About The instructor

Mahmoud Yasser Mahmoud

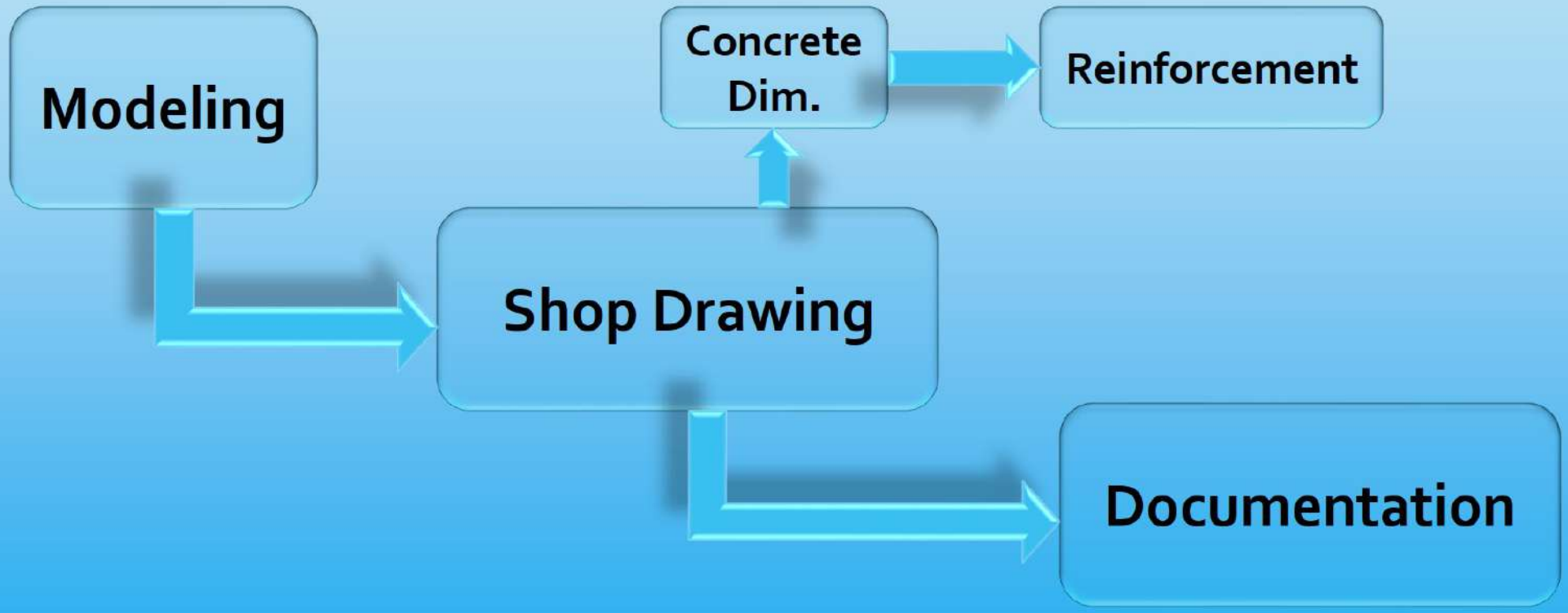
6 Years of experience

Senior Structure Engineer @ ACE pm Moharram and Bakhoum

Master of Structure from Cairo University

Mahmoud Yasser

Contents



Mahmoud Yasser

COURSE OWNER

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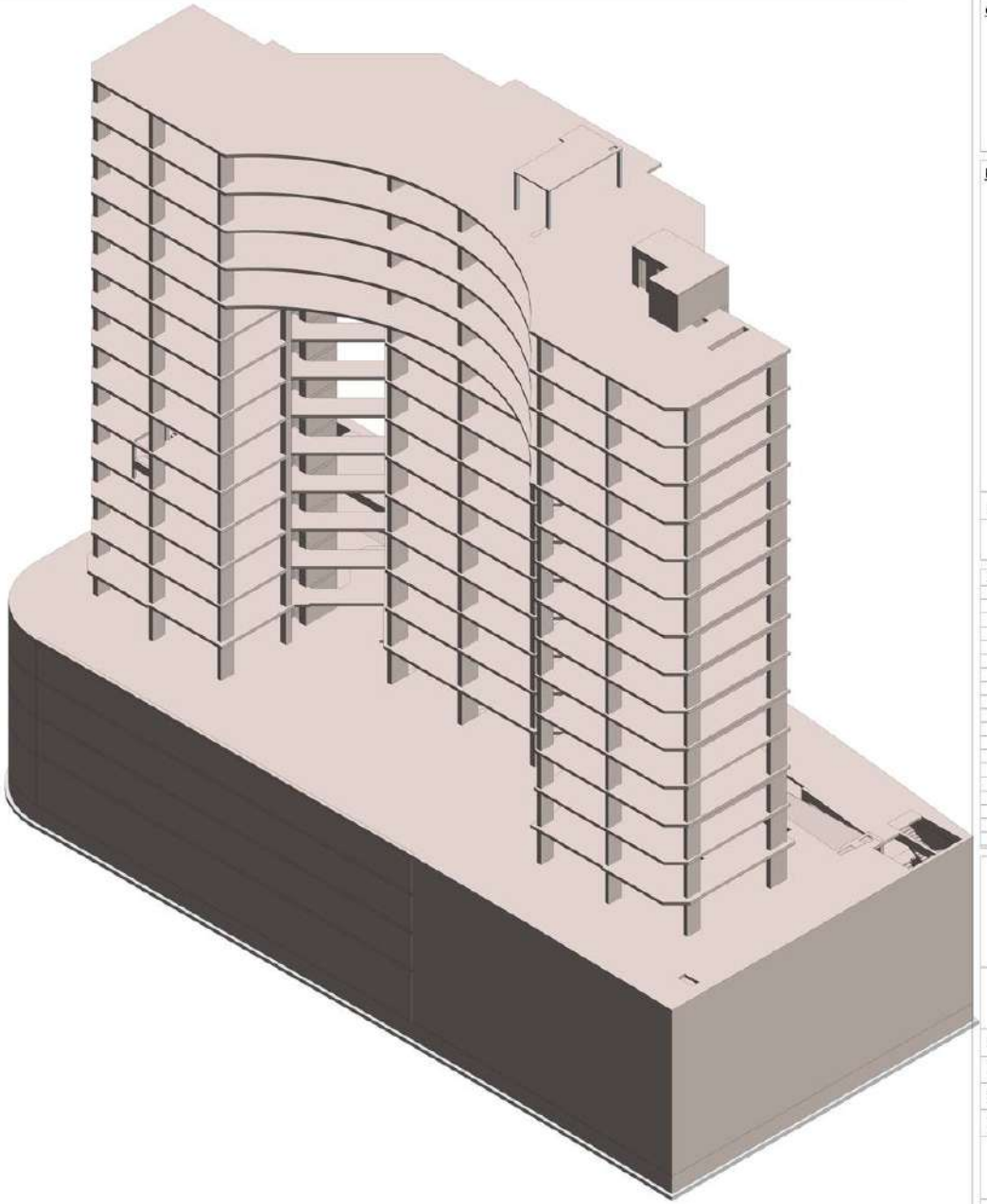
COURSE INSTRUCTOR

Mahmoud Yasser

COURSE TITLE

STRUCTURE SHOP DRWAING WORKSHOP USING REVIT AND SOFiSTiK



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SHEET LIST

Project number	01
Date	02/07/2023
Drawn by	Author
Checked by	Checker

SD-00

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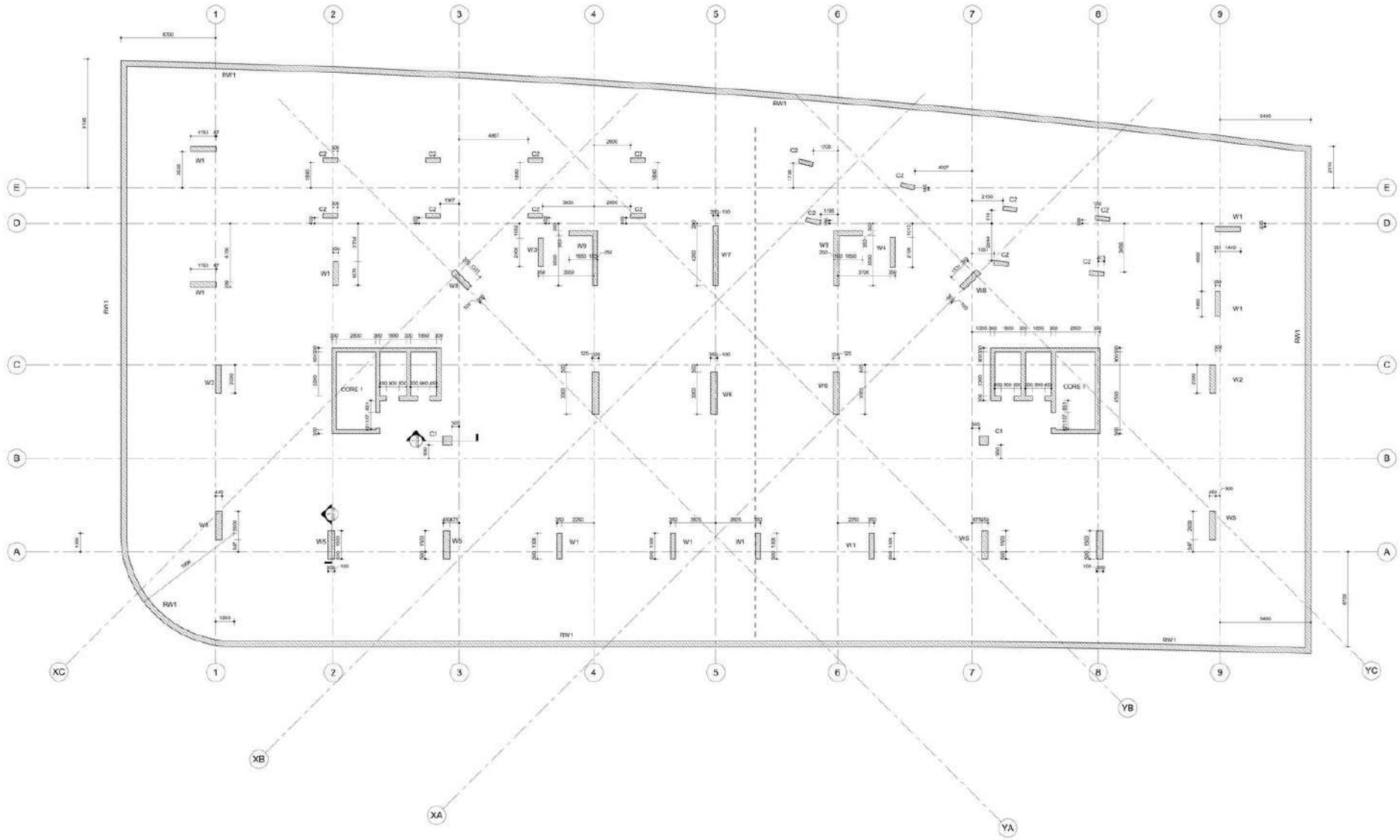

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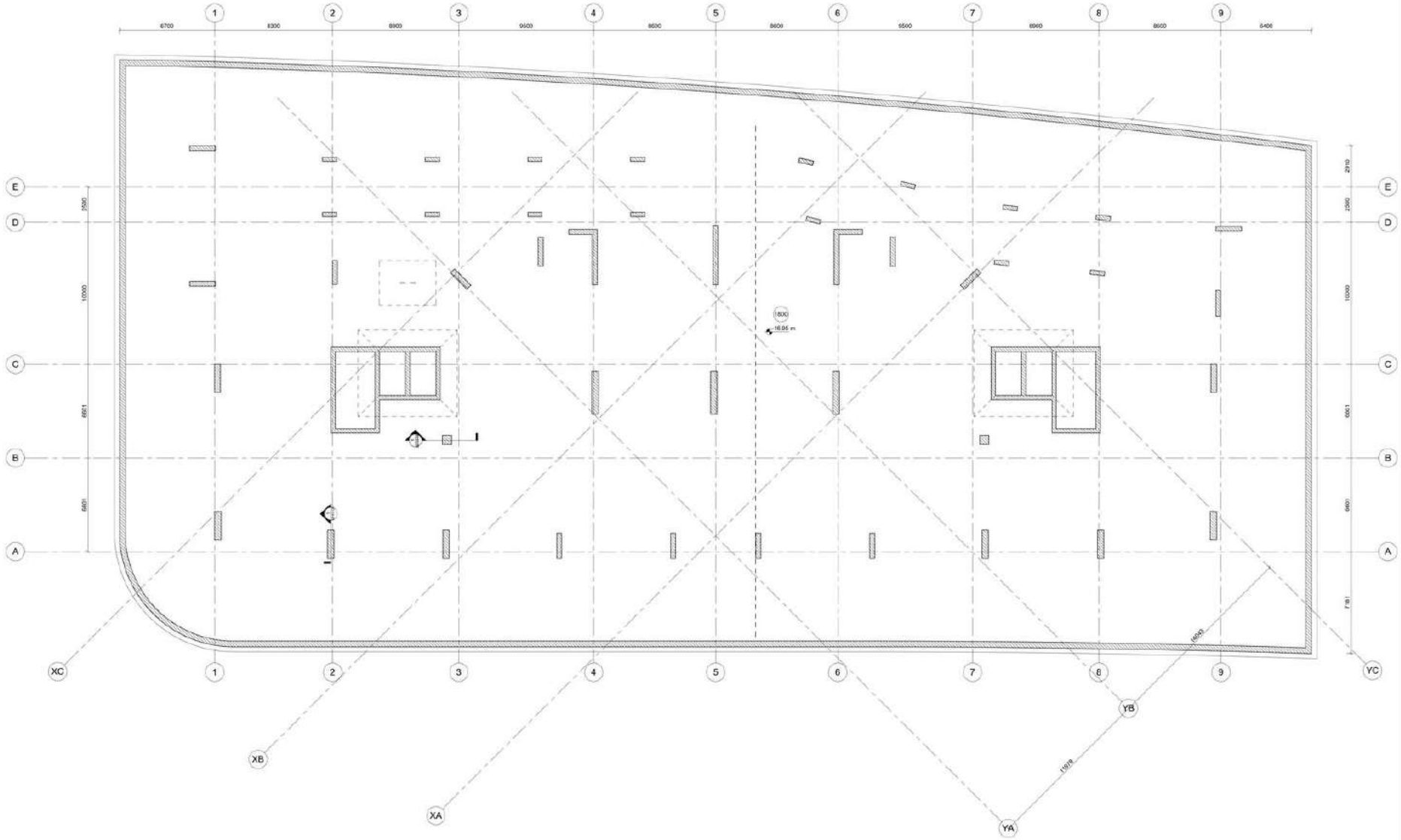

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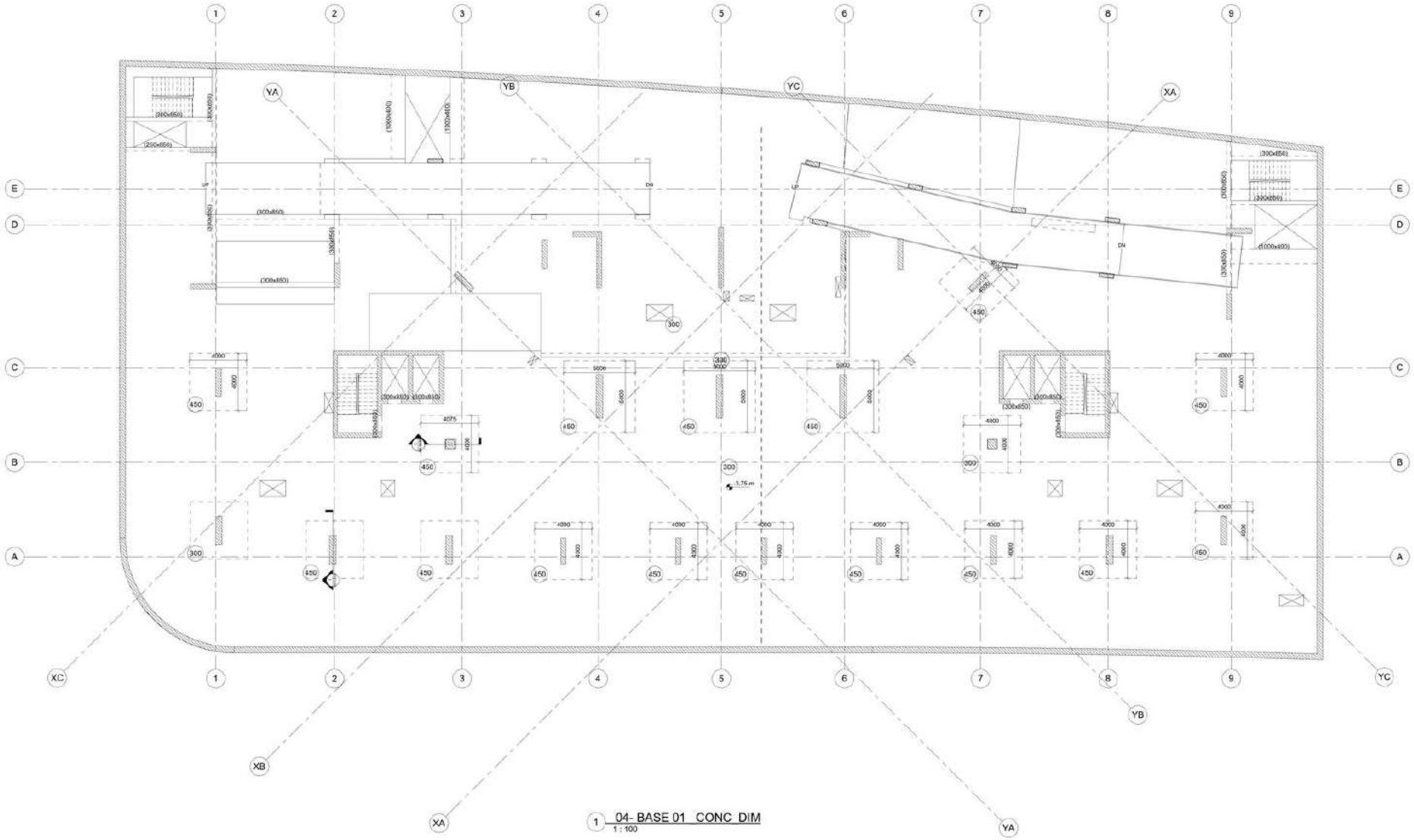

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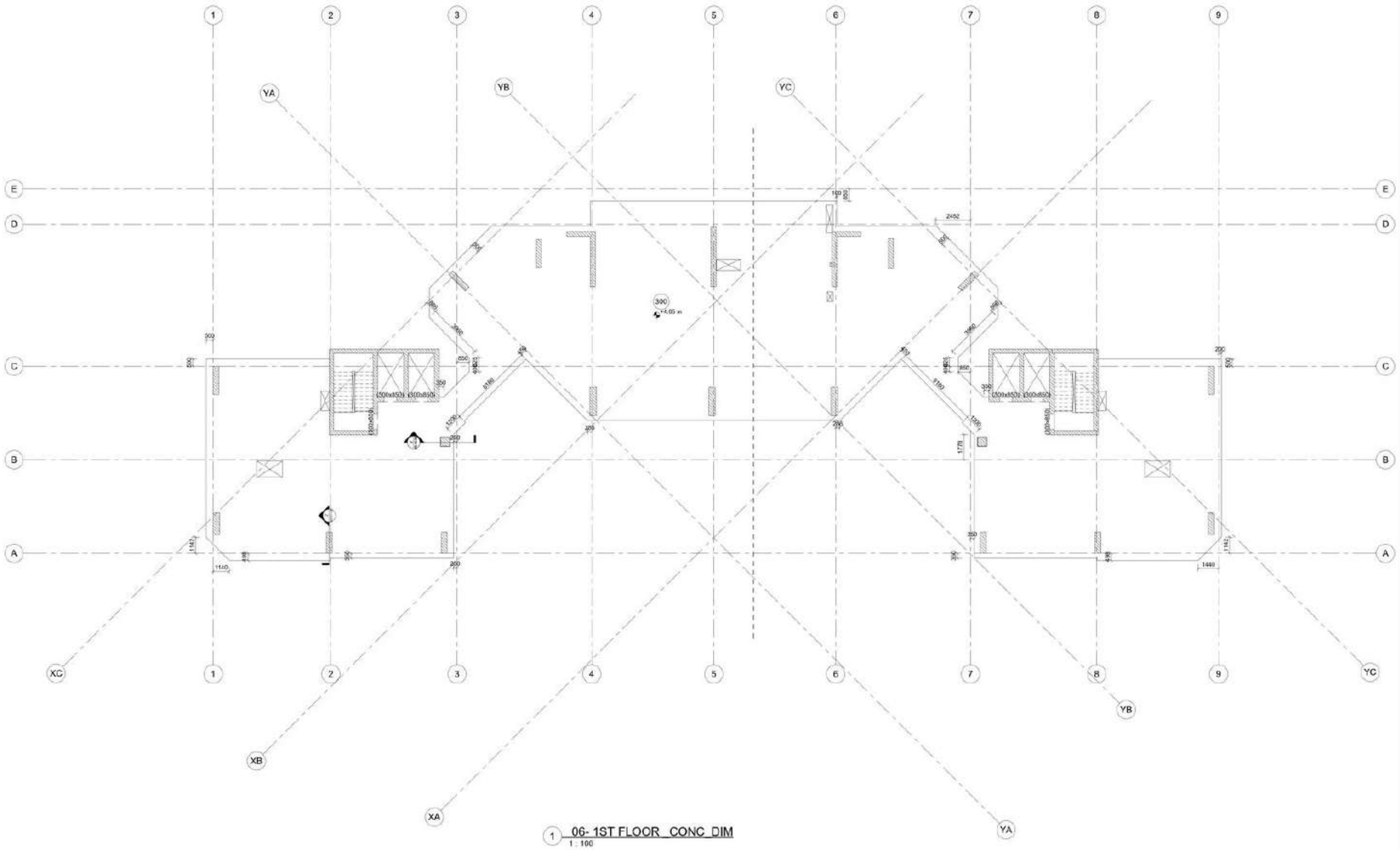

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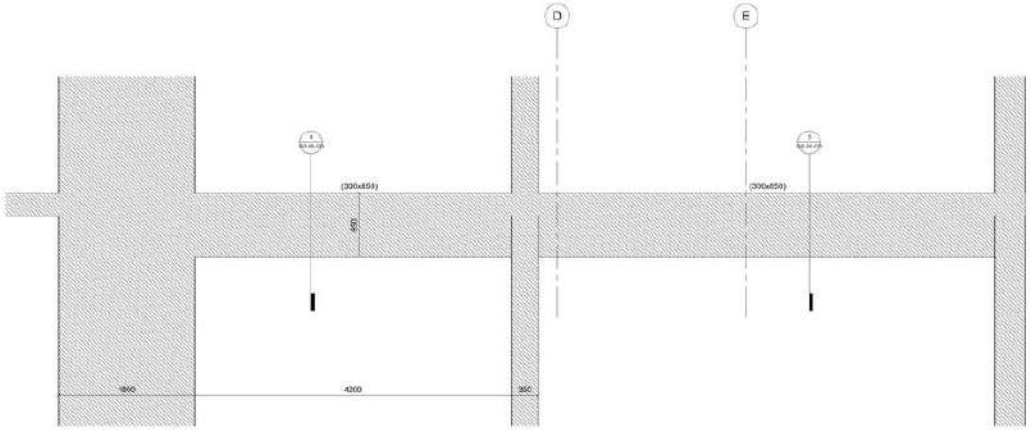

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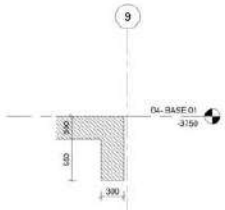

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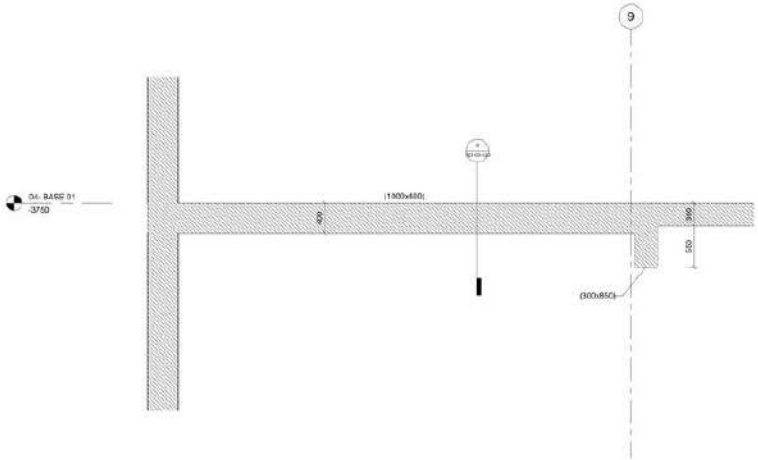

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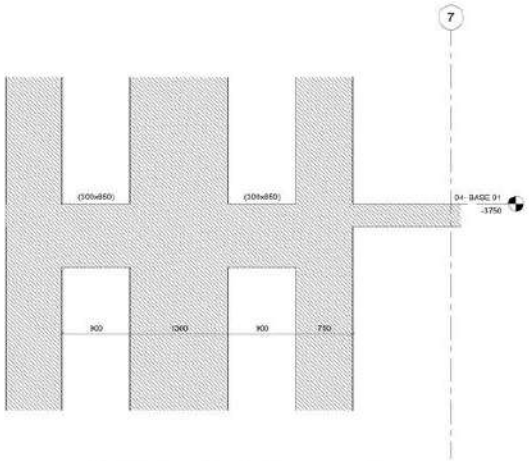

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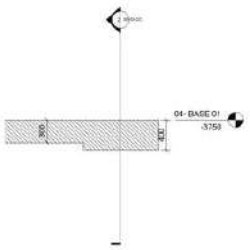

6 BEAM @ 9&C-E-SEC3
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BEAMS SECTIONS

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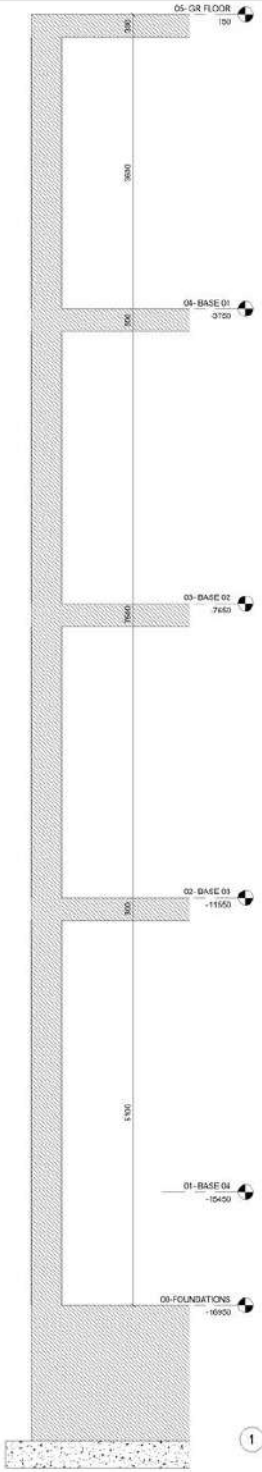

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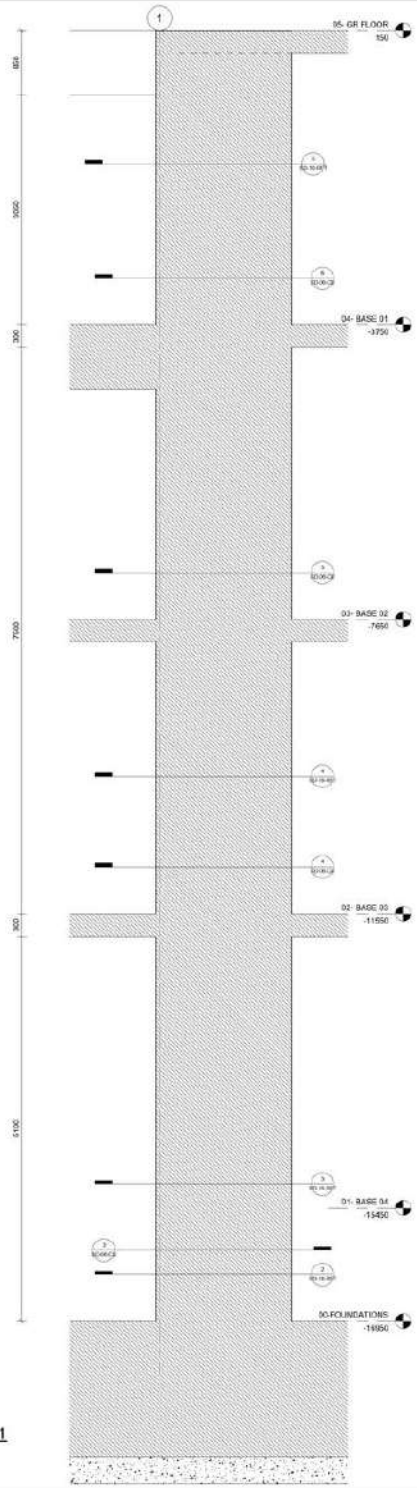

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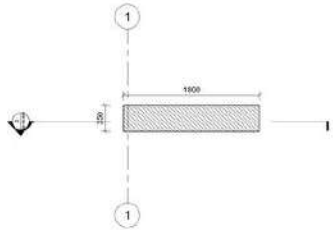

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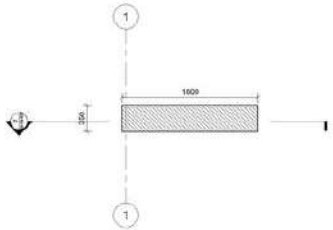

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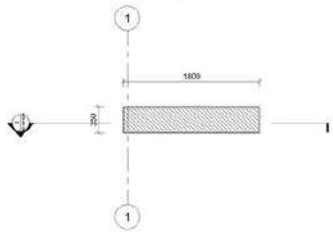

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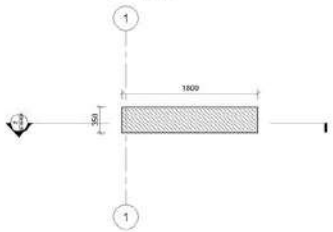

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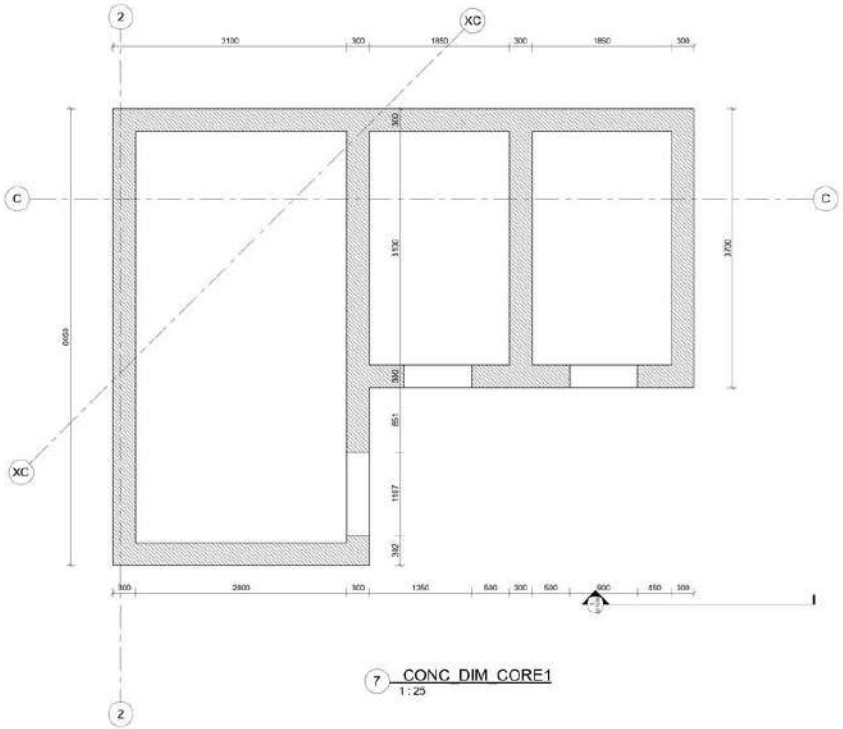

7 CONC_DIM_CORE1
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TOWER PROJECT

RETAINING WALL & SHEAR WALL (W1) SECTIONS & CORE 1 PLAN

Project number	01
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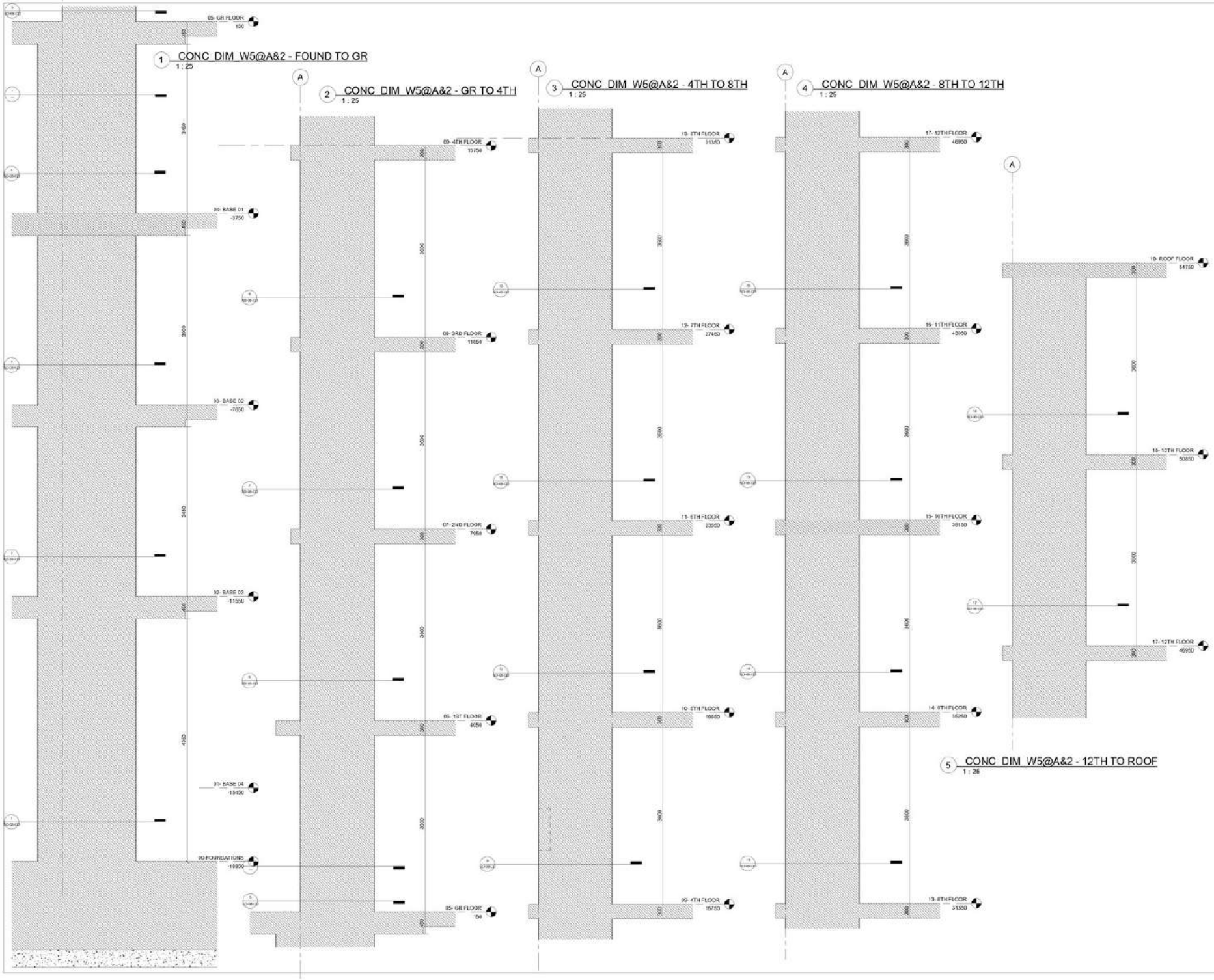

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SHEAR WALL (W5) ELEVATIONS

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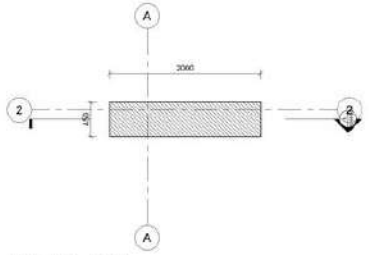

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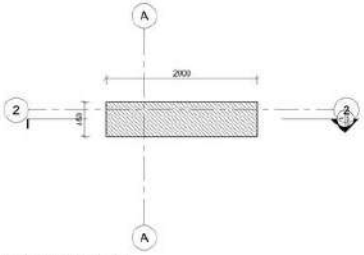

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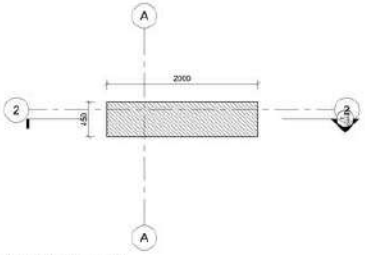

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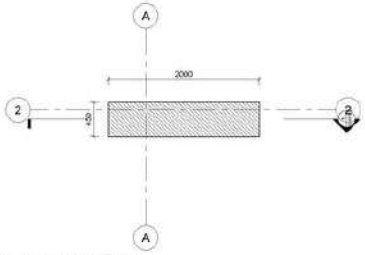

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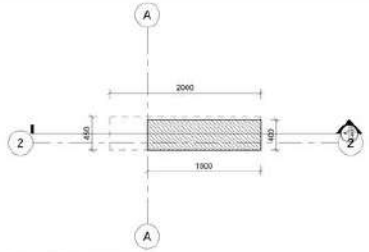

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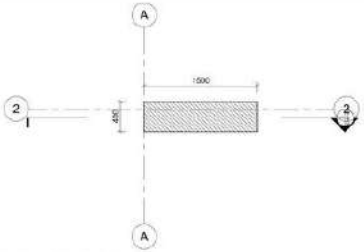

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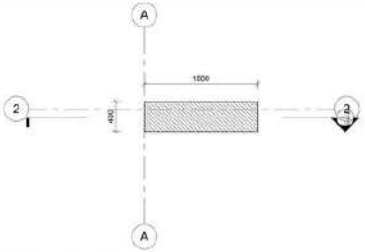

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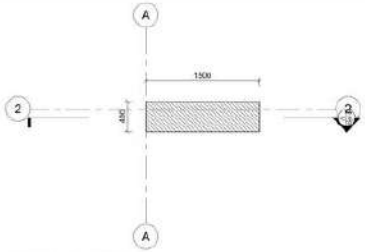

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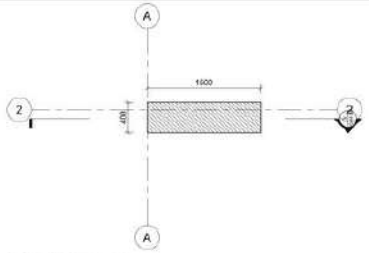

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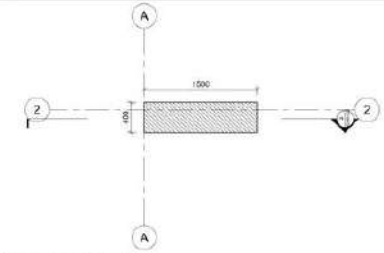

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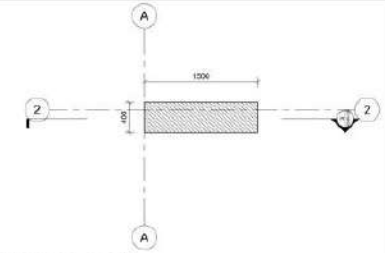

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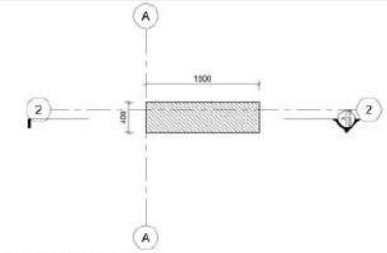

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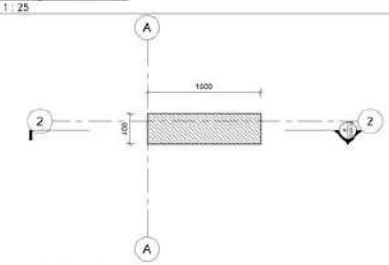

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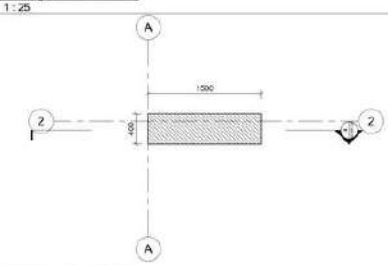

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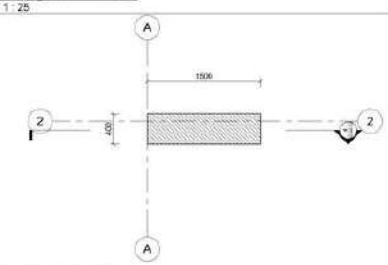

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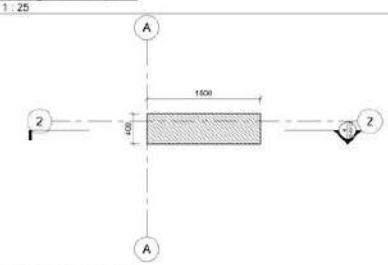

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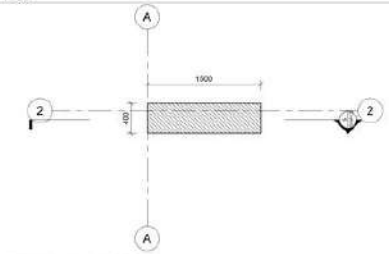

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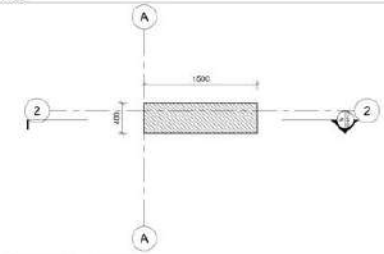

18 W5@A&2 -SEC18
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TOWER PROJECT

SHEAR WALLL (W5) SECTIONS

Project number	01
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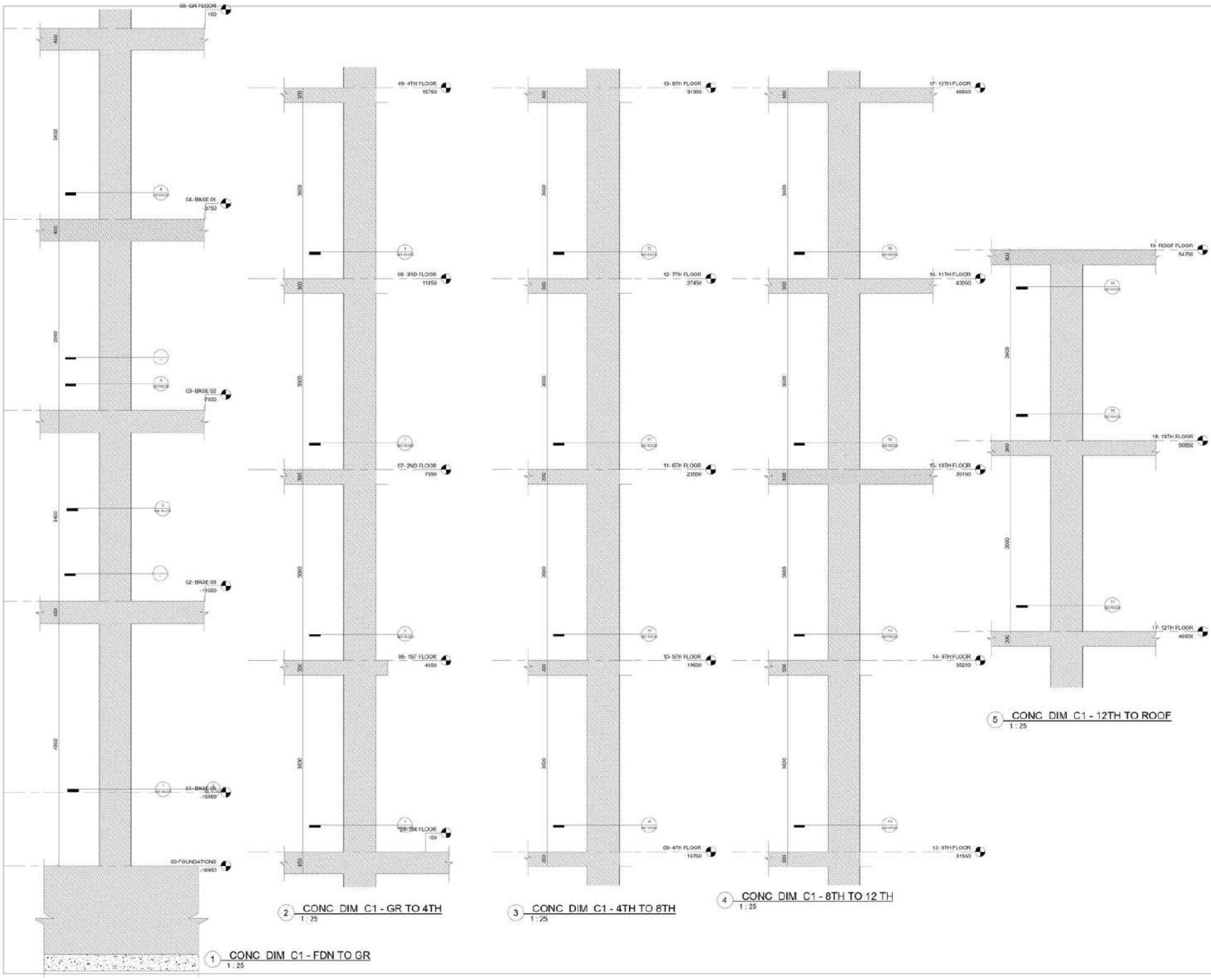
Drawn by	Author
Checked by	Checker

SD-08-CD

Scale	1 : 25



1 CONC DIM C1 - FDN TO GR
1 : 25

2 CONC DIM C1 - GR TO 4TH
1 : 25

3 CONC DIM C1 - 4TH TO 8TH
1 : 25

4 CONC DIM C1 - 8TH TO 12 TH
1 : 25

5 CONC DIM C1 - 12TH TO ROOF
1 : 25

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NOTES

LAST REVISION	SHEET CODE
06/28/23	

No.	Description	Date

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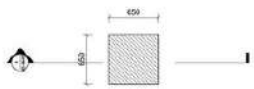
TOWER PROJECT

COLUMN (C1) ELEVATION

Project number	01
Date	02/07/2023
Drawn by	Author
Checked by	Checker

SD-09-CD

Scale	1 : 25



1 C1-SEC0
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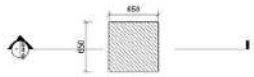

2 C1-SEC1
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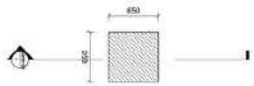

3 C1-SEC2
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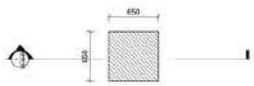

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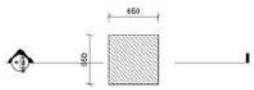

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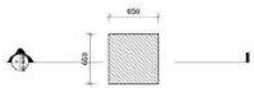

6 C1-SEC5
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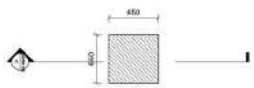

7 C1-SEC6
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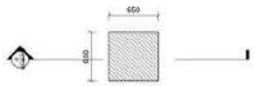

8 C1-SEC7
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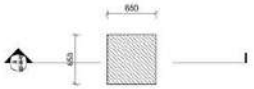

9 C1-SEC8
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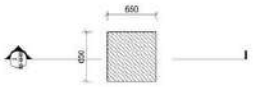

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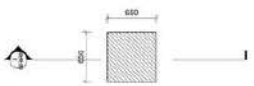

11 C1-SEC10
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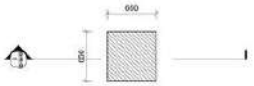

12 C1-SEC11
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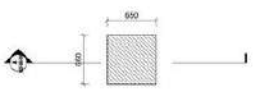

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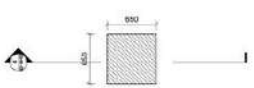

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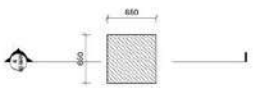

15 C1-SEC14
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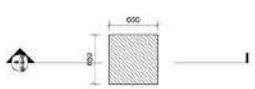
16 C1-SEC15
1 : 25



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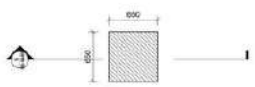

18 C1-SEC17
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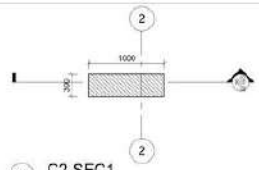
19 C1-SEC18
1 : 25



21 C2-SEC1
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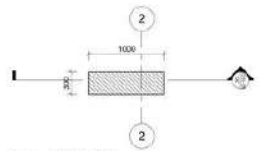

22 C2-SEC2
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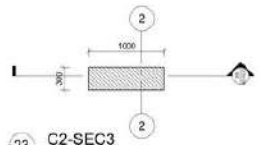

23 C2-SEC3
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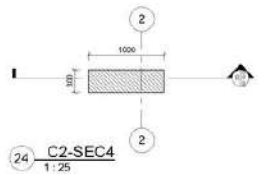

24 C2-SEC4
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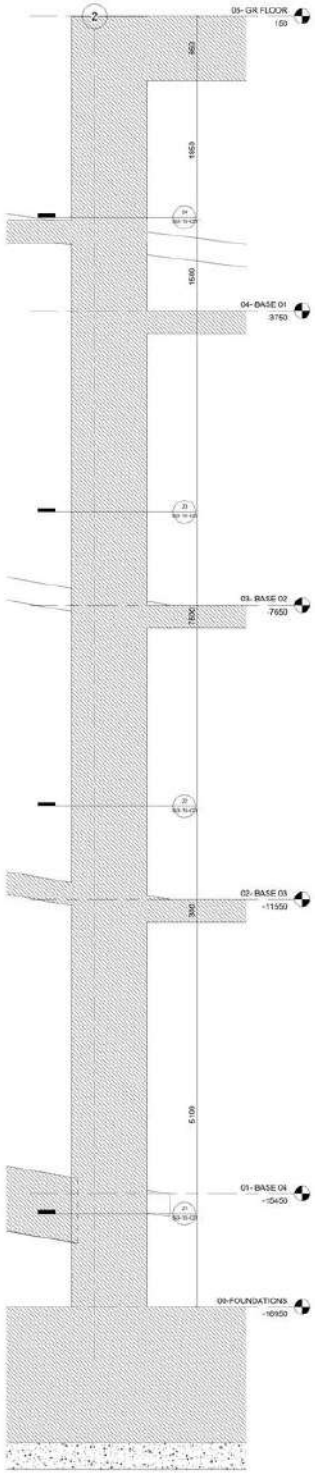

20 CONC DIM C2
1 : 25

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LAST REVISION	SHEET CODE
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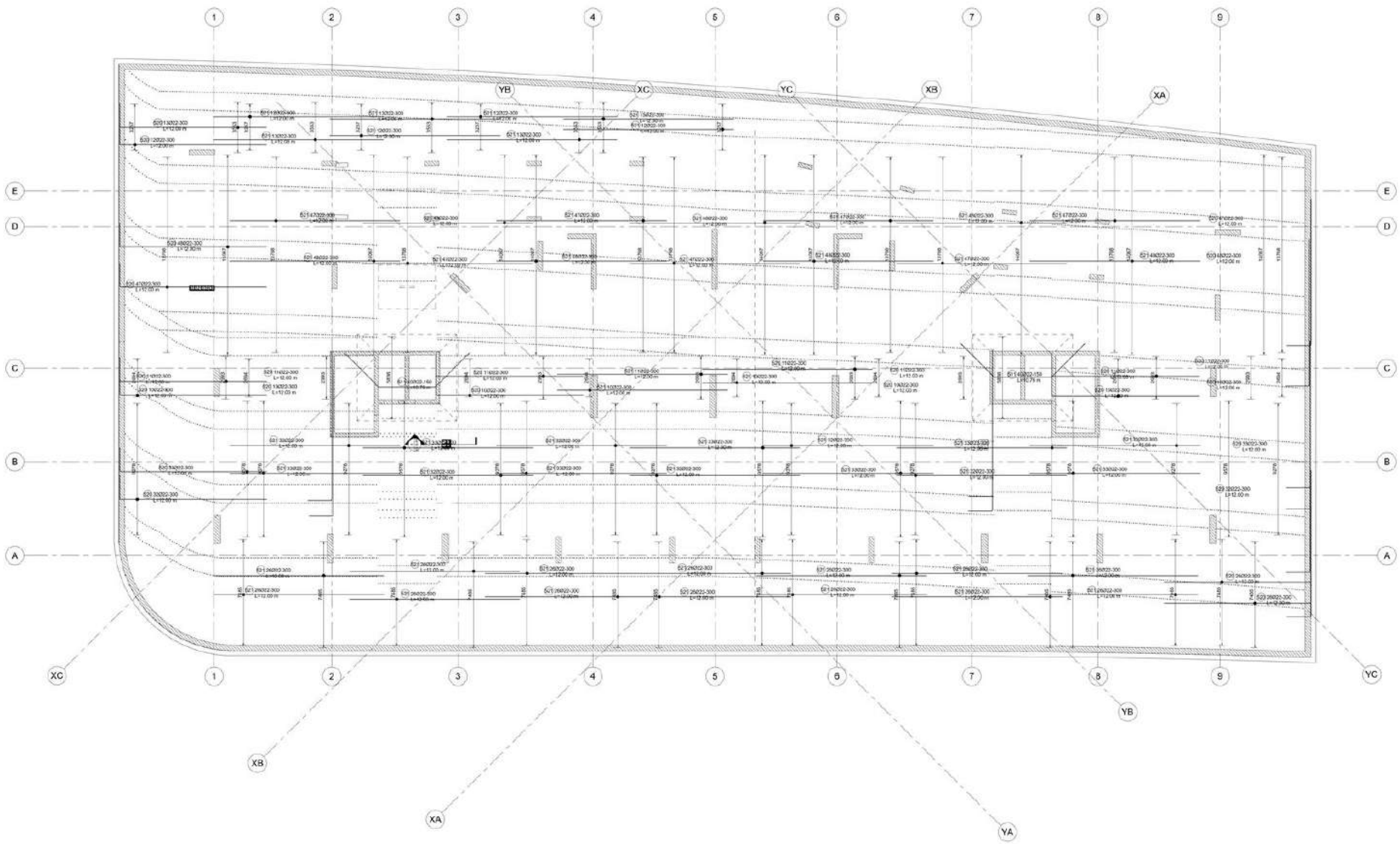
TOWER PROJECT

C1 & C2 SECTIONS

Project number	01
Date	02/07/2023
Drawn by	Author
Checked by	Checker

SD-10-CD

Scale	1 : 25



1 00-FOUNDATIONS_BOTT X-DIR
1 : 100

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07/02/23	

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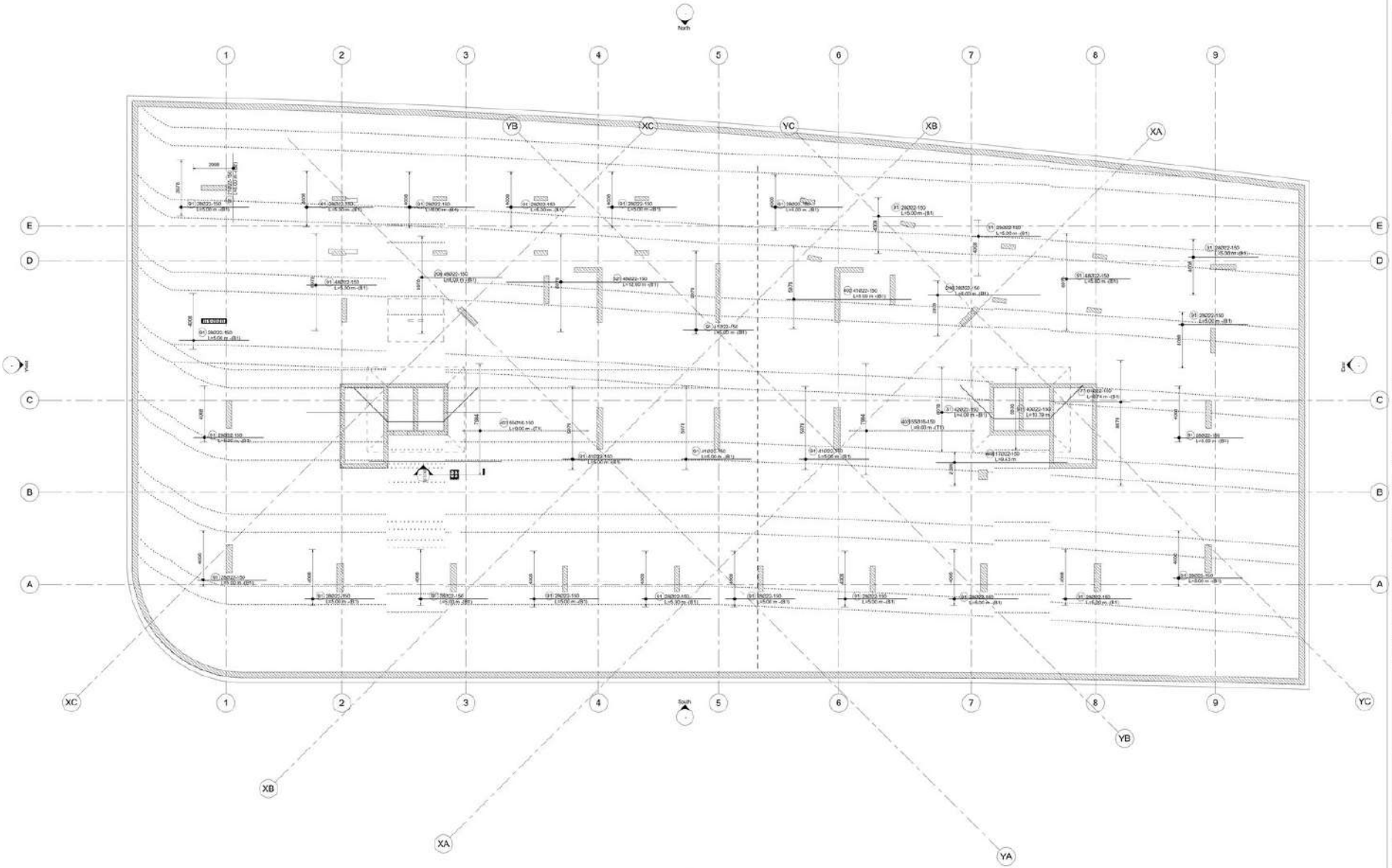
TOWER PROJECT

FOUNDATIONS _BOTTOM_X-DIRICTION

Project number	01
Date	02/07/2023
Drawn by	Author
Checked by	Checker

SD-11-RFT

Scale	1 : 100



1 00-FOUNDATIONS_ADD
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LAST REVISION	SHEET CODE
07/02/23	

No.	Description	Date

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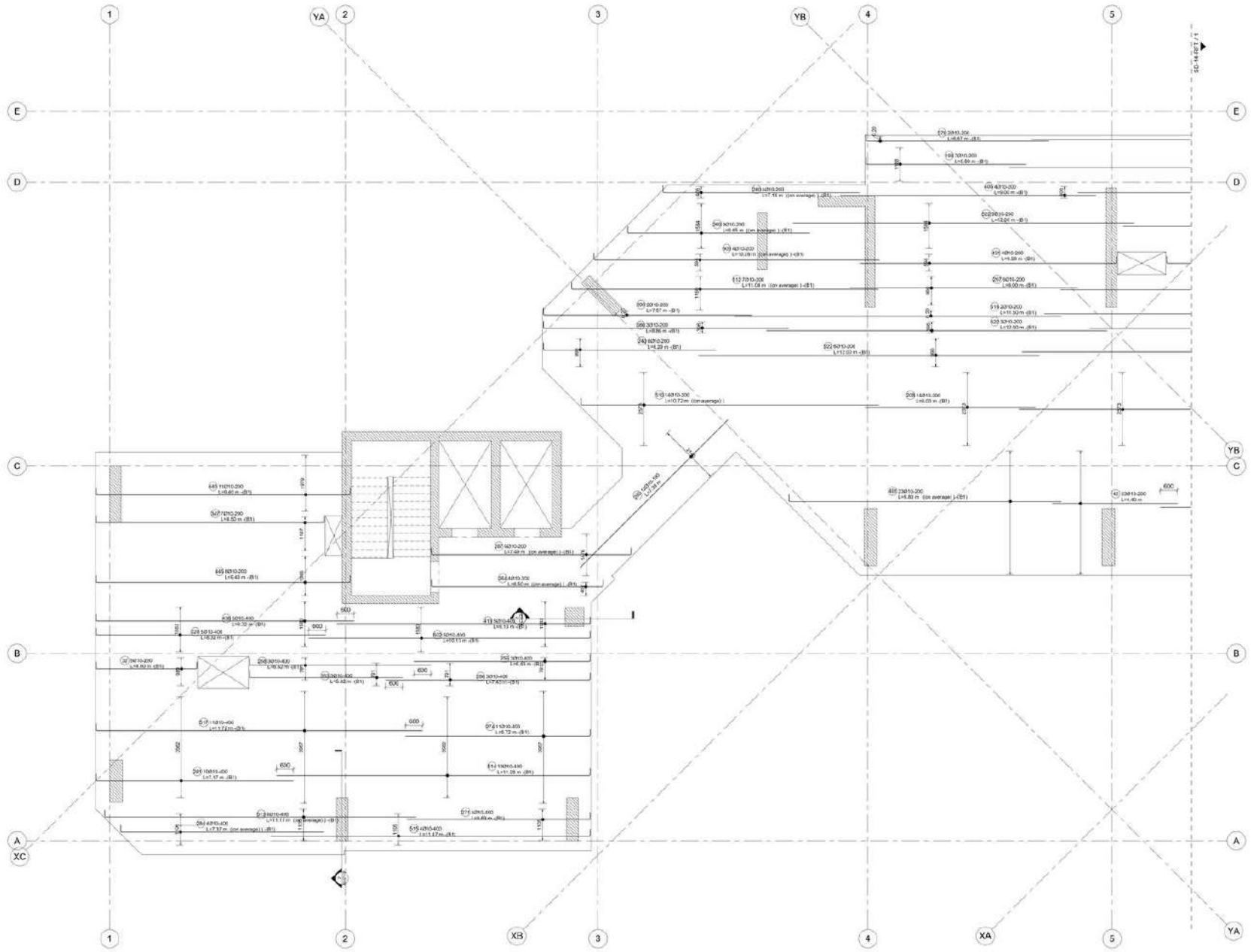
TOWER PROJECT

FOUNDATIONS _ADDITIONAL REINF.

Project number	01
Date	02/07/2023
Drawn by	Author
Checked by	Checker

SD-12-RFT

Scale	1 : 100



1 06- 1ST FLOOR _BOTTOM_X_RFT - PART 01
1 : 50

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07/04/23	

No.	Description	Date

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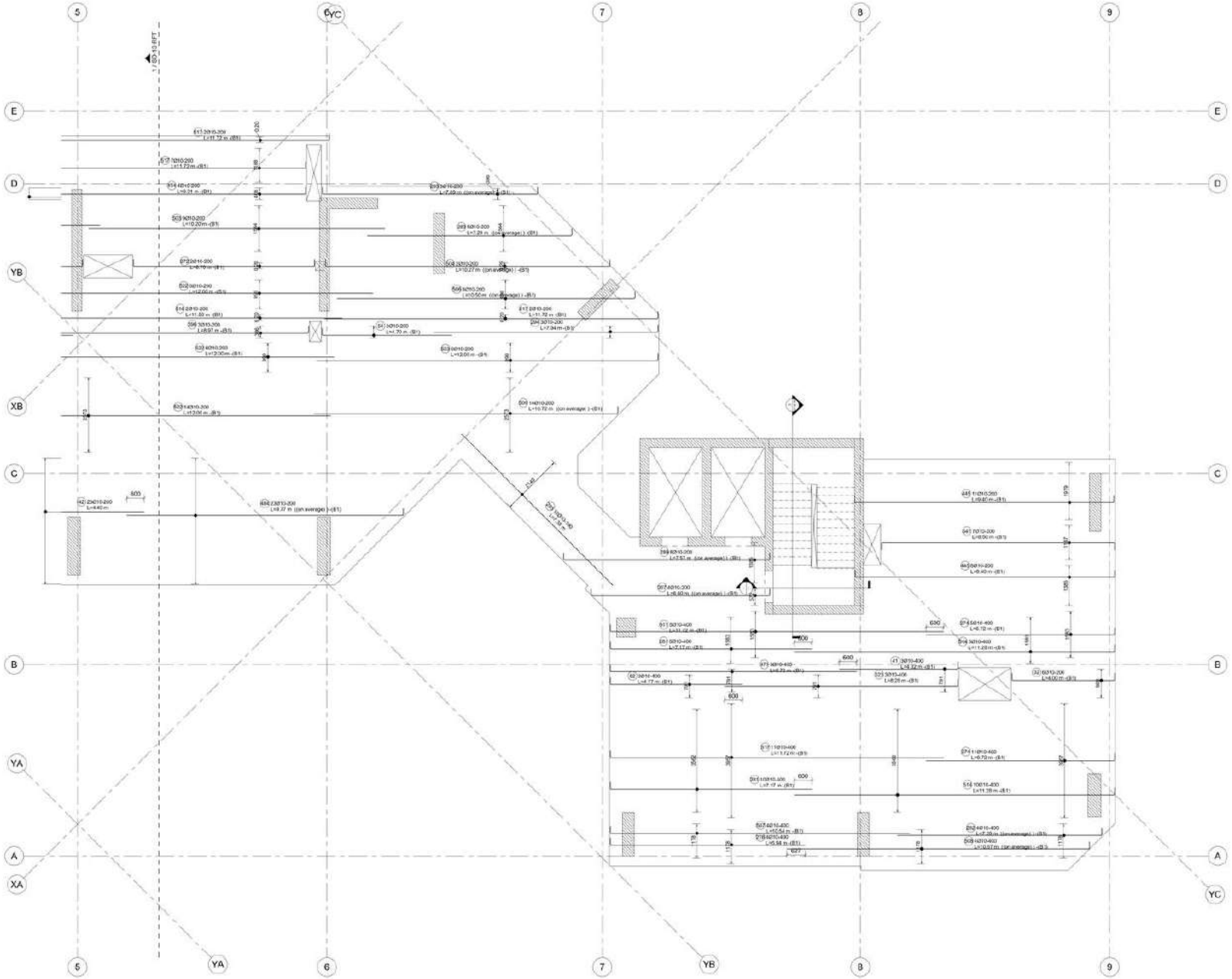
TOWER PROJECT

06- 1ST FLOOR _BOTTOM_X_RFT - PART 01

Project number	01
Date	02/07/2023
Drawn by	Author
Checked by	Checker

SD-13-RFT

Scale	1 : 50



1 06- 1ST FLOOR _BOTTOM_X_RFT - PART 02
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LAST REVISION	SHEET CODE
07/04/23	

No.	Description	Date

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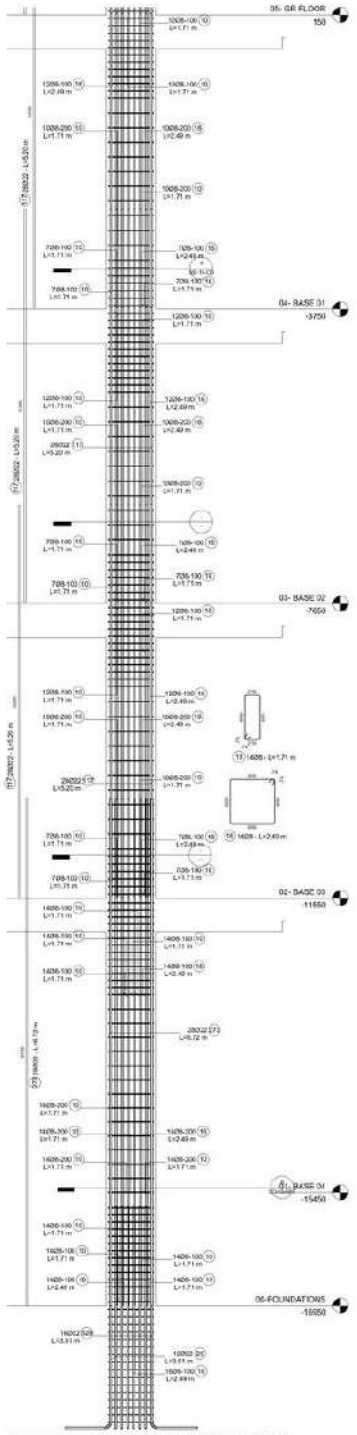
TOWER PROJECT

06- 1ST FLOOR _BOTTOM_X_RFT - PART 02

Project number	01
Date	02/07/2023
Drawn by	Author
Checked by	Checker

SD-14-RFT

Scale	1 : 50



1 RFT_C1 - FDN TO GR
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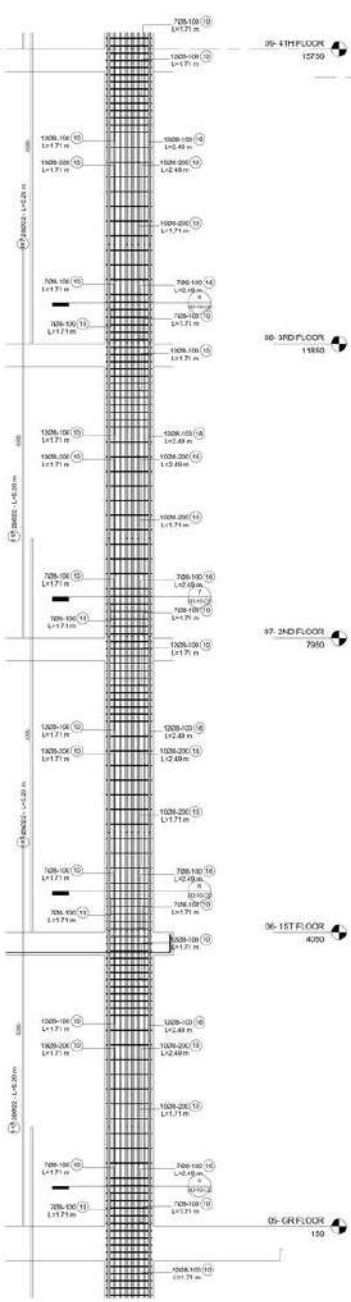

2 RFT_C1 - GR TO 4TH
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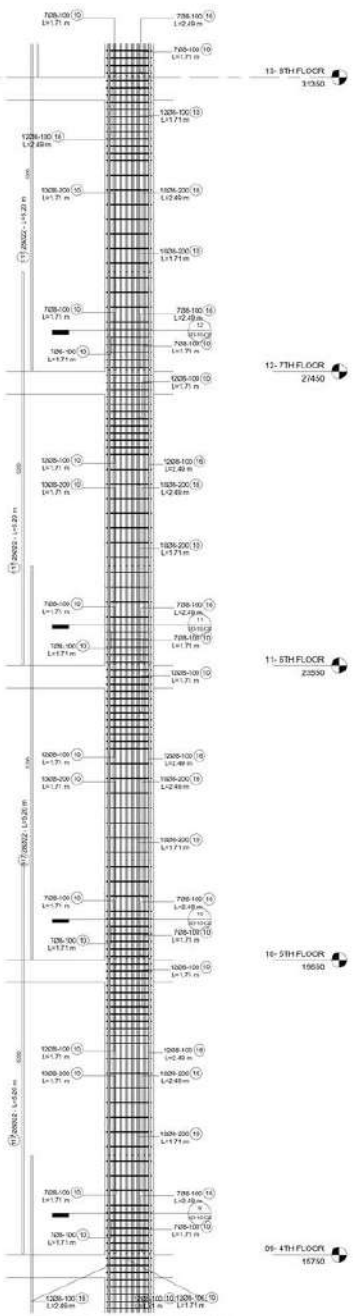
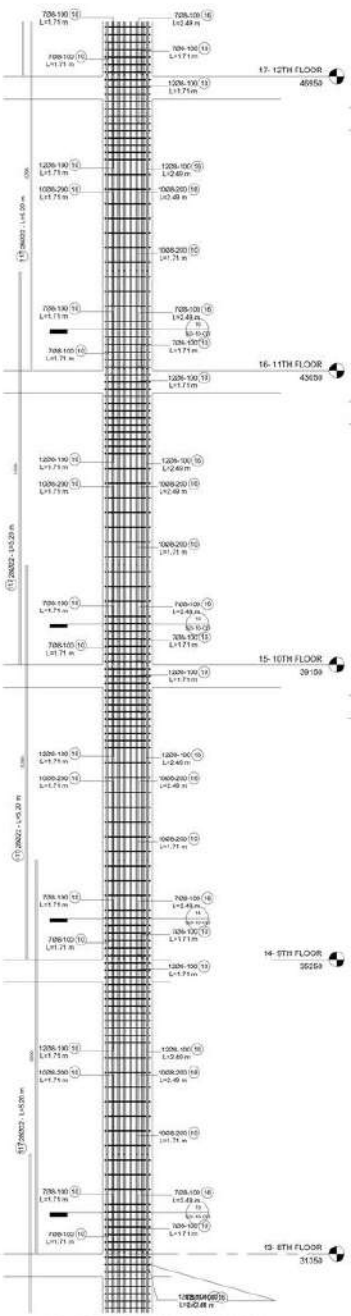


3 RFT_C1 - 4TH TO 8TH
1 : 25



4 RFT_C1 - 8TH TO 12 TH
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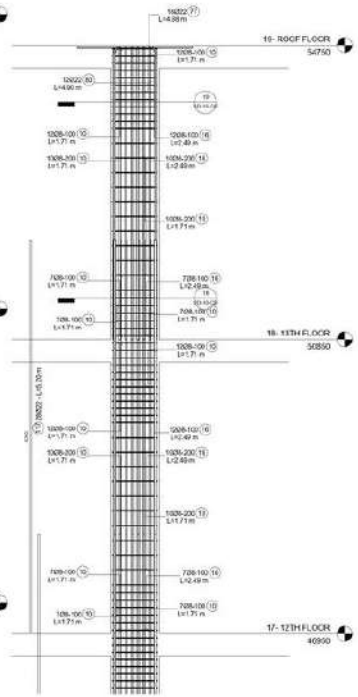

5 RFT_C1 - 12TH TO ROOF
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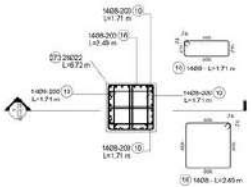

6 C1-SEC0_RFT
1 : 25

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LAST REVISION	SHEET CODE
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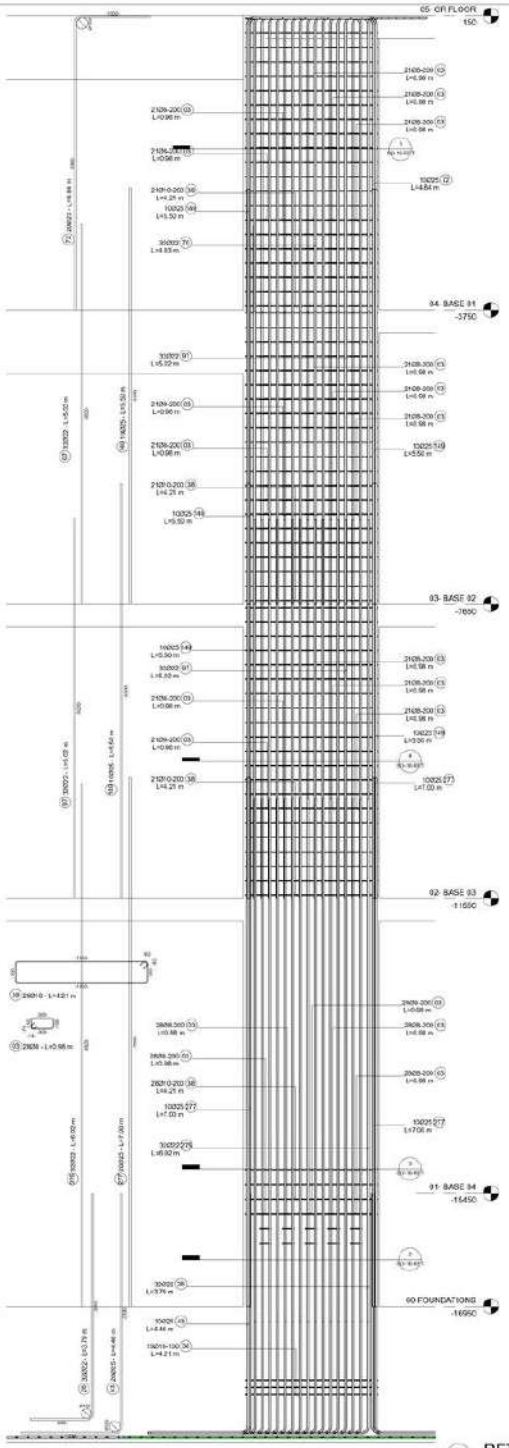
TOWER PROJECT

COLUMN C1 REINFORCEMENT DAETAILS

Project number	01
Date	02/07/2023
Drawn by	Author
Checked by	Checker

SD-15-RFT

Scale	1 : 25



1 RFT_W1@1&D
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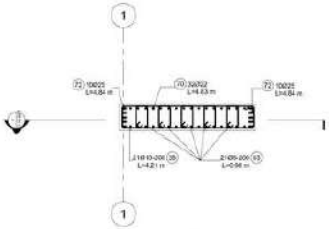

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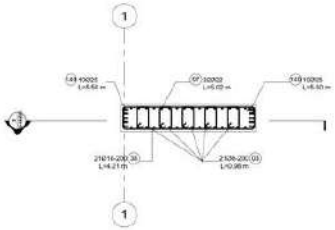

4 W1@1&D_SEC5
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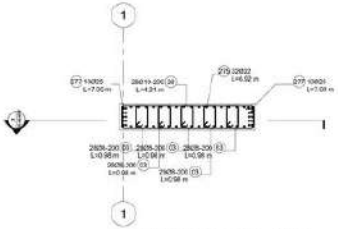

3 W1@1&D_SEC1_RFT1
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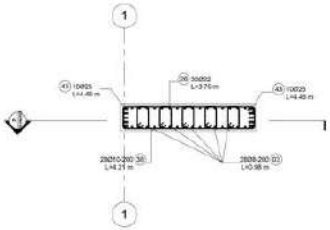

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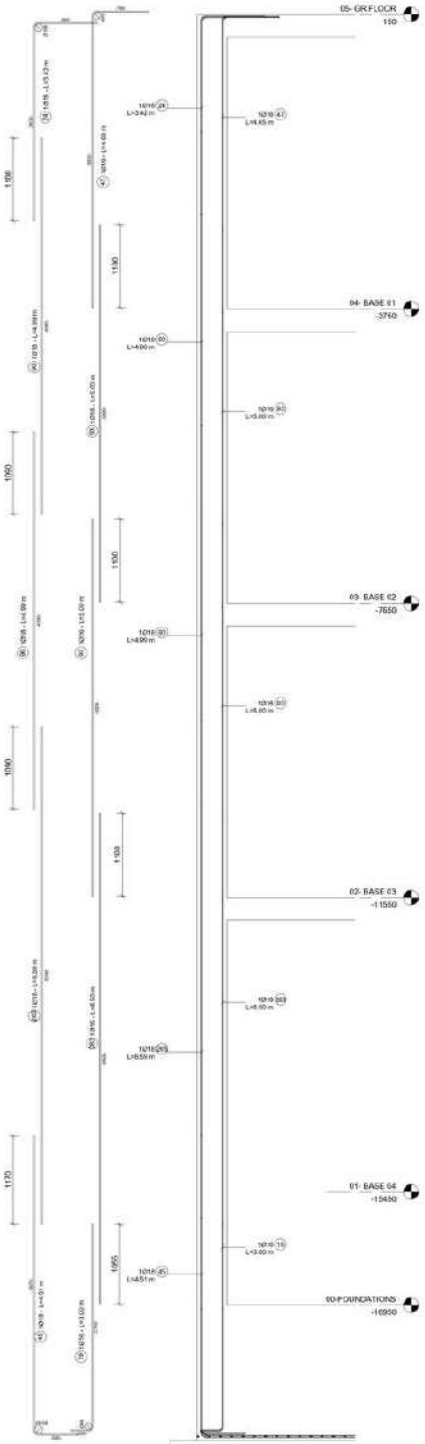

6 RFT_RW1
1 : 25

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LAST REVISION	SHEET CODE
07/04/23	

No.	Description	Date

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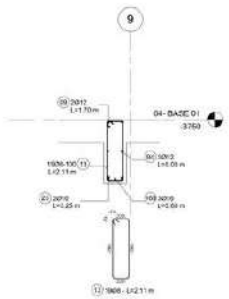
TOWER PROJECT

RETAINING WALL (RW1) & SHEAR WALL (W1) RFT DETAILS

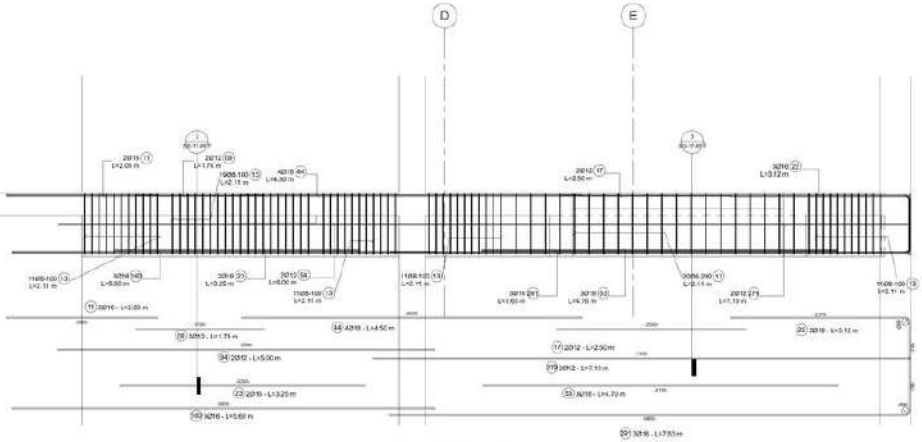
Project number	01
Date	02/07/2023
Drawn by	Author
Checked by	Checker

SD-16-RFT

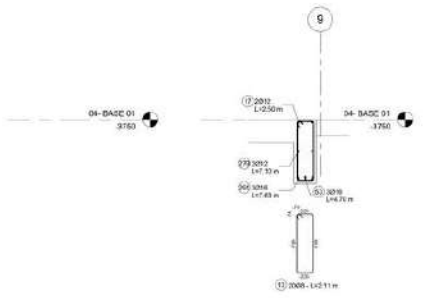
Scale	1 : 25



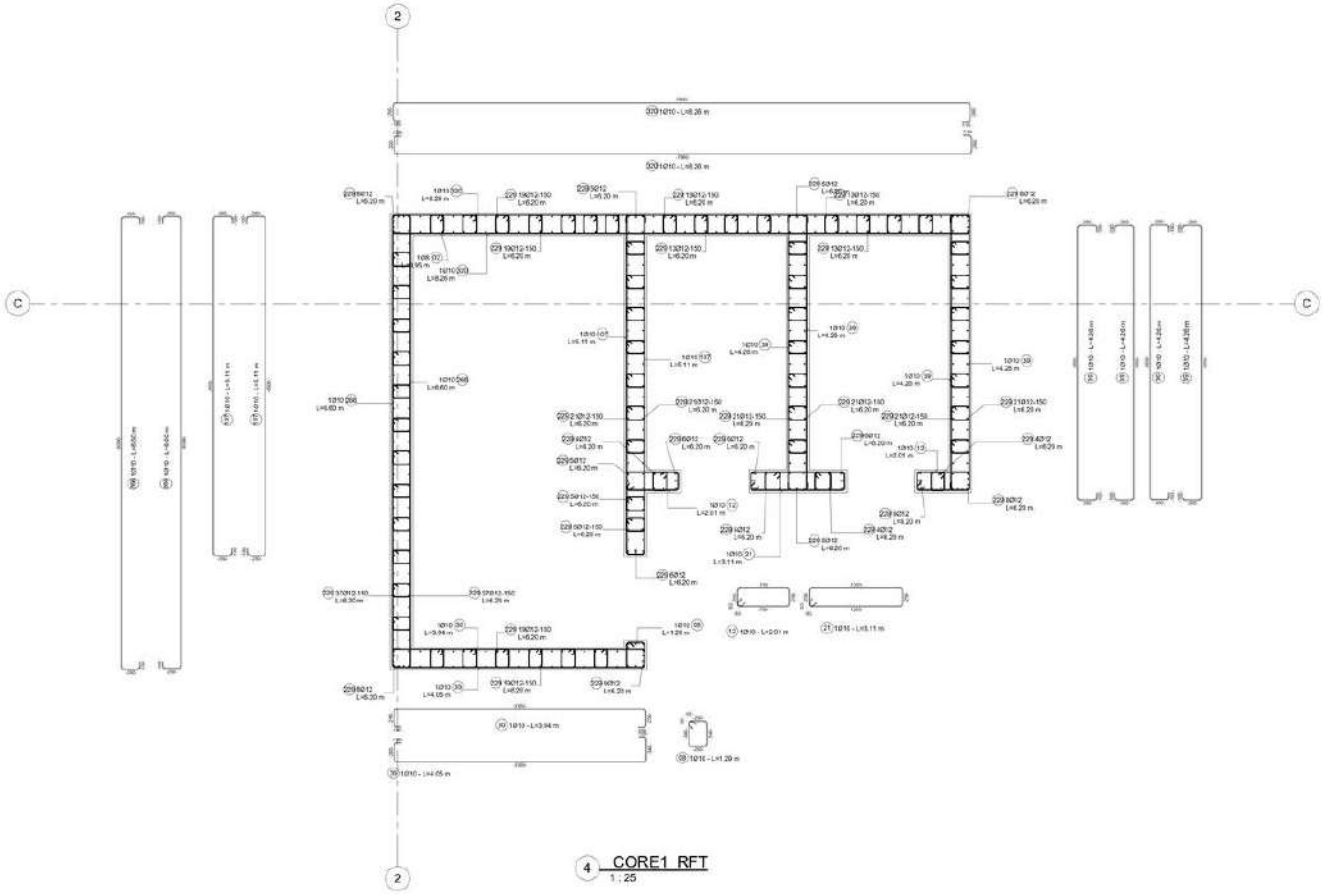
2 BEAM @ 9&C-E_SEC1_RFT
1 : 25



1 RFT_FOR BEAM @ 9&C-E
1 : 25



3 BEAM @ 9&C-E_SEC2_RFT
1 : 25



4 CORE1_RFT
1 : 25

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LAST REVISION	SHEET CODE
07/04/23	

No.	Description	Date

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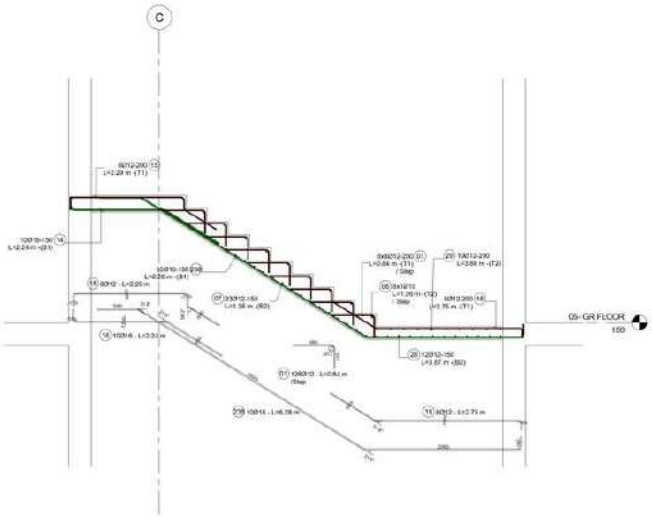
TOWER PROJECT

RFT_FOR BEAM @ 9&C-E & CORE RFT

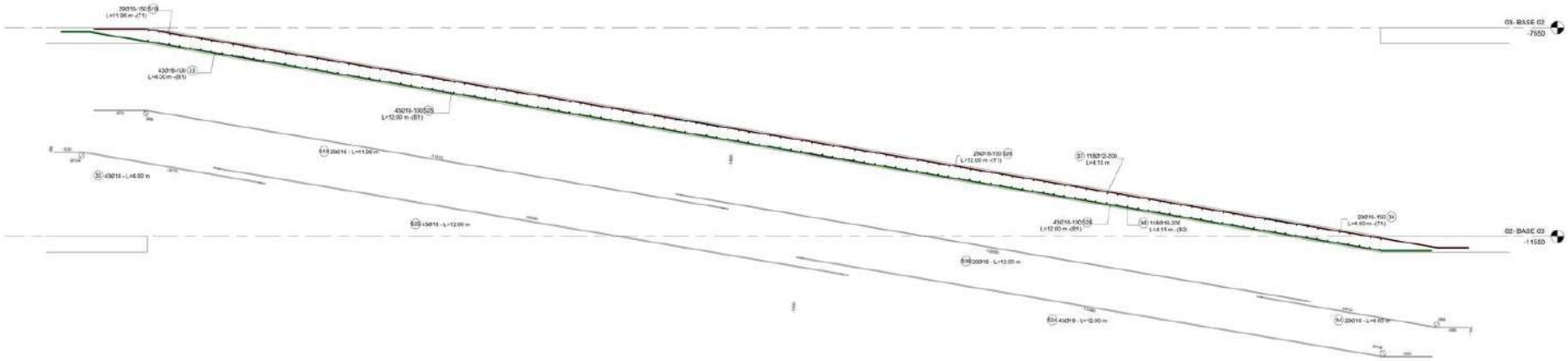
Project number	01
Date	02/07/2023
Drawn by	Author
Checked by	Checker

SD-17-RFT

Scale	1 : 25



1 STRAIR02 RFT SEC
1 : 25



2 RAMP RFT SECTION
1 : 30

INSTRUCTOR

Mahmoud Yasser

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Engineering Secrets Courses

NOTES

LAST REVISION	SHEET CODE
07/04/23	

No.	Description	Date

Engineering Secrets Academy - Be Unique

TOWER PROJECT

STAIRS AND RAMPS RFT SECTIONS

Project number	01
Date	02/07/2023
Drawn by	Author
Checked by	Checker

SD-18-RFT

Scale	As indicated

RAFT BAR Bending Schedule

Bar Mark	Ø Bar Diameter	Length of each bar (m)	Total No	Total Length (m)	Ø Bend Diameter (mm)	Shape Code	Hook Type	Image	Segments	Hook Lengths	Rev
02	8 mm	0.95	58	55.10	48	31	S:Stirrup/Tie 135°, Sφ; E:Stirrup/Tie 135°, Sφ		A= 180 mm ,B= 250 mm ,C= 180 mm ,D= 250 mm	S=74 mm; E=74 mm.	
04	8 mm	1.00	2	2.00	48	31	S:Stirrup/Tie 135°, Sφ; E:Stirrup/Tie 135°, Sφ		A= 250 mm ,B= 210 mm ,C= 250 mm ,D= 210 mm	S=74 mm; E=74 mm.	
06	10 mm	1.29	1	1.29	60	31	S:Stirrup/Tie 135°, Sφ; E:Stirrup/Tie 135°, Sφ		A= 340 mm ,B= 250 mm ,C= 340 mm ,D= 250 mm	S=92 mm; E=92 mm.	
12	10 mm	2.01	2	4.02	60	31	S:Stirrup/Tie 135°, Sφ; E:Stirrup/Tie 135°, Sφ		A= 700 mm ,B= 250 mm ,C= 700 mm ,D= 250 mm	S=92 mm; E=92 mm.	
21	10 mm	3.11	1	3.11	60	31	S:Stirrup/Tie 135°, Sφ; E:Stirrup/Tie 135°, Sφ		A= 1250 mm ,B= 250 mm ,C= 1250 mm ,D= 250 mm	S=92 mm; E=92 mm.	
30	10 mm	3.94	1	3.94	60	41	S:None; E:None.		A= 100 mm ,B= 250 mm ,C= 3350 mm ,D= 240 mm ,E= 100 mm		
31	22 mm	4.00	84	336.00	132	00	S:None; E:None.		A= 4000 mm		
35	10 mm	4.05	1	4.05	60	41	S:None; E:None.		A= 100 mm ,B= 340 mm ,C= 3350 mm ,D= 260 mm ,E= 100 mm		
39	10 mm	4.26	4	17.04	60	41	S:None; E:None.		A= 100 mm ,B= 260 mm ,C= 3650 mm ,D= 260 mm ,E= 100 mm		
40	22 mm	4.27	1	4.27	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 880 mm	S=1750 mm; E=1750 mm.	
46	22 mm	4.58	1	4.58	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1190 mm	S=1750 mm; E=1750 mm.	
48	22 mm	4.66	1	4.66	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1270 mm	S=1750 mm; E=1750 mm.	
49	22 mm	4.67	1	4.67	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1280 mm	S=1750 mm; E=1750 mm.	
50	22 mm	4.68	1	4.68	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1290 mm	S=1750 mm; E=1750 mm.	
51	22 mm	4.69	2	9.38	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1300 mm	S=1750 mm; E=1750 mm.	
52	22 mm	4.70	1	4.70	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1310 mm	S=1750 mm; E=1750 mm.	
55	22 mm	4.71	2	9.42	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1320 mm	S=1750 mm; E=1750 mm.	
56	22 mm	4.72	2	9.44	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1330 mm	S=1750 mm; E=1750 mm.	
57	22 mm	4.73	3	14.19	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1340 mm	S=1750 mm; E=1750 mm.	
58	22 mm	4.74	3	14.22	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1350 mm	S=1750 mm; E=1750 mm.	
59	22 mm	4.75	2	9.50	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1360 mm	S=1750 mm; E=1750 mm.	
60	22 mm	4.76	3	14.28	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1370 mm	S=1750 mm; E=1750 mm.	
61	22 mm	4.77	2	9.54	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1380 mm	S=1750 mm; E=1750 mm.	
63	22 mm	4.78	2	9.56	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1390 mm	S=1750 mm; E=1750 mm.	
64	22 mm	4.78	1	4.78	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1400 mm	S=1750 mm; E=1750 mm.	
65	22 mm	4.79	2	9.58	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1400 mm	S=1750 mm; E=1750 mm.	
66	22 mm	4.80	2	9.60	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1410 mm	S=1750 mm; E=1750 mm.	
67	22 mm	4.81	4	19.24	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1420 mm	S=1750 mm; E=1750 mm.	
68	22 mm	4.82	2	9.64	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1430 mm	S=1750 mm; E=1750 mm.	
69	22 mm	4.83	3	14.49	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1440 mm	S=1750 mm; E=1750 mm.	
71	22 mm	4.84	2	9.68	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1450 mm	S=1750 mm; E=1750 mm.	
73	22 mm	4.85	3	14.55	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1460 mm	S=1750 mm; E=1750 mm.	
74	22 mm	4.86	3	14.58	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1470 mm	S=1750 mm; E=1750 mm.	
75	22 mm	4.87	2	9.74	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1480 mm	S=1750 mm; E=1750 mm.	
76	22 mm	4.88	3	14.64	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1490 mm	S=1750 mm; E=1750 mm.	
78	22 mm	4.89	2	9.78	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1500 mm	S=1750 mm; E=1750 mm.	
79	22 mm	4.90	2	9.80	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1510 mm	S=1750 mm; E=1750 mm.	
81	22 mm	4.91	2	9.82	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1520 mm	S=1750 mm; E=1750 mm.	

RAFT BAR Bending Schedule

Bar Mark	Ø Bar Diameter	Length of each bar (m)	Total No	Total Length (m)	Ø Bend Diameter (mm)	Shape Code	Hook Type	Image	Segments	Hook Lengths	Rev
82	22 mm	4.92	2	9.84	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1530 mm	S=1750 mm; E=1750 mm.	
83	22 mm	4.93	3	14.79	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1540 mm	S=1750 mm; E=1750 mm.	
84	22 mm	4.94	2	9.88	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1550 mm	S=1750 mm; E=1750 mm.	
85	22 mm	4.95	3	14.85	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1560 mm	S=1750 mm; E=1750 mm.	
86	22 mm	4.96	3	14.88	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1570 mm	S=1750 mm; E=1750 mm.	
87	22 mm	4.97	3	14.91	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1580 mm	S=1750 mm; E=1750 mm.	
88	22 mm	4.98	2	9.96	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1590 mm	S=1750 mm; E=1750 mm.	
89	22 mm	4.99	2	9.98	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1600 mm	S=1750 mm; E=1750 mm.	
91	22 mm	5.00	929	4625.00	132	00	S:None; E:None.		A= 5000 mm		
92	22 mm	5.00	4	20.00	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1610 mm	S=1750 mm; E=1750 mm.	
95	22 mm	5.01	2	10.02	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1620 mm	S=1750 mm; E=1750 mm.	
96	22 mm	5.02	3	15.06	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1630 mm	S=1750 mm; E=1750 mm.	
98	22 mm	5.03	2	10.06	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1640 mm	S=1750 mm; E=1750 mm.	
99	22 mm	5.04	3	15.12	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1650 mm	S=1750 mm; E=1750 mm.	
100	22 mm	5.05	2	10.10	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1660 mm	S=1750 mm; E=1750 mm.	
101	22 mm	5.06	2	10.12	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1670 mm	S=1750 mm; E=1750 mm.	
102	22 mm	5.07	4	20.28	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1680 mm	S=1750 mm; E=1750 mm.	
103	22 mm	5.08	2	10.16	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1690 mm	S=1750 mm; E=1750 mm.	
104	22 mm	5.09	4	20.36	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1700 mm	S=1750 mm; E=1750 mm.	
105	22 mm	5.10	2	10.20	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1710 mm	S=1750 mm; E=1750 mm.	
106	22 mm	5.11	3	15.33	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1720 mm	S=1750 mm; E=1750 mm.	
107	10 mm	5.11	2	10.22	60	41	S:None; E:None.		A= 100 mm ,B= 250 mm ,C= 4560 mm ,D= 260 mm ,E= 100 mm		
108	22 mm	5.12	2	10.24	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1730 mm	S=1750 mm; E=1750 mm.	
109	22 mm	5.13	3	15.39	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1740 mm	S=1750 mm; E=1750 mm.	
110	22 mm	5.14	2	10.28	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1750 mm	S=1750 mm; E=1750 mm.	
111	22 mm	5.15	2	10.30	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1760 mm	S=1750 mm; E=1750 mm.	
112	22 mm	5.16	3	15.48	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1770 mm	S=1750 mm; E=1750 mm.	
113	22 mm	5.17	4	20.68	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1780 mm	S=1750 mm; E=1750 mm.	
114	22 mm	5.18	3	15.54	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1790 mm	S=1750 mm; E=1750 mm.	
115	22 mm	5.19	2	10.38	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1800 mm	S=1750 mm; E=1750 mm.	
116	22 mm	5.20	3	15.60	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1810 mm	S=1750 mm; E=1750 mm.	
118	22 mm	5.21	2	10.42	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1820 mm	S=1750 mm; E=1750 mm.	
119	22 mm	5.22	3	15.66	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1830 mm	S=1750 mm; E=1750 mm.	
120	22 mm	5.23	2	10.46	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1840 mm	S=1750 mm; E=1750 mm.	
121	22 mm	5.24	3	15.72	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1850 mm	S=1750 mm; E=1750 mm.	
122	22 mm	5.25	2	10.50	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1860 mm	S=1750 mm; E=1750 mm.	
123	22 mm	5.26	4	21.04	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1870 mm	S=1750 mm; E=1750 mm.	
124	22 mm	5.27	3	15.81	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1880 mm	S=1750 mm; E=1750 mm.	
125	22 mm	5.28	2	10.56	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1890 mm	S=1750 mm; E=1750 mm.	
126	22 mm	5.29	3	15.87	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1900 mm	S=1750 mm; E=1750 mm.	
127	22 mm	5.30	2	10.60	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 1910 mm	S=1750 mm; E=1750 mm.	

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Engineering Secrets Courses

NOTES

LAST REVISION	SHEET CODE
07/06/23	

No.	Description	Date

Engineering Secrets Academy - Be Unique

TOWER PROJECT

RAFT BBS (1/5)

Project number	01
Date	02/07/2023
Drawn by	Author
Checked by	Checker

SD-19-BBS

Scale

RAFT BAR Bending Schedule

Bar Mark	Ø Bar Diameter	Length of each bar (m)	Total No.	Total Length (m)	Ø Bend Diameter (mm)	Shape Code	Hook Type	Image	Segments	Hook Lengths	Rev
128	22 mm	5.31	3	15.93	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 1920 mm	S=1750 mm; E=1750 mm	
129	22 mm	5.32	3	15.96	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 1930 mm	S=1750 mm; E=1750 mm.	
130	22 mm	5.33	3	15.99	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 1940 mm	S=1750 mm; E=1750 mm.	
131	22 mm	5.34	2	10.68	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 1950 mm	S=1750 mm; E=1750 mm.	
132	22 mm	5.35	3	16.05	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 1960 mm	S=1750 mm; E=1750 mm.	
133	22 mm	5.36	4	21.44	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 1970 mm	S=1750 mm; E=1750 mm.	
134	22 mm	5.37	3	16.11	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 1980 mm	S=1750 mm; E=1750 mm.	
135	22 mm	5.38	2	10.76	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 1990 mm	S=1750 mm; E=1750 mm	
136	22 mm	5.39	3	16.17	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2000 mm	S=1750 mm; E=1750 mm	
137	22 mm	5.40	2	10.80	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2010 mm	S=1750 mm; E=1750 mm	
138	22 mm	5.41	3	16.23	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2020 mm	S=1750 mm; E=1750 mm.	
139	22 mm	5.42	2	10.84	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2030 mm	S=1750 mm; E=1750 mm	
140	22 mm	5.43	6	32.58	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2040 mm	S=1750 mm; E=1750 mm	
141	22 mm	5.44	3	16.32	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2050 mm	S=1750 mm; E=1750 mm.	
142	22 mm	5.45	5	27.25	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2060 mm	S=1750 mm; E=1750 mm	
143	22 mm	5.46	5	27.30	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2070 mm	S=1750 mm; E=1750 mm.	
144	22 mm	5.47	3	16.41	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2080 mm	S=1750 mm; E=1750 mm.	
145	22 mm	5.47	1	5.47	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2090 mm	S=1750 mm; E=1750 mm	
146	22 mm	5.48	3	16.44	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2090 mm	S=1750 mm; E=1750 mm.	
147	22 mm	5.49	5	27.45	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2100 mm	S=1750 mm; E=1750 mm	
148	22 mm	5.50	4	22.00	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2110 mm	S=1750 mm; E=1750 mm	
150	22 mm	5.51	2	11.02	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2120 mm	S=1750 mm; E=1750 mm.	
151	22 mm	5.52	3	16.56	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2130 mm	S=1750 mm; E=1750 mm	
152	22 mm	5.53	2	11.06	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2140 mm	S=1750 mm; E=1750 mm	
153	22 mm	5.54	4	22.16	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2150 mm	S=1750 mm; E=1750 mm.	
154	22 mm	5.55	3	16.65	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2160 mm	S=1750 mm; E=1750 mm.	
155	22 mm	5.56	2	11.12	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2170 mm	S=1750 mm; E=1750 mm	
156	22 mm	5.57	2	11.14	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2180 mm	S=1750 mm; E=1750 mm	
157	22 mm	5.58	4	22.32	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2190 mm	S=1750 mm; E=1750 mm	
158	22 mm	5.59	3	16.77	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2200 mm	S=1750 mm; E=1750 mm.	
159	22 mm	5.60	2	11.20	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2210 mm	S=1750 mm; E=1750 mm.	
161	22 mm	5.61	4	22.44	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2220 mm	S=1750 mm; E=1750 mm	
162	22 mm	5.62	2	11.24	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2230 mm	S=1750 mm; E=1750 mm	
164	22 mm	5.63	2	11.26	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2240 mm	S=1750 mm; E=1750 mm	
165	22 mm	5.64	1	5.64	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2250 mm	S=1750 mm; E=1750 mm	
166	22 mm	5.65	1	5.65	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2260 mm	S=1750 mm; E=1750 mm.	
167	22 mm	5.66	1	5.66	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2270 mm	S=1750 mm; E=1750 mm	
168	22 mm	5.67	2	11.34	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2280 mm	S=1750 mm; E=1750 mm	
170	22 mm	5.68	1	5.68	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2290 mm	S=1750 mm; E=1750 mm	
171	22 mm	5.69	5	28.45	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2300 mm	S=1750 mm; E=1750 mm	
172	22 mm	5.70	3	17.10	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2310 mm	S=1750 mm; E=1750 mm	
173	22 mm	5.71	3	17.13	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2320 mm	S=1750 mm; E=1750 mm.	

RAFT BAR Bending Schedule

Bar Mark	Ø Bar Diameter	Length of each bar (m)	Total No.	Total Length (m)	Ø Bend Diameter (mm)	Shape Code	Hook Type	Image	Segments	Hook Lengths	Rev
174	22 mm	5.72	2	11.44	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2330 mm	S=1750 mm; E=1750 mm.	
175	22 mm	5.73	1	5.73	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2350 mm	S=1750 mm; E=1750 mm.	
176	22 mm	5.73	3	17.19	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2340 mm	S=1750 mm; E=1750 mm.	
177	22 mm	5.74	122	700.28	132	00	S:None; E:None.		A= 5740 mm		
178	22 mm	5.74	2	11.48	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2350 mm	S=1750 mm; E=1750 mm.	
179	22 mm	5.76	3	17.28	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2360 mm	S=1750 mm; E=1750 mm.	
180	22 mm	5.76	3	17.28	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2370 mm	S=1750 mm; E=1750 mm.	
181	22 mm	5.77	4	23.08	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2380 mm	S=1750 mm; E=1750 mm.	
182	22 mm	5.78	2	11.56	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2390 mm	S=1750 mm; E=1750 mm.	
183	22 mm	5.79	5	28.95	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2400 mm	S=1750 mm; E=1750 mm.	
184	22 mm	5.80	4	23.20	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2410 mm	S=1750 mm; E=1750 mm.	
185	22 mm	5.81	5	29.05	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2420 mm	S=1750 mm; E=1750 mm.	
186	22 mm	5.82	4	23.28	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2430 mm	S=1750 mm; E=1750 mm.	
187	22 mm	5.83	6	34.98	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2440 mm	S=1750 mm; E=1750 mm.	
188	22 mm	5.84	3	17.52	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2450 mm	S=1750 mm; E=1750 mm.	
189	22 mm	5.85	6	35.10	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2460 mm	S=1750 mm; E=1750 mm.	
190	22 mm	5.86	3	17.58	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2470 mm	S=1750 mm; E=1750 mm.	
191	22 mm	5.87	5	29.35	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2480 mm	S=1750 mm; E=1750 mm.	
192	22 mm	5.88	2	11.76	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2490 mm	S=1750 mm; E=1750 mm.	
194	22 mm	5.89	4	23.56	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2500 mm	S=1750 mm; E=1750 mm.	
195	22 mm	5.89	1	5.89	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2510 mm	S=1750 mm; E=1750 mm.	
196	22 mm	5.90	4	23.60	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2510 mm	S=1750 mm; E=1750 mm.	
197	22 mm	5.91	3	17.73	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2520 mm	S=1750 mm; E=1750 mm.	
198	22 mm	5.92	3	17.76	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2530 mm	S=1750 mm; E=1750 mm.	
199	22 mm	5.93	3	17.79	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2540 mm	S=1750 mm; E=1750 mm.	
200	22 mm	5.94	3	17.82	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2550 mm	S=1750 mm; E=1750 mm.	
201	22 mm	5.95	4	23.80	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2560 mm	S=1750 mm; E=1750 mm.	
202	22 mm	5.96	3	17.88	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2570 mm	S=1750 mm; E=1750 mm.	
203	22 mm	5.97	3	17.91	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2580 mm	S=1750 mm; E=1750 mm.	
204	22 mm	5.98	16	95.68	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2590 mm	S=1750 mm; E=1750 mm.	
205	22 mm	5.99	2	11.98	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2600 mm	S=1750 mm; E=1750 mm.	
206	22 mm	6.00	48	288.00	132	00	S:None; E:None.		A= 5000 mm		
207	22 mm	6.00	14	84.00	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2610 mm	S=1750 mm; E=1750 mm.	
209	22 mm	6.01	15	90.15	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2620 mm	S=1750 mm; E=1750 mm.	
210	22 mm	6.02	4	24.08	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2630 mm	S=1750 mm; E=1750 mm.	
211	22 mm	6.03	2	12.06	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2640 mm	S=1750 mm; E=1750 mm.	
212	22 mm	6.04	1	6.04	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2650 mm	S=1750 mm; E=1750 mm.	
213	22 mm	6.05	2	12.10	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2660 mm	S=1750 mm; E=1750 mm.	
214	22 mm	6.06	3	18.18	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2670 mm	S=1750 mm; E=1750 mm.	
215	22 mm	6.07	4	24.28	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2680 mm	S=1750 mm; E=1750 mm.	
216	22 mm	6.08	3	18.24	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2690 mm	S=1750 mm; E=1750 mm.	
217	22 mm	6.09	4	24.36	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 2700 mm	S=1750 mm; E=1750 mm.	

INSTRUCTOR

Mahmoud Yasser

CLIENT

Engineering Secrets Courses

NOTES

LAST REVISION	SHEET CODE
07/06/23	

No.	Description	Date

Engineering Secrets Academy - Be Unique

TOWER PROJECT

RAFT BBS (2/5)

Project number	01
Date	02/07/2023
Drawn by	Author
Checked by	Checker

SD-20-BBS

Scale

RAFT BAR Bending Schedule

Bar Mark	Ø Bar Diameter	Length of each bar (m)	Total No.	Total Length (m)	Ø Bend Diameter (mm)	Shape Code	Hook Type	Image	Segments	Hook Lengths	Rev
218	22 mm	6.10	4	24.40	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2710 mm	S=1750 mm; E=1750 mm.	
219	22 mm	6.11	3	18.33	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2720 mm	S=1750 mm; E=1750 mm.	
220	22 mm	6.12	4	24.48	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2730 mm	S=1750 mm; E=1750 mm.	
221	22 mm	6.13	3	18.39	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2740 mm	S=1750 mm; E=1750 mm.	
222	22 mm	6.14	3	18.42	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2750 mm	S=1750 mm; E=1750 mm.	
223	22 mm	6.15	5	30.75	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2760 mm	S=1750 mm; E=1750 mm.	
224	22 mm	6.16	4	24.64	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2770 mm	S=1750 mm; E=1750 mm.	
225	22 mm	6.17	4	24.68	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2780 mm	S=1750 mm; E=1750 mm.	
226	22 mm	6.18	2	12.36	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2790 mm	S=1750 mm; E=1750 mm.	
227	22 mm	6.19	4	24.76	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2800 mm	S=1750 mm; E=1750 mm.	
228	22 mm	6.20	5	31.00	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2810 mm	S=1750 mm; E=1750 mm.	
229	12 mm	6.20	445	2759.00	72	00	S:None; E:None.		A= 6200 mm		
230	22 mm	6.21	3	18.63	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2820 mm	S=1750 mm; E=1750 mm.	
231	22 mm	6.22	4	24.88	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2830 mm	S=1750 mm; E=1750 mm.	
232	22 mm	6.23	3	18.69	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2840 mm	S=1750 mm; E=1750 mm.	
233	22 mm	6.24	5	31.20	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2850 mm	S=1750 mm; E=1750 mm.	
234	22 mm	6.25	4	25.00	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2860 mm	S=1750 mm; E=1750 mm.	
235	22 mm	6.26	4	25.04	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2870 mm	S=1750 mm; E=1750 mm.	
236	22 mm	6.27	4	25.08	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2880 mm	S=1750 mm; E=1750 mm.	
237	22 mm	6.28	4	25.12	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2890 mm	S=1750 mm; E=1750 mm.	
239	22 mm	6.29	4	25.16	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2900 mm	S=1750 mm; E=1750 mm.	
241	22 mm	6.30	3	18.90	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2910 mm	S=1750 mm; E=1750 mm.	
242	22 mm	6.31	6	37.86	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2920 mm	S=1750 mm; E=1750 mm.	
243	22 mm	6.32	4	25.28	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2930 mm	S=1750 mm; E=1750 mm.	
244	22 mm	6.33	3	18.99	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2940 mm	S=1750 mm; E=1750 mm.	
245	22 mm	6.34	5	31.70	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2950 mm	S=1750 mm; E=1750 mm.	
246	22 mm	6.35	4	25.40	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2960 mm	S=1750 mm; E=1750 mm.	
247	22 mm	6.36	5	31.80	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2970 mm	S=1750 mm; E=1750 mm.	
248	22 mm	6.37	3	19.11	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2980 mm	S=1750 mm; E=1750 mm.	
249	22 mm	6.38	7	44.66	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 2990 mm	S=1750 mm; E=1750 mm.	
250	22 mm	6.39	4	25.56	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 3000 mm	S=1750 mm; E=1750 mm.	
251	22 mm	6.40	4	25.60	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 3010 mm	S=1750 mm; E=1750 mm.	
252	22 mm	6.41	4	25.64	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 3020 mm	S=1750 mm; E=1750 mm.	
253	22 mm	6.42	5	32.10	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 3030 mm	S=1750 mm; E=1750 mm.	
254	22 mm	6.43	5	32.15	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 3040 mm	S=1750 mm; E=1750 mm.	
256	22 mm	6.44	5	32.20	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 3050 mm	S=1750 mm; E=1750 mm.	
257	22 mm	6.45	3	19.35	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 3060 mm	S=1750 mm; E=1750 mm.	
258	22 mm	6.46	1	6.46	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 3070 mm	S=1750 mm; E=1750 mm.	
259	22 mm	6.47	2	12.94	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 3080 mm	S=1750 mm; E=1750 mm.	
260	22 mm	6.48	2	12.96	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 3090 mm	S=1750 mm; E=1750 mm.	
261	22 mm	6.49	2	12.98	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 3100 mm	S=1750 mm; E=1750 mm.	
262	22 mm	6.50	263	1709.50	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 3110 mm	S=1750 mm; E=1750 mm.	
266	10 mm	6.60	2	13.20	50	41	S:None; E:None.		A= 100 mm ,B= 250 mm ,C= 6600 mm ,D= 250 mm ,E= 100 mm		

RAFT BAR Bending Schedule

Bar Mark	Ø Bar Diameter	Length of each bar (m)	Total No.	Total Length (m)	Ø Bend Diameter (mm)	Shape Code	Hook Type	Image	Segments	Hook Lengths	Rev
278	22 mm	7.02	14	98.28	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 3630 mm	S=1750 mm; E=1750 mm.	
292	22 mm	7.66	1	7.66	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4270 mm	S=1750 mm; E=1750 mm.	
295	22 mm	7.97	1	7.97	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4589 mm	S=1750 mm; E=1750 mm.	
296	22 mm	8.00	28	224.00	132	00	S:None; E:None.		A= 8000 mm		
298	22 mm	8.05	1	8.05	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4660 mm	S=1750 mm; E=1750 mm.	
299	22 mm	8.06	1	8.06	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4670 mm	S=1750 mm; E=1750 mm.	
300	22 mm	8.07	1	8.07	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4680 mm	S=1750 mm; E=1750 mm.	
301	22 mm	8.08	2	16.16	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4690 mm	S=1750 mm; E=1750 mm.	
302	22 mm	8.09	1	8.09	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4700 mm	S=1750 mm; E=1750 mm.	
303	22 mm	8.10	2	16.20	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4710 mm	S=1750 mm; E=1750 mm.	
304	22 mm	8.11	1	8.11	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4720 mm	S=1750 mm; E=1750 mm.	
305	22 mm	8.12	1	8.12	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4730 mm	S=1750 mm; E=1750 mm.	
306	22 mm	8.13	2	16.26	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4740 mm	S=1750 mm; E=1750 mm.	
307	22 mm	8.14	1	8.14	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4750 mm	S=1750 mm; E=1750 mm.	
308	22 mm	8.15	2	16.30	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4760 mm	S=1750 mm; E=1750 mm.	
309	22 mm	8.16	1	8.16	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4770 mm	S=1750 mm; E=1750 mm.	
310	22 mm	8.17	2	16.34	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4780 mm	S=1750 mm; E=1750 mm.	
311	22 mm	8.18	1	8.18	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4790 mm	S=1750 mm; E=1750 mm.	
312	22 mm	8.19	1	8.19	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4800 mm	S=1750 mm; E=1750 mm.	
313	22 mm	8.20	3	24.60	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4810 mm	S=1750 mm; E=1750 mm.	
314	22 mm	8.21	1	8.21	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4820 mm	S=1750 mm; E=1750 mm.	
315	22 mm	8.22	2	16.44	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4830 mm	S=1750 mm; E=1750 mm.	
316	22 mm	8.23	1	8.23	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4840 mm	S=1750 mm; E=1750 mm.	
317	22 mm	8.24	1	8.24	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4850 mm	S=1750 mm; E=1750 mm.	
318	22 mm	8.25	2	16.50	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4860 mm	S=1750 mm; E=1750 mm.	
319	22 mm	8.26	1	8.26	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4870 mm	S=1750 mm; E=1750 mm.	
320	10 mm	8.26	2	16.52	60	41	S:None; E:None.		A= 110 mm ,B= 260 mm ,C= 7960 mm ,D= 250 mm ,E= 100 mm		
321	22 mm	8.27	2	16.54	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4880 mm	S=1750 mm; E=1750 mm.	
322	22 mm	8.28	1	8.28	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4890 mm	S=1750 mm; E=1750 mm.	
324	22 mm	8.29	2	16.58	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4900 mm	S=1750 mm; E=1750 mm.	
325	22 mm	8.30	1	8.30	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4910 mm	S=1750 mm; E=1750 mm.	
326	22 mm	8.31	1	8.31	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4920 mm	S=1750 mm; E=1750 mm.	
327	22 mm	8.32	2	16.64	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4930 mm	S=1750 mm; E=1750 mm.	
329	22 mm	8.33	1	8.33	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4940 mm	S=1750 mm; E=1750 mm.	
330	22 mm	8.34	2	16.68	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4950 mm	S=1750 mm; E=1750 mm.	
331	22 mm	8.35	1	8.35	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4960 mm	S=1750 mm; E=1750 mm.	
332	22 mm	8.36	2	16.72	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4970 mm	S=1750 mm; E=1750 mm.	
333	22 mm	8.37	1	8.37	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4980 mm	S=1750 mm; E=1750 mm.	
334	22 mm	8.38	1	8.38	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 4990 mm	S=1750 mm; E=1750 mm.	
335	22 mm	8.39	3	25.17	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 5000 mm	S=1750 mm; E=1750 mm.	
336	22 mm	8.40	1	8.40	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 5010 mm	S=1750 mm; E=1750 mm.	
337	22 mm	8.41	2	16.82	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 5020 mm	S=1750 mm; E=1750 mm.	
338	22 mm	8.42	1	8.42	132	00	S:Standard - 90 deg.; E:Standard - 90 deg..		A= 5030 mm	S=1750 mm; E=1750 mm.	

INSTRUCTOR

Mahmoud Yasser

CLIENT

Engineering Secrets Courses

NOTES

LAST REVISION	SHEET CODE
07/07/23	

No.	Description	Date

Engineering Secrets Academy - Be Unique

TOWER PROJECT

RAFT BBS (3/5)

Project number	01
Date	02/07/2023
Drawn by	Author
Checked by	Checker

SD-21-BBS

Scale

SLABS BAR Bending Schedule

Bar Mark	Ø Bar Diameter	Length of each bar (m)	Total No.	Total Length (m)	Ø Bend Diameter (mm)	Shape Code	Hook Type	Image	Segments	Hook Lengths	Rev
32	10 mm	4.00	12	48.00	60	00	S:Standard 90°, 10ϕ; E:Standard 90°, 10ϕ		A= 3550 mm	S=250 mm; E=250 mm;	
41	10 mm	4.32	3	12.96	60	00	S:Standard 90°, 10ϕ; E:None;		A= 4100 mm	S=250 mm;	
42	10 mm	4.40	23	101.20	60	00	S:None; E:None;		A= 4400 mm		
54	10 mm	4.70	3	14.10	60	00	S:Standard 90°, 10ϕ; E:None;		A= 4480 mm	S=250 mm;	
62	10 mm	4.77	3	14.31	60	00	S:Standard 90°, 10ϕ; E:None;		A= 4550 mm	S=250 mm;	
163	10 mm	5.52	3	15.86	60	00	S:Standard 90°, 10ϕ; E:None;		A= 5390 mm	S=250 mm;	
169	10 mm	5.67	1	5.67	60	00	S:Standard 90°, 10ϕ; E:Standard 90°, 10ϕ		A= 5220 mm	S=250 mm; E=250 mm;	
193	10 mm	5.84	7	41.16	60	00	S:Standard 90°, 10ϕ; E:None;		A= 5660 mm	S=250 mm;	
208	10 mm	6.00	14	84.00	60	00	S:None; E:None;		A= 6000 mm		
240	10 mm	6.29	6	37.74	60	00	S:Standard 90°, 10ϕ; E:None;		A= 6070 mm	S=250 mm;	
255	10 mm	6.43	3	19.29	60	00	S:Standard 90°, 10ϕ; E:None;		A= 6210 mm	S=250 mm;	
264	10 mm	6.50	4	26.00	60	00	S:Standard 90°, 10ϕ; E:Standard 90°, 10ϕ		A= 6050 mm (on average)	S=250 mm; E=250 mm;	
267	10 mm	6.09	4	26.40	60	00	S:Standard 90°, 10ϕ; E:Standard 90°, 10ϕ		A= 6155 mm (on average)	S=250 mm; E=250 mm;	
268	10 mm	6.62	3	19.86	60	00	S:Standard 90°, 10ϕ; E:None;		A= 6390 mm	S=250 mm;	
269	10 mm	6.65	9	59.85	60	11	S:None; E:None;		A= 250 mm ,B= 6424 mm (on average)		
270	10 mm	6.67	2	13.34	60	00	S:Standard 90°, 10ϕ; E:None;		A= 6450 mm	S=250 mm;	
271	10 mm	6.69	4	26.76	60	00	S:Standard 90°, 10ϕ; E:None;		A= 6460 mm	S=250 mm;	
272	10 mm	6.70	2	13.40	60	00	S:Standard 90°, 10ϕ; E:Standard 90°, 10ϕ		A= 6250 mm	S=250 mm; E=250 mm;	
274	10 mm	6.72	27	181.44	60	00	S:Standard 90°, 10ϕ; E:None;		A= 6500 mm	S=250 mm;	
276	10 mm	6.94	4	27.76	60	00	S:Standard 90°, 10ϕ; E:None;		A= 6720 mm	S=250 mm;	
280	10 mm	7.14	4	28.56	60	11	S:None; E:None;		A= 250 mm ,B= 6916 mm (on average)		
281	10 mm	7.17	25	179.25	60	00	S:Standard 90°, 10ϕ; E:None;		A= 6950 mm	S=250 mm;	
282	10 mm	7.29	4	29.16	60	00	S:Standard 90°, 10ϕ; E:None;		A= 7060 mm (on average)	S=250 mm;	
283	10 mm	7.29	9	65.61	60	11	S:None; E:None;		A= 250 mm ,B= 7062 mm (on average)		
284	10 mm	7.37	4	29.48	60	00	S:Standard 90°, 10ϕ; E:None;		A= 7145 mm (on average)	S=250 mm;	
285	10 mm	7.38	24	177.12	60	00	S:None; E:None;		A= 7380 mm		
286	10 mm	7.43	3	22.29	60	00	S:Standard 90°, 10ϕ; E:None;		A= 7210 mm	S=250 mm;	
287	10 mm	7.49	9	67.41	60	00	S:Standard 90°, 10ϕ; E:Standard 90°, 10ϕ		A= 7041 mm (on average)	S=250 mm; E=250 mm;	
288	10 mm	7.55	2	15.10	60	00	S:Standard 90°, 10ϕ; E:Standard 90°, 10ϕ		A= 7100 mm	S=250 mm; E=250 mm;	
289	10 mm	7.57	8	60.56	60	00	S:Standard 90°, 10ϕ; E:Standard 90°, 10ϕ		A= 7116 mm (on average)	S=250 mm; E=250 mm;	
290	10 mm	7.57	2	15.14	60	00	S:Standard 90°, 10ϕ; E:None;		A= 7350 mm	S=250 mm;	
293	10 mm	7.89	3	23.67	60	00	S:Standard 90°, 10ϕ; E:Standard 90°, 10ϕ		A= 7440 mm (on average)	S=250 mm; E=250 mm;	
294	10 mm	7.94	3	23.82	60	00	S:Standard 90°, 10ϕ; E:None;		A= 7720 mm	S=250 mm;	
297	10 mm	8.00	6	48.00	60	00	S:None; E:None;		A= 8000 mm		

SLABS BAR Bending Schedule

Bar Mark	Ø Bar Diameter	Length of each bar (m)	Total No.	Total Length (m)	Ø Bend Diameter (mm)	Shape Code	Hook Type	Image	Segments	Hook Lengths	Rev
323	10 mm	8.28	3	24.84	60	00	S:Standard 90°, 10ϕ; E:None;		A= 8050 mm	S=250 mm;	
328	10 mm	8.32	5	41.60	60	00	S:Standard 90°, 10ϕ; E:None;		A= 8090 mm	S=250 mm;	
347	10 mm	8.50	14	119.00	60	00	S:Standard 90°, 10ϕ; E:Standard 90°, 10ϕ;		A= 8050 mm	S=250 mm; E=250 mm;	
371	10 mm	8.72	3	26.16	60	00	S:Standard 90°, 10ϕ; E:None;		A= 8500 mm	S=250 mm;	
386	10 mm	8.86	3	26.58	60	11	S:None; E:None;		A= 250 mm ,B= 8640 mm		
399	10 mm	8.97	3	26.91	60	11	S:None; E:None;		A= 250 mm ,B= 8750 mm		
405	10 mm	9.00	4	36.00	60	00	S:None; E:None;		A= 9000 mm		
413	10 mm	9.13	5	45.65	60	00	S:Standard 90°, 10ϕ; E:None;		A= 8910 mm	S=250 mm;	
431	10 mm	9.29	4	37.16	60	11	S:None; E:None;		A= 250 mm ,B= 9060 mm		
434	10 mm	9.31	4	37.24	60	00	S:Standard 90°, 10ϕ; E:None;		A= 9080 mm	S=250 mm;	
436	10 mm	9.32	5	46.60	60	00	S:Standard 90°, 10ϕ; E:None;		A= 9090 mm	S=250 mm;	
445	10 mm	9.40	38	357.20	60	00	S:Standard 90°, 10ϕ; E:Standard 90°, 10ϕ;		A= 8950 mm	S=250 mm; E=250 mm;	
484	10 mm	9.77	23	224.71	60	00	S:Standard 90°, 10ϕ; E:None;		A= 9542 mm (on average)	S=250 mm;	
491	10 mm	9.83	23	226.09	60	00	S:Standard 90°, 10ϕ; E:None;		A= 9602 mm (on average)	S=250 mm;	
502	10 mm	10.13	6	60.65	60	00	S:Standard 90°, 10ϕ; E:None;		A= 9910 mm	S=250 mm;	
503	10 mm	10.20	9	91.80	60	00	S:None; E:None;		A= 10200 mm		
504	10 mm	10.27	2	20.54	60	00	S:Standard 90°, 10ϕ; E:Standard 90°, 10ϕ;		A= 9820 mm (on average)	S=250 mm; E=250 mm;	
505	10 mm	10.28	4	41.12	60	11	S:None; E:None;		A= 250 mm ,B= 10059 mm (on average)		
506	10 mm	10.50	6	63.00	60	11	S:None; E:None;		A= 250 mm ,B= 10275 mm (on average)		
507	10 mm	10.54	4	42.16	60	00	S:Standard 90°, 10ϕ; E:None;		A= 10320 mm	S=250 mm;	
508	10 mm	10.67	4	42.68	60	00	S:Standard 90°, 10ϕ; E:None;		A= 10443 mm (on average)	S=250 mm;	
509	10 mm	10.72	14	150.08	60	11	S:None; E:None;		A= 250 mm ,B= 10491 mm (on average)		
510	10 mm	10.72	14	150.08	60	11	S:None; E:None;		A= 250 mm ,B= 10499 mm (on average)		
512	10 mm	11.04	7	77.28	60	11	S:None; E:None;		A= 250 mm ,B= 10813 mm (on average)		
513	10 mm	11.17	4	44.68	60	00	S:Standard 90°, 10ϕ; E:None;		A= 10945 mm (on average)	S=250 mm;	
514	10 mm	11.28	25	282.00	60	00	S:Standard 90°, 10ϕ; E:None;		A= 11050 mm	S=250 mm;	
515	10 mm	11.47	4	45.88	60	00	S:Standard 90°, 10ϕ; E:None;		A= 11250 mm	S=250 mm;	
516	10 mm	11.50	4	46.00	60	00	S:None; E:None;		A= 11500 mm		
517	10 mm	11.72	38	445.36	60	00	S:Standard 90°, 10ϕ; E:None;		A= 11500 mm	S=250 mm;	
518	10 mm	11.95	1	11.95	60	00	S:Standard 90°, 10ϕ; E:Standard 90°, 10ϕ;		A= 11500 mm	S=250 mm; E=250 mm;	
522	10 mm	12.00	44	528.00	60	00	S:None; E:None;		A= 12000 mm		
523	10 mm	12.00	6	72.00	60	00	S:Standard 90°, 10ϕ; E:None;		A= 11750 mm	S=250 mm;	
527	10 mm	17.17	1	17.17	60	00	S:Standard 90°, 10ϕ; E:Standard 90°, 10ϕ;		A= 16720 mm	S=250 mm; E=250 mm;	
528	10 mm	19.27	1	19.27	60	00	S:Standard 90°, 10ϕ; E:Standard 90°, 10ϕ;		A= 18820 mm	S=250 mm; E=250 mm;	

INSTRUCTOR

Mahmoud Yasser

CLIENT

Engineering Secrets Courses

Be Unique

NOTES

LAST REVISION	SHEET CODE
07/07/23	

No.	Description	Date

Engineering Secrets Academy - Be Unique

TOWER PROJECT

BBS (2/2)

Project number	01
Date	02/07/2023
Drawn by	Author
Checked by	Checker

SD-25-BBS

Scale

RAFT BAR Bending Schedule

Bar Mark	Ø Bar Diameter	Length of each bar (m)	Total No.	Total Length (m)	Ø Bend Diameter (mm)	Shape Code	Hook Type	Image	Segments	Hook Lengths	Rev
432	22 mm	9.30	1	9.30	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5910 mm	S=1750 mm; E=1750 mm.	
433	22 mm	9.31	2	18.62	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5920 mm	S=1750 mm; E=1750 mm.	
435	22 mm	9.32	1	9.32	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5930 mm	S=1750 mm; E=1750 mm.	
437	22 mm	9.33	2	18.66	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5940 mm	S=1750 mm; E=1750 mm.	
438	22 mm	9.34	1	9.34	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5950 mm	S=1750 mm; E=1750 mm.	
439	22 mm	9.35	2	18.70	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5960 mm	S=1750 mm; E=1750 mm.	
440	22 mm	9.36	1	9.36	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5970 mm	S=1750 mm; E=1750 mm.	
441	22 mm	9.37	58	543.46	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5980 mm	S=1750 mm; E=1750 mm.	
442	22 mm	9.38	2	18.76	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5990 mm	S=1750 mm; E=1750 mm.	
443	22 mm	9.39	14	131.46	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6000 mm	S=1750 mm; E=1750 mm.	
444	22 mm	9.40	14	131.60	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6010 mm	S=1750 mm; E=1750 mm.	
446	22 mm	9.41	4	37.64	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6020 mm	S=1750 mm; E=1750 mm.	
447	22 mm	9.42	2	18.84	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6030 mm	S=1750 mm; E=1750 mm.	
448	22 mm	9.43	34	320.62	132	00	S:None; E:None.		A= 9430 mm		
449	22 mm	9.43	1	9.43	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6040 mm	S=1750 mm; E=1750 mm.	
450	22 mm	9.44	3	28.32	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6050 mm	S=1750 mm; E=1750 mm.	
451	22 mm	9.45	2	18.90	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6060 mm	S=1750 mm; E=1750 mm.	
452	22 mm	9.46	2	18.92	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6070 mm	S=1750 mm; E=1750 mm.	
453	22 mm	9.47	2	18.94	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6080 mm	S=1750 mm; E=1750 mm.	
454	22 mm	9.48	2	18.96	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6090 mm	S=1750 mm; E=1750 mm.	
455	22 mm	9.49	2	18.98	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6100 mm	S=1750 mm; E=1750 mm.	
456	22 mm	9.50	1	9.50	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6110 mm	S=1750 mm; E=1750 mm.	
457	22 mm	9.51	2	19.02	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6120 mm	S=1750 mm; E=1750 mm.	
458	22 mm	9.52	1	9.52	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6130 mm	S=1750 mm; E=1750 mm.	
459	22 mm	9.53	2	19.06	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6140 mm	S=1750 mm; E=1750 mm.	
460	22 mm	9.54	2	19.08	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6150 mm	S=1750 mm; E=1750 mm.	
461	22 mm	9.55	2	19.10	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6160 mm	S=1750 mm; E=1750 mm.	
462	22 mm	9.56	2	19.12	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6170 mm	S=1750 mm; E=1750 mm.	
463	22 mm	9.57	1	9.57	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6180 mm	S=1750 mm; E=1750 mm.	
464	22 mm	9.58	2	19.16	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6190 mm	S=1750 mm; E=1750 mm.	
465	22 mm	9.59	2	19.18	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6200 mm	S=1750 mm; E=1750 mm.	
466	22 mm	9.60	1	9.60	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6210 mm	S=1750 mm; E=1750 mm.	
467	22 mm	9.61	2	19.22	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6220 mm	S=1750 mm; E=1750 mm.	
468	22 mm	9.62	2	19.24	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6230 mm	S=1750 mm; E=1750 mm.	
469	22 mm	9.63	2	19.26	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6240 mm	S=1750 mm; E=1750 mm.	
470	22 mm	9.64	2	19.28	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6250 mm	S=1750 mm; E=1750 mm.	
471	22 mm	9.65	2	19.30	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6260 mm	S=1750 mm; E=1750 mm.	
472	22 mm	9.66	1	9.66	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6270 mm	S=1750 mm; E=1750 mm.	
473	22 mm	9.67	2	19.34	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6280 mm	S=1750 mm; E=1750 mm.	
474	22 mm	9.68	2	19.36	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6290 mm	S=1750 mm; E=1750 mm.	
475	22 mm	9.69	1	9.69	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6300 mm	S=1750 mm; E=1750 mm.	
476	22 mm	9.70	3	29.10	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6310 mm	S=1750 mm; E=1750 mm.	

RAFT BAR Bending Schedule

Bar Mark	Ø Bar Diameter	Length of each bar (m)	Total No.	Total Length (m)	Ø Bend Diameter (mm)	Shape Code	Hook Type	Image	Segments	Hook Lengths	Rev
477	22 mm	9.71	2	19.42	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6320 mm	S=1750 mm; E=1750 mm.	
478	22 mm	9.72	1	9.72	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6330 mm	S=1750 mm; E=1750 mm.	
479	22 mm	9.73	2	19.46	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6340 mm	S=1750 mm; E=1750 mm.	
480	22 mm	9.74	2	19.48	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6350 mm	S=1750 mm; E=1750 mm.	
481	22 mm	9.75	2	19.50	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6360 mm	S=1750 mm; E=1750 mm.	
482	22 mm	9.76	2	19.52	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6370 mm	S=1750 mm; E=1750 mm.	
483	22 mm	9.77	3	29.31	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6380 mm	S=1750 mm; E=1750 mm.	
485	22 mm	9.78	2	19.56	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6390 mm	S=1750 mm; E=1750 mm.	
486	22 mm	9.79	2	19.58	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6400 mm	S=1750 mm; E=1750 mm.	
487	22 mm	9.80	1	9.80	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6410 mm	S=1750 mm; E=1750 mm.	
488	22 mm	9.81	2	19.62	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6420 mm	S=1750 mm; E=1750 mm.	
489	22 mm	9.82	2	19.64	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6430 mm	S=1750 mm; E=1750 mm.	
490	22 mm	9.83	2	19.66	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6440 mm	S=1750 mm; E=1750 mm.	
492	22 mm	9.84	4	39.36	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6450 mm	S=1750 mm; E=1750 mm.	
493	22 mm	9.85	1	9.85	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6470 mm	S=1750 mm; E=1750 mm.	
494	22 mm	9.85	2	19.70	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6460 mm	S=1750 mm; E=1750 mm.	
495	22 mm	9.86	2	19.72	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6470 mm	S=1750 mm; E=1750 mm.	
496	22 mm	9.87	4	39.48	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6480 mm	S=1750 mm; E=1750 mm.	
497	22 mm	9.88	4	39.52	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6490 mm	S=1750 mm; E=1750 mm.	
498	22 mm	9.89	3459	<varies>	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6500 mm	S=1750 mm; E=1750 mm.	
499	22 mm	9.90	4	39.60	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6510 mm	S=1750 mm; E=1750 mm.	
500	22 mm	9.91	1	9.91	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6520 mm	S=1750 mm; E=1750 mm.	
501	22 mm	9.92	1	9.92	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 6530 mm	S=1750 mm; E=1750 mm.	
511	22 mm	10.79	160	1726.40	132	26	S:None; E:None.		A= 3410 mm ,B= 4000 mm ,C= 3410 mm ,D= 2410 mm ,E= 2410 mm		
520	22 mm	12.00	523	6276.00	132	11	S:None; E:None.		A= <varies> ,B= <varies>		
521	22 mm	12.00	1674	20088.00	132	00	S:None; E:None.		A= 12000 mm		

RAFT Reinforcement Weight Summary

SOFISTIK_Member	Bar Dia. (mm)	Type	Mass per Unit Length (kg/m)	Total Length (m)	Total Weight (ton)
RAFT	8	Ø8	0.40	57.10	0.02
RAFT	10	Ø10	0.62	73.39	0.05
RAFT	12	Ø12	0.89	2756.00	2.46
RAFT	16	Ø16	1.58	990.00	1.56
RAFT	22	Ø22	2.99	79072.50	233.44
				81951.99	237.52

INSTRUCTOR

Mahmoud Yasser

CLIENT

Engineering Secrets Courses

NOTES

LAST REVISION	SHEET CODE
07/07/23	

No.	Description	Date

Engineering Secrets Academy - Be Unique

TOWER PROJECT

RAFT BBS (5/5)

Project number	01
Date	02/07/2023
Drawn by	Author
Checked by	Checker

SD-23-BBS

Scale

COLUMNS & WALLS BAR Bending Schedule

Bar Mark	Ø Bar Diameter	Length of each bar (m)	Total No.	Total Length (m)	Ø Bend Diameter (mm)	Shape Code	Hook Type	Image	Segments	Hook Lengths	Rev
03	8 mm	0.98	455	445.90	48	31	S:Stirrup/Tie 135°, 5ϕ; E:Stirrup/Tie 135°, 5ϕ.		A= 300 mm ,B= 150 mm ,C= 300 mm ,D= 150 mm	S=74 mm; E=74 mm.	
05	25 mm	1.24	1	1.24	150	26	S:None; E:None.		A= 640 mm ,B= 240 mm ,C= 360 mm ,D= 60 mm		
10	8 mm	1.71	2140	3659.40	48	31	S:Stirrup/Tie 135°, 5ϕ; E:Stirrup/Tie 135°, 5ϕ.		A= 210 mm ,B= 600 mm ,C= 210 mm ,D= 600 mm	S=74 mm; E=74 mm.	
16	8 mm	2.49	551	1371.99	48	31	S:Stirrup/Tie 135°, 5ϕ; E:Stirrup/Tie 135°, 5ϕ.		A= 600 mm ,B= 600 mm ,C= 600 mm ,D= 600 mm	S=74 mm; E=74 mm.	
19	16 mm	3.00	1	3.00	96	11	S:None; E:None.		A= 2740 mm ,B= 300 mm		
20	25 mm	3.09	1	3.09	150	00	S:None; E:None.		A= 3090 mm		
24	16 mm	3.42	1	3.42	108	11	S:None; E:None.		A= 2630 mm ,B= 840 mm		
25	22 mm	3.51	12	42.12	132	11	S:None; E:None.		A= 2950 mm ,B= 610 mm		
26	22 mm	3.79	32	121.28	132	11	S:None; E:None.		A= 830 mm ,B= 3010 mm		
27	25 mm	3.95	1	3.95	150	11	S:None; E:None.		A= 2800 mm ,B= 1110 mm		
38	10 mm	4.21	106	446.26	60	31	S:Stirrup/Tie 135°, 5ϕ; E:Stirrup/Tie 135°, 5ϕ.		A= 1750 mm ,B= 300 mm ,C= 1750 mm ,D= 300 mm	S=92 mm; E=92 mm.	
43	25 mm	4.46	20	89.20	150	11	S:None; E:None.		A= 3190 mm ,B= 1340 mm		
45	16 mm	4.51	1	4.51	108	11	S:None; E:None.		A= 590 mm ,B= 3970 mm		
47	16 mm	4.95	1	4.95	96	11	S:None; E:None.		A= 3930 mm ,B= 790 mm		
70	22 mm	4.83	32	154.56	132	11	S:None; E:None.		A= 3900 mm ,B= 990 mm		
72	25 mm	4.84	20	96.80	150	11	S:None; E:None.		A= 3900 mm ,B= 1000 mm		
77	22 mm	4.58	16	73.28	132	11	S:None; E:None.		A= 3580 mm ,B= 1050 mm		
80	22 mm	4.90	12	58.80	132	11	S:None; E:None.		A= 3880 mm ,B= 1070 mm		
90	16 mm	4.99	2	9.98	108	00	S:None; E:None.		A= 4950 mm		
93	16 mm	5.00	2	10.00	96	00	S:None; E:None.		A= 5000 mm		
97	22 mm	5.02	64	321.28	132	00	S:None; E:None.		A= 5020 mm		
117	22 mm	5.20	476	2475.20	132	00	S:None; E:None.		A= 5200 mm		
149	25 mm	5.50	40	220.00	150	00	S:None; E:None.		A= 5500 mm		
263	16 mm	6.50	1	6.50	96	00	S:None; E:None.		A= 6500 mm		
265	16 mm	6.59	1	6.59	108	00	S:None; E:None.		A= 6590 mm		
273	22 mm	6.72	28	188.16	132	00	S:None; E:None.		A= 6720 mm		
275	22 mm	6.92	32	221.44	132	00	S:None; E:None.		A= 6920 mm		
277	25 mm	7.00	20	140.00	150	00	S:None; E:None.		A= 7000 mm		
498	22 mm	9.89	3460	34308.41	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5500 mm	S=1750 mm; E=1750 mm.	
529	22 mm	3.51	16	56.16	132	11	S:None; E:None.		A= 2950 mm ,B= 610 mm		

STAIRS AND RAMPS BAR Bending Schedule

Bar Mark	Ø Bar Diameter	Length of each bar (m)	Total No.	Total Length (m)	Ø Bend Diameter (mm)	Shape Code	Hook Type	Image	Segments	Hook Lengths	Rev
01	12 mm	0.84	128	107.52	72	11	S:None; E:None.		A= 560 mm ,B= 310 mm		
06	10 mm	1.26	16	20.16	60	00	S:None; E:None.		A= 1260 mm		
07	12 mm	1.26	23	28.98	72	00	S:None; E:None.		A= 1260 mm		
14	16 mm	2.24	10	22.40	96	99	S:None; E:None.				
15	12 mm	2.29	8	18.32	72	99	S:None; E:None.				
18	12 mm	2.75	8	22.00	72	99	S:None; E:None.				
28	12 mm	3.87	12	46.44	72	11	S:None; E:None.		A= 120 mm ,B= 3790 mm		
29	12 mm	3.88	10	38.80	72	11	S:None; E:None.		A= 120 mm ,B= 3790 mm		
33	16 mm	4.00	43	172.00	108	15	S:None; E:None.		A= 530 mm ,B= 3470 mm ,C= 90 mm		
34	16 mm	4.00	29	116.00	96	15	S:None; E:None.		A= 500 mm ,B= 3410 mm ,C= 100 mm		
36	16 mm	4.15	116	489.70	96	00	S:None; E:None.		A= 4150 mm		
37	12 mm	4.15	118	489.70	72	00	S:None; E:None.		A= 4150 mm		
238	16 mm	6.28	10	62.80	96	99	S:None; E:None.				
519	16 mm	11.99	29	347.42	96	15	S:None; E:None.		A= 11610 mm ,B= 670 mm ,C= 1640 mm		
524	16 mm	12.00	43	516.00	108	15	S:None; E:None.		A= 11090 mm ,B= 520 mm ,C= 1850 mm		
525	16 mm	12.00	43	516.00	108	00	S:None; E:None.		A= 12000 mm		
526	16 mm	12.00	29	348.00	96	00	S:None; E:None.		A= 12000 mm		

BEAMS BAR Bending Schedule

Bar Mark	Ø Bar Diameter	Length of each bar (m)	Total No.	Total Length (m)	Ø Bend Diameter (mm)	Shape Code	Hook Type	Image	Segments	Hook Lengths	Rev
00	12 mm	1.70	2	3.40	72	00	S:None; E:None.		A= 1700 mm		
11	16 mm	2.00	2	4.00	96	00	S:None; E:None.		A= 2000 mm		
13	8 mm	2.11	83	175.13	48	31	S:Stirrup/Tie 135°, 5ϕ; E:Stirrup/Tie 135°, 5ϕ.		A= 790 mm ,B= 220 mm ,C= 790 mm ,D= 220 mm	S=74 mm; E=74 mm.	
17	12 mm	2.50	2	5.00	72	00	S:None; E:None.		A= 2500 mm		
22	16 mm	3.12	3	9.36	96	11	S:None; E:None.		A= 790 mm ,B= 2370 mm		
23	16 mm	3.25	2	6.50	96	00	S:None; E:None.		A= 3250 mm		
44	16 mm	4.50	4	18.00	108	00	S:None; E:None.		A= 4500 mm		
53	16 mm	4.70	3	14.10	96	00	S:None; E:None.		A= 4700 mm		
94	12 mm	5.00	2	10.00	72	00	S:None; E:None.		A= 5000 mm		
160	16 mm	5.60	3	16.80	96	00	S:None; E:None.		A= 5600 mm		
279	12 mm	7.10	2	14.20	72	00	S:None; E:None.		A= 7100 mm		
261	16 mm	7.63	3	22.89	96	11	S:None; E:None.		A= 5890 mm ,B= 790 mm		

OTHER ELEMENTS Reinforcement Weight Summary

SOFiSTiK_Member	Bar Dia. (mm)	Type	Mass per Unit Length (kg/m)	Total Length (m)	Total Weight (ton)
OTHER ELEMENTS	8	Ø8	0.40	5592.42	2.23
OTHER ELEMENTS	10	Ø10	0.62	5559.13	3.43
OTHER ELEMENTS	12	Ø12	0.89	784.36	0.70
OTHER ELEMENTS	16	Ø16	1.58	1484.12	2.34
OTHER ELEMENTS	18	Ø18	2.00	1246.50	2.49
COLUMNS	22	Ø22	2.99	3736.66	11.17
COLUMNS	25	Ø25	3.85	554.18	2.13
				19017.57	24.51

INSTRUCTOR

Mahmoud Yasser

CLIENT

Engineering Secrets Courses

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NOTES

LAST REVISION	SHEET CODE
07/07/23	

No.	Description	Date

Engineering Secrets Academy - Be Unique

TOWER PROJECT

BBS (1/2)

Project number	01
Date	02/07/2023
Drawn by	Author
Checked by	Checker

SD-24-BBS

Scale

RAFT BAR Bending Schedule

Bar Mark	Ø Bar Diameter	Length of each bar (m)	Total No.	Total Length (m)	Ø Bend Diameter (mm)	Shape Code	Hook Type	Image	Segments	Hook Lengths	Rev
339	22 mm	8.43	2	16.86	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5040 mm	S=1750 mm; E=1750 mm.	
340	22 mm	8.44	1	8.44	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5050 mm	S=1750 mm; E=1750 mm.	
341	22 mm	8.45	1	8.45	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5060 mm	S=1750 mm; E=1750 mm.	
342	22 mm	8.46	2	16.92	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5070 mm	S=1750 mm; E=1750 mm.	
343	22 mm	8.47	1	8.47	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5080 mm	S=1750 mm; E=1750 mm.	
344	22 mm	8.48	2	16.96	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5090 mm	S=1750 mm; E=1750 mm.	
345	22 mm	8.49	1	8.49	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5100 mm	S=1750 mm; E=1750 mm.	
346	22 mm	8.50	2	17.00	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5110 mm	S=1750 mm; E=1750 mm.	
348	22 mm	8.51	1	8.51	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5120 mm	S=1750 mm; E=1750 mm.	
349	22 mm	8.52	2	17.04	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5130 mm	S=1750 mm; E=1750 mm.	
350	22 mm	8.53	1	8.53	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5140 mm	S=1750 mm; E=1750 mm.	
351	22 mm	8.54	1	8.54	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5150 mm	S=1750 mm; E=1750 mm.	
352	22 mm	8.54	1	8.54	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5150 mm	S=1750 mm; E=1750 mm.	
353	22 mm	8.55	1	8.55	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5160 mm	S=1750 mm; E=1750 mm.	
354	22 mm	8.56	2	17.12	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5170 mm	S=1750 mm; E=1750 mm.	
355	22 mm	8.57	2	17.14	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5180 mm	S=1750 mm; E=1750 mm.	
356	22 mm	8.58	1	8.58	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5190 mm	S=1750 mm; E=1750 mm.	
357	22 mm	8.59	2	17.18	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5200 mm	S=1750 mm; E=1750 mm.	
358	22 mm	8.60	1	8.60	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5210 mm	S=1750 mm; E=1750 mm.	
359	22 mm	8.61	2	17.22	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5220 mm	S=1750 mm; E=1750 mm.	
360	22 mm	8.62	1	8.62	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5230 mm	S=1750 mm; E=1750 mm.	
361	22 mm	8.63	2	17.26	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5240 mm	S=1750 mm; E=1750 mm.	
362	22 mm	8.64	1	8.64	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5250 mm	S=1750 mm; E=1750 mm.	
363	22 mm	8.65	2	17.30	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5260 mm	S=1750 mm; E=1750 mm.	
364	22 mm	8.66	1	8.66	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5270 mm	S=1750 mm; E=1750 mm.	
365	22 mm	8.67	1	8.67	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5280 mm	S=1750 mm; E=1750 mm.	
366	22 mm	8.68	2	17.36	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5290 mm	S=1750 mm; E=1750 mm.	
367	22 mm	8.69	1	8.69	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5300 mm	S=1750 mm; E=1750 mm.	
368	22 mm	8.70	2	17.40	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5310 mm	S=1750 mm; E=1750 mm.	
369	22 mm	8.71	2	17.42	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5320 mm	S=1750 mm; E=1750 mm.	
370	22 mm	8.72	2	17.44	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5330 mm	S=1750 mm; E=1750 mm.	
372	22 mm	8.73	1	8.73	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5340 mm	S=1750 mm; E=1750 mm.	
373	22 mm	8.74	2	17.48	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5350 mm	S=1750 mm; E=1750 mm.	
374	22 mm	8.75	1	8.75	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5360 mm	S=1750 mm; E=1750 mm.	
375	22 mm	8.76	2	17.52	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5370 mm	S=1750 mm; E=1750 mm.	
376	22 mm	8.77	1	8.77	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5380 mm	S=1750 mm; E=1750 mm.	
377	22 mm	8.78	2	17.56	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5390 mm	S=1750 mm; E=1750 mm.	
378	22 mm	8.79	1	8.79	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5400 mm	S=1750 mm; E=1750 mm.	
379	22 mm	8.80	2	17.60	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5410 mm	S=1750 mm; E=1750 mm.	
380	22 mm	8.81	1	8.81	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5420 mm	S=1750 mm; E=1750 mm.	
381	22 mm	8.82	4	35.28	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5430 mm	S=1750 mm; E=1750 mm.	
382	22 mm	8.83	2	17.66	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5440 mm	S=1750 mm; E=1750 mm.	
383	22 mm	8.84	3	26.52	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5450 mm	S=1750 mm; E=1750 mm.	

RAFT BAR Bending Schedule

Bar Mark	Ø Bar Diameter	Length of each bar (m)	Total No.	Total Length (m)	Ø Bend Diameter (mm)	Shape Code	Hook Type	Image	Segments	Hook Lengths	Rev
384	22 mm	8.85	4	35.40	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5460 mm	S=1750 mm; E=1750 mm.	
385	22 mm	8.86	3	26.58	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5470 mm	S=1750 mm; E=1750 mm.	
387	22 mm	8.87	2	17.74	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5480 mm	S=1750 mm; E=1750 mm.	
388	22 mm	8.88	3	26.64	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5490 mm	S=1750 mm; E=1750 mm.	
389	22 mm	8.88	1	8.88	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5500 mm	S=1750 mm; E=1750 mm.	
390	22 mm	8.89	2	17.78	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5500 mm	S=1750 mm; E=1750 mm.	
391	22 mm	8.90	1	8.90	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5510 mm	S=1750 mm; E=1750 mm.	
392	22 mm	8.91	2	17.82	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5520 mm	S=1750 mm; E=1750 mm.	
393	22 mm	8.92	1	8.92	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5530 mm	S=1750 mm; E=1750 mm.	
394	22 mm	8.93	1	8.93	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5540 mm	S=1750 mm; E=1750 mm.	
395	22 mm	8.94	2	17.88	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5550 mm	S=1750 mm; E=1750 mm.	
396	22 mm	8.95	1	8.95	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5560 mm	S=1750 mm; E=1750 mm.	
397	22 mm	8.96	1	8.96	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5570 mm	S=1750 mm; E=1750 mm.	
398	22 mm	8.97	3	26.91	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5580 mm	S=1750 mm; E=1750 mm.	
400	22 mm	8.98	1	8.98	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5590 mm	S=1750 mm; E=1750 mm.	
401	22 mm	8.99	1	8.99	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5600 mm	S=1750 mm; E=1750 mm.	
402	22 mm	9.00	41	369.00	132	00	S:None; E:None.		A= 9000 mm		
403	16 mm	9.00	110	990.00	96	00	S:None; E:None.		A= 9000 mm		
404	22 mm	9.00	2	18.00	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5610 mm	S=1750 mm; E=1750 mm.	
406	22 mm	9.01	1	9.01	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5620 mm	S=1750 mm; E=1750 mm.	
407	22 mm	9.08	3	27.24	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5690 mm	S=1750 mm; E=1750 mm.	
408	22 mm	9.09	1	9.09	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5700 mm	S=1750 mm; E=1750 mm.	
409	22 mm	9.10	2	18.20	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5710 mm	S=1750 mm; E=1750 mm.	
410	22 mm	9.11	1	9.11	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5720 mm	S=1750 mm; E=1750 mm.	
411	22 mm	9.12	2	18.24	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5730 mm	S=1750 mm; E=1750 mm.	
412	22 mm	9.13	1	9.13	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5740 mm	S=1750 mm; E=1750 mm.	
414	22 mm	9.14	2	18.28	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5750 mm	S=1750 mm; E=1750 mm.	
415	22 mm	9.15	1	9.15	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5760 mm	S=1750 mm; E=1750 mm.	
416	22 mm	9.16	2	18.32	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5770 mm	S=1750 mm; E=1750 mm.	
417	22 mm	9.17	1	9.17	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5780 mm	S=1750 mm; E=1750 mm.	
418	22 mm	9.18	2	18.36	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5790 mm	S=1750 mm; E=1750 mm.	
419	22 mm	9.19	2	18.38	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5800 mm	S=1750 mm; E=1750 mm.	
420	22 mm	9.20	2	18.40	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5810 mm	S=1750 mm; E=1750 mm.	
421	22 mm	9.21	1	9.21	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5820 mm	S=1750 mm; E=1750 mm.	
422	22 mm	9.22	2	18.44	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5830 mm	S=1750 mm; E=1750 mm.	
423	22 mm	9.23	1	9.23	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5840 mm	S=1750 mm; E=1750 mm.	
424	22 mm	9.24	2	18.48	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5850 mm	S=1750 mm; E=1750 mm.	
425	22 mm	9.25	1	9.25	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5860 mm	S=1750 mm; E=1750 mm.	
426	22 mm	9.26	2	18.52	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5870 mm	S=1750 mm; E=1750 mm.	
427	22 mm	9.27	1	9.27	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5880 mm	S=1750 mm; E=1750 mm.	
428	22 mm	9.27	1	9.27	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5880 mm	S=1750 mm; E=1750 mm.	
429	22 mm	9.28	1	9.28	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5890 mm	S=1750 mm; E=1750 mm.	
430	22 mm	9.29	3	27.87	132	00	S:Standard - 90 deg.; E:Standard - 90 deg.		A= 5900 mm	S=1750 mm; E=1750 mm.	

INSTRUCTOR

Mahmoud Yasser

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Engineering Secrets Courses

NOTES

LAST REVISION	SHEET CODE
07/07/23	

No.	Description	Date

Engineering Secrets Academy - Be Unique

TOWER PROJECT

RAFT BBS (4/5)

Project number	01
Date	02/07/2023
Drawn by	Author
Checked by	Checker

SD-22-BBS

Scale