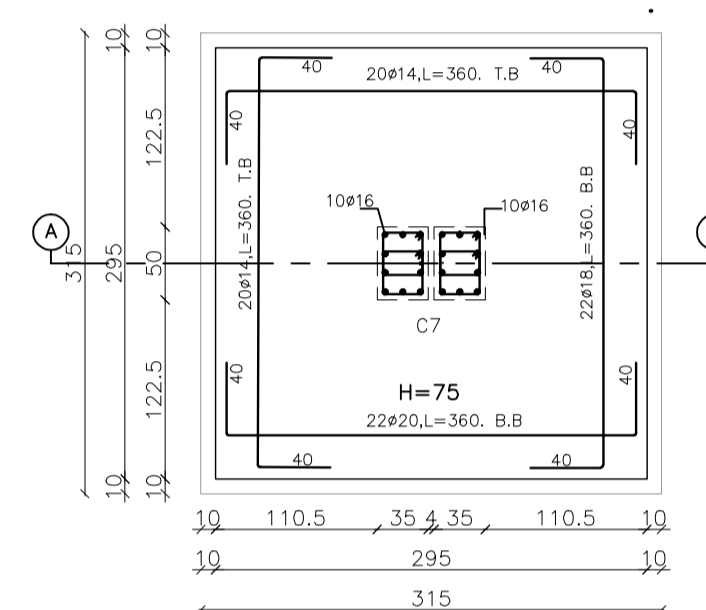


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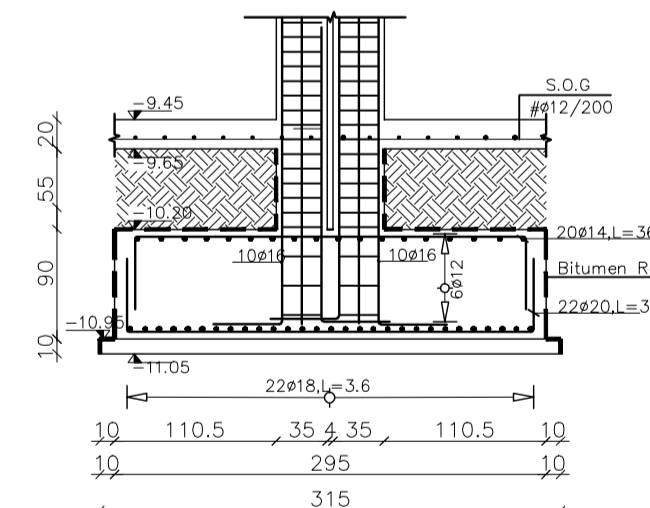


Section A-A

C.Footing F17,C24  
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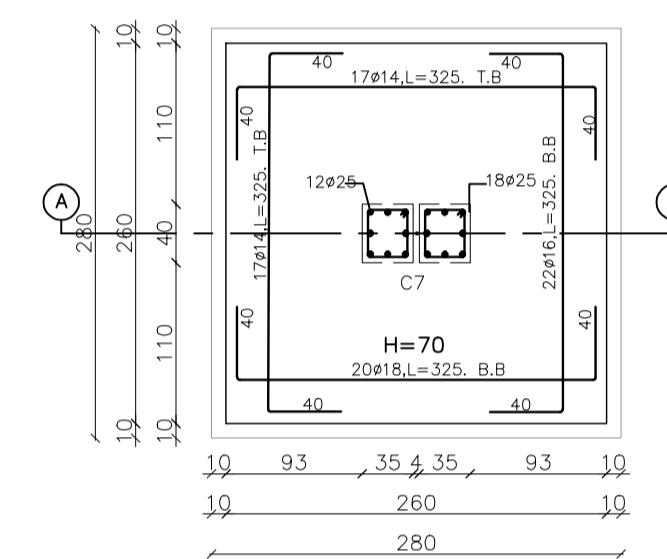


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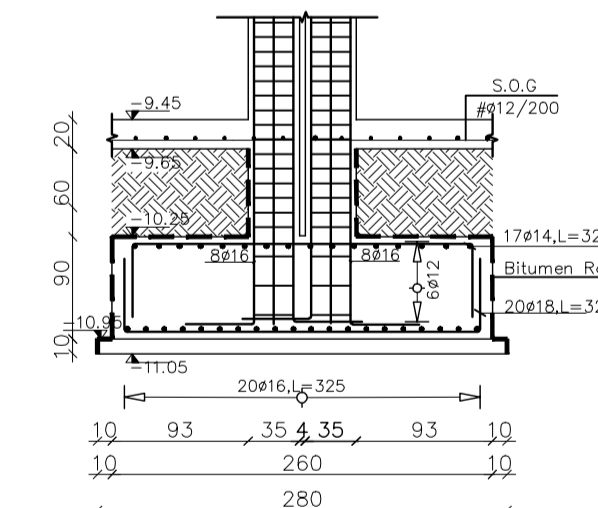


Section A-A

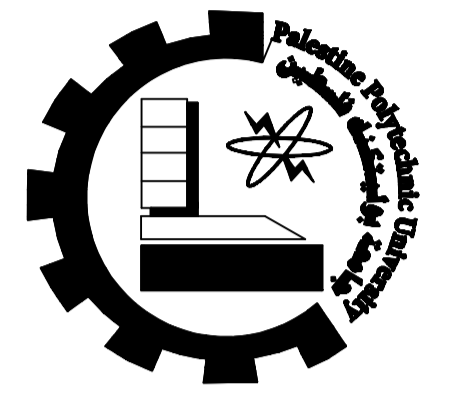
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Plan



Section A-A



PALESTINE POLYTECHNIC UNIVERSITY  
COLLEGE OF ENGINEERING  
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Natheer Talahmah  
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Supervisor:  
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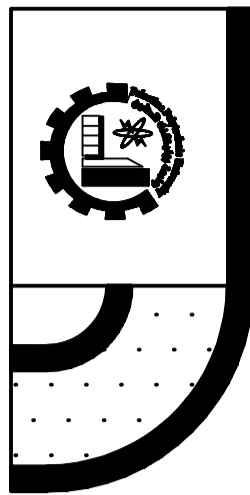
Project: Structural Design For  
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Commercial Complex

In:  
ALBERE

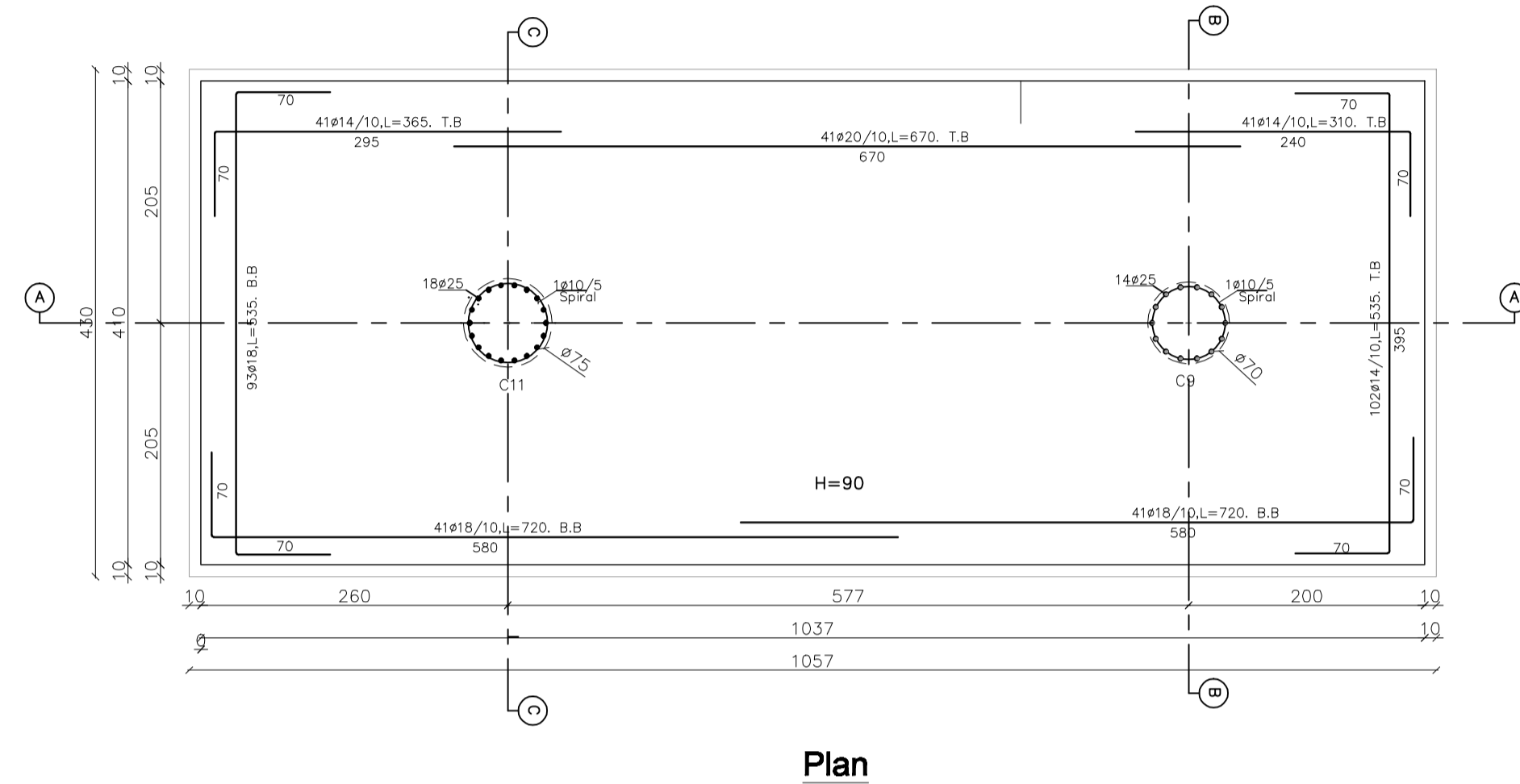
Drawing :  
Foundation Details

NO: S(06A)

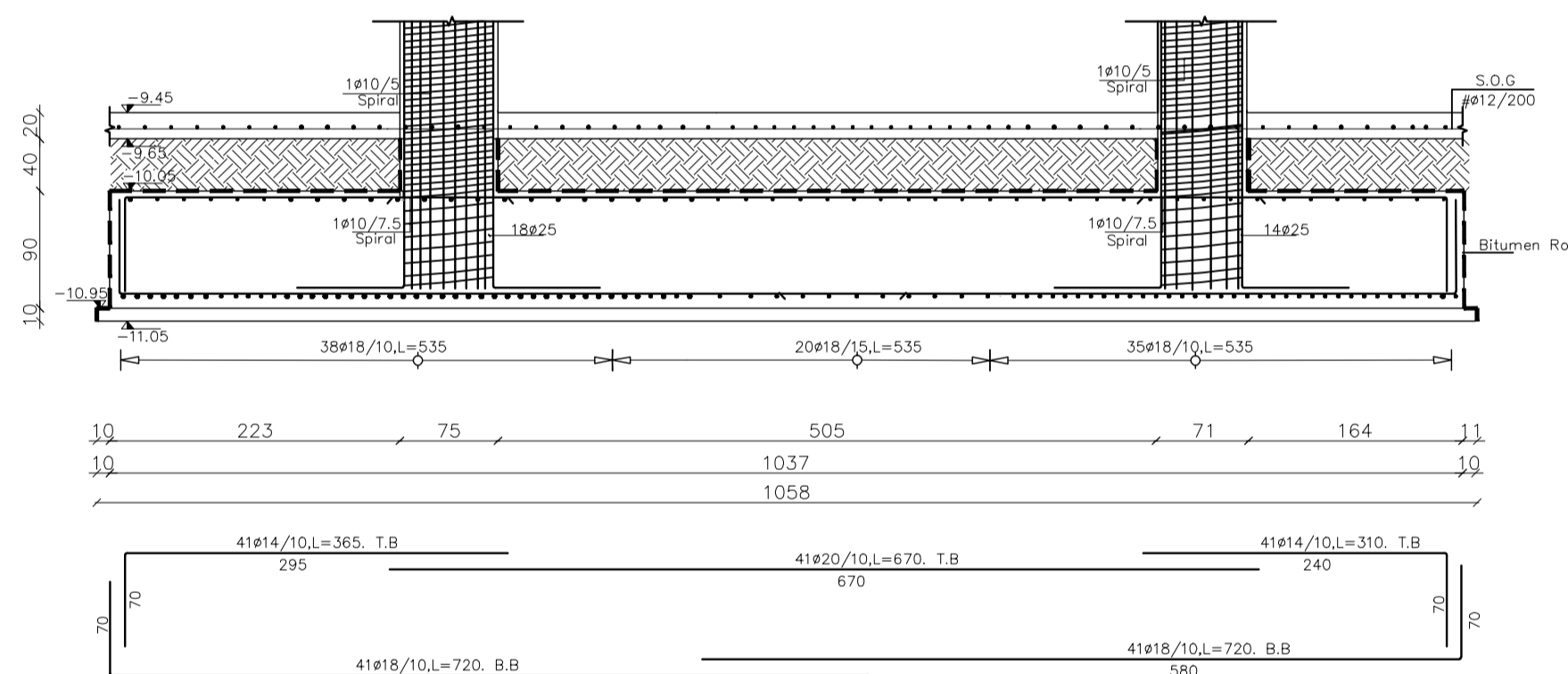
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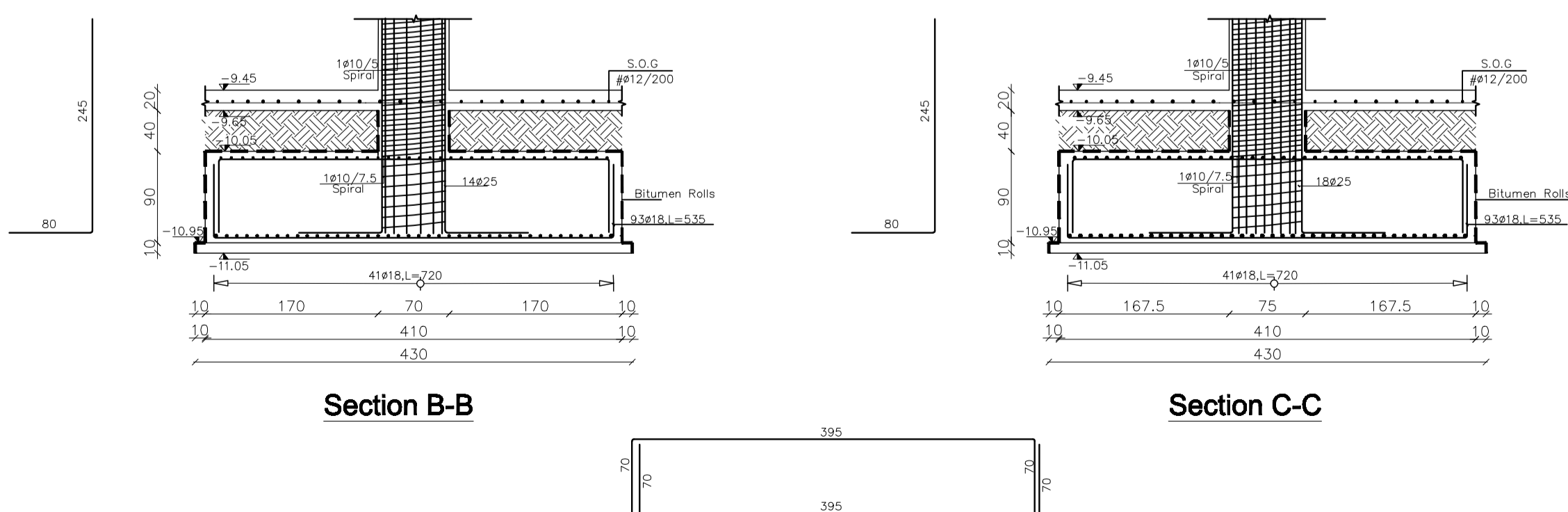
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Plan



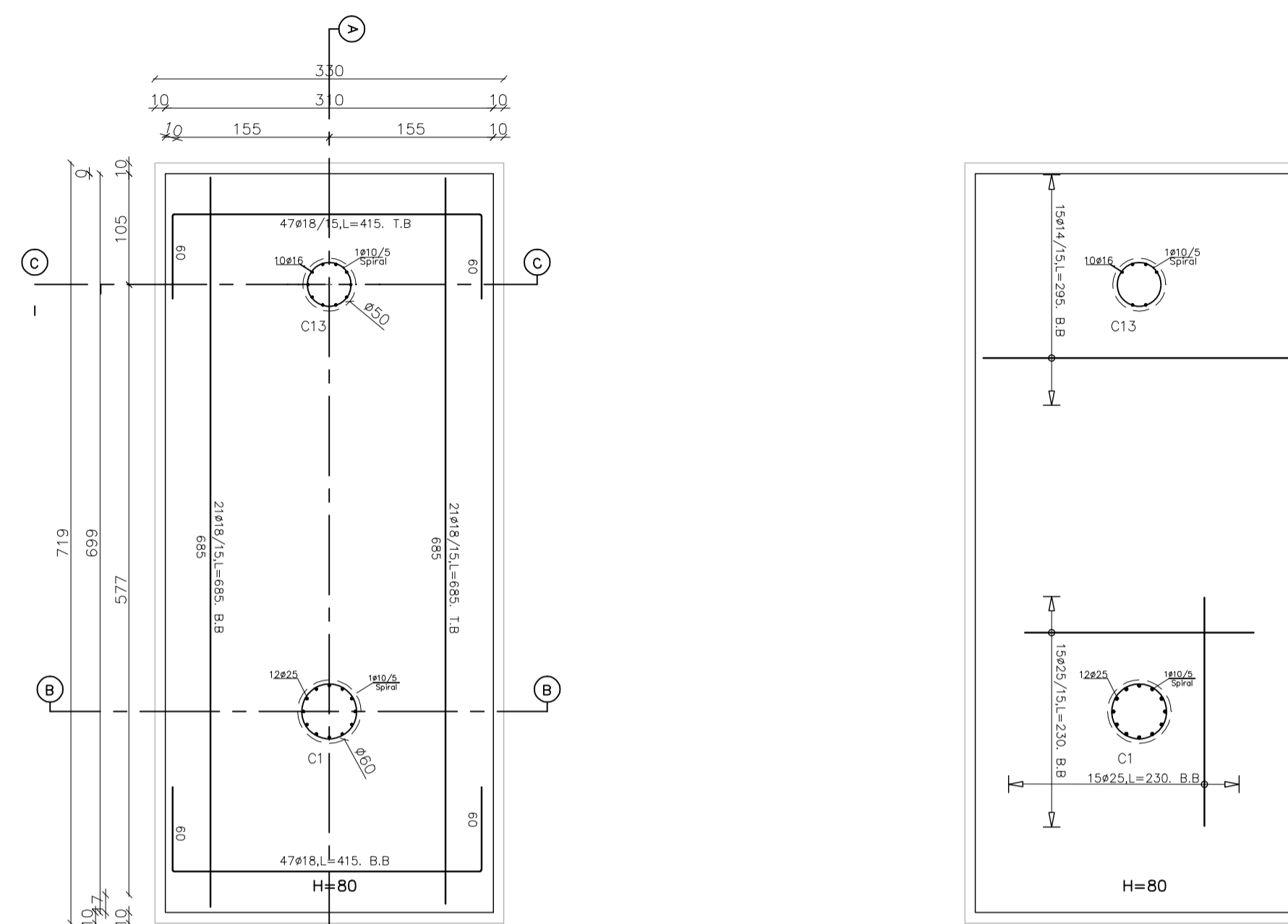
Section A-A



Section B-B

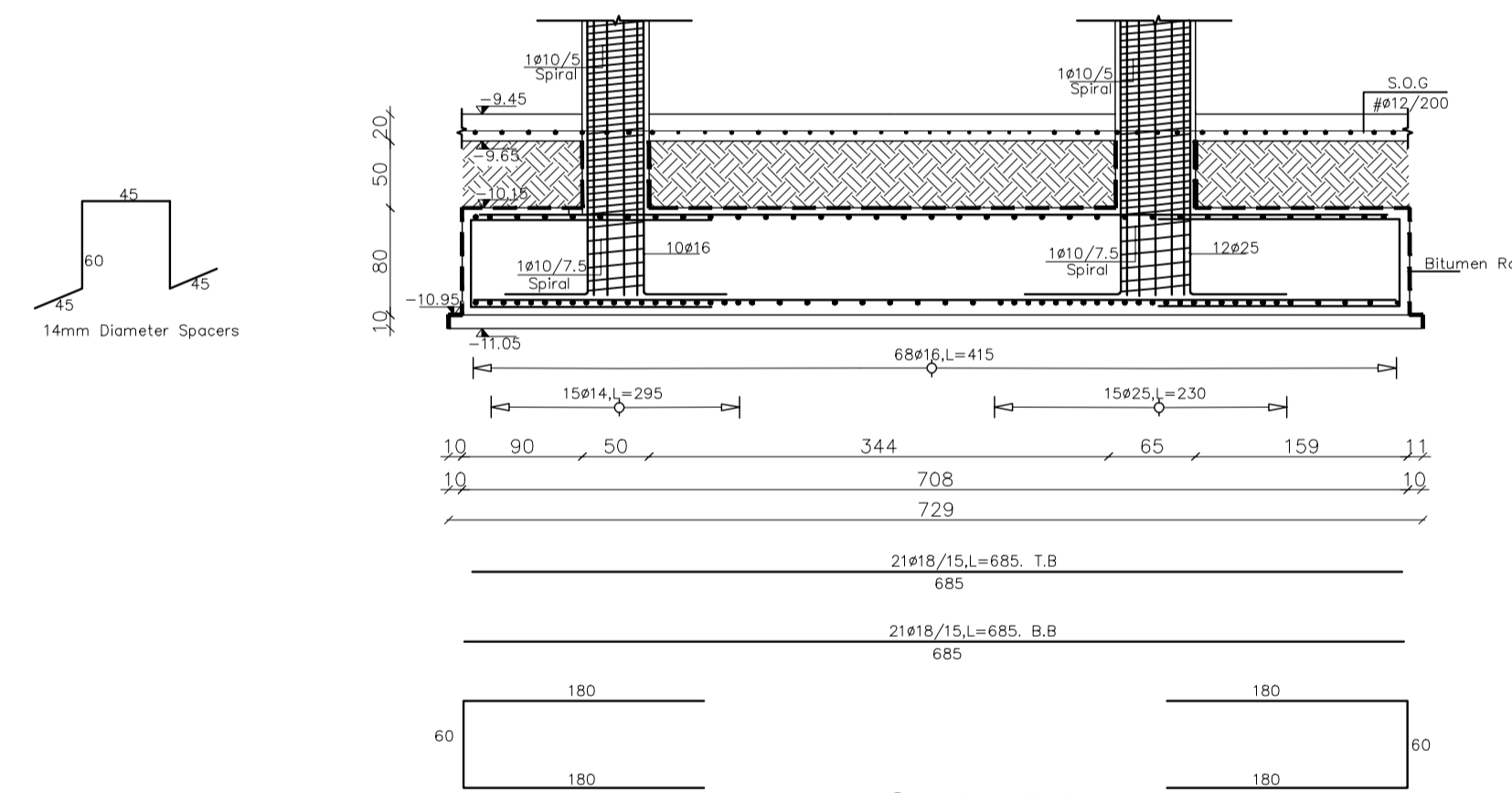
Section C-C

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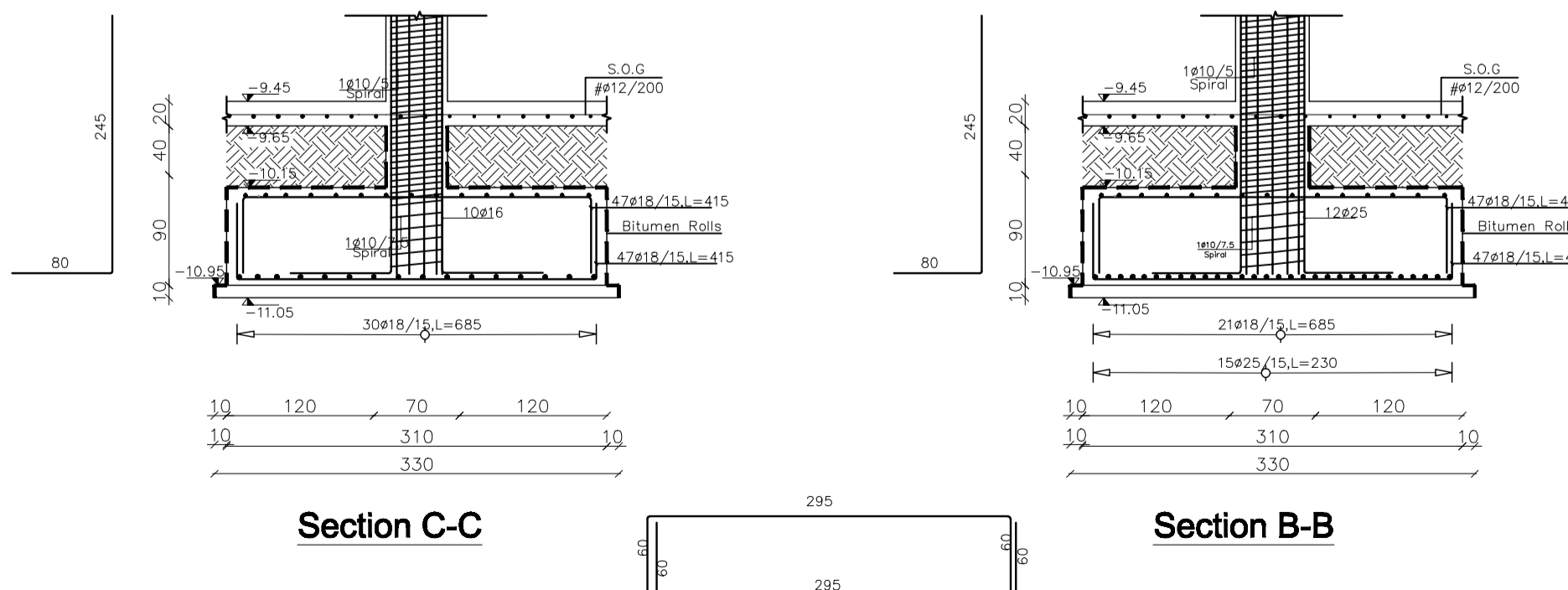


Plan  
Basic Mesh Ø18/15 BB@TB

Additional to Bottom Basic Mesh

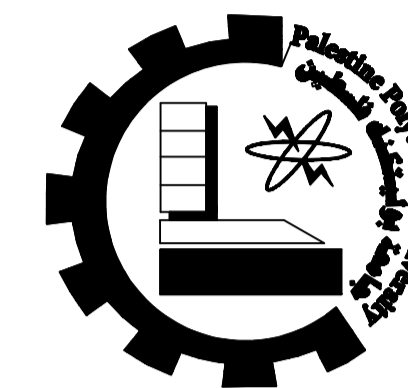


Section A-A



Section C-C

Section B-B



**PALESTINE POLYTECHNIC UNIVERSITY**  
**COLLEGE OF ENGINEERING**  
**CIVIL & ARCH. ENG. DEPARTMENT**  
**Architecture ENGINEERING**

**Designed by:**  
**Natheer Talahmah**  
**Montaser Qazzaz**  
**Mohammad Talahmah**  
**Ammar AL-rjoub**

**Supervisor:**  
**Eng. Mona AL-Shaar**

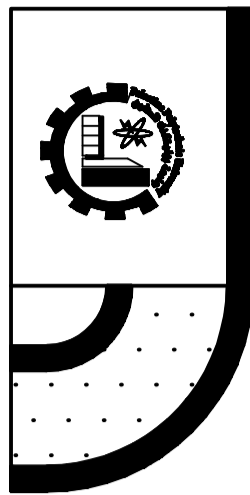
**Project:** Structural Design For  
Proposed  
Commercial Complex

**In:**  
**ALBERE**

**Drawing :**  
Foundation Details

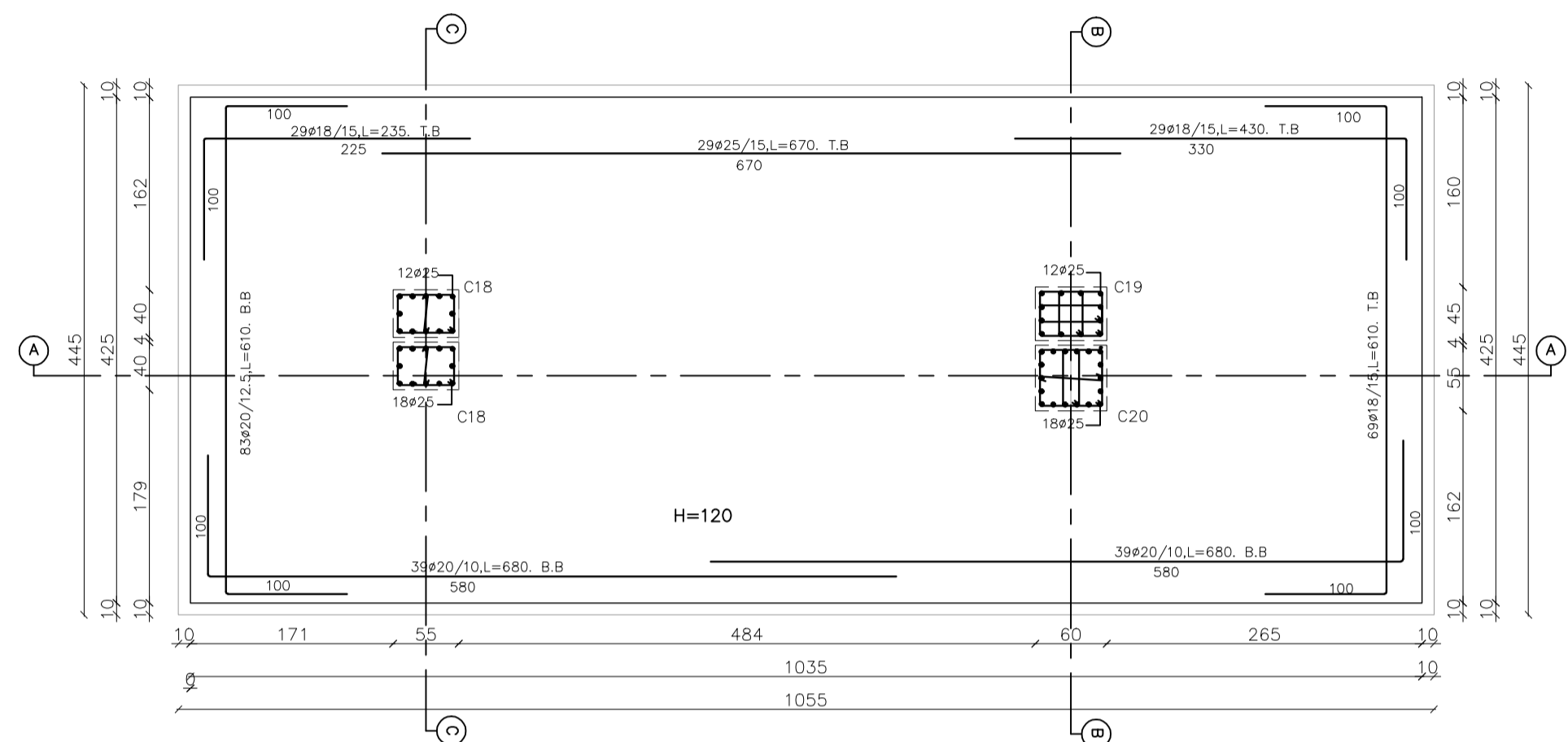
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**Date :** Dec-2019

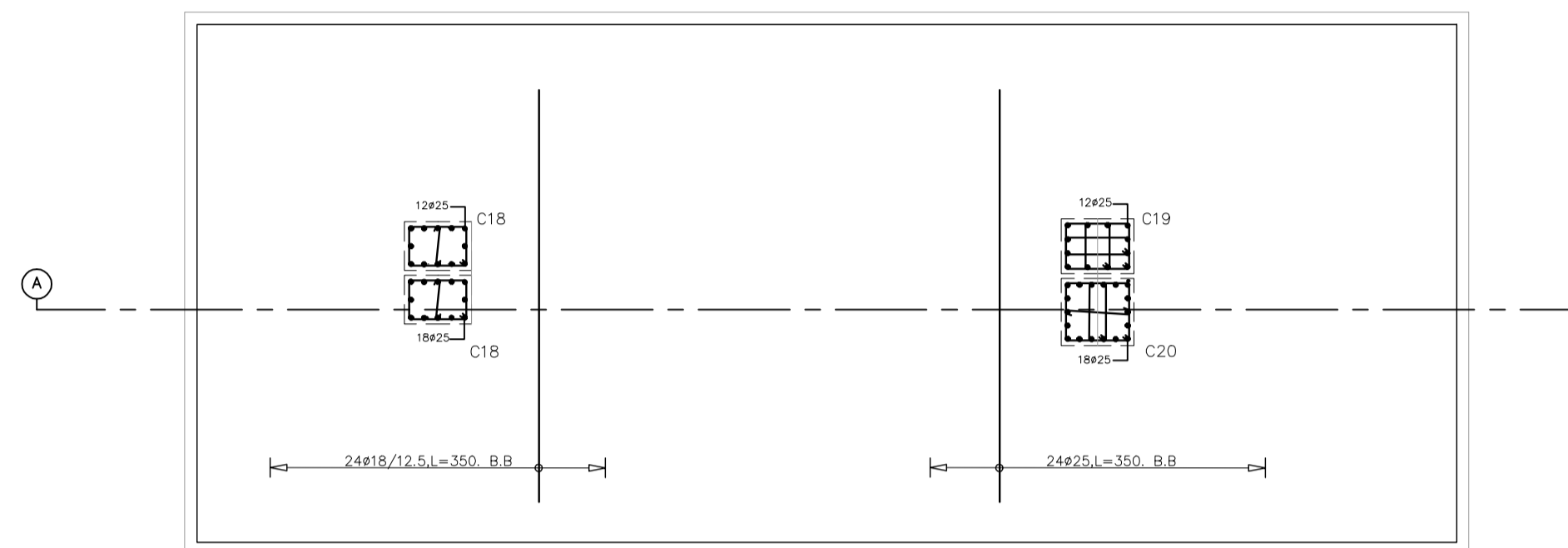


# M.Footing F22

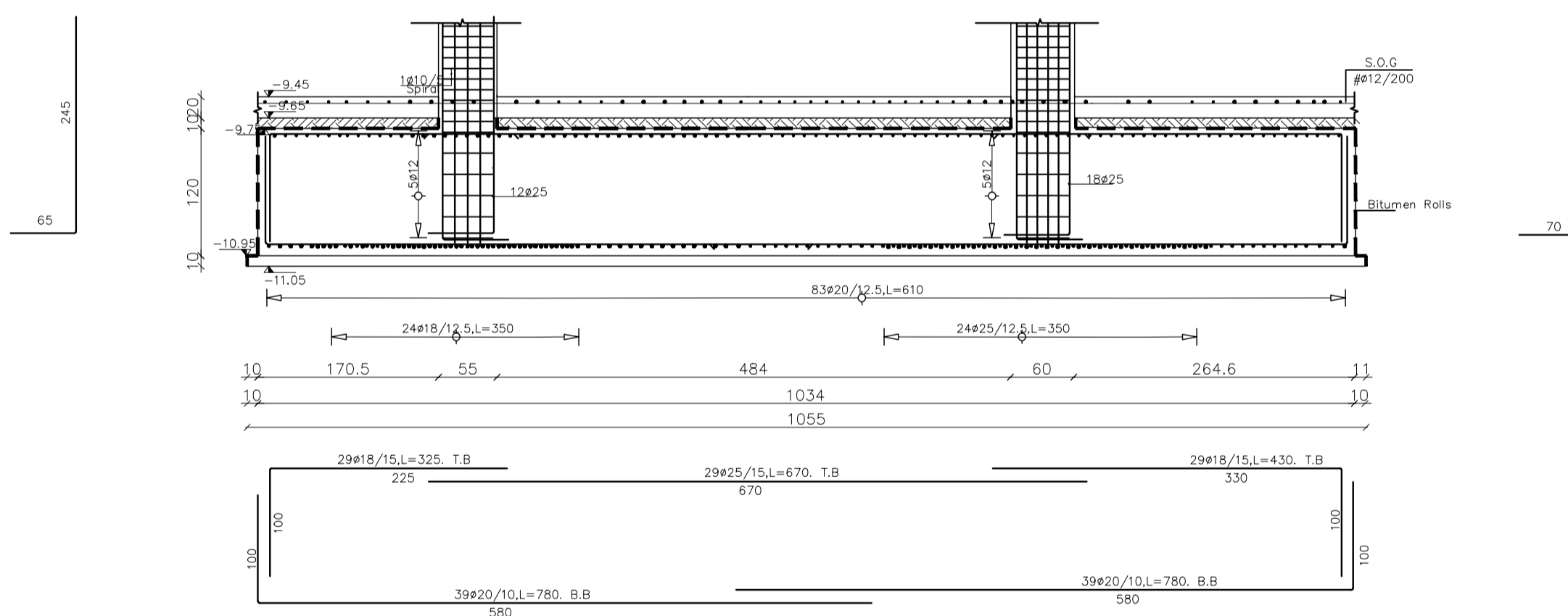
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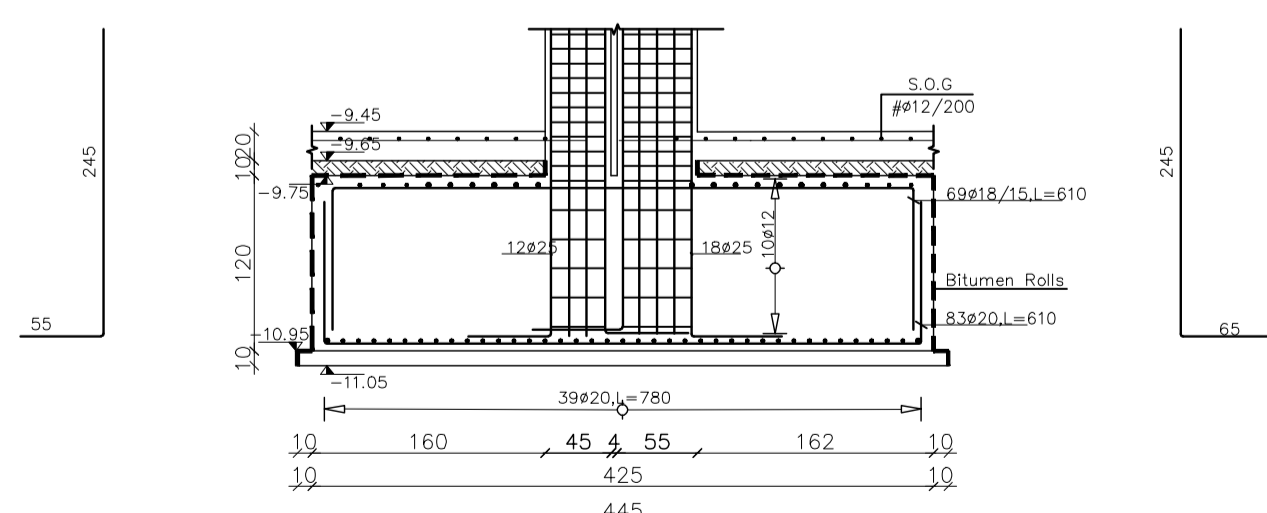
Plan BB@TB



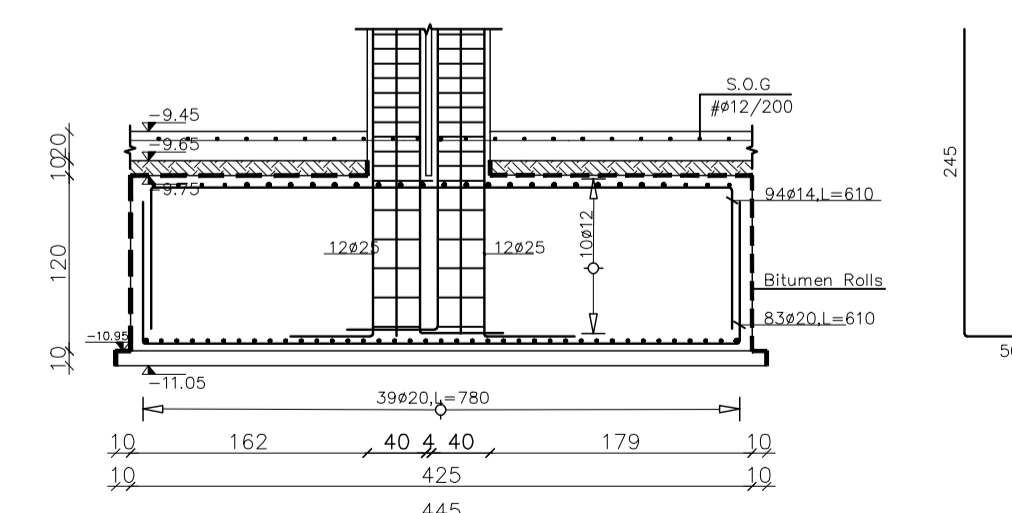
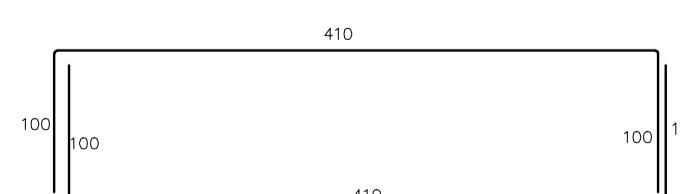
Additional to Bottom Basic Mesh



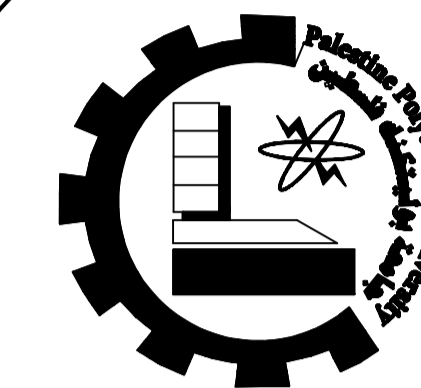
Section A-A



Section B-B



Section C-C



PALESTINE POLYTECHNIC UNIVERSITY  
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Architecture ENGINEERING

Designed by:

Nathee Talahmah  
Montaser Qazzaz  
Mohammad Talahmah  
Ammar AL-rjoub

Supervisor:

Eng. Mona AL-Shaar

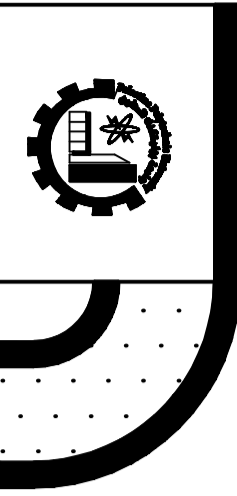
Project: Structural Design For  
Proposed  
Commercial Complex

In:  
ALBERE

Drawing :  
Foundation Details

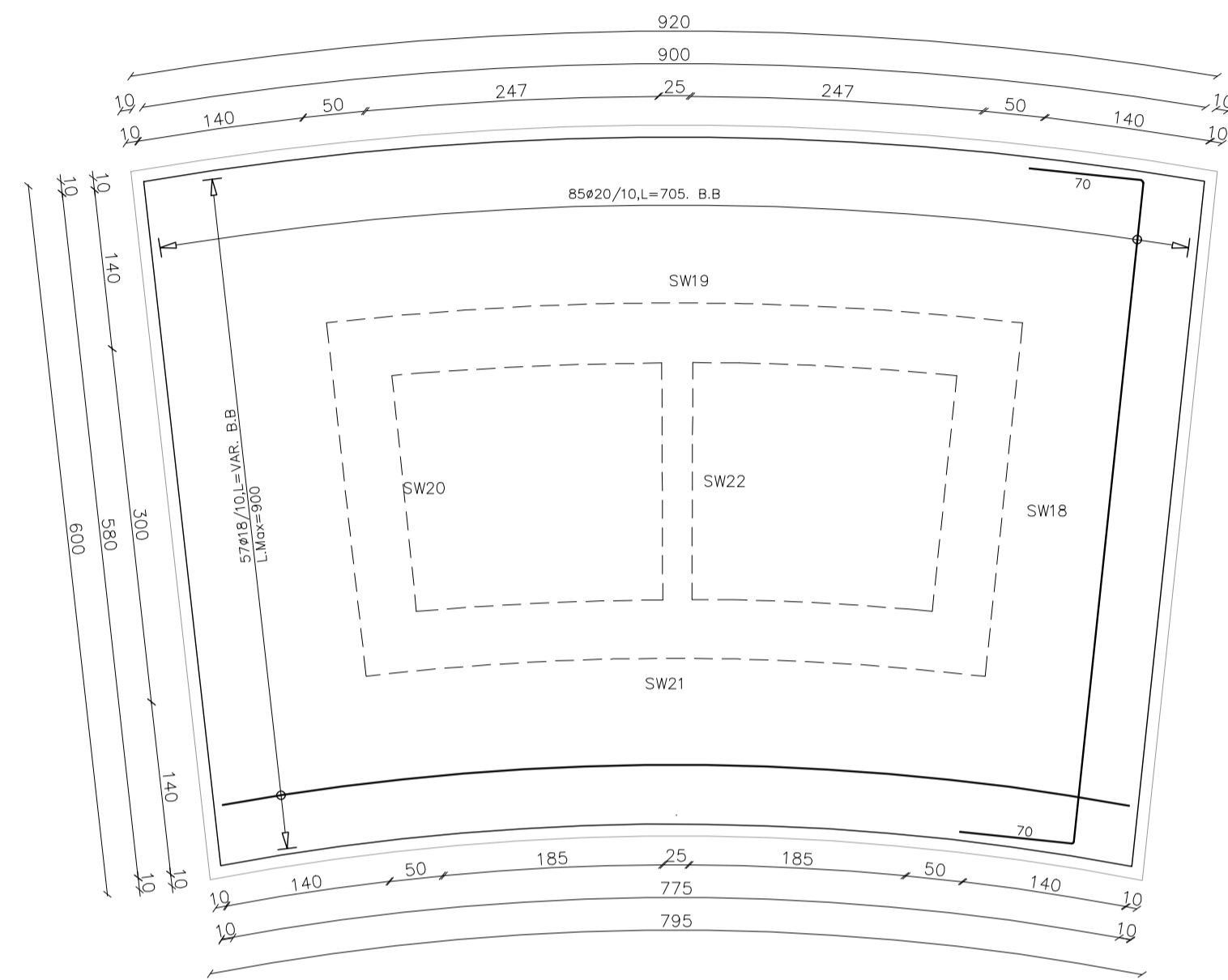
NO: S(08)

Scale : 1:200 Date : Dec-2019

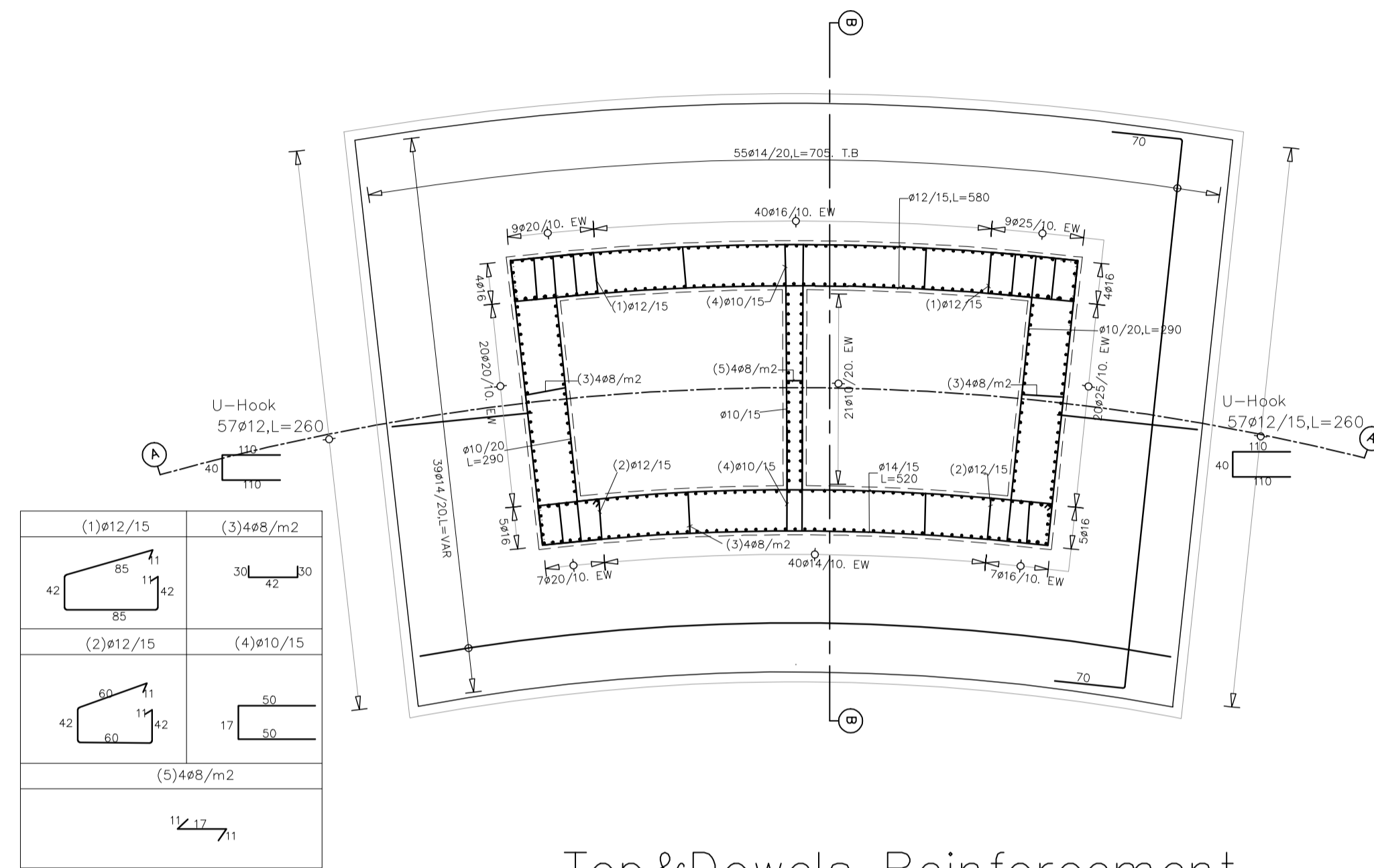


# M.Footing F23

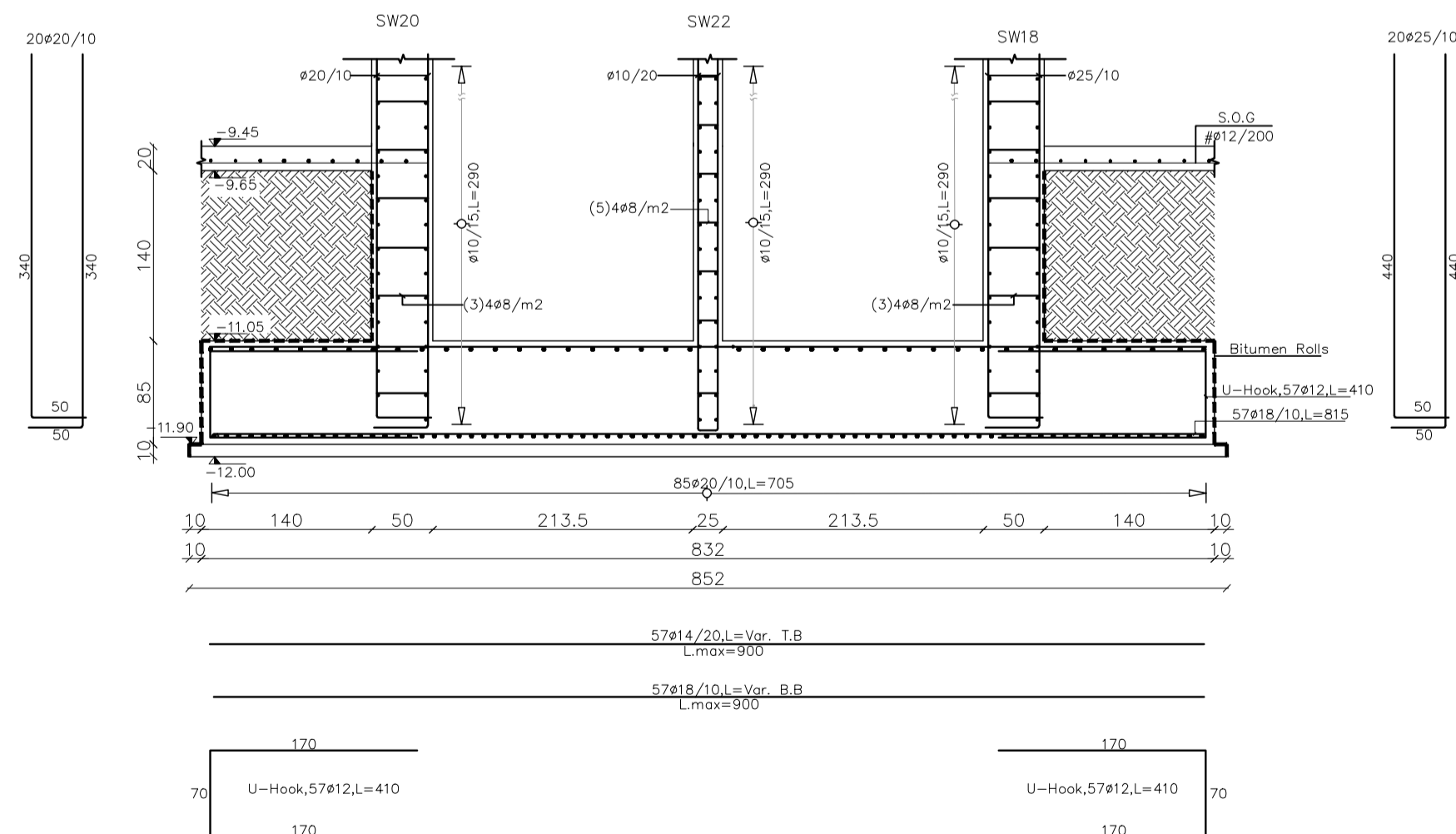
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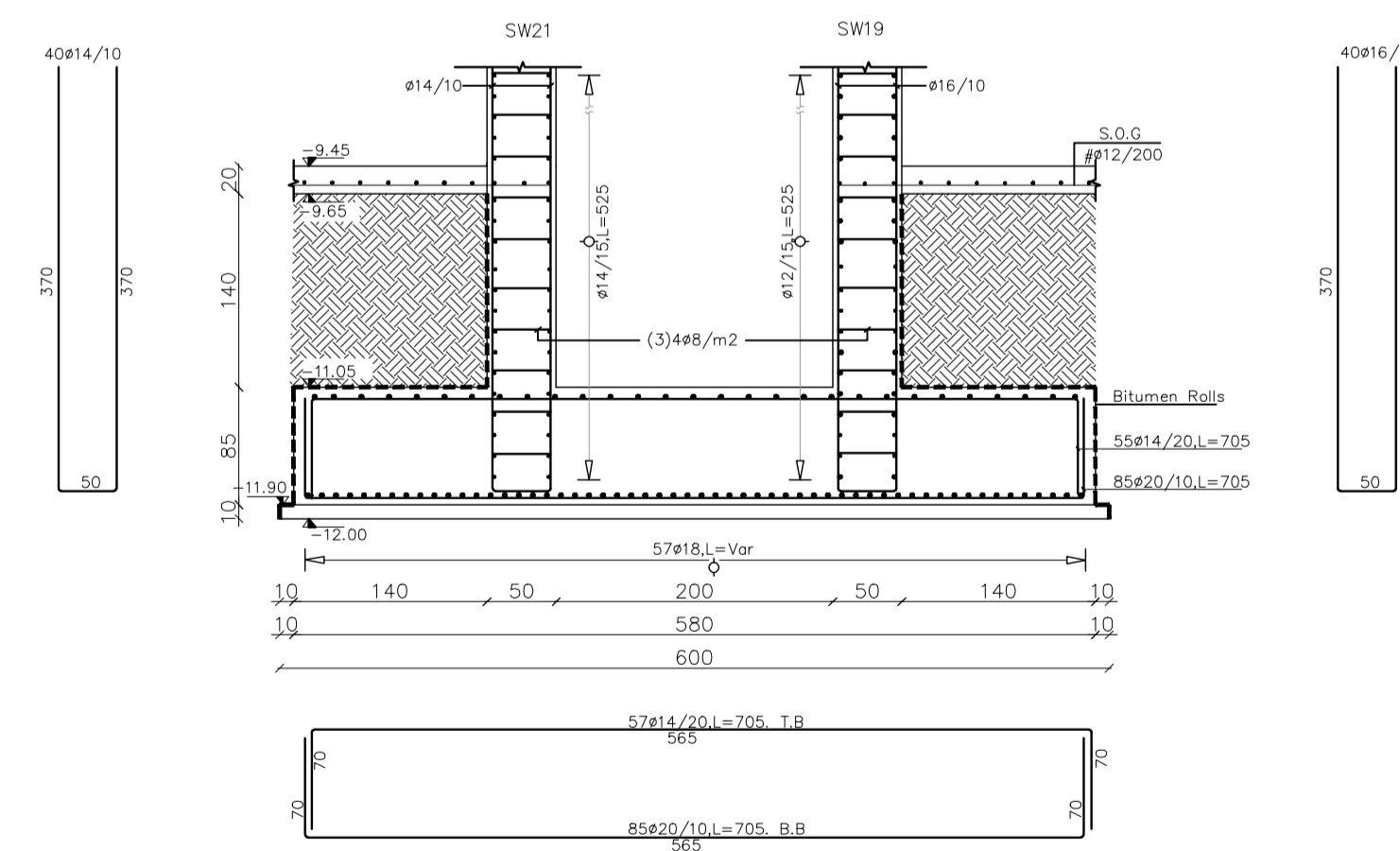
Bottom Reinforcement



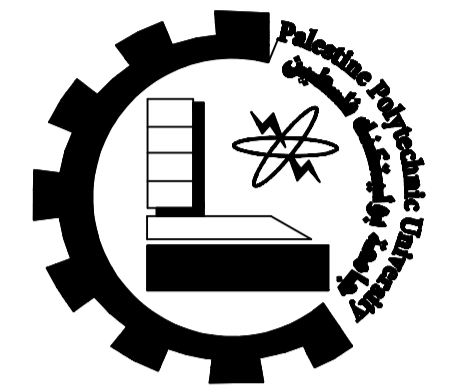
Top&Dowels Reinforcement



Section A-A



Section B-B



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**Ammar AL-rjoub**

**Supervisor:**  
**Eng. Mona AL-Shaar**

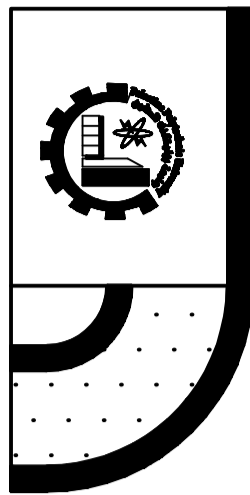
**Project:** Structural Design For  
**Proposed Commercial Complex**

**In:**  
**ALBERE**

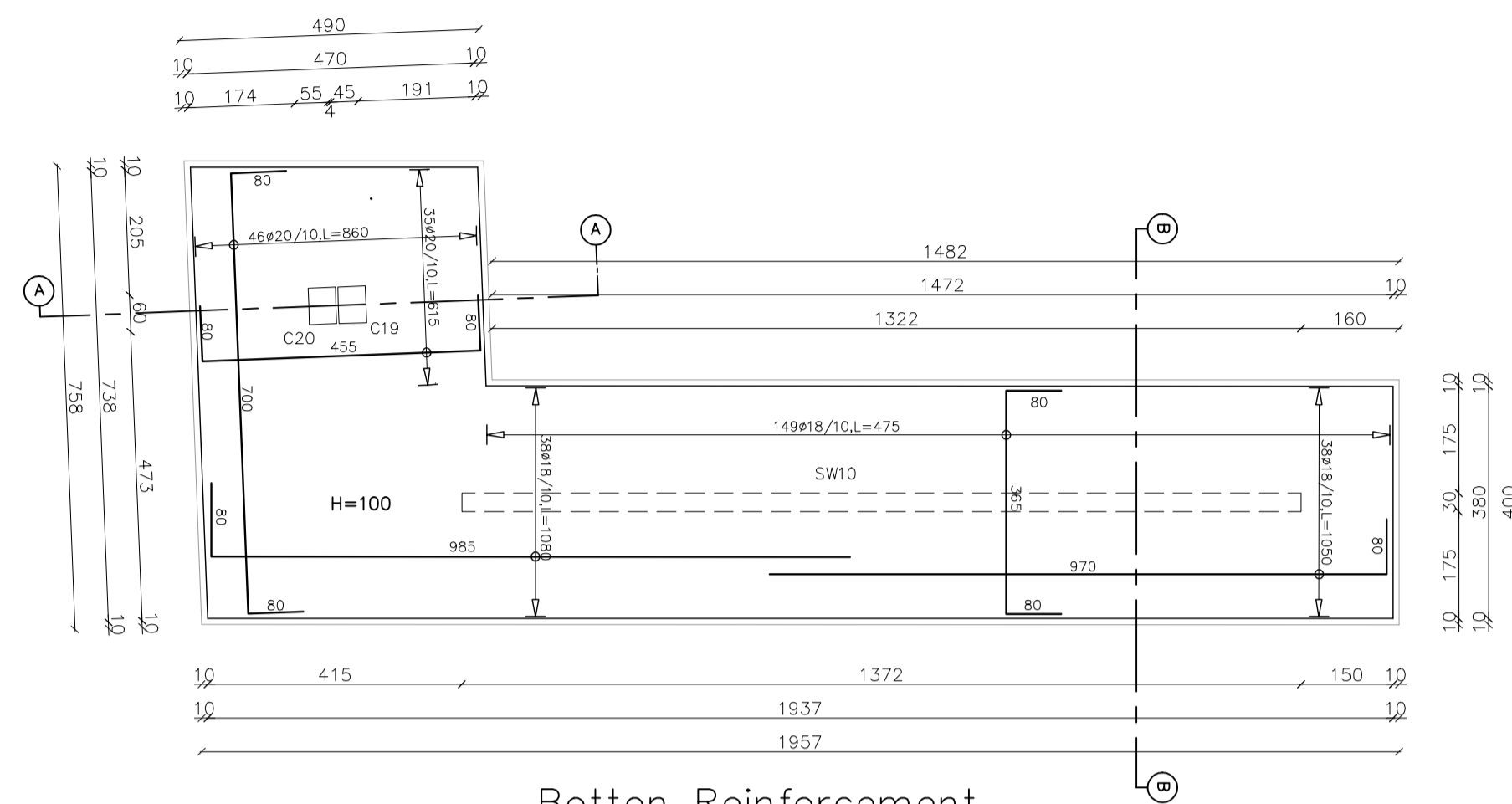
**Drawing:**  
**Foundation Details**

**NO:** S(09)

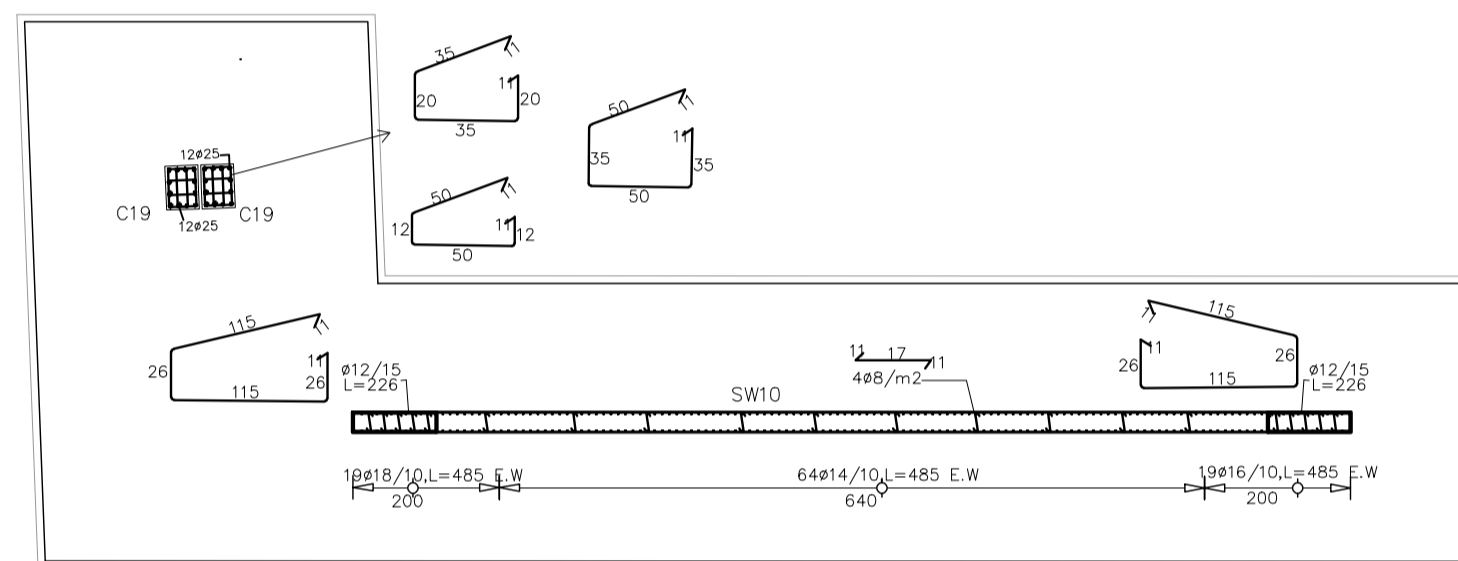
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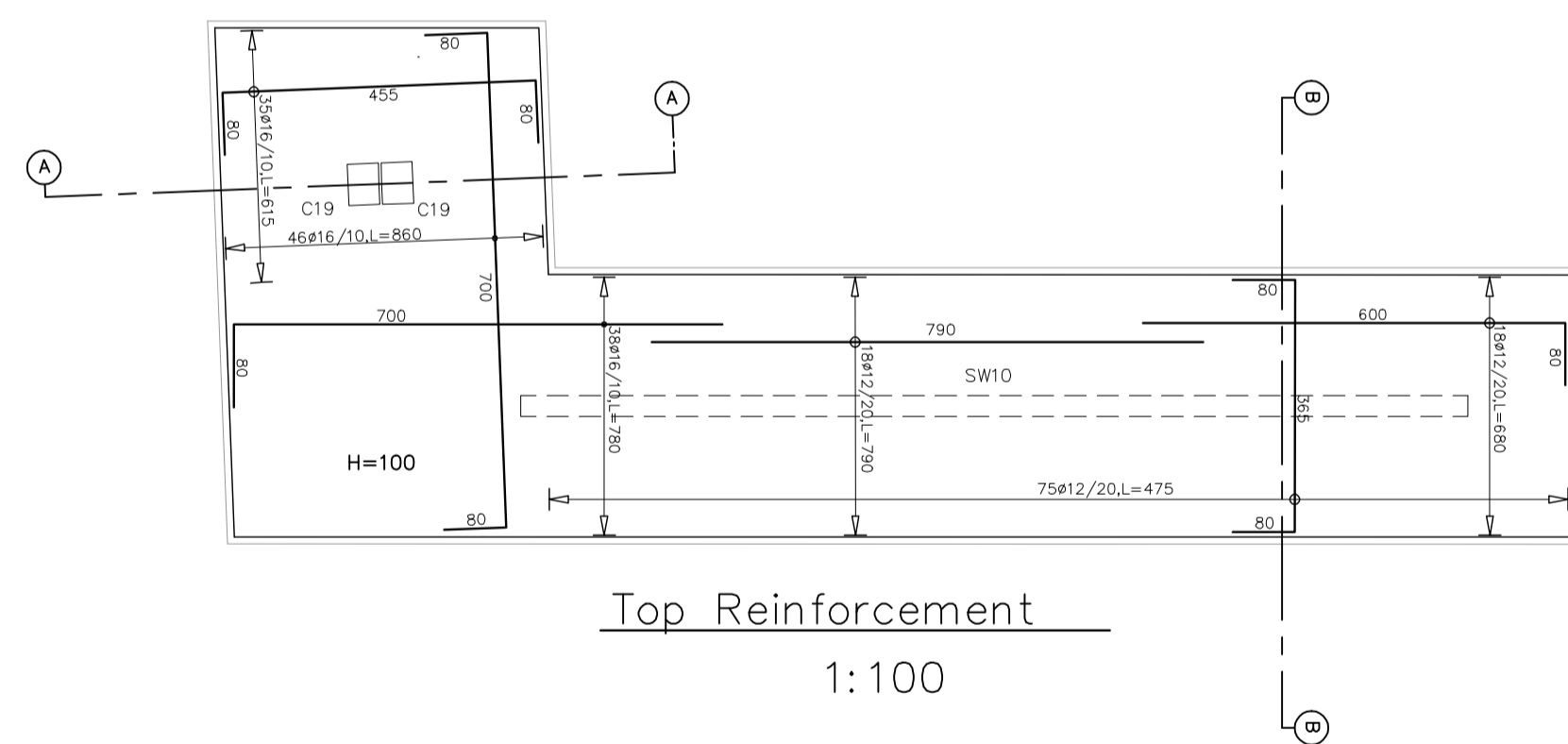
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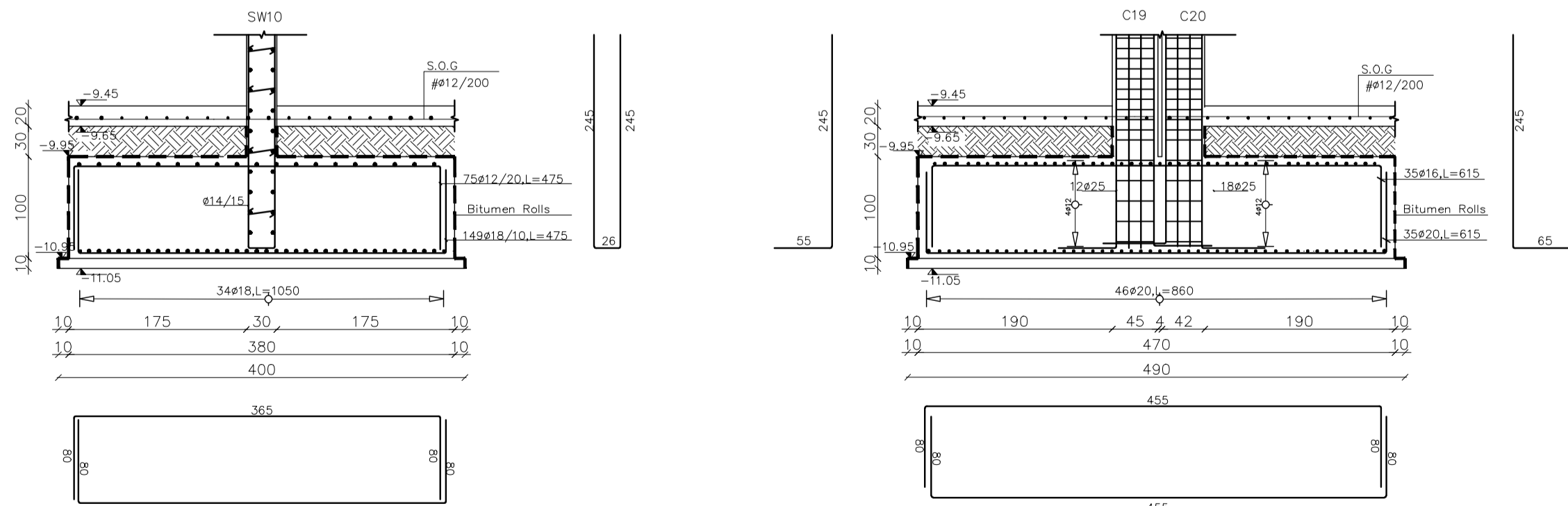
**Bottom Reinforcement**  
1:100



**Dowels Reinforcement**  
1:100



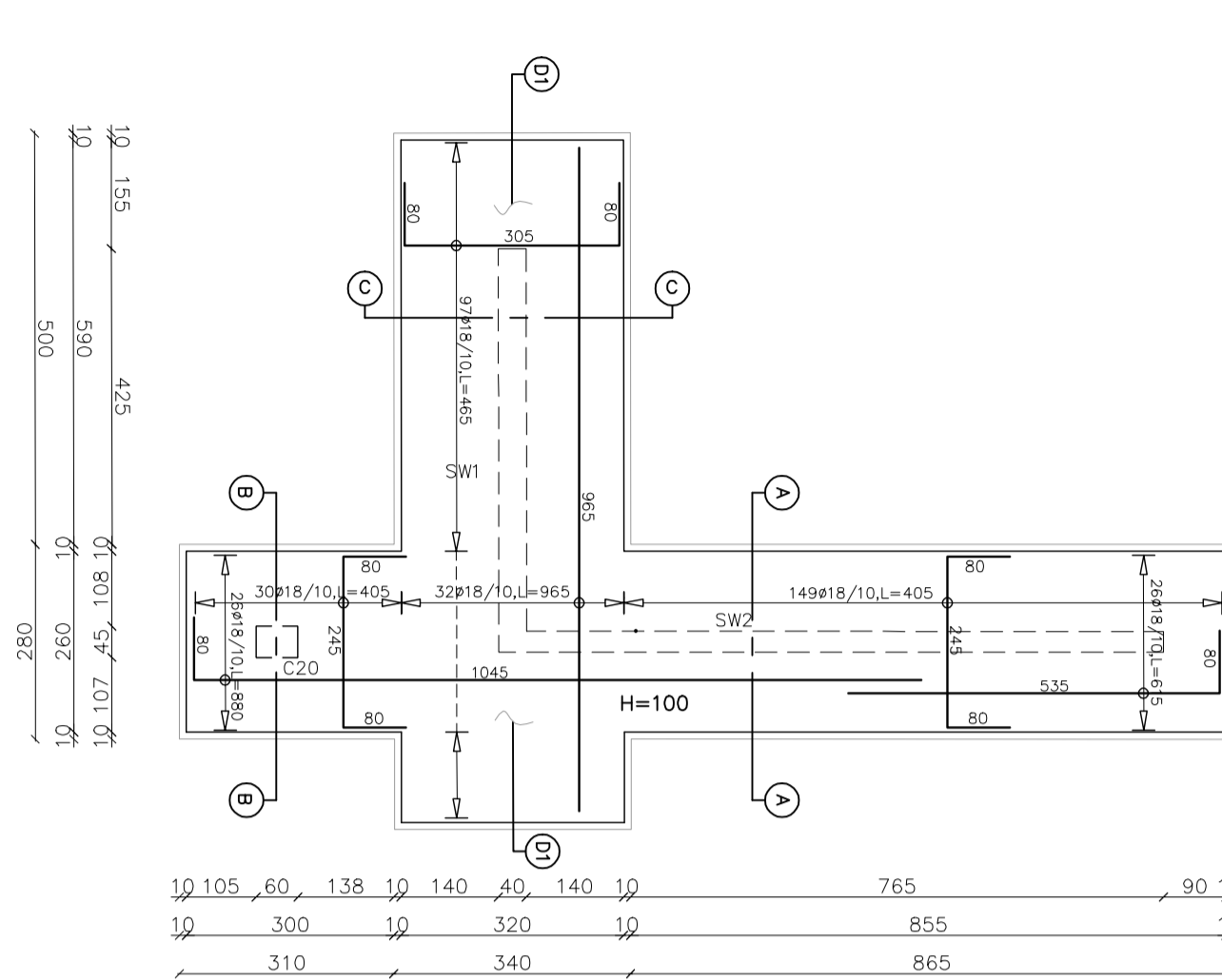
**Top Reinforcement**  
1:100



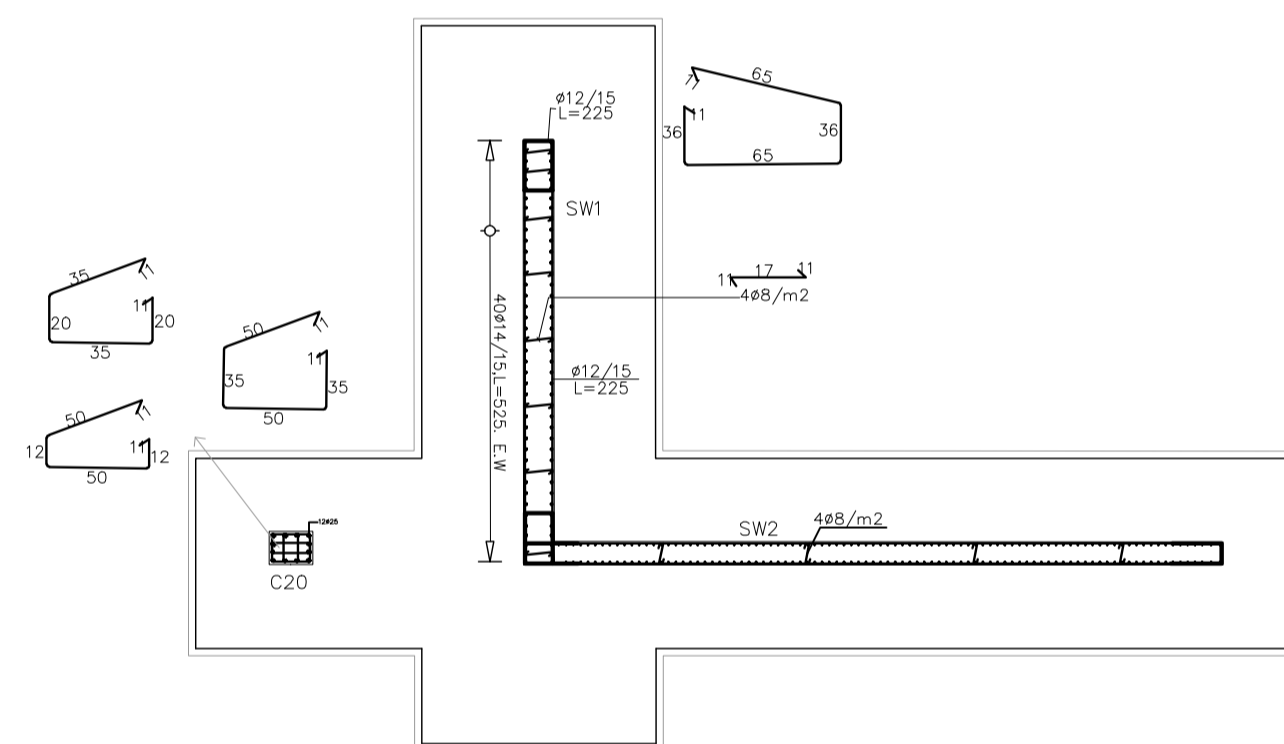
**Section B-B**  
1:50

**Section A-A**  
1:50

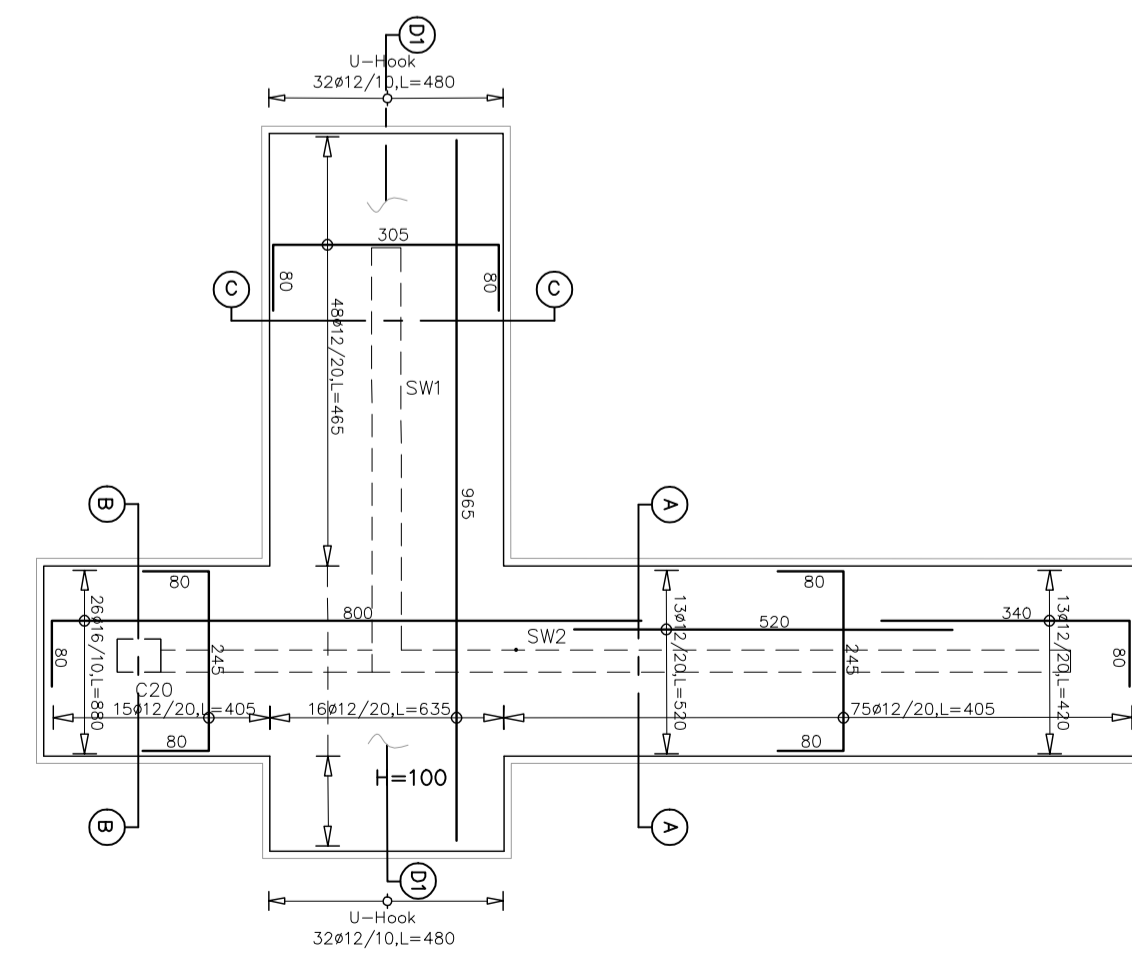
### M.Footing F25



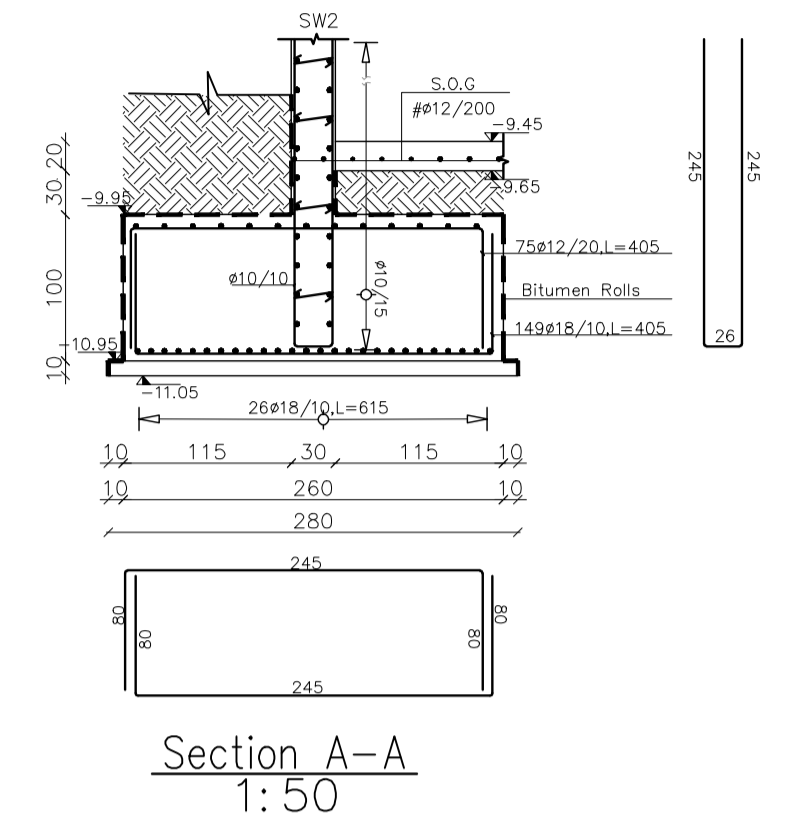
**Bottom Reinforcement**  
1:100



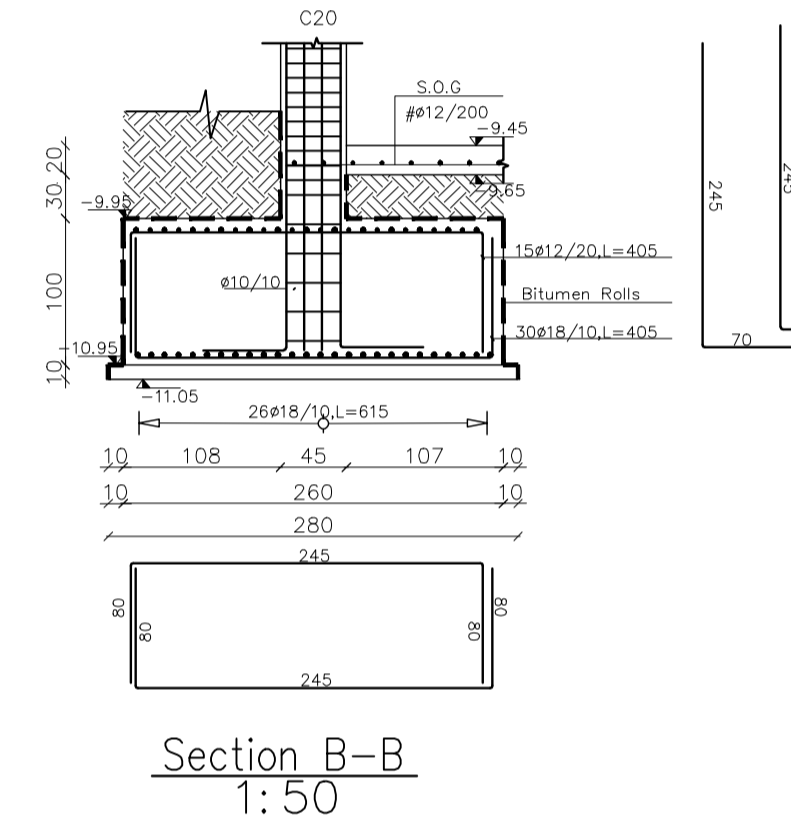
**Dowels Reinforcement**  
1:100



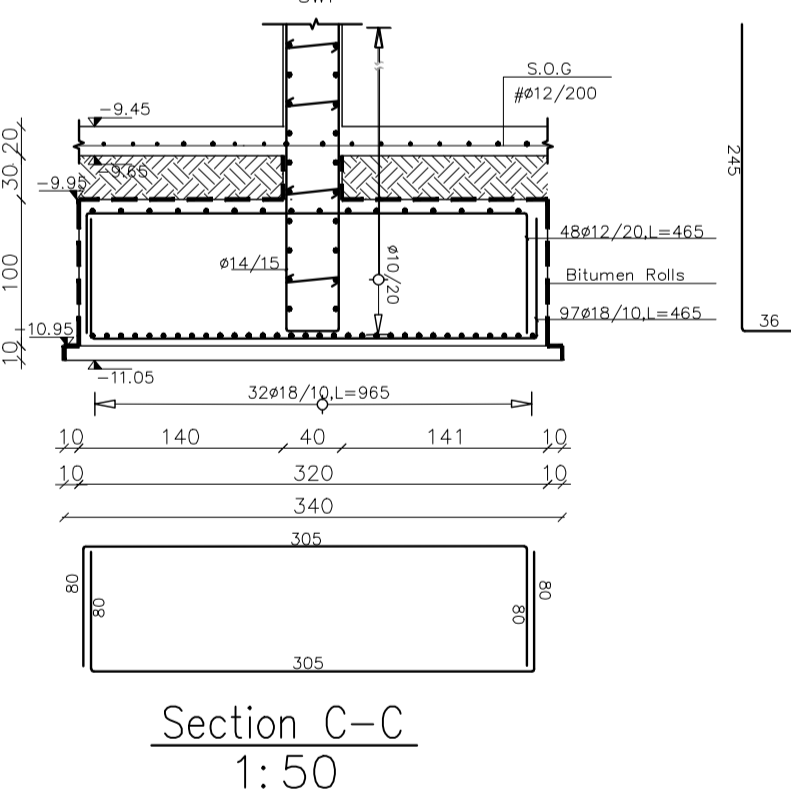
**Top Reinforcement**  
1:100



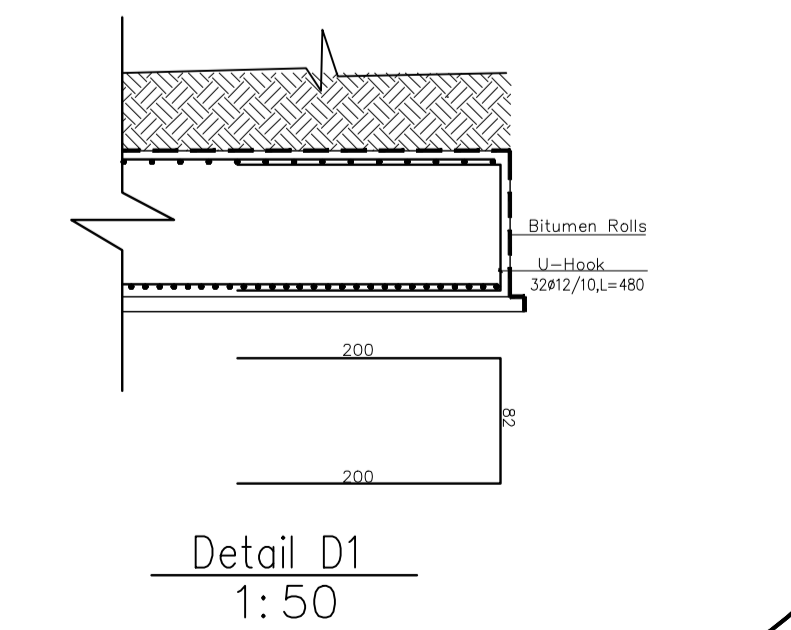
**Section A-A**  
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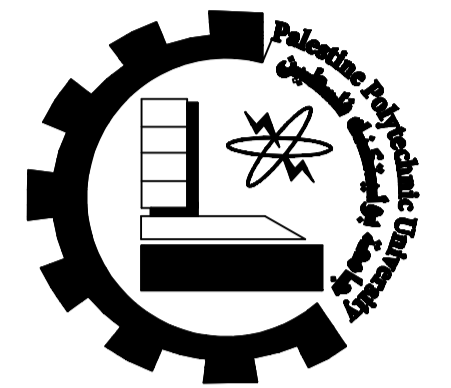
**Section B-B**  
1:50



**Section C-C**  
1:50



**Detail D1**  
1:50



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**Mohammad Talahmah**  
**Ammar AL-rjoub**

**Supervisor:**  
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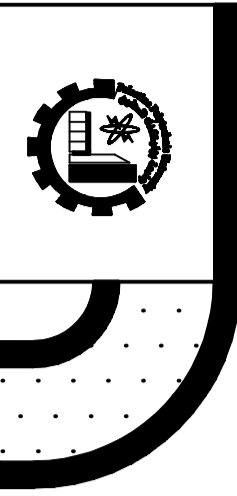
**Project:** Structural Design For  
Proposed  
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**In:**  
**ALBERE**

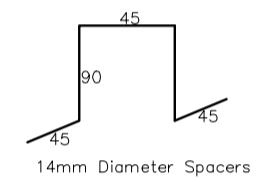
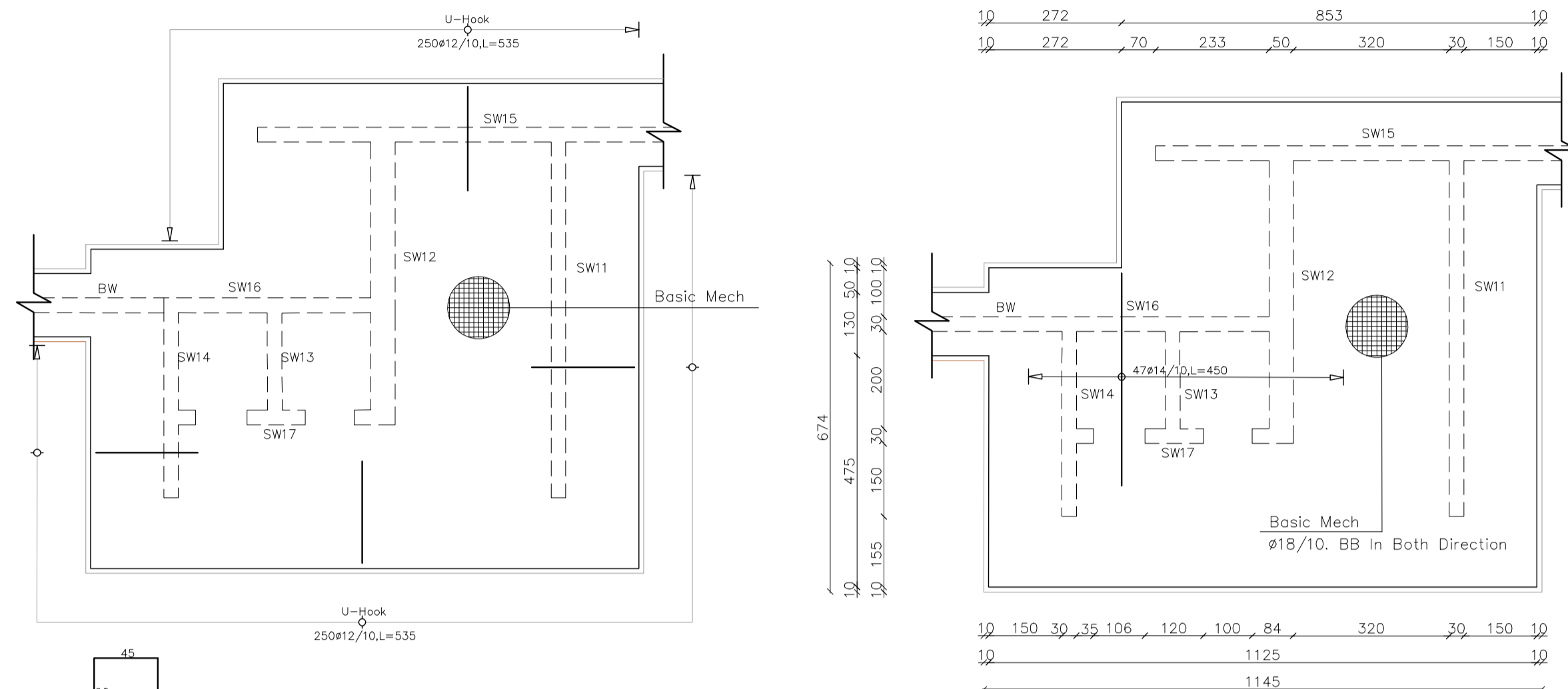
**Drawing:**  
Foundation Details

**NO:** S(10)

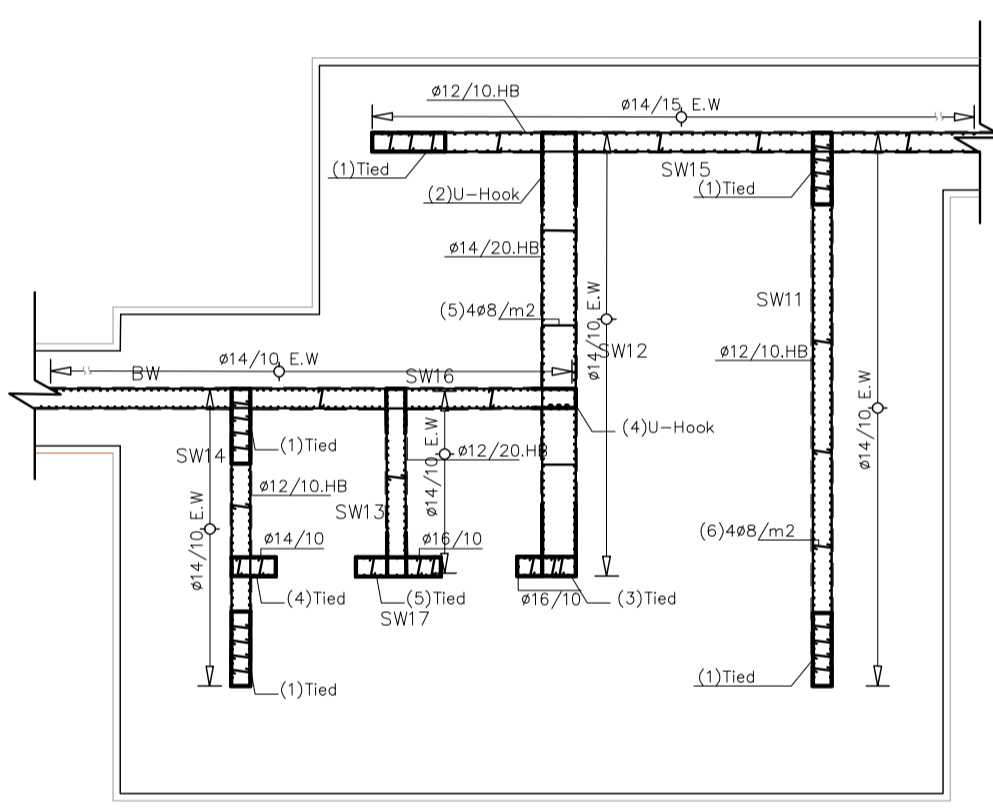
**Scale:** 1:200  
**Date:** Dec-2019



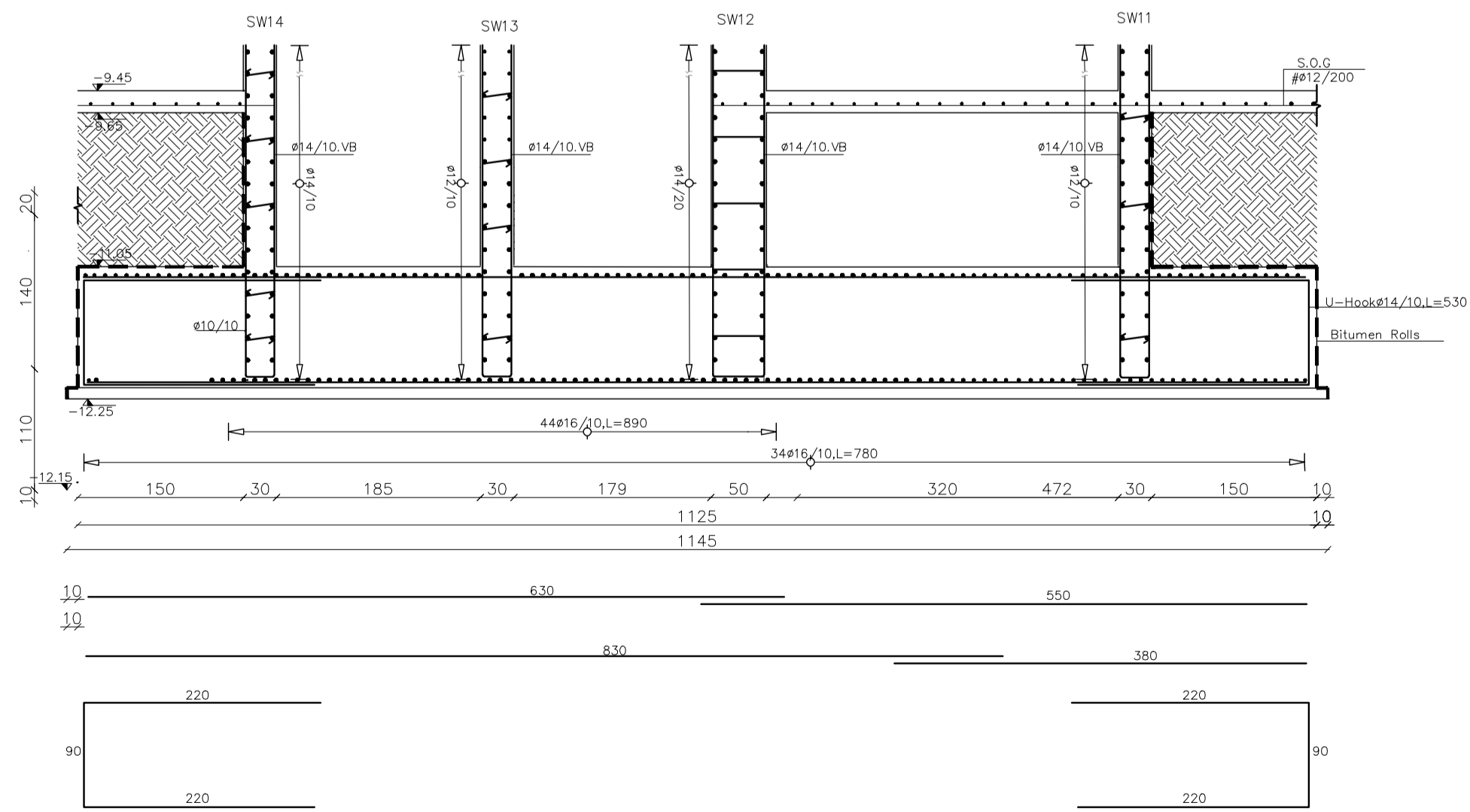
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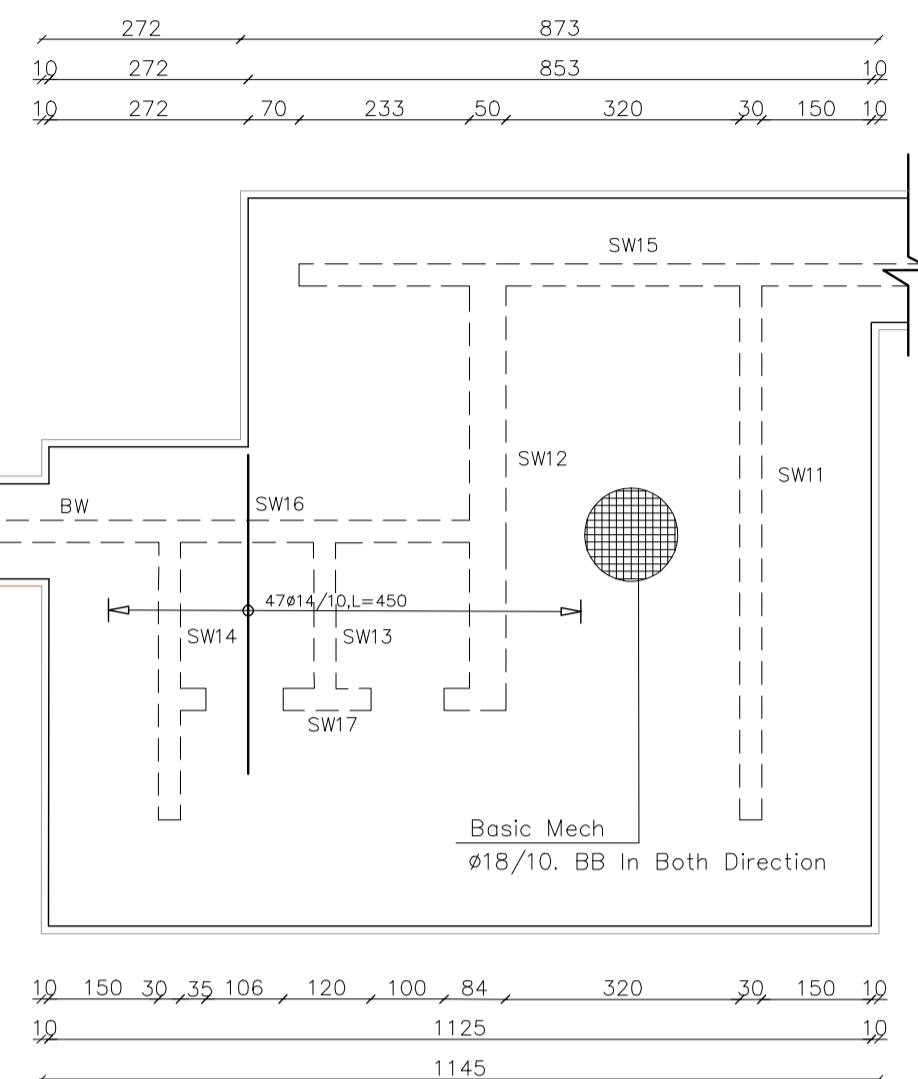
Top Reinforcement  
1:100



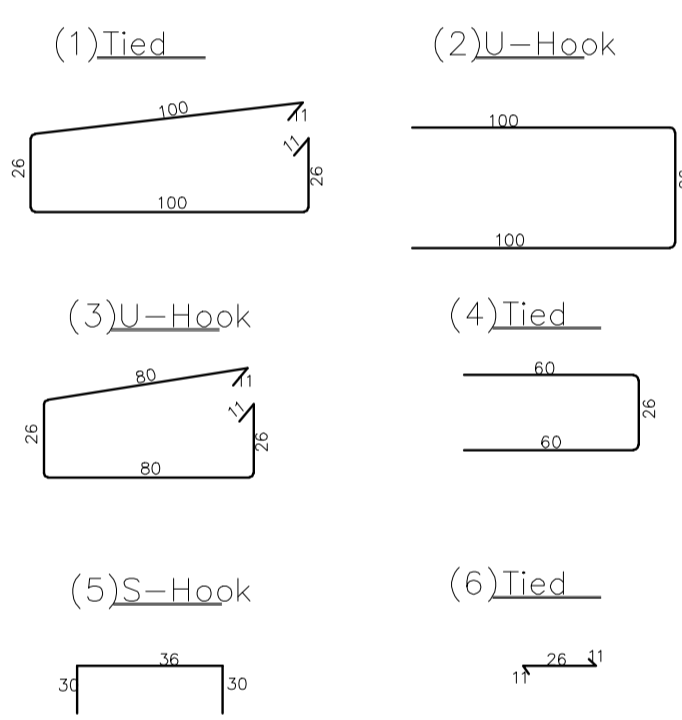
Dowels Reinforcement  
1:100



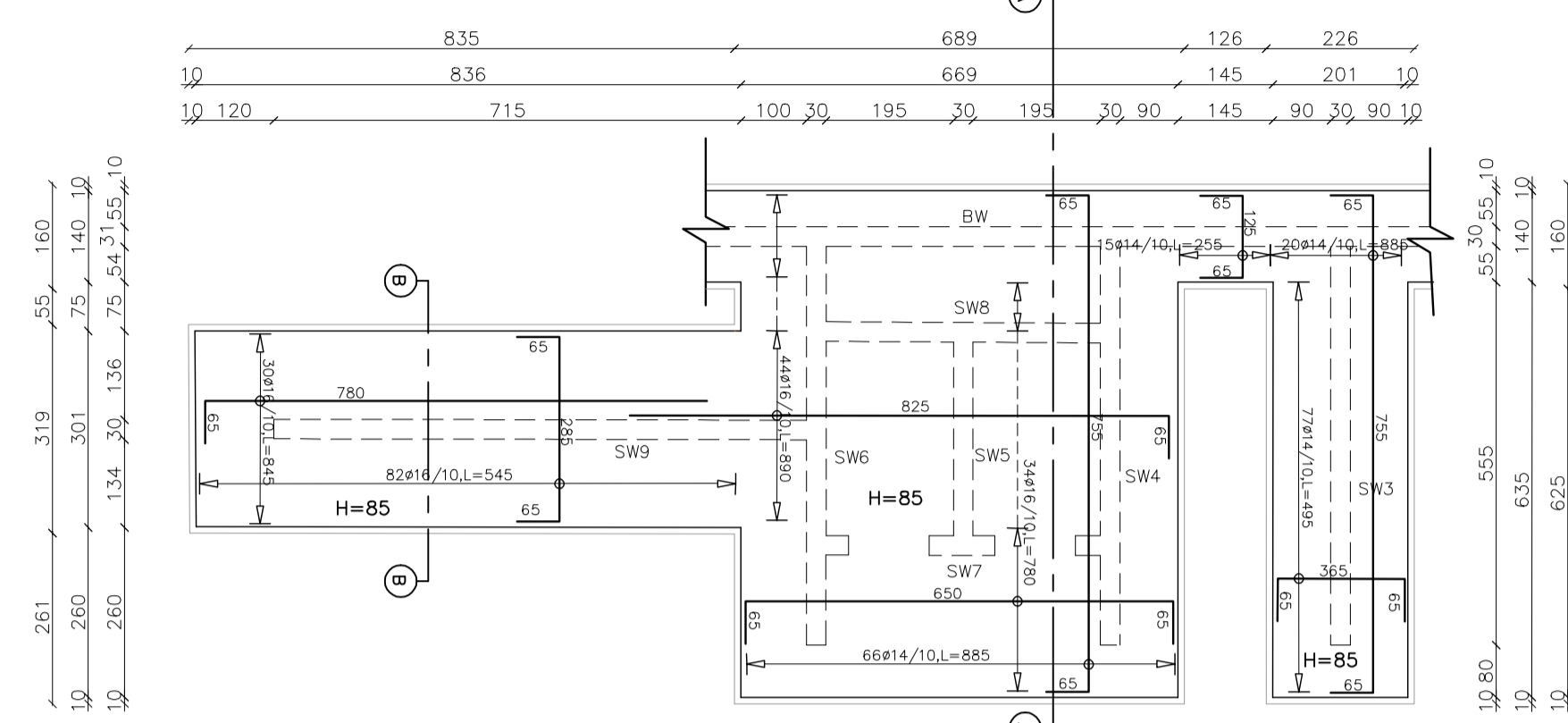
Section A-A  
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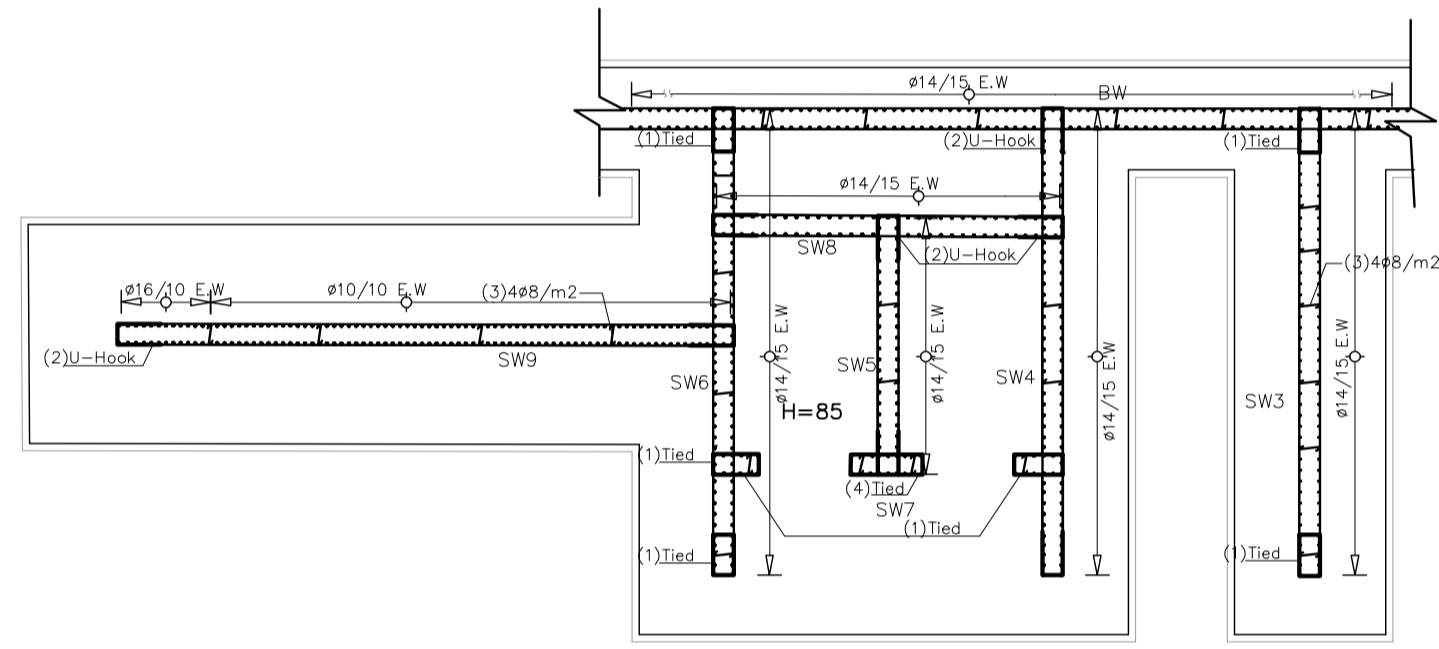
Bottom Reinforcement  
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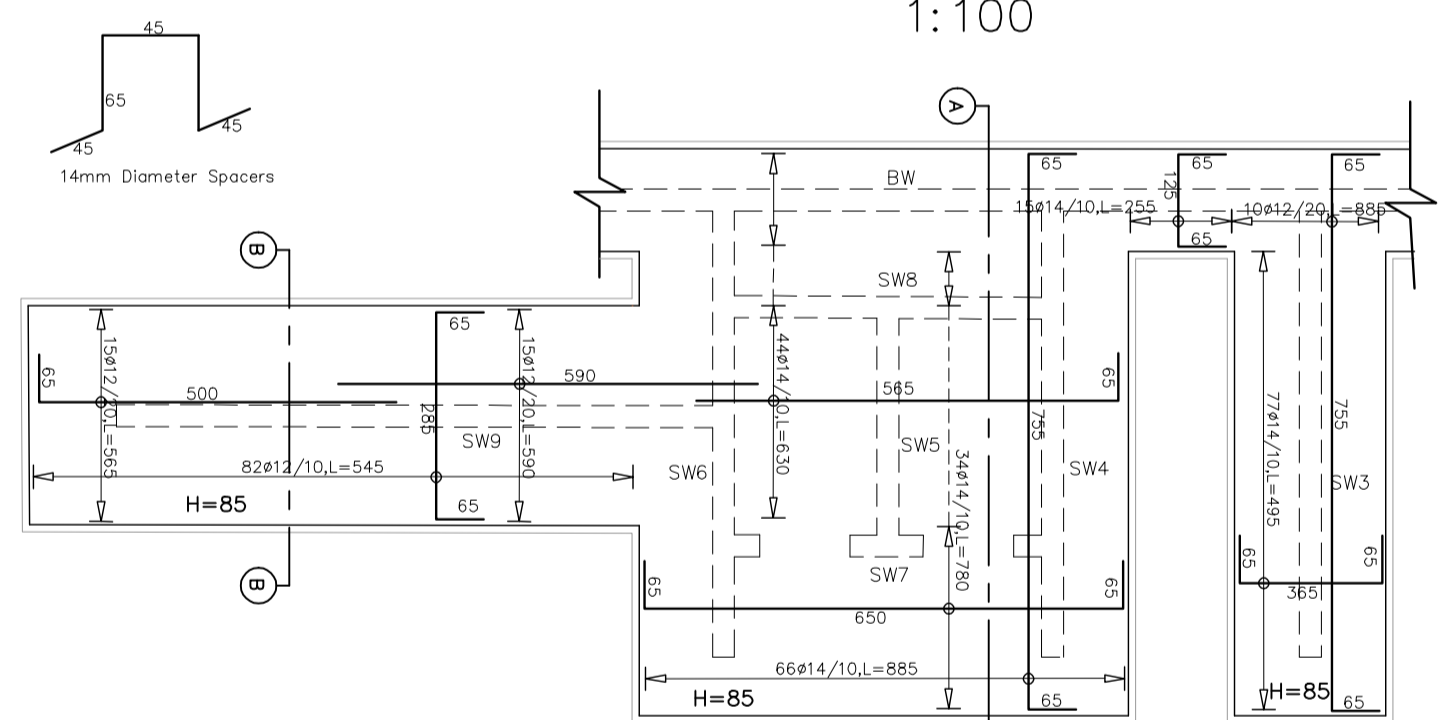
### M.Footing F27



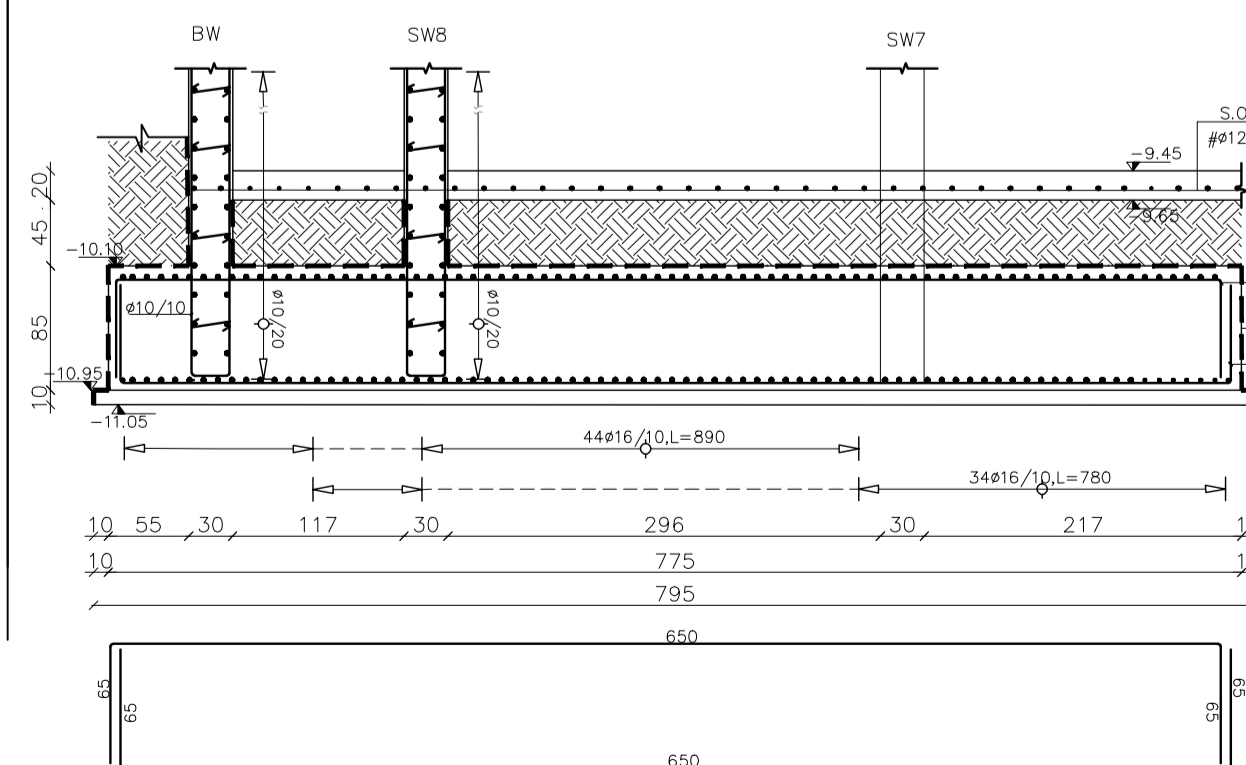
Bottom Reinforcement  
1:100



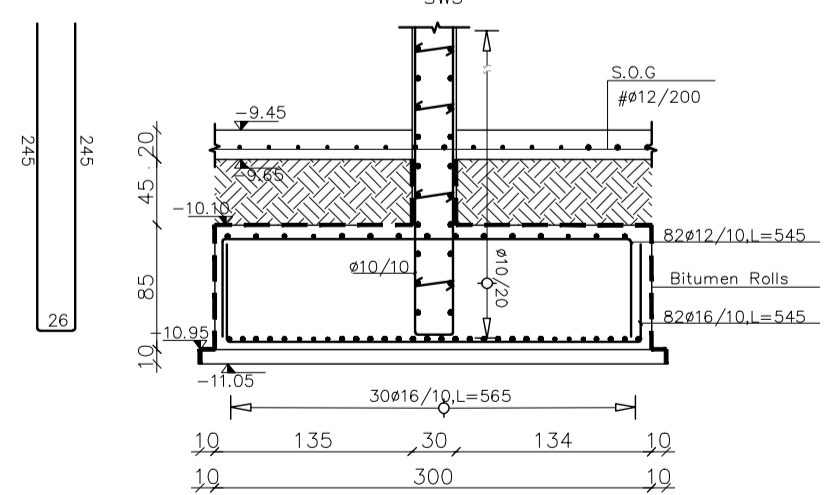
Dowels Reinforcement  
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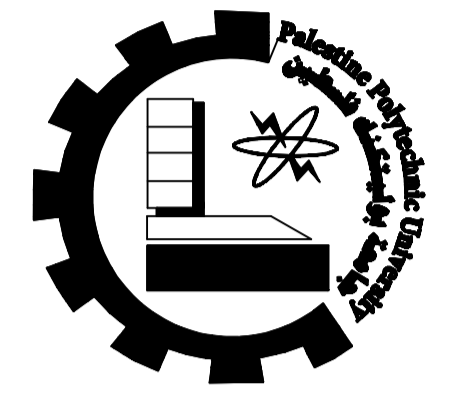
Top Reinforcement  
1:100



Section A-A  
1:50



Section B-B  
1:50



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Ammar AL-rjoub

Supervisor:  
Eng. Mona AL-Shaar

Project: Structural Design For  
Proposed  
Commercial Complex

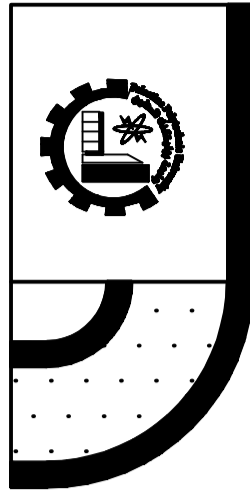
In:  
ALBERE

Drawing :  
Foundation Details

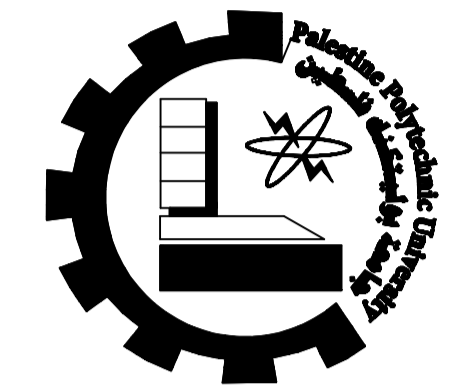
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Date : Dec-2019

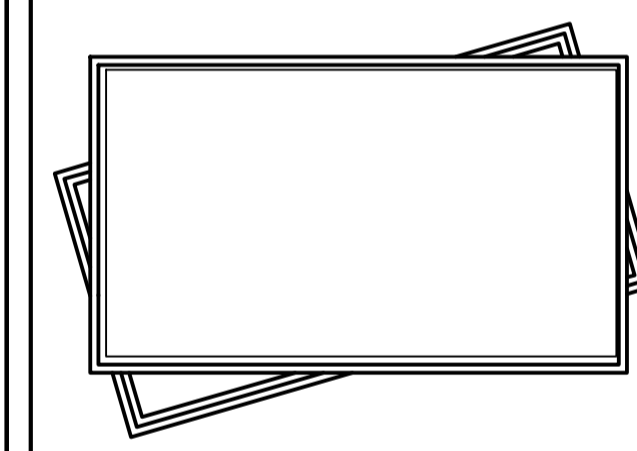




<p>column1 (B3)</p> <p>60</p> <p>12φ25</p> <p>φ10@5cm</p> <p>D52</p> <p>Spiral</p> <p>Cover=4cm</p>	<p>column1 (B1 ,B2,GF)</p> <p>60</p> <p>12φ18</p> <p>φ10@6cm</p> <p>D52</p> <p>Spiral</p> <p>Cover=4cm</p>	<p>column1 1st</p> <p>50</p> <p>12φ18</p> <p>φ10@7cm</p> <p>D42</p> <p>Spiral</p> <p>Cover=4cm</p>
<p>column1 2nd</p> <p>50</p> <p>12φ16</p> <p>φ10@7cm</p> <p>D42</p> <p>Spiral</p> <p>Cover=4cm</p>	<p>column2 b3</p> <p>65</p> <p>17φ25</p> <p>φ10@5cm</p> <p>D57</p> <p>Spiral</p> <p>Cover=4cm</p>	<p>column2 b2</p> <p>65</p> <p>17φ20</p> <p>φ10@5cm</p> <p>D57</p> <p>Spiral</p> <p>Cover=4cm</p>
<p>column2 (b1,GF)</p> <p>65</p> <p>17φ16</p> <p>φ10@5cm</p> <p>D57</p> <p>Spiral</p> <p>Cover=4cm</p>	<p>column2 1st,2nd</p> <p>55</p> <p>12φ16</p> <p>φ10@7cm</p> <p>D47</p> <p>Spiral</p> <p>Cover=4cm</p>	<p>column3 b3</p> <p>70</p> <p>16φ25</p> <p>φ10@5cm</p> <p>D62</p> <p>Spiral</p> <p>Cover=4cm</p>
<p>column3 b2</p> <p>70</p> <p>16φ25</p> <p>φ10@5cm</p> <p>D62</p> <p>Spiral</p> <p>Cover=4cm</p>	<p>column3 b1,GF</p> <p>70</p> <p>16φ25</p> <p>φ10@5cm</p> <p>D62</p> <p>Spiral</p> <p>Cover=4cm</p>	<p>column3 1st,2nd</p> <p>60</p> <p>16φ16</p> <p>φ10@7cm</p> <p>D52</p> <p>Spiral</p> <p>Cover=4cm</p>
<p>column3 3rd</p> <p>60</p> <p>16φ10</p> <p>φ10@7cm</p> <p>D52</p> <p>Spiral</p> <p>Cover=4cm</p>	<p>column4 b3</p> <p>70</p> <p>17φ25</p> <p>φ10@5cm</p> <p>D62</p> <p>Spiral</p> <p>Cover=4cm</p>	<p>column4 b2</p> <p>70</p> <p>17φ20</p> <p>φ10@5cm</p> <p>D62</p> <p>Spiral</p> <p>Cover=4cm</p>
<p>column4 b1,GF</p> <p>70</p> <p>17φ18</p> <p>φ10@5cm</p> <p>D62</p> <p>Spiral</p> <p>Cover=4cm</p>	<p>column4 1st,2nd</p> <p>60</p> <p>17φ18</p> <p>φ10@6cm</p> <p>D52</p> <p>Spiral</p> <p>Cover=4cm</p>	<p>column4 3rd</p> <p>50</p> <p>15φ16</p> <p>φ10@7cm</p> <p>D42</p> <p>Spiral</p> <p>Cover=4cm</p>



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Montaser Qazzaz  
Mohammad Talahmah  
Ammar AL-rjoub

Supervisor:

Eng. Mona AL-Shaar

Project: Structural Design For  
Proposed  
Commercial Complex

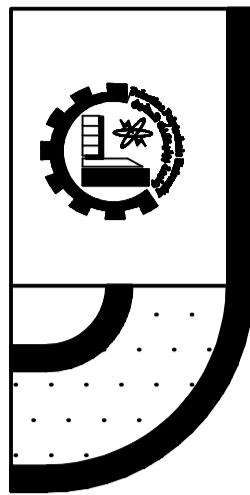
In:  
ALBERE

Drawing: Column Details  
(Sections)

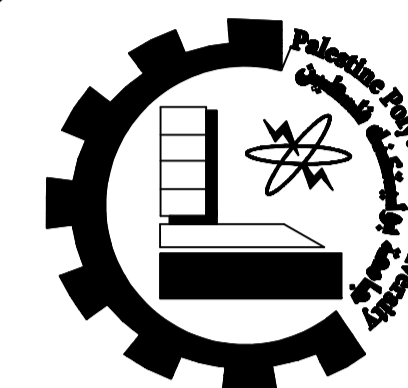
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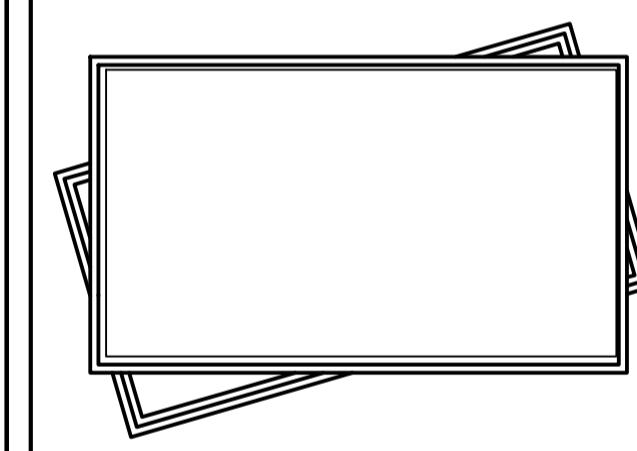
Date:  
Dec-2019



<p>column4 4th</p> <p>40 10<math>\phi</math>16 <math>\phi</math>10@5cm Cover=4cm</p> <p>D32 <math>\phi</math>10@7cm Spiral</p>	<p>column4 5th</p> <p>40 10<math>\phi</math>14 <math>\phi</math>10@5cm Cover=4cm</p> <p>D32 <math>\phi</math>10@7cm Spiral</p>	<p>column5 GF</p> <p>65 14<math>\phi</math>20 <math>\phi</math>10@5cm Cover=4cm</p> <p>D57 <math>\phi</math>10@6cm Spiral</p>
<p>column5 1st,2nd</p> <p>65 14<math>\phi</math>18 <math>\phi</math>10@5cm Cover=4cm</p> <p>D57 <math>\phi</math>10@6cm Spiral</p>	<p>column5 3rd</p> <p>50 14<math>\phi</math>18 <math>\phi</math>10@5cm Cover=4cm</p> <p>D42 <math>\phi</math>10@7cm Spiral</p>	<p>column6 GF</p> <p>60 15<math>\phi</math>16 <math>\phi</math>10@5cm Cover=4cm</p> <p>D52 <math>\phi</math>10@7cm Spiral</p>
<p>column6 1st,2nd</p> <p>60 15<math>\phi</math>16 <math>\phi</math>10@5cm Cover=4cm</p> <p>D52 <math>\phi</math>10@7cm Spiral</p>	<p>column7 b3</p> <p>85 24<math>\phi</math>25 <math>\phi</math>10@5cm Cover=4cm</p> <p>D77 <math>\phi</math>10@5cm Spiral</p>	<p>column7 b2,b1,GF</p> <p>85 24<math>\phi</math>18 <math>\phi</math>10@5cm Cover=4cm</p> <p>D77 <math>\phi</math>10@5cm Spiral</p>
<p>column7 1st,2nd</p> <p>75 24<math>\phi</math>16 <math>\phi</math>10@5cm Cover=4cm</p> <p>D67 <math>\phi</math>10@7cm Spiral</p>	<p>column7 3rd</p> <p>65 24<math>\phi</math>14 <math>\phi</math>10@5cm Cover=4cm</p> <p>D57 <math>\phi</math>10@7cm Spiral</p>	<p>column8 b3</p> <p>90 22<math>\phi</math>25 <math>\phi</math>10@5cm Cover=4cm</p> <p>D82 <math>\phi</math>10@5cm Spiral</p>
<p>column8 b2,b1,GF</p> <p>90 22<math>\phi</math>20 <math>\phi</math>10@5cm Cover=4cm</p> <p>D82 <math>\phi</math>10@5cm Spiral</p>	<p>column8 1st,2nd</p> <p>80 22<math>\phi</math>18 <math>\phi</math>10@5cm Cover=4cm</p> <p>D72 <math>\phi</math>10@6cm Spiral</p>	<p>column8 3rd</p> <p>70 22<math>\phi</math>16 <math>\phi</math>10@5cm Cover=4cm</p> <p>D62 <math>\phi</math>10@7cm Spiral</p>
<p>column8 4th,5th</p> <p>60 15<math>\phi</math>16 <math>\phi</math>10@5cm Cover=4cm</p> <p>D52 <math>\phi</math>10@7cm Spiral</p>	<p>column9 b3</p> <p>70 14<math>\phi</math>25 <math>\phi</math>10@5cm Cover=4cm</p> <p>D62 <math>\phi</math>10@5cm Spiral</p>	<p>column9 b2,b1,GF</p> <p>70 14<math>\phi</math>25 <math>\phi</math>10@5cm Cover=4cm</p> <p>D62 <math>\phi</math>10@5cm Spiral</p>



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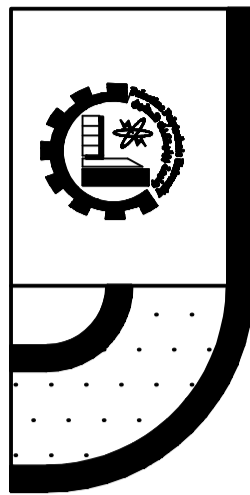
In:  
ALBERE

Drawing: Column Details  
(Sections)

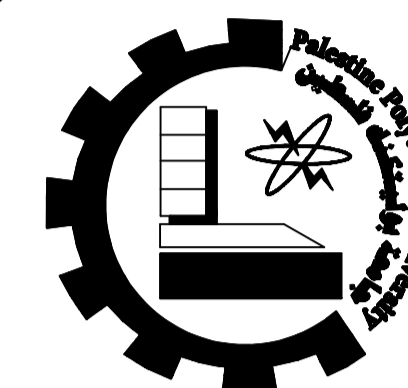
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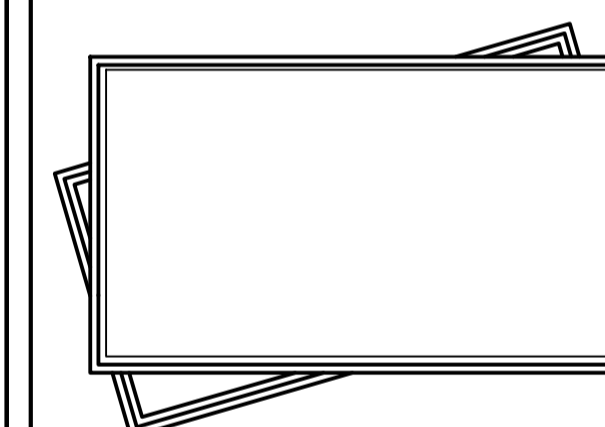
Date:  
Dec-2019



<p>column9 1st,2nd</p>	<p>column9 3rd</p>	<p>column9 4th</p>
<p>column9 5th</p>	<p>column10 b3</p>	<p>column10 b2</p>
<p>column10 b1,GF</p>	<p>column10 1st,2nd</p>	<p>column10 3rd</p>
<p>column10 4th,5th</p>	<p>column11 b3</p>	<p>column11 b2</p>
<p>column11 b1,GF</p>	<p>column11 1st,2nd</p>	<p>column11 3rd</p>
<p>column11 4th,5th</p>	<p>column12 b3,b2</p>	<p>column12 b1,GF</p>



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Architecture ENGINEERING



Designed by:

Natheer Talahmah  
Montaser Qazzaz  
Mohammad Talahmah  
Ammar AL-rjoub

Supervisor:

Eng. Mona AL-Shaar

Project: Structural Design For  
Proposed  
Commercial Complex

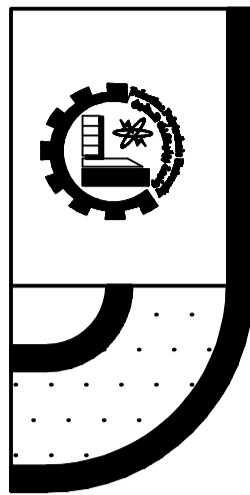
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ALBERE

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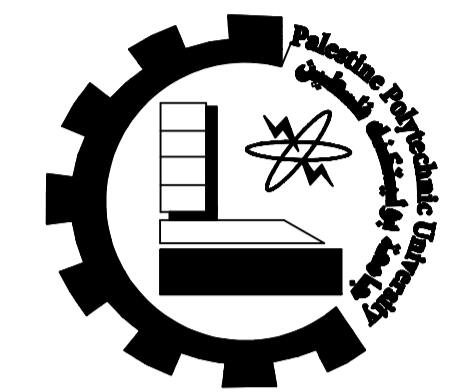
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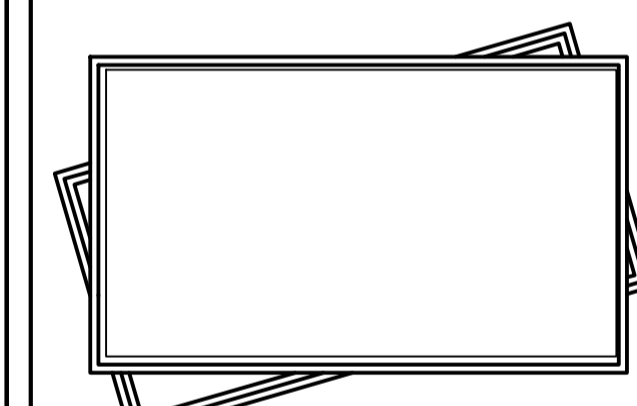
Date:  
Dec-2019



<p>column12 1st</p>	<p>column12 2nd</p>	<p>column13 b3,b2,b1&amp;b2,b1 incolumn 14</p>
<p>column14 b3</p>	<p>column15 b3,b2,b1,GF</p>	<p>column15 1st,2nd,3rd</p>
<p>column15 4th</p>	<p>column16 b3</p>	<p>column16 b2,b1</p>
<p>column17 b3,b2,b1</p>	<p>column18 b3,b2,b1,GF</p>	<p>column18 1st</p>
<p>column18 2nd,3rd</p>	<p>column19 b1,b2,b3,GF</p>	<p>column19 1st,2nd</p>
<p>column19 3rd</p>	<p>column19 4th</p>	<p>column20 b3</p>



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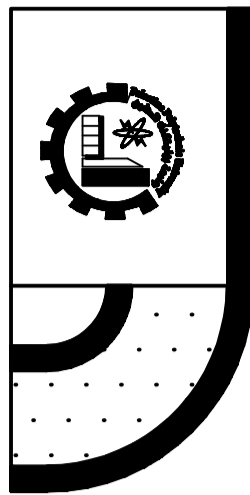
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ALBERE

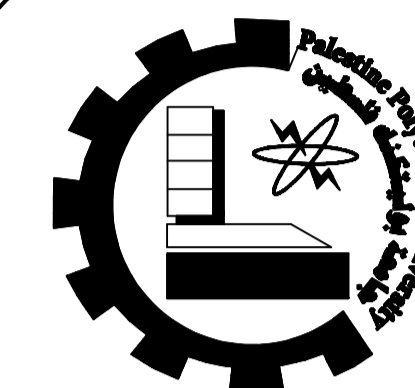
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(Sections)

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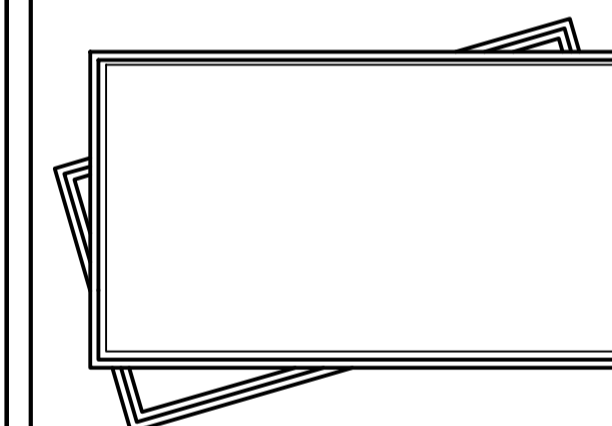
Scale: 1:200 Date: Dec-2019



<p>column20 b2,b1,GF</p> <p>Cover=4cm</p>	<p>column20 1st</p> <p>Cover=4cm</p>	<p>column20 2nd,3rd</p> <p>Cover=4cm</p>
<p>column20 4th,5th</p> <p>Cover=4cm</p>	<p>column21 1st</p> <p>Cover=4cm</p>	<p>column21 2nd,3rd</p> <p>Cover=4cm</p>
<p>column21 4th</p> <p>Cover=4cm</p>	<p>column21 5th</p> <p>Cover=4cm</p>	<p>column22 GF</p> <p>Cover=4cm</p>
<p>column22 1st</p> <p>Cover=4cm</p>	<p>column22 2nd,3rd</p> <p>Cover=4cm</p>	<p>column22 4th,5th</p> <p>Cover=4cm</p>
<p>column23 B1,B2,B3,GF,1st</p> <p>Cover=4cm</p>	<p>column23 2nd,3rd</p> <p>Cover=4cm</p>	<p>column24 b3</p> <p>Cover=4cm</p>
<p>column24 b2</p> <p>Cover=4cm</p>	<p>column24 b1,GF</p> <p>Cover=4cm</p>	<p>column24 1st</p> <p>Cover=4cm</p>



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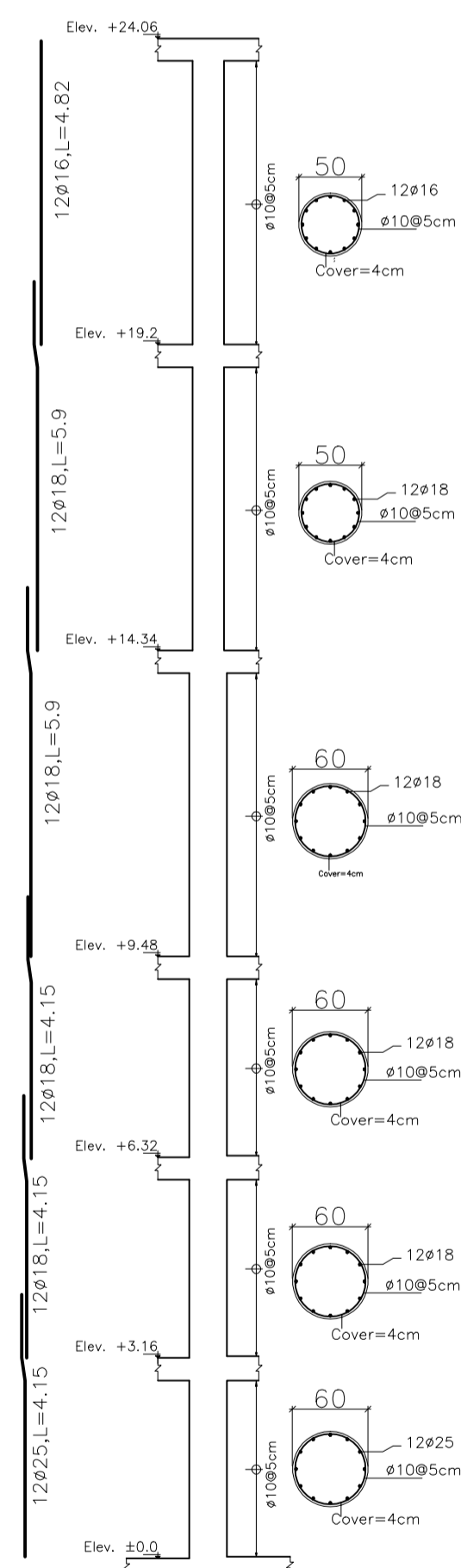
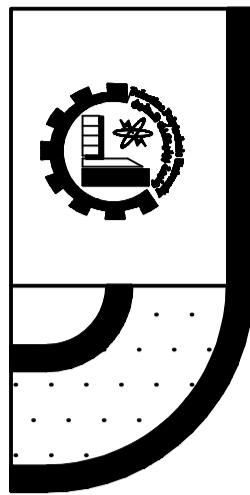
Project: Structural Design For  
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ALBERE

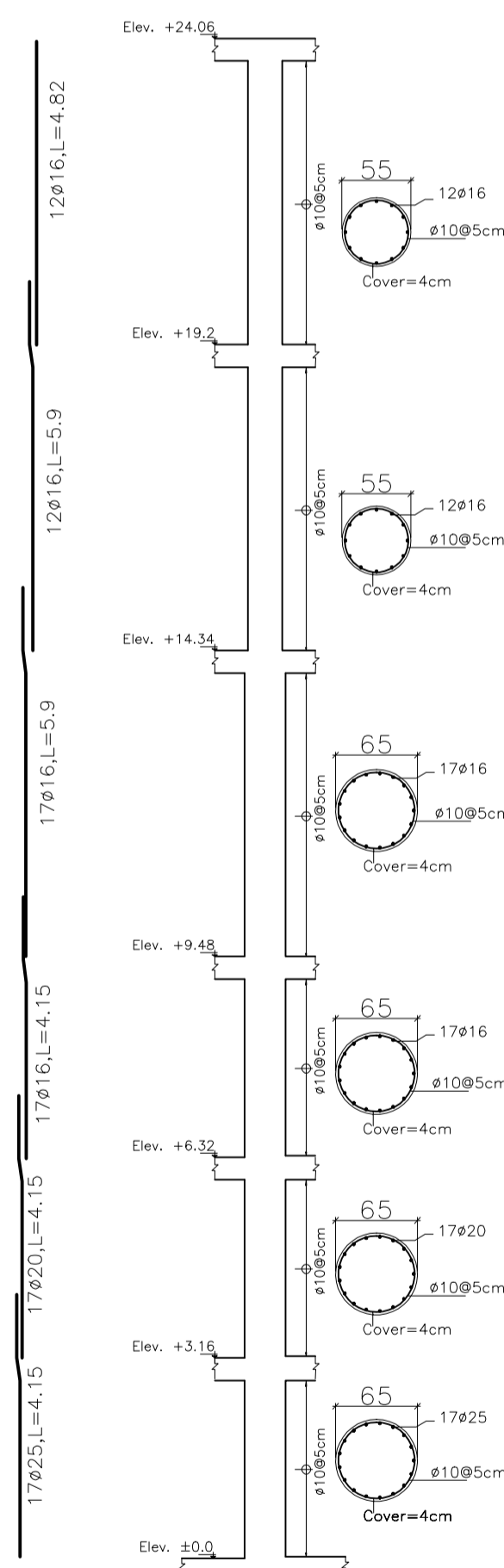
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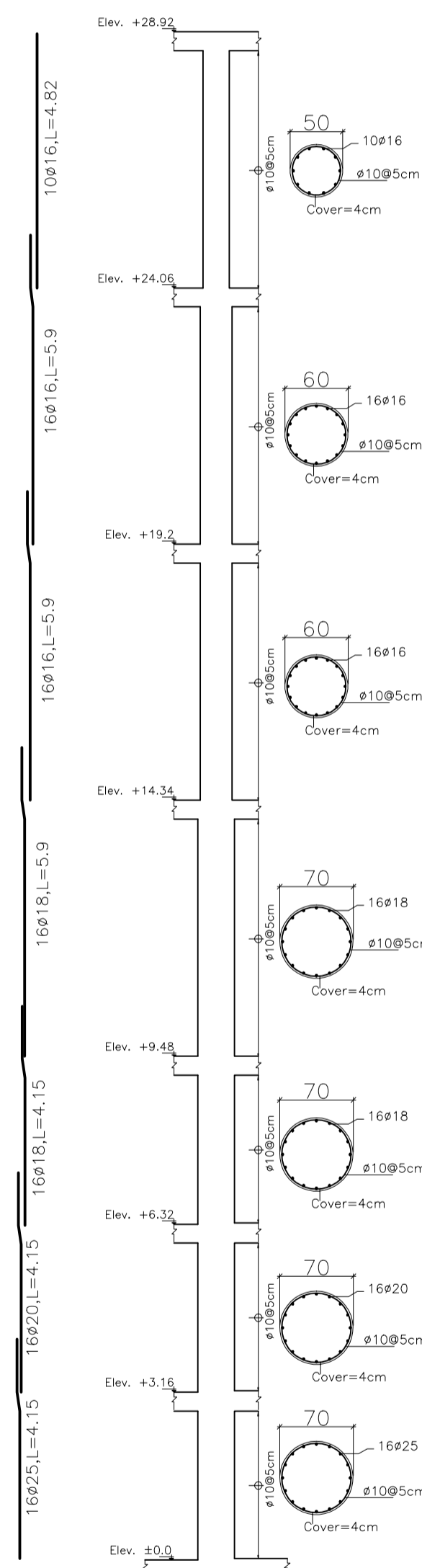
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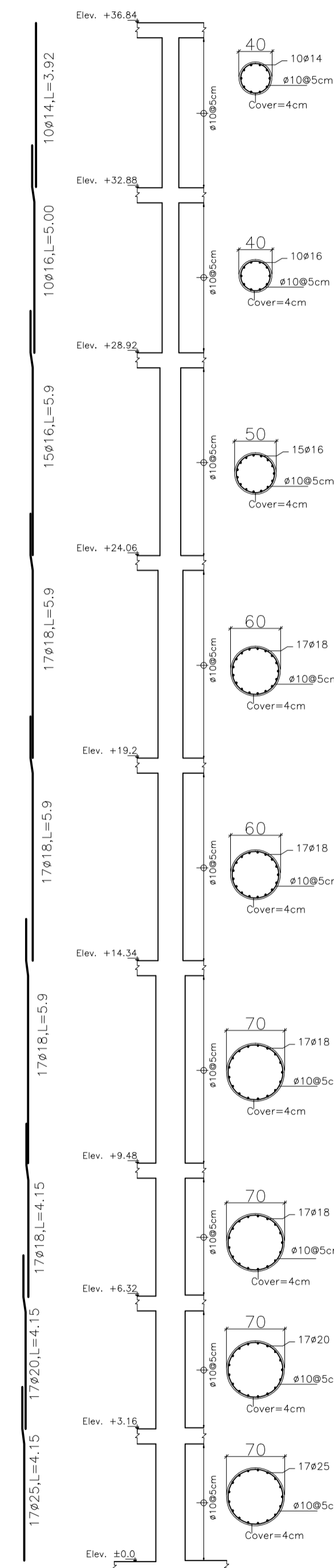
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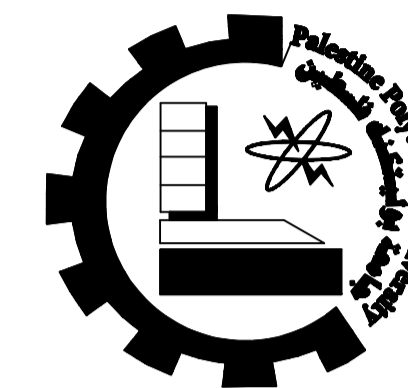
**Column2  
(C20)**



**Column3  
(C11-C25-C40)**



**Column4  
(C32-C34-C43-C51)**



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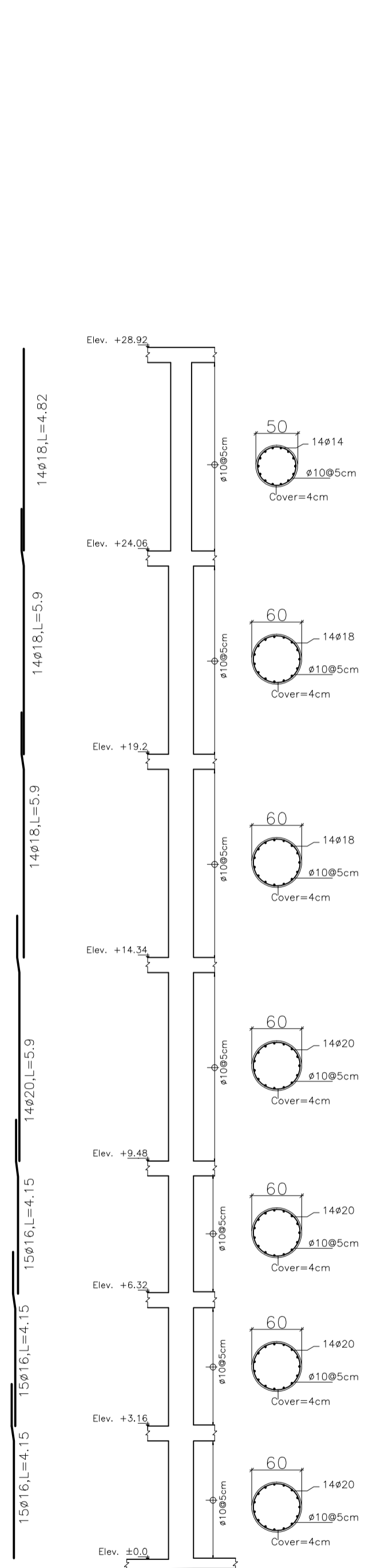
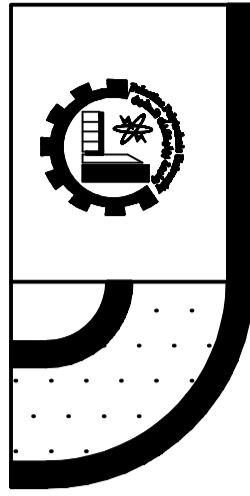
**Project:** Structural Design For  
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**In:**  
**ALBERE**

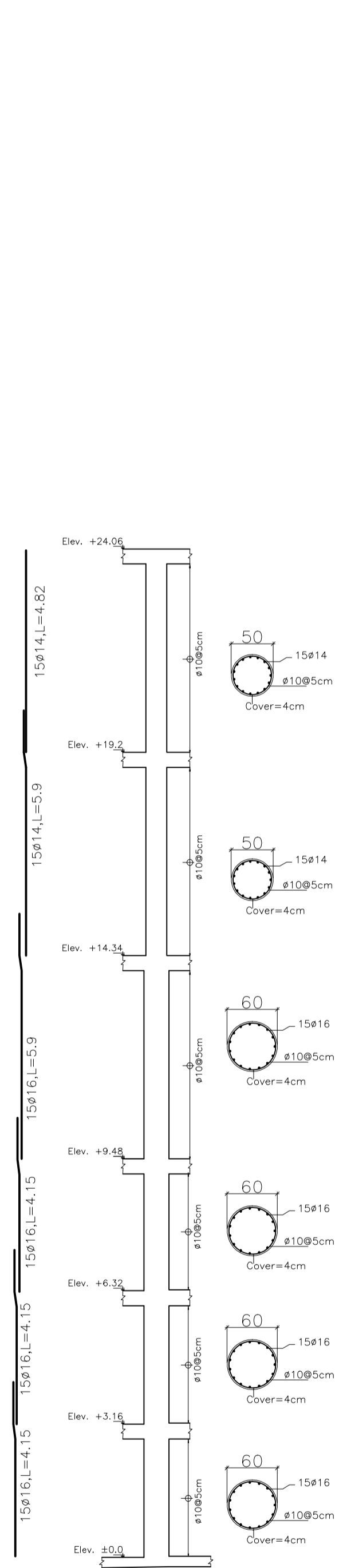
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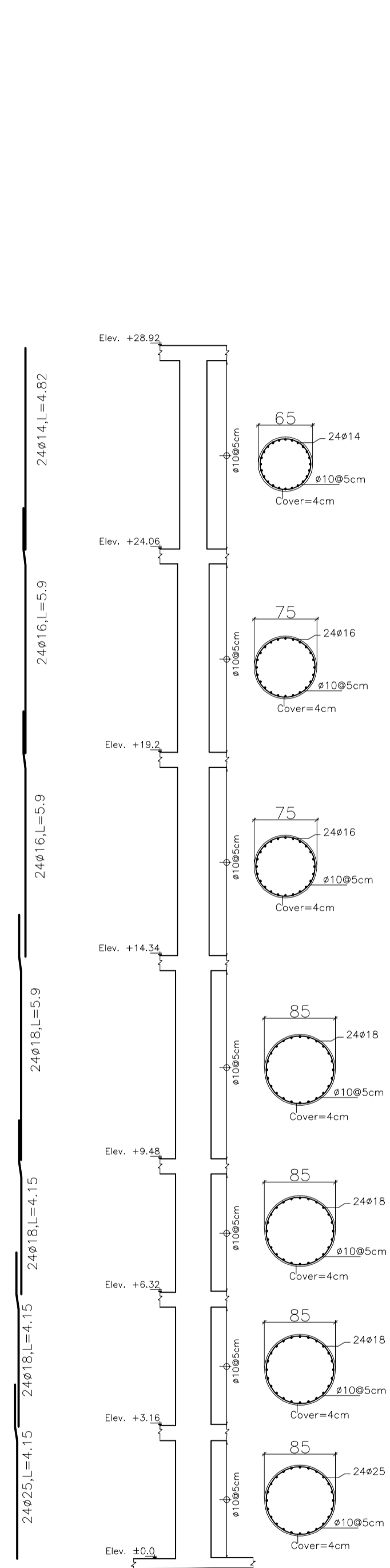
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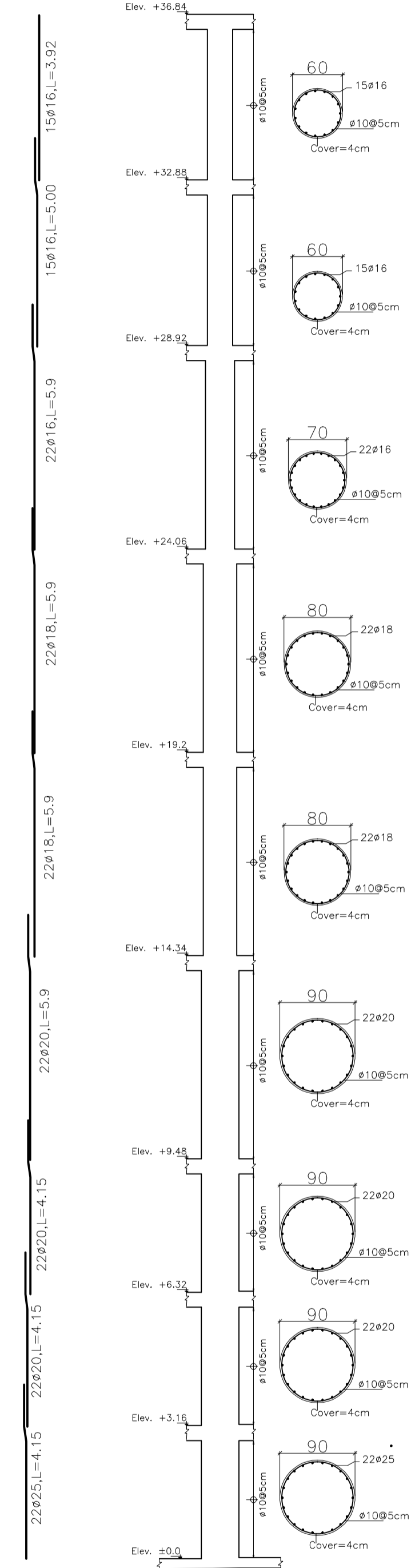
**Column5  
(C23-C41)**



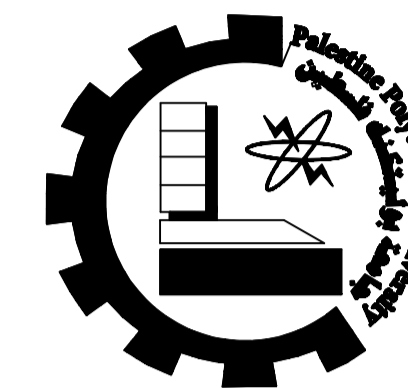
**Column6  
(C22)**



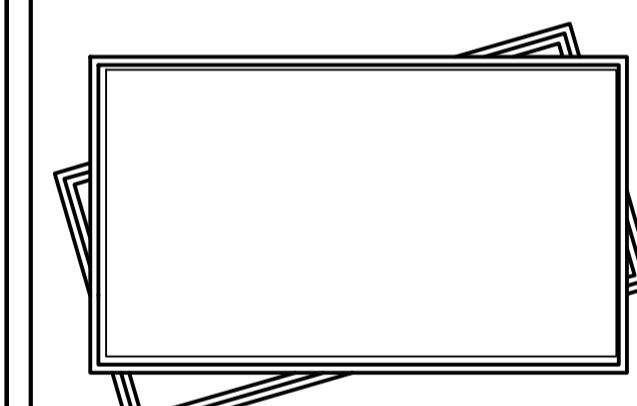
**Column7  
(C24)**



**Column8  
(C48-C65)**



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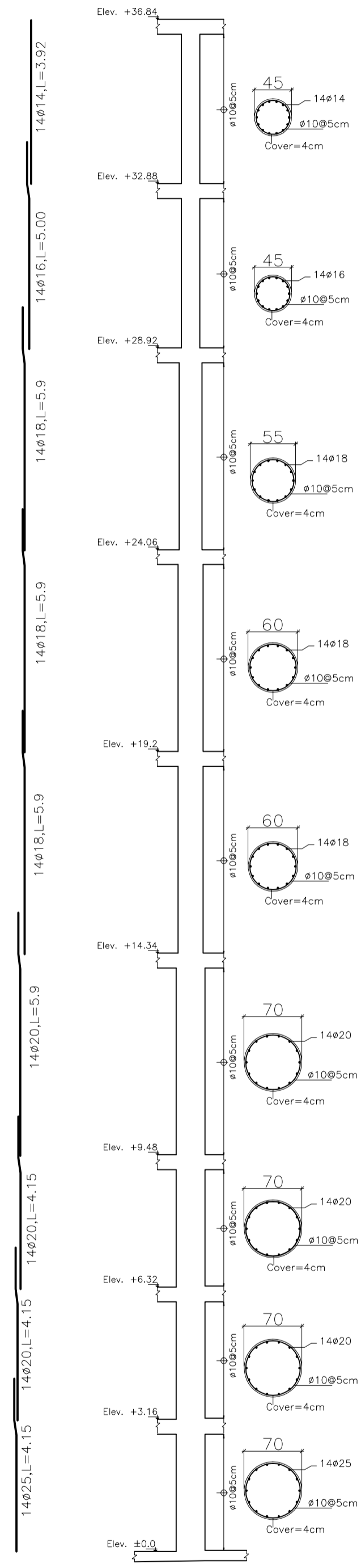
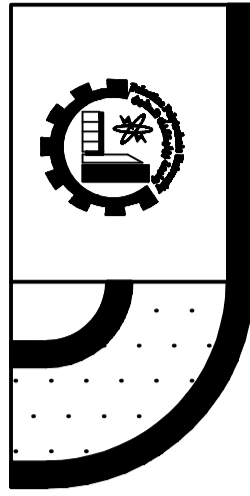
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**In:  
ALBERE**

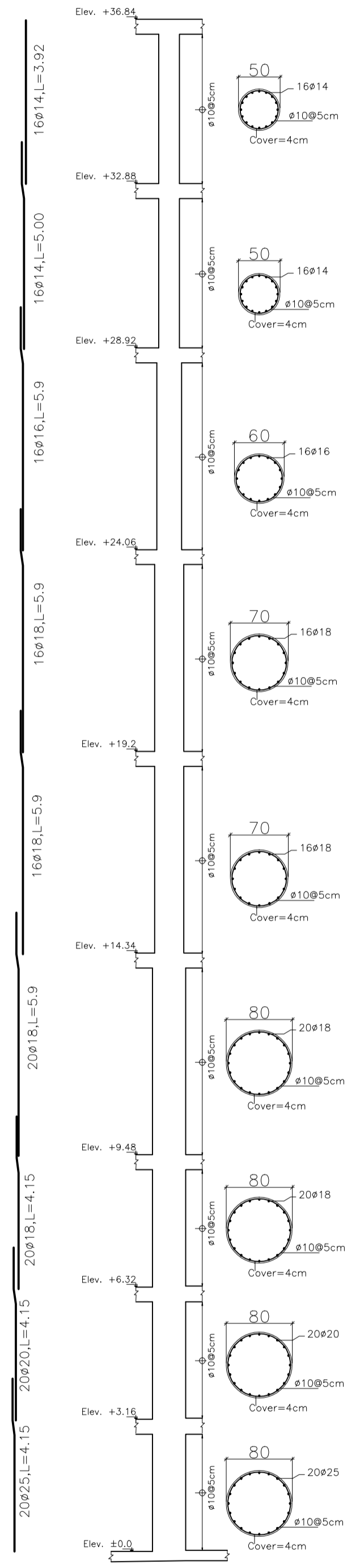
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(Elevation)**

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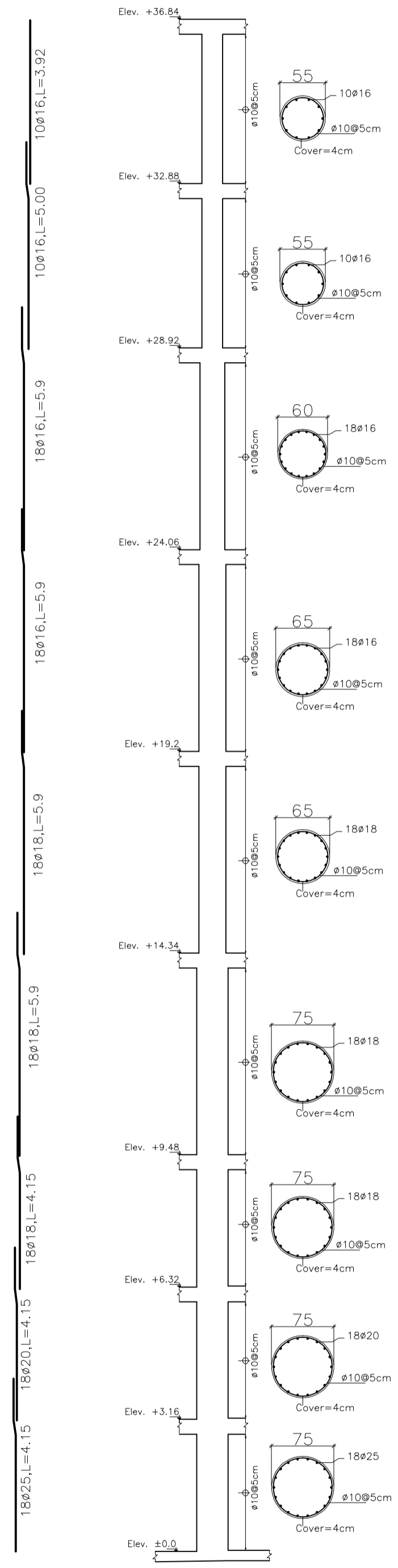
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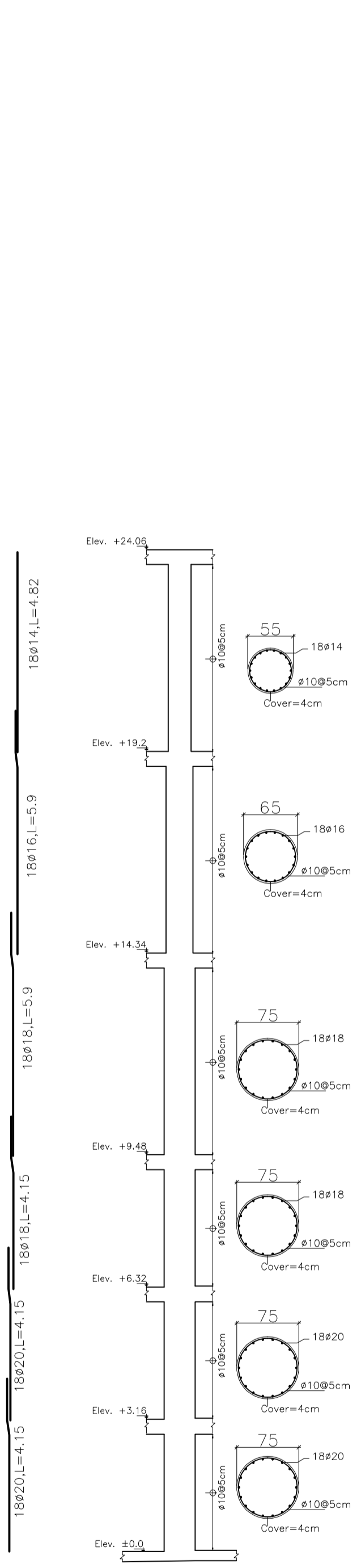
**Column9  
(C33-C60-C64)**



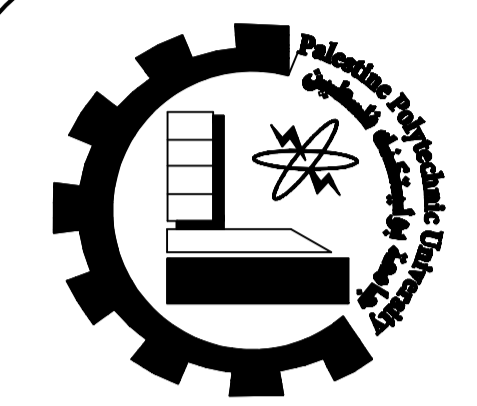
**Column10  
(C56)**



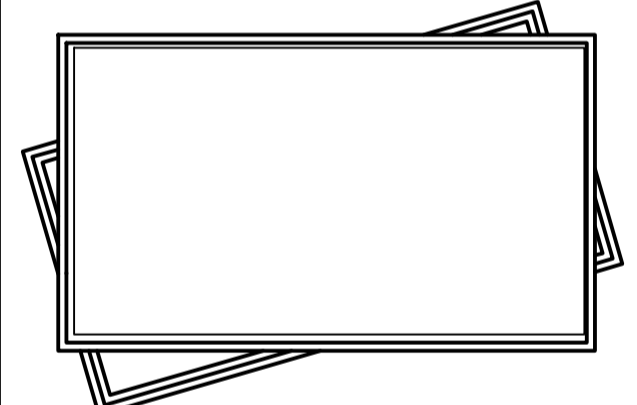
**Column11  
(C52-C57-C58-C63)**



**Column12  
(C21)**



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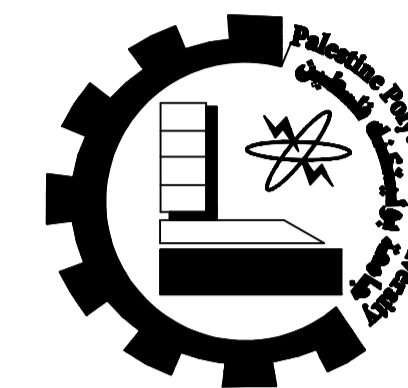
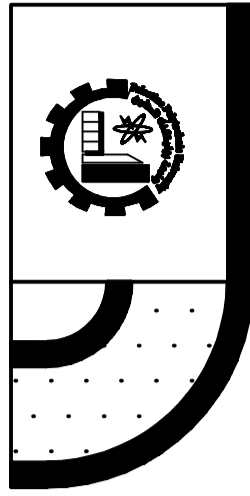
**Project: Structural Design For  
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**In:**  
**ALBERE**

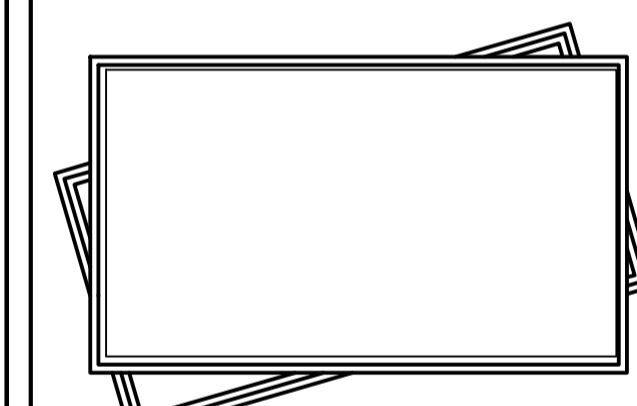
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(Elevation)**

**NO:**  
**S(20)**

**Scale: 1:200**      **Date: Dec-2019**



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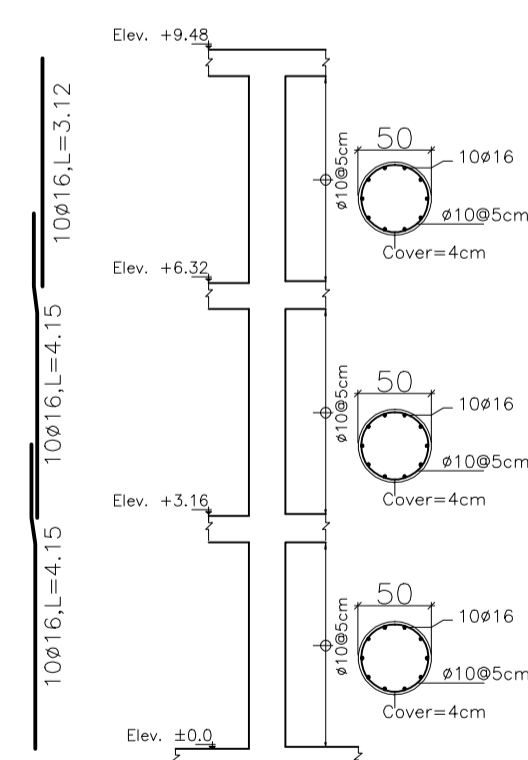
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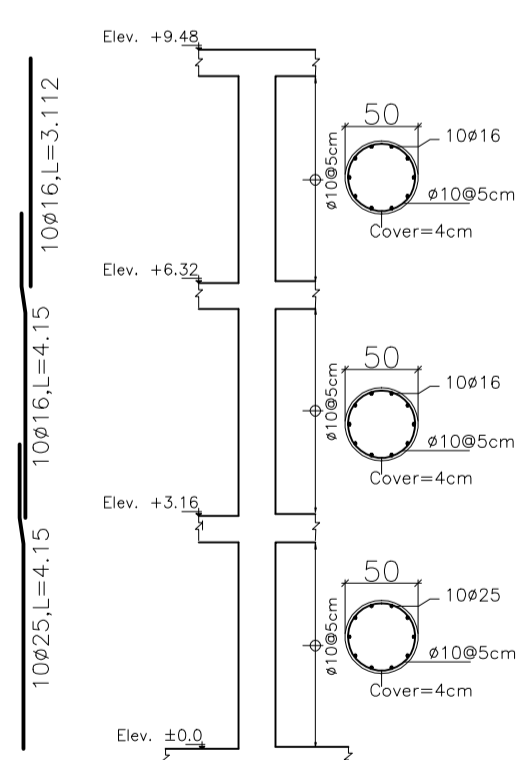
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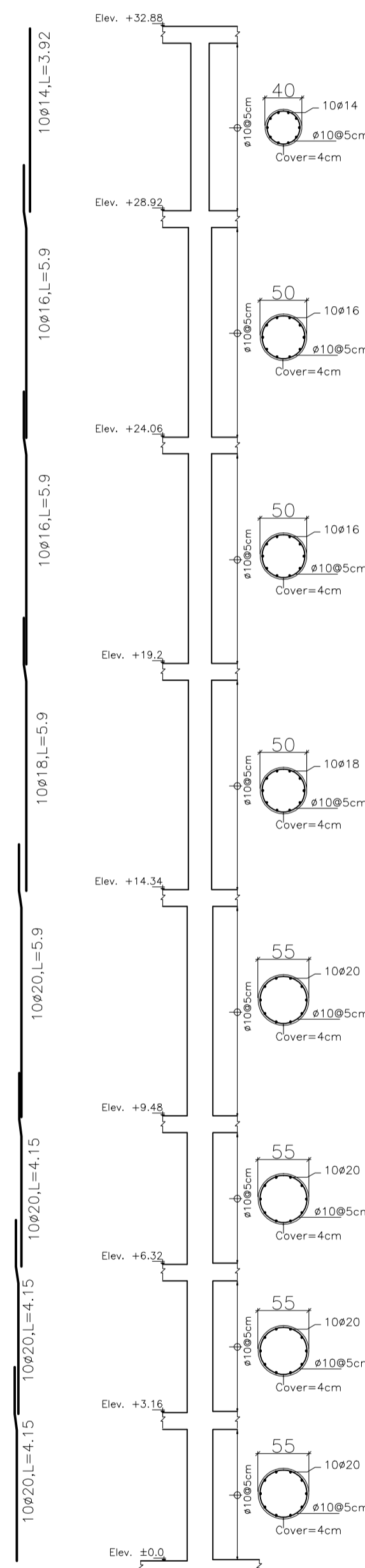
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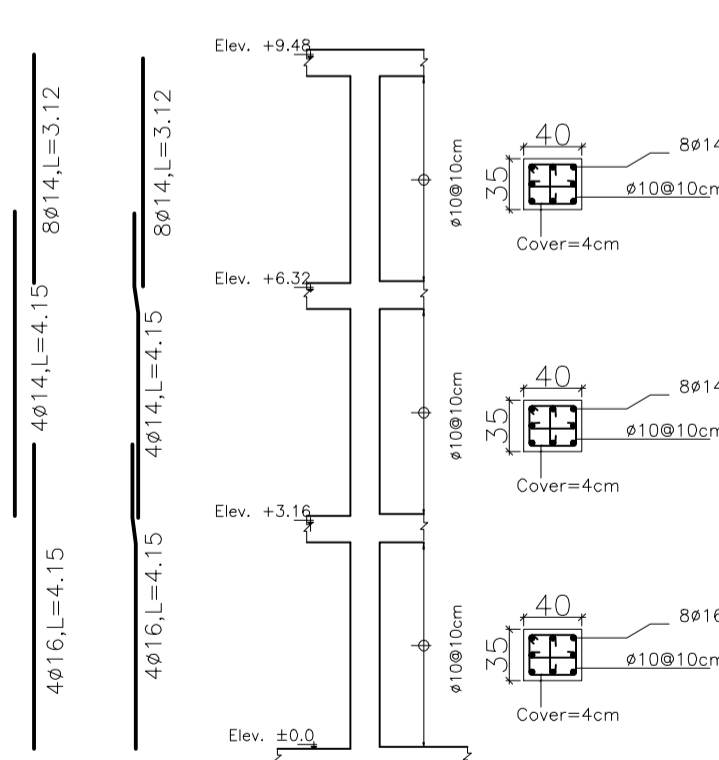
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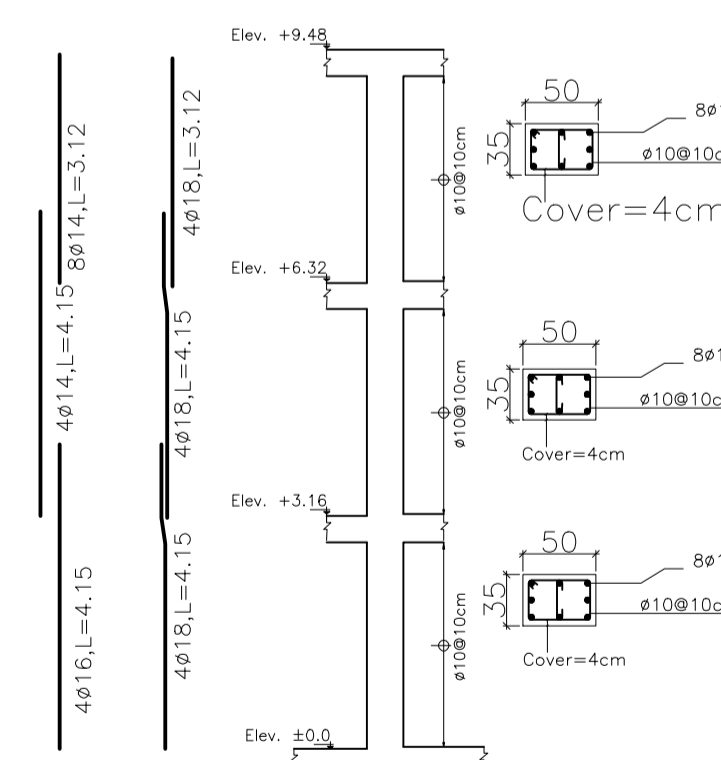
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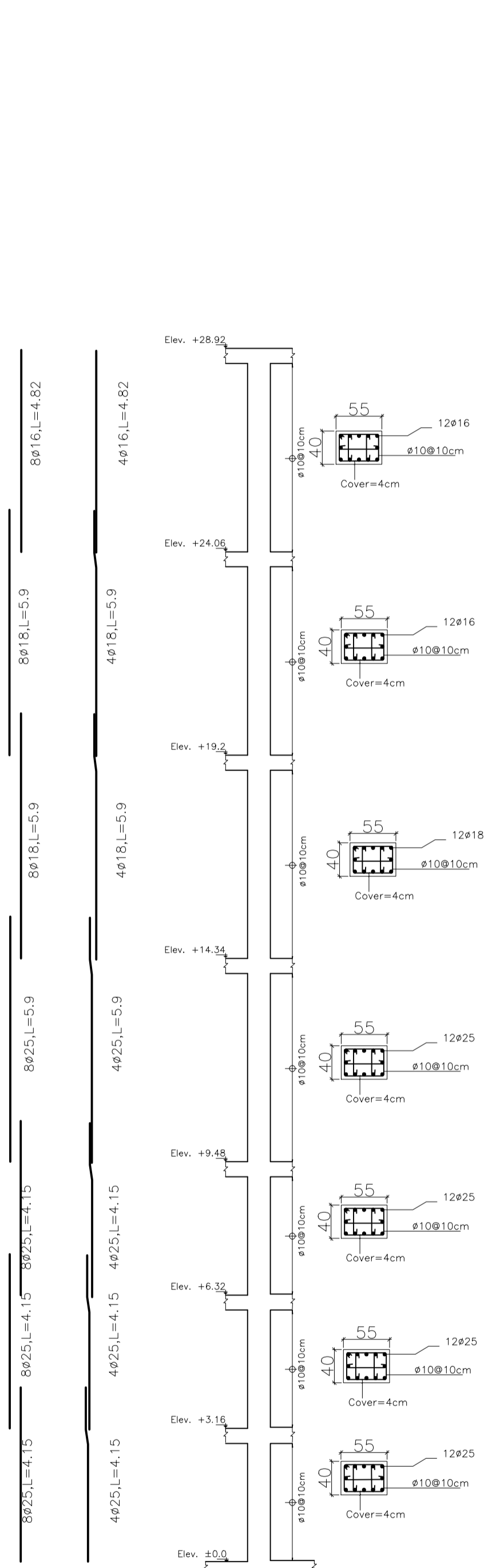
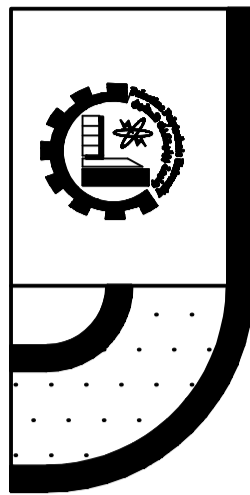
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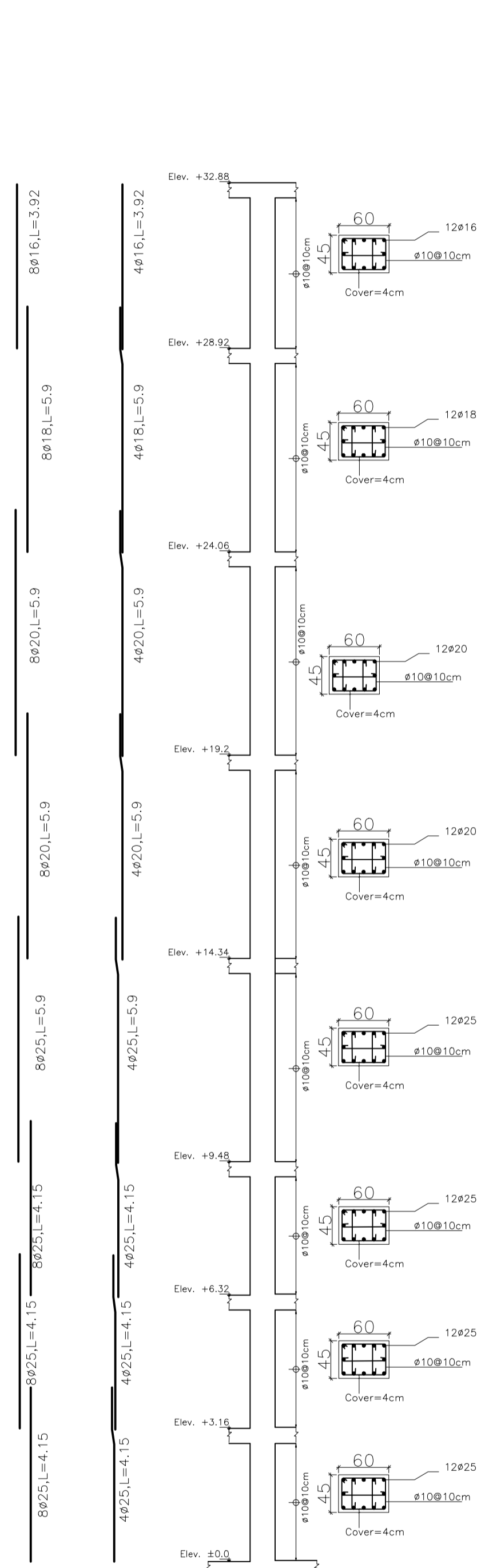
Column16  
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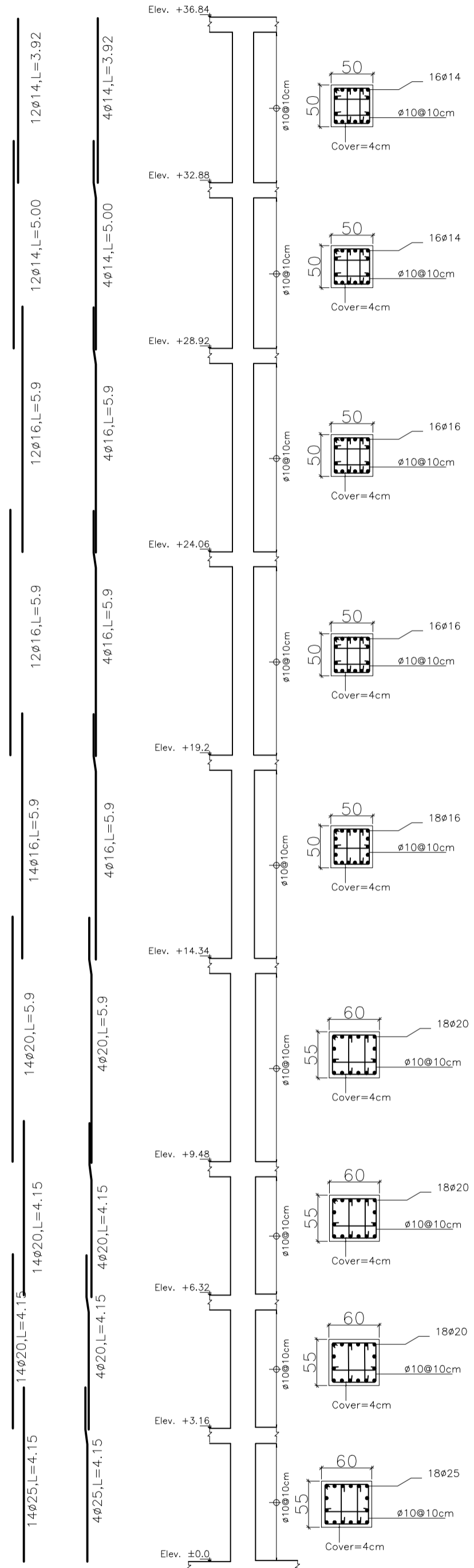
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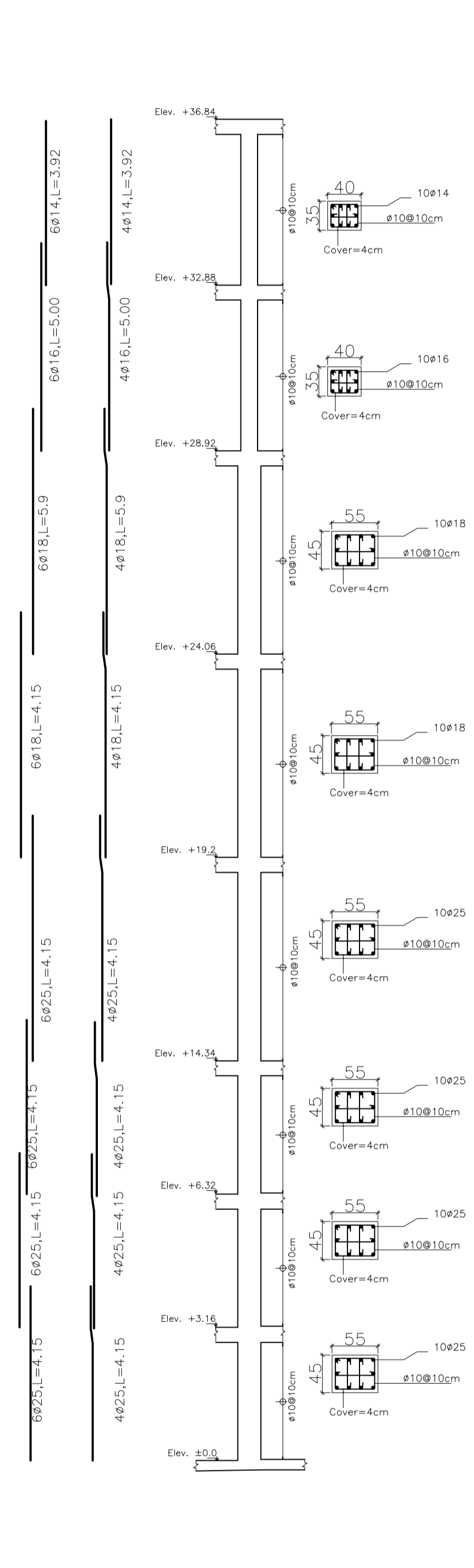
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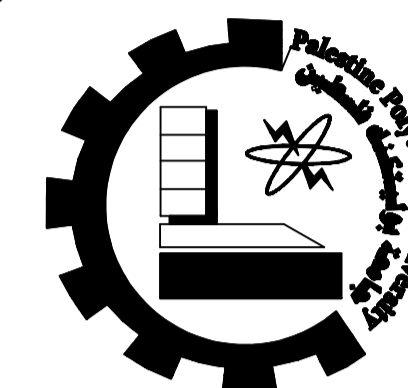
**Column19  
(C44)**



**Column20  
(C12-C45-C68-C59-  
C61-C62-C69)**



**Column21  
(C53-C54-C55)**



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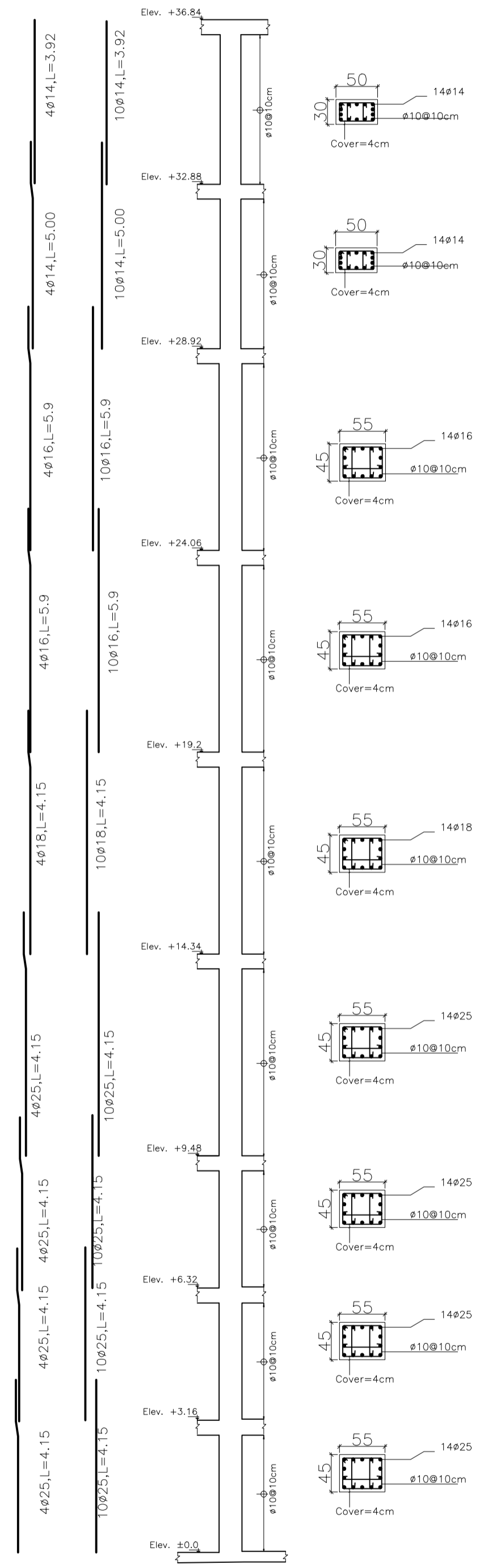
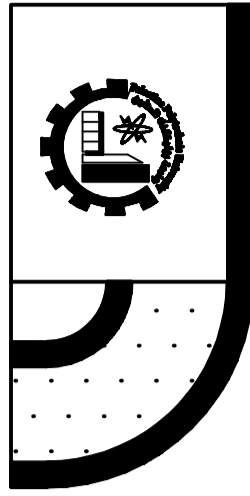
**Project:** Structural Design For  
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**ALBERE**

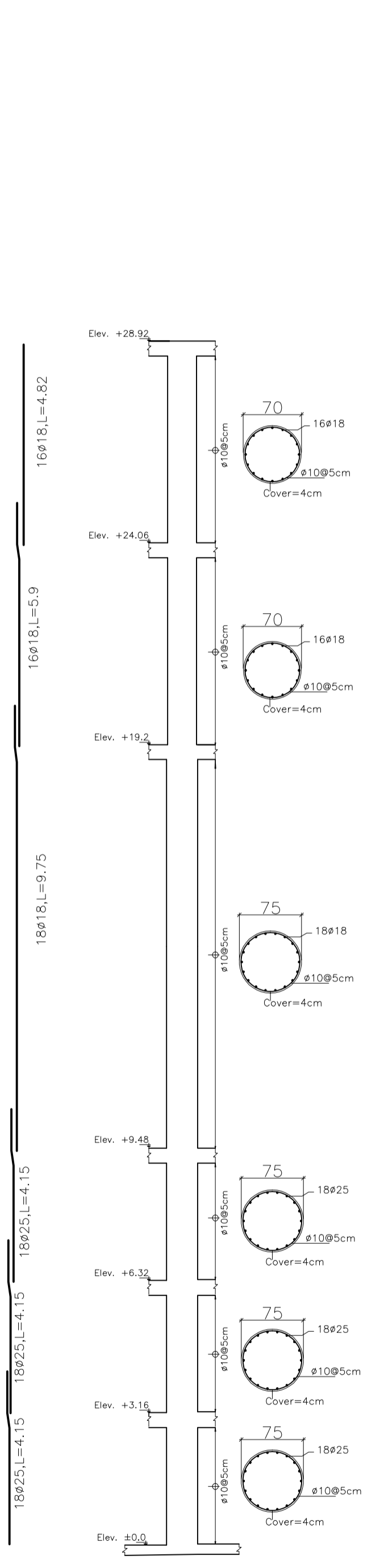
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(Elevation)

**NO:** S(22)

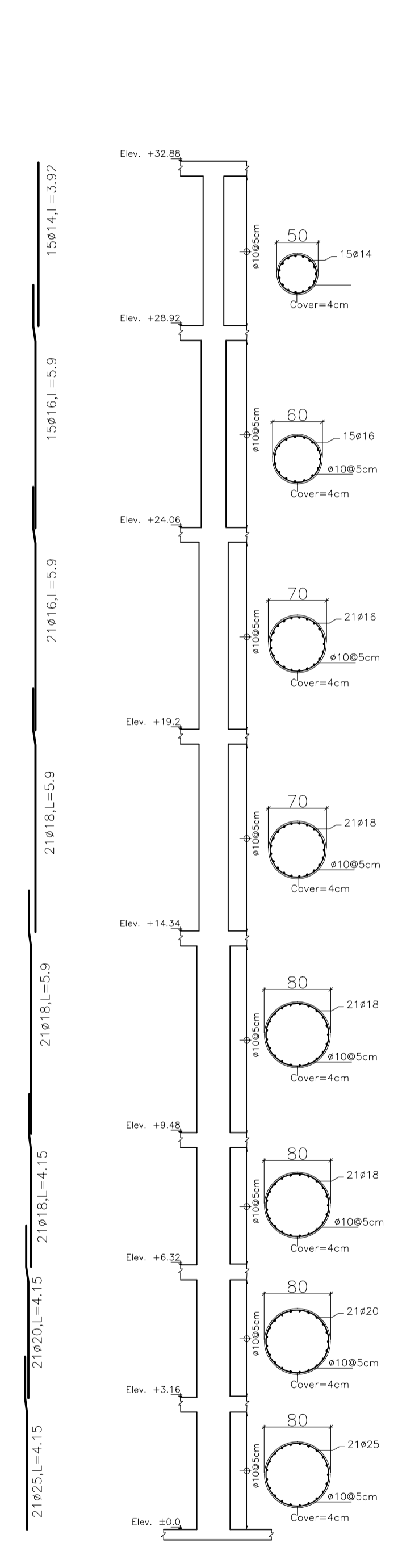
**Scale:** 1:200  
**Date:** Dec-2019



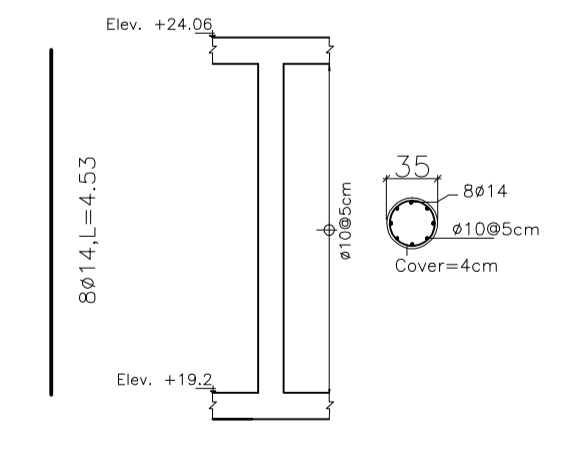
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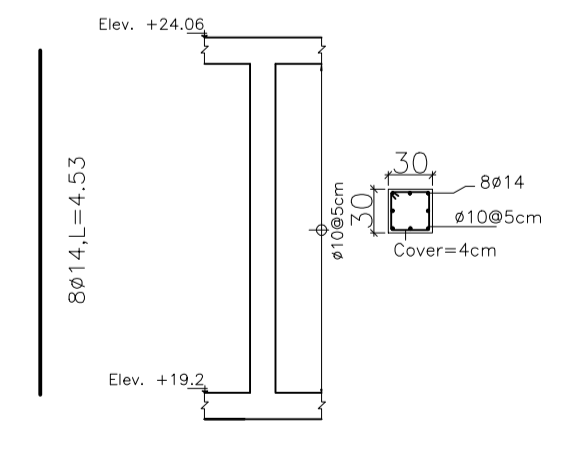
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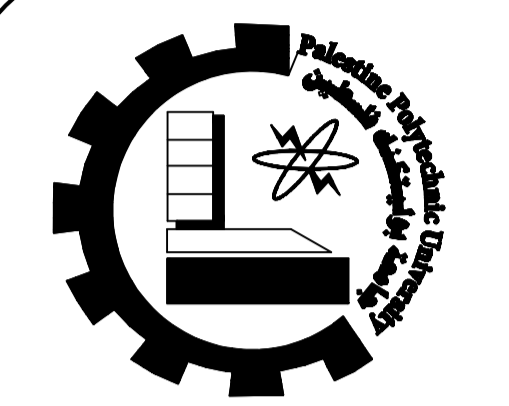
Column 24 (C42-C39)



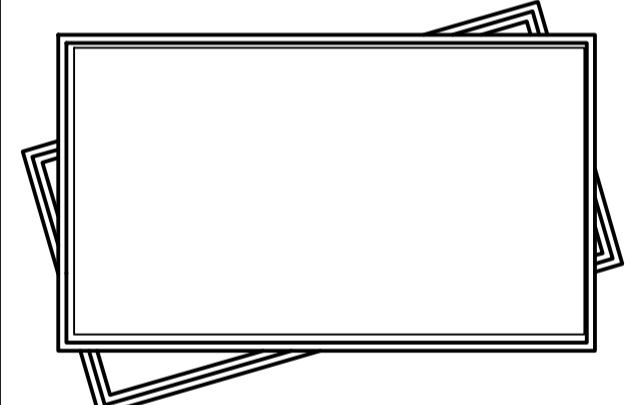
Column D-C1



Column D-C2



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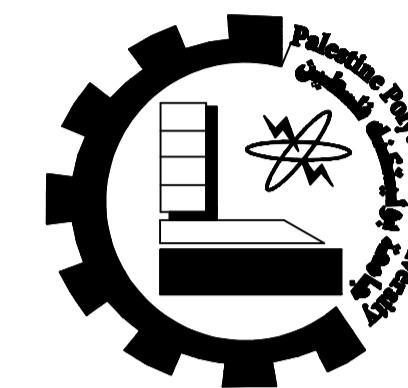
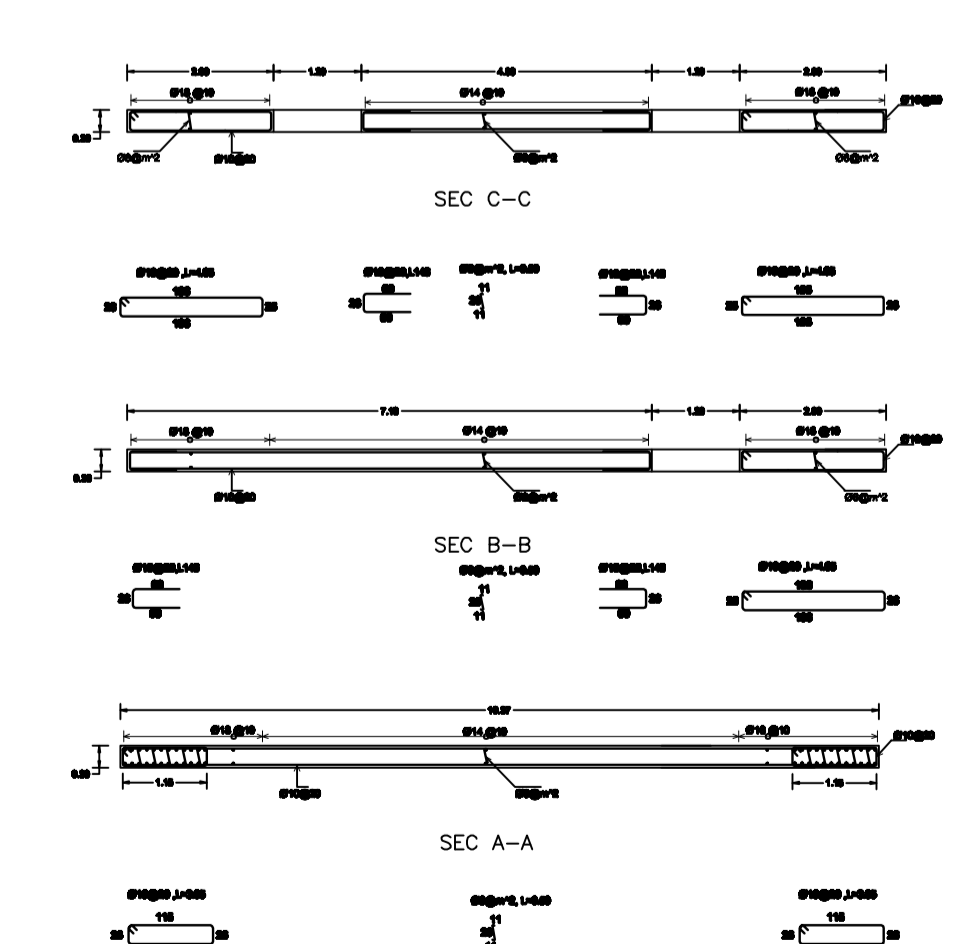
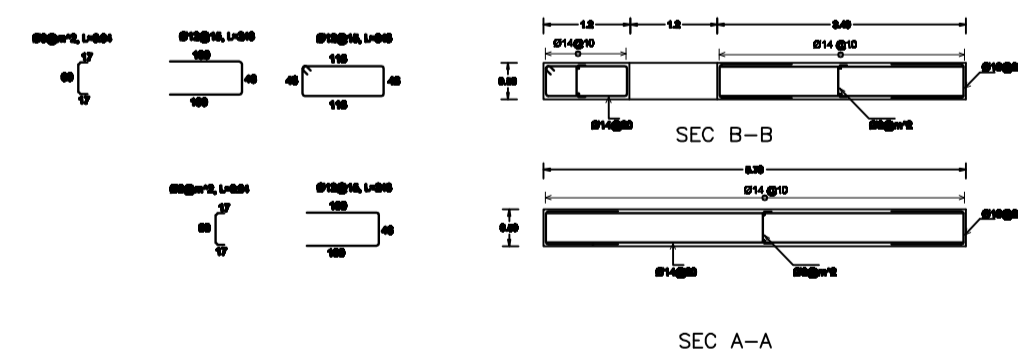
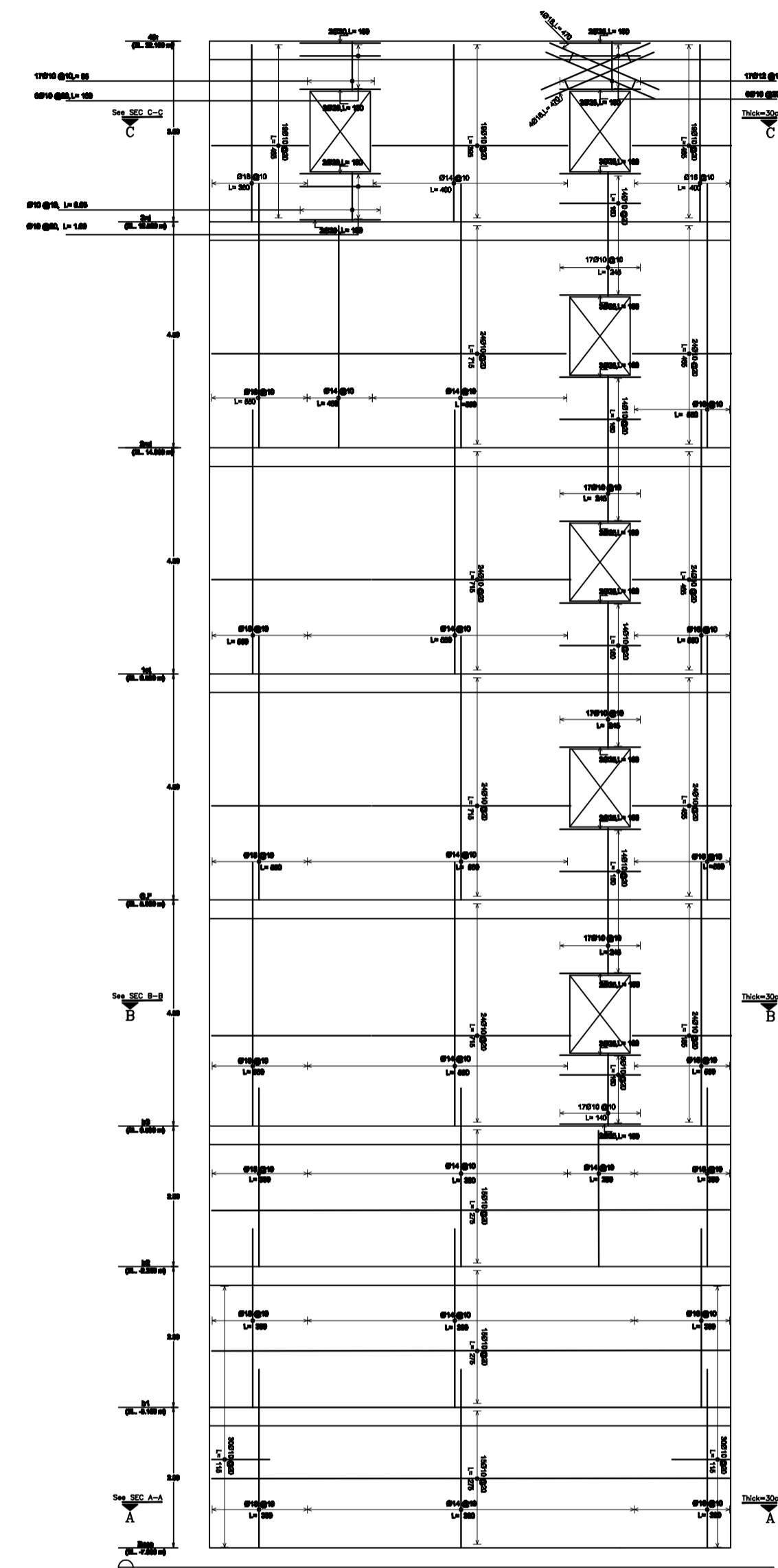
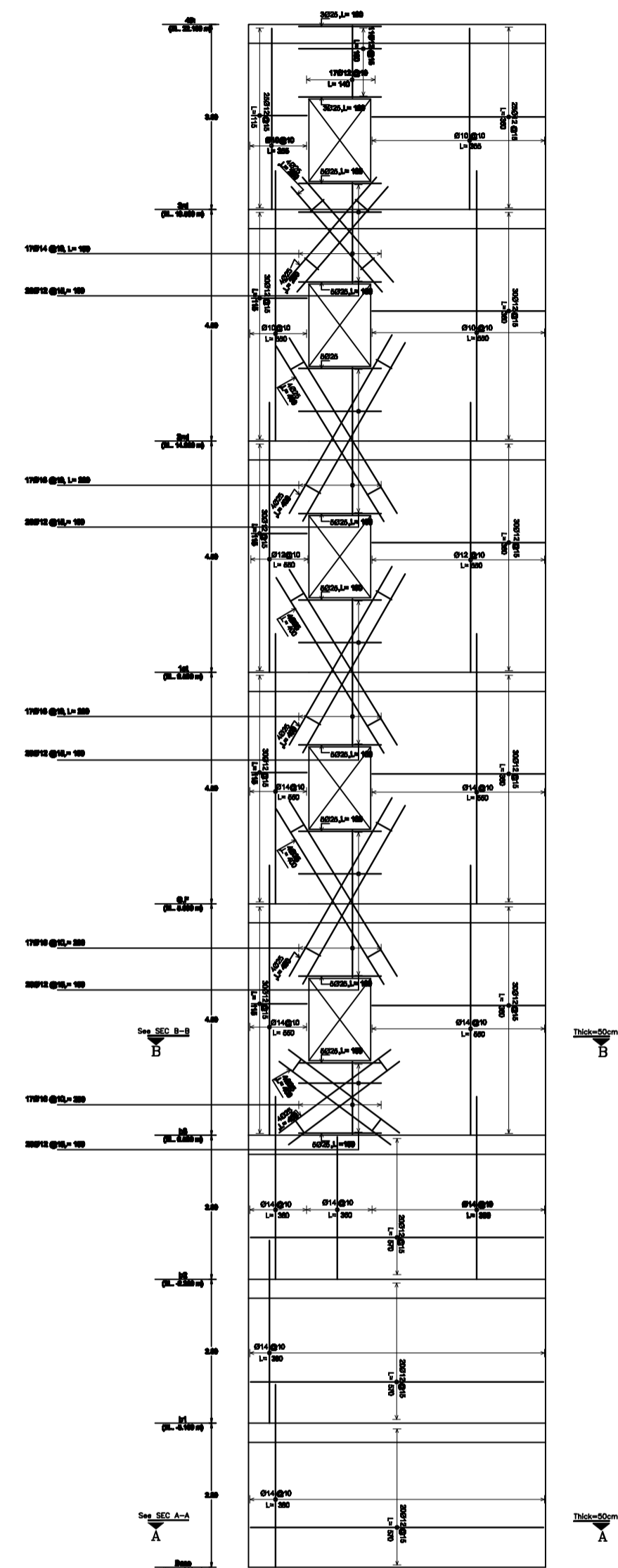
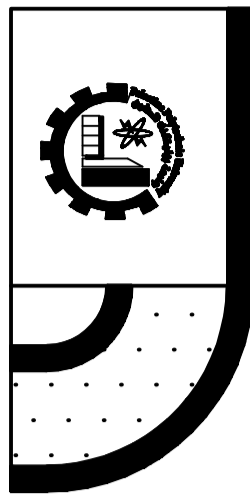
Project: Structural Design For Proposed Commercial Complex

In: ALBERE

Drawing: Column Details (Elevation)

NO: S(23)

Scale: 1:200 Date: Dec-2019



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Supervisor:

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Project: Structural Design For  
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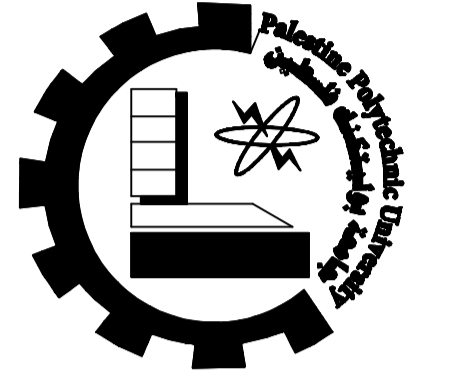
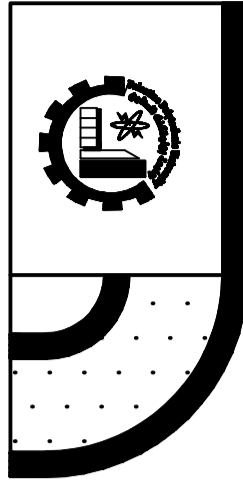
In:  
 ALBERE

Drawing :

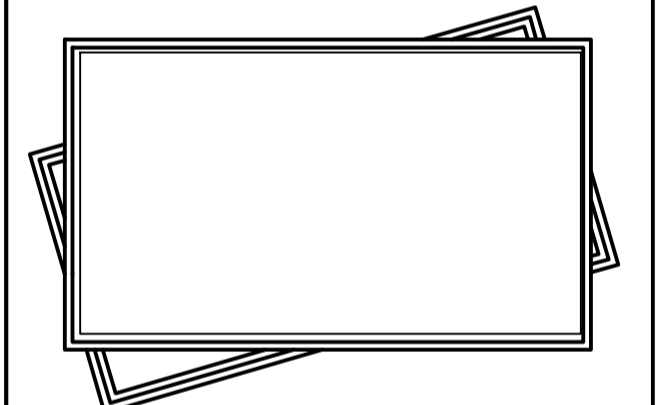
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Scale :  
 1:200

Date :  
 April-2019



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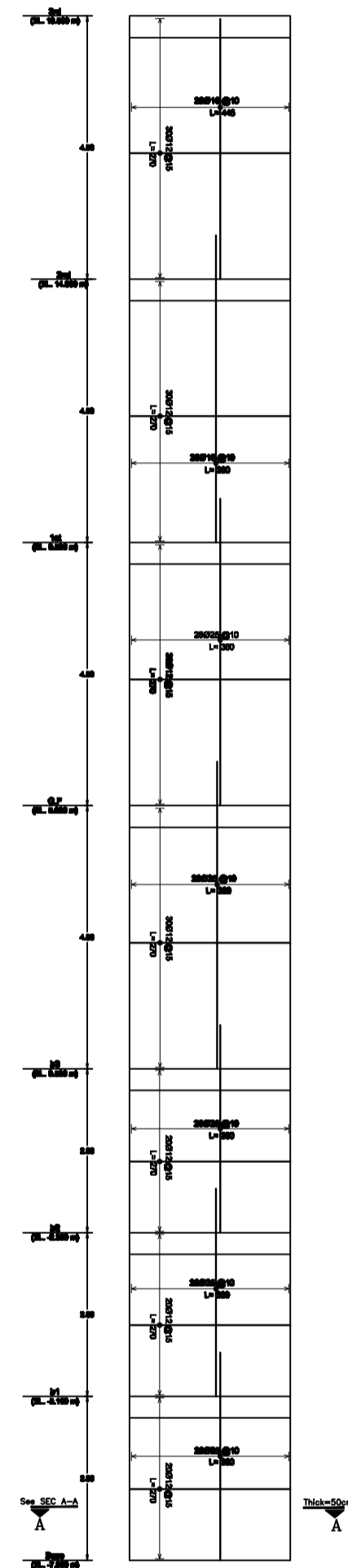
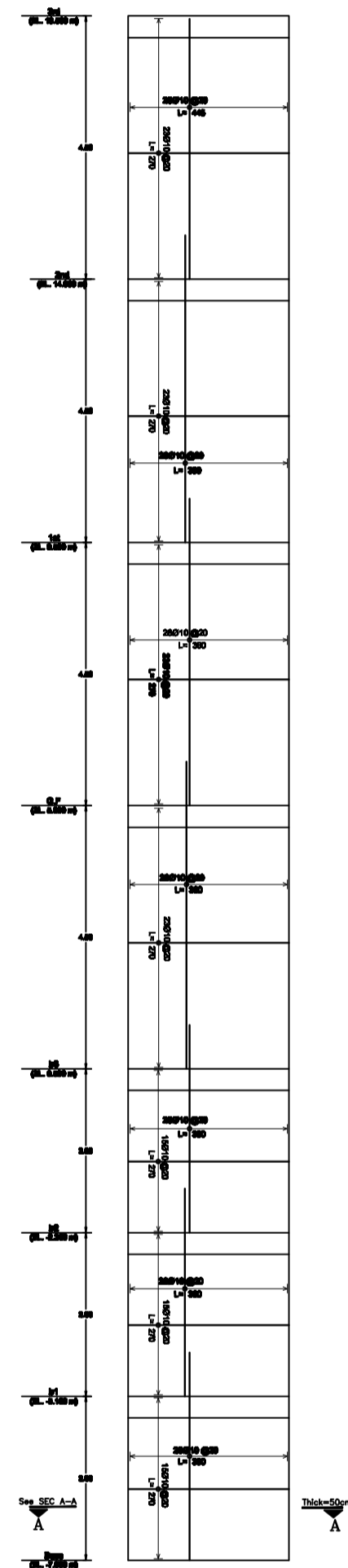
Project: Structural Design For  
 Proposed  
 Comercial Cplx

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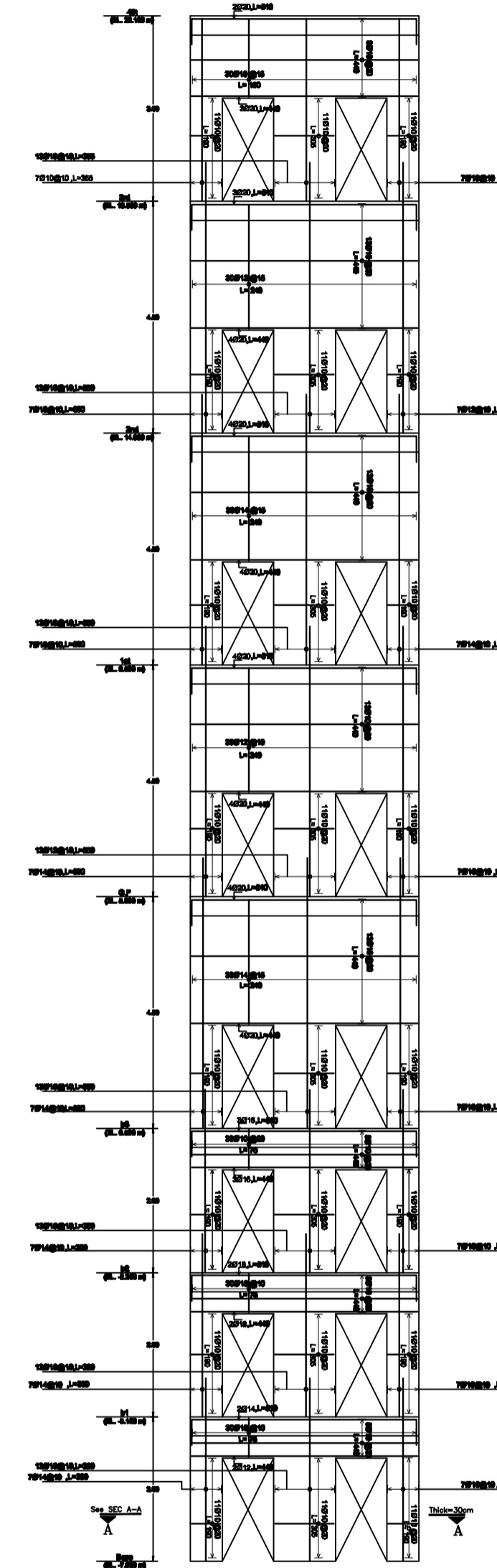
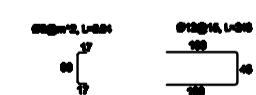
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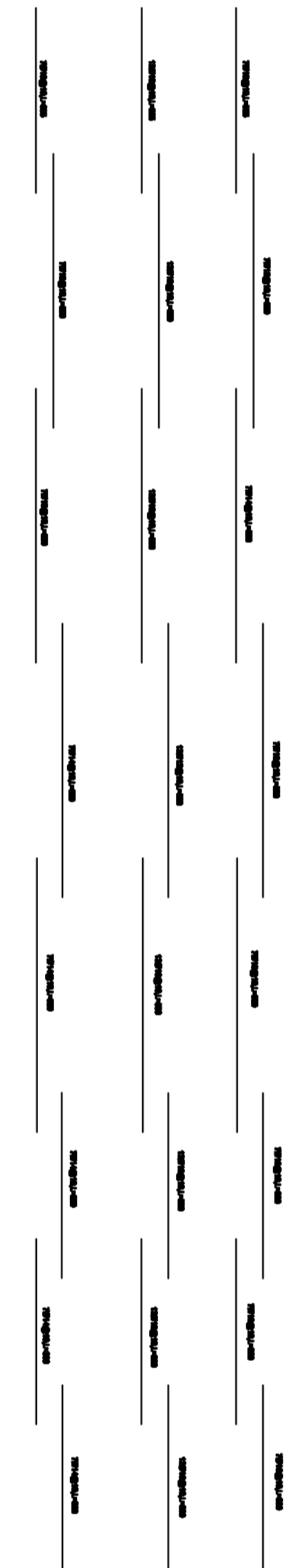
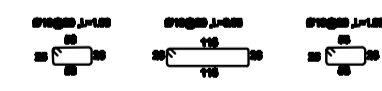
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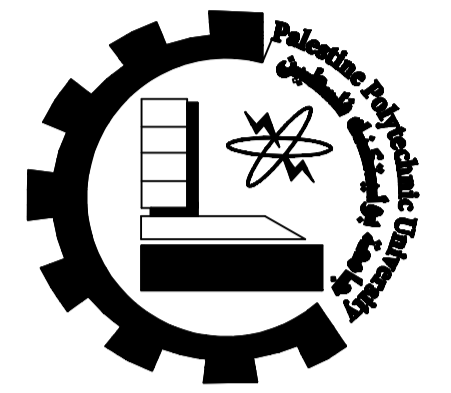
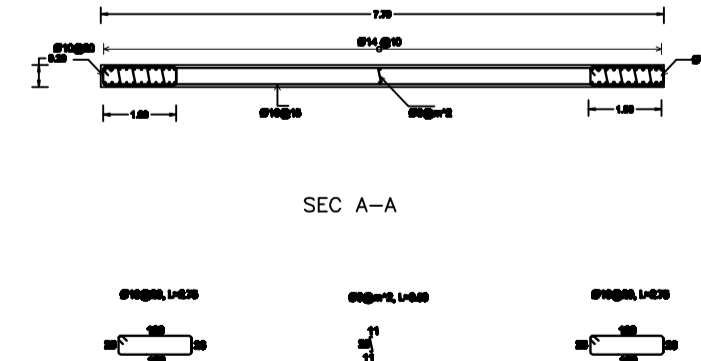
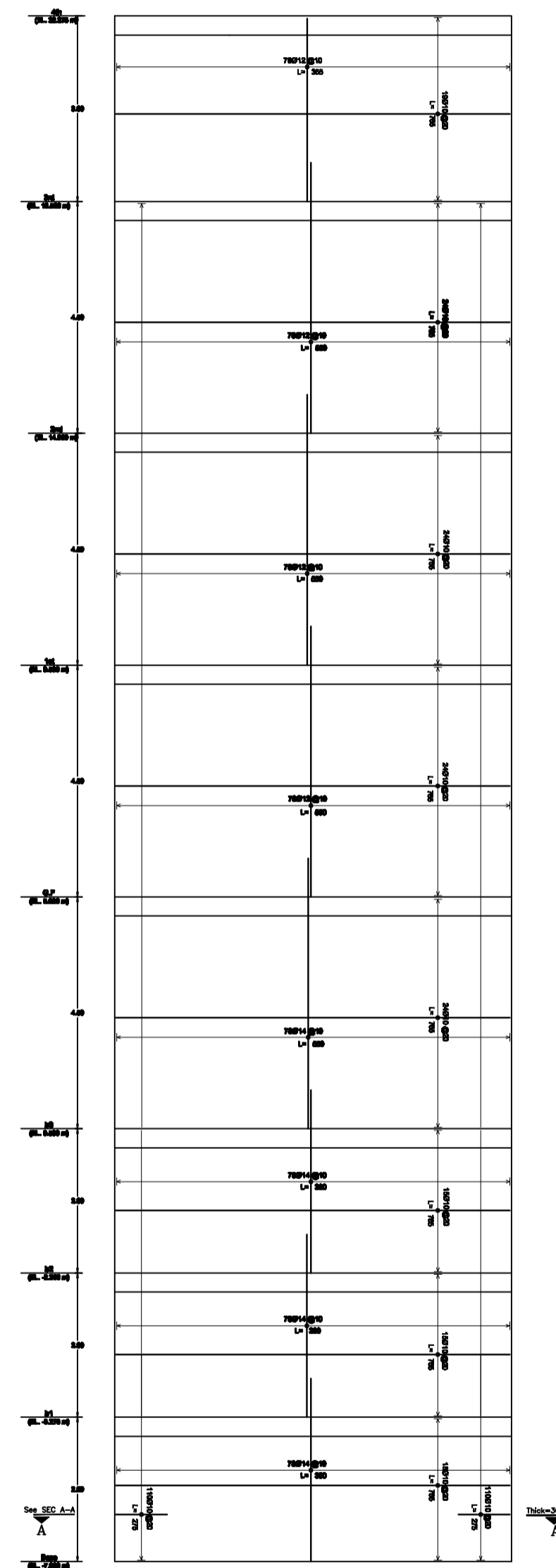
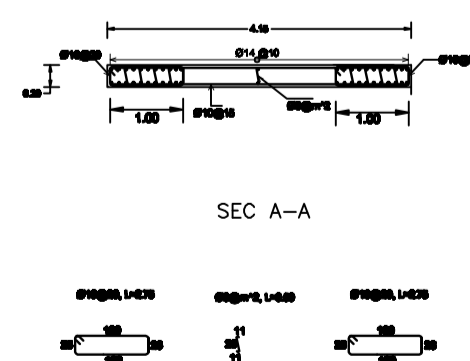
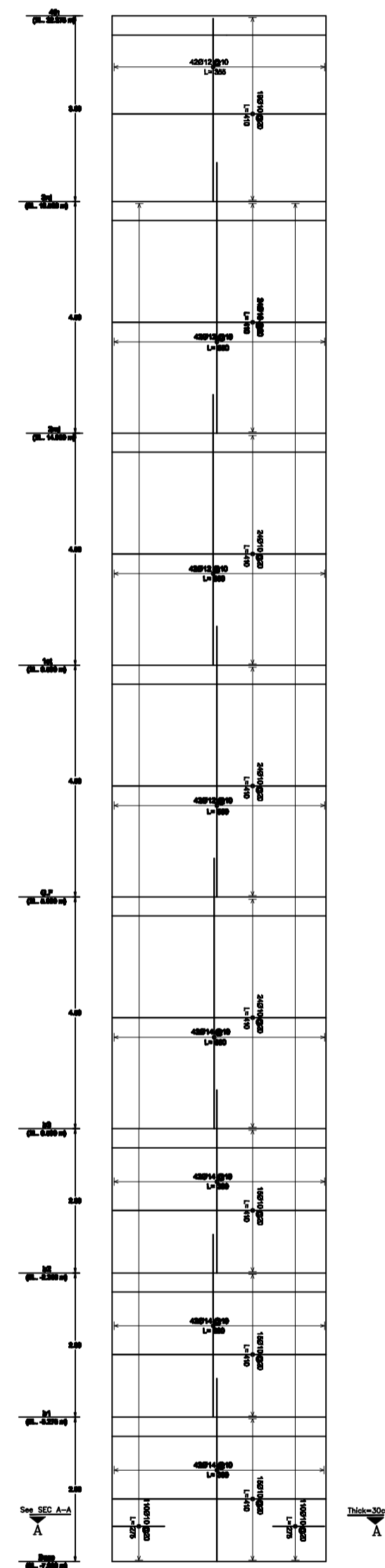
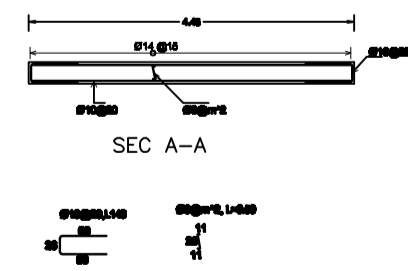
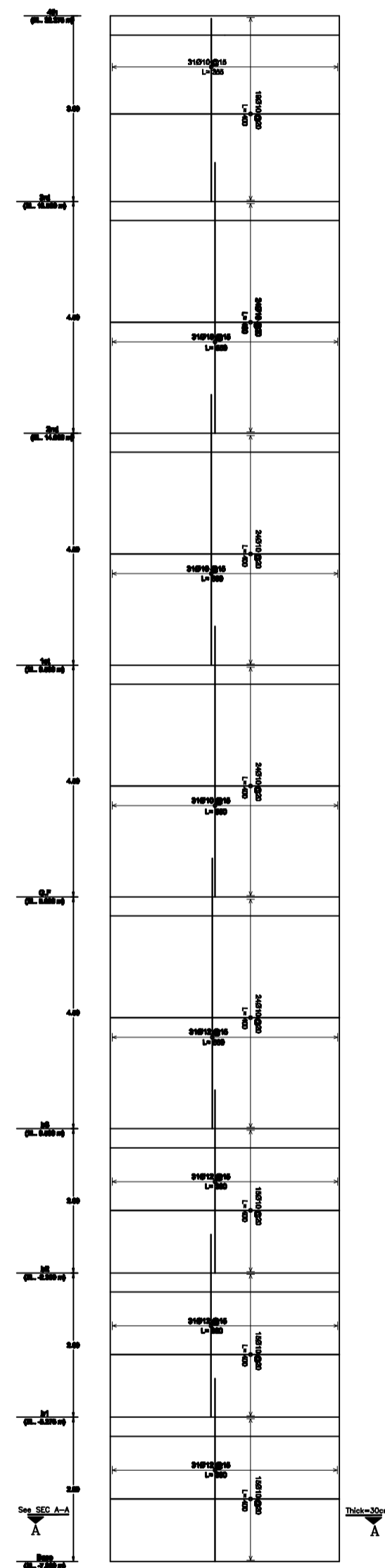
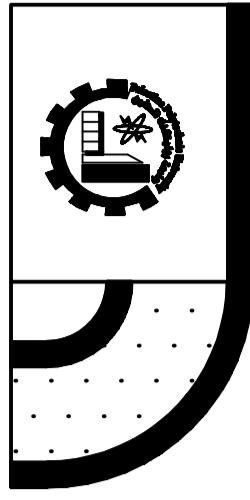


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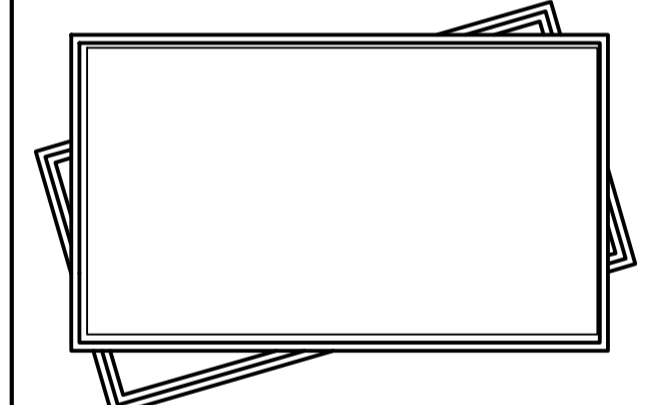


SEC A-A





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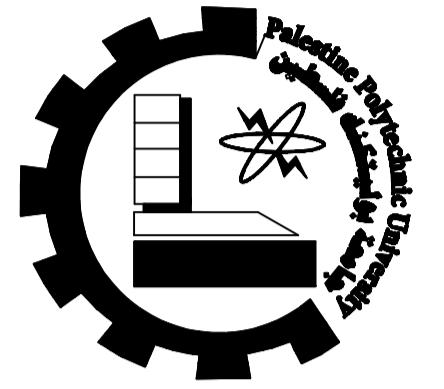
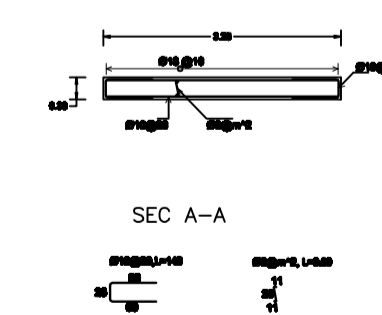
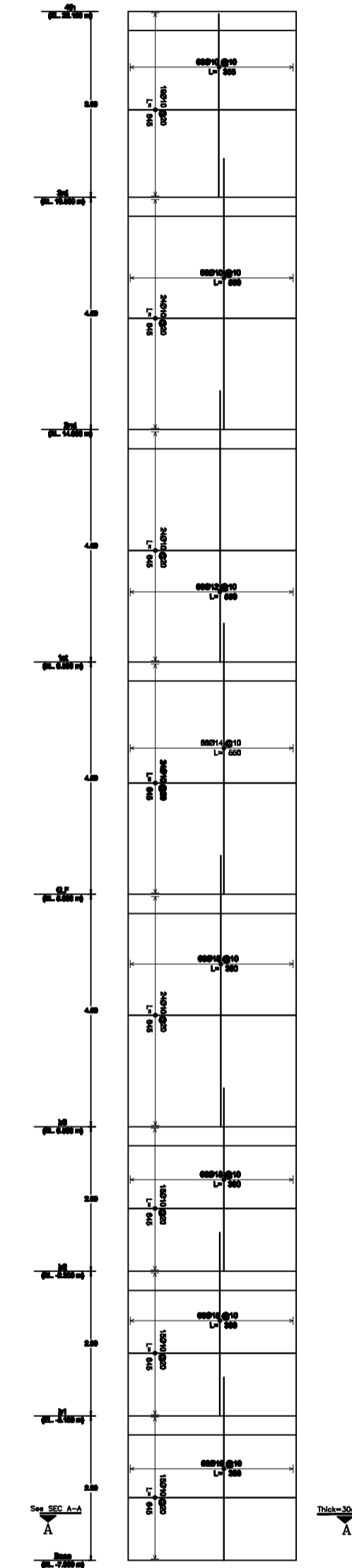
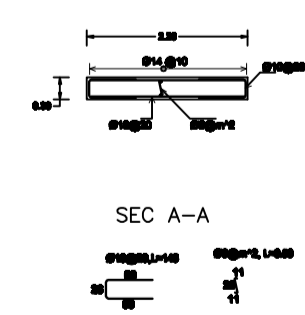
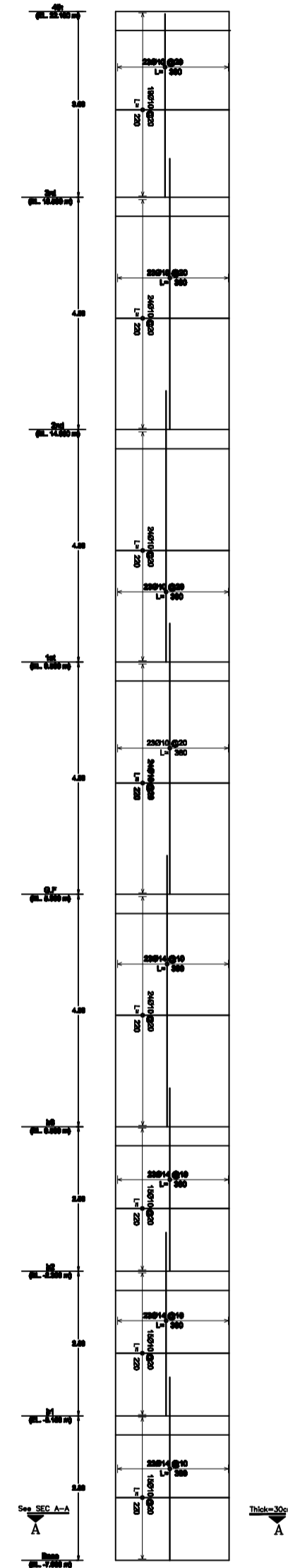
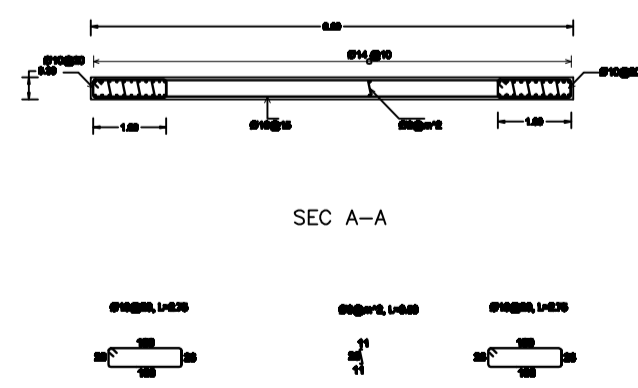
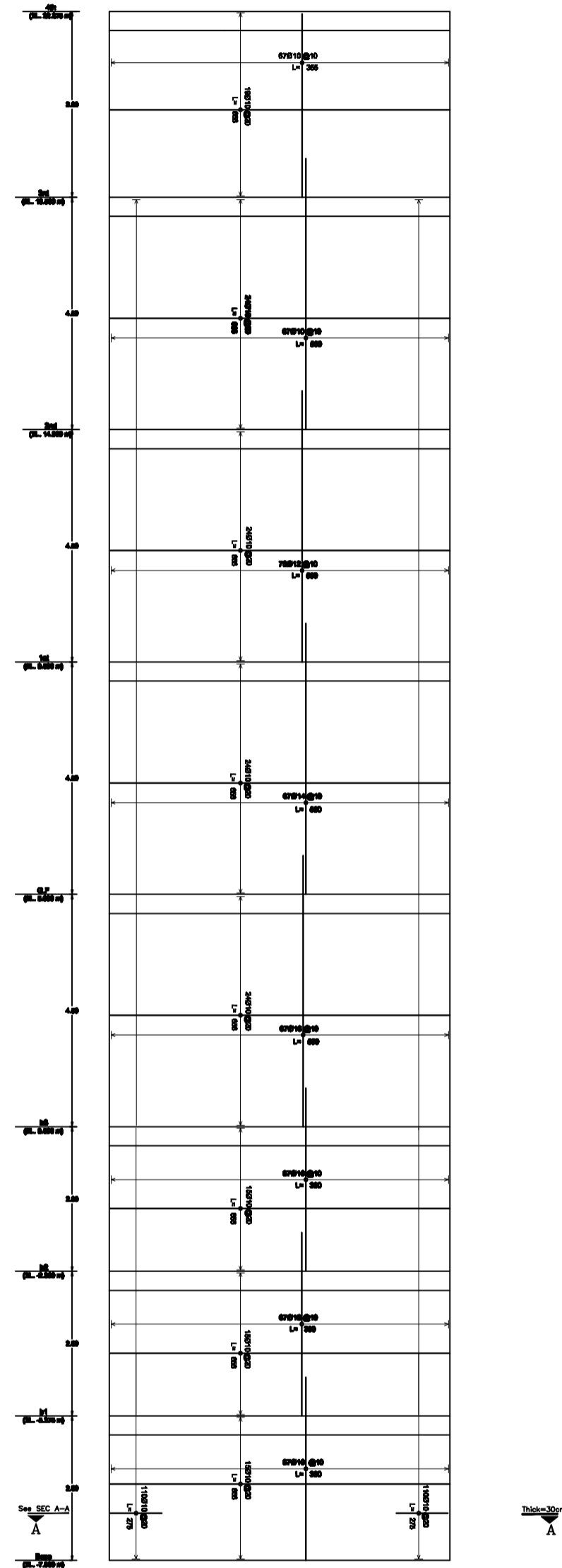
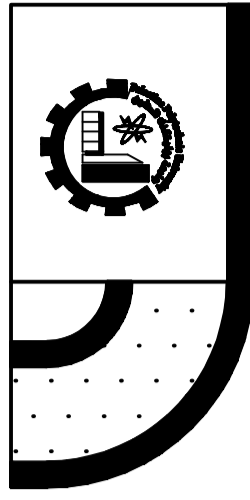
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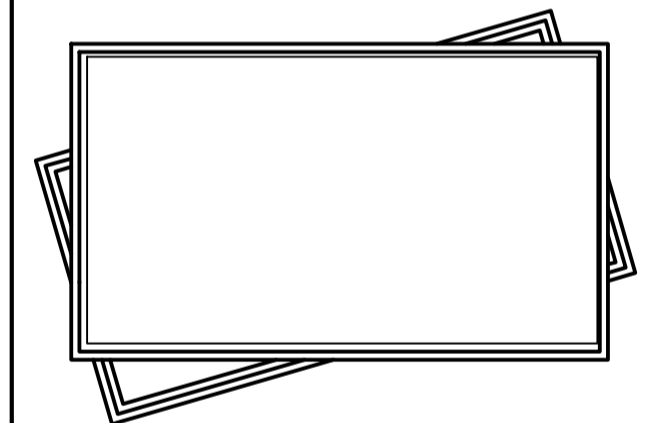
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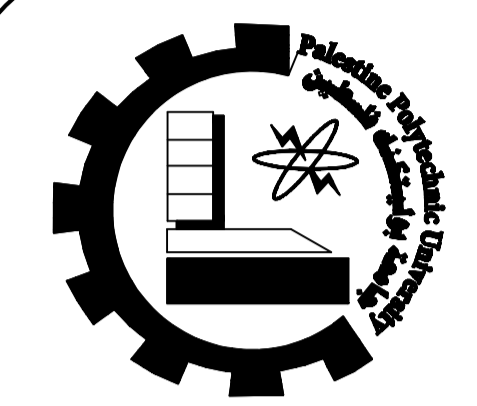
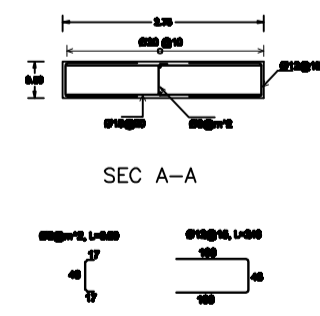
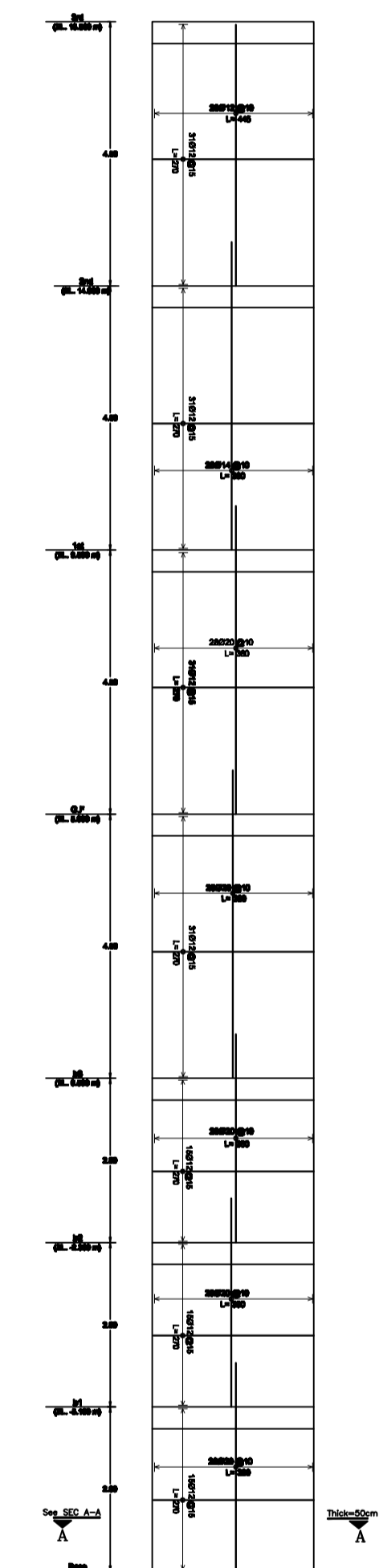
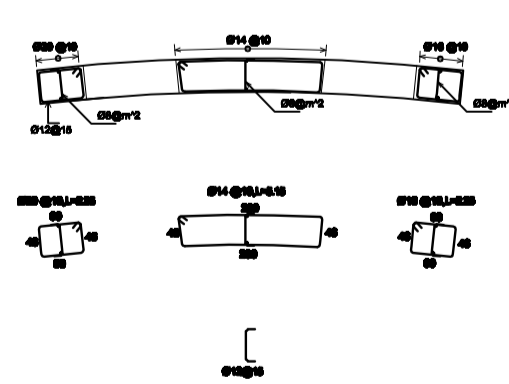
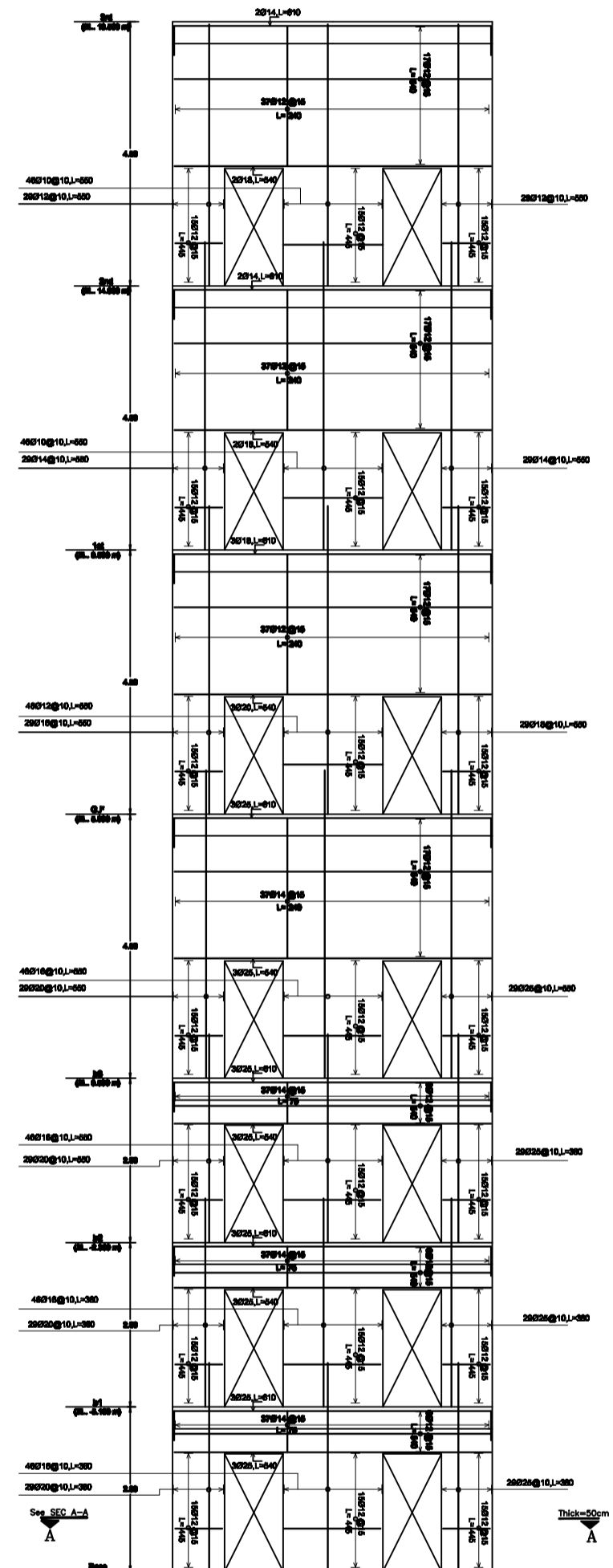
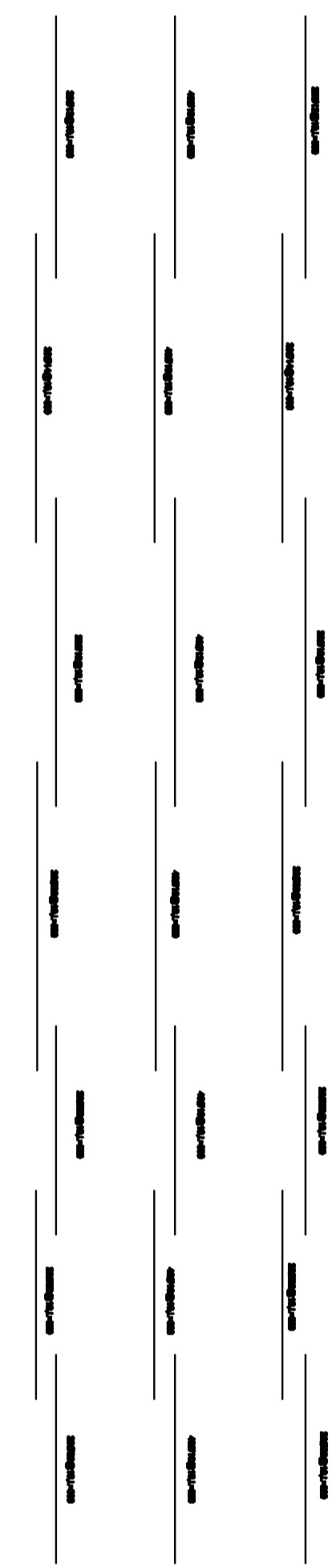
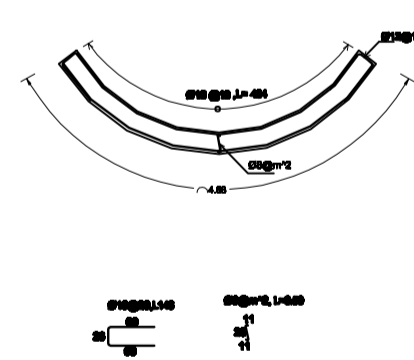
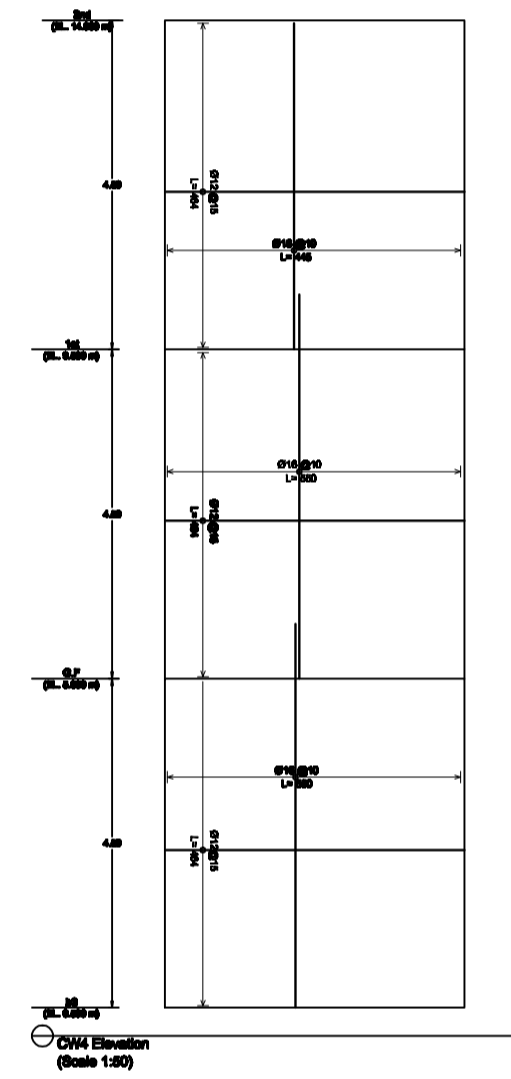
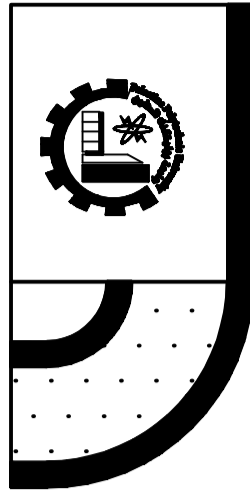
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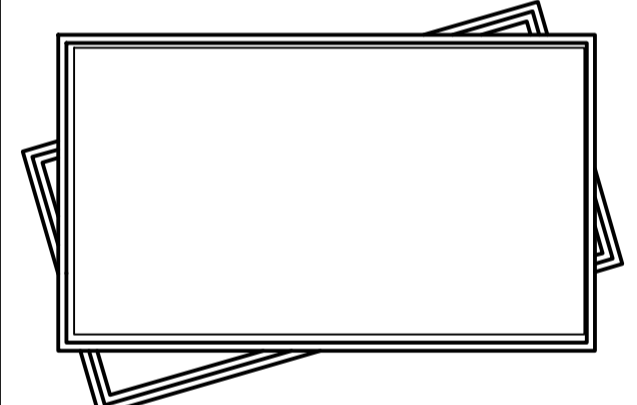
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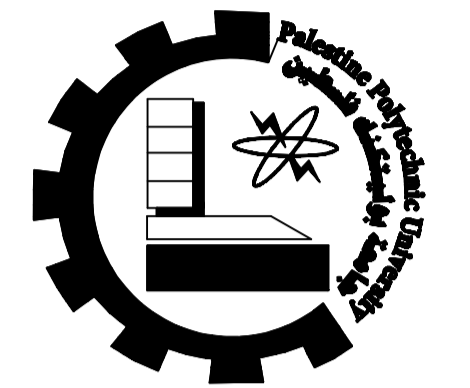
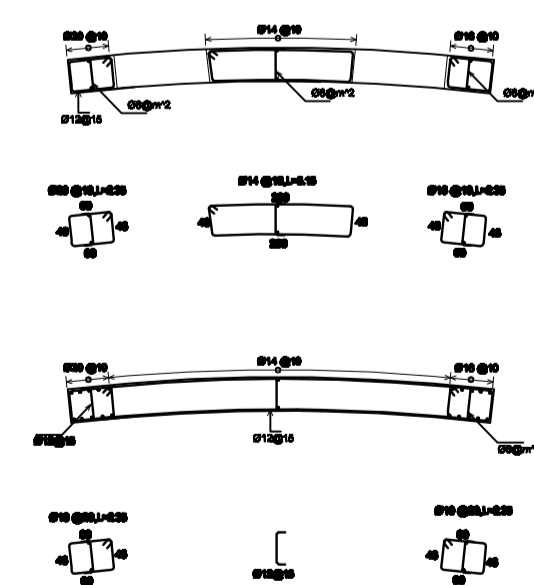
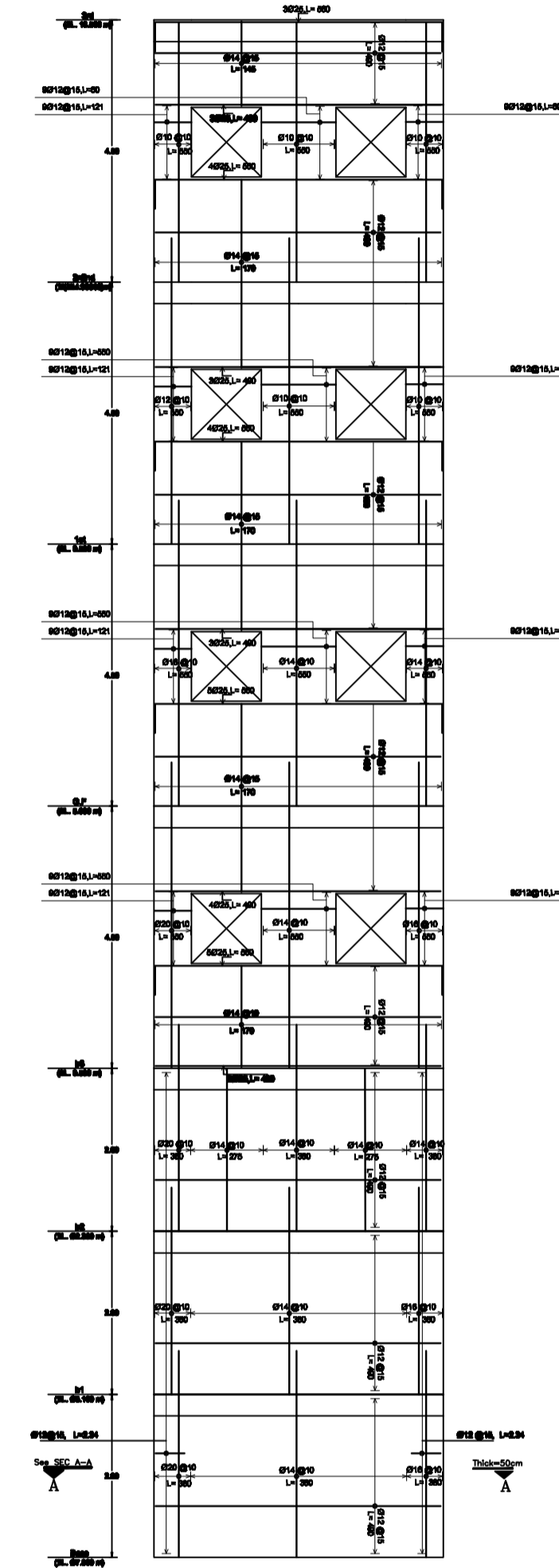
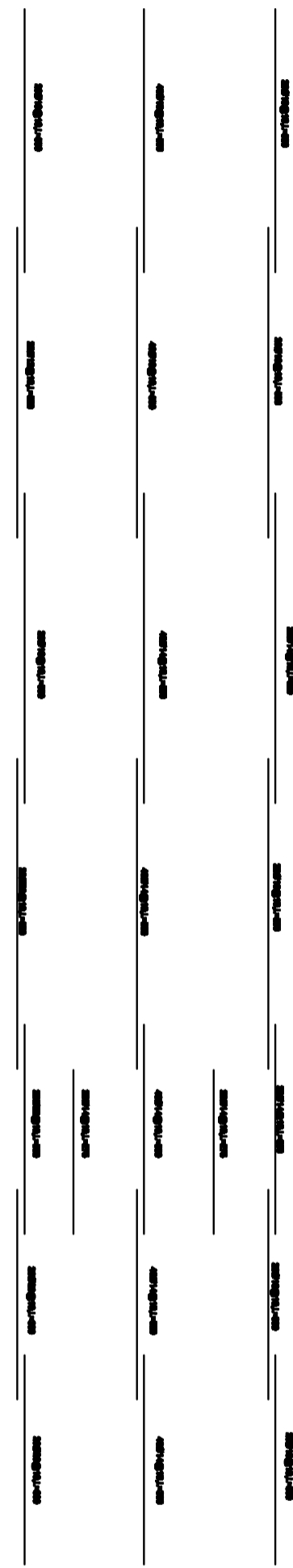
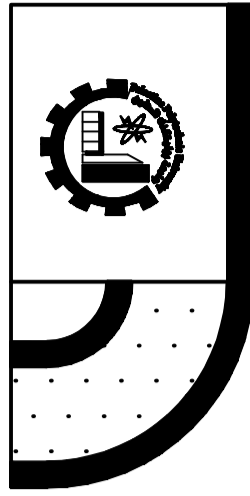
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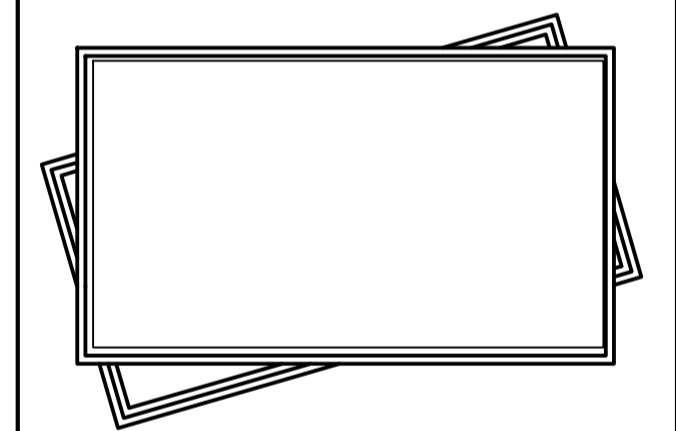
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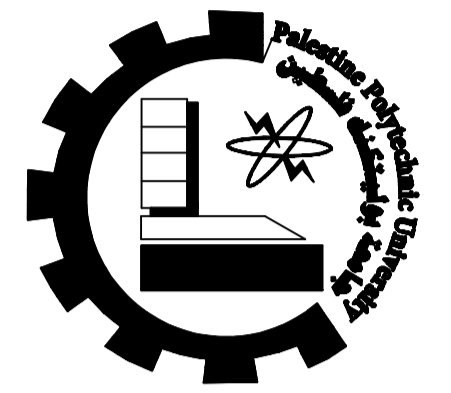
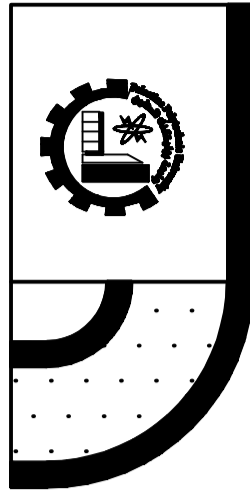
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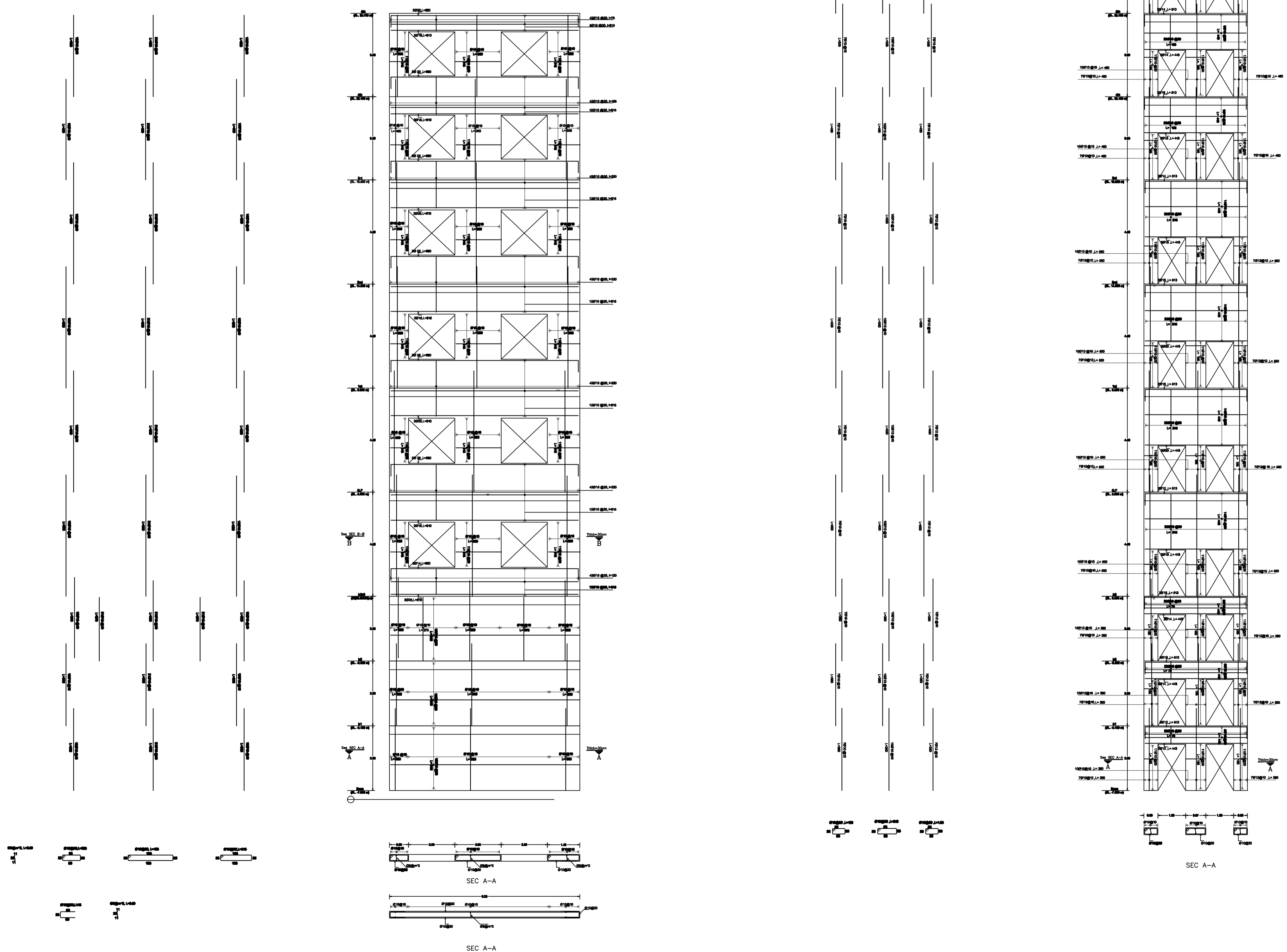
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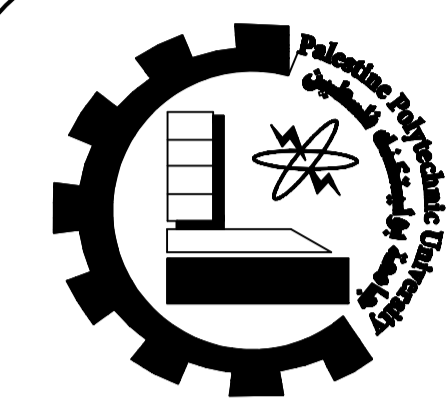
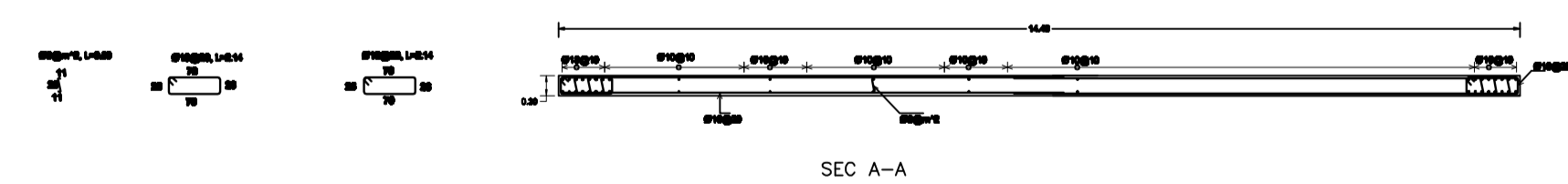
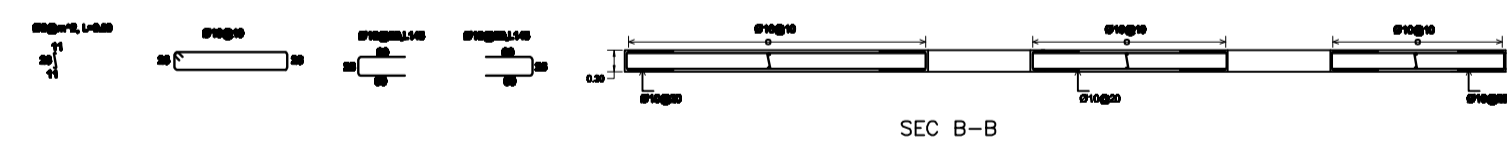
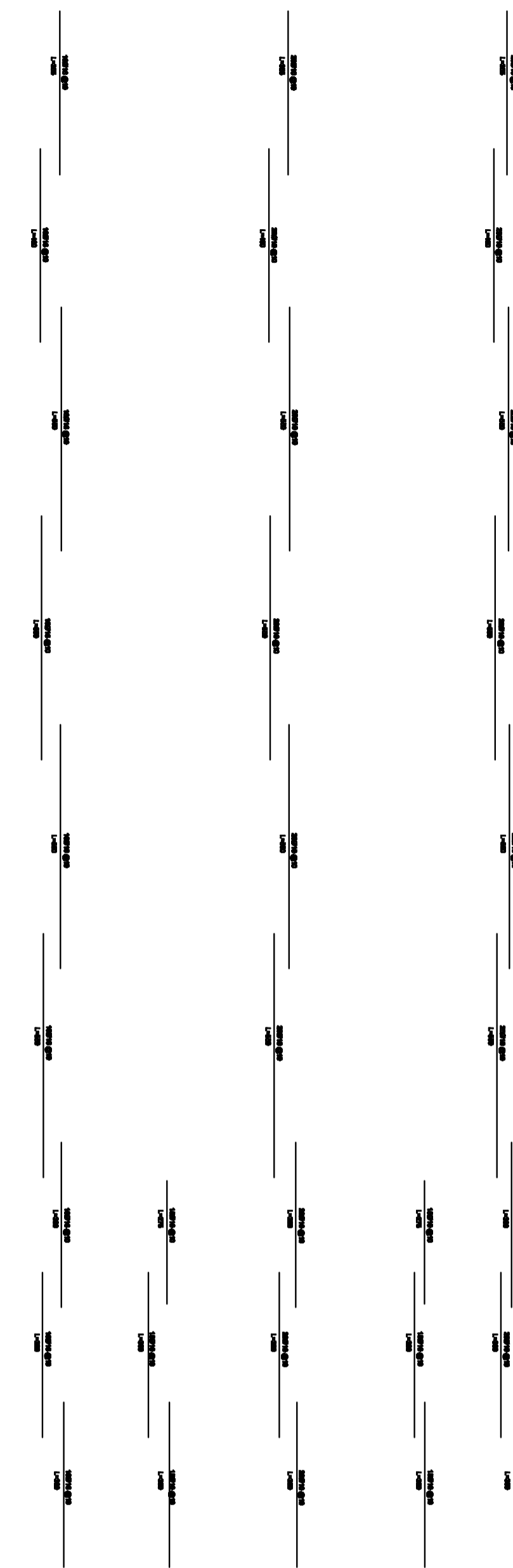
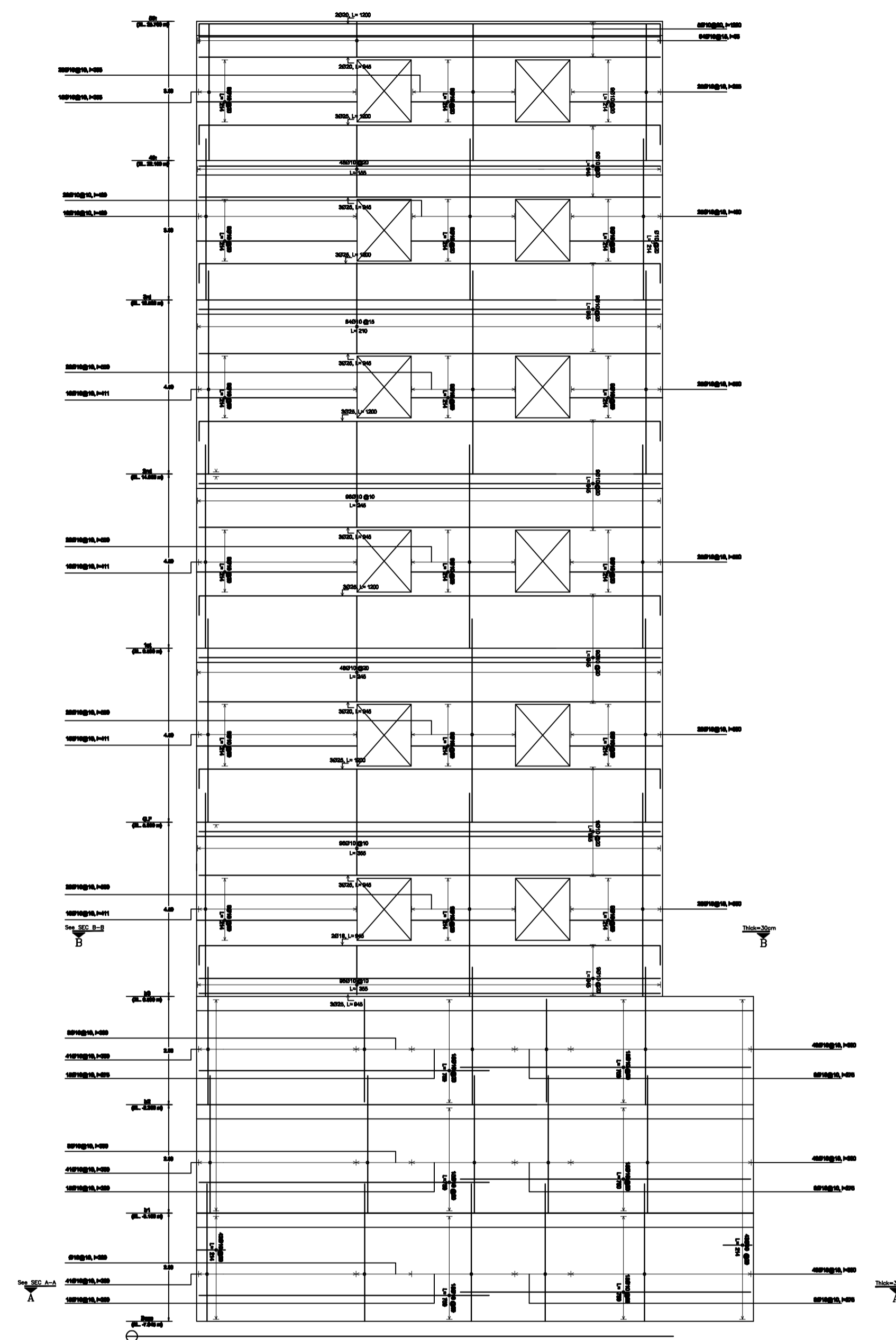
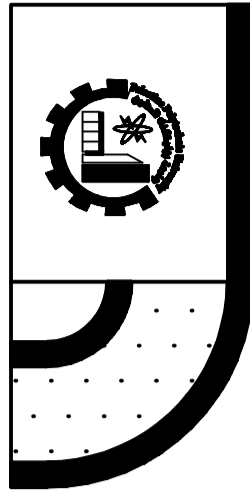
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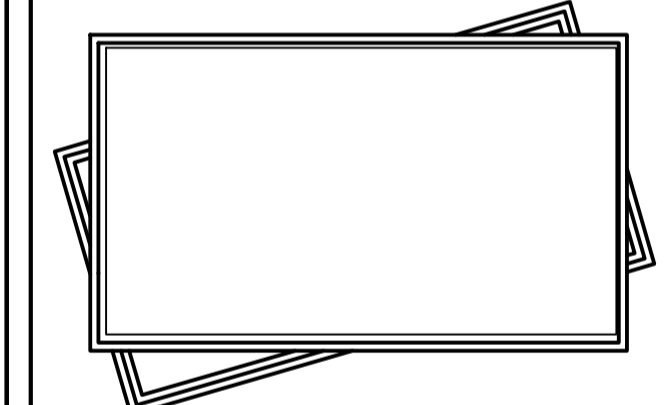
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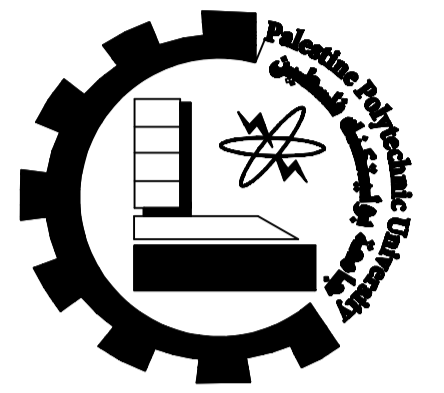
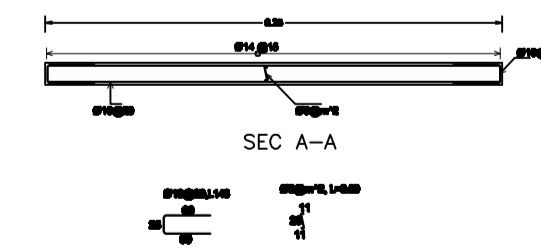
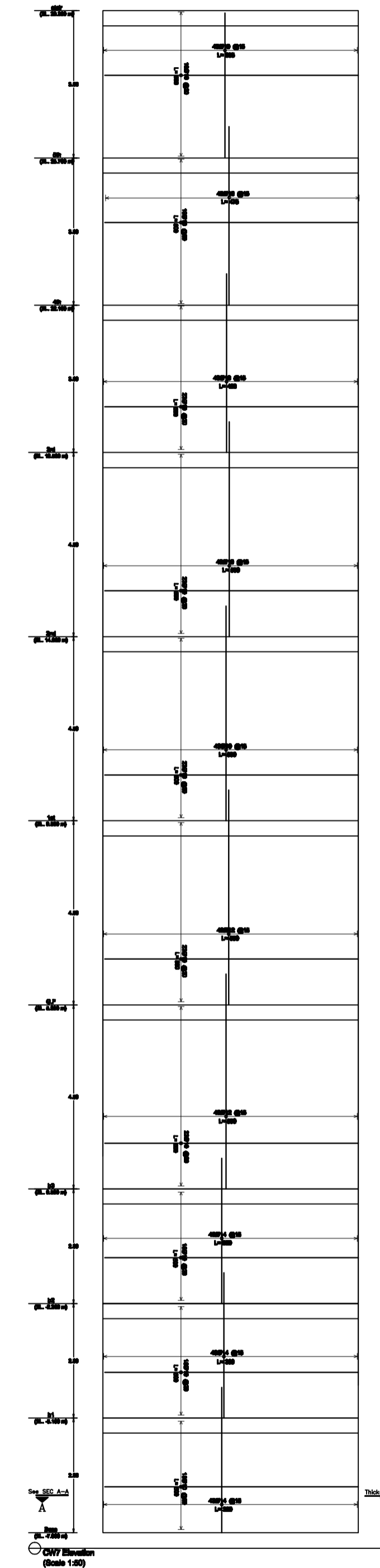
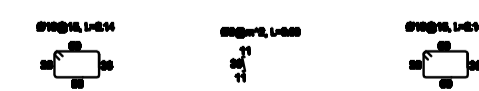
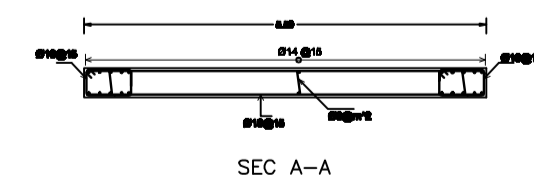
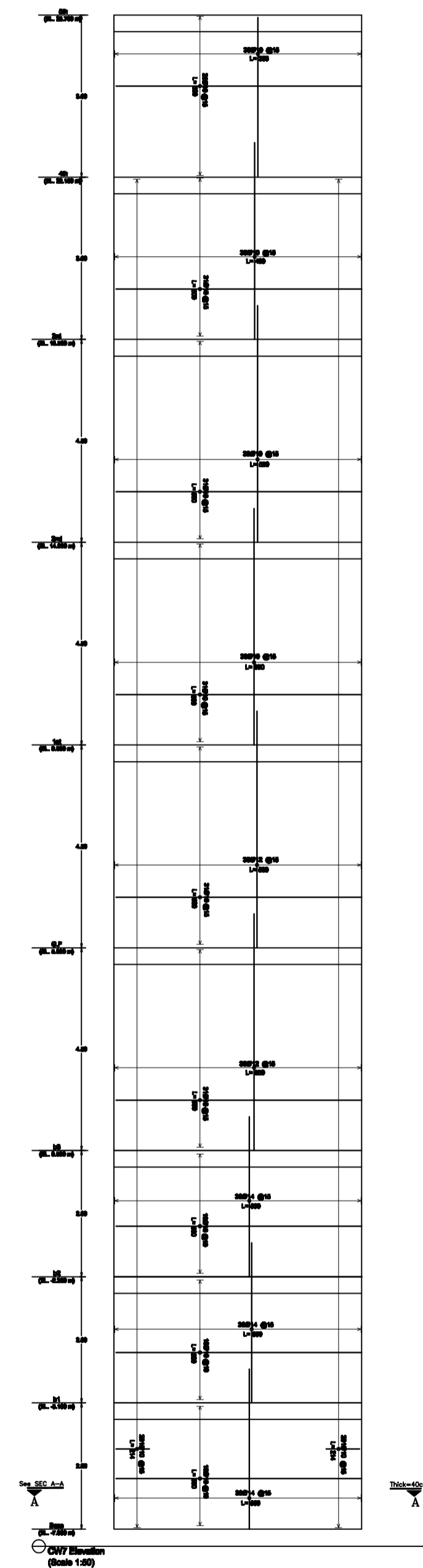
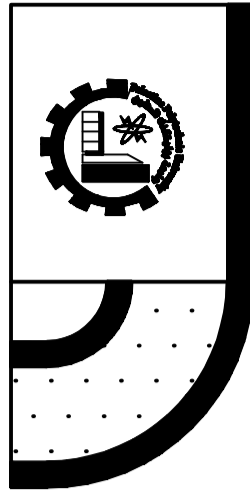
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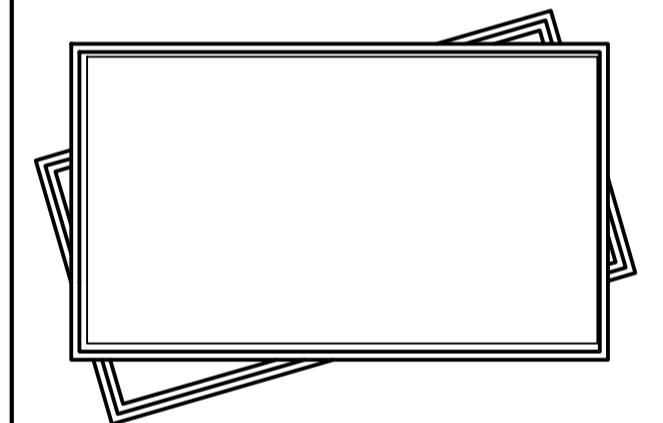
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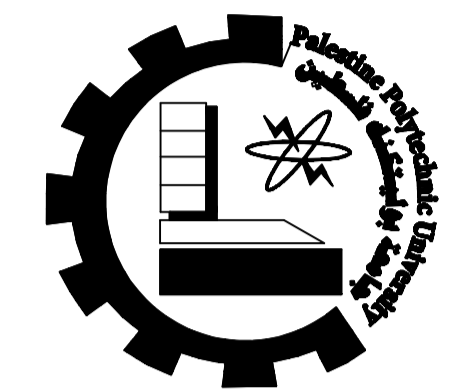
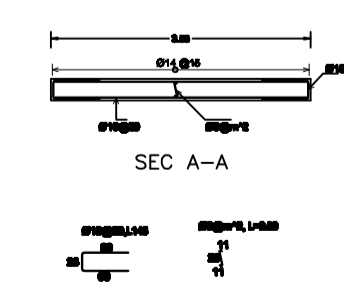
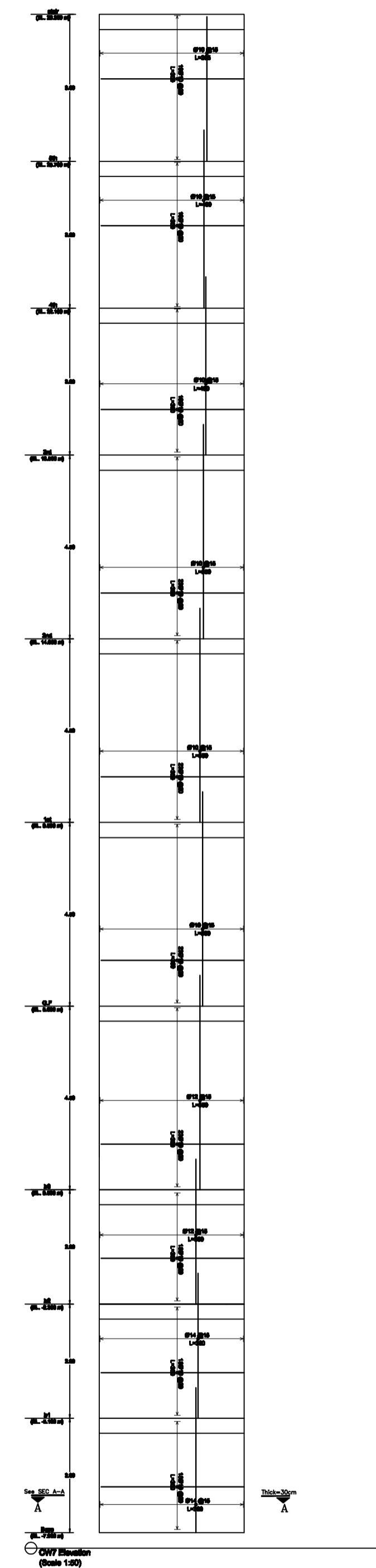
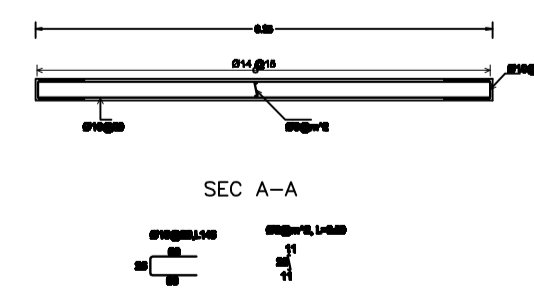
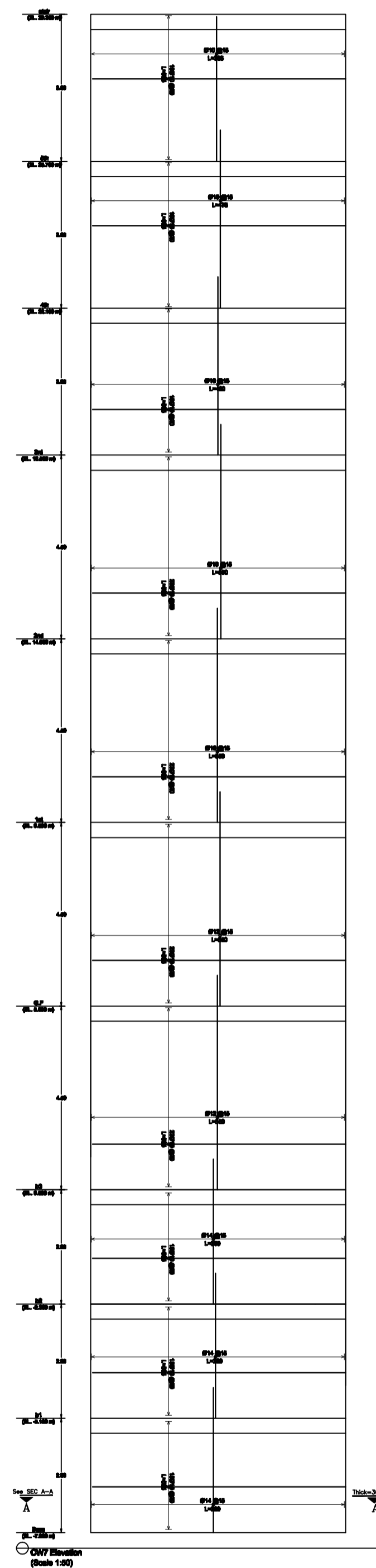
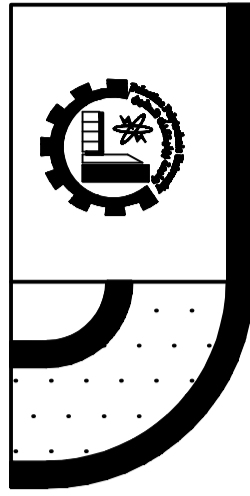
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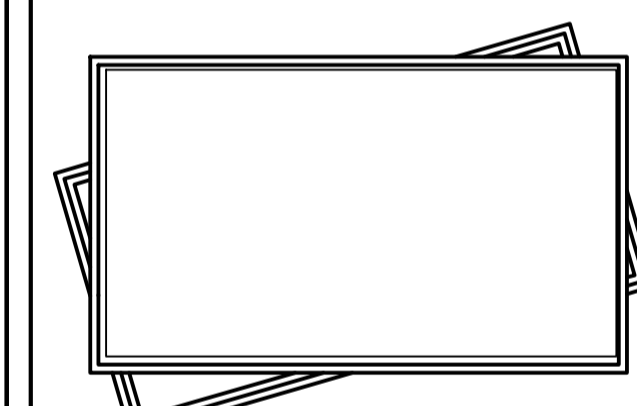
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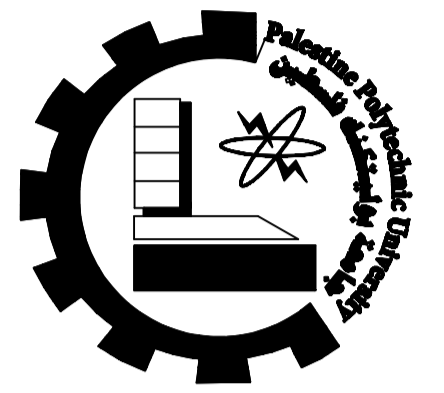
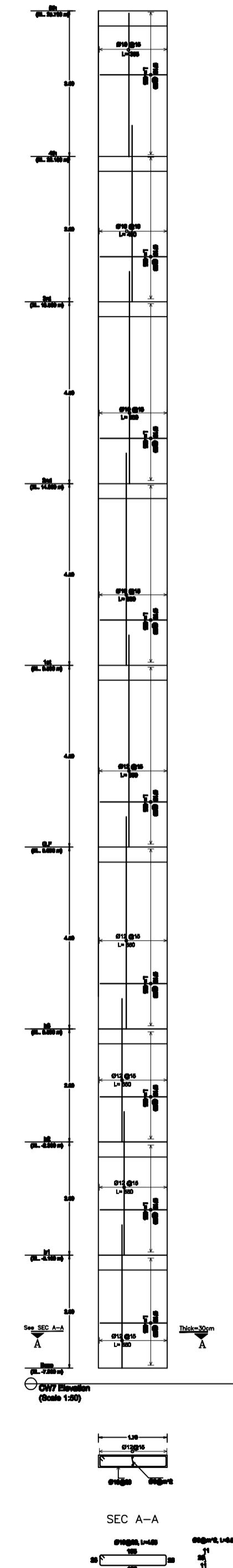
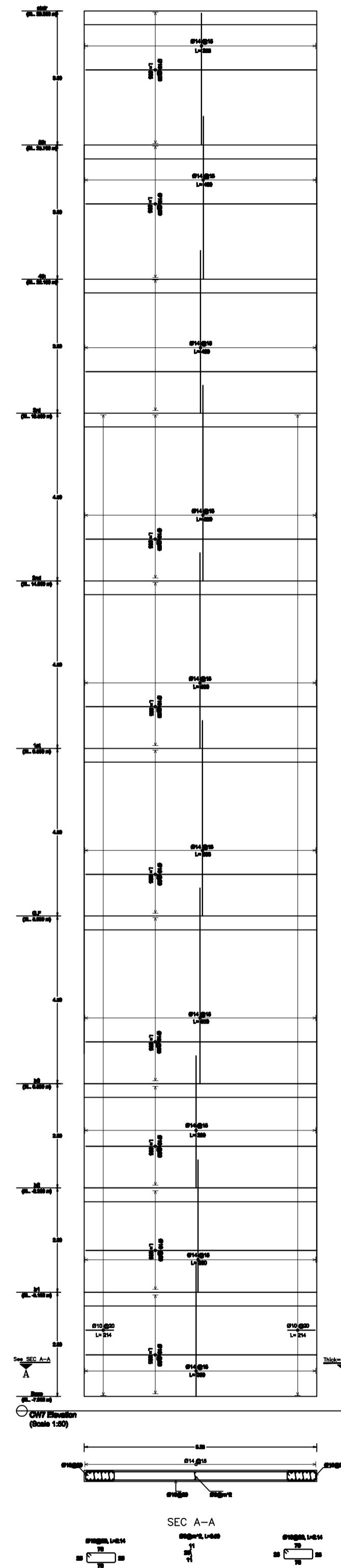
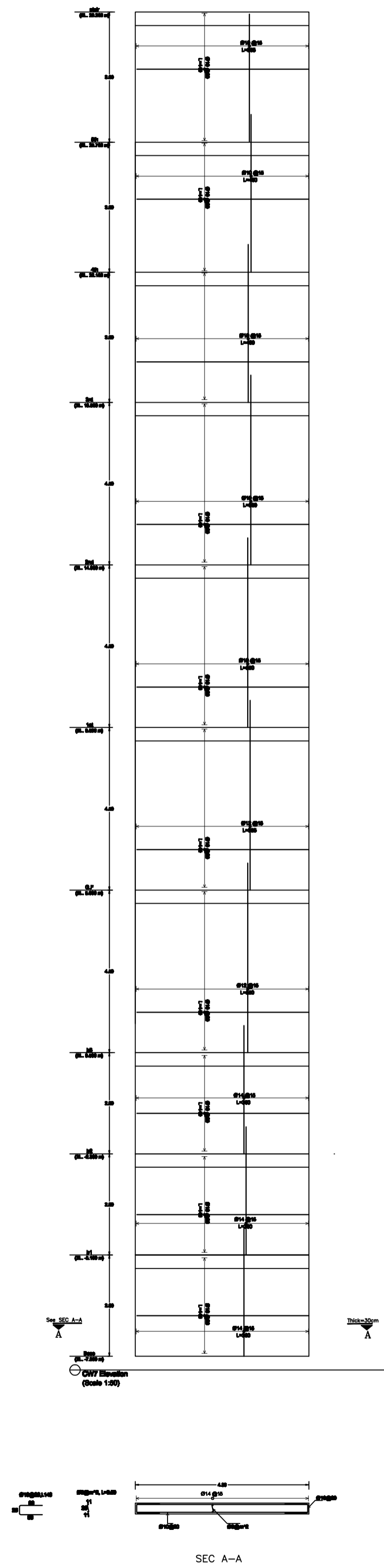
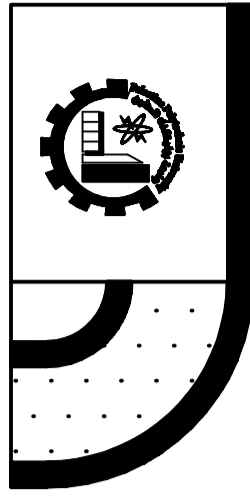
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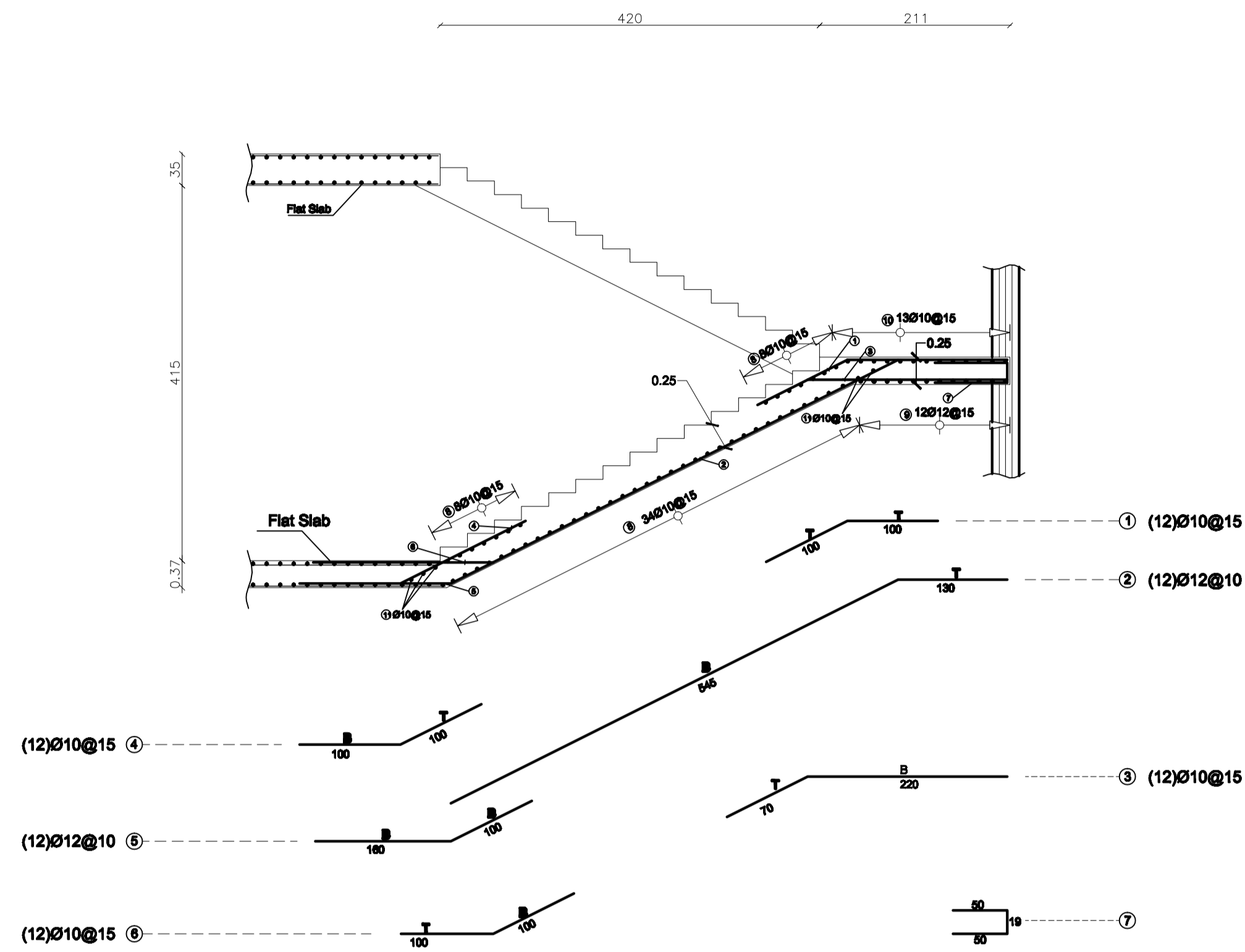
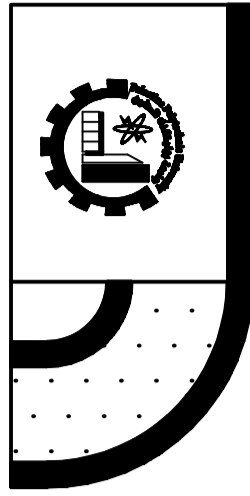
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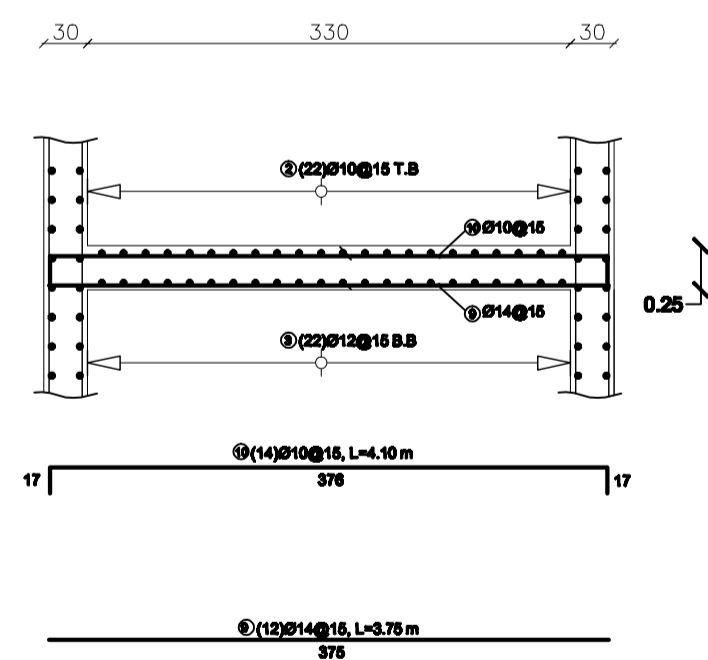
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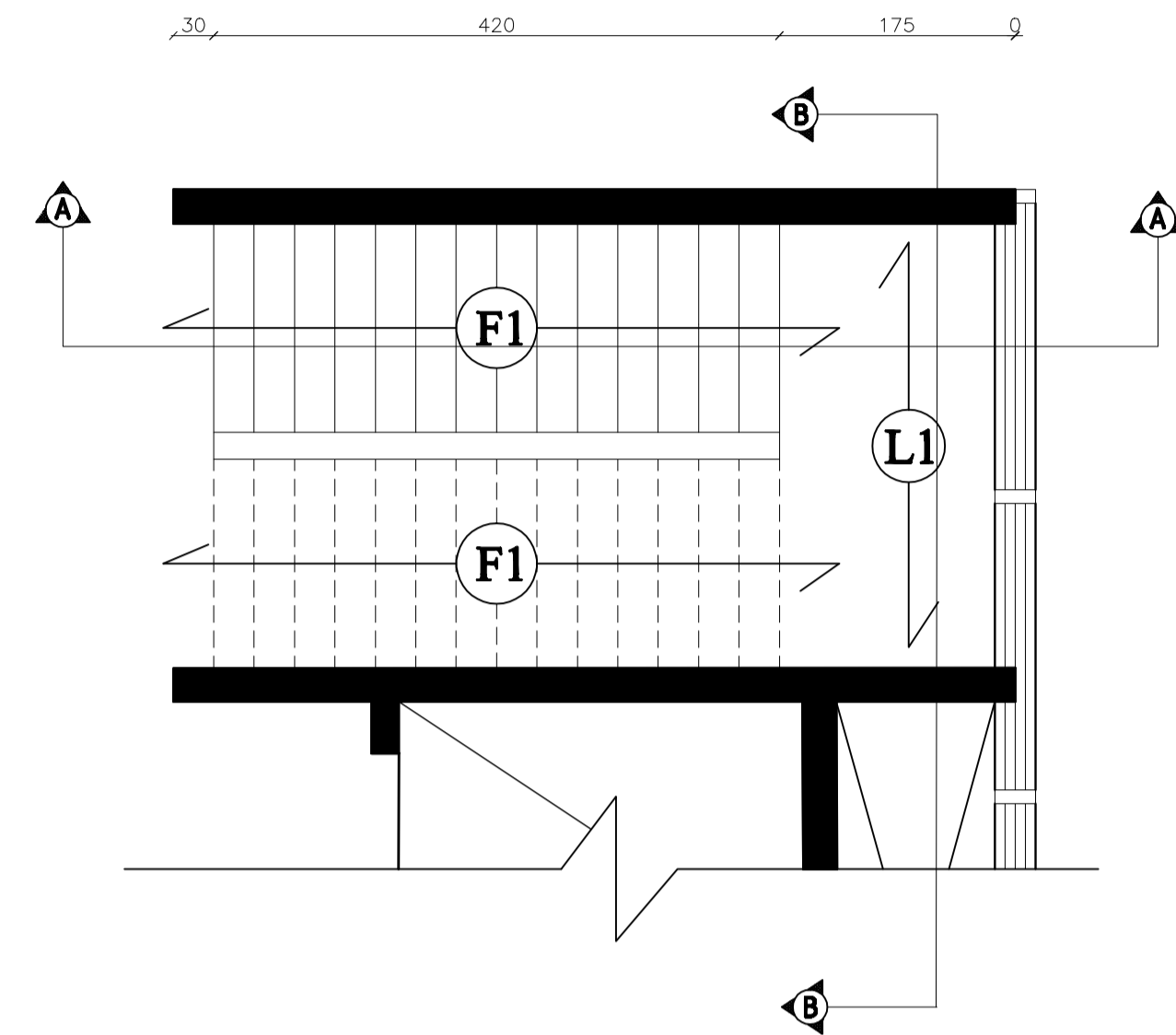
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Section A-A  
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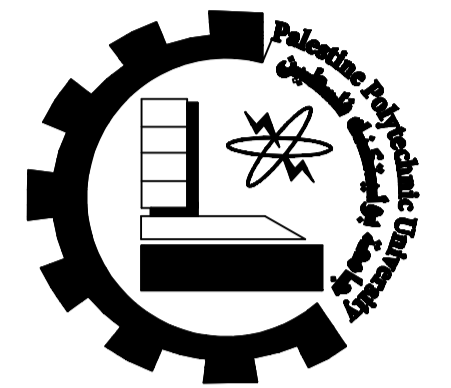


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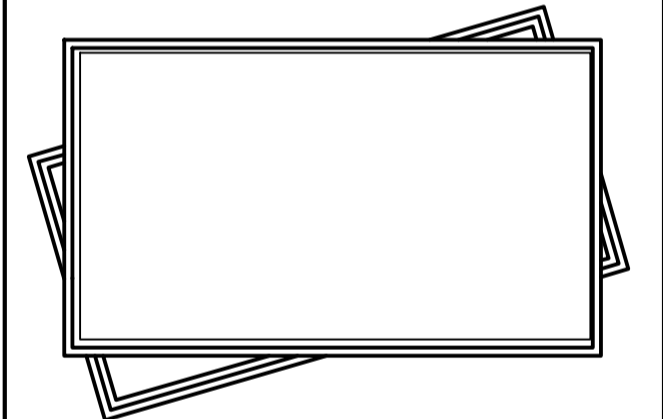
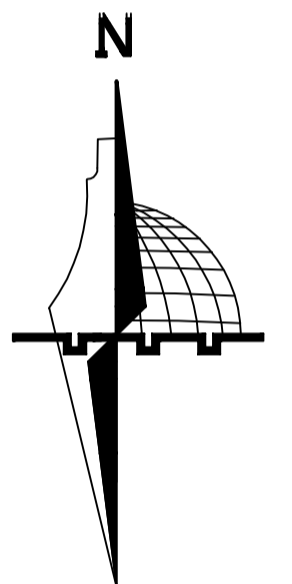


### Reinforcement Steel List

① (12)Ø10/15 ,L= 2.00 m 	② (16)Ø12/10 ,L= 6.75 m 
③ (12)Ø10/15 ,L= 2.90 m 	④ (12)Ø10/15 ,L= 2.00 m 
⑤ (16)Ø12/10 ,L= 2.60 m 	⑥ (12)Ø12/15 ,L= 2.00 m 
⑦ (26)Ø10/15 ,L= 1.19 m 	⑧ (50)Ø10/15 ,L= 1.50 m 
⑨ (12)Ø12/15 ,L= 3.85 m 	⑩ (13)Ø10/15 ,L= 4.25 m 
⑪ (5)Ø10/15 ,L= 3.85 m 	



PALESTINE POLYTECHNIC UNIVERSITY  
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Architecture ENGINEERING



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Montaser Qazzaz  
Mohammad Talahmah  
Ammar AL-rjoub

Supervisor:

Eng. Mona AL-Shaar

Project: Structural Design For  
Proposed  
Commercial Complex

In:  
ALBERE

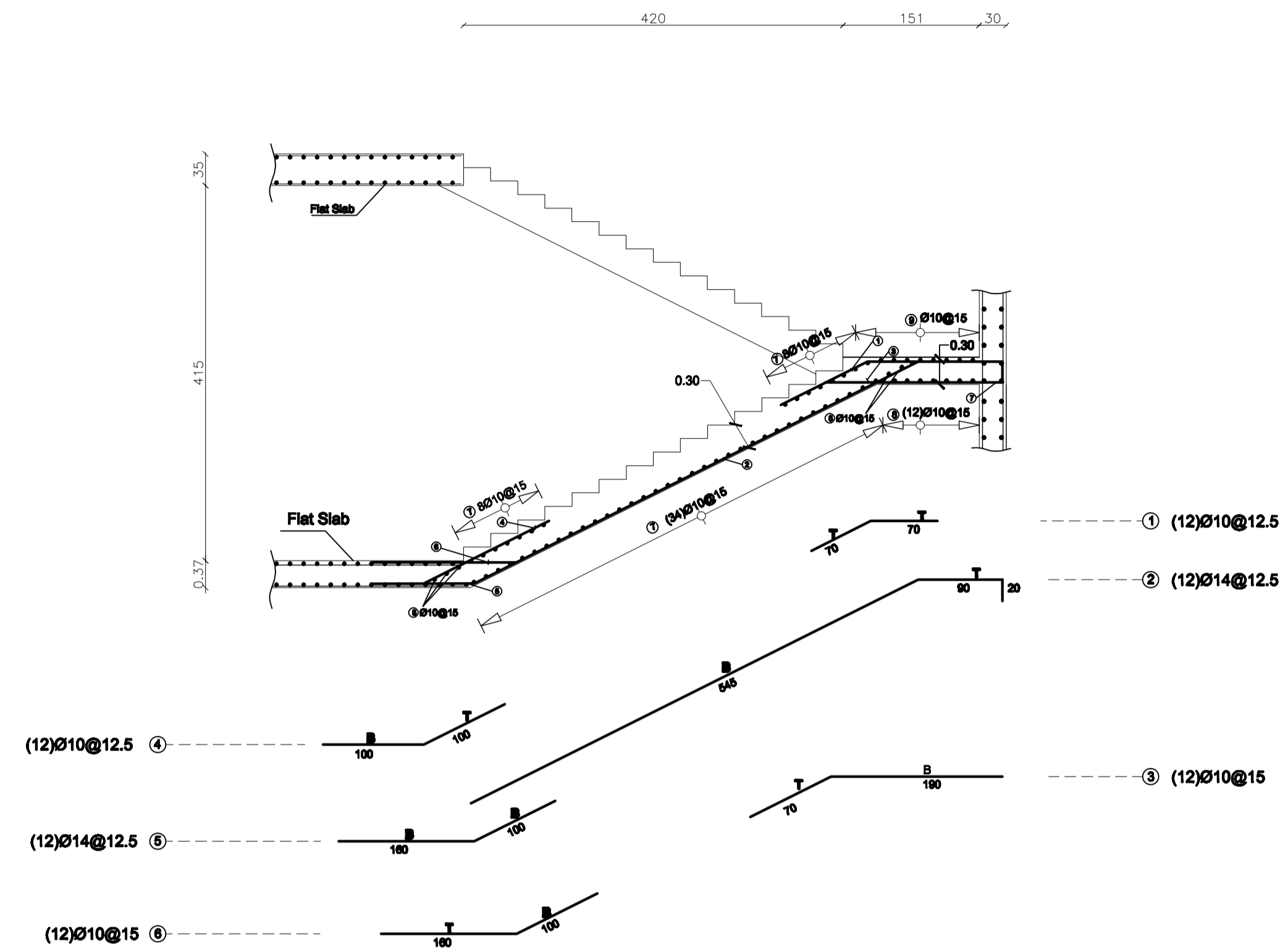
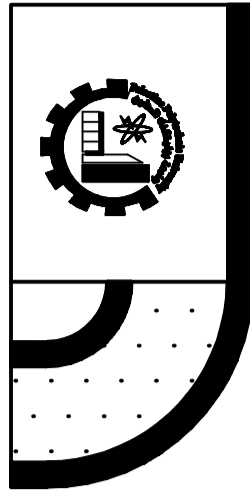
Drawing :

Right Stair Details

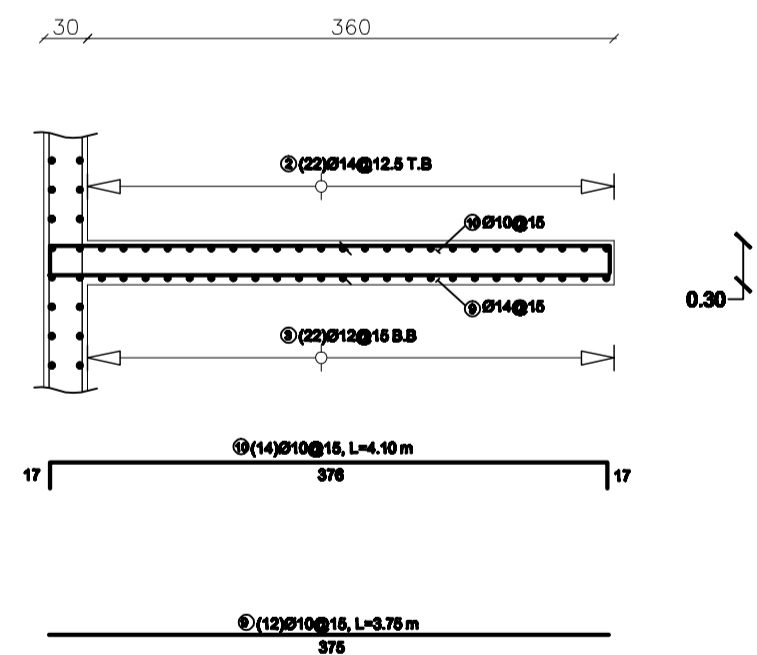
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Scale :  
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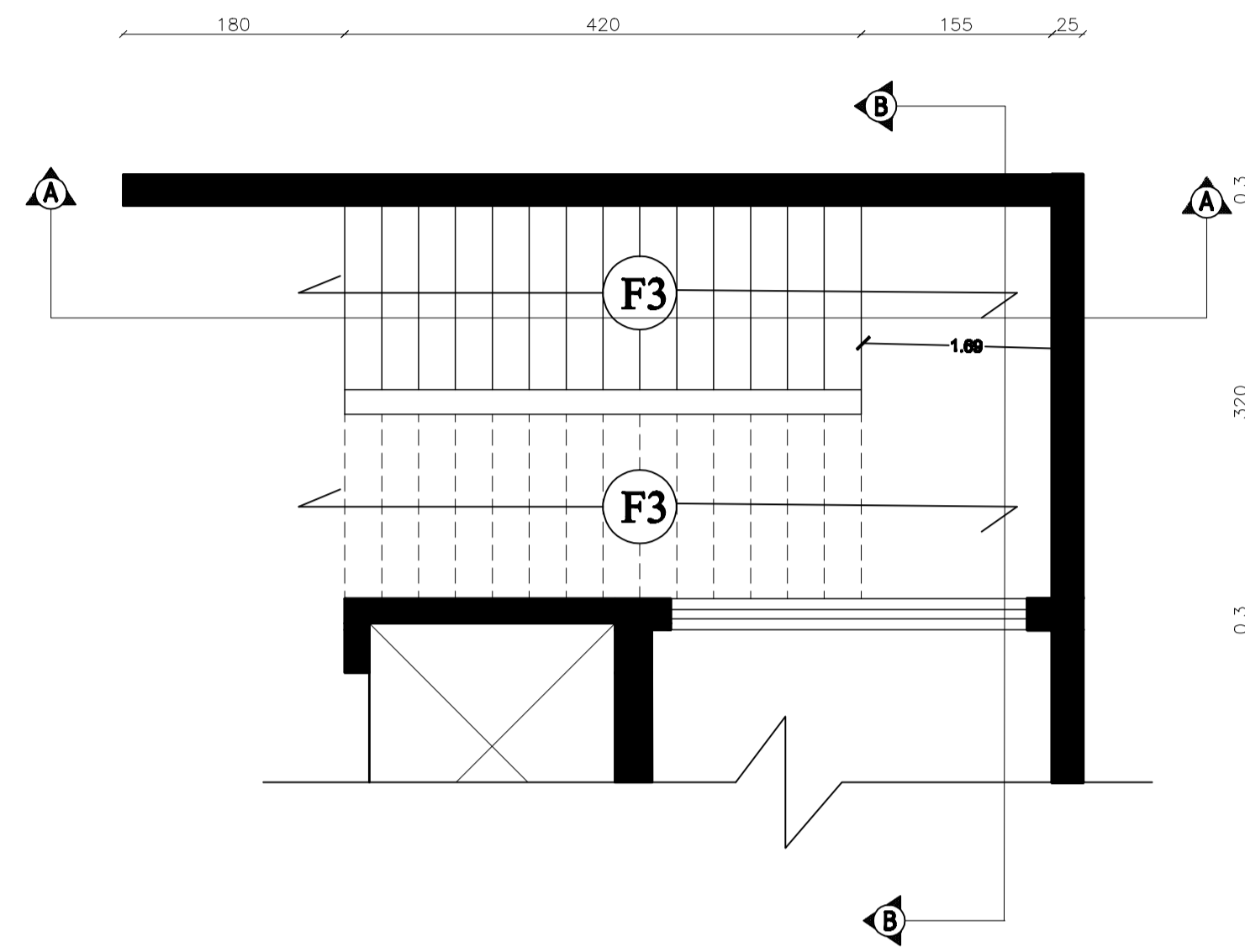
Date :  
Dec-2019



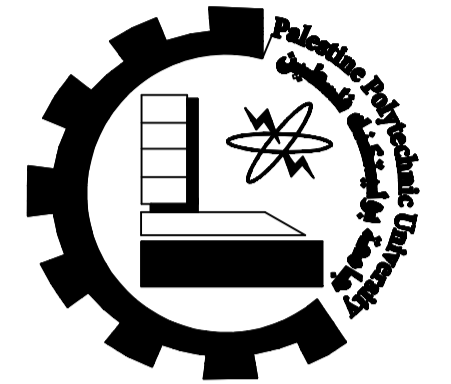
Section A-A  
Scale 1:25



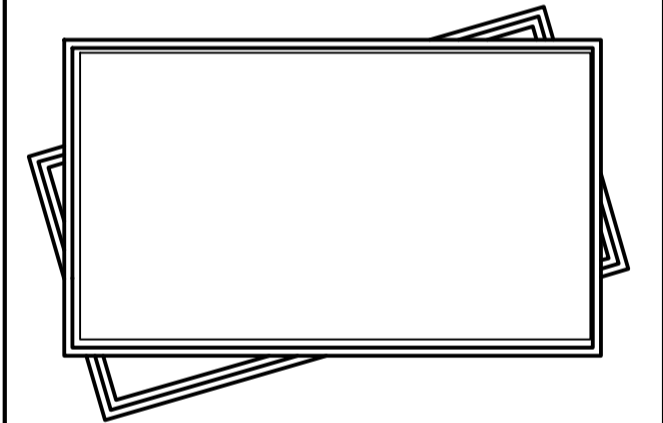
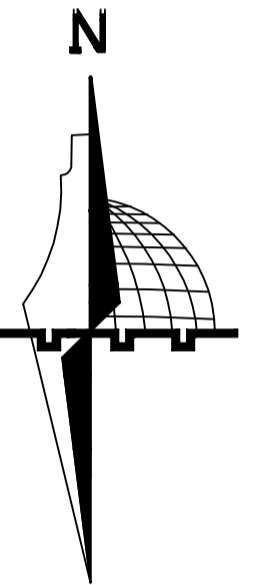
Section B-B  
Scale 1:25



Reinforcement Steel List	
① (14)Ø10/12.5 ,L= 1.40 m 	② (14)Ø14/12.5 ,L= 6.55 m 
③ (12)Ø10/15 ,L= 2.60 m 	④ (14)Ø10/12.5 ,L= 2.00 m 
⑤ (14)Ø14/12.5 ,L= 2.60 m 	⑥ (12)Ø10/15 ,L= 2.6 m 
⑦ (50)Ø12/15 ,L= 1.50 m 	⑧ (13)Ø10/15 ,L= 3.85 m 
⑨ (8)Ø10/15 ,L= 4.25 m 	



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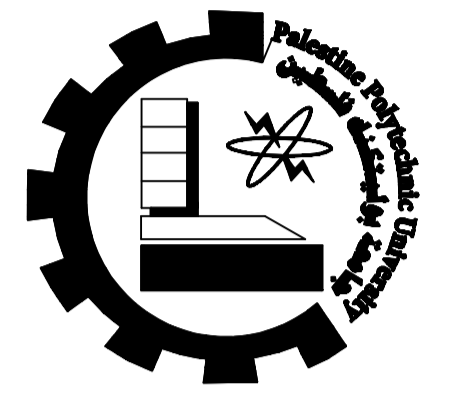
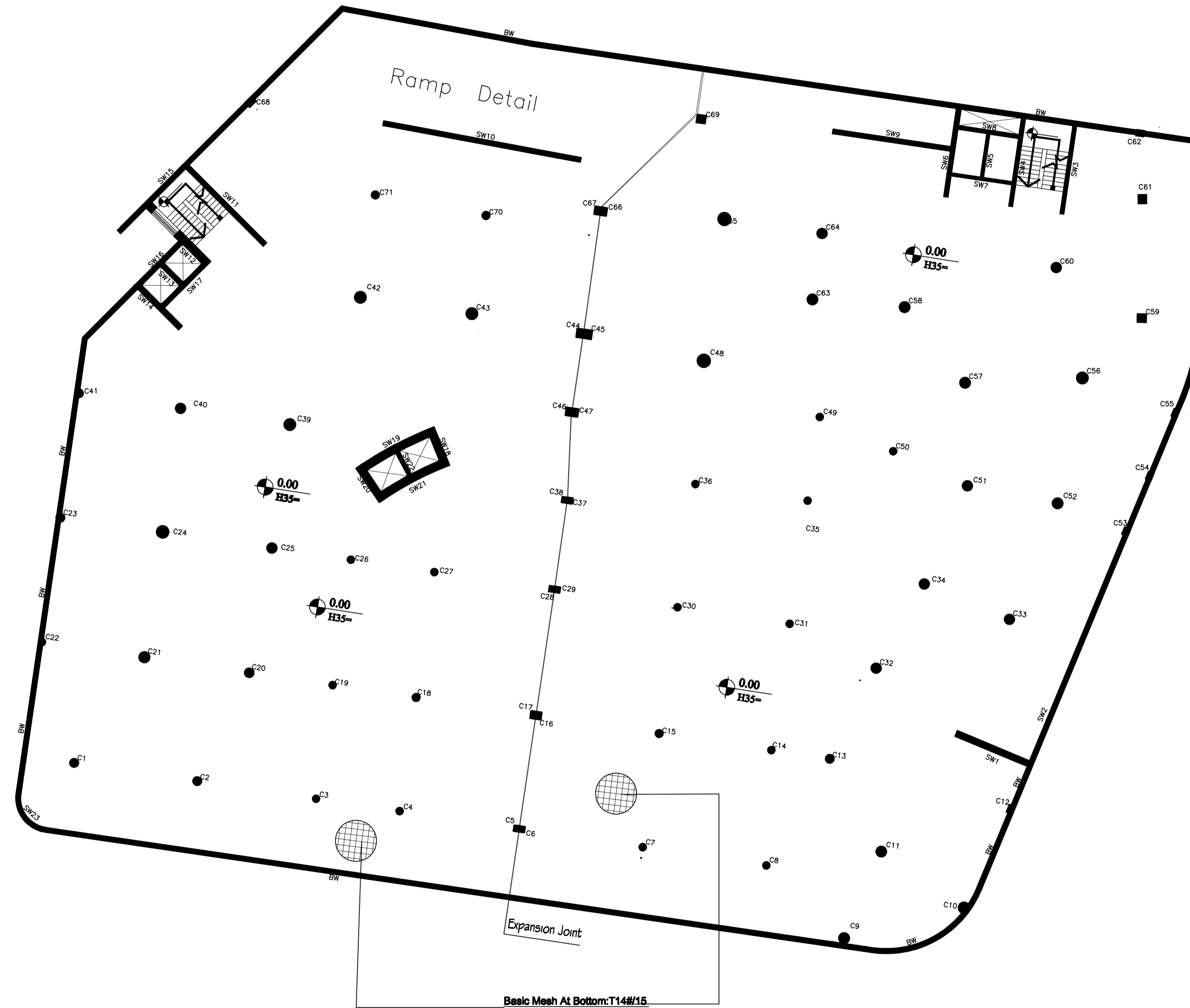
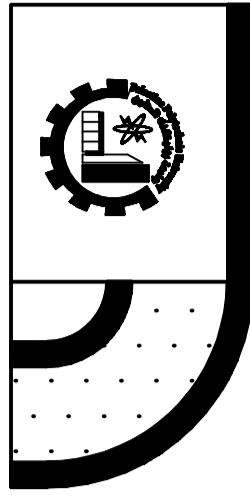
Project: Structural Design For  
Proposed  
Commercial Complex

In:  
ALBERE

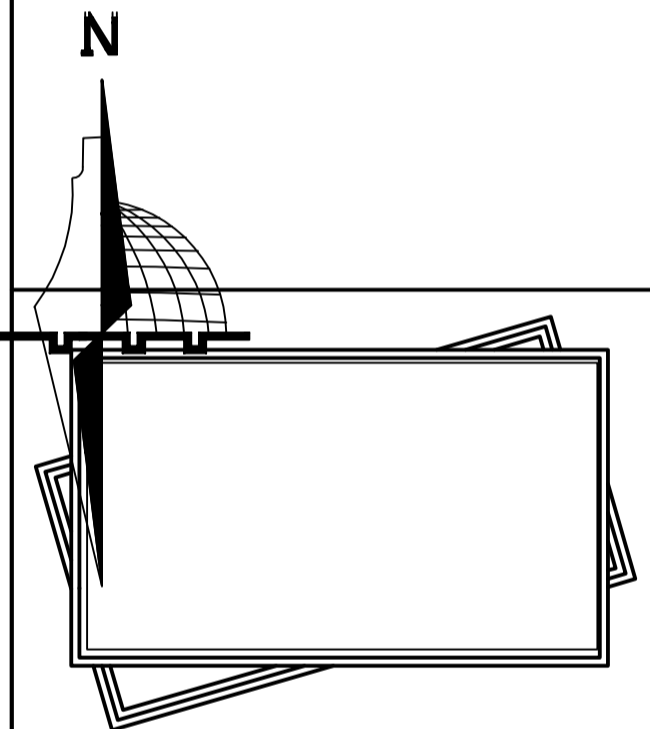
Drawing :  
left Stair Details

NO: S(36)

Scale : 1:200 Date : Dec-2019



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Project: Structural Design For  
 Proposed  
 Commercial Cplx

In:  
 ALBERE

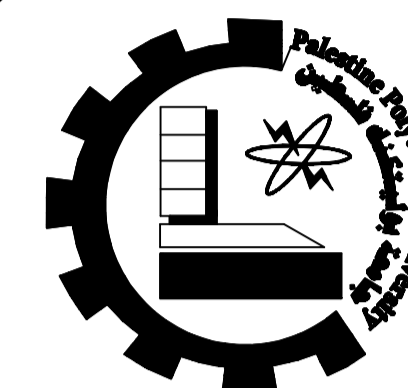
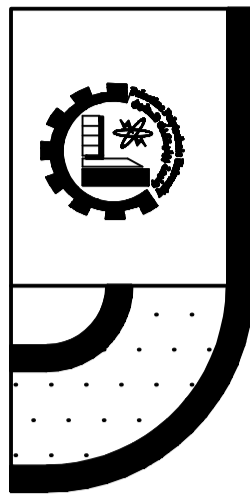
Drawing: Basement(1) Floor Slab  
 Bottom Reinforcement

NO: S(37)

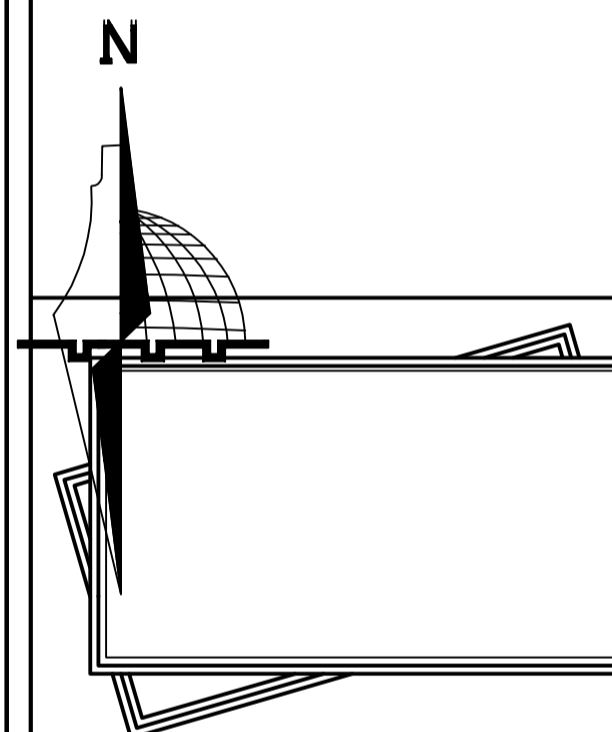
Scale: 1:200 Date: Dec-2019

S  
37

B2&B3 Floor Slab  
 SCALE 1/200



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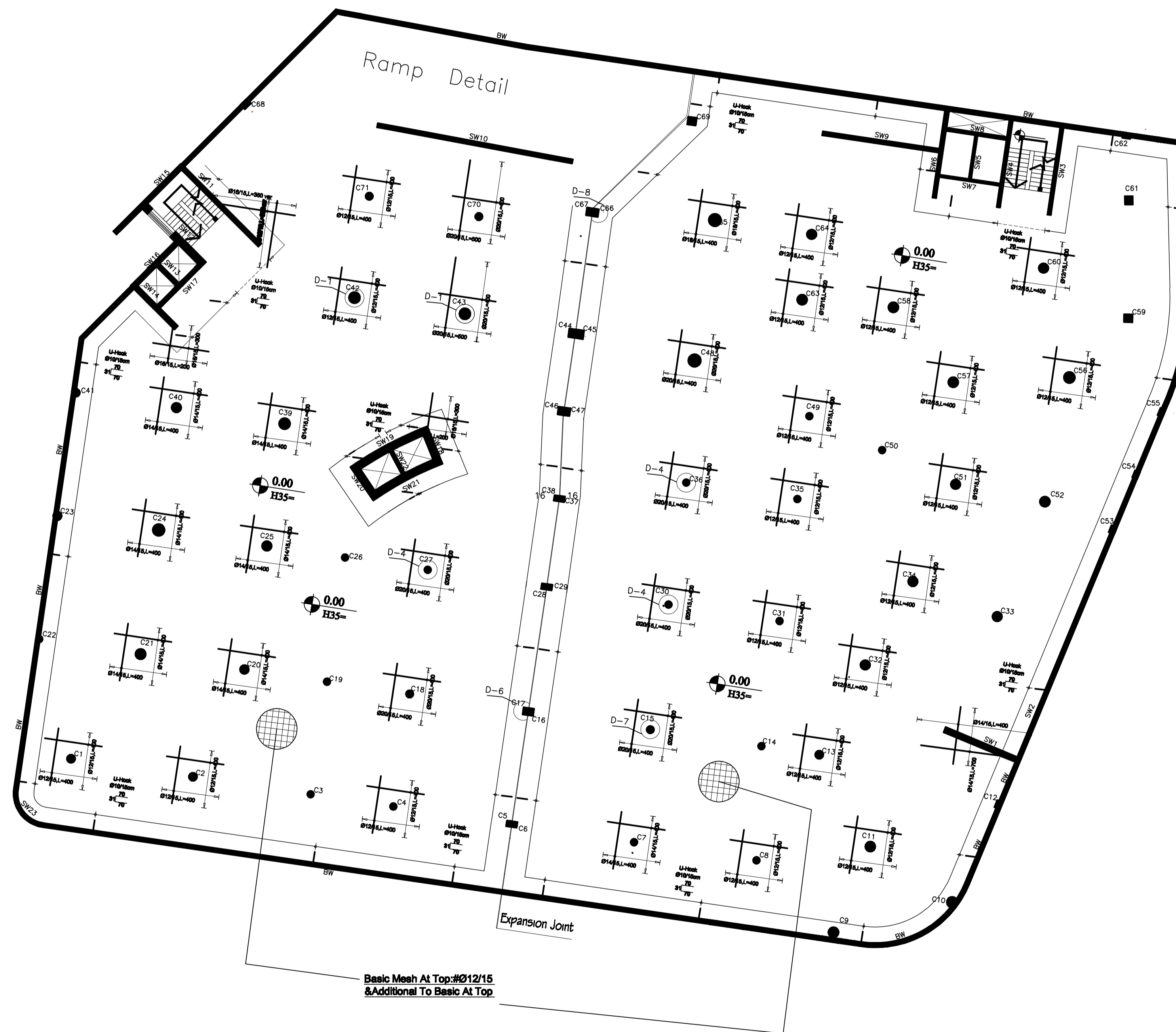
Project: Structural Design For  
 Proposed  
 Commercial Complex

In:  
 ALBERE

Drawing:  
 Basement(1) Floor Slab  
 Additional To Top Reinforcement

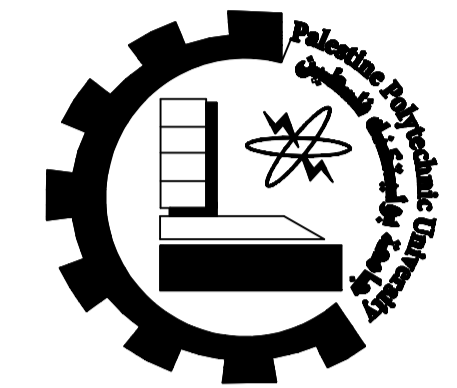
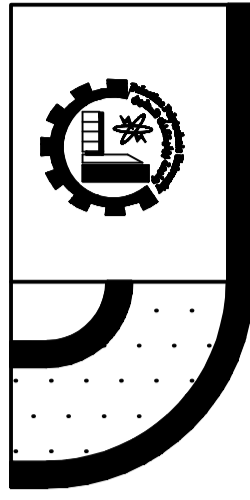
NO: S(38)

Scale: 1:200 Date: Dec-2019

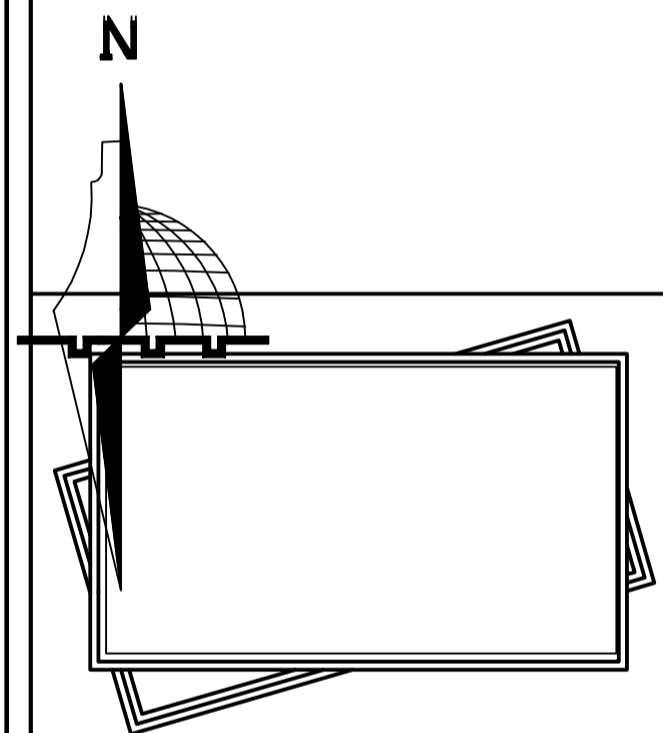


S  
38

B2&B3 Floor Slab  
 SCALE 1/200



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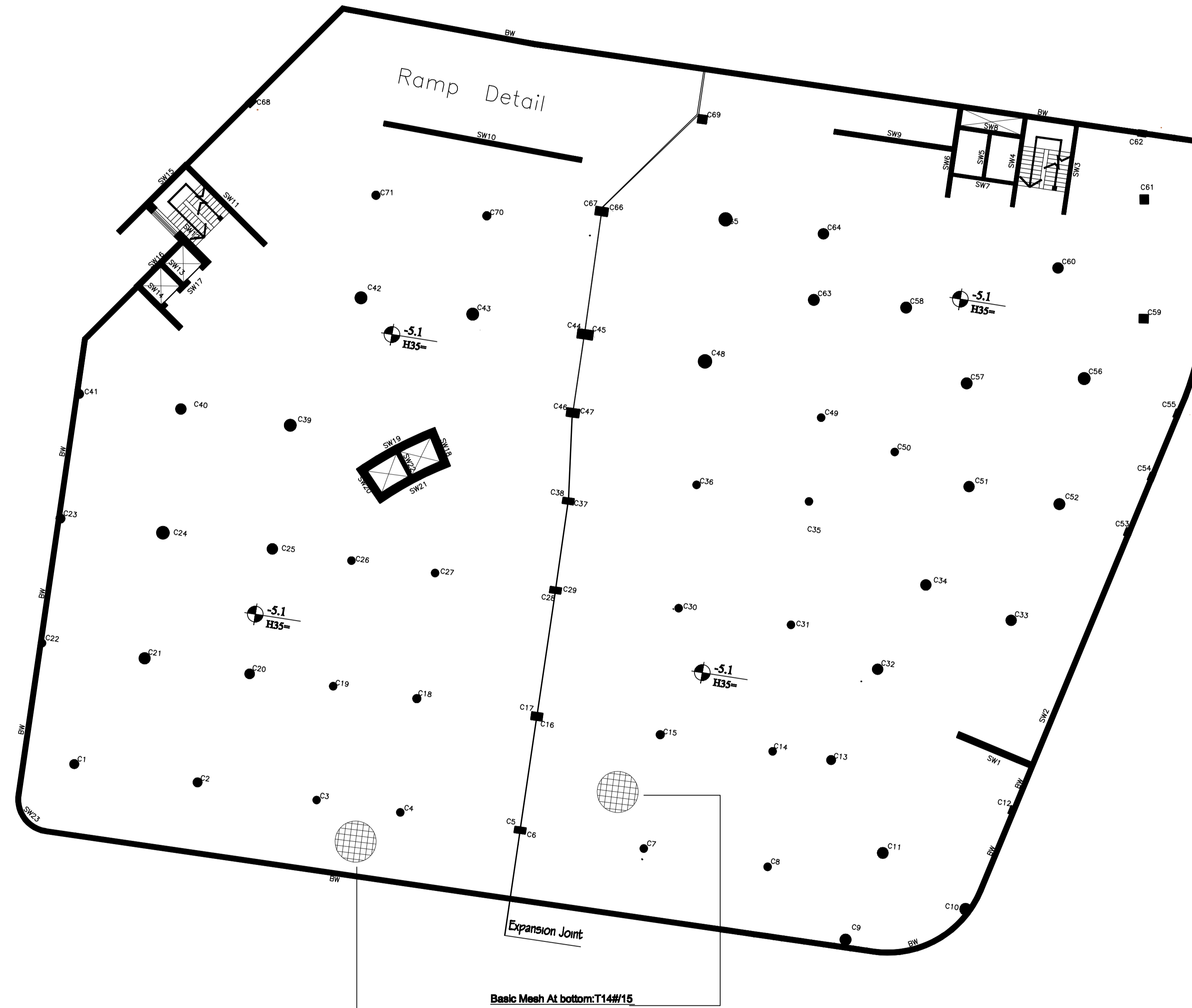
Project: Structural Design For  
 Proposed  
 Commercial Cplx

In:  
 ALBERE

Drawing : Basement 2&3 Floor Slab  
 Bottom Reinforcement

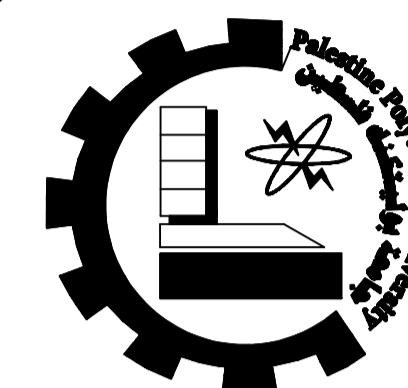
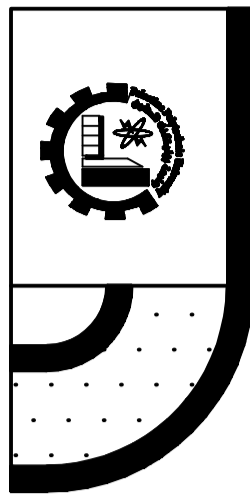
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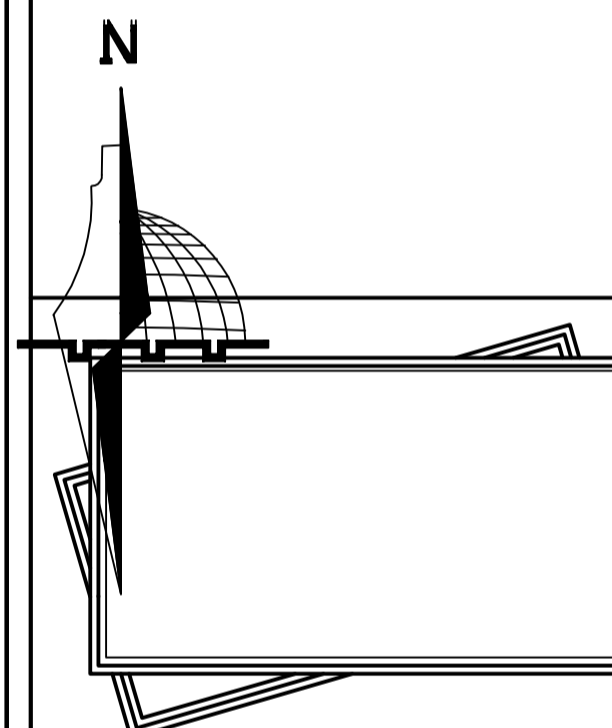


S  
39

B1 Floor Slab  
 SCALE 1/200



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Supervisor:  
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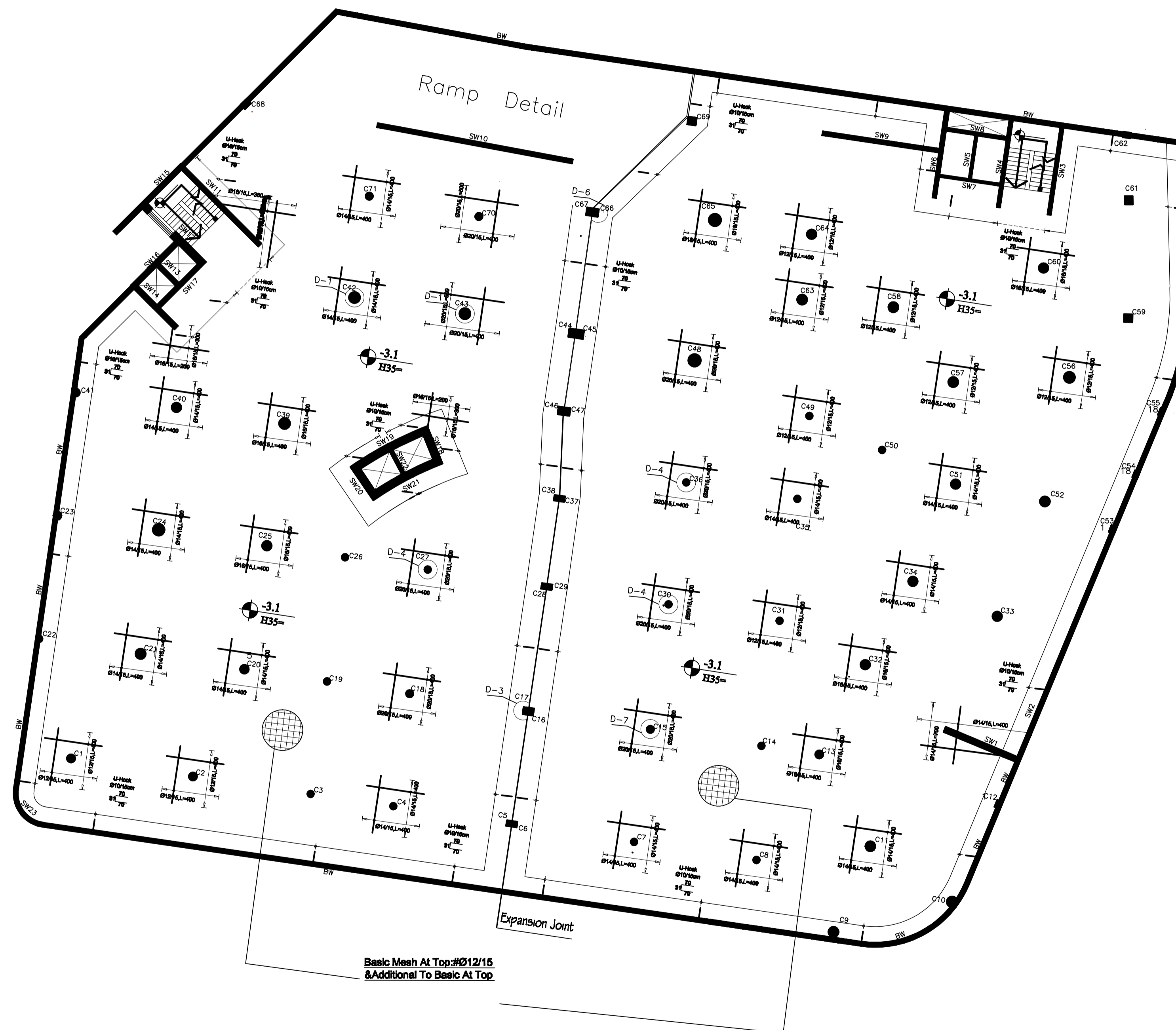
Project: Structural Design For  
 Proposed  
 Commercial Complex

In:  
 ALBERE

Drawing :  
 Basement 2&3 Floor Slab  
 Additional To Top Reinforcement

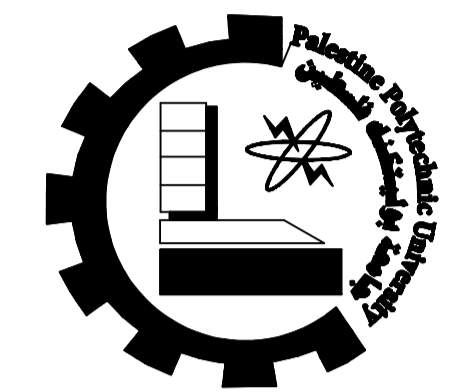
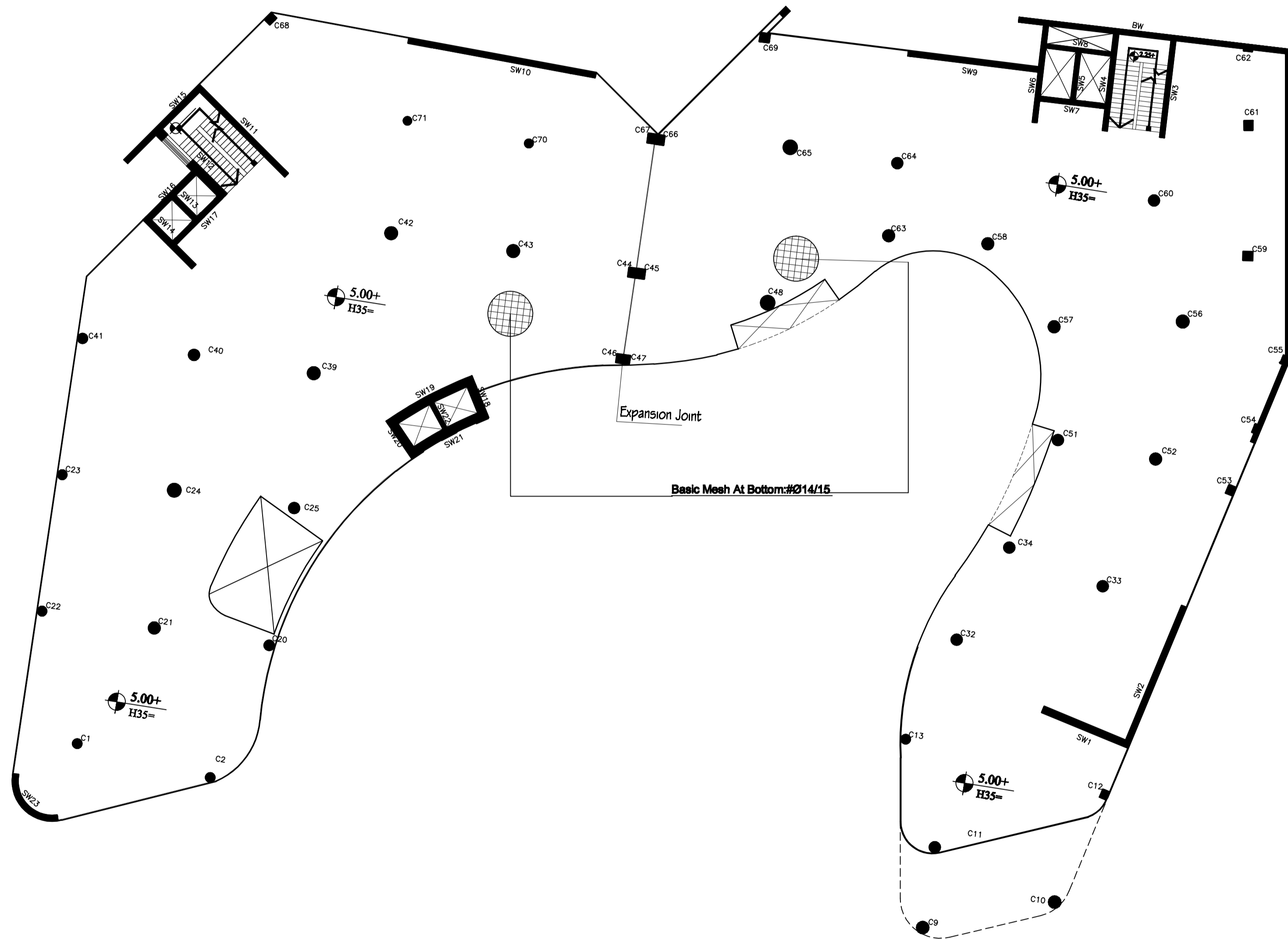
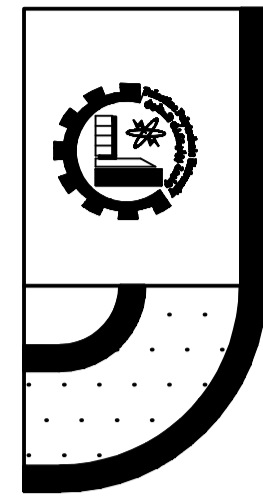
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Scale : 1:200 Date : Dec-2019

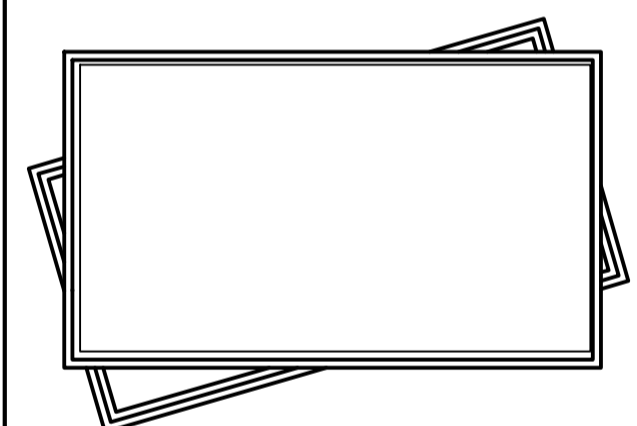
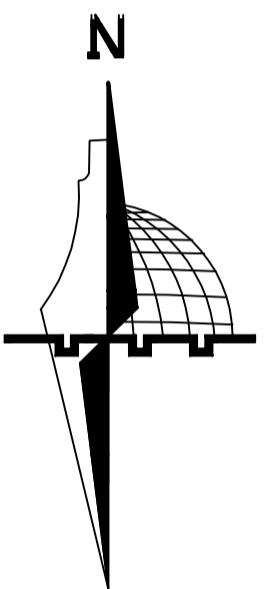


S  
40

B1 Floor Slab  
 SCALE 1/200



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 Commercial Complex

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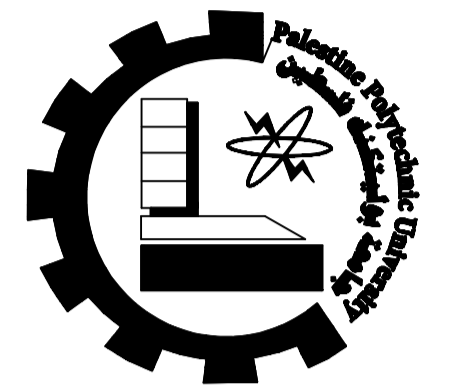
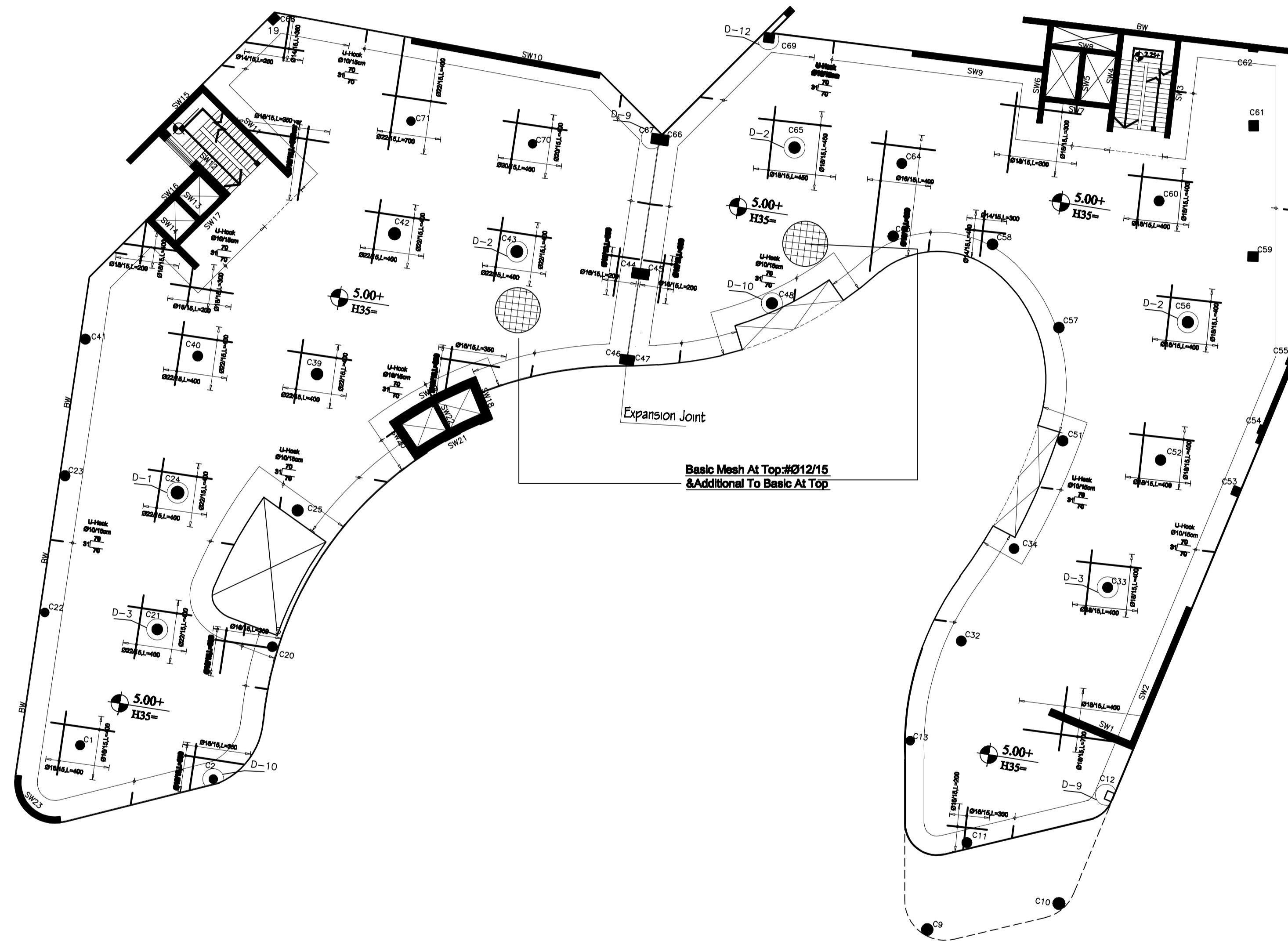
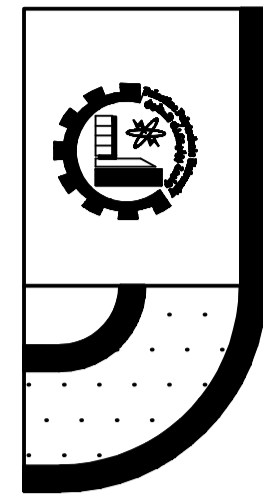
Drawing: Ground Floor Slab  
 Bottom Reinforcement

NO: S(41)

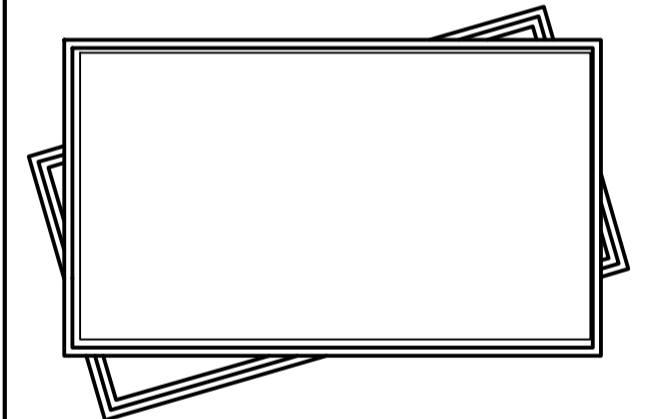
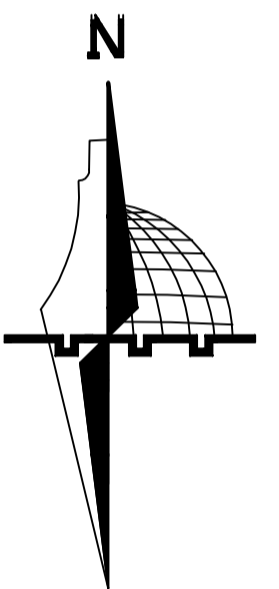
Scale: 1:200 Date: Dec-2019

S  
 41

Graound Floor Slab  
 SCALE 1/200



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Project: Structural Design For  
 Proposed  
 Commercial Complex

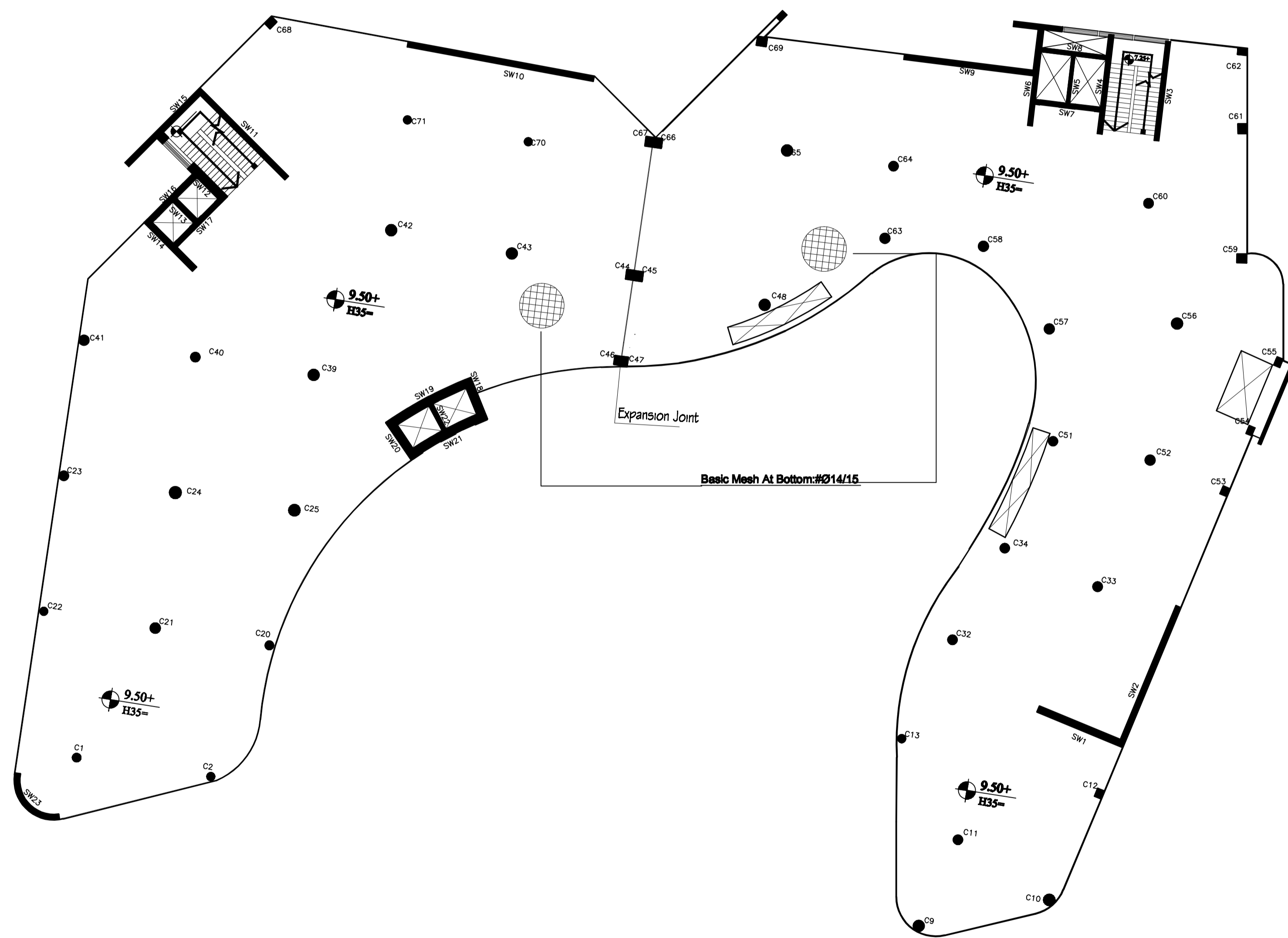
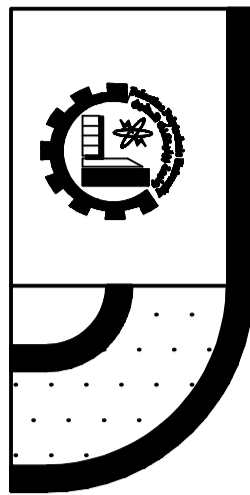
In:  
 ALBERE

Drawing:  
 Ground Floor Slab  
 Additional To Top Reinforcement

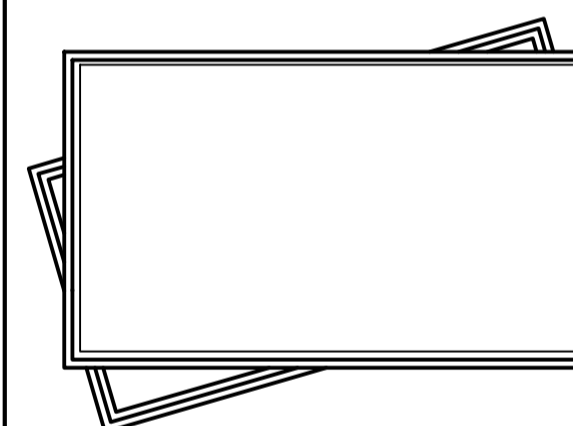
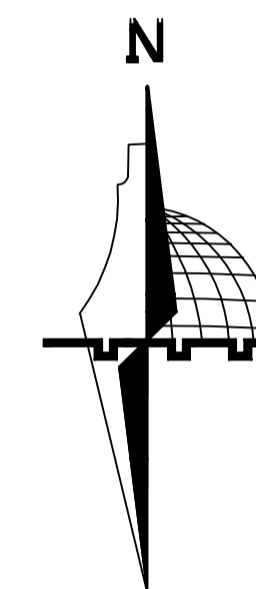
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Scale: 1:200 Date: Dec-2019

**S**  
**42** Ground Floor Slab  
 SCALE 1/200



PALESTINE POLYTECHNIC UNIVERSITY  
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Project: Structural Design For  
 Proposed  
 Commercial Complex

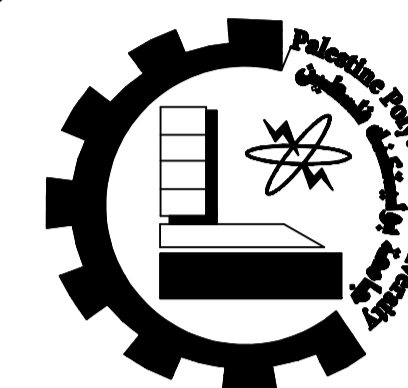
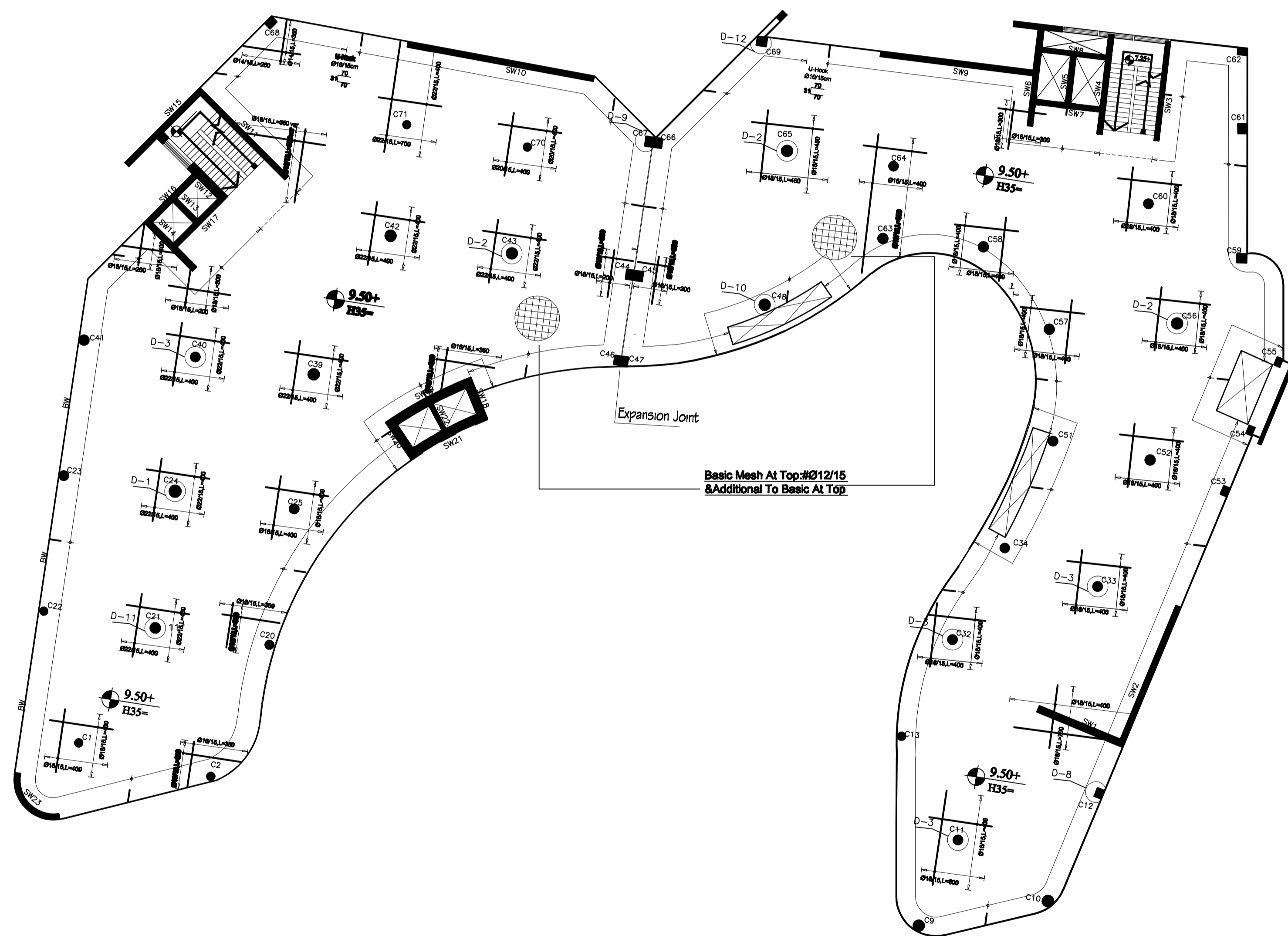
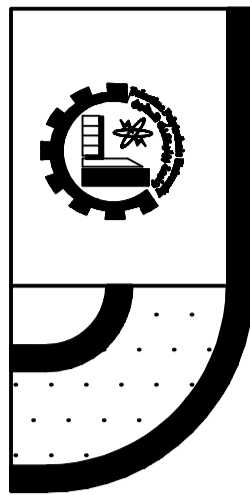
In:  
 ALBERE

Drawing:  
 First Floor Slab  
 Bottom Reinforcement

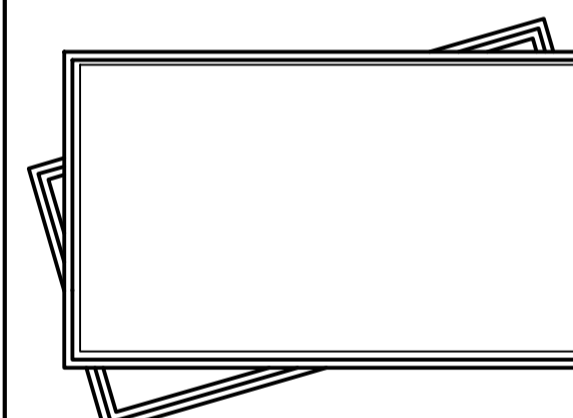
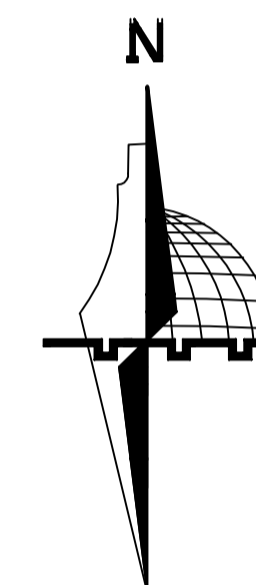
NO: S(43)

Scale: 1:200 Date: Dec-2019

**S**  
**43** First Floor Slab  
 SCALE 1/200



PALESTINE POLYTECHNIC UNIVERSITY  
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 Ammar AL-rjoub

Supervisor:

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Project: Structural Design For  
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 Commercial Complex

In:  
 ALBERE

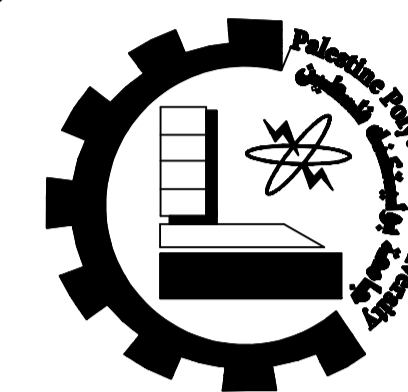
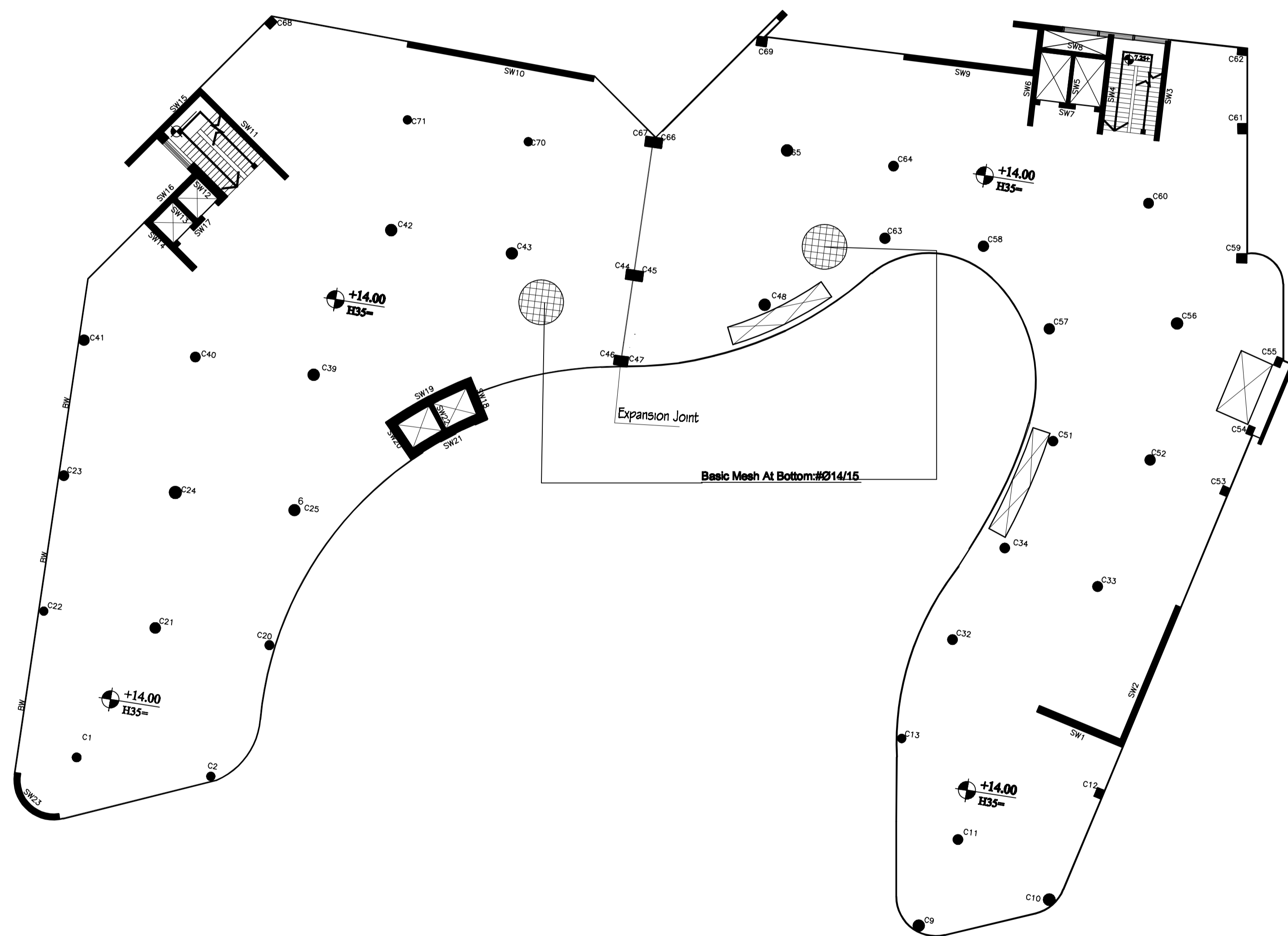
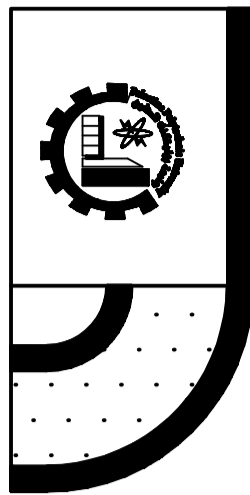
Drawing :  
 First Floor Slab  
 Additional To Top Reinforcement

NO: S(44)

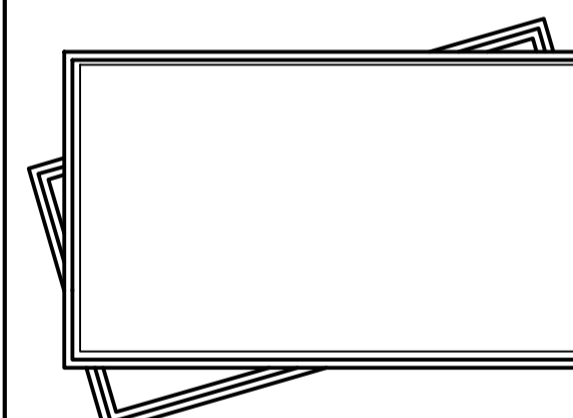
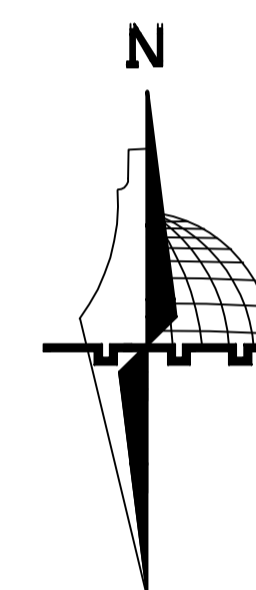
Scale : 1:200 Date : Dec-2019

S  
 44

First Floor Slab  
 SCALE 1/200



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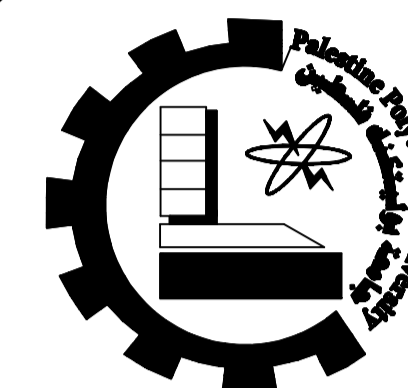
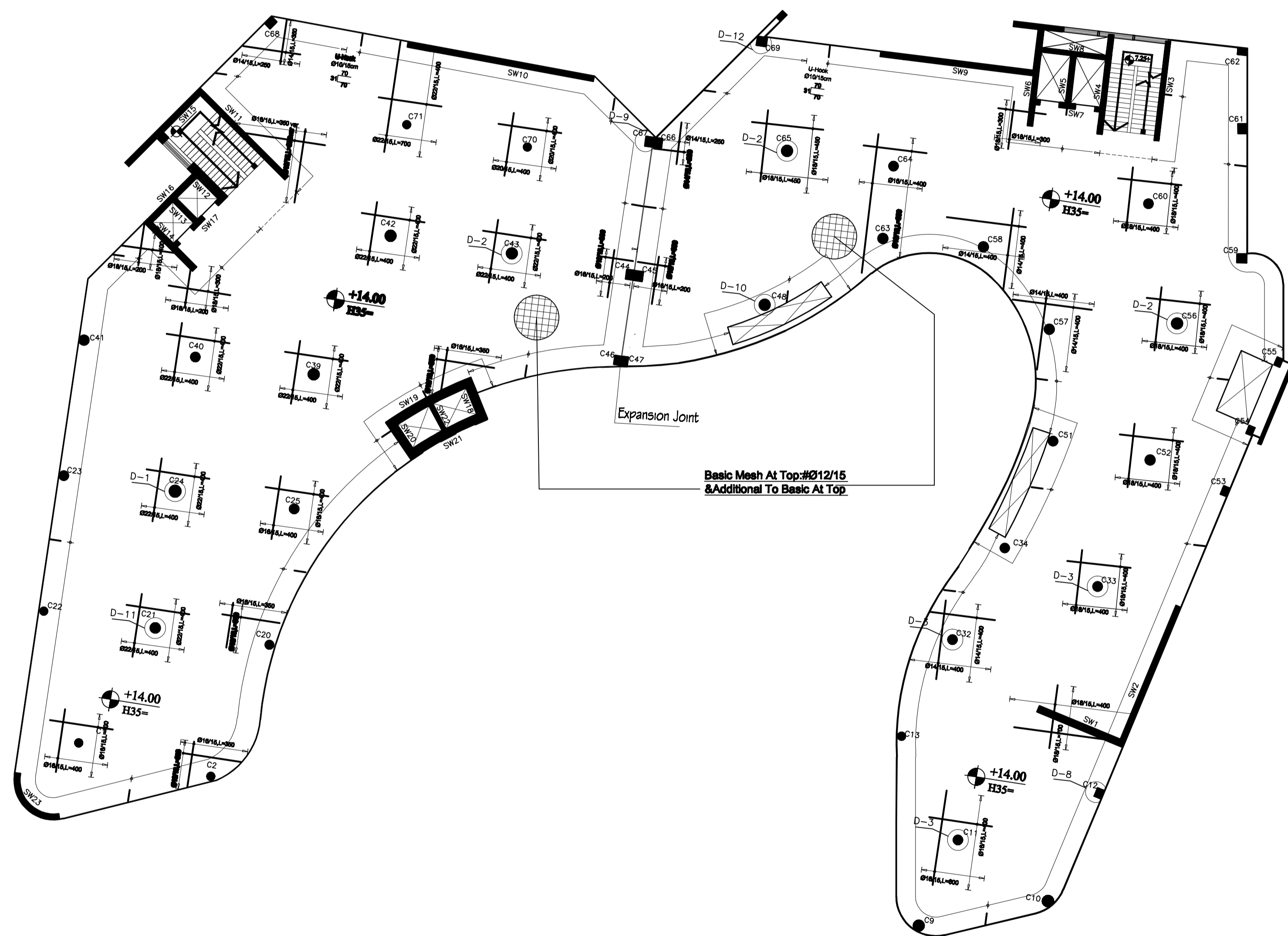
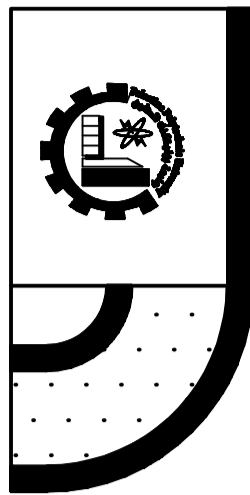
Drawing :  
 Second Floor Slab  
 Bottom Reinforcement

NO: S(45)

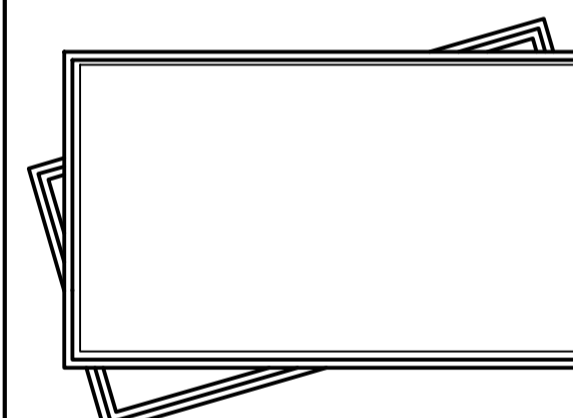
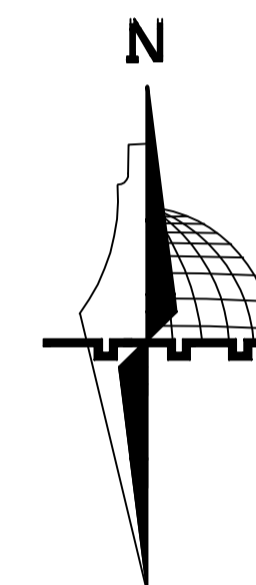
Scale : 1:200 Date : Dec-2019

S  
45

Second Floor Slab  
 SCALE 1/200



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In:  
 ALBERE

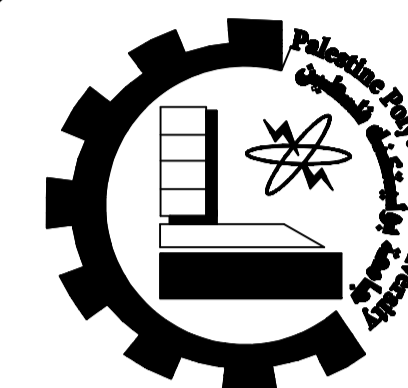
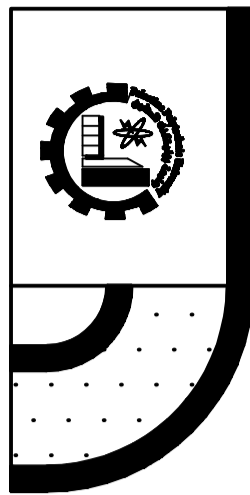
Drawing :  
 Second Floor Slab  
 Additional To Top Reinforcement

NO: S(46)

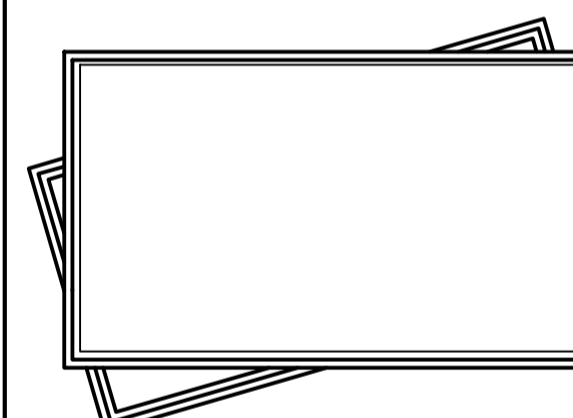
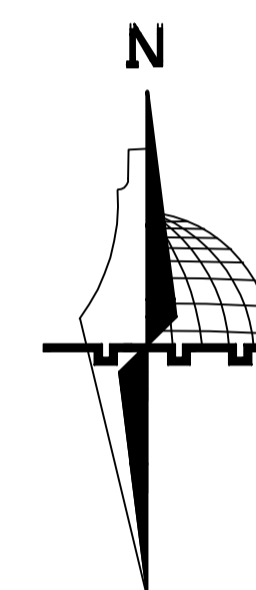
Scale : 1:200 Date : Dec-2019

S  
46

Second Floor Slab  
 SCALE 1/200



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 Ammar AL-rjoub

Supervisor:  
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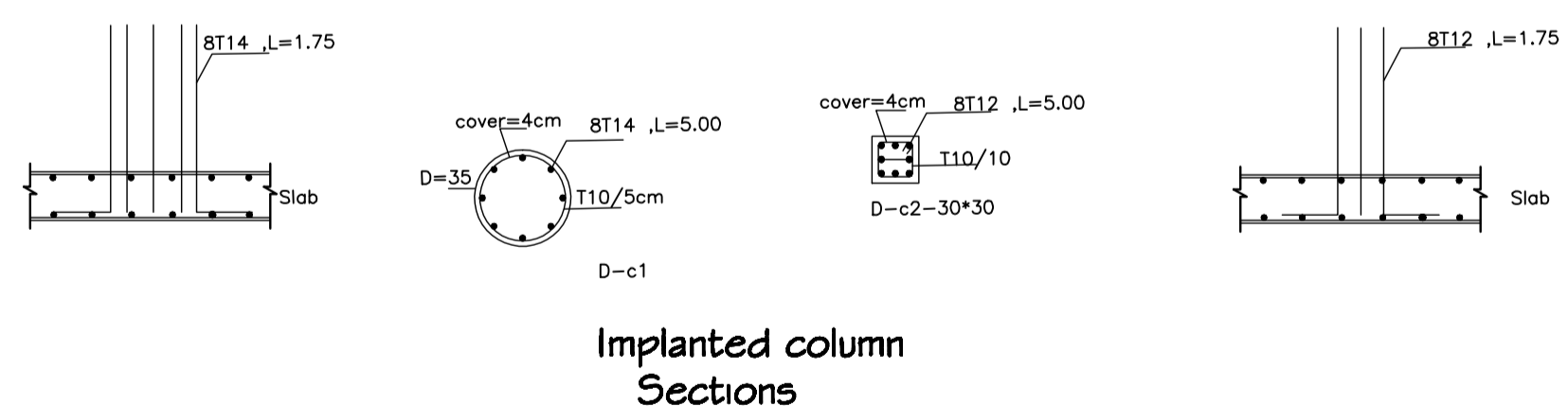
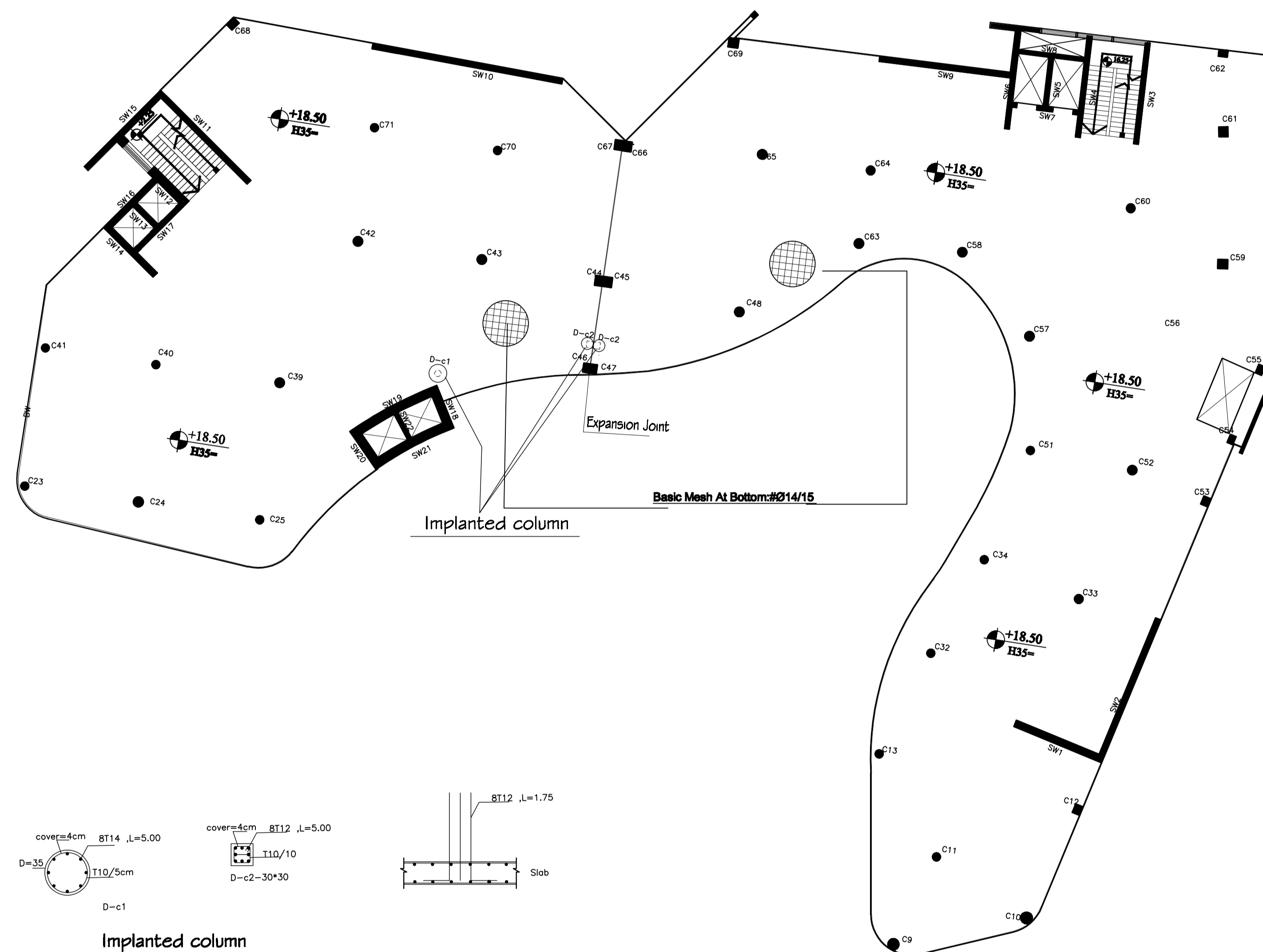
Project: Structural Design For  
 Proposed  
 Commercial Complex

In:  
 ALBERE

Drawing :  
 Third Floor Slab  
 Bottom Reinforcement

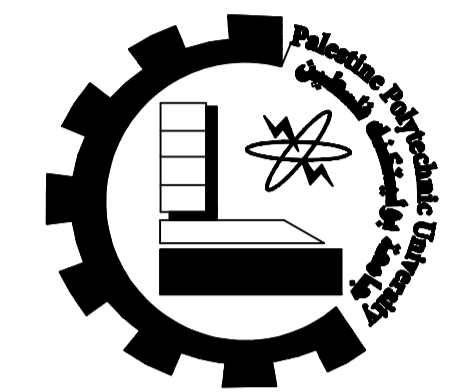
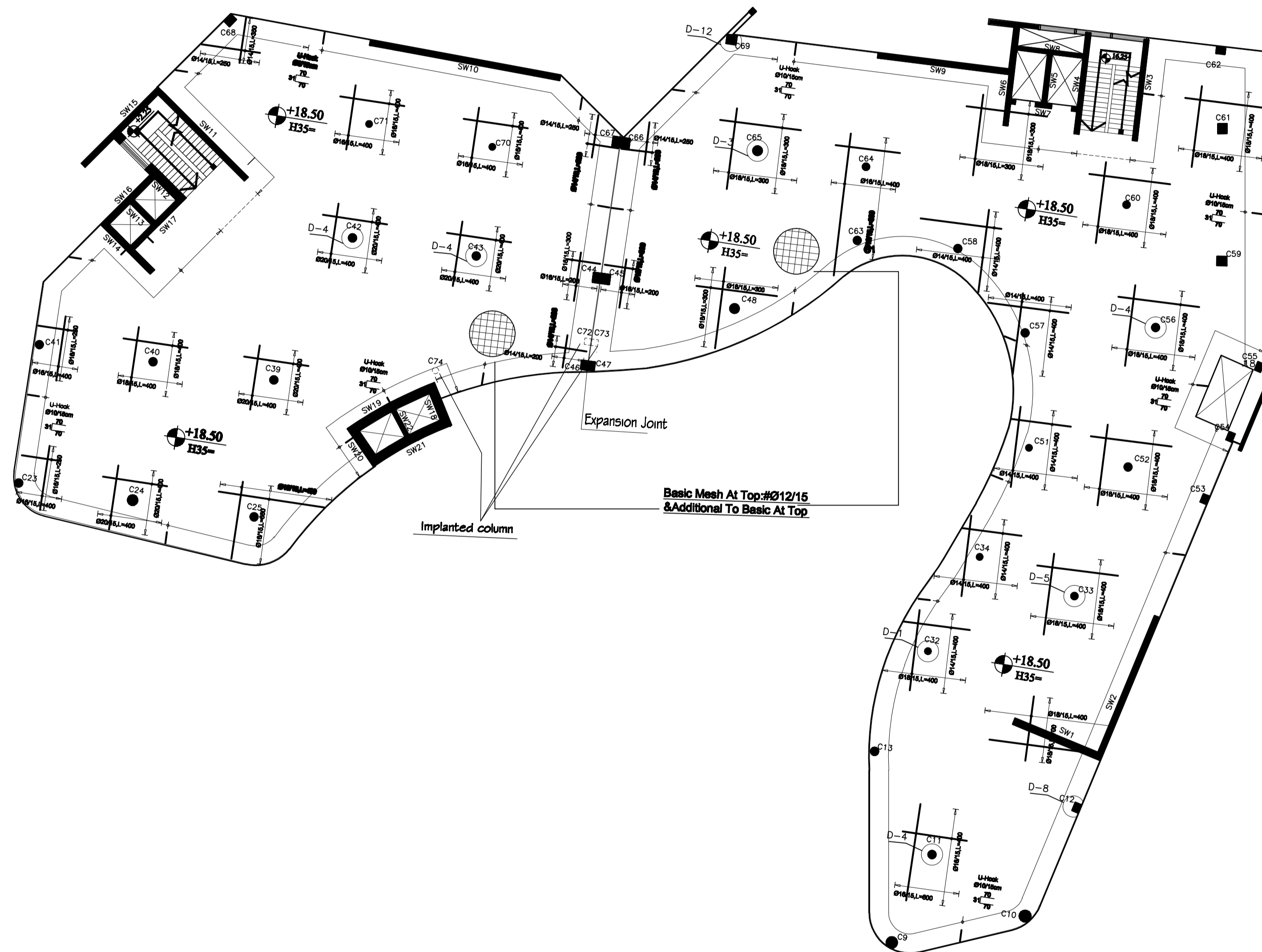
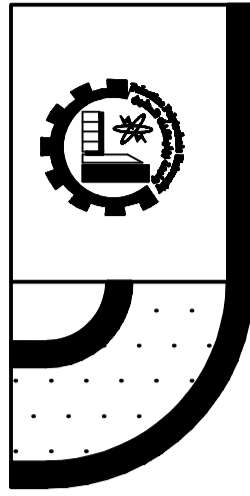
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Scale : 1:200 Date : Dec-2019

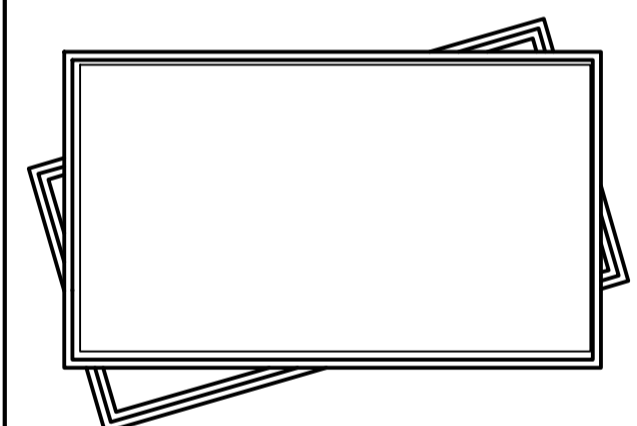
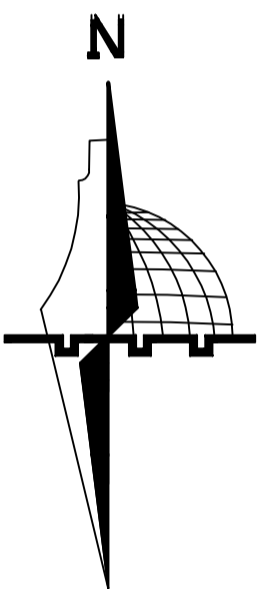


S  
47

Third Floor Slab  
 SCALE 1/200



PALESTINE POLYTECHNIC UNIVERSITY  
 COLLEGE OF ENGINEERING  
 CIVIL & ARCH. ENG. DEPARTMENT  
 Architecture ENGINEERING



Designed by:  
 Natheer Talahmah  
 Montaser Qazzaz  
 Mohammad Talahmah  
 Ammar AL-rjoub

Supervisor:  
 Eng. Mona AL-Shaar

Project: Structural Design For  
 Proposed  
 Commercial Complex

In:  
 ALBERE

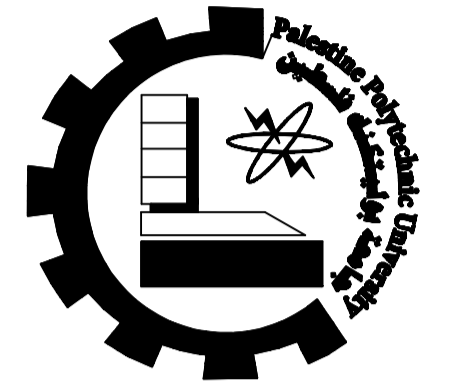
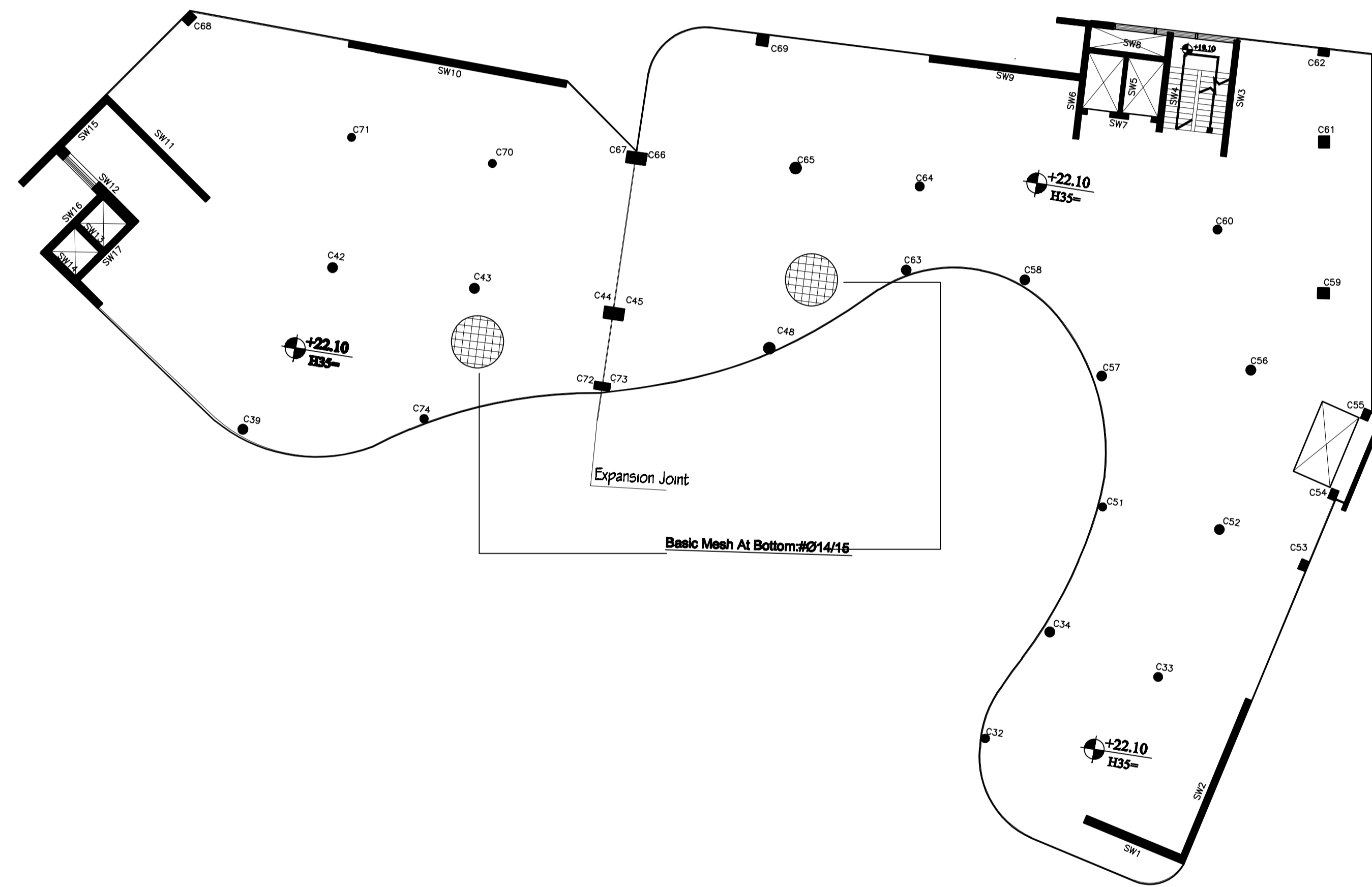
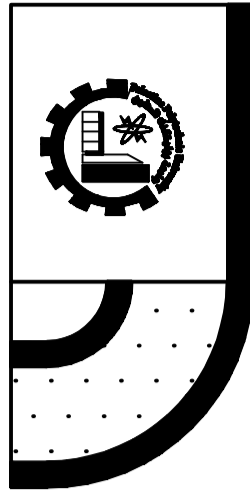
Drawing :  
 Third Floor Slab  
 Additional To Top Reinforcement

NO: S(48)

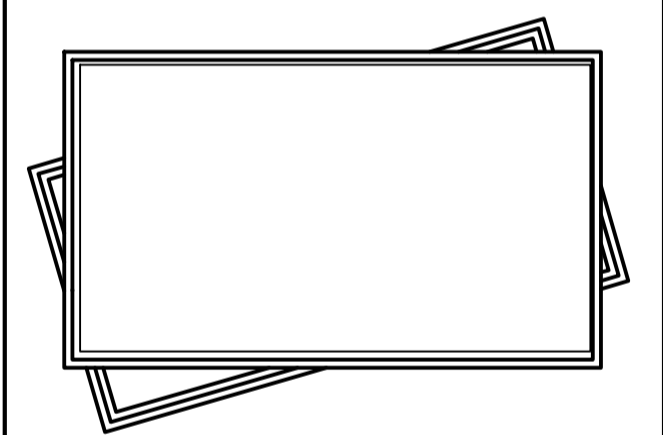
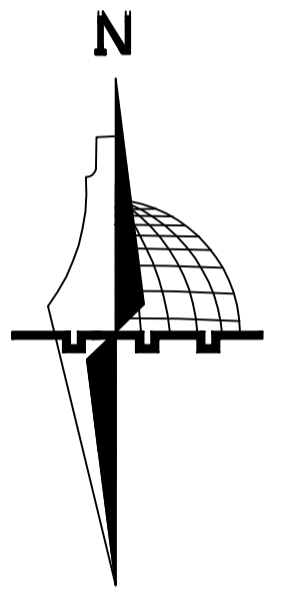
Scale : 1:200      Date : Dec-2019

S  
48

Third Floor Slab  
 SCALE 1/200



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In:  
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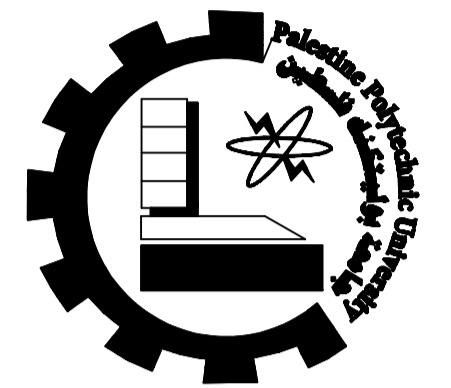
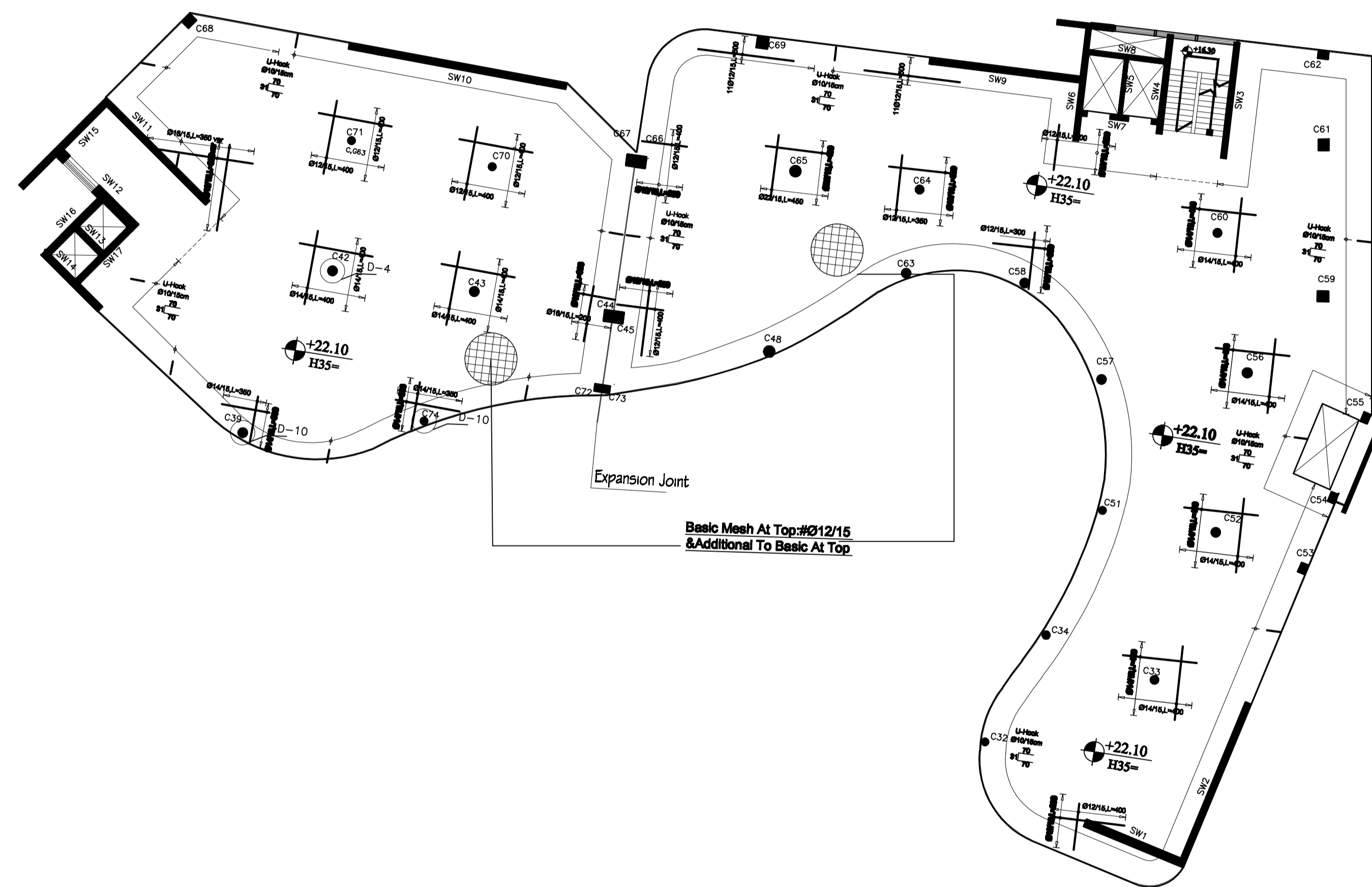
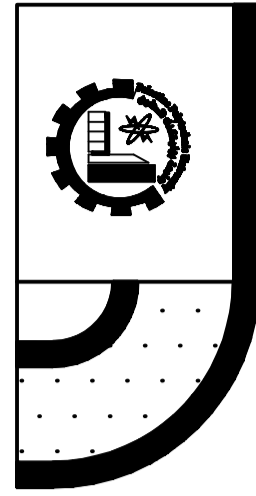
Drawing:  
 Forth Floor Slab  
 Bottom Reinforcement

NO: S(49)

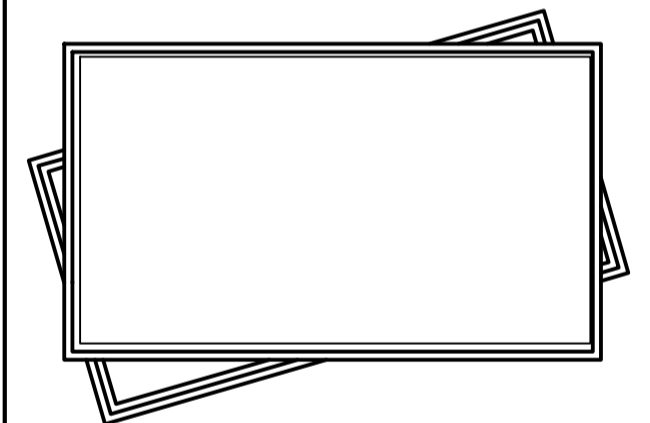
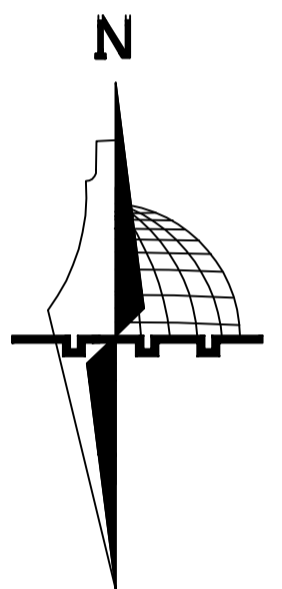
Scale: 1:200      Date: Dec-2019

S  
49

4th Floor Slab  
 SCALE 1/200



PALESTINE POLYTECHNIC UNIVERSITY  
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 Proposed  
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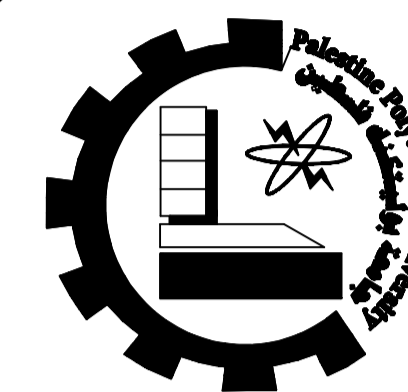
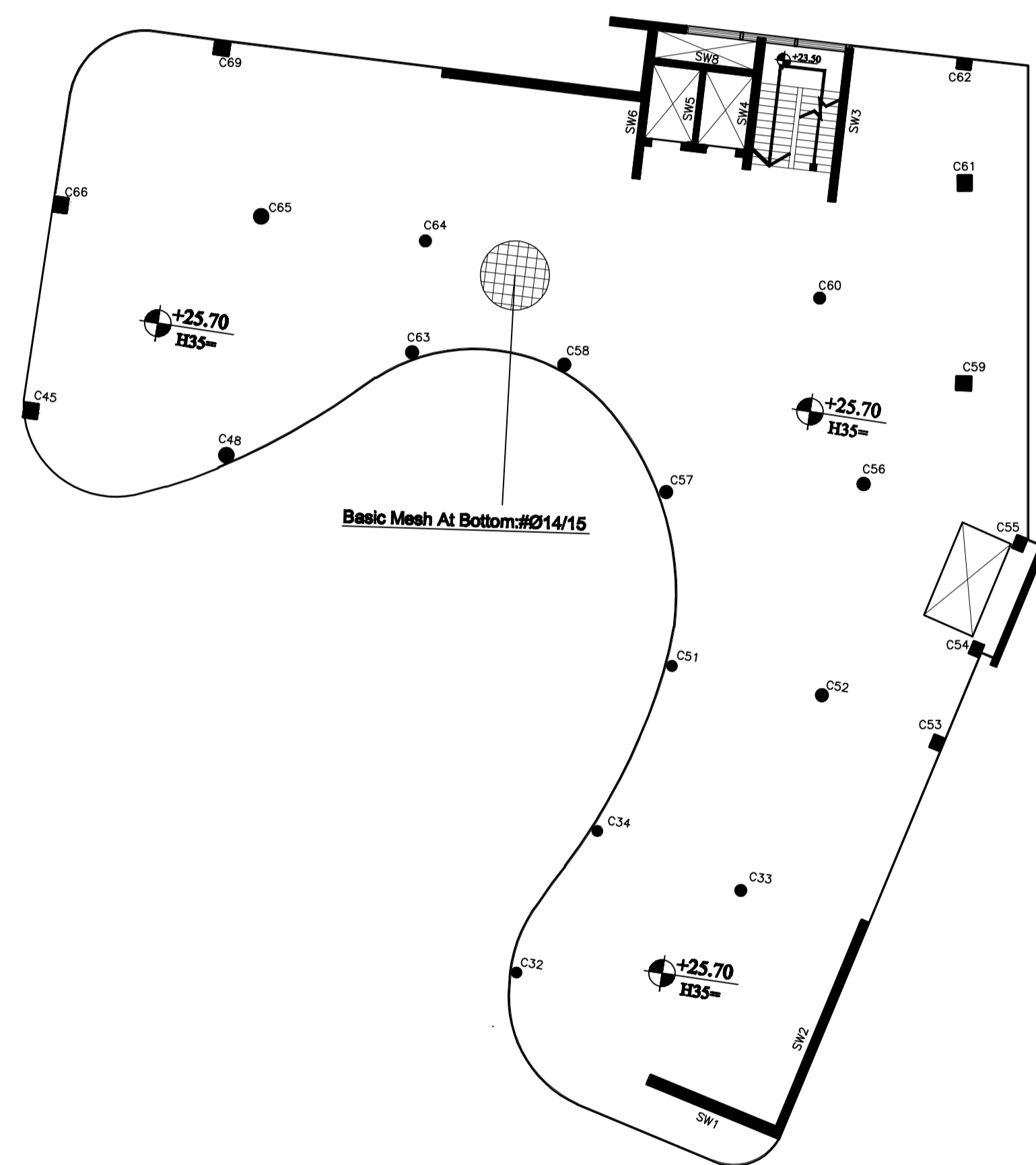
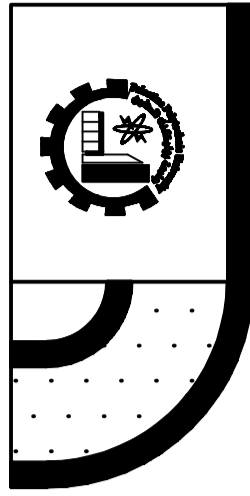
Drawing :  
 Fourth Floor Slab  
 Additional To Top Reinforcement

NO: S(50)

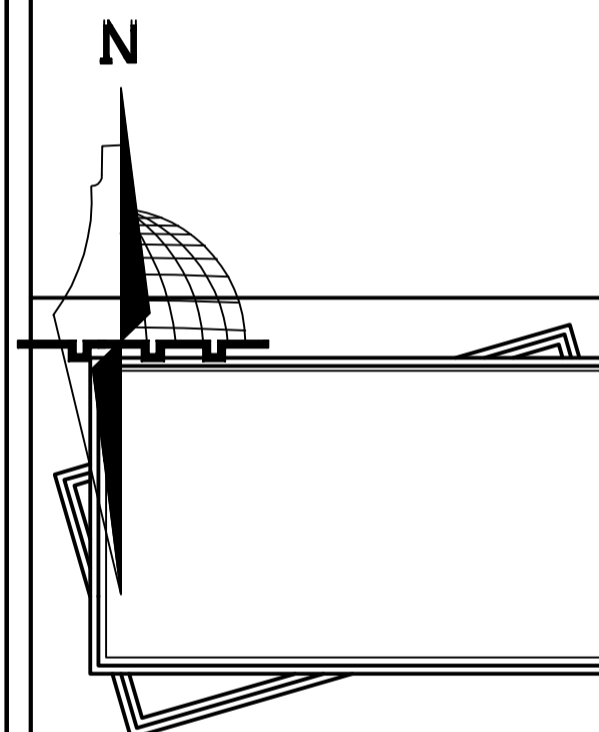
Scale : 1:200      Date : Dec-2019

S  
50

4th Floor Slab  
 SCALE 1/200



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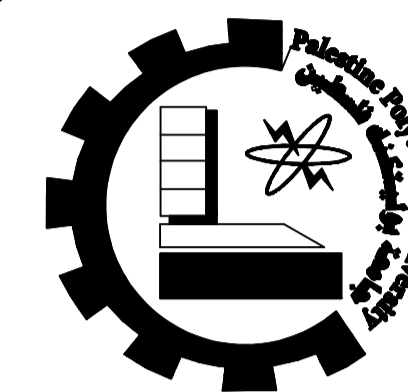
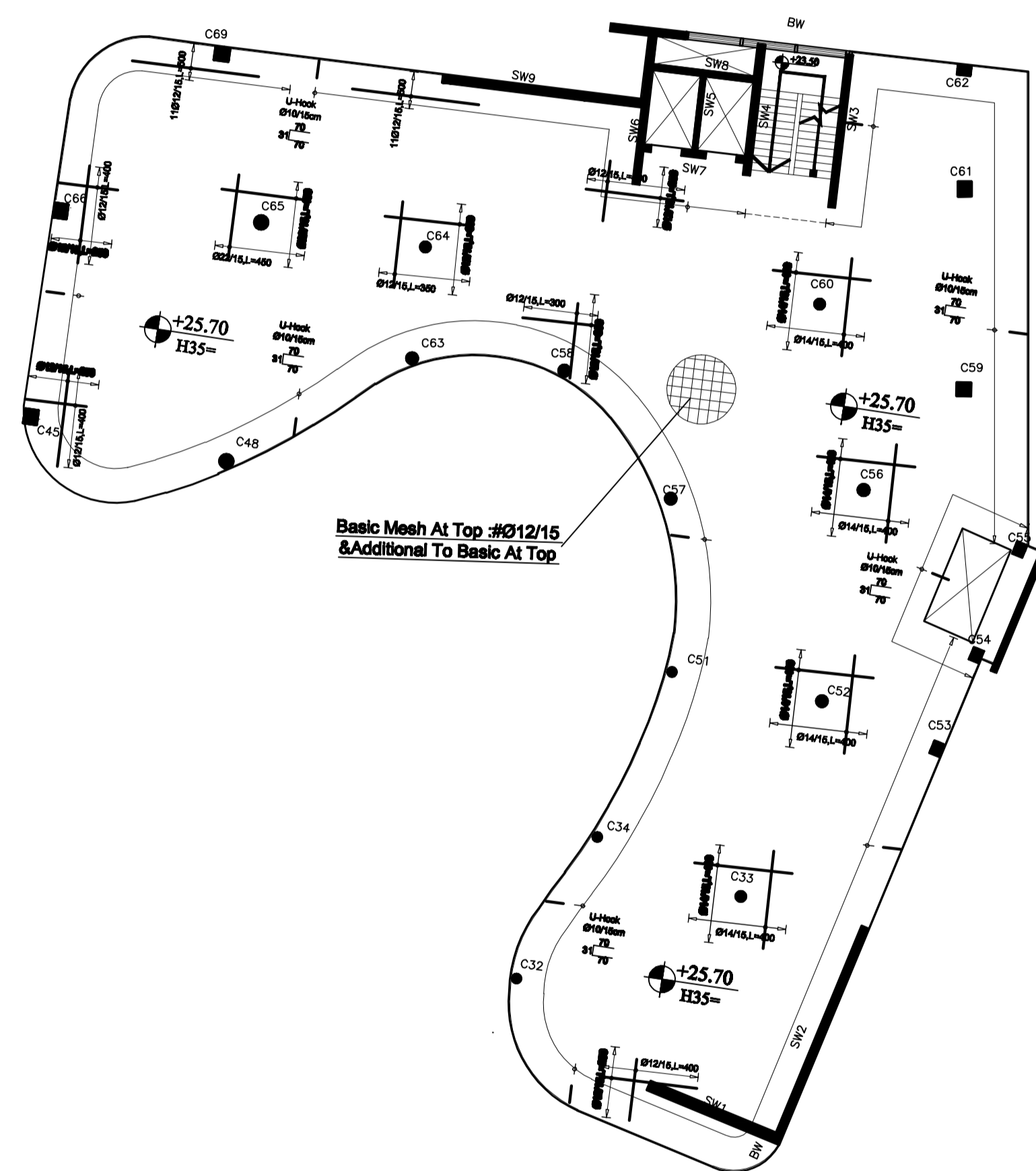
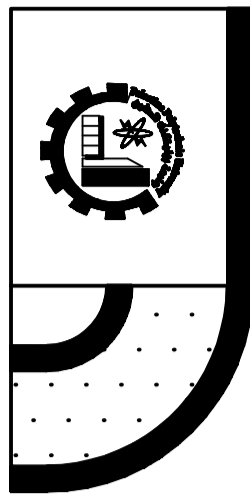
Drawing:  
 Five Floor Slab  
 Bottom Reinforcement

NO: S(51)

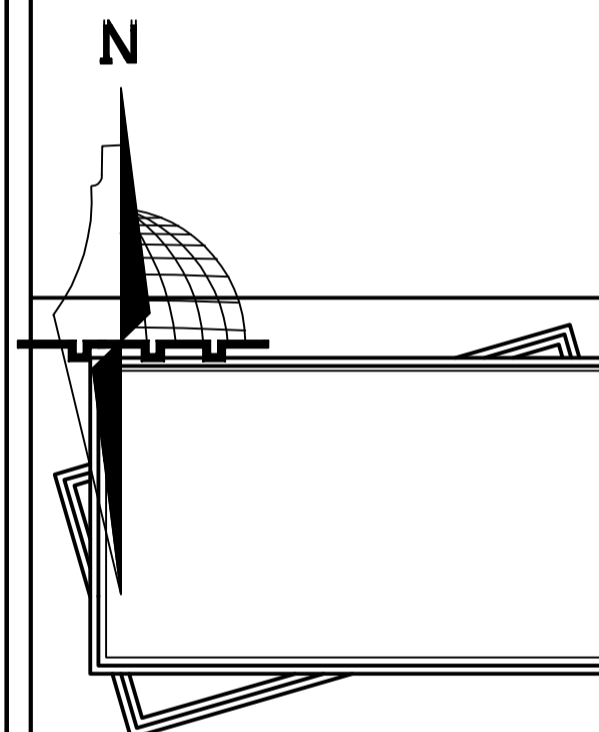
Scale: 1:200 Date: Dec-2019

S  
 51

5th Floor Slab  
 SCALE 1/200



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 Commercial Complex

In:  
 ALBERE

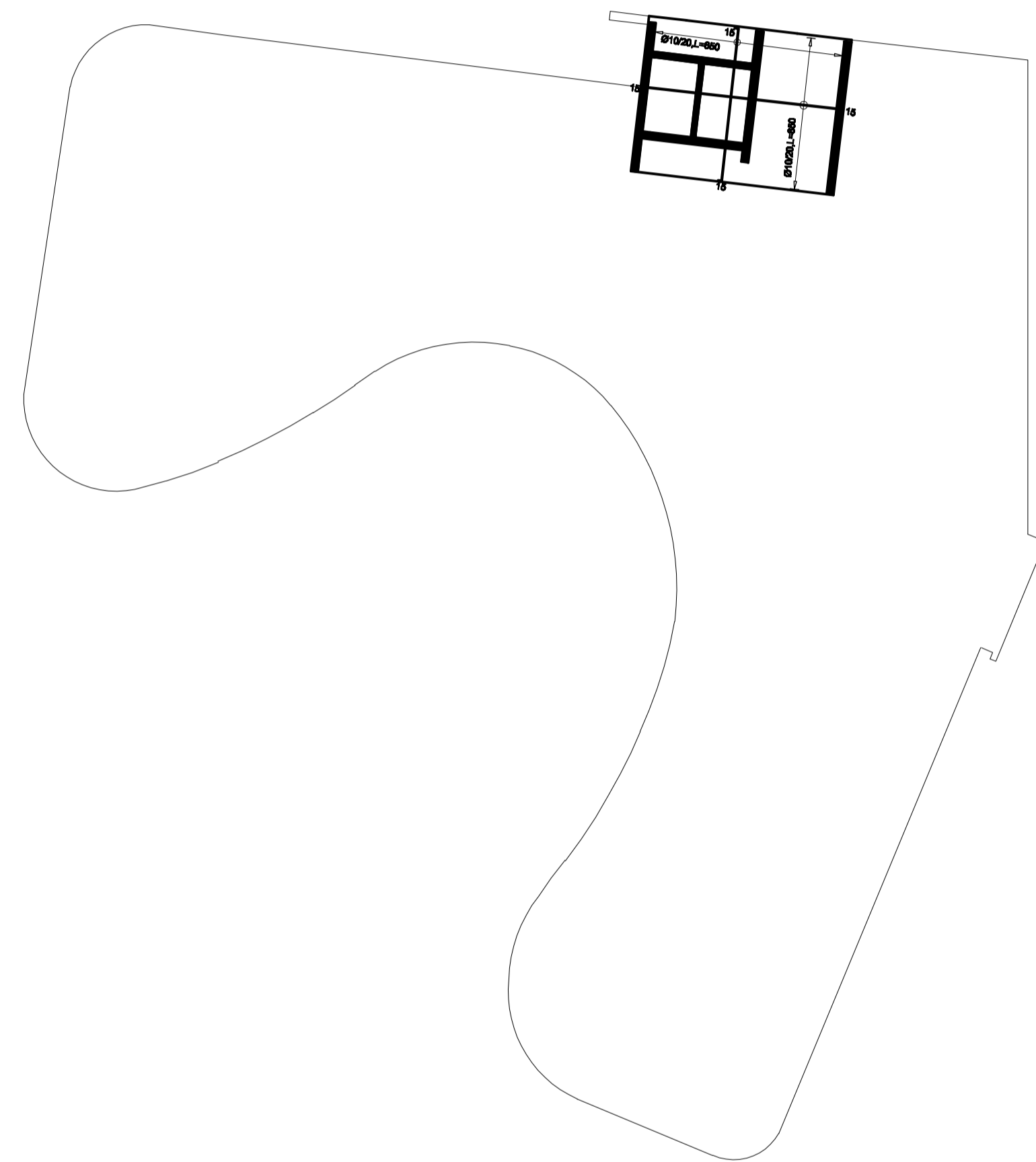
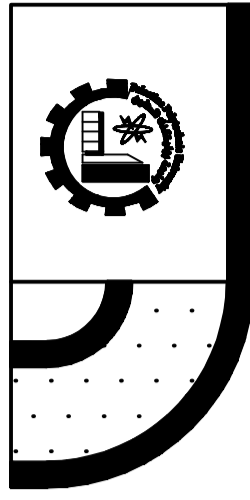
Drawing :  
 Five Floor Slab  
 Additional To Top Reinforcement

NO: S(52)

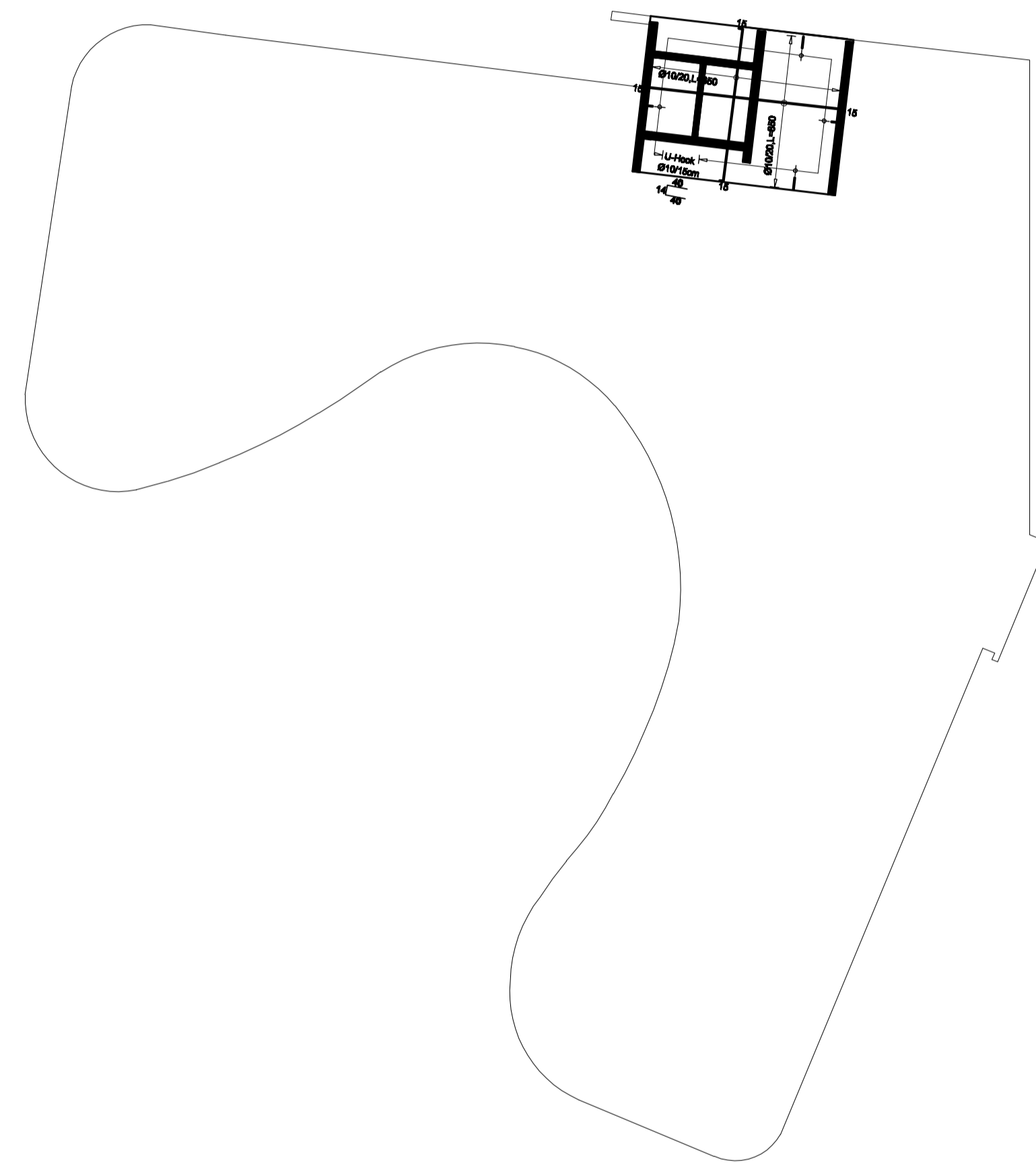
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S  
52

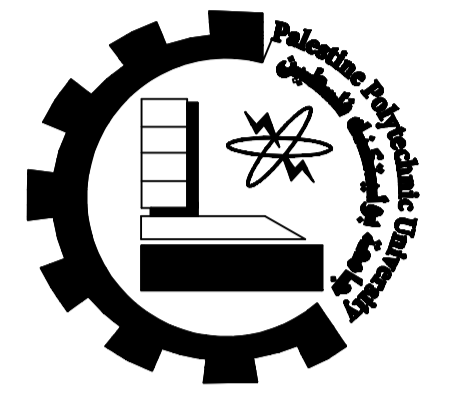
5th Floor Slab  
 SCALE 1/200



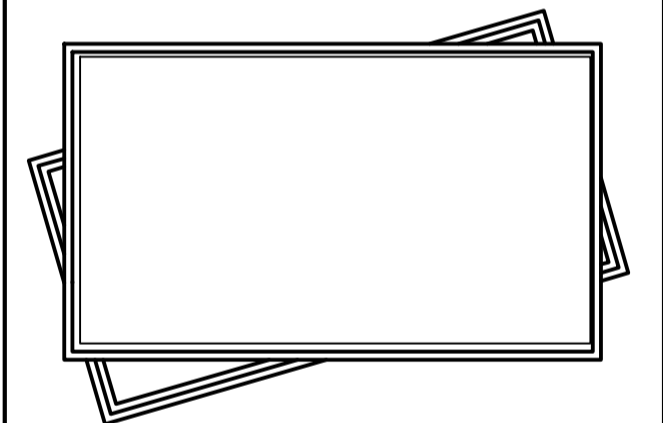
Top Reinforcement



Bottom Reinforcement



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Ammar AL-rjoub

Supervisor:

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Project: Structural Design For  
Proposed  
Commercial Complex

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ALBERE

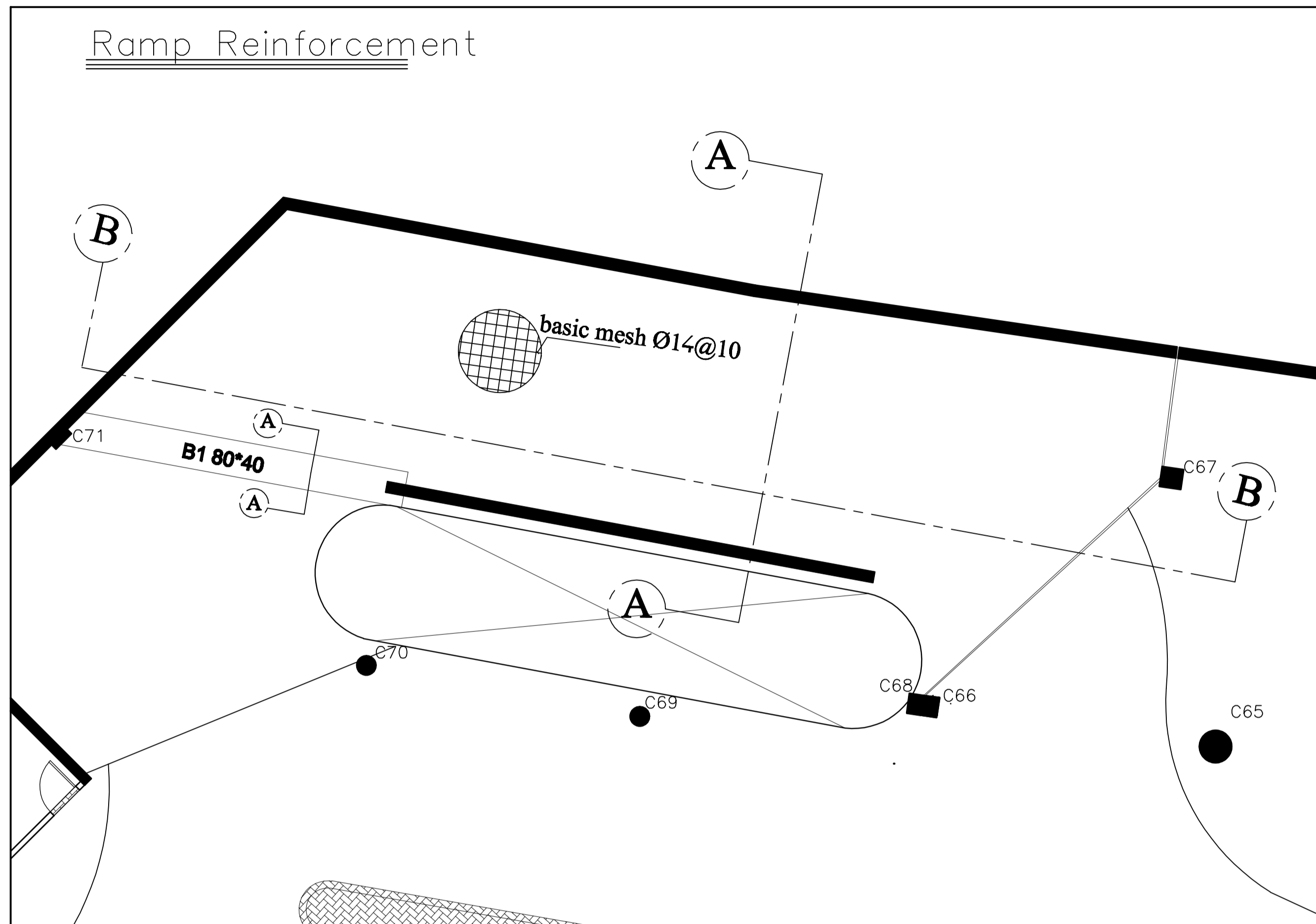
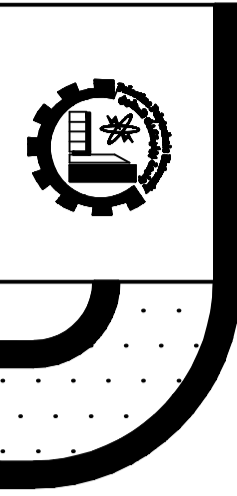
Drawing: Stair Floor Slab  
Bottom And Top  
Reinforcement

NO: S(53)

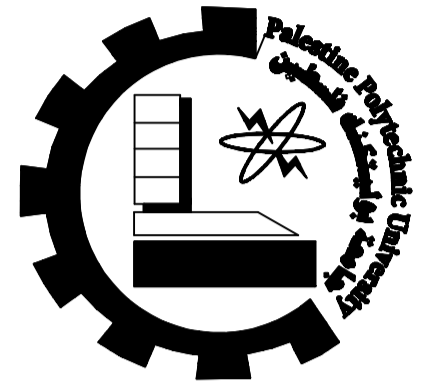
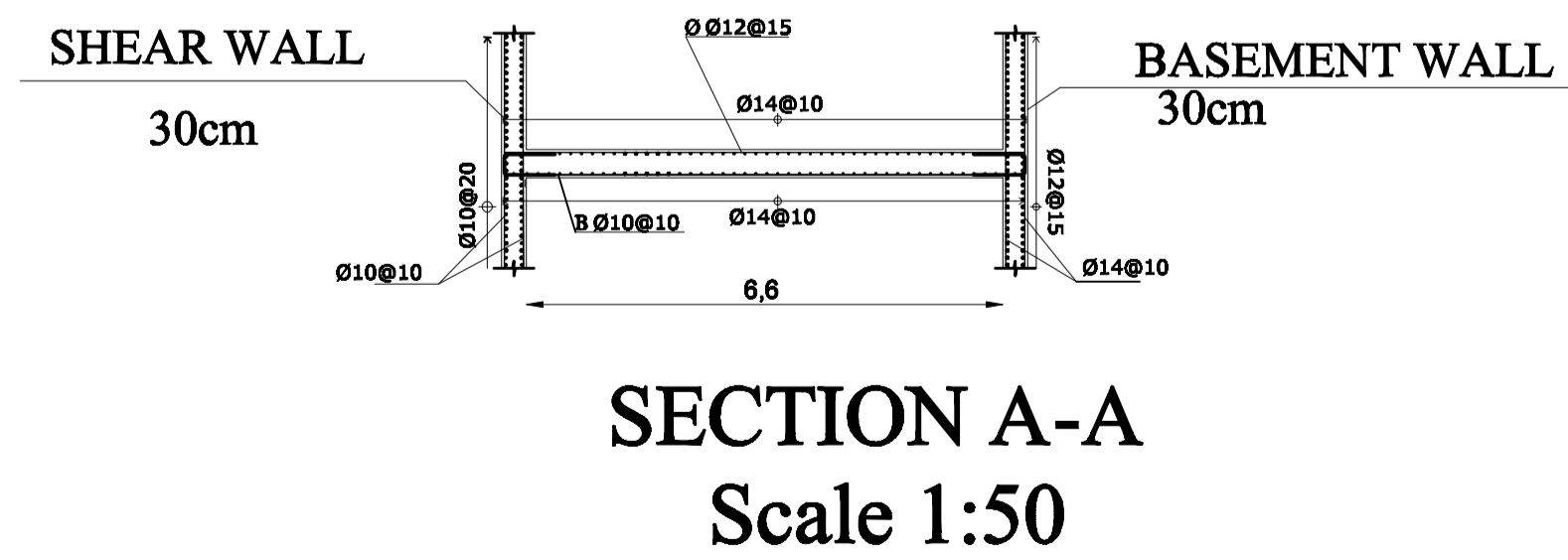
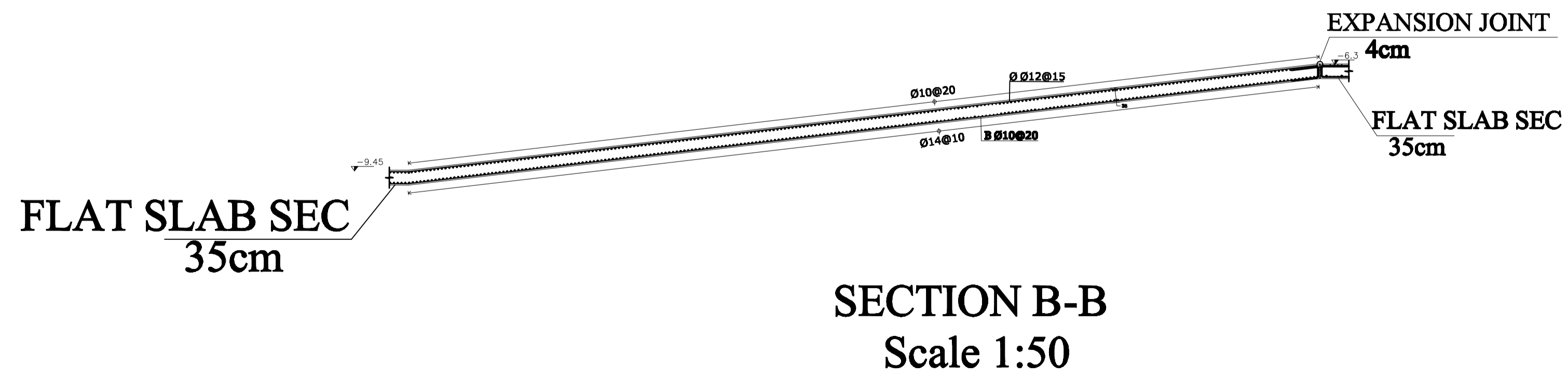
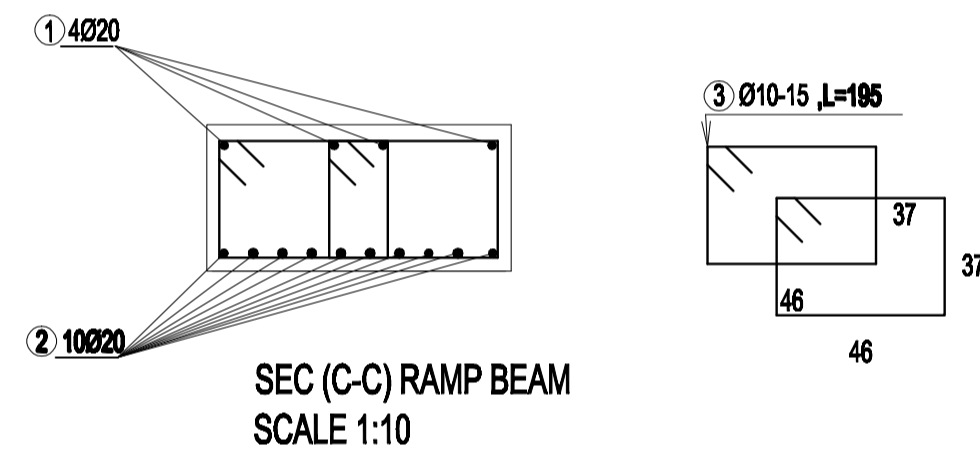
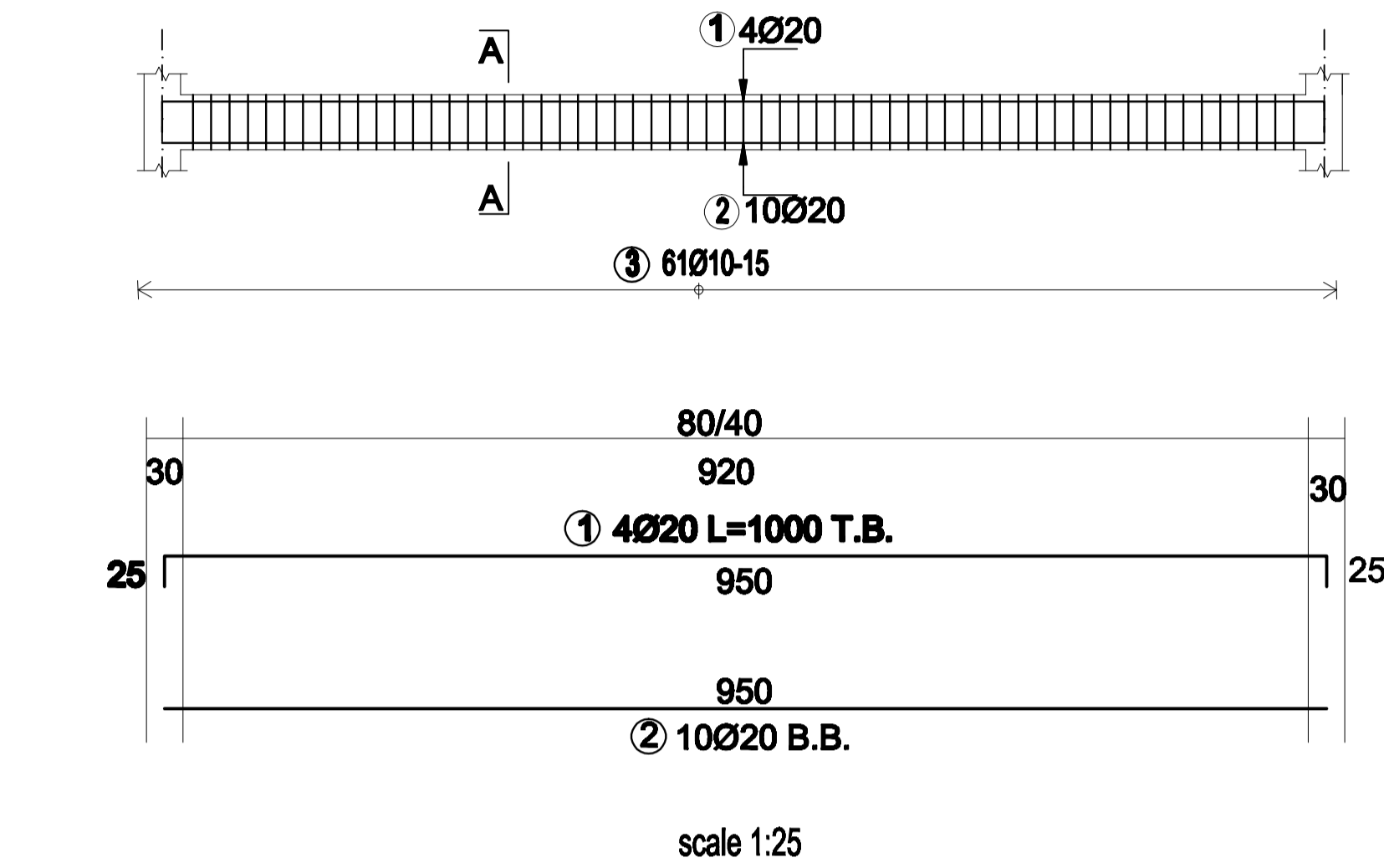
Scale: 1:200 Date: Dec-2019

S  
53

Stair Slab  
SCALE 1/200



Beam 1



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Supervisor:  
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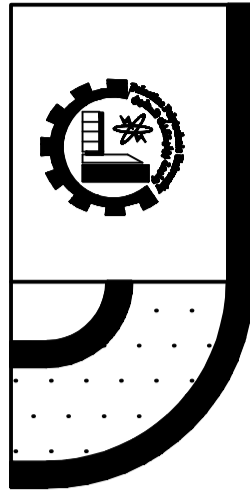
Project: Structural Design For  
Proposed  
Commercial Complex

In:  
ALBERE

Drawing :  
Ramp Details  
BB & TB Reinforcement

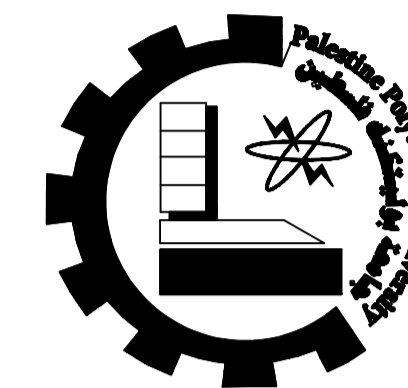
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Date : Dec-2019

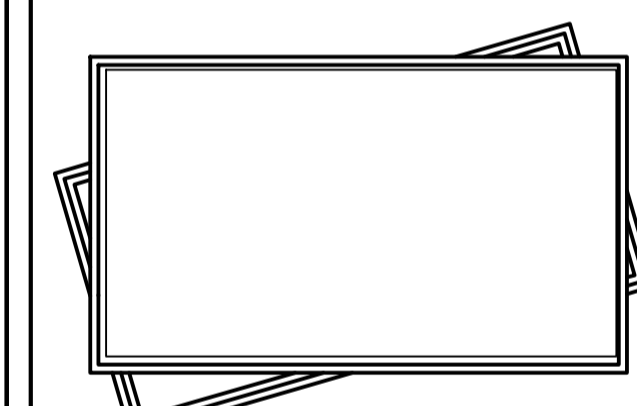


# Punching Stirrups Design

	Punching Stirrups D-1	Punching Stirrups D-2	Punching Stirrups D-3
Plan	<p>800</p> <p>800</p> <p>300</p> <p>A A</p> <p>2*5 - 12db-100mm</p>	<p>700</p> <p>700</p> <p>300</p> <p>A A</p> <p>3*7 - 12db-100mm</p>	<p>600</p> <p>600</p> <p>300</p> <p>A A</p> <p>2*6 - 14db-100mm</p>
Section	<p>350</p> <p>300</p> <p>100</p> <p>100</p> <p>200</p> <p>200</p> <p>800</p>	<p>350</p> <p>300</p> <p>100</p> <p>100</p> <p>200</p> <p>200</p> <p>700</p>	<p>350</p> <p>300</p> <p>100</p> <p>100</p> <p>200</p> <p>200</p> <p>600</p>



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Supervisor:  
Eng. Mona AL-Shaar

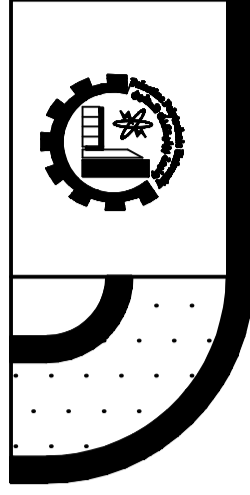
Project: Structural Design For  
Proposed  
Commercial Cplx

In:  
ALBERE

Drawing :  
Stirrups Punching Details

NO: S(55)

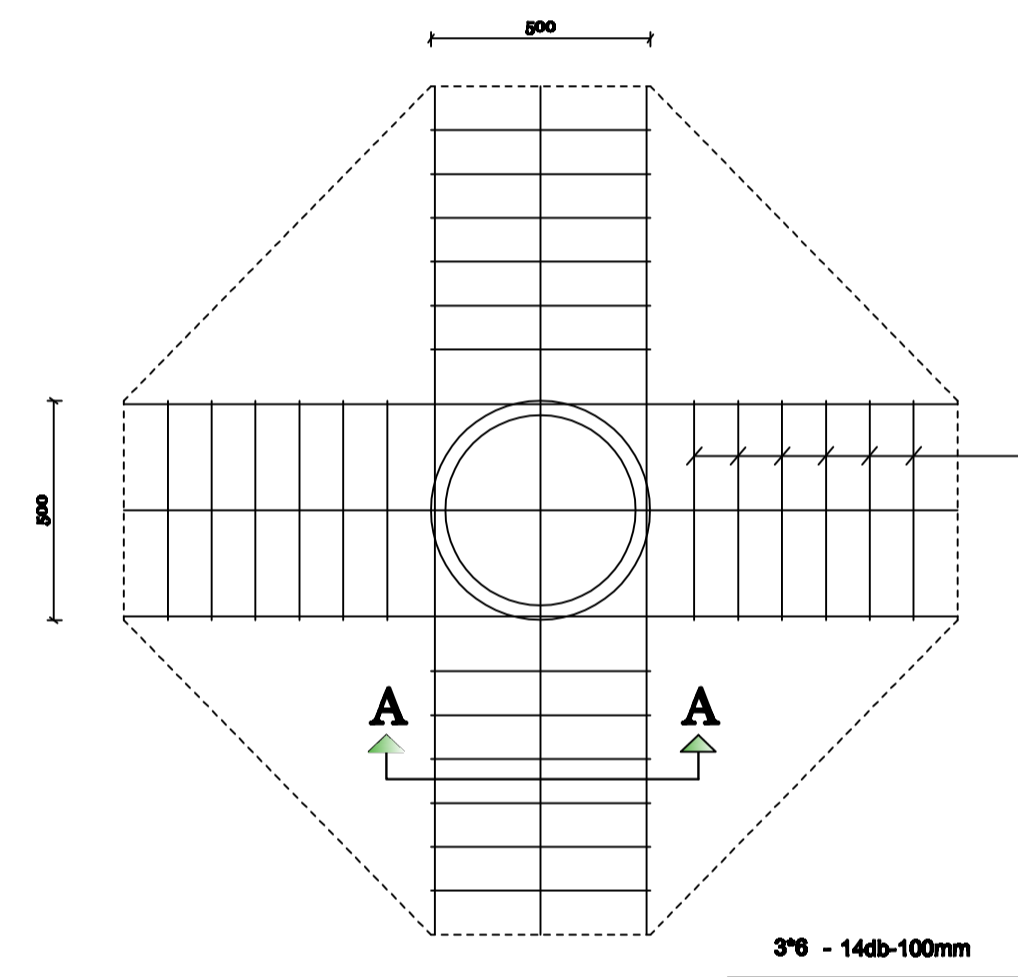
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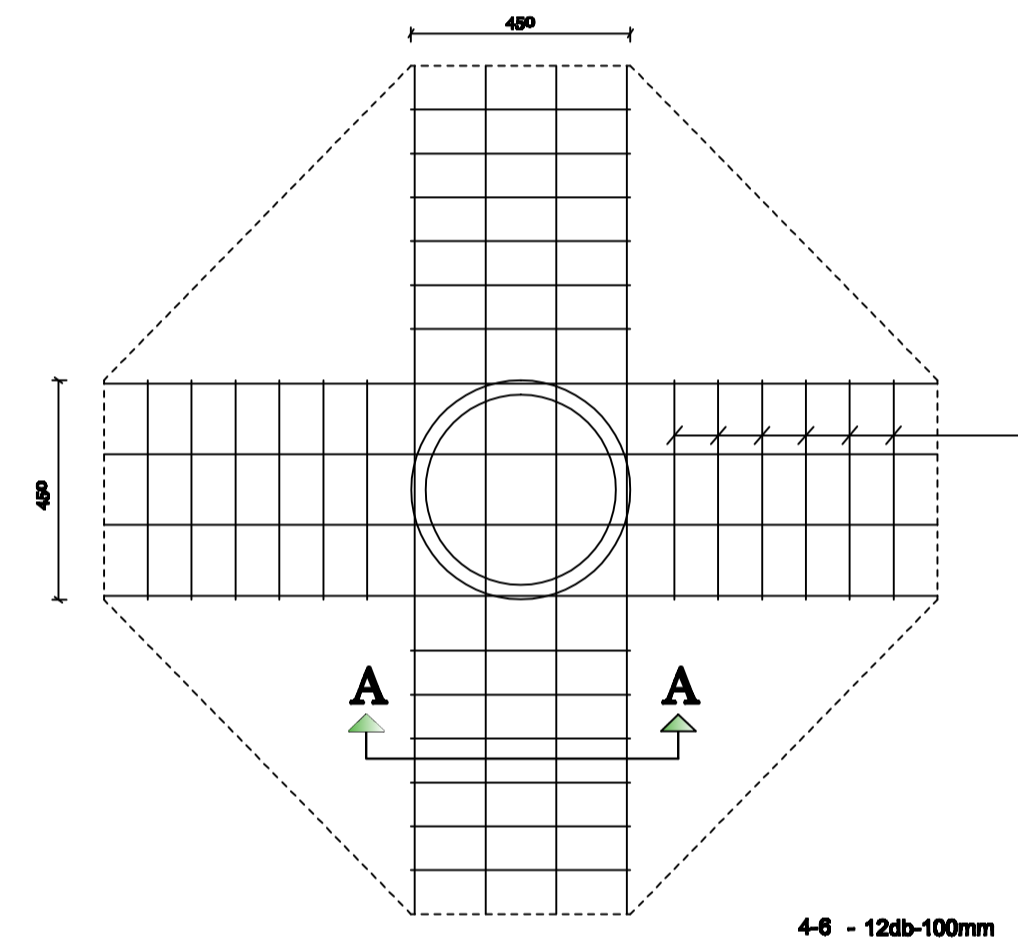
# Punching Stirrups Design

Plan

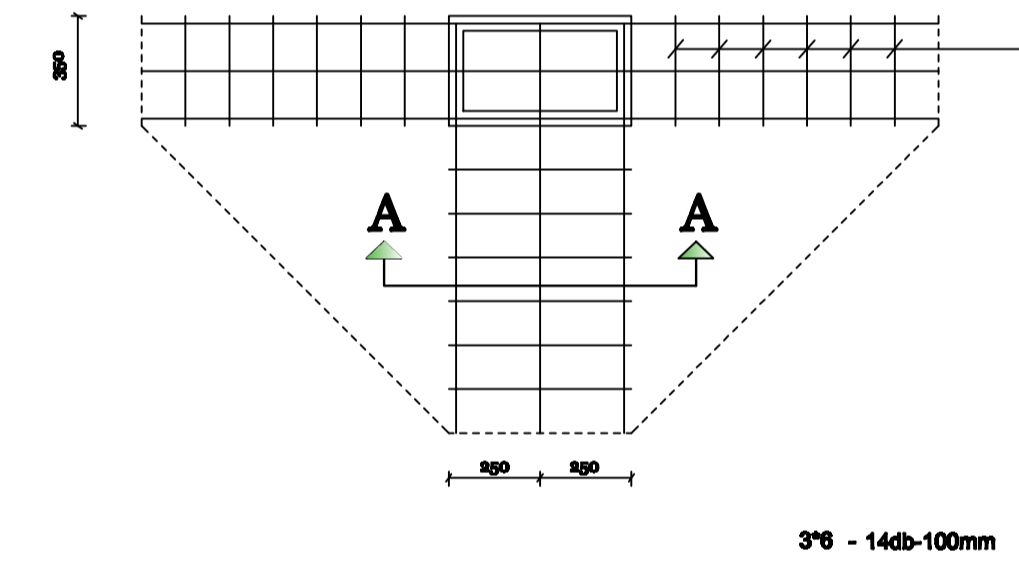
Punching Stirrups D-4



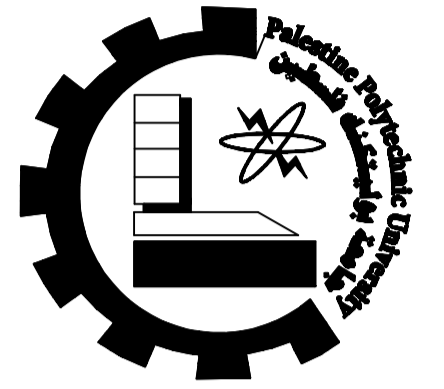
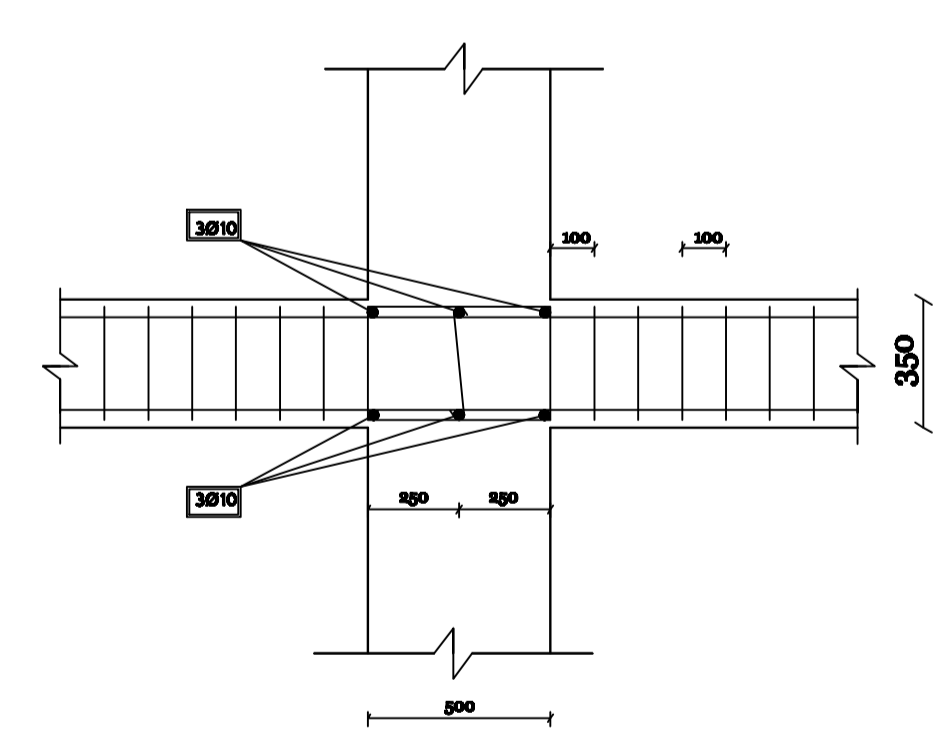
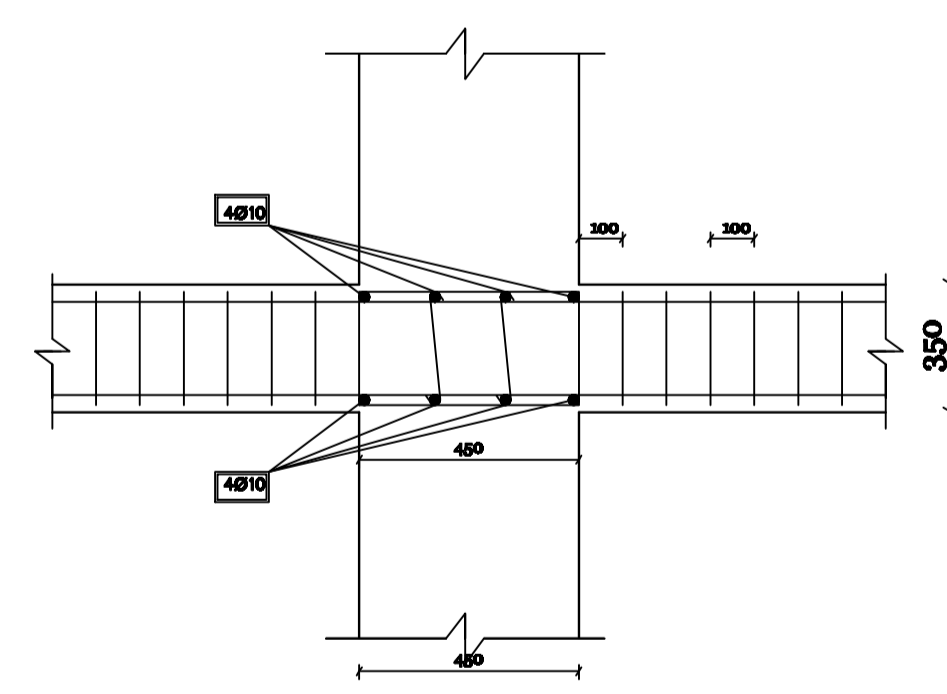
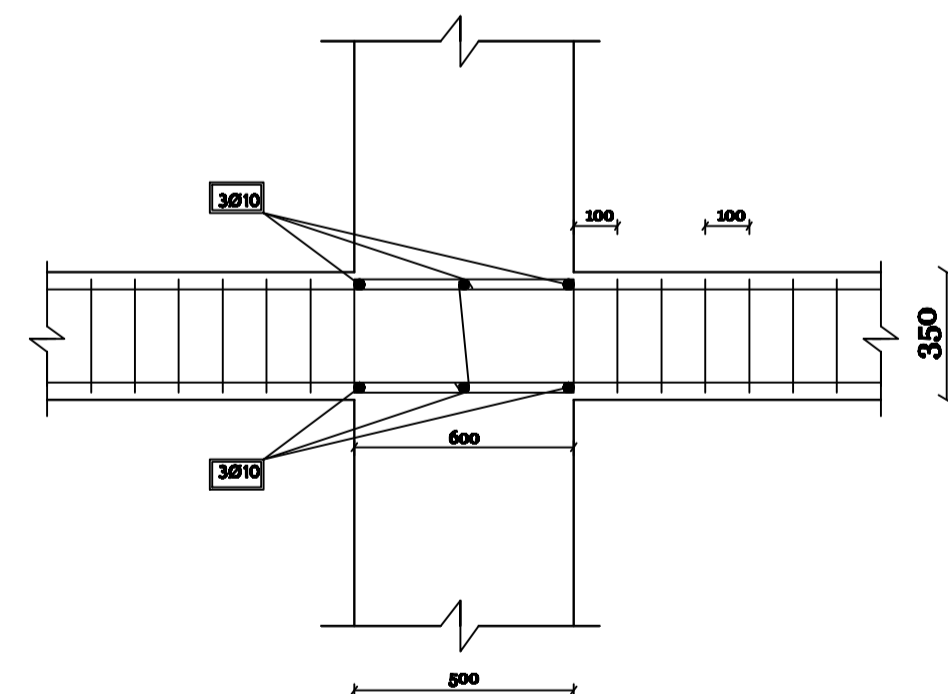
Punching Stirrups D-5



Punching Stirrups D-6



Section



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Supervisor:  
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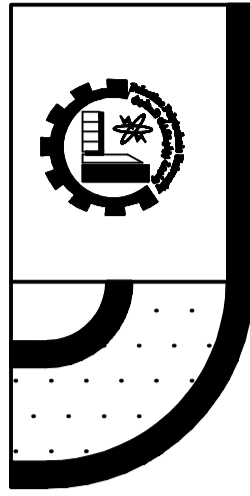
Project: Structural Design For  
Proposed  
Commercial Complex

In:  
ALBERE

Drawing :  
Stirrups Punching Details

NO: S(56)

Scale : 1:200 Date : Dec-2019



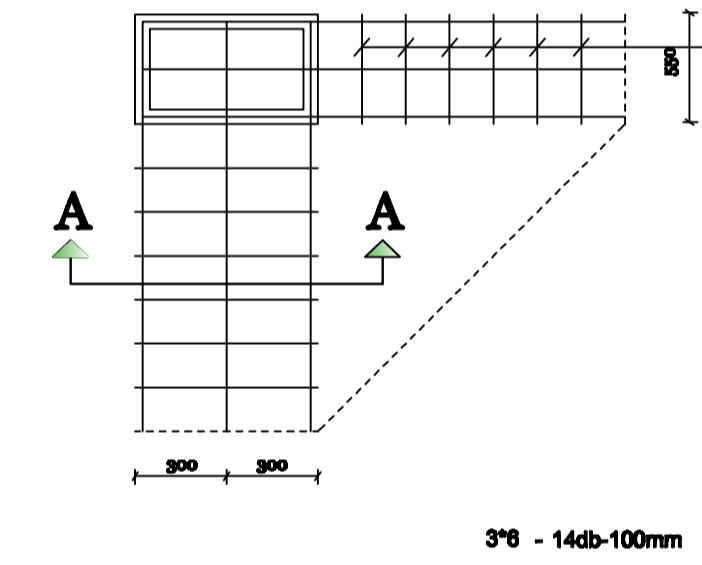
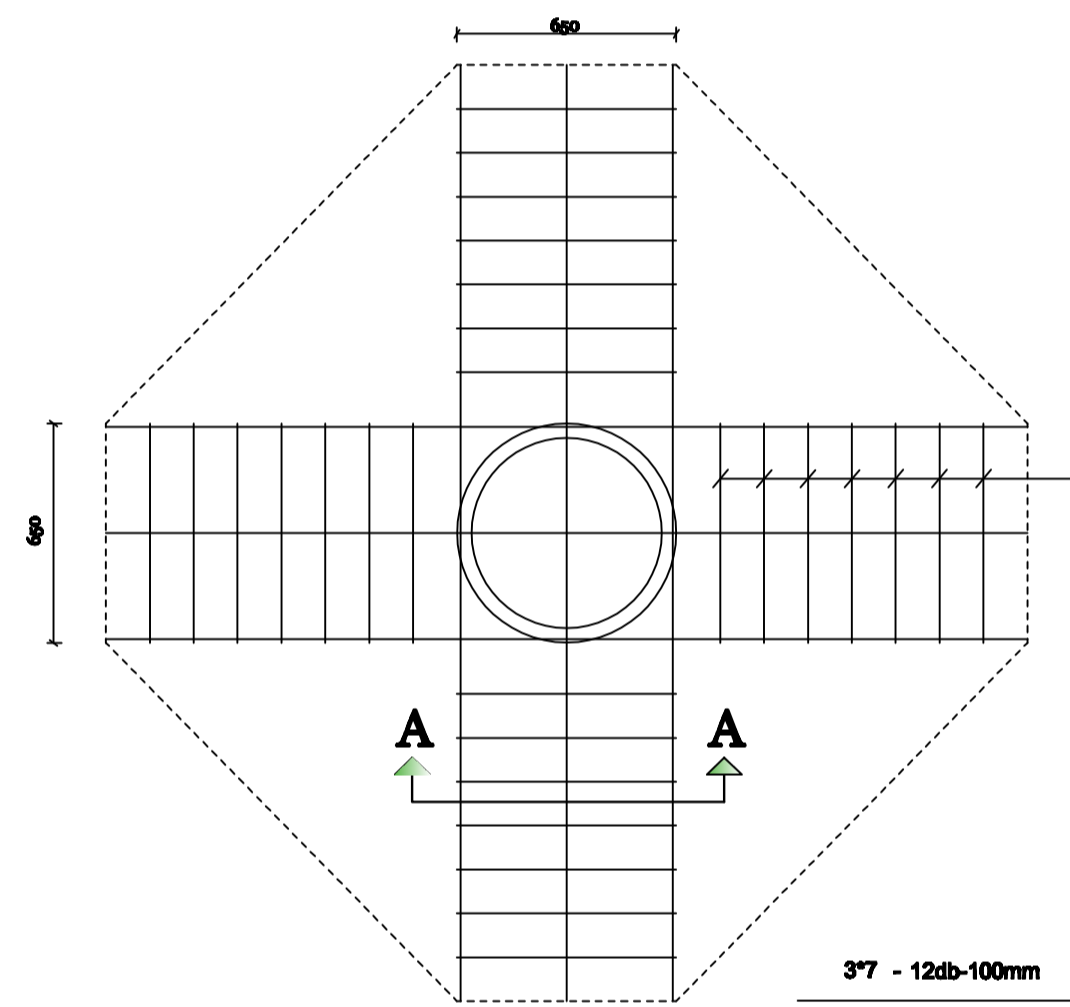
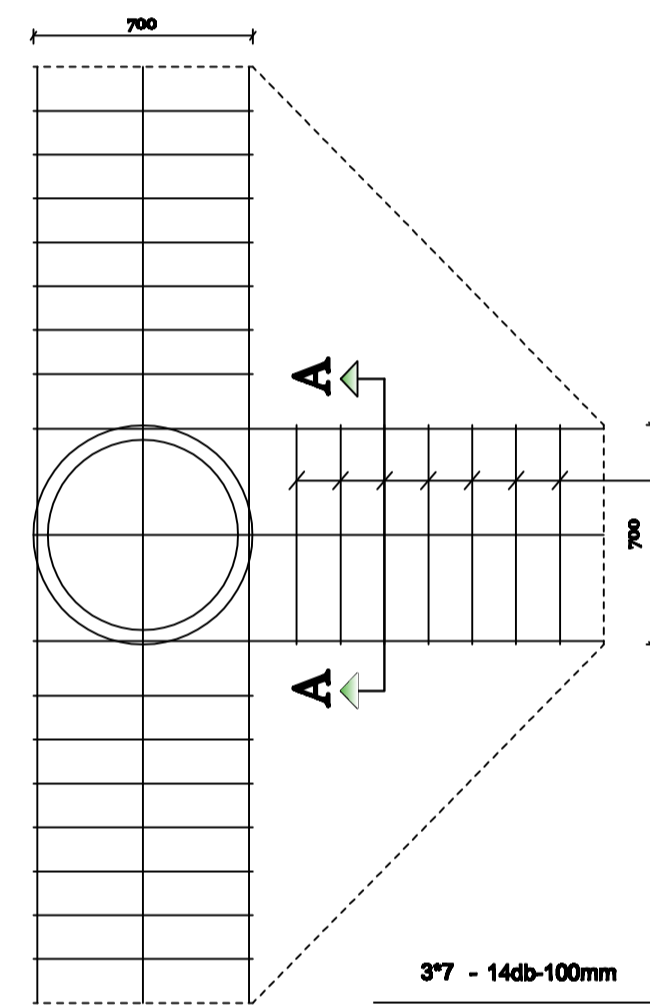
# Punching Stirrups Design

Punching Stirrups D-10

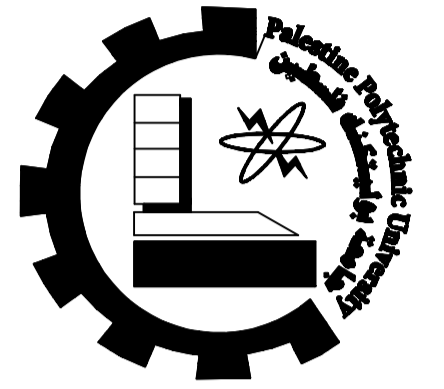
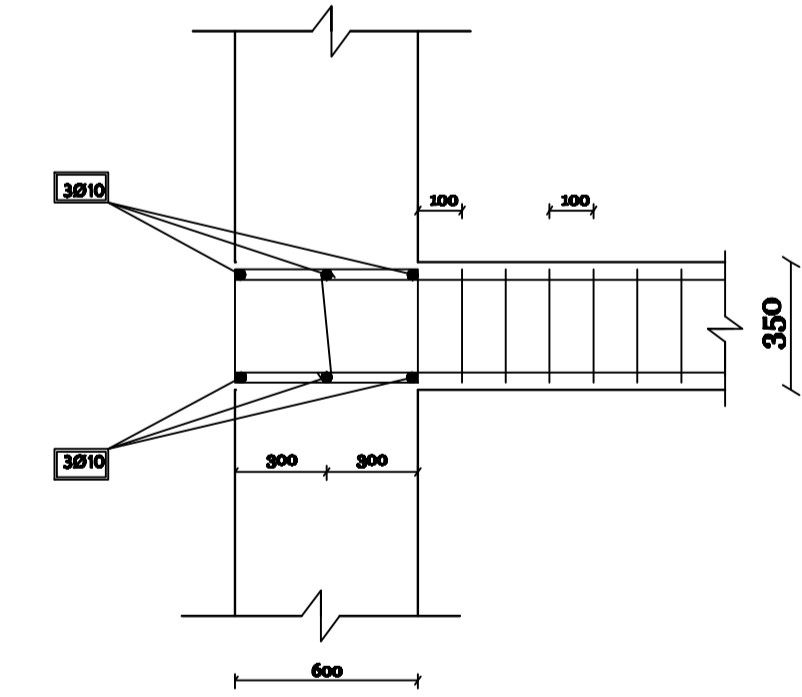
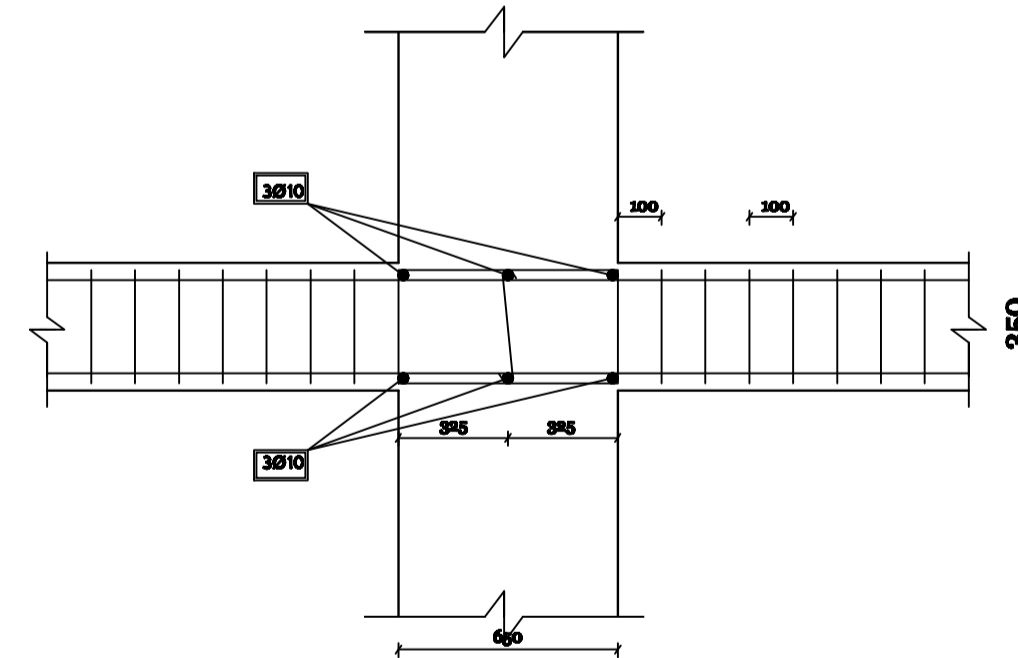
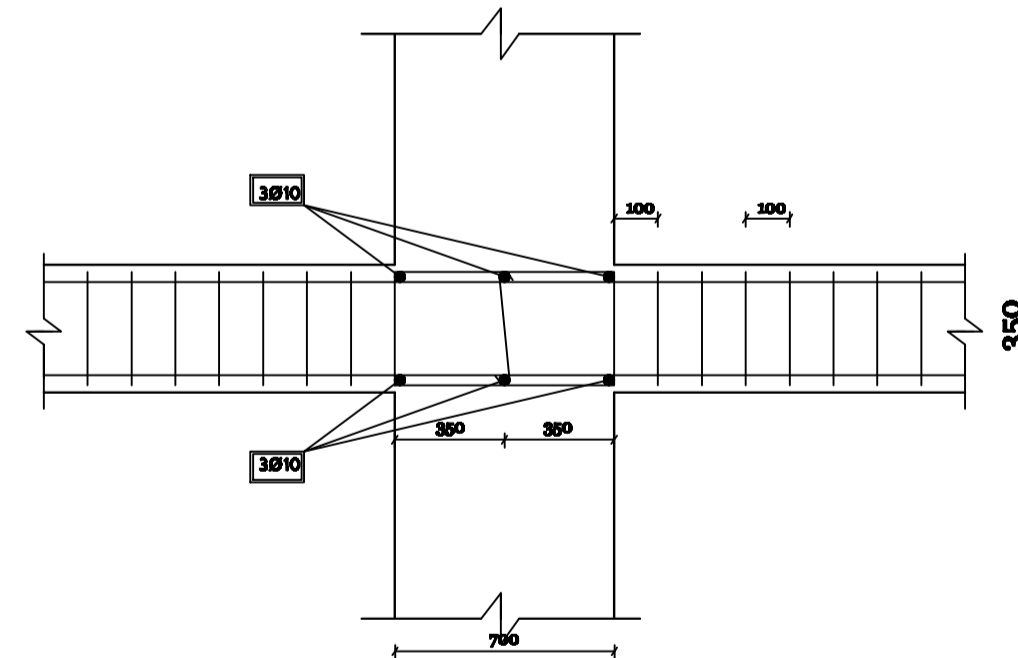
Punching Stirrups D-11

Punching Stirrups D-12

Plan



Section



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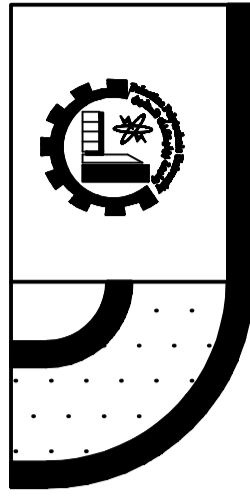
Project: Structural Design For  
Proposed  
Commercial Complex

In:  
ALBERE

Drawing :  
Stirrups Punching Details

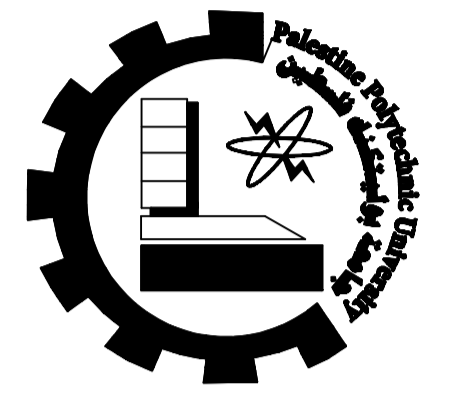
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Scale : 1:200 Date : Dec-2019

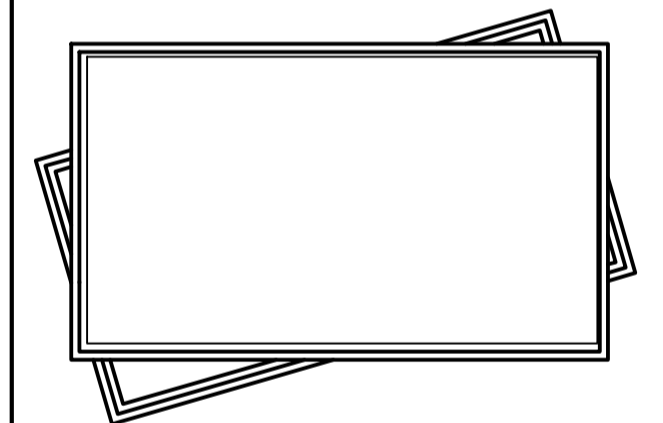


# Punching Stirrups Design

	Punching Stirrups D-7	Punching Stirrups D-8	Punching Stirrups D-9
Plan			
Section			



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 Proposed  
 Commercial Complex

In:  
 ALBERE

Drawing :  
 Stirrups Punching Details

NO: S(58)

Scale : 1:200 Date : Dec-2019