

# STRUCTURAL DESIGN CRITERIA AND CONSTRUCTION REQUIREMENTS

## 1. GENERAL:

- 1.1 ALL DIMENSIONS ARE METRIC.
- 1.2 ALL STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTURAL DRAWINGS.
- 1.3 THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCEMENT OF WORKS AND ANY DISCREPANCIES SHALL BE REPORTED TO TO THE ENGINEER BEFORE EXECUTION.
- 1.4 ALL OPENINGS FOR PIPING AND CONVEYANCE SHALL BE FORMED IN POSITION BEFORE THE CASTING OF CONCRETE.
- 1.5 NO HOLES OR CHASES ARE PERMITTED IN THE CONCRETE MEMBERS UNLESS OTHER THAN AS DETAILED OR UNLES APPROVED BY THE ENGINEER.
- 1.6 ELECTRICAL CONDUITS SHOULD NOT BE PROVIDED WITH IN THE COVER TO THE REINFORCEMENT OF STRUCTURAL ELEMENTS.

- ## 2.DESIGN:
- 2.1 CODES OF PRACTICE AND STANDARDS USED:
    - a. DESIGN AND DETAILING ARE IN ACCORDANCE WITH THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318-19) .
    - b. GRAVITY LOADS ESTIMATION ARE IN ACCORDANCE OF JORDANIAN CODE .
    - c. FOR THE DEFINITION OF LATERAL SEISMIC LOADING (ASCE7-16) IS USED.
  - 2.2 THE DESIGN ALLOWABLE BEARING CAPACITY OF THE SUPPORTING SOIL UNDER THE FOUNDATION  $500 \text{ kN/m}^2$
  - 2.3 STRUCTURAL MEMBERS ARE DESIGNED TO RESIST ITS SELF WEIGHT IN ADDITION TO :
    - a. LIVE LOAD OF  $5 \text{ kN/m}^2$  For cafeteria and  $2.5 \text{ kN/m}^2$  For offices
    - b. SUPER IMPOSED DEAD LOAD OF  $5.38 \text{ kN/m}^2$
  - 2.4 ALL STRUCTURAL MEMBERS ARE DESIGNED TO WITHSTAND TOTAL NUMBER OF FIVE STORIES.

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### 3.CONCRETE&REINFORCEMENT:

3.1 CONCRETE GRADE ARE B300 FOR ALL MEMBERS.

3.2 DEFORMED REINFORCING BARS SHALL CONFORM TO THE ASTM SPECIFICATIONS.

3.3 ALL STEEL REINFORCEMENT BARS SHALL BE FROM HIGH TENSILE DEFORMED BARS OF YIELD STRENGTH = 420 MPa

3.4 LAP SPLICE LENGTHS OF REINFORCEMENT BARS SHALL BE AS SHOWN ON THE DRAWINGS BUT NOT LESS THAN 50 BARS DIAMETER (50 $\phi$ ).

3.5 ALL REINFORCING BARS ANCHORING TWO DIFFERENT STRUCTURAL ELEMENTS SHALL BE ENDED WITH 90 OR 180 HOOK AS SHOWN ON DRAWINGS BUT NOT LESS THAN THE FOLLOWING :

|    | Secondary Steel | Main Steel |
|----|-----------------|------------|
| D  | 4d              | 5d         |
| 1e | 12d             | 14d        |

3.6 MINIMUM CLEAR CONCRETE COVER TO STEEL REINFORCEMENT SHALL BE AS FOLLOWS :

50mm. FOR FOUNDATIONS .

40mm. FOR BEAMS & COLUMNS.

20mm. FOR SLABS.

3.7 IN ALL STIRRUPS IN BEAMS & COLUMNS THE LENGTH OF a = 11 cm.

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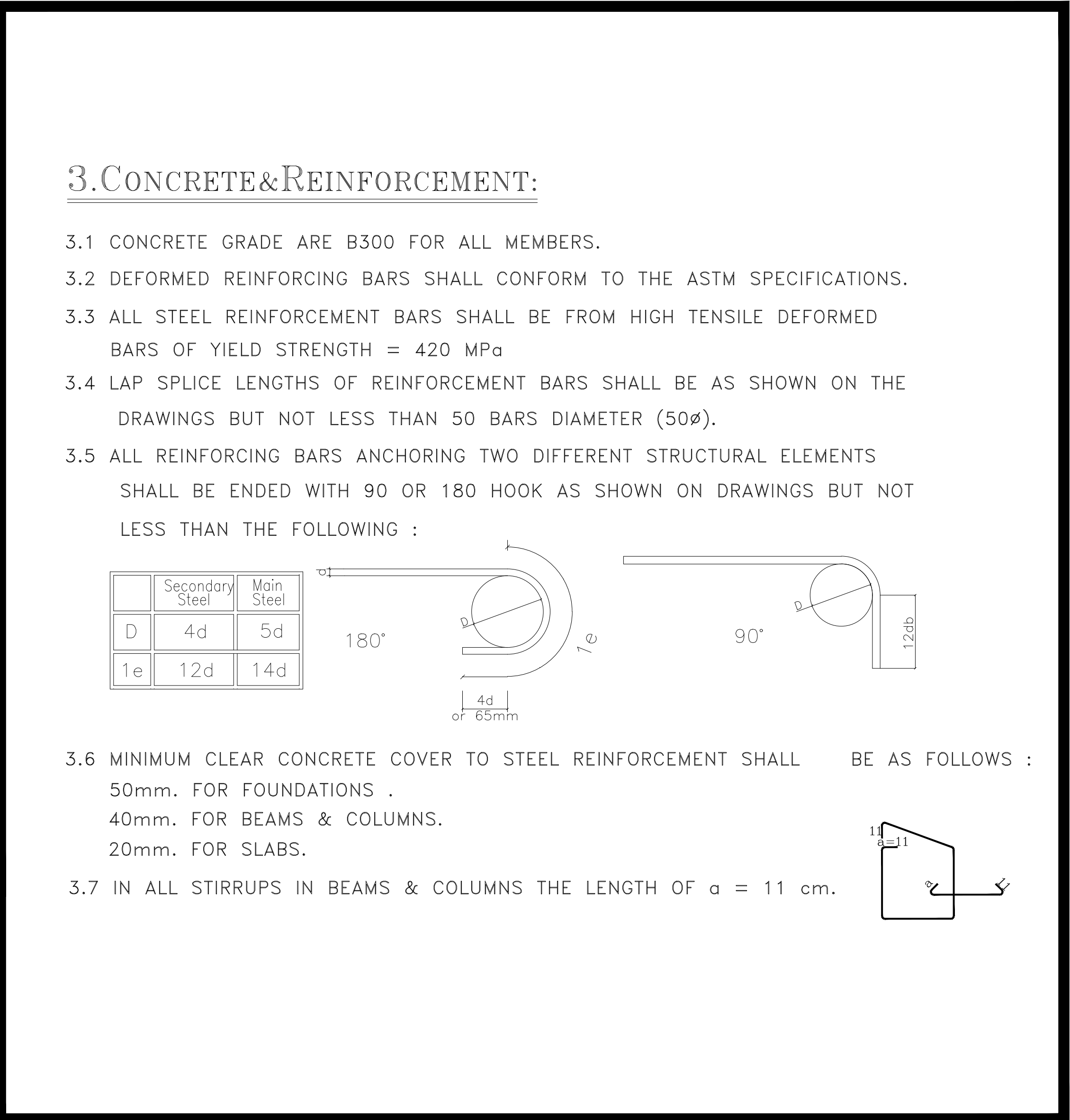
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The diagram illustrates two types of reinforcement bar hooks. On the left, a 180-degree hook is shown with a diameter 'D' and a length dimensioned as '4d or 65mm'. On the right, a 90-degree hook is shown with a diameter 'D' and a length dimensioned as '12db'.

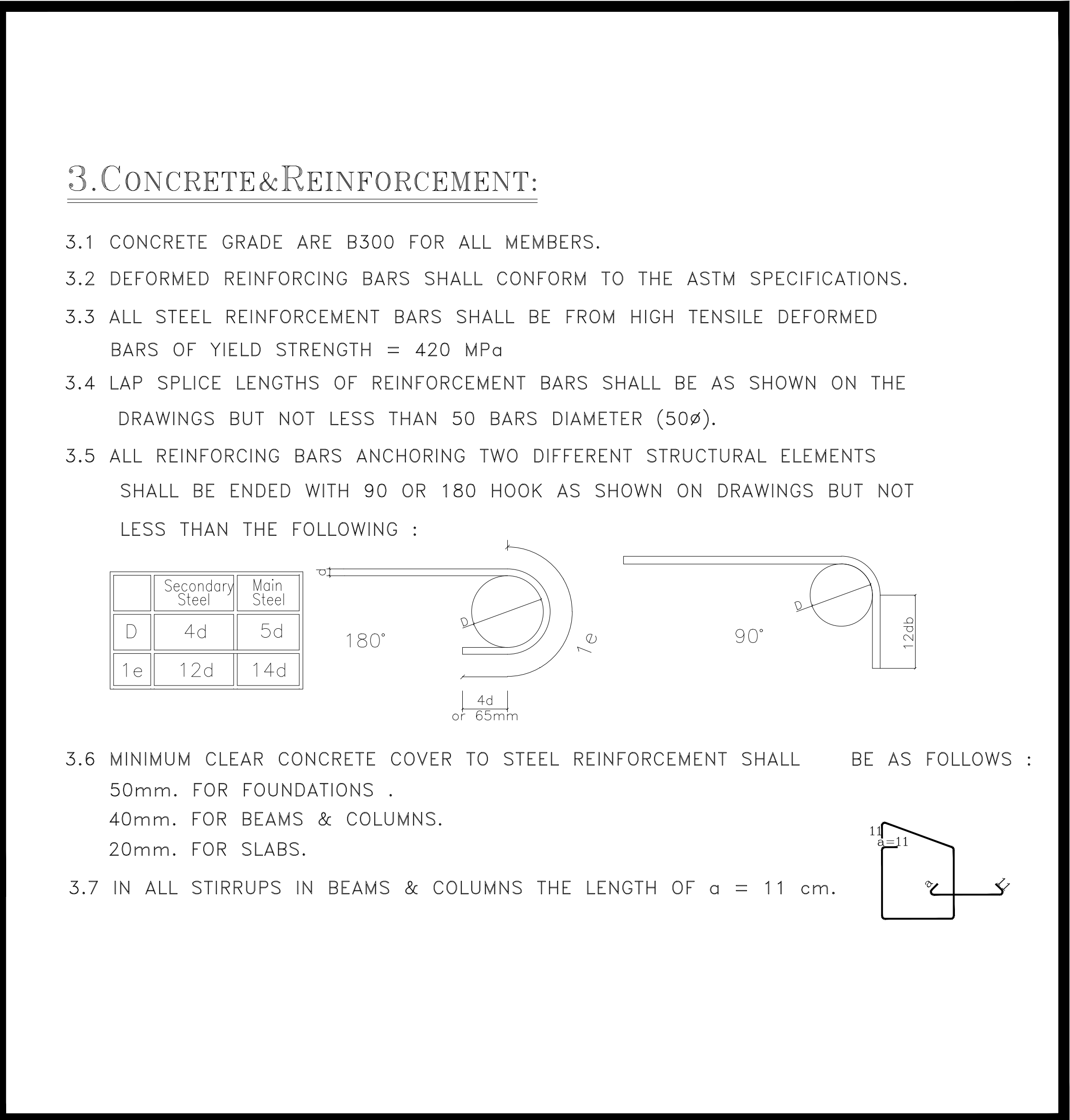
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The diagram shows a square stirrup with four sides, each labeled with the dimension '11'.



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- 



#### 4. SYMBOLS & ABBREVIATIONS:

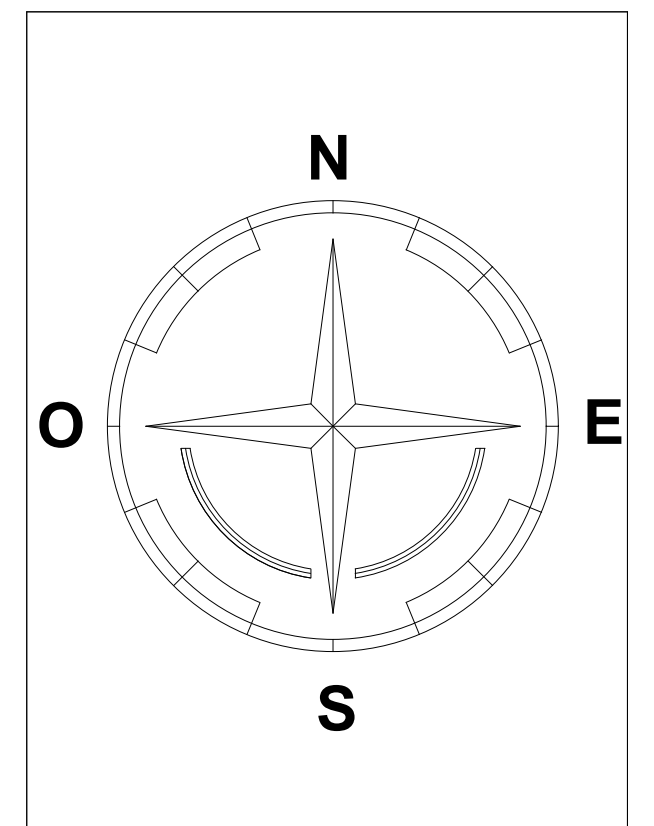
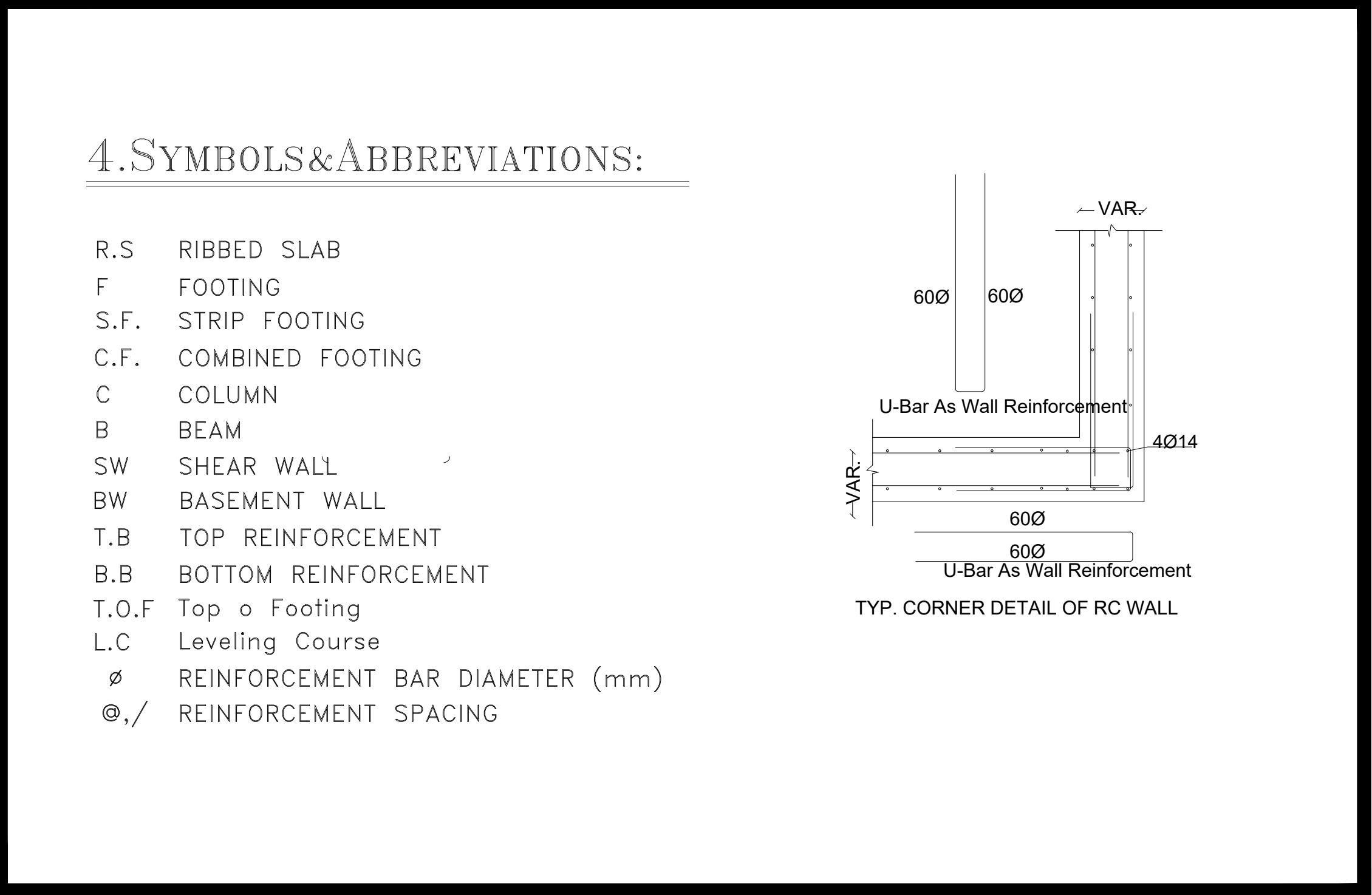
|       |                                 |
|-------|---------------------------------|
| R.S   | RIBBED SLAB                     |
| F     | FOOTING                         |
| S.F.  | STRIP FOOTING                   |
| C.F.  | COMBINED FOOTING                |
| C     | COLUMN                          |
| B     | BEAM                            |
| SW    | SHEAR WALL                      |
| BW    | BASEMENT WALL                   |
| T.B   | TOP REINFORCEMENT               |
| B.B   | BOTTOM REINFORCEMENT            |
| T.O.F | Top of Footing                  |
| L.C   | Leveling Course                 |
| Ø     | REINFORCEMENT BAR DIAMETER (mm) |
| @, /  | REINFORCEMENT SPACING           |

Diagram illustrating the typical corner detail of an RC wall. The wall thickness is 600mm. The reinforcement includes top and bottom bars, and U-bars for wall reinforcement. The corner is detailed with 4Ø14 bars. The diagram is labeled "TYP. CORNER DETAIL OF RC WALL".

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| F     | FOOTING                         |
| S.F.  | STRIP FOOTING                   |
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| SW    | SHEAR WALL                      |
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| T.B   | TOP REINFORCEMENT               |
| B.B   | BOTTOM REINFORCEMENT            |
| T.O.F | Top of Footing                  |
| L.C   | Leveling Course                 |
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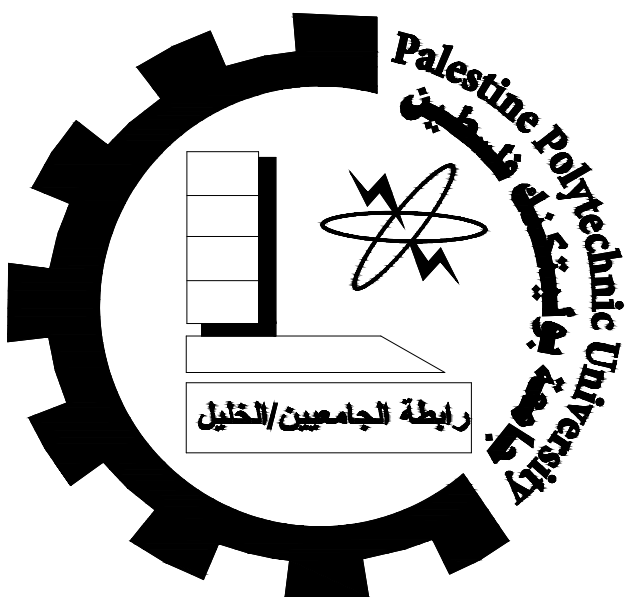
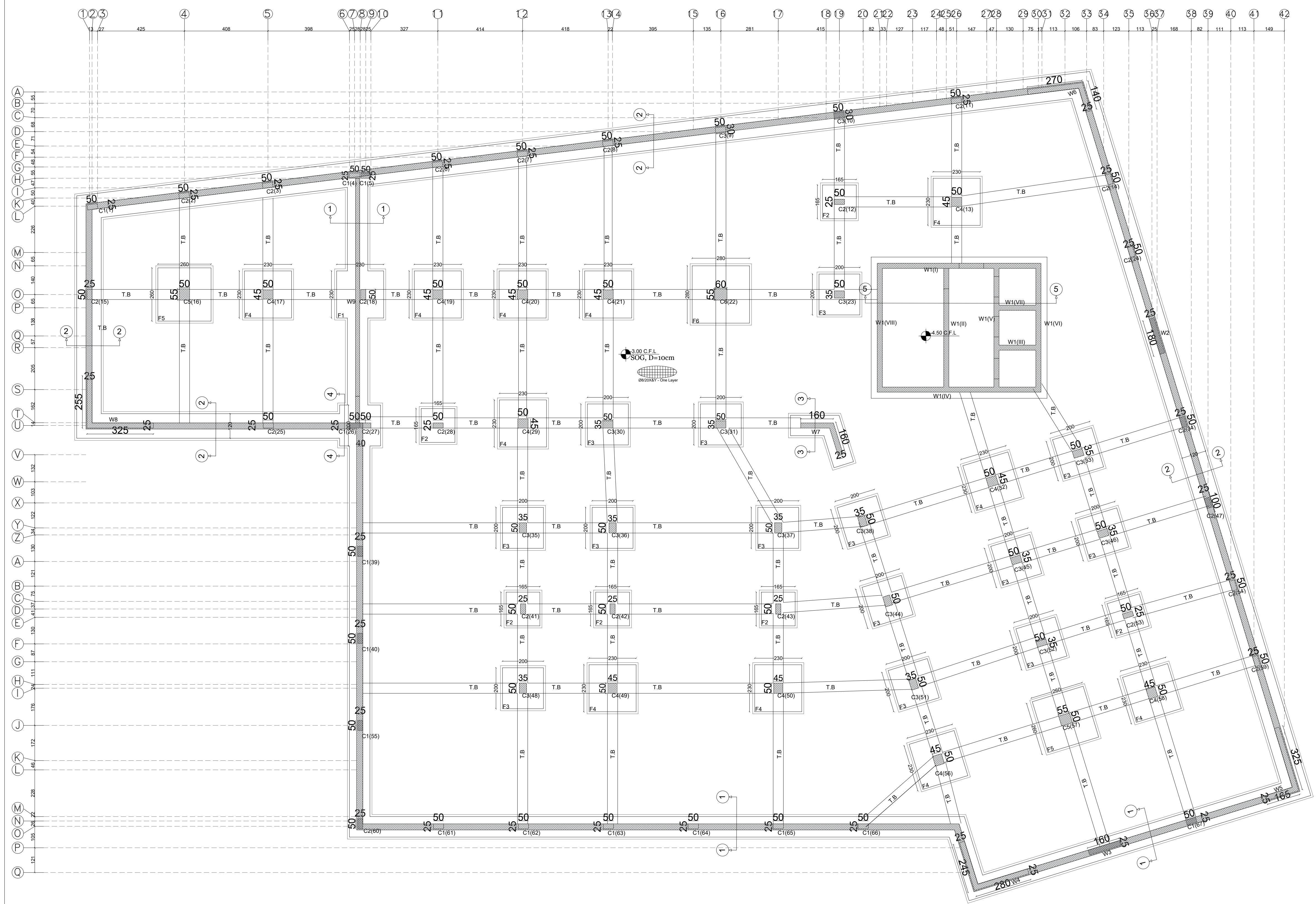
The diagram illustrates the corner detail of an RC wall. It shows a cross-section of a wall corner with reinforcement bars. The wall has a thickness of 600 mm. The reinforcement includes top and bottom bars, and U-bars for wall reinforcement. The corner is reinforced with 4Ø14 bars. The diagram is labeled 'TYP. CORNER DETAIL OF RC WALL'.



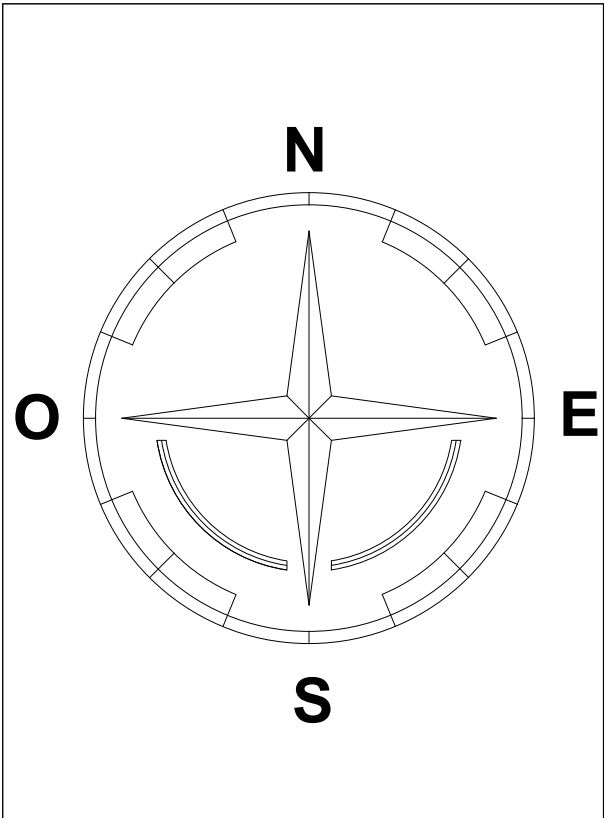
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| SCALE | NO. OF DRAW |
| 1:100 | S00         |



Building A



Palestine Polytechnic University  
College of Engineering  
Civil & Architecture Department  
Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Column& Walls layout

SCALE

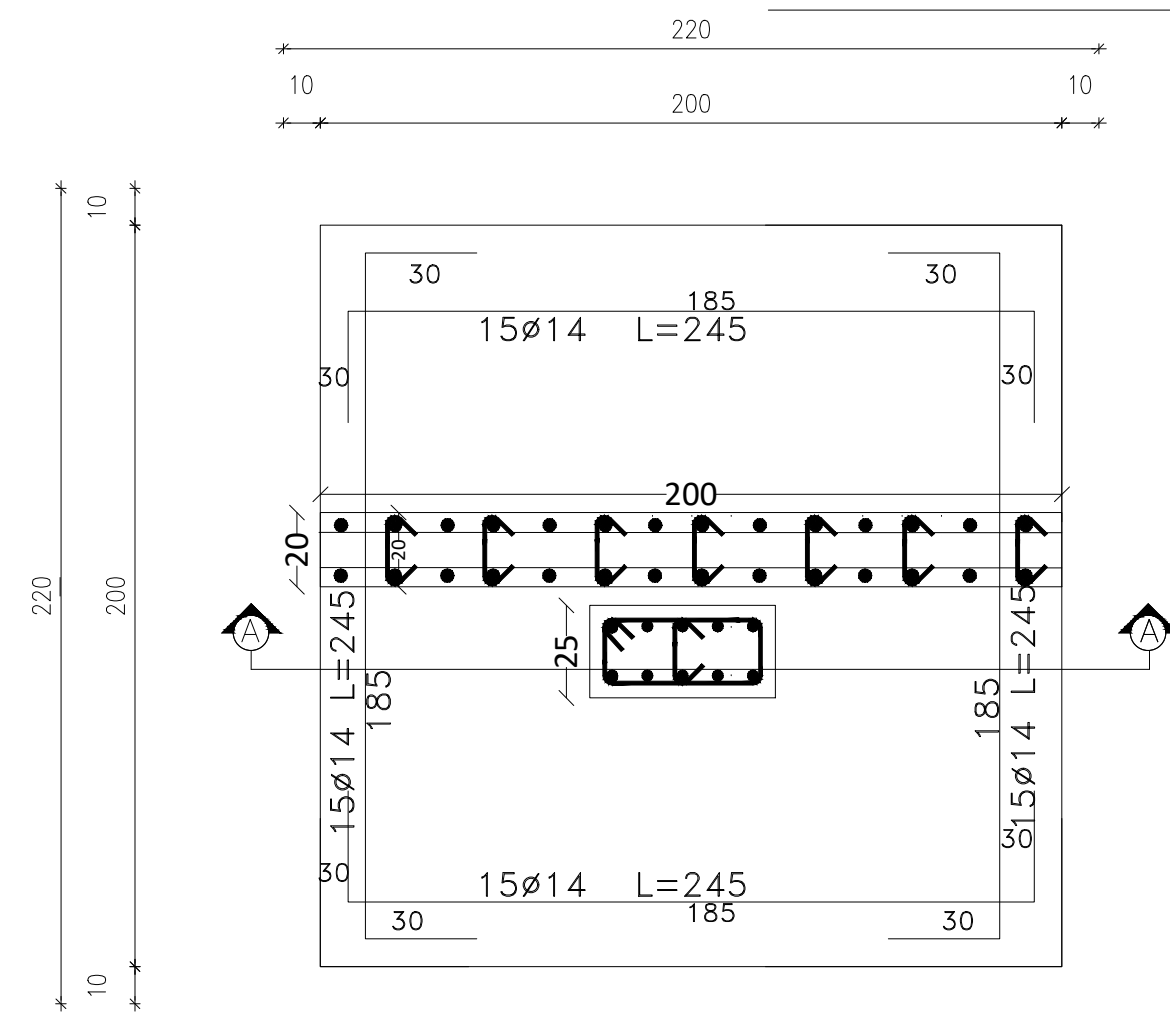
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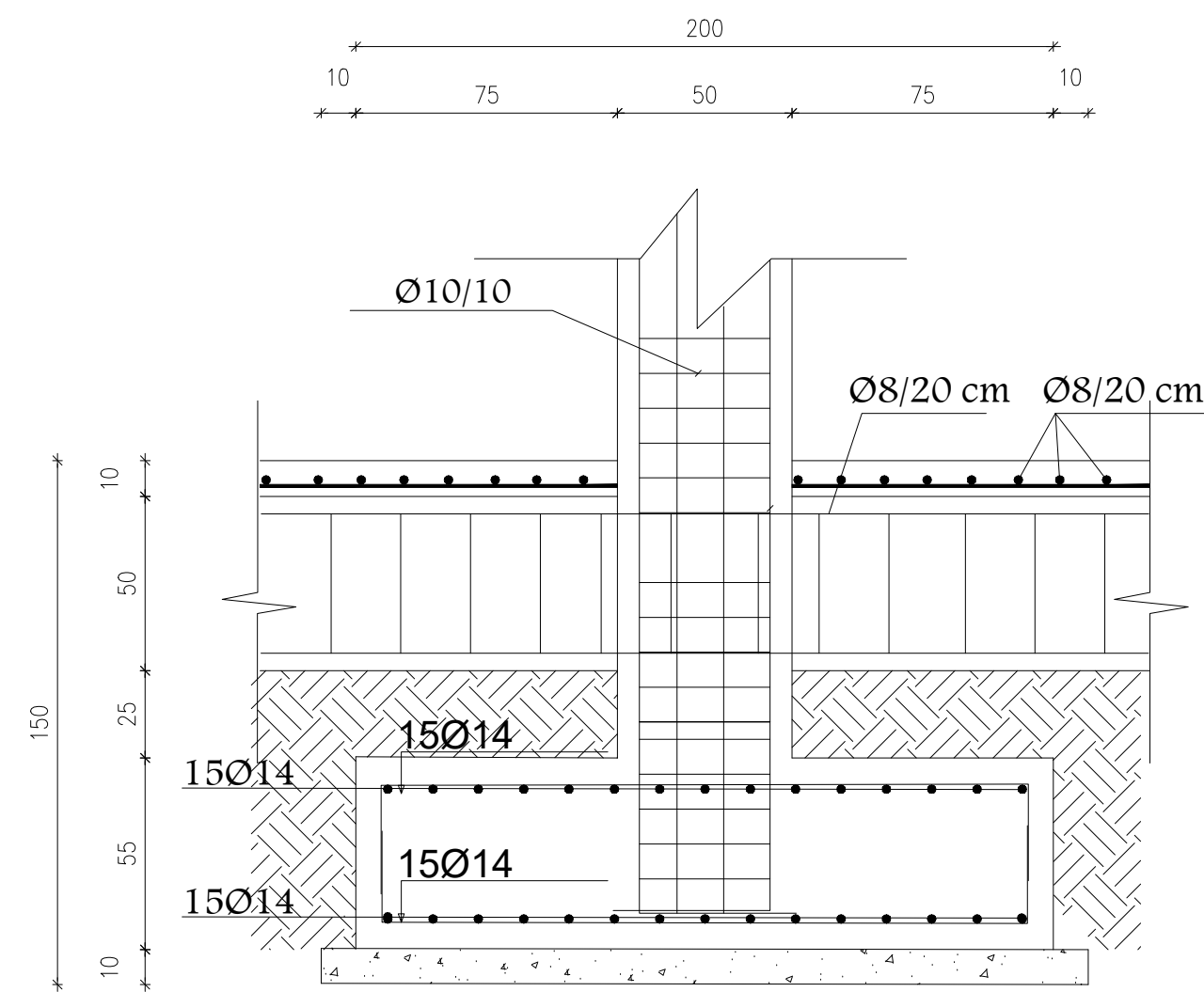
S01



ISOLATED FOOTING - F1 (2.00×2.00)m

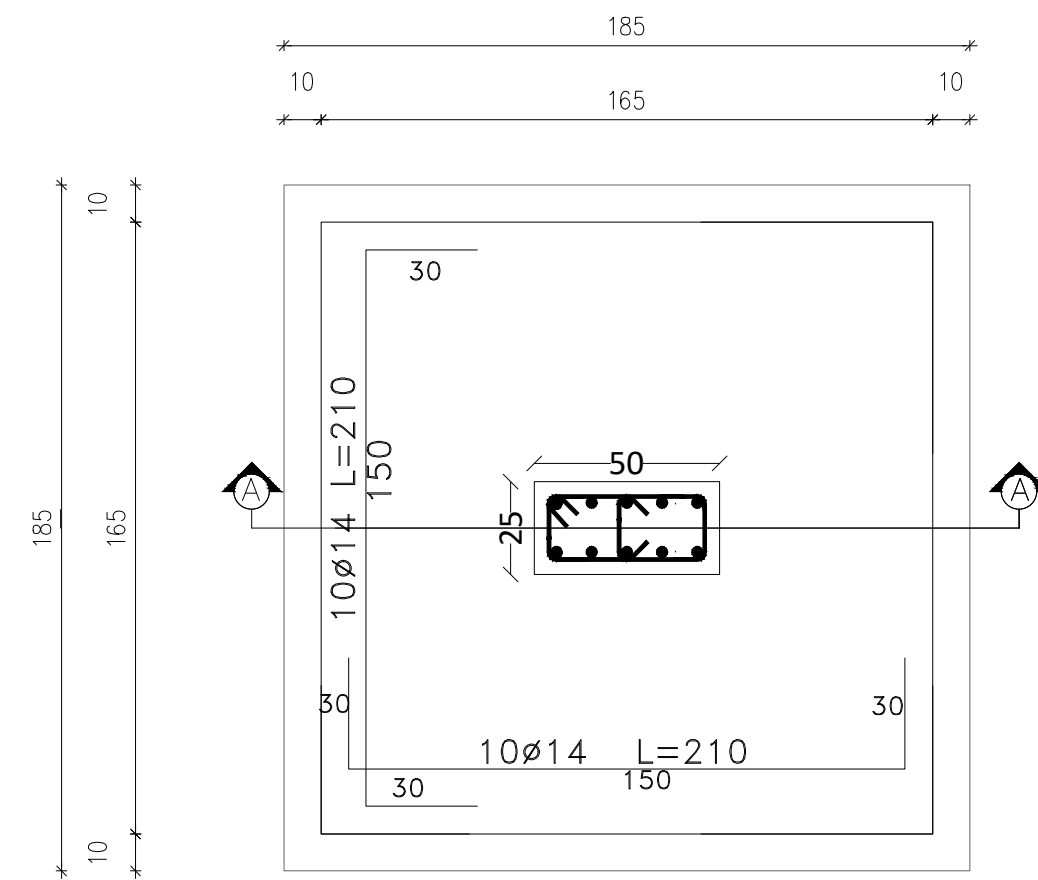


BOTTOM REINFORCEMENT

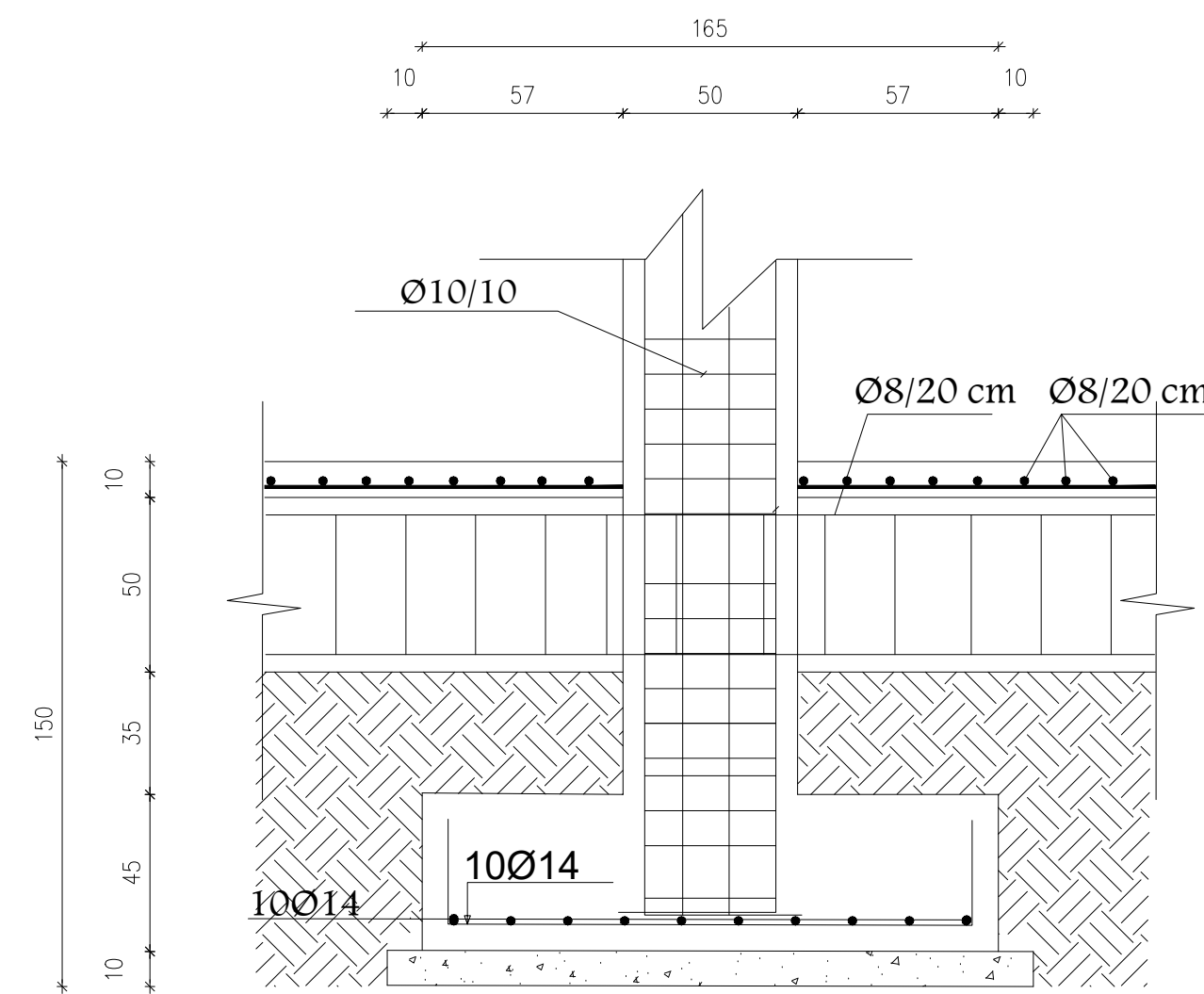


SECTION A-A  
SCALE 1:20

ISOLATED FOOTING - F2 (1.65×1.65)m

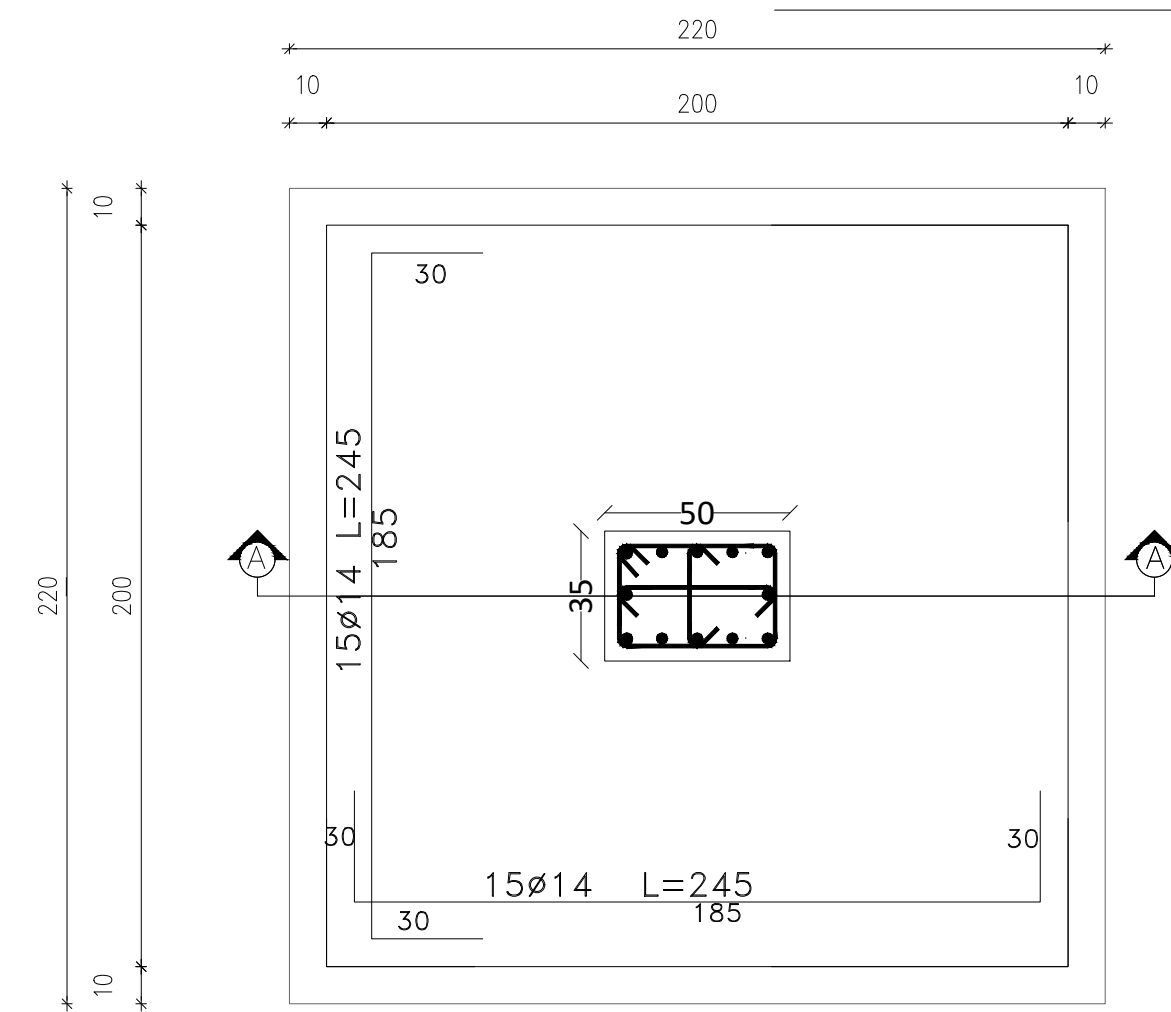


BOTTOM REINFORCEMENT

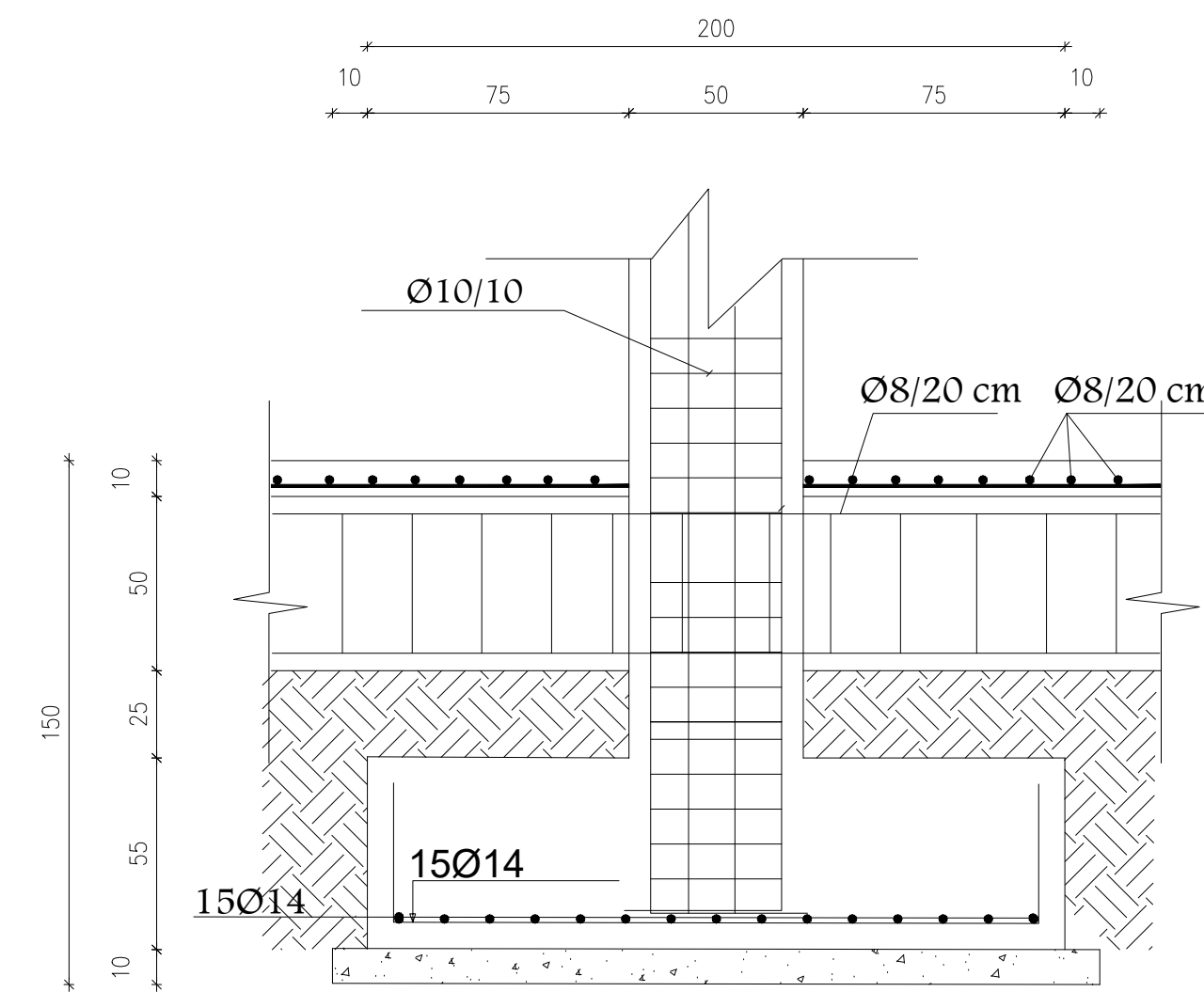


SECTION A-A  
SCALE 1:20

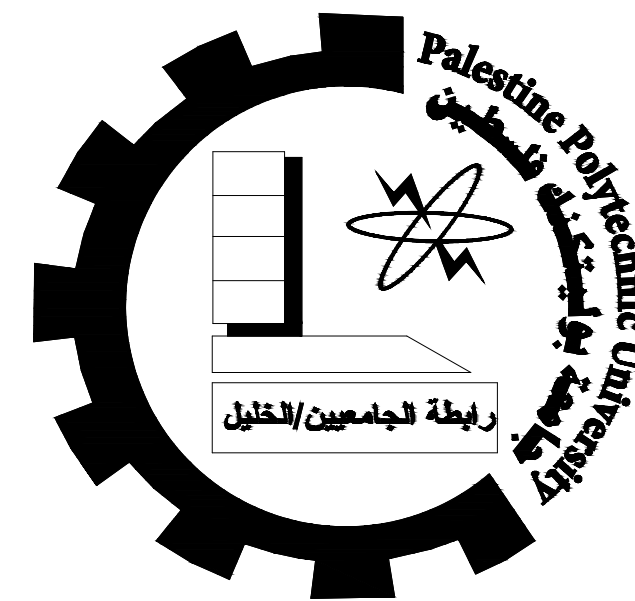
ISOLATED FOOTING - F3 (2.00×2.00)m



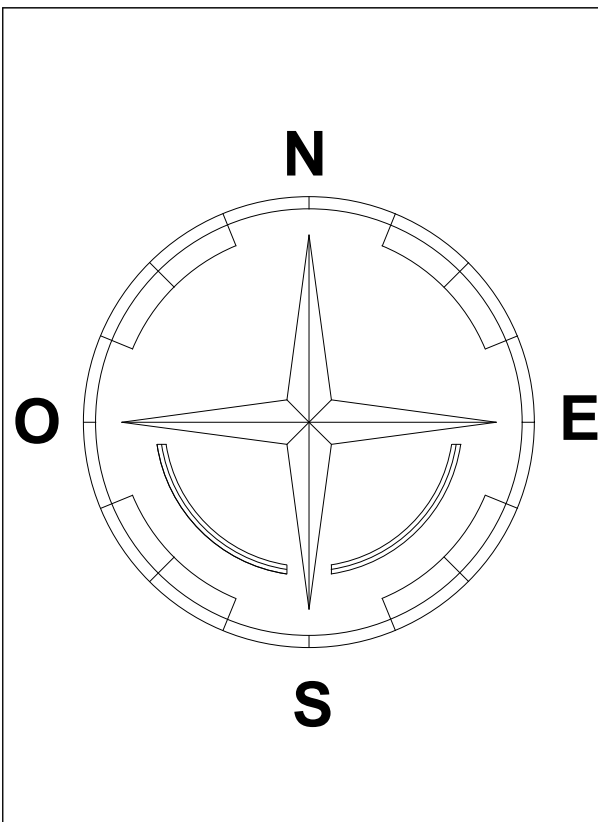
BOTTOM REINFORCEMENT



SECTION A-A  
SCALE 1:20



Palestine Polytechnic University  
College of Engineering  
Civil & Architecture Department  
Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Foundation Details

SCALE

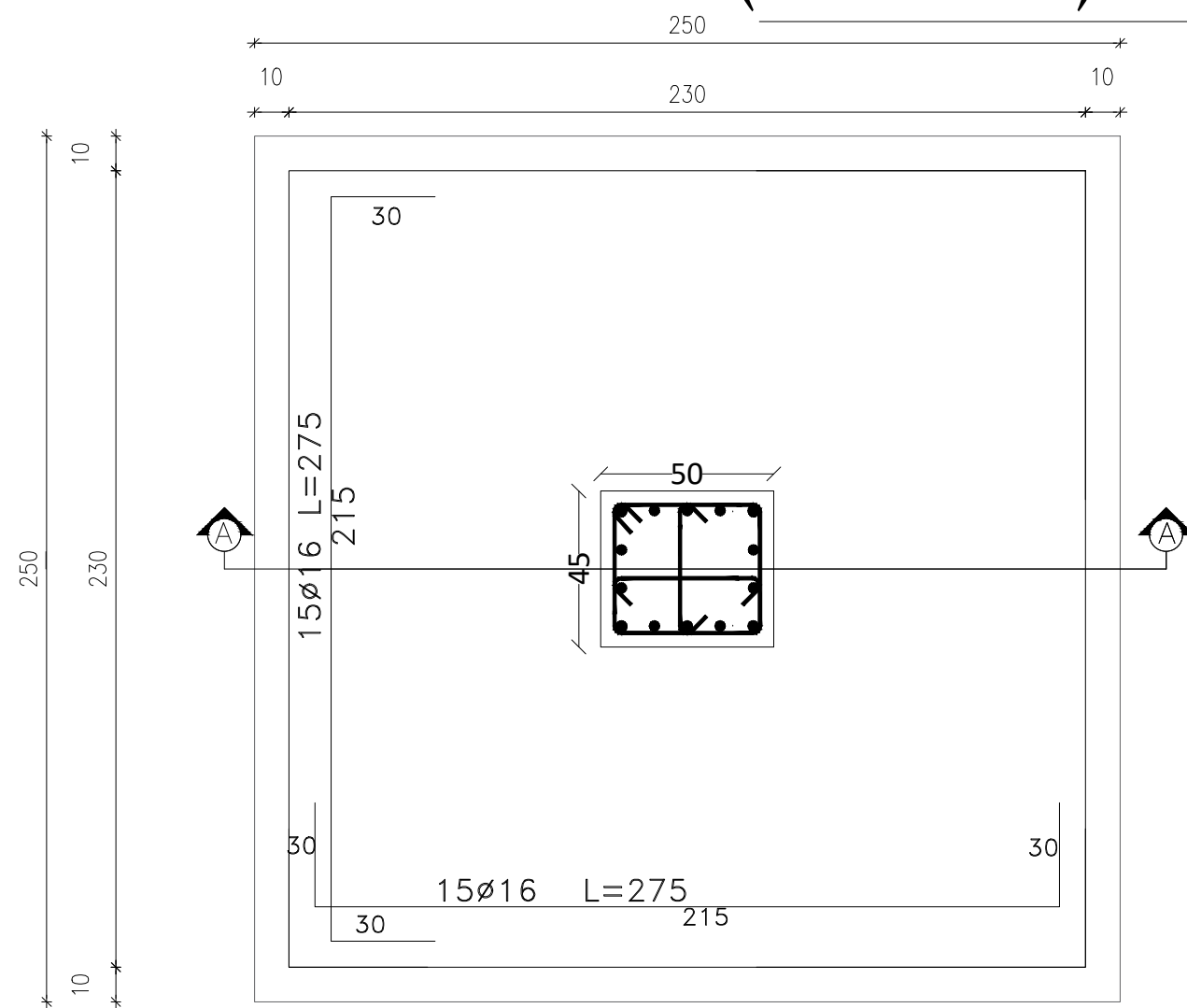
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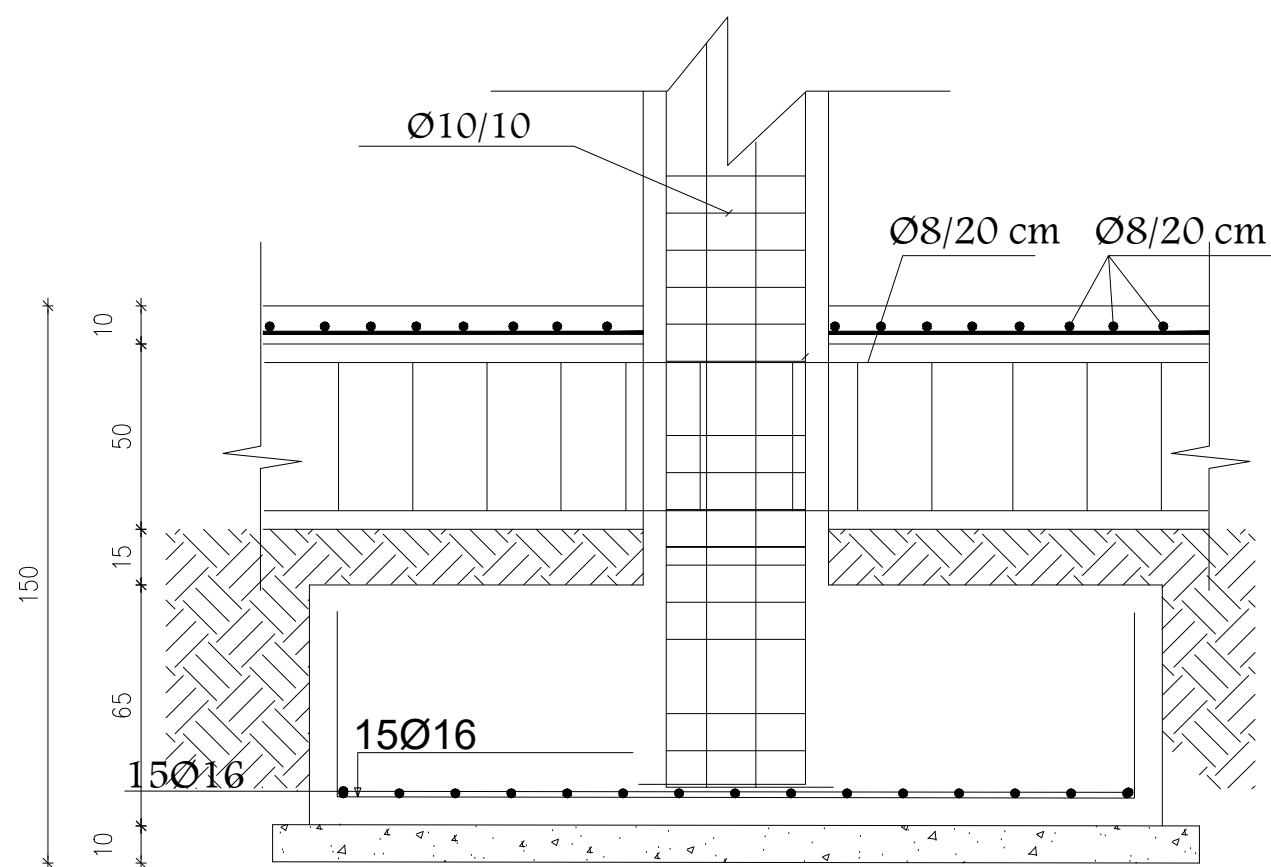
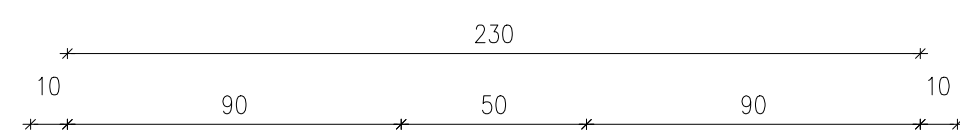
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ISOLATED FOOTING - F4 (2.30×2.30)m



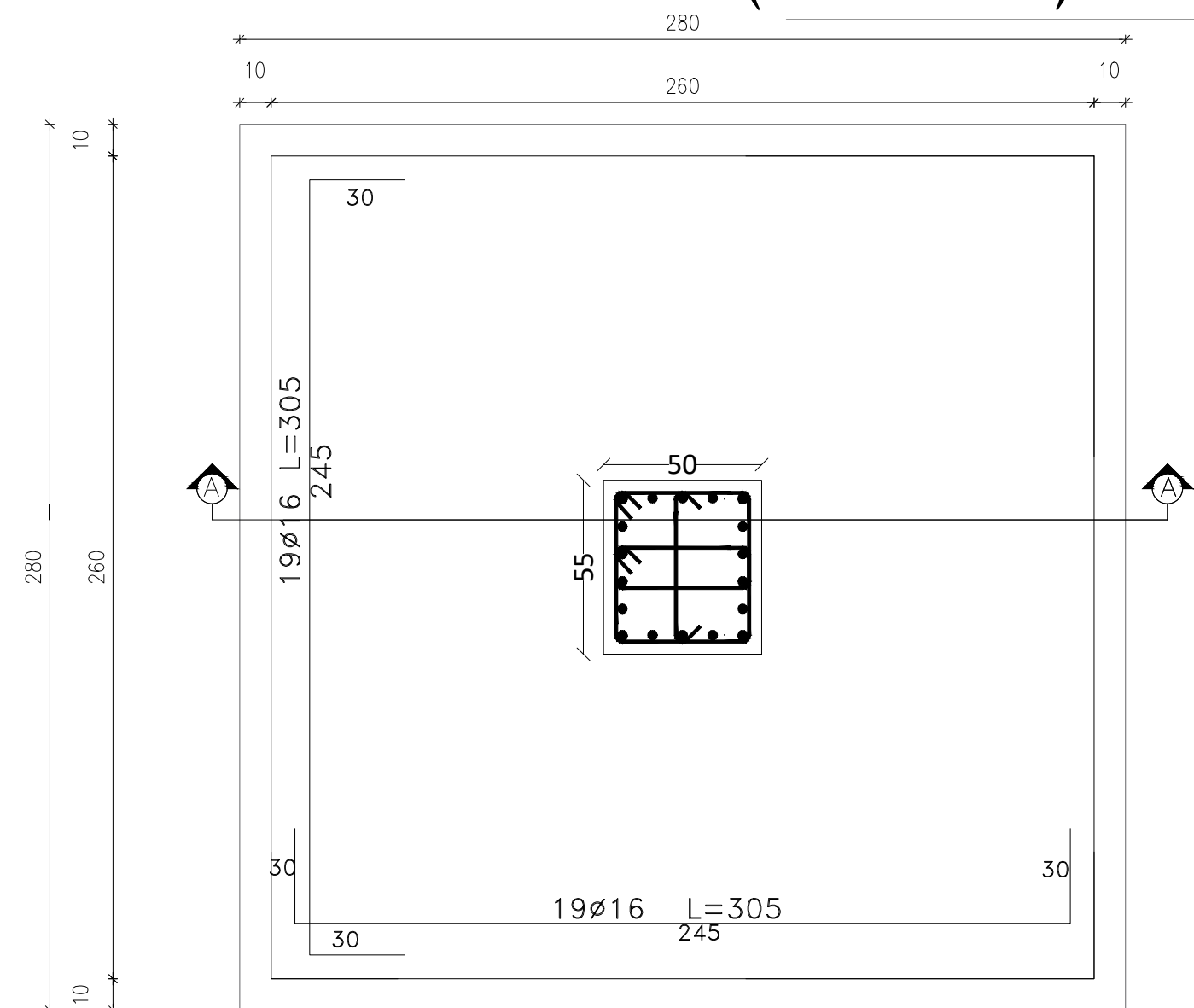
BOTTOM REINFORCEMENT



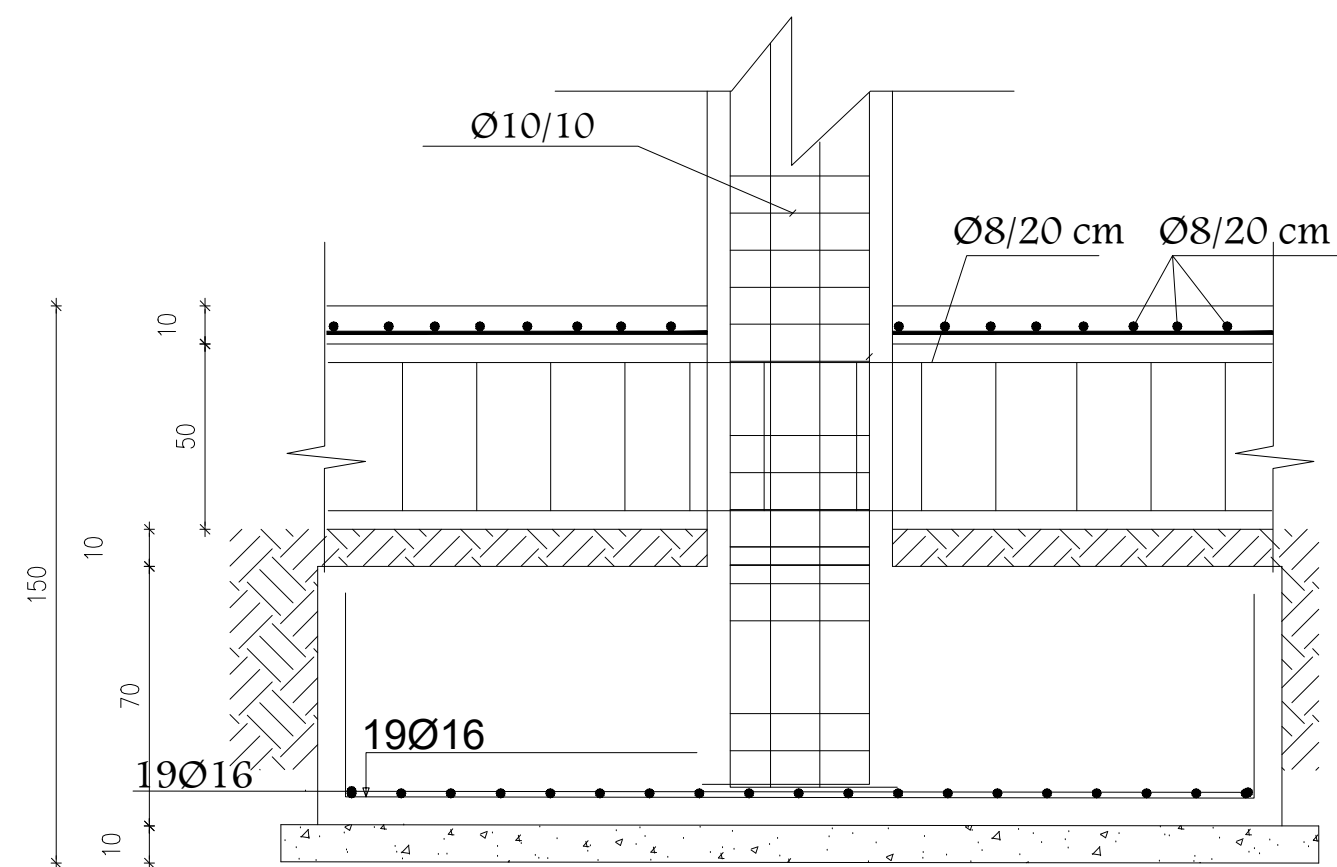
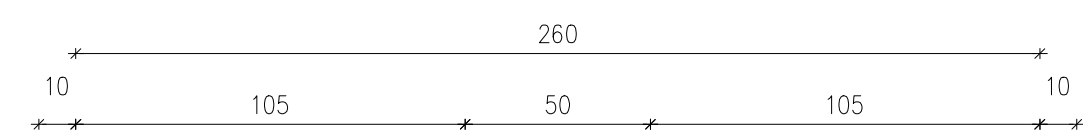
SECTION A-A

SCALE 1:20

ISOLATED FOOTING - F5 (2.60×2.60)m



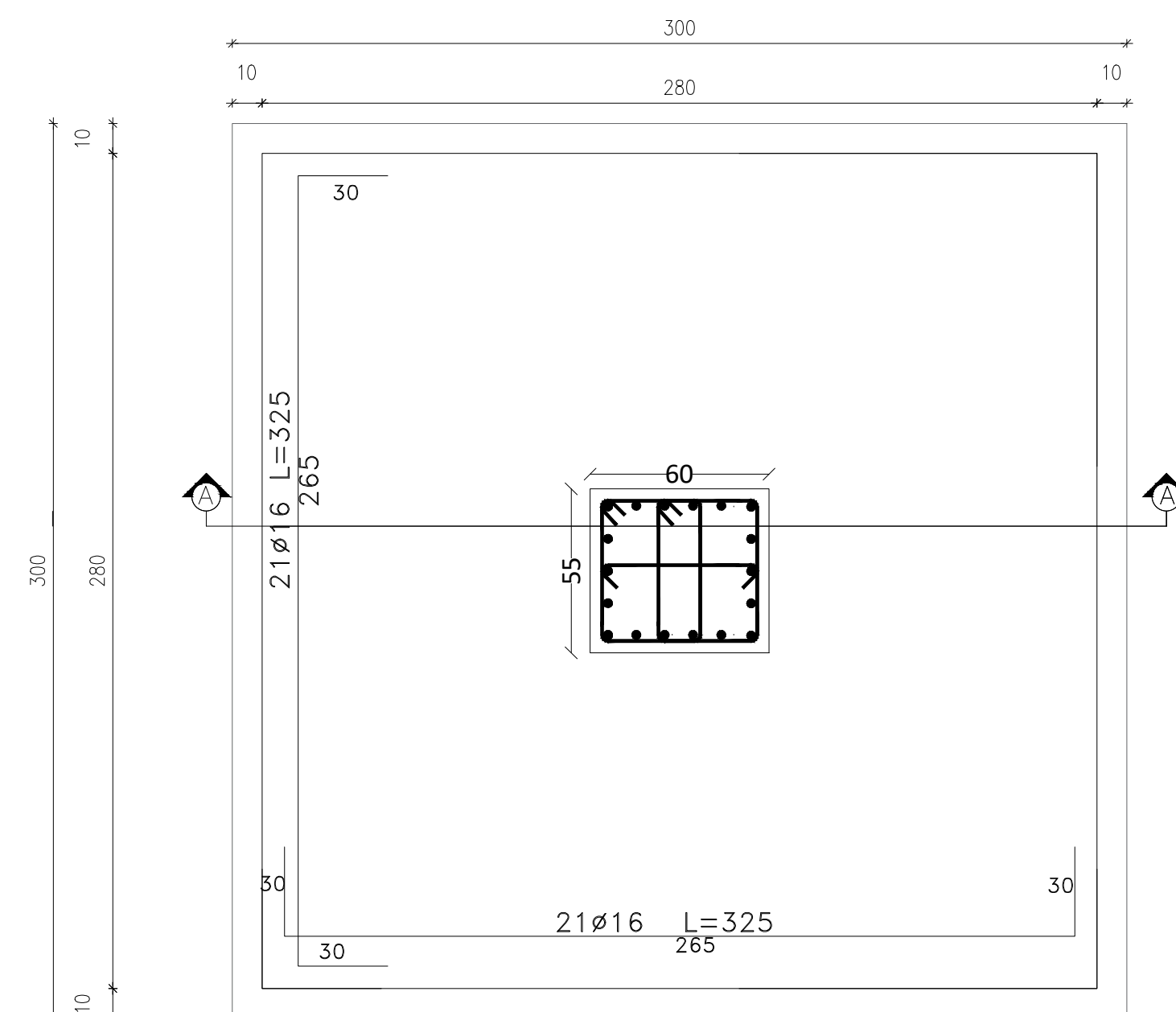
BOTTOM REINFORCEMENT



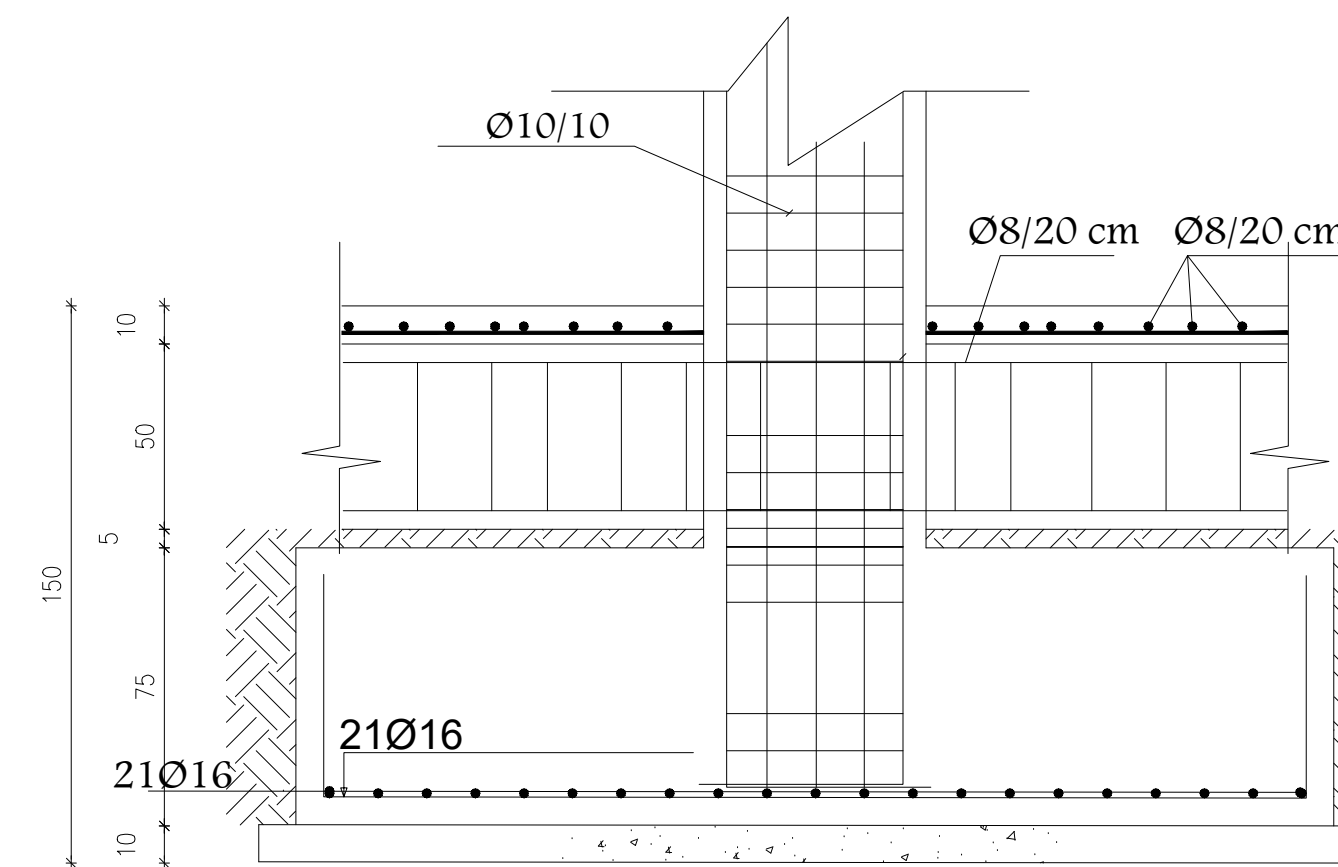
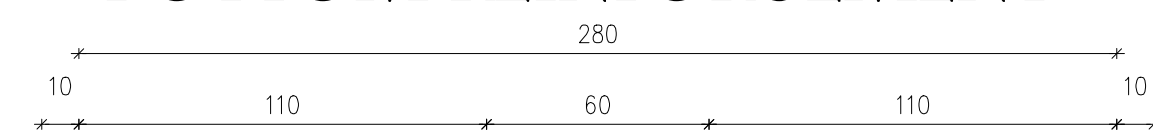
SECTION A-A

SCALE 1:20

ISOLATED FOOTING - F6 (2.80×2.80)m

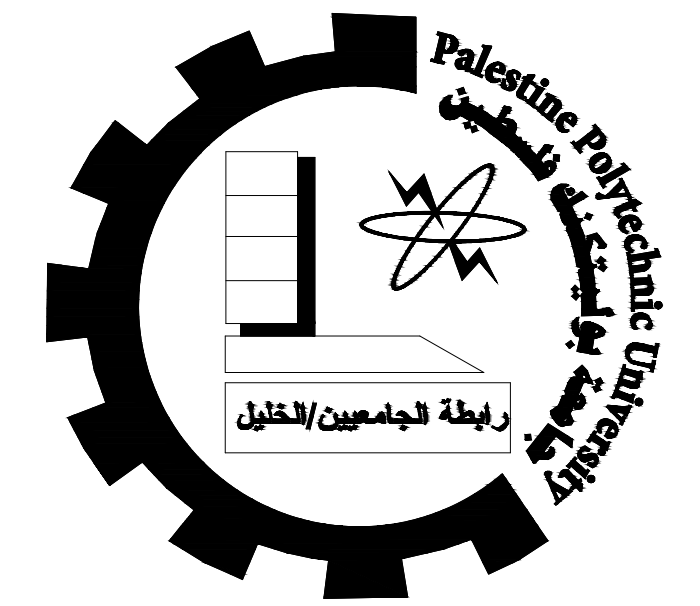


BOTTOM REINFORCEMENT

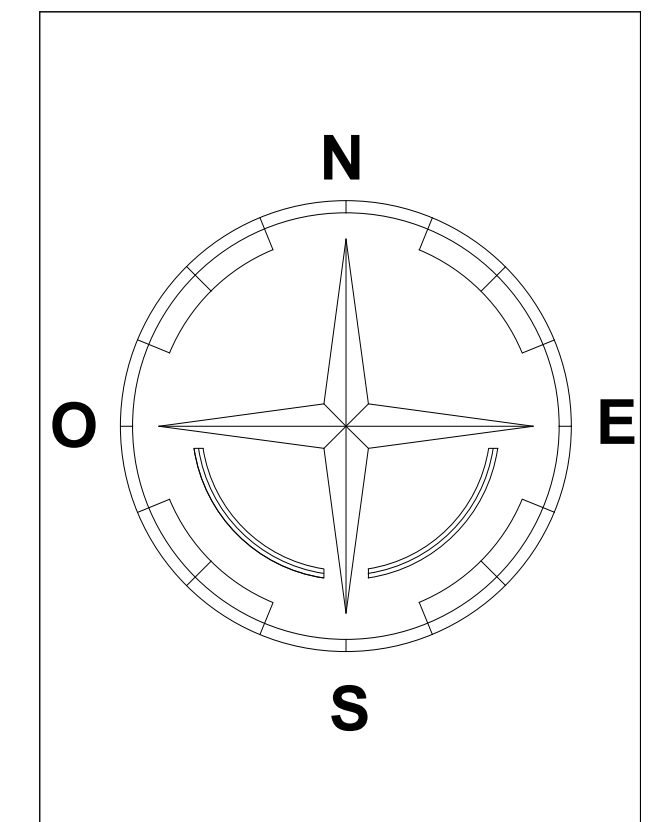


SECTION A-A

SCALE 1:20



Palestine Polytechnic University  
College of Engineering  
Civil & Architecture Department  
Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Foundation Details

SCALE

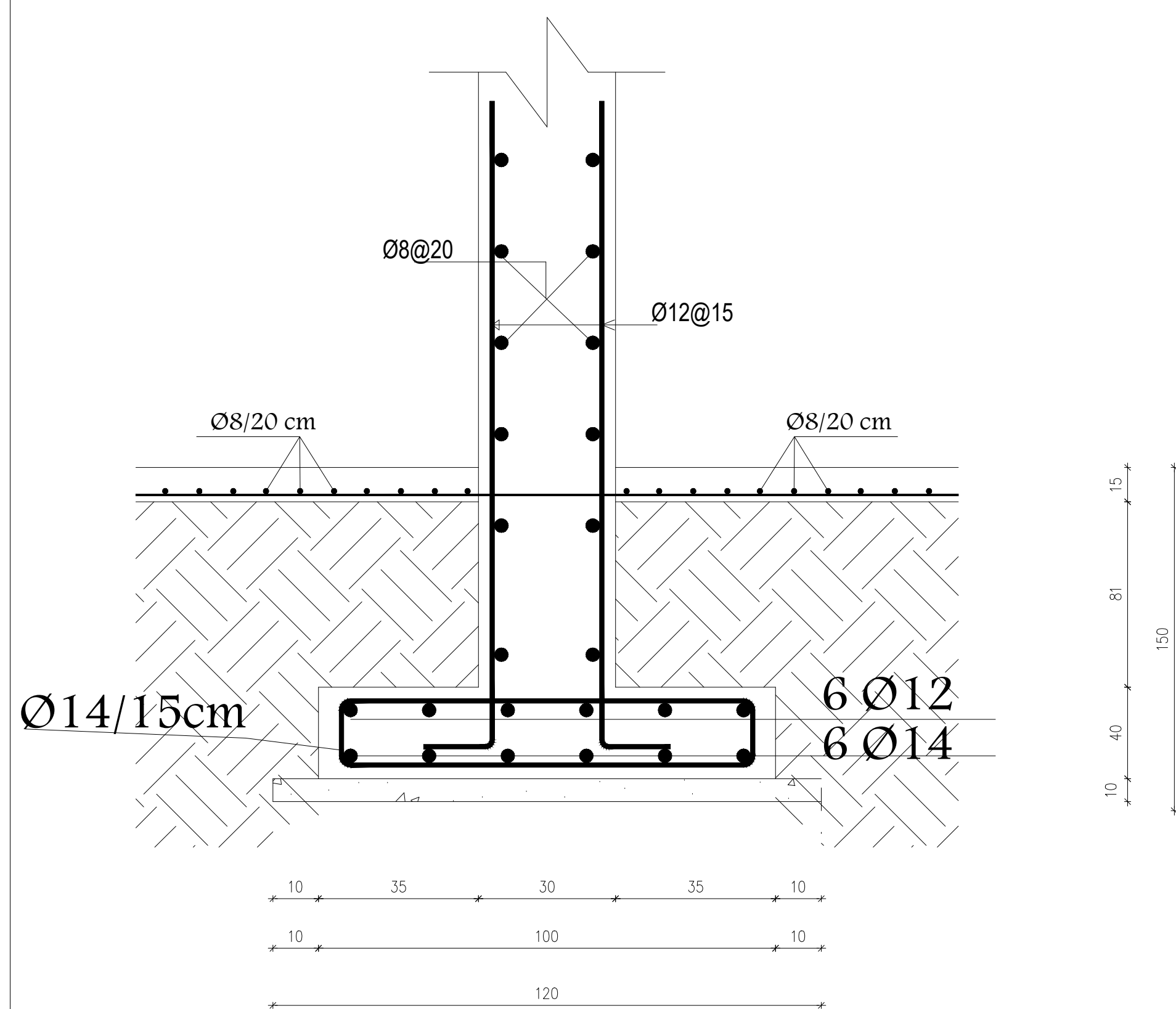
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S03



## Strip Footing 1 Detail



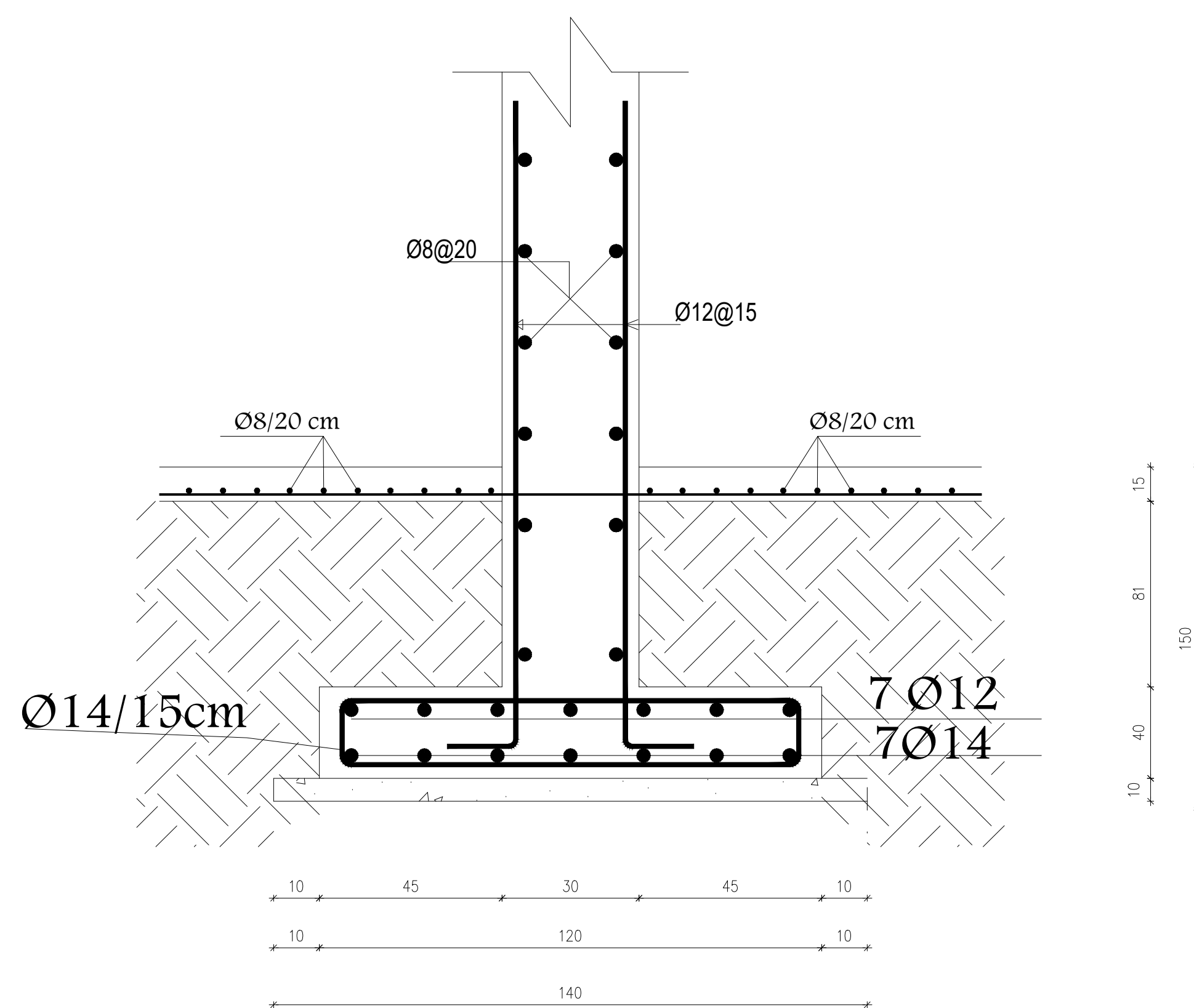
SECTION 1-1

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SCALE 1:20

## Strip Footing 2 Detail



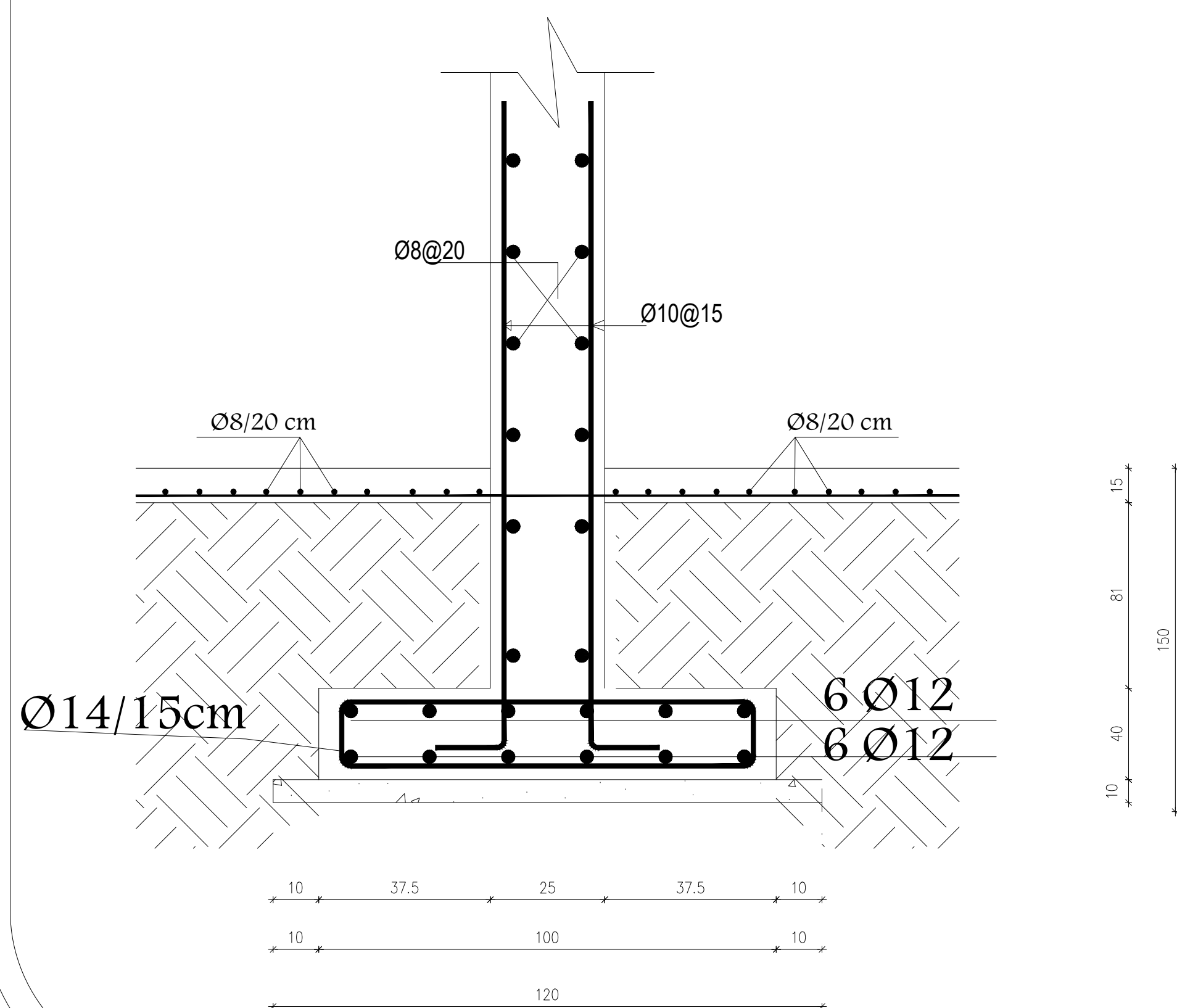
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SCALE 1:20

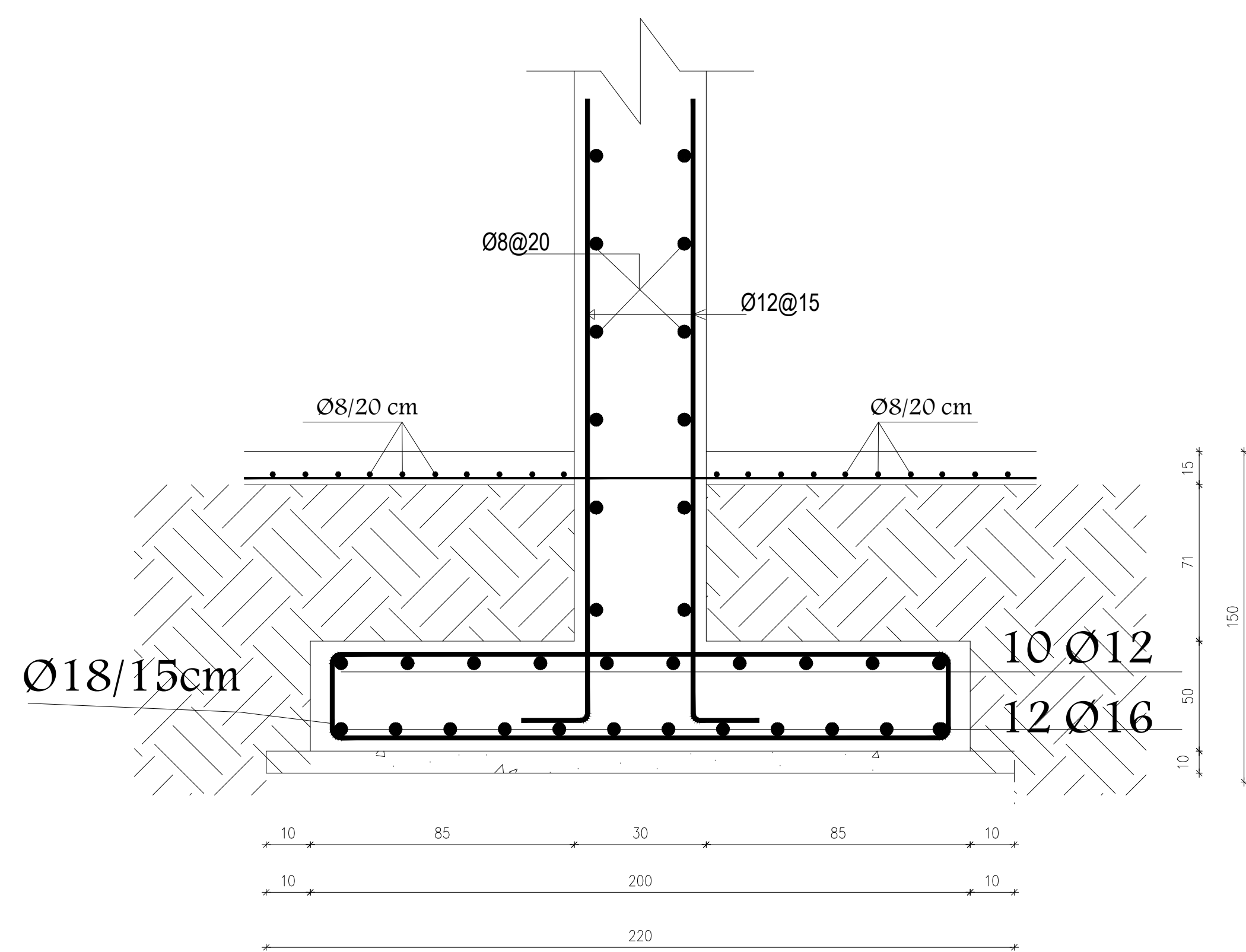
### Strip Footing 3 Detail



SECTION 3-3

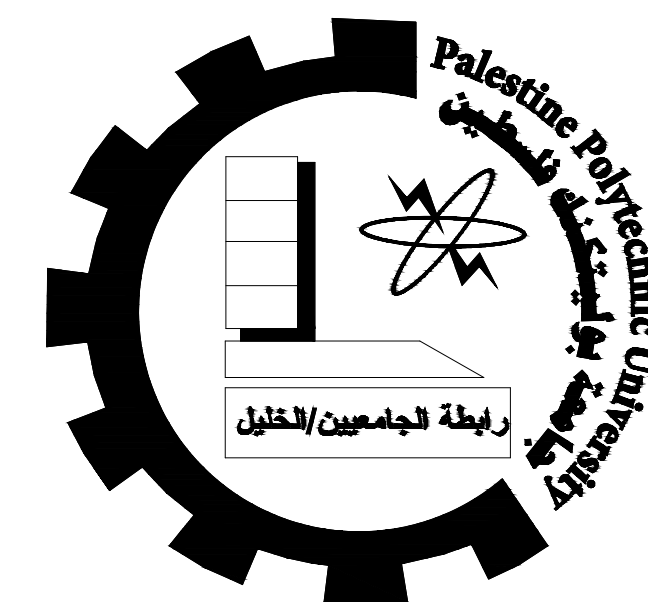
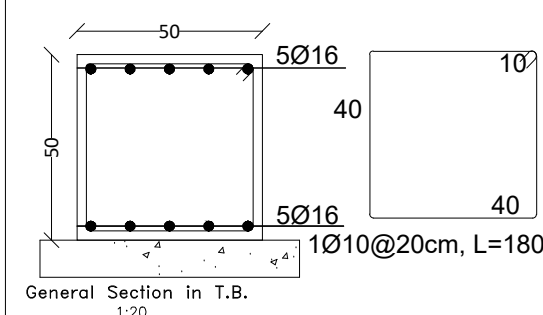
SCALE 1:20

## Strip Footing 4 Detail

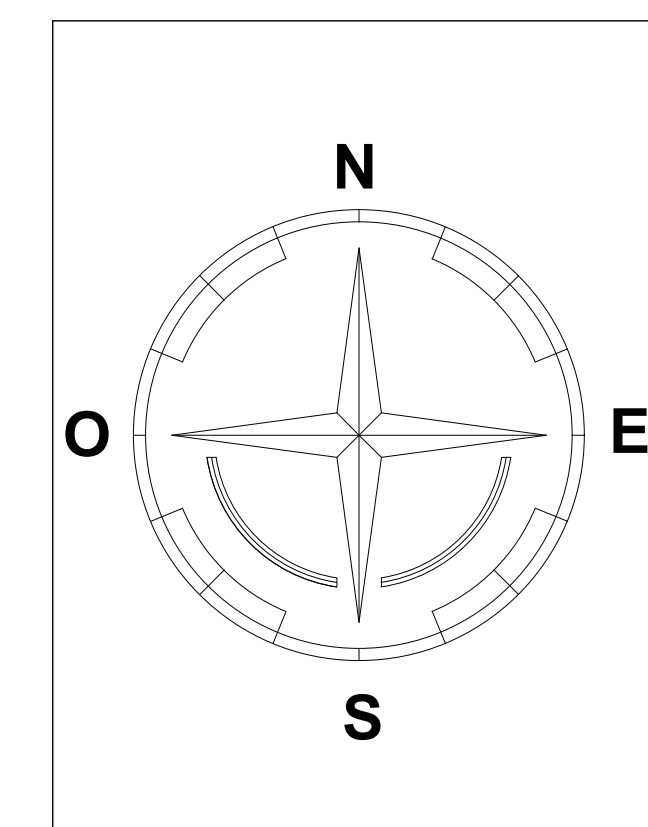


SECTION 1-1

SCALE 1:20



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Civil & Architecture Department  
Civil Engineering



Project: Office Building

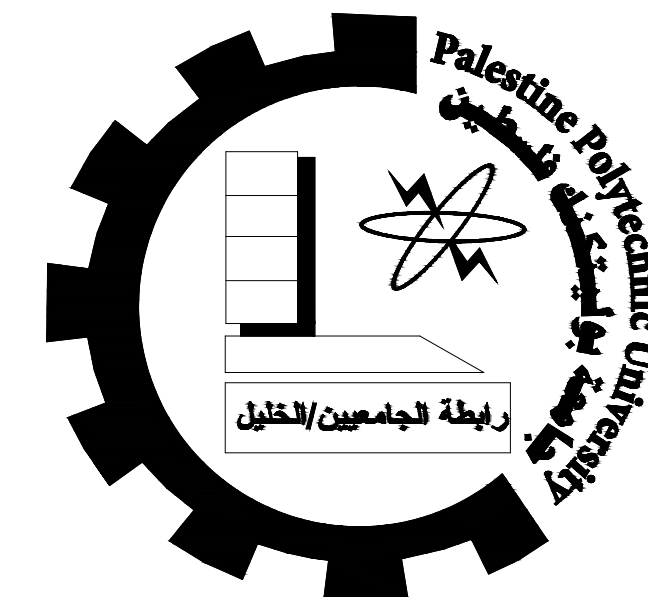
Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

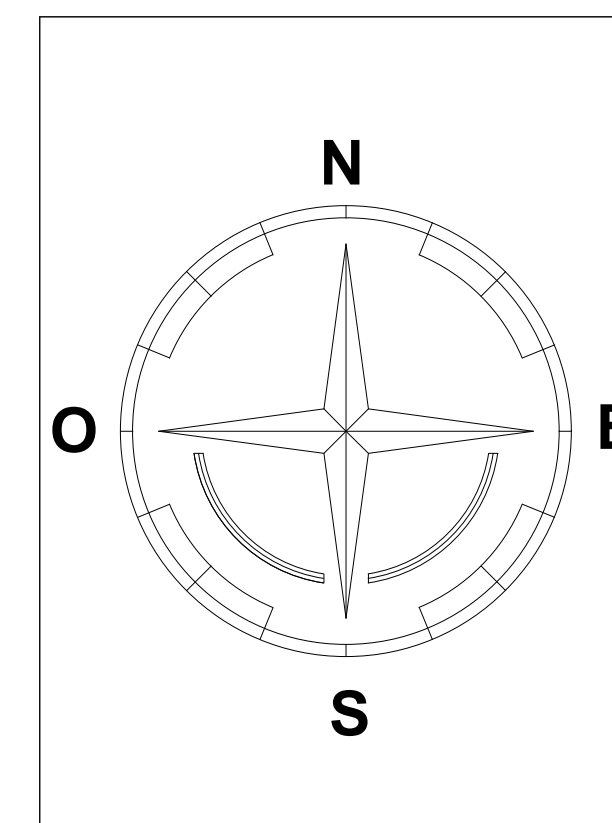
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Foundation Details

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| 1:100 | S04         |





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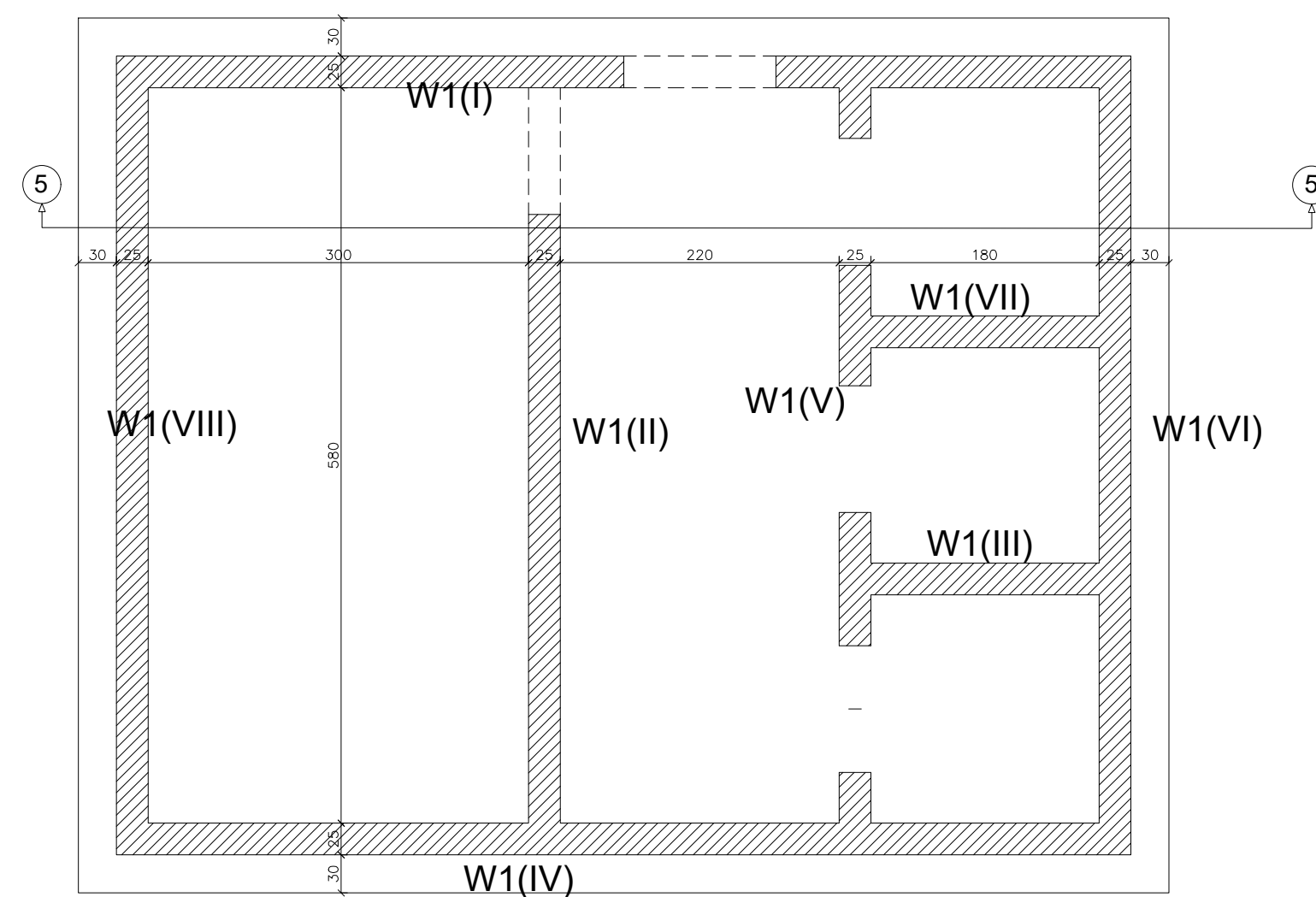
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Foundation Details

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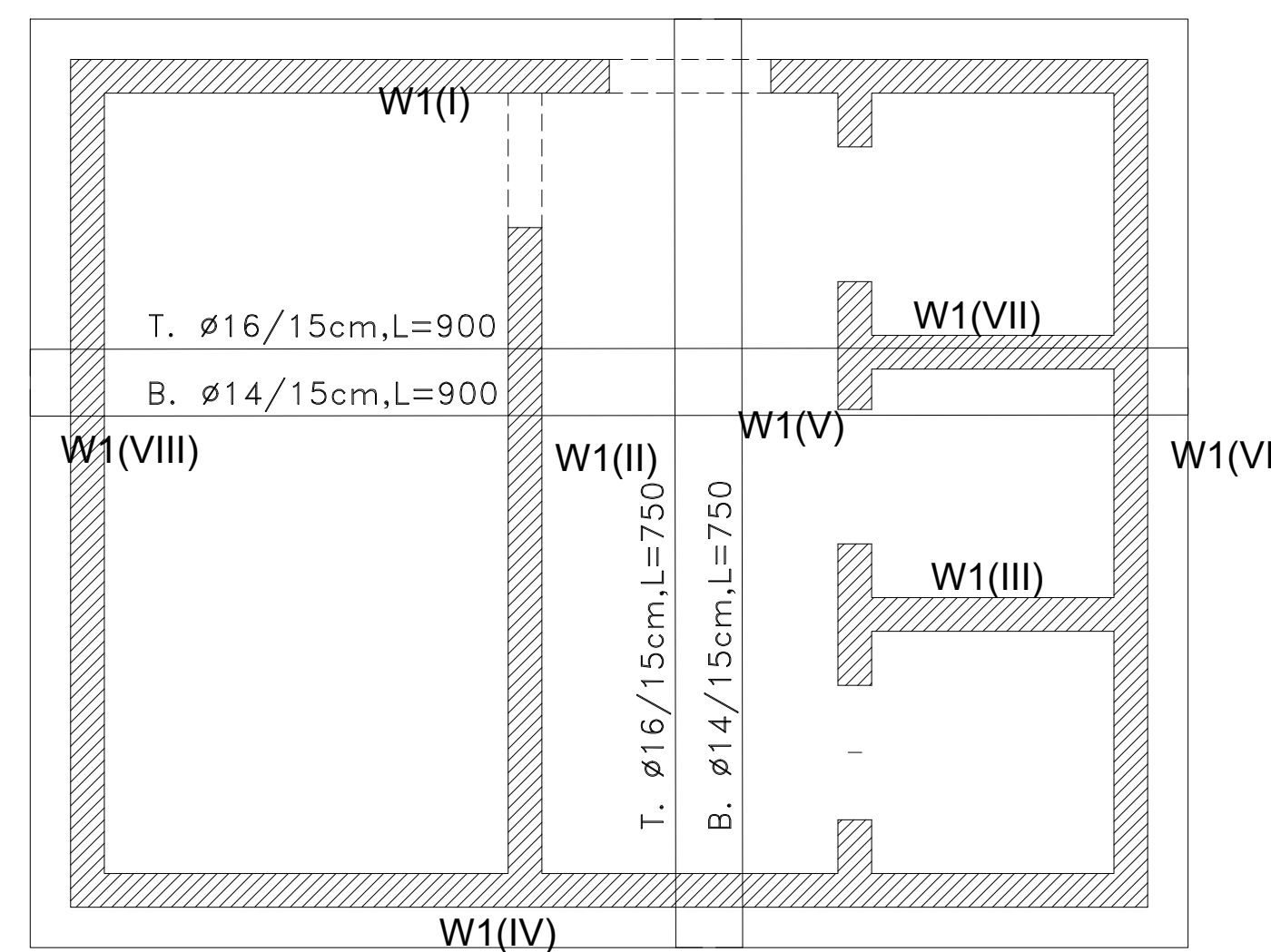
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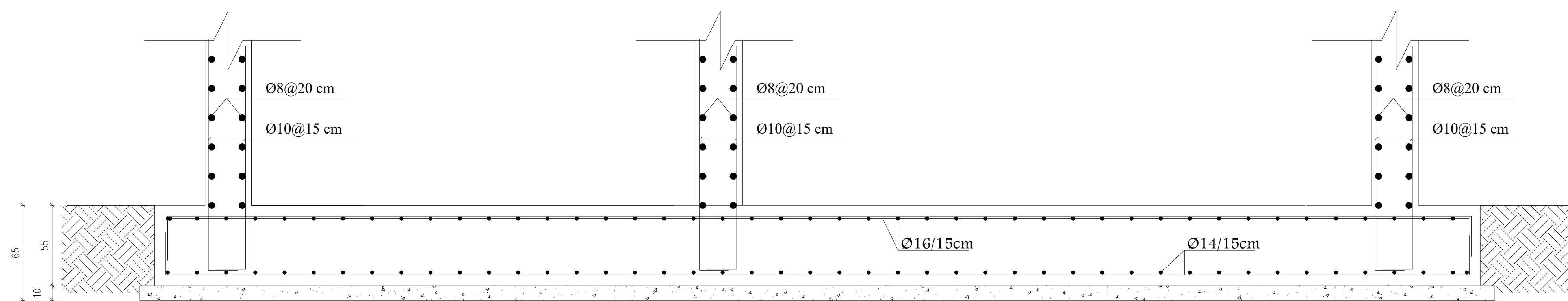
S05



Dimension



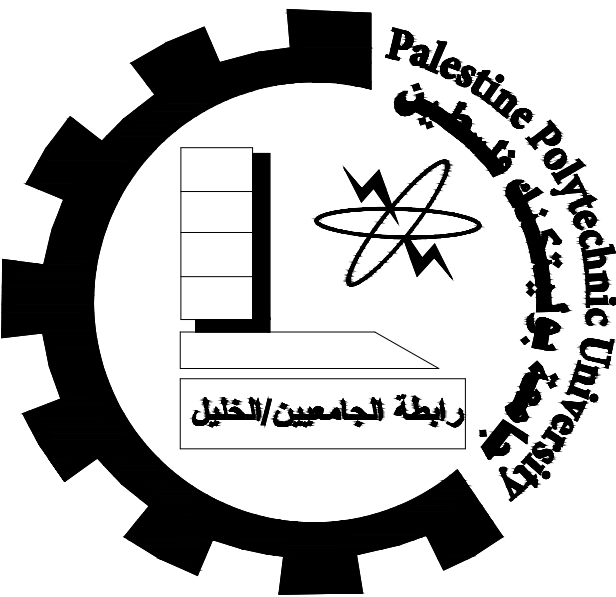
Reinforcement Details



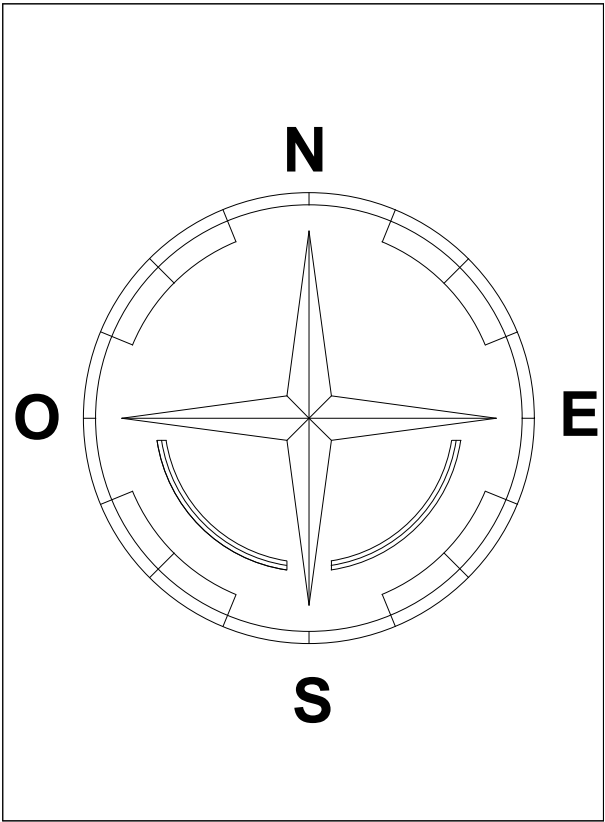
SECTION A-A

SCALE 1:20





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College of Engineering  
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Yousef Nasser

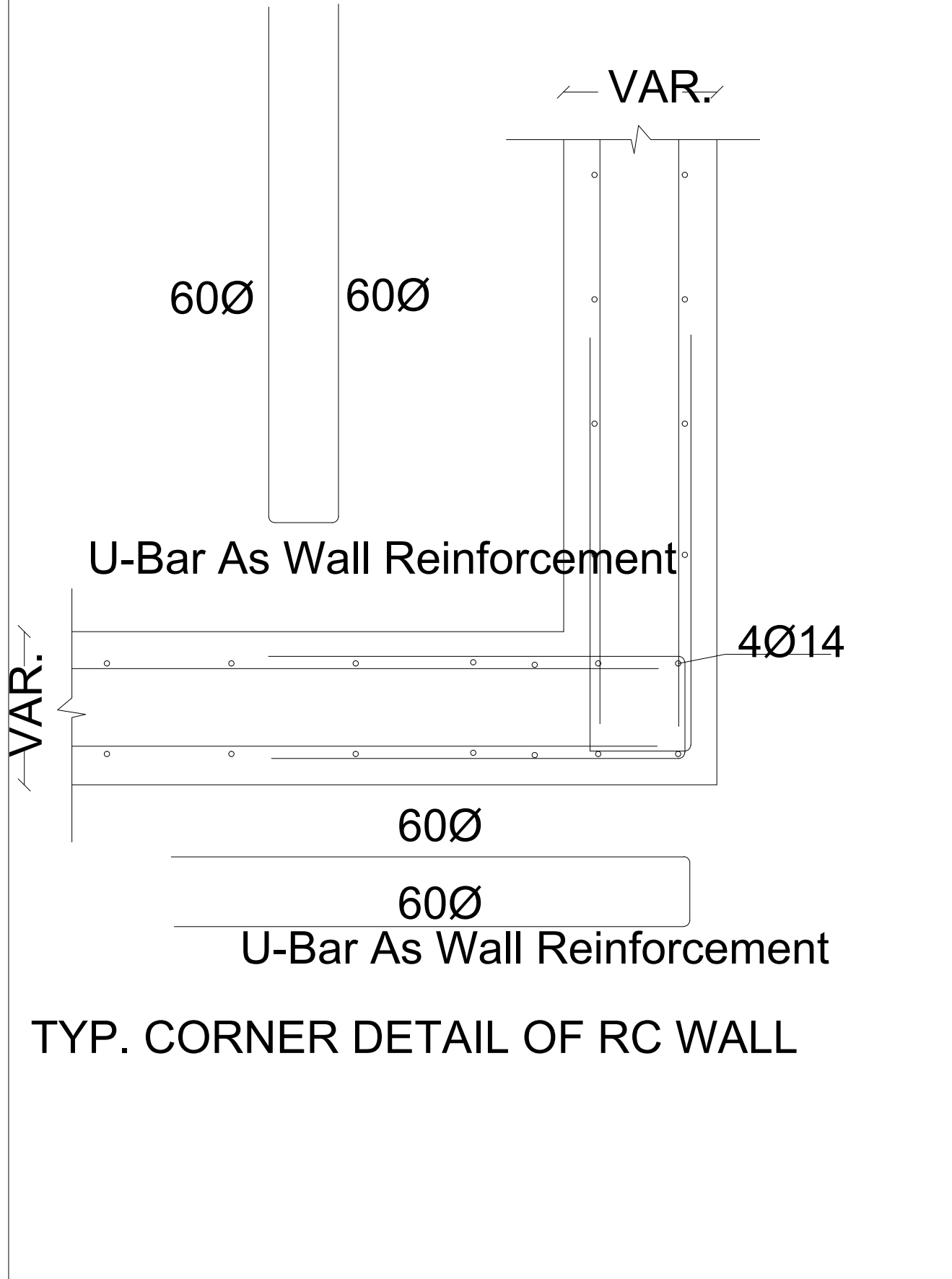
Drawing Title:  
Column details

| SCALE | NO. OF DRAW |
|-------|-------------|
| 1:100 | S06         |

| Group No. | Name's Floor | Column Section | Stirrups Deatailing | Group No. | Name's Floor | Column Section | Stirrups Deatailing |
|-----------|--------------|----------------|---------------------|-----------|--------------|----------------|---------------------|
| "C1"      | BF&GF,FF     |                |                     | "C4"      | BF&GF,FF     |                |                     |
|           | 2ndF, 3rdF   |                |                     |           | 2ndF, 3rdF   |                |                     |
| "C2"      | BF&GF,FF     |                |                     | "C5"      | BF&GF,FF     |                |                     |
|           | 2ndF, 3rdF   |                |                     |           | 2ndF, 3rdF   |                |                     |
| "C3"      | BF&GF,FF     |                |                     | "C6"      | BF&GF,FF     |                |                     |
|           | 2ndF, 3rdF   |                |                     |           | 2ndF, 3rdF   |                |                     |

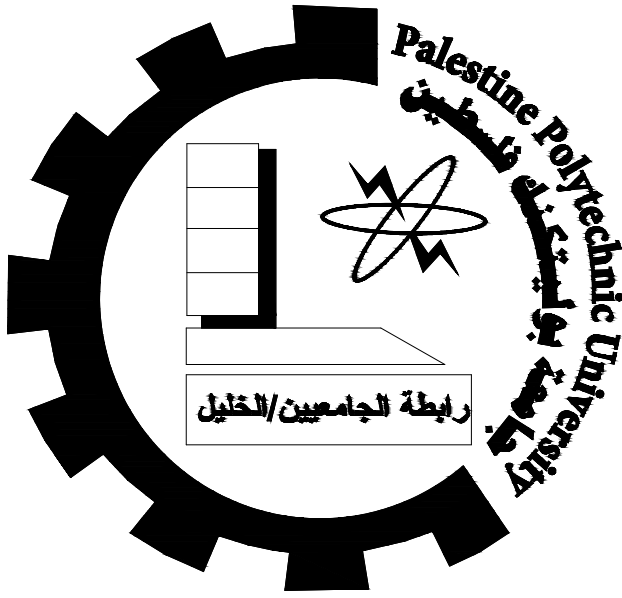


| Group No. | Name's Floor | Wall Section |
|-----------|--------------|--------------|
| "W1"      | BF&GF,FF     |              |
|           | 2ndF, 3rdF   |              |
| "W2"      | BF&GF,FF     |              |
|           | 2ndF, 3rdF   |              |
| "W3"      | BF&GF,FF     |              |
|           | 2ndF, 3rdF   |              |

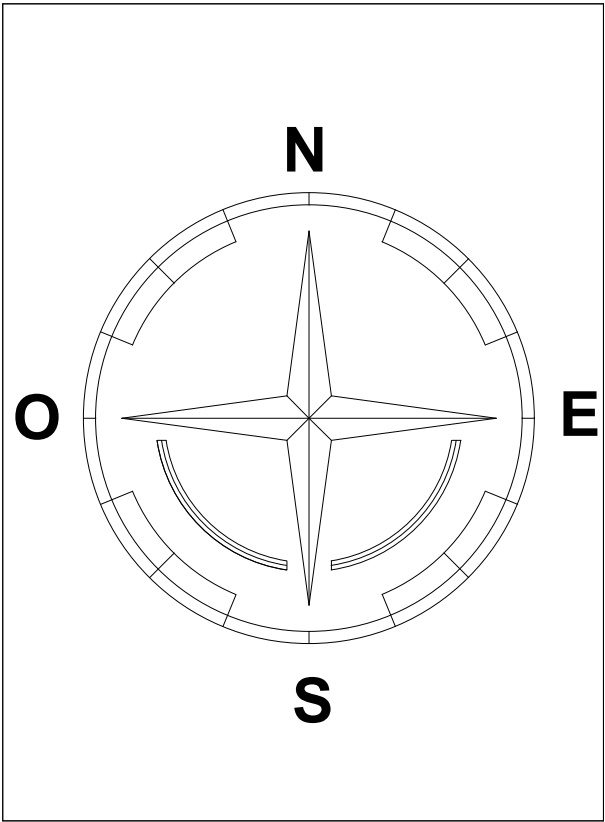


| Group No. | Name's Floor | Wall Section |
|-----------|--------------|--------------|
| "W4"      | BF&GF,FF     |              |
|           | 2ndF, 3rdF   |              |
| "W5"      | BF&GF,FF     |              |
|           | 2ndF, 3rdF   |              |
| "W6"      | BF&GF,FF     |              |
|           | 2ndF, 3rdF   |              |

| Group No. | Name's Floor | Wall Section |
|-----------|--------------|--------------|
| "W7"      | BF&GF,FF     |              |
|           | 2ndF, 3rdF   |              |
| "W8"      | BF&GF,FF     |              |
|           | 2ndF, 3rdF   |              |
| "W9"      | BF&GF,FF     |              |
|           | 2ndF, 3rdF   |              |



Palestine Polytechnic University  
College of Engineering  
Civil & Architecture Department  
Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Column& Walls details

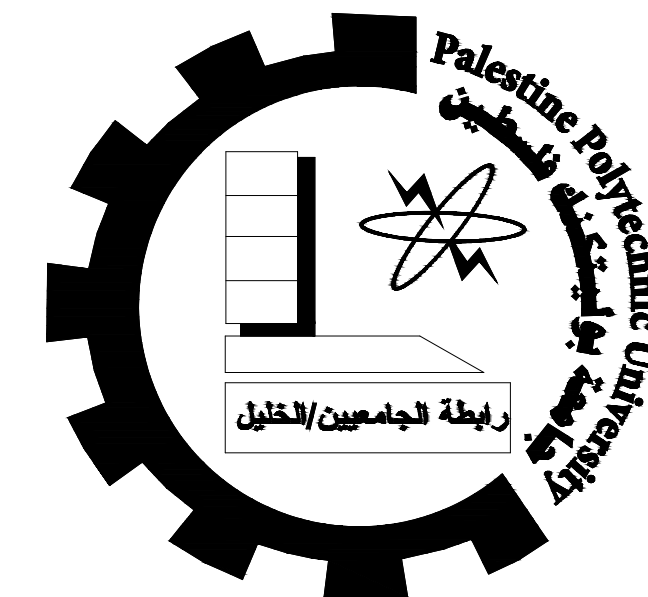
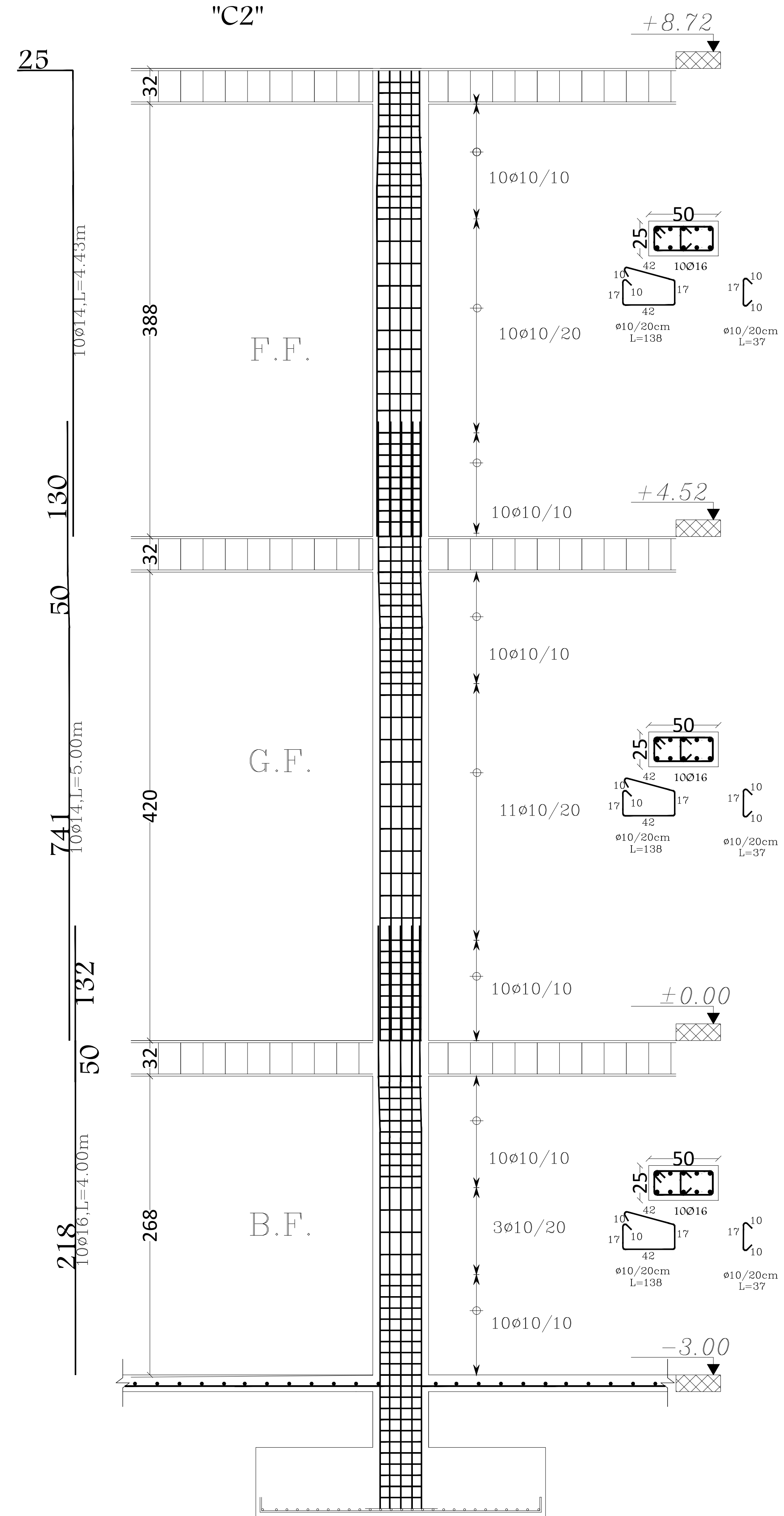
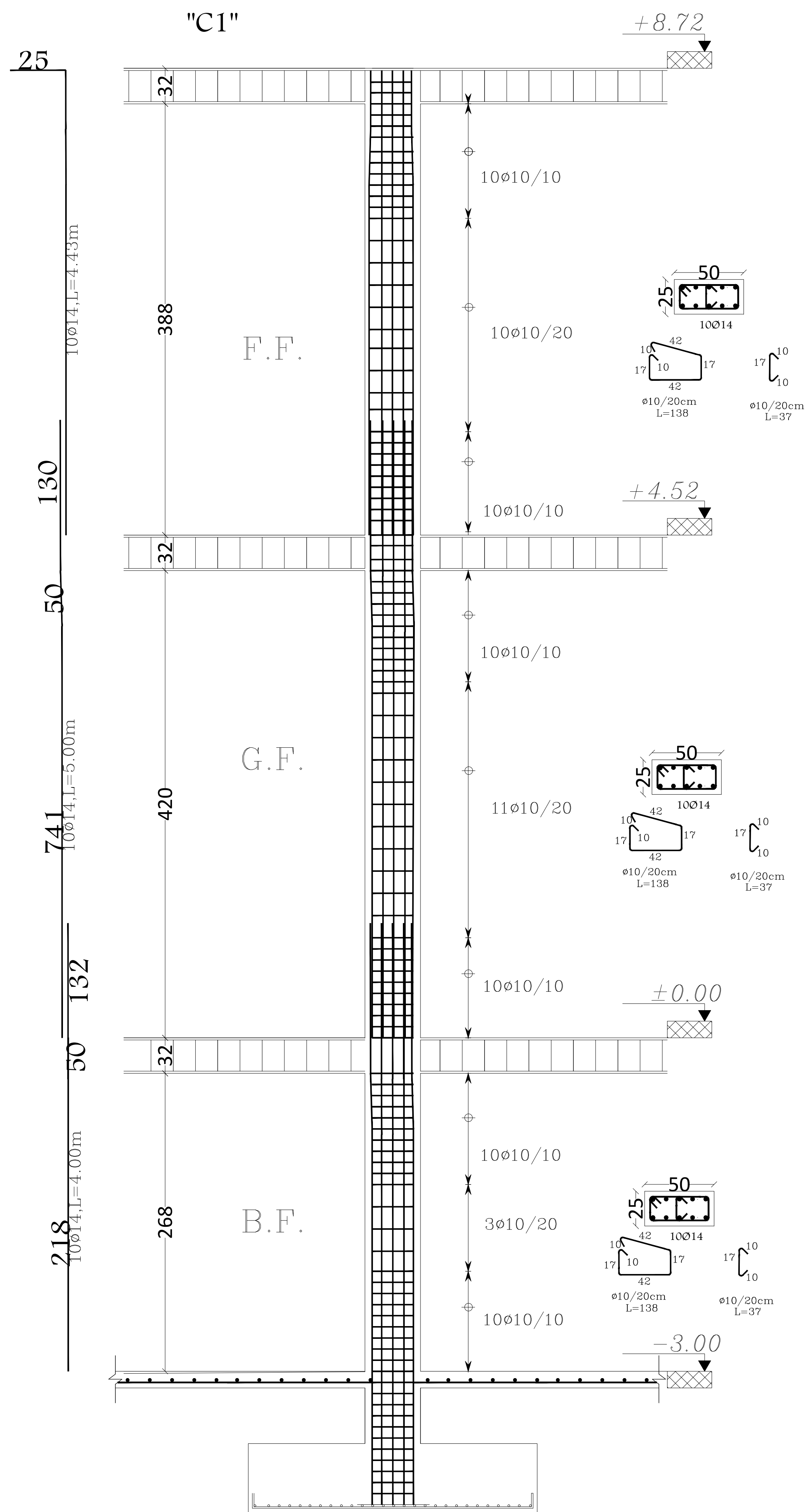
SCALE

1:100

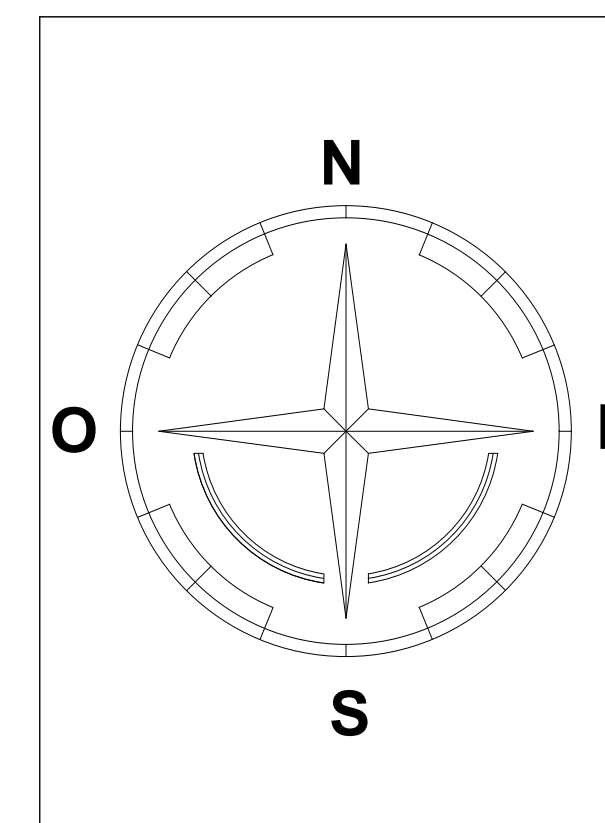
NO. OF DRAW

S07





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Civil & Architecture Department  
Civil Engineering



Project: Office Building

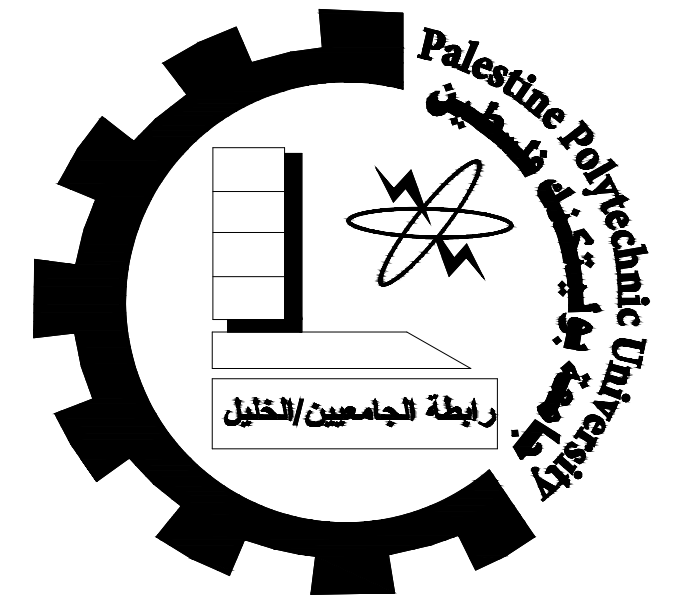
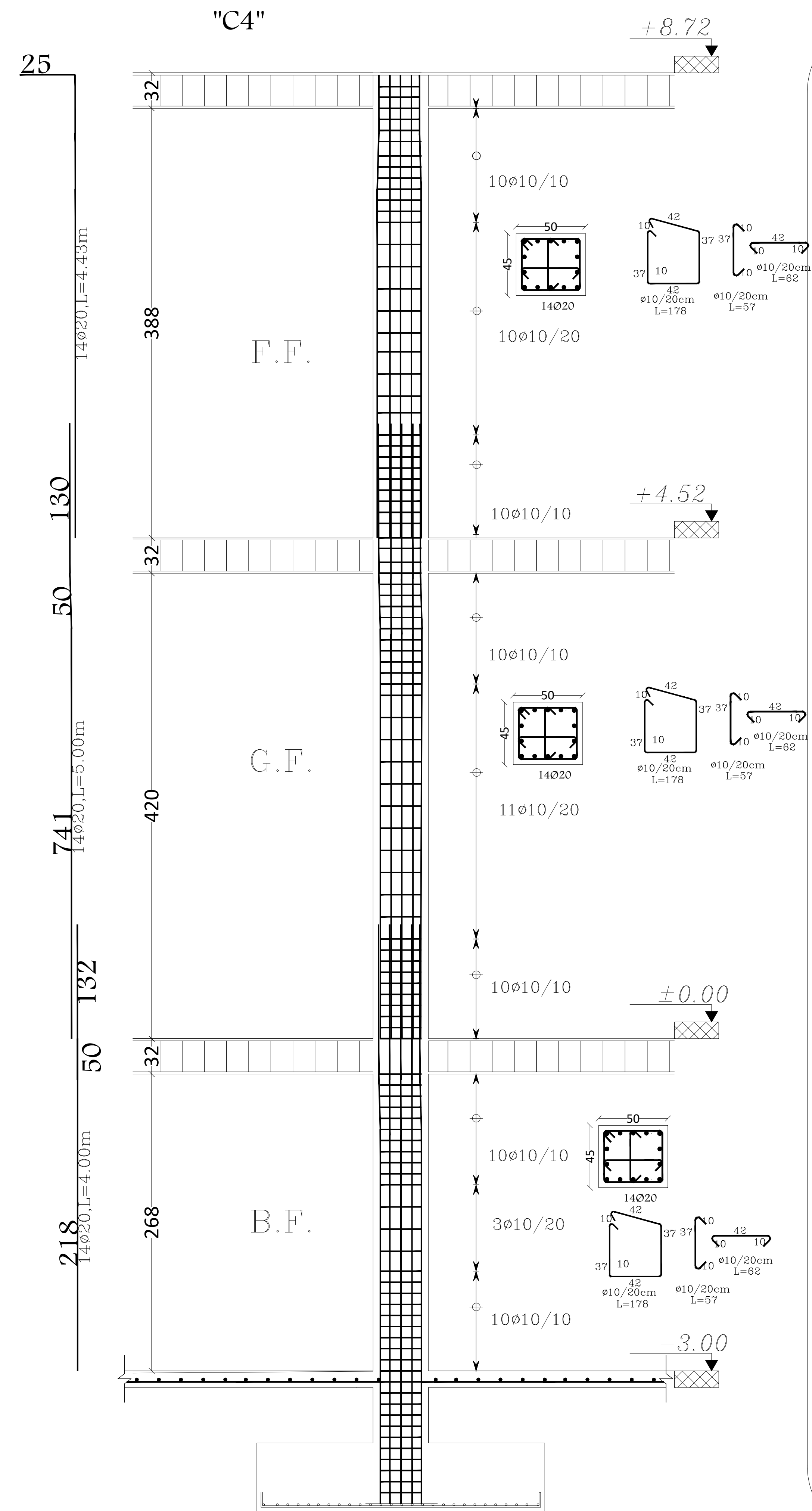
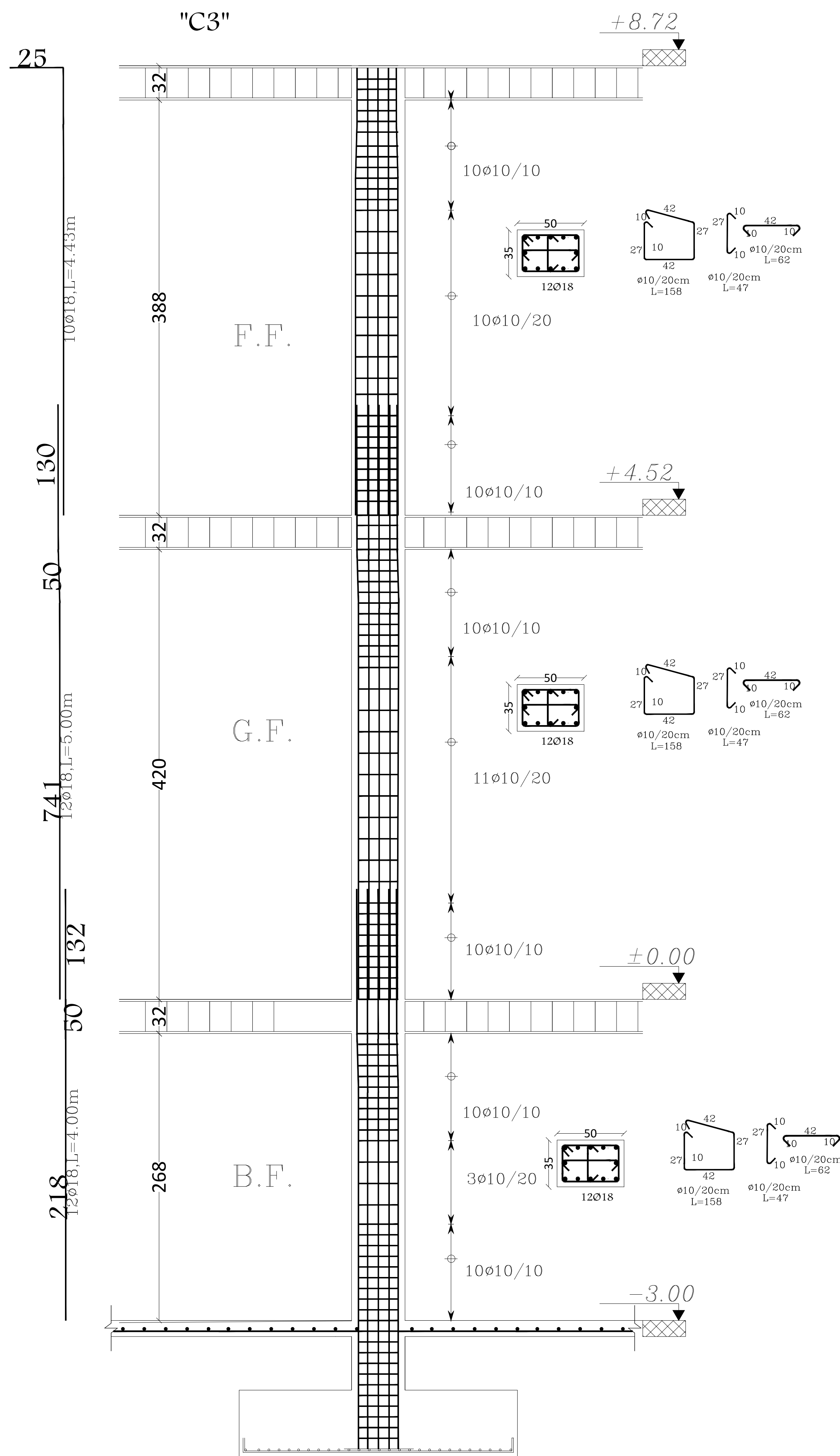
Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

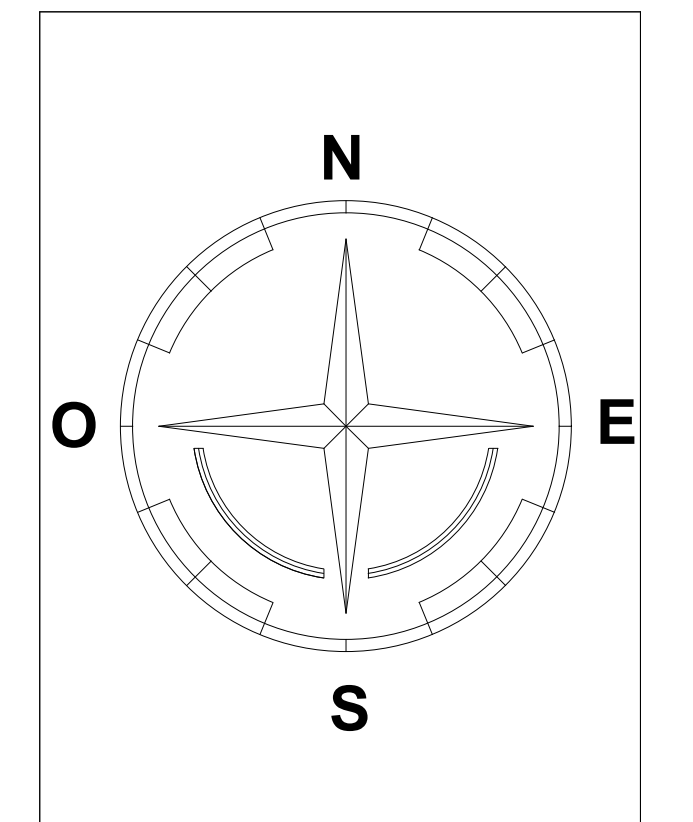
Drawing Title:  
Column details

|       |             |
|-------|-------------|
| SCALE | NO. OF DRAW |
| 1:100 | S08         |





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Project: Office Building

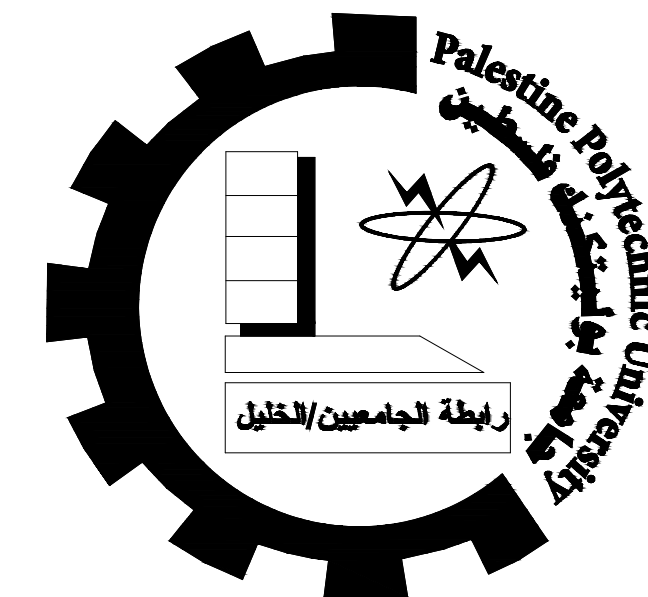
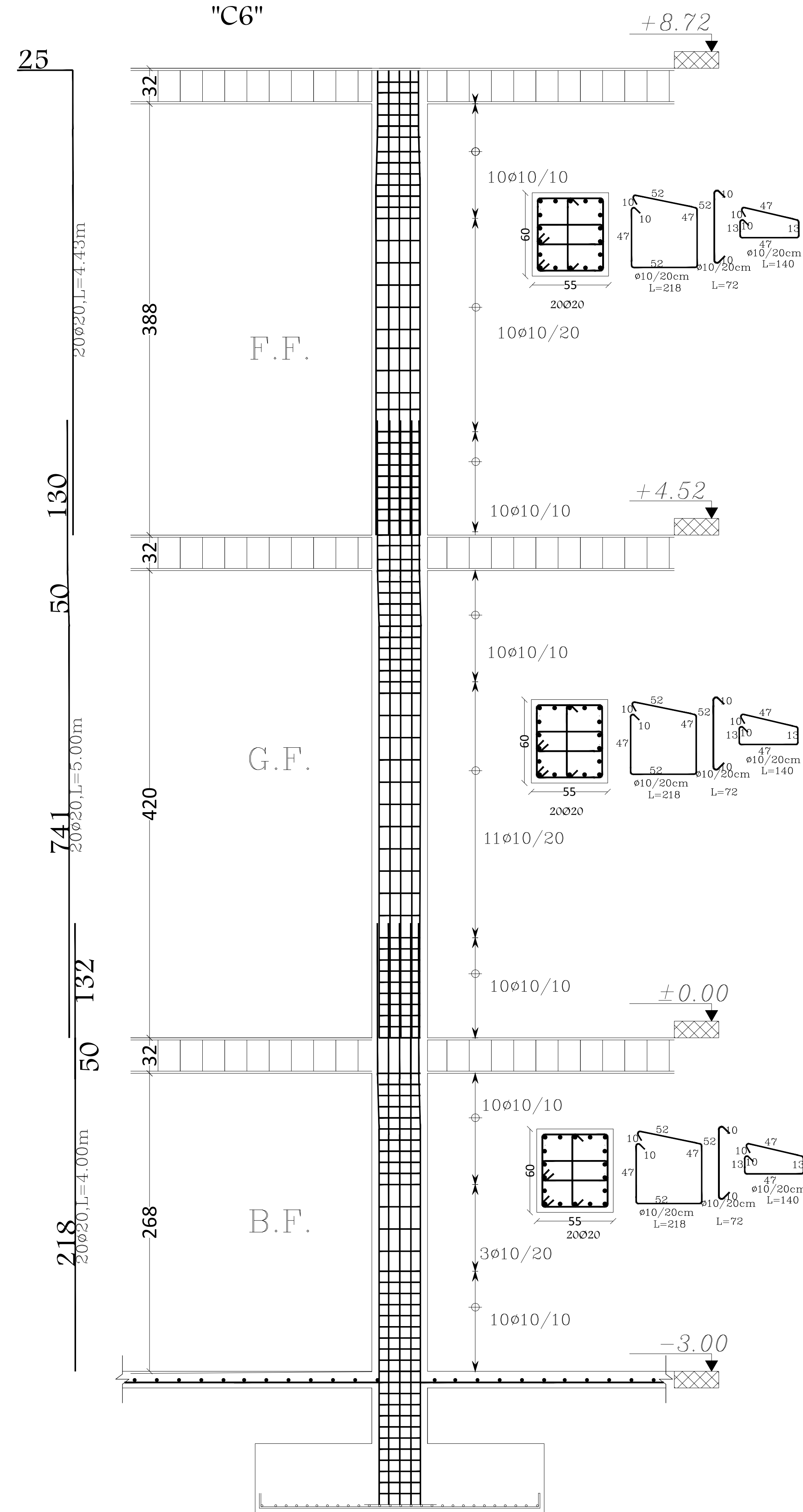
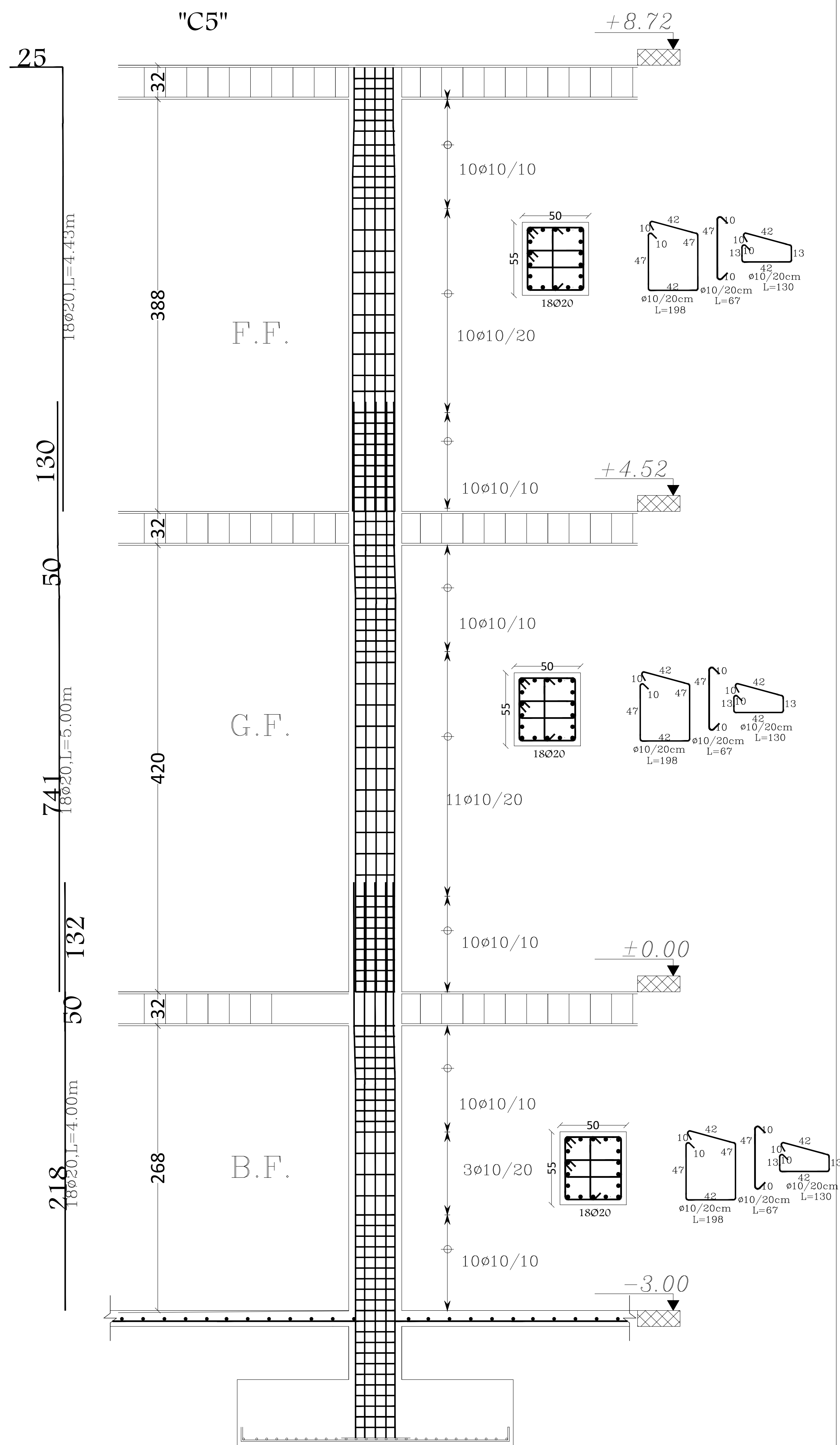
Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

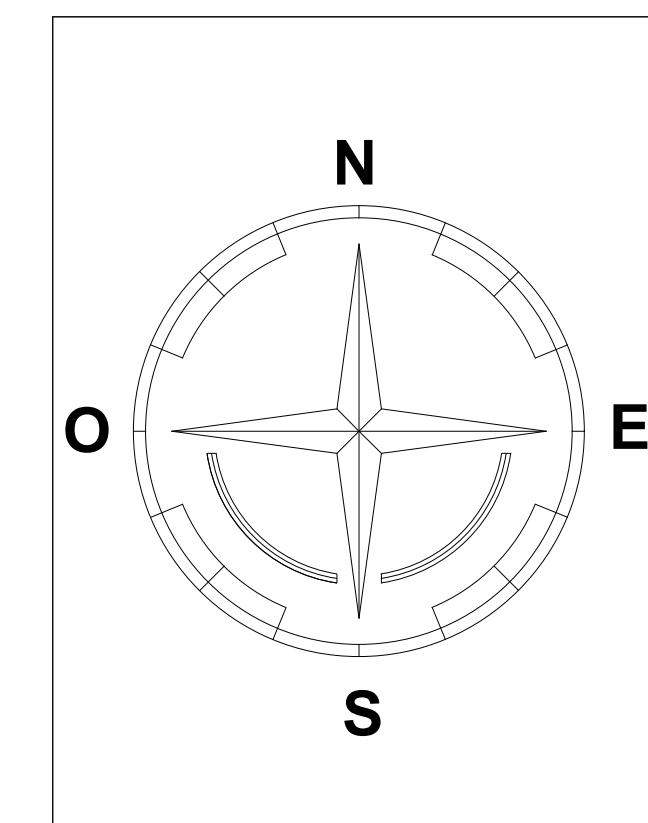
Drawing Title:  
Column details

|       |             |
|-------|-------------|
| SCALE | NO. OF DRAW |
| 1:100 | S09         |





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Civil Engineering



Project: Office Building

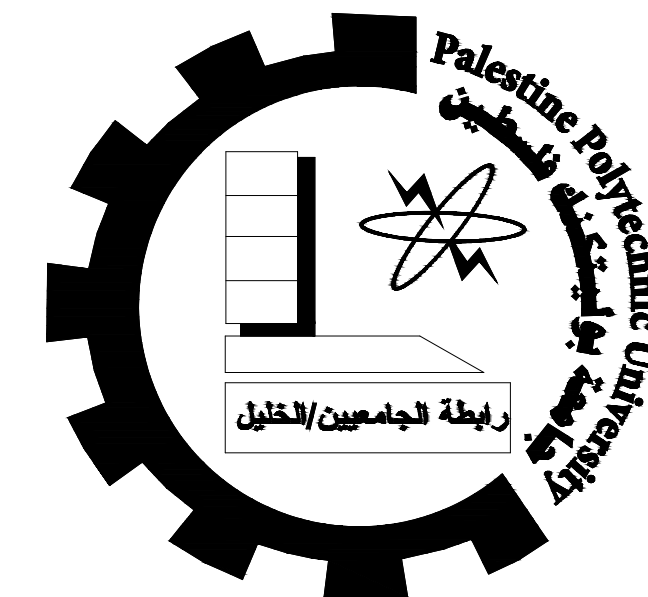
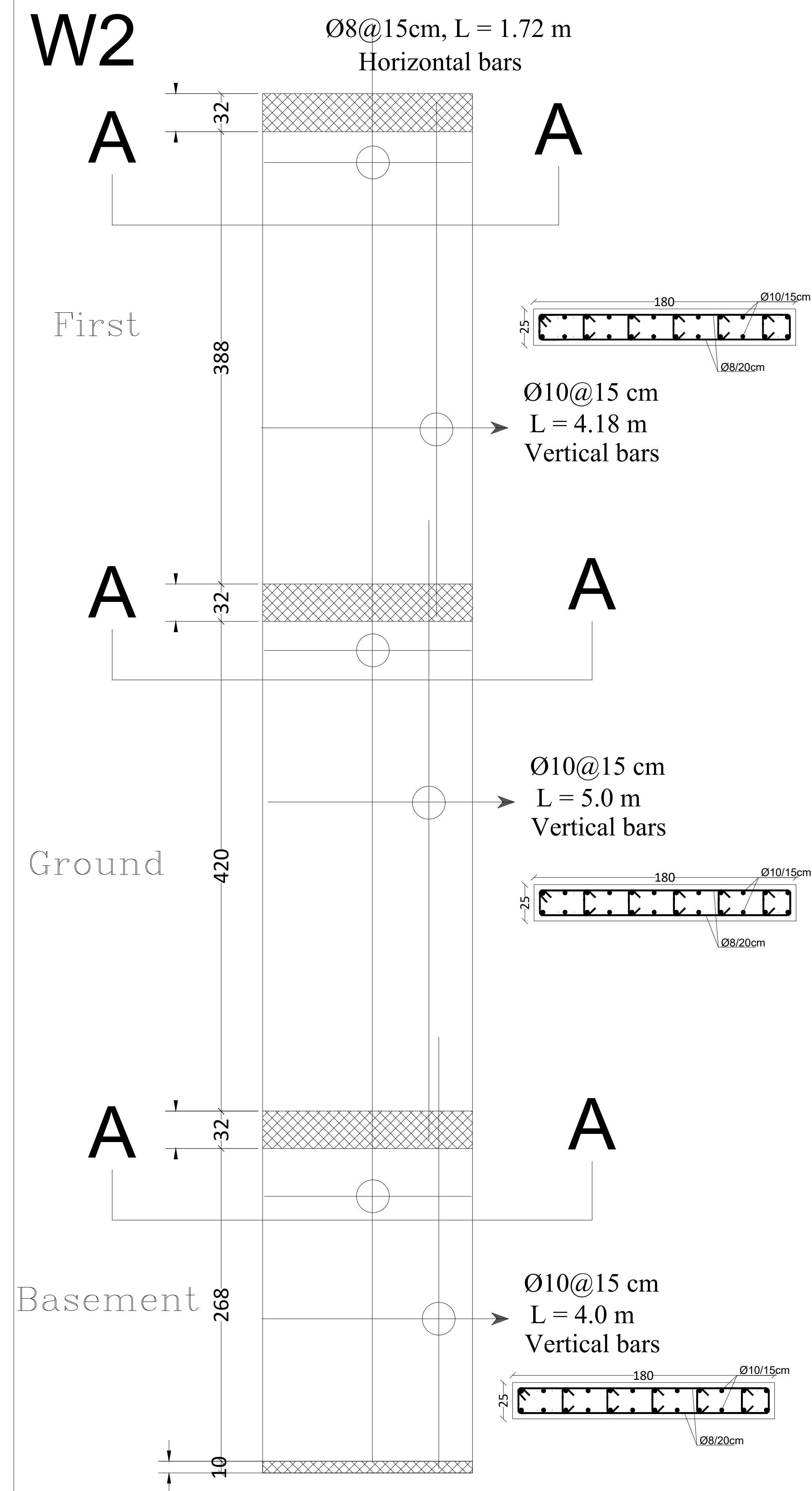
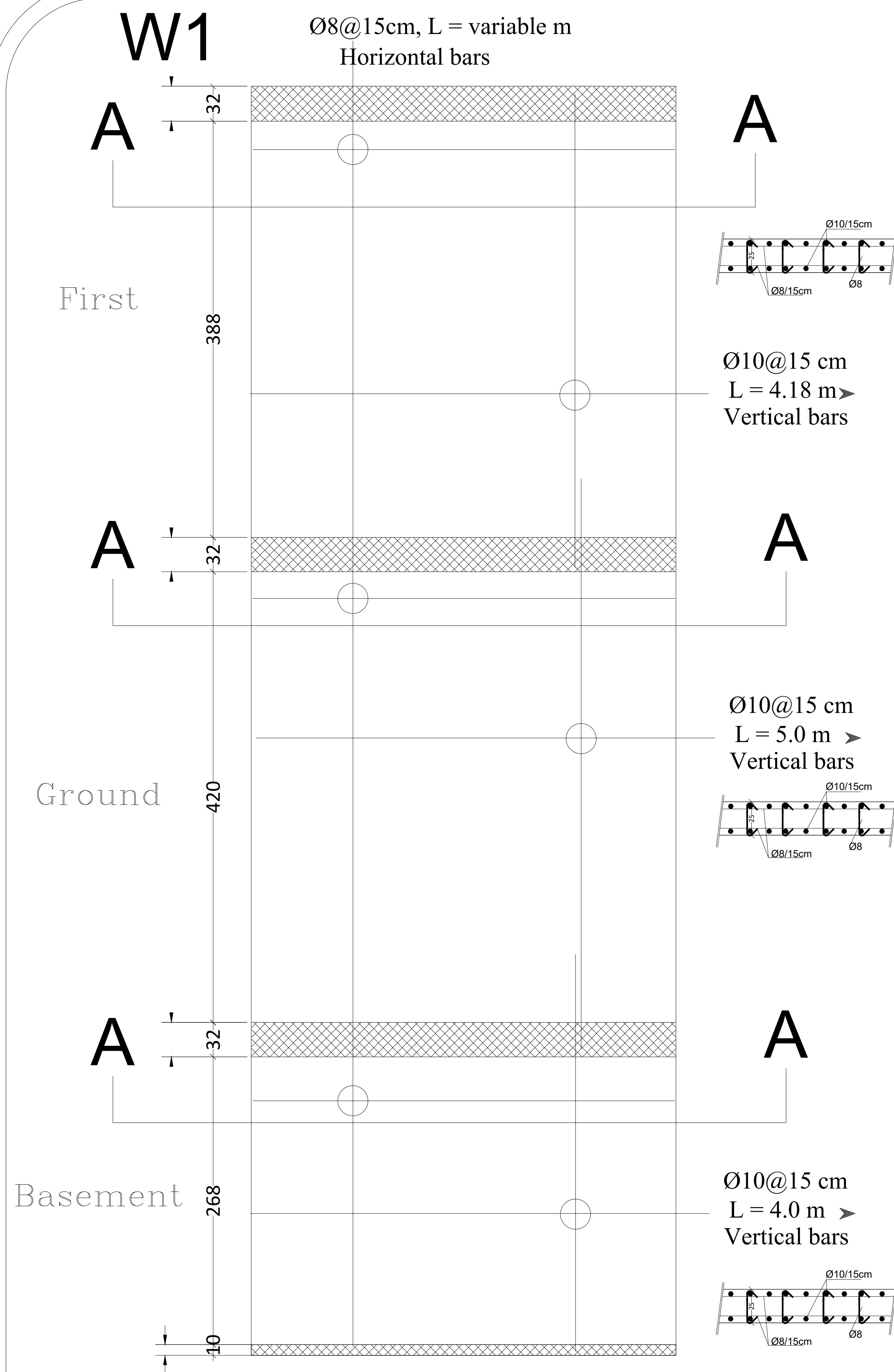
Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

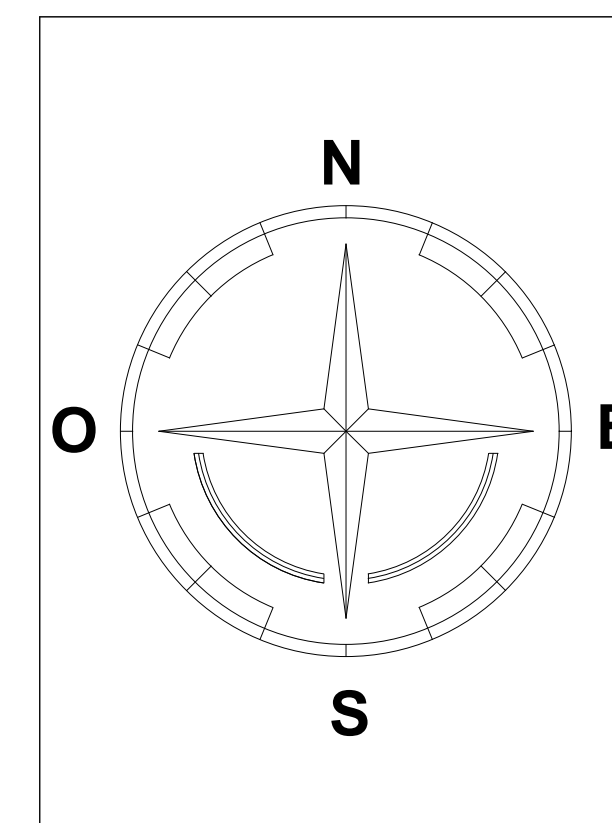
Drawing Title:  
Column details

|       |             |
|-------|-------------|
| SCALE | NO. OF DRAW |
| 1:100 | S10         |





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Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Wall details

SCALE

1:100

NO. OF DRAW

S11



W3

Ø8@15cm, L = 152 m  
Horizontal bars

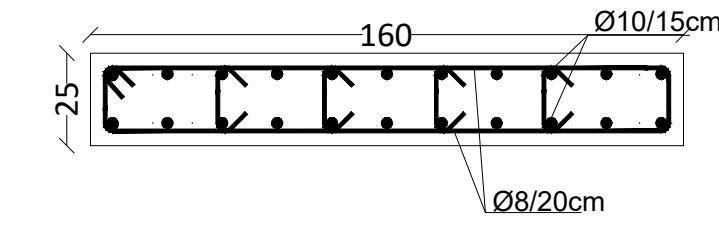
A

A

First

388

Ø10@15 cm  
L = 4.18 m  
Vertical bars



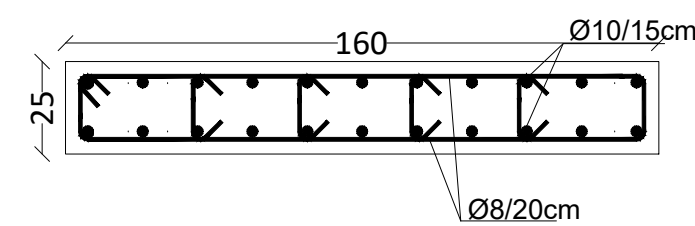
A

A

Ground

420

Ø10@15 cm  
L = 5.0 m  
Vertical bars



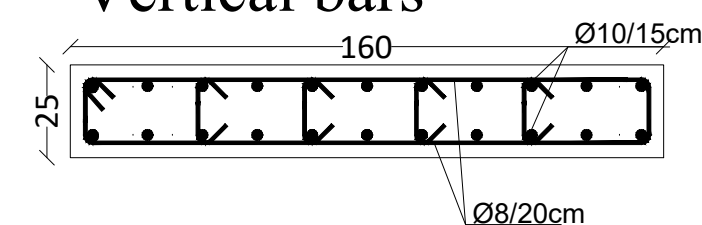
A

A

Basement

268

Ø10@15 cm  
L = 4.0 m  
Vertical bars



W4

Ø8@15cm, L = 2.37 m  
Horizontal bars

Ø8@15cm, L = 2.72 m  
Horizontal bars

A

A

First

245

280

Ø10@15 cm  
L = 4.18 m  
Vertical bars

A

A

Ground

420

Ø10@15 cm  
L = 5.0 m  
Vertical bars

Ø10@15 cm  
L = 4.18 m  
Vertical bars

Ø10@15 cm  
L = 5.0 m  
Vertical bars

A

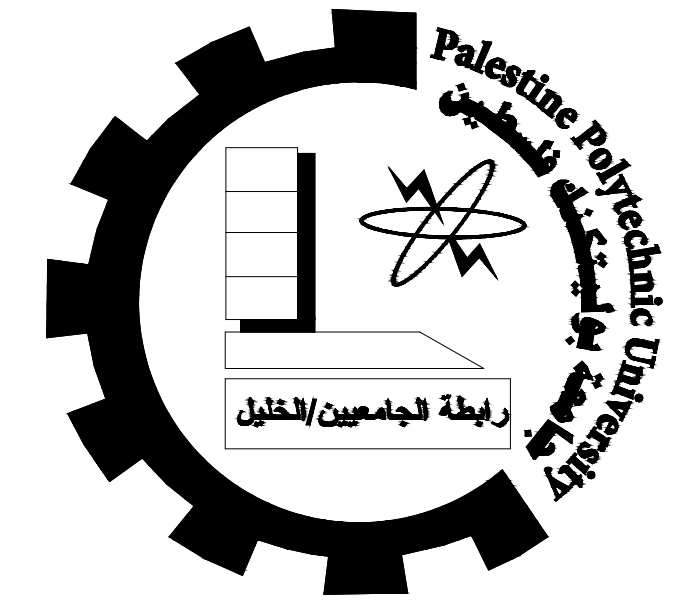
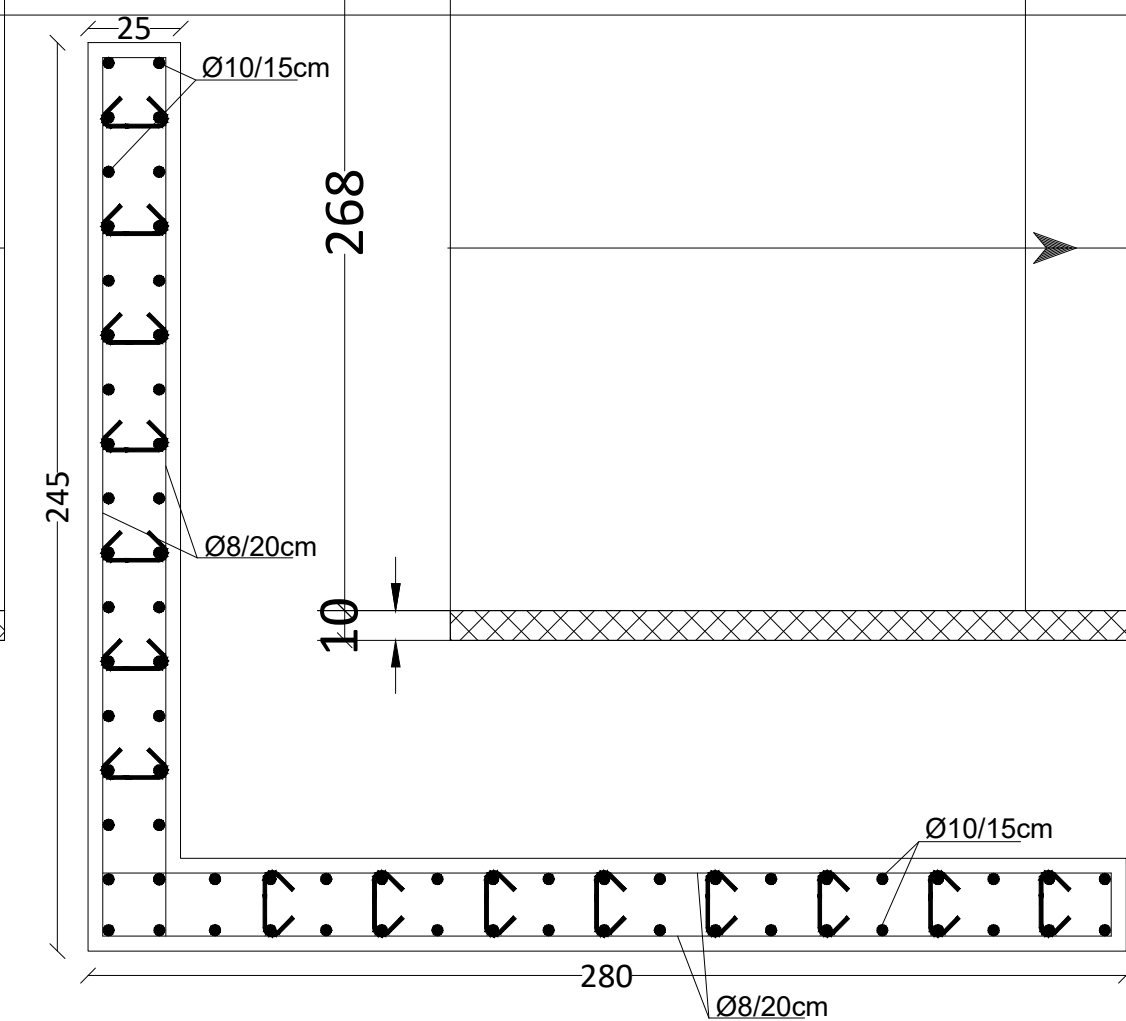
A

Basement

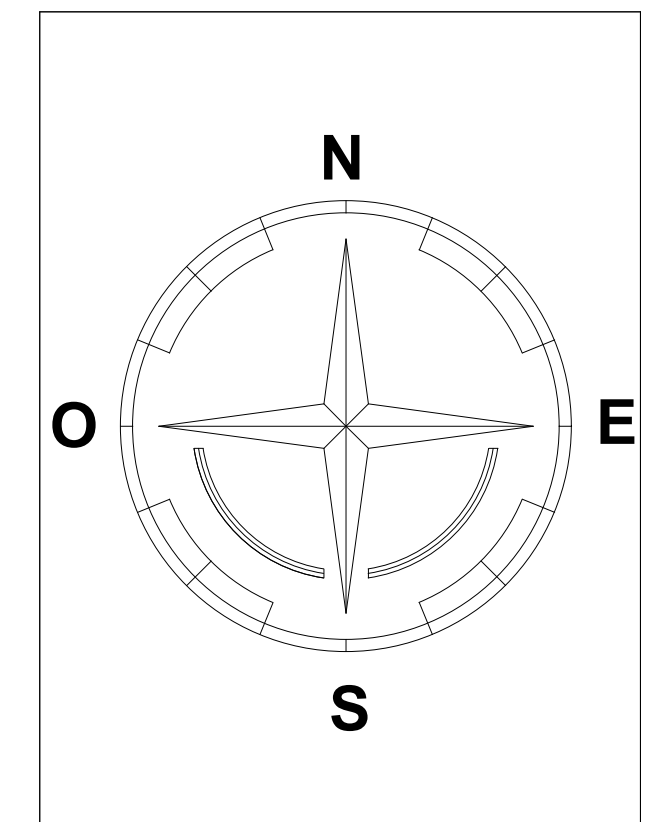
268

Ø10@15 cm  
L = 4.0 m  
Vertical bars

Ø10@15 cm  
L = 4.0 m  
Vertical bars



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Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
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Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Wall details

SCALE

1:100

NO. OF DRAW

S12



W5

Ø8@15cm, L = 157 m  
Horizontal bars

Ø8@15cm, L = 3.18 m  
Horizontal bars

First

Ground

Basement

A

A

A

A

A

A

Ø10@15 cm  
L = 4.18 m  
Vertical bars

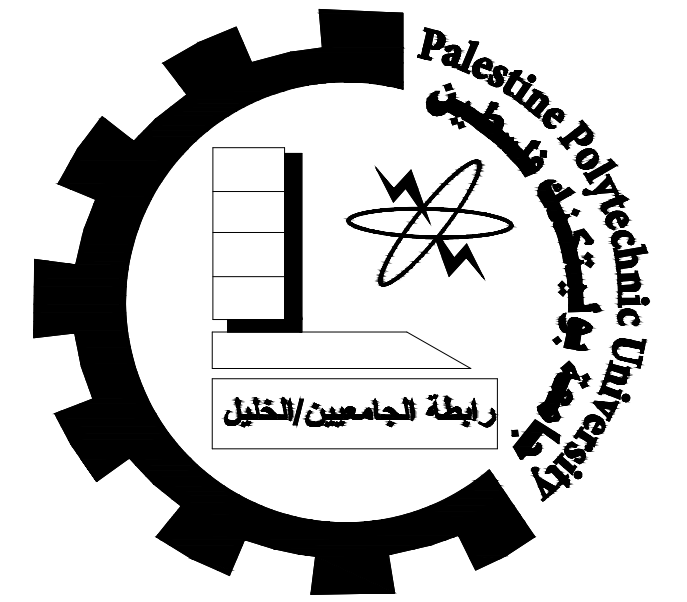
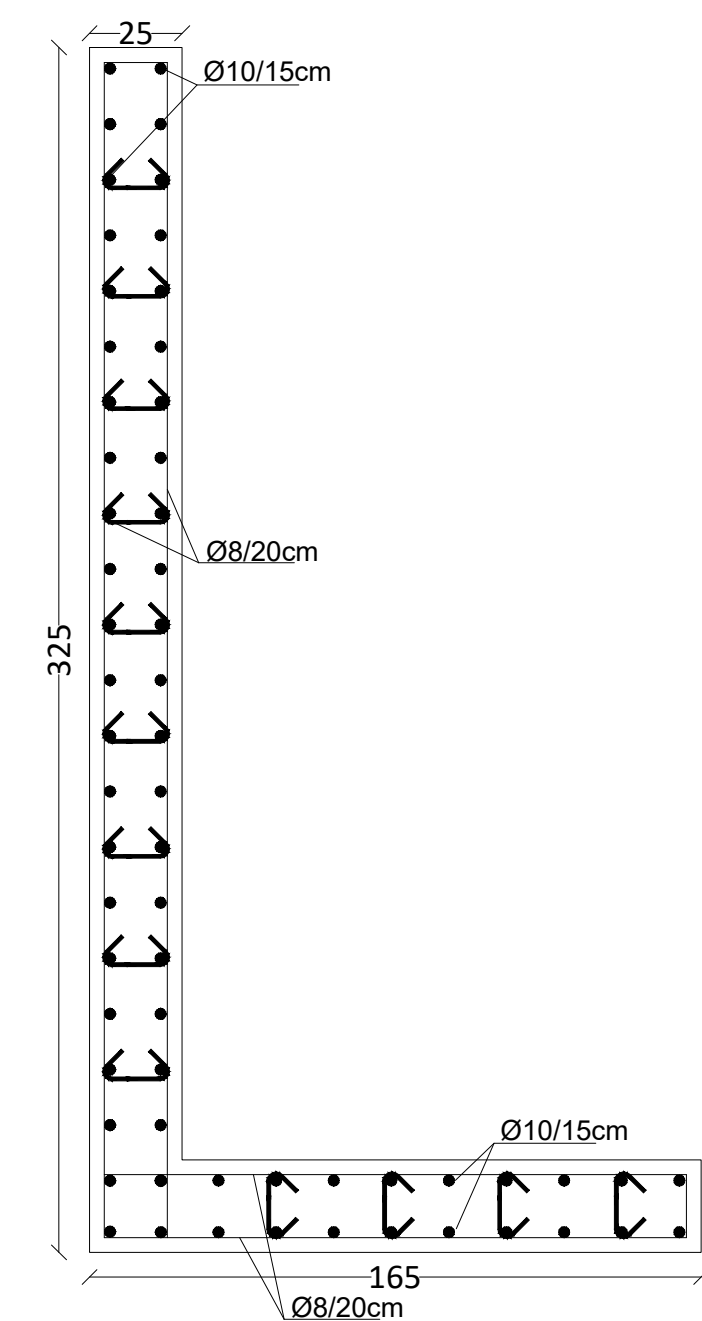
Ø10@15 cm  
L = 4.18 m  
Vertical bars

Ø10@15 cm  
L = 5.0 m  
Vertical bars

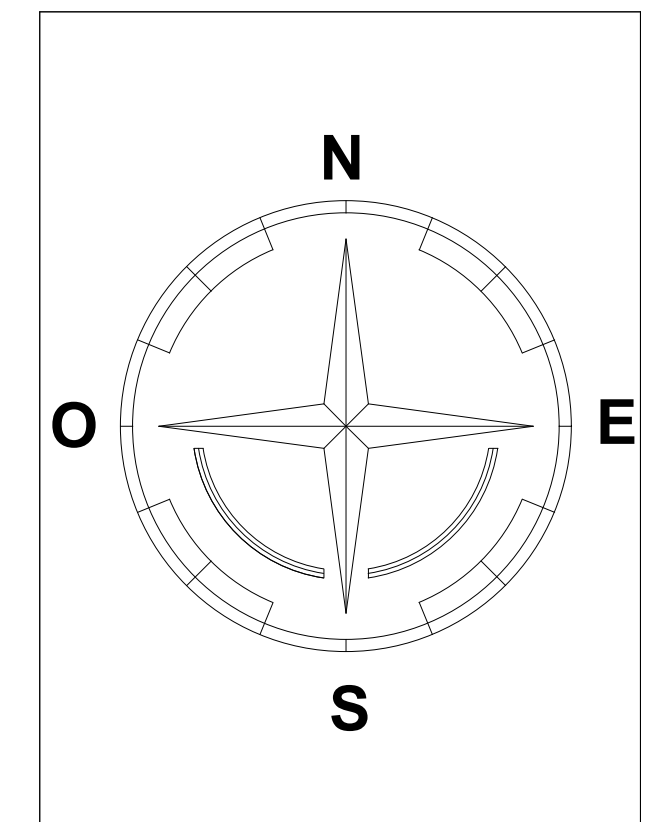
Ø10@15 cm  
L = 5.0 m  
Vertical bars

Ø10@15 cm  
L = 4.0 m  
Vertical bars

Ø10@15 cm  
L = 4.0 m  
Vertical bars



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Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
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Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Wall details

SCALE

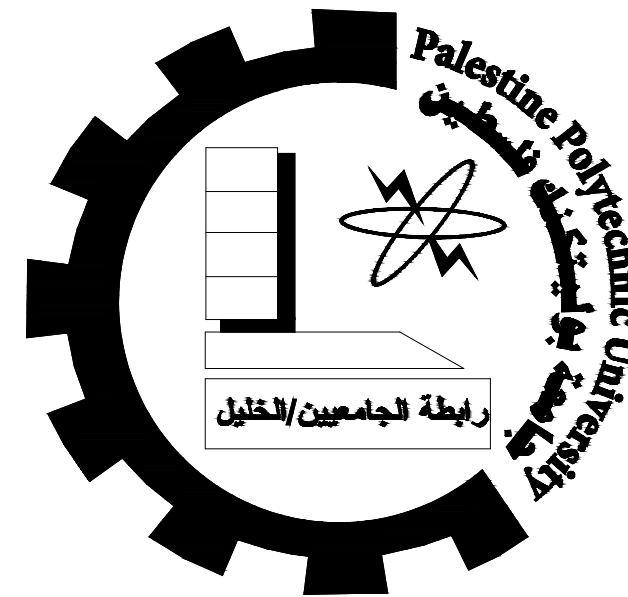
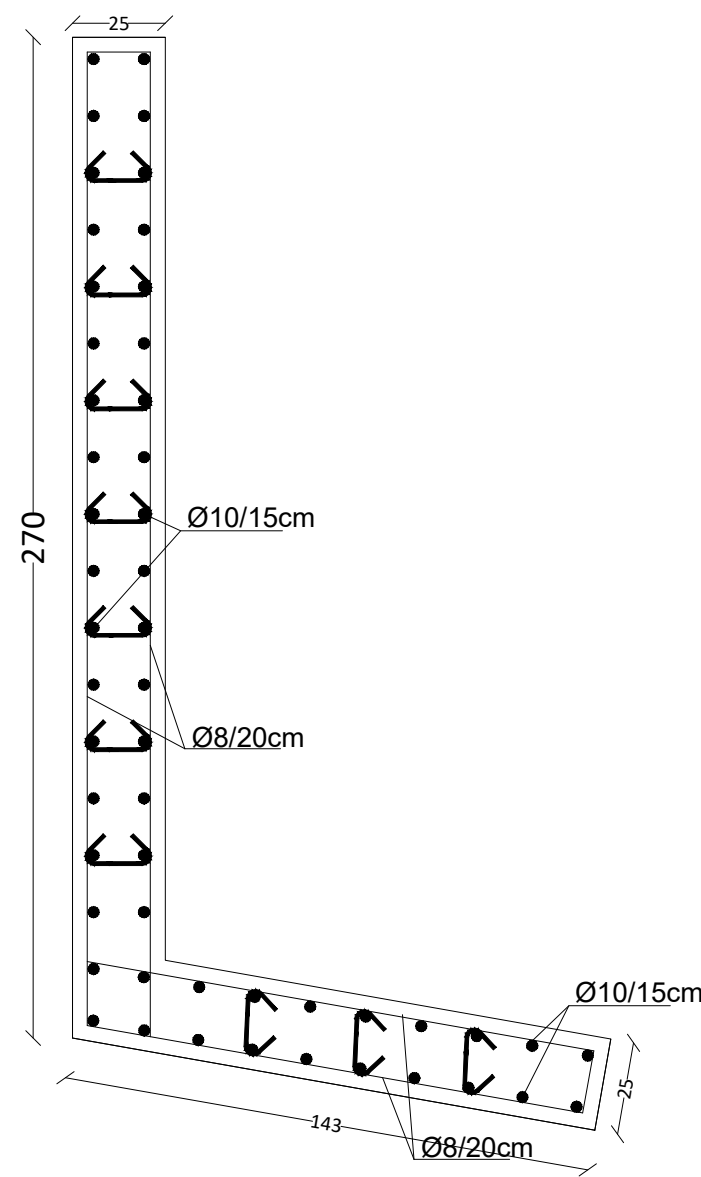
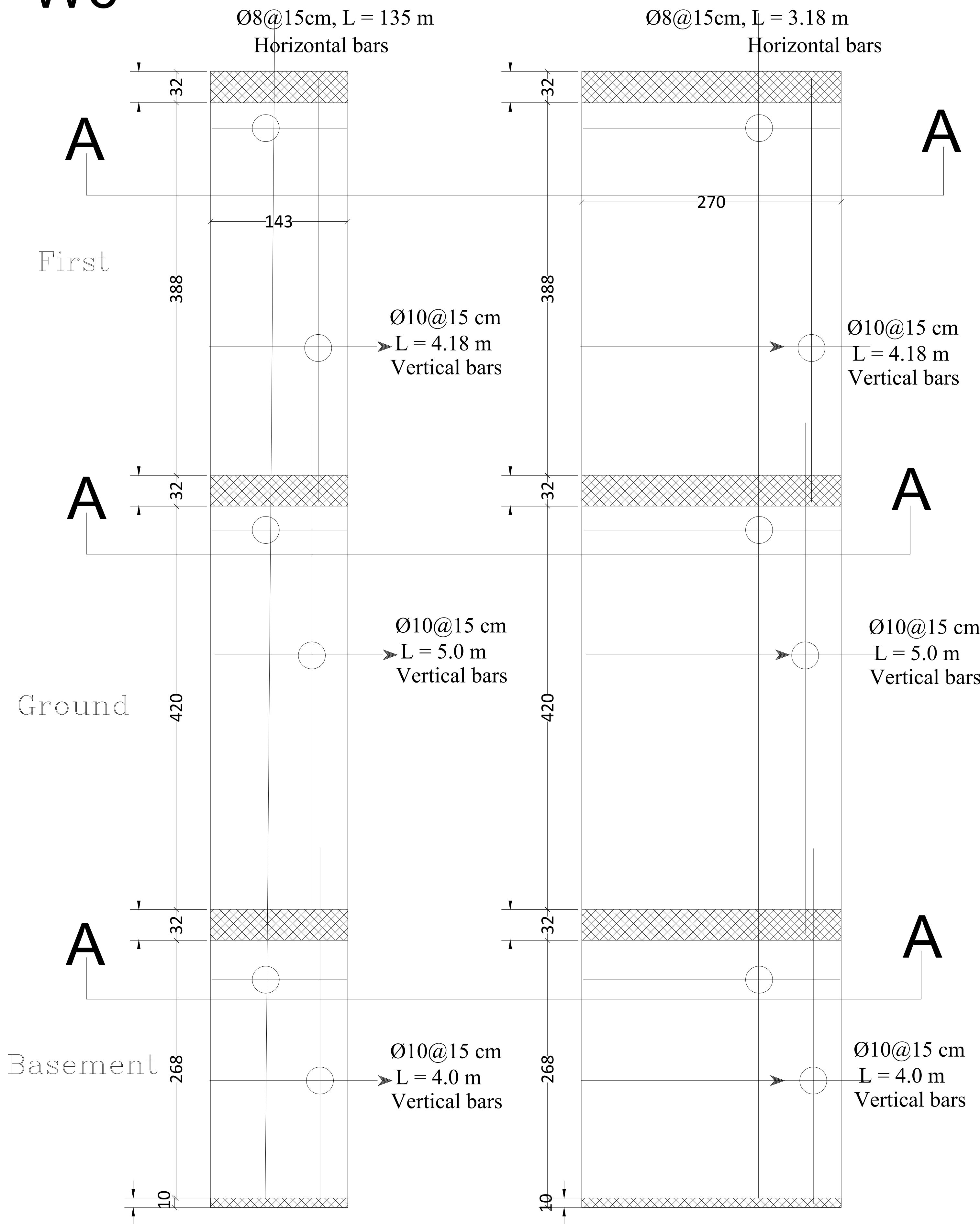
1:100

NO. OF DRAW

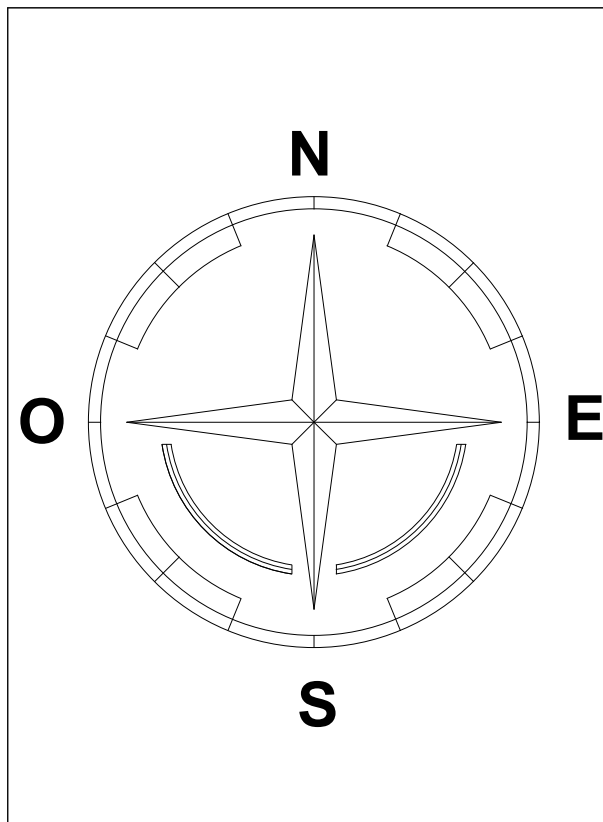
S13



W6



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Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Wall details

SCALE

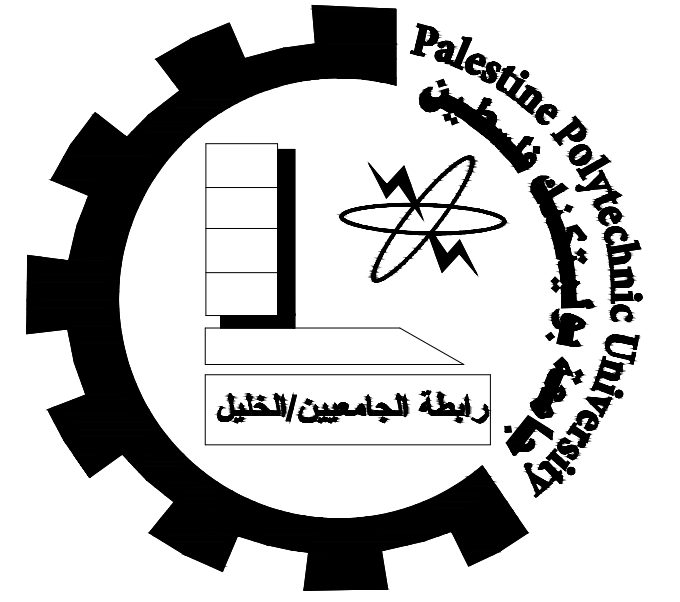
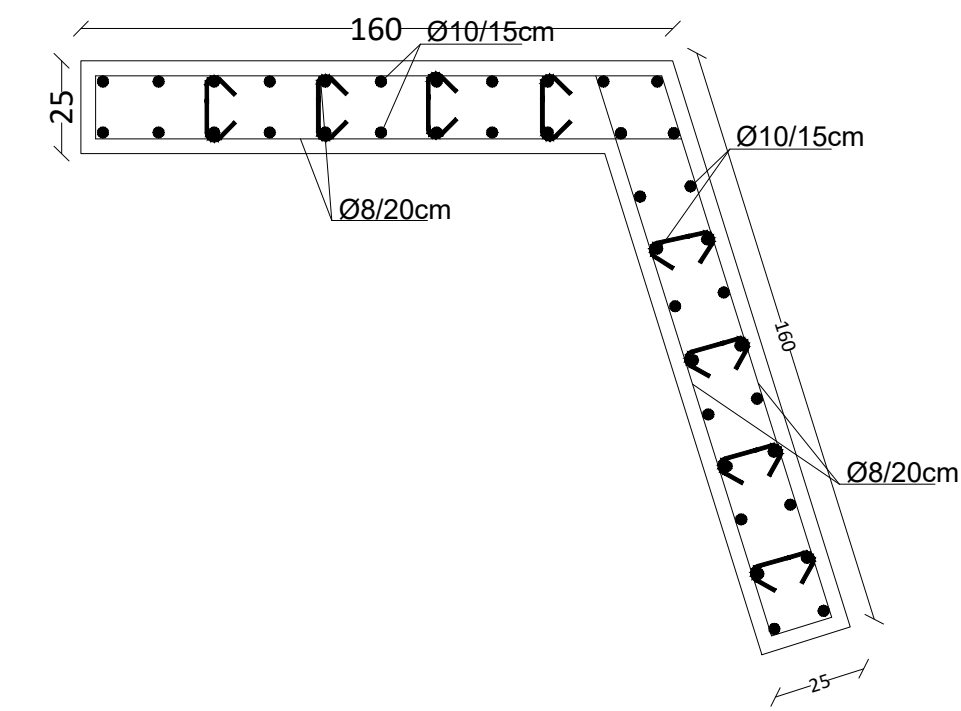
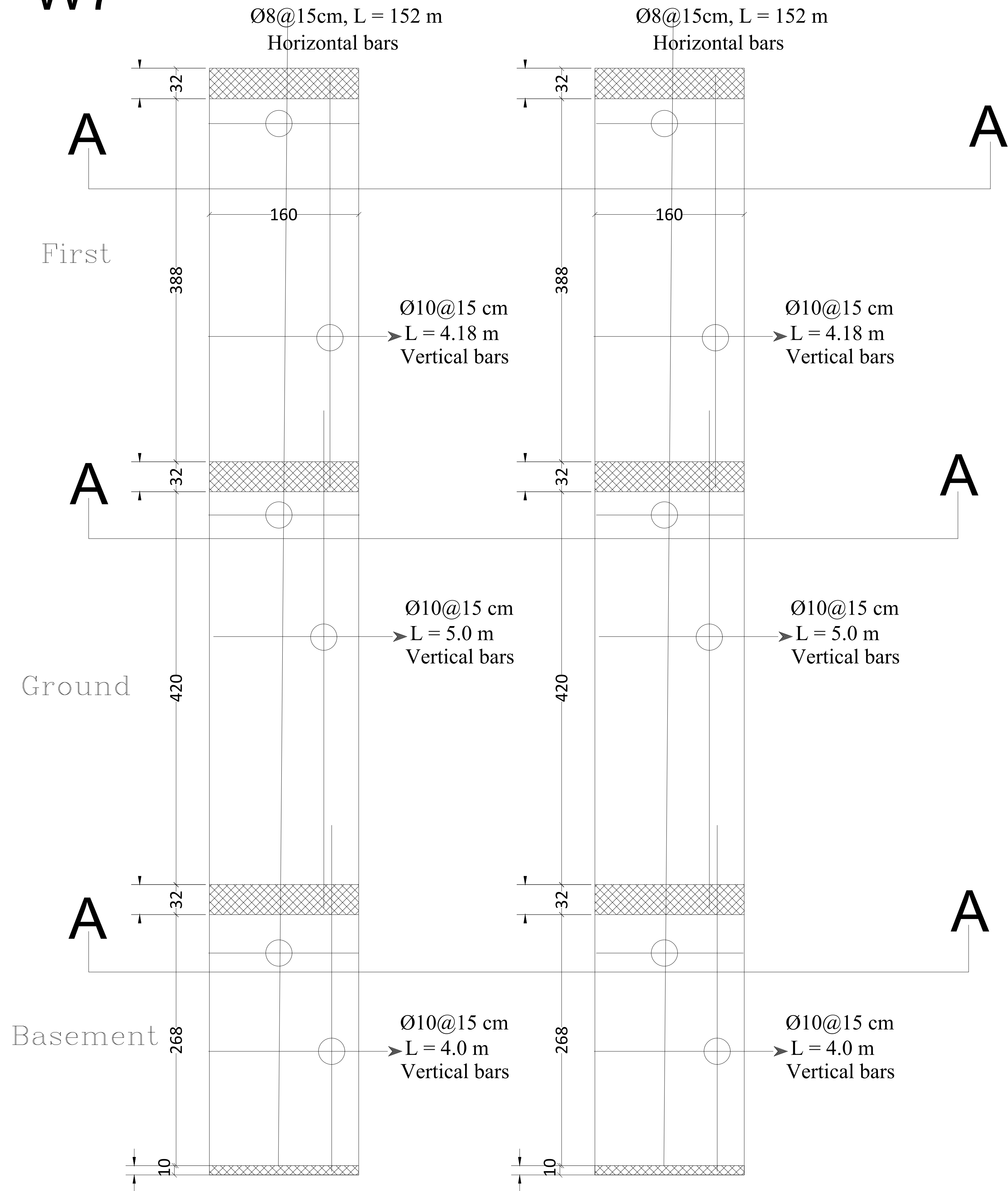
1:100

NO. OF DRAW

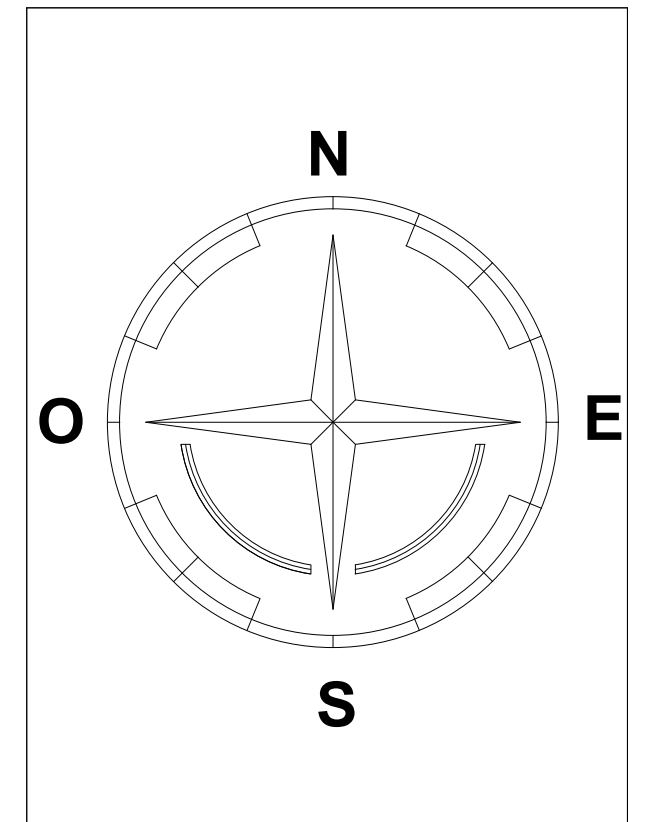
S14



W7



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Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Wall details

SCALE

1:100

NO. OF DRAW

S15

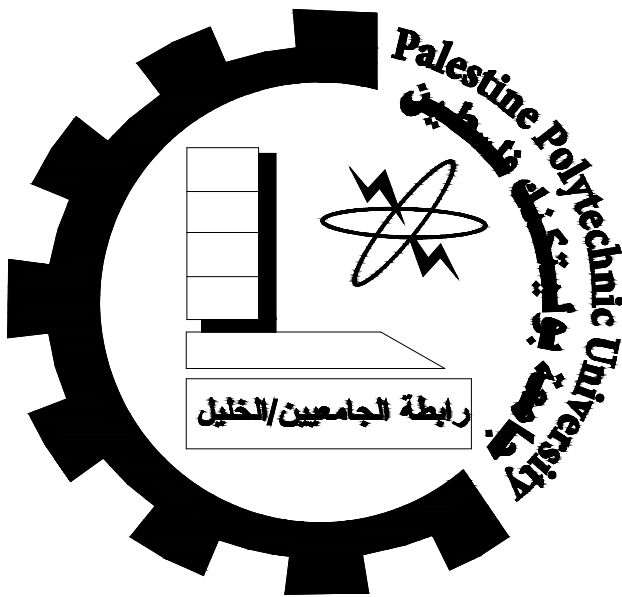
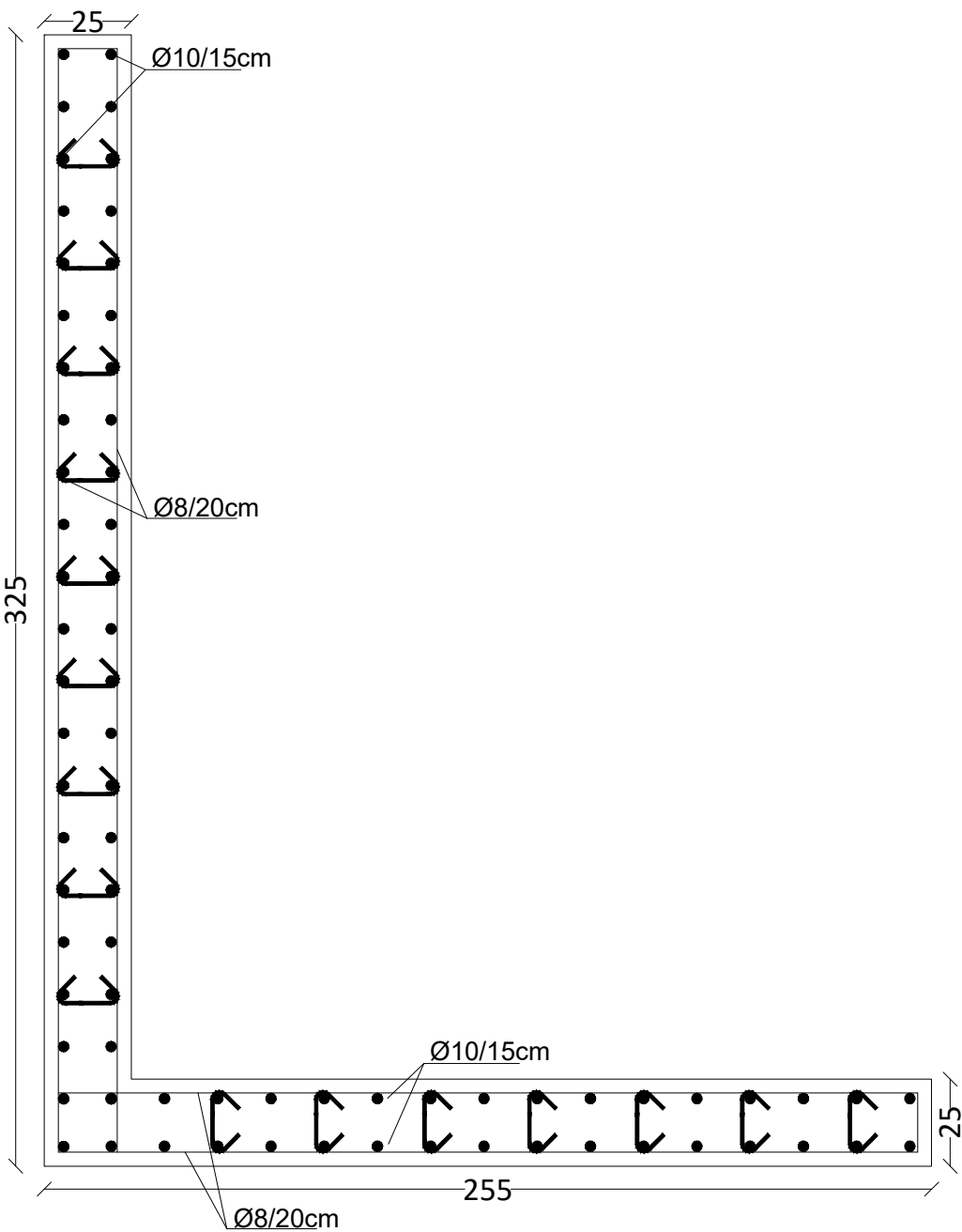
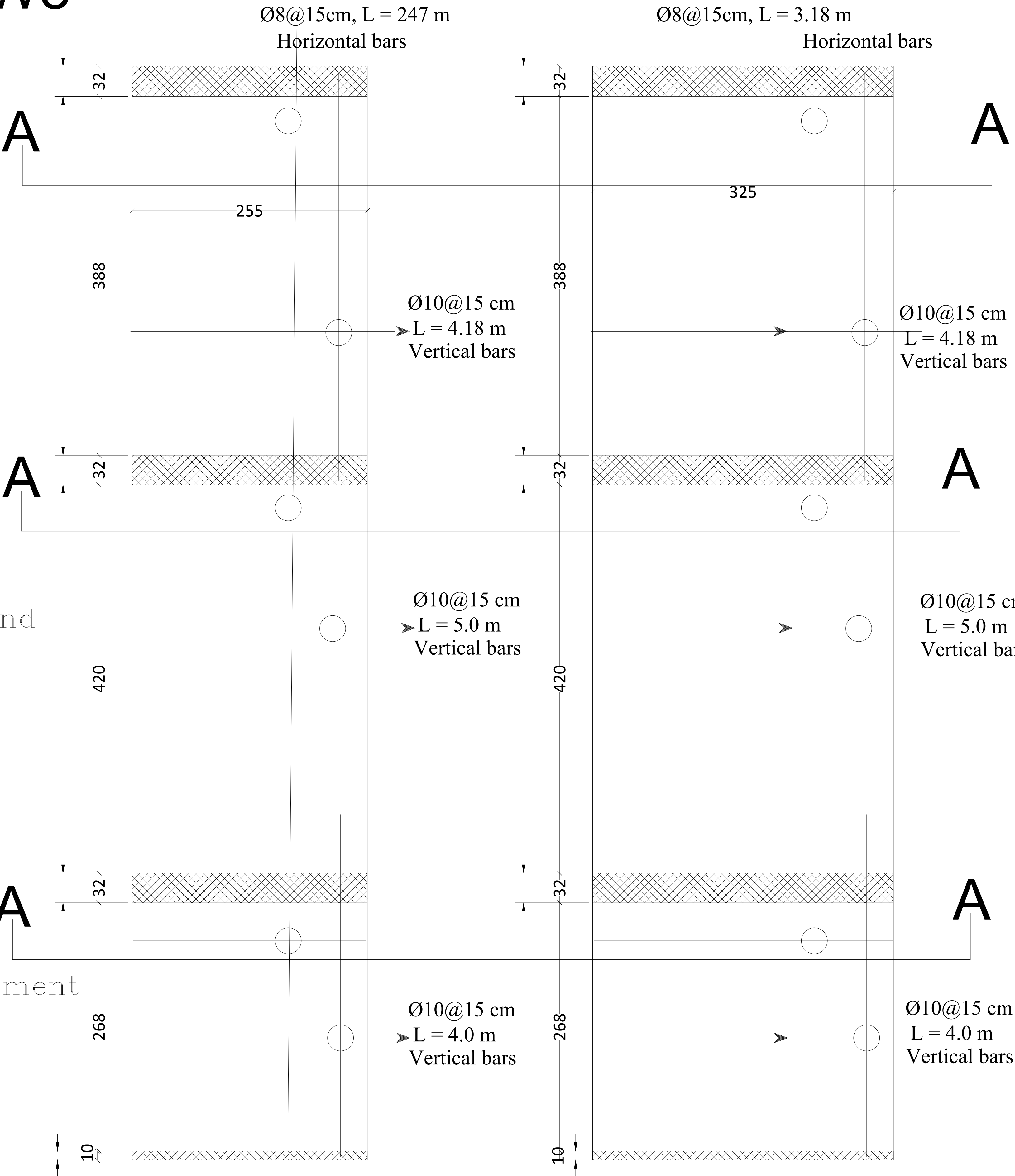


W8

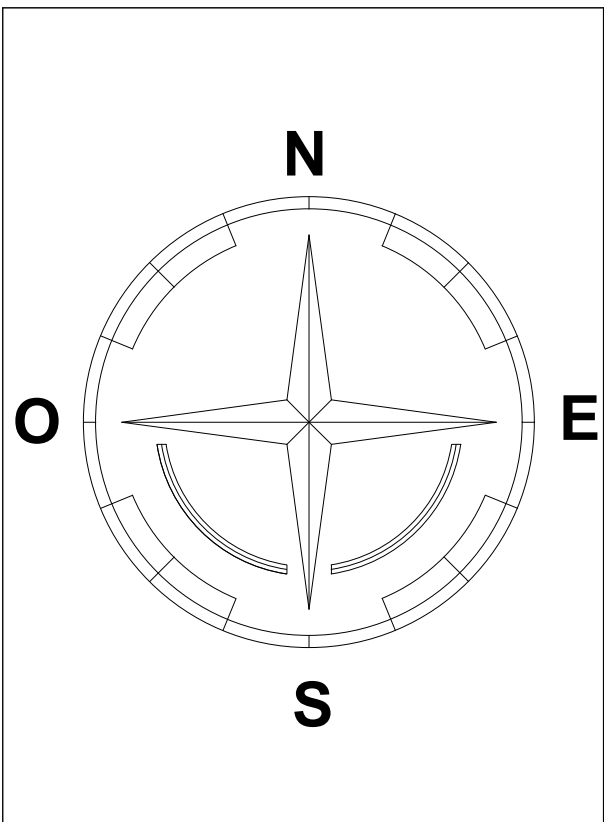
First

Ground

Basement



Palestine Polytechnic University  
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Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Wall details

SCALE

1:100

NO. OF DRAW

S16



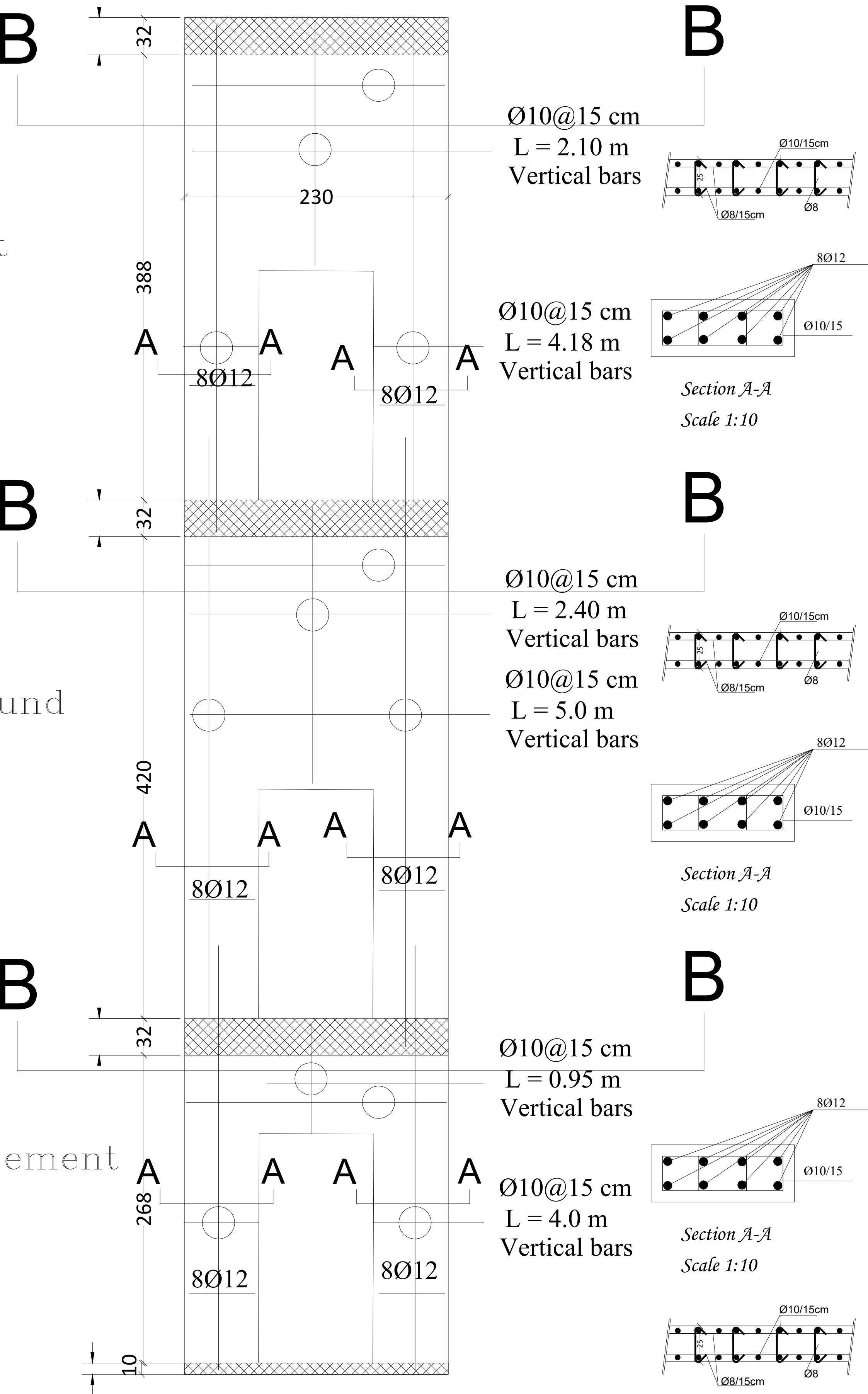
W elevator

Ø8@15cm, L = 247 m  
Horizontal bars

First

Ground

Basement



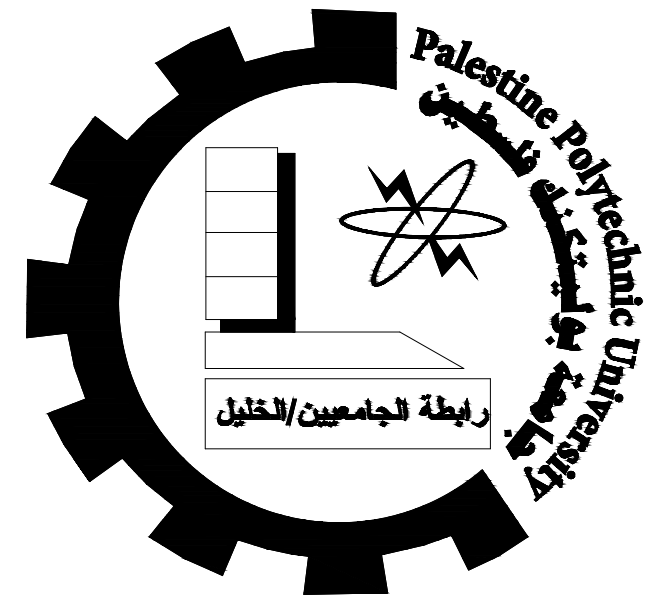
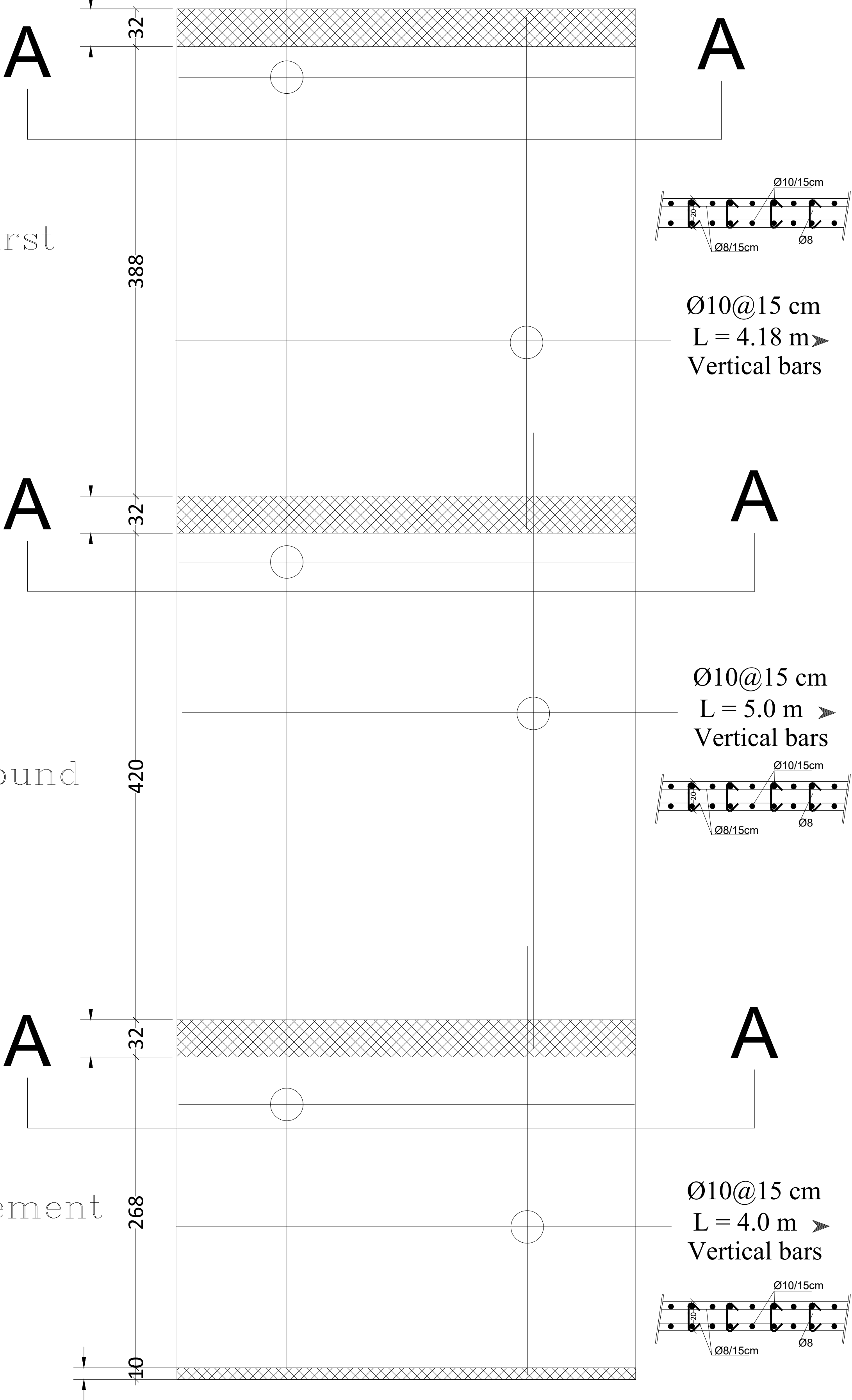
W9

Ø8@15cm, L = variable m  
Horizontal bars

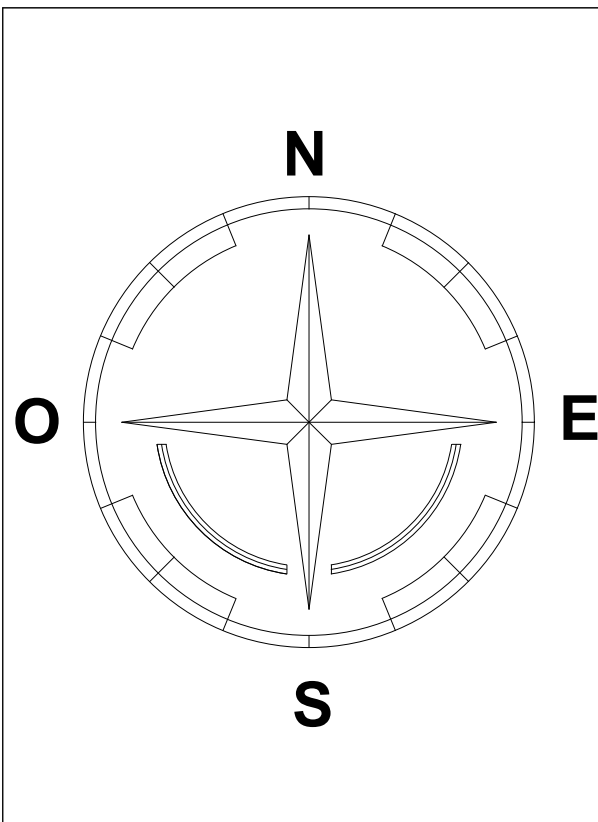
First

Ground

Basement



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Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Wall details

SCALE

1:100

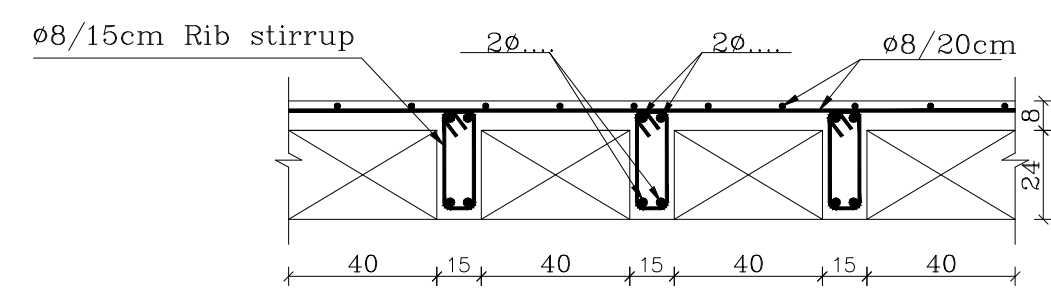
NO. OF DRAW

S16a



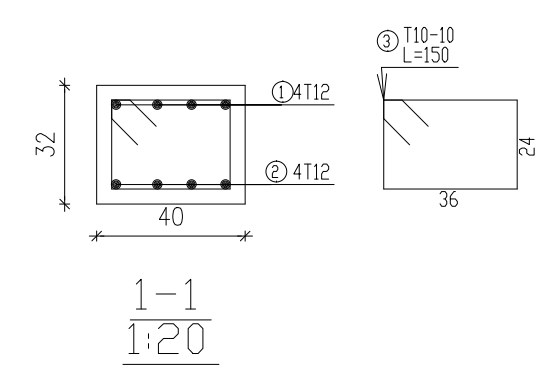




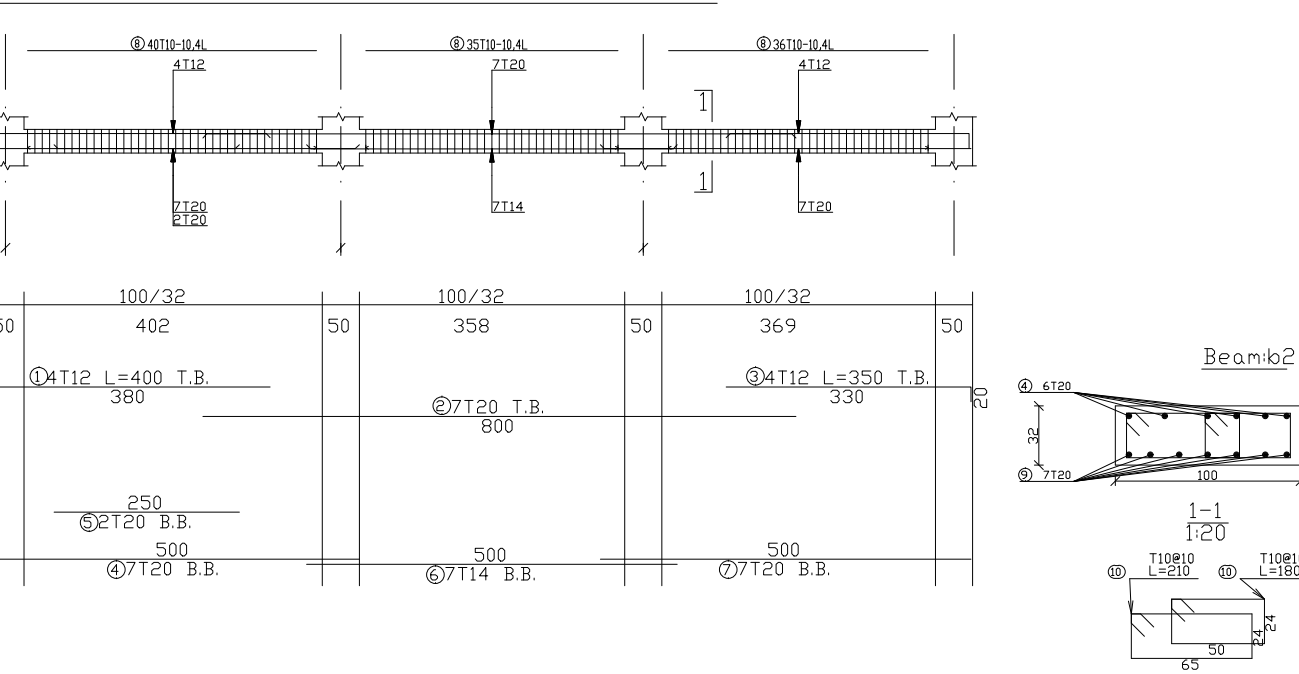




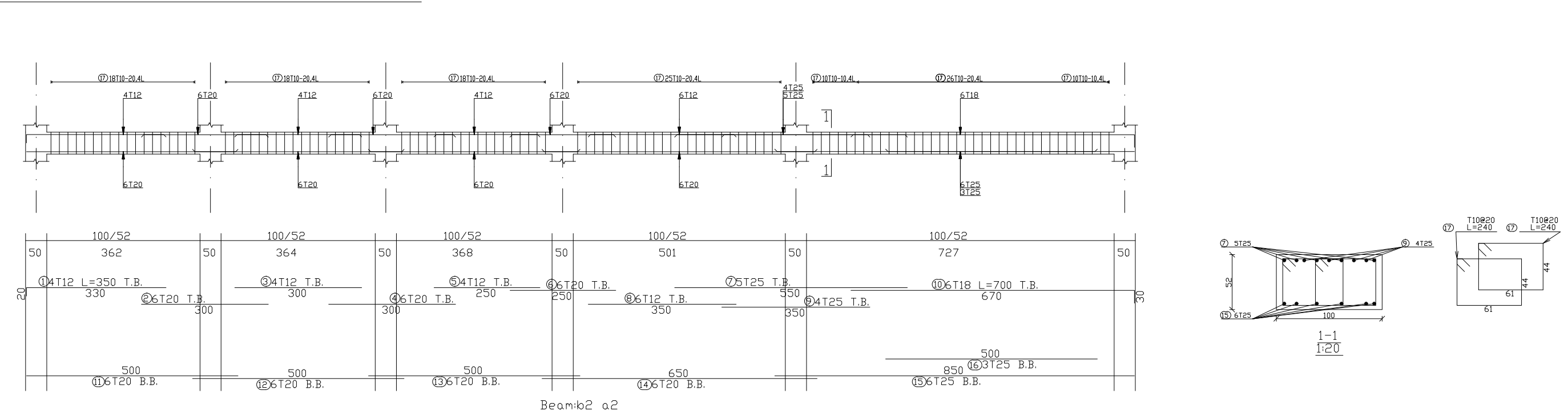
BEAM - B1 (40/32)



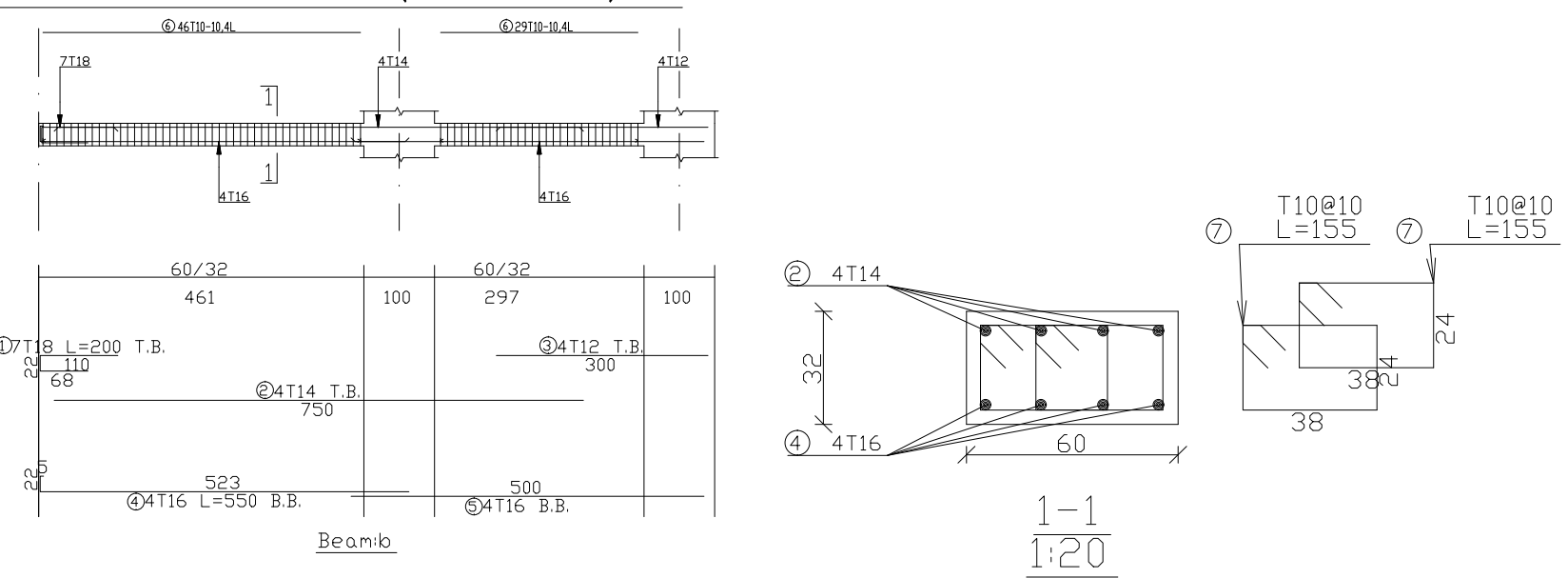
BEAM - B2 (100/32)



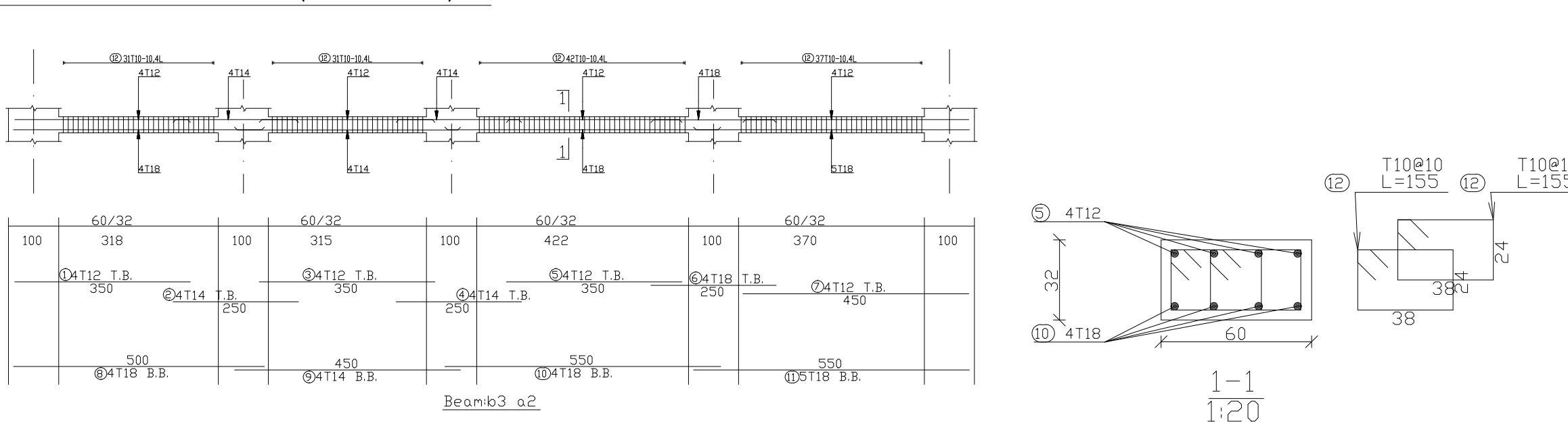
BEAM - B2\* (100/52)



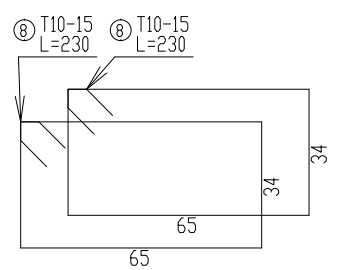
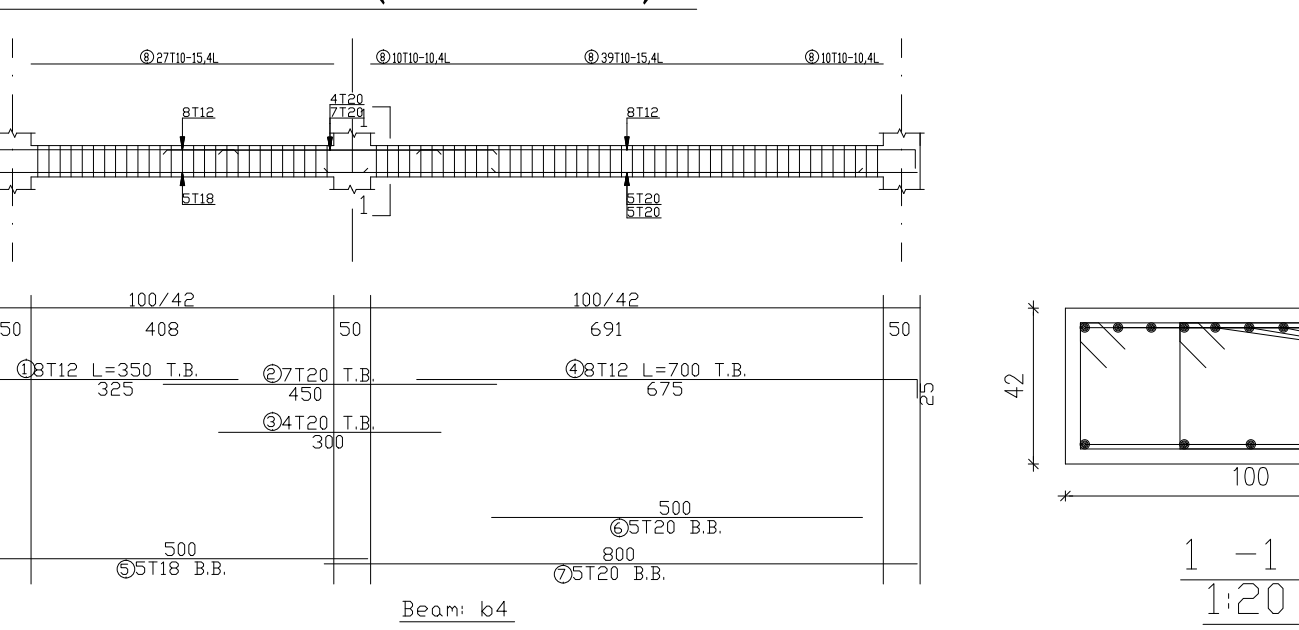
BEAM - B3 (60/32)



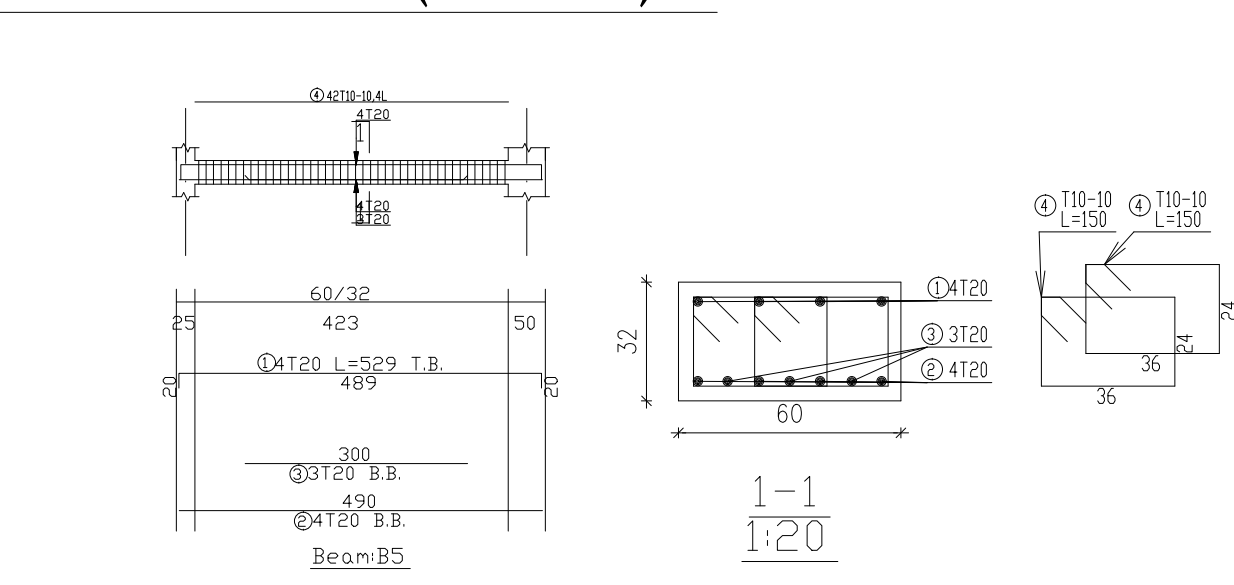
BEAM - B3\* (60/32)



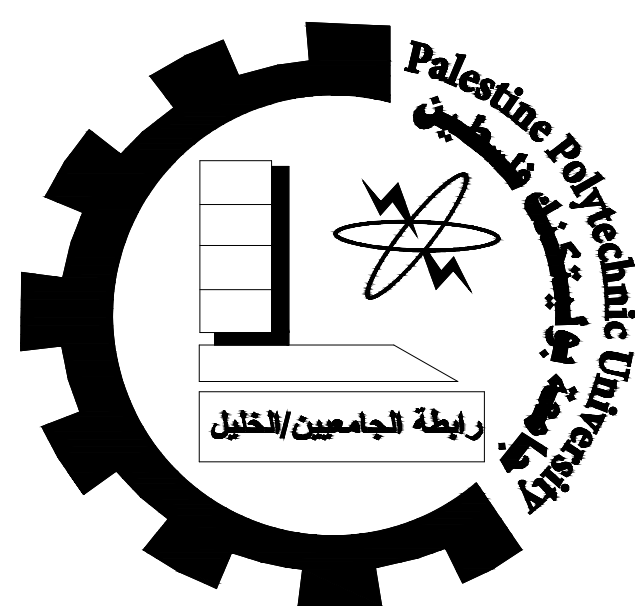
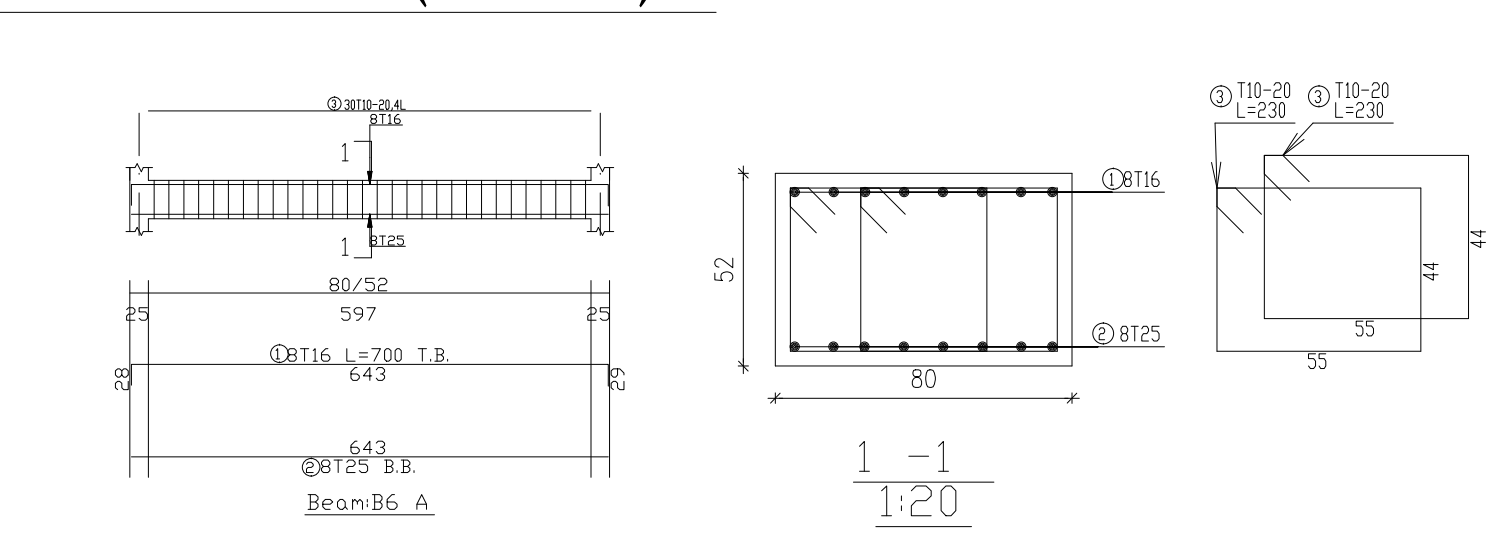
BEAM - B4 (100/42)



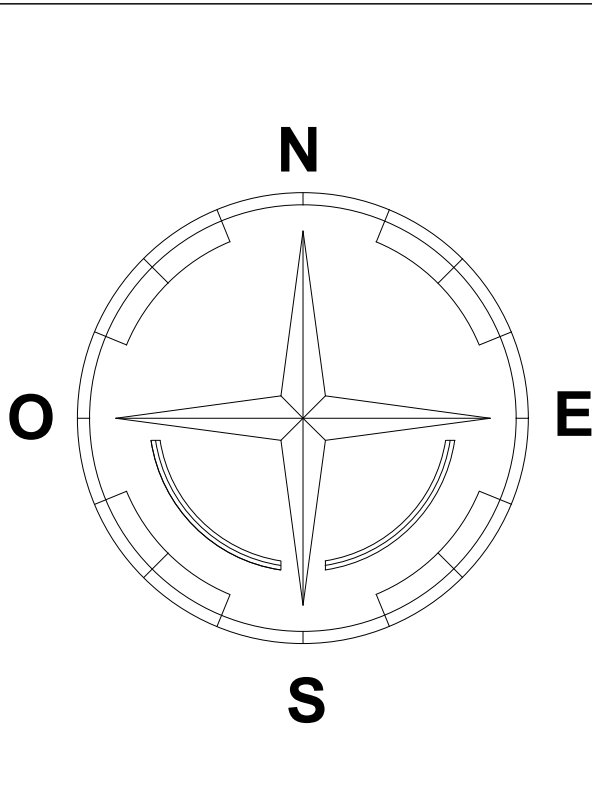
BEAM - B5 (60/32)



BEAM - B6 (80/52)



Palestine Polytechnic University  
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Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
basement beams details

SCALE

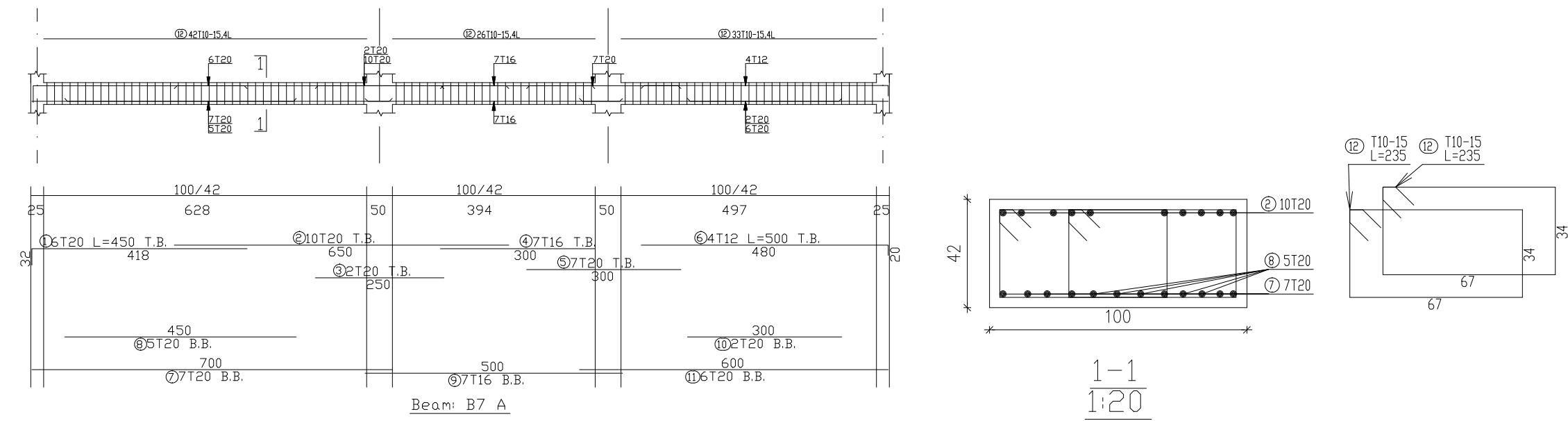
1:100

NO. OF DRAW

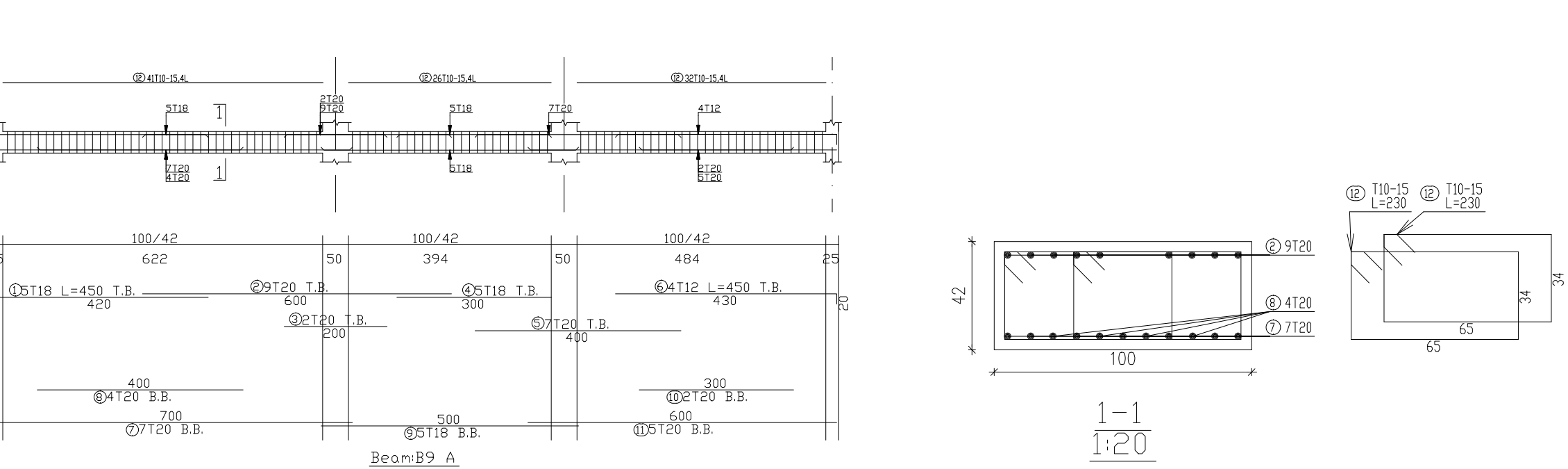
S19



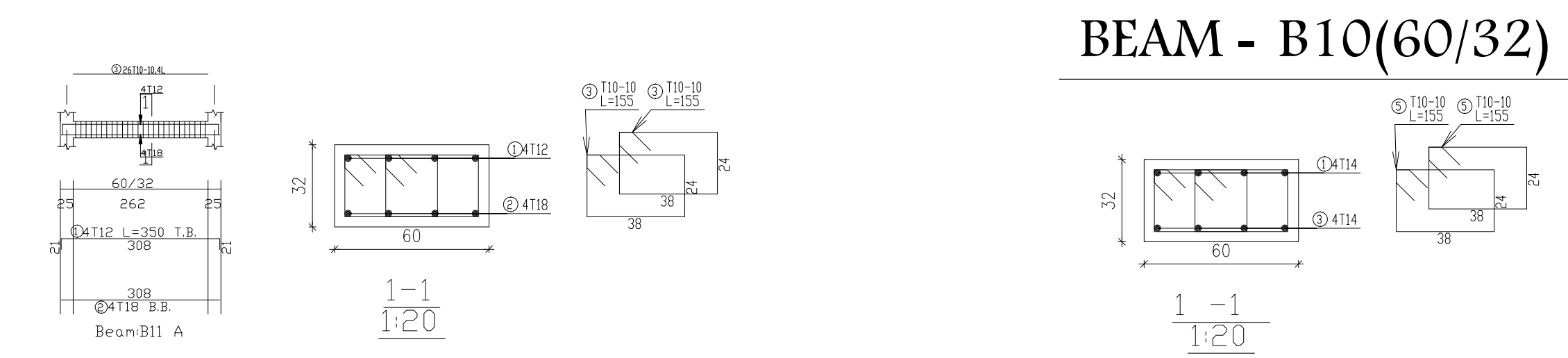
BEAM - B7 (100/42)



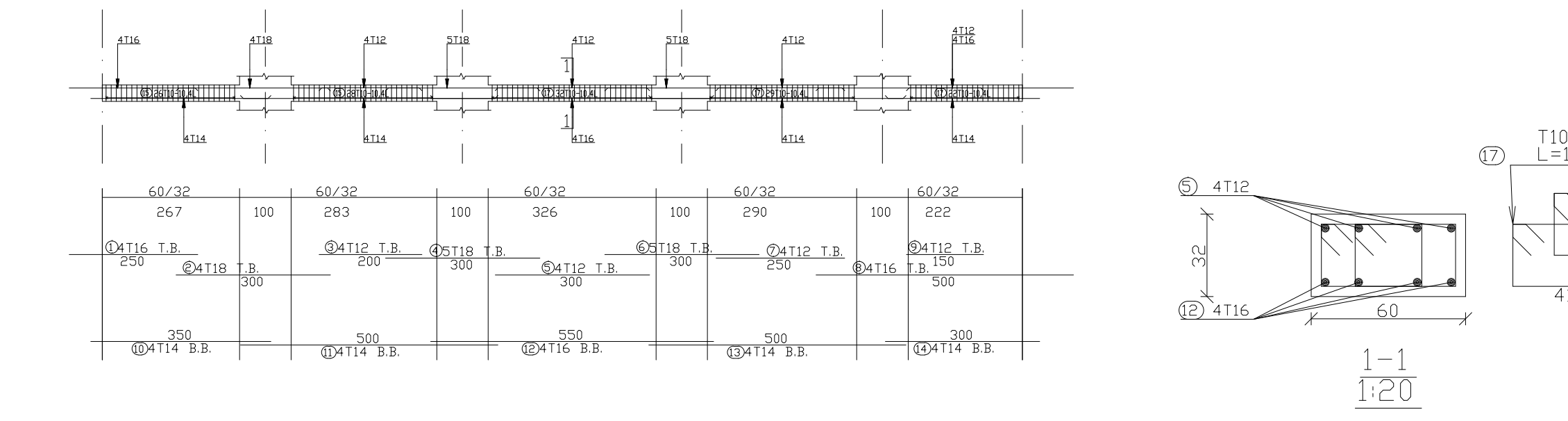
BEAM - B9(100/42)



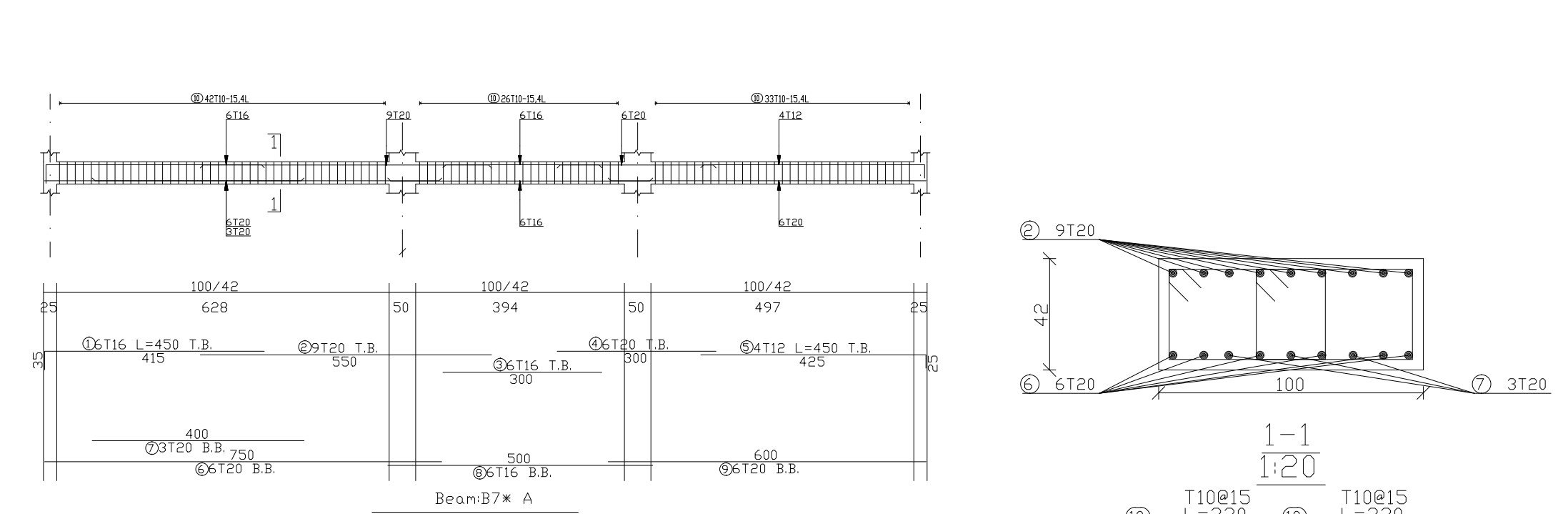
BEAM - B11(60/32)



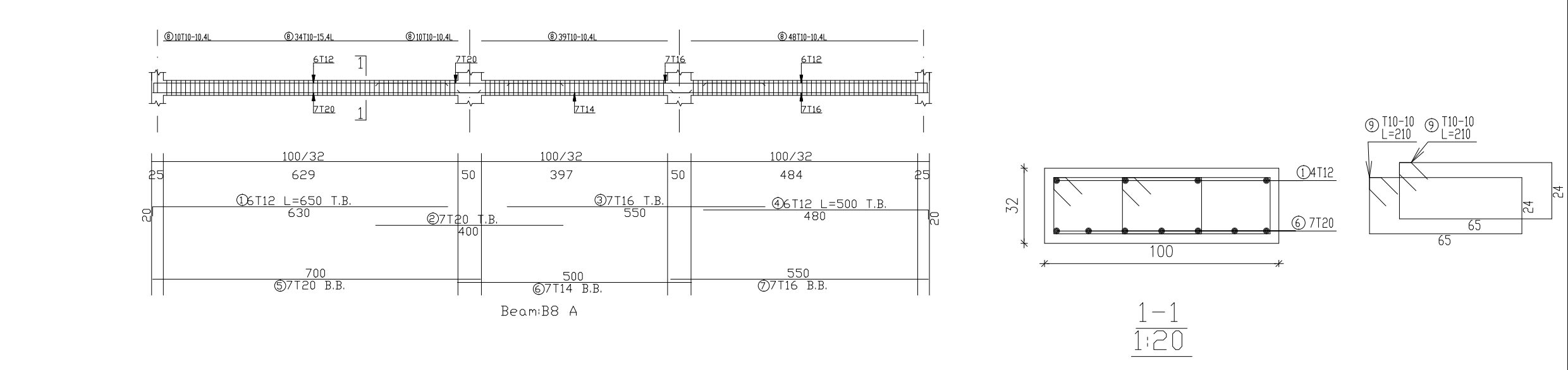
BEAM - B12(60/32)



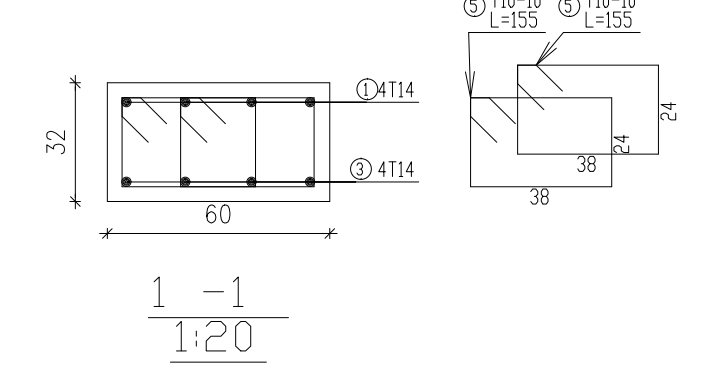
BEAM - B7\* (100/42)



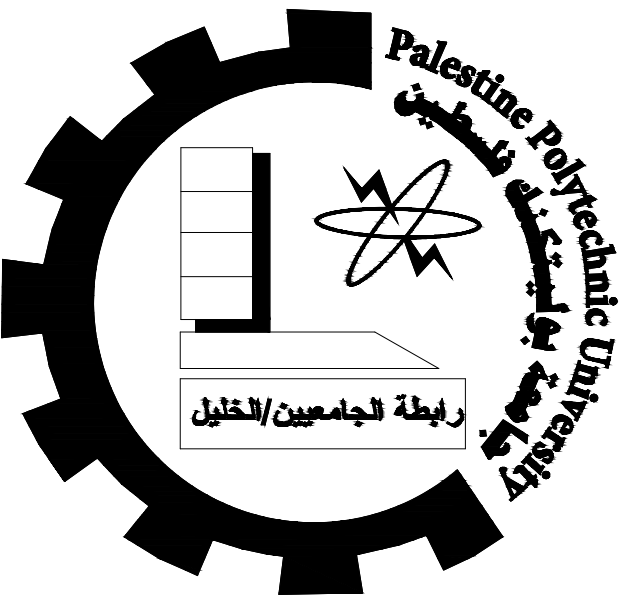
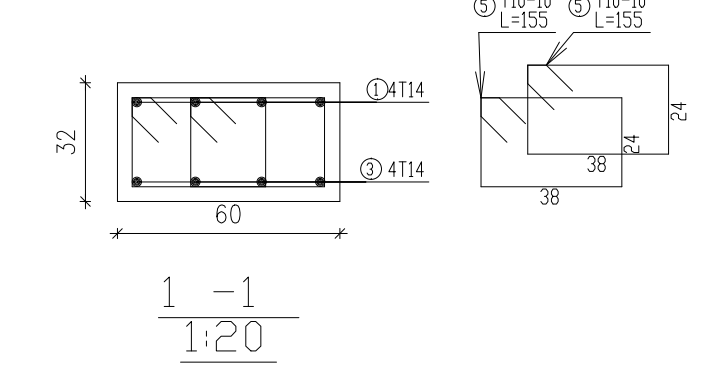
BEAM - B8 (100/32)



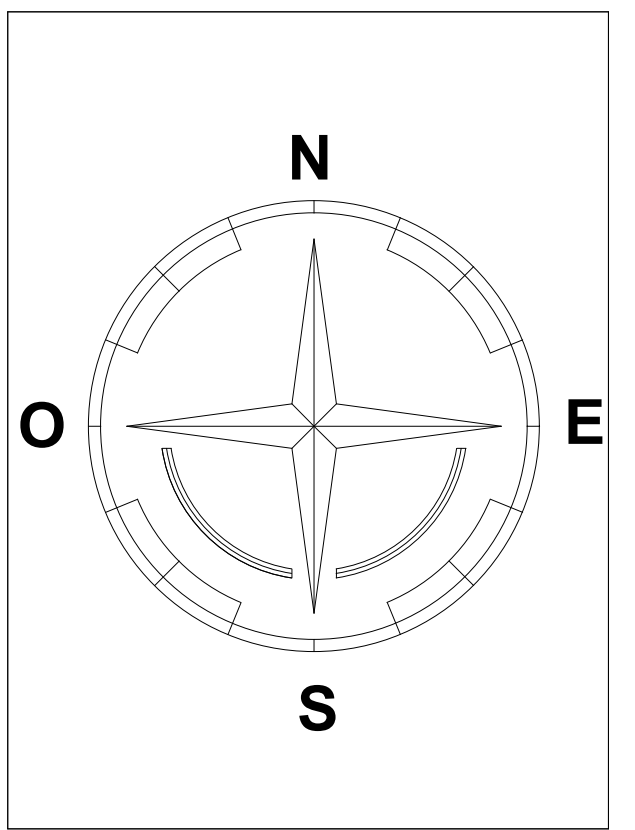
BEAM - B10(60/32)



BEAM - B10\*(60/32)



Palestine Polytechnic University  
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Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

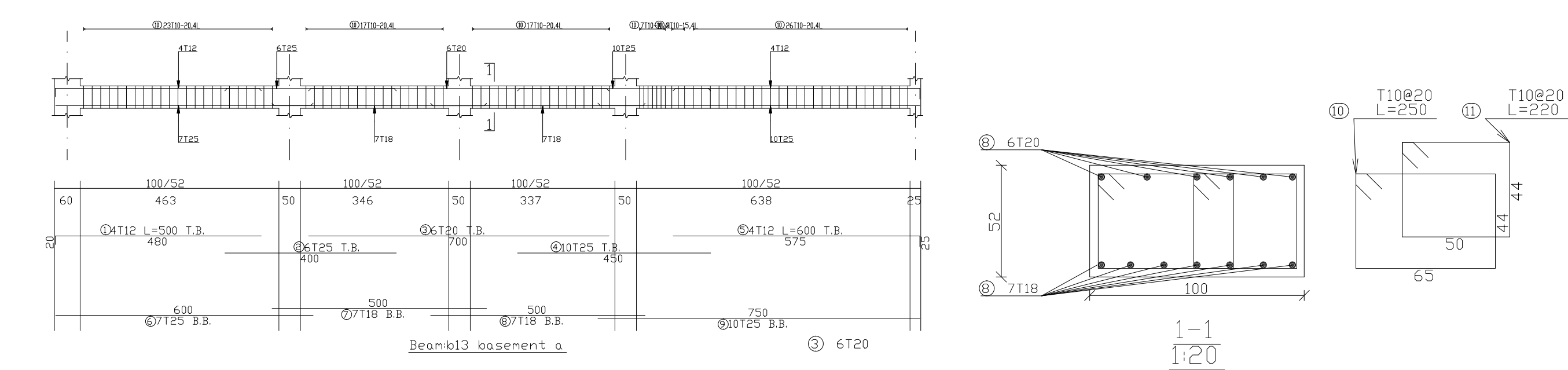
Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
basement beams details

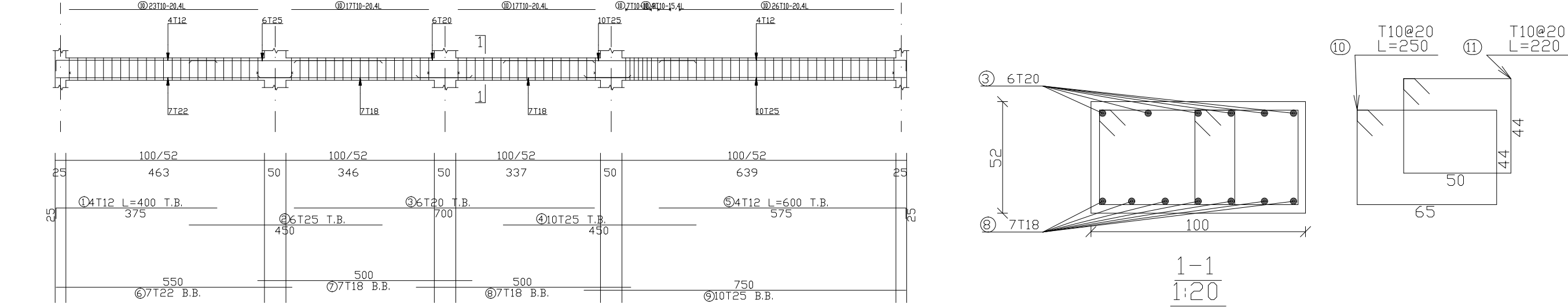
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|-------|-------------|
| 1:100 | S20         |



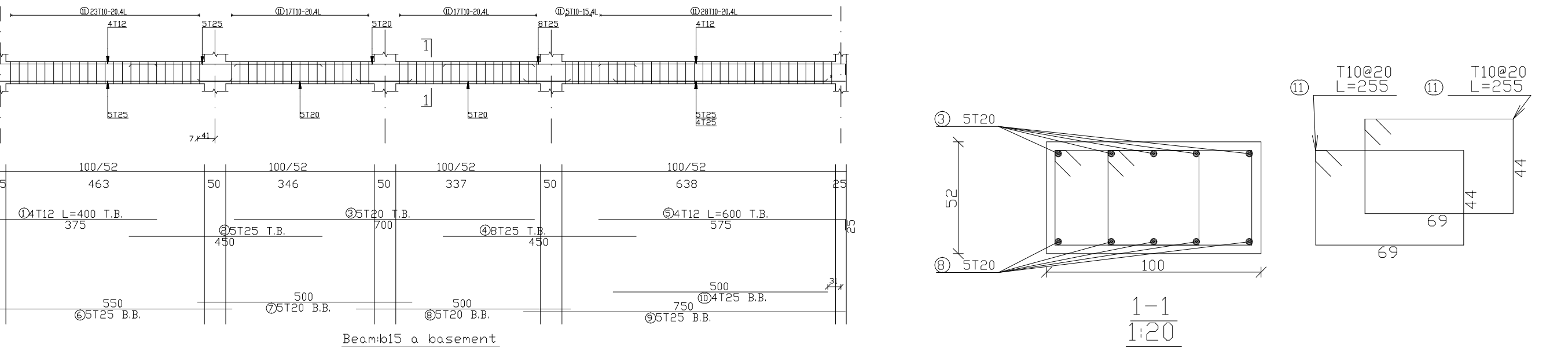
BEAM - B13(100/52)



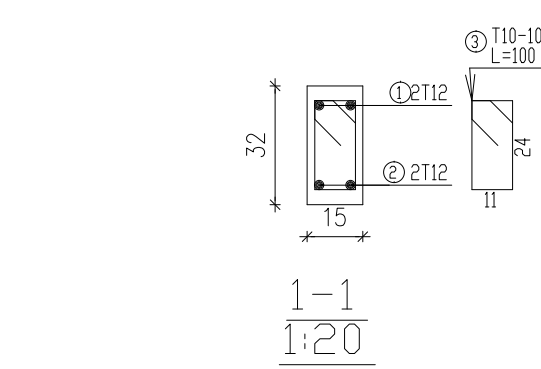
BEAM - B14(100/52)



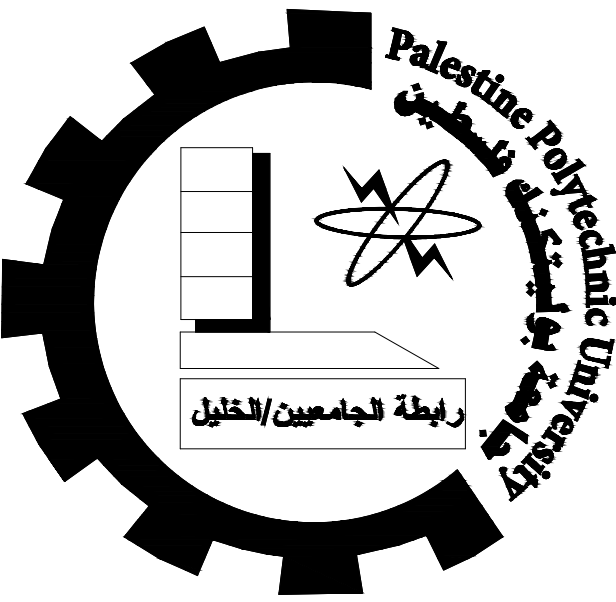
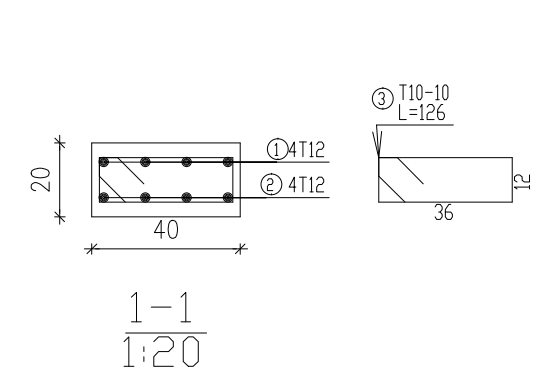
BEAM - B15(100/42)



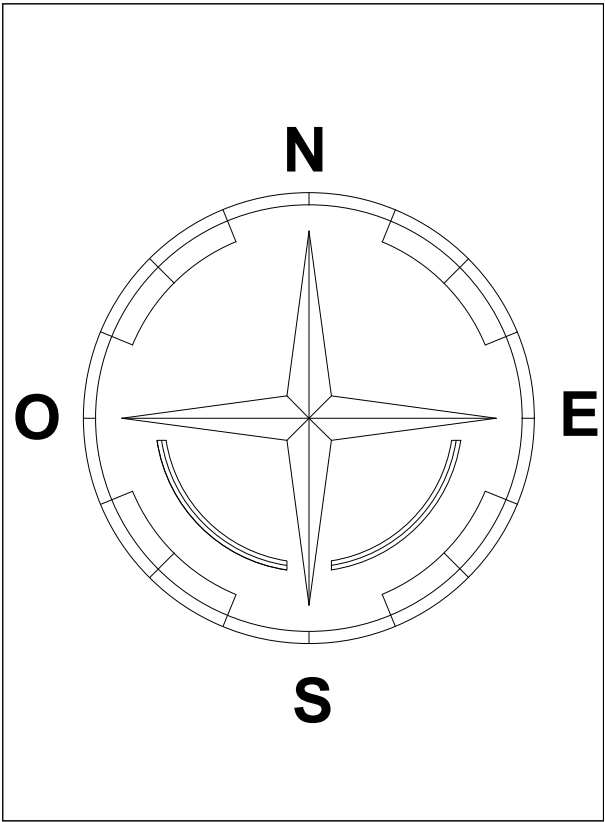
Cross rib (15/32)



BEAM - B16 (40/20)



Palestine Polytechnic University  
College of Engineering  
Civil & Architecture Department  
Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
basement beams details

SCALE

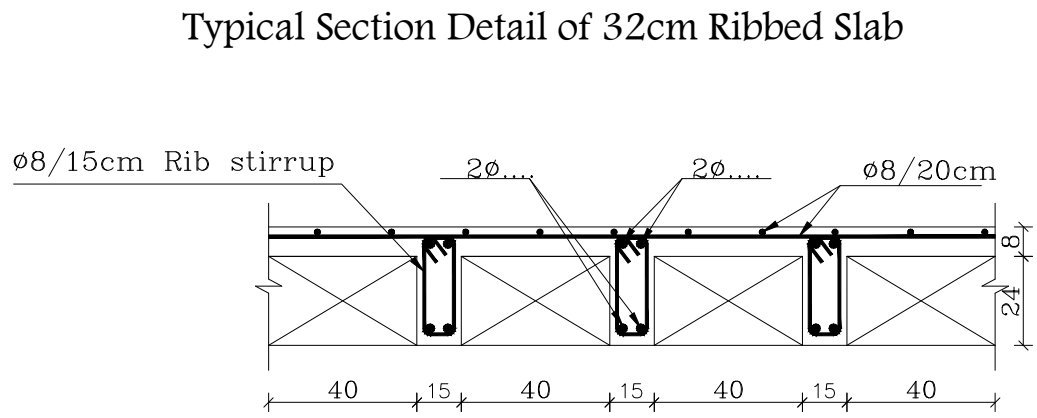
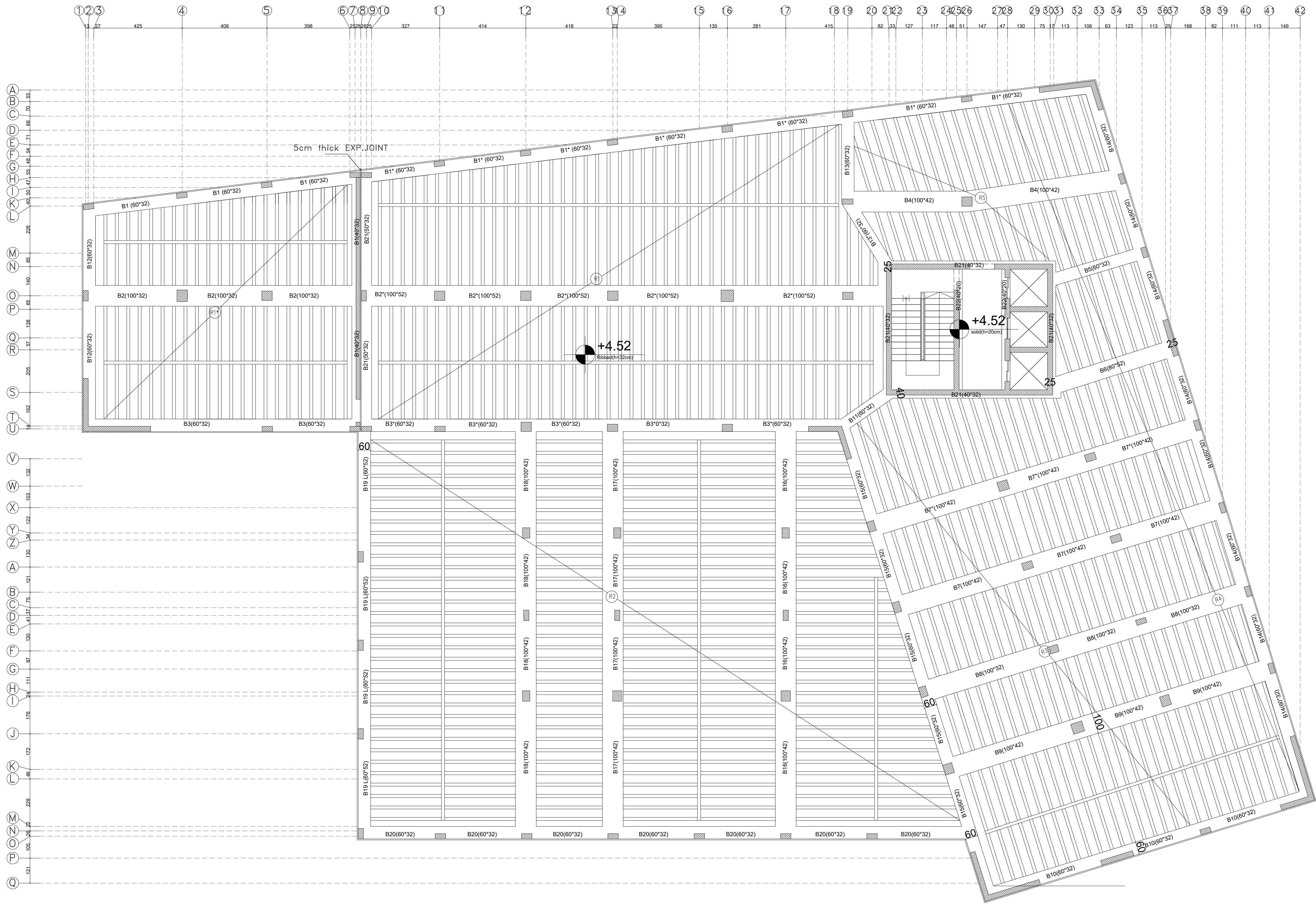
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NO. OF DRAW

S21

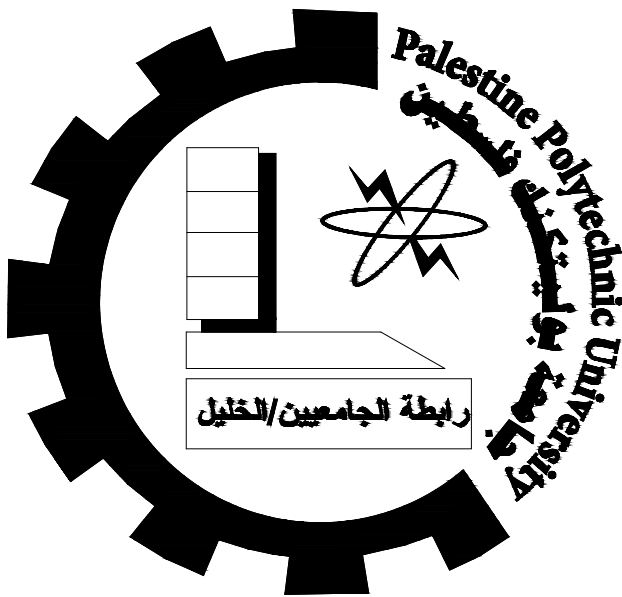


Building A

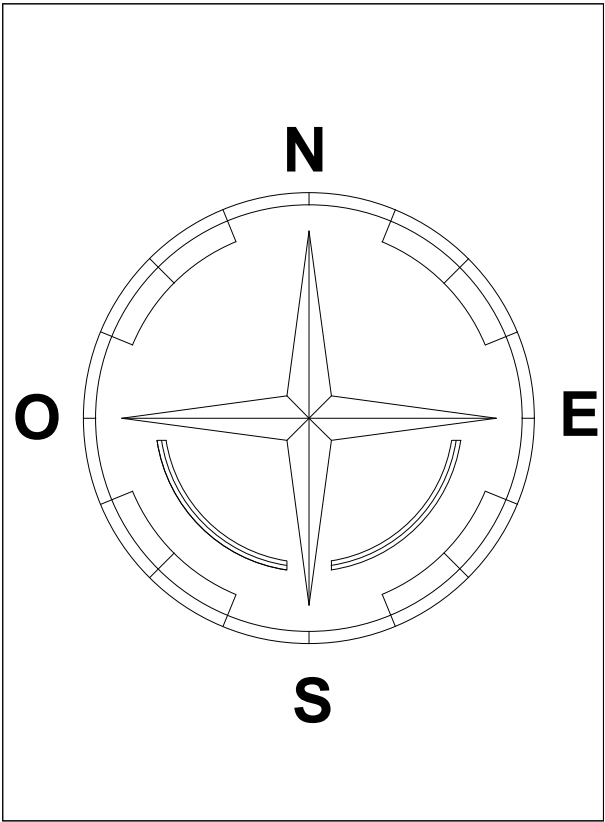


DETAIL #1

SCALE 1:20



Palestine Polytechnic University  
College of Engineering  
Civil & Architecture Department  
Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Ground slab layout

SCALE

1:100

NO. OF DRAW

S22

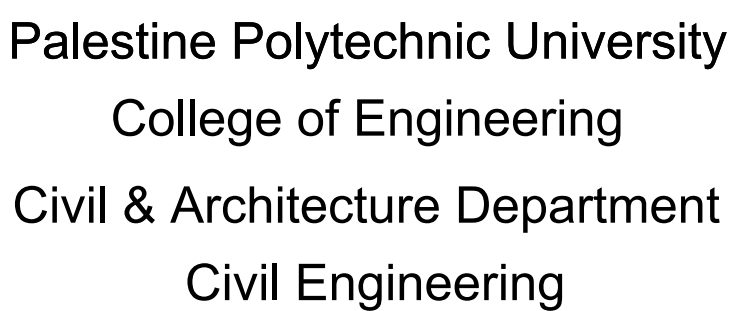


Architectural floor plan of a building, showing a grid system (1-42 horizontally, A-Q vertically) and various structural elements. The plan includes a central area marked with a circular symbol and the text "+4.52 Ribbed(h=32cm)". The plan also shows a "5cm thick EXP. JOINT" near the top left. The plan includes numerous dimension lines and labels for structural components like beams (T.B.), columns (C.), and walls (W.).

SCALE 1:20





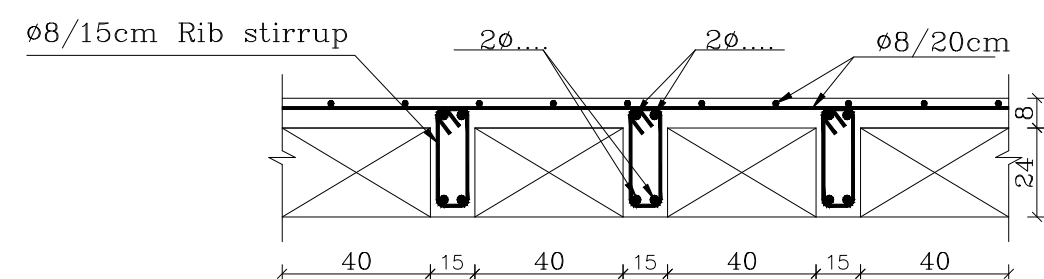
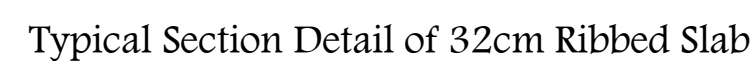


Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
First slab layout

|       |             |
|-------|-------------|
| SCALE | NO. OF DRAW |
| 1:100 | S24         |

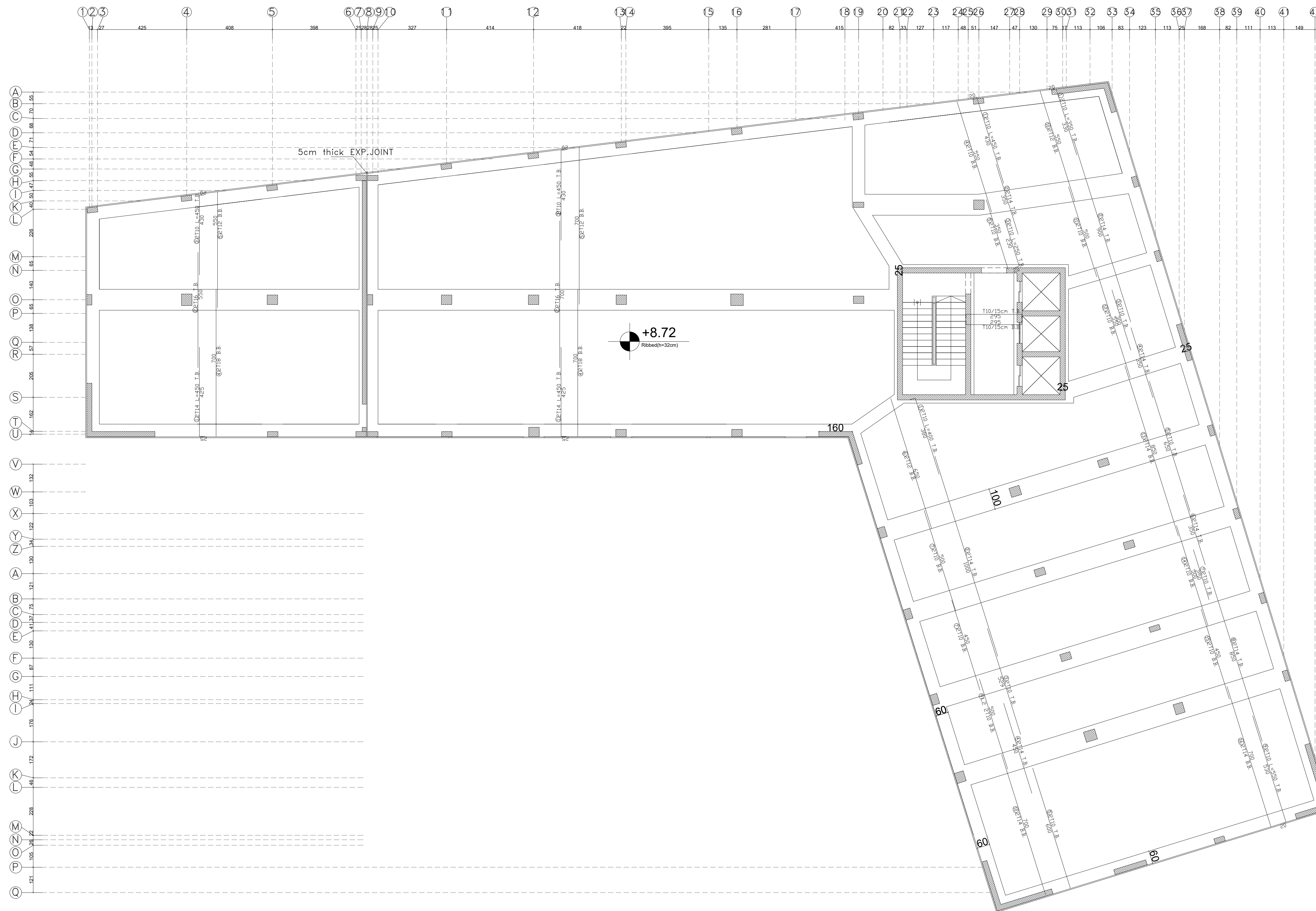


### DETAIL #1

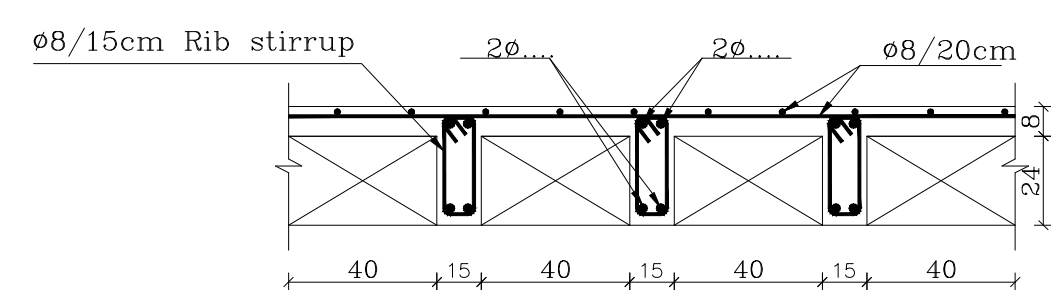
SCALE 1:20



## Building A

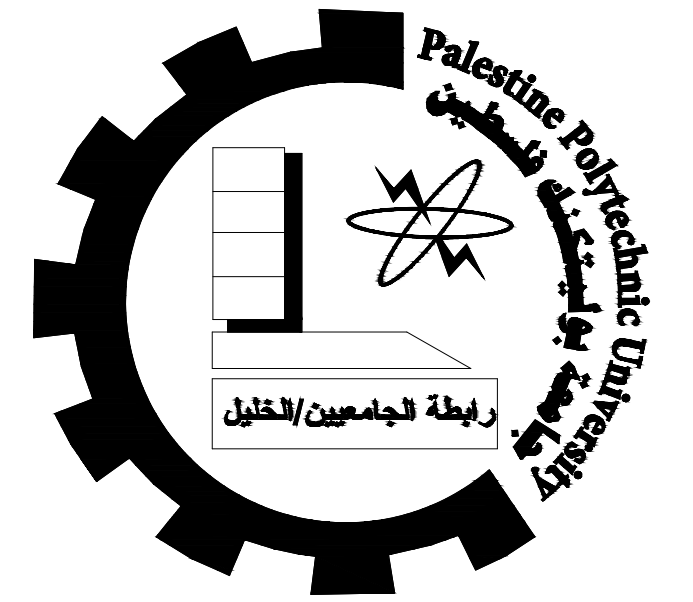


Typical Section Detail of 32cm Ribbed Slab

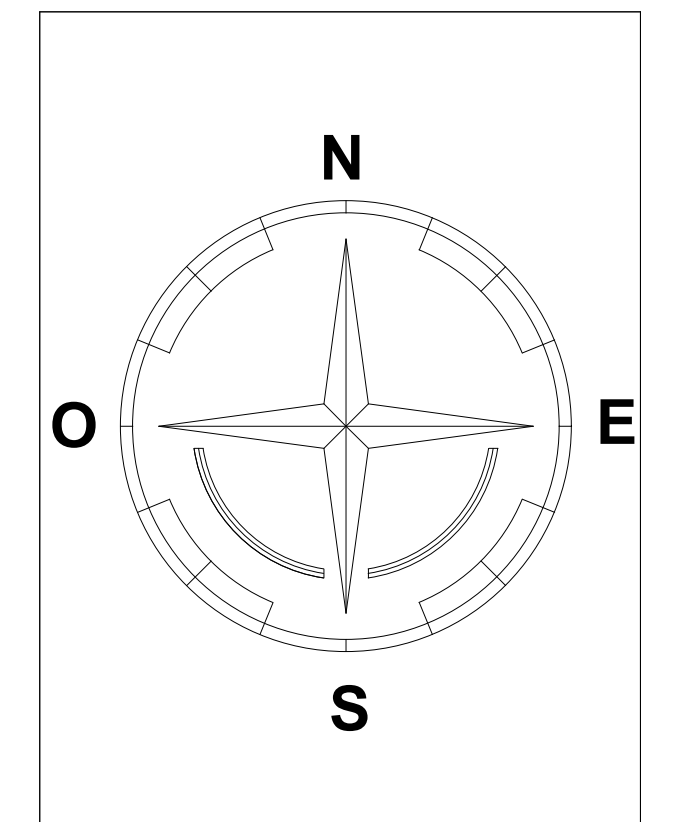


### DETAIL #1

SCALE 1:20



Palestine Polytechnic University  
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Civil & Architecture Department  
Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

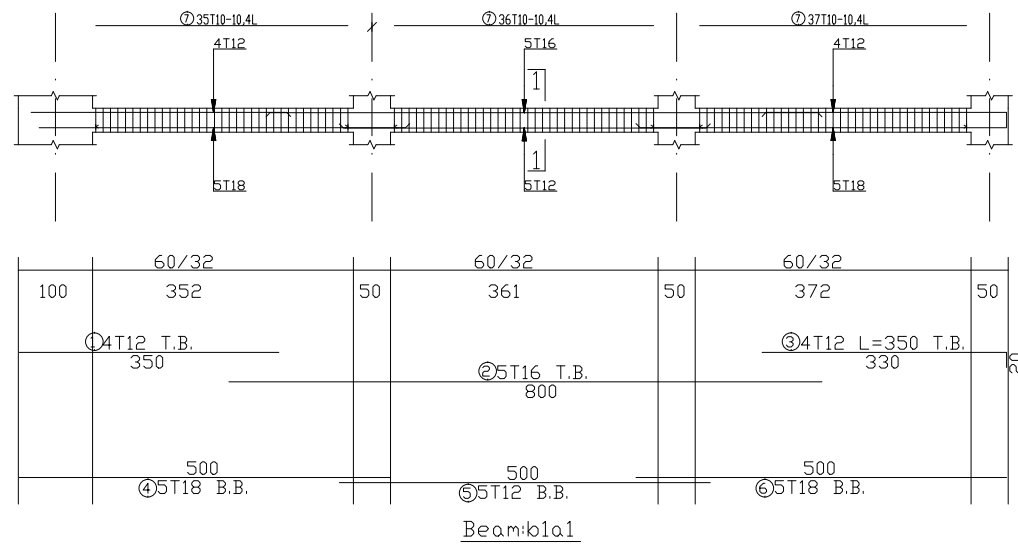
Drawing Title:

### First slab details

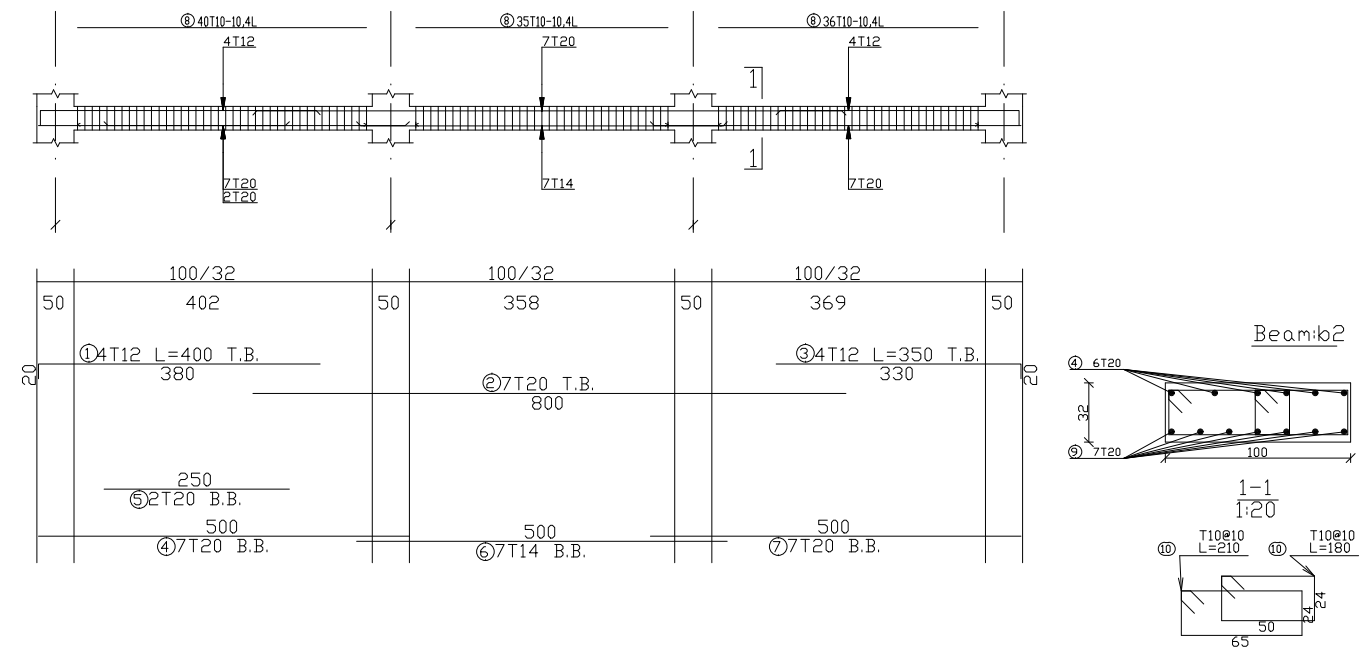
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|-------|-------------|
| SCALE | NO. OF DRAW |
| 1:100 | S25         |



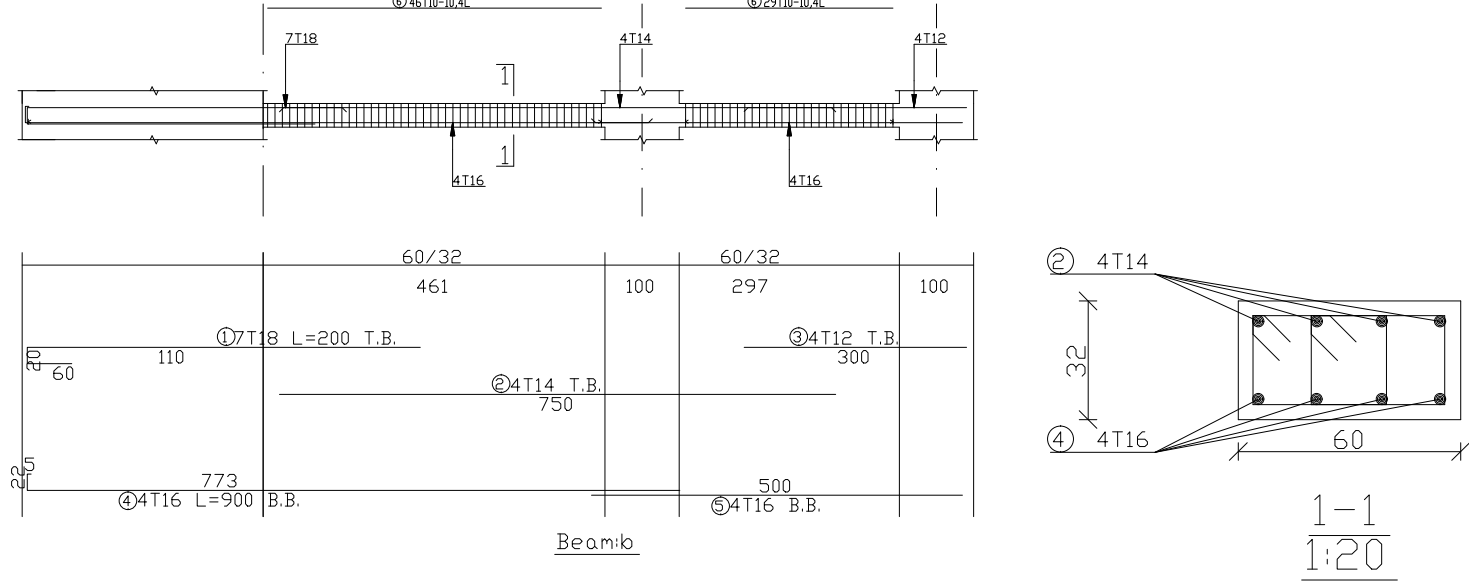
BEAM - B1 (60/32)



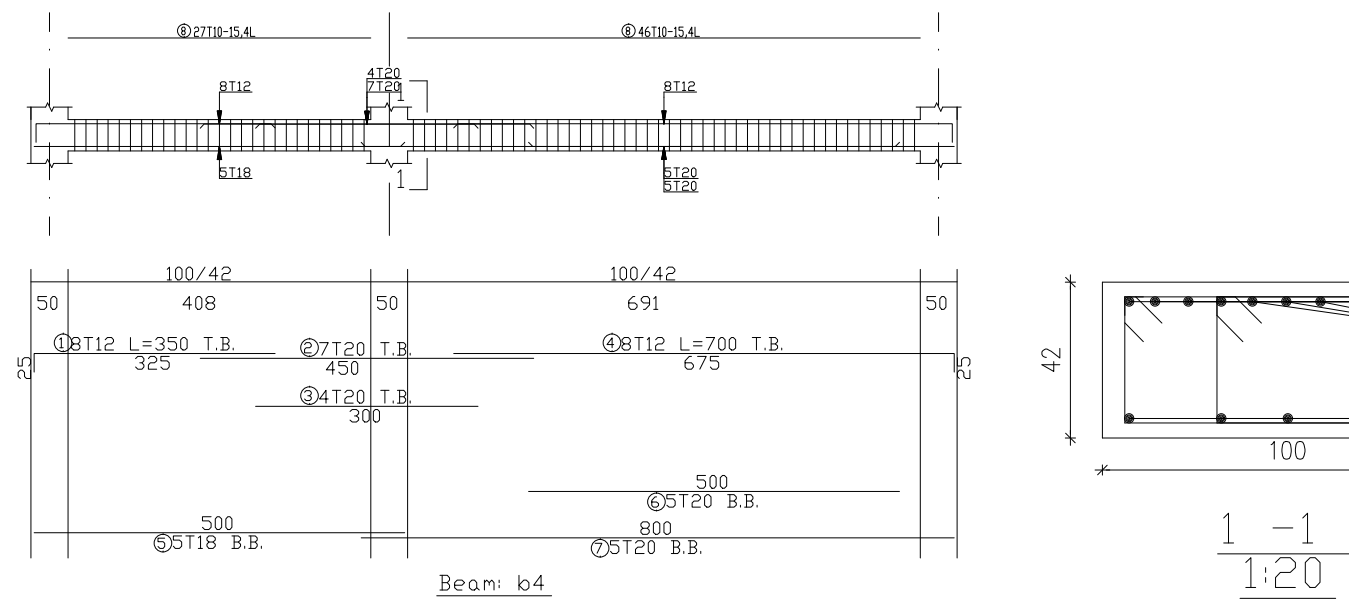
BEAM - B2 (100/32)



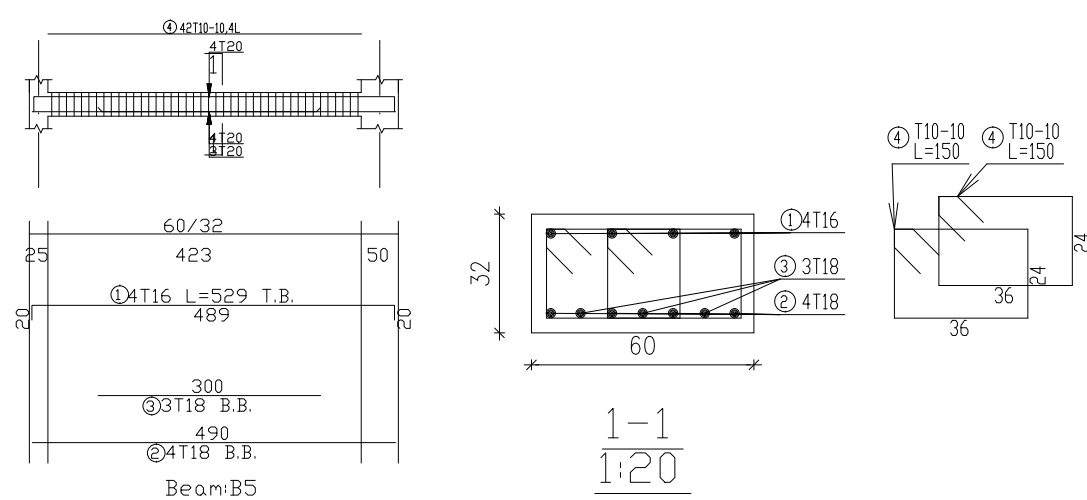
BEAM - B3 (60/32)



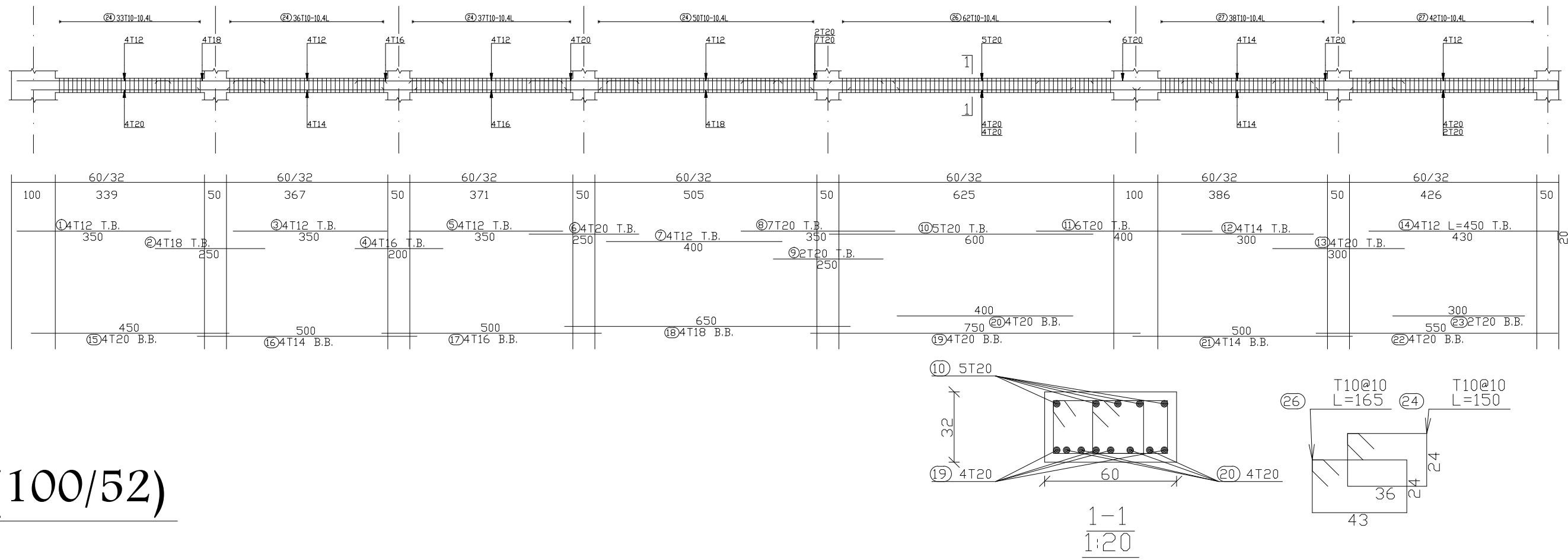
BEAM - B4 (100/42)



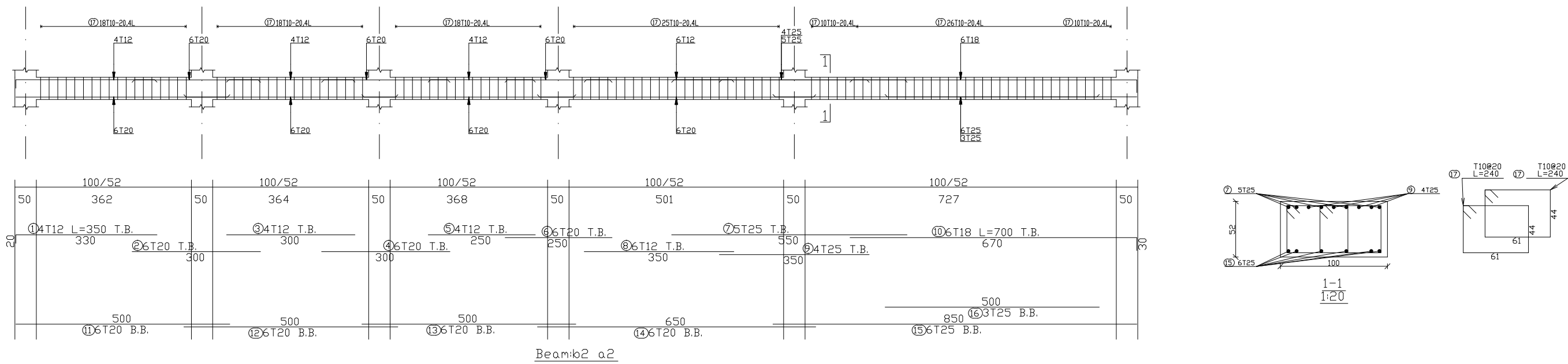
BEAM - B5 (60/32)



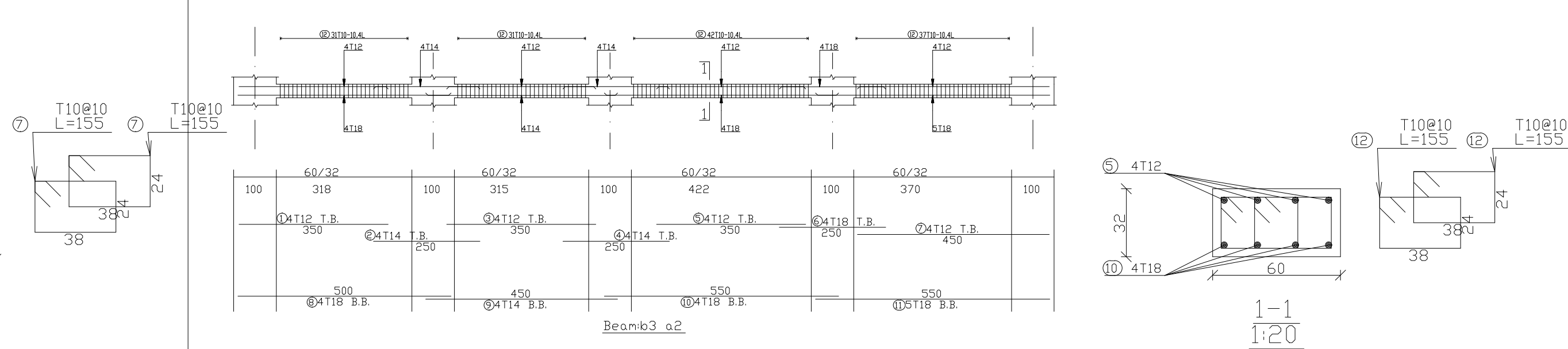
BEAM - B1\* (60/32)



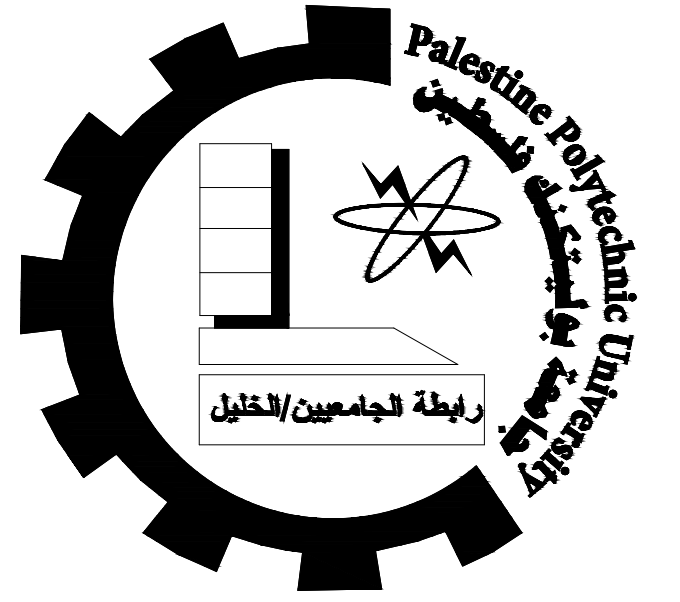
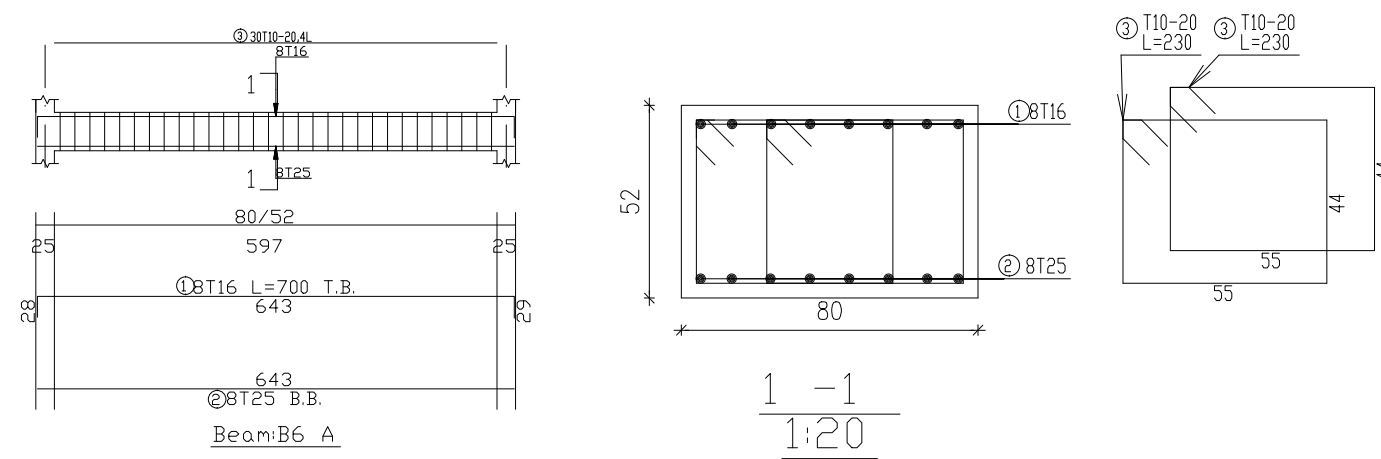
BEAM - B2\* (100/52)



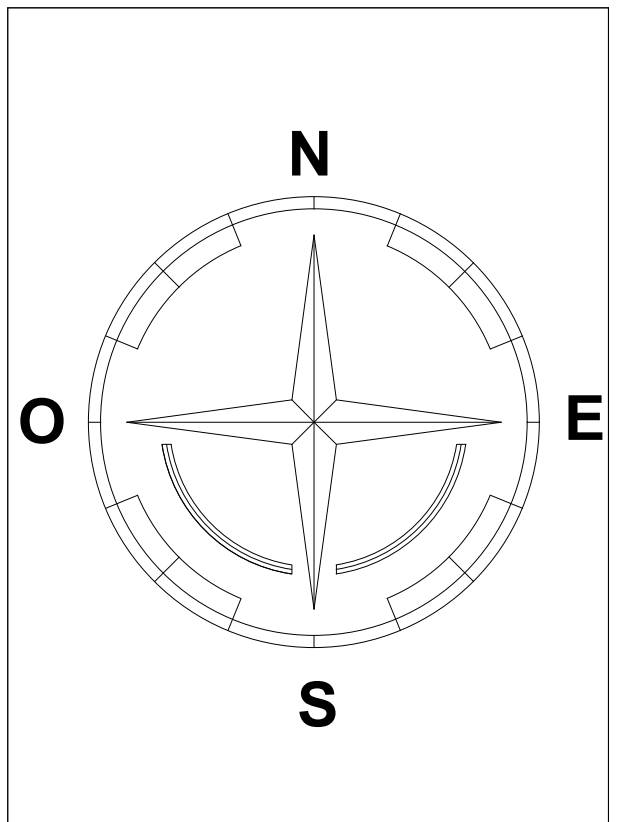
BEAM - B3\* (60/32)



BEAM - B6 (80/52)



Palestine Polytechnic University  
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Civil & Architecture Department  
Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Ground&First beams details

SCALE

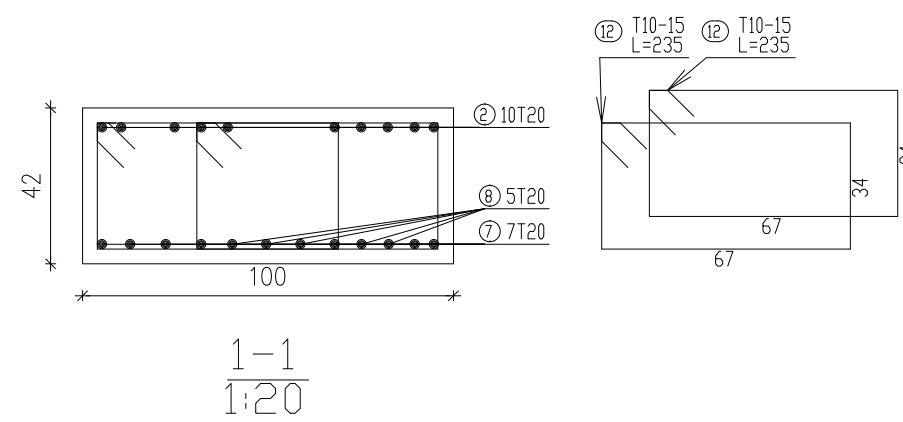
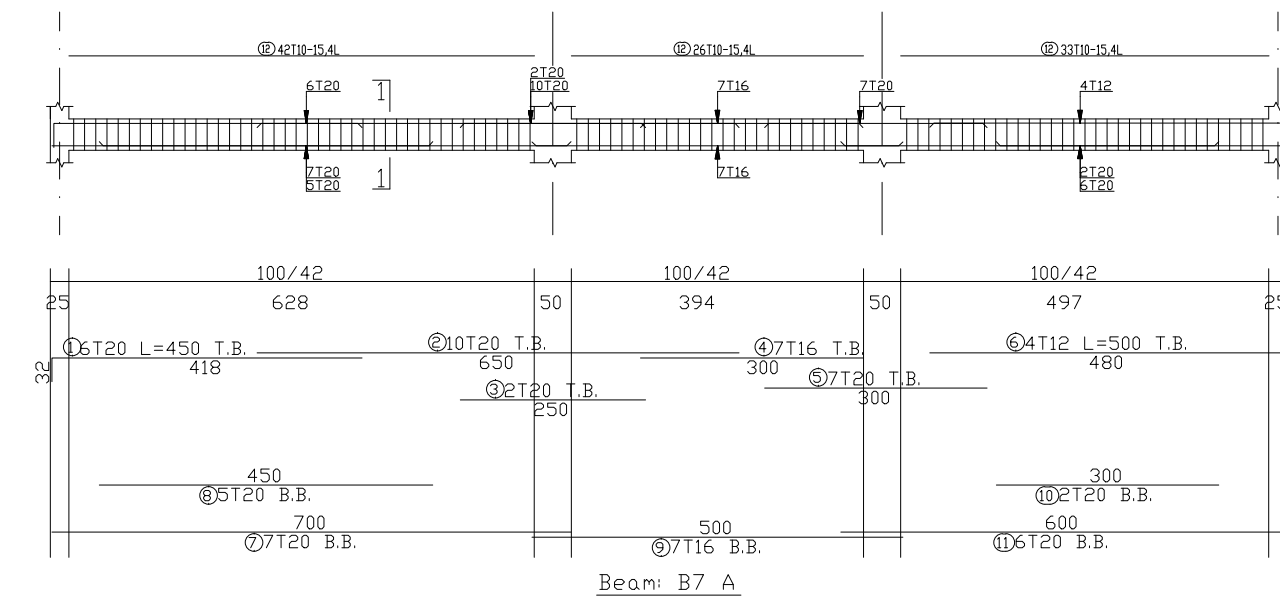
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NO. OF DRAW

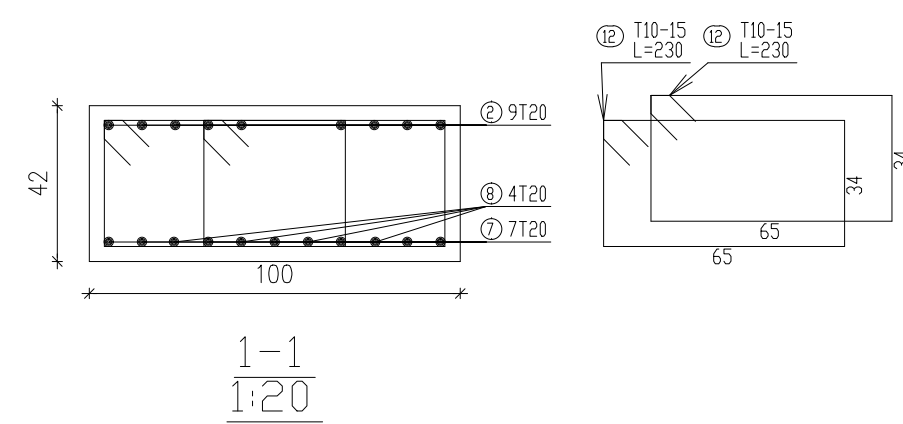
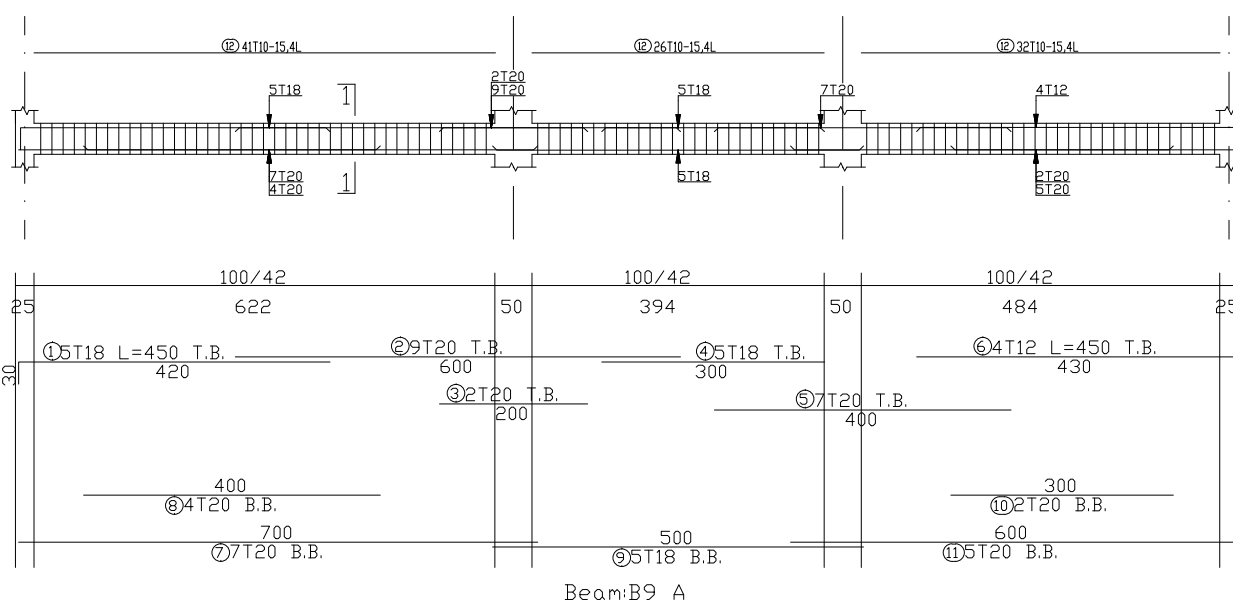
S26



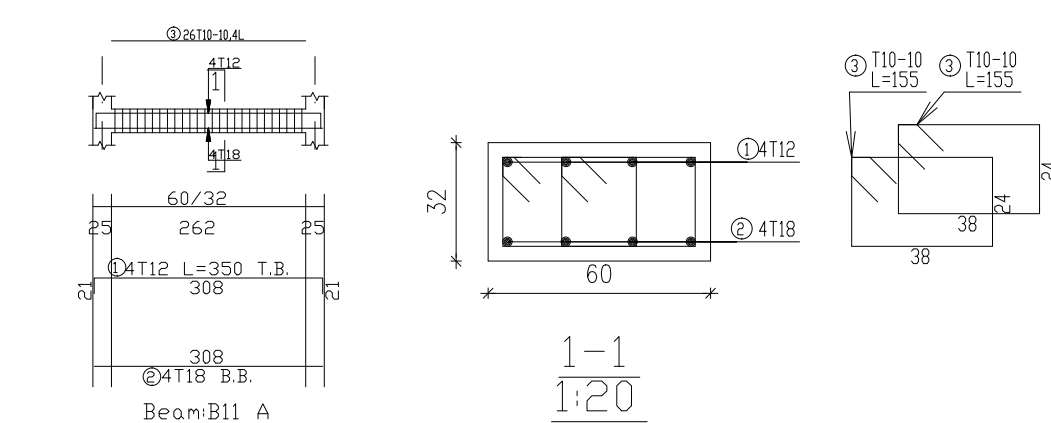
BEAM - B7 (100/42)



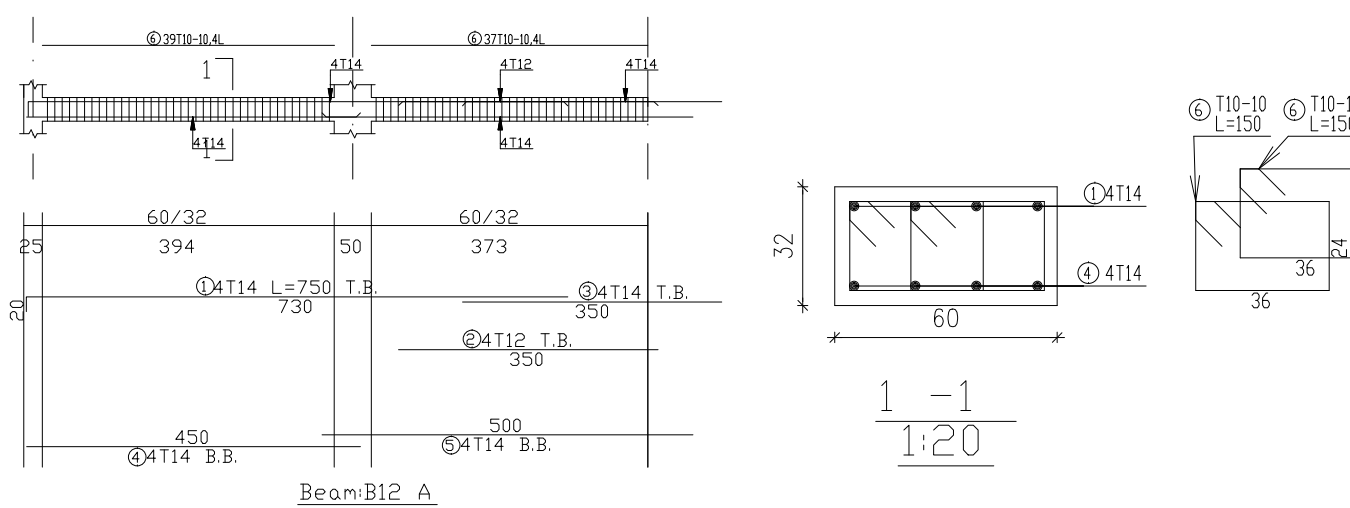
## BEAM - B9(100/42)



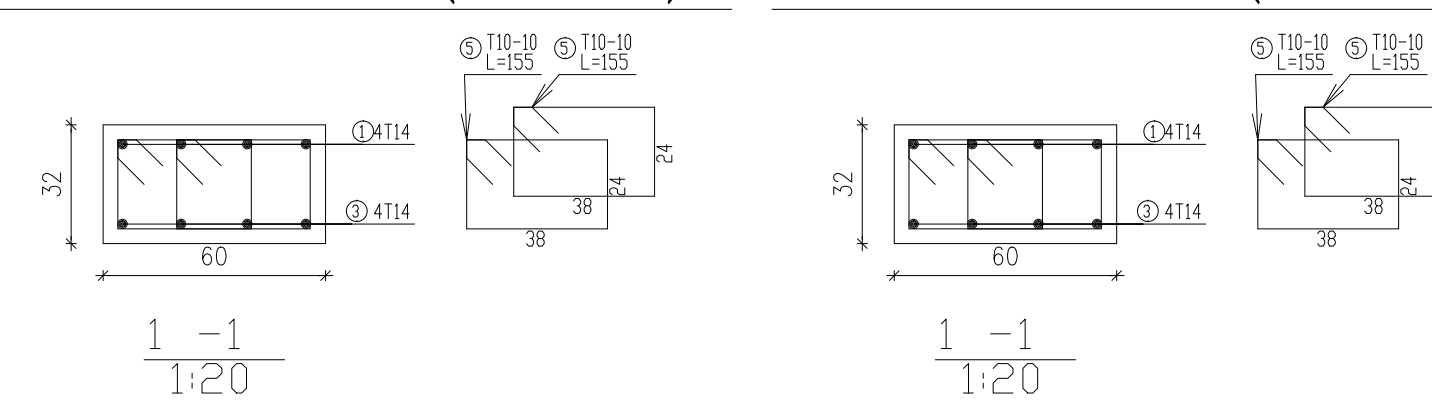
## BEAM - B11(60/32)



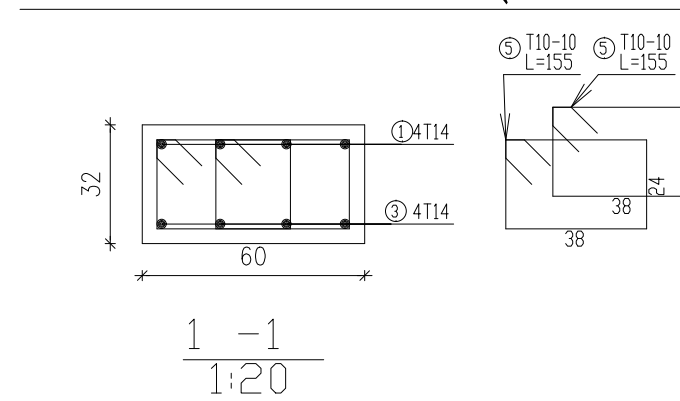
## BEAM - B12(60/32)



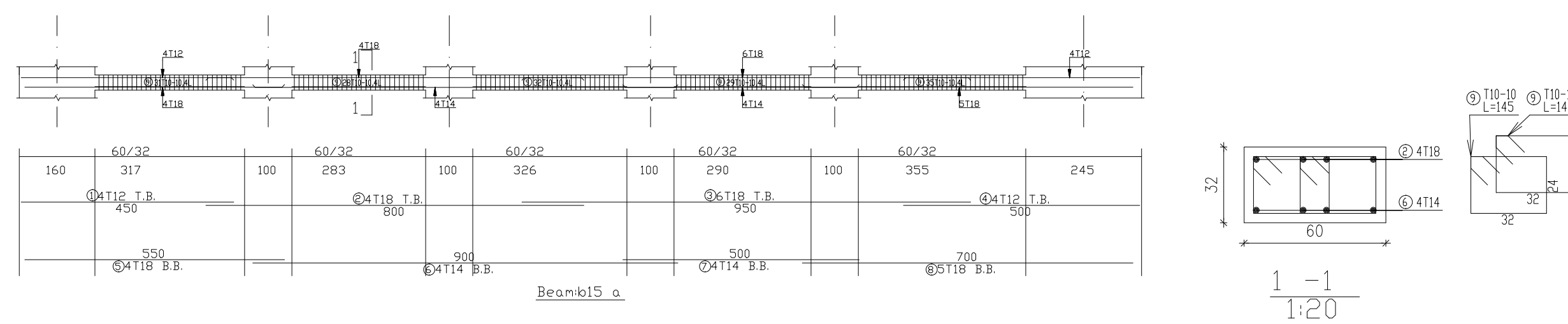
## BEAM - B13(60/32)



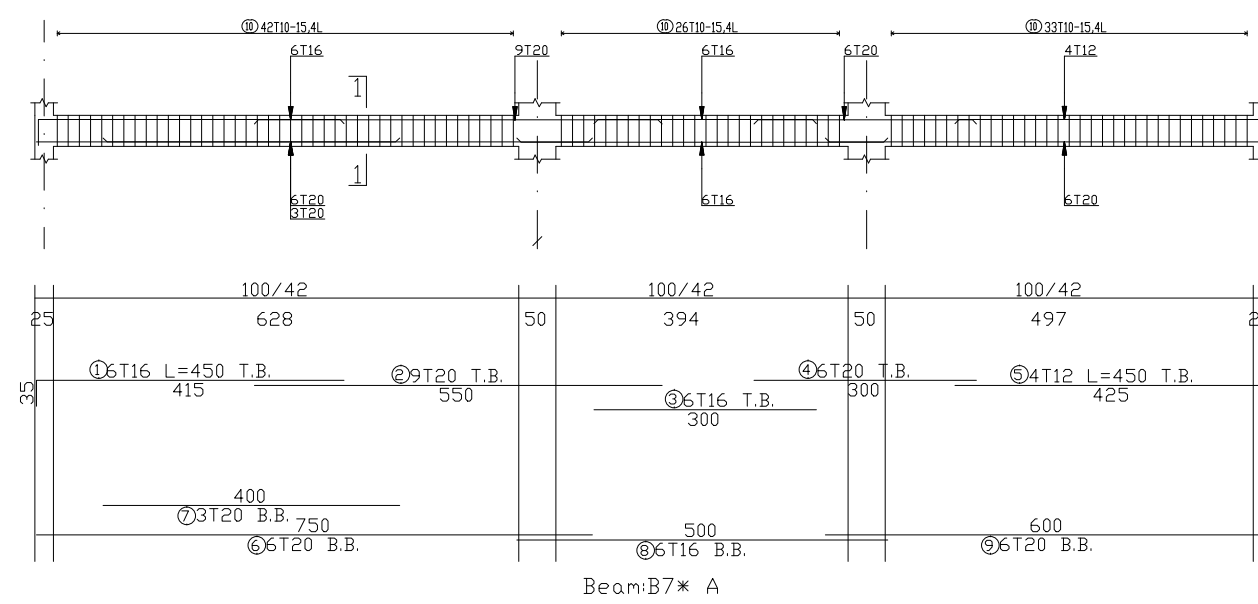
## BEAM - B13\*(60/32)



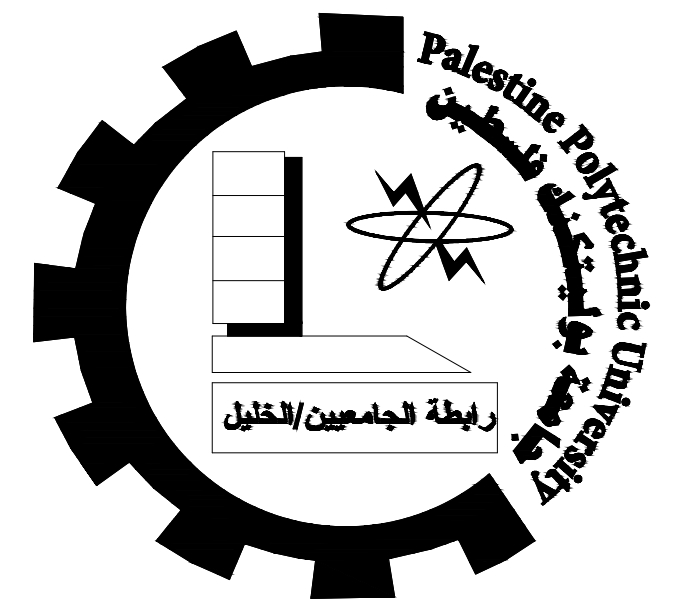
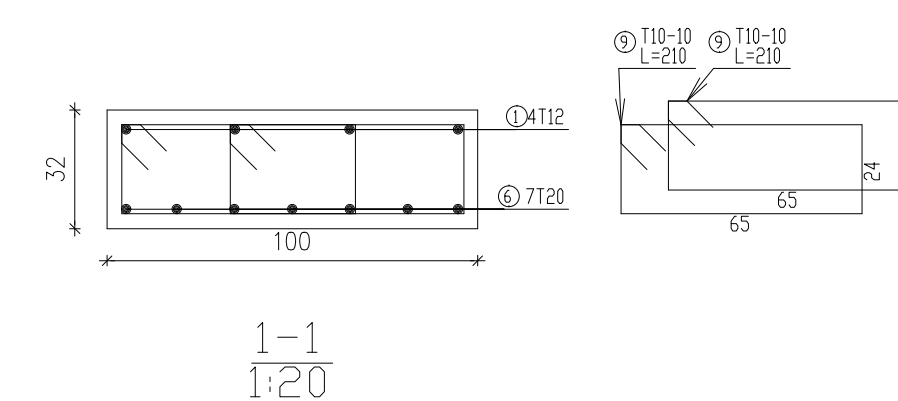
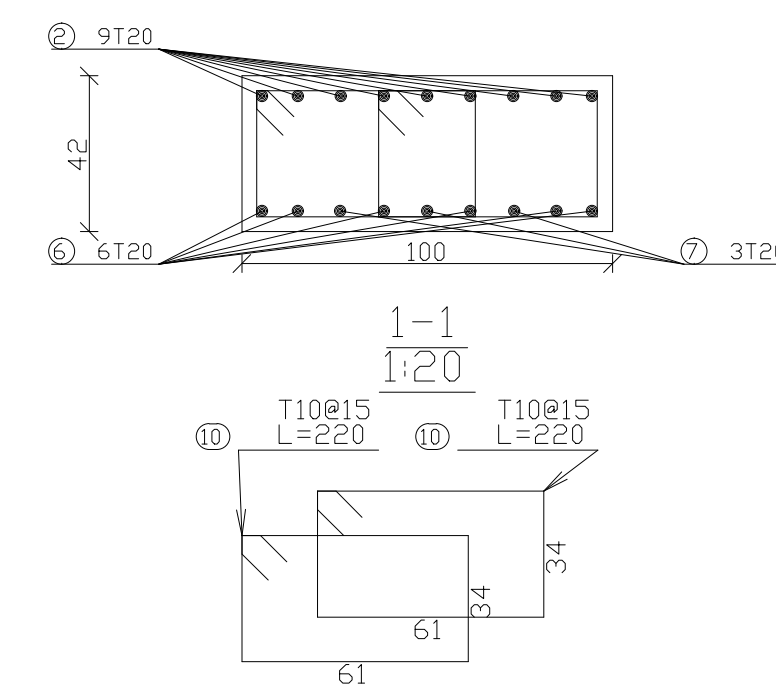
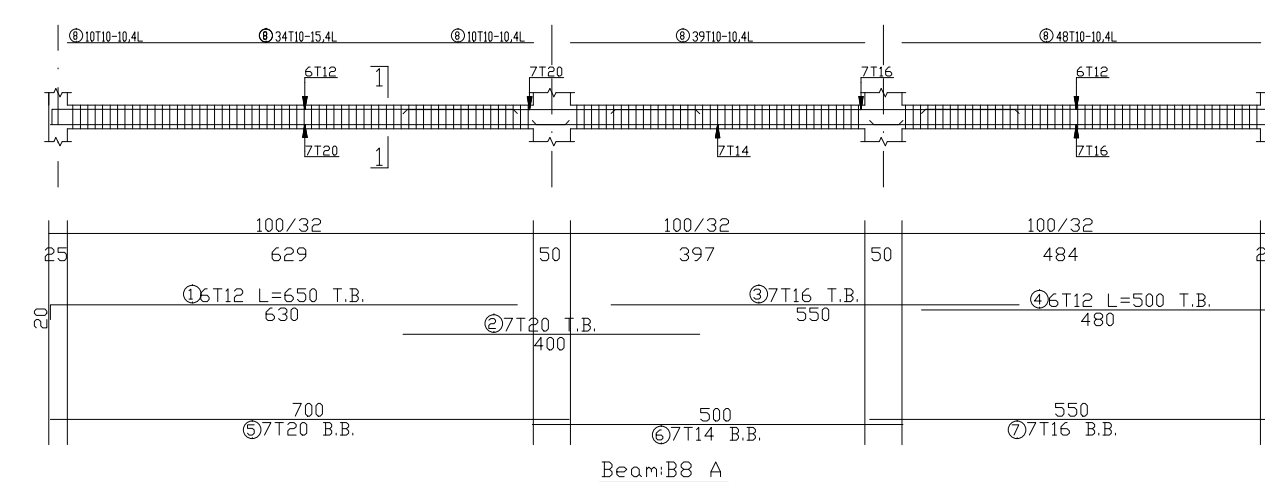
## BEAM - B15(60/32)



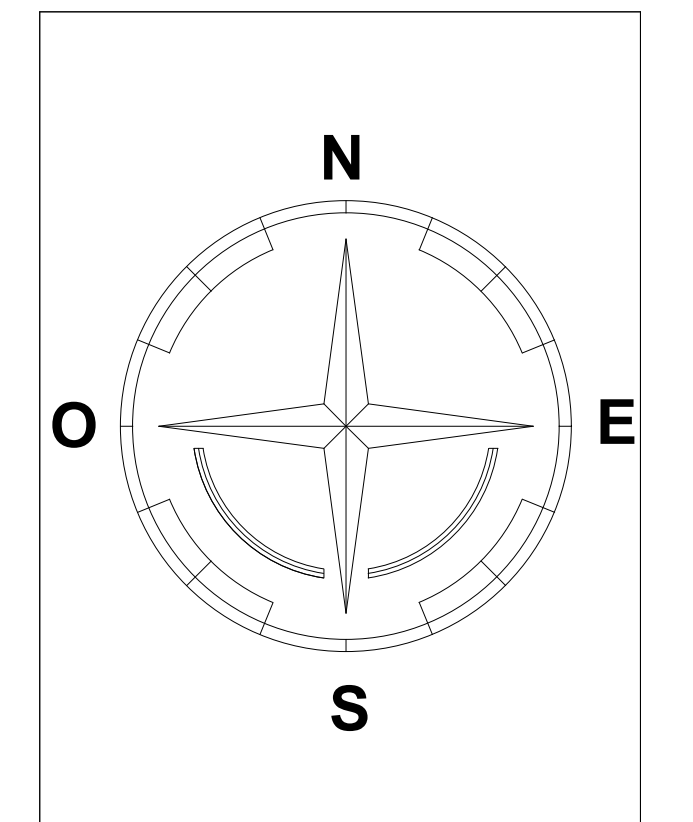
## BEAM - B7\* (100/42)



## BEAM - B8 (100/32)



Palestine Polytechnic University  
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Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Ground&First beams details

SCALE

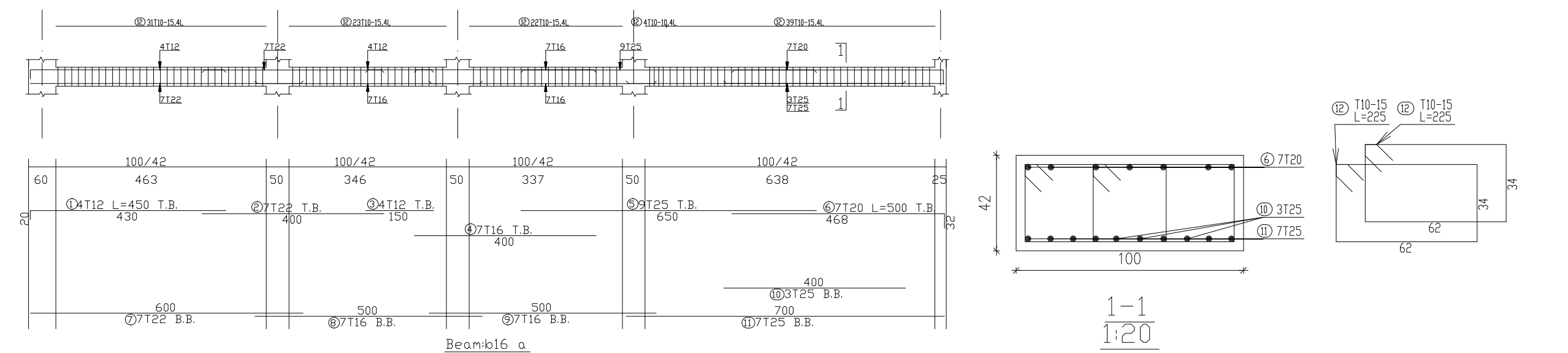
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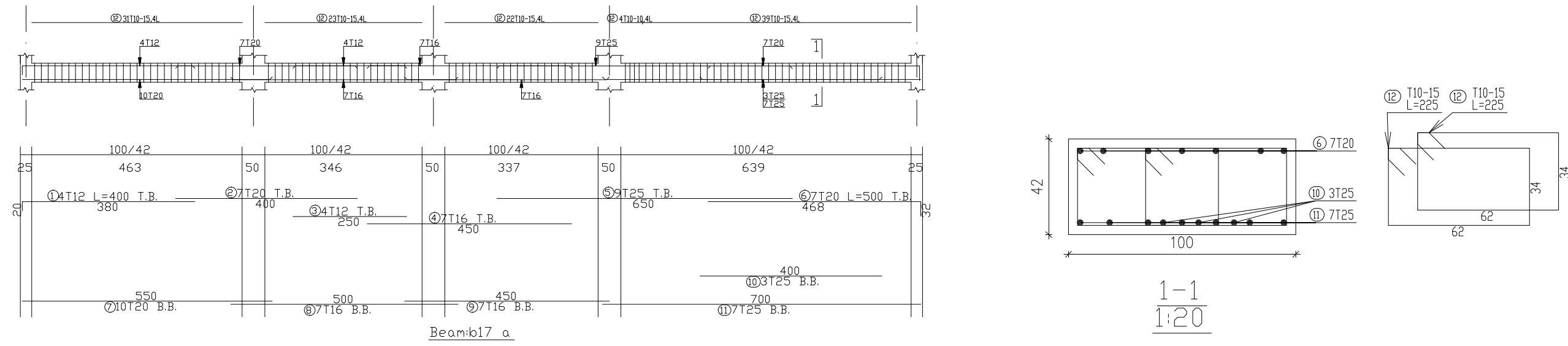
S27



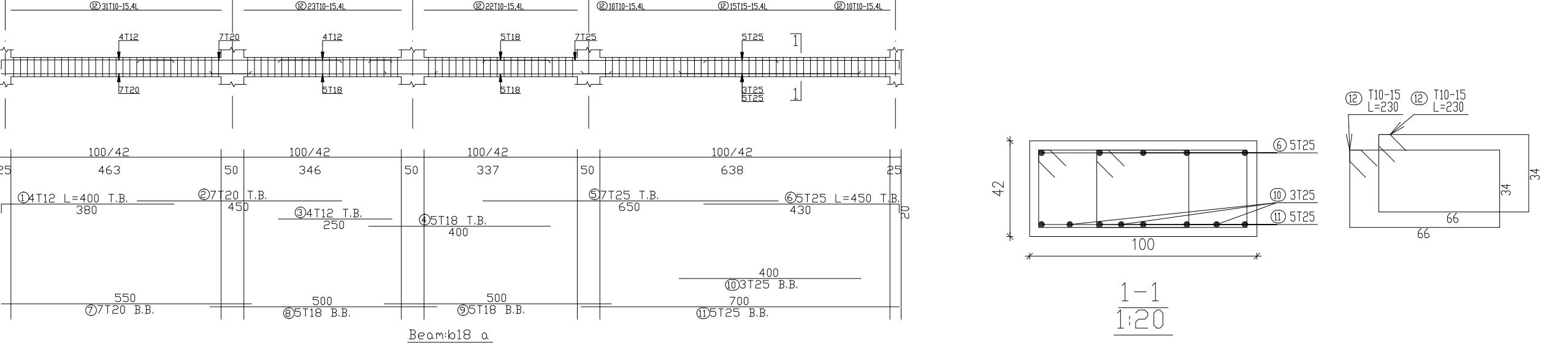
BEAM - B16(100/42)



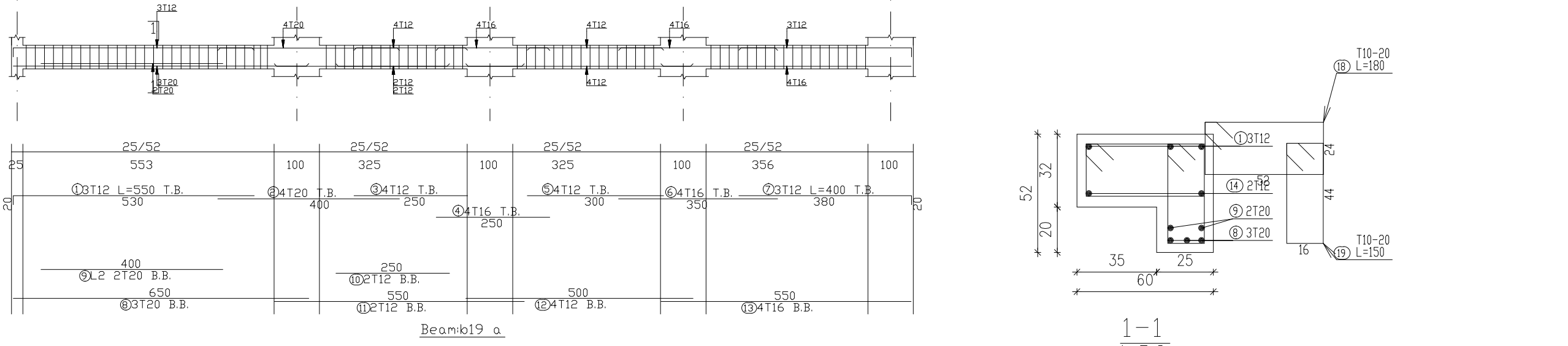
BEAM - B17(100/42)



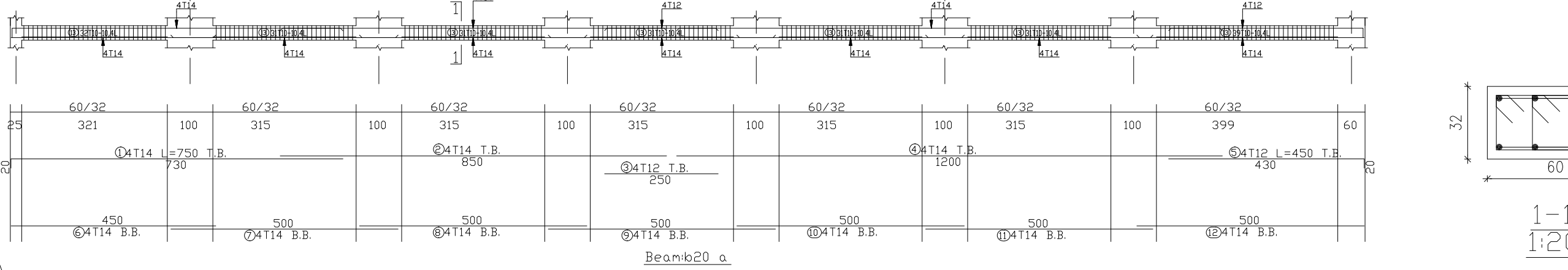
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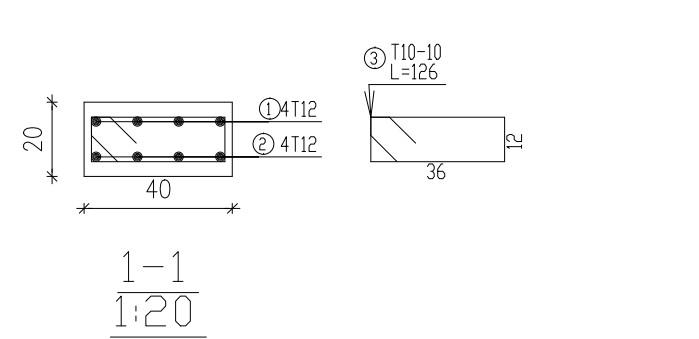
BEAM - B19 L(60/52)



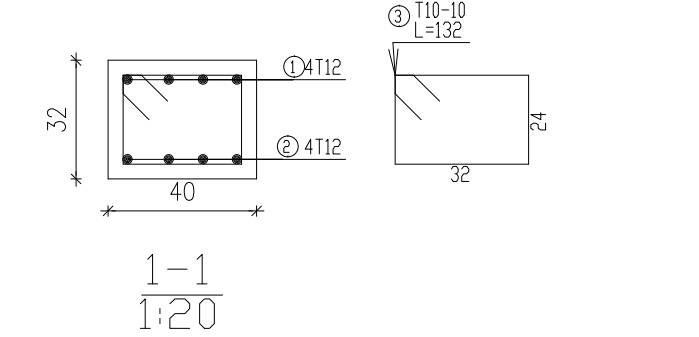
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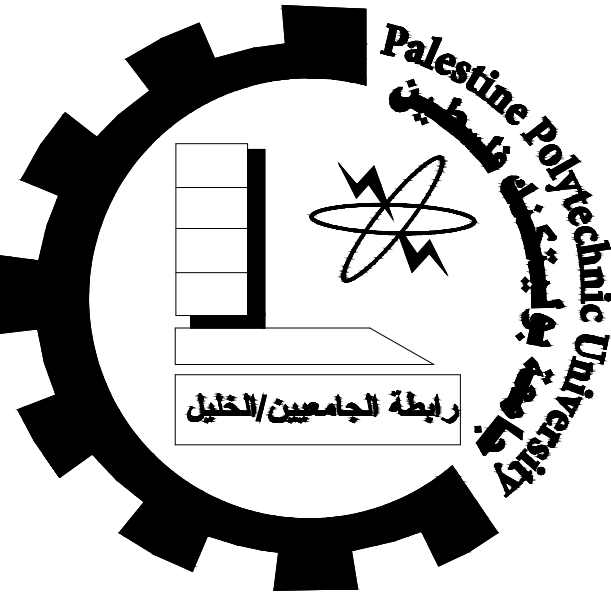
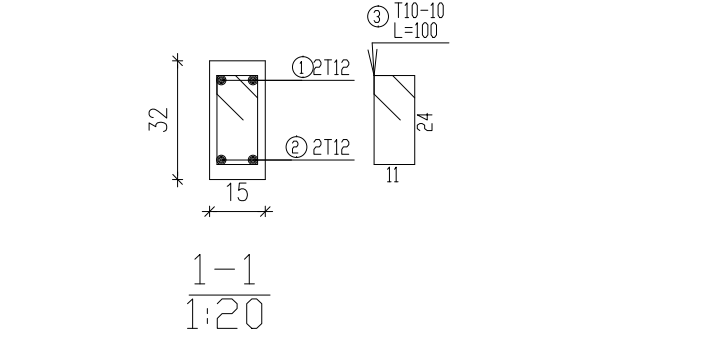
BEAM - B22 (40/20)



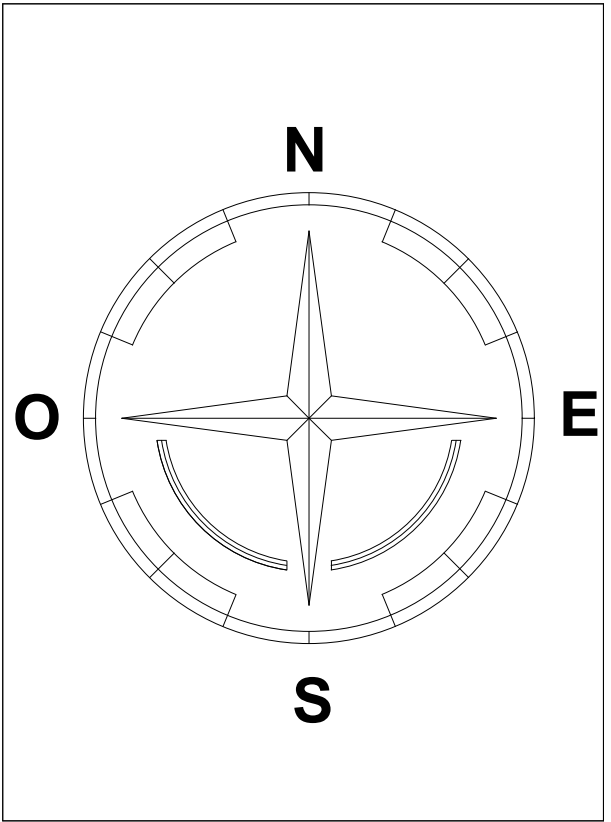
BEAM - B21 (40/32)



Cross rib (15/32)



Palestine Polytechnic University  
College of Engineering  
Civil & Architecture Department  
Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Ground&First beams details

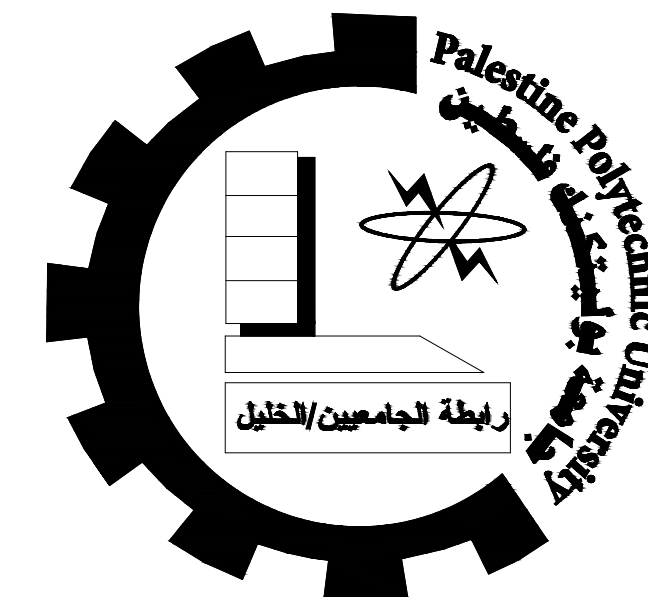
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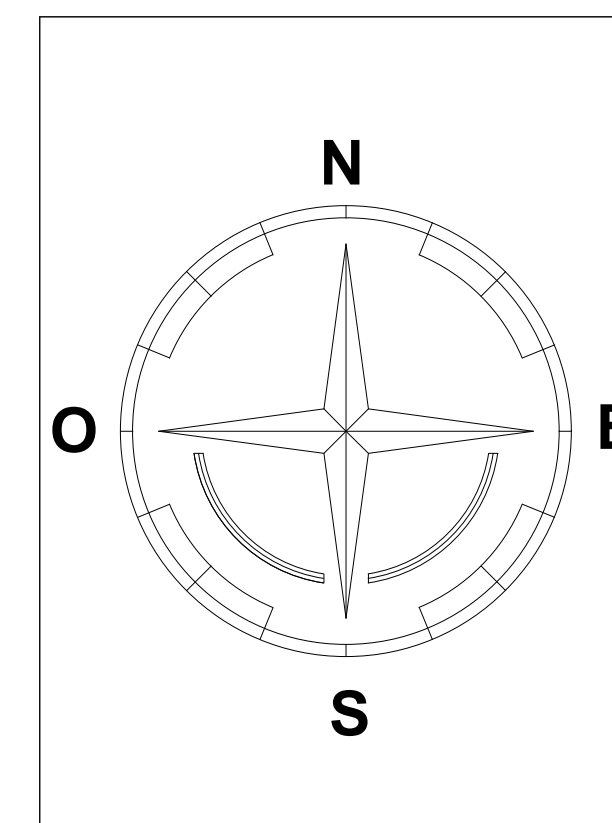
NO. OF DRAW

S28





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College of Engineering  
Civil & Architecture Department  
Civil Engineering



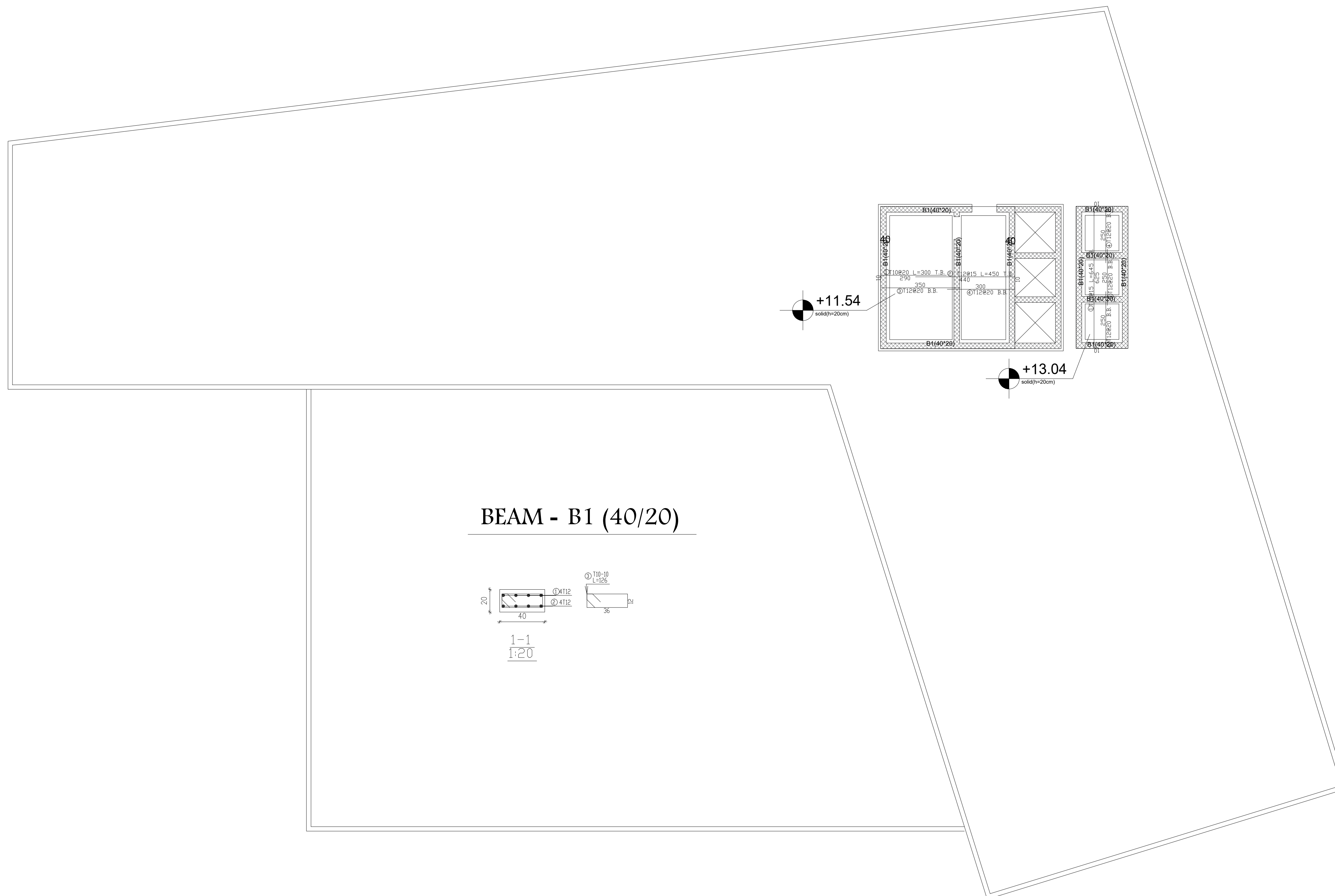
Project: Office Building

Supervisor: ENG. Hamdi Ideas

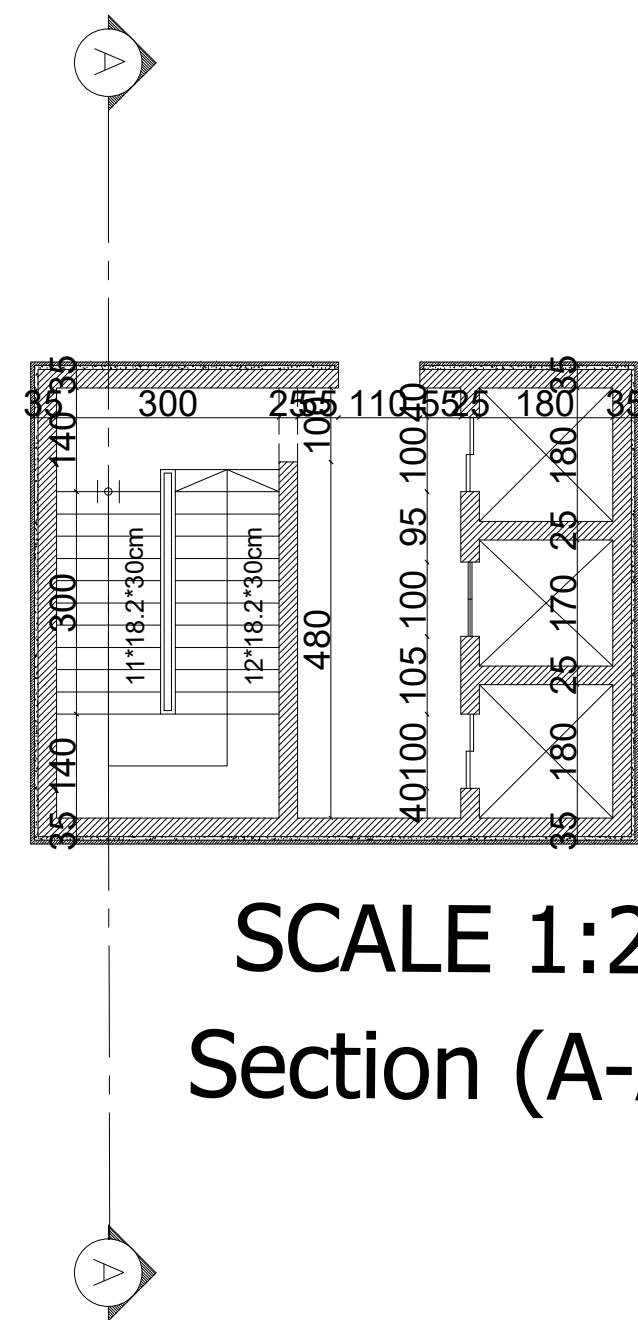
Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
staircase slab layout

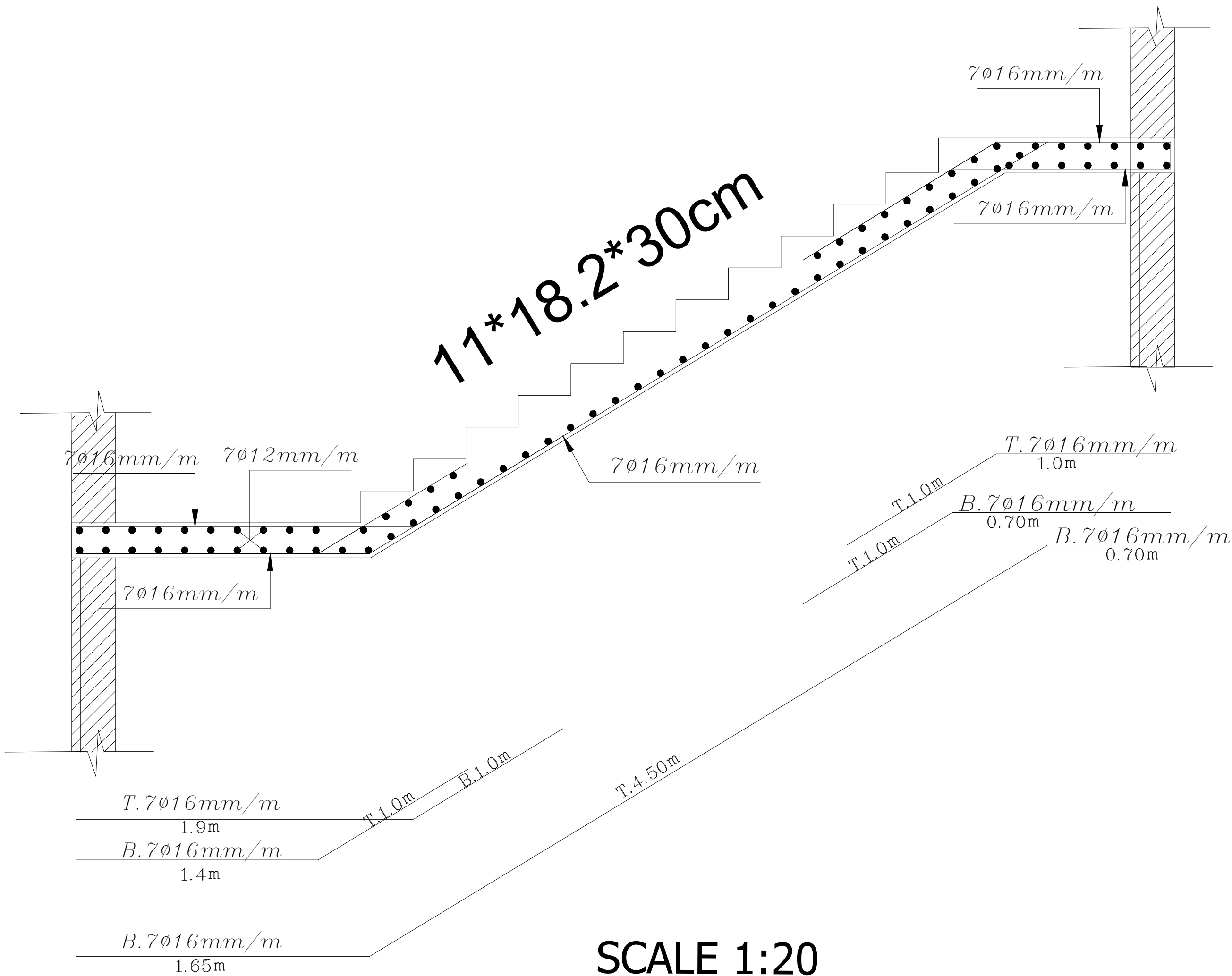
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| 1:100 | S29         |



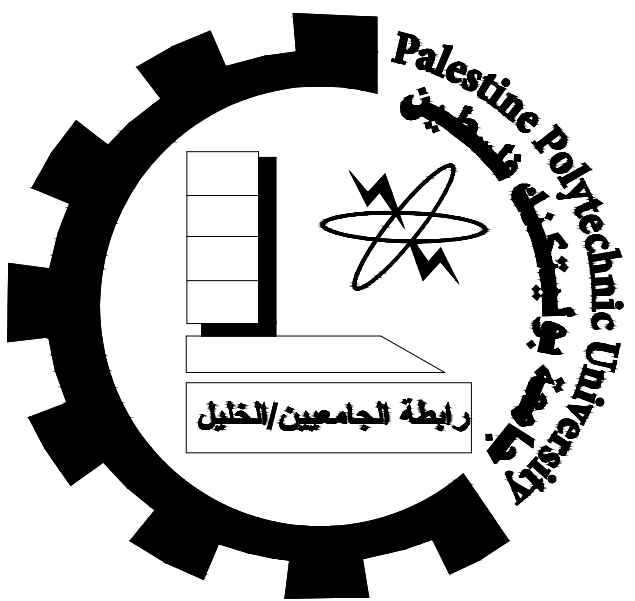




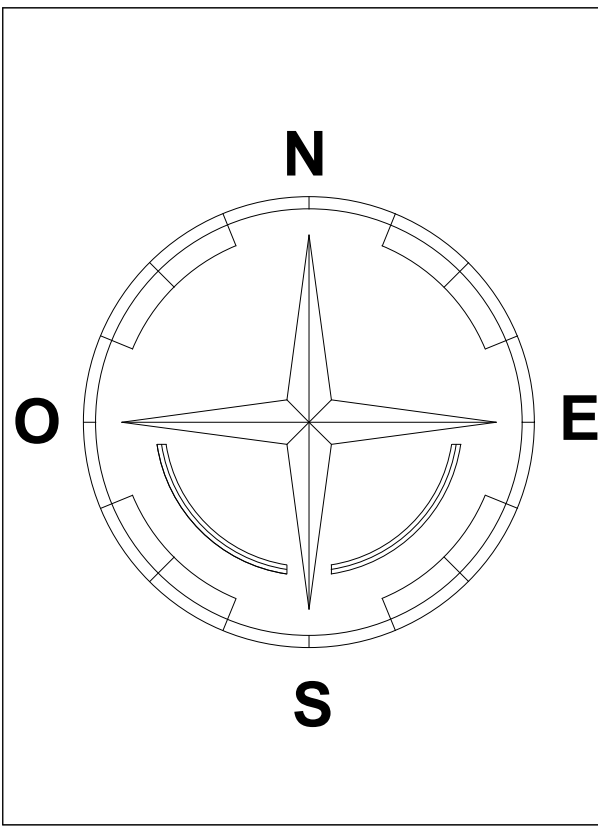
SCALE 1:20  
Section (A-A)



SCALE 1:20  
Section (A-A)



Palestine Polytechnic University  
College of Engineering  
Civil & Architecture Department  
Civil Engineering



# Project: Office Building

Supervisor: ENG. Hamdi Ideas

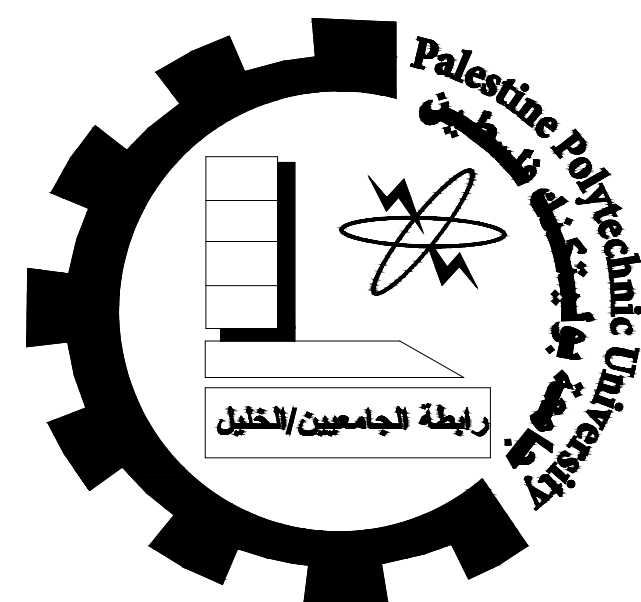
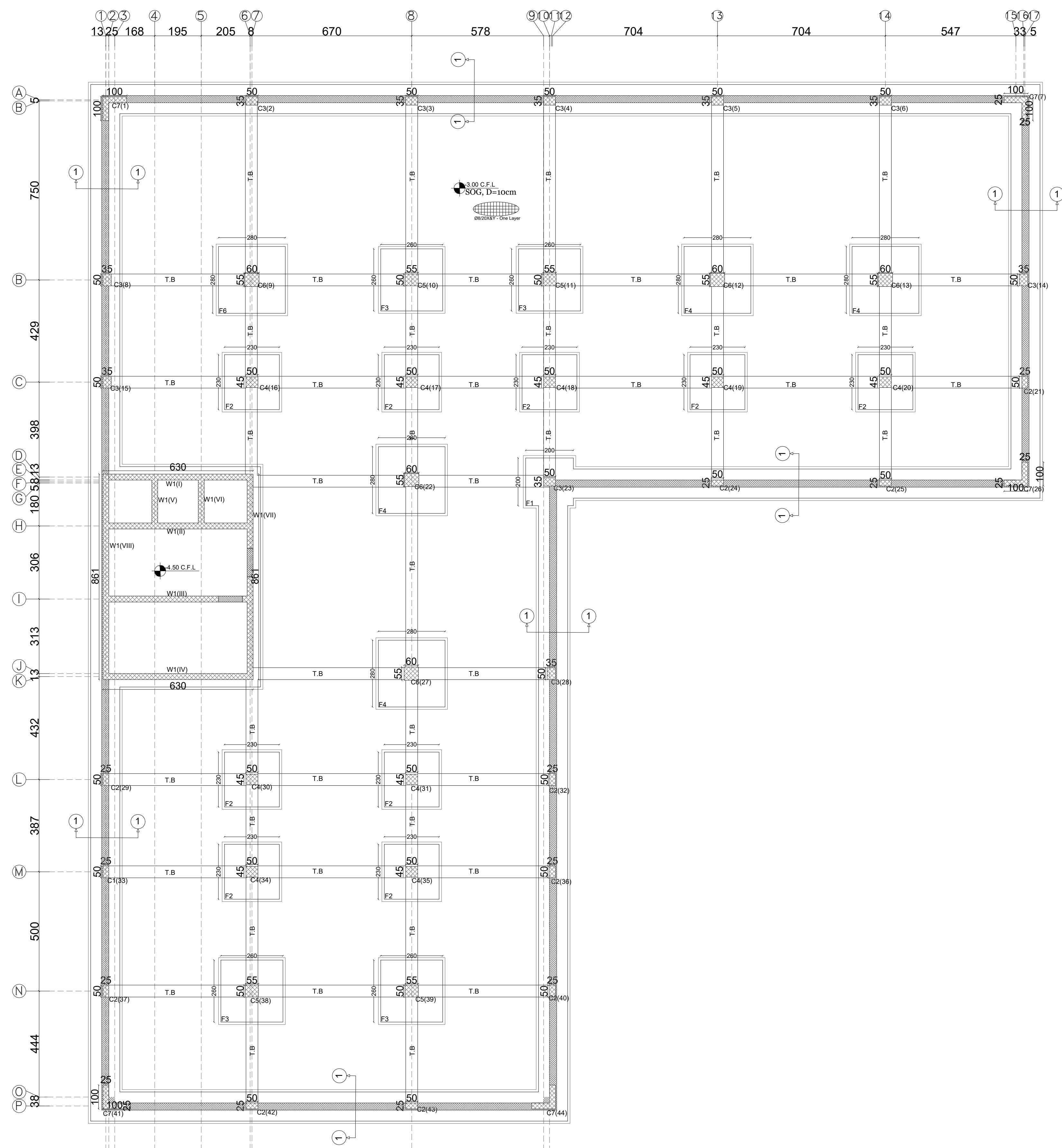
Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
staircase details

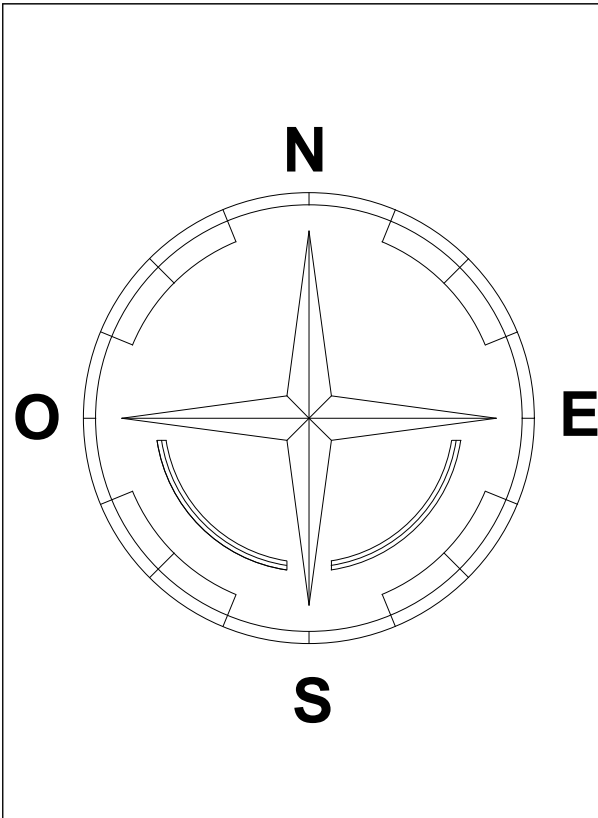
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| SCALE | NO. OF DRAW |
| 1:100 | S29*        |



Building B



Palestine Polytechnic University  
College of Engineering  
Civil & Architecture Department  
Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Column& Walls layout

SCALE

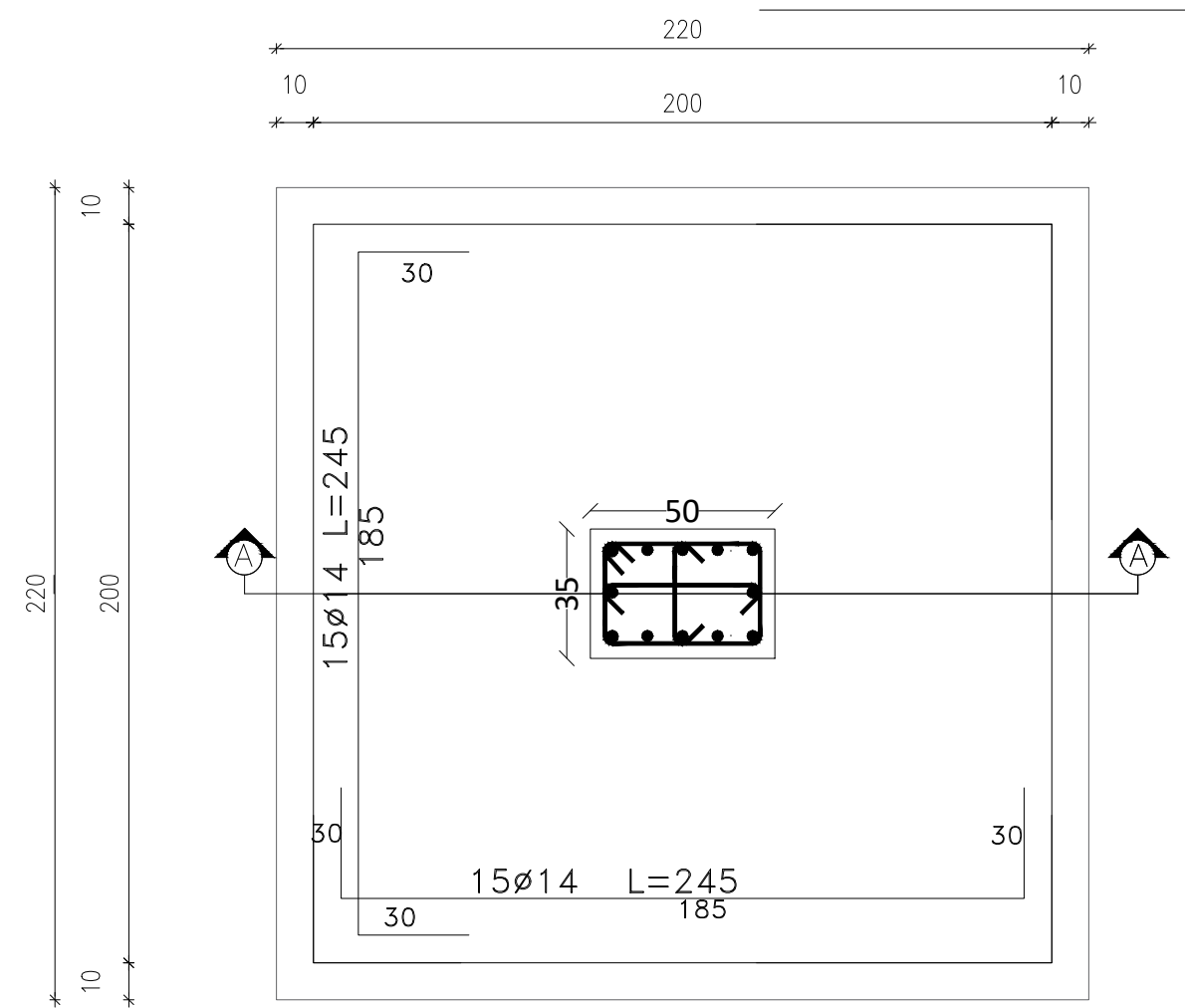
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NO. OF DRAW

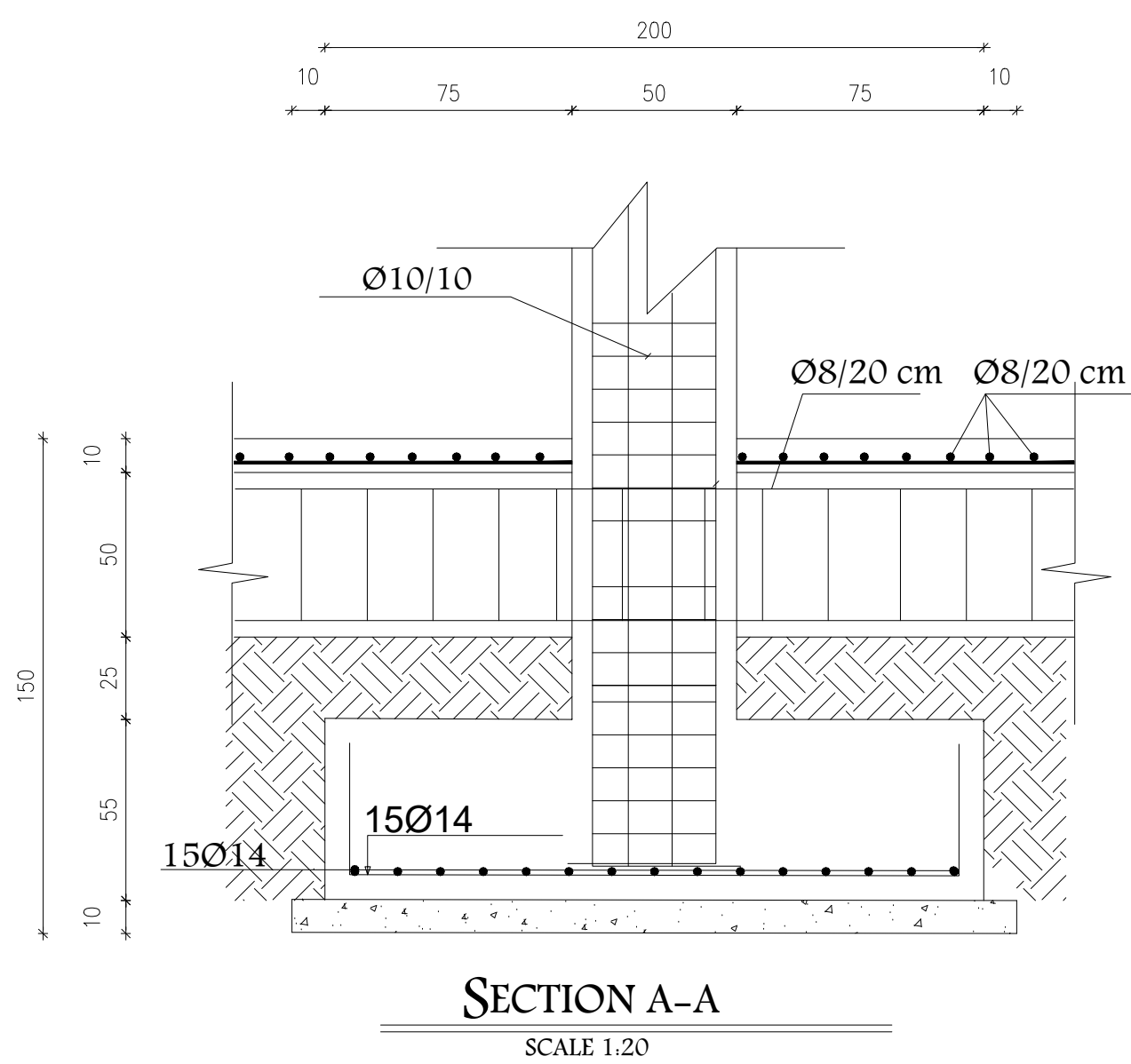
S30



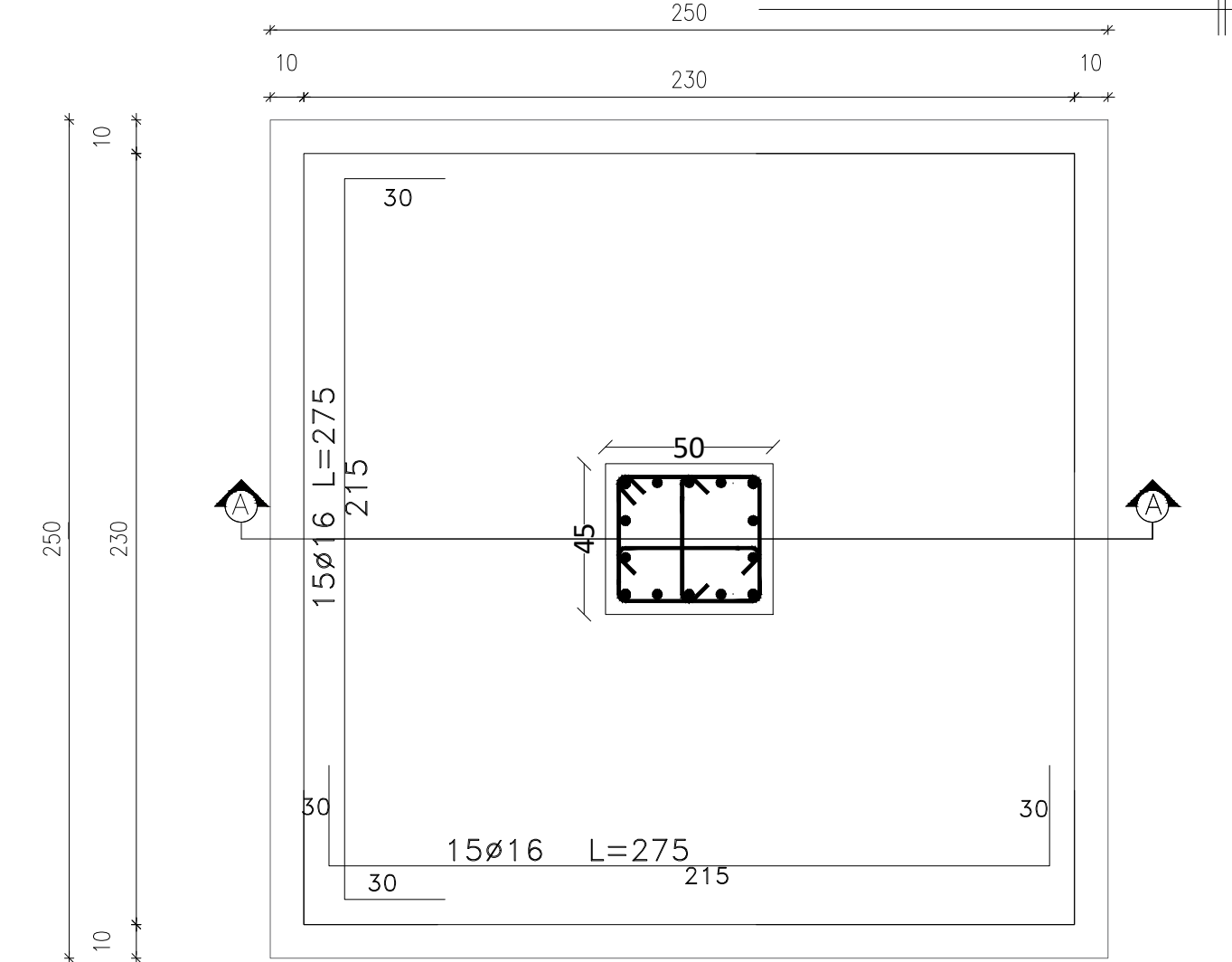
ISOLATED FOOTING - F1 (2.00×2.00)m



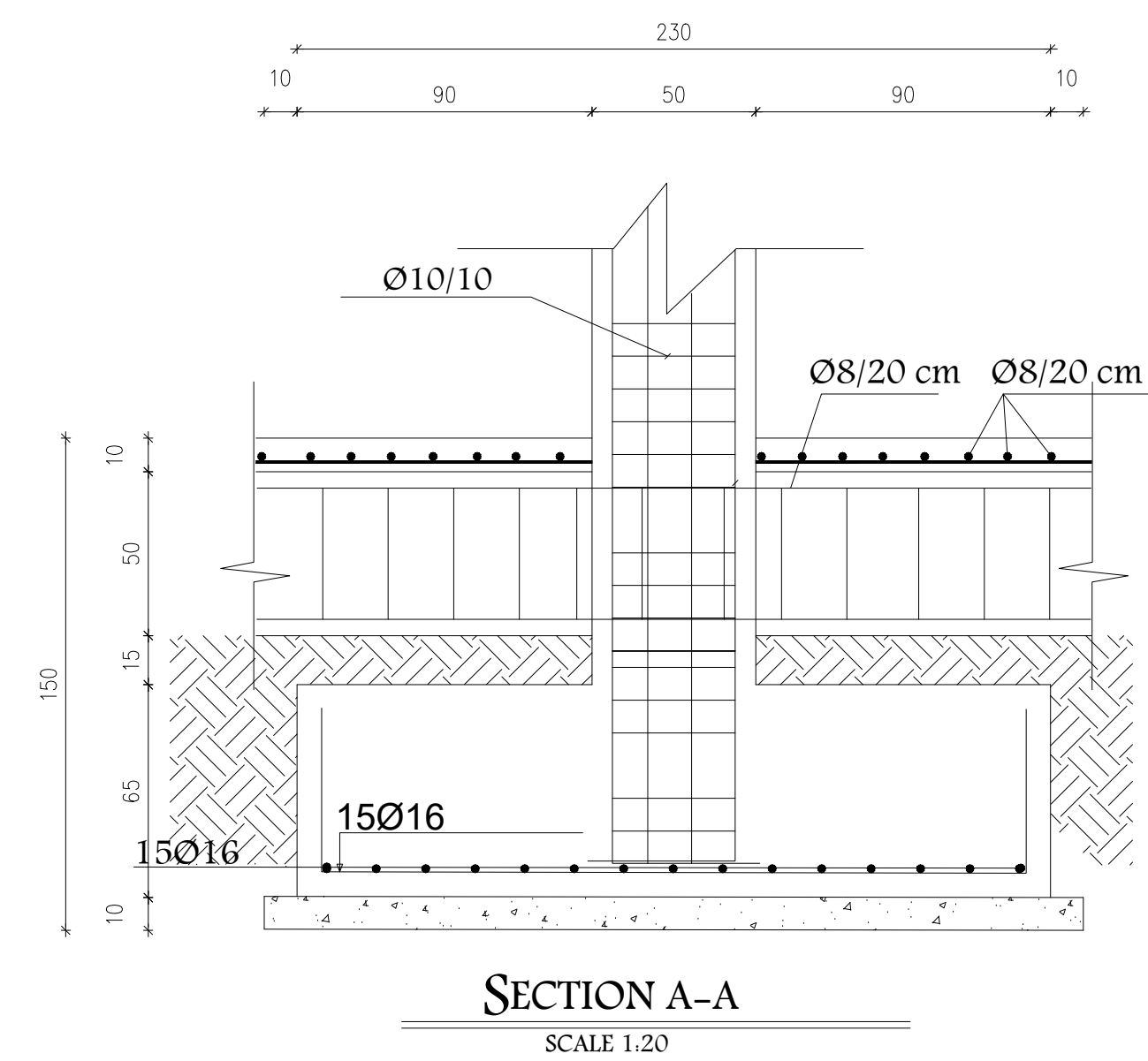
BOTTOM REINFORCEMENT



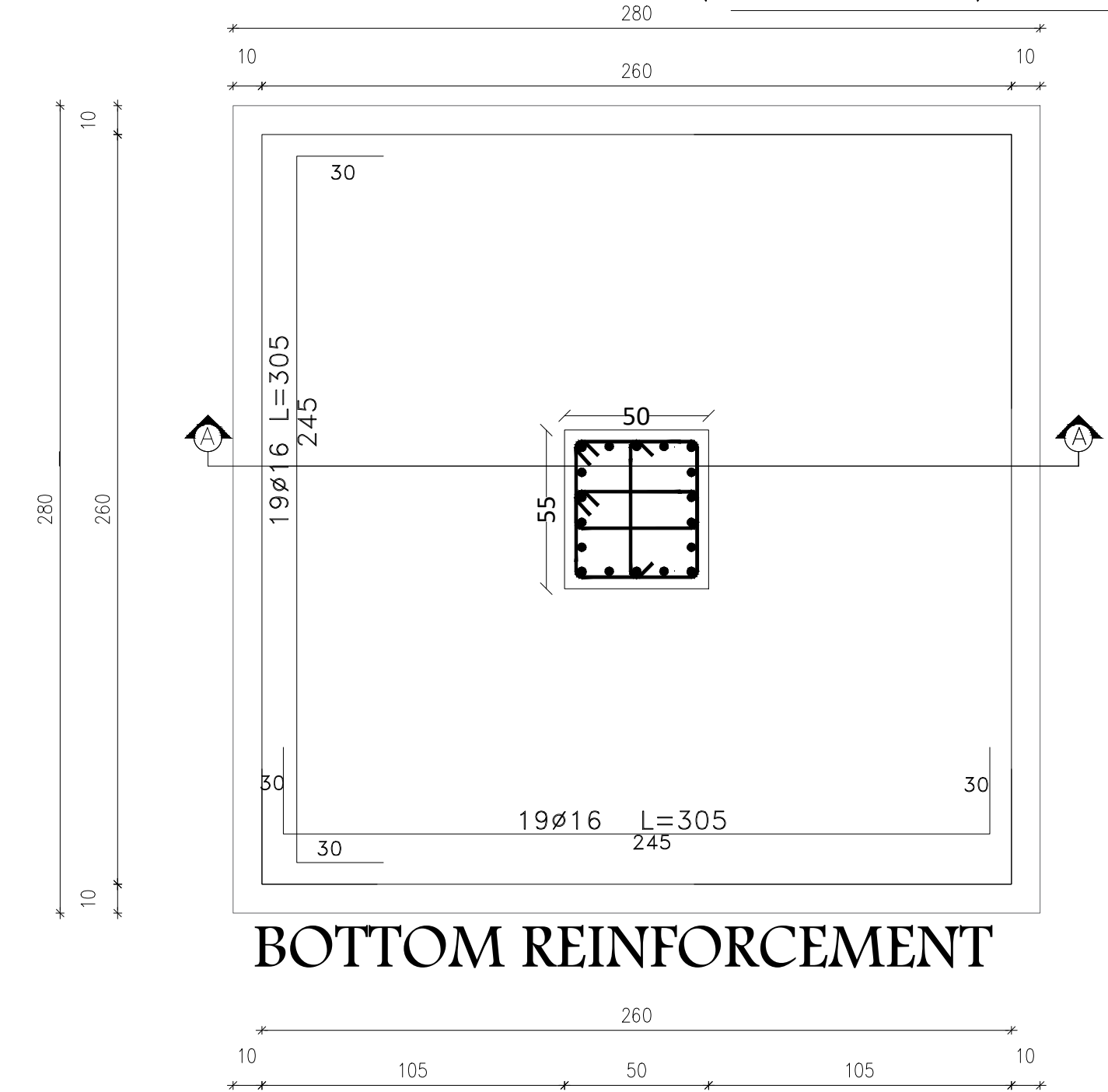
ISOLATED FOOTING - F2 (2.30×2.30)m



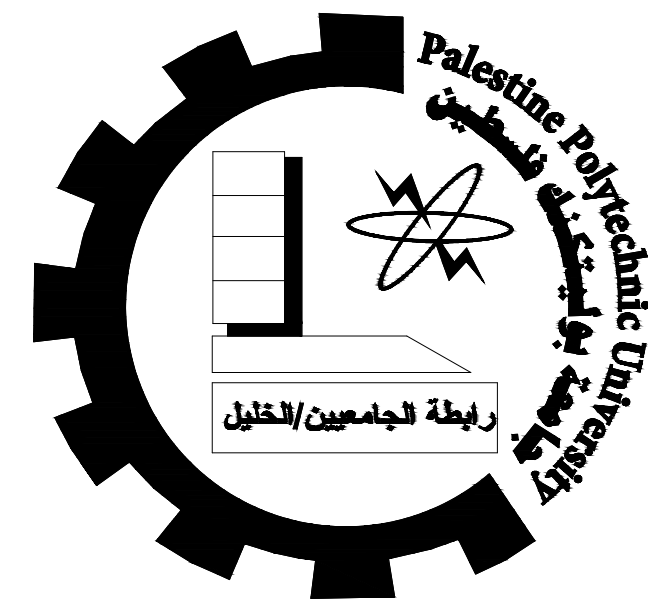
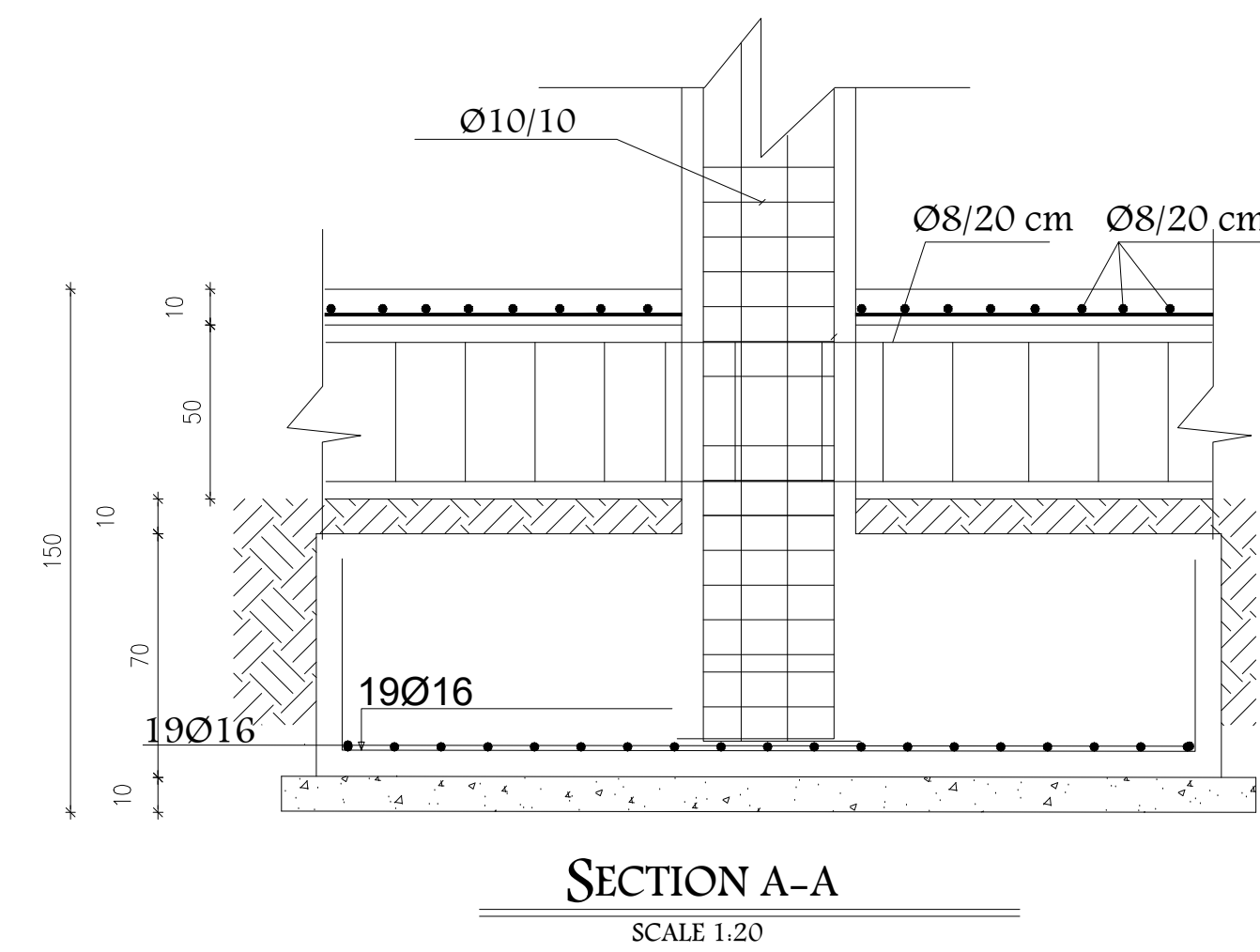
BOTTOM REINFORCEMENT



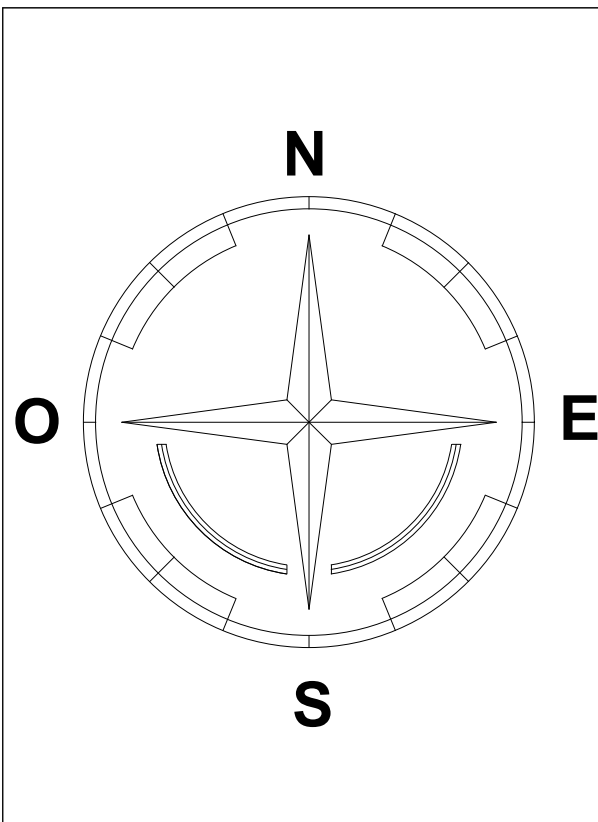
ISOLATED FOOTING - F3 (2.60×2.60)m



BOTTOM REINFORCEMENT



Palestine Polytechnic University  
College of Engineering  
Civil & Architecture Department  
Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Foundation Details

SCALE

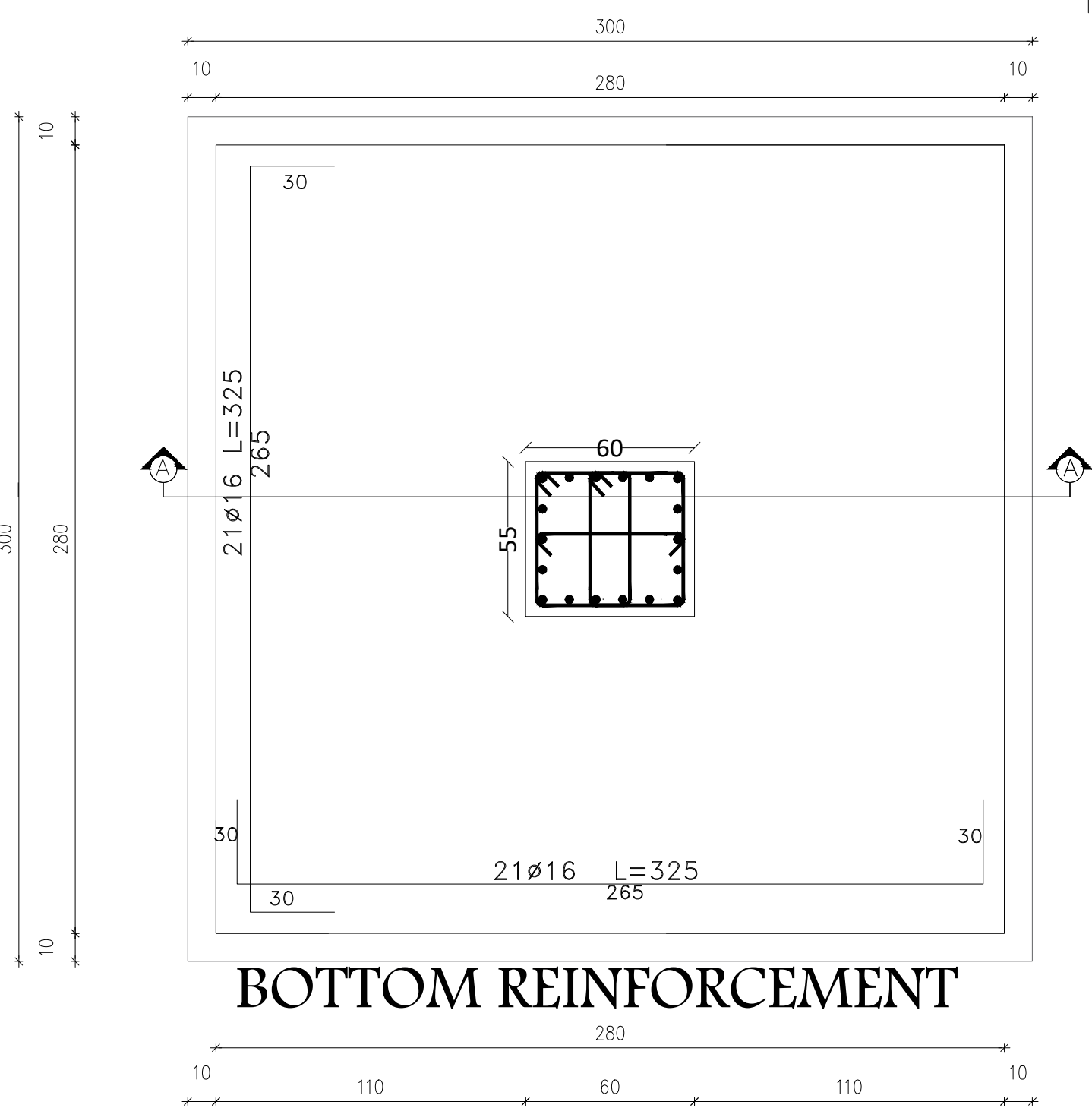
1:100

NO. OF DRAW

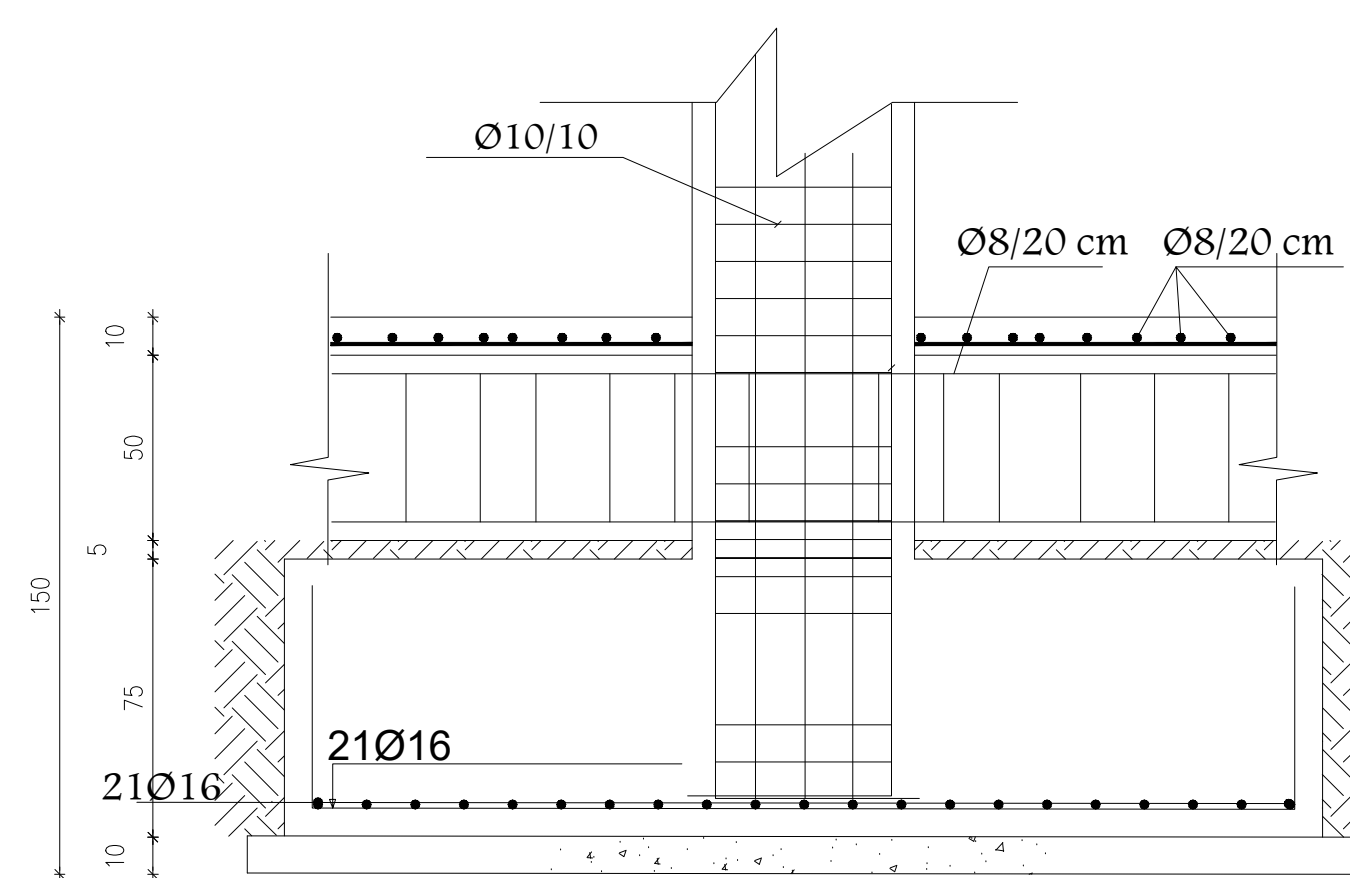
S31



ISOLATED FOOTING - F4 (2.80×2.80)m



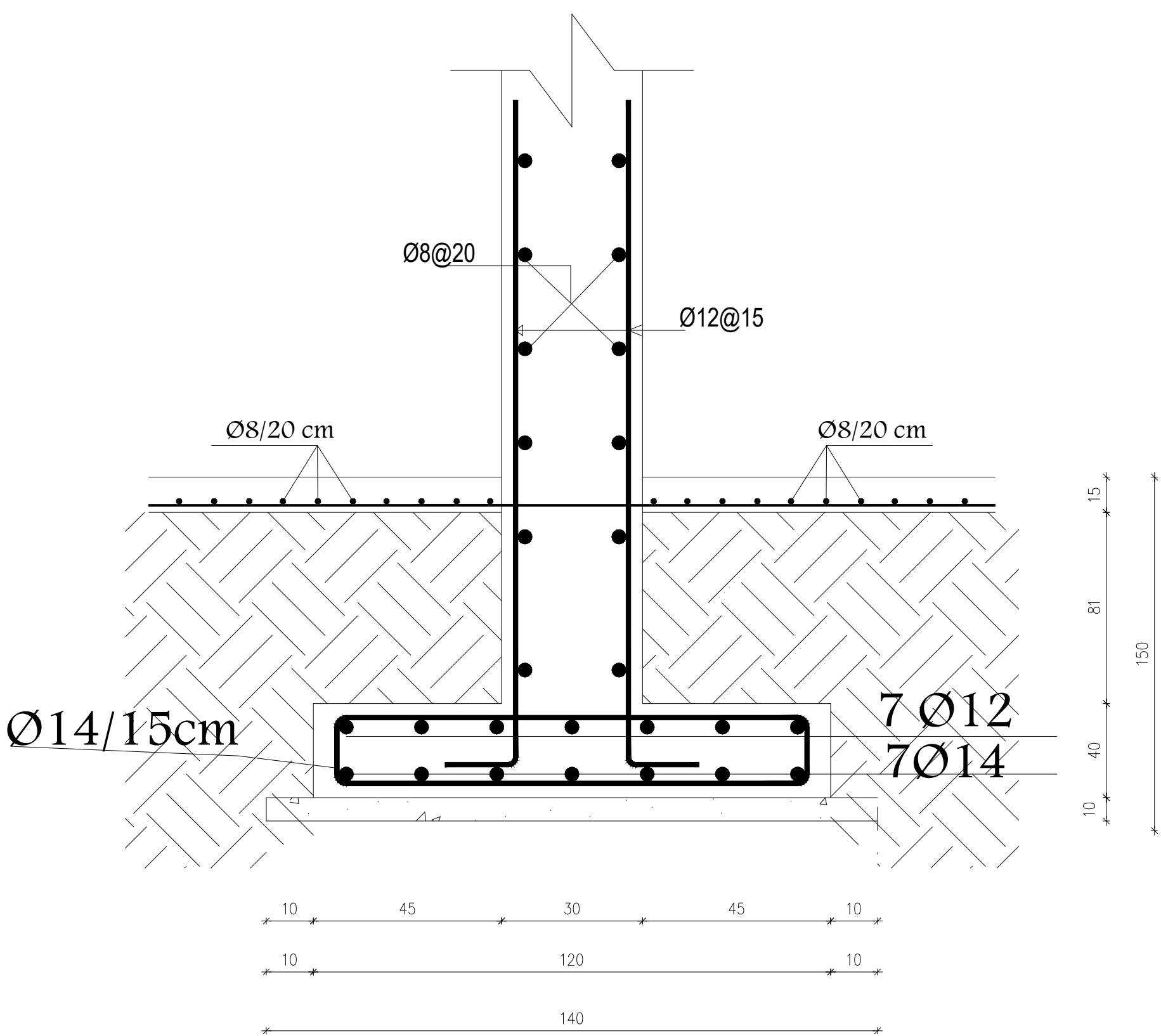
BOTTOM REINFORCEMENT



SECTION A-A

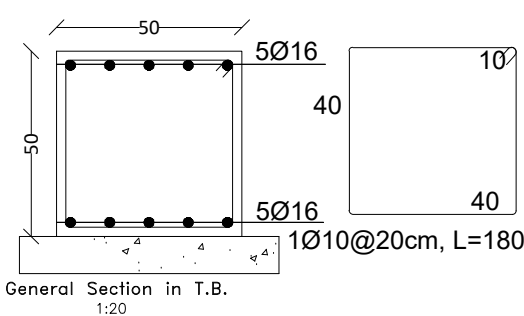
SCALE 1:20

Strip Footing 1 Detail



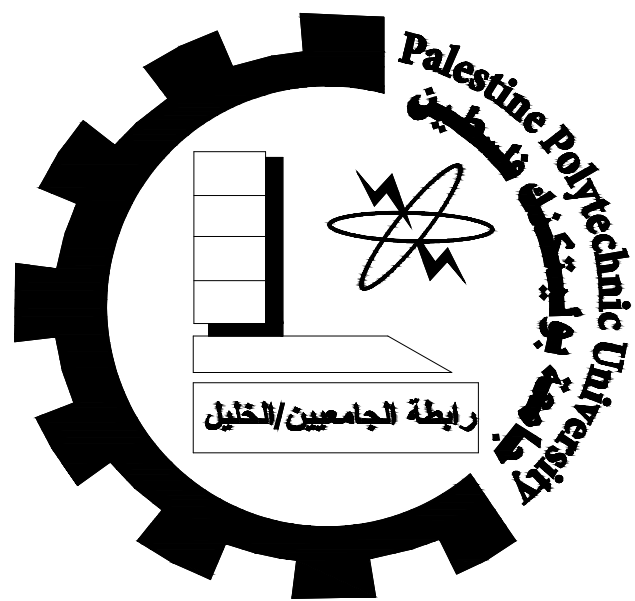
SECTION 2-2

SCALE 1:20

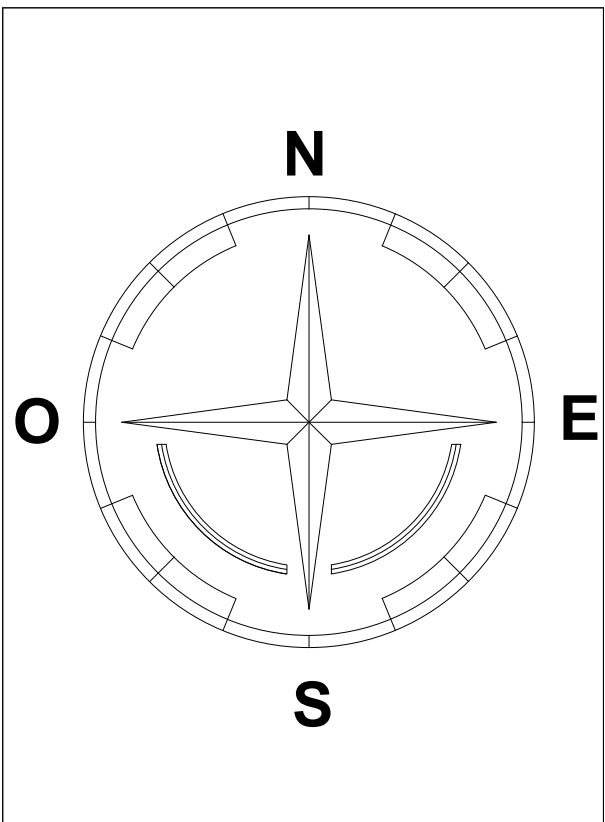


General Section in T.B.

1:20



Palestine Polytechnic University  
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Civil & Architecture Department  
Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Foundation Details

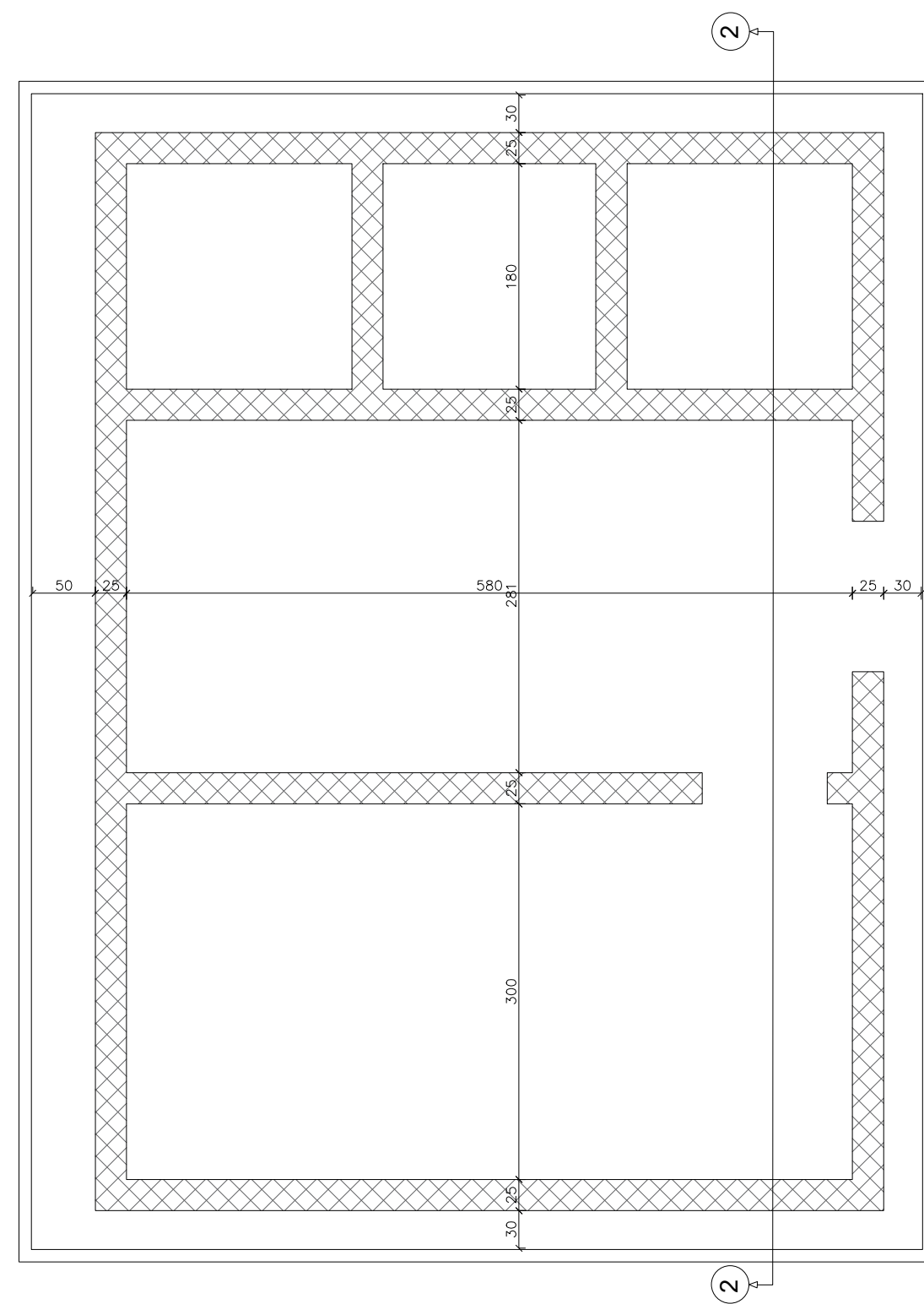
SCALE

1:100

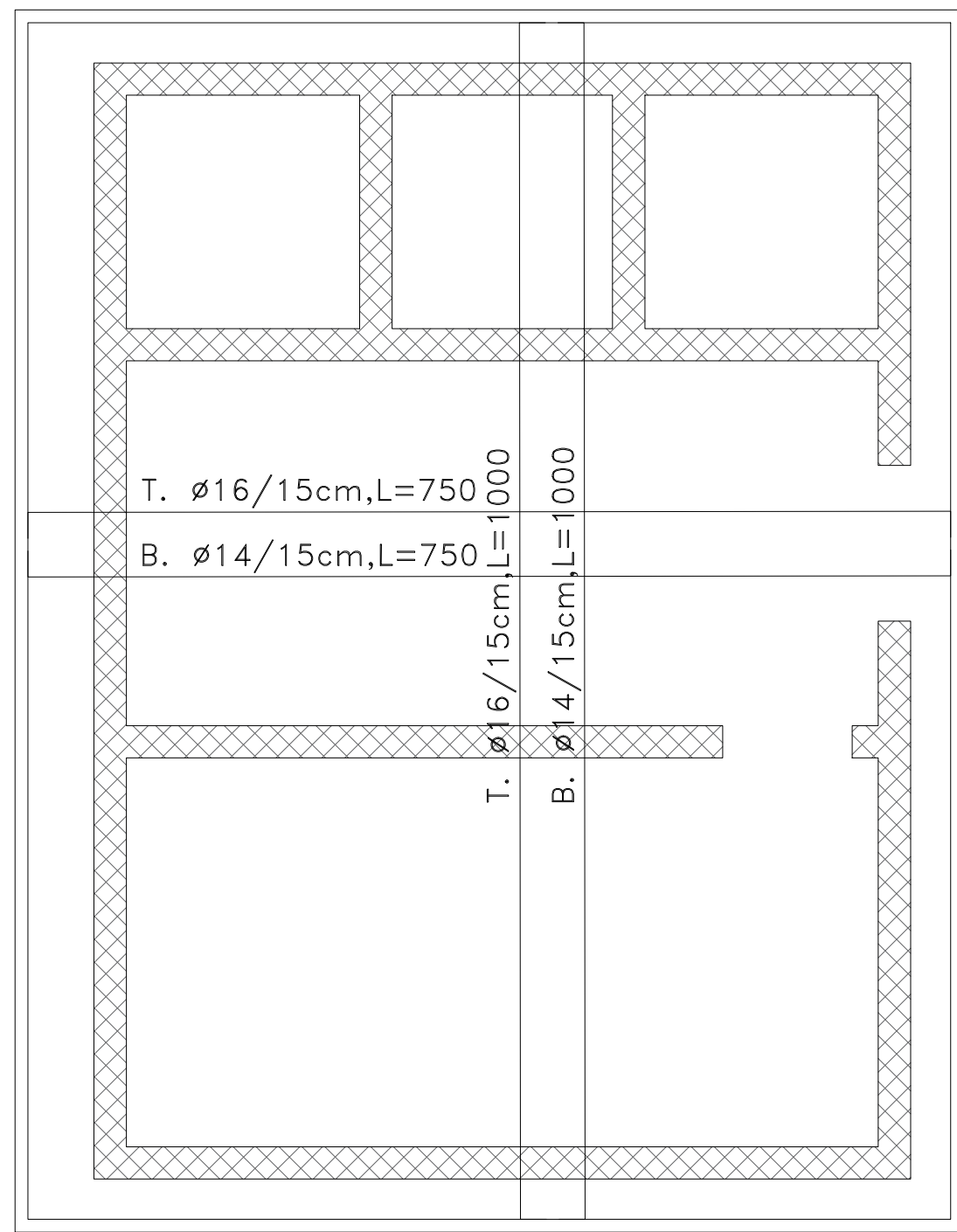
NO. OF DRAW

S32

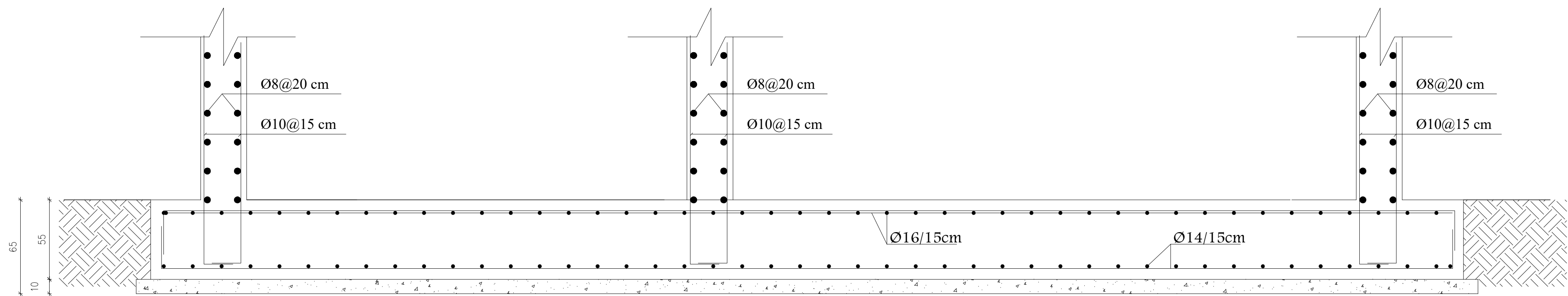




Dimension

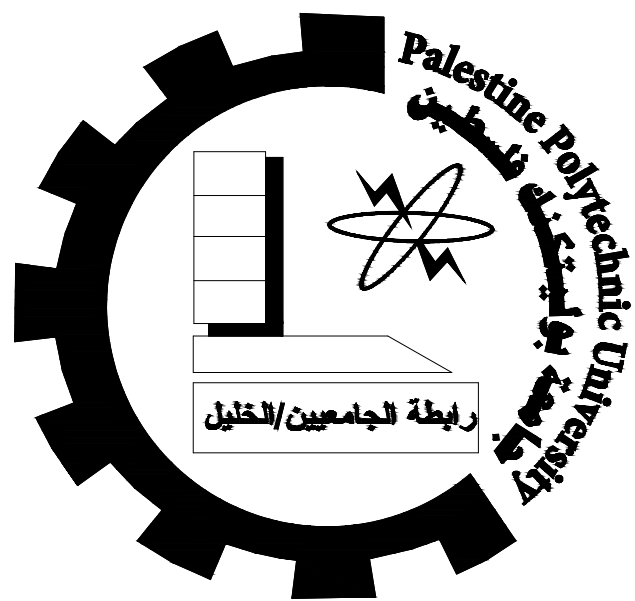


Reinforcement Details

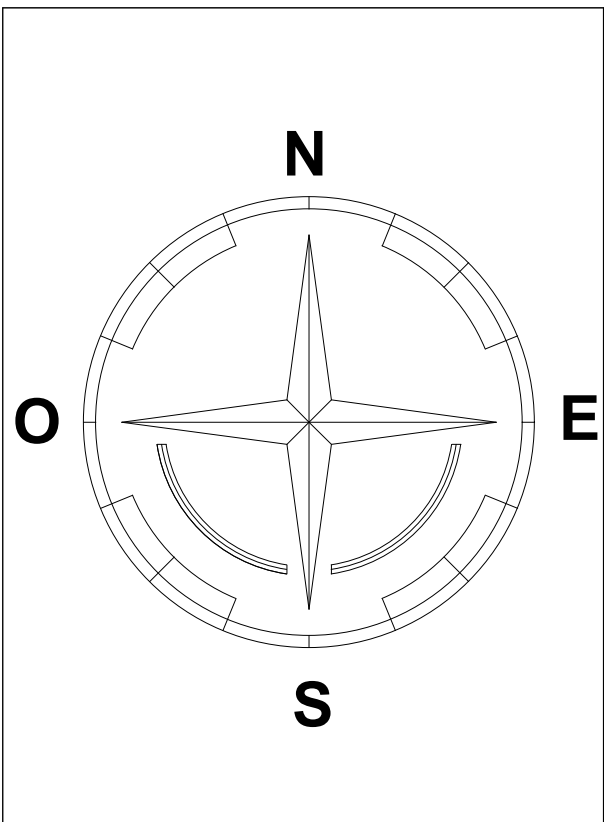


SECTION 2-2

SCALE 1:20



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Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Foundation Details

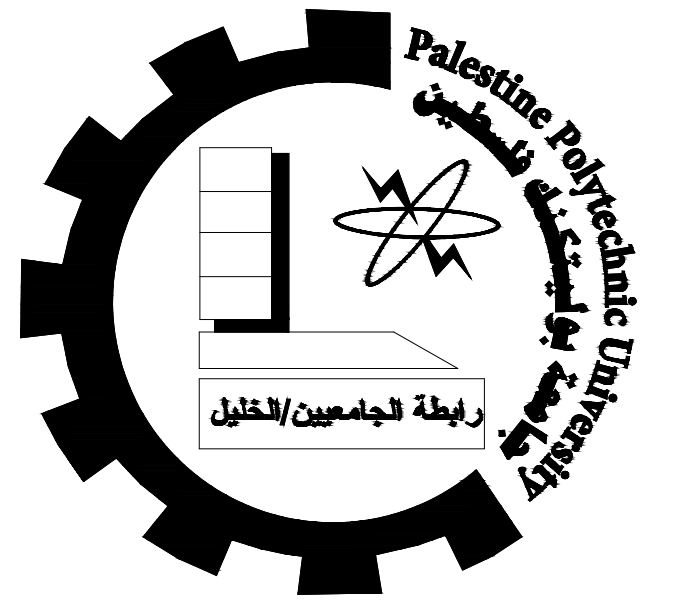
SCALE

1:100

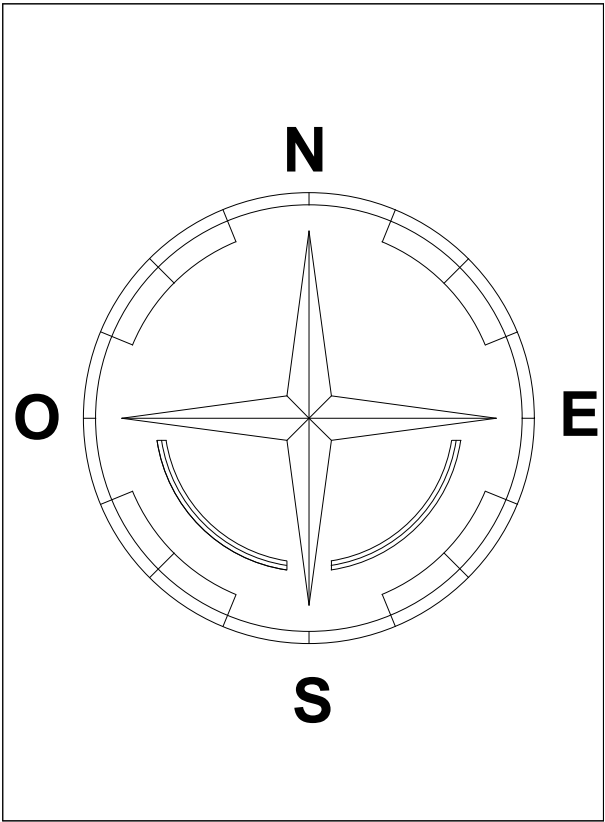
NO. OF DRAW

S33





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Civil & Architecture Department  
Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Column& walls details

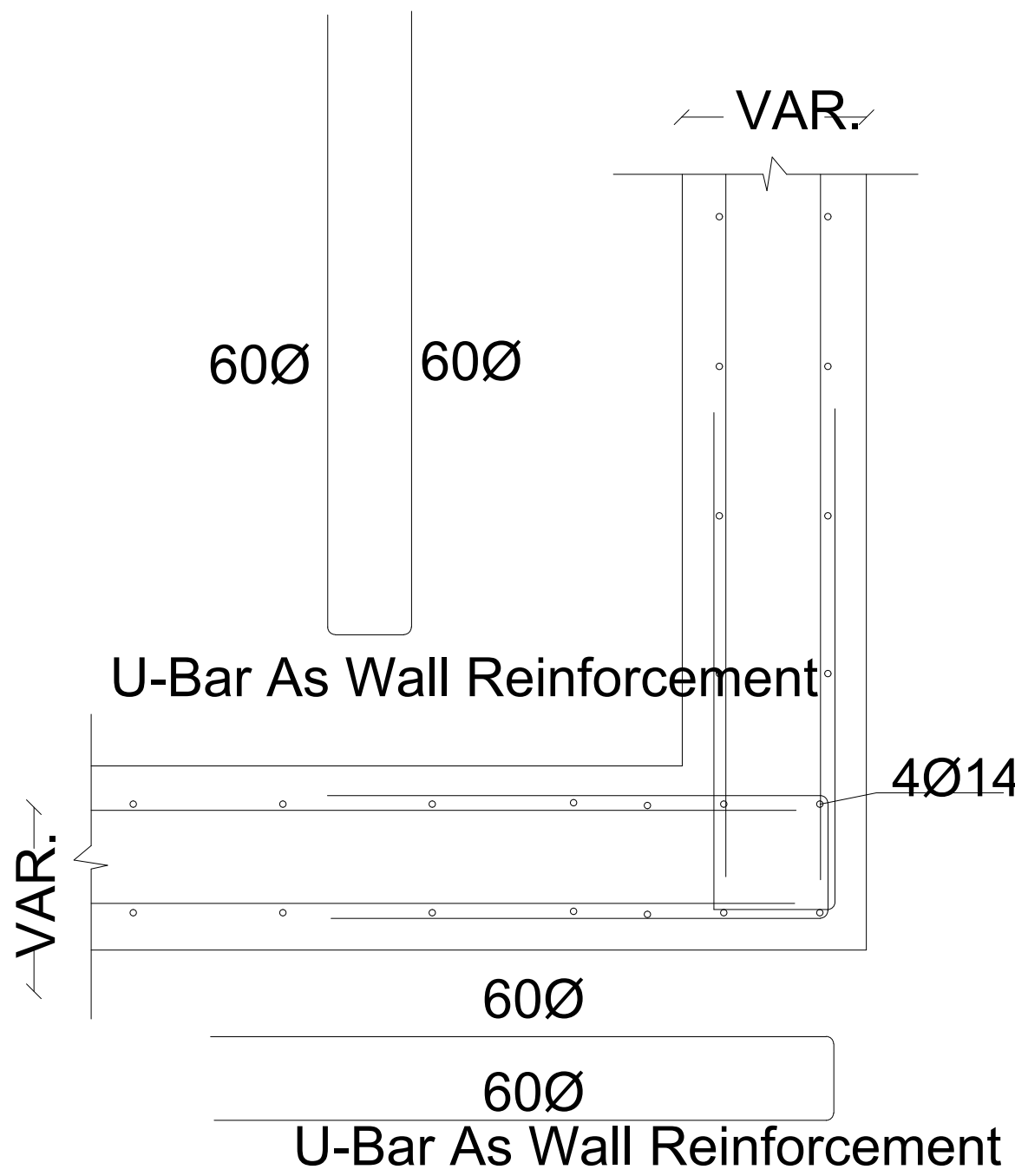
SCALE

1:100

NO. OF DRAW

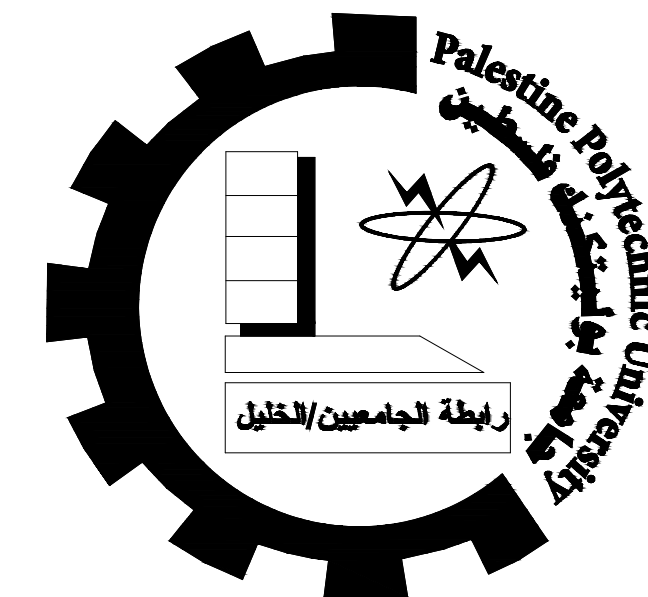
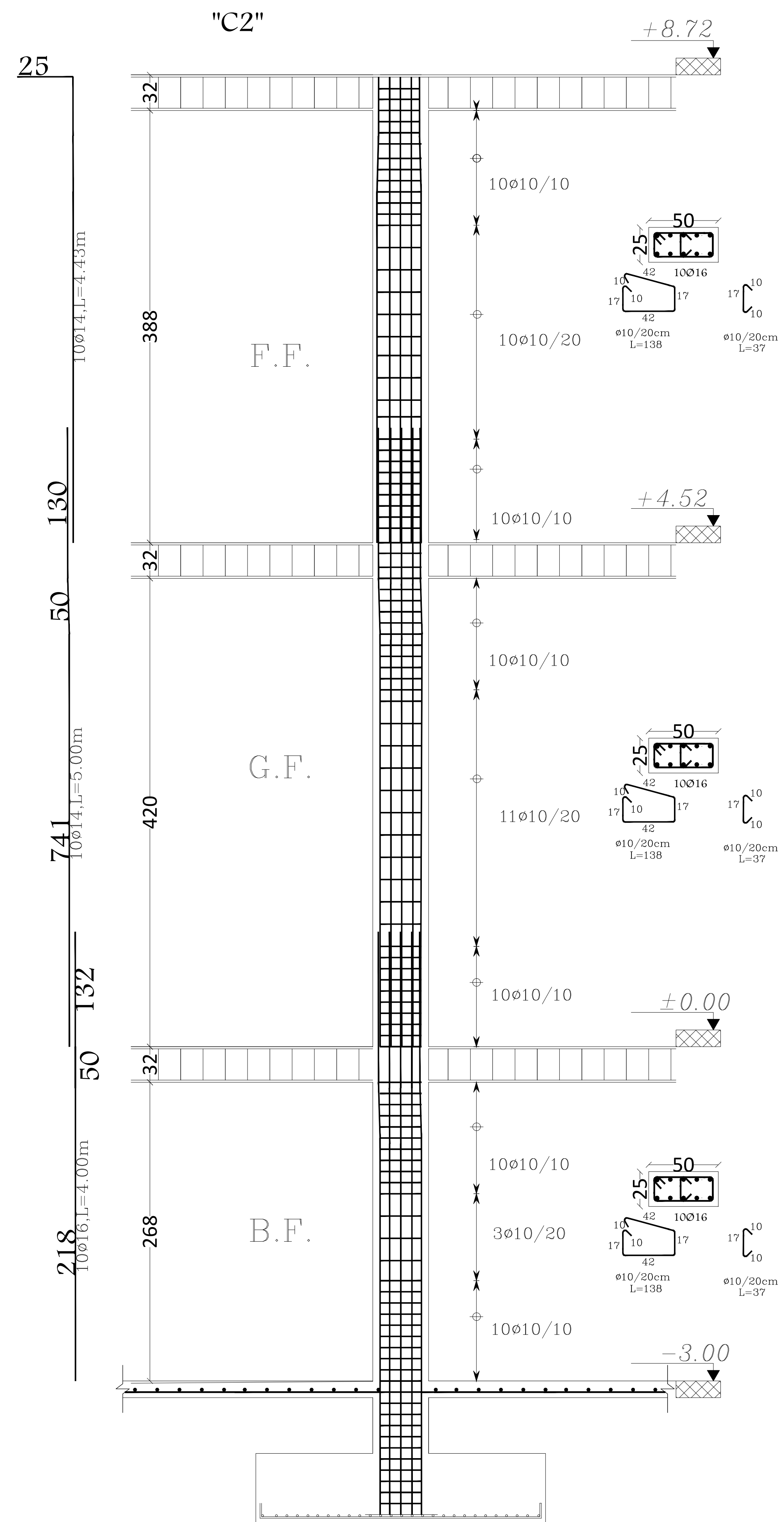
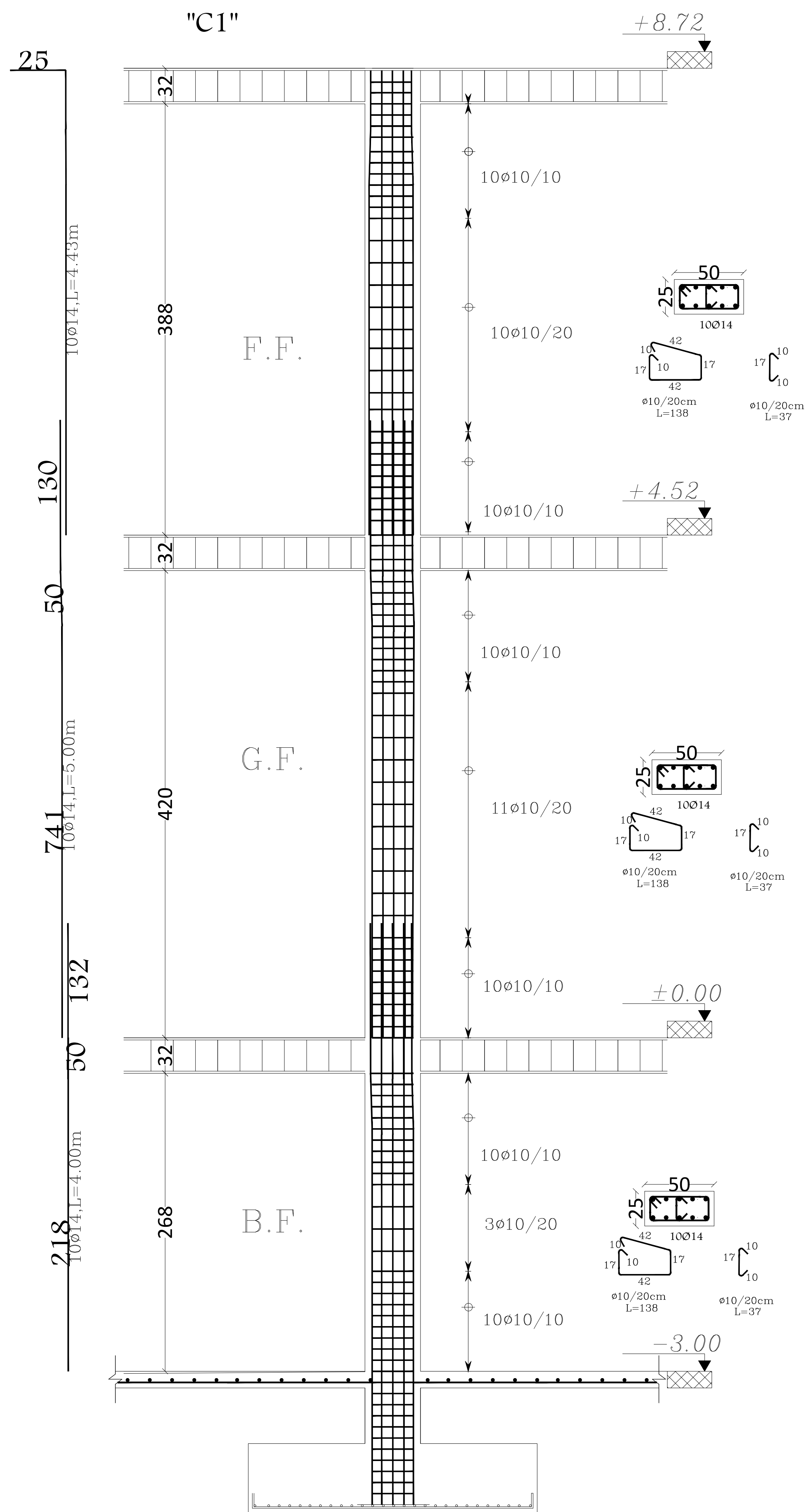
S34

| Group No. | Name's Floor | Column Section | Stirrups Deatailing | Group No. | Name's Floor | Column Section | Stirrups Deatailing |
|-----------|--------------|----------------|---------------------|-----------|--------------|----------------|---------------------|
| "C1"      | BF&GF,FF     |                |                     | "C4"      | BF&GF,FF     |                |                     |
|           | 2ndF, 3rdF   |                |                     |           | 2ndF, 3rdF   |                |                     |
| "C2"      | BF&GF,FF     |                |                     | "C5"      | BF&GF,FF     |                |                     |
|           | 2ndF, 3rdF   |                |                     |           | 2ndF, 3rdF   |                |                     |
| "C3"      | BF&GF,FF     |                |                     | "C6"      | BF&GF,FF     |                |                     |
|           | 2ndF, 3rdF   |                |                     |           | 2ndF, 3rdF   |                |                     |
| "W1"      | BF&GF,FF     |                |                     | "C7"      | BF&GF,FF     |                |                     |
|           | 2ndF, 3rdF   |                |                     |           | 2ndF, 3rdF   |                |                     |

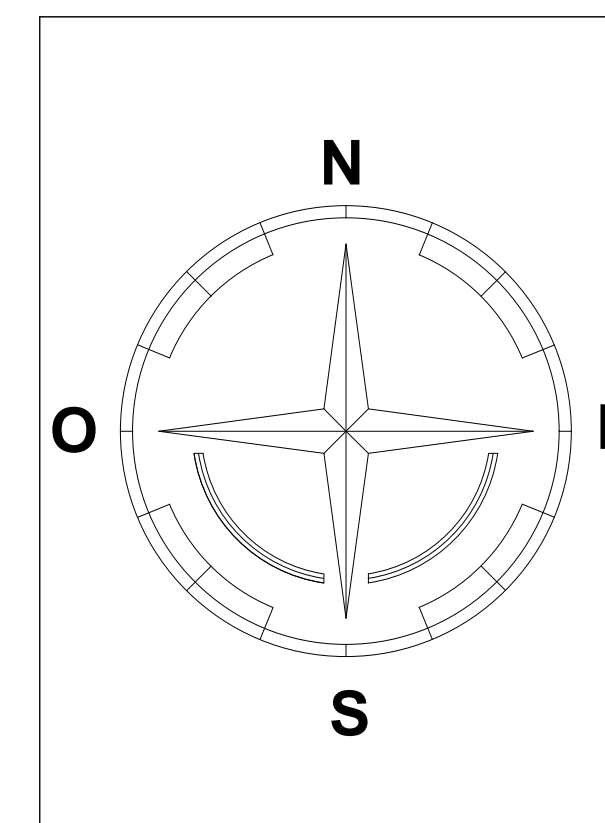


TYP. CORNER DETAIL OF RC WALL





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Civil Engineering



Project: Office Building

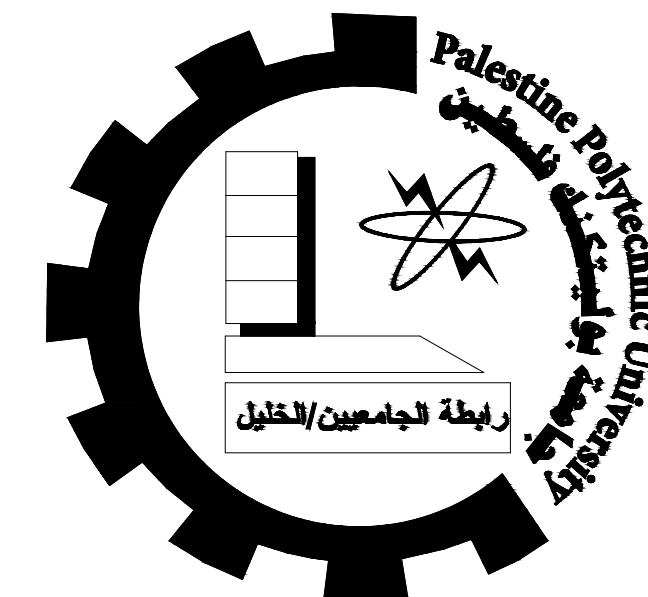
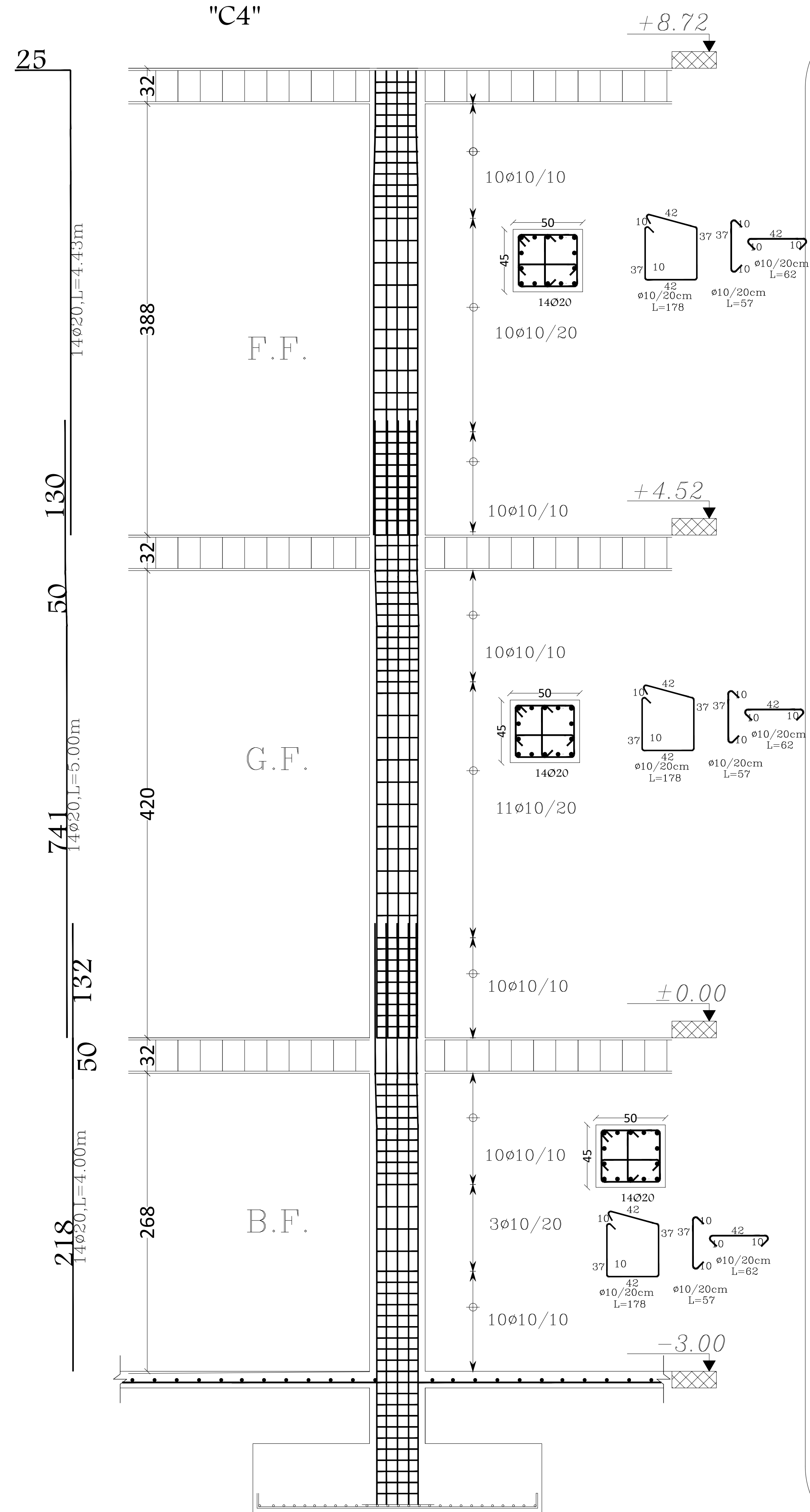
Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

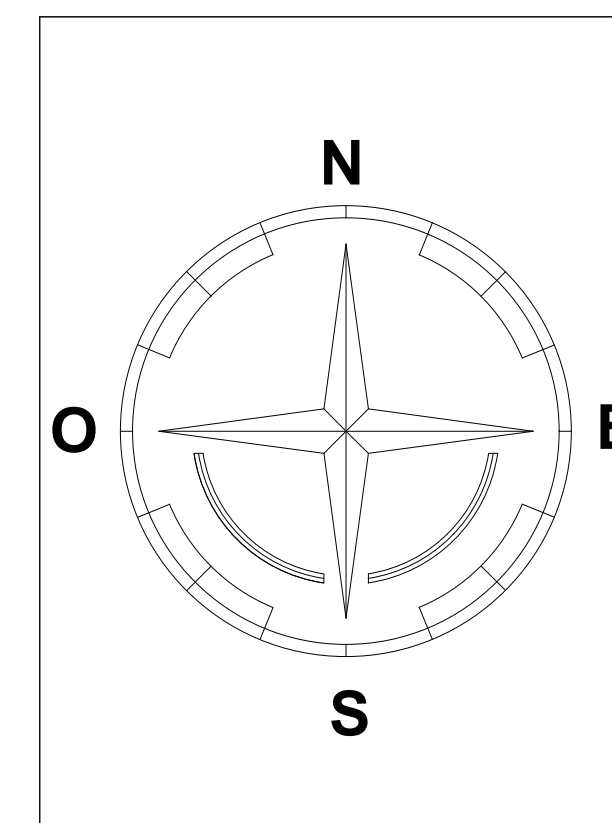
Drawing Title:  
Column details

|       |             |
|-------|-------------|
| SCALE | NO. OF DRAW |
| 1:100 | S35         |





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Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
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Ali Nasser  
Yousef Nasser

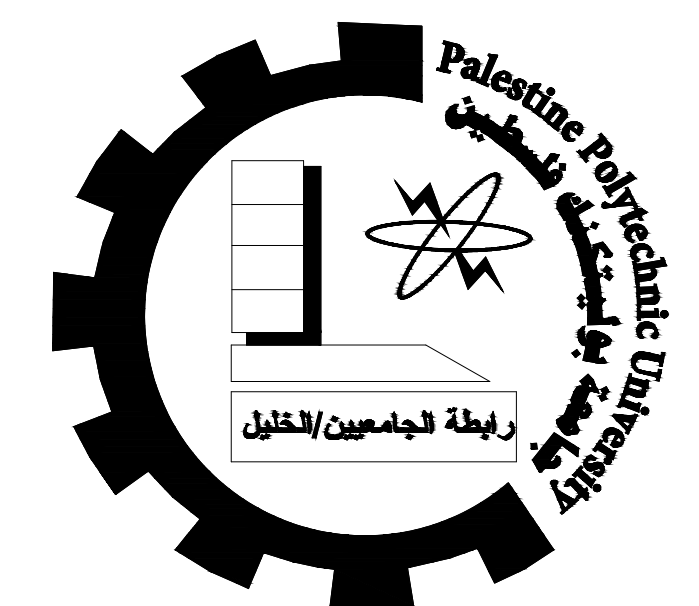
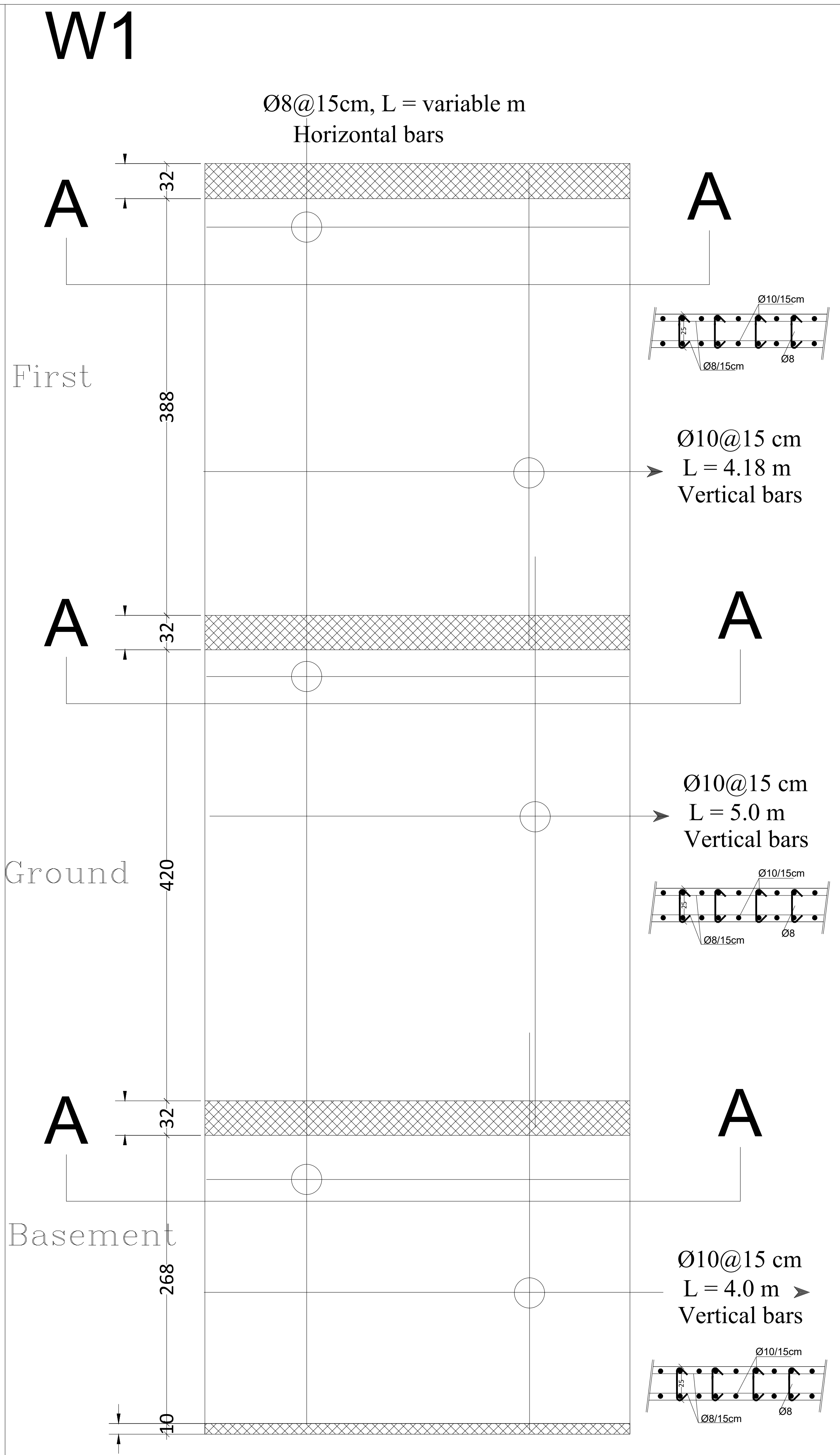
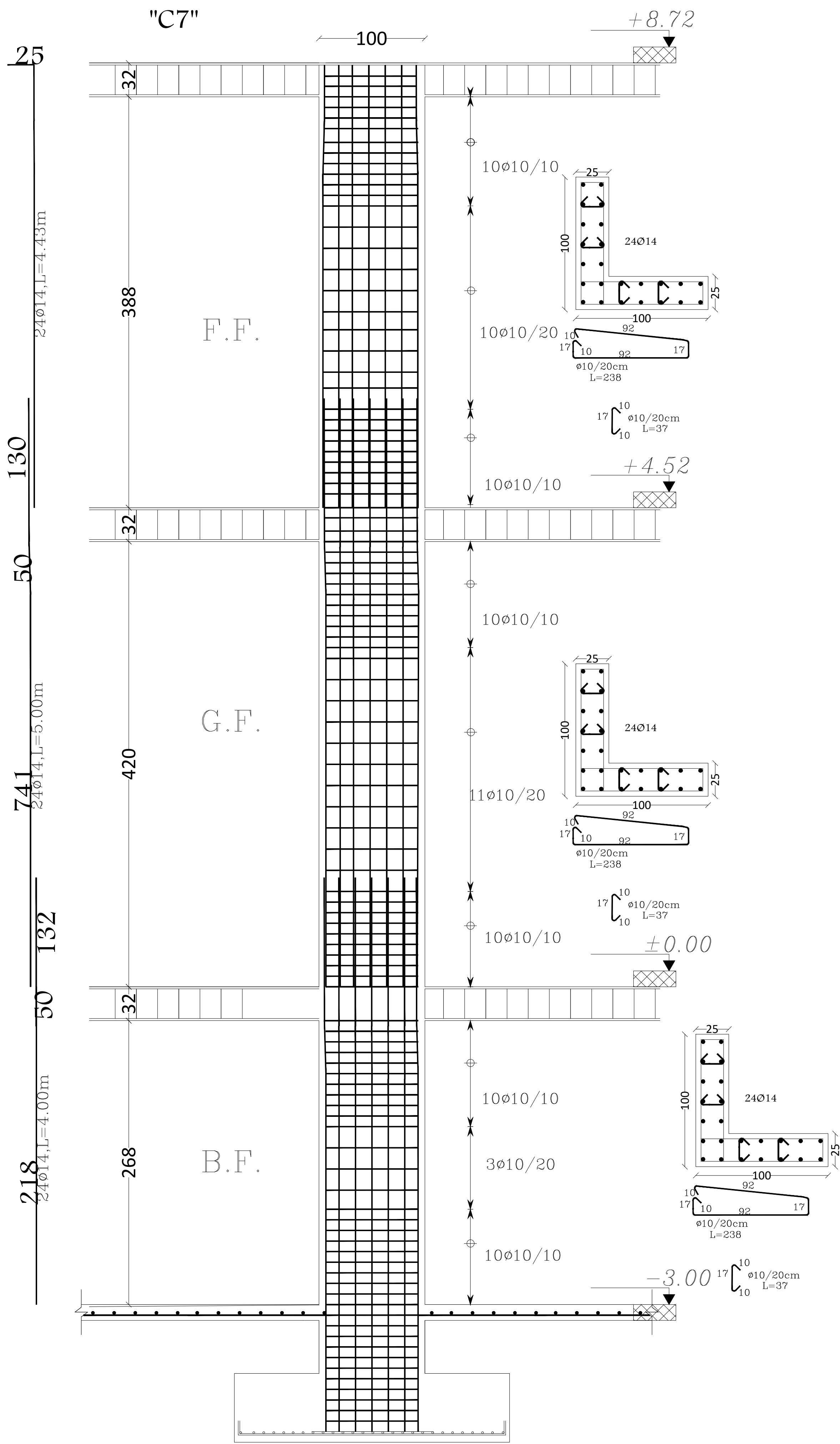
Drawing Title:  
Column details

|       |             |
|-------|-------------|
| SCALE | NO. OF DRAW |
| 1:100 | S36         |

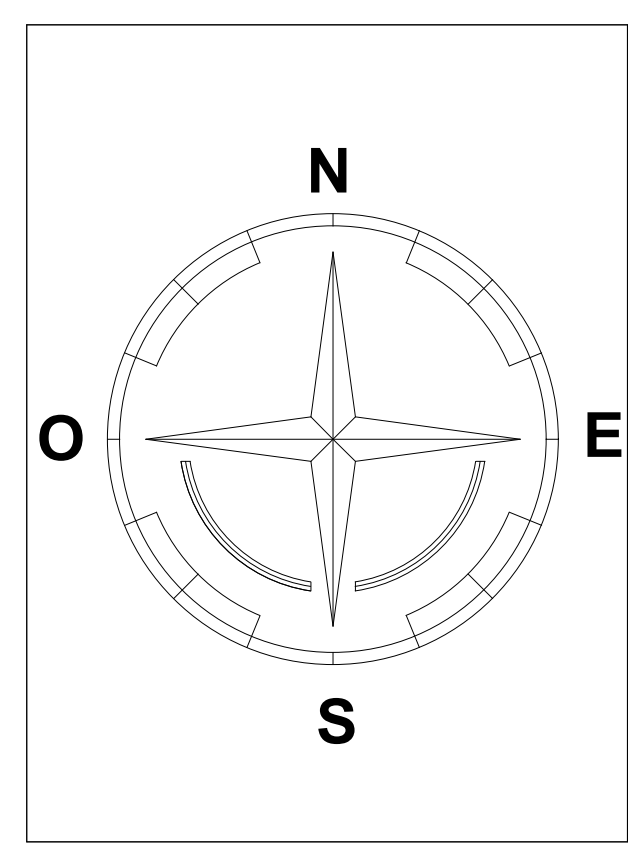








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College of Engineering  
Civil & Architecture Department  
Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Column& Walls details

| SCALE | NO. OF DRAW |
|-------|-------------|
| 1:100 | S38         |

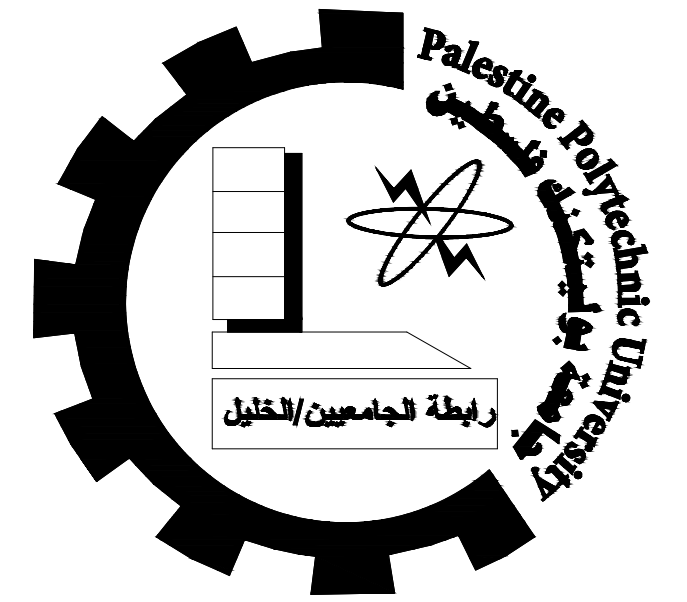
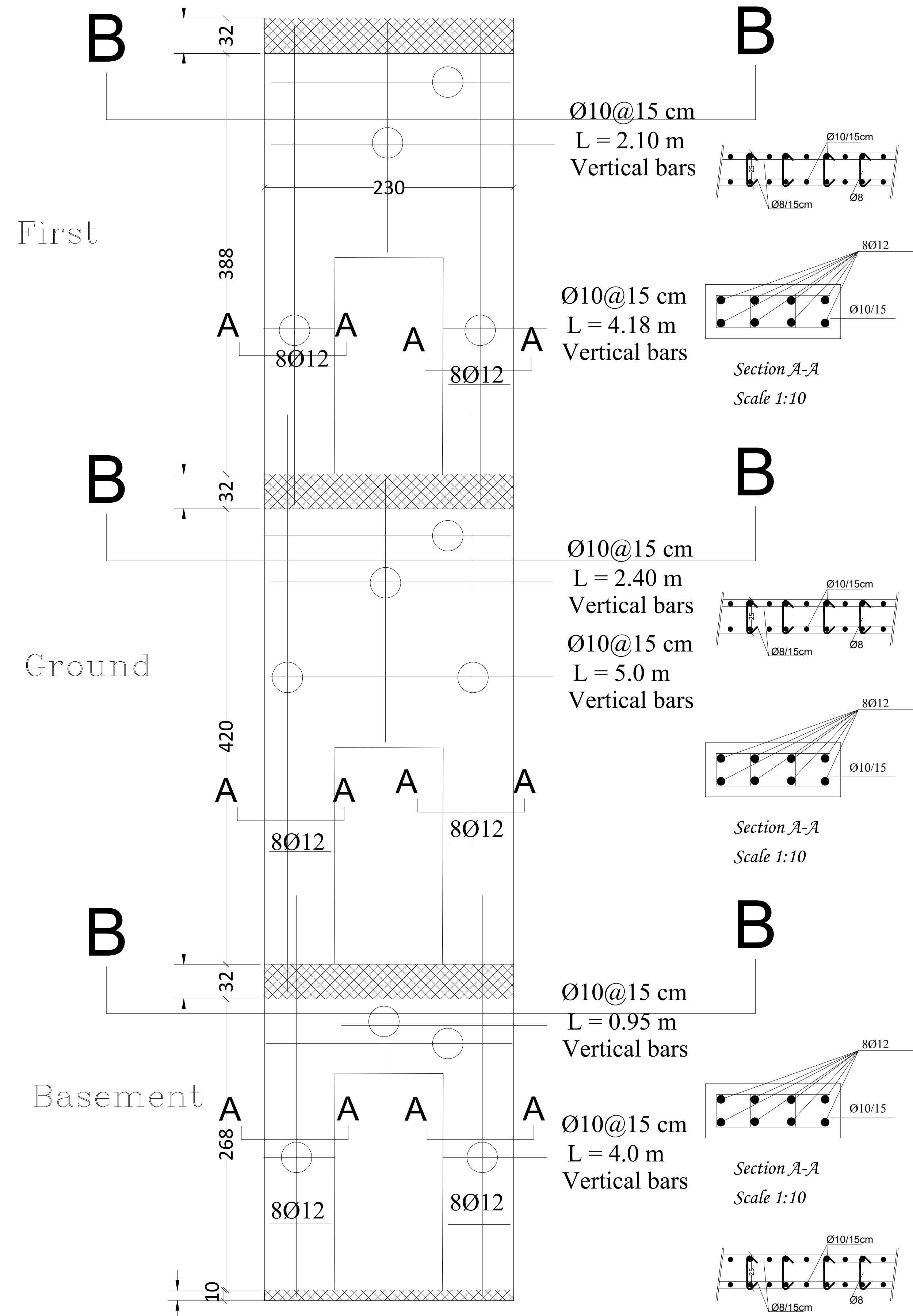


# W elevator

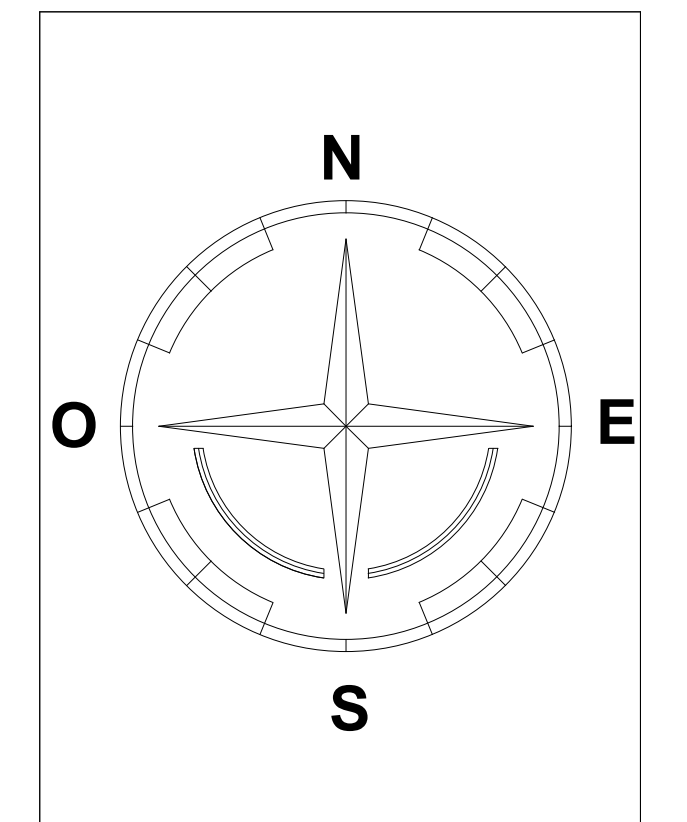
Ø8@15cm, L = 247 m  
Horizontal bars

Ø8@15cm, L = 247 m

Horizontal bars



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Project: Office Building

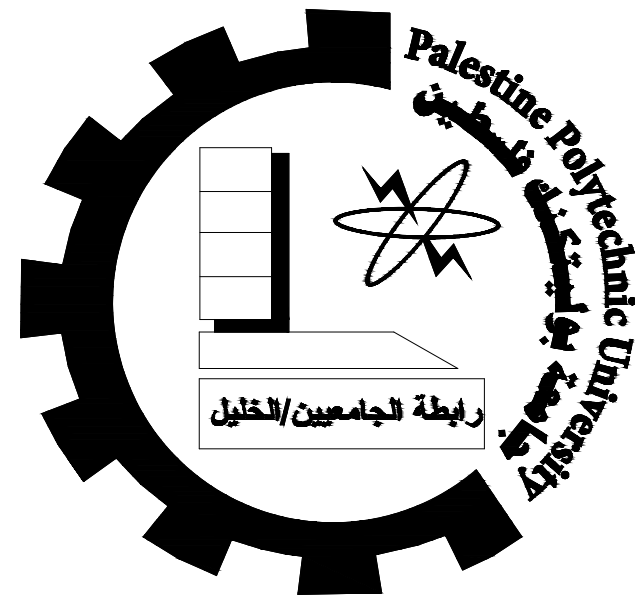
Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

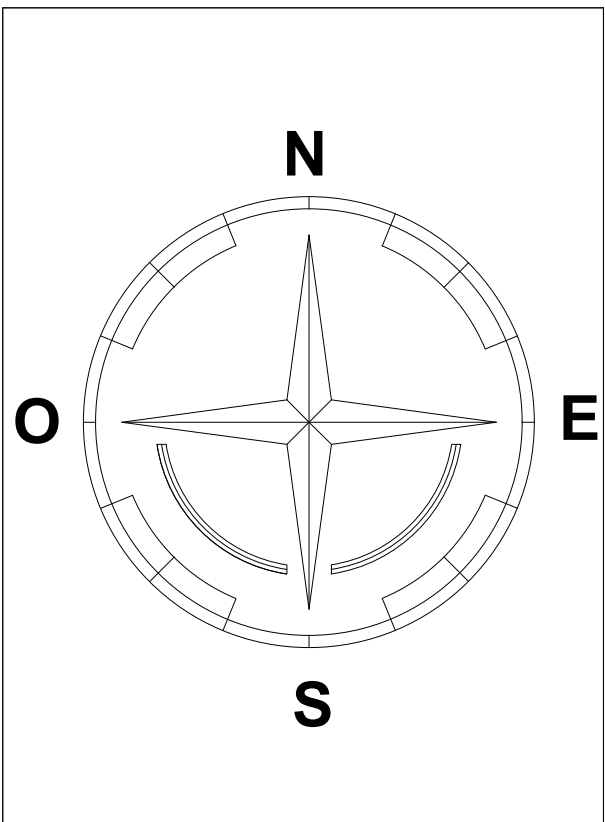
Drawing Title:  
Wall details

|       |             |
|-------|-------------|
| SCALE | NO. OF DRAW |
| 1:100 | S38a        |





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Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
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Ali Nasser  
Yousef Nasser

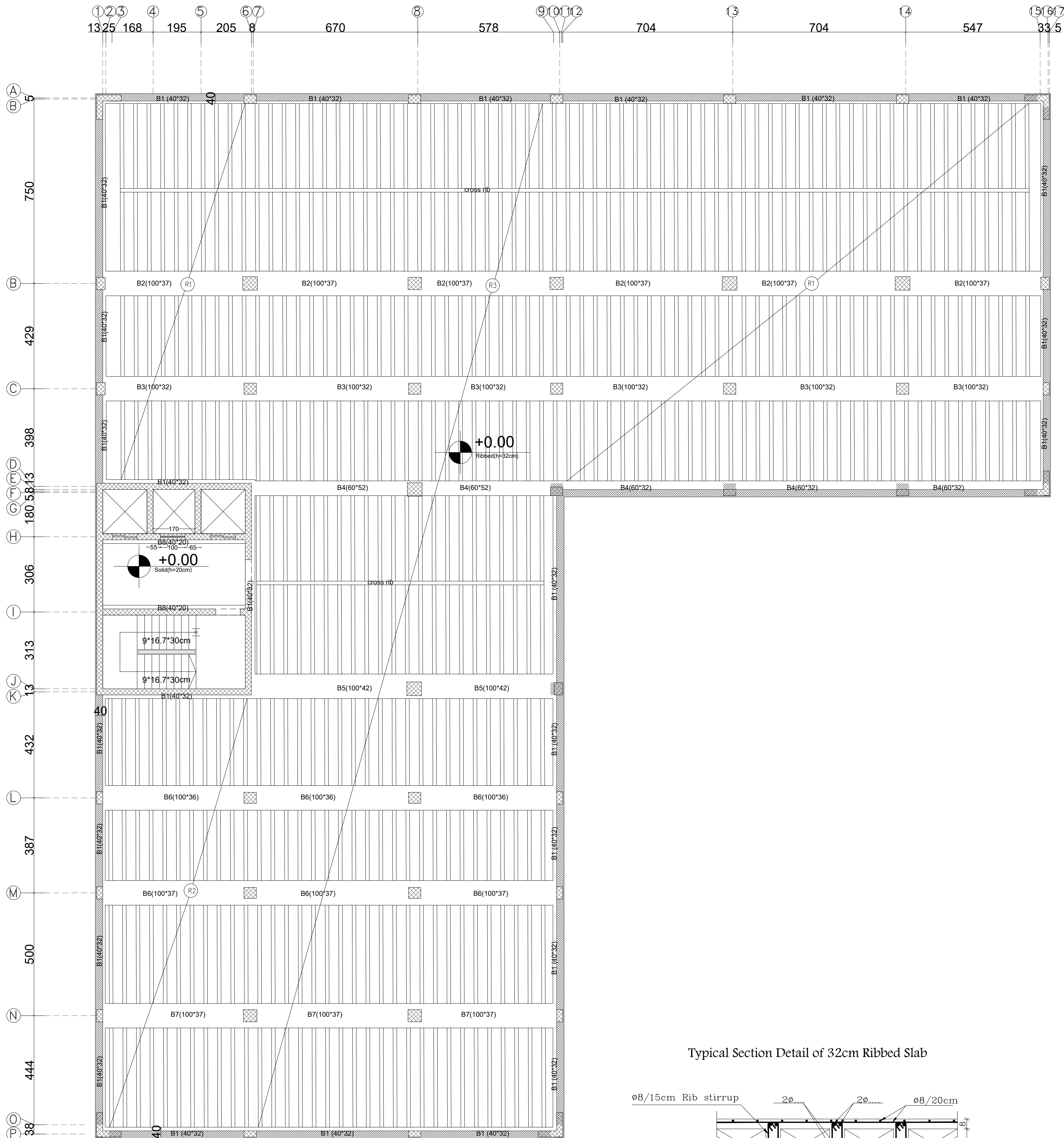
Drawing Title:  
**Basement  
Floor Plan**

SCALE

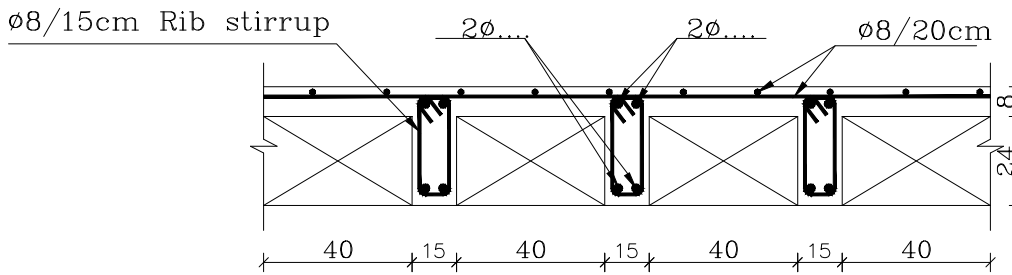
NO. OF DRAW

1:100

S39



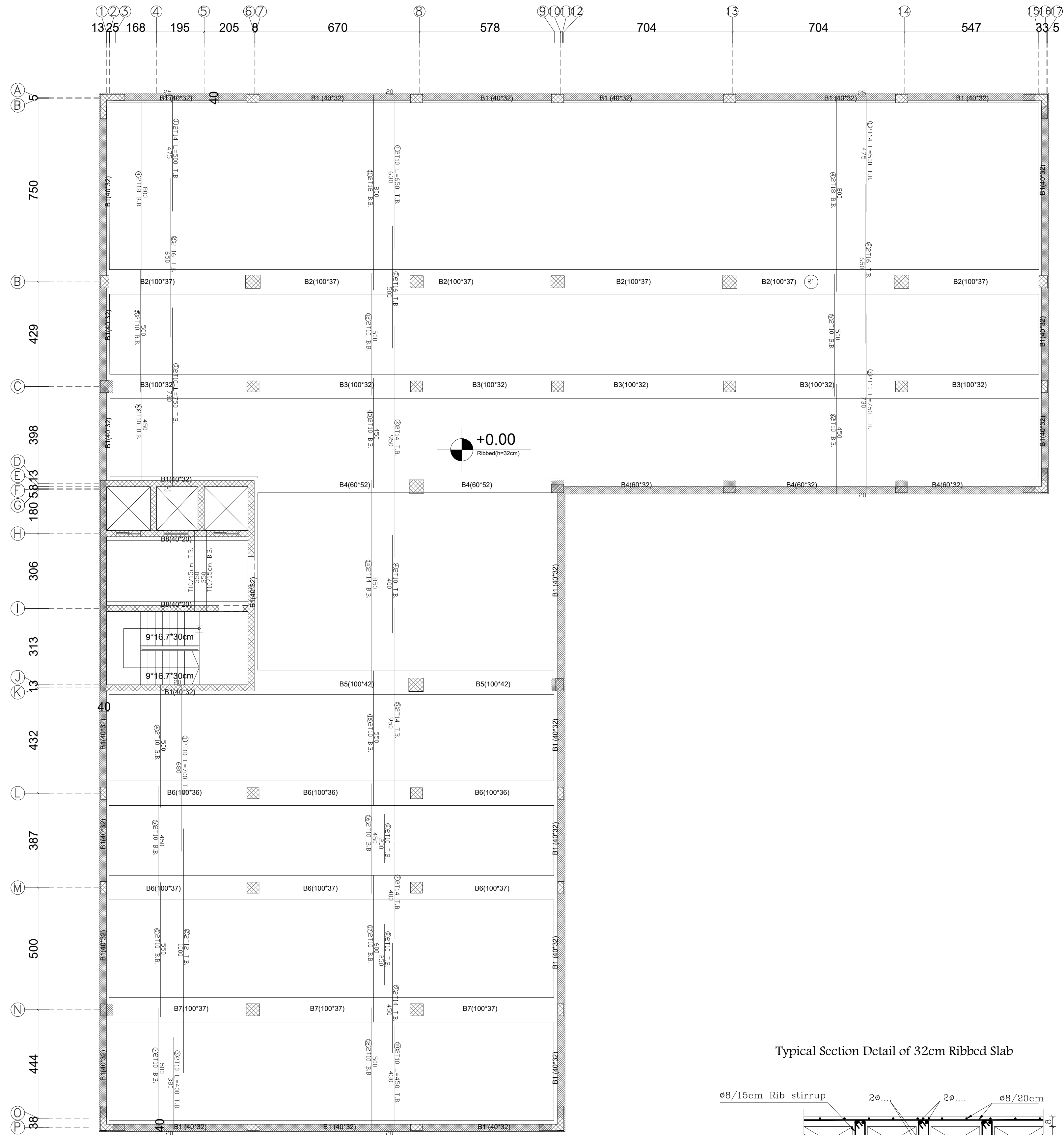
Typical Section Detail of 32cm Ribbed Slab



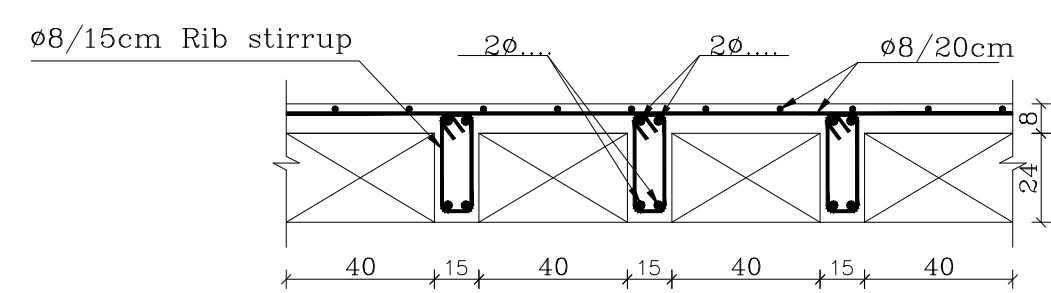
DETAIL #1

SCALE 1:20



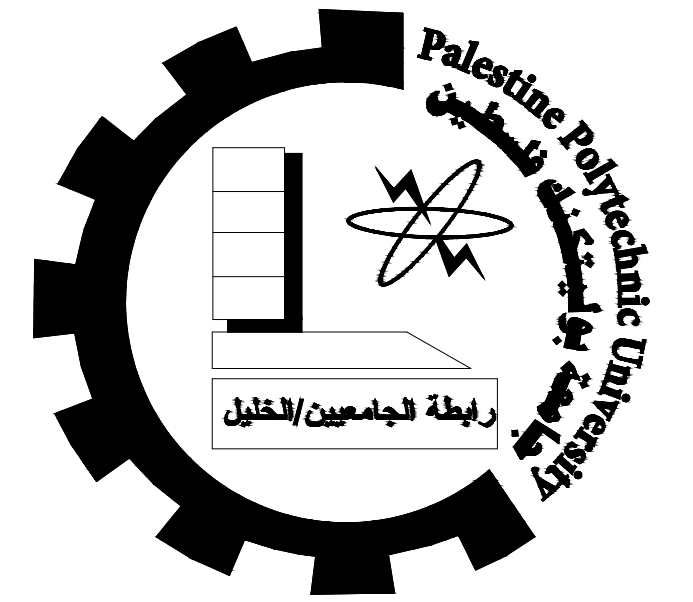


Typical Section Detail of 32cm Ribbed Slab

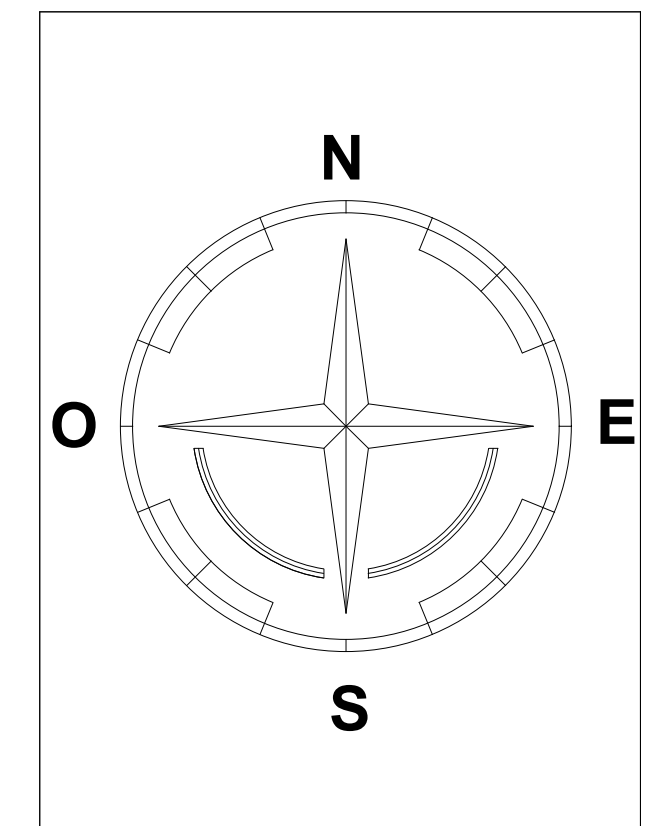


DETAIL #1

SCALE 1:20



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Civil & Architecture Department  
Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
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Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
**Basement  
Floor details**

SCALE

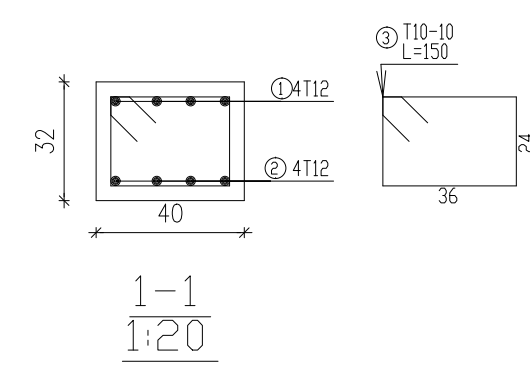
1:100

NO. OF DRAW

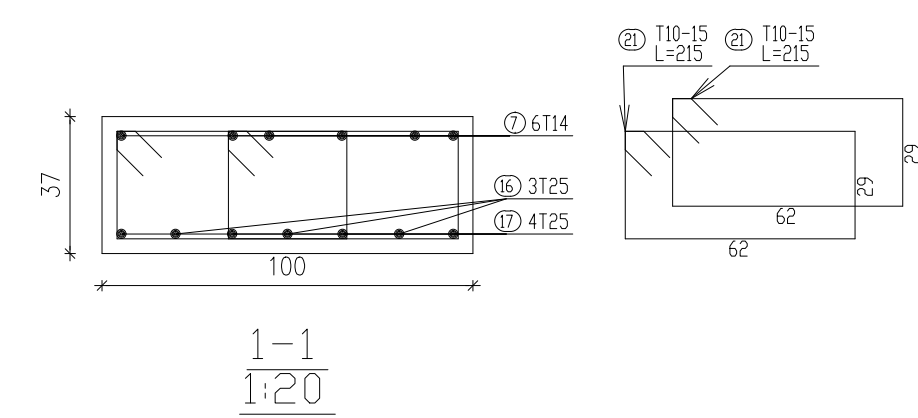
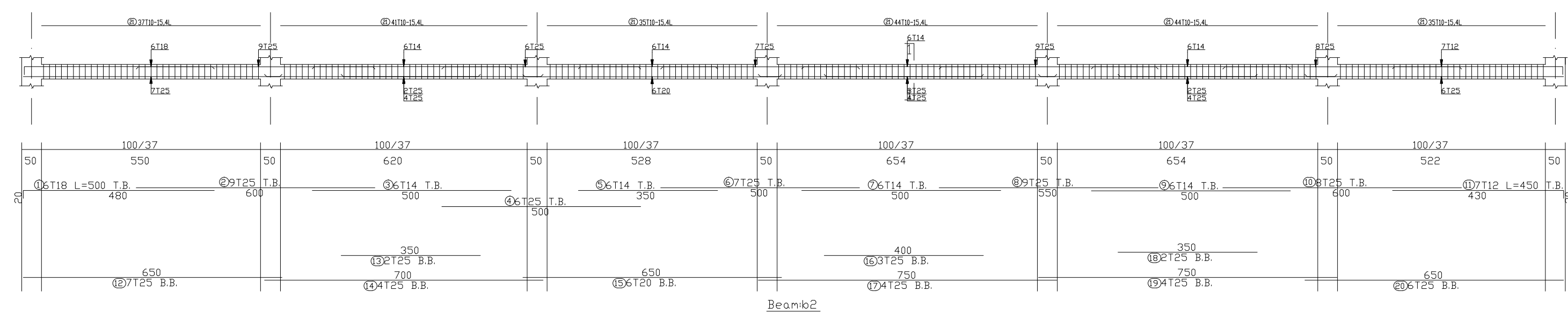
**S40**



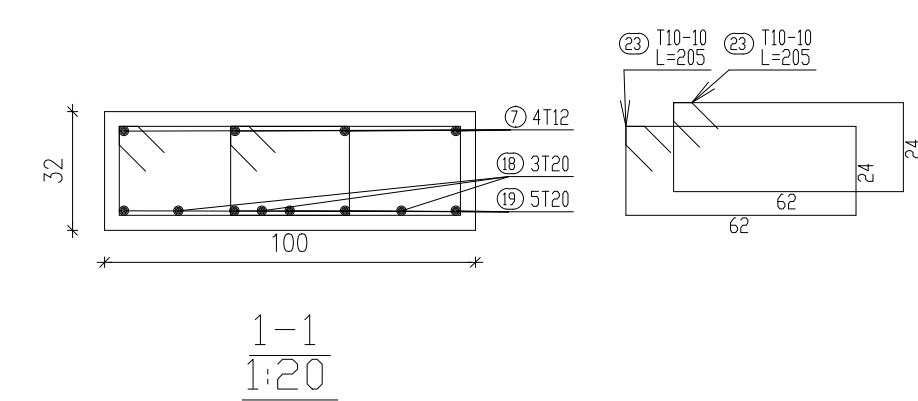
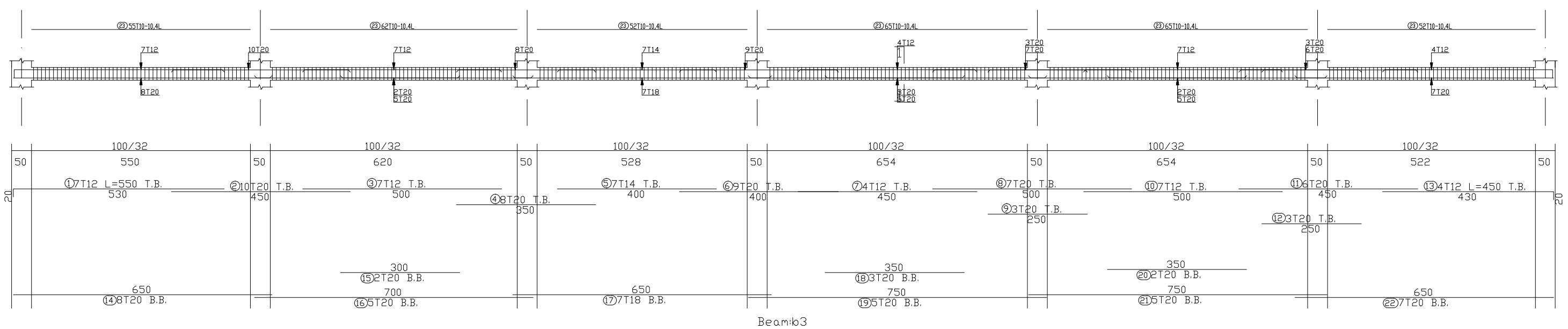
BEAM - B1 (40/32)



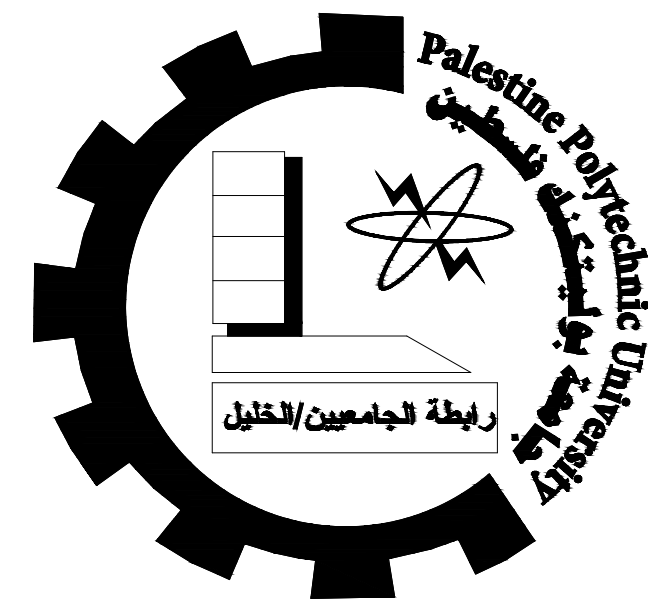
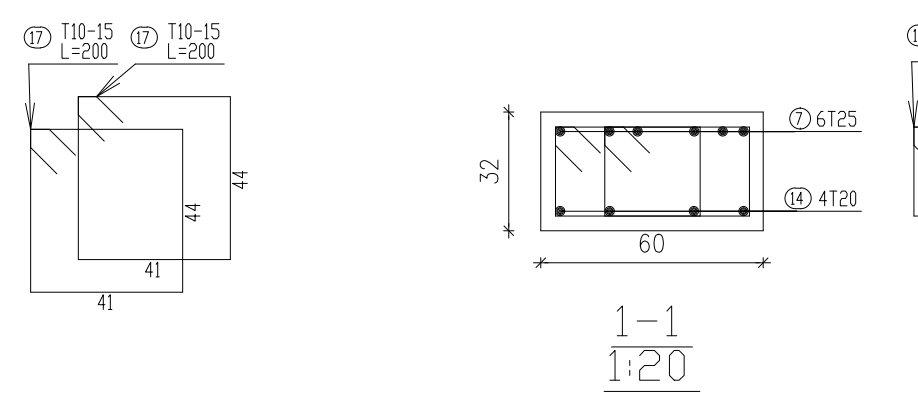
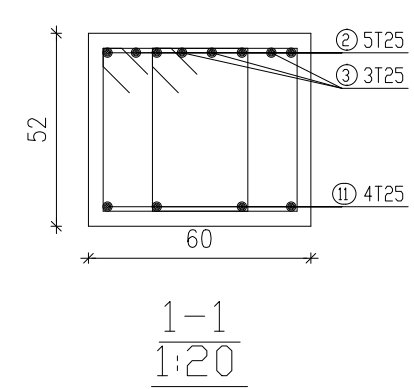
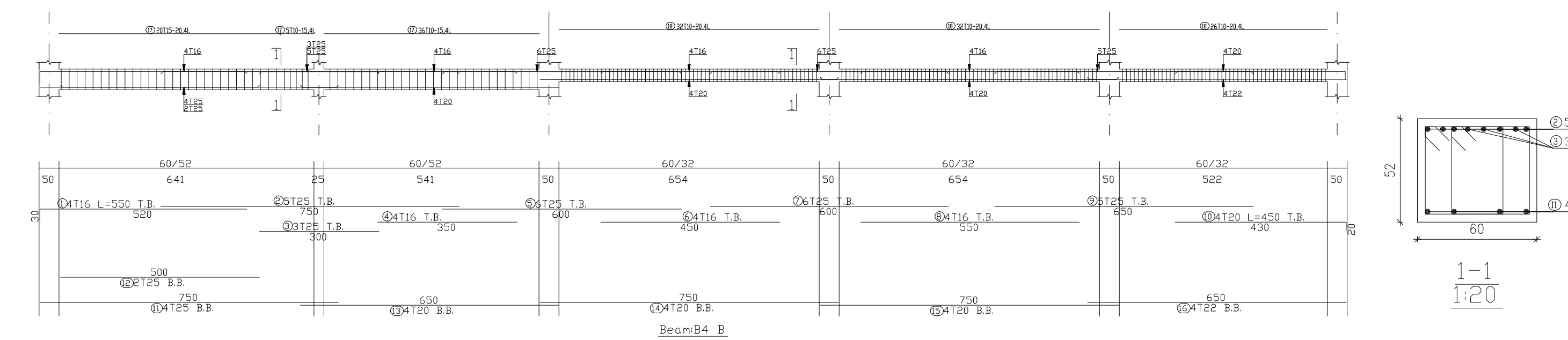
BEAM - B2 (100/37)



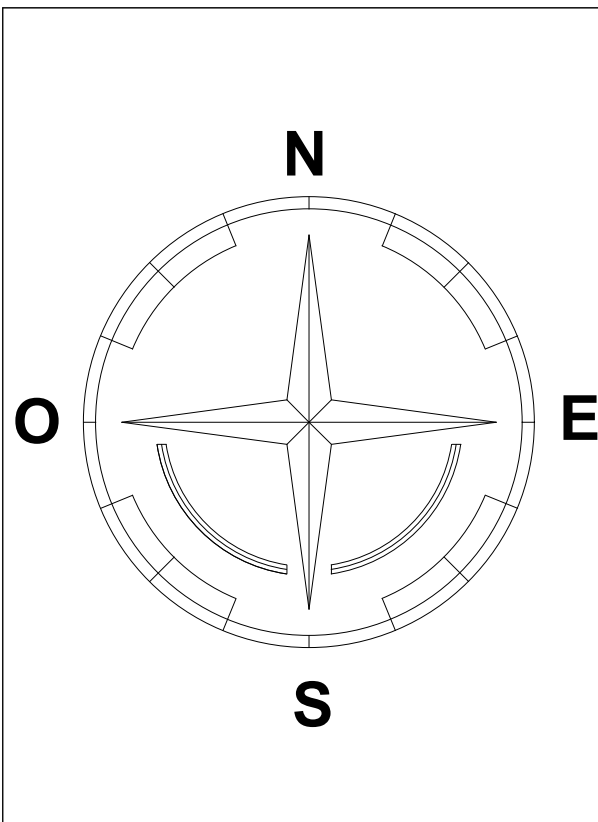
BEAM - B3 (100/32)



BEAM - B4 (60/32)



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Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Basement beams details

SCALE

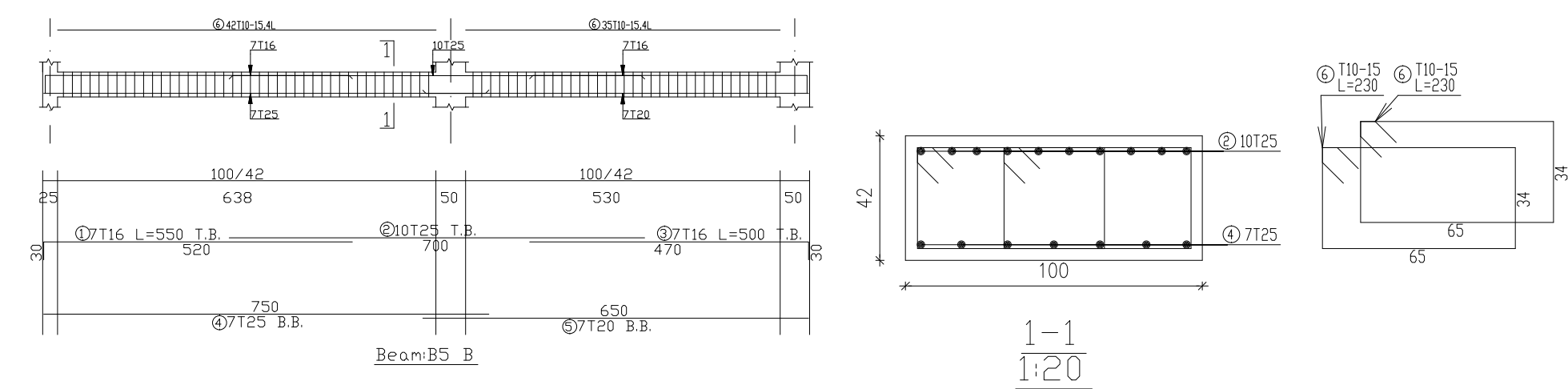
1:100

NO. OF DRAW

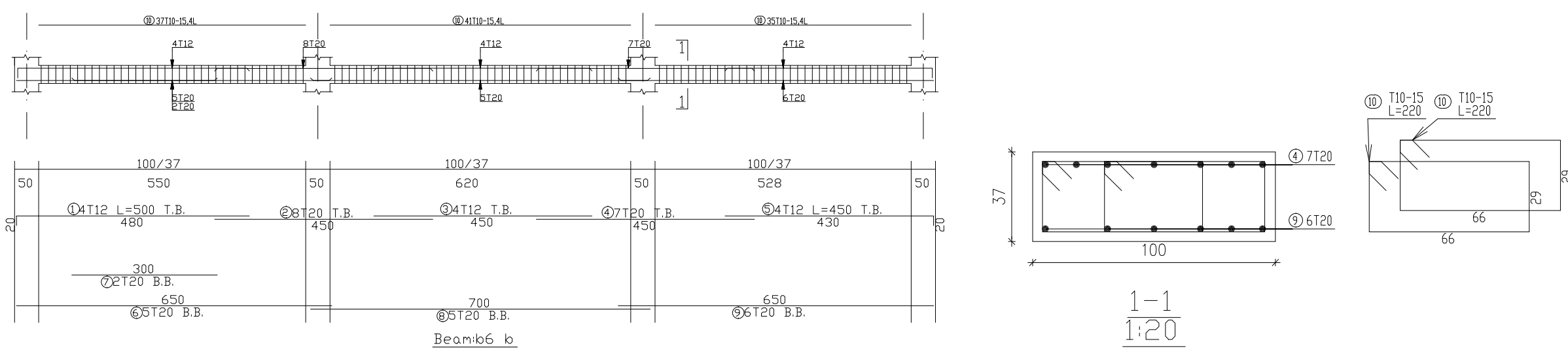
S41



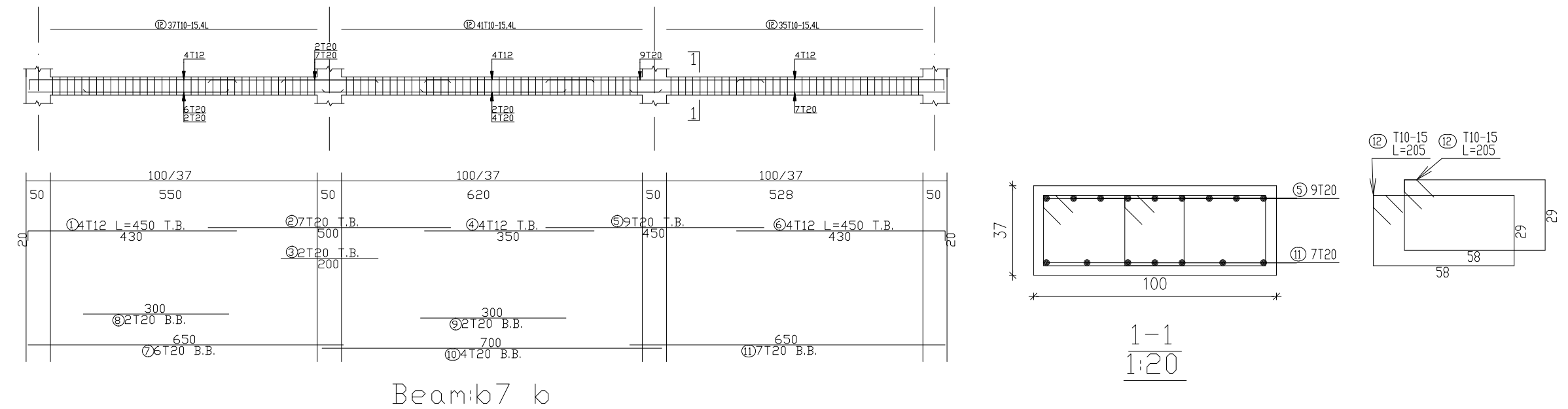
BEAM - B5 (100/42)



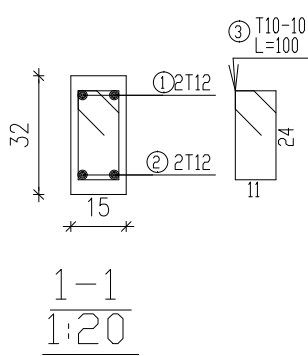
BEAM - B6 (100/37)



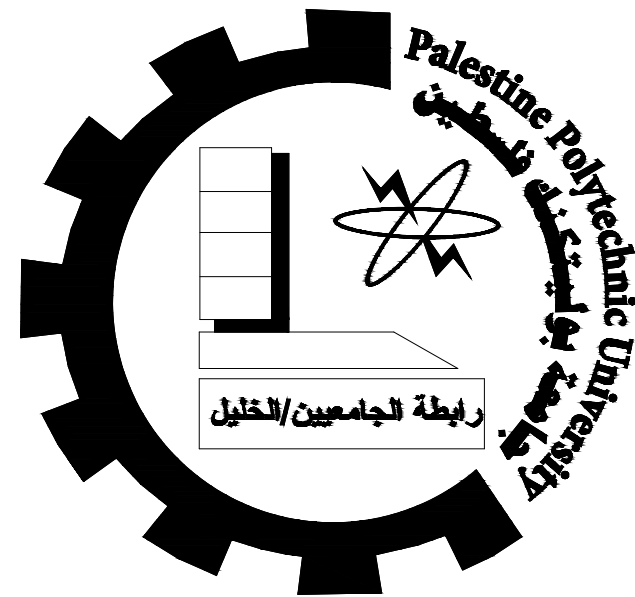
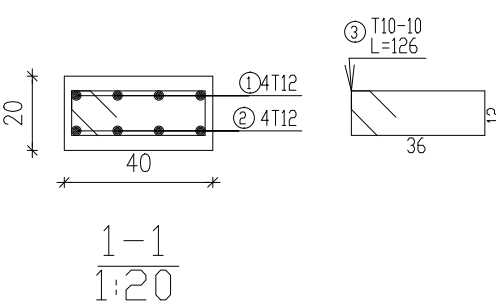
BEAM - B7 (100/37)



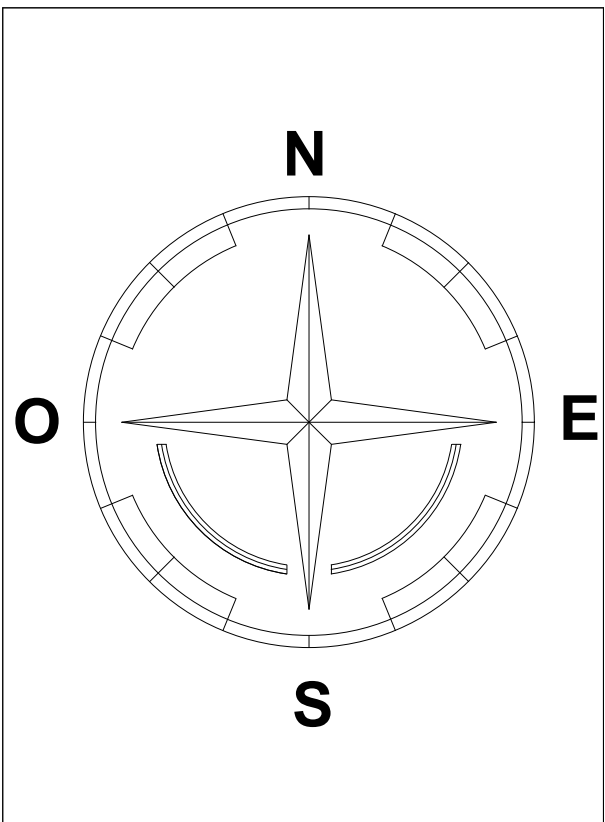
Cross rib (15/32)



BEAM - B8 (40/20)



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Project: Office Building

Supervisor: ENG. Hamdi Ideas

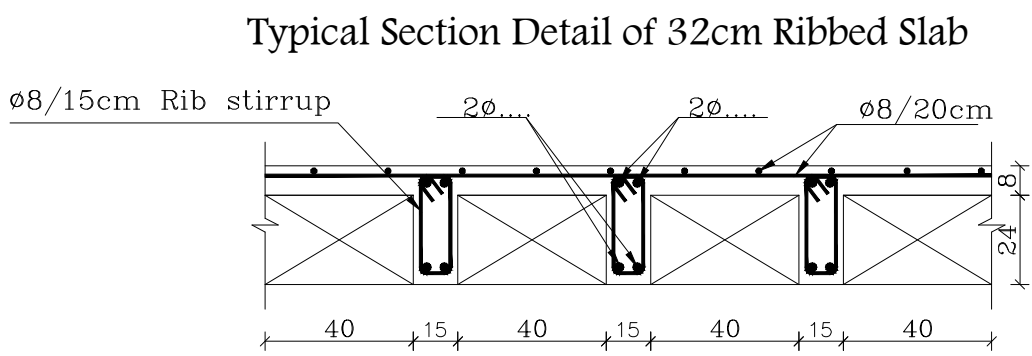
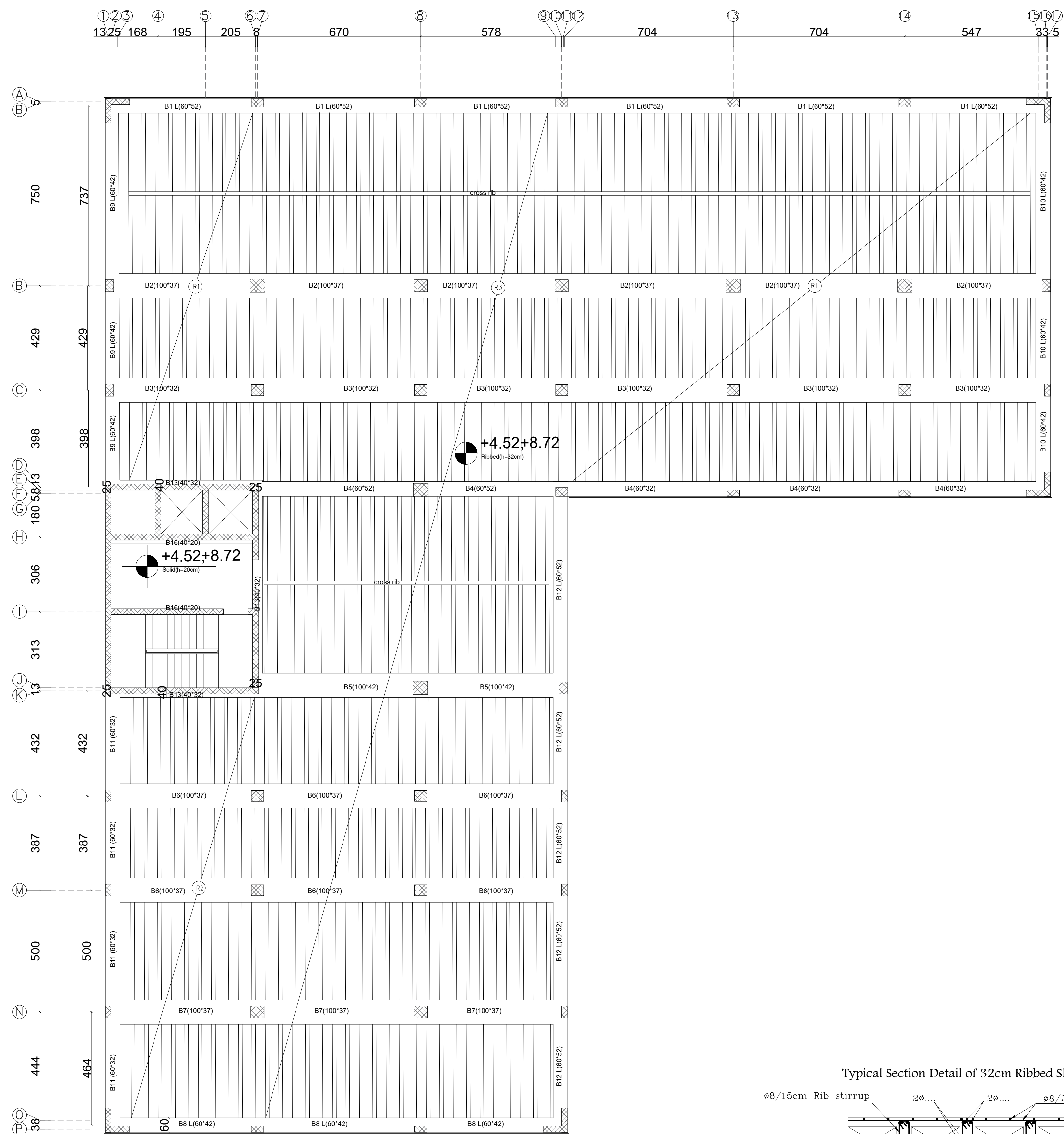
Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Basement beams details

| SCALE | NO. OF DRAW |
|-------|-------------|
| 1:100 | S42         |

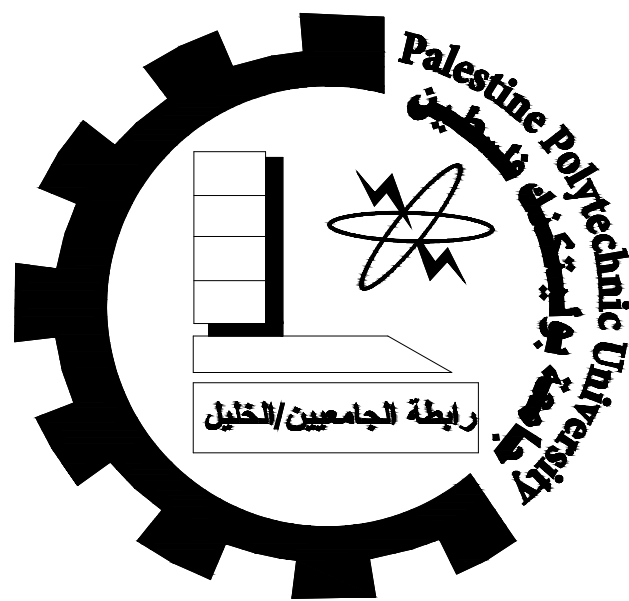


Building B

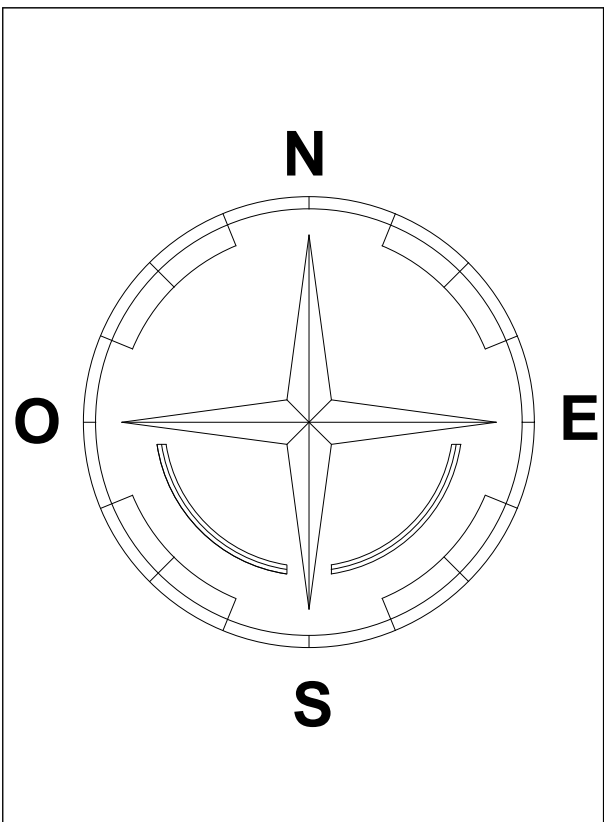


DETAIL #1

SCALE 1:20



Palestine Polytechnic University  
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Civil & Architecture Department  
Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Ground & First slab layout

SCALE

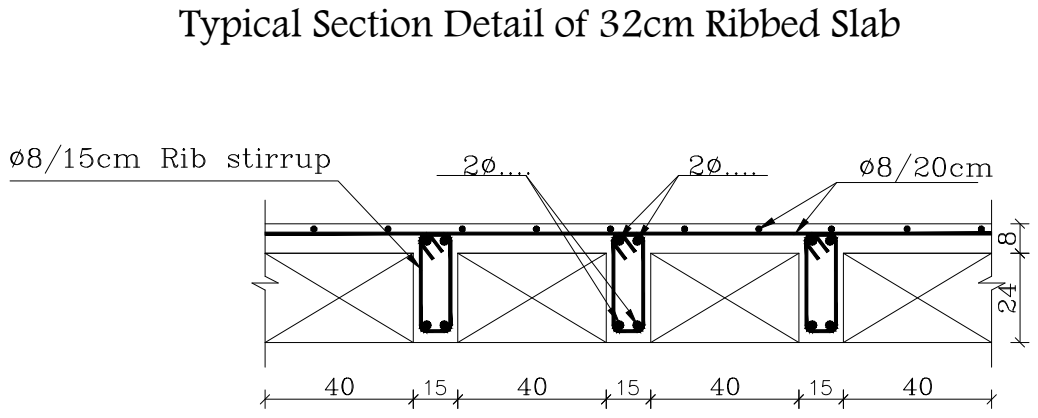
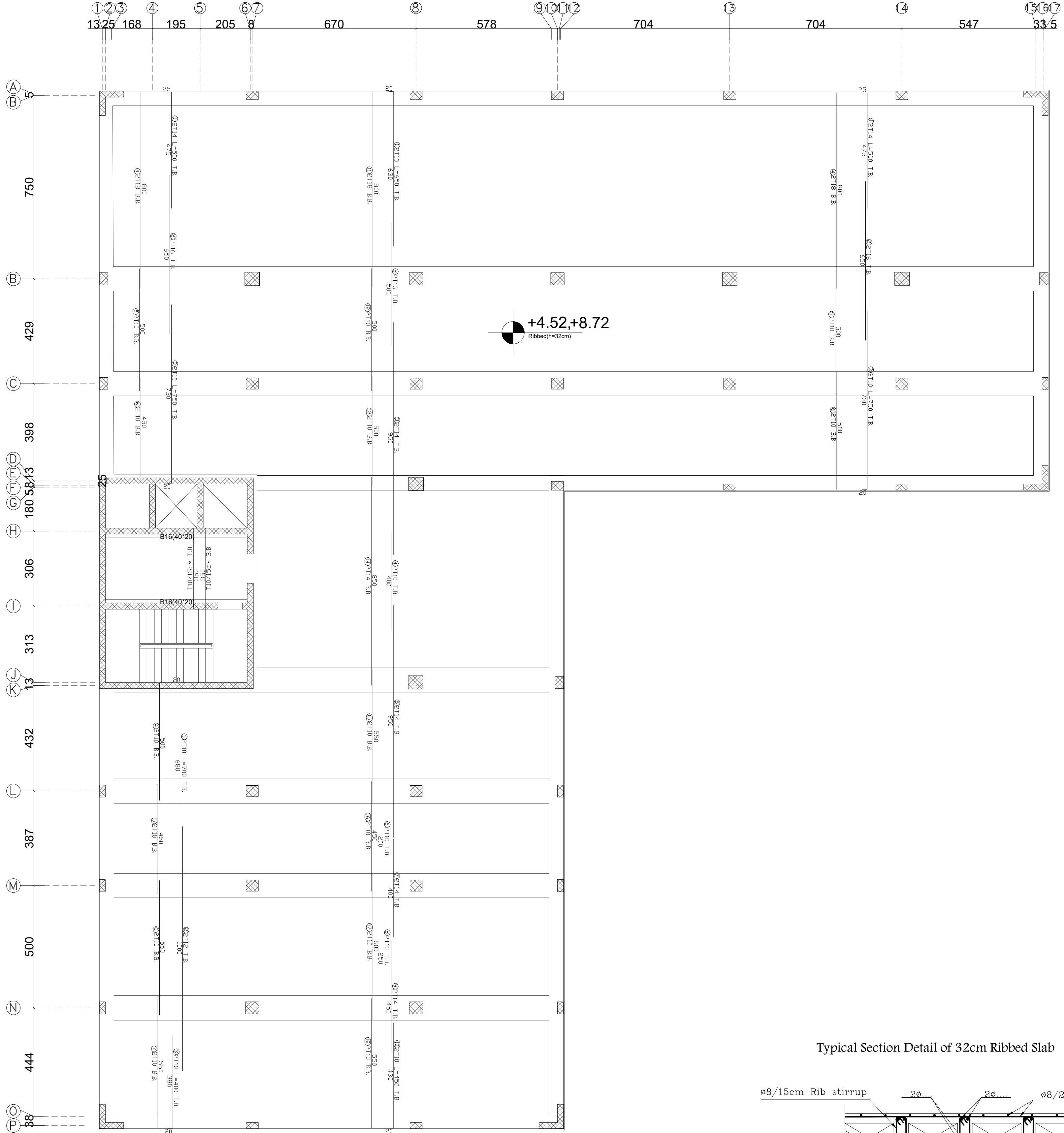
1:100

NO. OF DRAW

S43

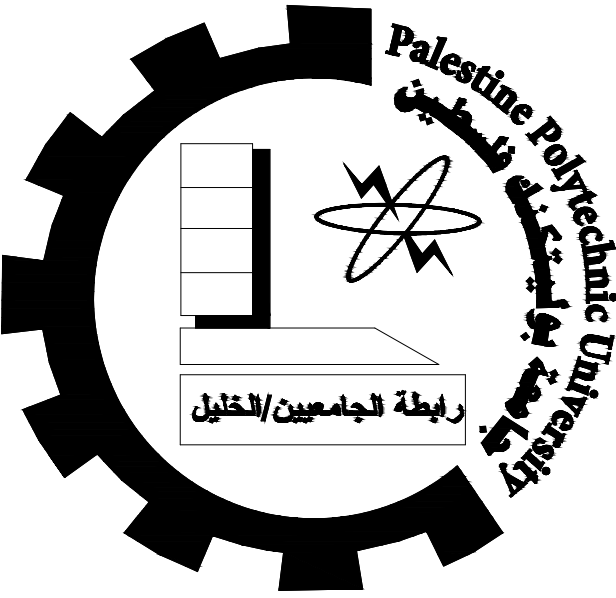


Building B

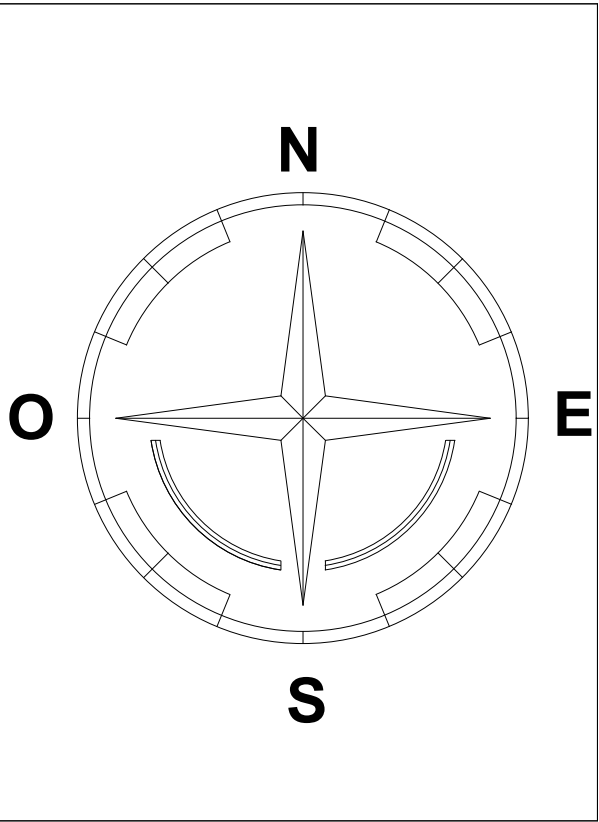


DETAIL #1

SCALE 1:20



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College of Engineering  
Civil & Architecture Department  
Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

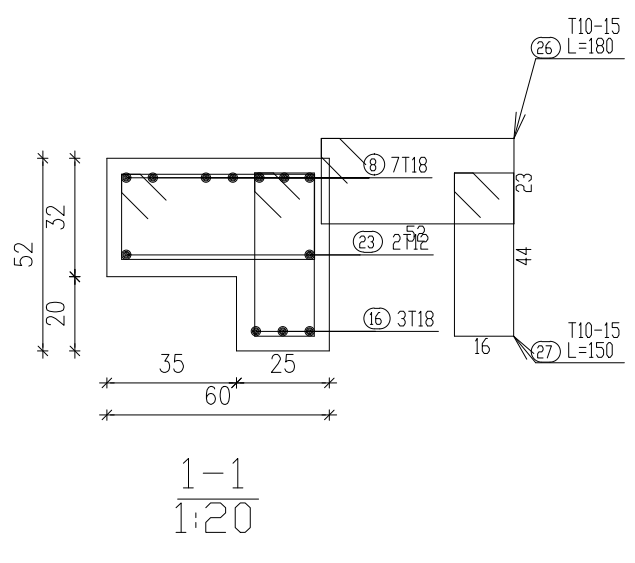
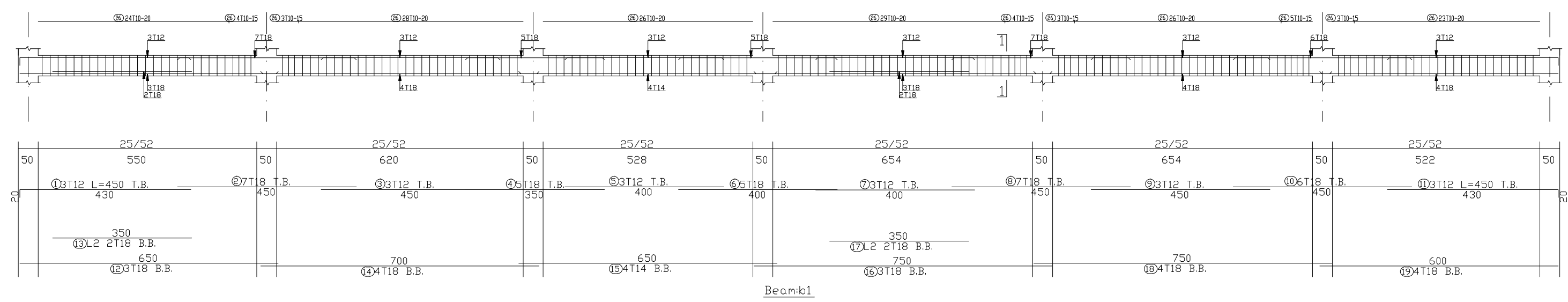
Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Ground& First slab details

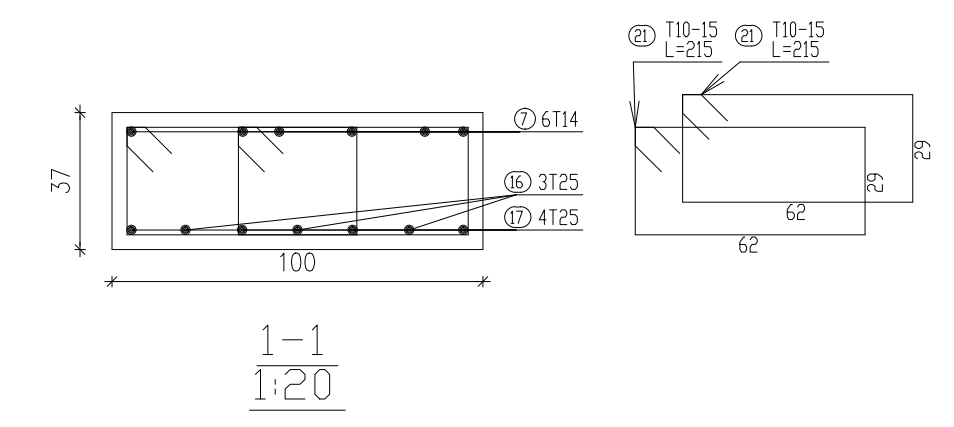
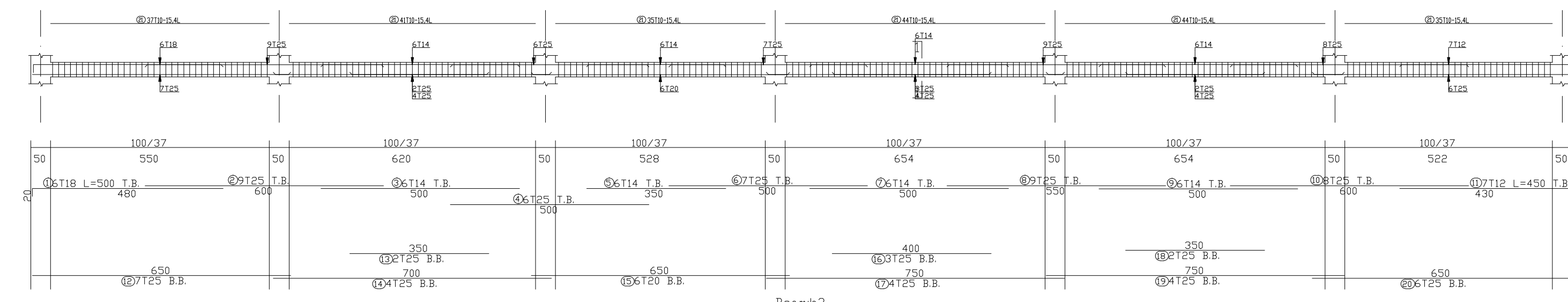
| SCALE | NO. OF DRAW |
|-------|-------------|
| 1:100 | S44         |



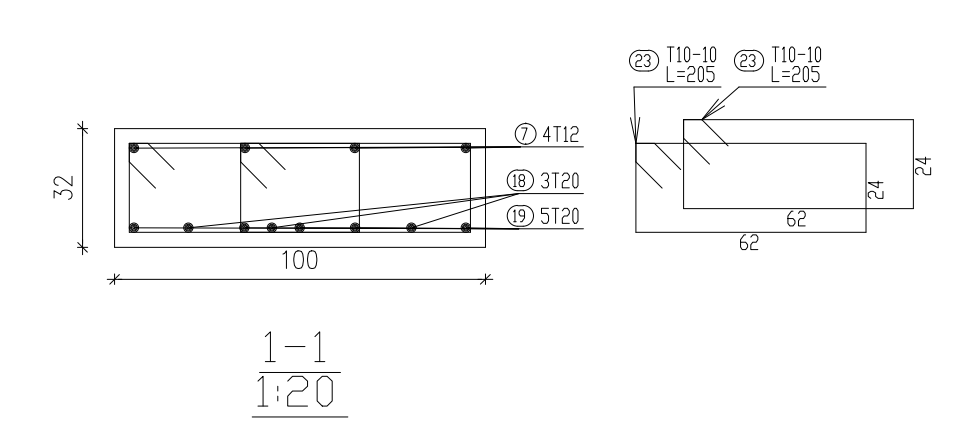
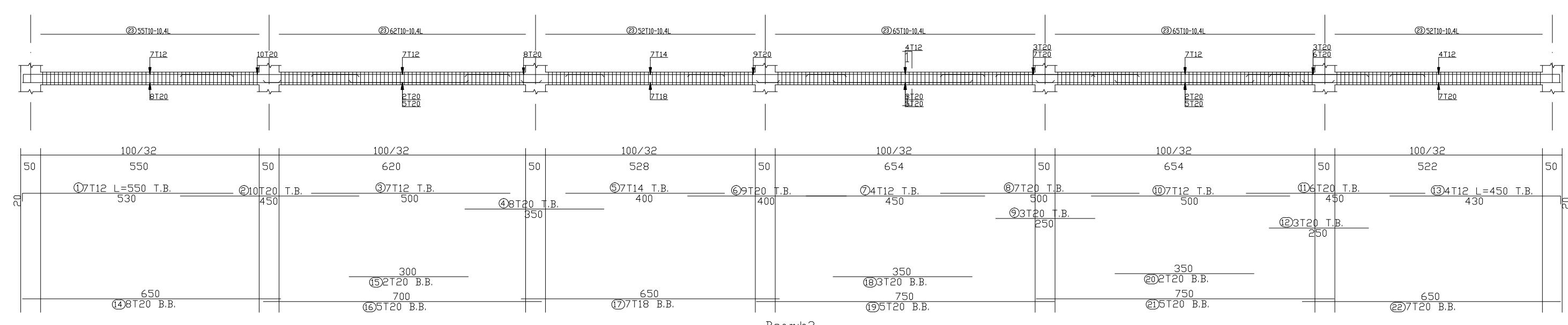
BEAM - B1 L(60/52)



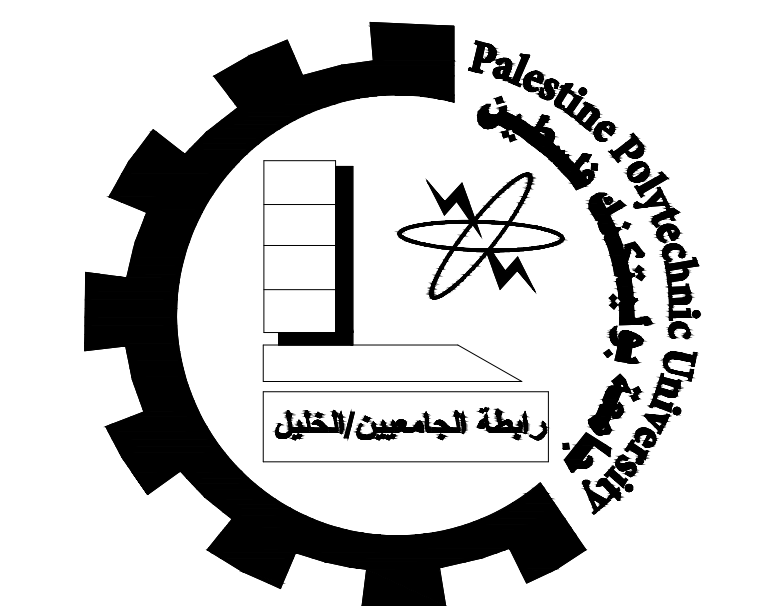
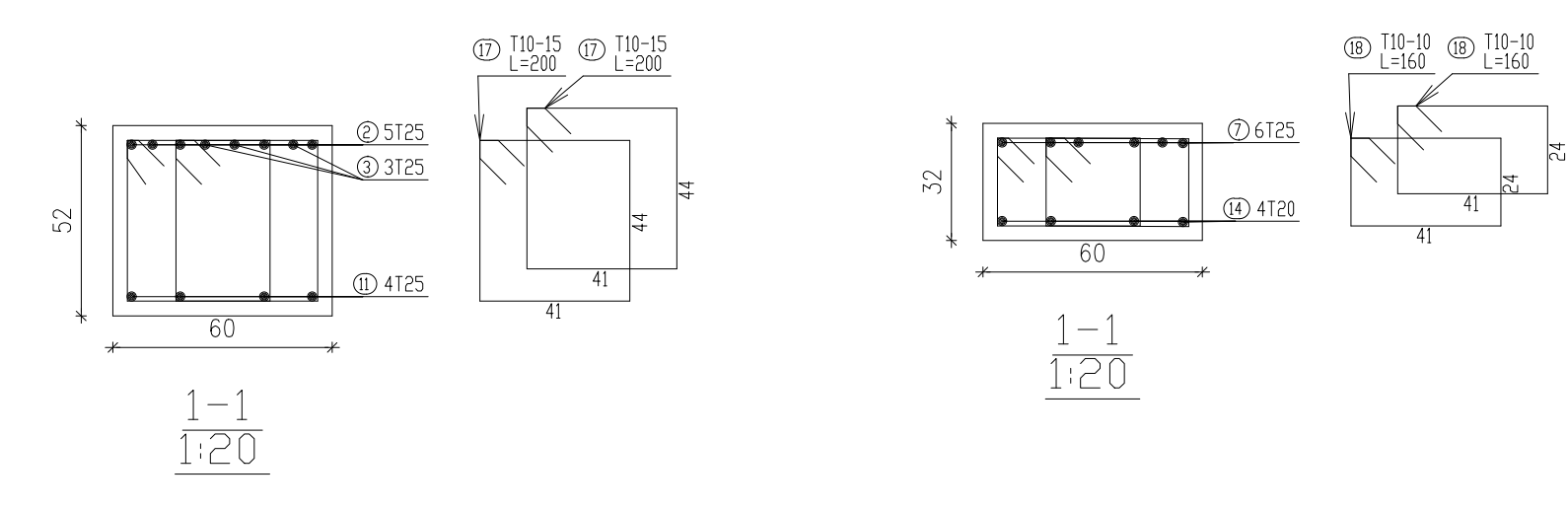
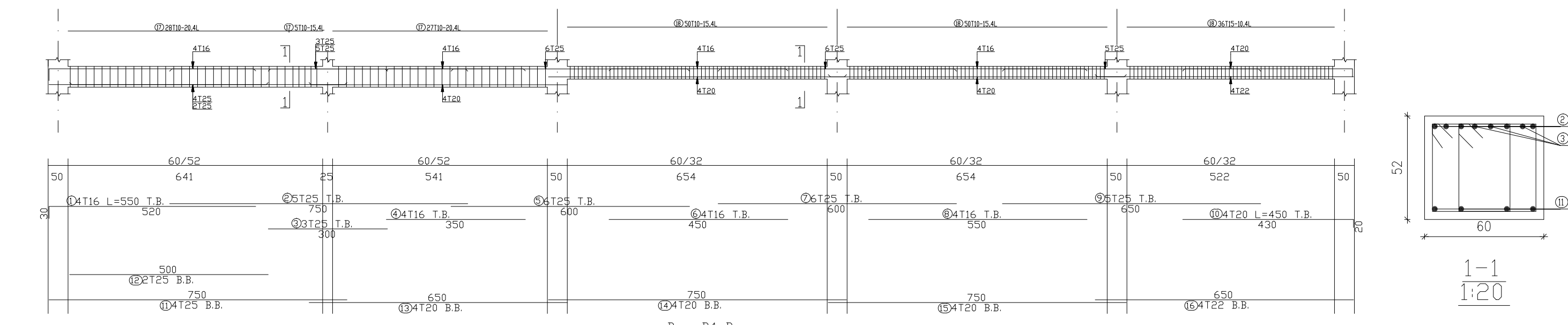
BEAM - B2 (100/37)



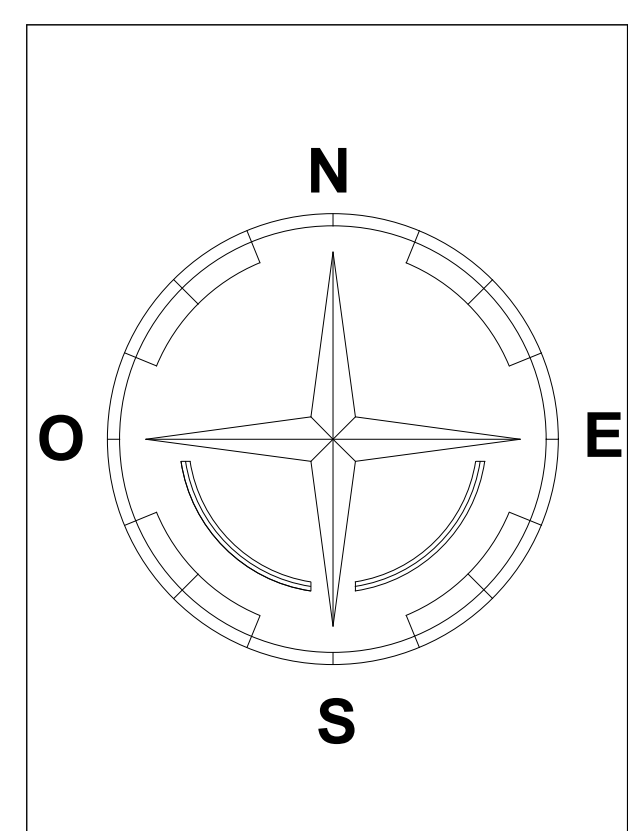
BEAM - B3 (100/32)



BEAM - B4 (60/32)



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Project: Office Building

Supervisor: ENG. Hamdi Ideas

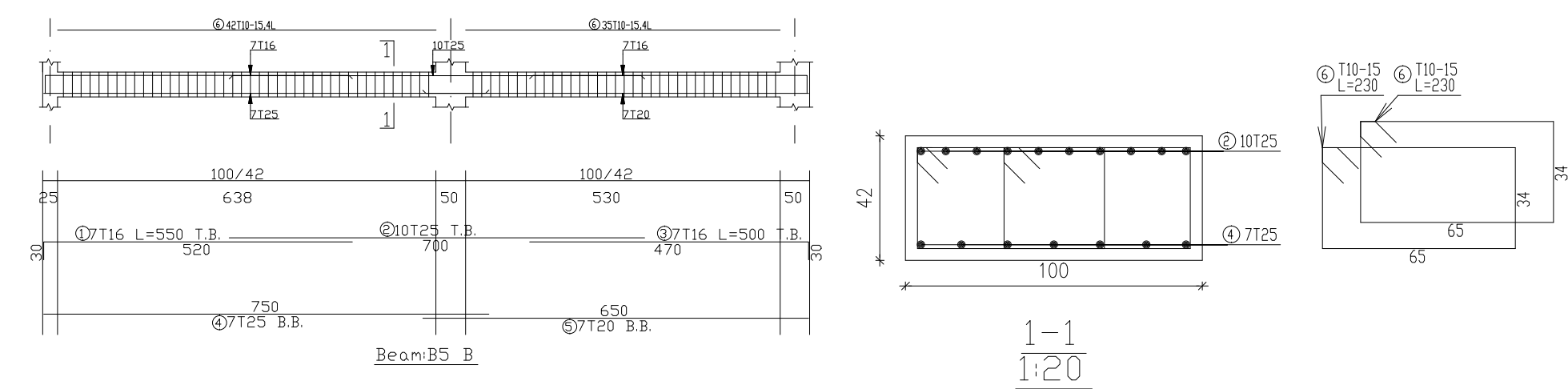
Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Ground&First beams details

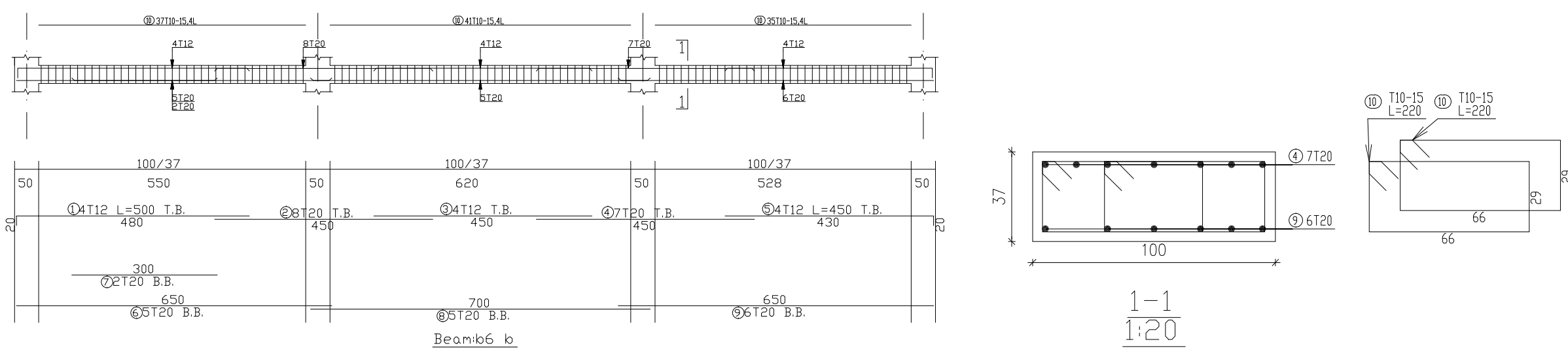
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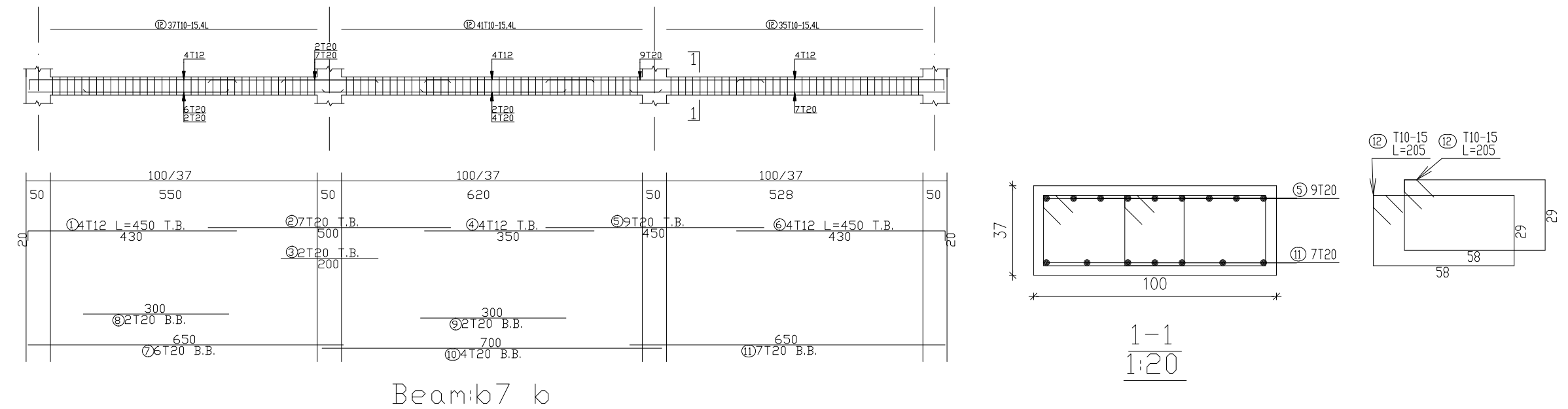
BEAM - B5 (100/42)



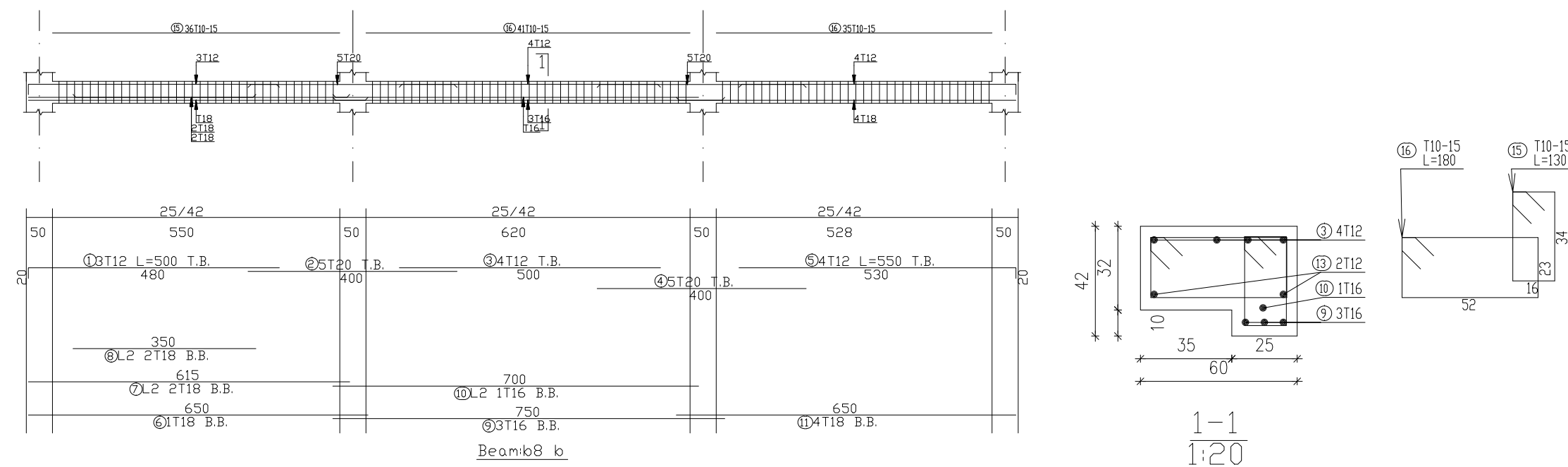
BEAM - B6 (100/37)



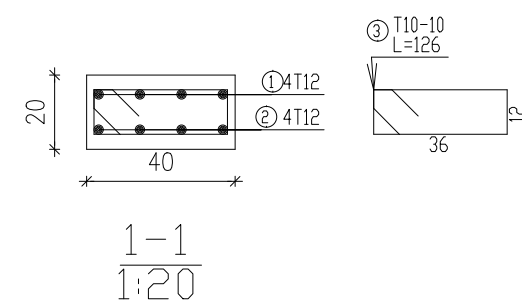
BEAM - B7 (100/37)



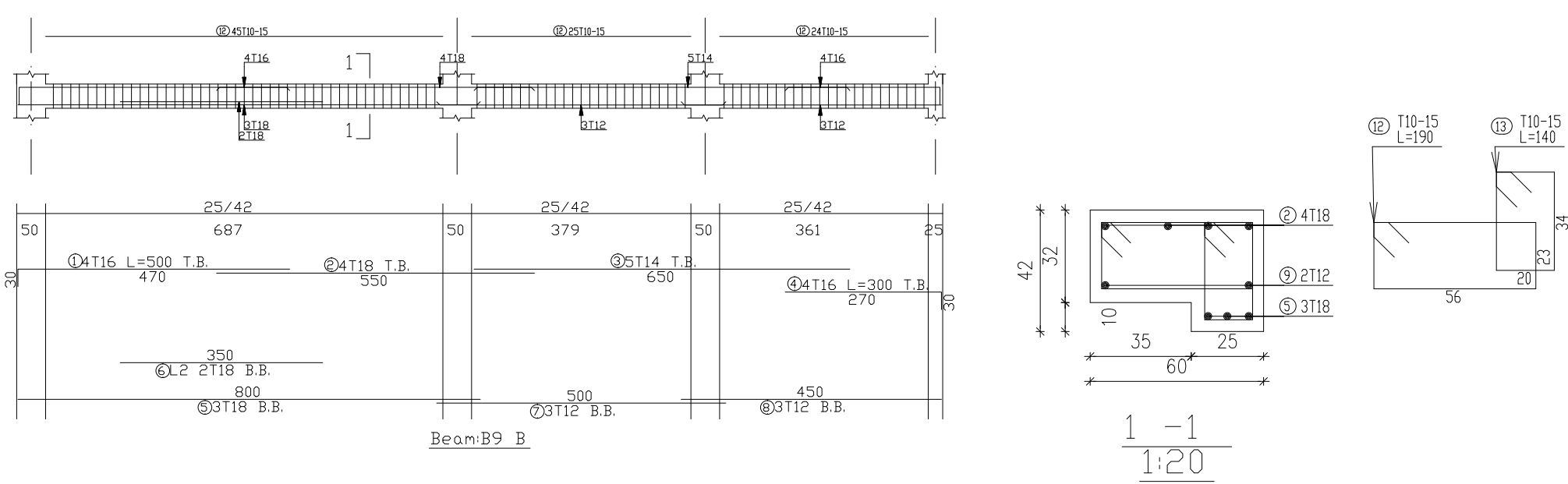
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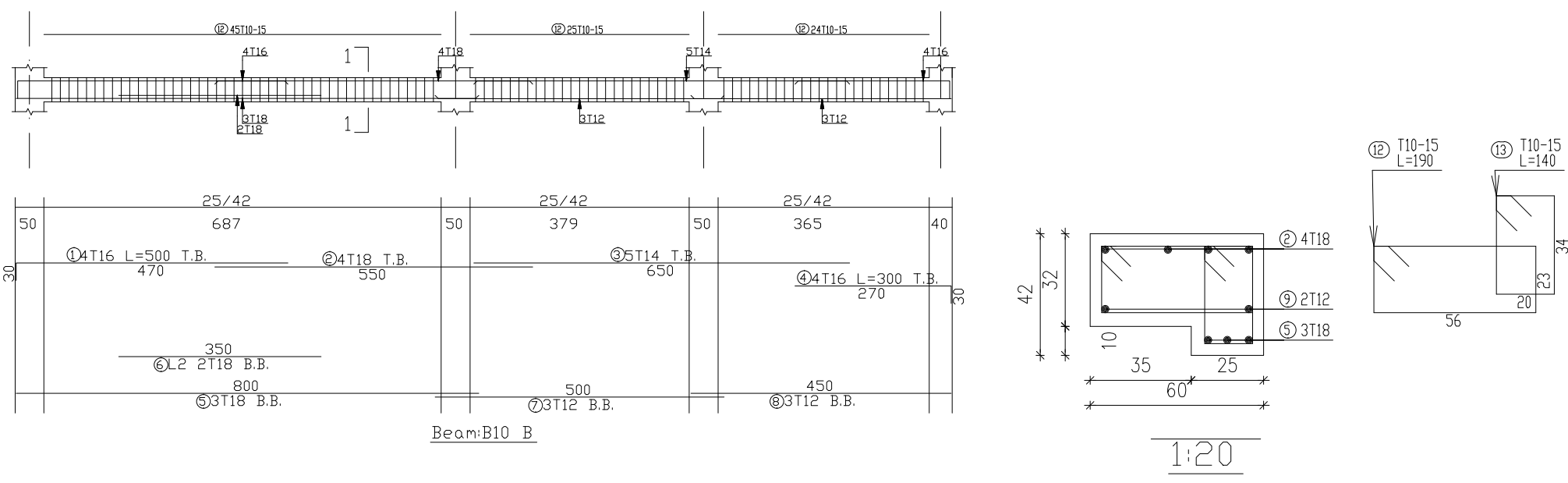
BEAM - B15 (40/20)



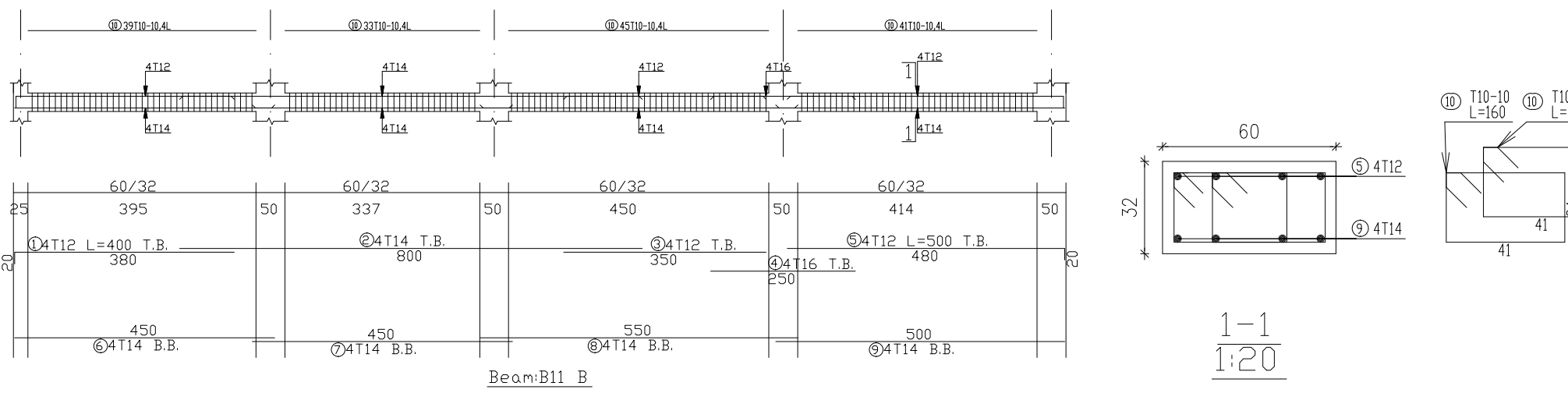
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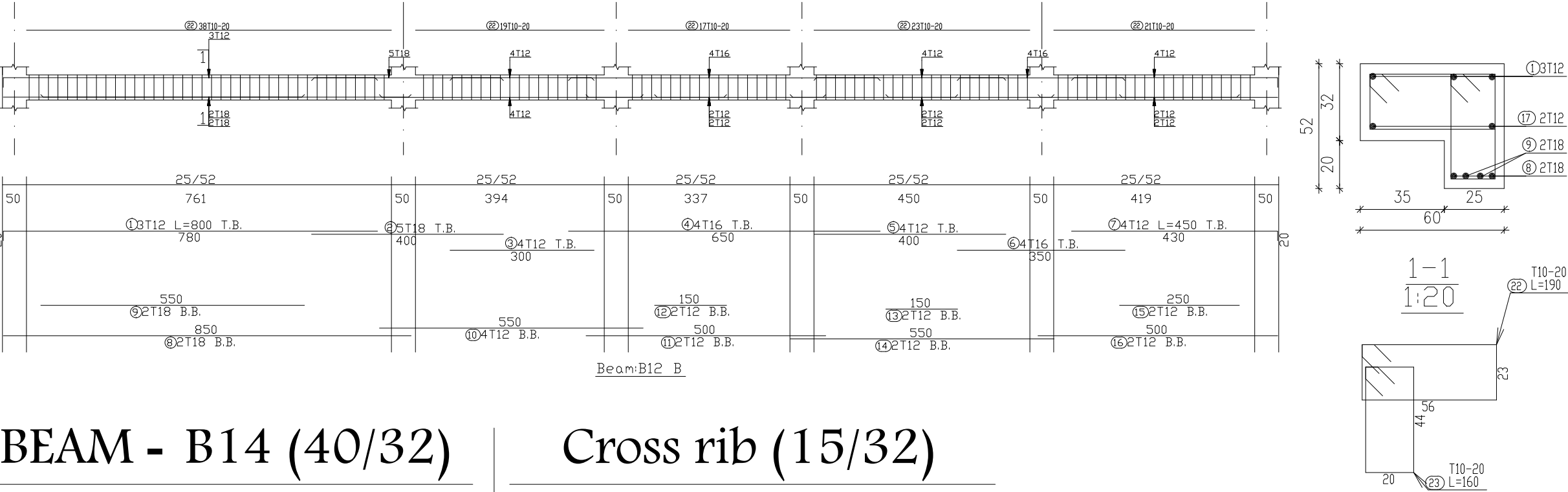
BEAM - B10 L(60/42)



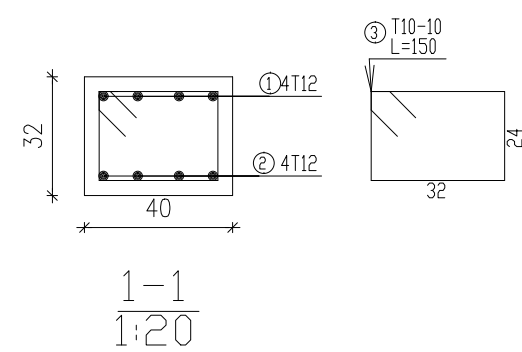
BEAM - B11 L(60/42)



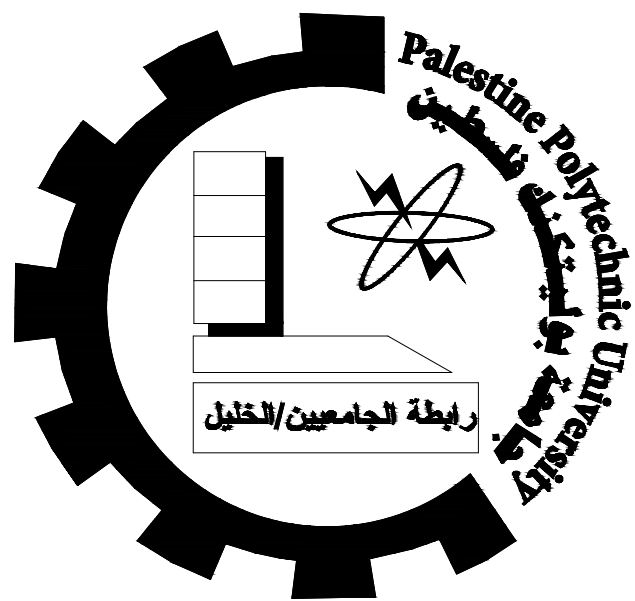
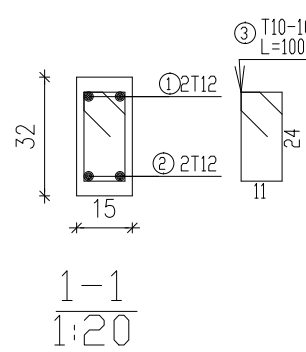
BEAM - B12 L(60/52)



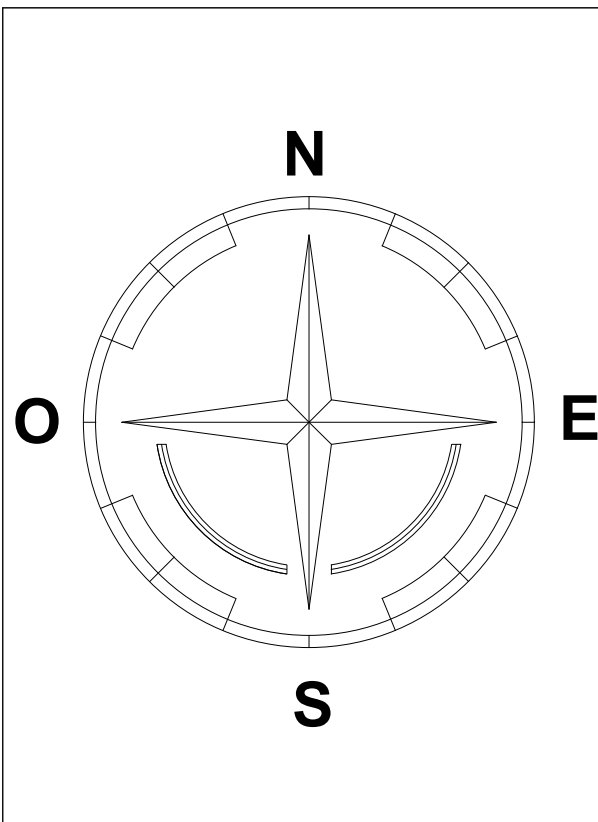
BEAM - B14 (40/32)



Cross rib (15/32)



Palestine Polytechnic University  
College of Engineering  
Civil & Architecture Department  
Civil Engineering



Project: Office Building

Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
Ground&First beams details

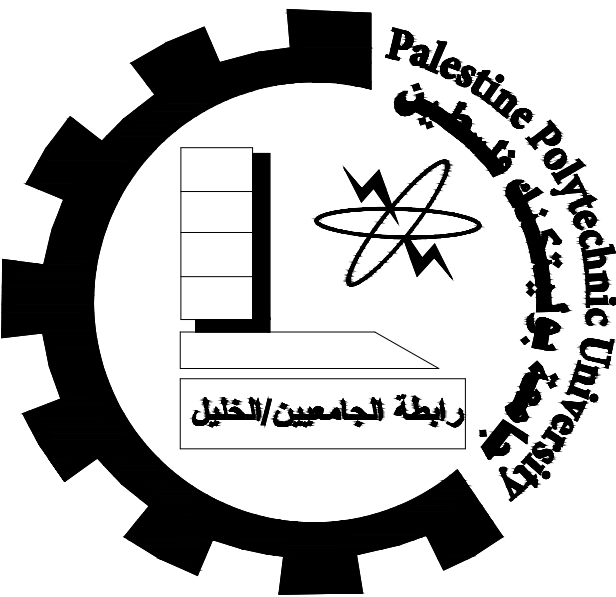
SCALE

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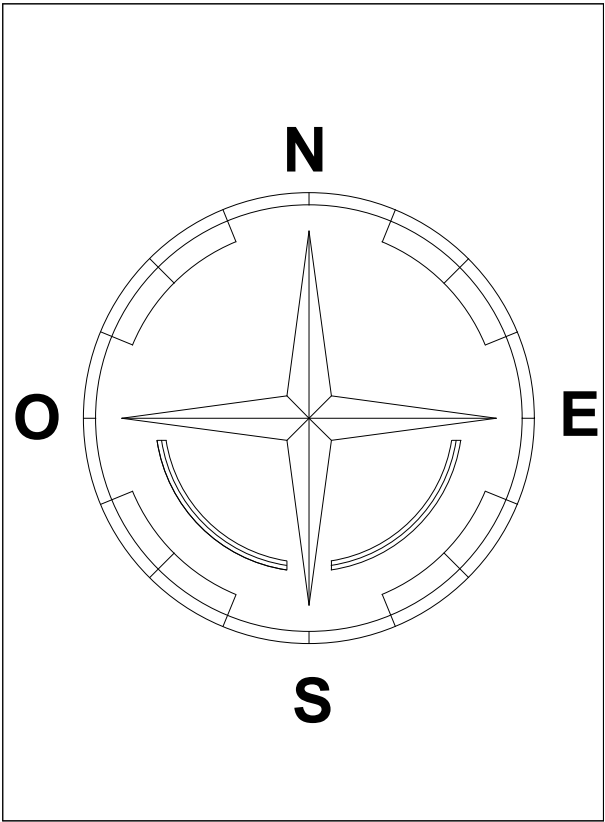
NO. OF DRAW

S46





Palestine Polytechnic University  
College of Engineering  
Civil & Architecture Department  
Civil Engineering



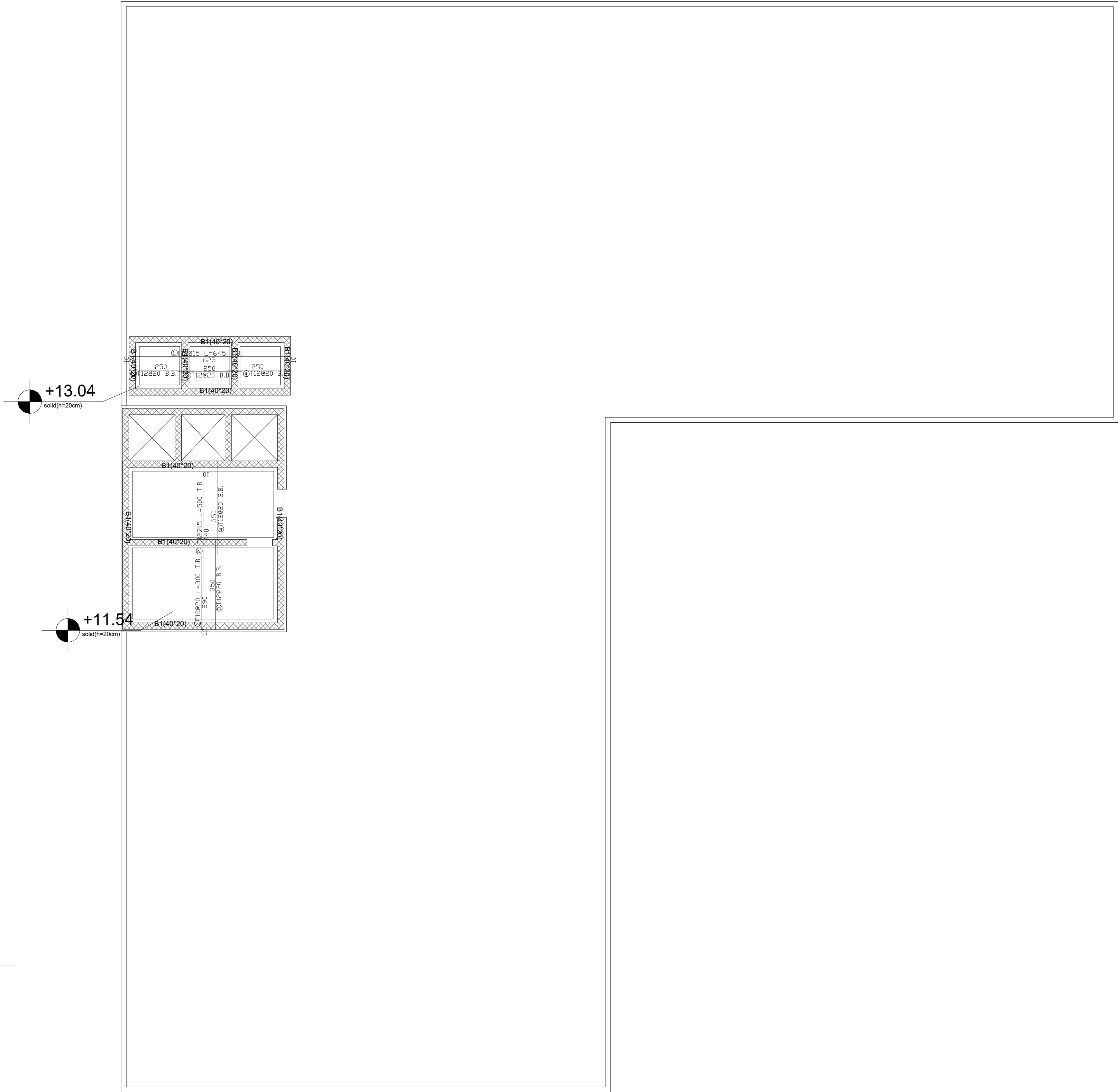
Project: Office Building

Supervisor: ENG. Hamdi Ideas

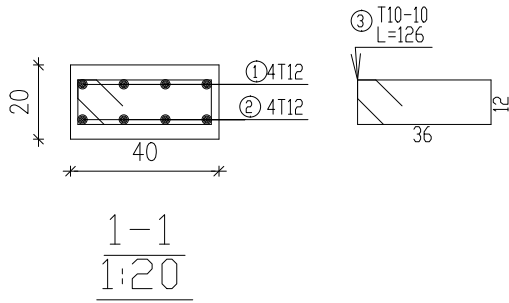
Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:  
staircase slab layout

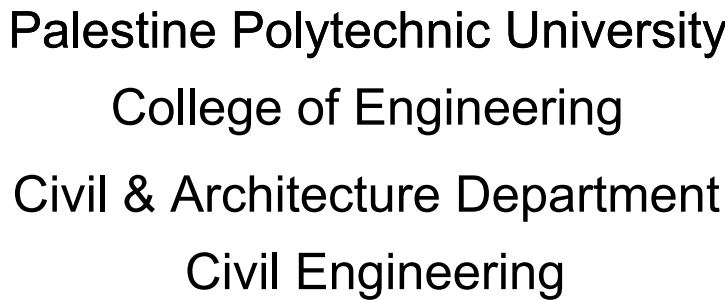
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|-------|-------------|
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BEAM - B1 (40/20)







Supervisor: ENG. Hamdi Ideas

Done By:  
Ahmad Shkair  
Ihab Farrah  
Ali Nasser  
Yousef Nasser

Drawing Title:

staircase details

|       |             |
|-------|-------------|
| SCALE | NO. OF DRAW |
| 1:100 | S48         |

