



Palestine Polytechnic University  
College of Engineering  
Civil & Arch. Eng Department  
Civil Engineering

Graduation Project

## STRUCTURAL DESIGN OF A RESIDENTIAL BUILDING

### APPENDICES A&B ARCHITECTURAL & STRUCTURAL DRAWINGS

Project Team  
HALA ALQADI & MAI HASHLAMOUN

Supervisor  
DR. NAFITH NASSEREDDIN

— ❁ —  
DECEMBER 2020



## LIST OF DRAWINGS

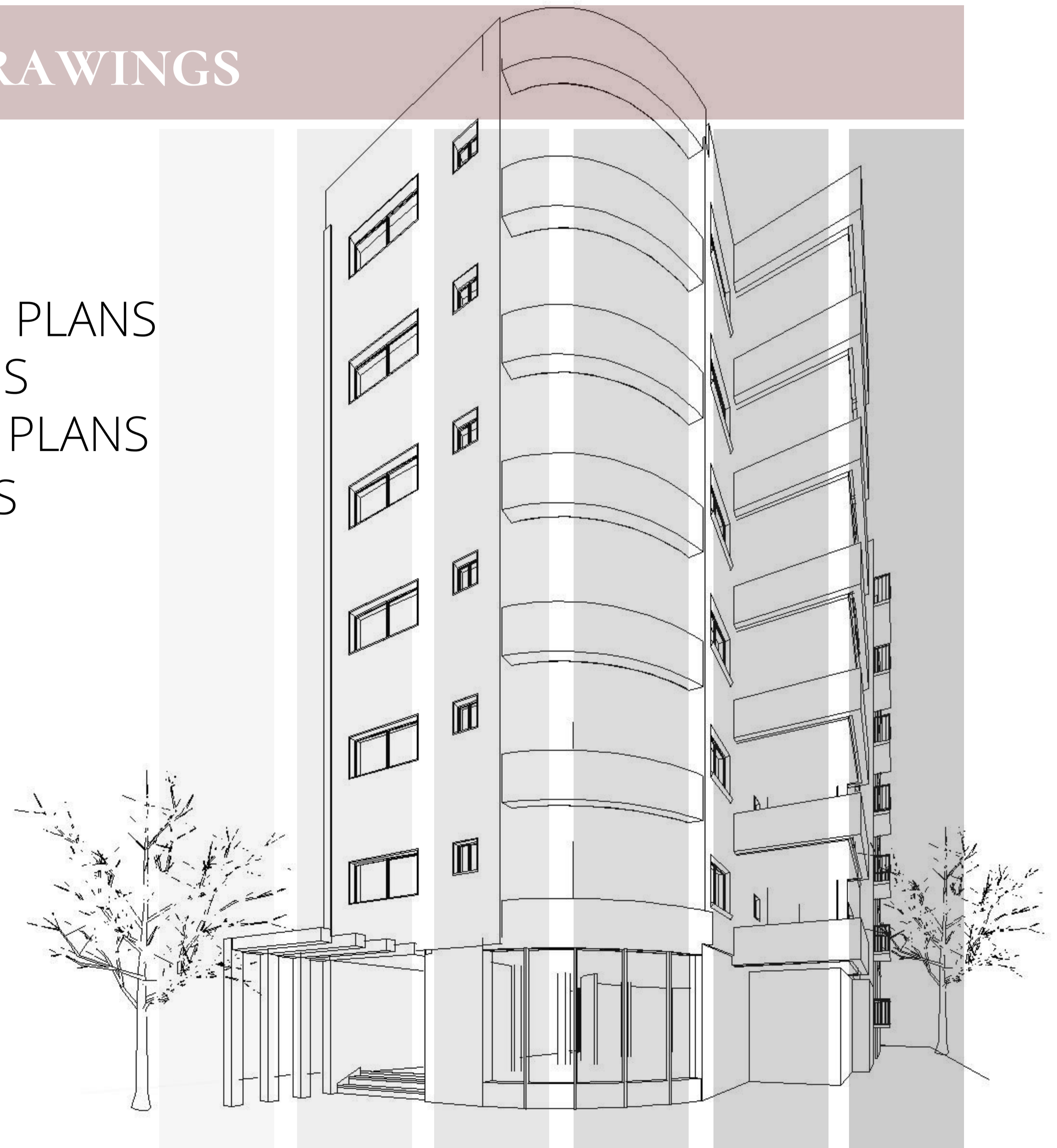
ARCHITECTURAL DRAWINGS		STRUCTURAL DRAWINGS	
DRW. NO.	DRAWING TITLE	DRW. NO.	DRAWING TITLE
A 00	SITE PLAN	S00	GENERAL NOTES
A 01	BASEMENT & GROUND FLOOR DIMENSION PLANS	S01	COLUMNS & FOOTING LAYOUT PLAN
A 02	TYPICAL FLOOR & ROOF DIMENSION PLANS	S02-S05	FOOTING DETAILS
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A 04	TYPICAL FLOOR & ROOF FURNITURE PLANS	S07	BASEMENT SLAB PLAN
A 05	NORTH EAST ELEVATION	S08	GROUND & TYPICAL SLAB PLAN
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A 08	SECTION A-A	S12 - S21	BEAMS DETAILING
A 09	SECTION B-B	S22	STAIRS DETAILS

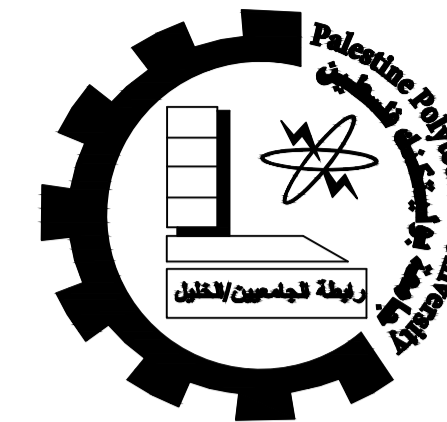




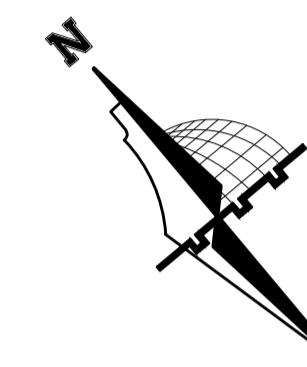
## APPENDIX (A) : ARCHITECTURAL DRAWINGS

- A00 : SITE PLAN
- A01 : BASEMENT & GROUND FLOOR DIMENSION PLANS
- A02 : TYPICAL FLOOR & ROOF DIMENSION PLANS
- A03 : BASEMENT & GROUND FLOOR FURNITURE PLANS
- A04 : TYPICAL FLOOR & ROOF FURNITURE PLANS
- A05 : NORTH EAST ELEVATION
- A06 : SOUTH WEST ELEVATION
- A07 : SOUTH EAST & NORTH WEST ELEVATIONS
- A08 : SECTION A-A
- A09 : SECTION B-B





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NOTES:

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Graduation Project  
"Structural Design  
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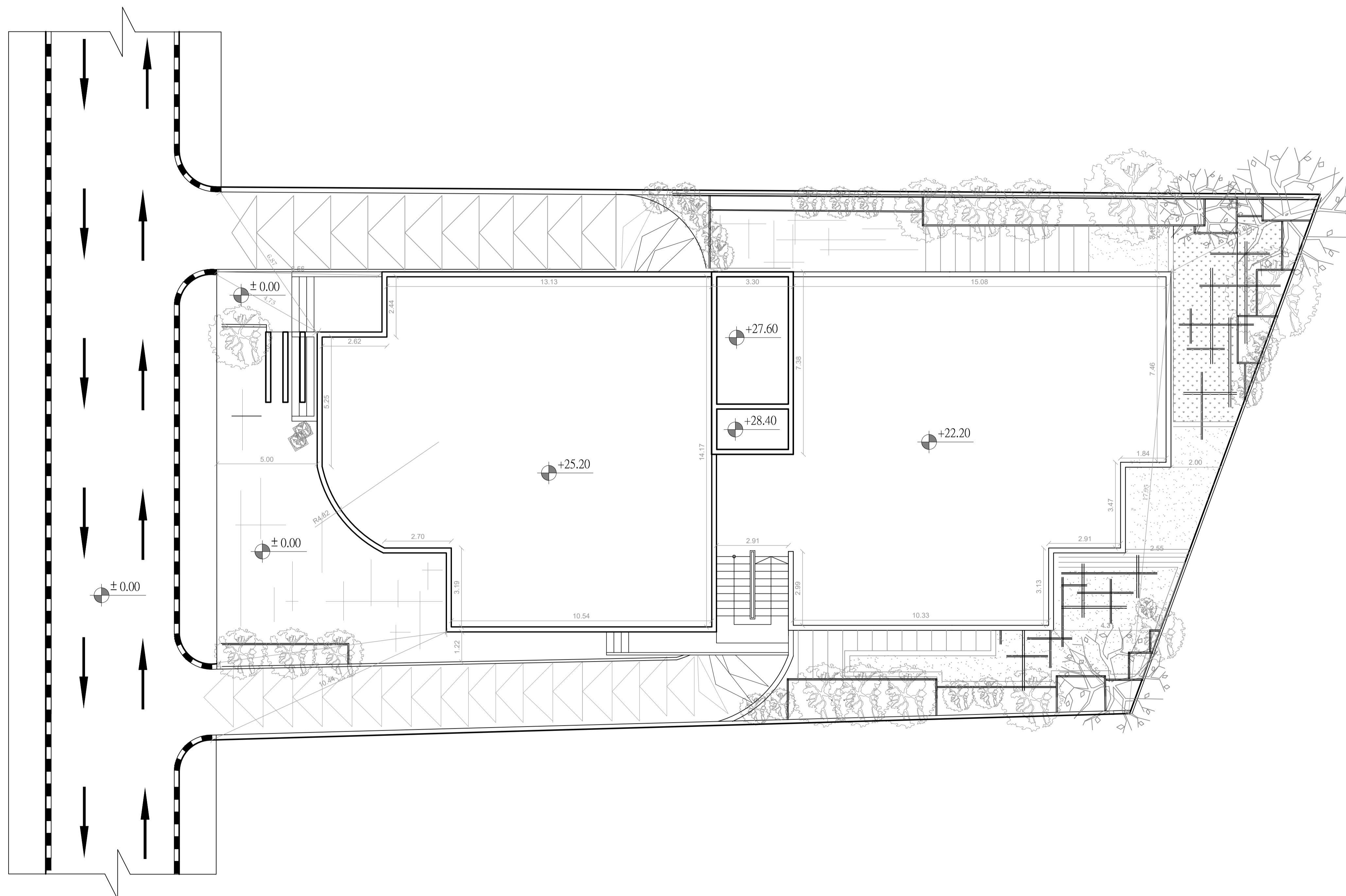
Project Team  
Hala Al-Qadi  
Mai Hashlamoun

Drawing Title  
SITE PLAN

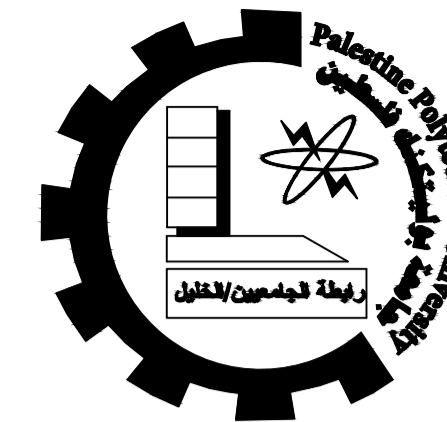
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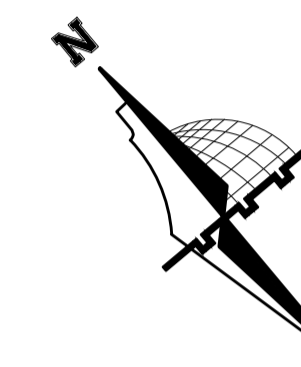
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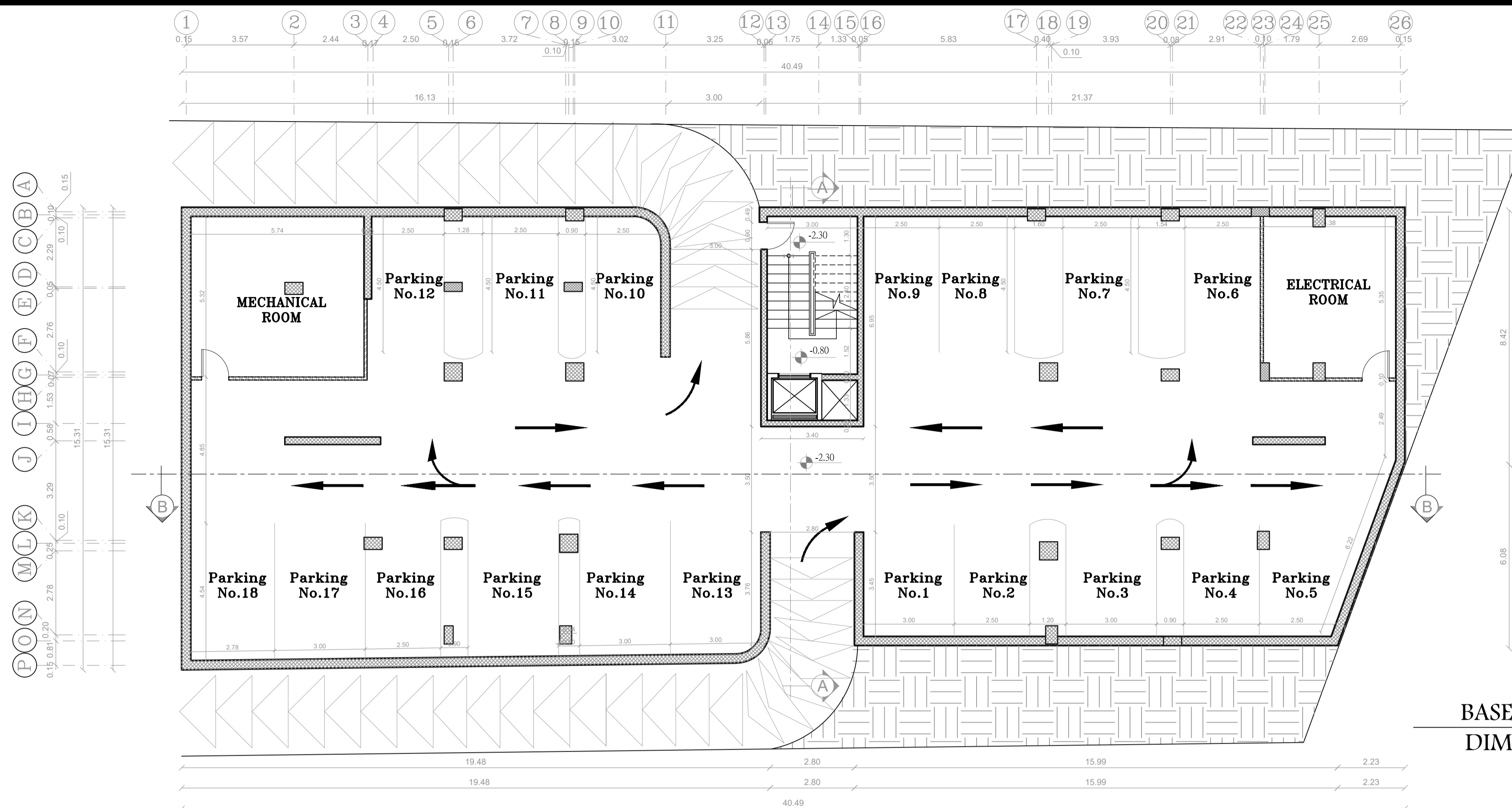
Project Team  
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Drawing Title  
 BASEMENT & GROUND FLOOR  
 DIMENSION PLANS

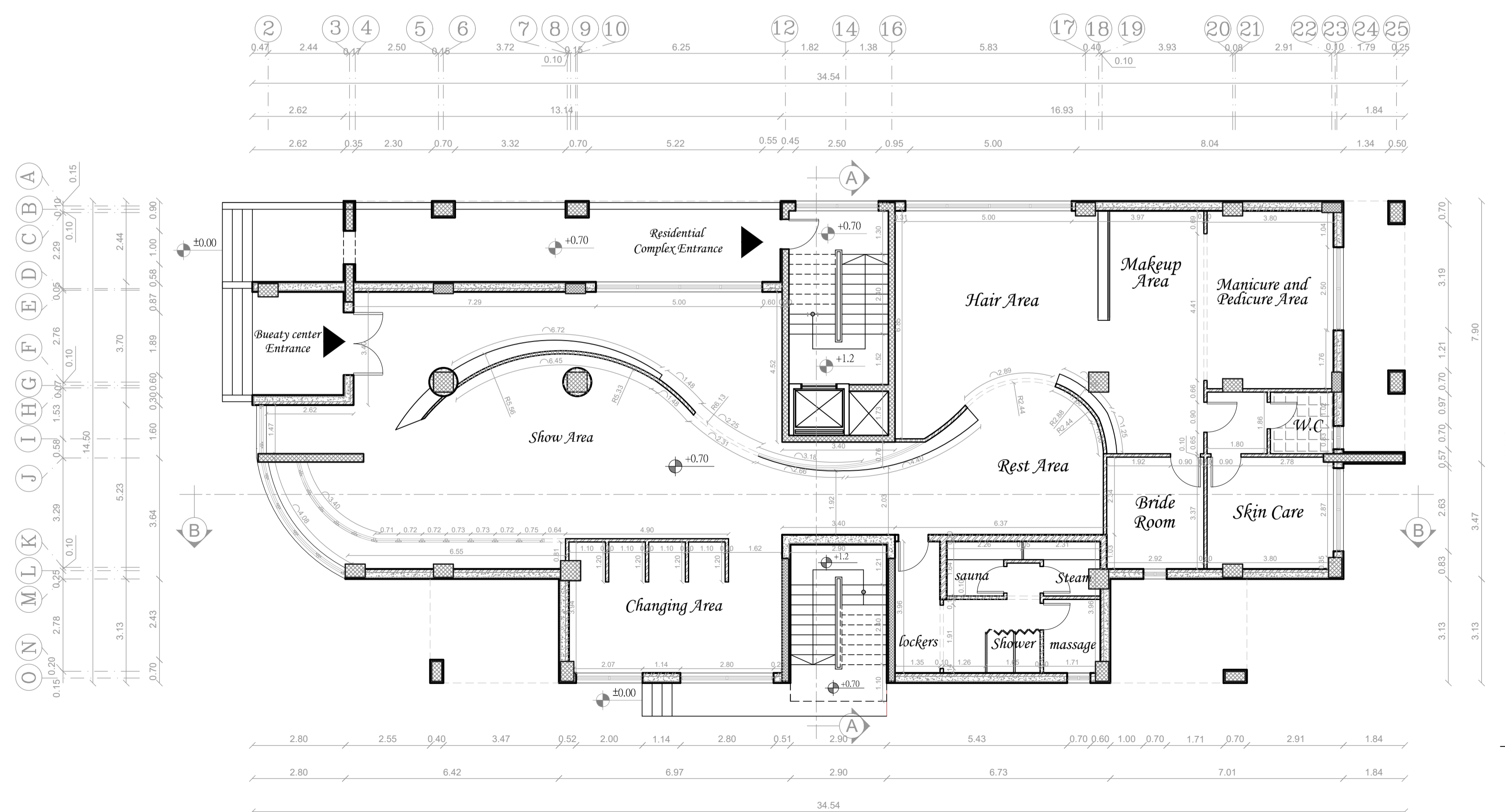
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 A 01

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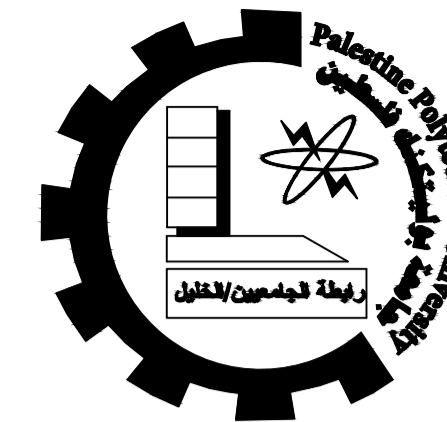


BASEMENT FLOOR  
 DIMENSION PLAN

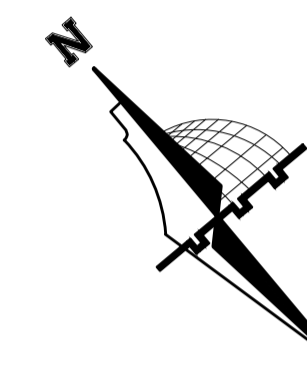


GROUND FLOOR  
 DIMENSION PLAN





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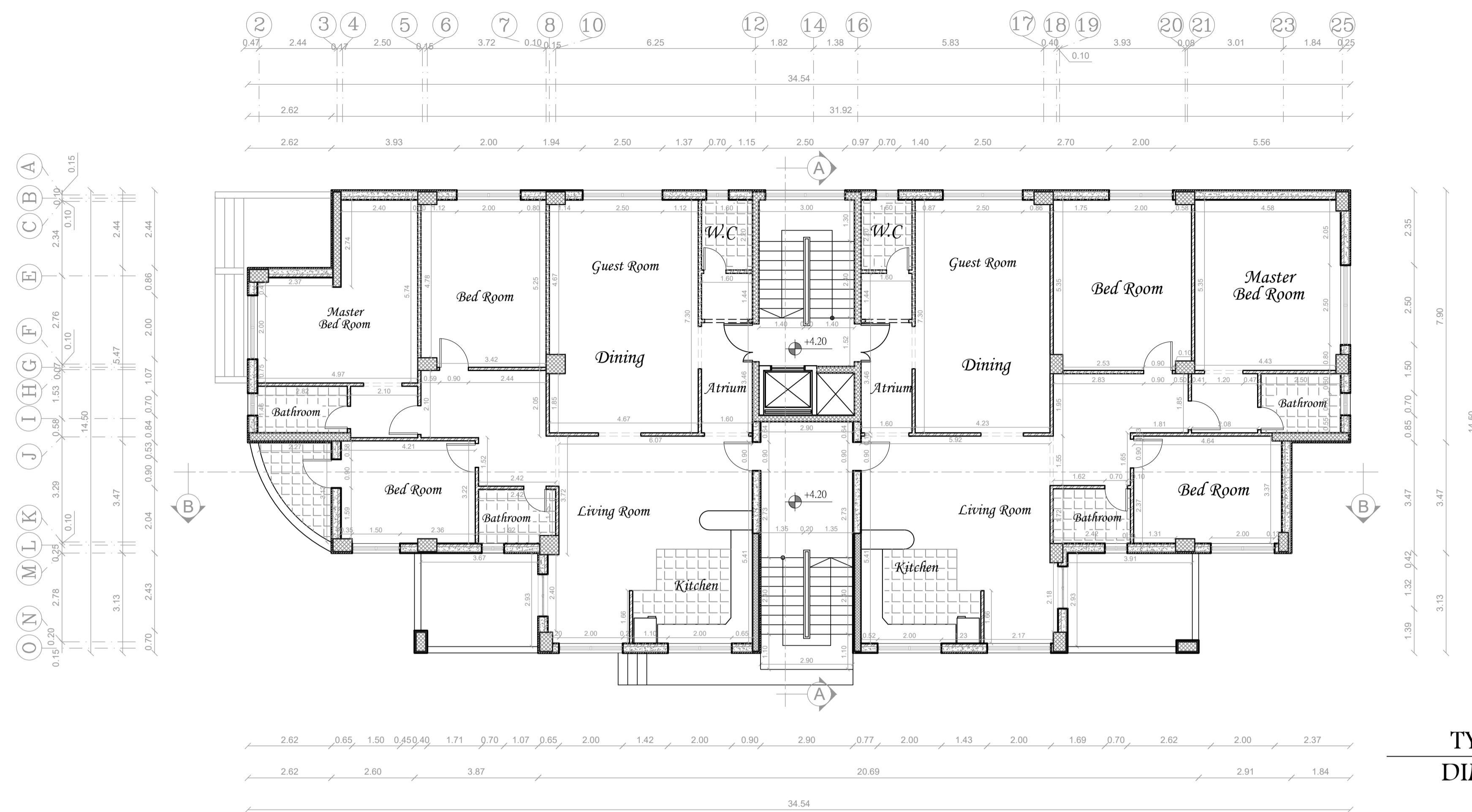
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 Mai Hashlamoun

Drawing Title  
 TYPICAL FLOOR & ROOF  
 DIMENSION PLANS

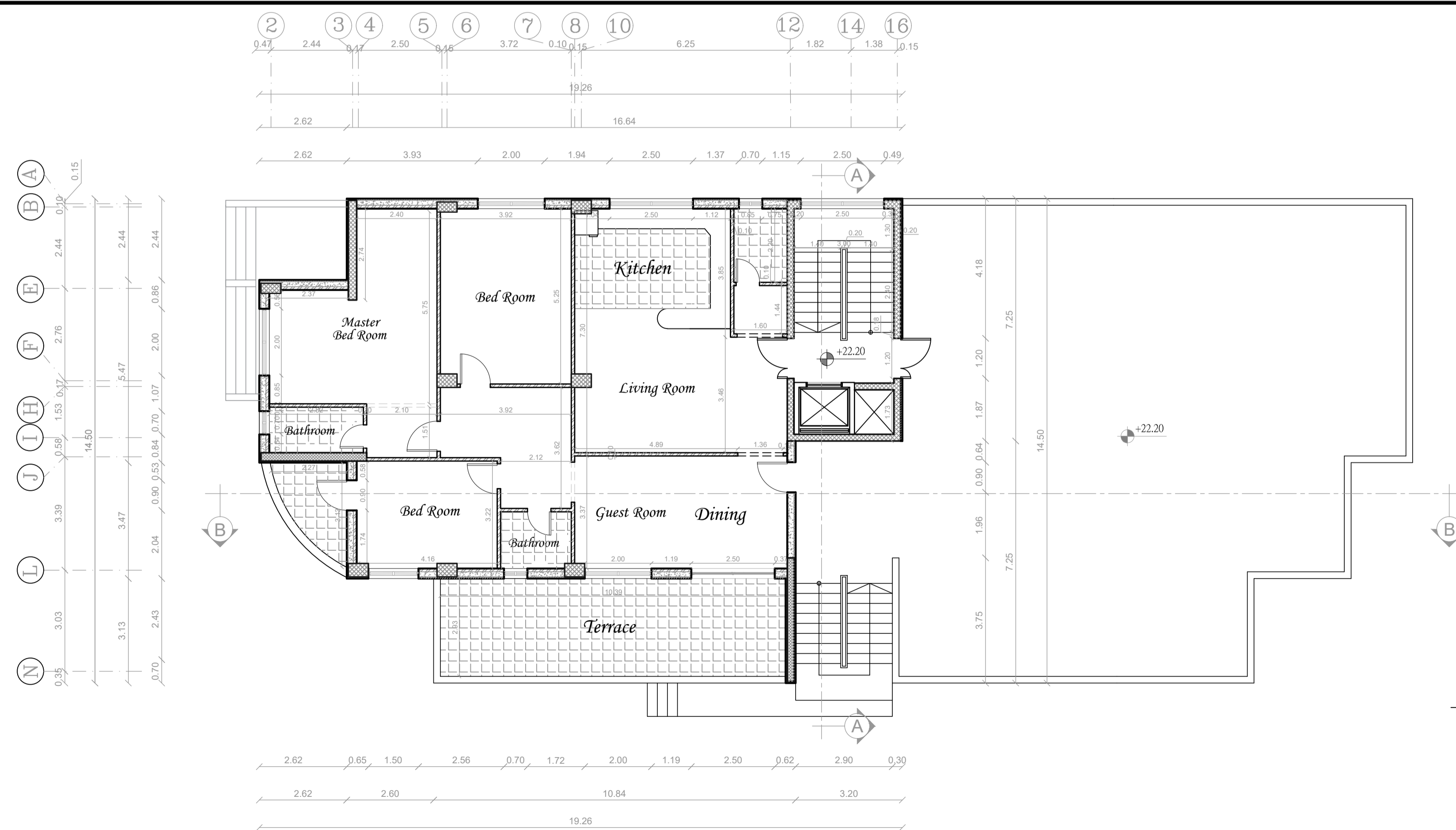
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 A 02

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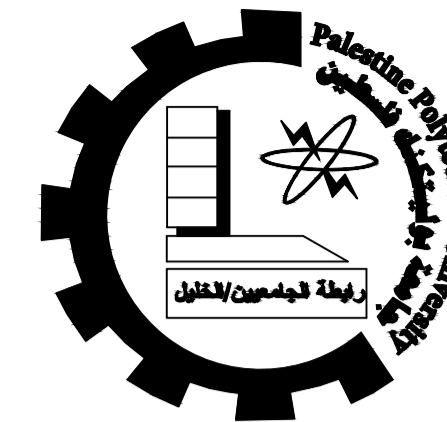


TYPICAL FLOOR  
 DIMENSION PLAN

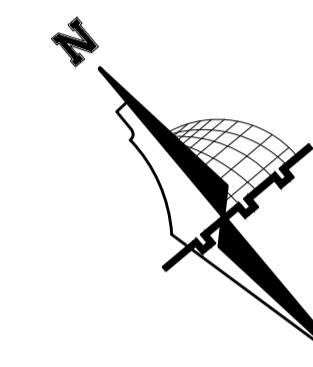


ROOF FLOOR  
 DIMENSION PLAN





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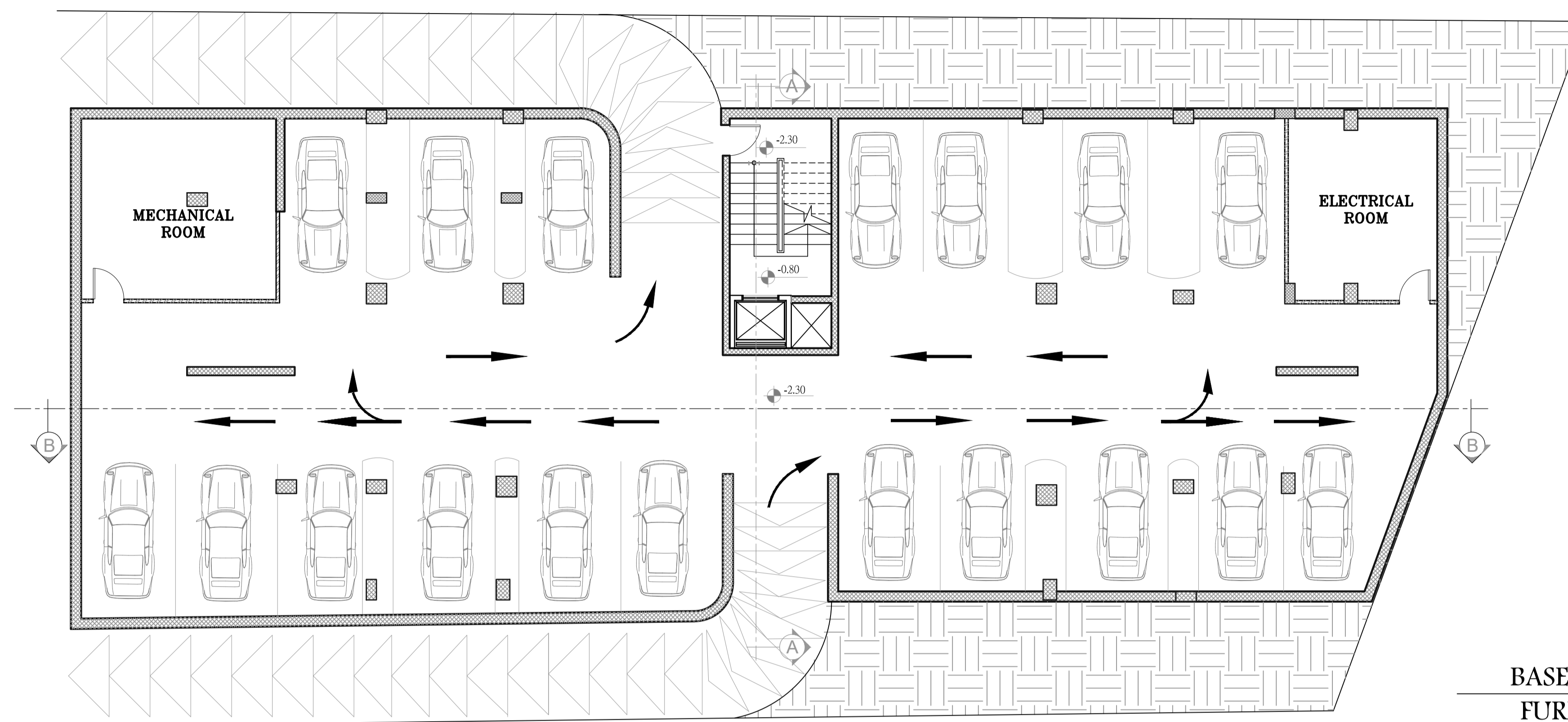
Project Team  
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Drawing Title  
BASEMENT & GROUND FLOOR  
FURNITURE PLANS

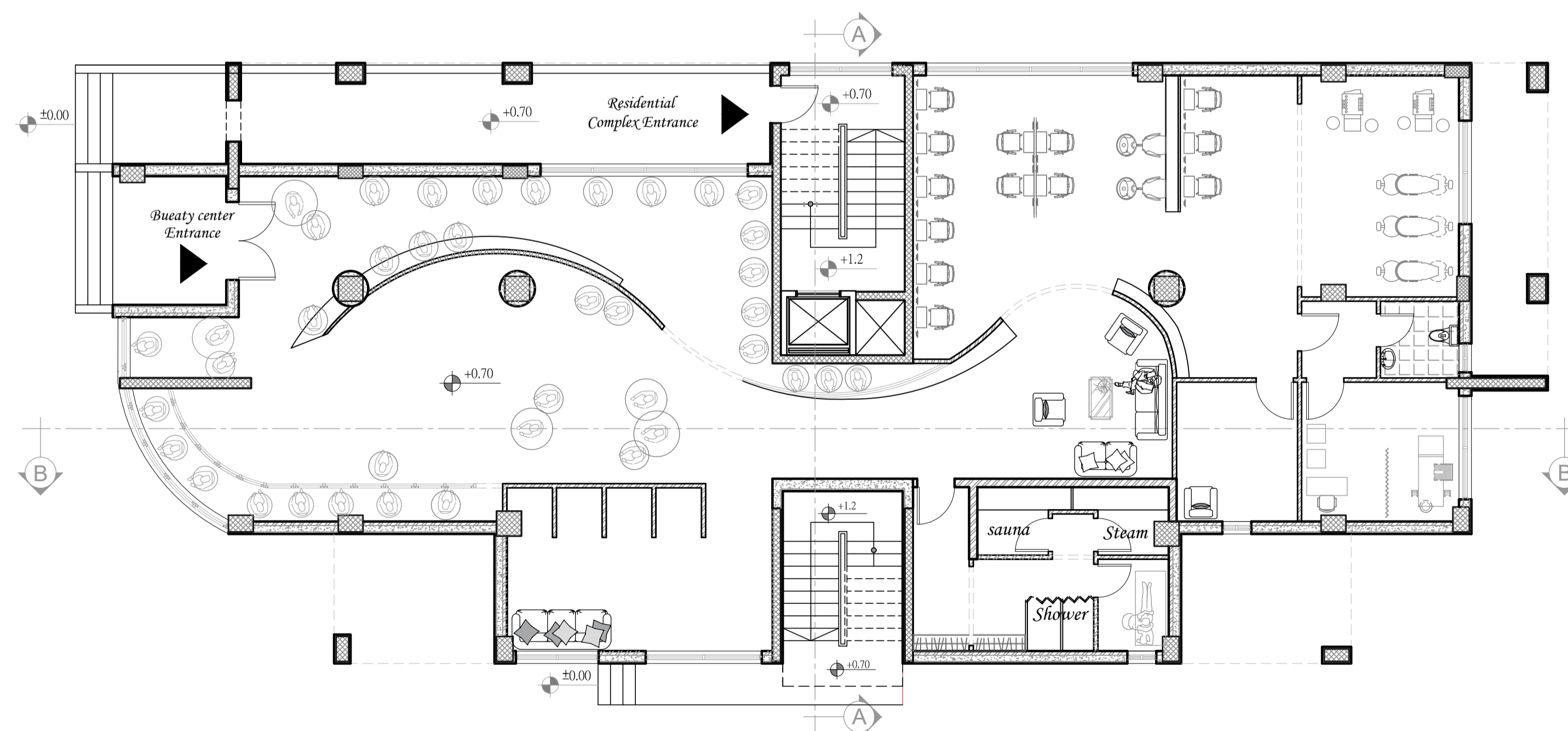
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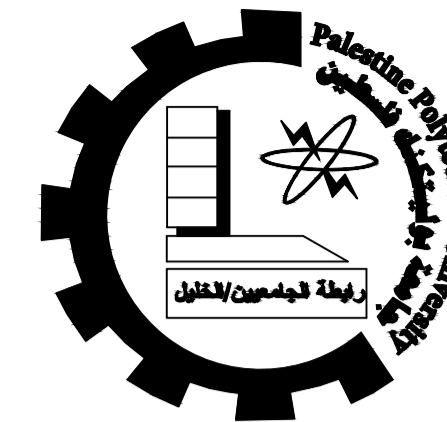


BASEMENT FLOOR  
FURNITURE PLAN

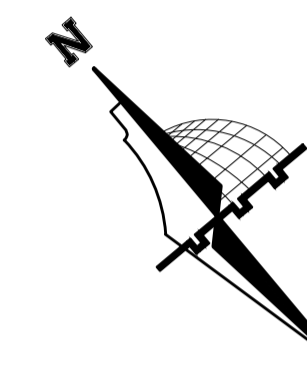


GROUND FLOOR  
FURNITURE PLAN





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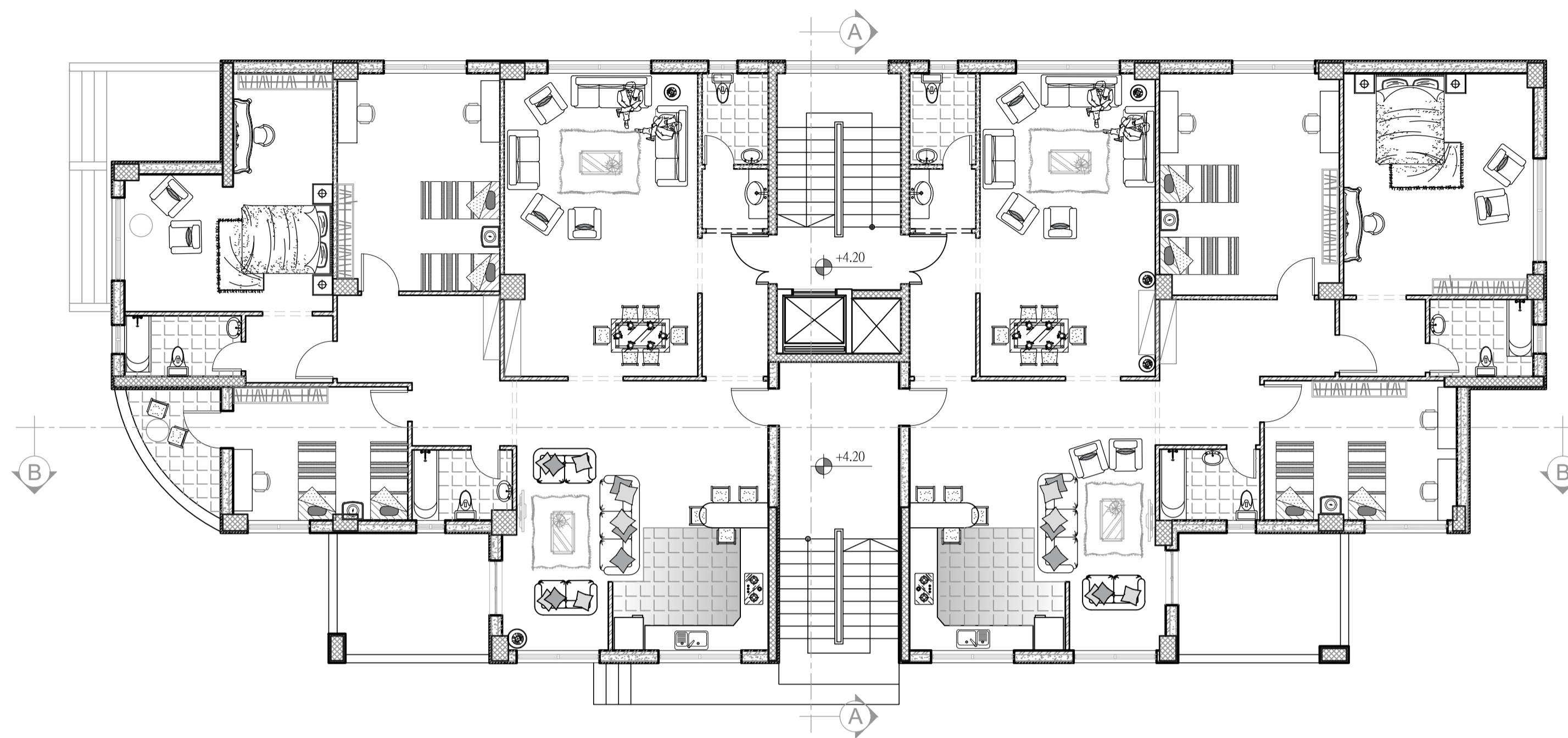
Project Team  
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Drawing Title  
TYPICAL FLOOR & ROOF  
FURNITURE PLANS

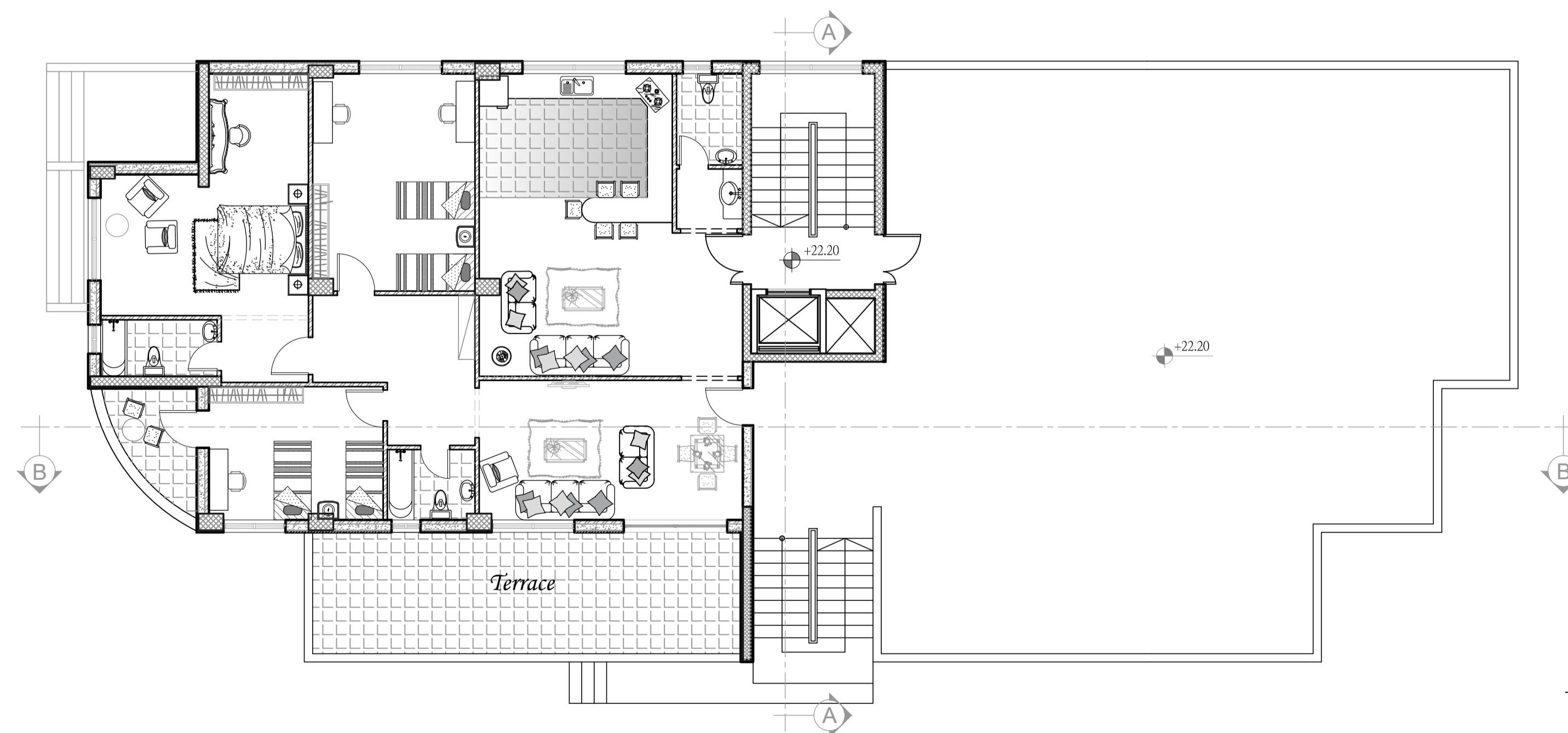
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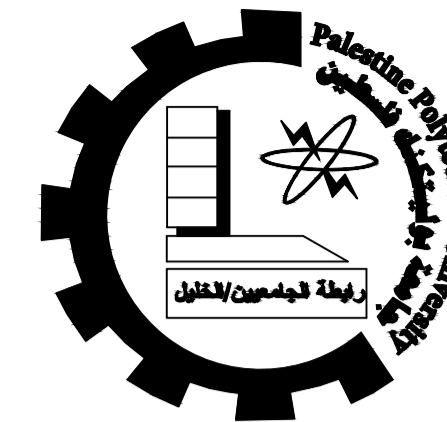


TYPICAL FLOOR  
FURNITURE PLAN

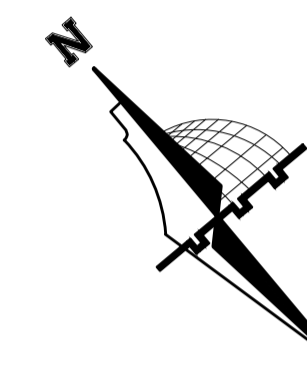


ROOF FLOOR  
FURNITURE PLAN





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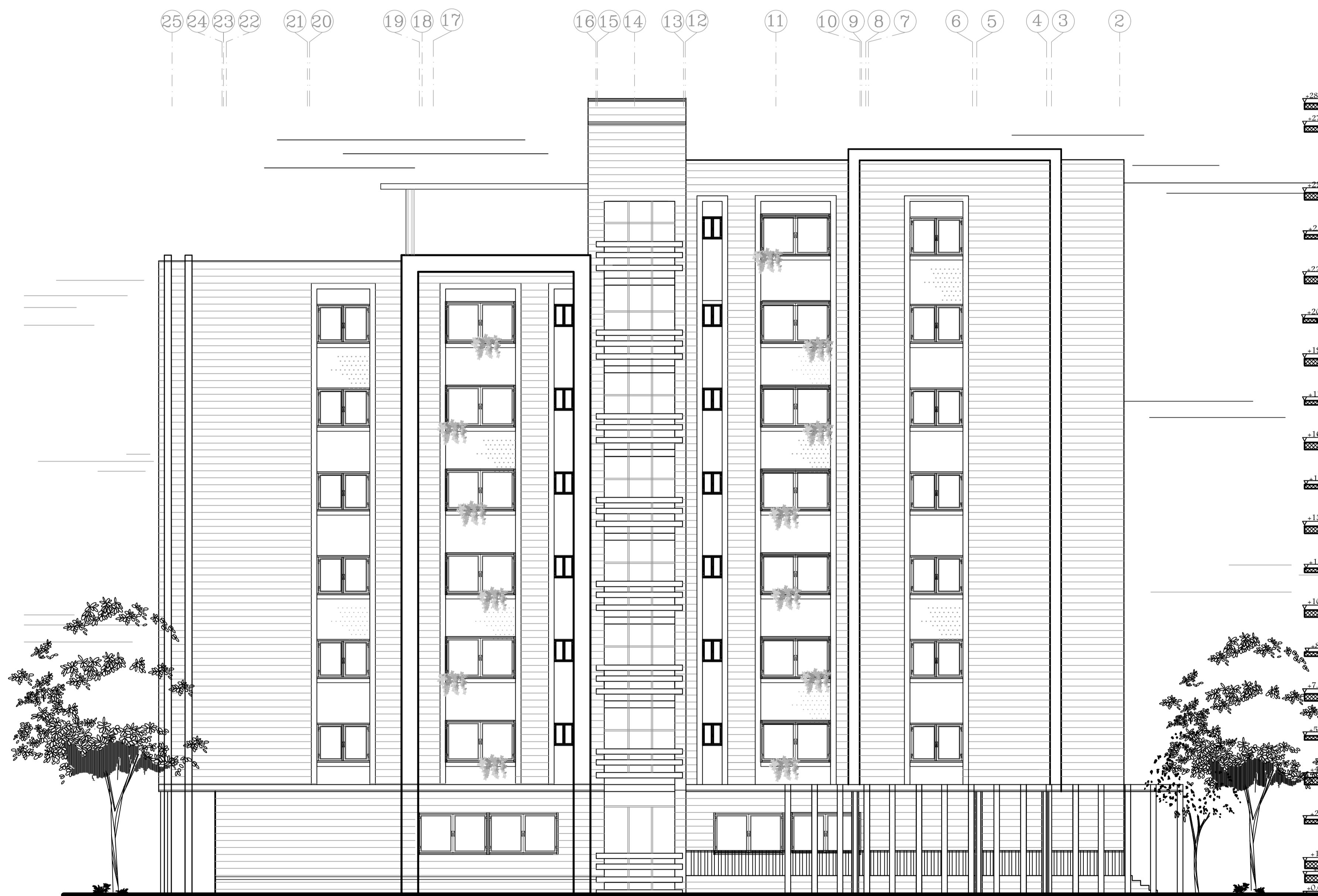
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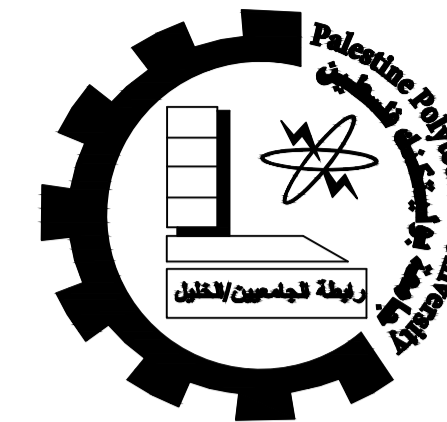
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NORTH EAST ELEVATION

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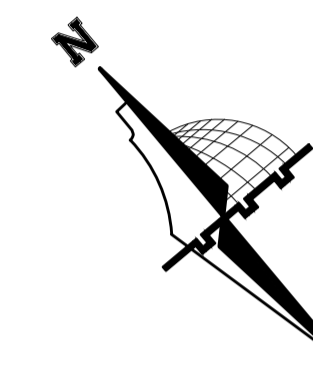
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A 05

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Drawing Title  
SOUTH WEST ELEVATION

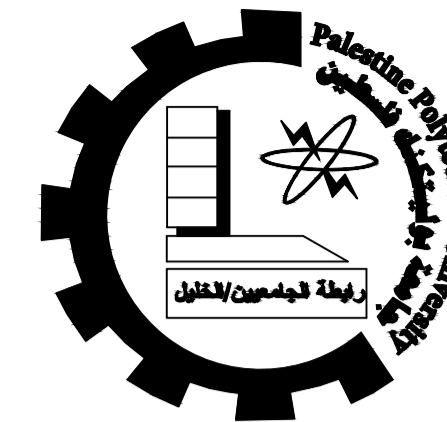
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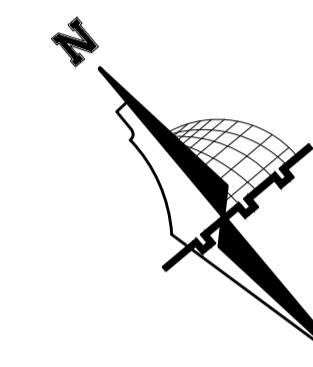
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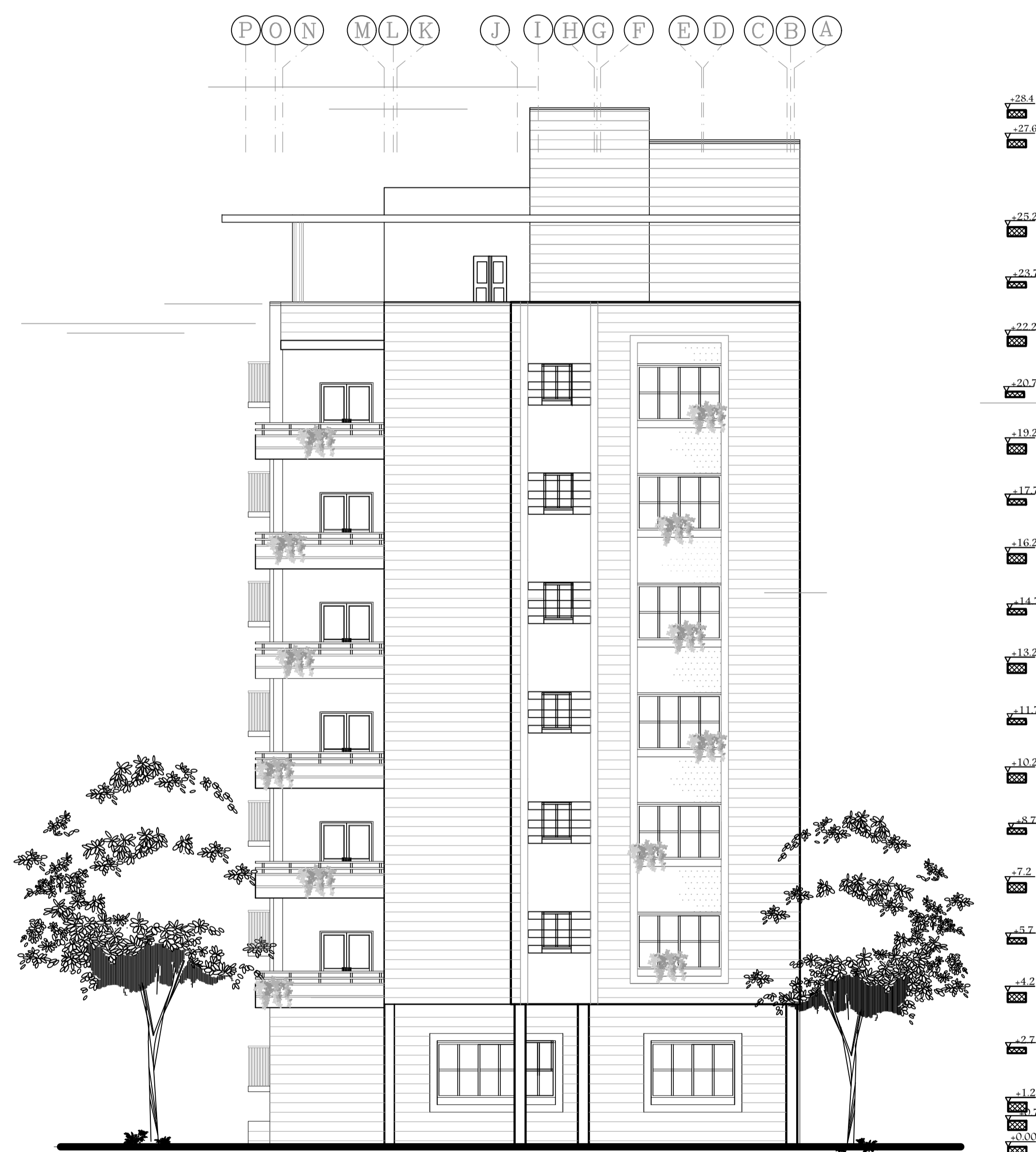
Project Team  
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Drawing Title  
SOUTHEAST & NORTHWEST  
ELEVATIONS

SCALE  
1/100

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A 07

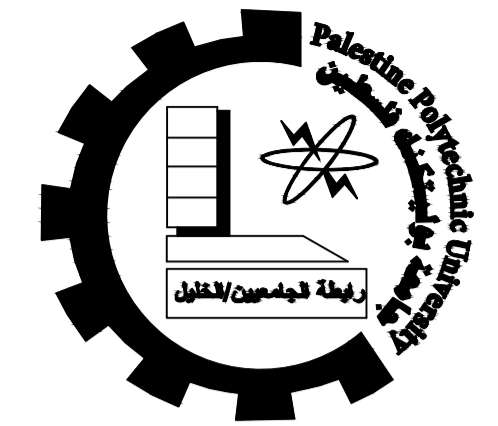
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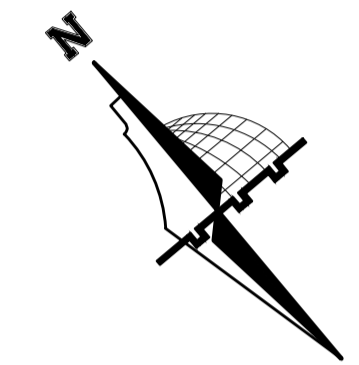
SOUTHEAST ELEVATION



NORTHWEST ELEVATION



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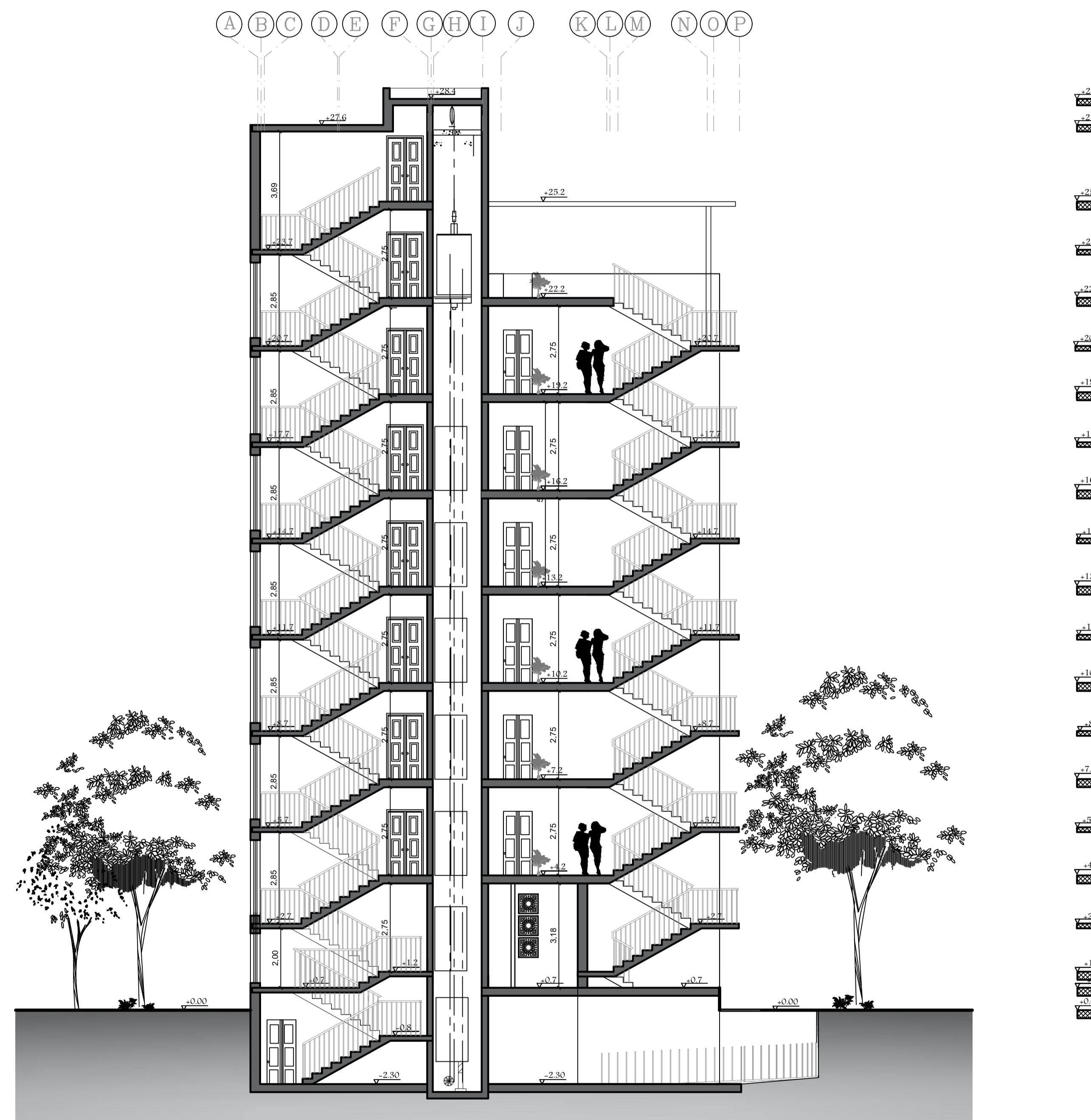
Project Team  
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Drawing Title  
SECTION A-A

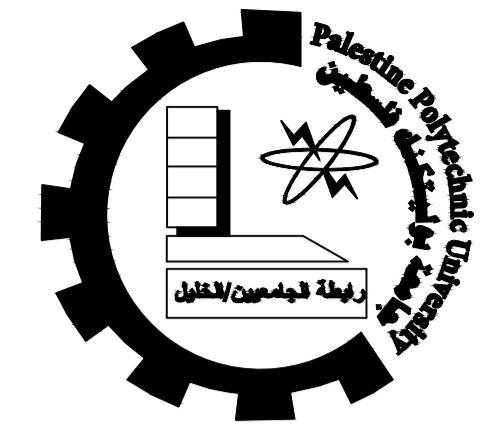
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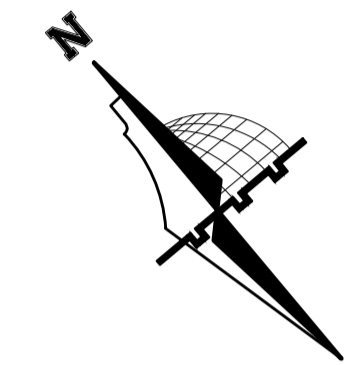
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Drawing Title  
SECTION B-B

SCALE  
1/100

DRAW. NO.  
A 09

2020





## APPENDIX (B) : STUCTURAL DRAWINGS

- S00 : GENERAL NOTES
- S01 : COLUMNS & FOOTING LAYOUT PLAN
- S02-S05 : FOOTING DETAILS
- S06 : COLUMNS DETAILS
- S07 : BASEMENT SLAB PLAN
- S08 : GROUND & TYPICAL SLAB PLAN
- S09 : ROOF SLAB PLAN
- S10-S11 : SLAB DETAILING
- S12-S21 : BEAMS DETAILING
- S22: STAIRS DETAILS



# STRUCTURAL DESIGN CRITERIA AND CONSTRUCTION REQUIREMENTS

## 1. GENERAL:

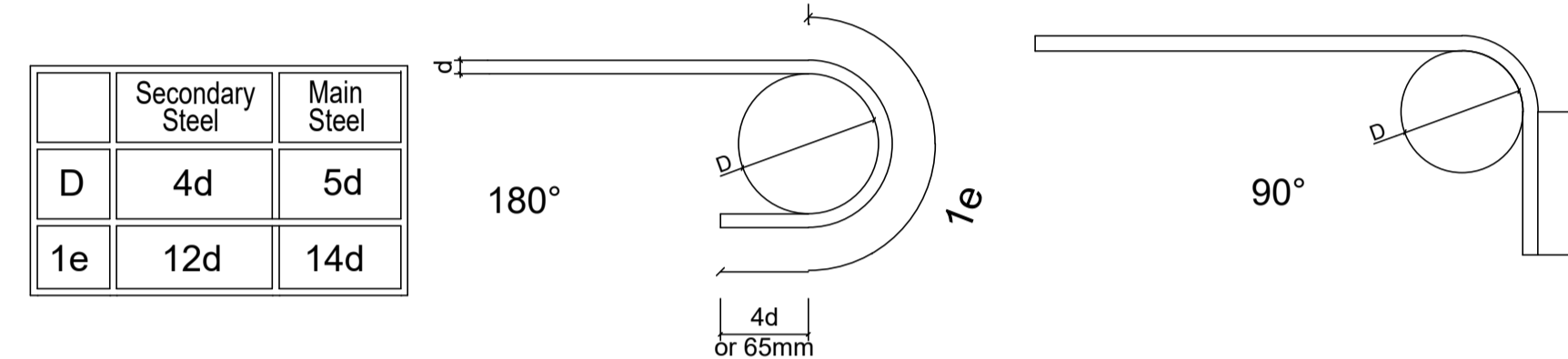
- 1.1 ALL DIMENSIONS ARE METRIC.
- 1.2 ALL STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTURAL DRAWINGS.
- 1.3 THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCEMENT OF WORKS AND ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER BEFORE EXECUTION.
- 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 318-14) .
  - 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 400 kN/m<sup>2</sup>
- 2.3 STRUCTURAL MEMBERS ARE DESIGNED TO RESIST ITS SELF WEIGHT IN ADDITION TO :
  - a. LIVE LOAD OF 2 kN/m<sup>2</sup>
  - b. SUPER IMPOSED DEAD LOAD OF 4.54 kN/m<sup>2</sup>
- 2.4 ALL STRUCTURAL MEMBERS ARE DESIGNED TO WITHSTAND TOTAL NUMBER OF NINE STORIES.

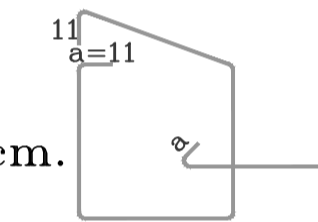
## 3. CONCRETE & REINFORCEMENT:

- 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 :



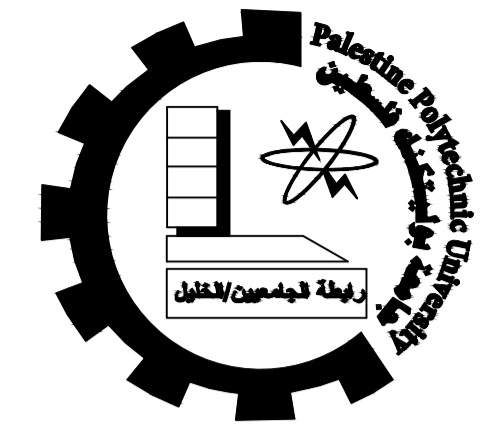
- 3.6 MINIMUM CLEAR CONCRETE COVER TO STEEL REINFORCEMENT SHALL BE AS FOLLOWS :
  - 50mm. FOR FOUNDATIONS .
  - 40mm. FOR BEAMS & COLUMNS.
  - 20mm. FOR SLABS.

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

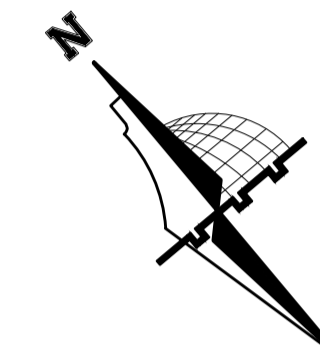


## 4. SYMBOLS & ABBREVIATIONS:

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 o Footing
L.C	Leveling Course
$\phi$	REINFORCEMENT BAR DIAMETER (mm)
@./	REINFORCEMENT SPACING



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GENERAL NOTES

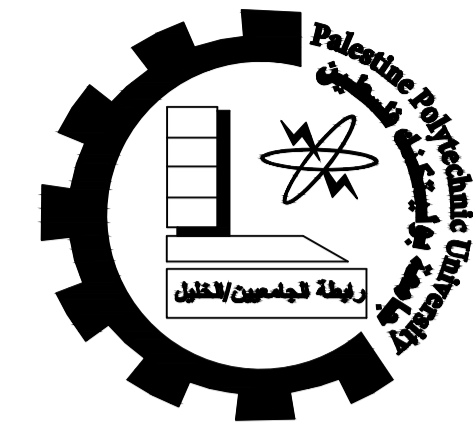
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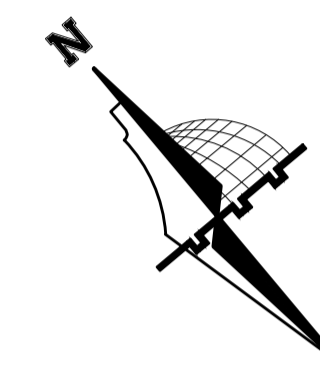
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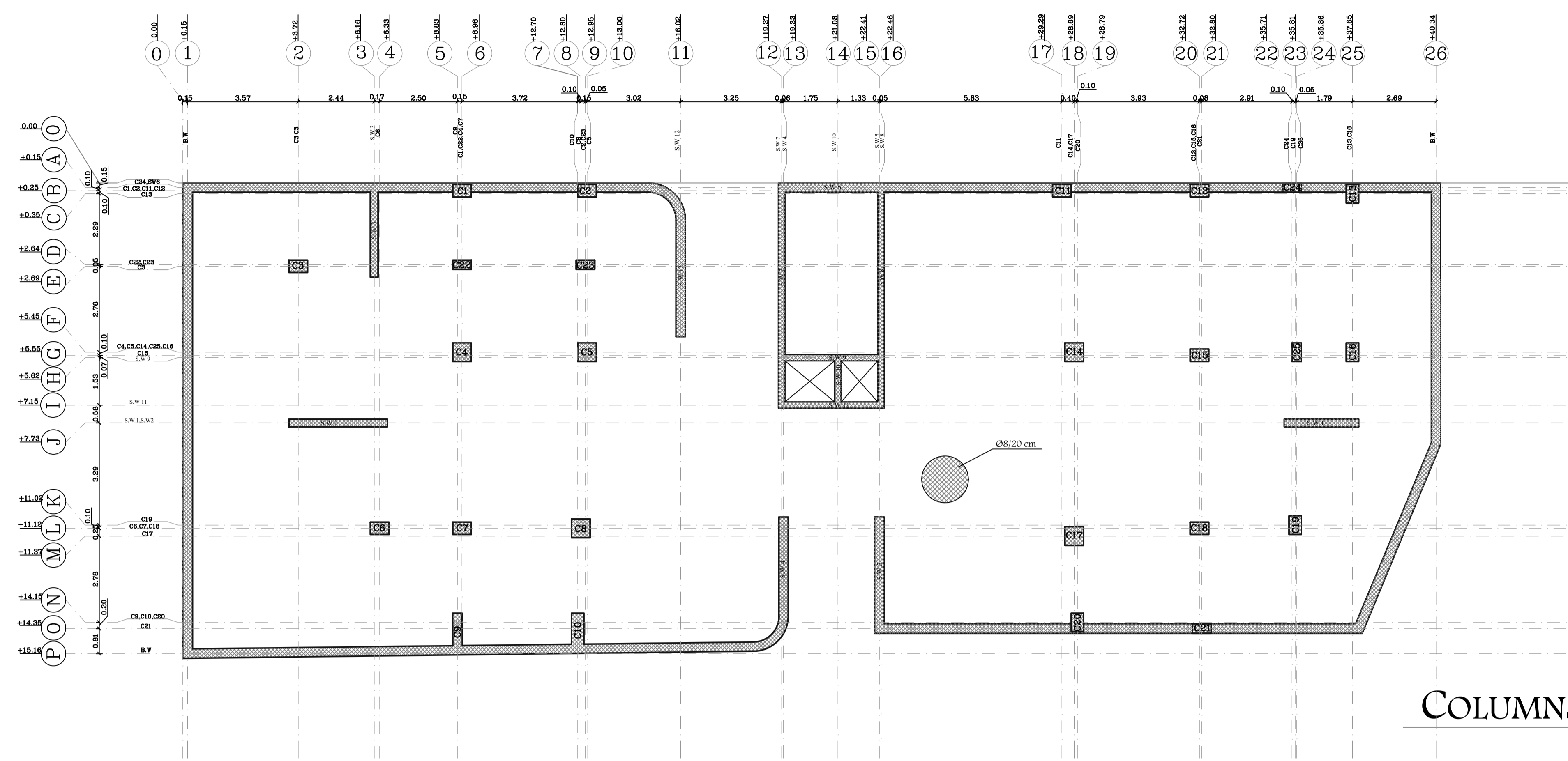
Project Team  
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Drawing Title  
 COLUMNS & FOOTING LAYOUT PLAN

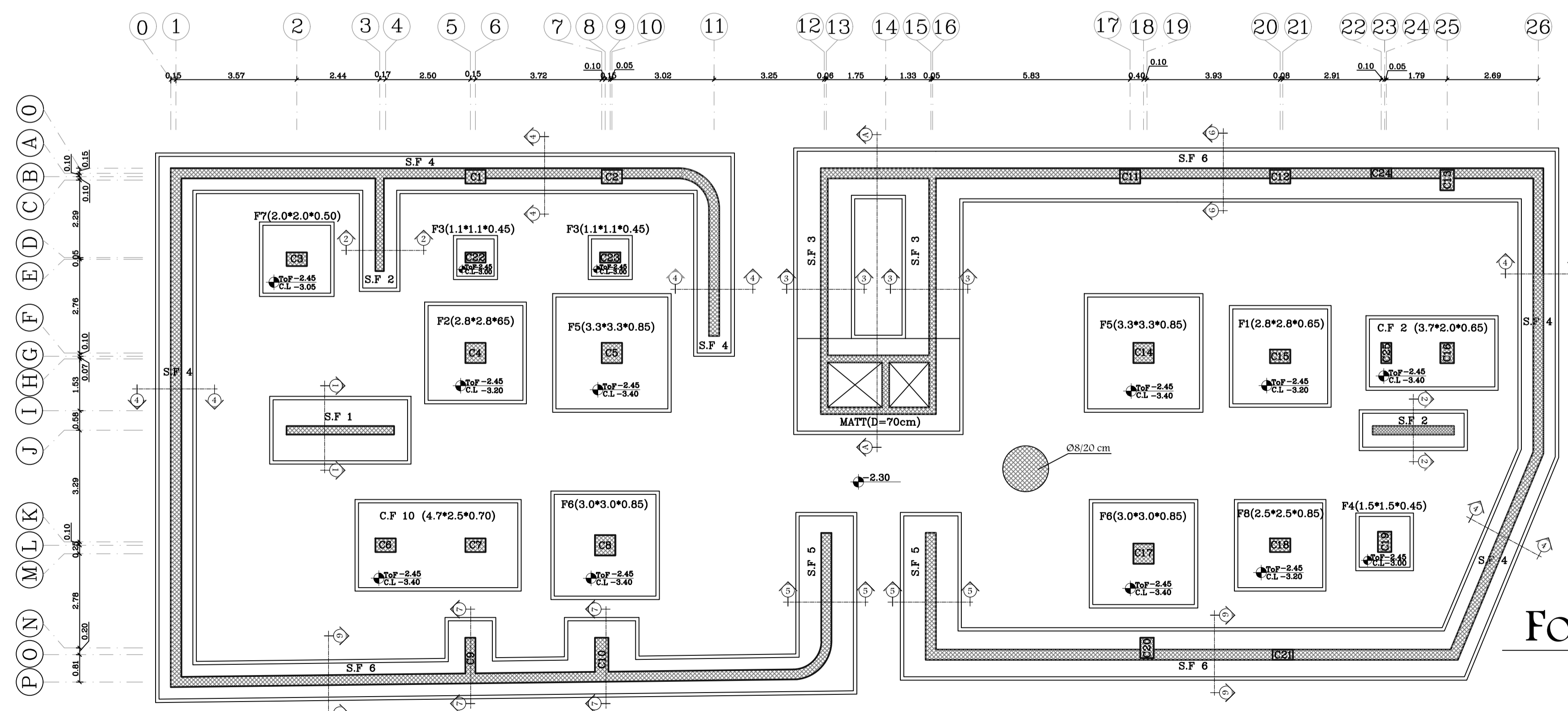
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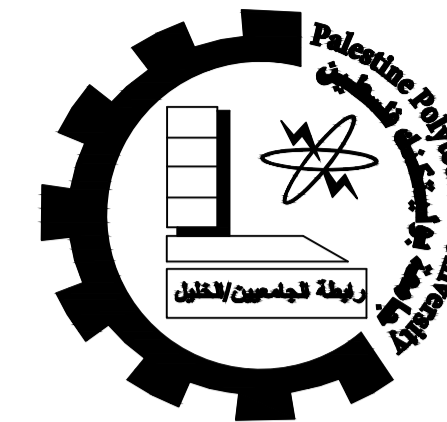
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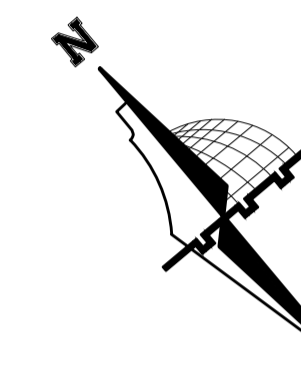
COLUMNS LAYOUT PLAN



FOOTING LAYOUT PLAN



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Drawing Title

FOOTING DETAILS

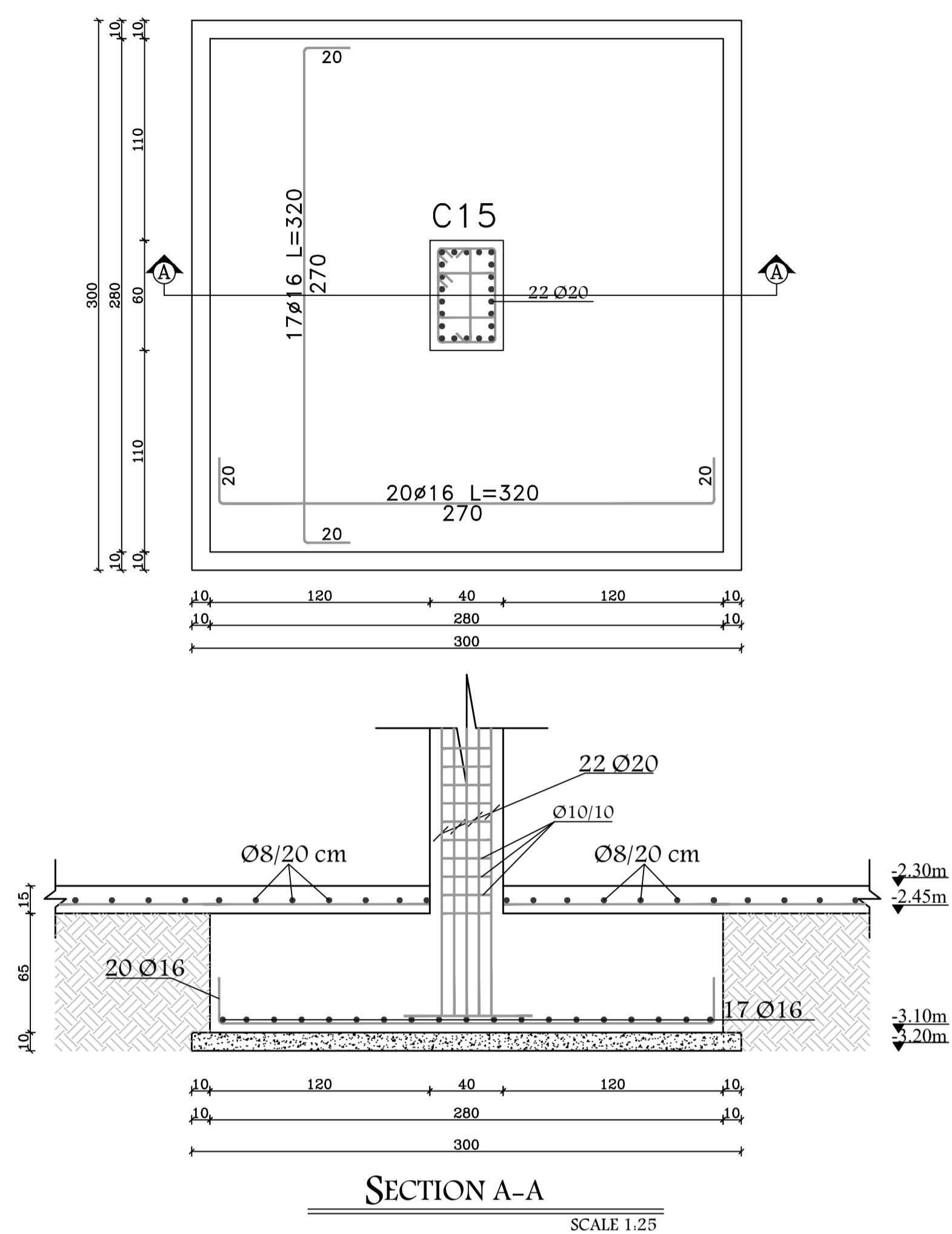
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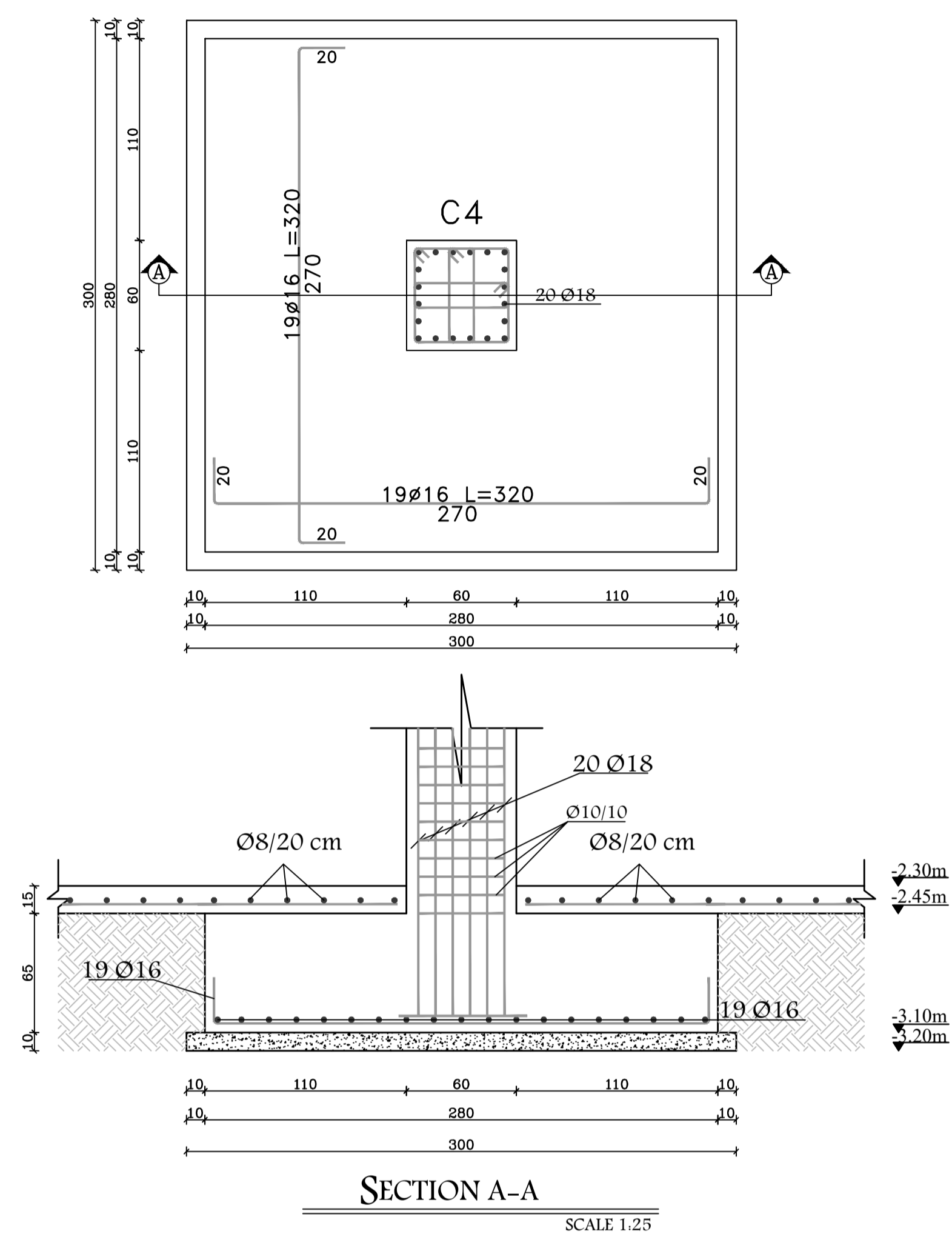
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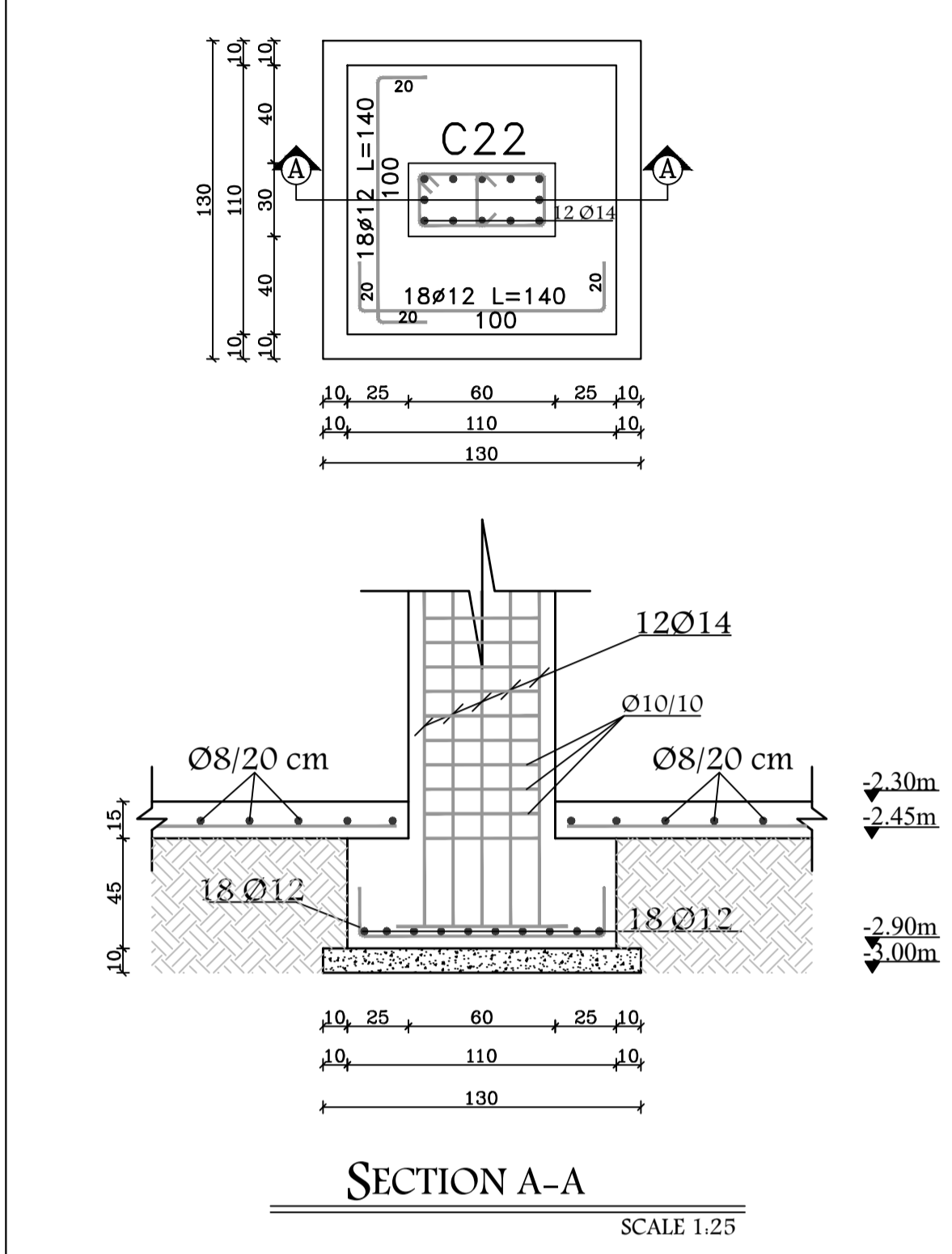
FOOTING - F1 (2.8x2.8)m



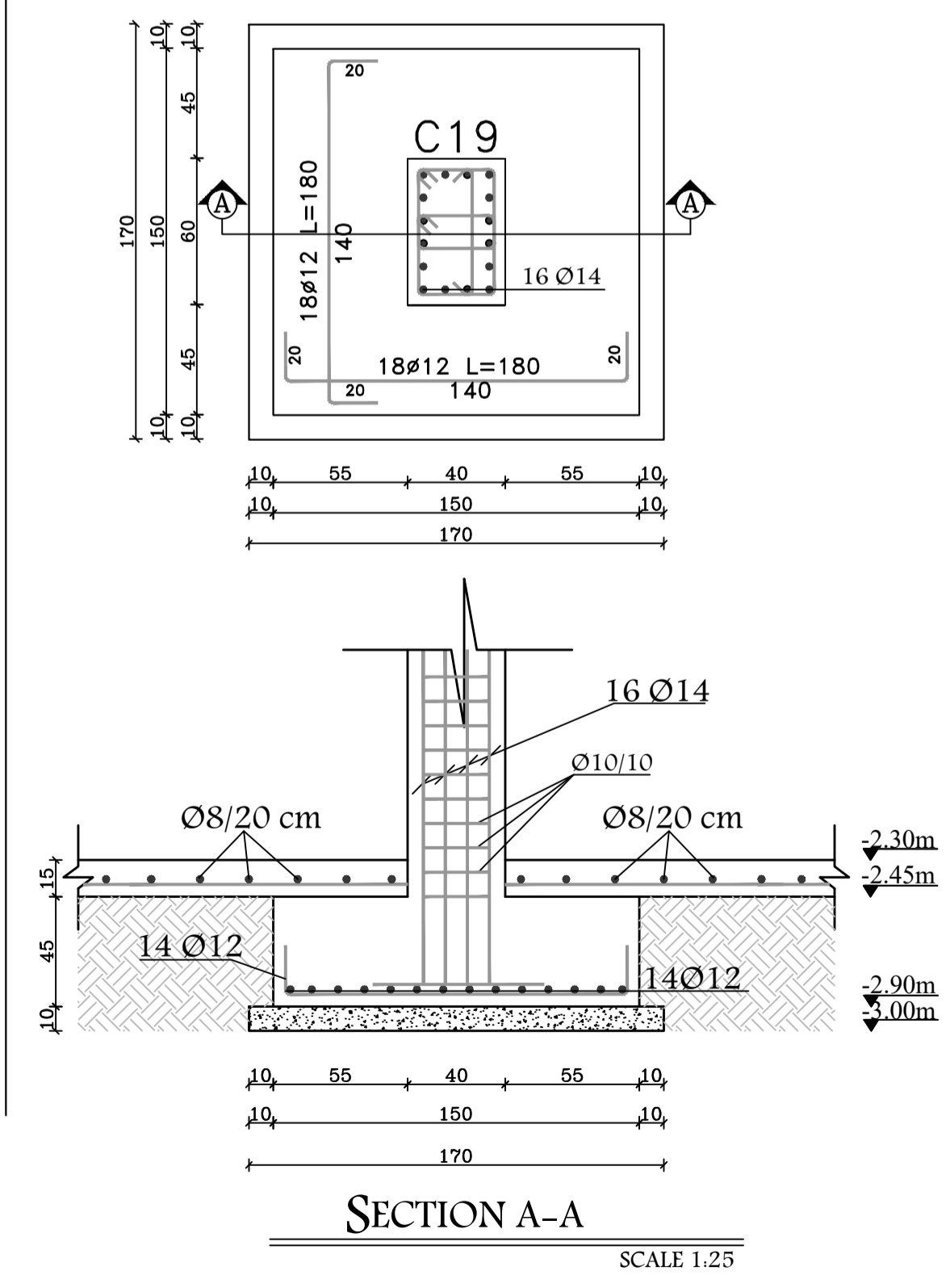
FOOTING - F2 (2.8x2.8)m



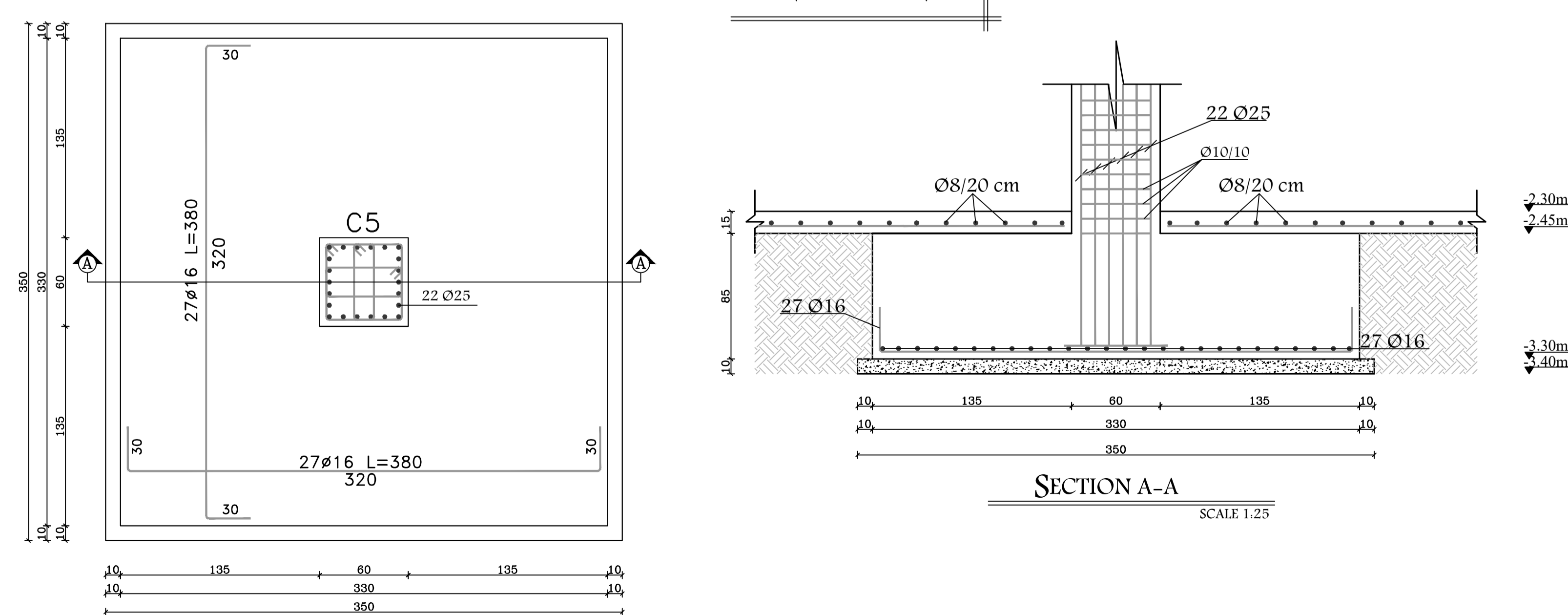
FOOTING - F3 (2.8x2.8)m



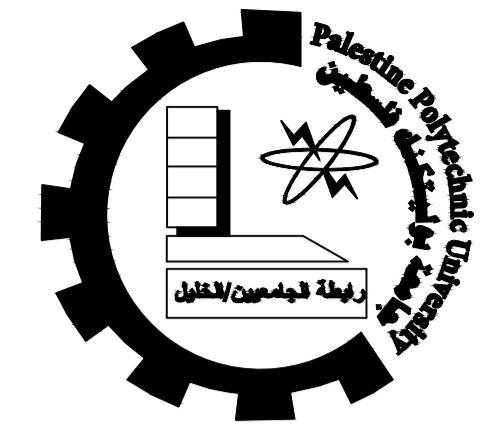
FOOTING - F4 (2.8x2.8)m



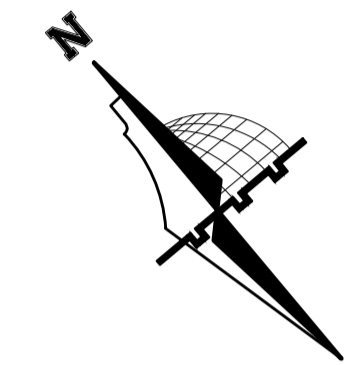
FOOTING - F5 (3.3x3.3)m







Palestine Polytechnic University  
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Graduation Project  
 "Structural Design of a Residential Building"

Supervisor  
 Dr.Nafith Nssereddin

Project Team  
 Hala Al-Qadi  
 Mai Hashlamoun

Drawing Title  
 FOOTING DETAILS

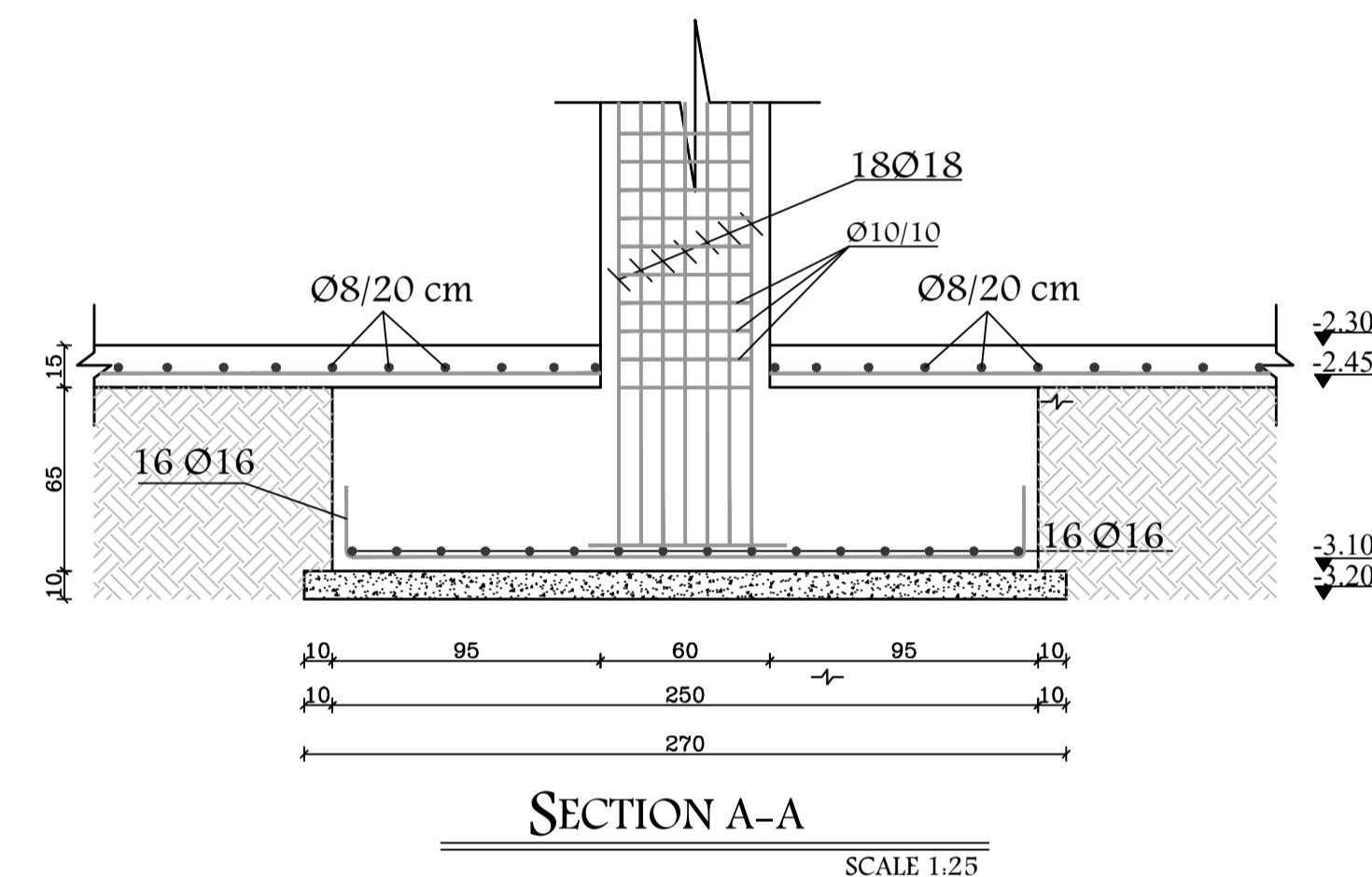
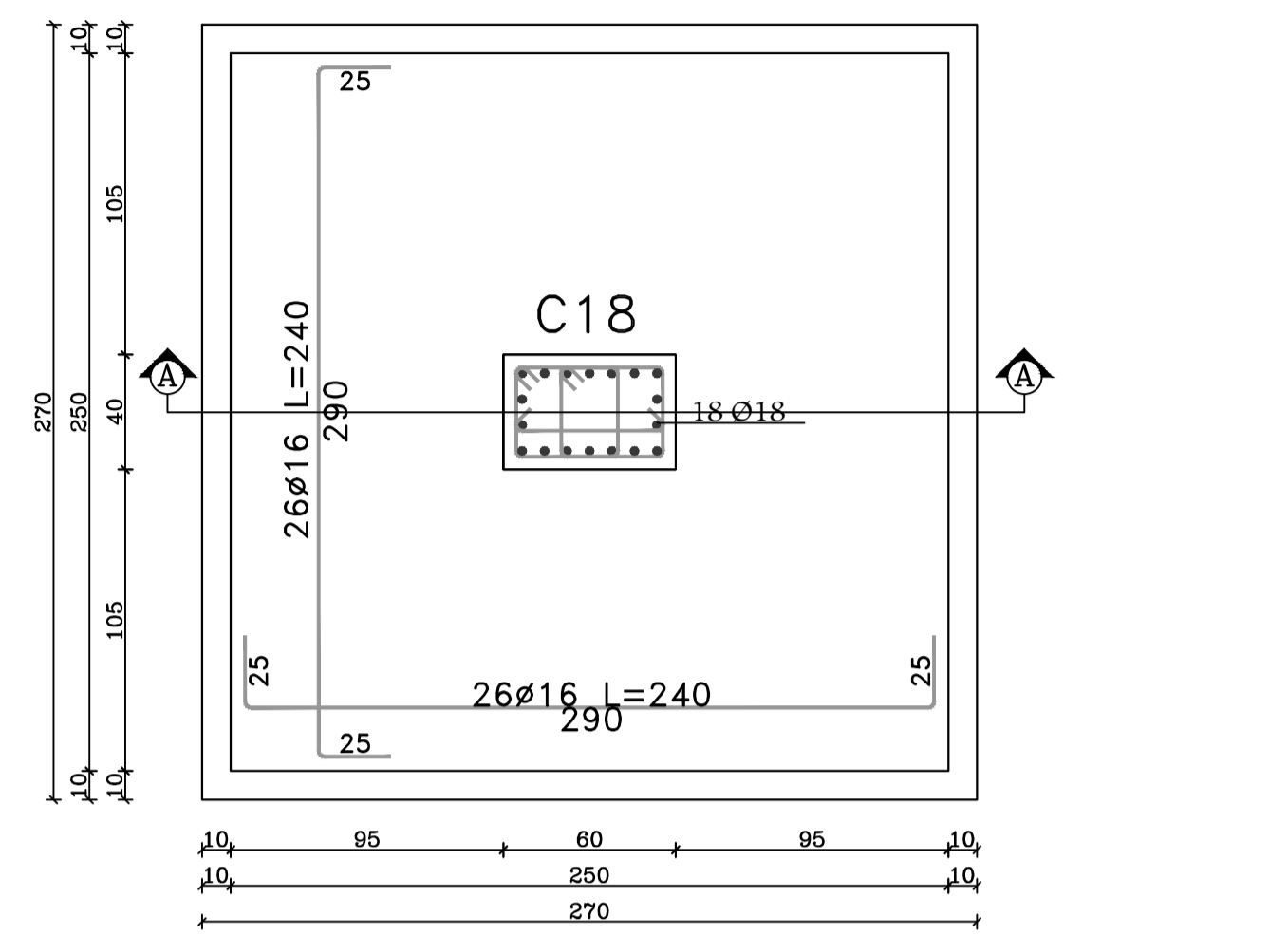
SCALE  
 1/25

DRAW. NO.  
 S 03

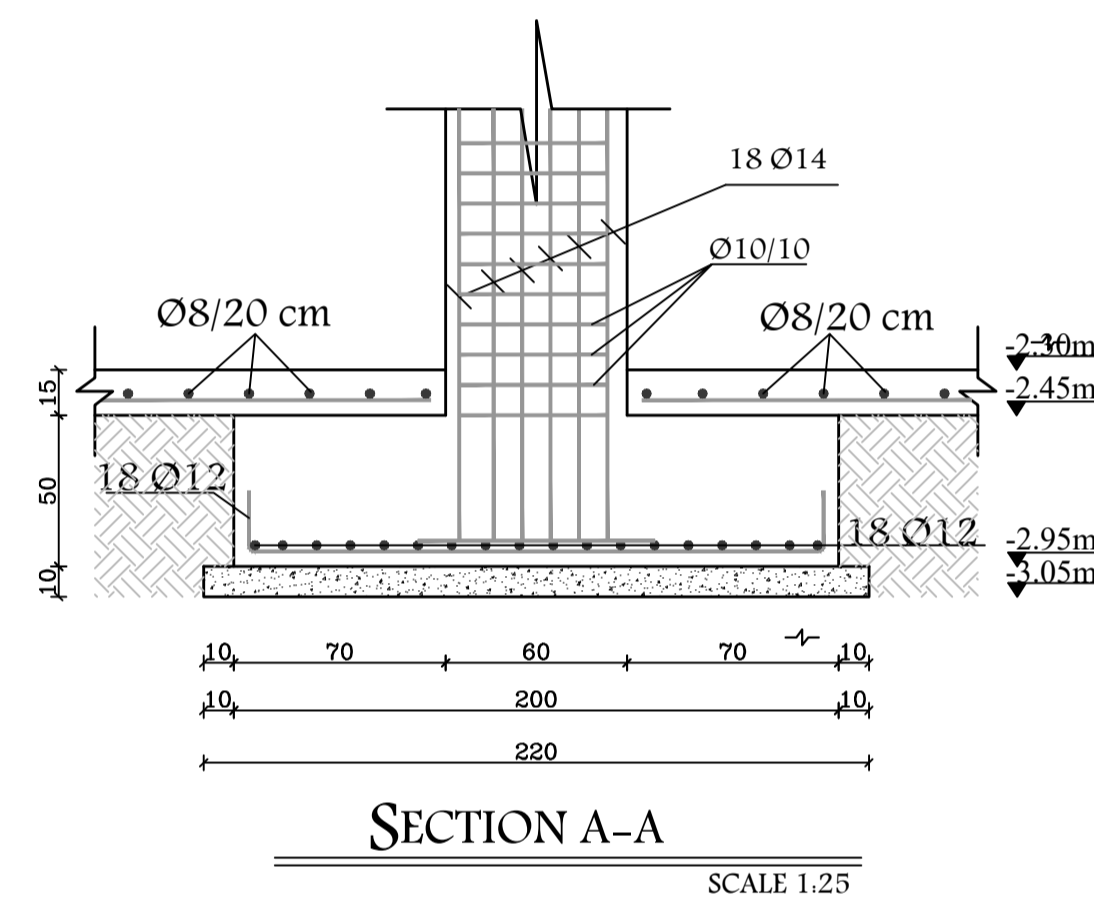
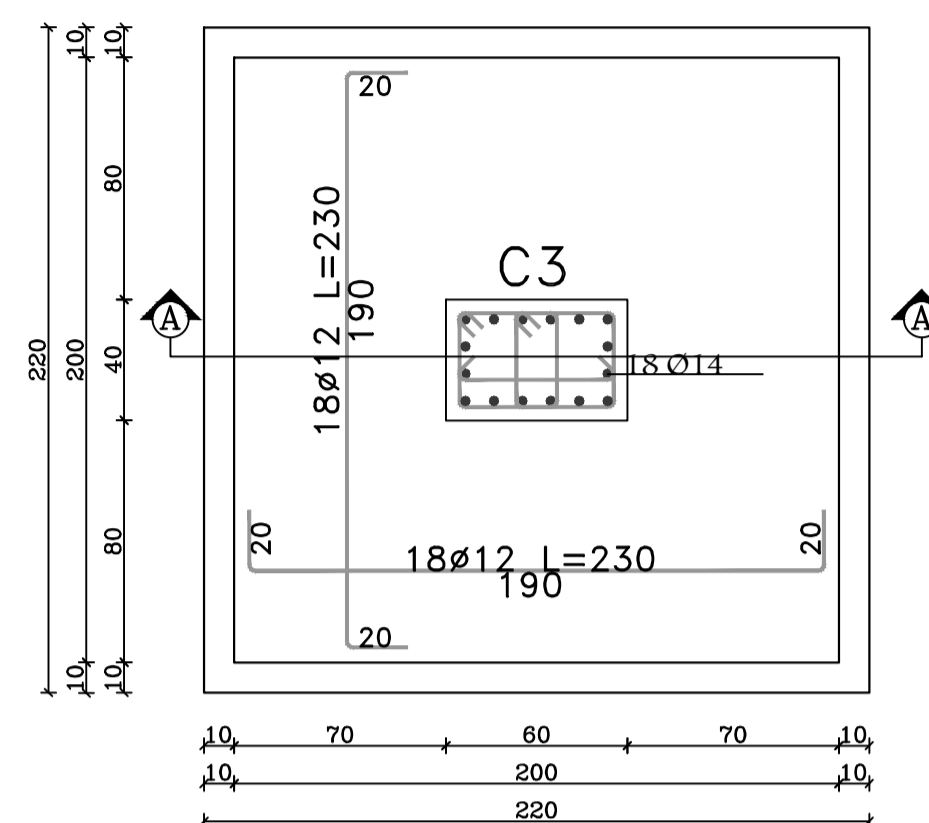
2020



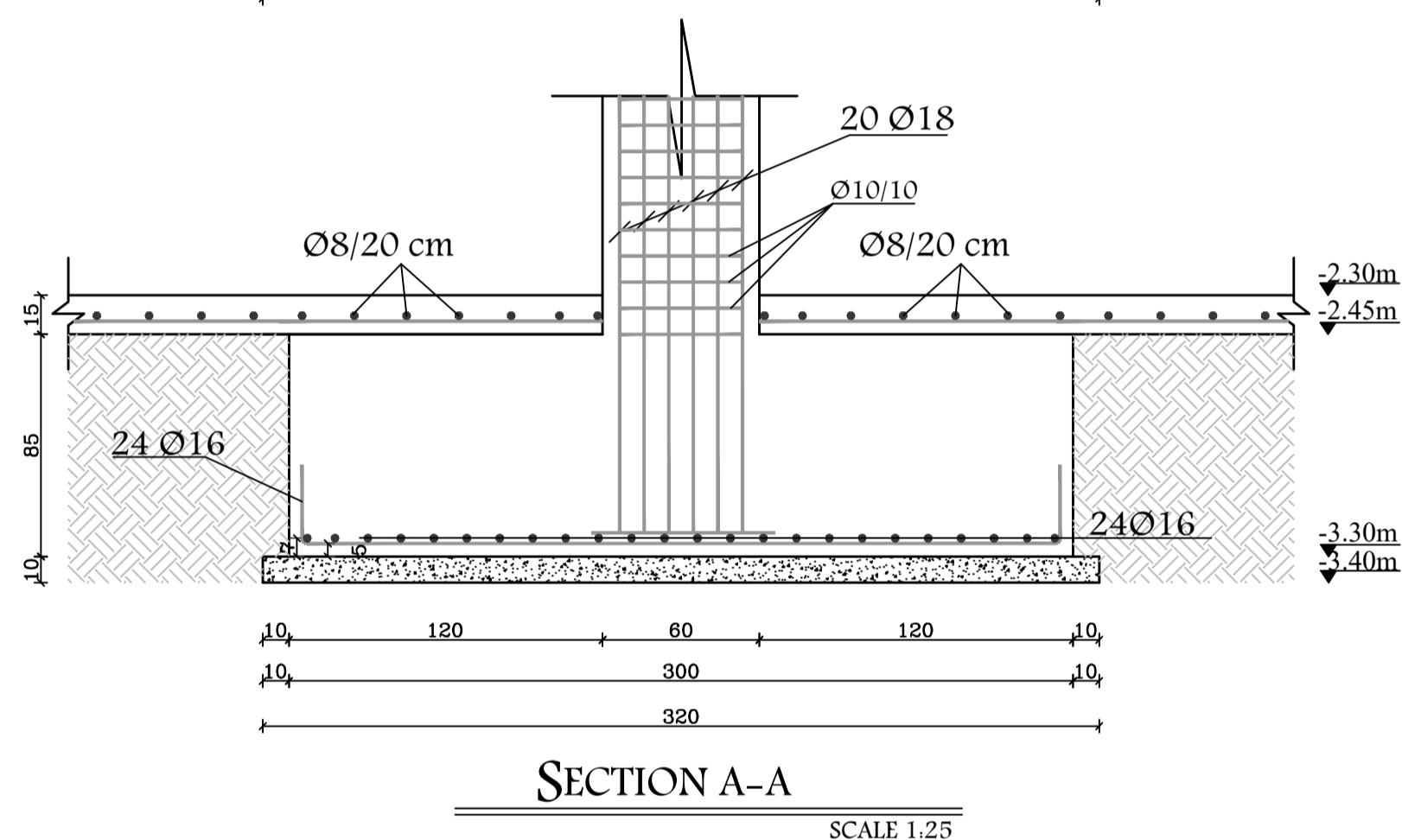
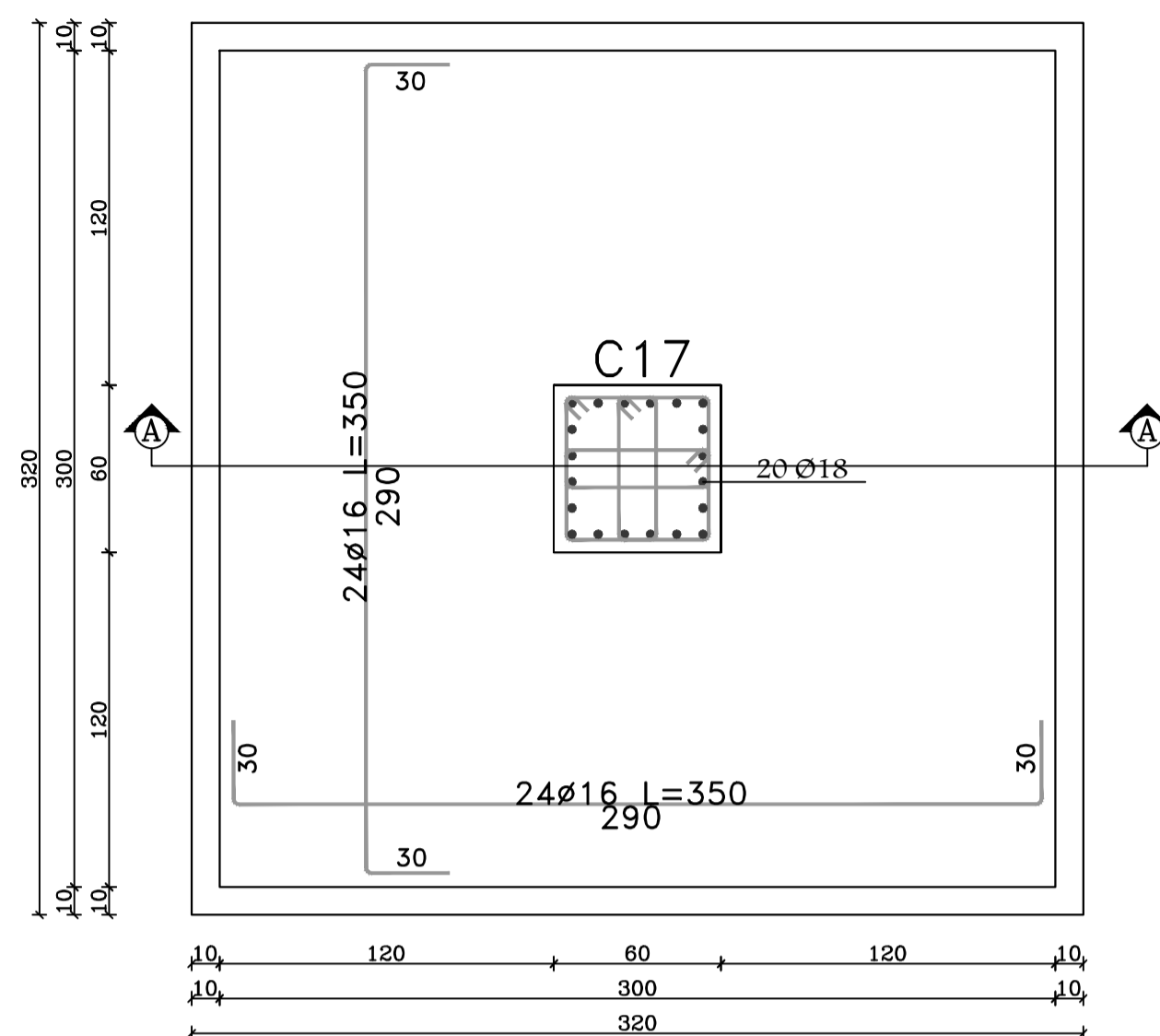
FOOTING - F8 (2.5x2.5)m



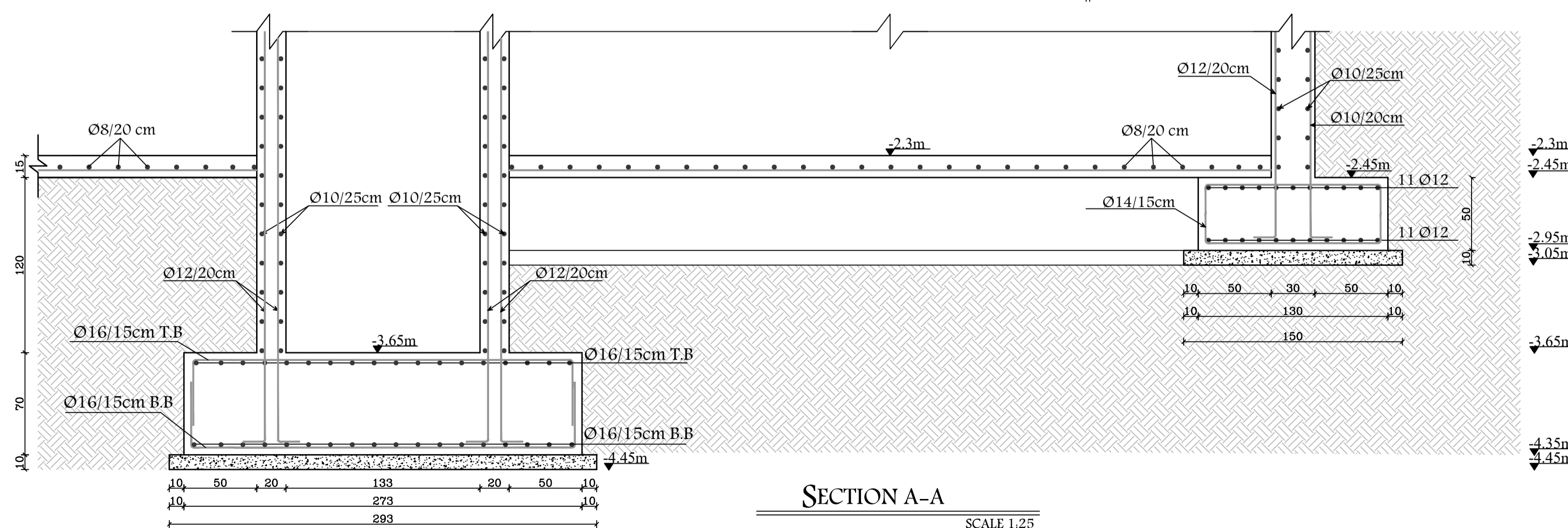
FOOTING - F7 (2x2)m



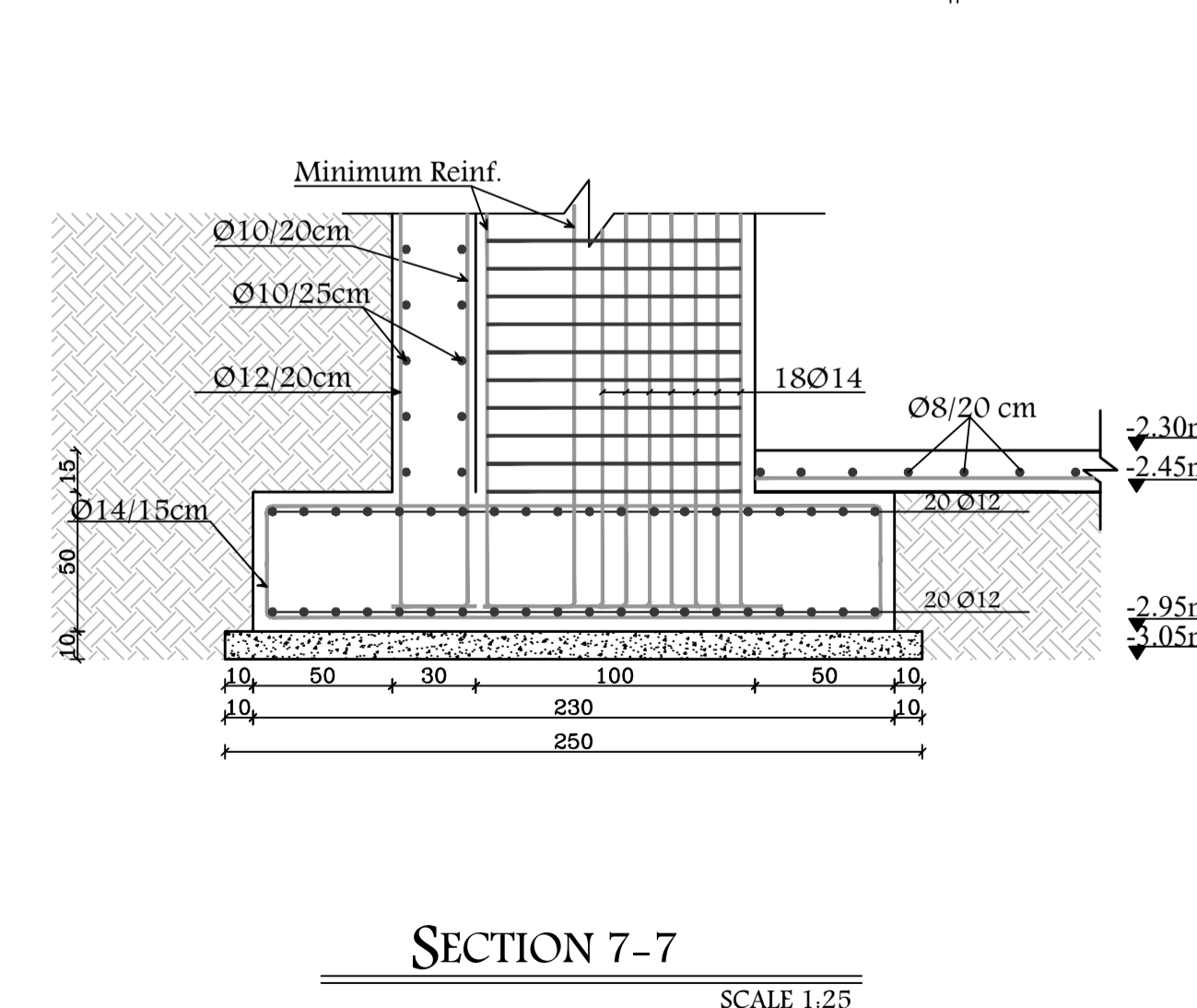
FOOTING - F6 (3x3)m

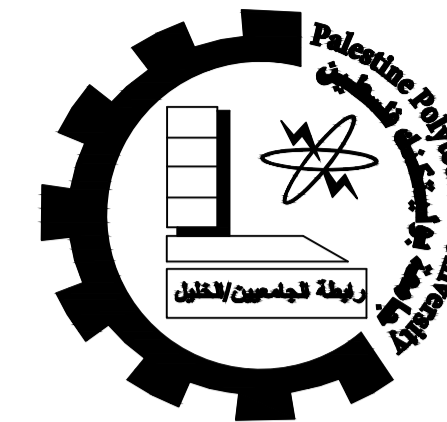


MATT FOOTING DETAIL

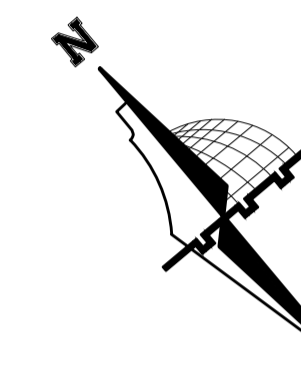


SECTION 7-7 DETAIL





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 Building Engineering



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Graduation Project

"Structural Design of a Residential Building"

Supervisor

Dr.Nafith Nssereddin

Project Team

Hala Al-Qadi

Mai Hashlamoun

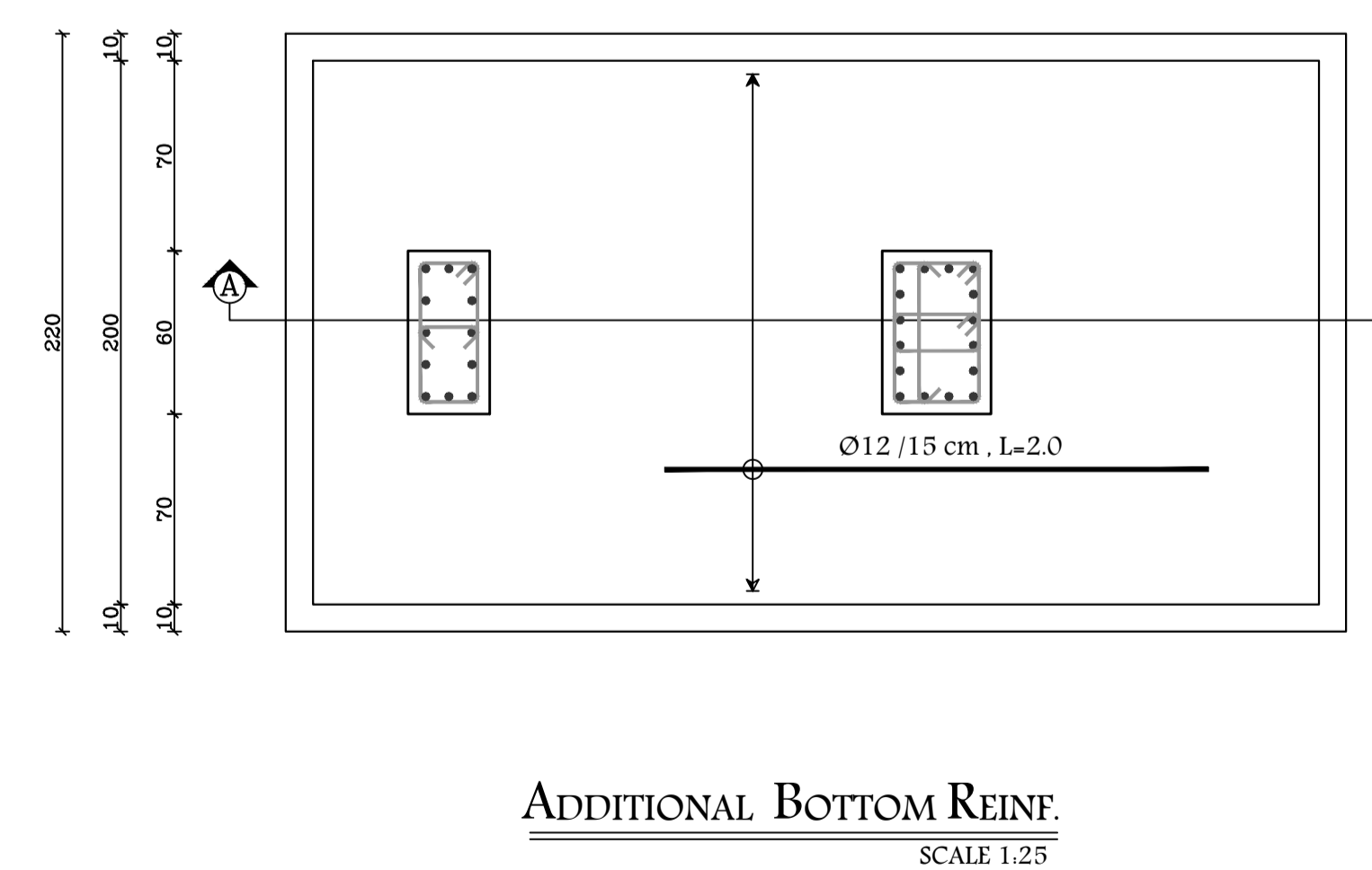
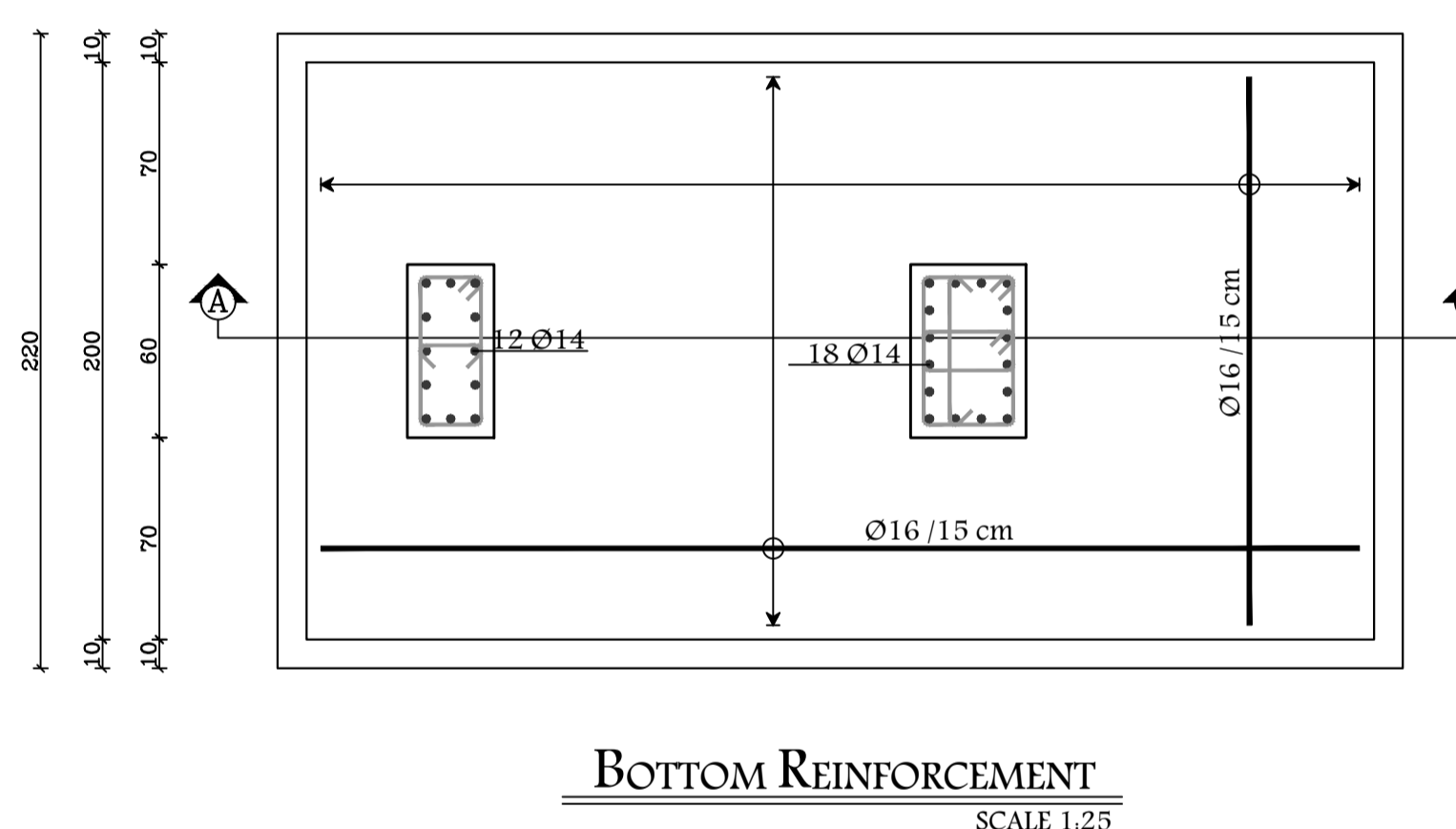
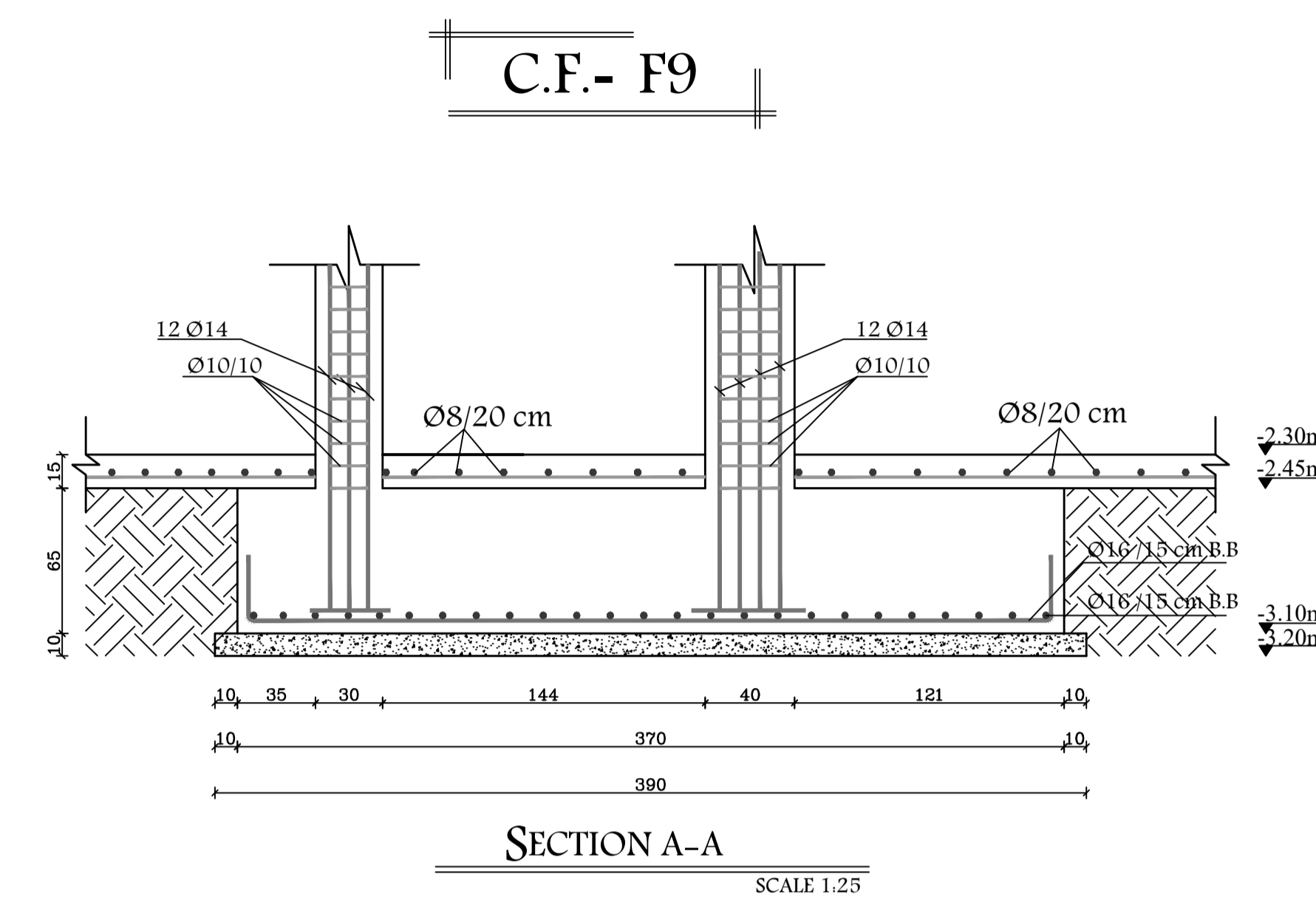
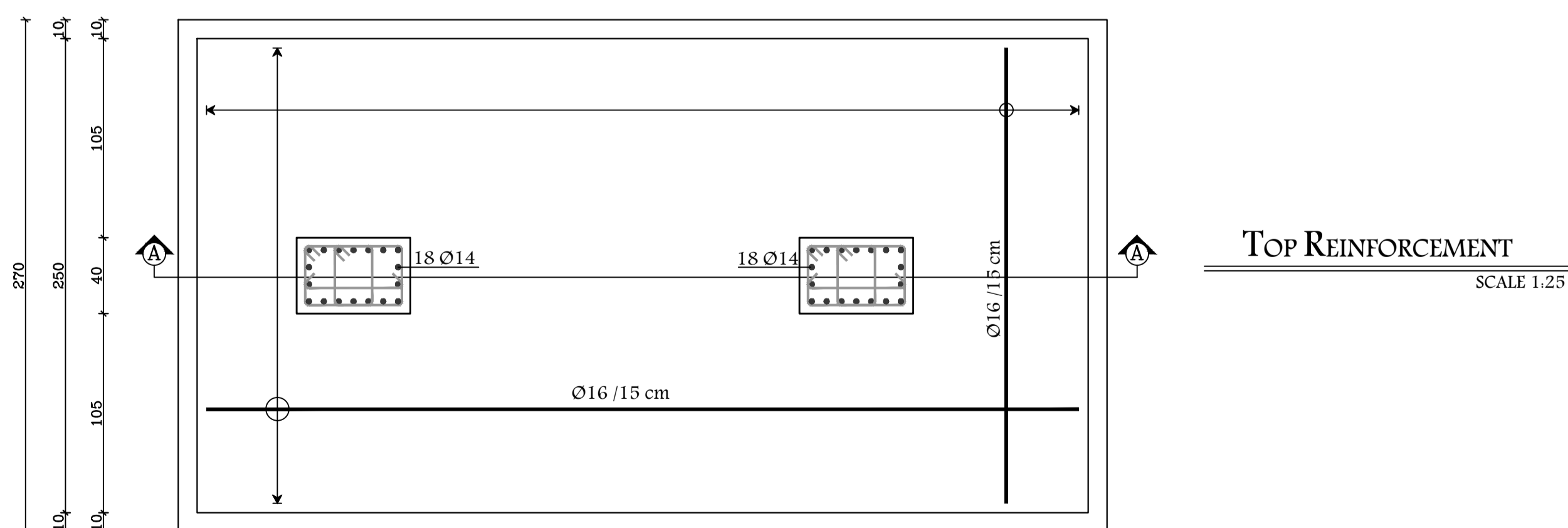
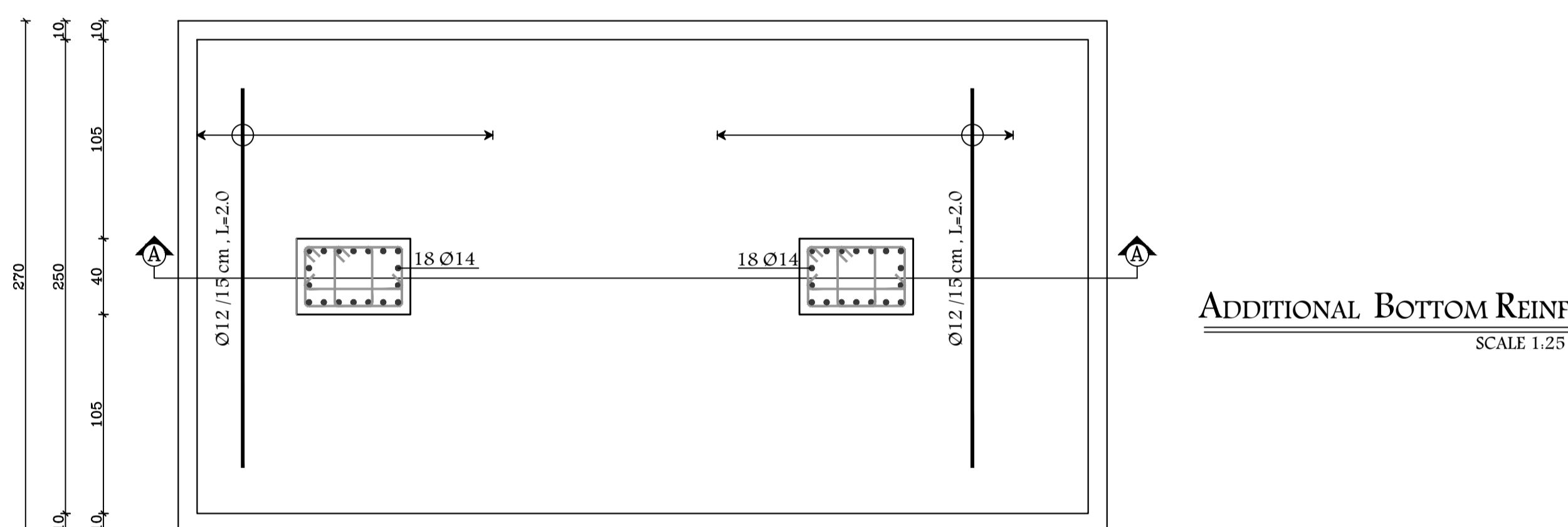
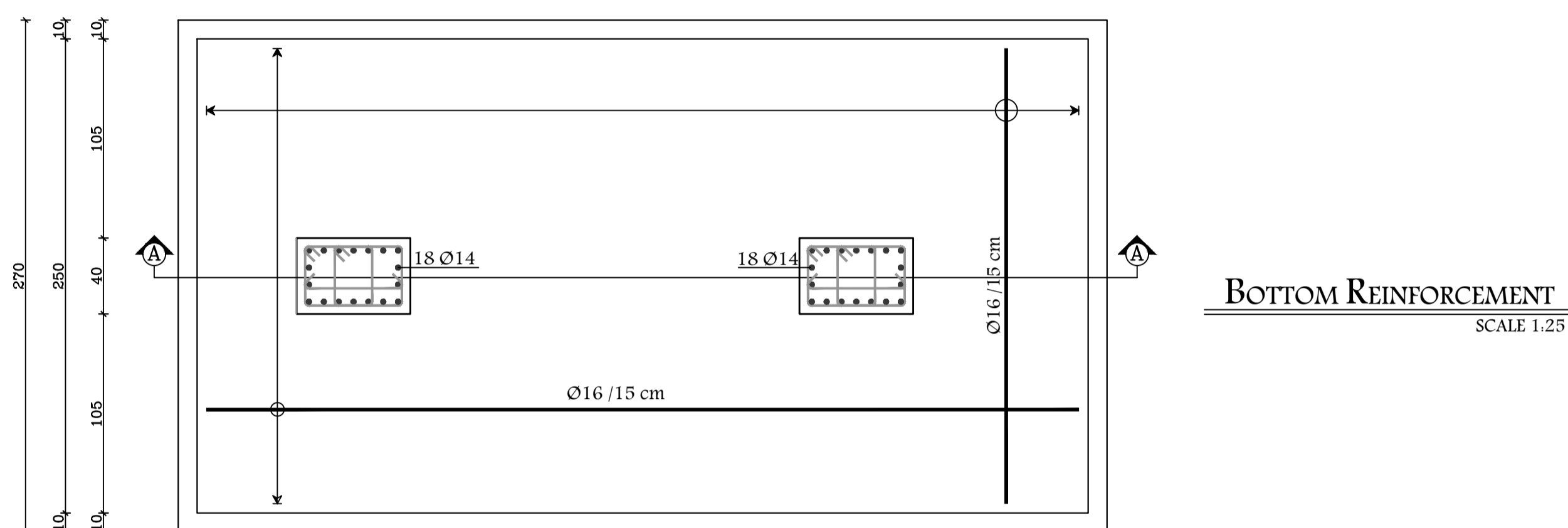
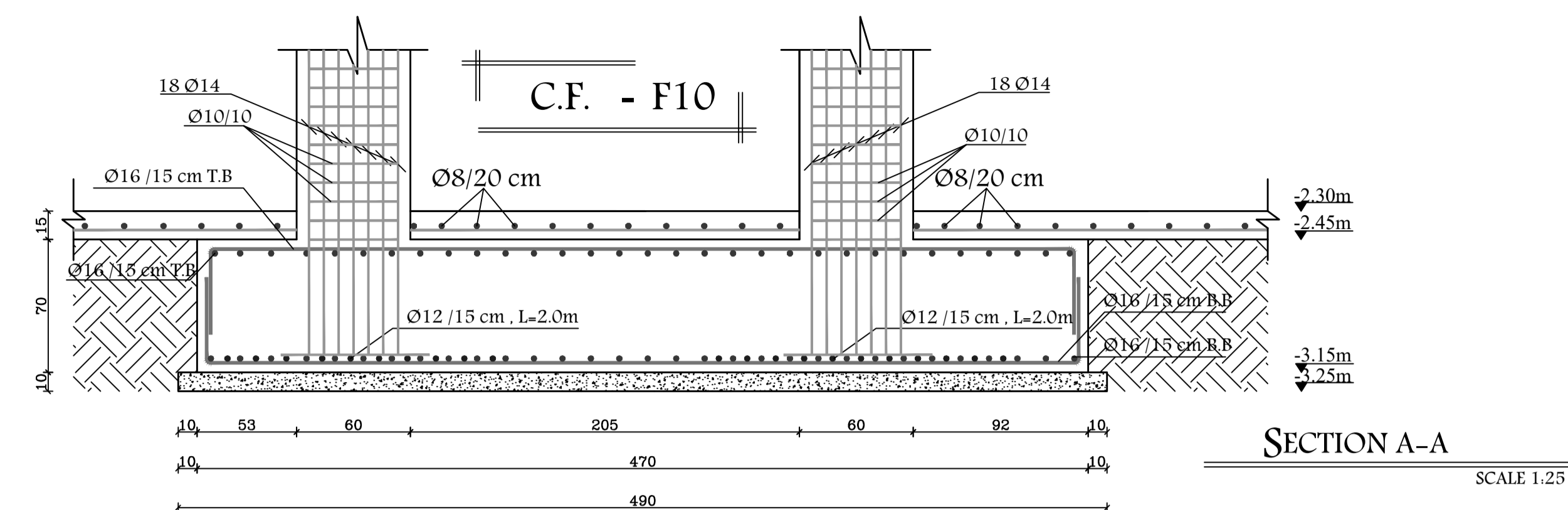
Drawing Title

FOOTING DETAILS

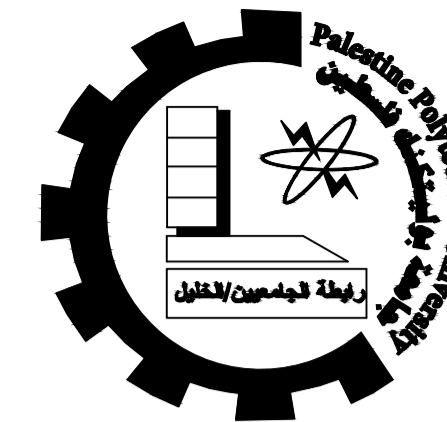
SCALE  
 1/25

DRAW. NO.  
 S 04

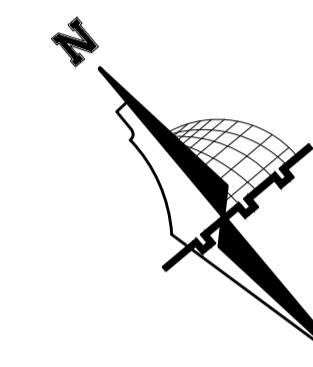
2020







Palestine Polytechnic University  
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 Building Engineering



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Graduation Project

"Structural Design of a Residential Building"

Supervisor  
 Dr.Nafith Nssereddin

Project Team  
 Hala Al-Qadi  
 Mai Hashlamoun

Drawing Title  
 FOOTING DETAILS

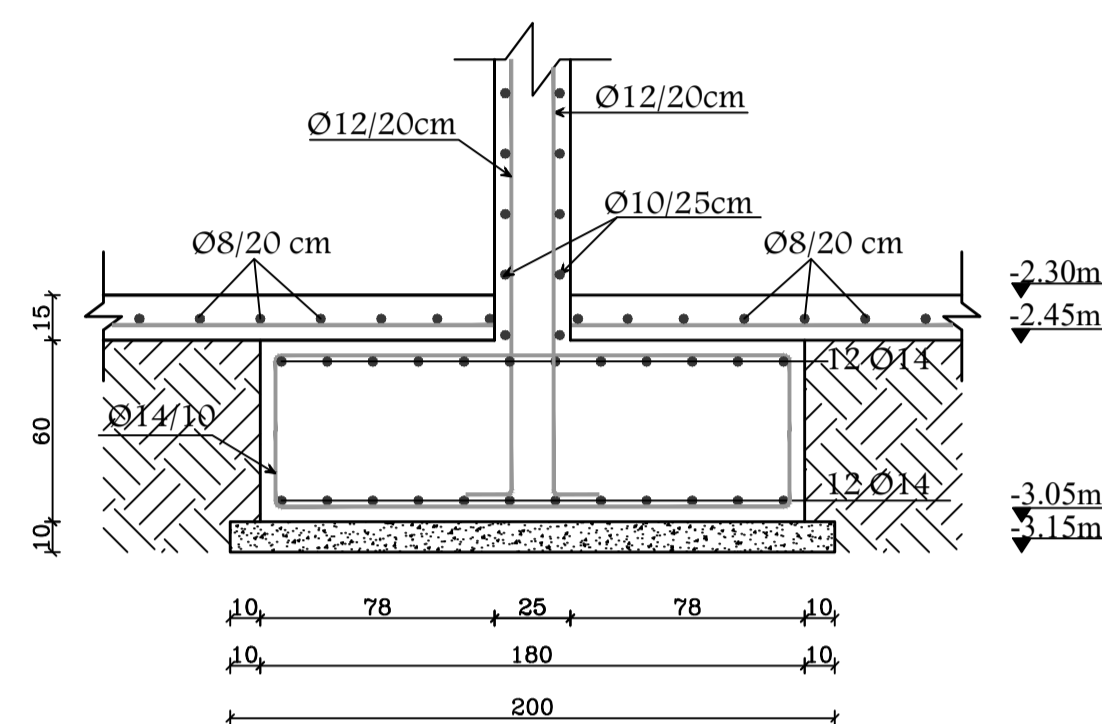
SCALE  
 1/25

DRAW. NO.  
 S 05

2020



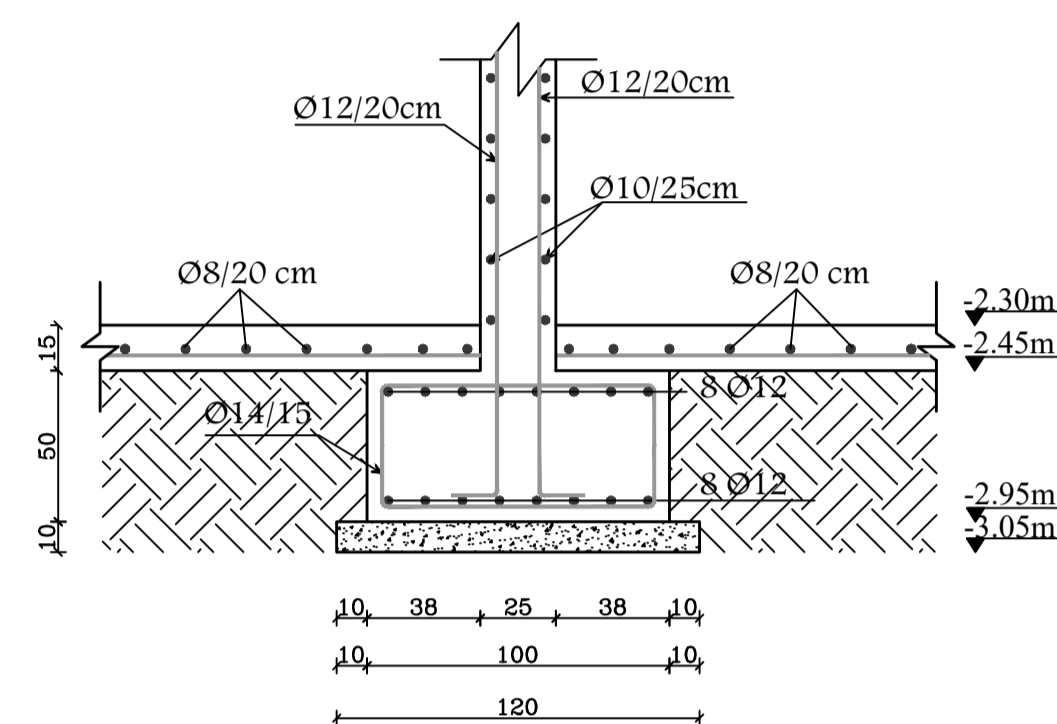
Strip Footing 1 Detail



SECTION 1-1

SCALE 1:25

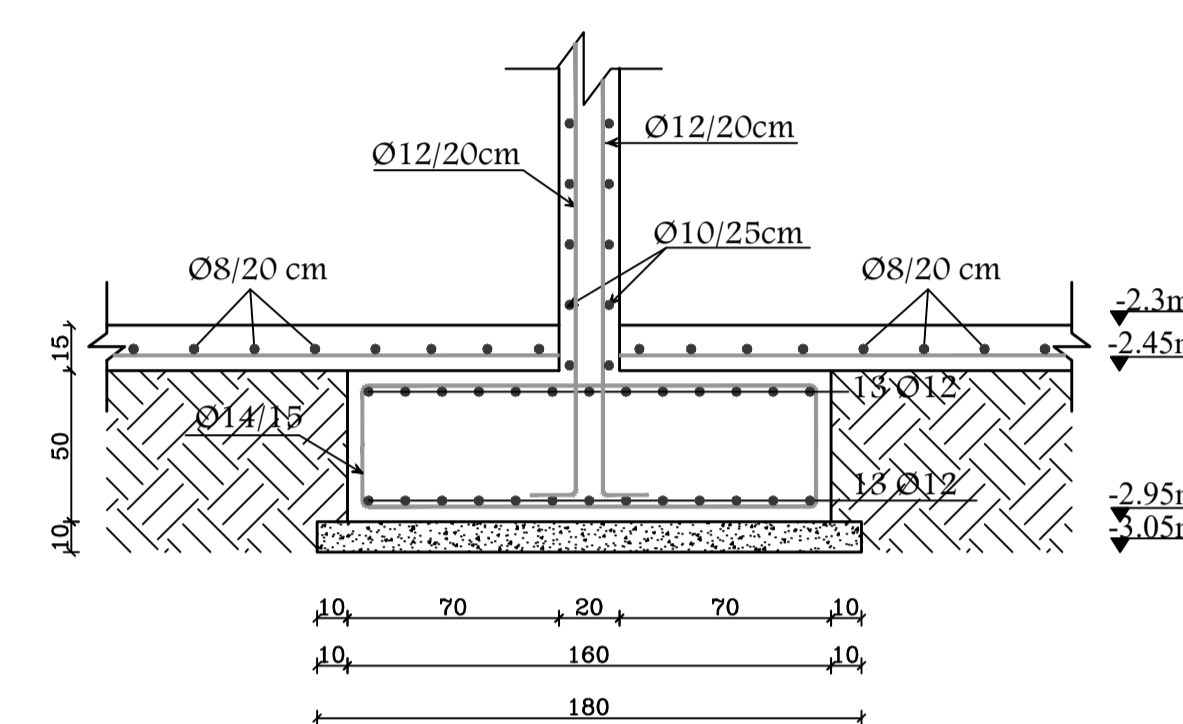
Strip Footing 2 Detail



SECTION 2-2

SCALE 1:25

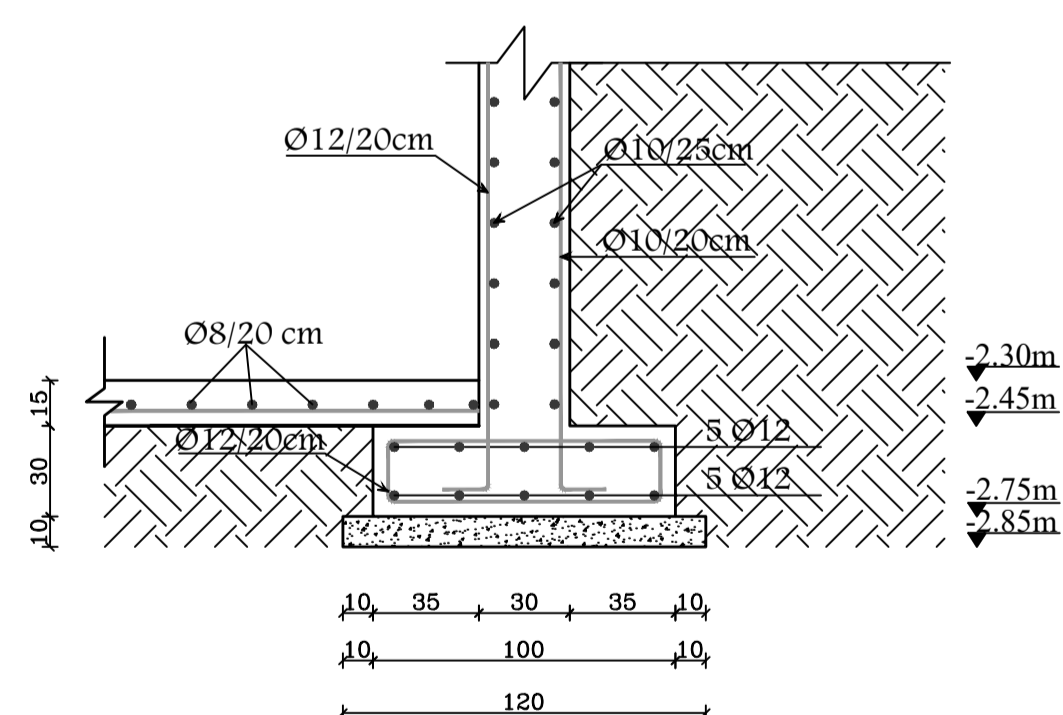
Strip Footing 3 Detail



SECTION 3-3

SCALE 1:25

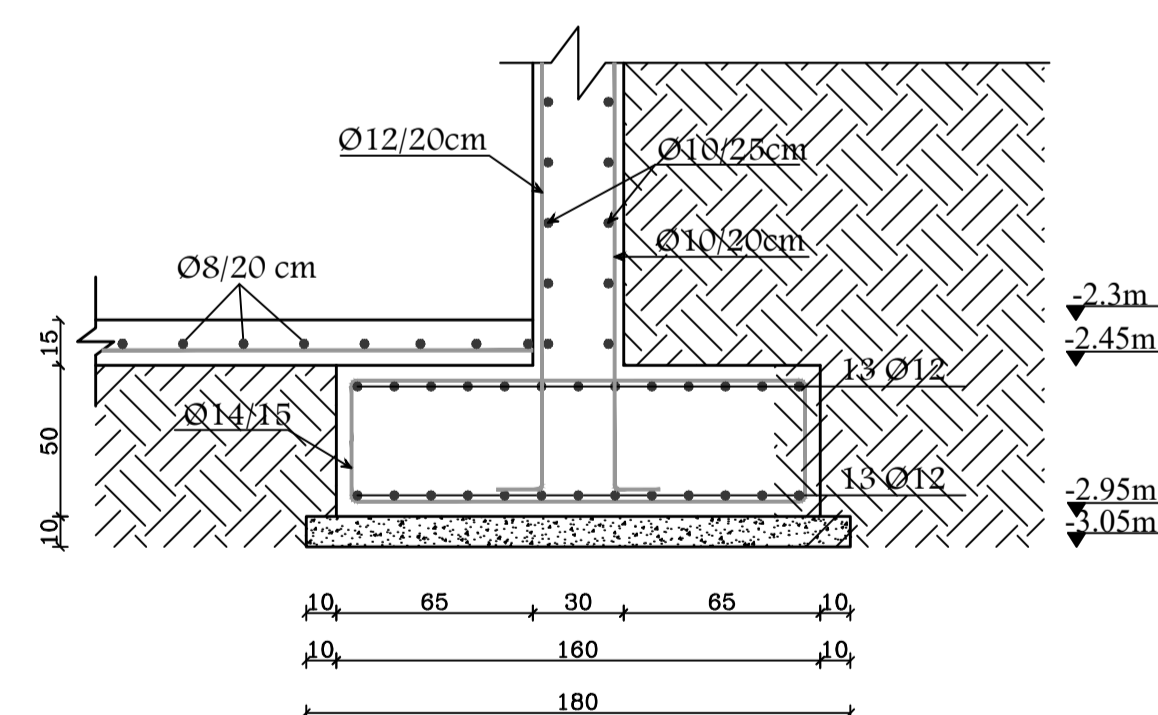
Strip Footing 4 Detail



SECTION 4-4

SCALE 1:25

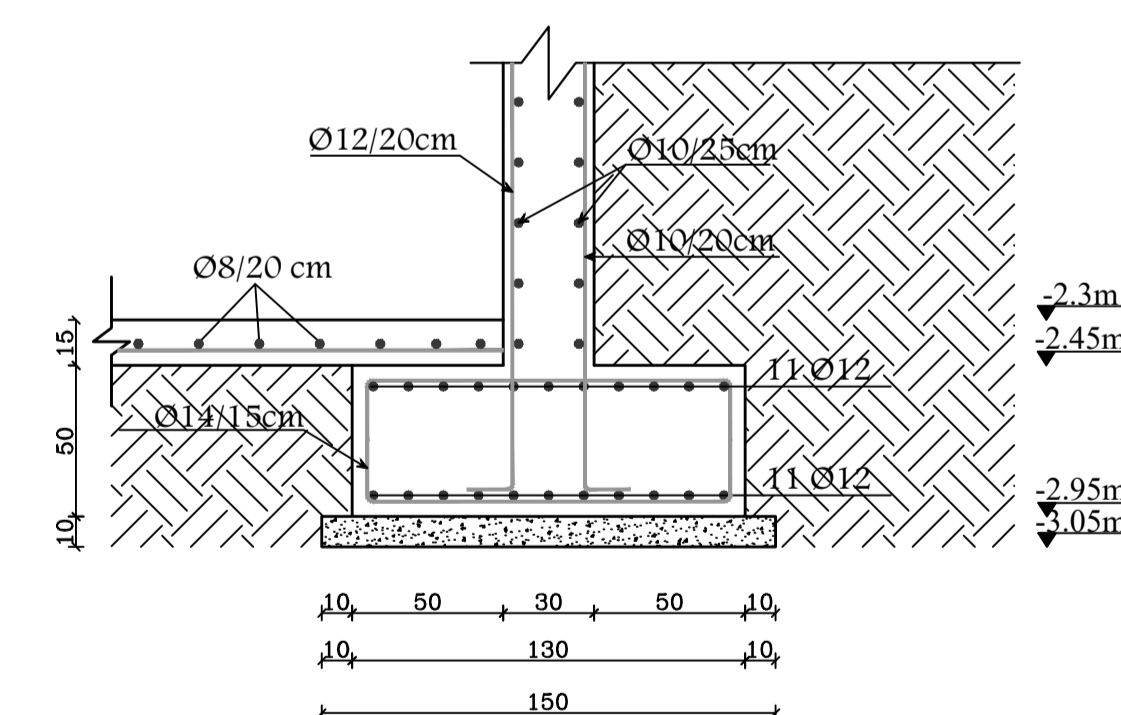
Strip Footing 5 Detail



SECTION 5-5

SCALE 1:25

Strip Footing 6 Detail



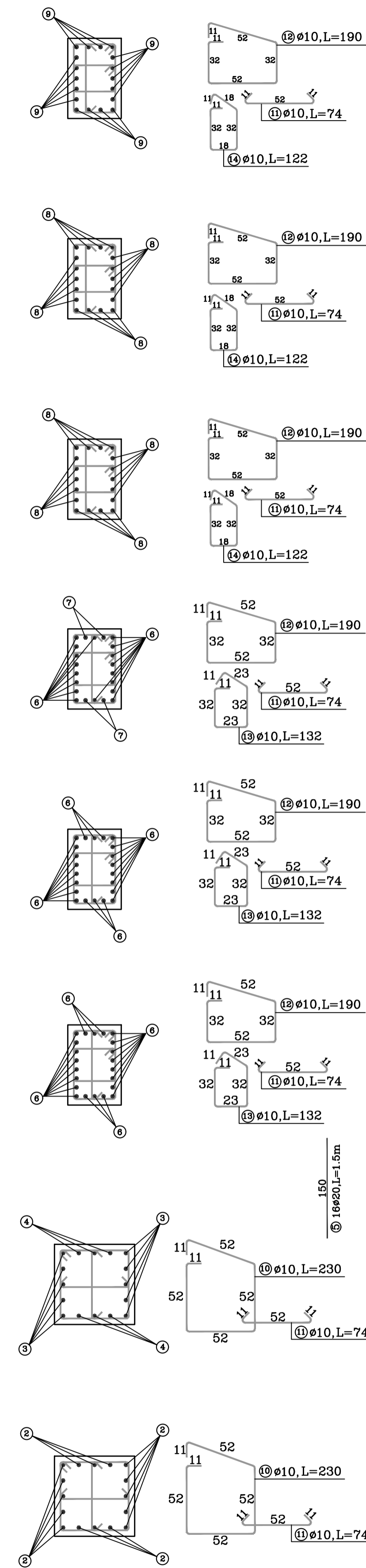
SECTION 6-6

SCALE 1:25

# DETAILING OF COLUMNS

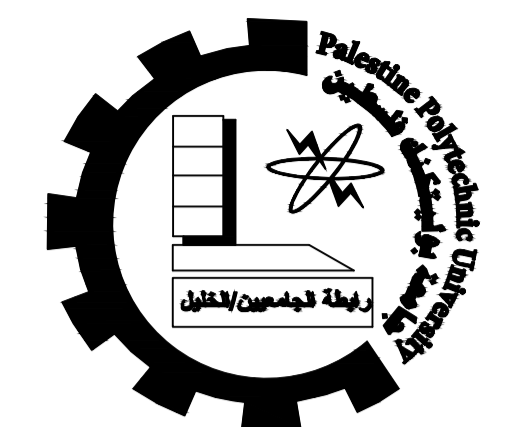
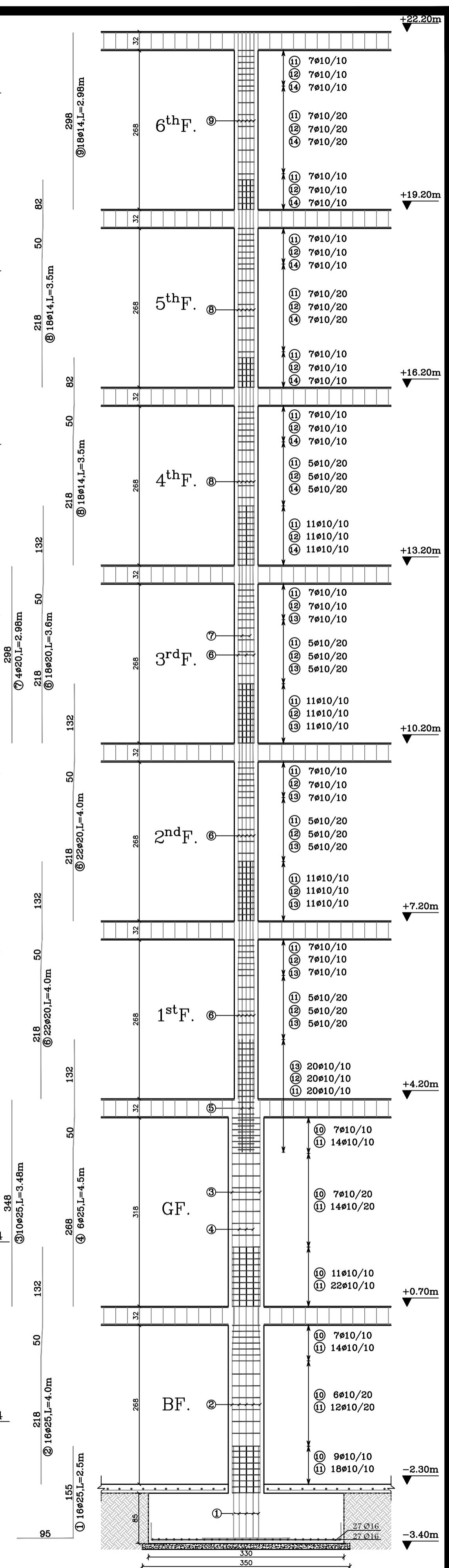
SCALE 1:25

Group No.	Column No.	Column Section	Stirrups Deatiling
"C1"	BF&GF	C9, C21, C22 C23, C24 & C25	
	1F,2F&3F	C9, C19 & C21	
	4F,5F,6F&ROOF	C1, C3, C9, C13, C19, C20 & C21	
"C2"	BF&GF	C3, C6, C12, C10 C13, C16, C19 & C20	
	1F,2F&3F	C1, C2, C3, C6, C7 C10, C11, C12, C13 C16, C18 & C20	
	4F,5F,6F&ROOF	C2, C4, C5, C6, C7, C8 C10, C11, C12, C14 C15, C16, C17 & C18	
"C3"	BF&GF	C11 & C18	
	1F,2F&3F	C4 & C15	
"C4"	BF&GF	C1, C2, C7 & C15	
	1F,2F&3F	C14 & C17	
"C5"	BF&GF	C4 & C17	
	1F,2F&3F	C5 & C8	
"C6"	BF&GF	C14	
"C7"	BF&GF	C5 & C8	

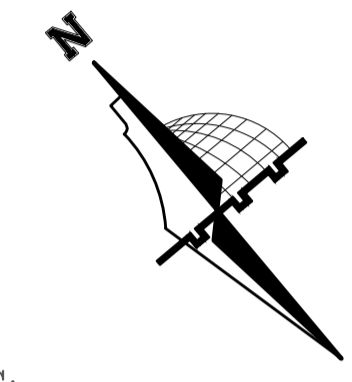


Longitudinal Section in Column C14

SCALE 1:50



Palestine Polytechnic University  
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Building Engineering



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Graduation Project  
"Structural Design of a Residential Building"

Supervisor  
Dr.Nafith Nssereddin

Project Team  
Hala Al-Qadi  
Mai Hashlamoun

Drawing Title  
COLUMNS DETAILS

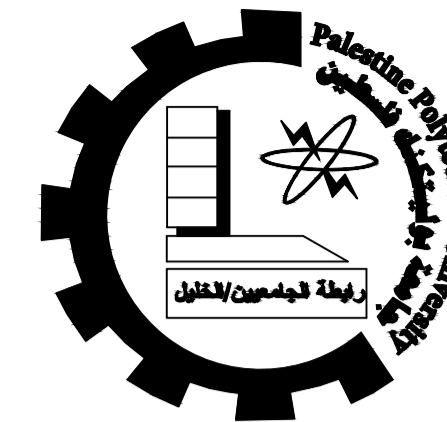
SCALE  
1/100

DRAW. NO.  
S 06

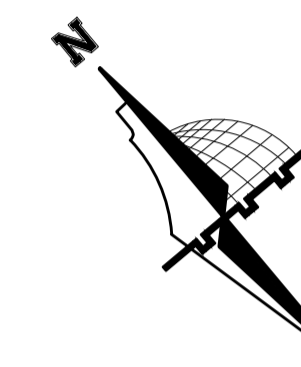
2020







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Graduation Project

"Structural Design of a Residential Building"

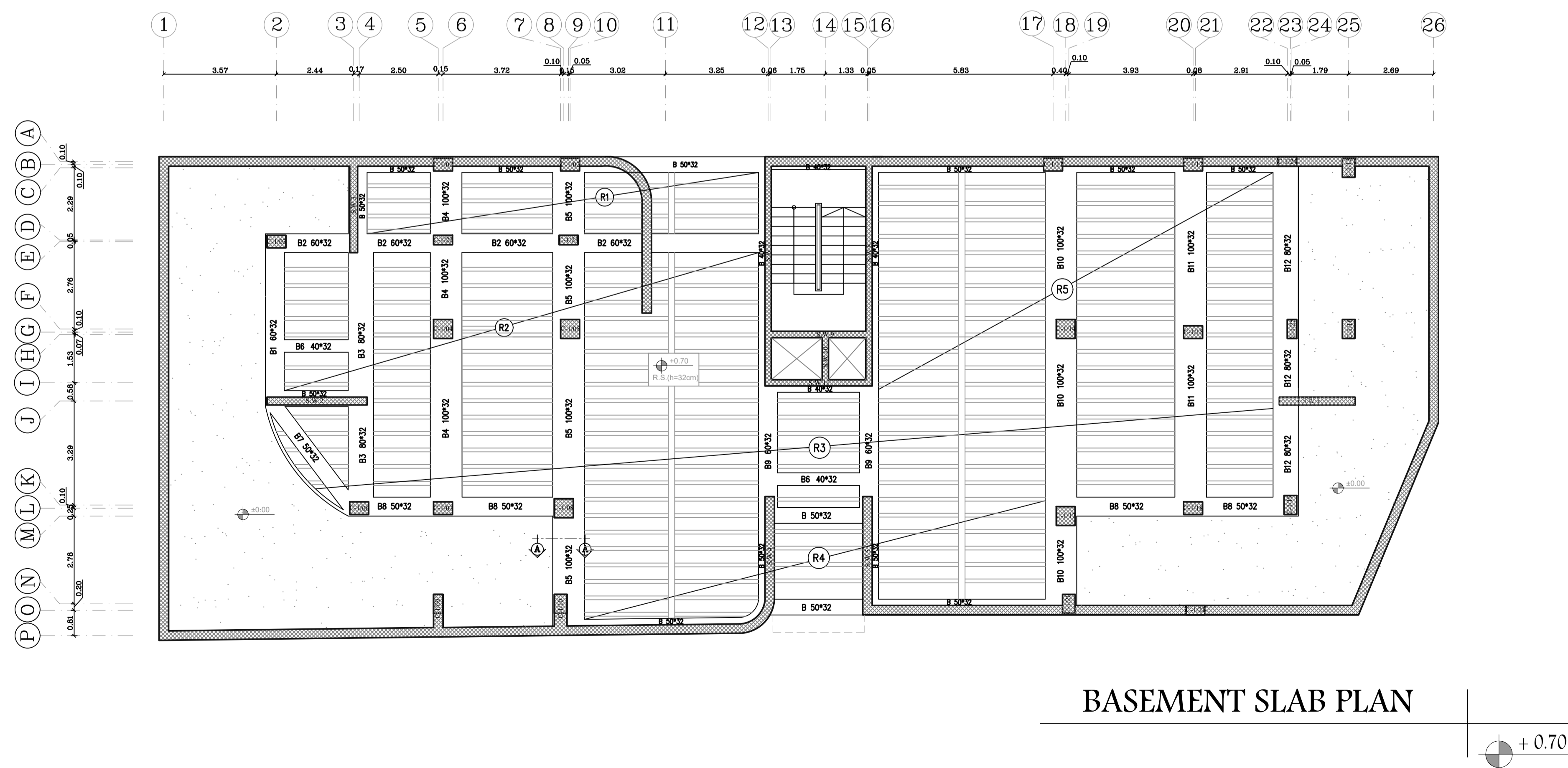
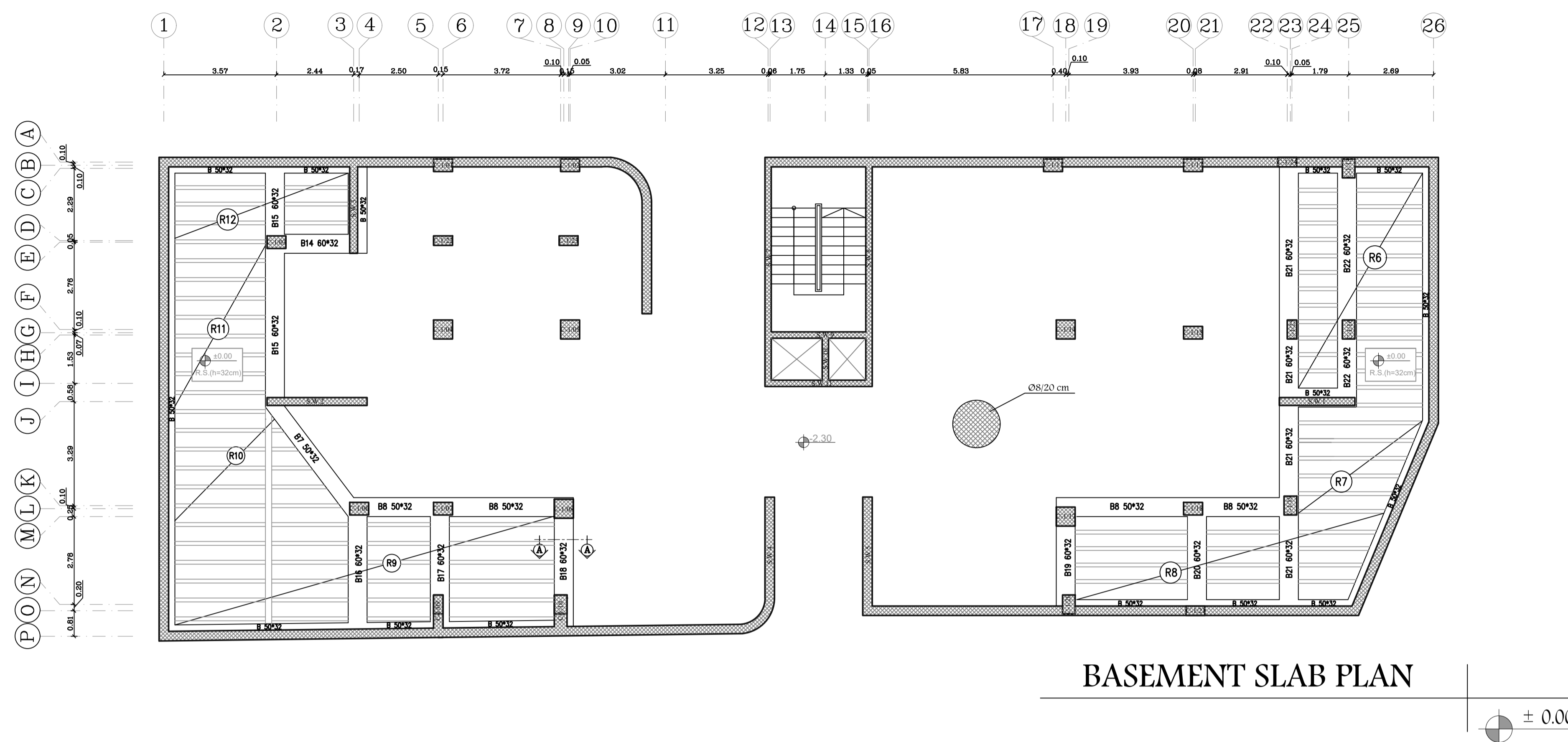
Supervisor  
 Dr.Nafith Nssereddin

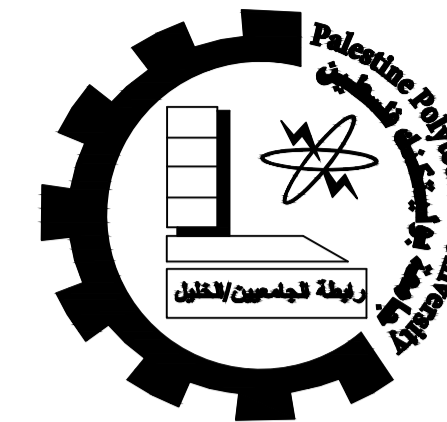
Project Team  
 Hala Al-Qadi  
 Mai Hashlamoun

Drawing Title  
 BASEMENT SLAB PLAN

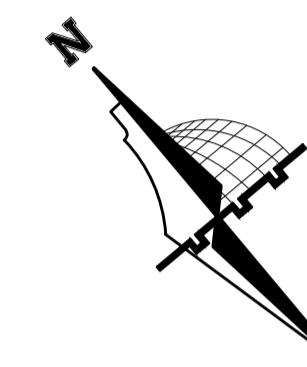
SCALE  
 1/100  
 DRAW. NO.  
 S 07

2020





Palestine Polytechnic University  
 College of Engineering  
 Civil & Arch. Eng Department  
 Building Engineering



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Graduation Project

"Structural Design of a Residential Building"

Supervisor

Dr.Nafith Nssereddin

Project Team

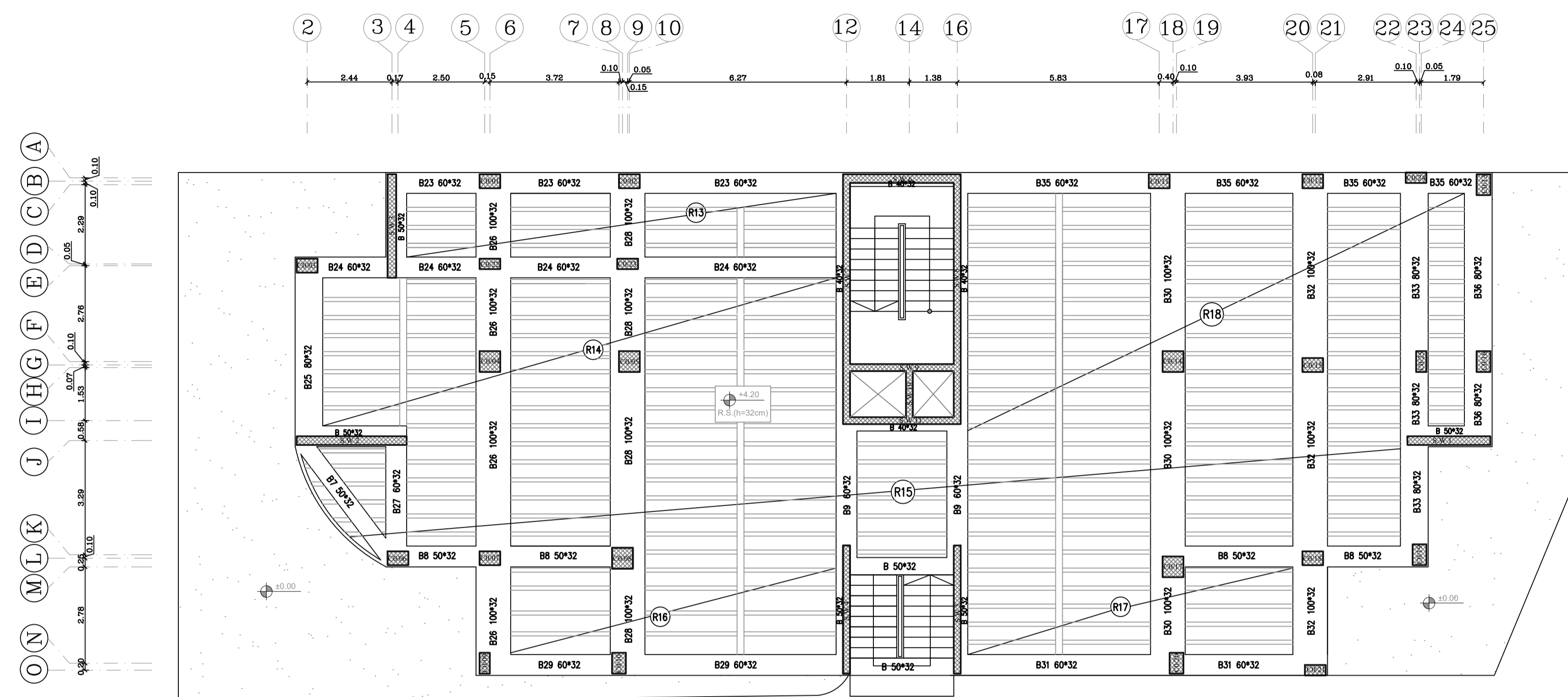
Hala Al-Qadi  
 Mai Hashlamoun

Drawing Title  
 GROUND & TYPICAL  
 SLAB PLAN

SCALE  
 1/100

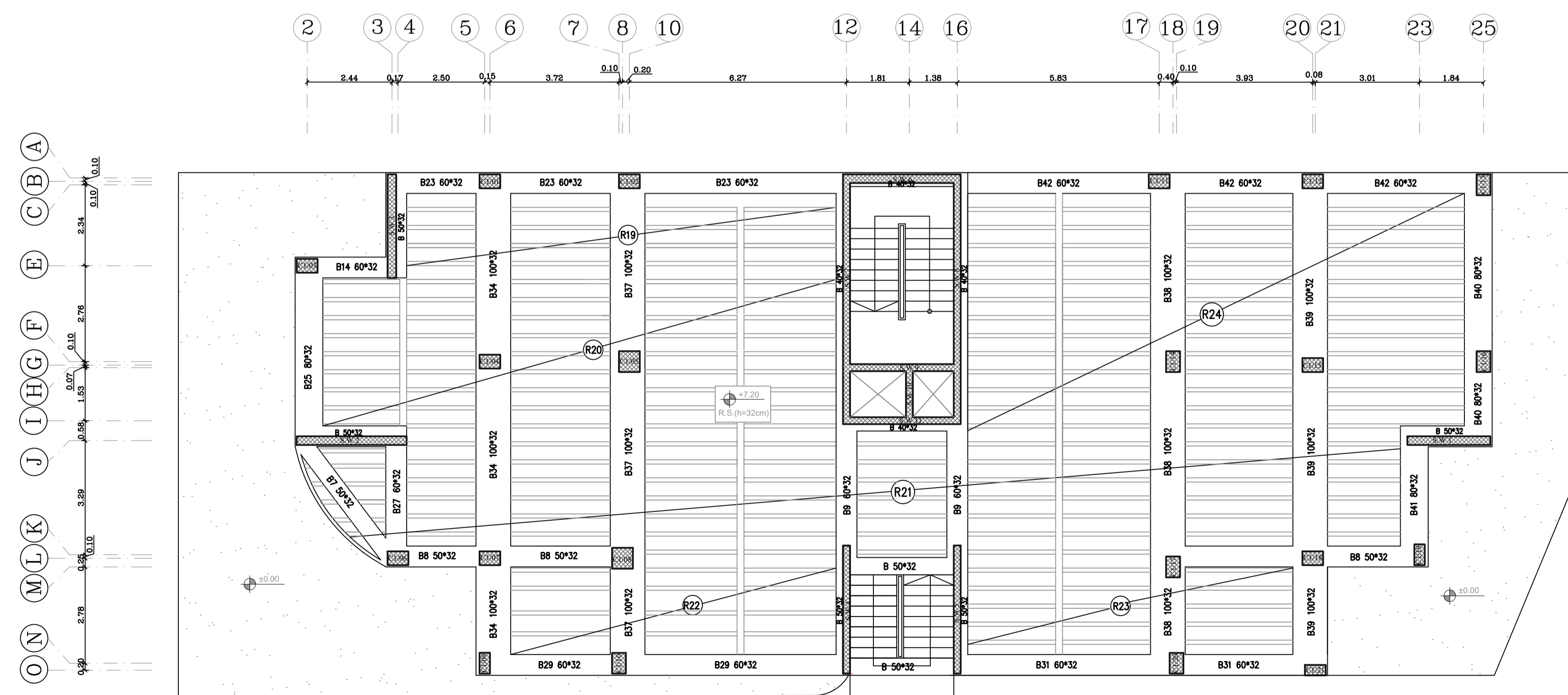
DRAW. NO.  
 S 08

2020



GROUND FLOOR SLAB PLAN

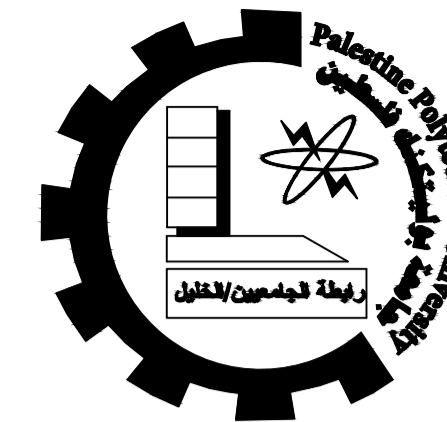
+ 4.20



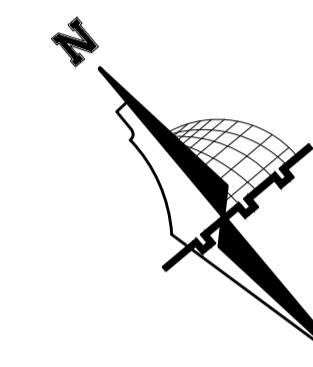
TYPICAL FLOOR SLAB PLAN

+ 7.34





Palestine Polytechnic University  
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 Building Engineering



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Graduation Project

"Structural Design of a Residential Building"

Supervisor

Dr.Nafith Nssereddin

Project Team

Hala Al-Qadi  
 Mai Hashlamoun

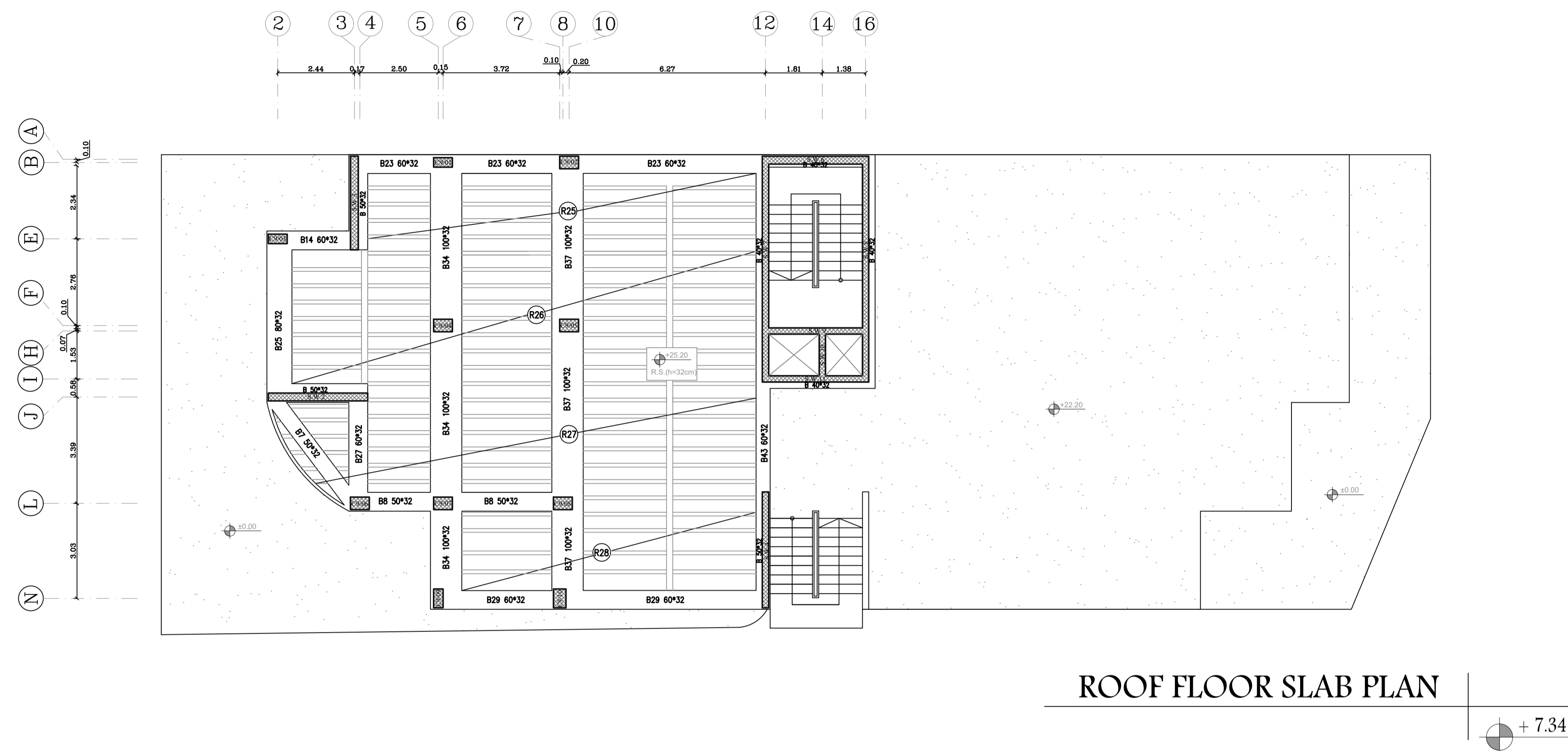
Drawing Title

ROOF SLAB PLAN

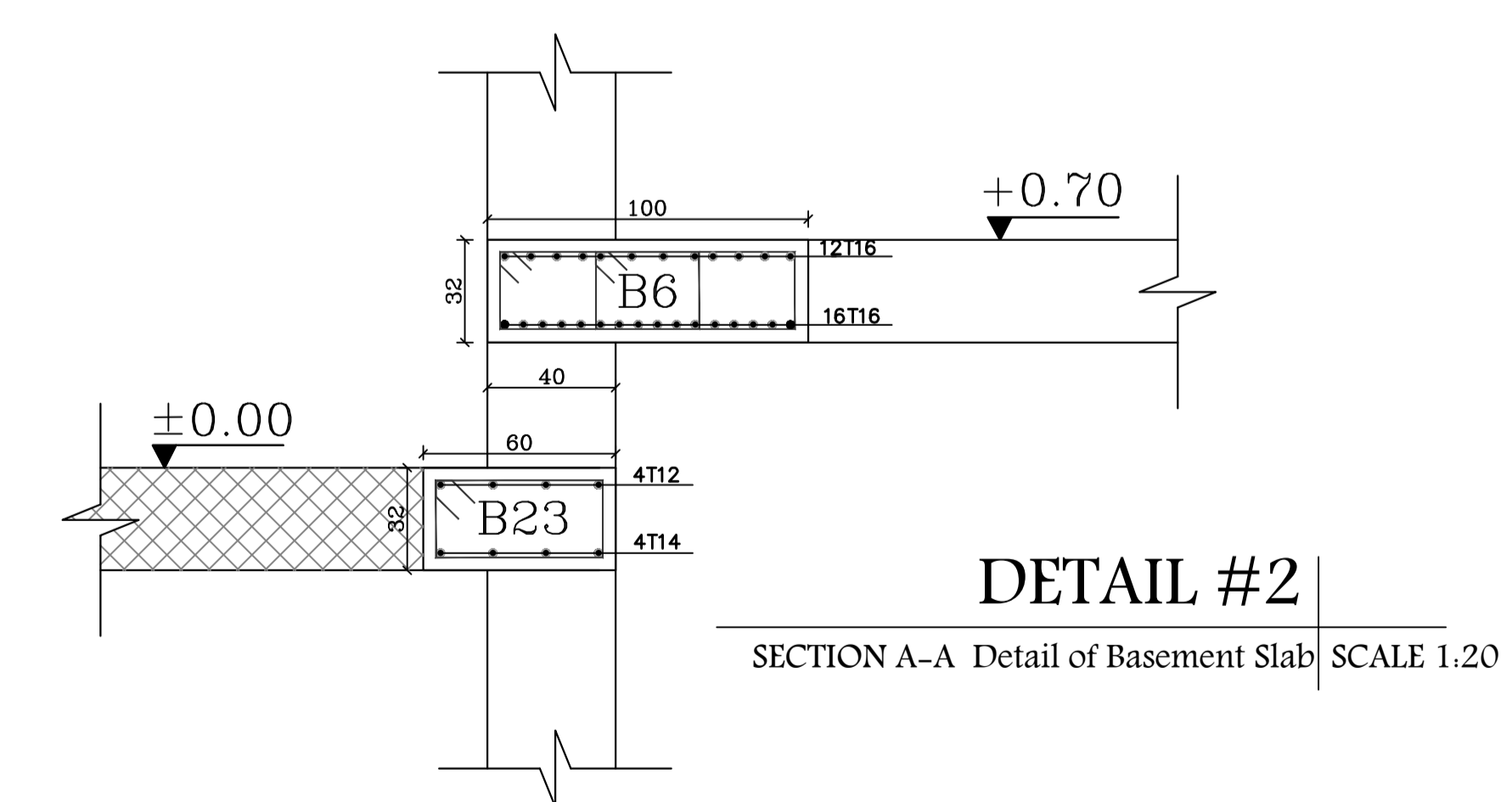
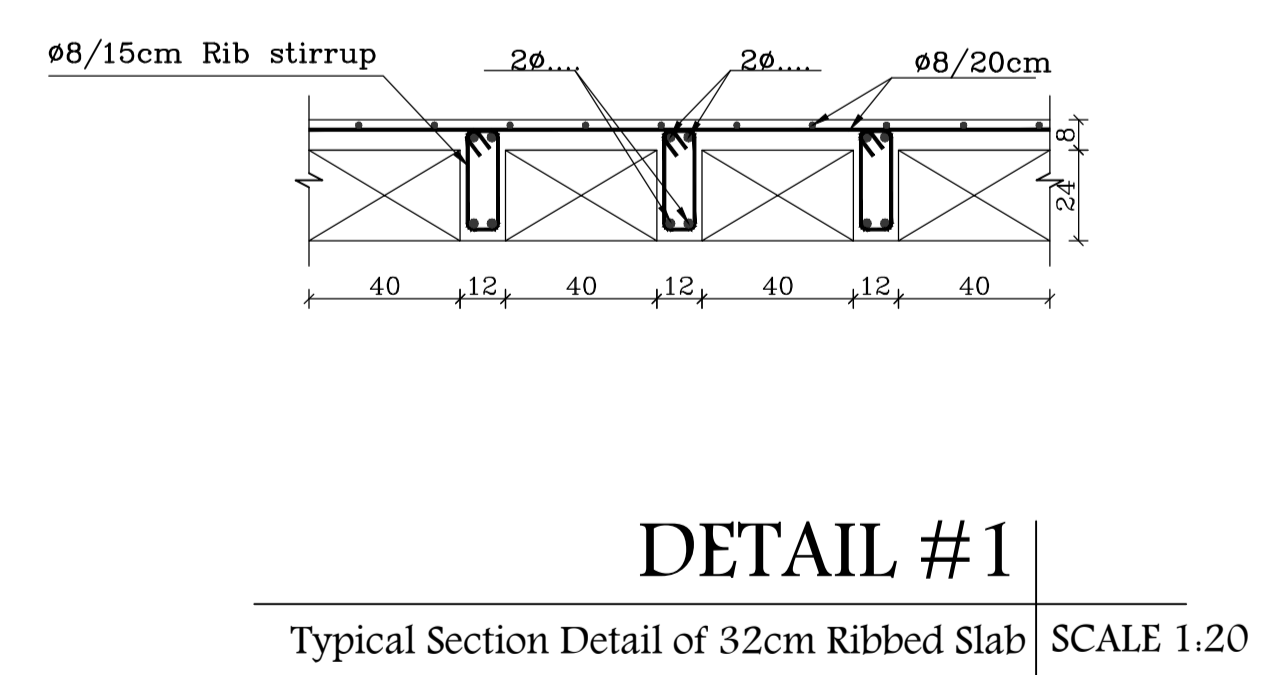
SCALE  
 1/100

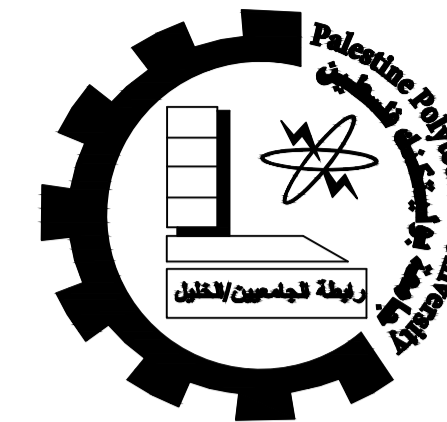
DRAW. NO.  
 S 09

2020

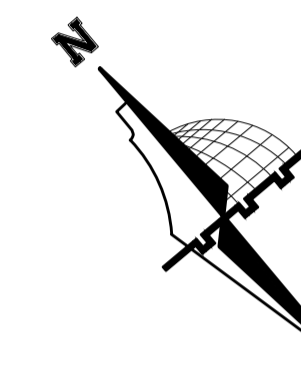


**SLAB DETAILS**





Palestine Polytechnic University  
 College of Engineering  
 Civil & Arch. Eng Department  
 Building Engineering



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Graduation Project  
 "Structural Design of a Residential Building"

Supervisor  
 Dr.Nafith Nssereddin

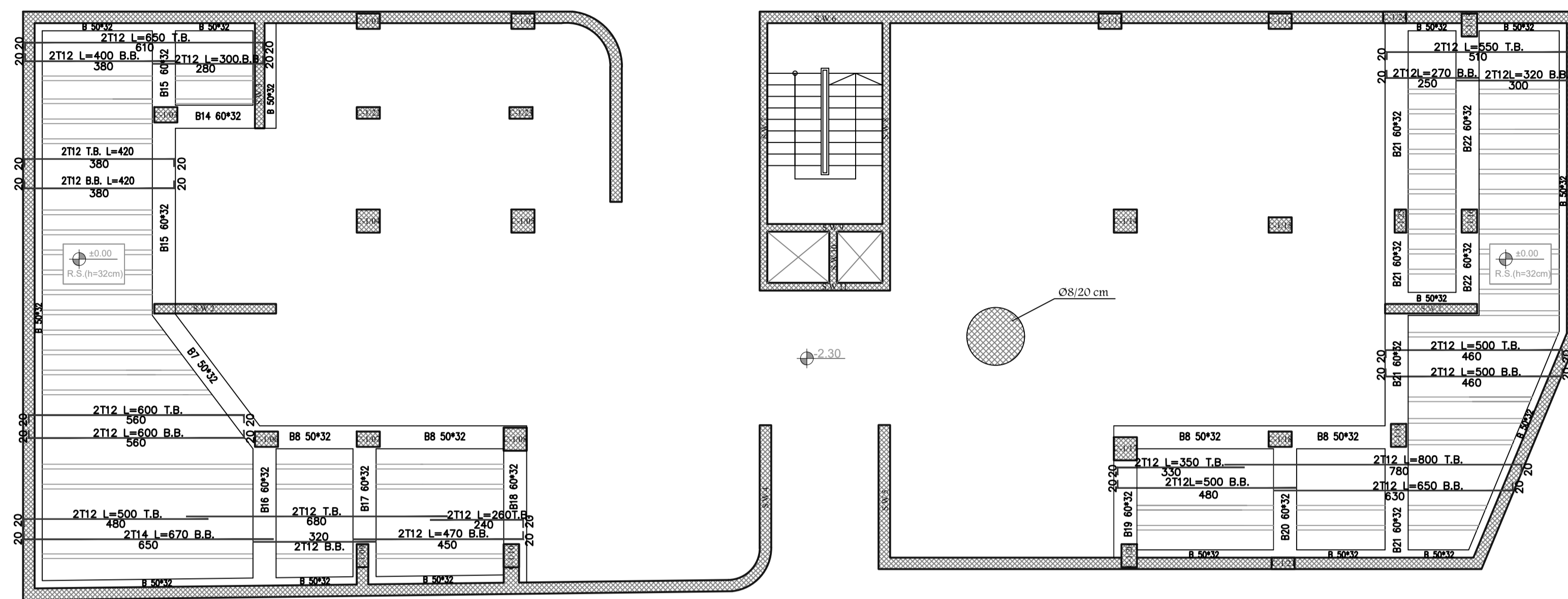
Project Team  
 Hala Al-Qadi  
 Mai Hashlamoun

Drawing Title  
 SLABS DETAILING

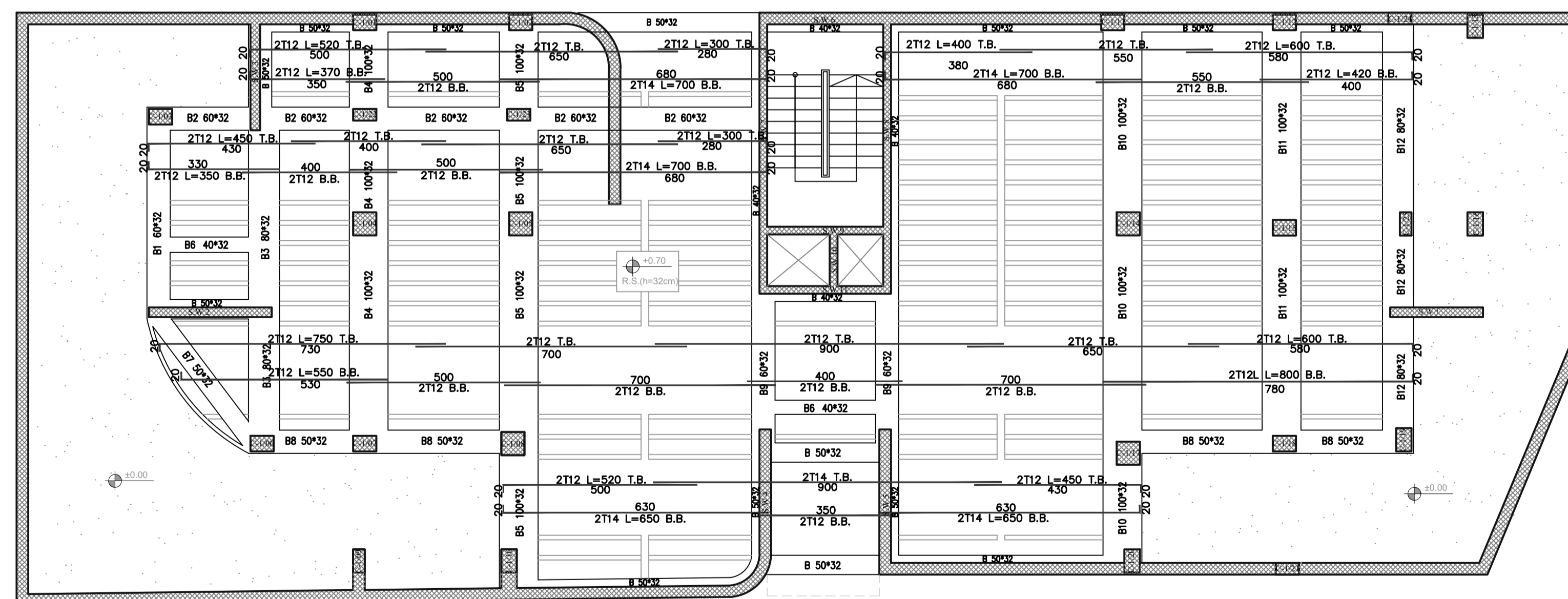
SCALE  
 1/100

DRAW. NO.  
 S 10

2020

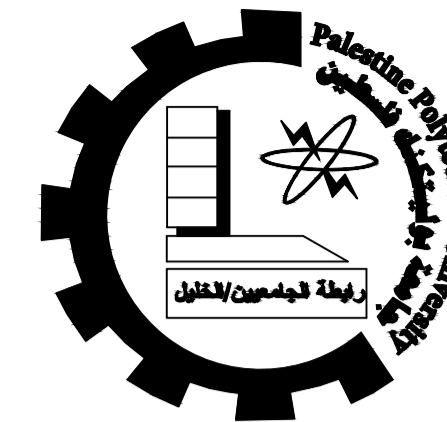


REINFORCEMENT DETAILING IN  
 BASEMENT FLOOR SLAB

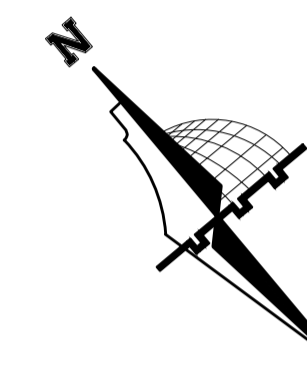


REINFORCEMENT DETAILING IN  
 BASEMENT FLOOR SLAB





Palestine Polytechnic University  
 College of Engineering  
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Graduation Project  
 "Structural Design  
 of a Residential Building"

Supervisor  
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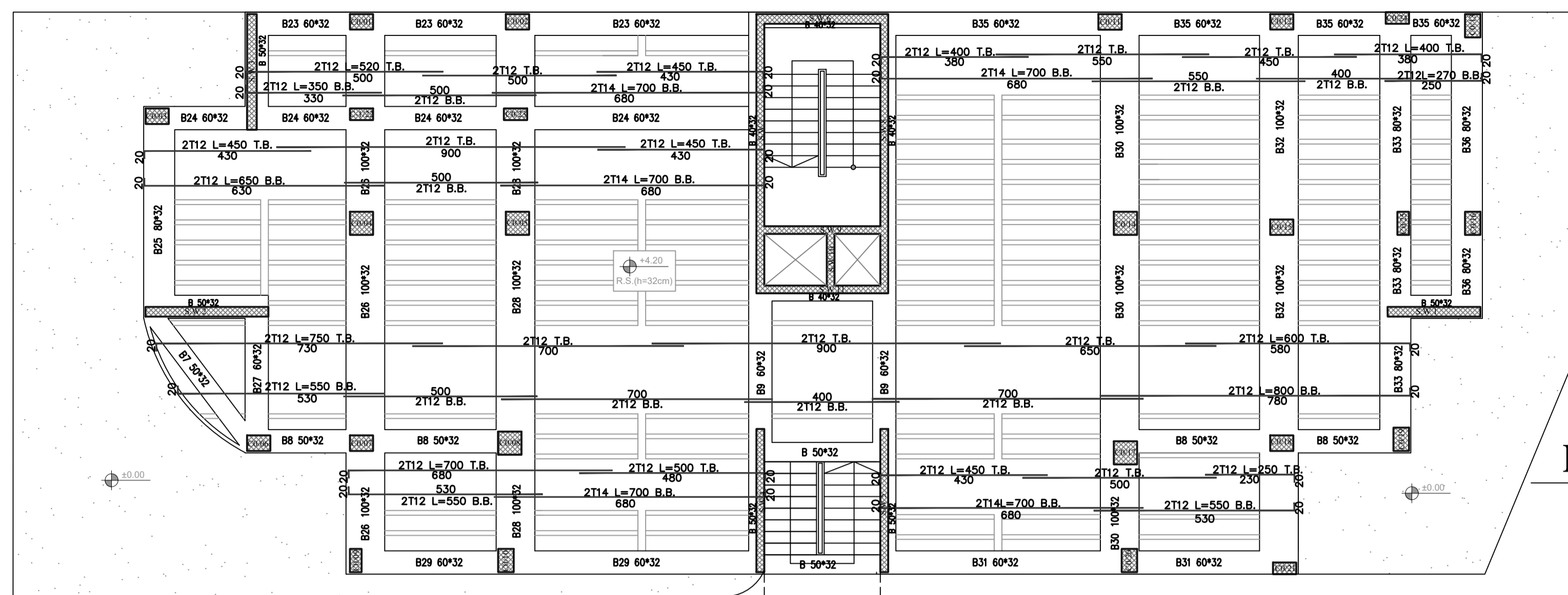
Project Team  
 Hala Al-Qadi  
 Mai Hashlamoun

Drawing Title  
 SLABS DETAILING

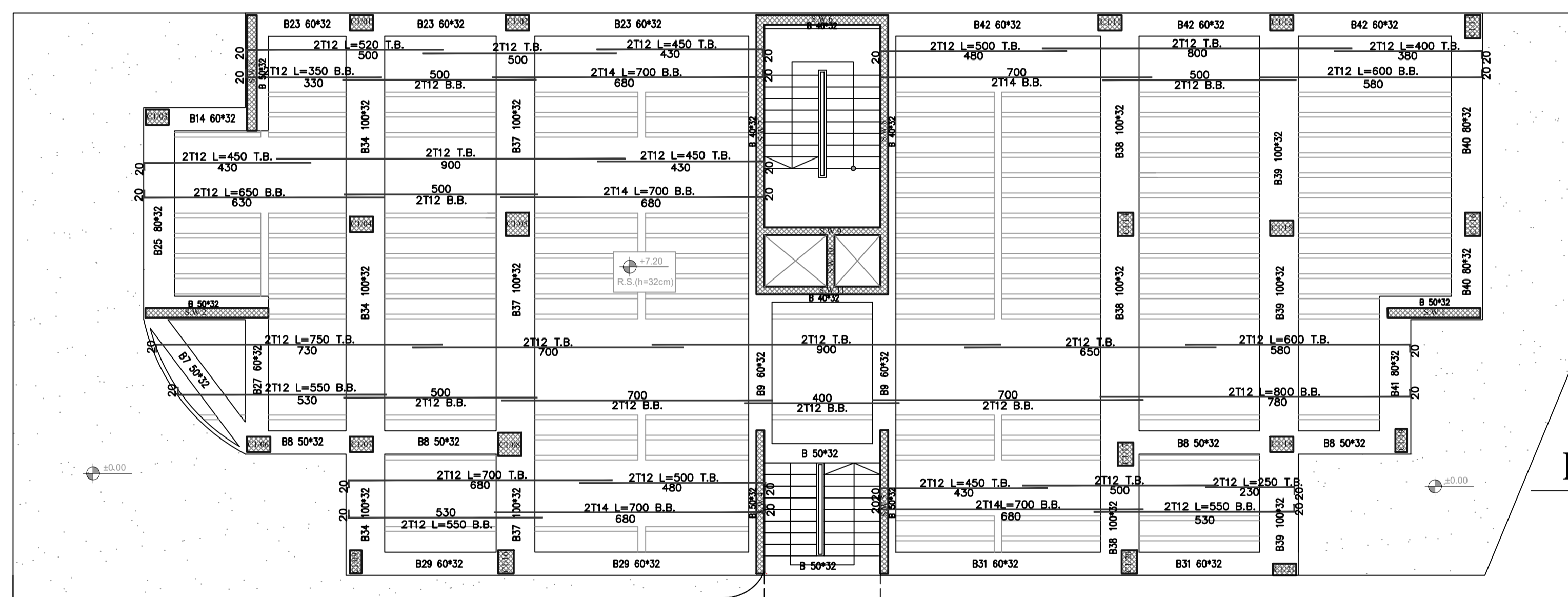
SCALE  
 1/100

DRAW. NO.  
 S 11

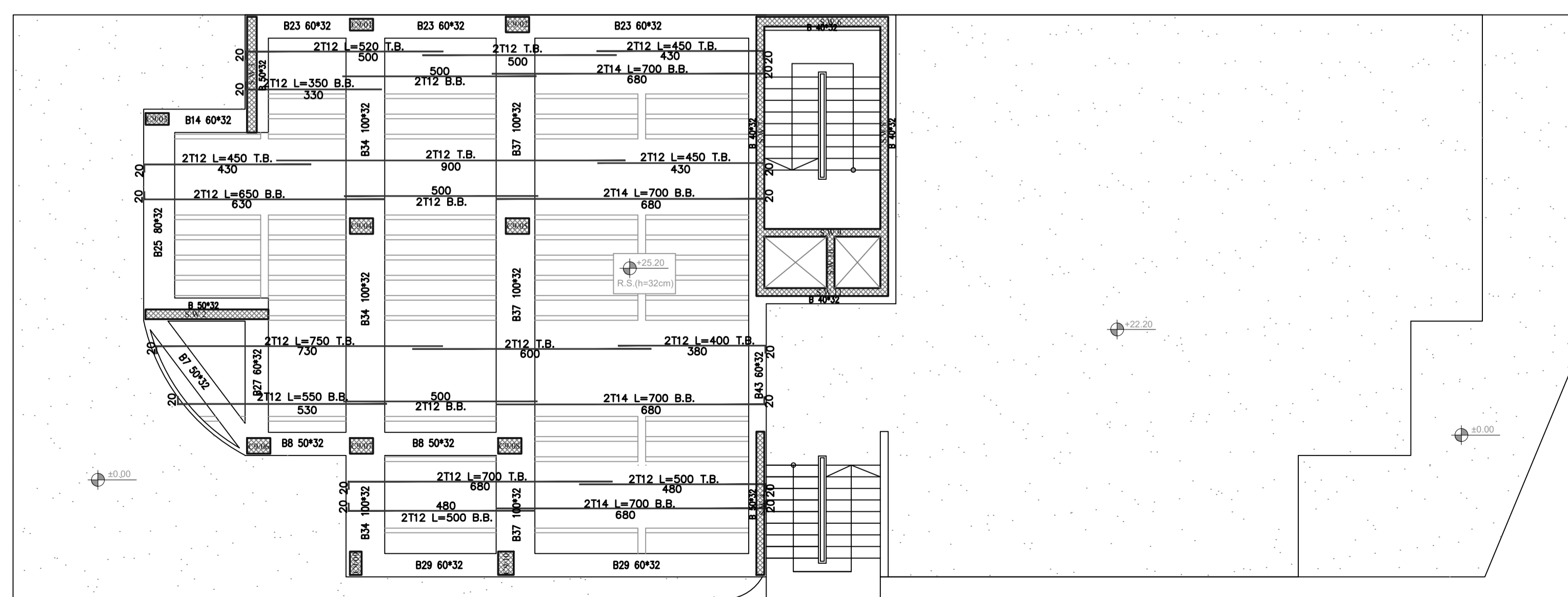
2020



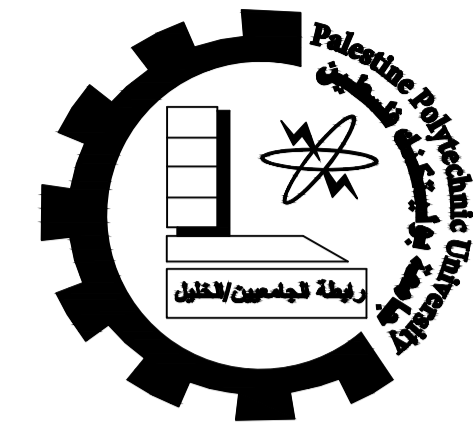
REINFORCEMENT DETAILING IN  
 GROUND FLOOR SLAB



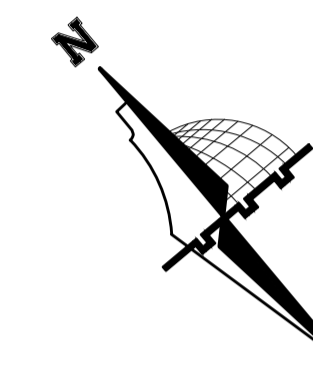
REINFORCEMENT DETAILING IN  
 TYPICAL FLOOR SLAB



REINFORCEMENT DETAILING IN  
 ROOF FLOOR SLAB



Palestine Polytechnic University  
 College of Engineering  
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Graduation Project  
 "Structural Design of a Residential Building"

Supervisor  
 Dr.Nafith Nssereddin

Project Team  
 Hala Al-Qadi  
 Mai Hashlamoun

Drawing Title  
 BEAMS DETAILING

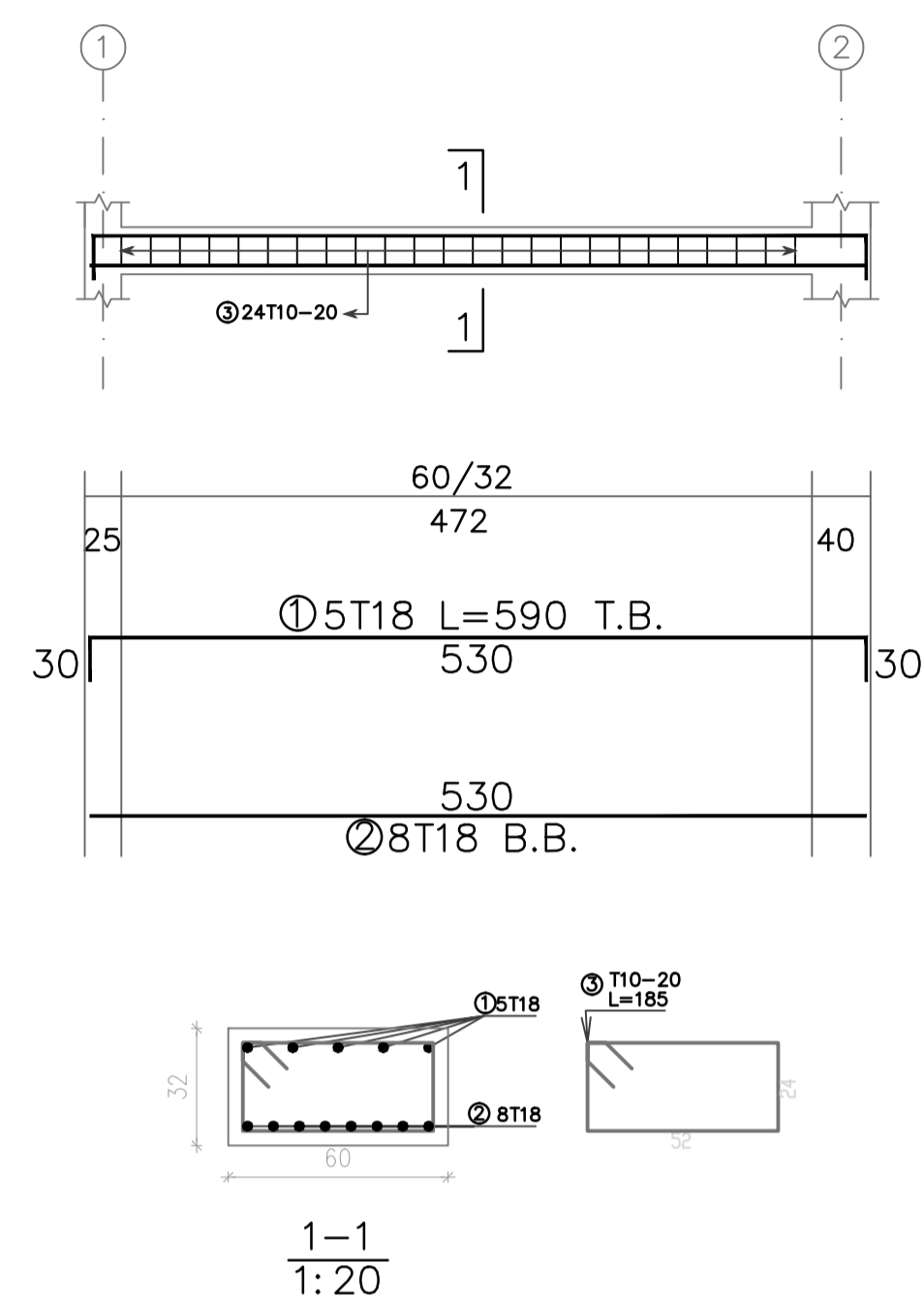
SCALE  
 1/50

DRAW. NO.  
 S 12

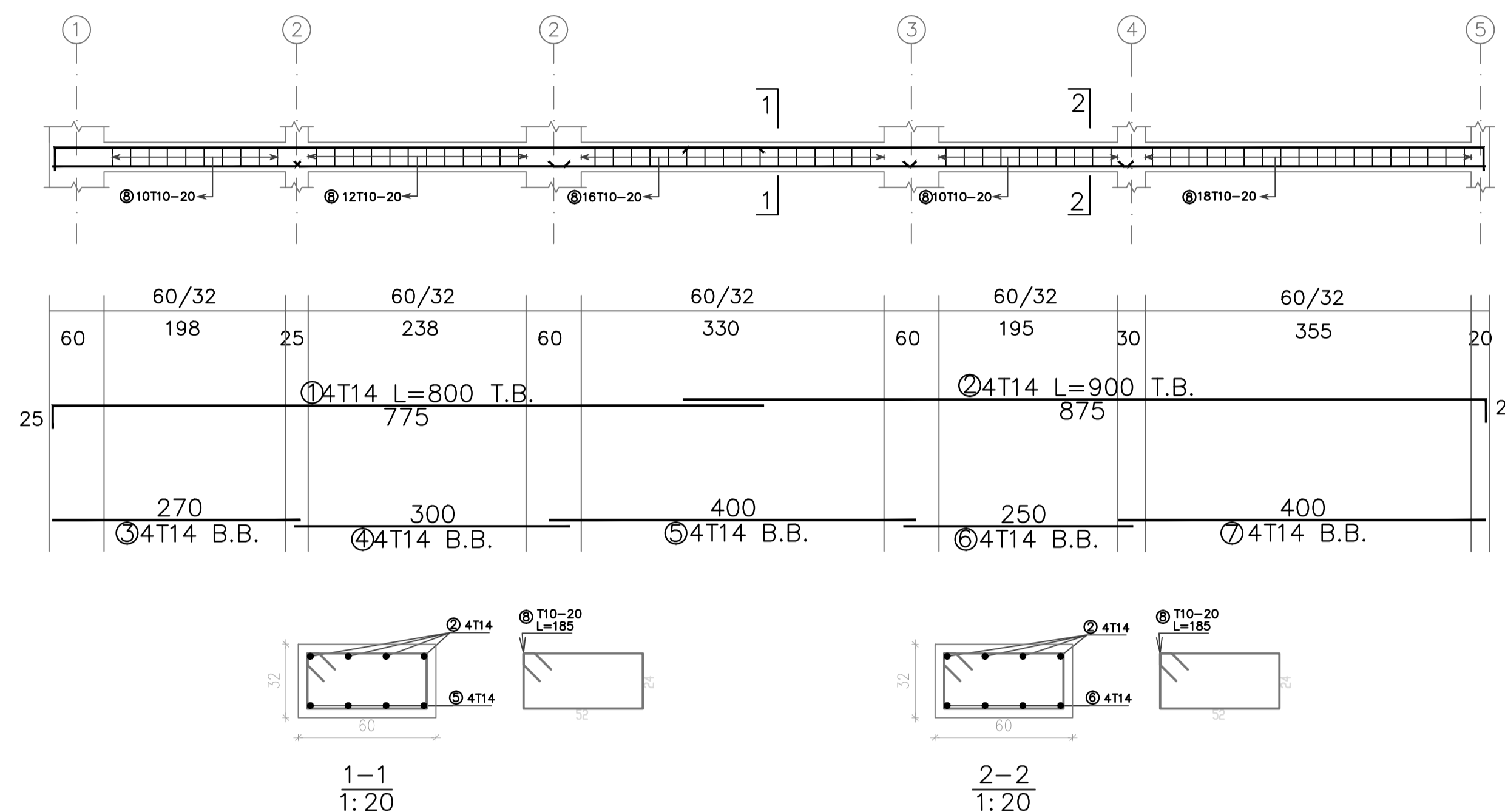
2020



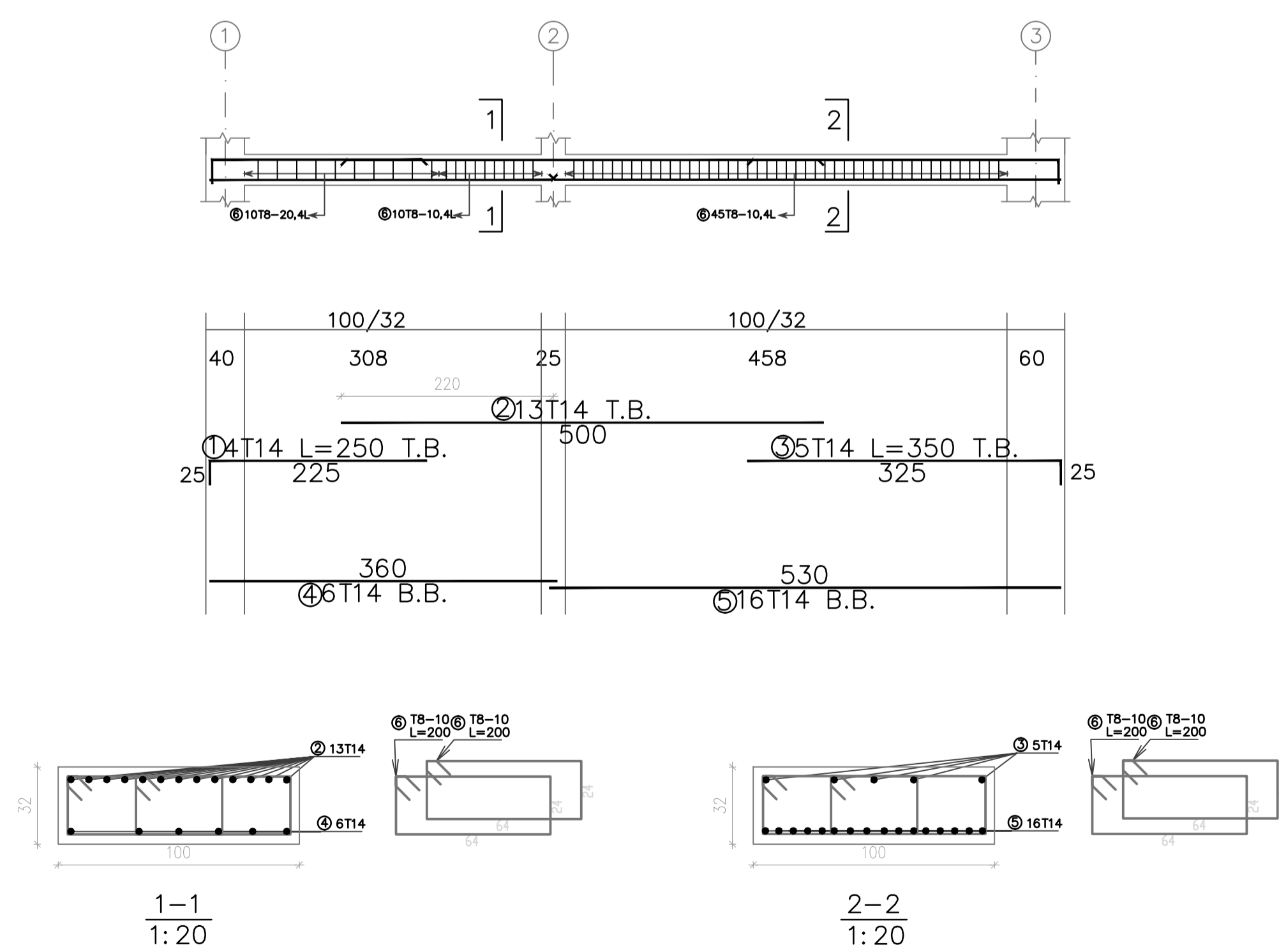
BEAM - B1 (60/32)



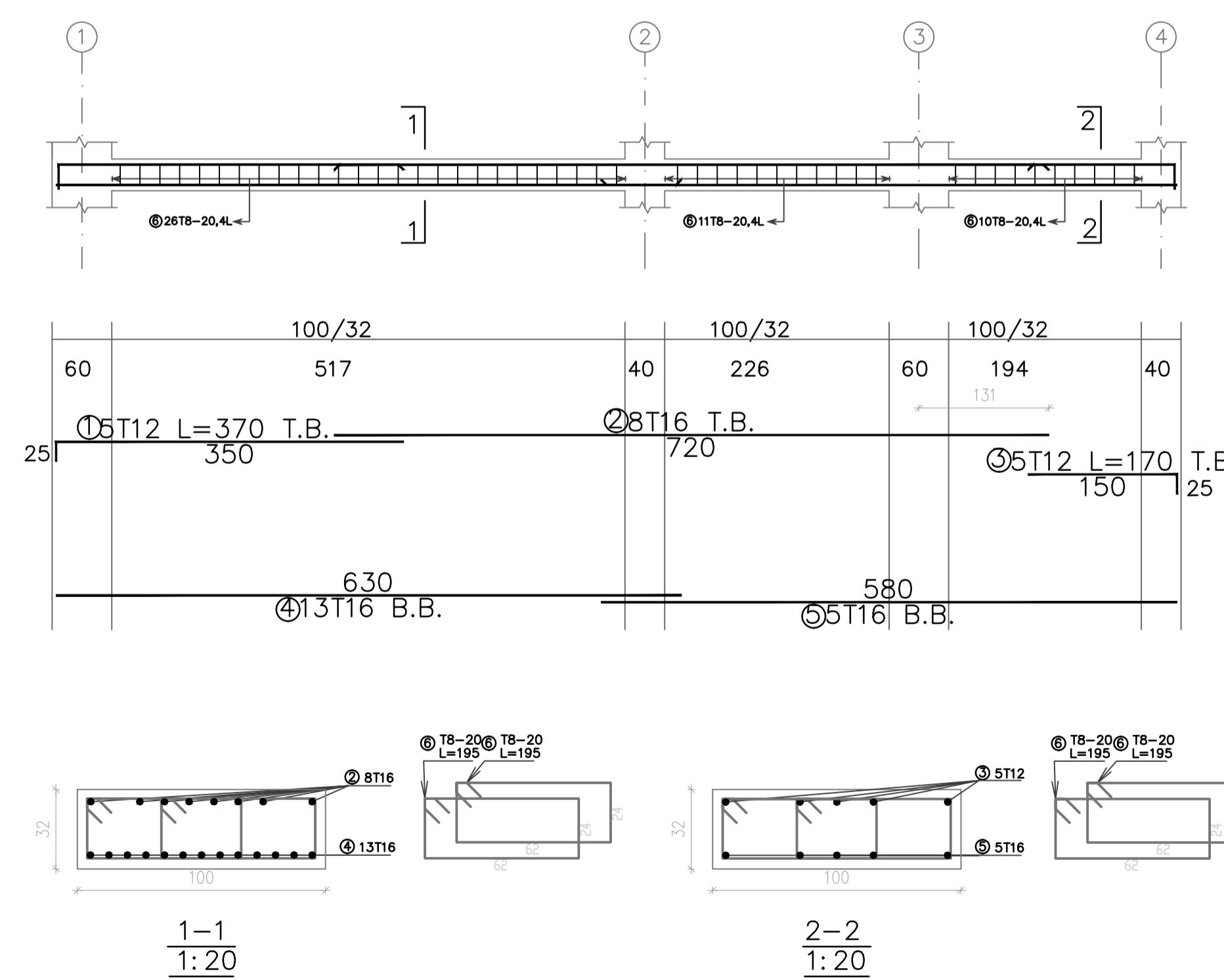
BEAM - B2 (60/32)



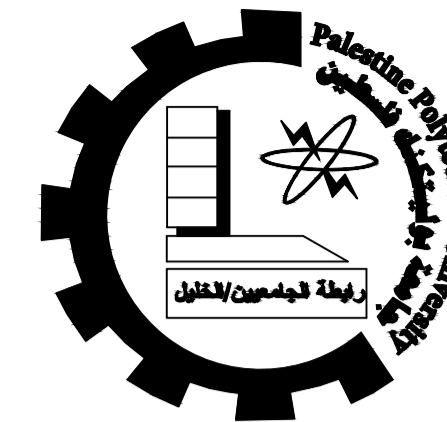
BEAM - B3 (100/32)



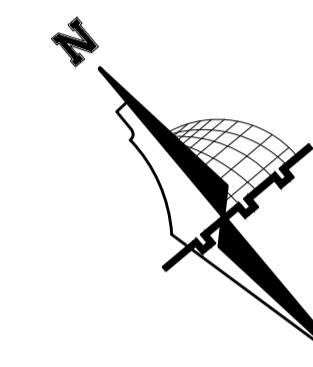
BEAM - B4 (100/32)







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 "Structural Design of a Residential Building"

Supervisor  
 Dr.Nafith Nssereddin

Project Team  
 Hala Al-Qadi  
 Mai Hashlamoun

Drawing Title  
 BEAMS DETAILING

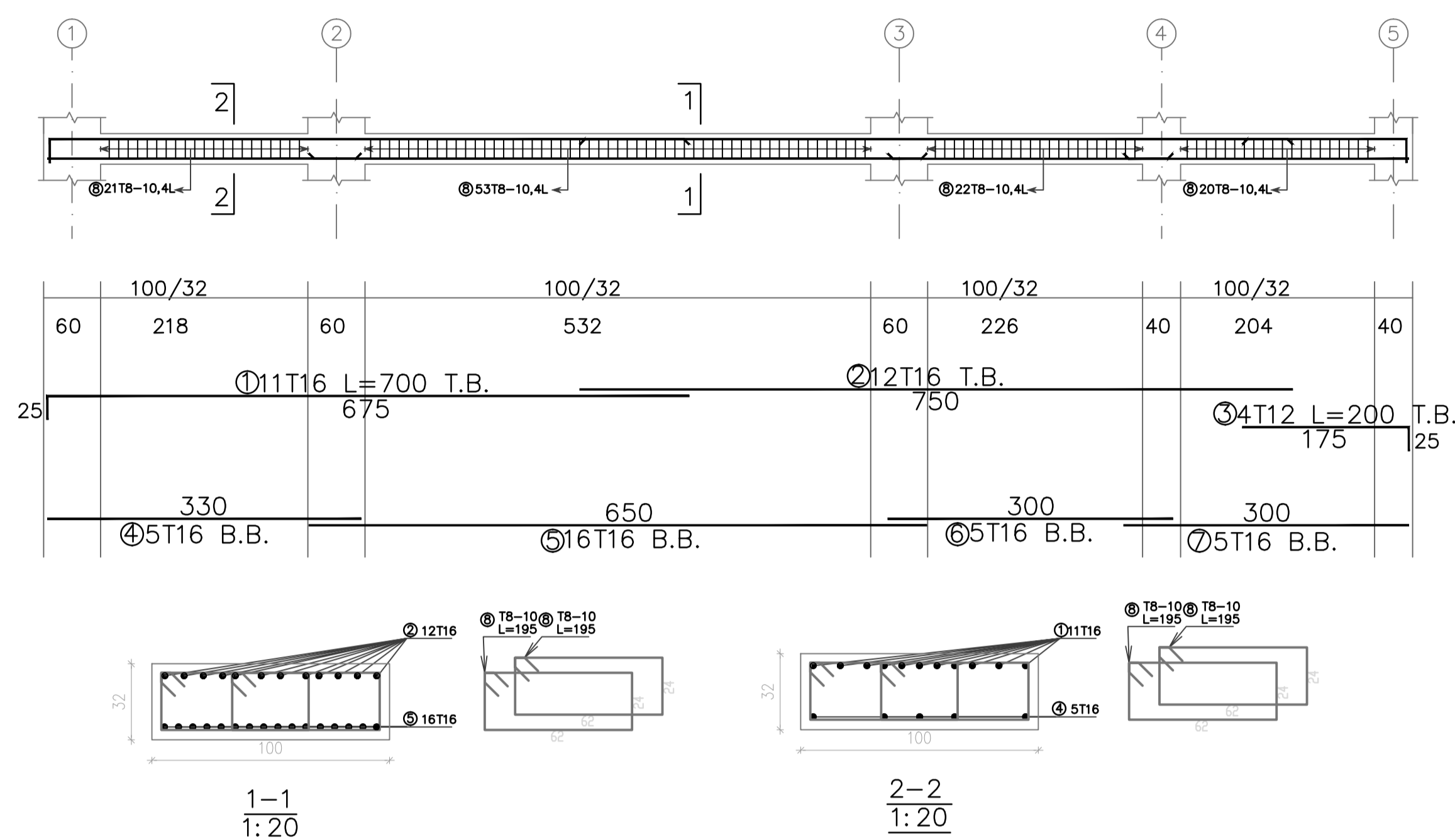
SCALE  
 1/50

DRAW. NO.  
 S13

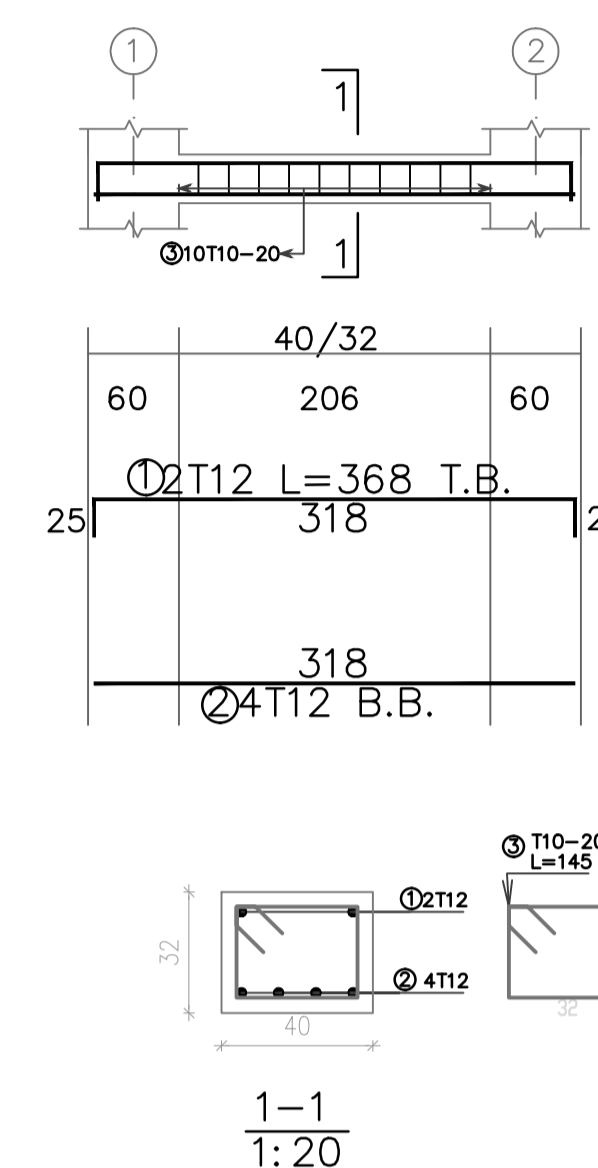
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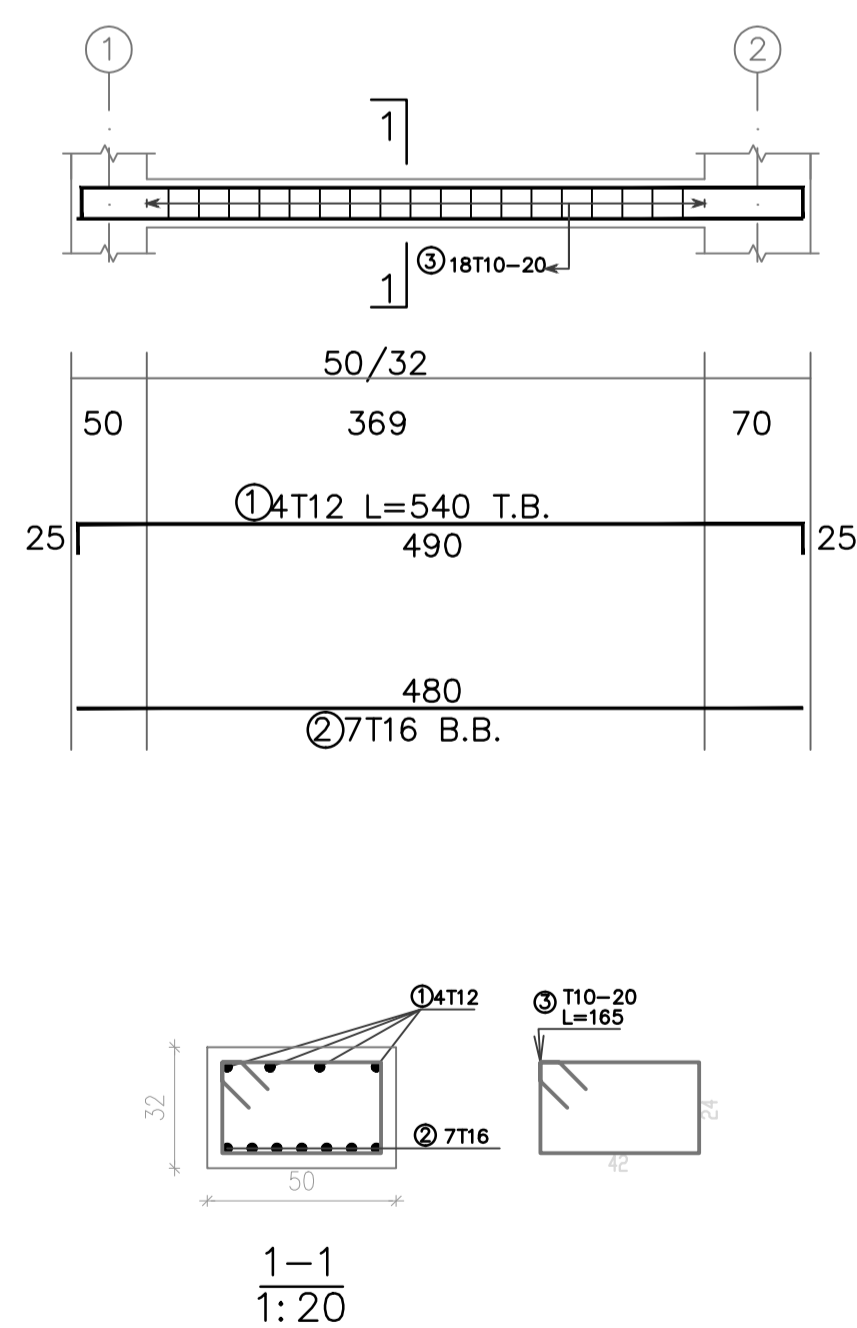
BEAM - B5 (60/32)



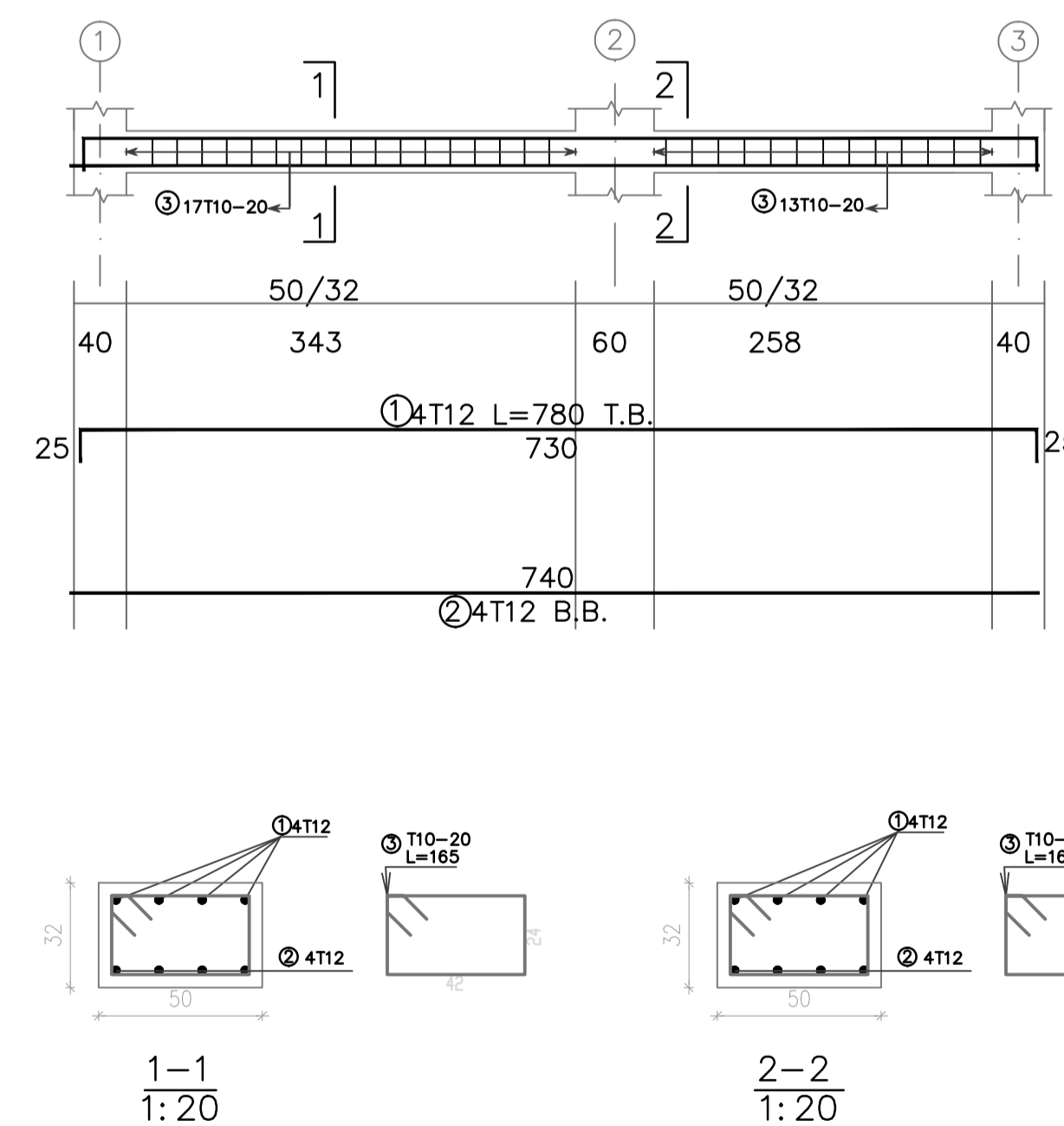
BEAM - B6 (60/32)



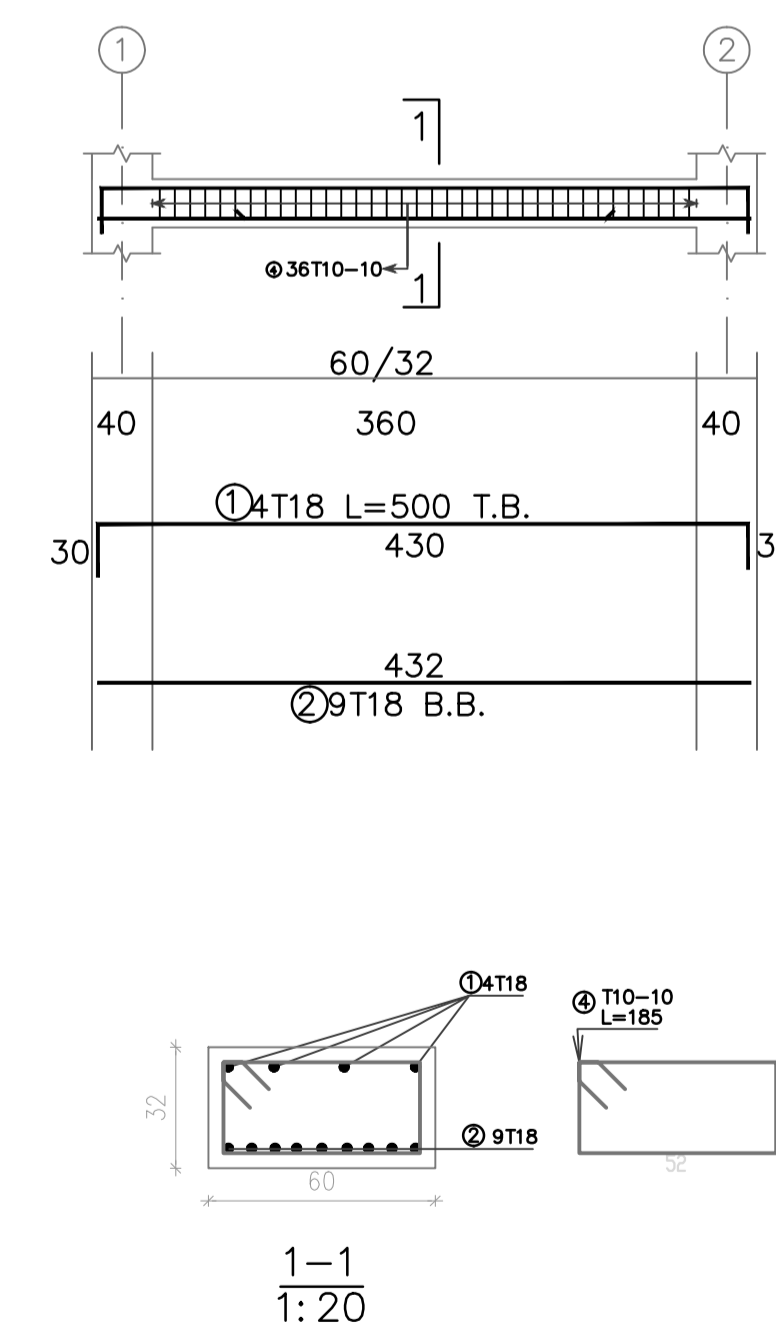
BEAM - B7 (50/32)

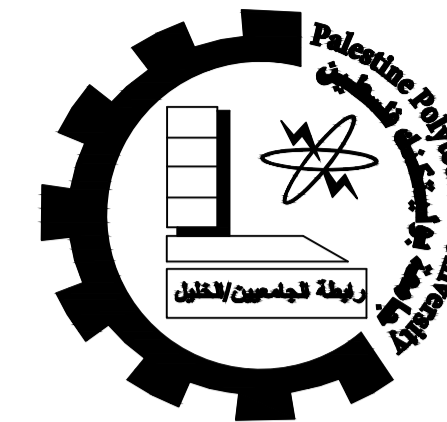


BEAM - B8 (100/32)

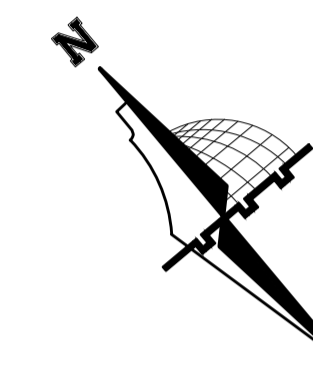


BEAM - B9 (100/32)





Palestine Polytechnic University  
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 Civil & Arch. Eng Department  
 Building Engineering



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Graduation Project  
 "Structural Design  
 of a Residential Building"

Supervisor  
 Dr.Nafith Nssereddin

Project Team  
 Hala Al-Qadi  
 Mai Hashlamoun

Drawing Title  
 BEAMS DETAILING

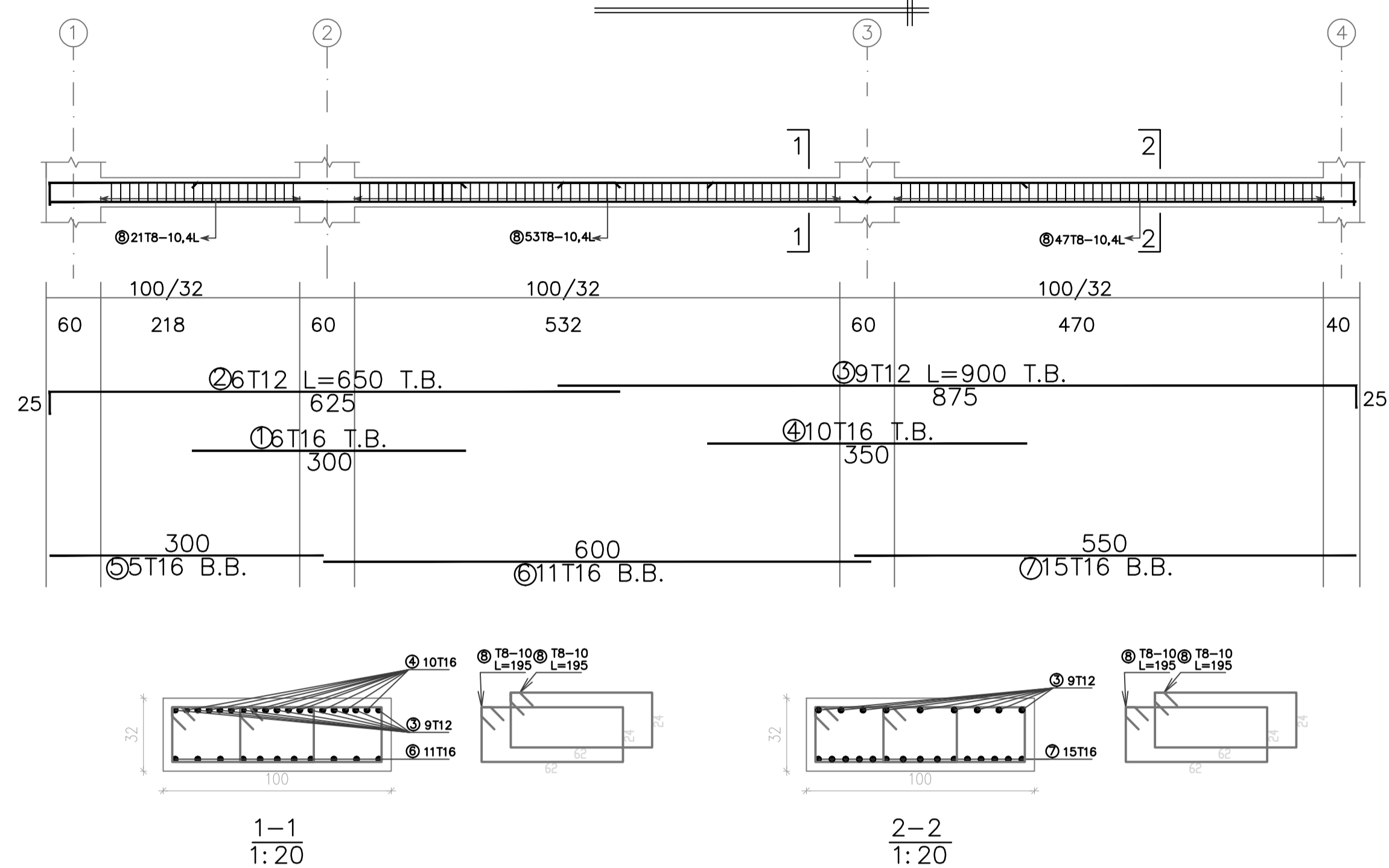
SCALE  
 1/50

DRAW. NO.  
 S 14

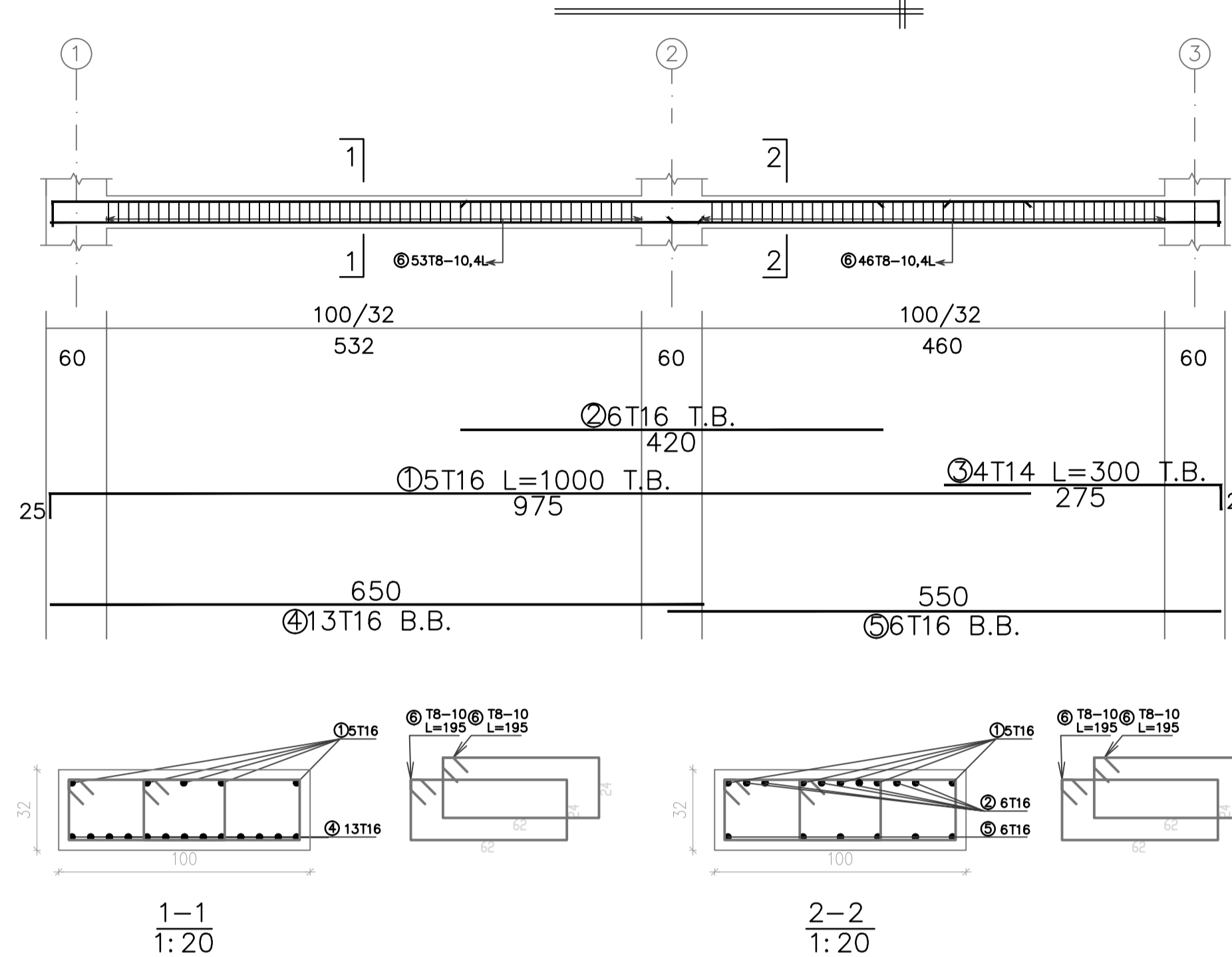
2020



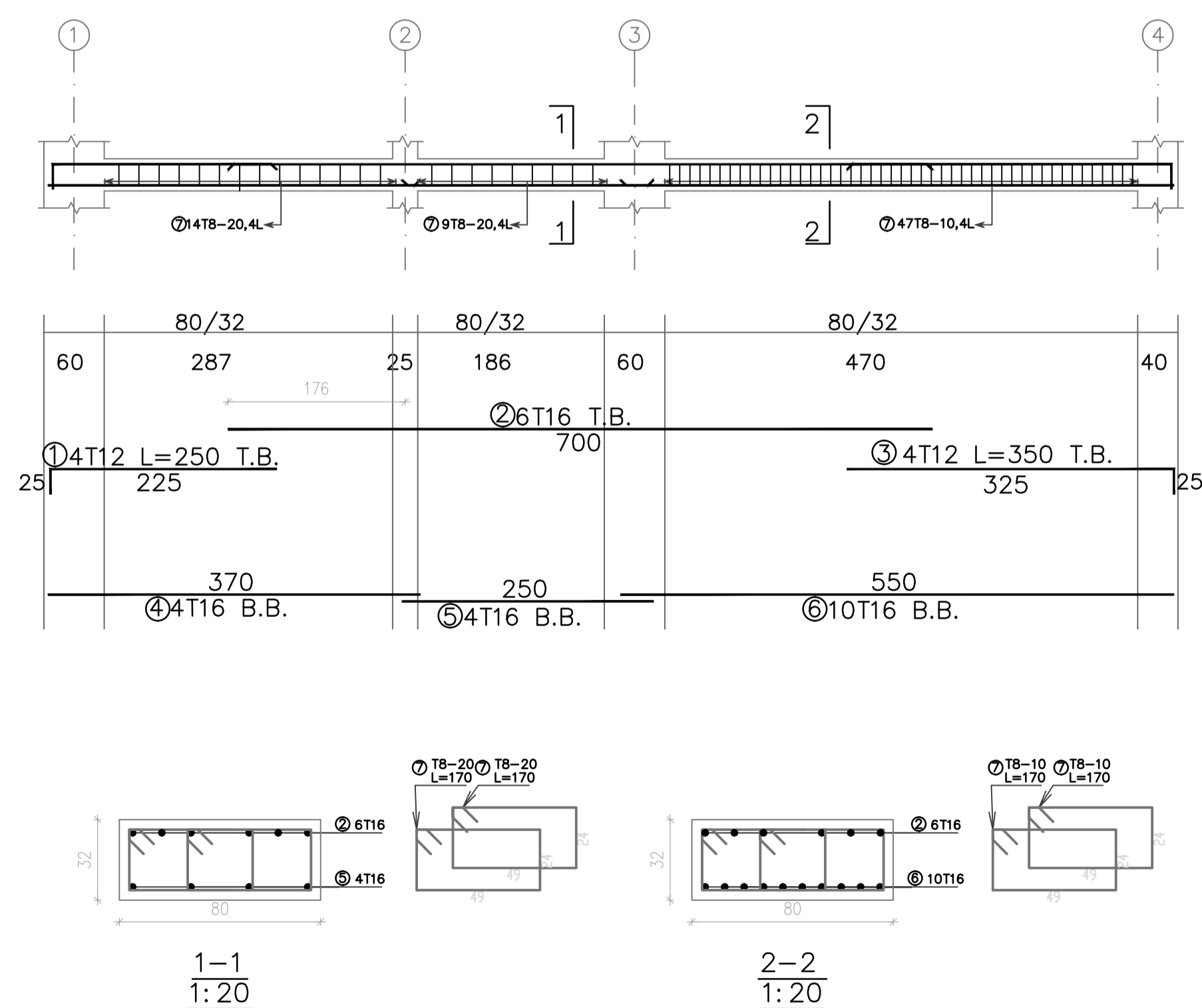
BEAM - B10 (60/32)



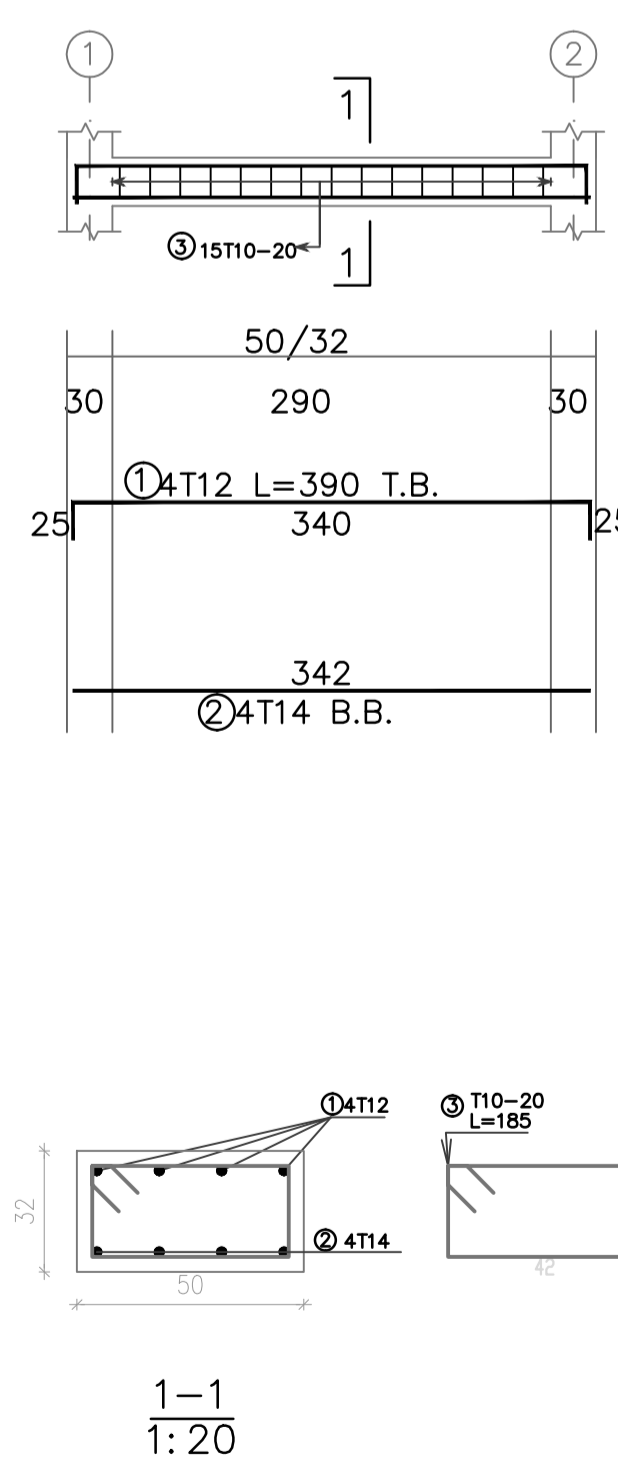
BEAM - B11 (60/32)



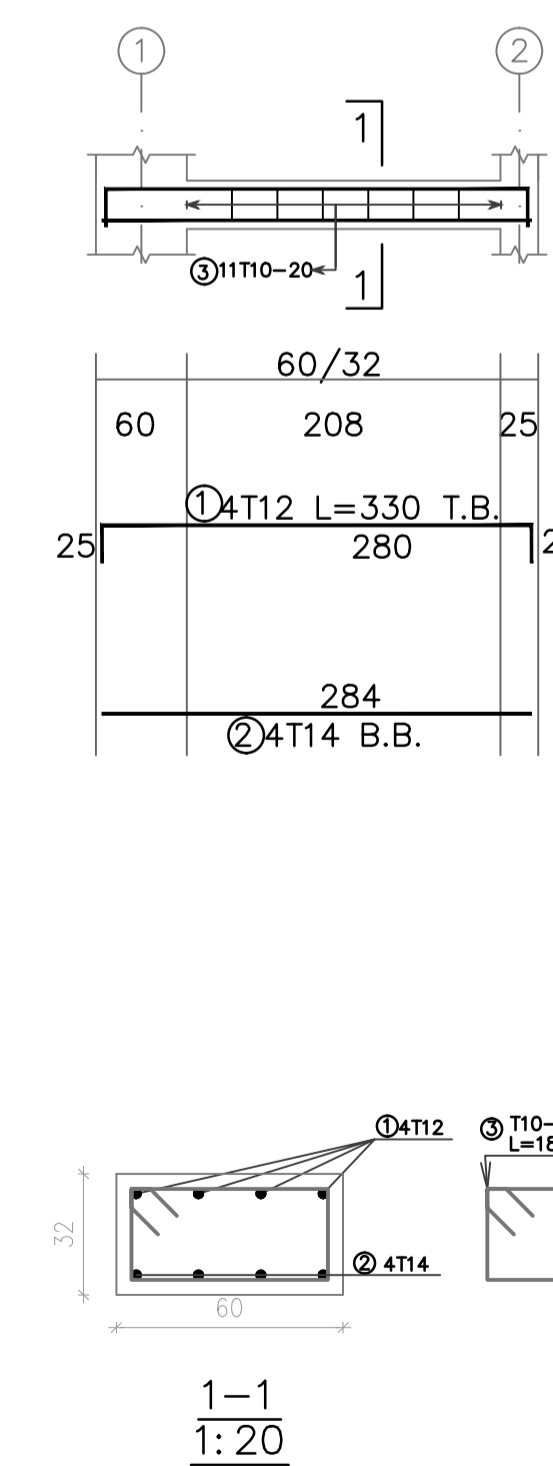
BEAM - B12(60/32)



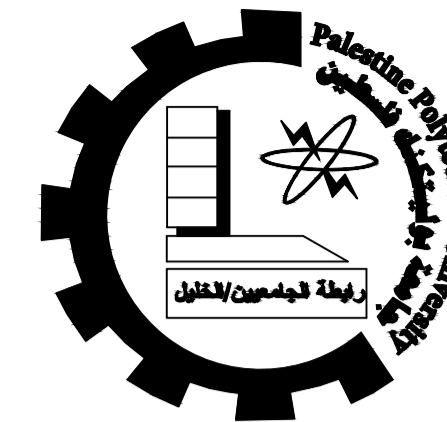
BEAM - B13 (60/32)



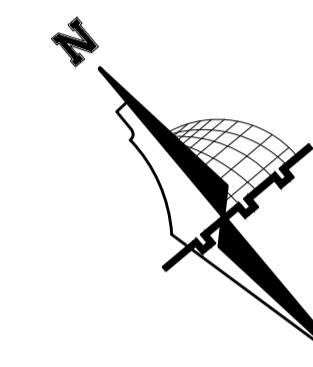
BEAM - B14 (60/32)







Palestine Polytechnic University  
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Graduation Project  
 "Structural Design  
 of a Residential Building"

Supervisor  
 Dr.Nafith Nssereddin

Project Team  
 Hala Al-Qadi  
 Mai Hashlamoun

Drawing Title  
 BEAMS DETAILING

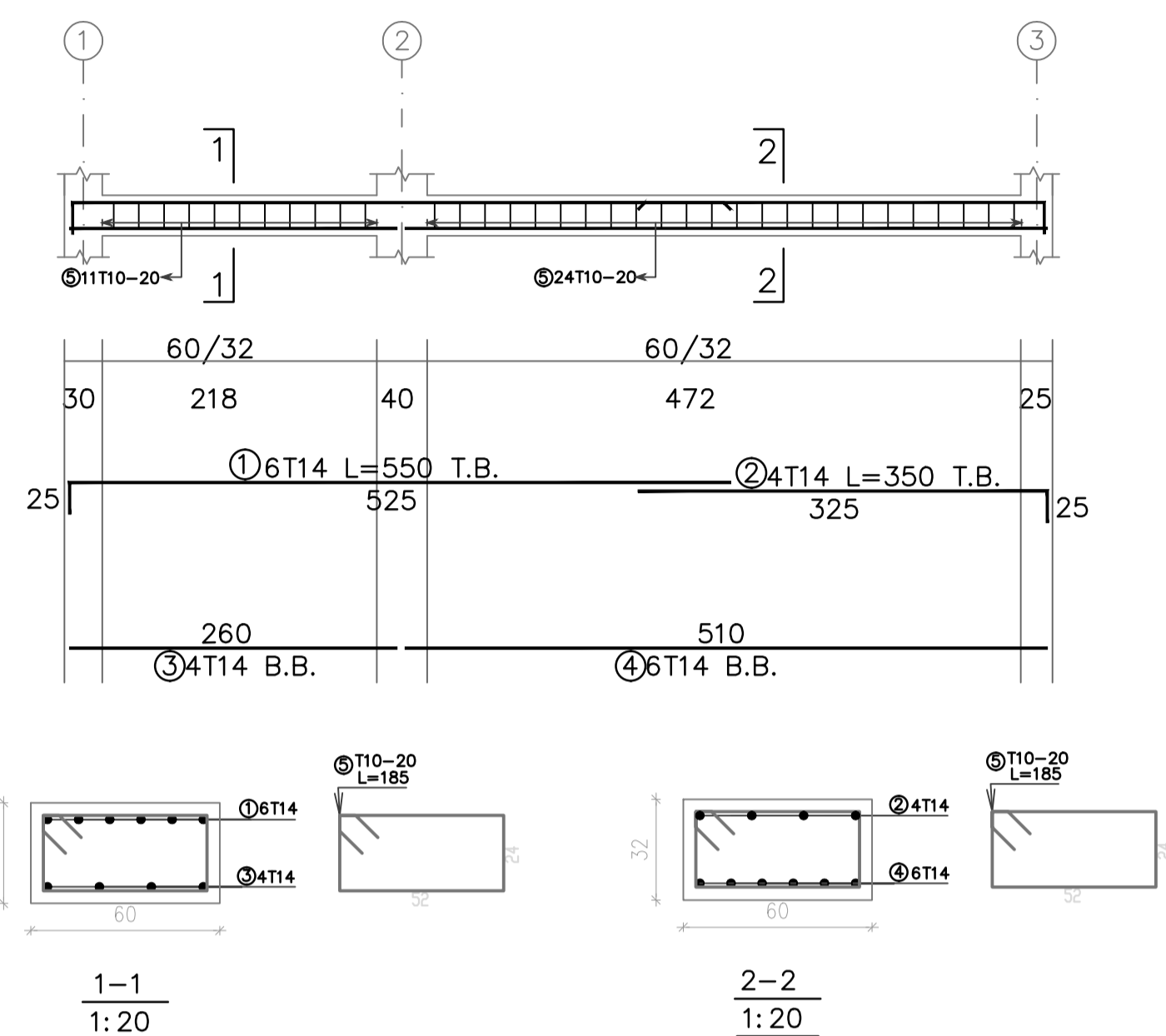
SCALE  
 1/50

DRAW. NO.  
 S 15

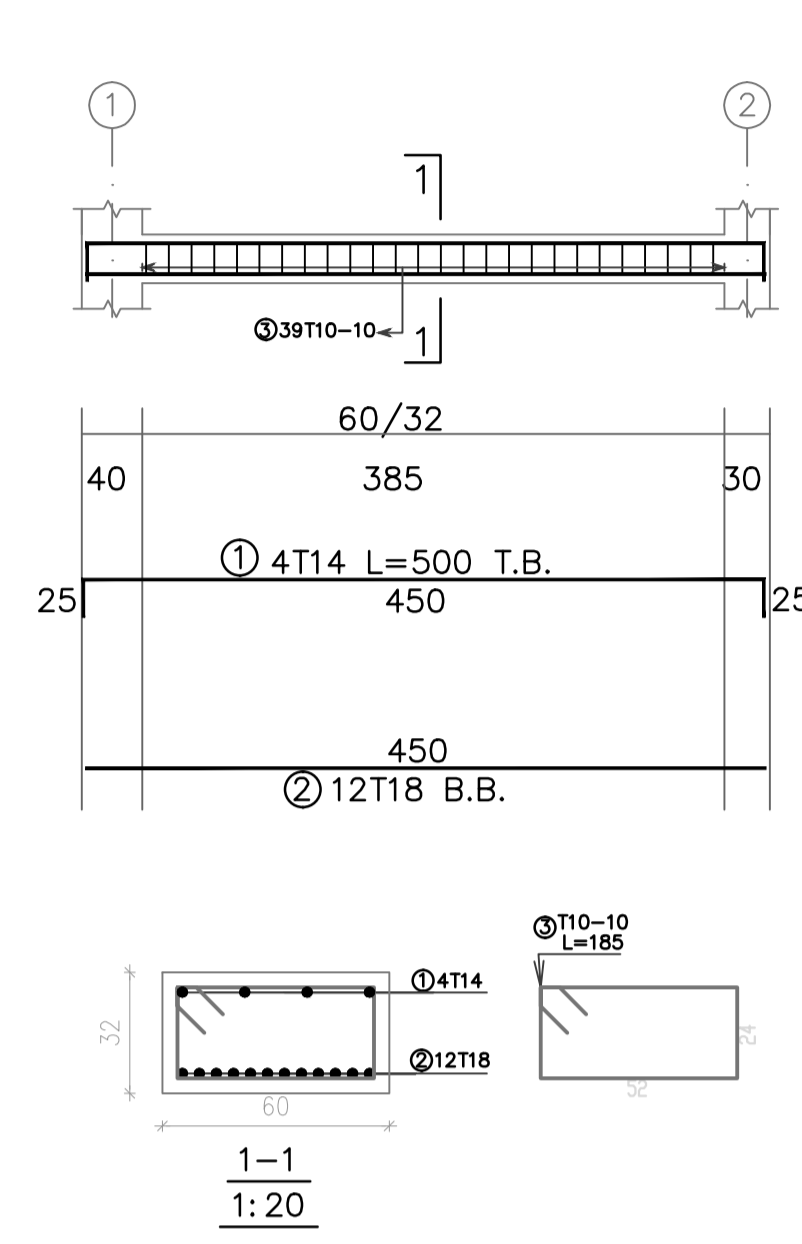
2020



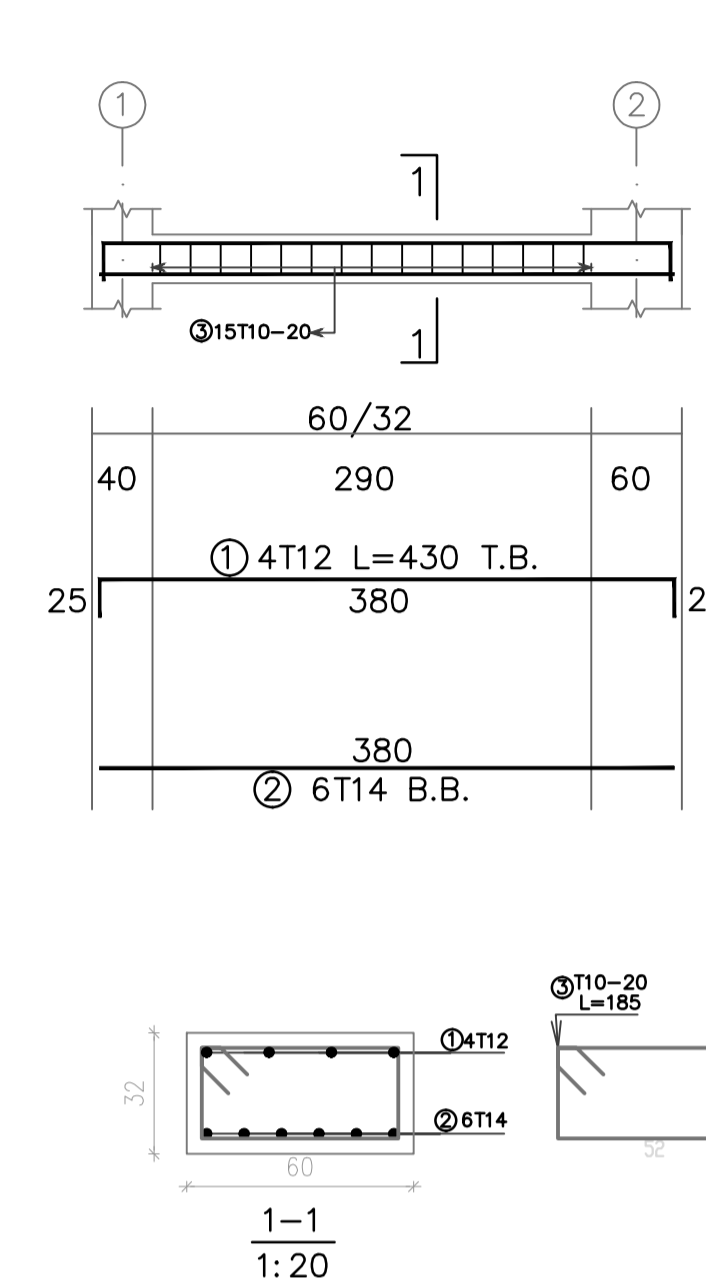
BEAM - B15 (60/32)



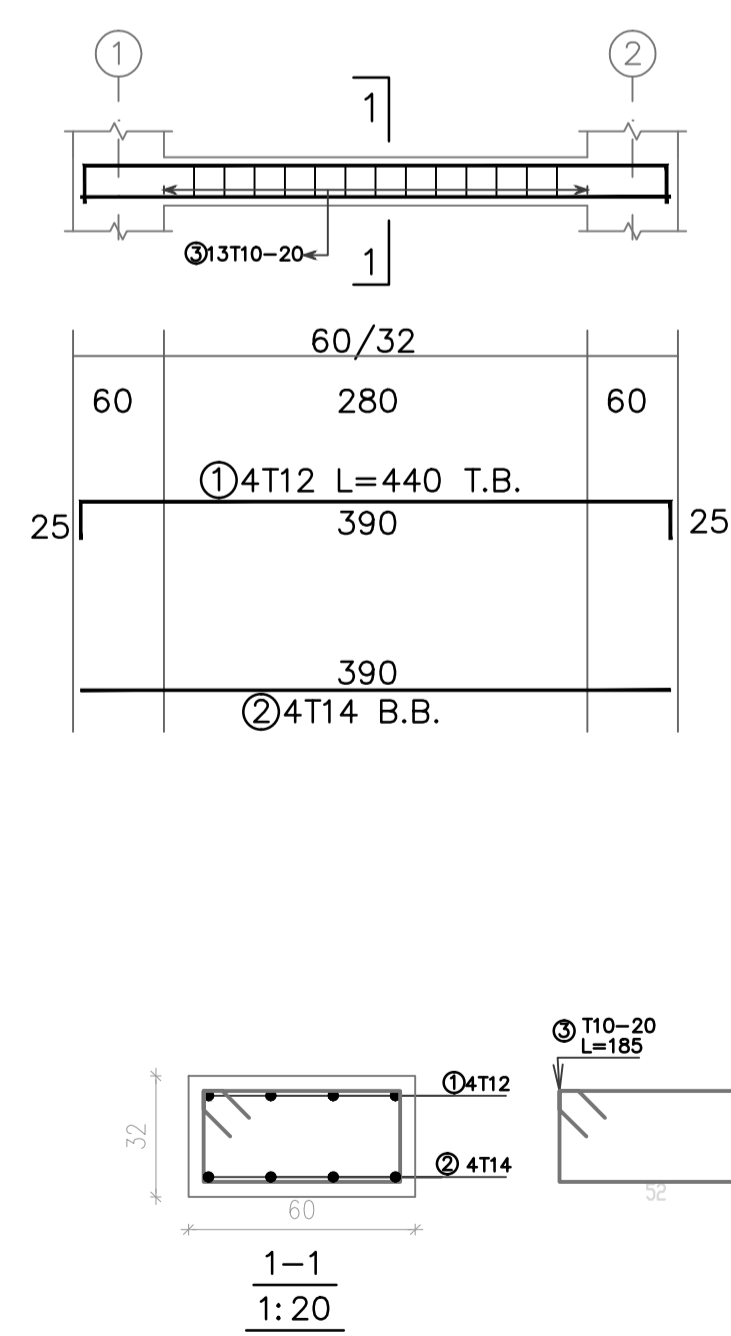
BEAM - B16 (60/32)



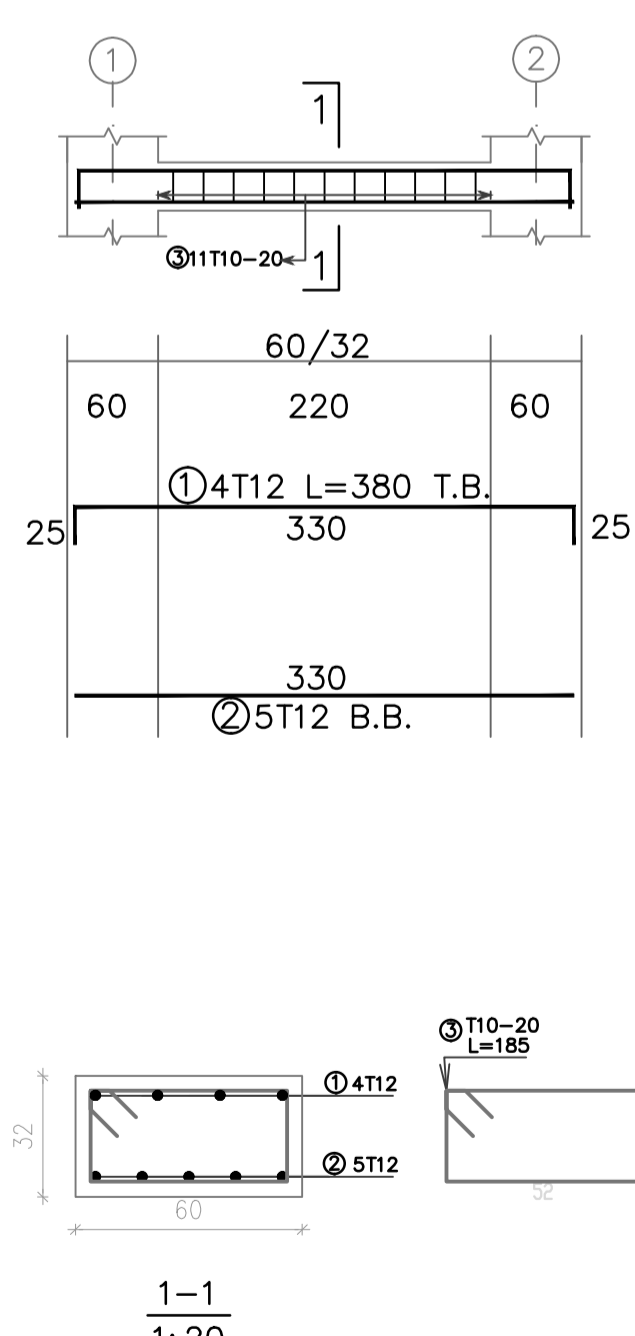
BEAM - B17 (60/32)



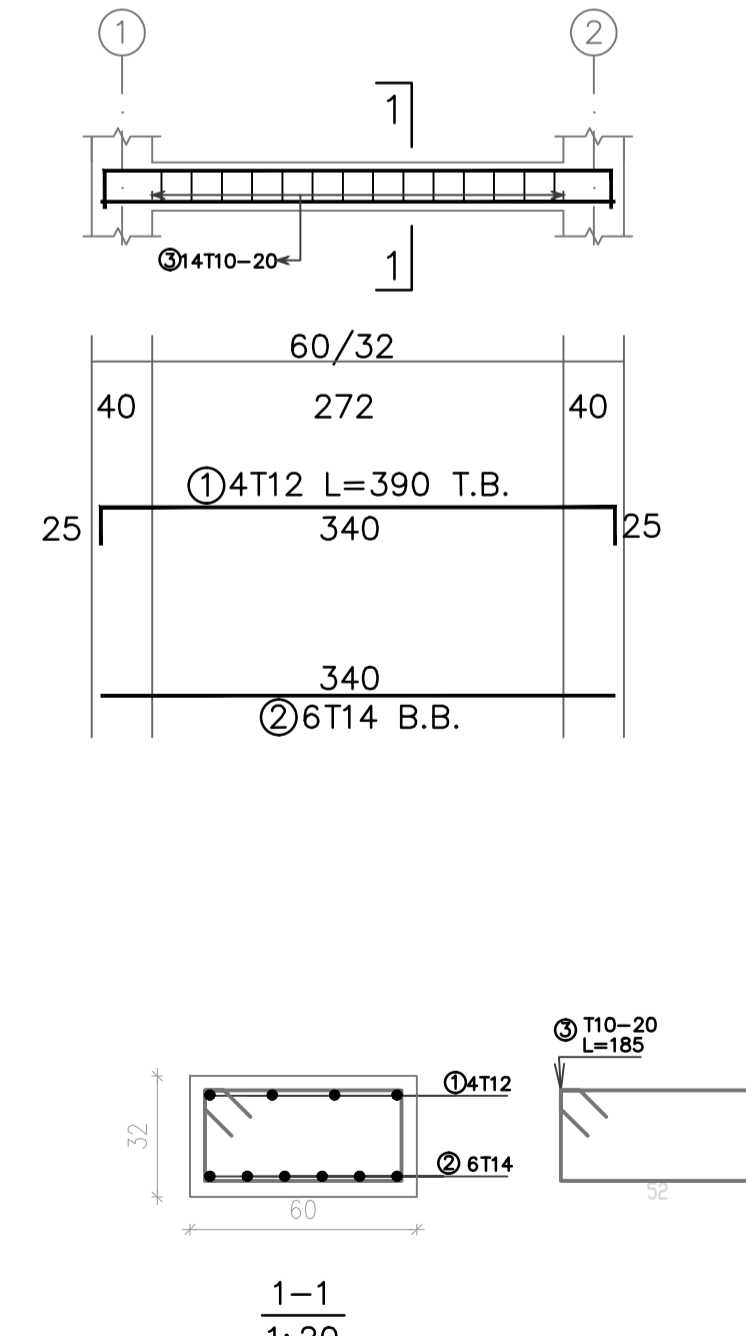
BEAM - B18 (60/32)

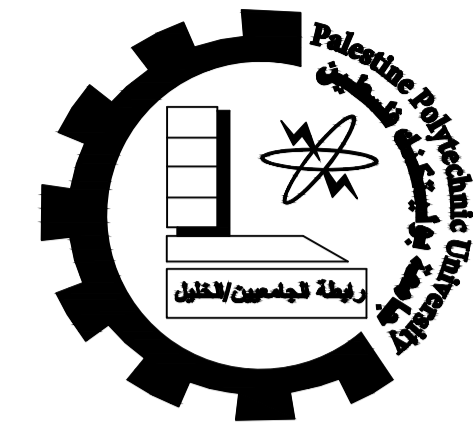


BEAM - B19 (60/32)

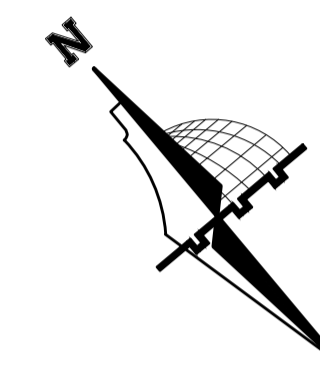


BEAM - B20 (60/32)





Palestine Polytechnic University  
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 Building Engineering



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Graduation Project  
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 of a Residential Building"

Supervisor  
 Dr.Nafith Nssereddin

Project Team  
 Hala Al-Qadi  
 Mai Hashlamoun

Drawing Title  
 BEAMS DETAILING

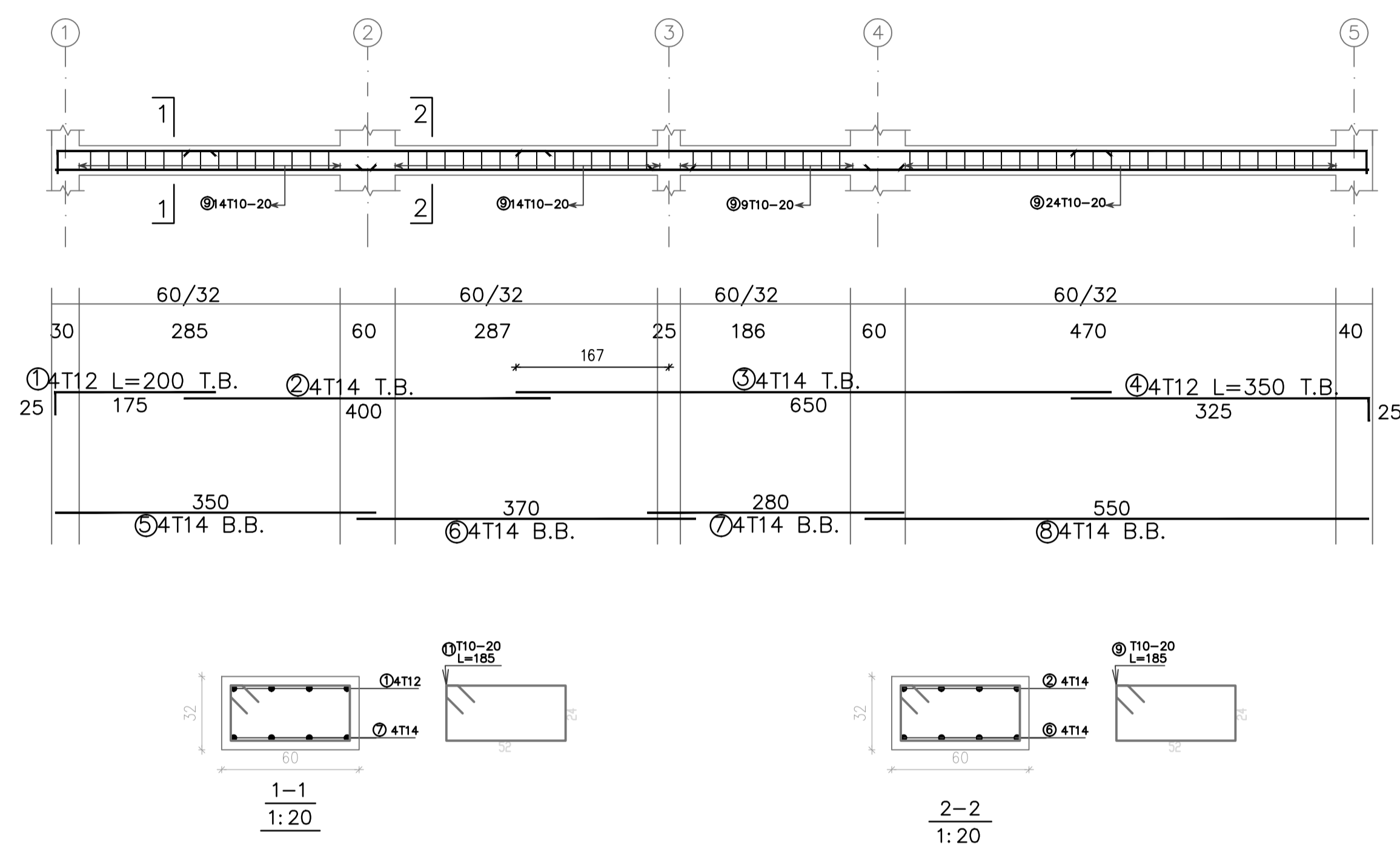
SCALE  
 1/50

DRAW. NO.  
 S 16

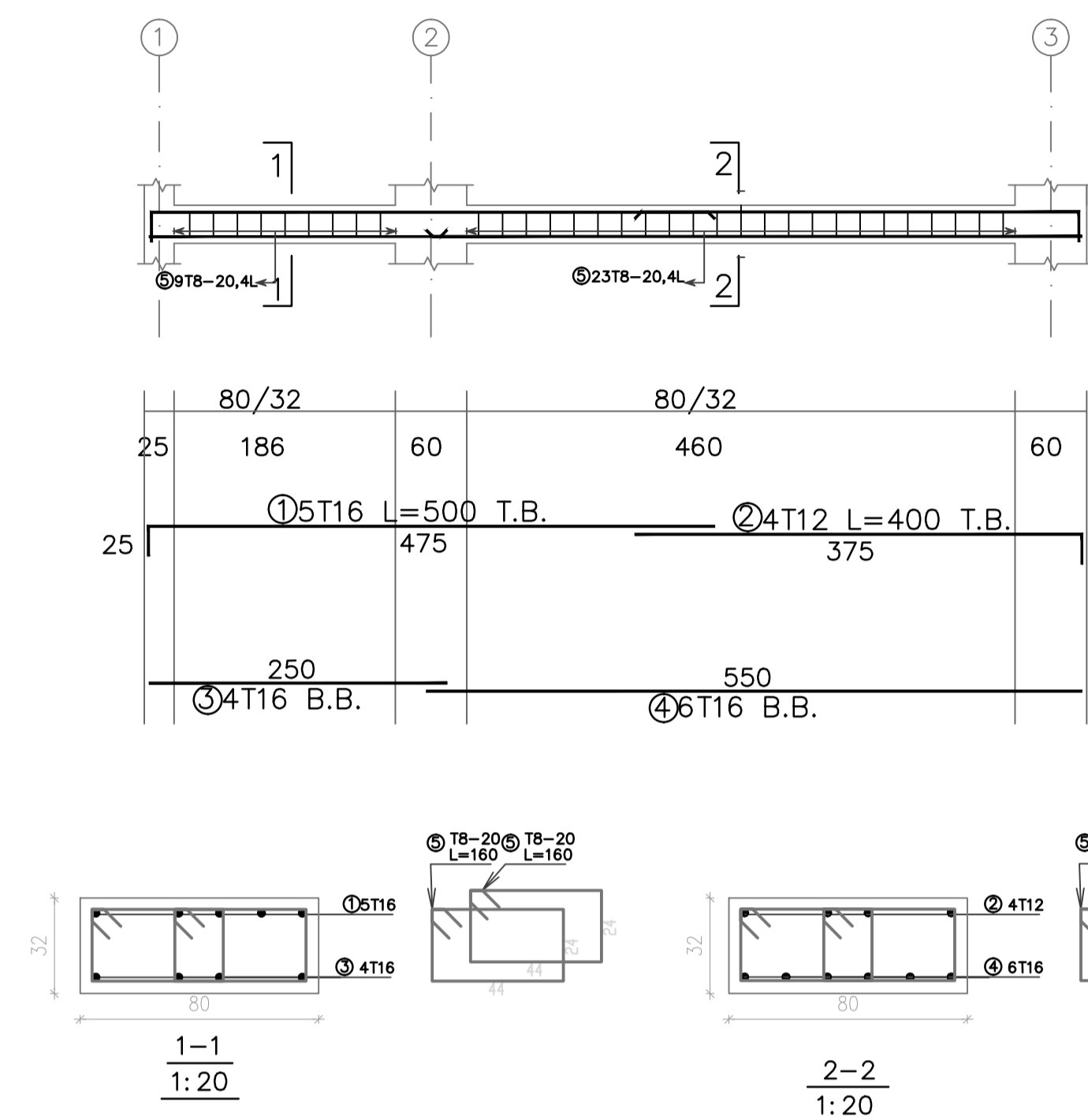
2020



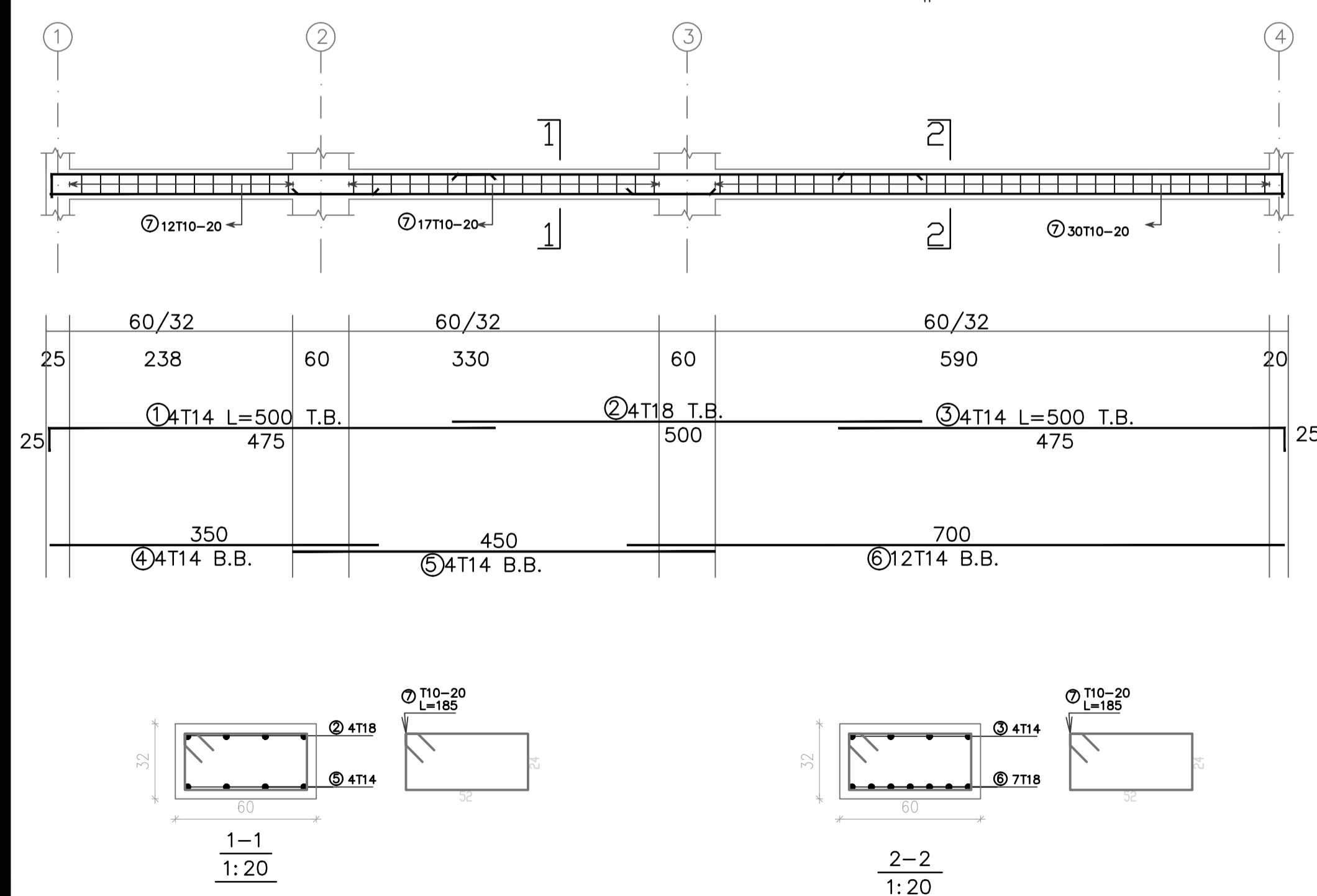
BEAM - B21 (60/32)



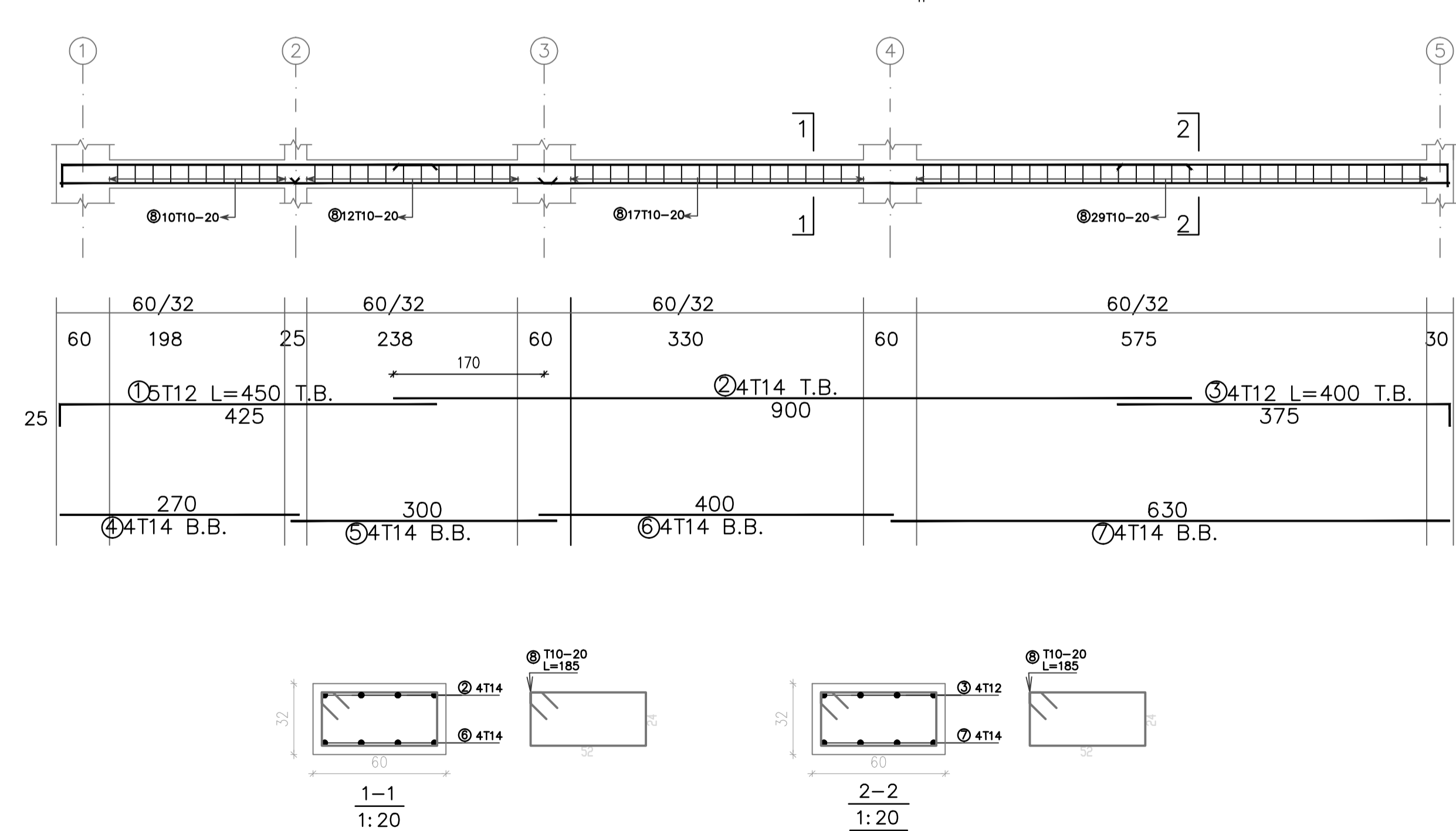
BEAM - B22 (60/32)



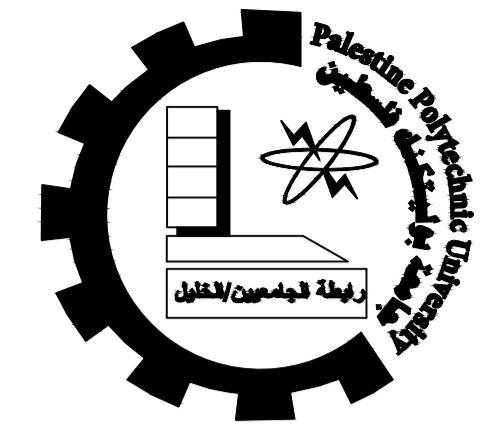
BEAM - B23 (60/32)



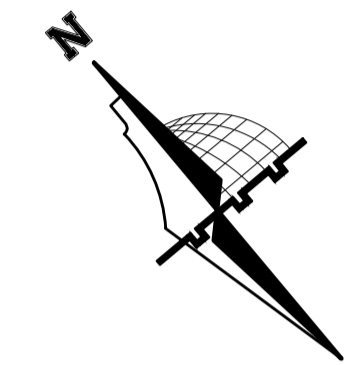
BEAM - B24 (60/32)







Palestine Polytechnic University  
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 Building Engineering



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Graduation Project  
 "Structural Design  
 of a Residential Building"

Supervisor  
 Dr.Nafith Nssereddin

Project Team  
 Hala Al-Qadi  
 Mai Hashlamoun

Drawing Title  
 BEAMS DETAILING

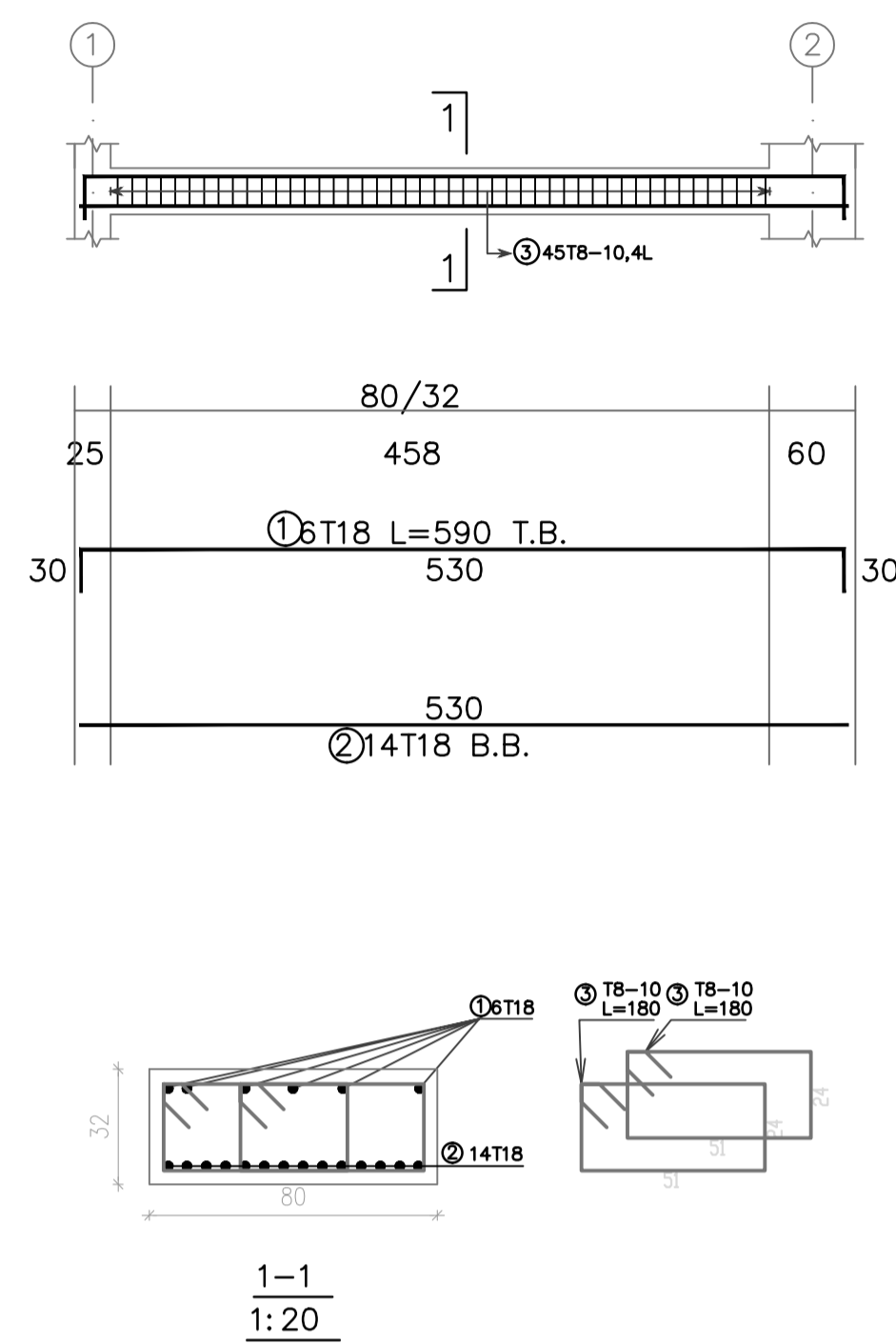
SCALE  
 1/50

DRAW. NO.  
 S17

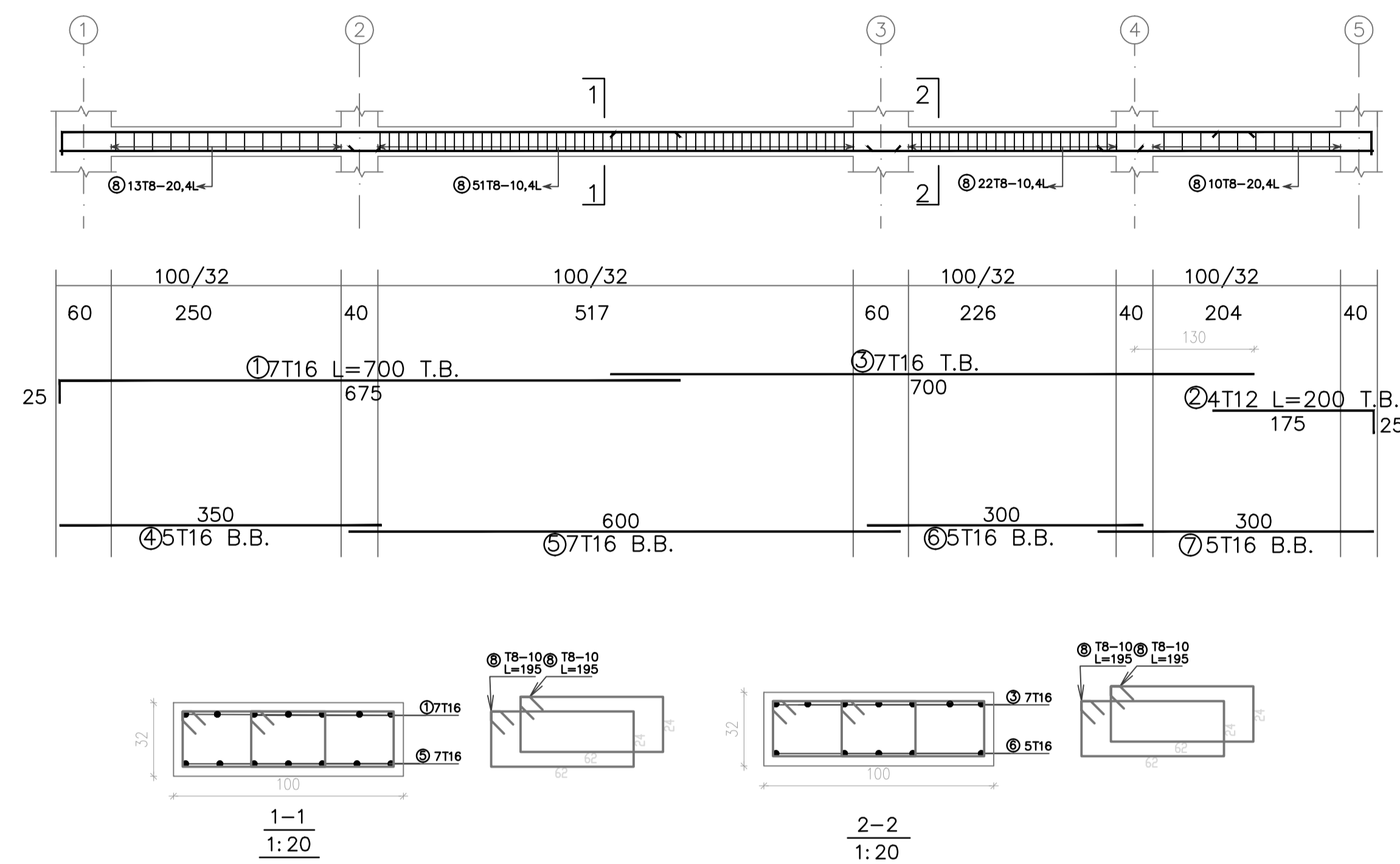
2020



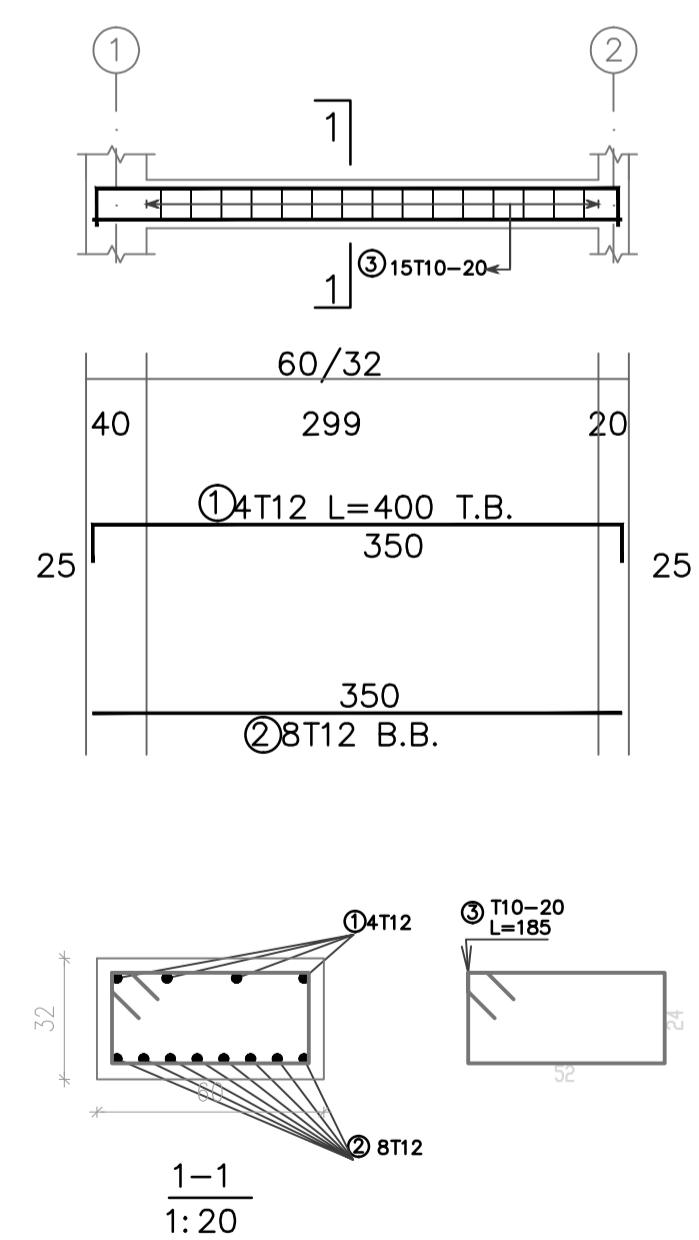
BEAM - B25 (60/32)



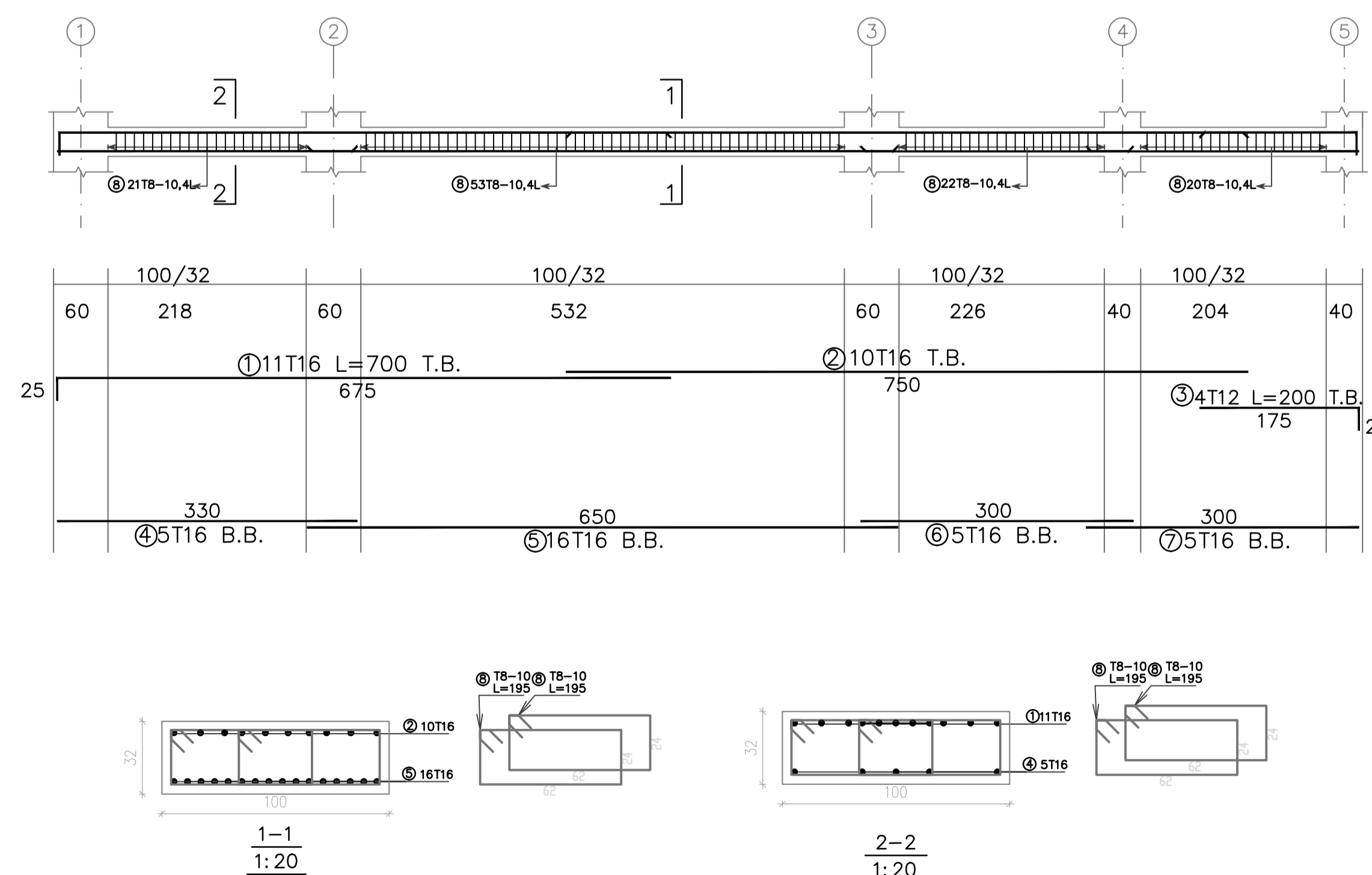
BEAM - B26 (60/32)

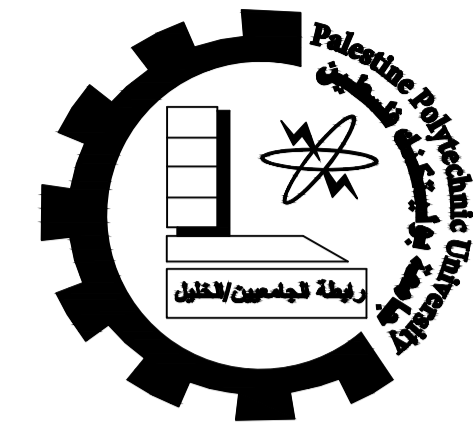


BEAM - B27 (60/32)

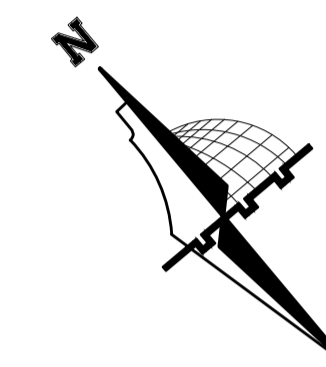


BEAM - B28 (60/32)





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 Building Engineering



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Graduation Project  
 "Structural Design of a Residential Building"

Supervisor  
 Dr.Nafith Nssereddin

Project Team  
 Hala Al-Qadi  
 Mai Hashlamoun

Drawing Title  
 BEAMS DETAILING

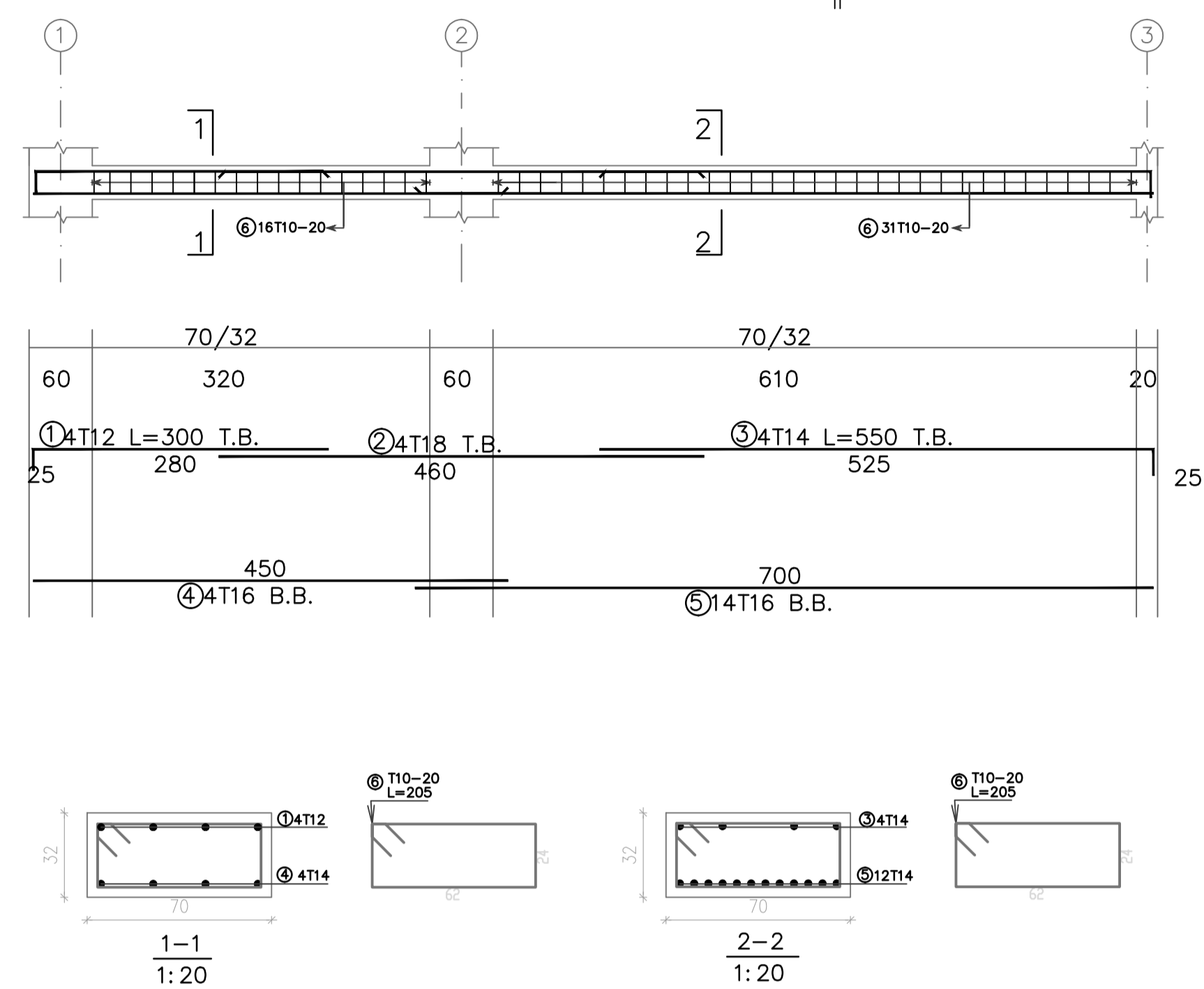
SCALE  
 1/50

DRAW. NO.  
 S 18

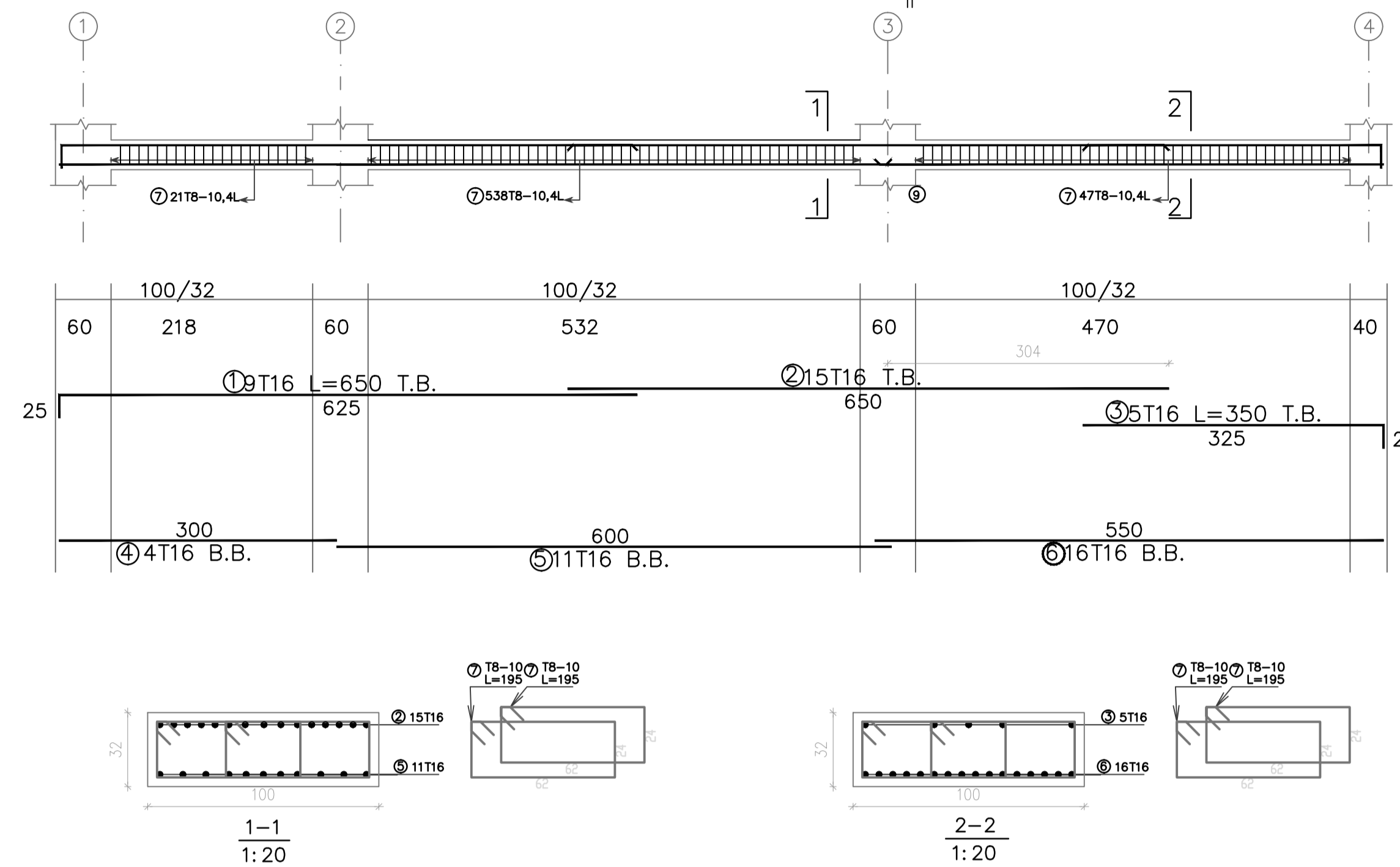
2020



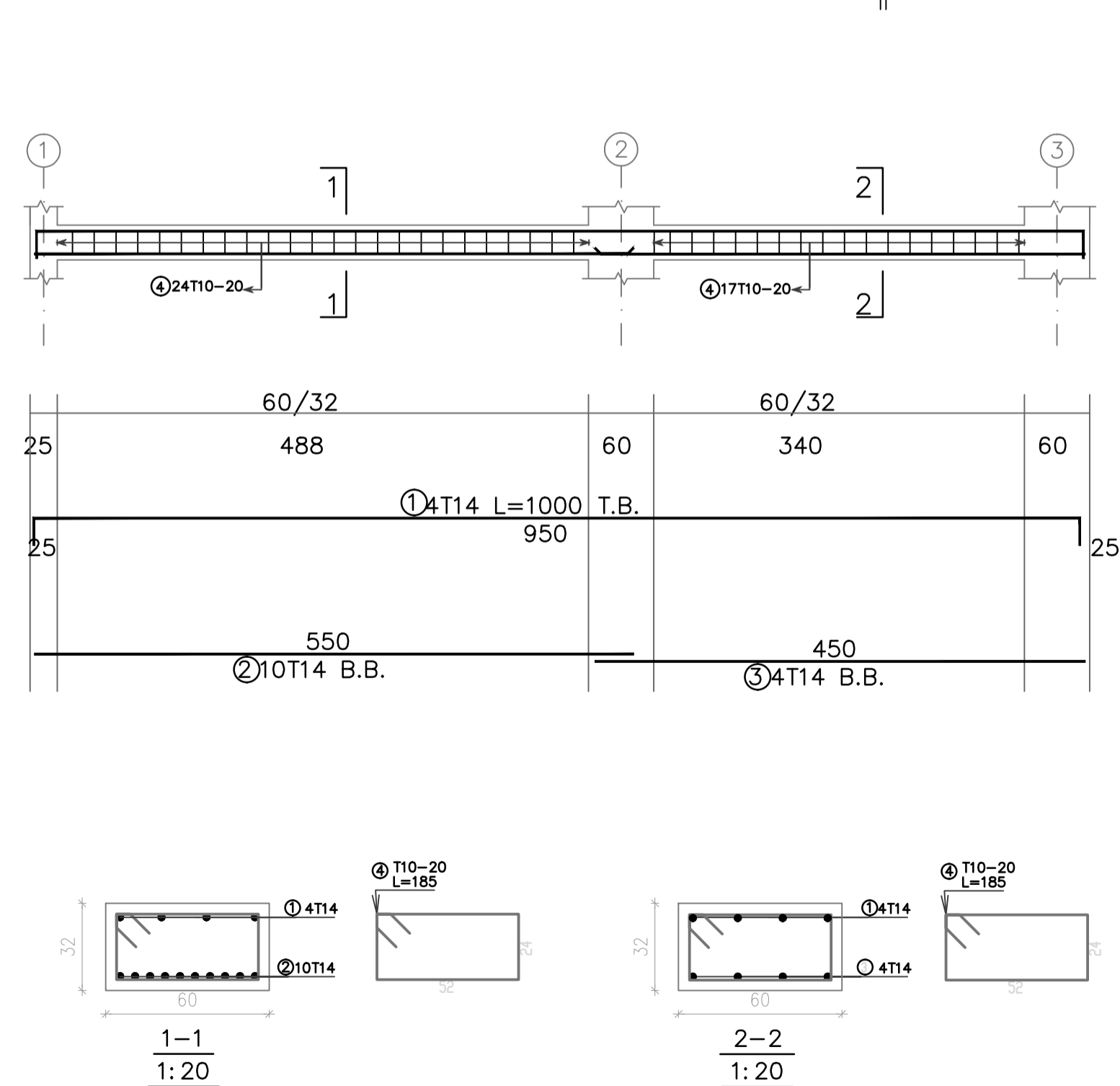
BEAM - B29 (60/32)



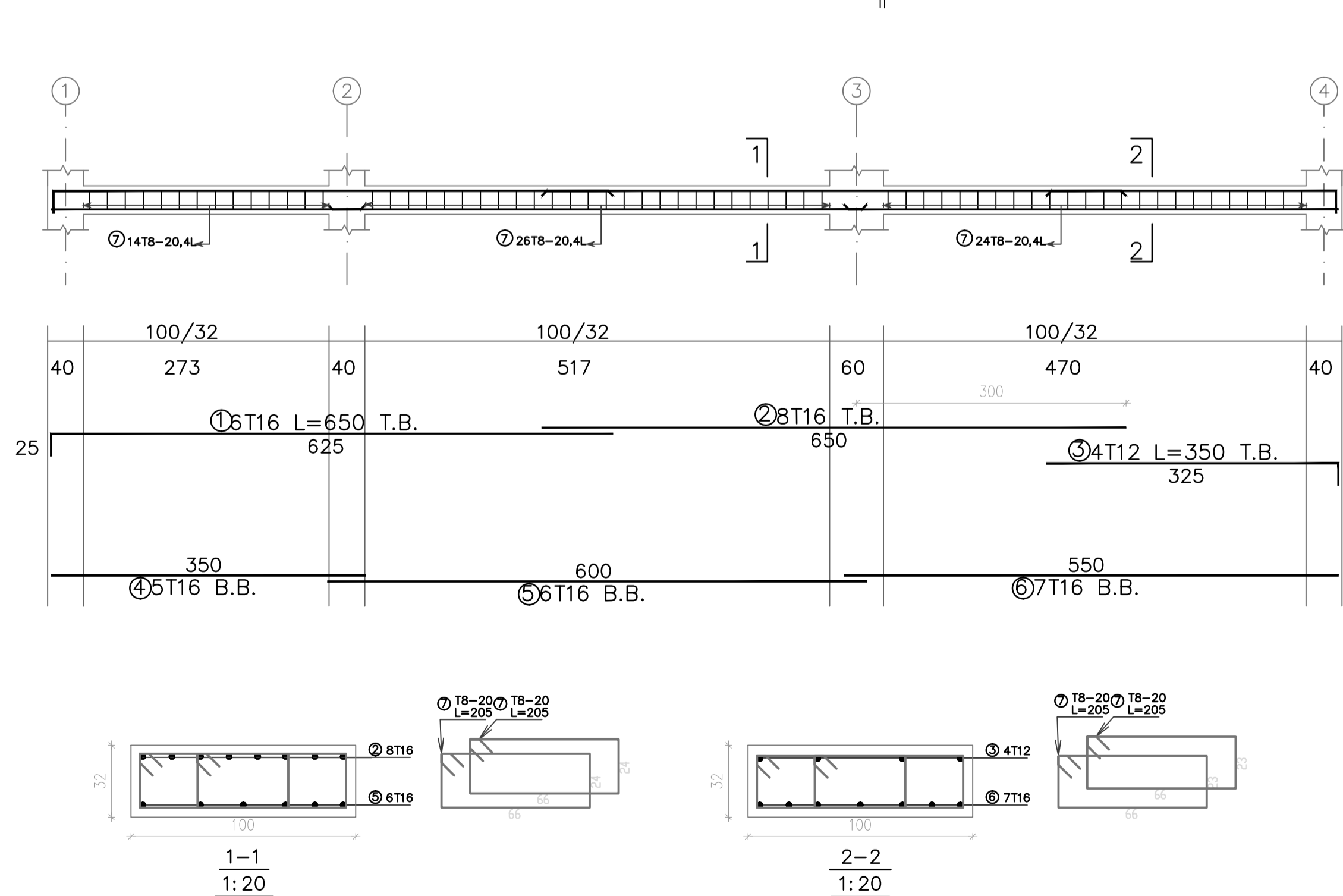
BEAM - B30 (60/32)

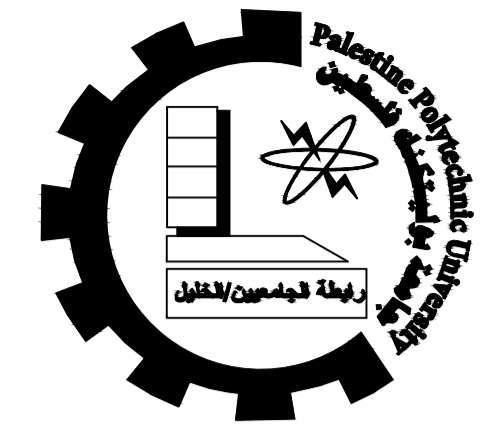


BEAM - B31 (60/32)

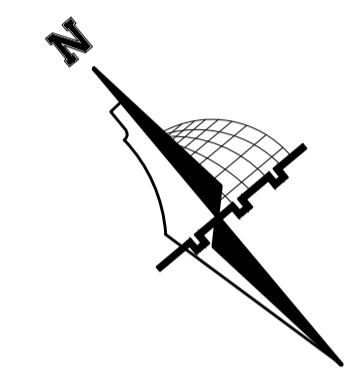


BEAM - B32 (60/32)





Palestine Polytechnic University  
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 Civil & Arch. Eng Department  
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Graduation Project  
 "Structural Design  
 of a Residential Building"

Supervisor  
 Dr.Nafith Nssereddin

Project Team  
 Hala Al-Qadi  
 Mai Hashlamoun

Drawing Title  
 BEAMS DETAILING

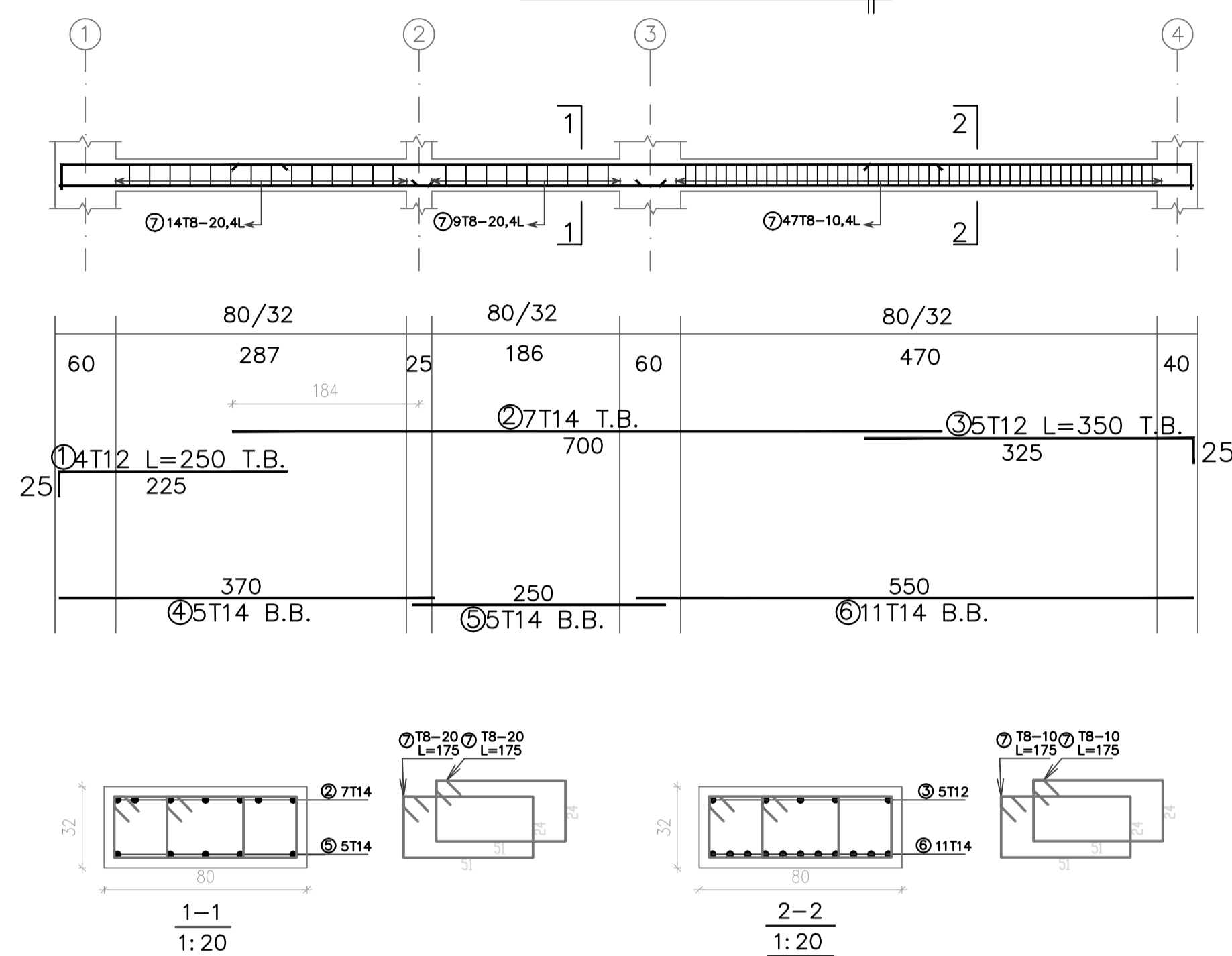
SCALE  
 1/50

DRAW. NO.  
 S 19

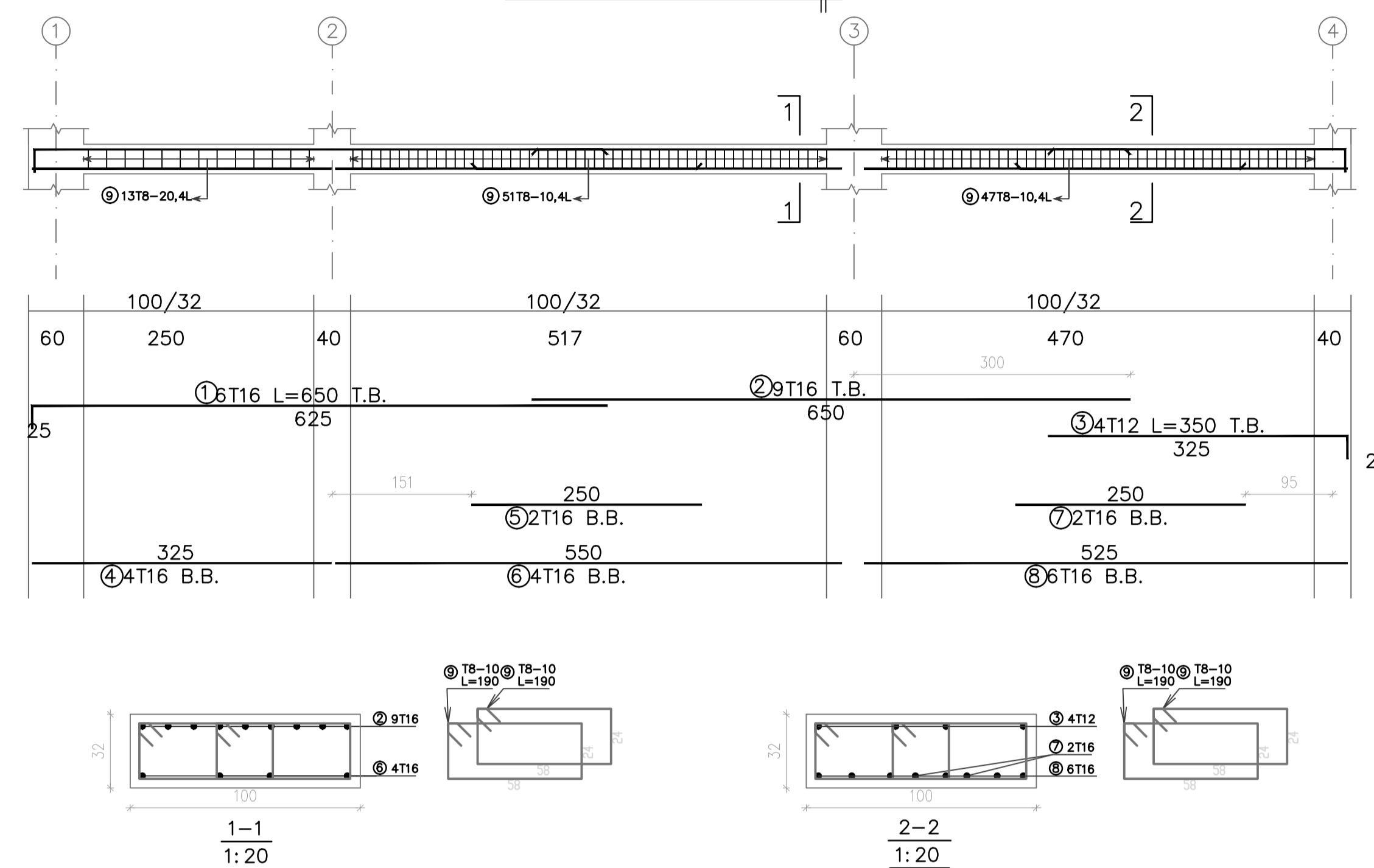
2020



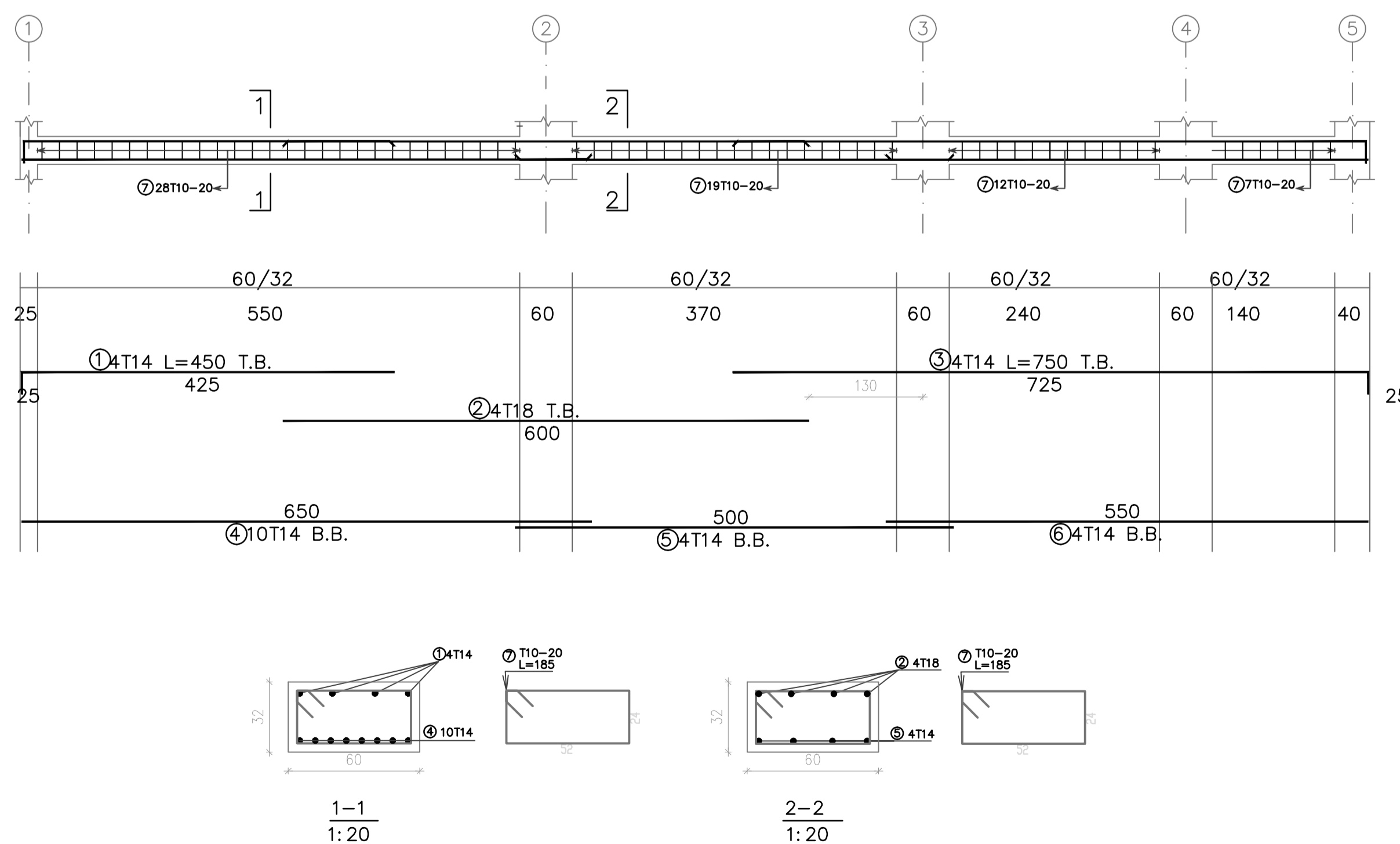
BEAM - B33 (60/32)



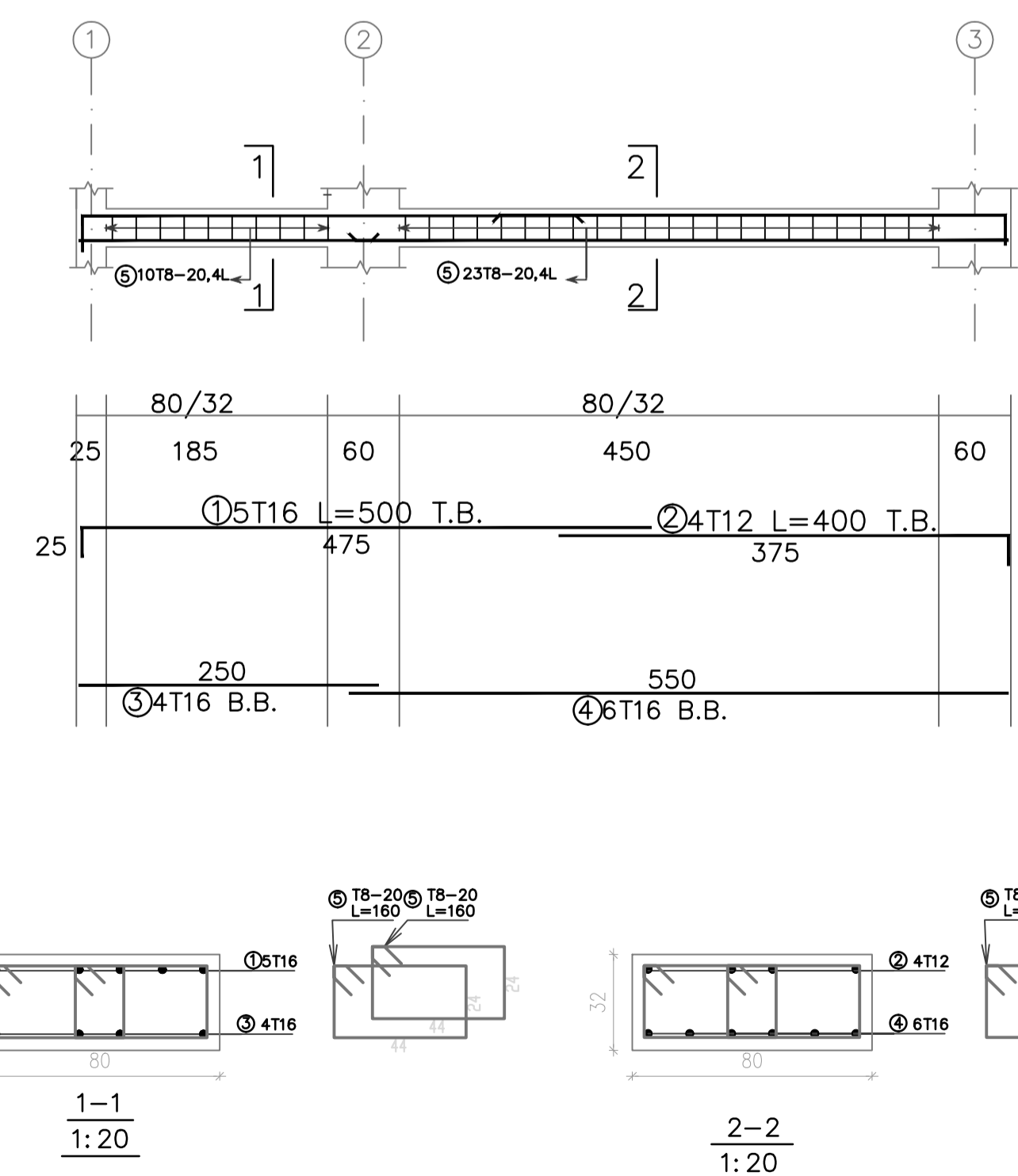
BEAM - B34 (60/32)



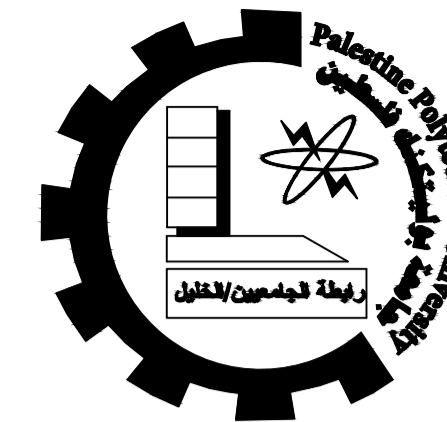
BEAM - B35 (60/32)



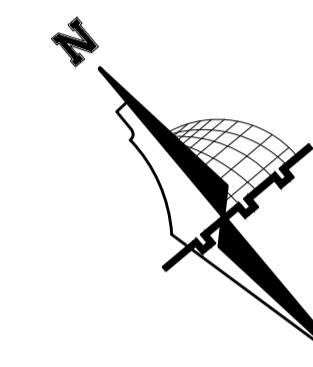
BEAM - B36 (60/32)







Palestine Polytechnic University  
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Graduation Project  
 "Structural Design of a Residential Building"

Supervisor  
 Dr.Nafith Nssereddin

Project Team  
 Hala Al-Qadi  
 Mai Hashlamoun

Drawing Title  
 BEAMS DETAILING

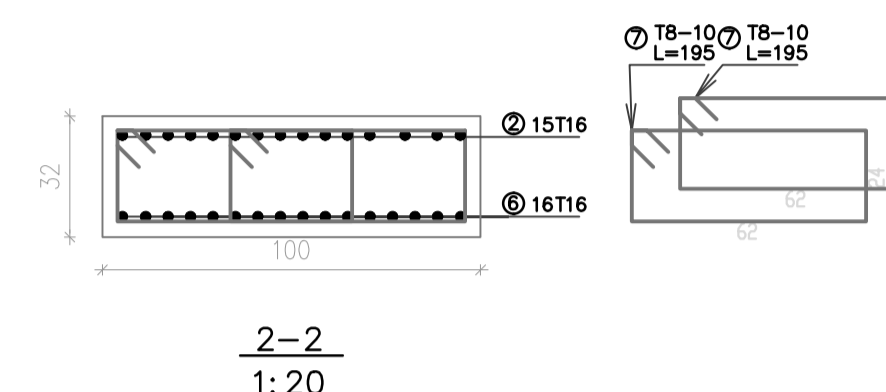
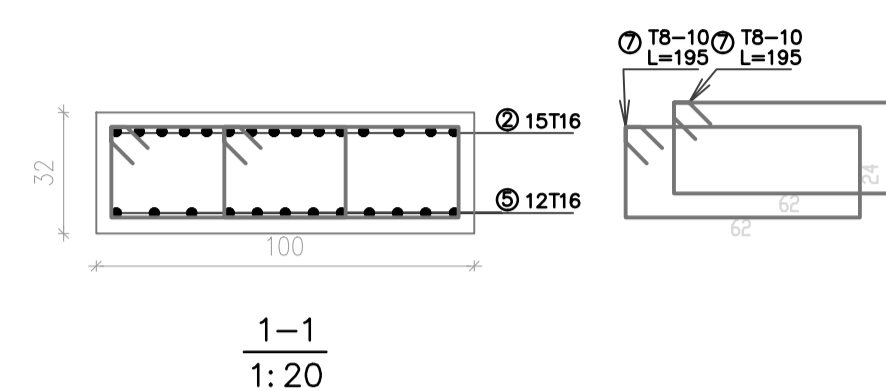
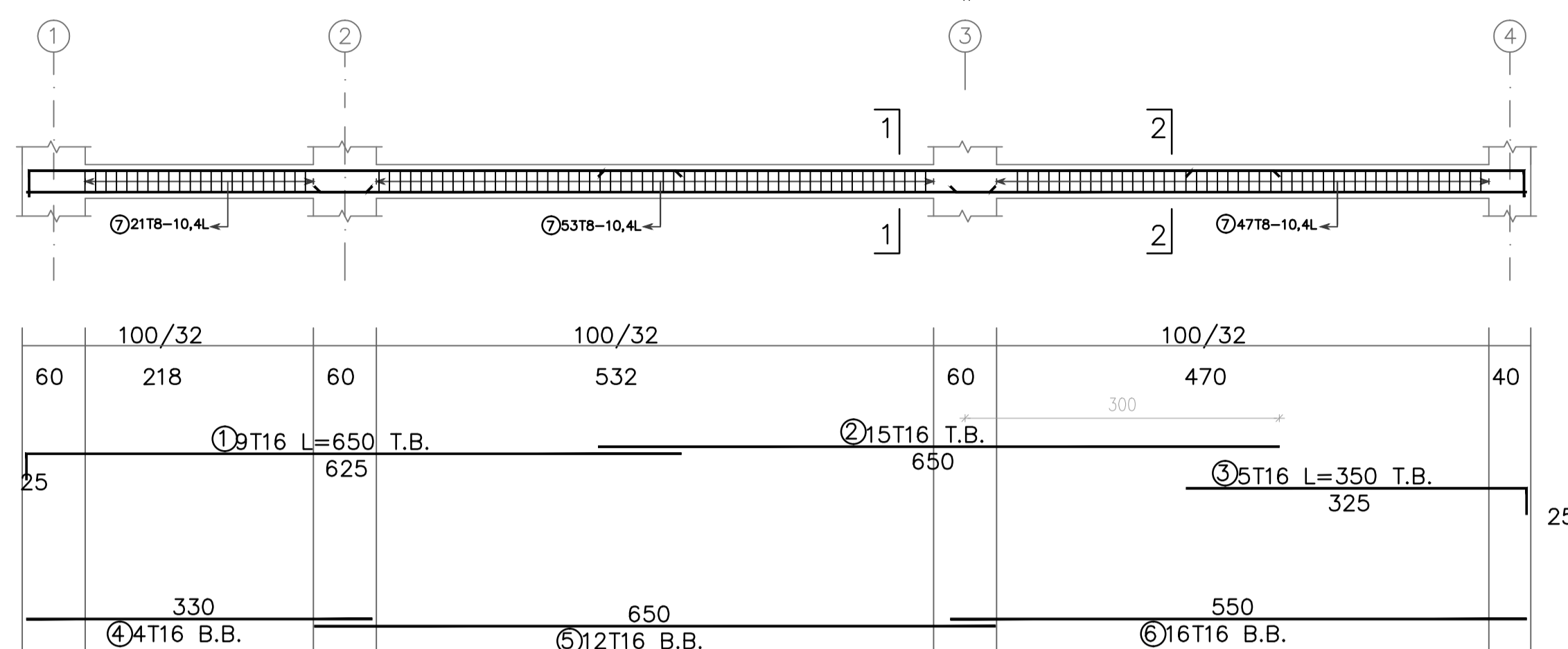
SCALE  
 1/50

DRAW. NO.  
 S 20

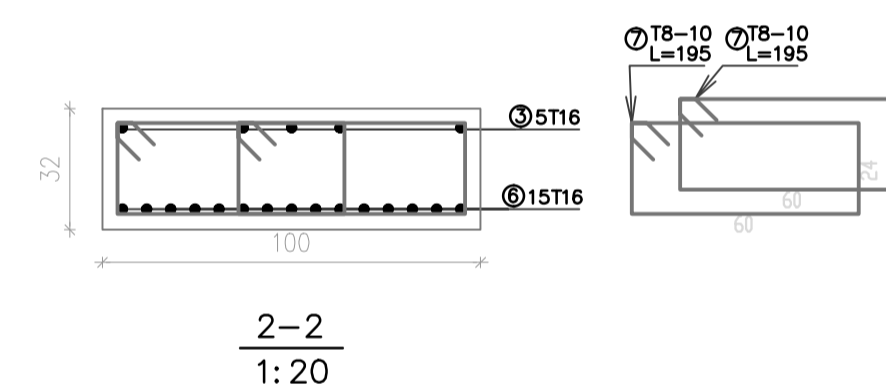
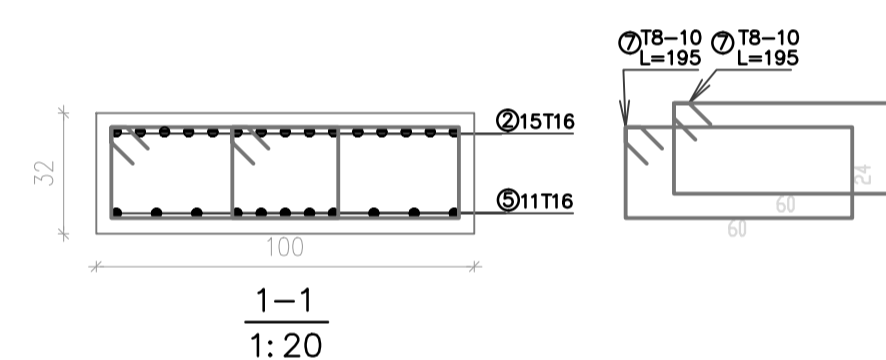
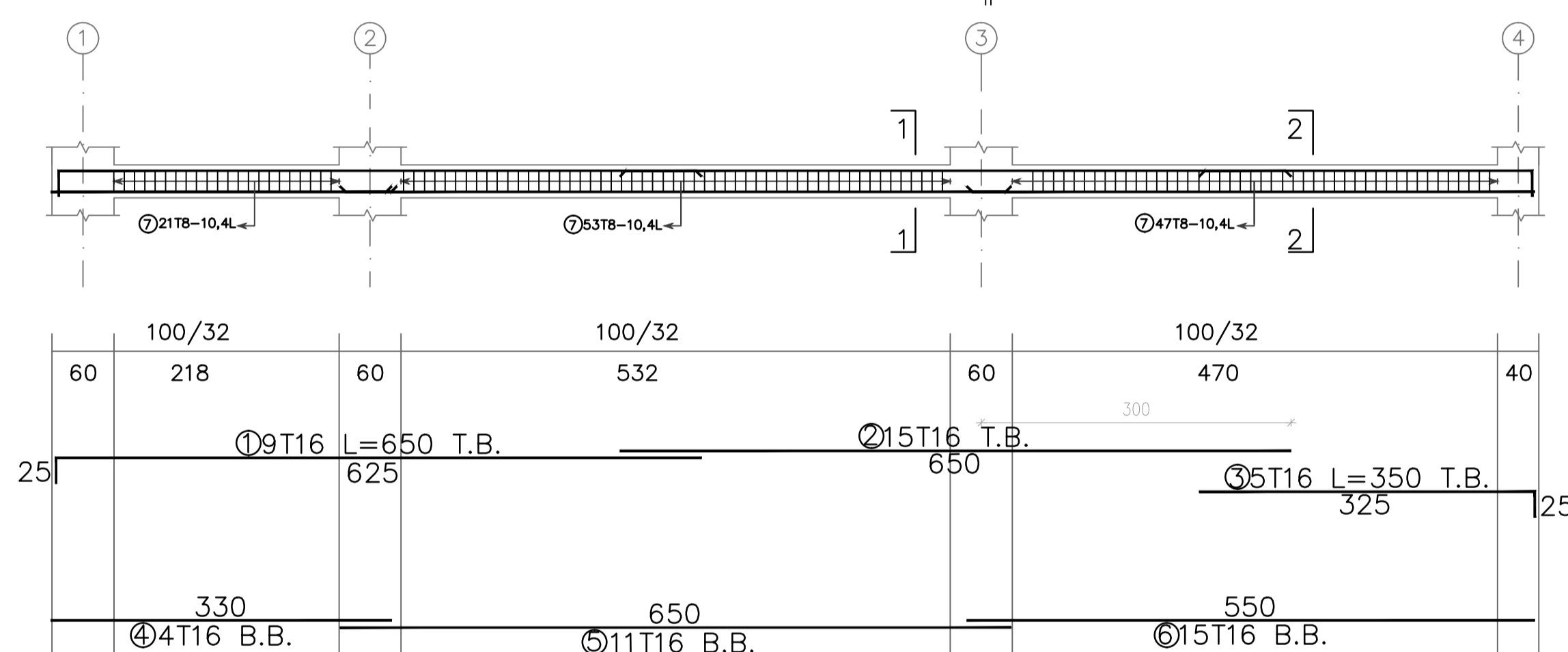
2020



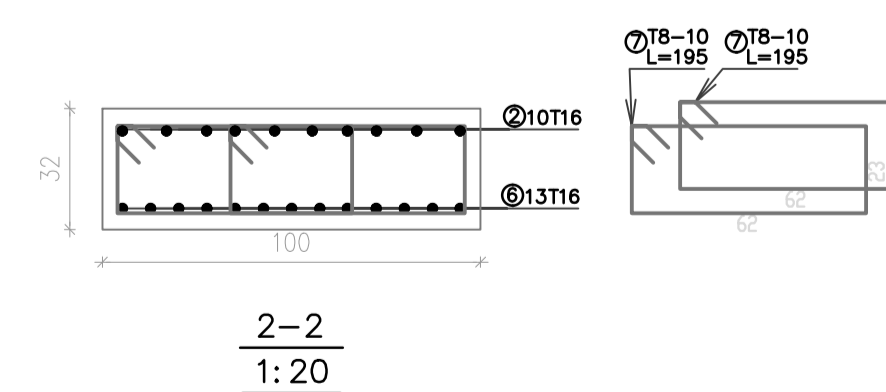
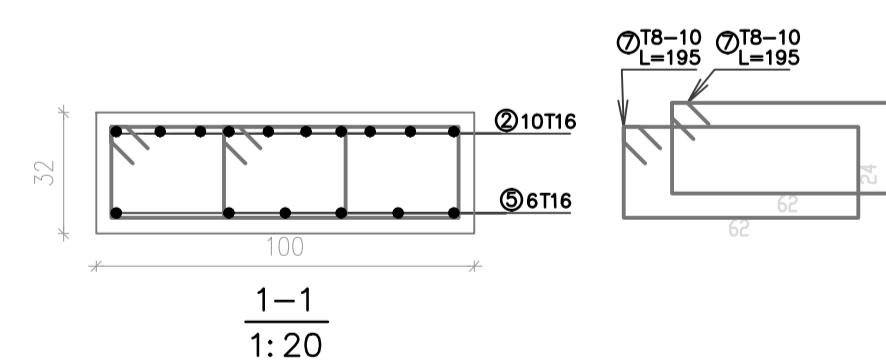
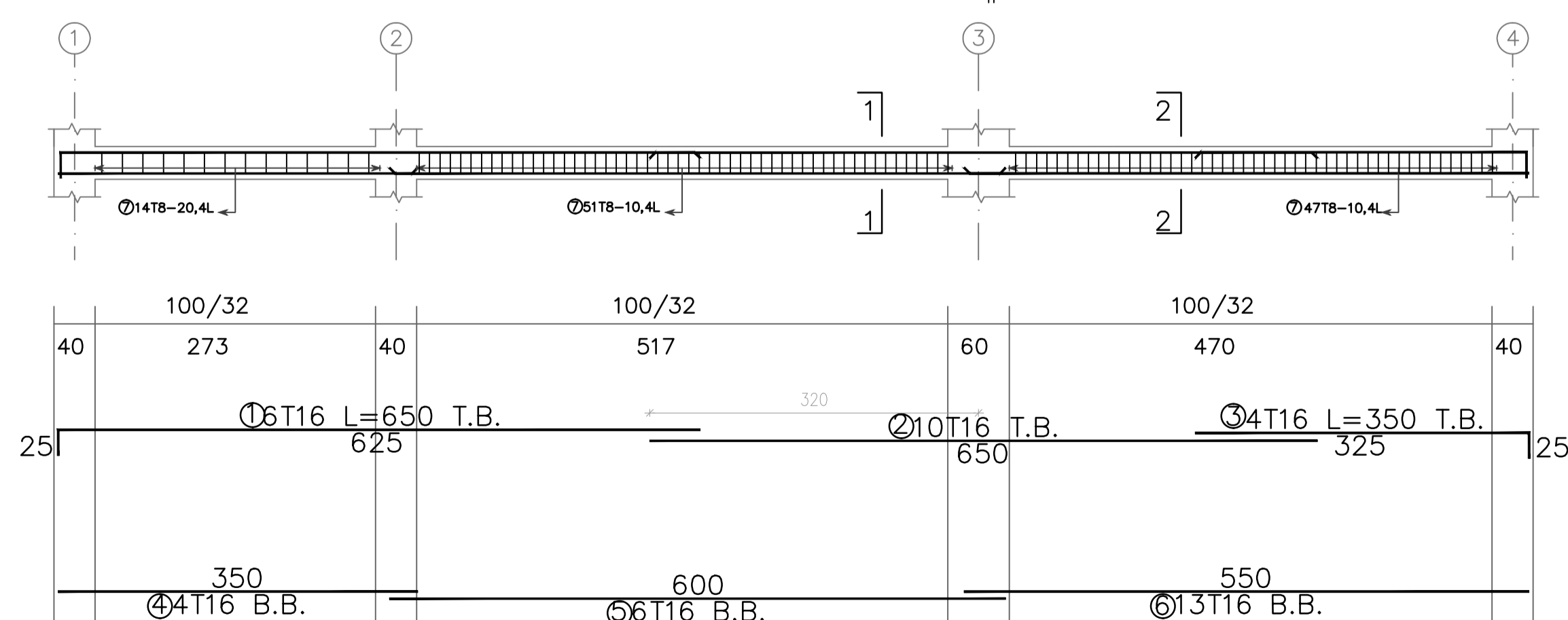
### BEAM - B37 (60/32)



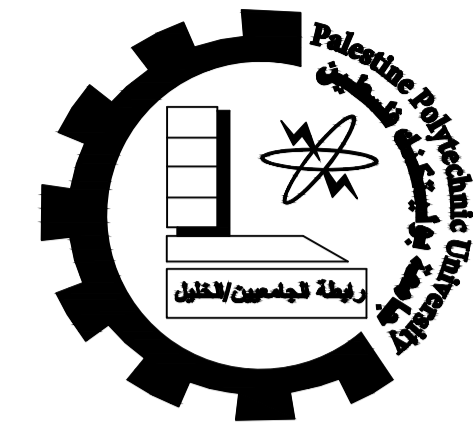
### BEAM - B38 (60/32)



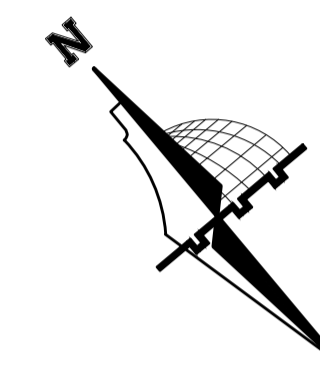
### BEAM - B39 (60/32)



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Palestine Polytechnic University  
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Graduation Project  
 "Structural Design  
 of a Residential Building"

Supervisor  
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Project Team  
 Hala Al-Qadi  
 Mai Hashlamoun

Drawing Title  
 BEAMS DETAILING

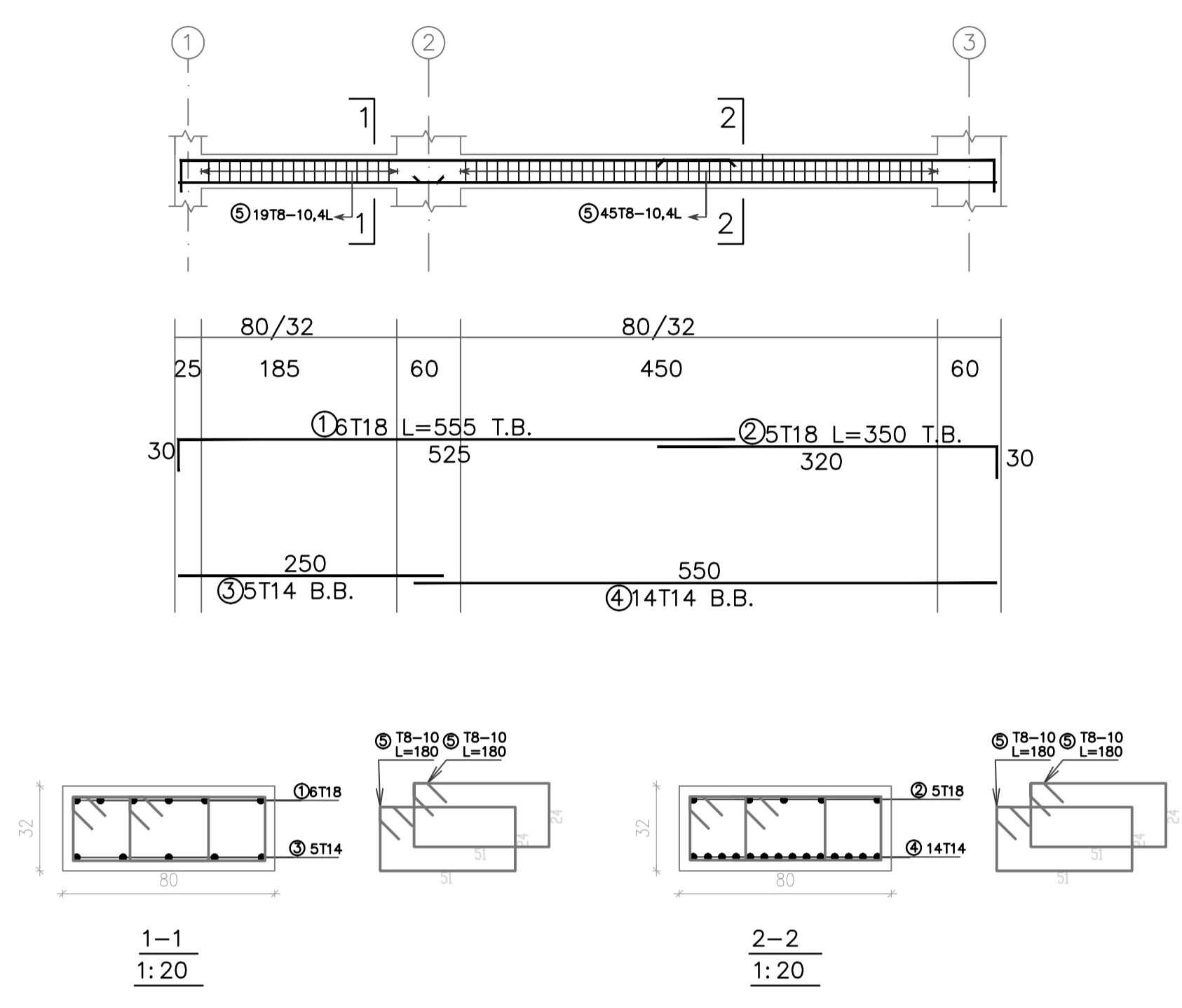
SCALE  
 1/50

DRAW. NO.  
 S 21

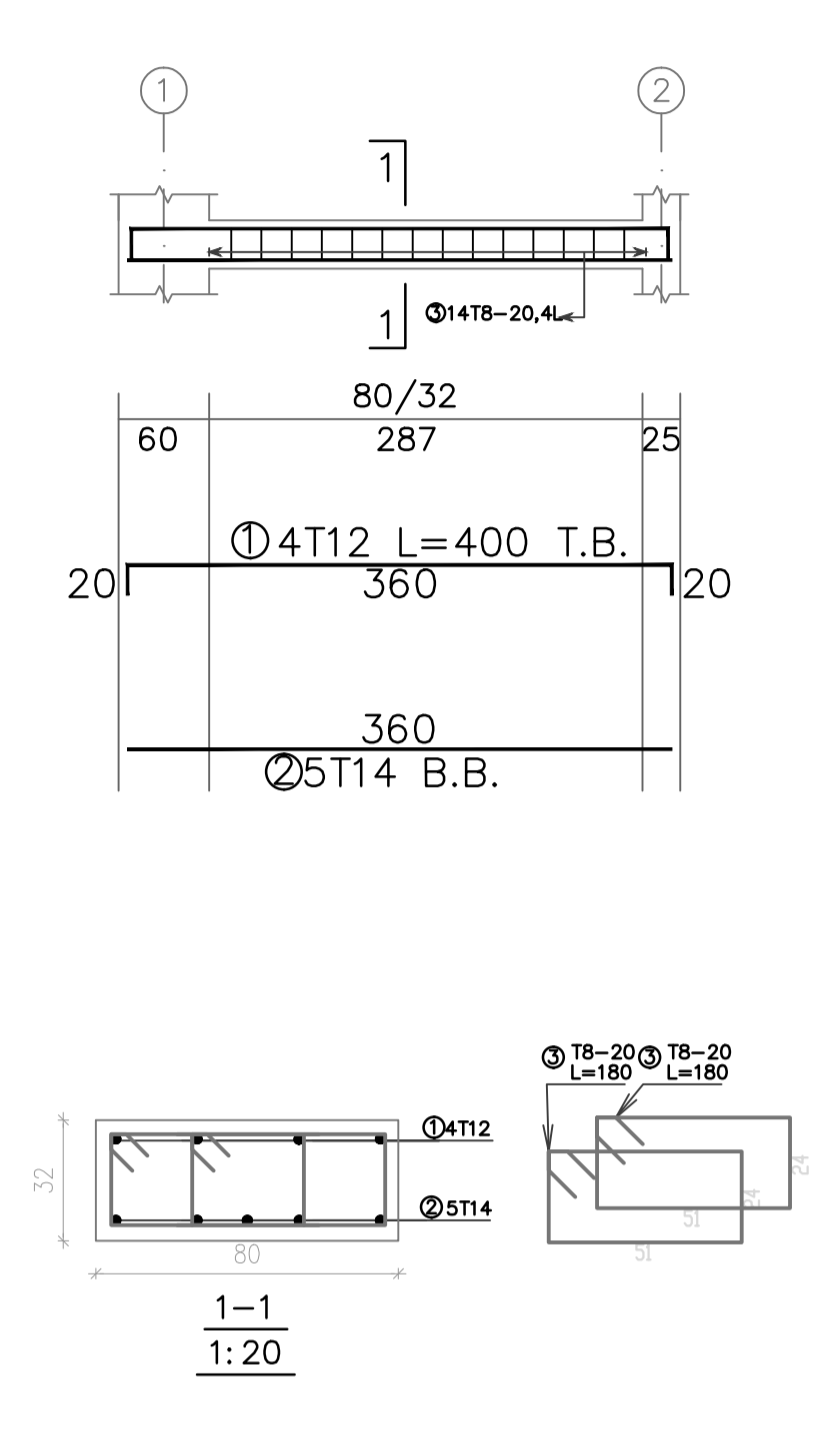
2020



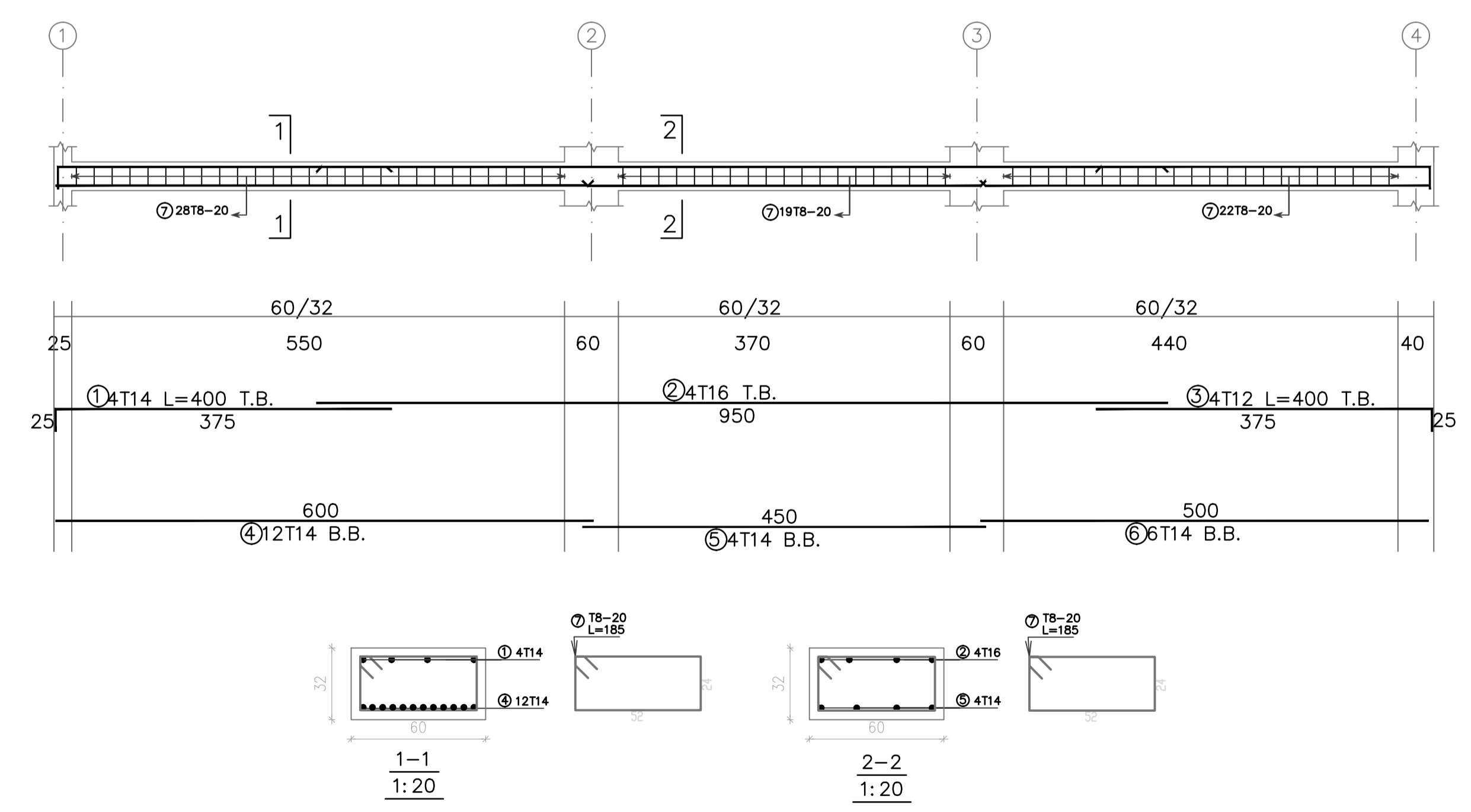
### BEAM - B40 (60/32)



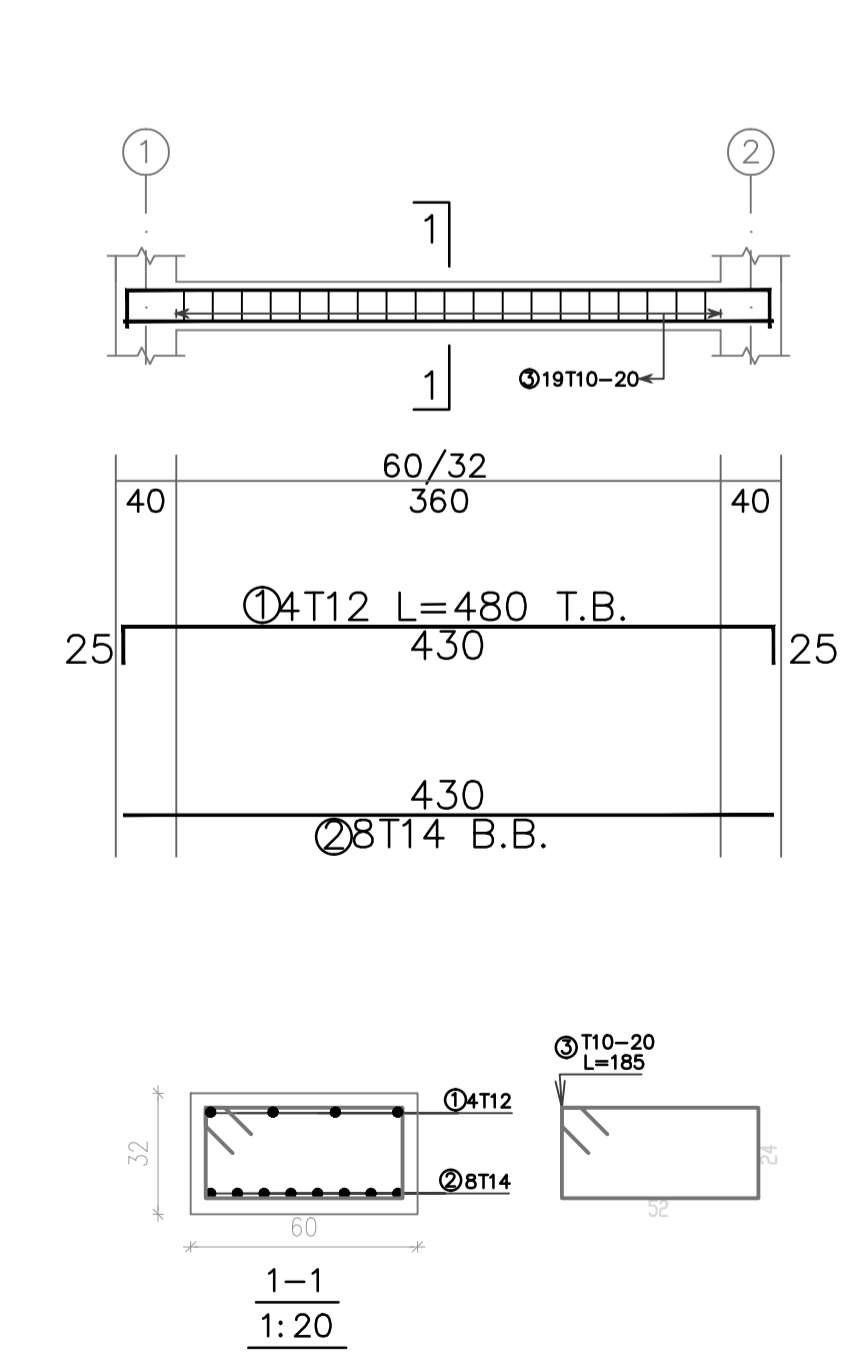
### BEAM - B41 (60/32)



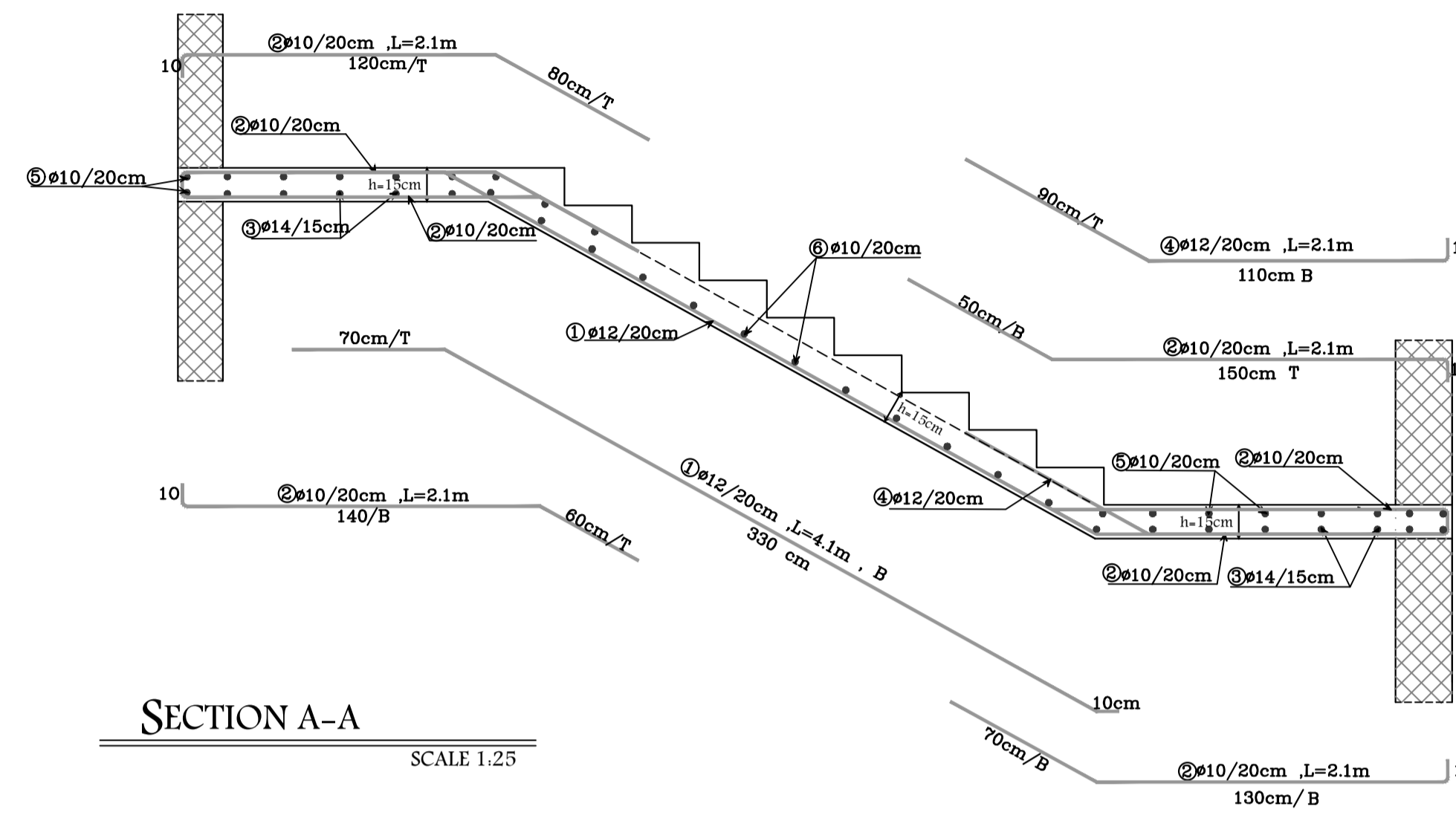
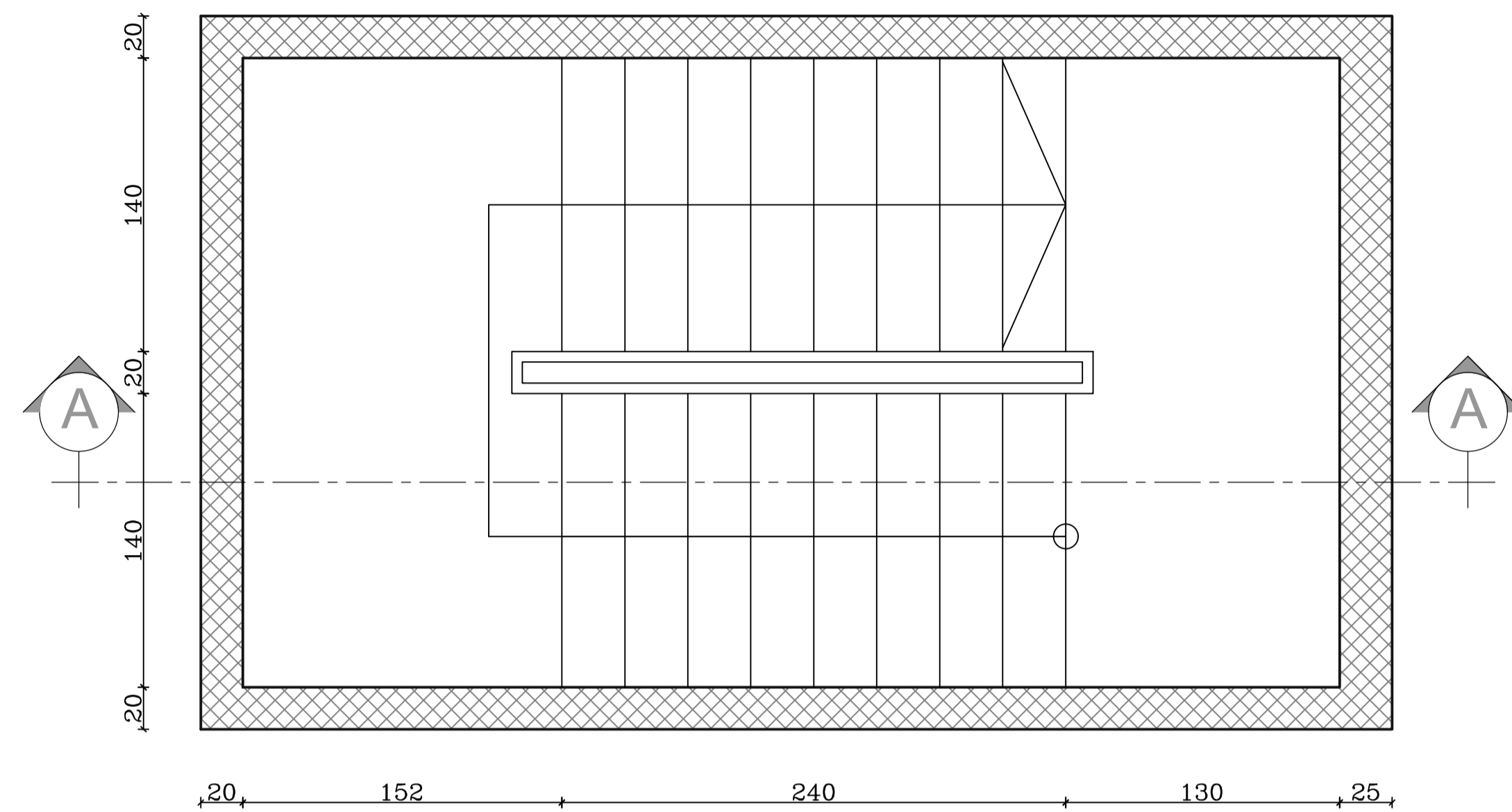
### BEAM - B42 (60/32)



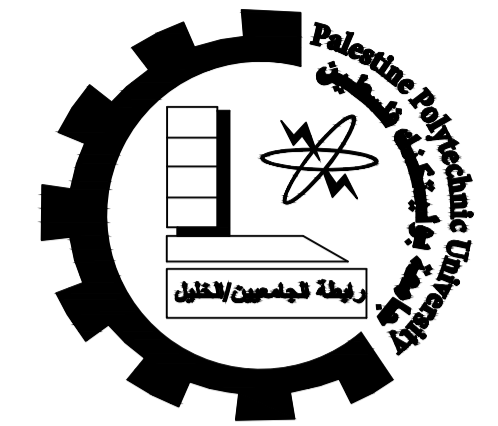
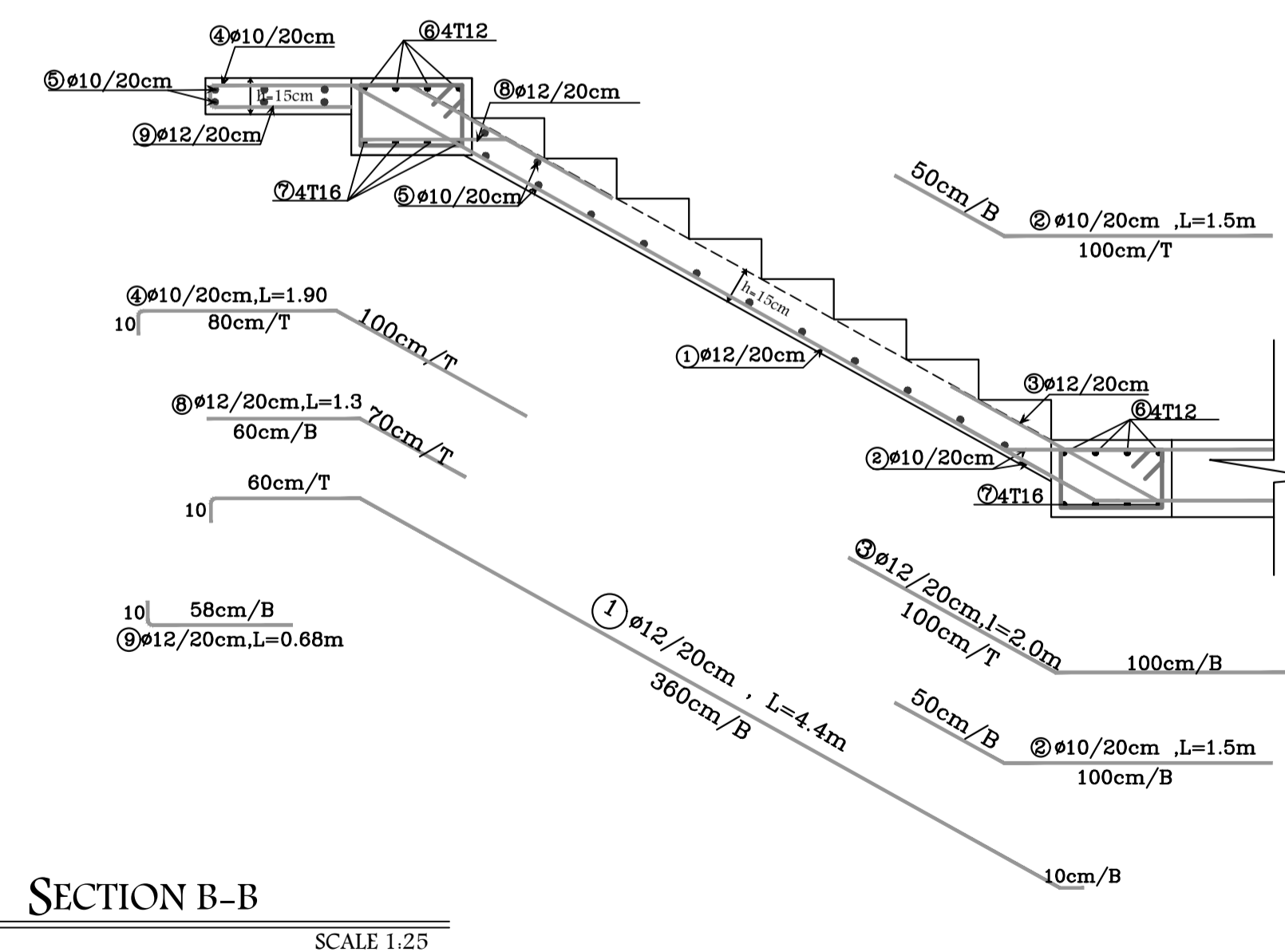
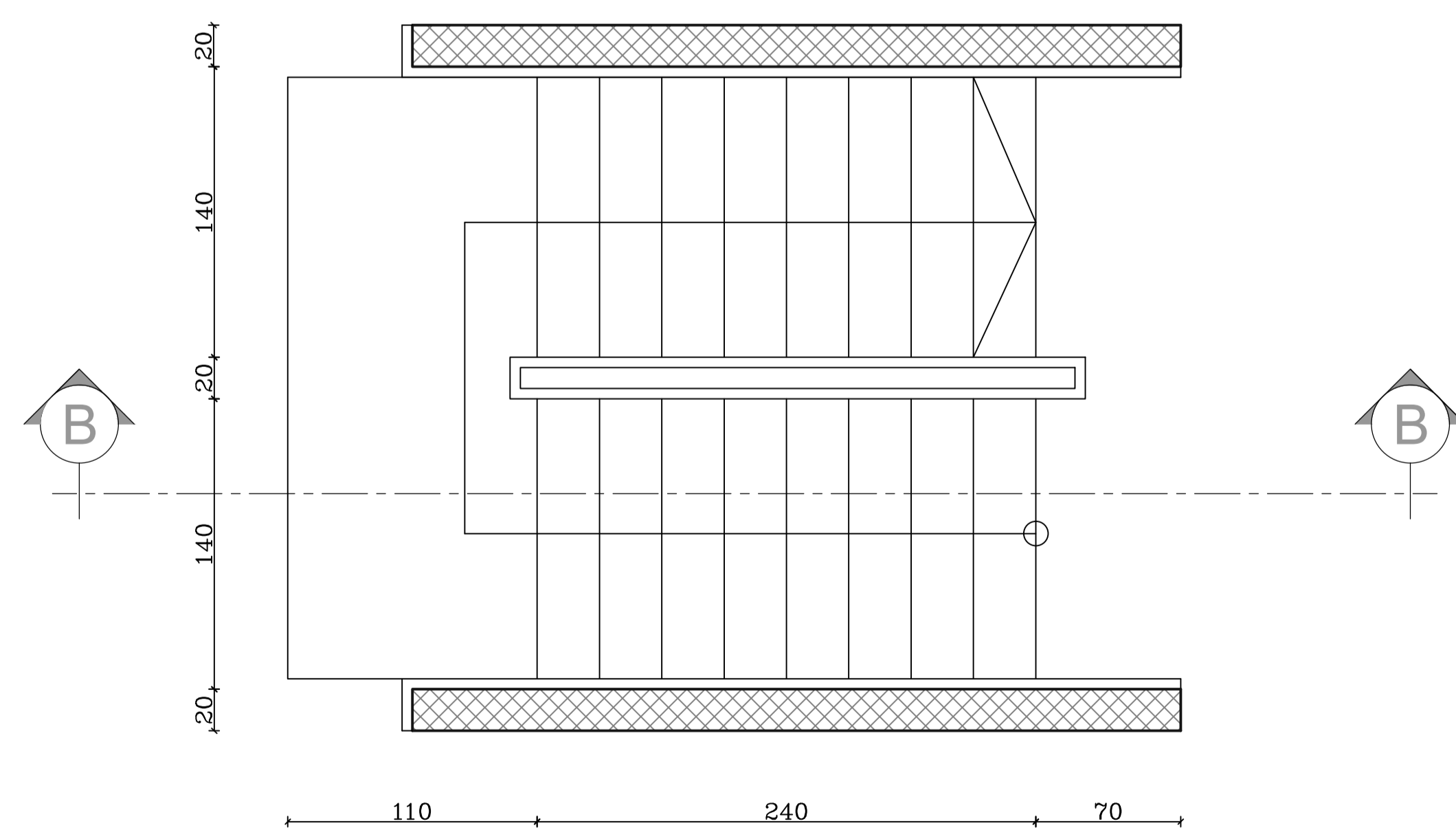
### BEAM - B43 (60/32)



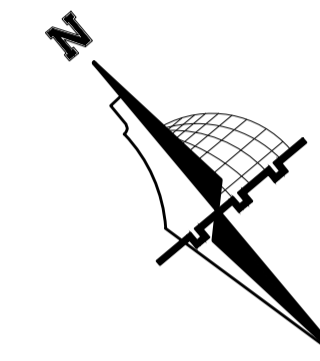
# STAIR #1



# STAIR #2



Palestine Polytechnic University  
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Building Engineering



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Graduation Project

"Structural Design of a Residential Building"

Supervisor  
Dr.Nafith Nssereddin

Project Team  
Hala Al-Qadi  
Mai Hashlamoun

Drawing Title  
STAIRS DETAILS

SCALE  
1/25

DRAW. NO.  
S 22

2020

