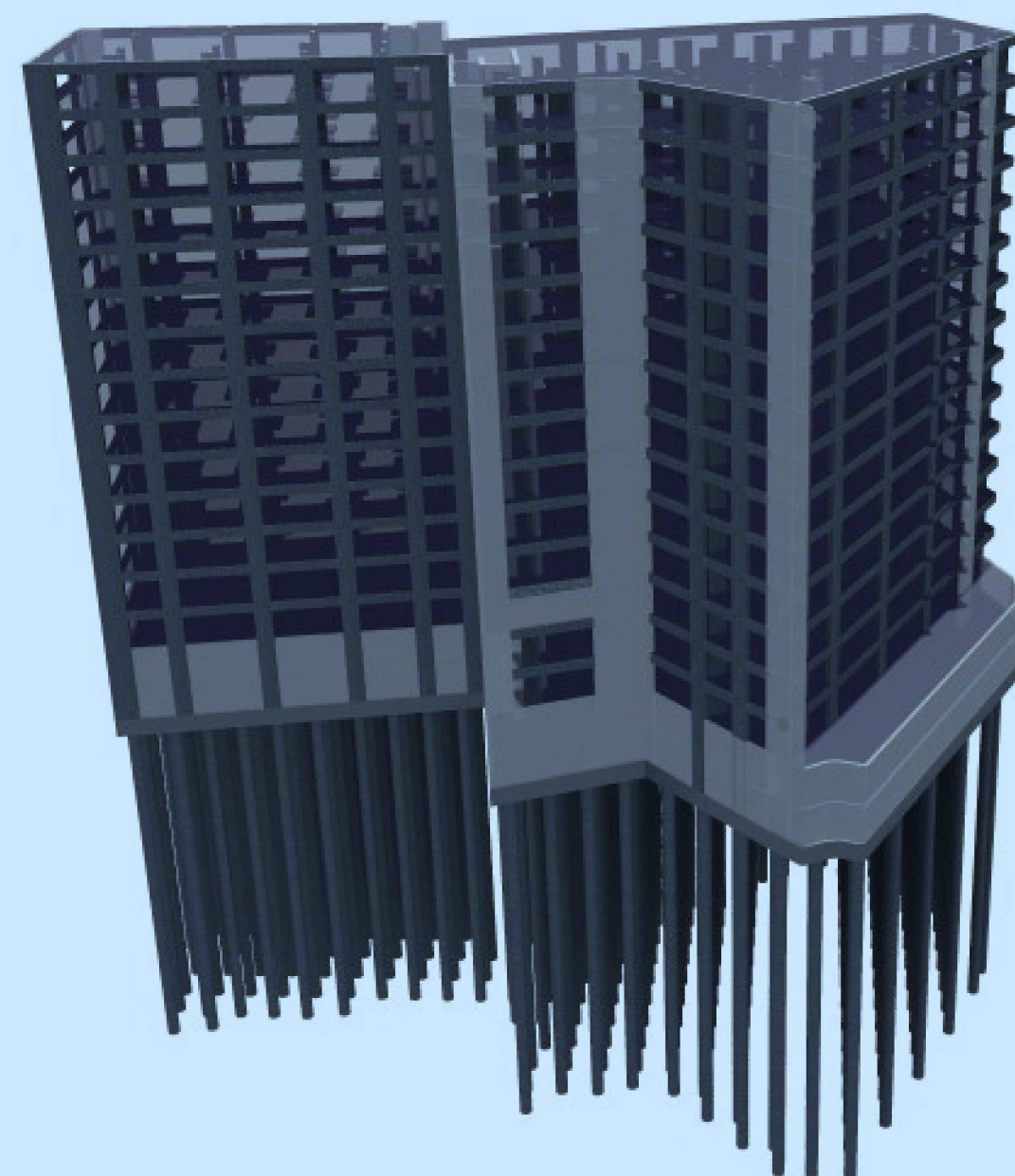


THE COPYRIGHTS OF THESE PLANS AND DRAWINGS ARE RESERVED
FOR
DR-MAJID AL BANA



PREPARE BY DR-Majid Albana
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Notes

THE BUILDING SYSTEM WILL BE
CONSIDER AS SHEAR WALL
BUILDING WITH COLUMNS AND THE
SLAB WILL BE AS FLAT SLAB WITH
M. BEAMS.THE SOFTWARE USED IN
DESIGN (CSI ETABS 2022, AND CSI
SAFE 2022&PROKON) IS THE
GENERAL PROGRAM USED IN THIS
DESIGN

job title

COMMERCIAL
BUILDING

DRWG. TITLE:

DESIGNED BY DR-Majid Albana

CHECKED BY

SCALE As Shown

DATE 8/2024

SHEET NO. Str. 1

1. ALL DIMENSIONS TO TAKE PRECEDENCE OVER SCALE SHOWN ON PLANS, SECTIONS AND DETAILS, (DO NOT SCALE FROM DRAWINGS).
2. ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS IN METRES (UNO).
3. THE STRUCTURAL DRAWINGS SHOULD BE USED IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL, CIVIL, PLUMBING AND ELECTRICAL DRAWINGS.
4. ALL OPENINGS SIZE AND LOCATION SHOULD BE VERIFIED AND CHECKED WITH SERVICES DRAWINGS, WHERE OPENINGS SIZES ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS, SITE ENGINEER SHALL INTRODUCE SUCH OPENINGS WITH PROPER FRAMING INCLUDING ANY REVISION TO THE SIZES SHOWN ON THE DRAWINGS.
5. DESIGN STANDARD & LOADS :-
 - DESIGN & CONSTRUCTION OF REINFORCED CONCRETE STRUCTURES MEMBERS SHALL IN ACCORDANCE WITH ACI-318-95 (ULTIMATE STRENGTH DESIGN METHOD).
 - ALL RETAINING WALL STRUCTURE SHOULD BE AS BRITISH 8 97- 110 or ACI - 93 - 318.
 - MASONRY BRICK OR CONCRETE BLOCK ACCORDING TO B.S - 5628.
6. LOADING :-
 - MINIMUM DESIGN LOAD (LIVE LOAD) ACCORDING TO IBC-09.
 - SEISMIC LOAD ACCORDING TO IRAQI SEISMIC CODE 1997.
 - WIND LOAD ACCORDING TO ASCE-05.
7. FOR TYP. SECTIONS & DETAILS SEE ST-G2.

1. FOUNDATION DESIGN BASED ACCORDING TO THE SOIL REPORT PREPARED BY THE
& RESEARCH () 2024\ \ \).

2. BEARING CAPACITY ACCORDING TO THE SOIL REPORT IS (120Knt) AT DEPTH OF (-4.00m)
BELOW THE EXISTING N.G.L.

3. A WELL COMPACTED SUB-BASE LAYERS OF A TOTAL THICK AS INDICATED IN THE DWG.
SHOULD BE USED UNDER FOOTING WITH FOLLOWING SPECIFICATIONS :-

- THE DIMENSION OF THE SUB-BASE LAYERS SHOULD BE LARGER THAN THE DIMENSIONS OF
THE FOUNDATION FROM ALL SIDES BY 0.25m.
- THE VALUE OF CALIFORNIA BEARING RATIO (C.B.R) SHALL NOT BE LESS THAN (35% ASTM D)
1883 AT 95% OF THE MAXIMUM DRY DENSITY ESTABLISHED ACCORDING TO (ASTM D)1557.
- LIQUID LIMIT $\leq 25\%$.
- PLASTICITY INDEX $\leq 6\%$.
- ORGANIC MATERIAL $\leq 2\%$.
- $SO_3 \leq 5\%$.
- TOTAL SOLUBLE SALTS $\leq 5\%$.
- GYPSUM CONTENT $\leq 10.75\%$.
- RELATIVE COMPACTION 95% (MODIFIED PROCTOR).

1. CONSTRUCTION JOINT :-

- CONSTRUCTION JOINT IN FLOORS SHOULD BE LOCATED WITHIN THE MIDDLE THIRD OF SPANS OF SLABS ,BEAMS & GIRDERS ,JOINT IN GIRDER SHOULD BE OFFSET A MINIMUM DISTANCE OF TWO TIMES THE WIDTH OF INTERSECTING BEAMS.
- AT CONSTRUCTION JOINTS SURFACES SHOULD BE ROUGHENED BY BROOMING OUT MORTAR ,EXPOSING 12mm OF COARSE AGGREGATE TWO HOURS AFTER PLACING CONCRETE.
- CONSTRUCTION JOINTS FOR STRUCTURAL SLAB / FOUNDATION / WALLS ETC. AND VOLUME OF CASTING IN A POUR SHOULD BE APPROVED BY THE ENGINEER.
- CONSTRUCTION JOINTS SHOULD BE DOWELED, KEYED AND THOROUGHLY CLEANED ,ALL CONSTRUCTION JOINTS SHOULD BE CONSTRUCTED IN ACCORDANCE WITH THE TYPICAL CONSTRUCTION JOINT DETAILS SHOWN ON THE STRUCTURAL DRAWINGS,CONTRACTOR HAVE TO PREPARE ANY MISSING DETAILS NOT COVERED IN THE STRUCTURAL DRAWINGS AND SUBMIT FOR ENGINEER'S APPROVAL.

2. WATERPROOFING :-

- WATER STOPS SHOULD BE USED AT ALL CONSTRUCTION,CONTRACTION & EXPANSION JOINTS,WHERE WATERPROOFING SYSTEM IS APPLIED ALL INTERSECTION PIECES OF WATER STOPS SHOULD BE FACTORY MOLDED.
- ALL CONCRETE WORKS IN CONTACT WITH SOIL FOR NORMAL STRUCTURE SHOULD BE COATED WITH PROTECTIVE LAYER.

LOCATIONS MEMBER TYPE	MINIMUM 28 DAYS CUBE COMPRESSIVE STRENGTH (F _{cu}) (MPa)	AGGREGATE MAX. SIZE
SCREED	20	10 mm
BLINDING OR LEAN CONCRETE	20	20 mm
SLABS	40	20 mm
PILES	-	20-38 mm
FOUNDATIONS	40	20 mm
COLUMNS AND SHEAR WALLS	50	20 mm
SUSPENDED SLAB, BEAMS AND WALLS	40	20 mm
WATER RETAINING STRUCTURES	-	20 mm
PLAIN CONCRETE	25	20 mm

- | MEMBER | (mm) |
|-----------------------|------|
| SLABS | 25 |
| BEAMS & GIRDERS | 40 |
| COLUMNS | 40 |
| INTERIOR WALLS | 25 |
| EXTERIOR FACE OF WALL | 40 |
| FORMED FOUNDATION | 50 |
| NON-FORMED FOUNDATION | 75 |

- | | | | | | | | |
|-------------------------------|-----|-----|-----|-----|-----|------|------|
| BAR DIA.(mm) | 10 | 12 | 16 | 18 | 20 | 22 | 25 |
| LAP LENGTH (mm) IN COLUMNS | 400 | 500 | 600 | 650 | 700 | 800 | 900 |
| LAP LENGTH (mm) IN ELSE WHERE | 400 | 600 | 700 | 800 | 900 | 1000 | 1250 |

- WHERE COLUMN FACE ARE OFFSET 75mm OR MORE SPLICE OF VERTICAL BARS TO THE OFFSET FACE SHOULD BE MADE BY SEPARATE DOWELS OVER LAP AS SPECIFIED ABOVE.
 - WHERE A LONGITUDINAL BARS ARE OFFSET AT SPLICE THE SLOPE OF INCLINED ADJACENT PORTION SHALL NOT EXCEED 1:6 (HORIZONTAL:VERTICAL).
 - CHANGING OF REINFORCEMENT BETWEEN FLOORS WHERE SUCH SITUATION OCCURS THE REINFORCEMENT OFF SHOULD BE CUT OFF AT DISTANCE 75mm BELOW FLOOR LEVEL SPACED 100mm AND PLACED BEFORE THE POINT OF BEND.
 - WHERE LONGITUDINAL BARS OFFSET, PROVIDE 4 TIES.
9. HOT & COLD WEATHERING SHOULD BE ACCORDING TO ACI-305R-99.
 10. ALL REINFORCING BAR BENDS TO BE MADE COLD.
 11. IN ONE-WAY SLAB, SHRINKAGE & TEMPERATURE REINF. STEEL EXTENDING IN THE LONG DIRECTION SHALL BE PLACED IN THE PLACE OF, AND TIED TO THE MAIN REINF. EXTENDING IN THE SHORT DIRECTION.
 12. MIXING & PLACING CONCRETE SHOULD BE DONE ACCORDING TO ACI - 318M - 95 (CHAPTER 5) CONDUIT OR PIPE SIZE SHALL NOT EXCEED 30% OF SLAB THICKNESS UNLESS SPECIFICALLY DETAILED. OTHERWISE CONCENTRATIONS OF CONDUITS OR PIPES SHOULD BE AVOIDED EXCEPT WHERE DETAILED OPENINGS ARE PROVIDED, ALL SUBJECT TO ENGINEER'S APPROVAL.

ADD	ADDITIONAL
ARCH	ARCHITECTURAL
B	BEAM
BOTT	BOTTOM
C1	COLUMN TYP C1
CANT	CANTILEVER
CJ	CONSTRUCTION JOINT
CL	CENTRE
C	COULMN
CONC	CONCRETE
DET	DETAIL
DIM	DIMENSION
DWG	DRAWING
D	DEPTH
E.A	EACH
E.F	EACH FACE
E.J	EXPANSION JOINT
ELEV	ELEVATION
E.W	EACH WAY
EXP	EXPANSION
F	FOOTING
F1	FOOTING TYPE-1
FDN	FOUNDATION
F.F.L	FINISH FLOOR LEVEL
GEN	GENERAL
GL	GRID LINE
LL	LIVE LOAD
MAX	MAXIMIM
MECH	MECHANICAL
MIN	MINIMUM
mm	MILLIMETRES
SEC	SECTION

EXCAVATION, BACK FILLING & FOUNDATION

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INVESTIGATE OR TO CHECK THE SOIL GEOTECHNICAL PROPERTIES BY HAVING SPECIALIST AND AFTER COMMENCING OF THE UNDERGROUND WORK.

2. FOOTINGS FOR BUILDING SHALL BE FOUNDED ON UNDISTURBED SOIL.
RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATION OF FOOTING TO OBTAIN SUCH BEARING PRESSURE. UNDER NO CONDITION FOOTINGS SHOULD BE PLACED ON LOOSE, SOFT OR UNDESIRABLE MATERIAL. IF SUCH MATERIALS ARE ENCOUNTERED, THEY SHOULD BE REMOVED UNTIL FIRM LAYERS ARE ENCOUNTERED AND REQUIRED BEARING PRESSURE IS OBTAINED.

3. THE SITE SHOULD BE CLEARED OF ALL BOULDERS, DEBRIS, DECOMPOSABLE MATERIAL SUCH AS WOOD, GRASS, PLANTS, ...ETC. ALL EXISTING MISCELLANEOUS FILL SHOULD BE REMOVED FROM AREAS WHERE STRUCTURAL SUPPORT IS REQUIRED. ANY SOIL AT STRIPED LEVEL THAT SOFTENS DUE TO RAINFALL, GROUND WATER, DISTURBANCE OR ANY OTHER CAUSE SHOULD BE EXCAVATED AND REPLACED WITH CONTROLLED FILL. BOTTOM OF EXCAVATIONS SHOULD BE SMOOTH AND FREE OF LOOSE EARTH OR SAND. ANY LOOSE OR SOFT AREAS SHOULD BE COMPACTED TO THE REQUIRED DENSITY.

4. IF DURING CONSTRUCTION ANY SIGNIFICANT VARIATIONS FROM WHAT IS REPORTED IN THE GEOTECHNICAL SOIL REPORT, THE ENGINEERS SHOULD BE NOTIFIED TO VISIT THE SITE AND ASSESS THE SITUATION.

5. PRIOR TO PLACEMENT OF BLINDING CONCRETE FOR FOUNDATIONS, WHEREVER POSSIBLE, BOTTOM OF EXCAVATIONS SHALL BE COMPACTED BY HEAVY VIBRATORY ROLLER TO 95% MIN. OF MODIFIED PROCTER DENSITY FOR COHESIVE AND WELL GRADED SOILS. 100 MM BLINDING CONCRETE THICK E. BE POURED UNDER THE RAFT FOOTINGS.

6. PROVIDE A POLYETHYLENE FILM (0.2MM) BELOW ALL GROUND LEVEL SLABS. FILM TO BE FIRMLY ANCHORED TO GROUND AND ADEQUATELY LAPPED.

7. BEFORE ANY BACKFILLING, ALL FORMS SHOULD BE REMOVED BUT IN NO CASE LESS THAN 24HOURS AFTER PLACING CONCRETE. ALL DEBRIS SHOULD BE CLEANED OUT.

8. USE WELL GRADED, NON COHESIVE SOILS FOR BACKFILLING. BACKFILL MATERIALS SHOULD NOT CONTAIN ANY ROOTS, CONSTRUCTION DEBRIS, DELETERIOUS MATERIALS, ORGANIC MATTERS, COBBLES OR BOULDERS(SIZE>80MM). THE FINES PERCENTAGE SHOULD NOT EXCEED 15% AND THE SOIL SHOULD BE NON PLASTIC.

9. IT IS EXPECTED THAT THE LAND WILL BE GRADED AND LEVELED TO THE FINAL FINISHED GRADE.

10. CLEAN SAND, FREE OF SALTS AND ORGANIC MATERIALS, AND WITH LESS THAN 10% PASSING THE NO. 200 SIEVE, IS CONSIDERED SUITABLE MATERIAL. BACKFILL MATERIALS SHOULD BE PLACED IN LOOSE LIFTS HAVING THICKNESS OF NOT MORE THAN 25 cm COMPACTED TO THE REQUIRED DENSITY, USE VIBRATORY ROLLER FOR COMPACTING GRANULAR SOILS.
TO AVOID STRESSING THE DUCT.
ALL STRUCTURAL FILL MATERIAL SHALL BE COMPACTED TO A DRY DENSITY OF AT LEAST 95% OF THE MAXIMUM DRY DENSITY OBTAINED BY THE MODIFIED PROCTOR TEST, USE NUCLEAR DENSITY GAUGES AS PER ASTM D-2922 TO MONITOR COMPACTION WORKS. NO BACKFILLING SHALL BE PERFORMED BEFORE CASTING OF THE SLABS THAT SUPPORT THE RETAINING WALLS.

11. FOR WALLS HAVING FILL ON BOTH SIDES, BACK FILLING OPERATION SHALL PROCEED SIMULTANEOUSLY IN EQUAL LIFTS. DIFFERENTIAL ELEVATION OF TOP OF LIFTS BETWEEN EACH SIDE SHALL NOT EXCEED 50 cm.

12. ALL CONNECTIONS OF PIPING BETWEEN THE STRUCTURES AND THE EXTERIOR BE DELAYED TO A LATER STAGE OF CONSTRUCTION AFTER WHICH MOST OF THE SETTLEMENT WOULD HAVE TAKEN PLACE, UNLESS FLEXIBLE SLEEVES ARE USED.

13. ALL SERVICE LINES SHALL BE LAID OUT IN A CLEAN SAND BED COMPACTED TO THE REQUIRED DENSITY.

14. UTILITY TRENCHING SHALL BE SUCH THAT DUCT RUNS CAN BE MADE AS STRAIGHT AS POSSIBLE, BOTH HORIZONTALLY AND VERTICALLY, AND IF A DEFLECTION MUST BE MADE IN A DUCT LINE, THE DEFLECTIONS SHOULD BE ALONG A SMOOTH AND GRADUAL CURVE

6) CONSTRUCTION JOINTS AND CONTROL JOINTS:

1. CONSTRUCTION JOINTS IN FLOOR SHALL BE LOCATED WITHIN THE MIDDLE THIRD OF SPANS OF SLABS, BEAMS AND GIRDERS, U.N.O. ON DWGS.
2. BEAMS, GIRDERS AND HAUNCHES SHALL BE PLACED MONOLITHICALLY AS PART OF A SLAB SYSTEM, UNLESS OTHERWISE SHOWN IN DESIGN DRAWINGS OR SPECIFICATIONS.
3. CONTROL JOINTS IN SLAB ON GRADE SHALL BE SPACED AT 6.00 METERS (MAX.) INTERVAL ON BOTH DIRECTIONS. THE RESULTING PANEL SHOULD BE APPROXIMATELY SQUARE. A CHECKERED BOARD PATTERN.
4. IN WALLS HAVING FREQUENT OPENINGS, SPACING OF CONTROL JOINTS 6.00 METERS APART IS CONSIDERED MAXIMUM. THE SPACING IN WALLS WITHOUT WINDOWS SHOULD NOT BE MORE THAN 7.50 METERS AND A JOINT WITHIN 3.00 METERS OF EACH CORNER IS DESIRABLE.
5. VERTICAL CONSTRUCTION JOINT SPACING IN WALLS SHALL NOT BE MORE THAN 12.00 METERS AND LOCATED WITHIN THE MIDDLE THIRD OF THE SPAN BETWEEN COLUMNS.

THE DESIGN LOADS

1) SUPER IMPOSED DEAD LOAD (SDL) :

FLOOR SCREED	0.80	KN/m ²
TILES	0.20	KN/m ²
False Ceiling & MECHANICAL DIVISIONS	0.50	KN/m ²
EXTERNAL & INTERNAL PARTITION WALL Bricks	2.5	KN/m ²
TOTAL -----	4.00	KN/m ²

2) LIVE LOADS:

LIVE LOAD	4.0	KN/m ²
STAIRCASE	4.0	KN/m ²

3) WIND LOADS:

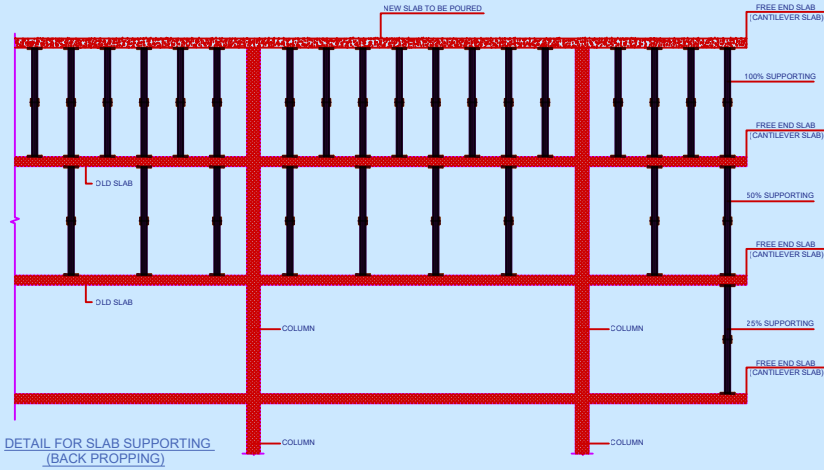
The main wind force resisting system (MWFRS) and all components and cladding (C&C) are determined in accordance to the ASCE (2016). All other parameters related to wind load are estimated according to (Unified Facilities Criteria (UFC) 2013). Based on aforementioned codes and standards, wind parameters for Baghdad city
Table 1.1: Wind Parameters for Baghdad that are Adopted in the Analysis.

Wind Parameter	NOTATION	NOTATION	Reference
Basic Wind Speed	V	161 km/h	ASCE (2016), (Unified Facilities Criteria (UFC) 2013)
Exposure Category	B		ASCE (2016)
Topographic Factor	Kzt	1	ASCE (2016)
Gust–Effect Factor	G	0.85	ASCE (2016)
Directionality Factor	Kd	0.85	ASCE (2016)

4) SEISMIC LOADS:

Seismic Design Categories (SDCs) are adopted from ASCE (2016). All other parameters related to seismic zone are estimated according to (Iraqi seismic code (2017)).
Table 1.2: Seismic Parameters for Baghdad that are Adopted in the Analysis.

seismic Parameter	NOTATION	NOTATION	Reference
Seismic Design Category	D		ASCE (2016), the soil type has been Assumed
Response Modification Coefficient	R	5	ASCE (2016)
Topographic Factor	Kzt	1	ASCE (2016)
Overstrength Factor	Ω_o	2.5	ASCE (2016)
Importance Factor	I	1	ASCE (2016)
Mapped Maximum Considered Earthquake (MCER), 5% damped, spectral response acceleration parameter at short periods	Ss	0.30	Iraqi seismic code 2017
Maximum Considered Earthquake (MCER), 5% damped, spectral response acceleration parameter at a period of 1 s	S1	0.10	Iraqi seismic code 2017
Seismic coefficient	Ca	0.12	Soil investigation report
Seismic coefficient	Cv	0.18	Soil investigation report
Undrained shear strength kN/m2	Vs	53.70	Soil investigation report
Soil type"stiff soil"	SD		Soil investigation report



GENERAL NOTES :-

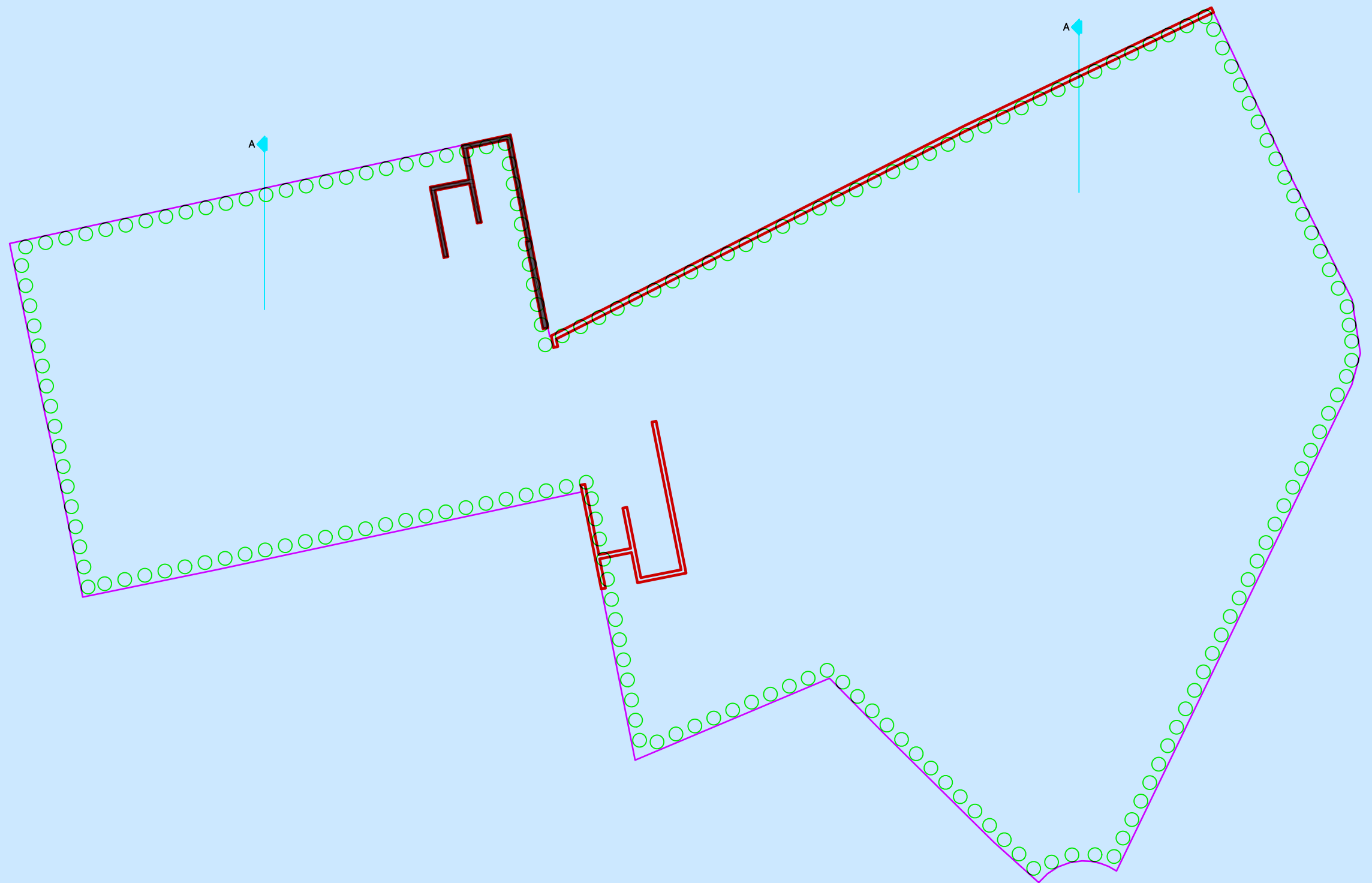
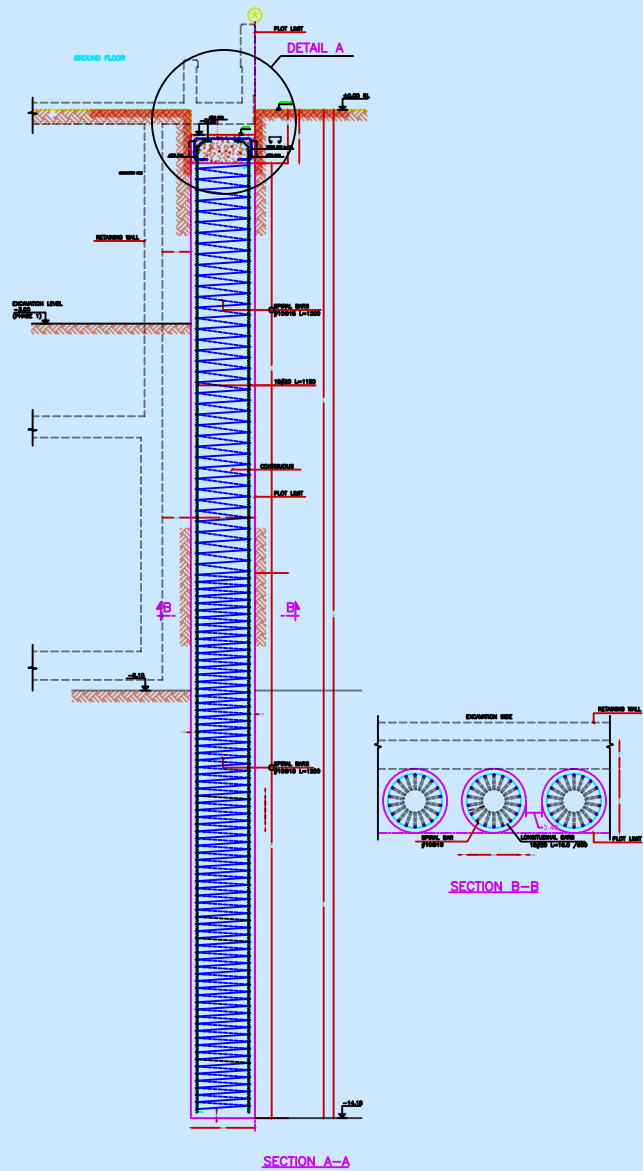
Frameworks removal time :

Type of framework	Min. period before striking formworks
Vertical framework of the column	24 hrs
Vertical framework of the shear walls	2-3 days
framework of the slab and beam	
a. span up to 6 m	14 days
a. span from 6-8 m	20 days

drawing title

THE DESIGN LOADS

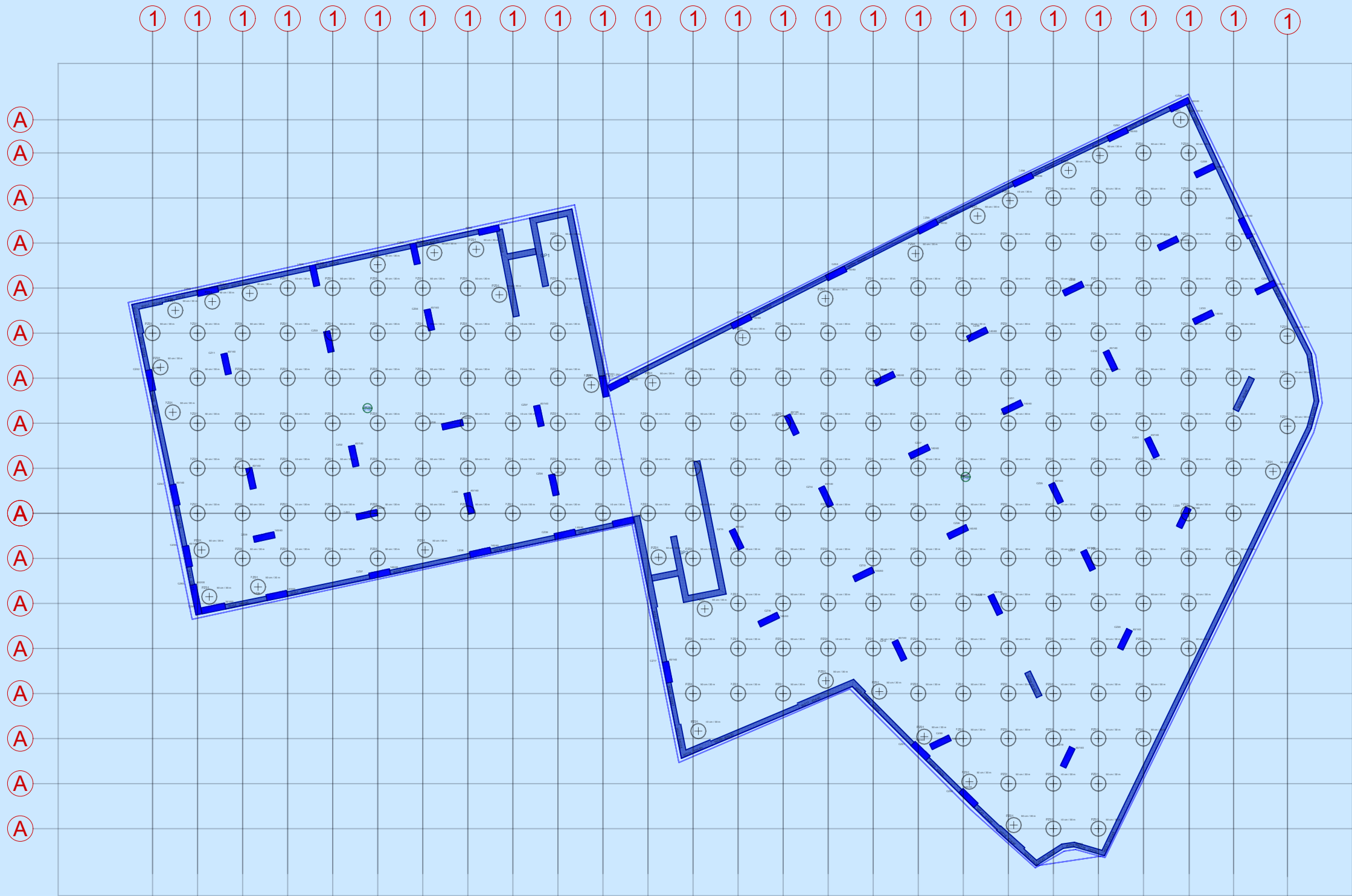
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checked	scale 1-100	date 8/2024
drawn	job no. 3	sheet no.
approved		ST/D/03



SHORING PILES DETAILS

Retaining wall design proposal

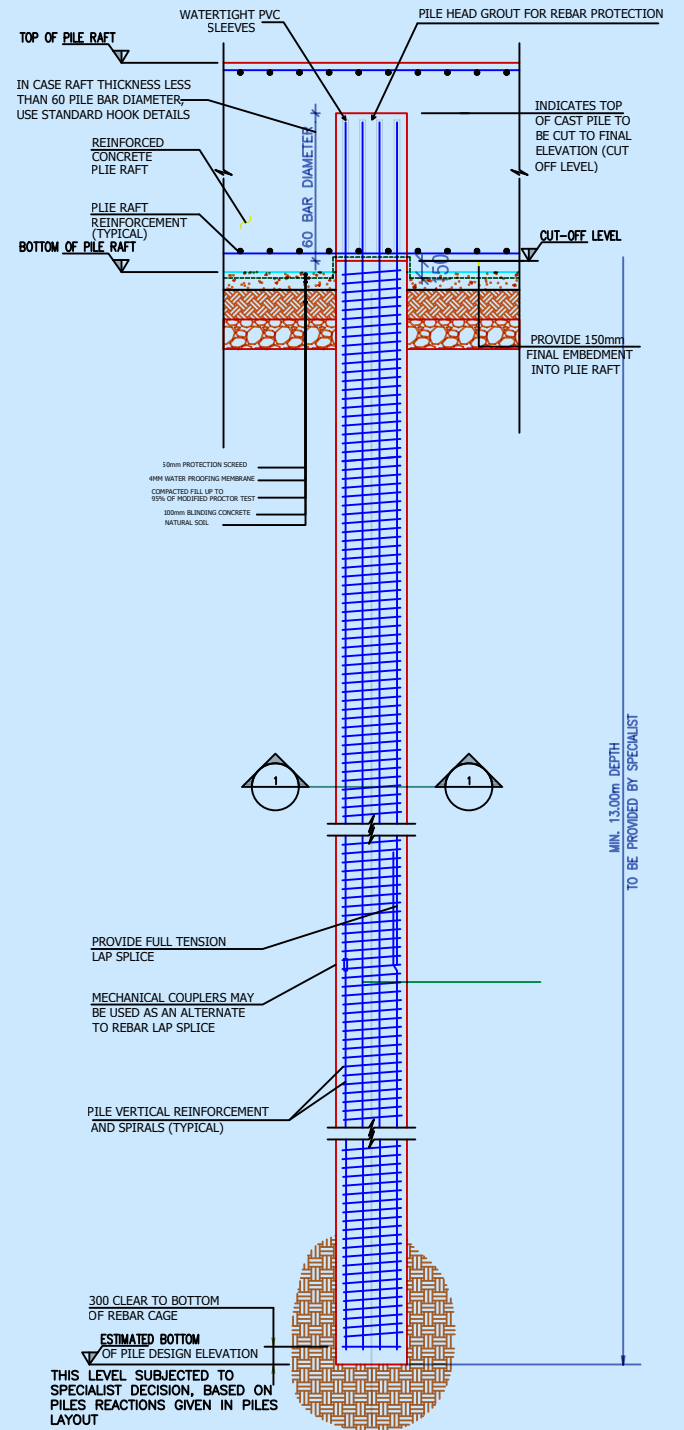
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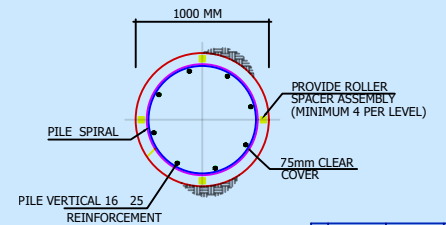
PILES KEY PLAN

ID	Quantity	Diameter	Length (cm)	Type	Weight (Kg)
2	3848	20	1200		113876.95
3	1924	20	880		41754.88
					155631.84
1	4810	10	1200		35586.55
4	74	10	776		354.04
					35940.59
Thin Steel Total (Ø8-Ø12) (Kg)				Thick Steel Total (Ø14=<) (Kg)	
35940.59				155631.84	

	1200	P2	3848Ø20
	880	P3	1924Ø20
	1200	P1	4810Ø10
	776	P4	74Ø10



TYPICAL FRANKI PILE ELEVATION



SECTION 1-1

no.	date	initials	revision
job title			
(A)			
drawing title			
PILES KEY PLAN			
designed	ENG : DR-Majid Albana	project manager	
checked	1-100	scale	date 9 /2024
drawn	job no. 6	sheet no.	

CONCRETE COVERS

-THE BUILDING IS DESIGNED FOR BASEMENT + GROUND FLOOR + 6 FLOORS + PENT-HOUSE

. all dim. from ARCH D.W.G.

no.	date	Initials	revision
job title			
(A)			
drawing title			
PLAN OF FOUNDATION REINFORCEMENT&SEC.			
designed ENG : DR-Majid Albana		project manager	
checked	scale 1-100	date 9 / 2024	
drawn	job no. 7	sheet no.	
approved	ST/D/04		

THICK. = 1500 mm

BAR DIA.(mm)	10	12	16	18	20	22	25
LAP LENGTH (mm) IN COLUMNS	400	500	600	650	700	800	900
LAP LENGTH (mm) IN ELSE WHERE	400	600	700	800	900	1000	1250

for all inter columns

1.50 m Reinf. conc. Raft foundation 40 Mpa min.

5 cm plain concrete

2layers Bitumen 1 cm thick. min

with bitumen felt between them

(1:2:4) 10cm Blinding

w/c = 0.45, coarse agg. 5-19 mm

25cm Sub base 95% comp.

25cm Bolder

Sub grade (stiff & stable)

1.00

SECTION IN RAFT FOUNDATION
BASEMENT WALL W2

CHOOSING BY SPECIFIC

ALIGNED WITH

REFER TO WALL DETAILS

REFER TO PLAN

REFER TO WALL DETAILS

REFER TO WALL DETAILS

REFER TO PLAN

200mm PROTECTION SCREEN

WATER PROOFING MEMBRANE

300mm BLINDING CONCRETE

COMPACTED FILL UP TO SOLE OF RAFTERS PROCTOR

NATURAL SOIL

SECTION A - A

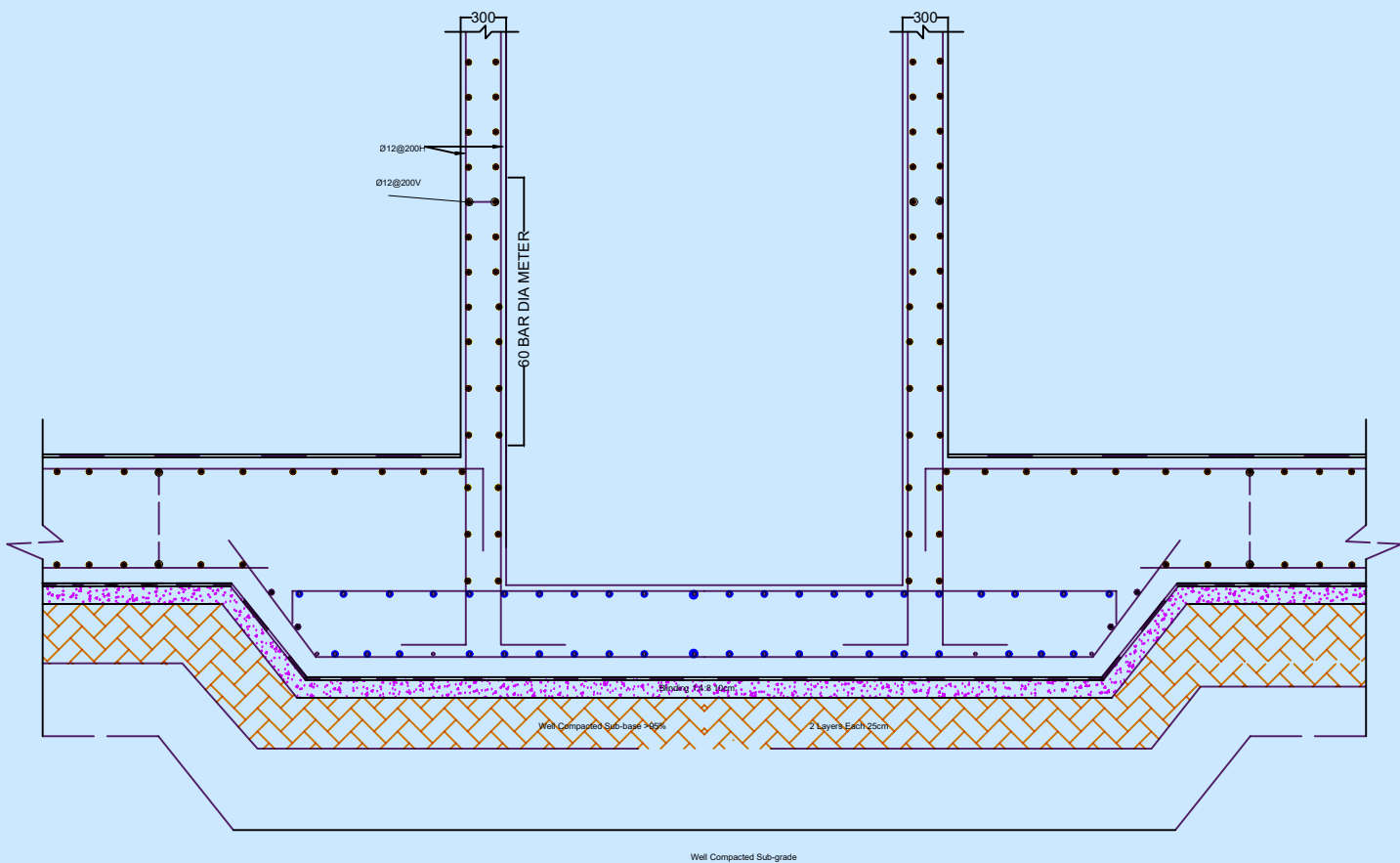
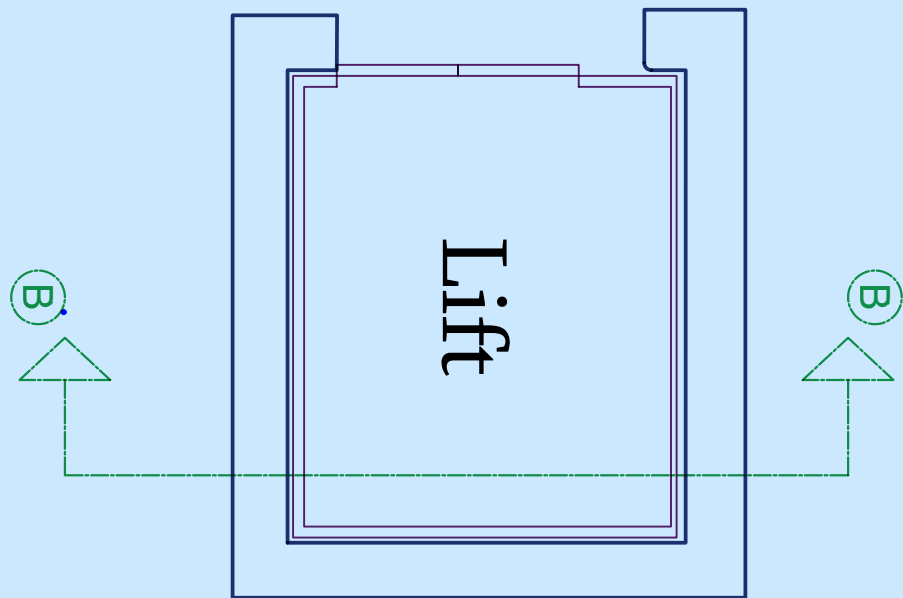
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checked		scale 1-100	date 9 /2024	
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M

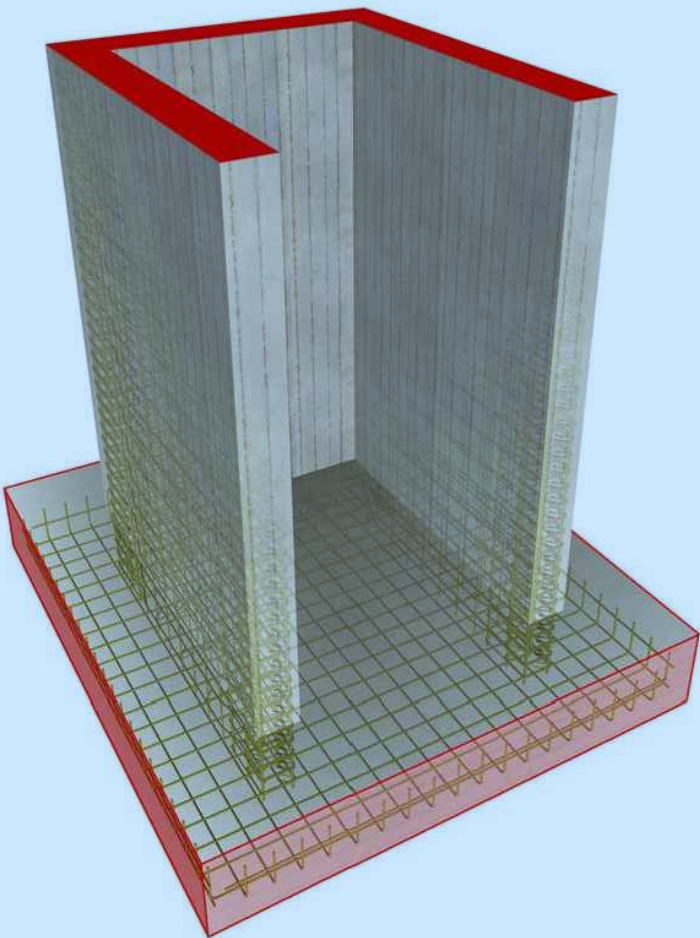
Eng MAJ D A bana

المصمم الاستشاري
د. ماجد البنا

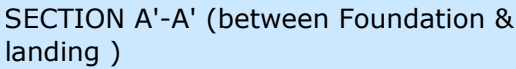
+964 770 272 4811
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Section B'-B'



no.	date	initials	revision
job title			
(A)			
drawing title			
Section A'-A' lift detail			
designed	ENG : Majid Albana	project manager	
checked	ENG : Majid Albana	scale	date
drawn	ENG : Majid Albana	1-100	3/2024
approved		job no.	sheet no.
		9	ST/D/06

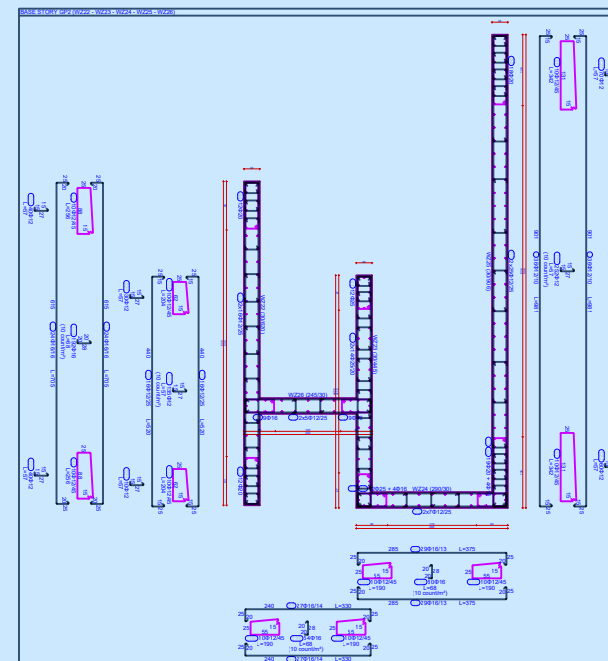
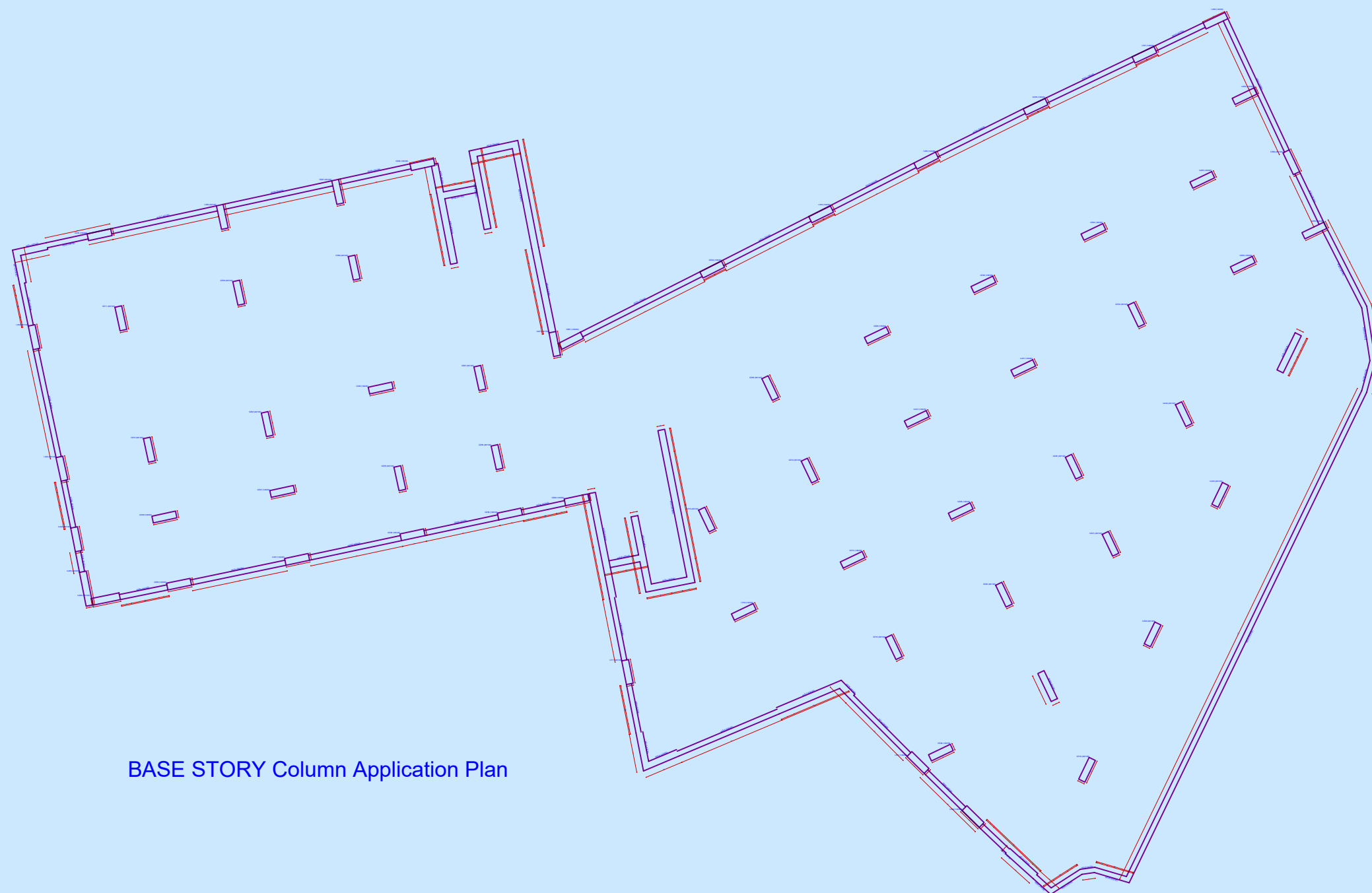


-F_{cu} = 40 N/mm²
-F_y = 420 N/mm².

CONCRETE COVERS	
SLABS	= 25 mm
BEAMS	= 40 mm
COLUMNS	= 40 mm
WALLS	= 25 mm
SLAB ON GRADE	= 50 mm
RAFT FOUNDATION	= 75 mm

. all dim. from ARCH D.W.G.

[illegible]

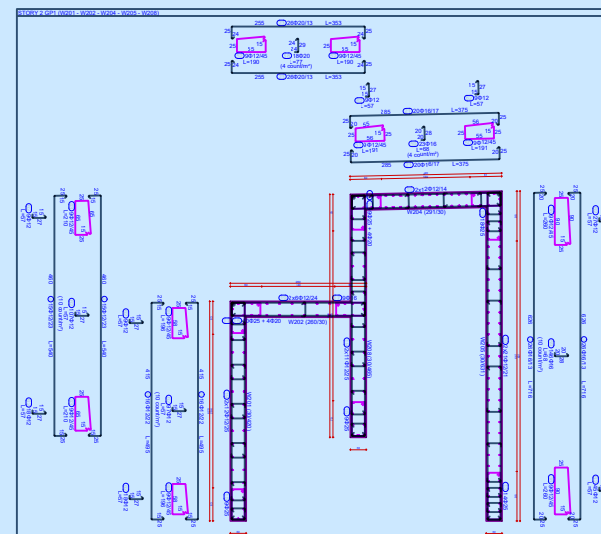
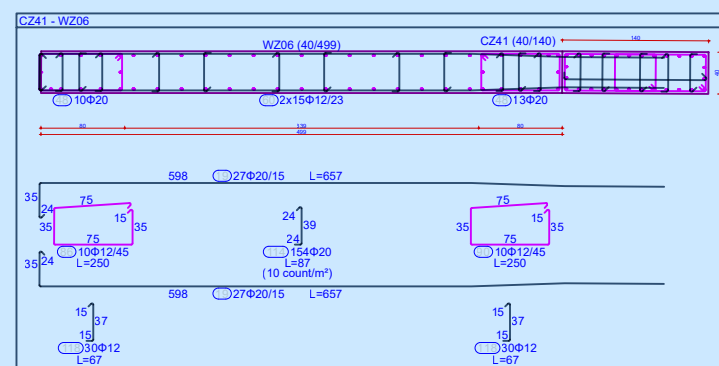
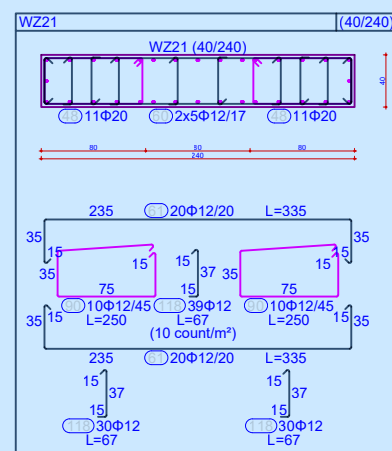


Notes

- $f_{cu} = 50 \text{ N/mm}^2$
- $f_y = 420 \text{ N/mm}^2$.

CONCRETE COVERS

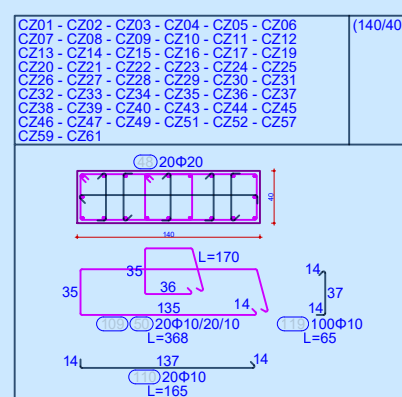
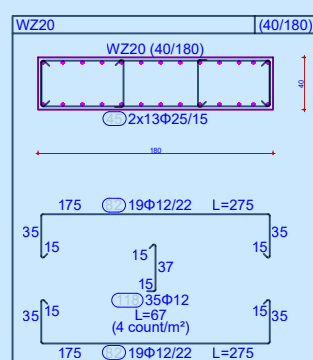
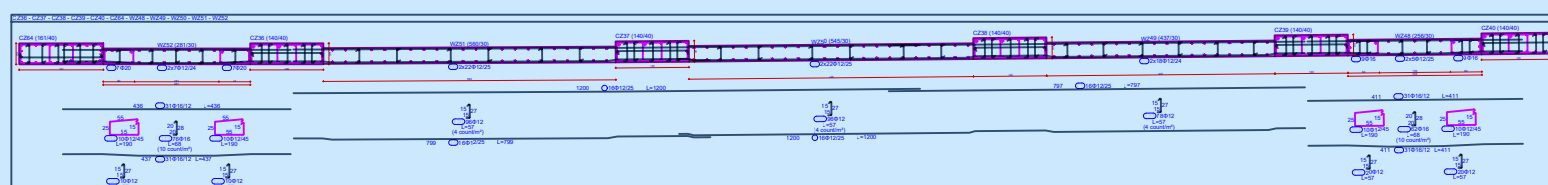
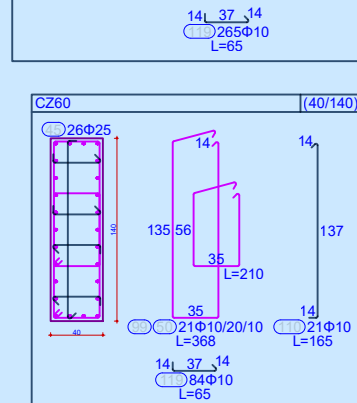
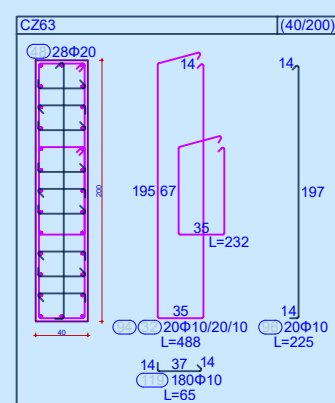
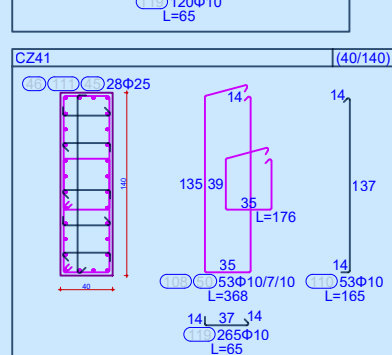
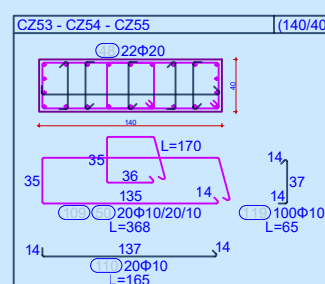
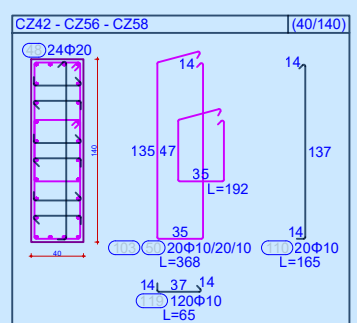
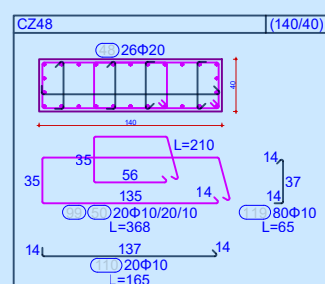
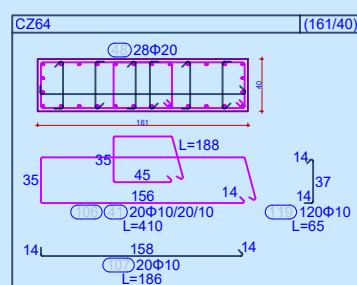
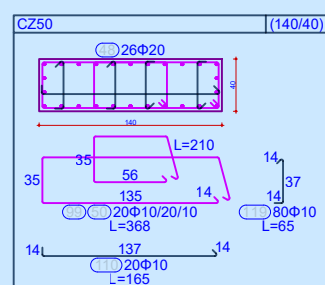
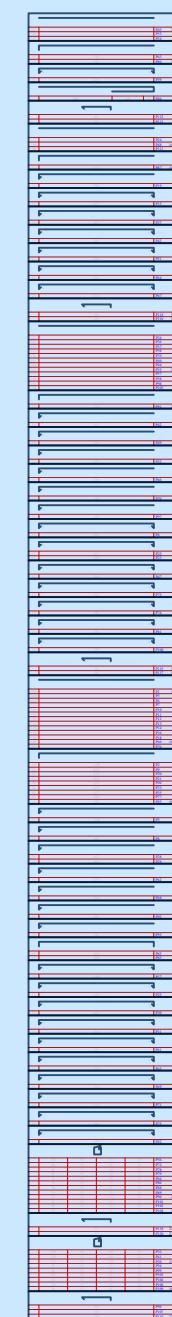
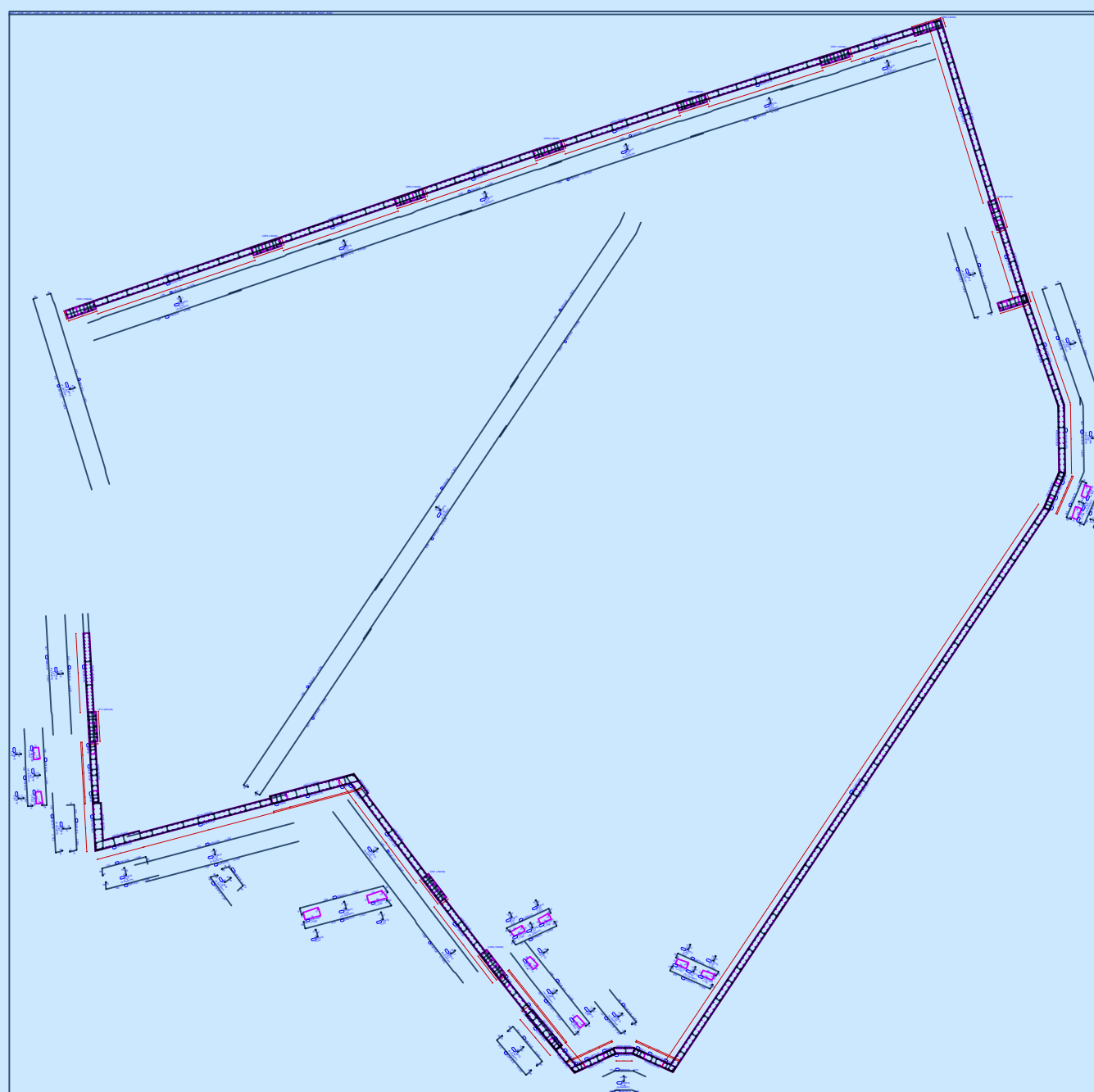
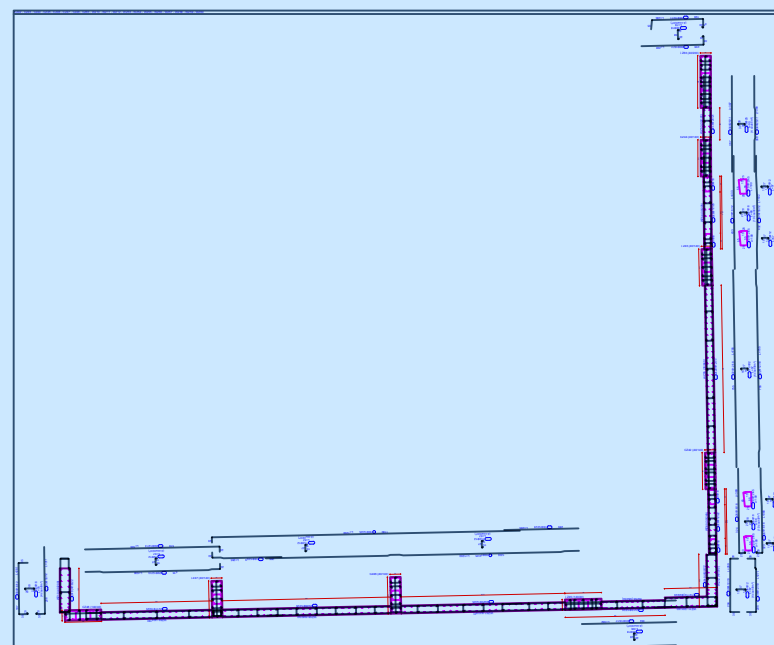
- SLABS = 25 mm
- BEAMS = 40 mm
- COLUMNS = 40 mm
- WALLS = 25 mm
- SLAB ON GRADE = 50 mm
- RAFT FOUNDATION = 75 mm



COLUMNS & WALL KEY PLAN

. all dim. from ARCH D.W.G.

no.	date	initials	revision
job title			
(A)			
drawing title			
COLUMNS & WALL KEY PLAN			
designed ENG : DR-Majid Albana		project manager	
checked	scale 1-100	date 9 / 2024	
drawn	job no. 11	sheet no. ST/D/O	
approved			



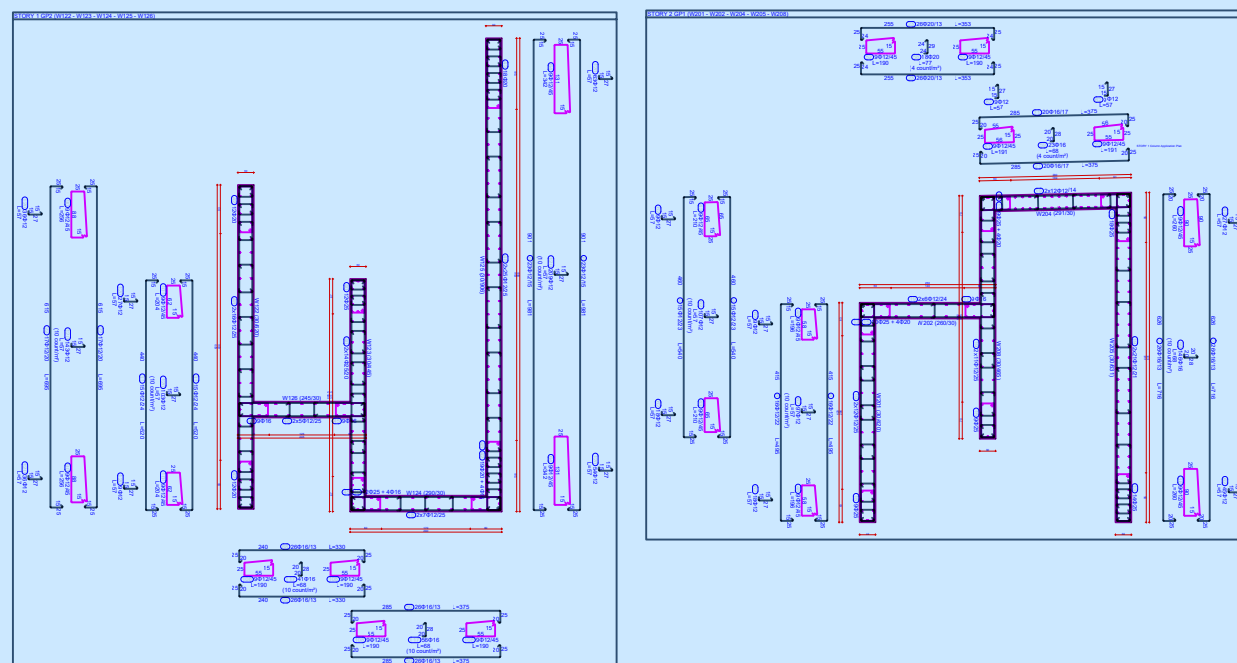
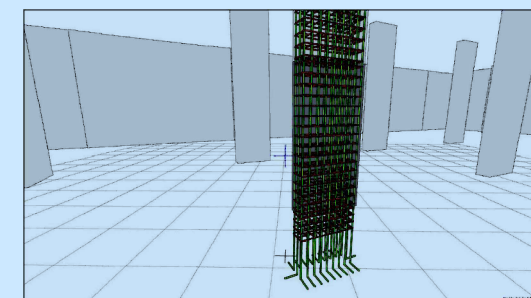
$-F_{cu} = 50 \text{ N/mm}^2$
 $-F_y = 420 \text{ N/mm}^2.$

CONCRETE COVERS

-SLABS	= 25 mm
-BEAMS	= 40 mm
-COLUMNS	= 40 mm
-WALLS	= 25 mm
-SLAB ON GRADE	= 50 mm
-RAFT FOUNDATION	= 75 mm

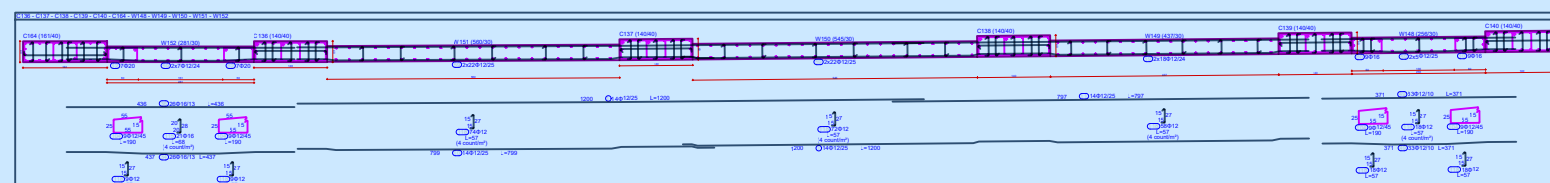
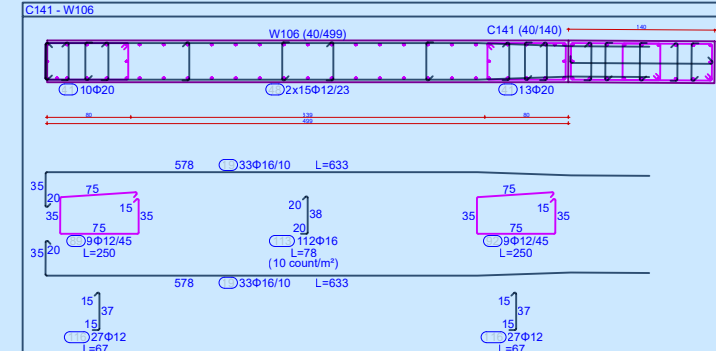
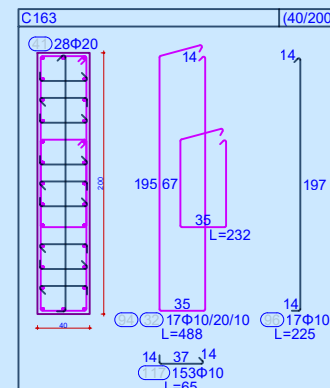
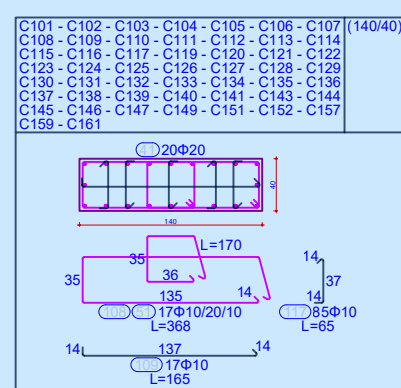
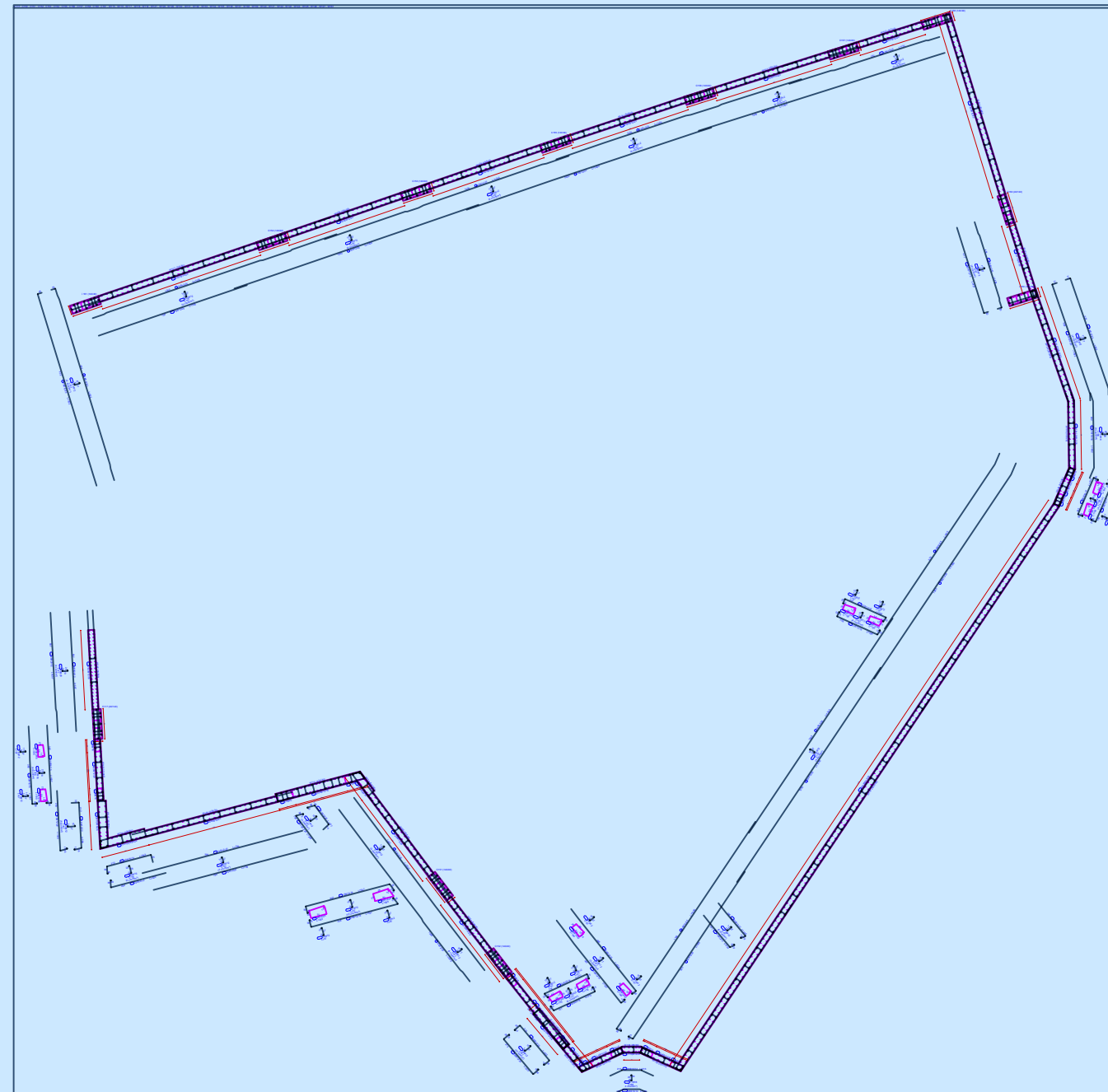
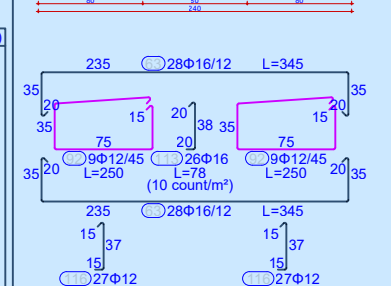
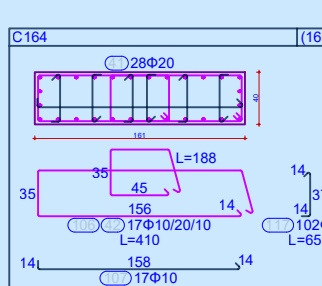
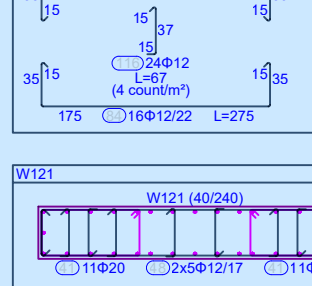
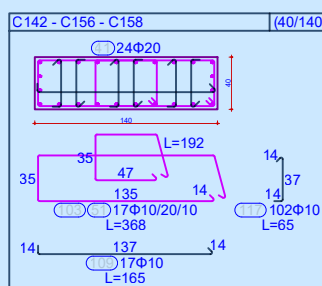
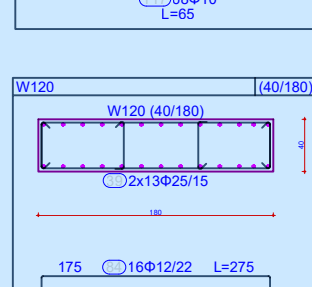
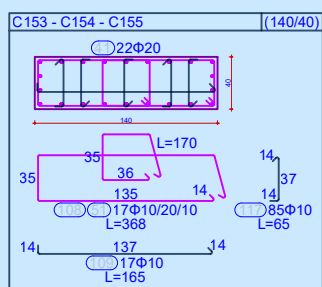
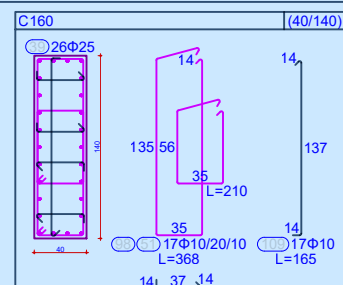
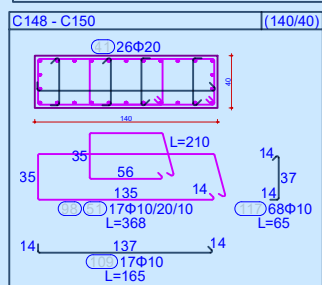
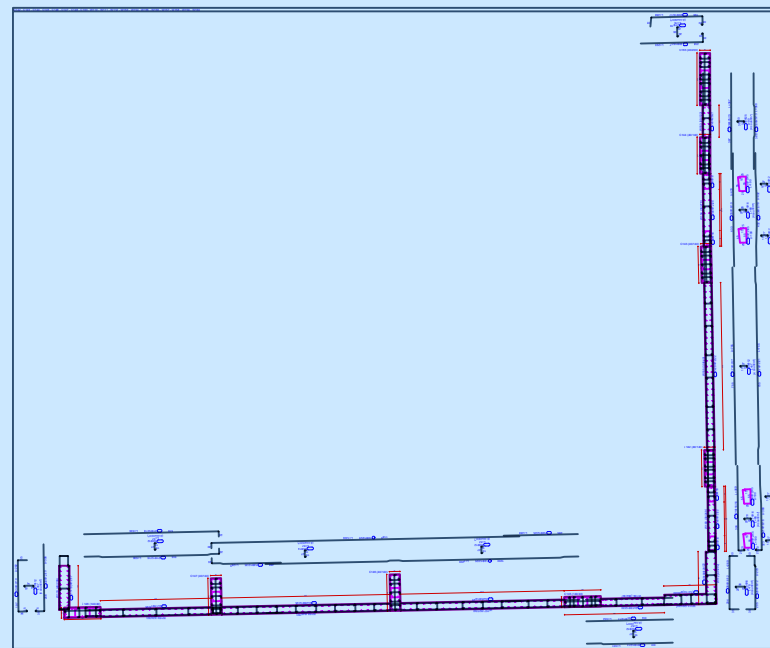
. all dim. from ARCH D.W.G.

no.	date	initials	revision	
job title				
(A)				
drawing title				
COLUMNS & WALL KEY PLAN				
designed ENG : DR-Majid Albana		project manager		
checked	scale 1-100	date 9 / 2024		
drawn	job no. 12	sheet no. ST/D/O		
approved				



. all dim. from ARCH D.W.G.

no.	date	initials	revision	
job title				
(A)				
drawing title				
COLUMNS & WALL KEY PLAN				
designed ENG : DR-Majid Albana		project manager		
checked	scale	1-100		date 9 / 2024
drawn	job no.	13		sheet no.
approved				ST/D/O

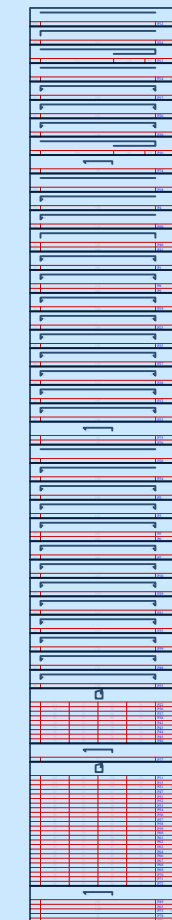
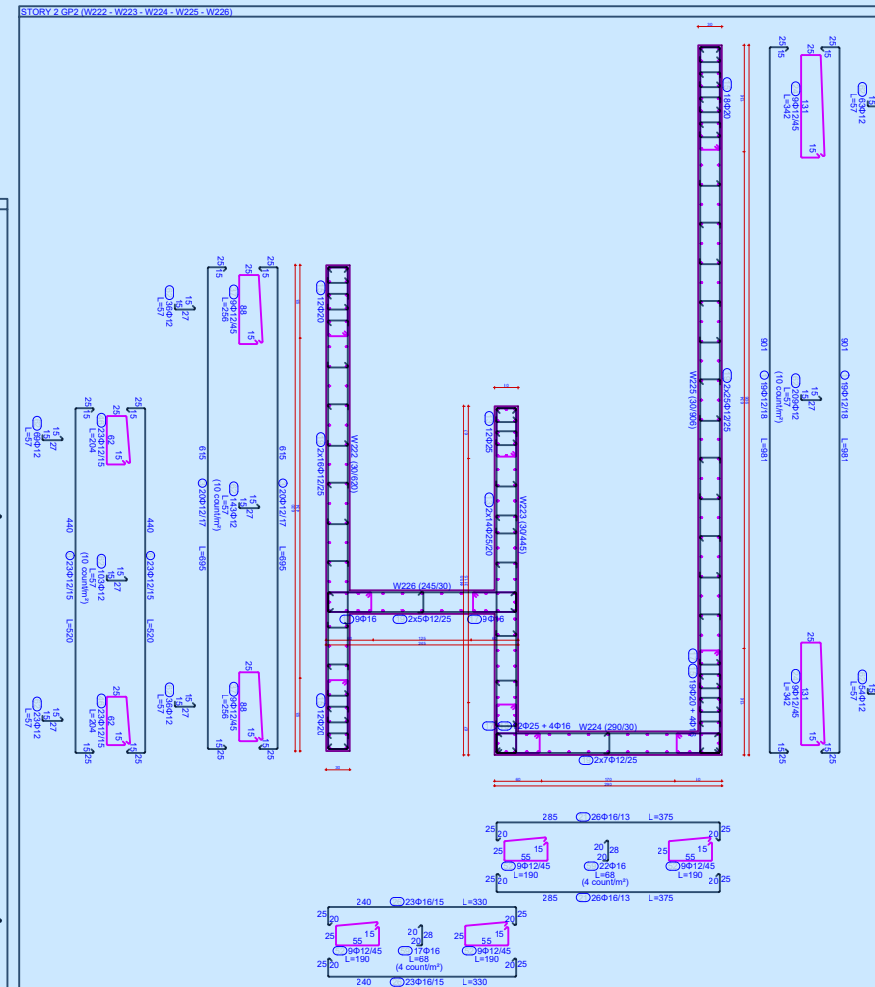
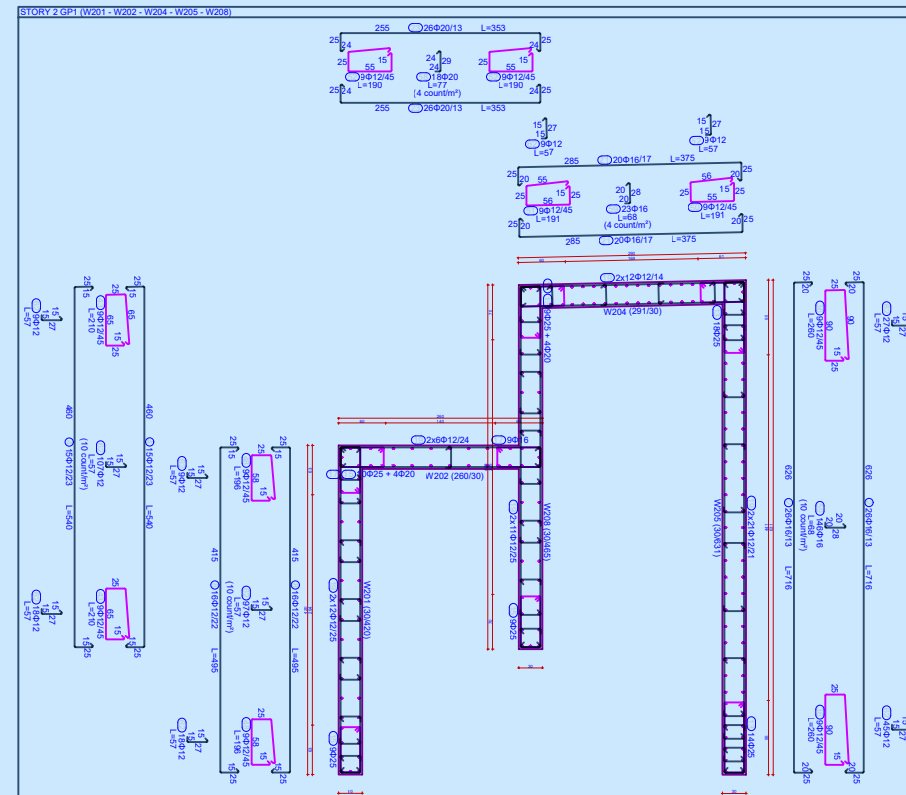
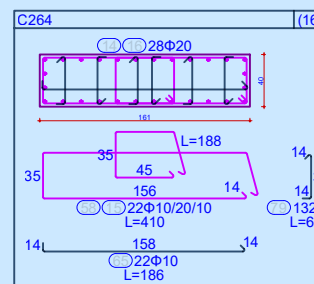


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W141 - C142 - C142 - C143 - W143 - C144 - C144 - W145 - W145
W146 - C146 - C147 - W147 - W148 - C148 - C149 - W149 - W150
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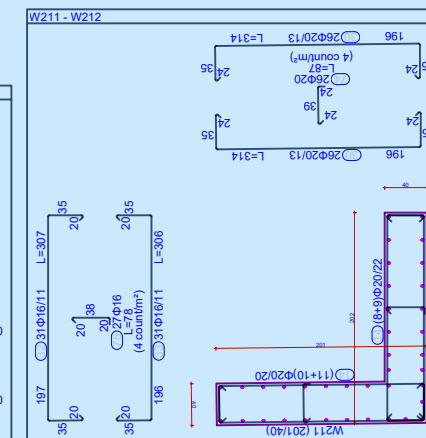
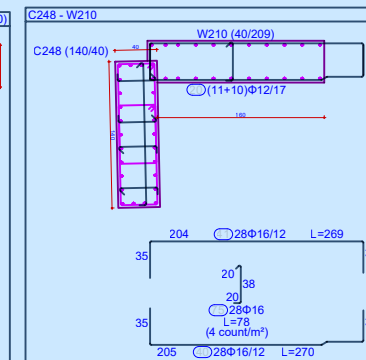
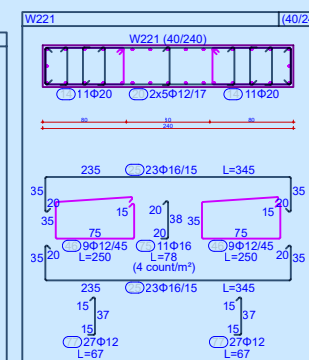
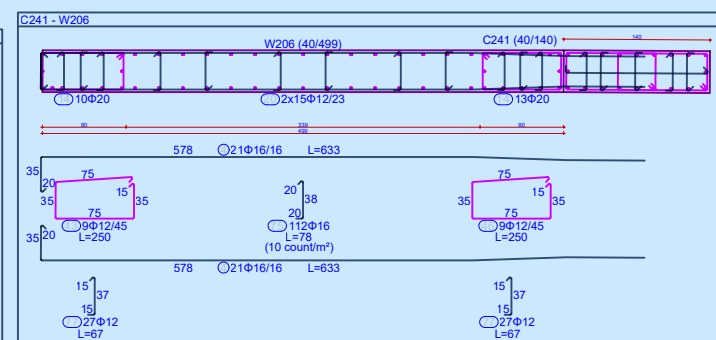
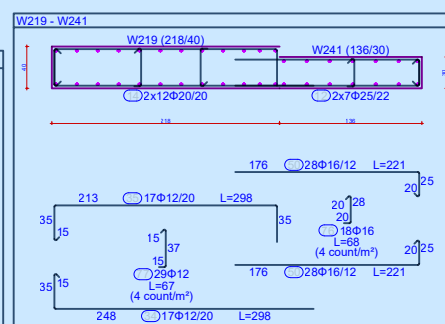
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no.	date	initials	revision
job title			
(A)			
drawing title			
COLUMNS & WALL KEY PLAN			
designed ENG : DR-Majid Albana		project manager	
checked	scale 1-100	date 9/2024	
drawn	job no. 14	sheet no.	
approved			S7/D/08

all dim. from ARCH D.W.G.

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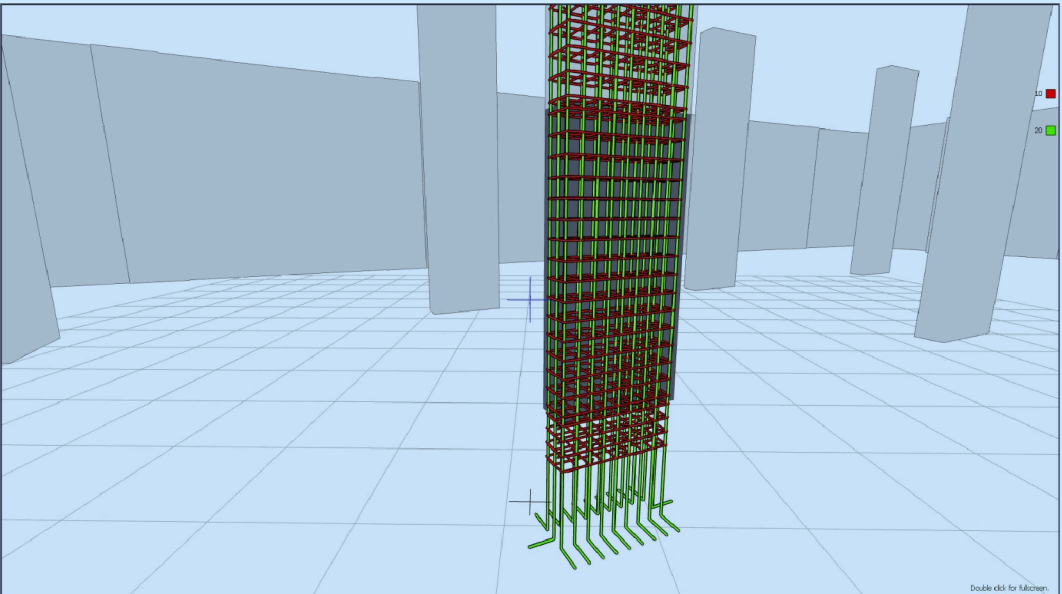
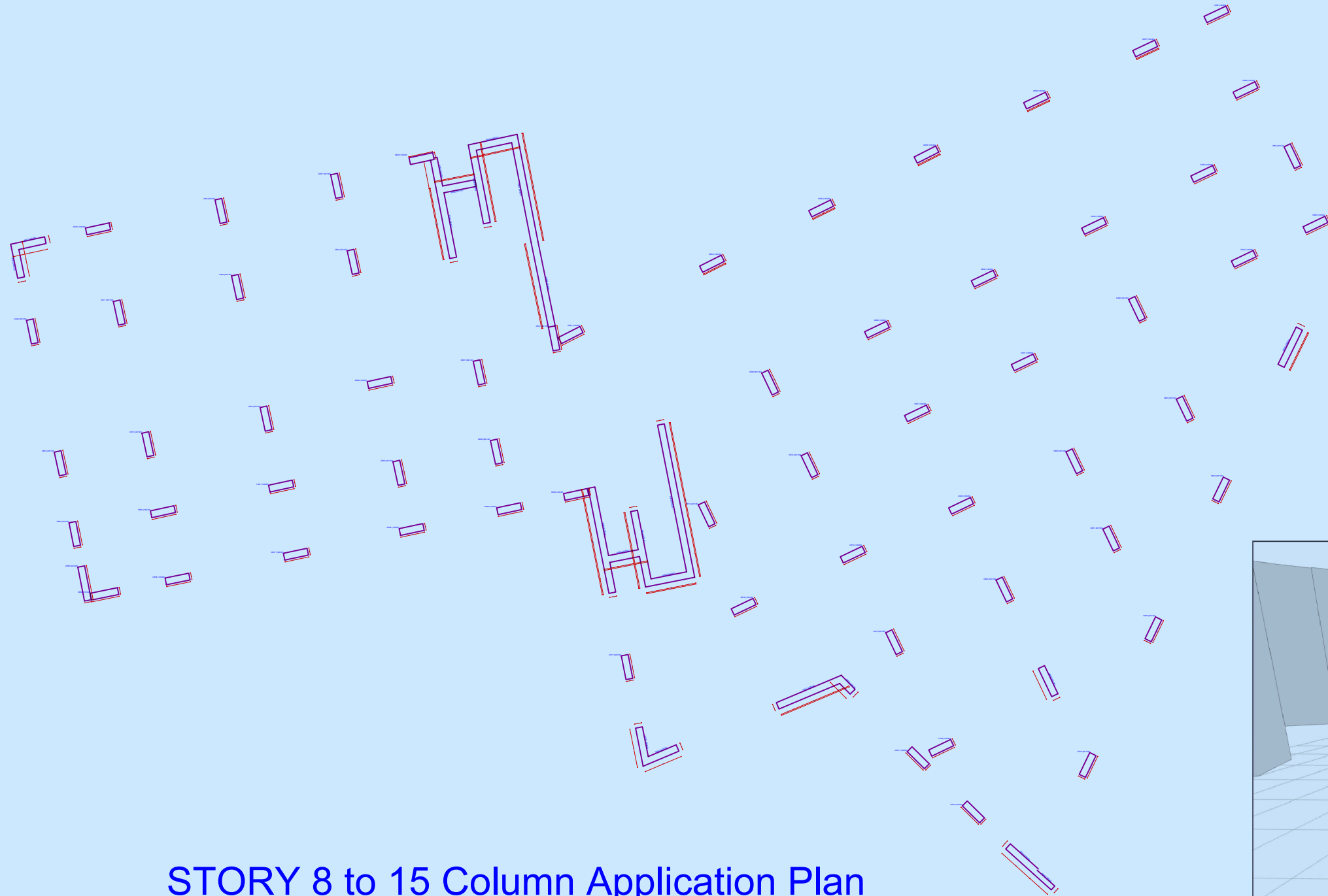
- SLABS = 25 mm
- BEAMS = 40 mm
- COLUMNS = 40 mm
- WALLS = 25 mm
- SLAB ON GRADE = 50 mm
- RAFT FOUNDATION = 75 mm

[illegible]

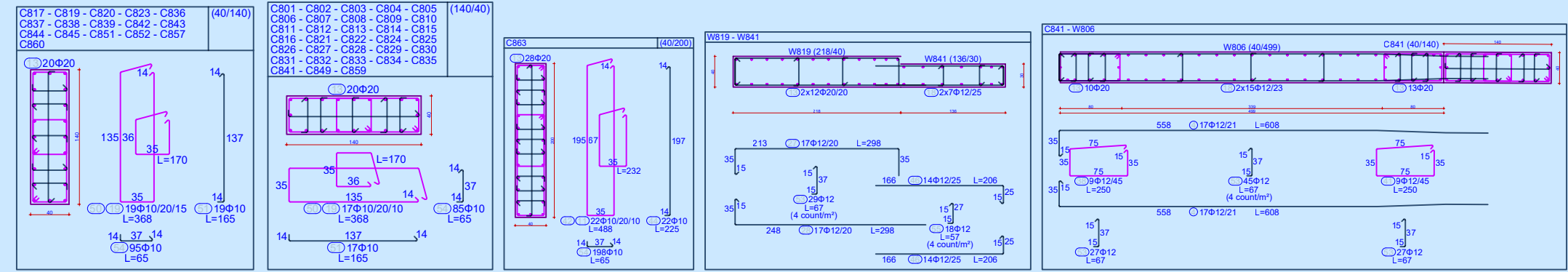
COLUMNS & WALL KEY PLAN

designed ENG : DR-Majid Albana		project manager	
checked	scale 1-100	date 9 /2024	
drawn	job no.	sheet no.	
approved	16		ST/D/O

all dim. from ARCH D.W.G.



STORY 8 to 15 Column Application Plan



Notes

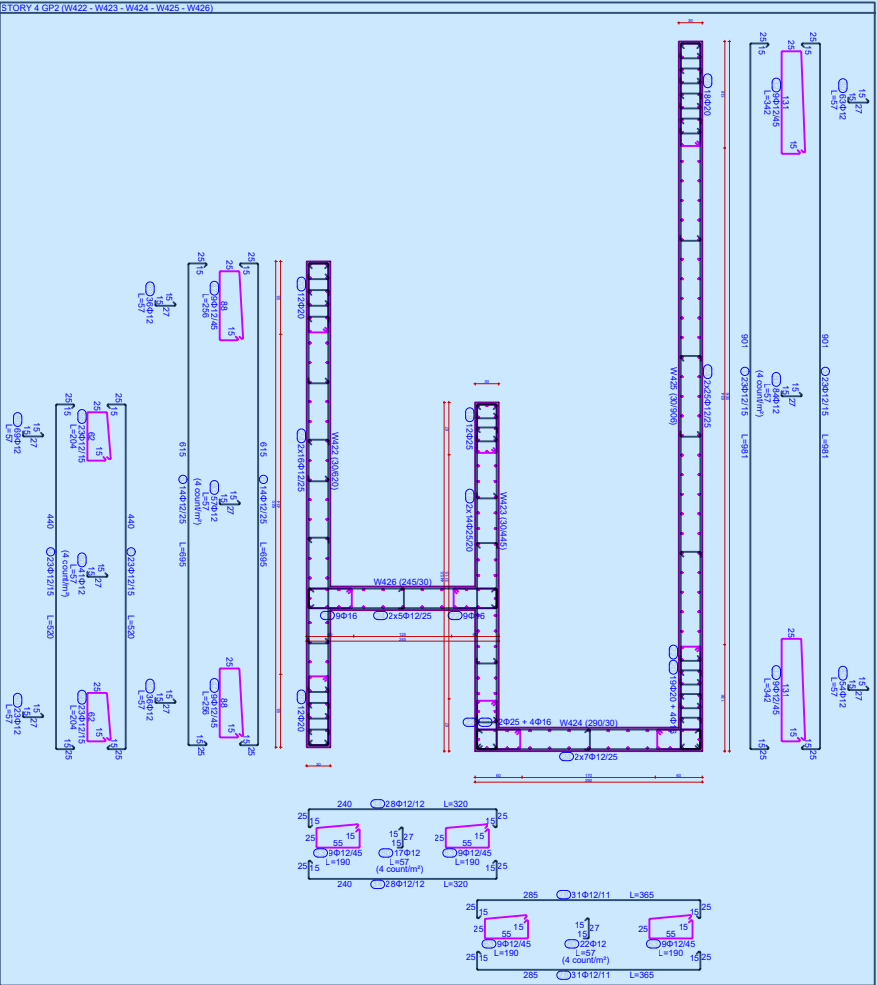
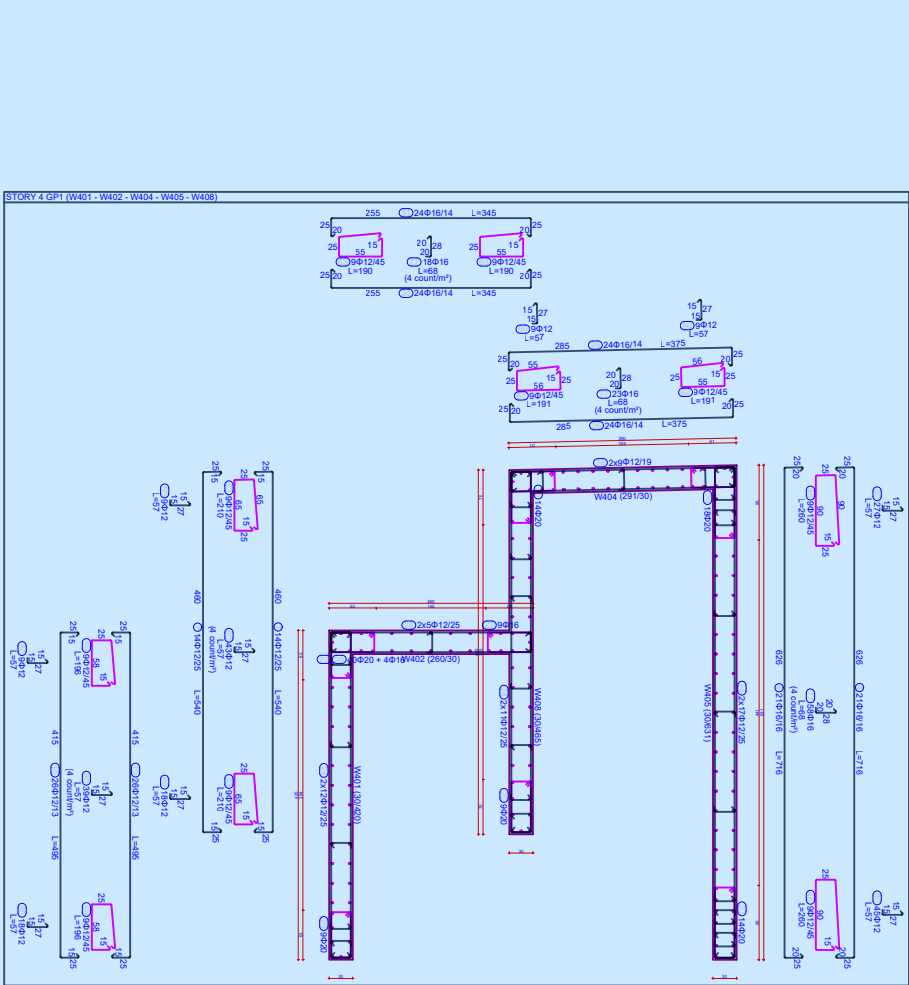
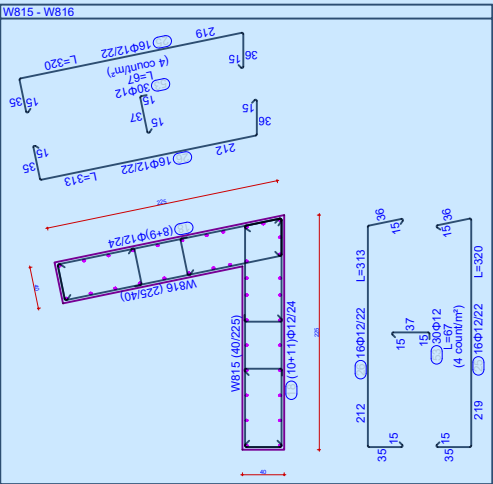
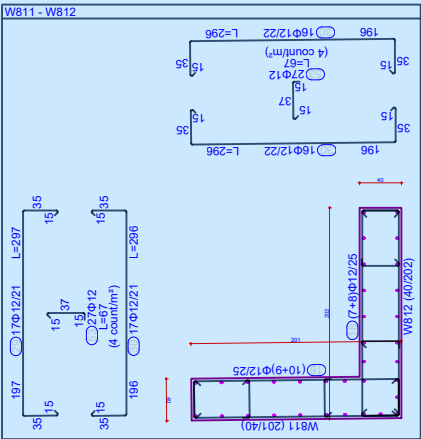
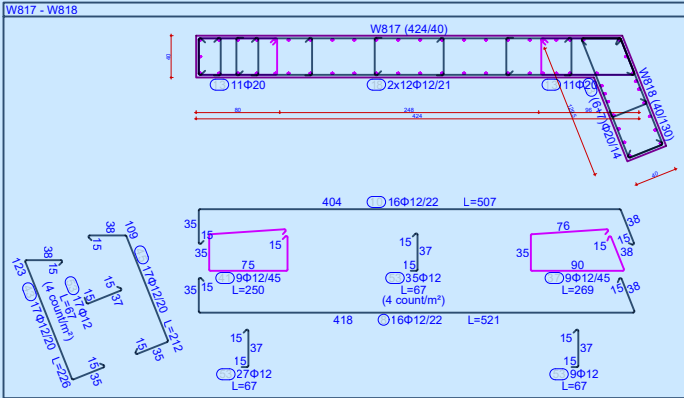
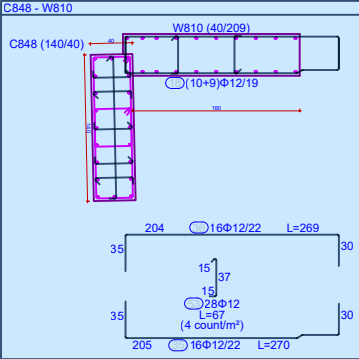
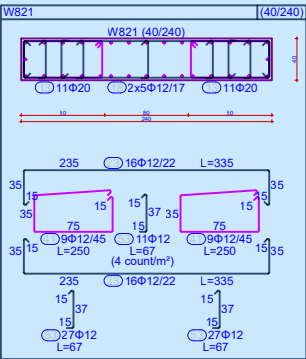
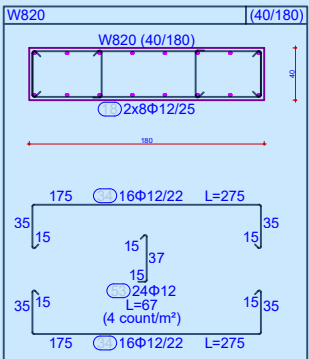
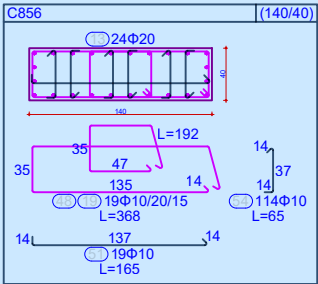
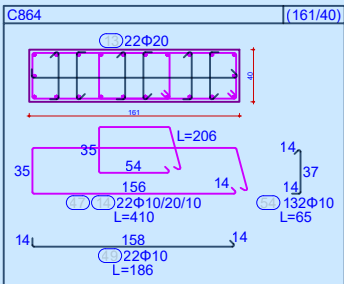
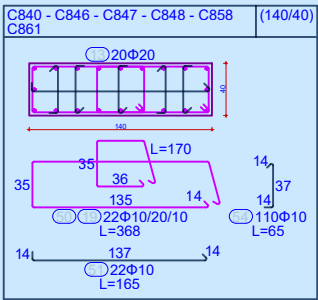
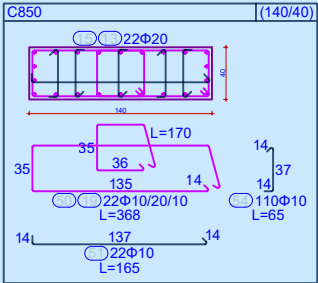
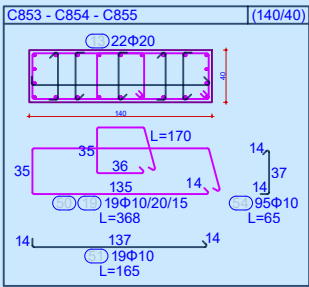
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CONCRETE COVERS

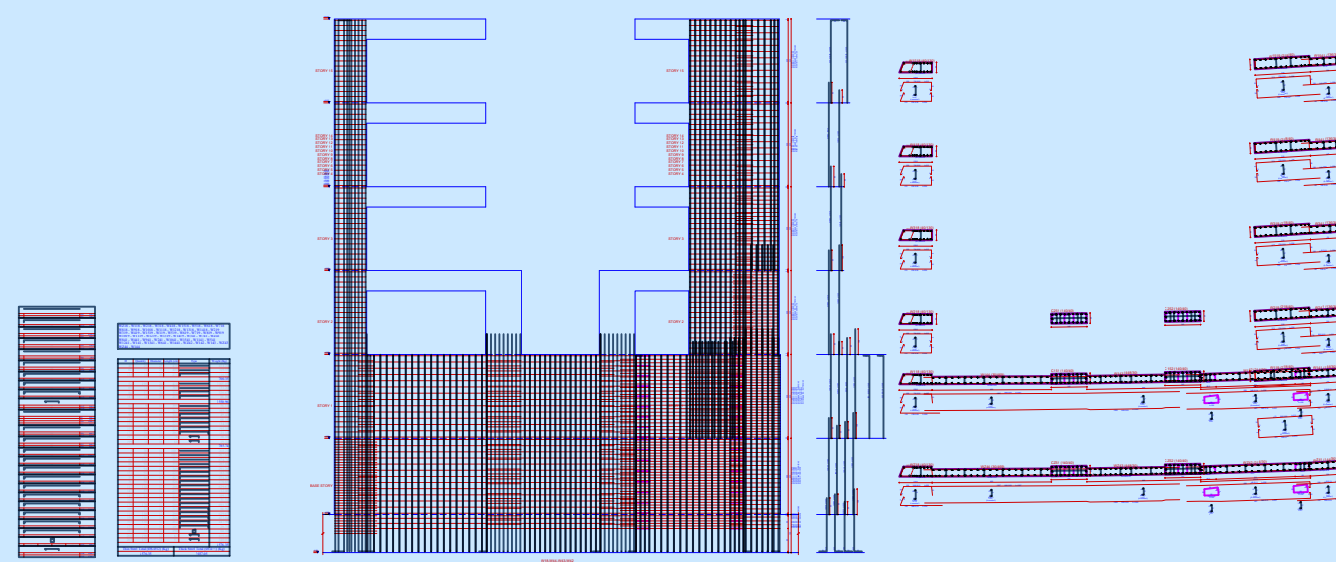
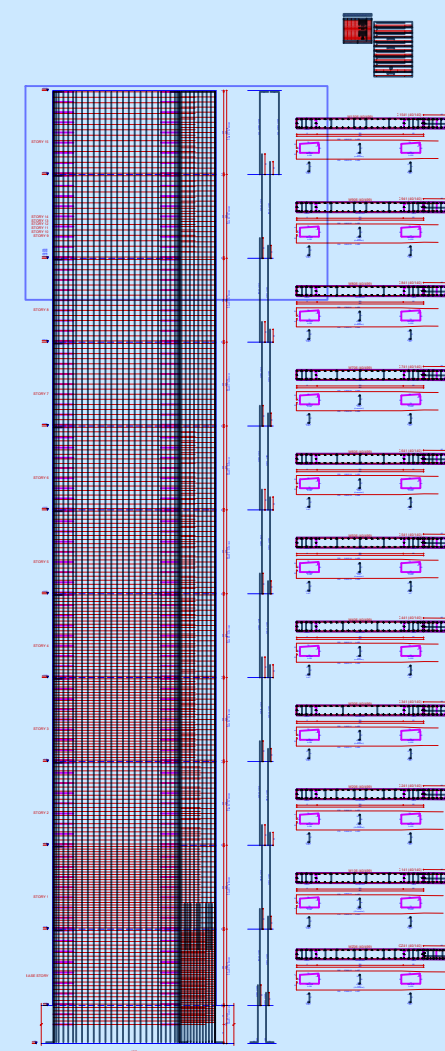
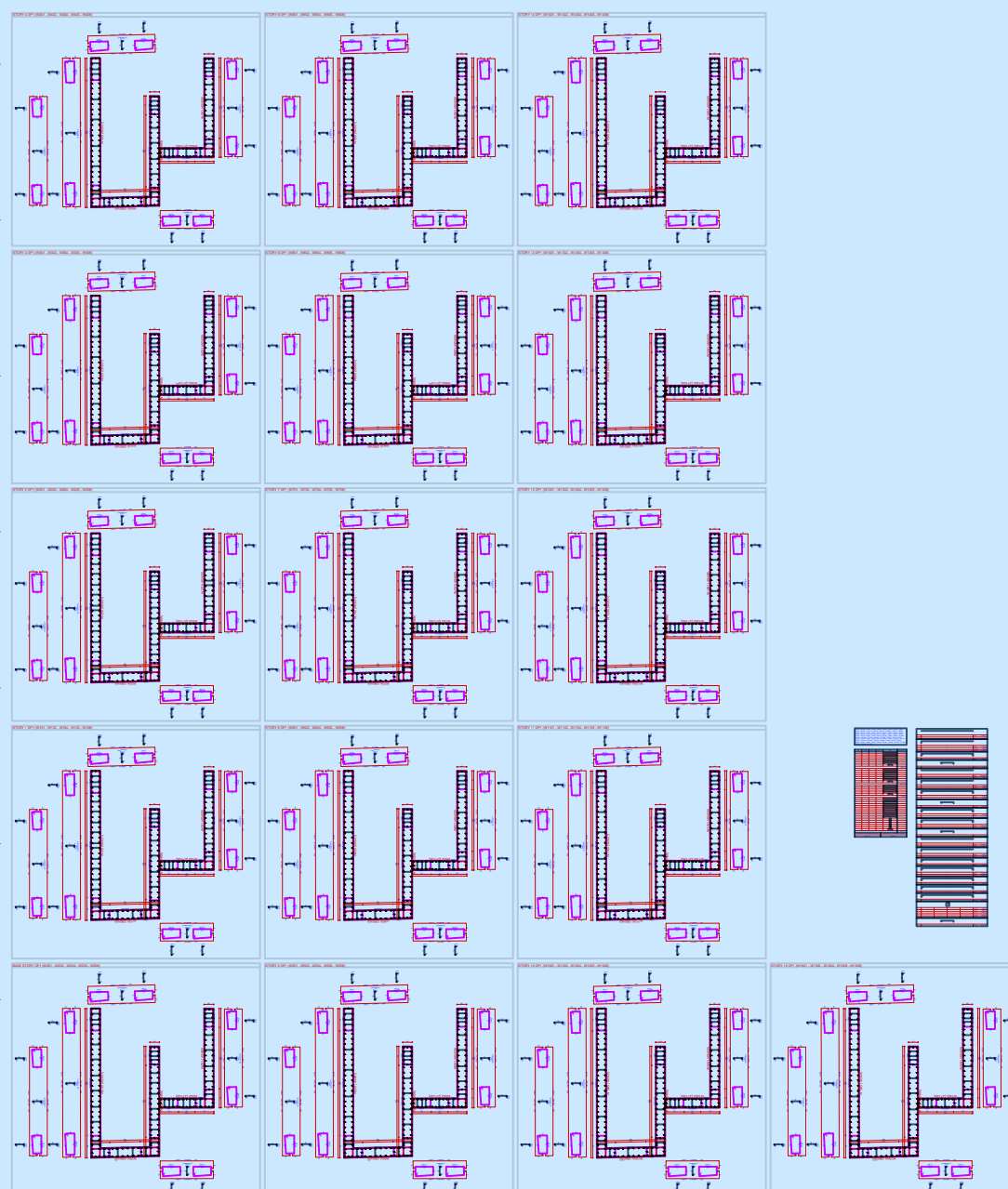
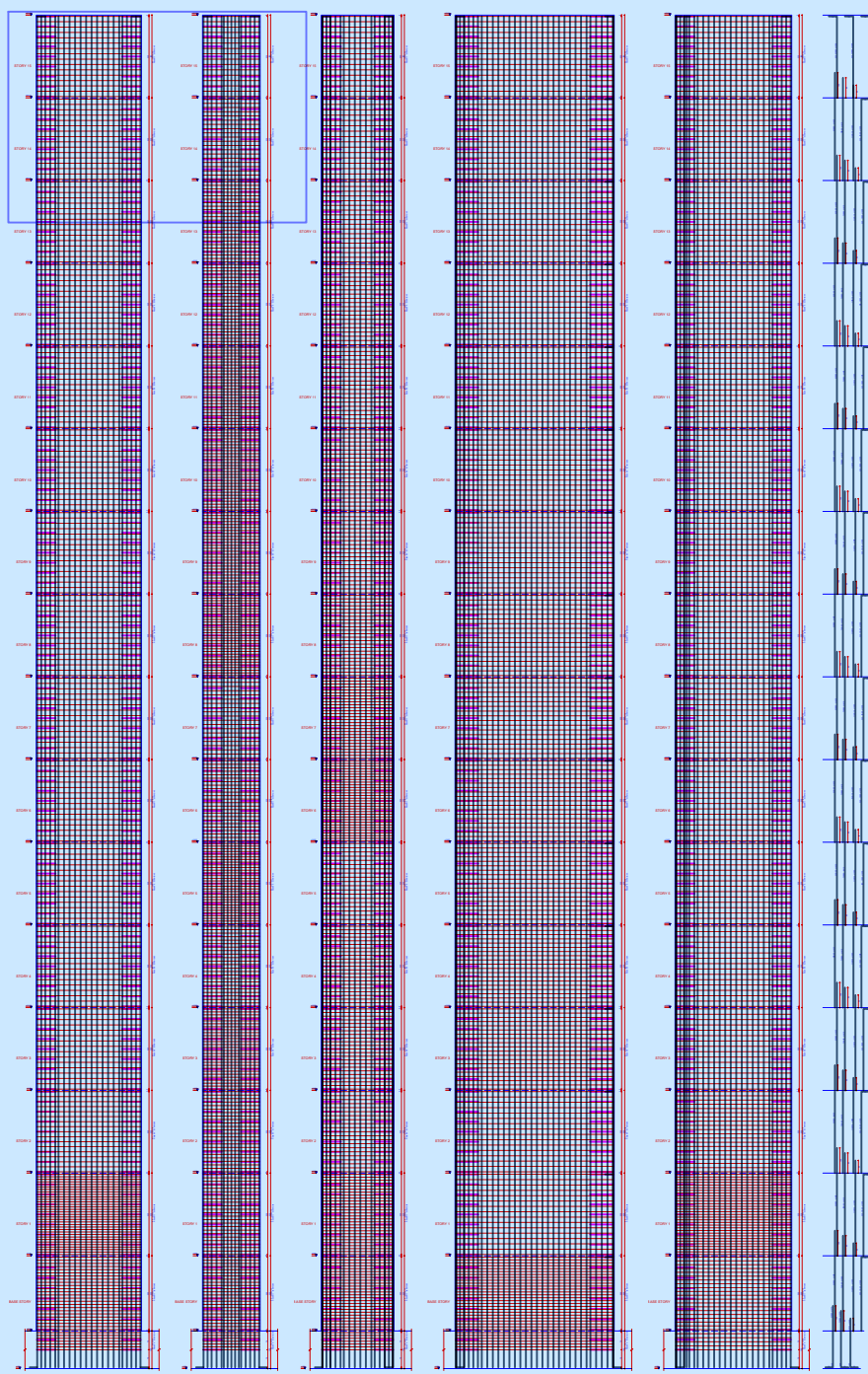
-SLABS = 25 mm
-BEAMS = 40 mm
-COLUMNS = 40 mm
-WALLS = 25 mm
-SLAB ON GRADE = 50 mm
-RAFT FOUNDATION = 75 mm

. all dim. from ARCH D.W.G.

no.	date	initials	revision
job title			
(A)			
drawing title			
COLUMNS & WALL KEY PLAN			
designed	ENG : DR-Majid Albana	project manager	
checked		scale	1-100
drawn		date	9 /2024
approved		job no.	17
		sheet no.	ST/D/08

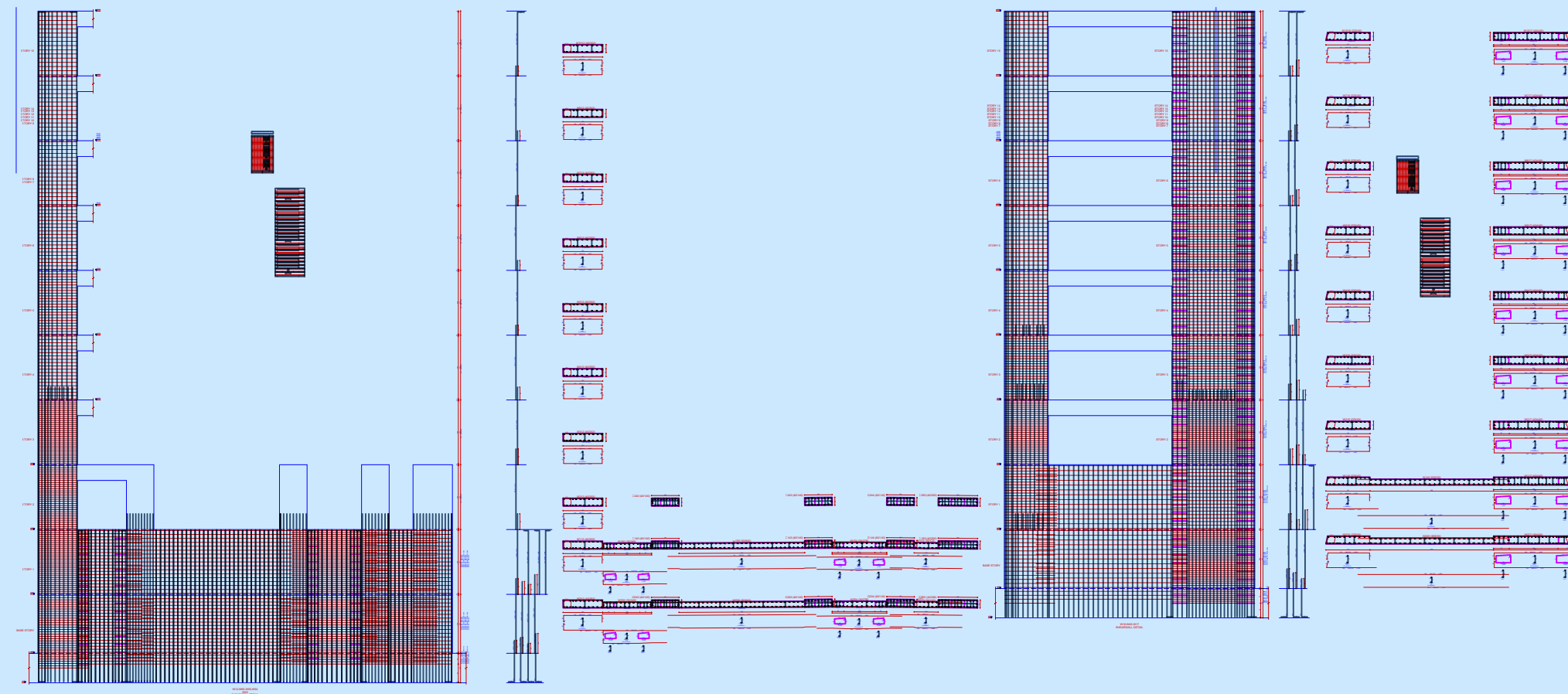
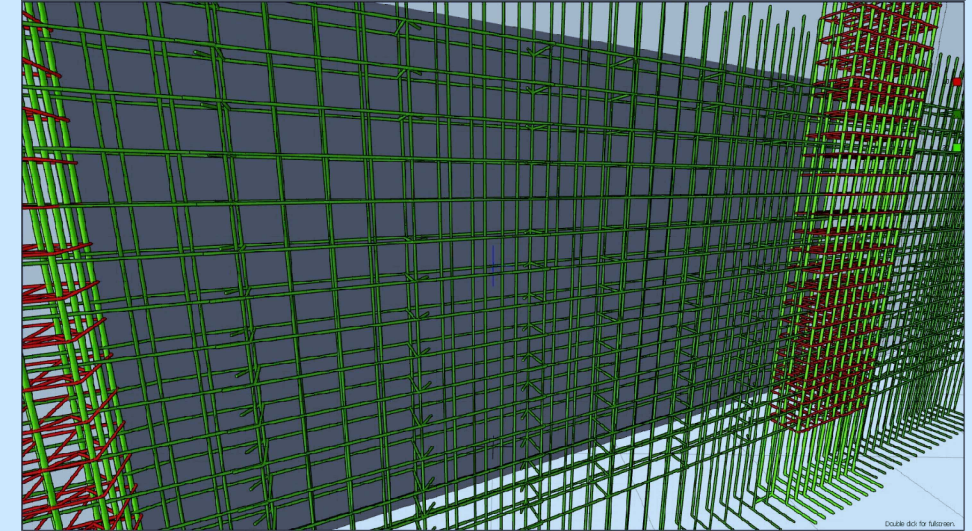


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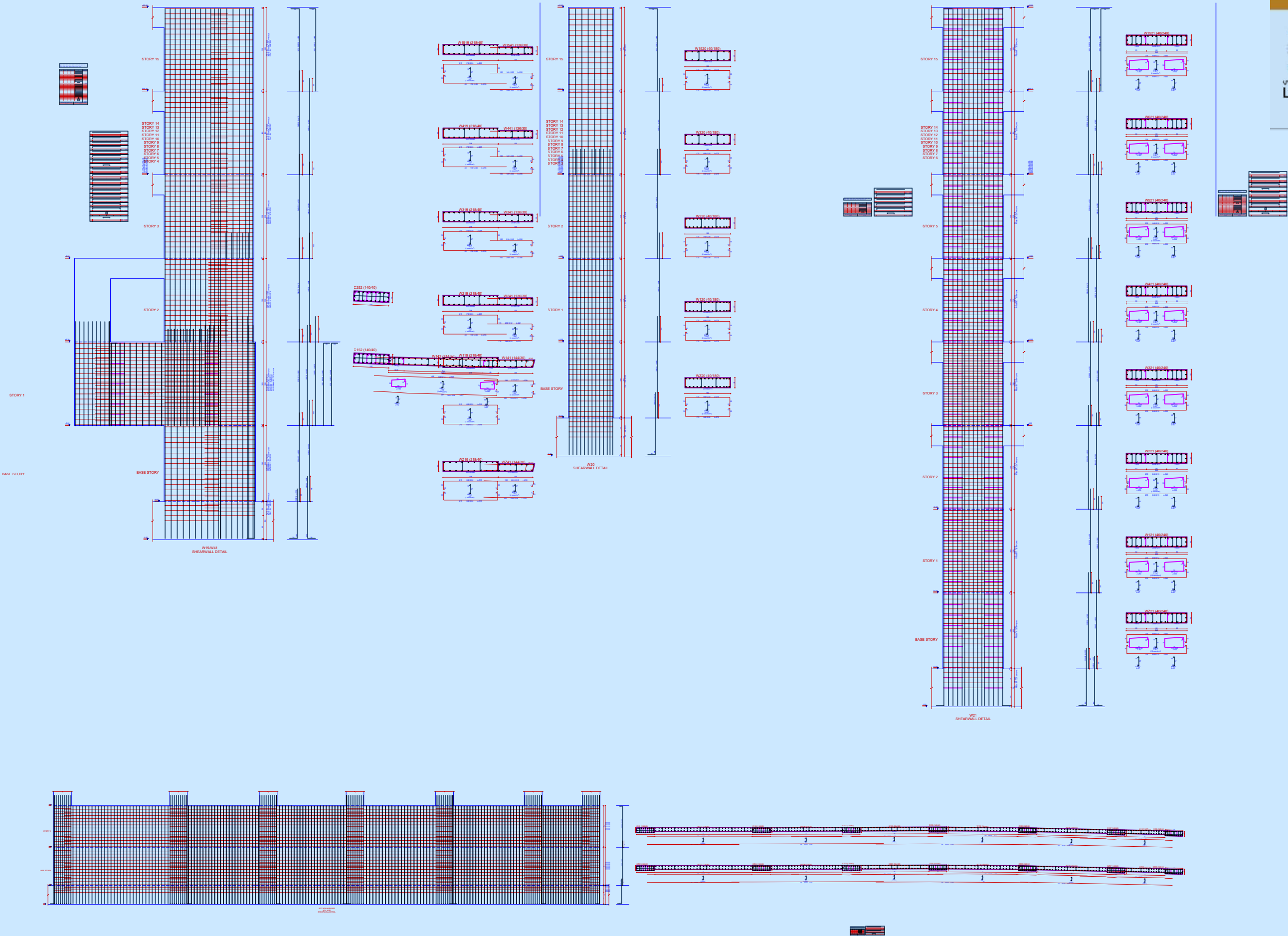
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vertical wall

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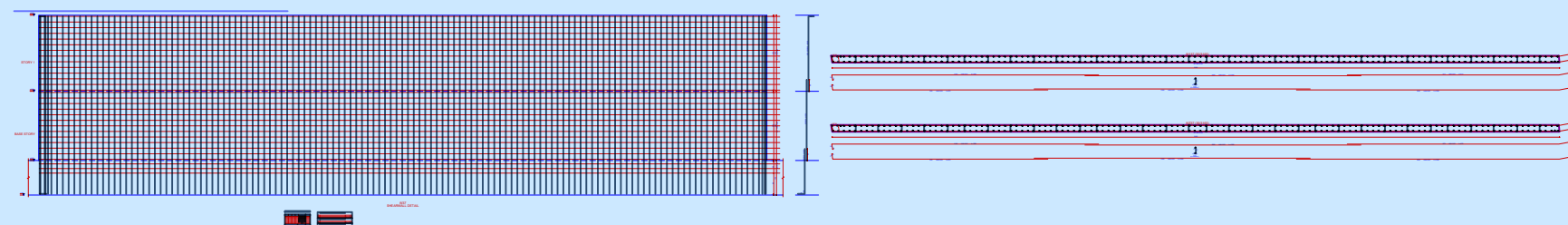
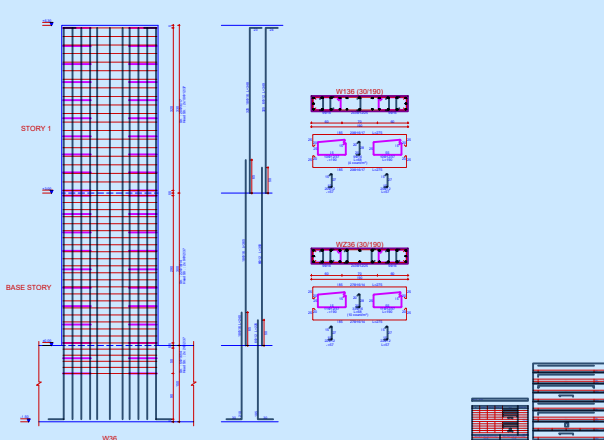
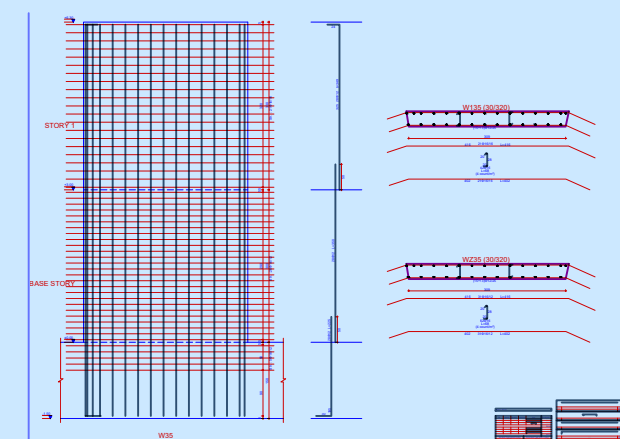
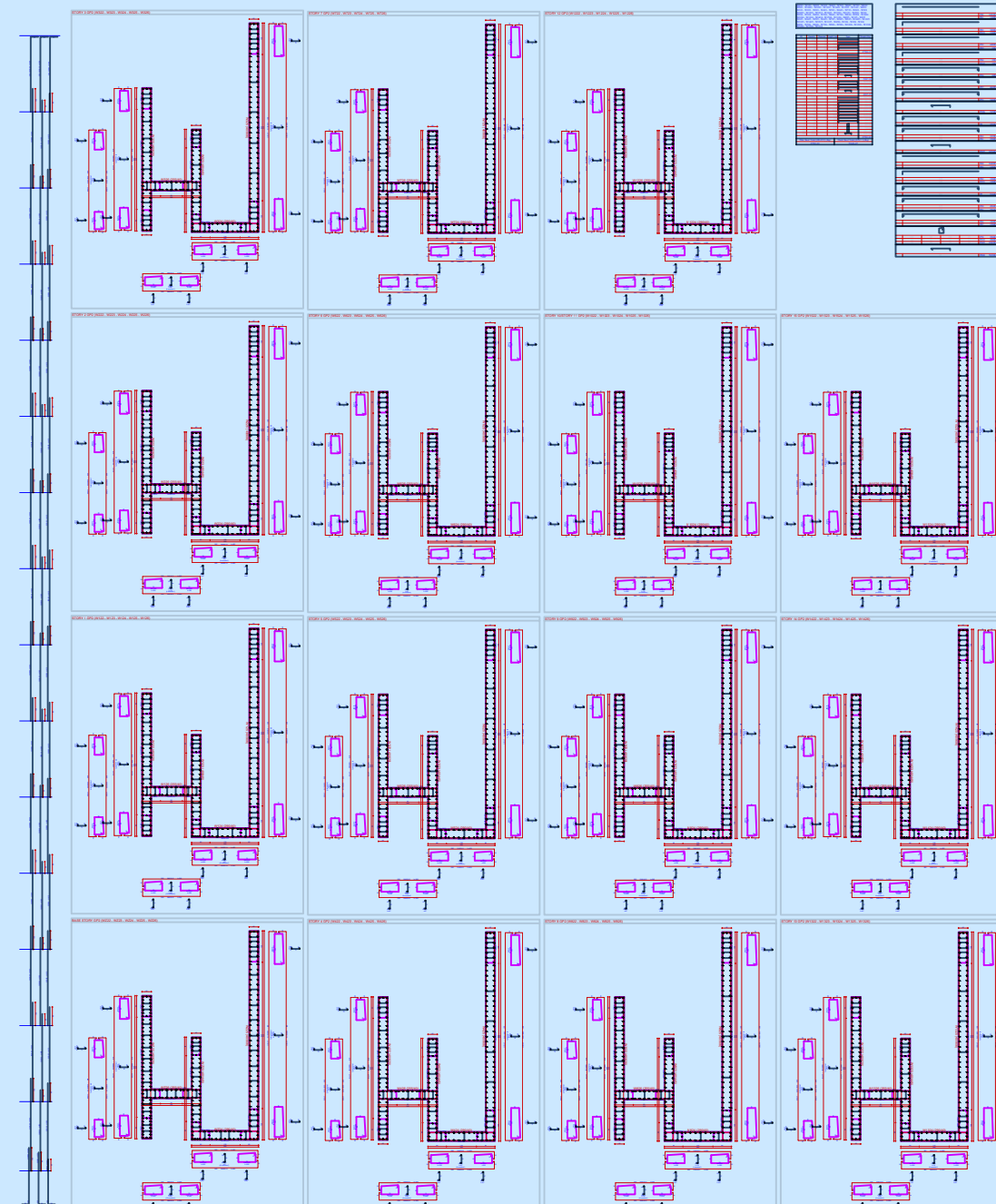




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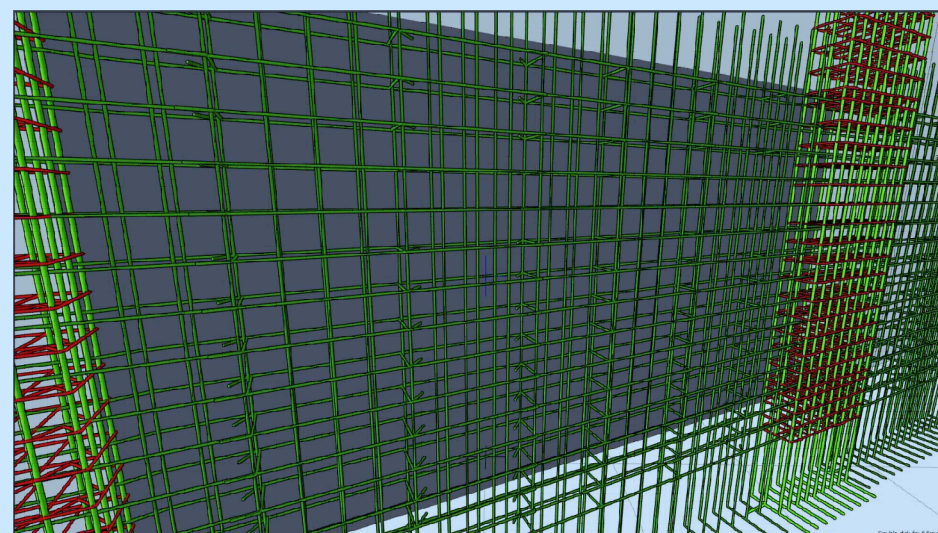
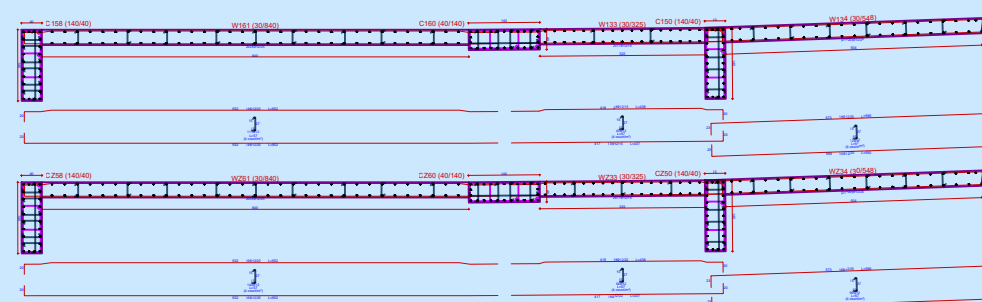
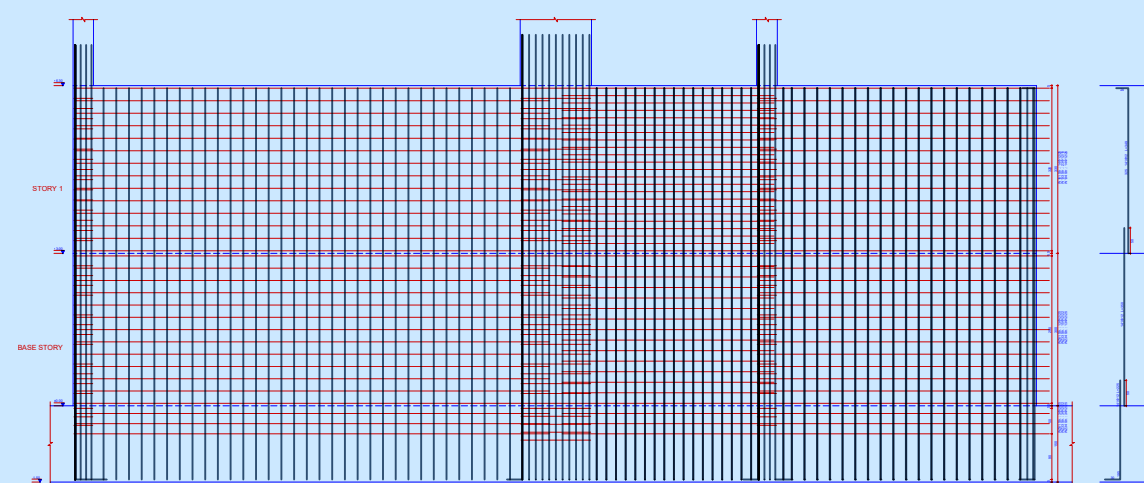
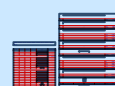
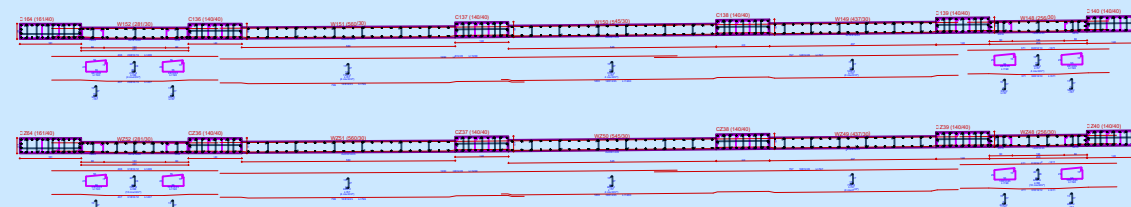
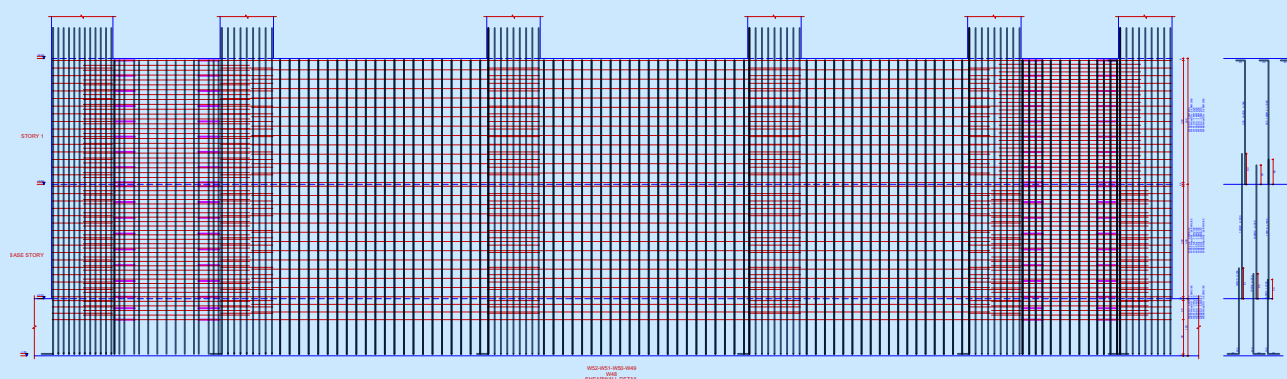
+964 770 272 4811
+964 782 595 3403
www.majidalbana.com
majidalbana@hotmail.com

no.			date	initials	revision
job title			(A)		
drawing title			SCHEDULE OF COLUMN		
designed		project manager			
checked		scale		date	
drawn		job no.		sheet no.	
approved		21		9 / 2024	



vertical wall

no.	date	initials	revision	
job title				
(A)				
drawing title				
SCHEDULE OF COLUMNS				
designed ENG - DR-Majid Albana			project manager	
checked			scale 1-100	date 9 / 2024
drawn			job no. 22	sheet no.
approved				



vertical wall

[illegible]



Eng MAJ D A bana

المصمم الاستشاري

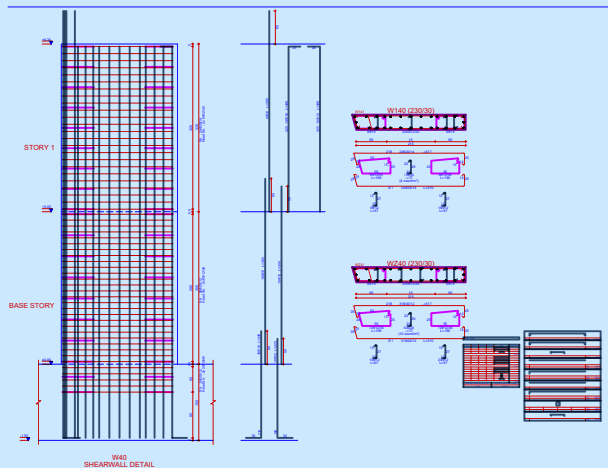
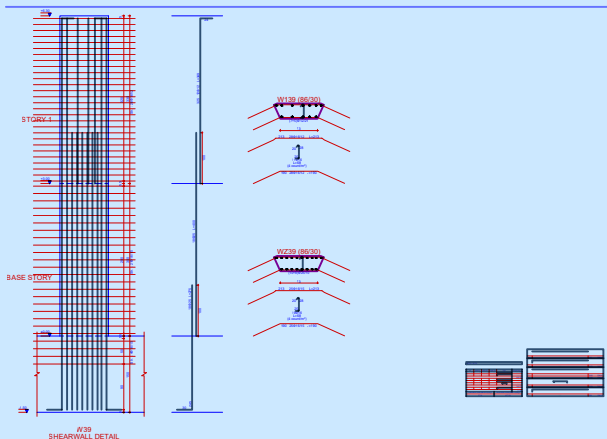
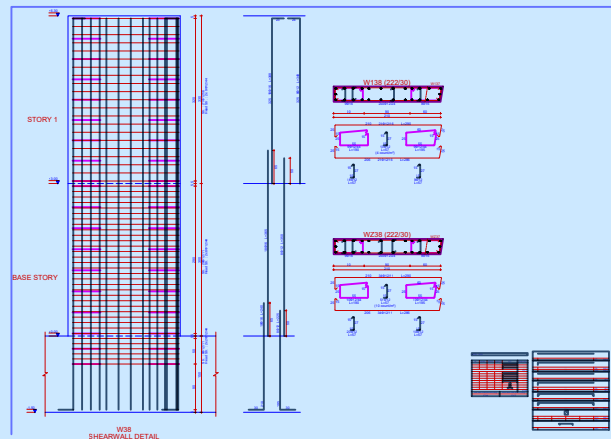
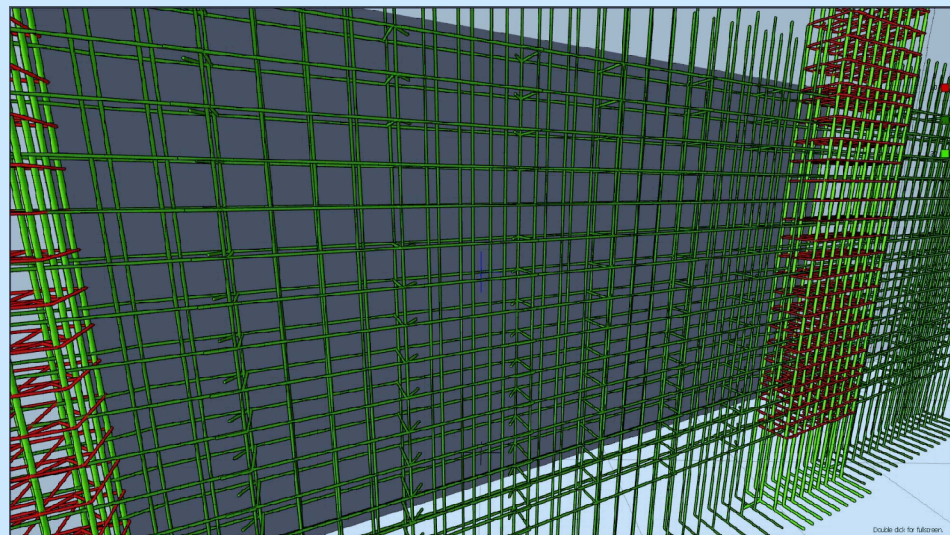
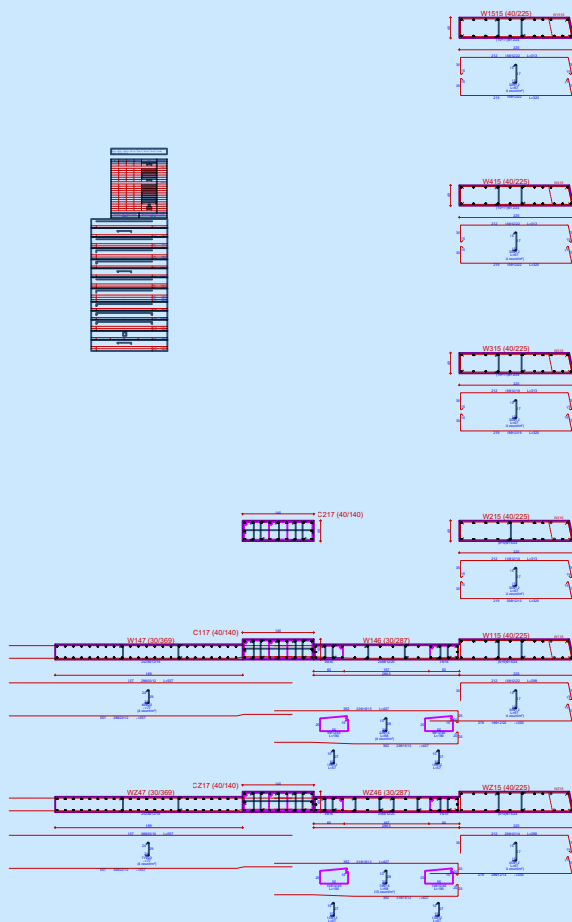
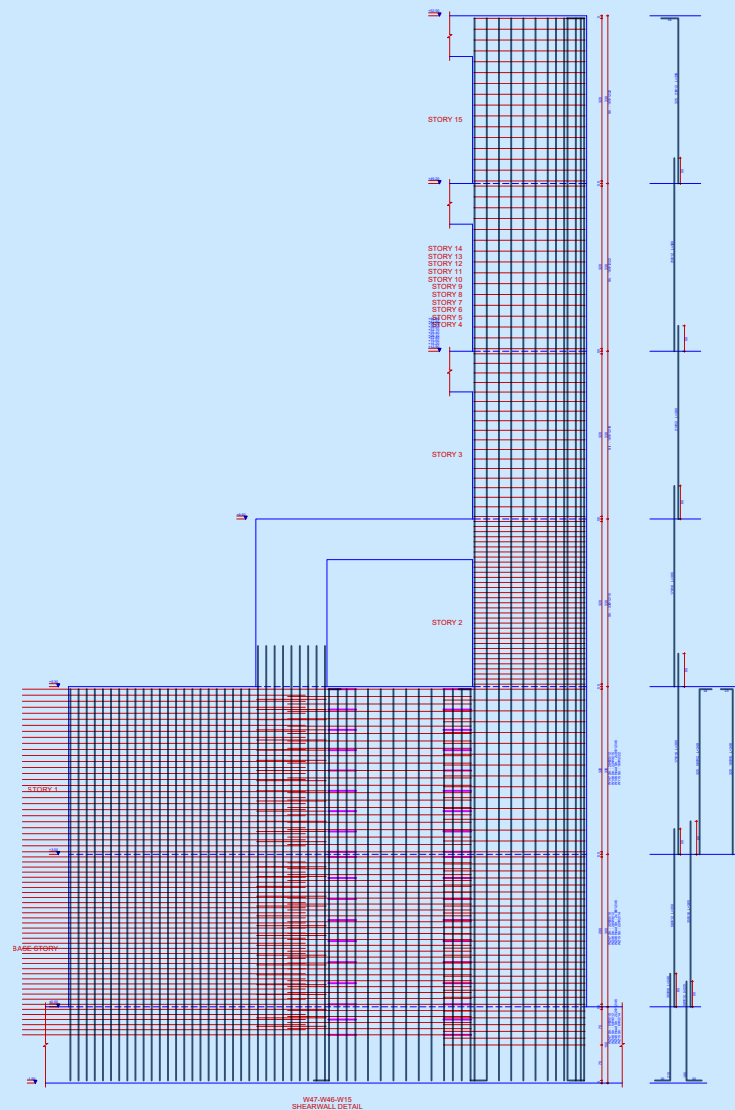
د. ماجد البنا

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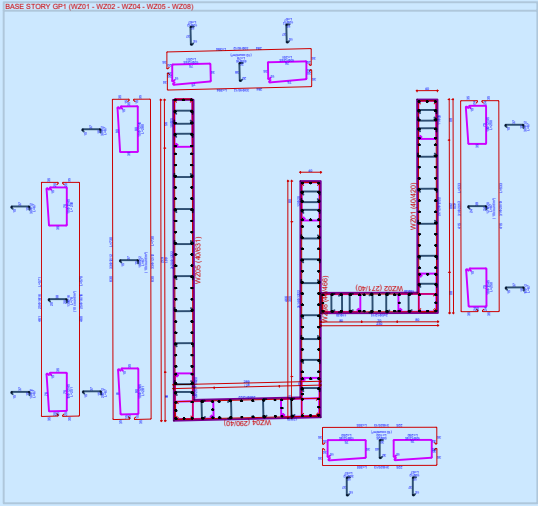
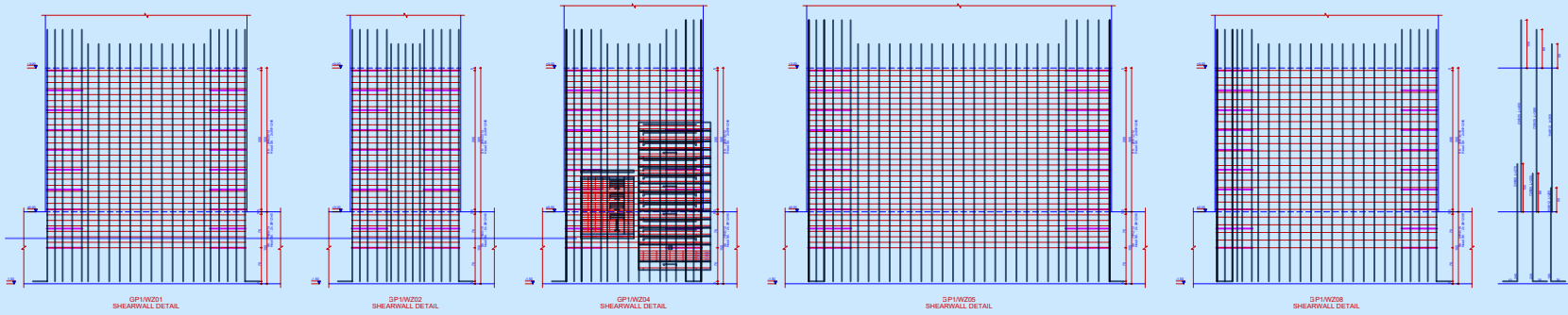
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vertical wall

no.	date	initials	revision
job title			
(A)			
drawing title			
SCHEDULE OF COLUMN			
designed	ENG - DR-Majid Albana		project manager
checked	scale	1-100	date
drawn	job no.	24	sheet no.
approved			



M

Eng MAJ D A bana

المصمم الاستشاري

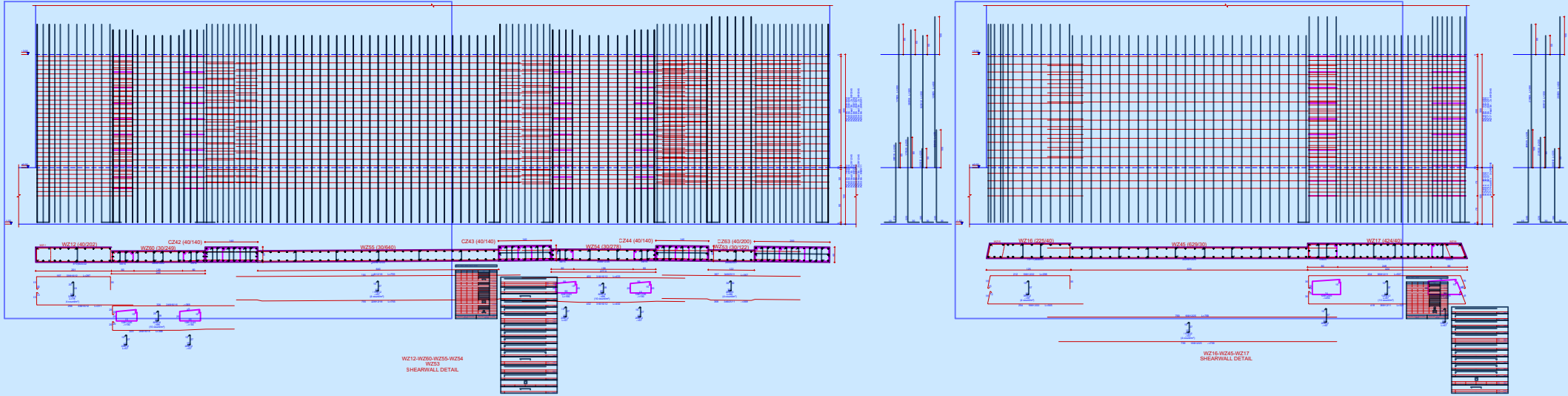
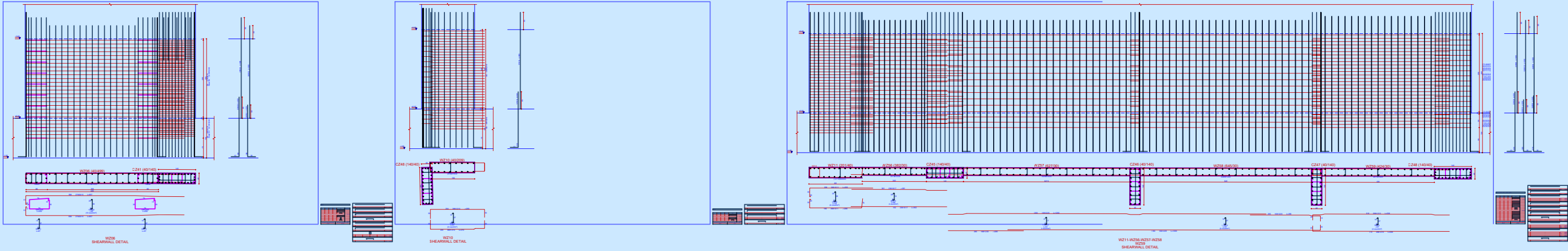
د. ماجد البنا

+964 770 272 4811

+964 782 595 3403

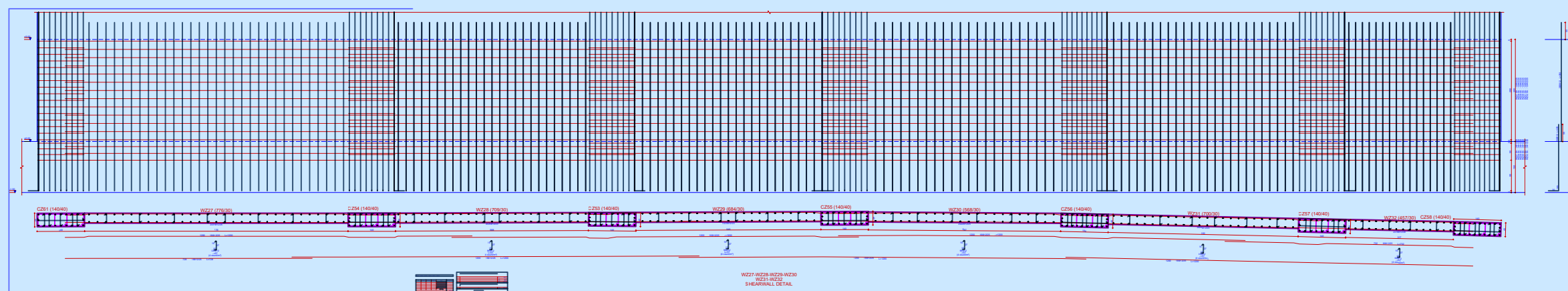
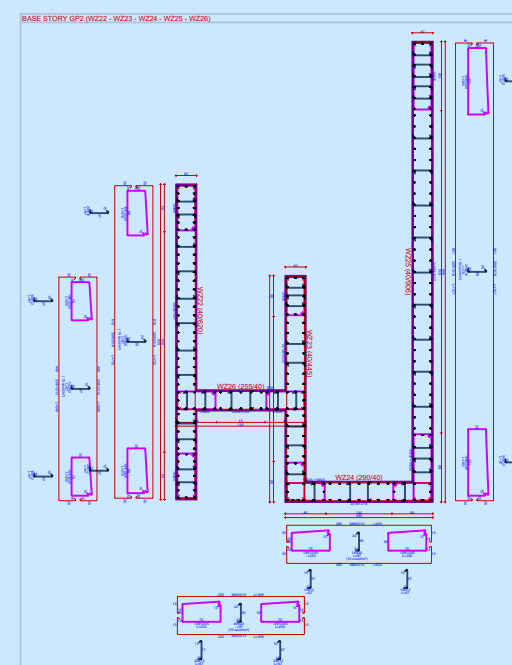
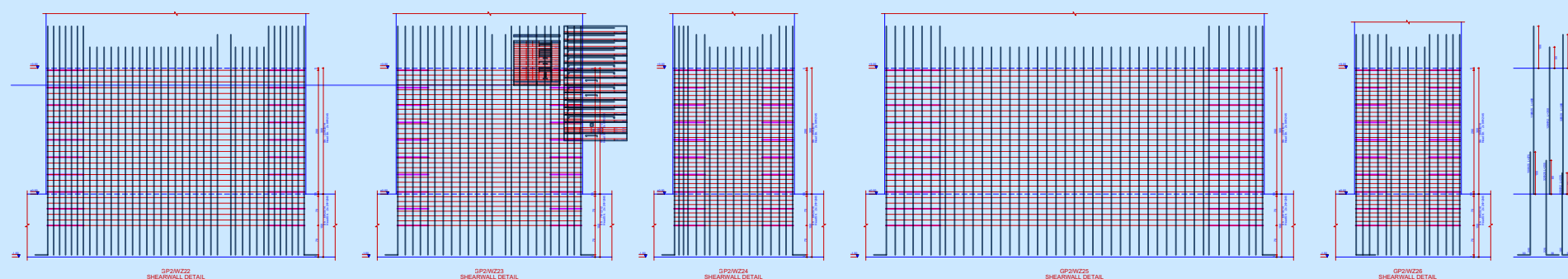
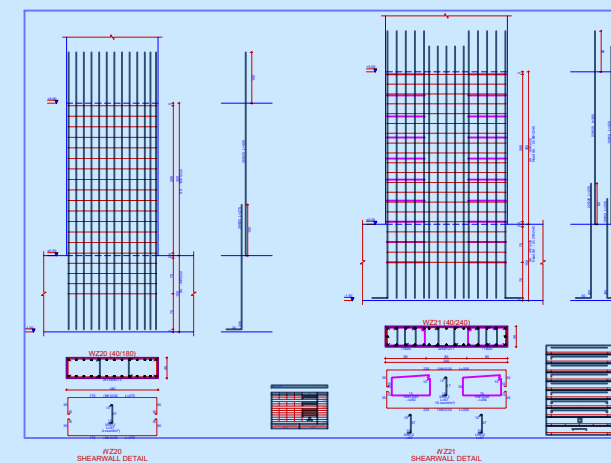
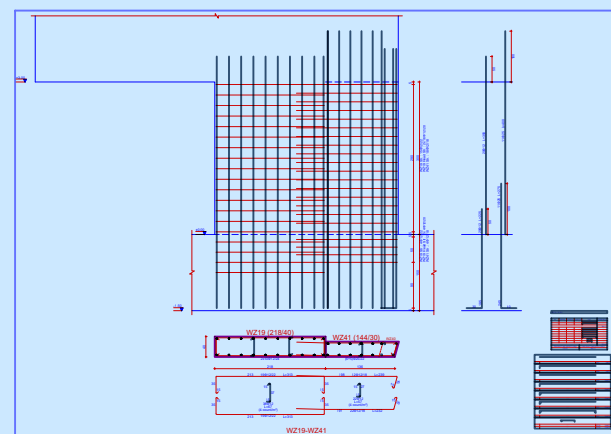
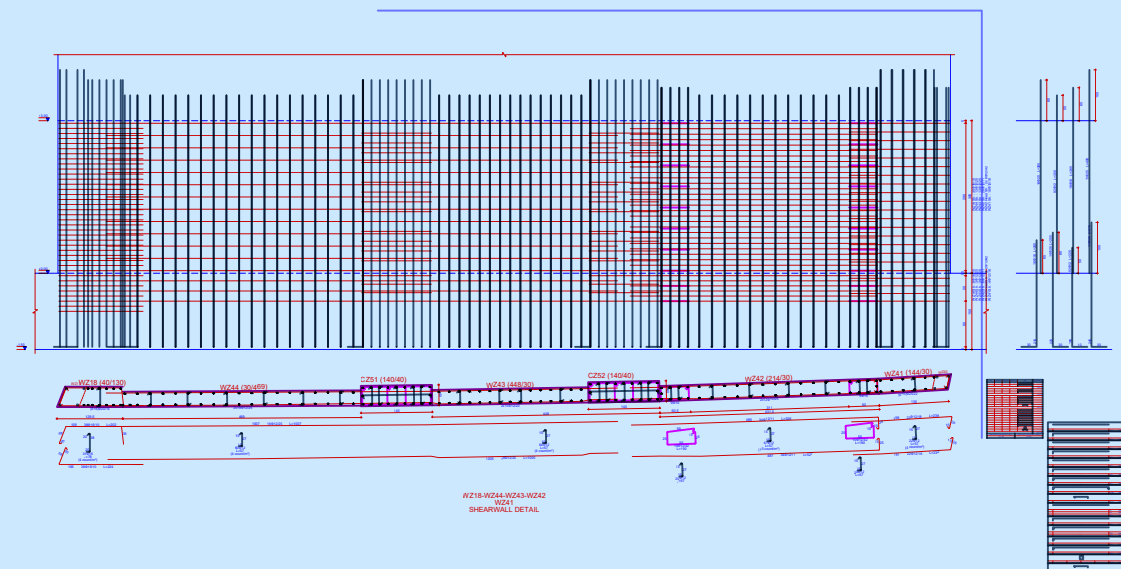
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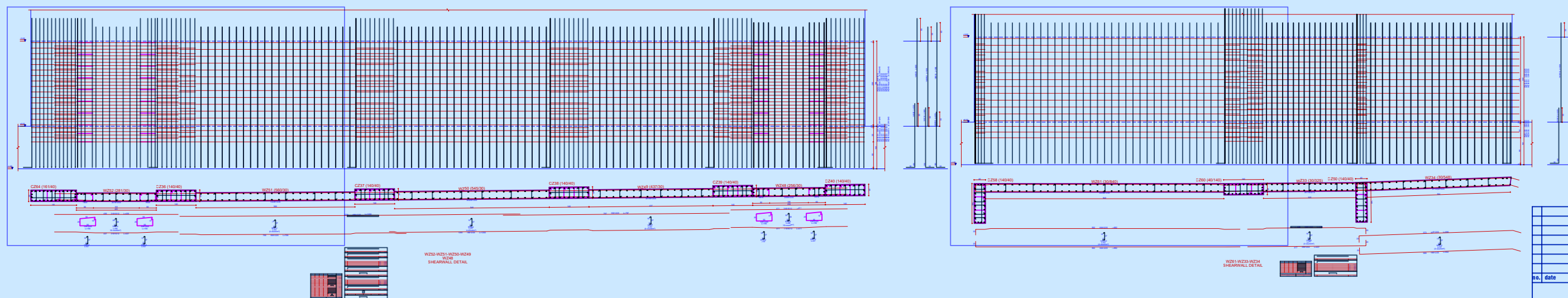
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no.	date	initials	revision
job title			
(A)			
drawing title			
SCHEDULE OF COLUMN			
designed	ENG : DR-Majid Albana	project manager	
checked		scale	1-100
drawn		date	9 / 2024
approved		job no.	25
		sheet no.	



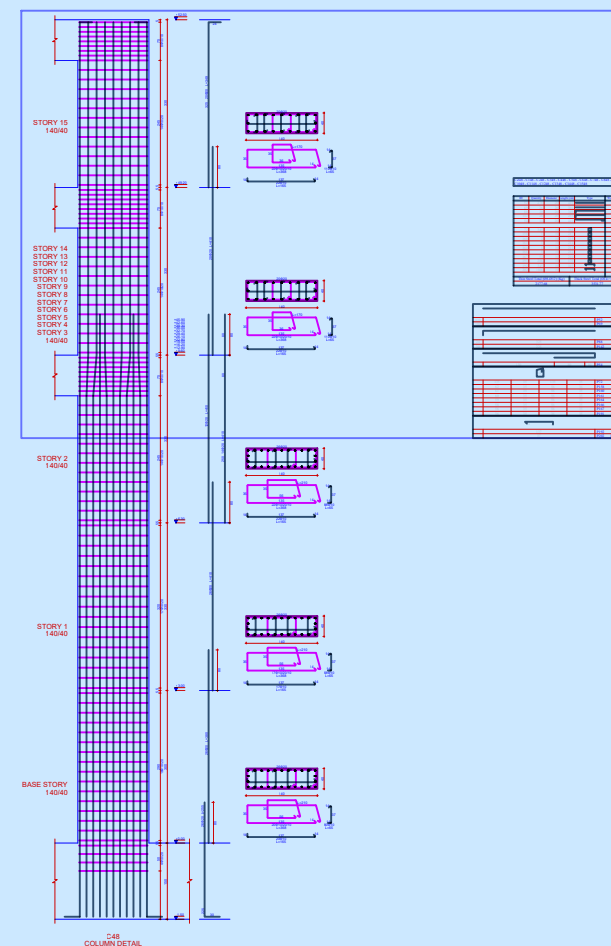
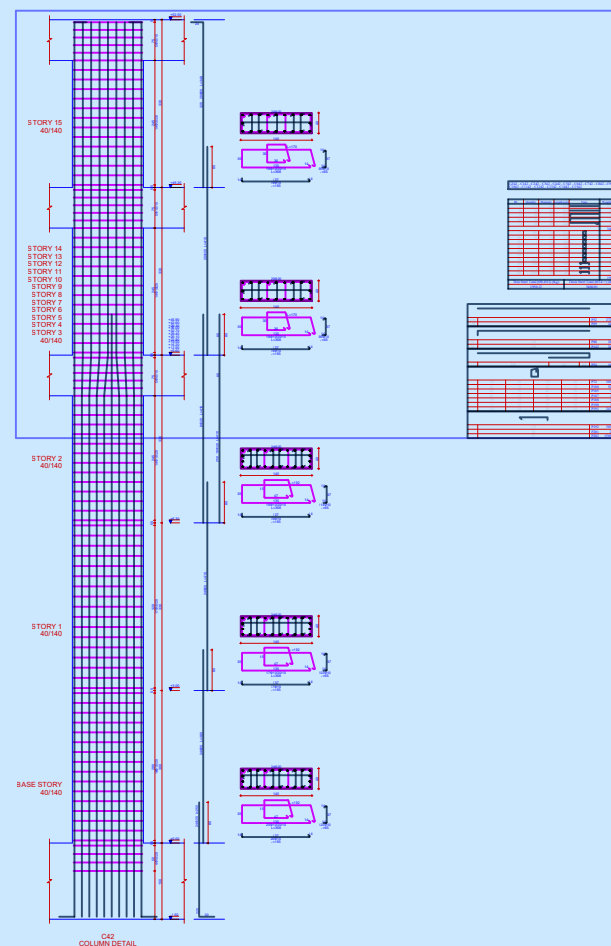
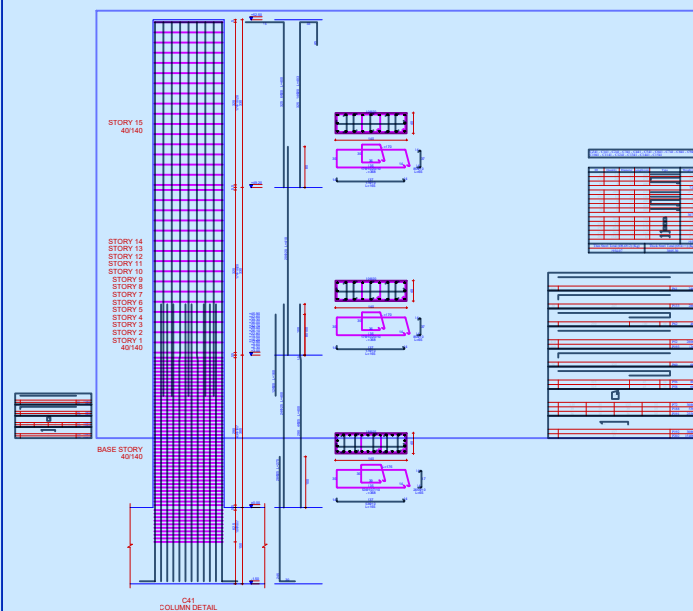
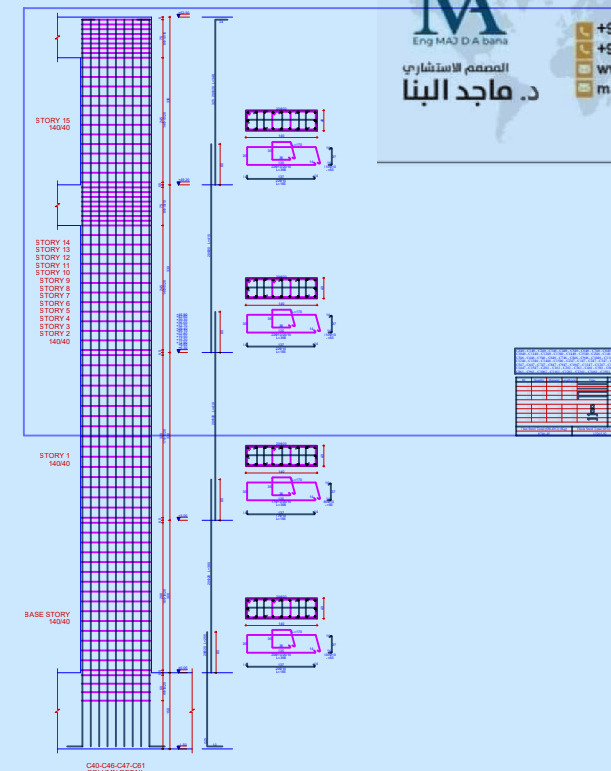
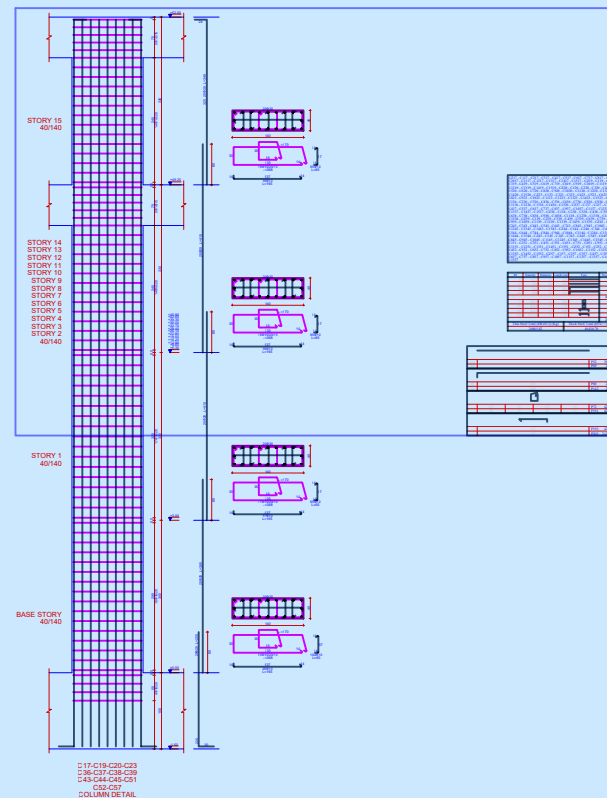
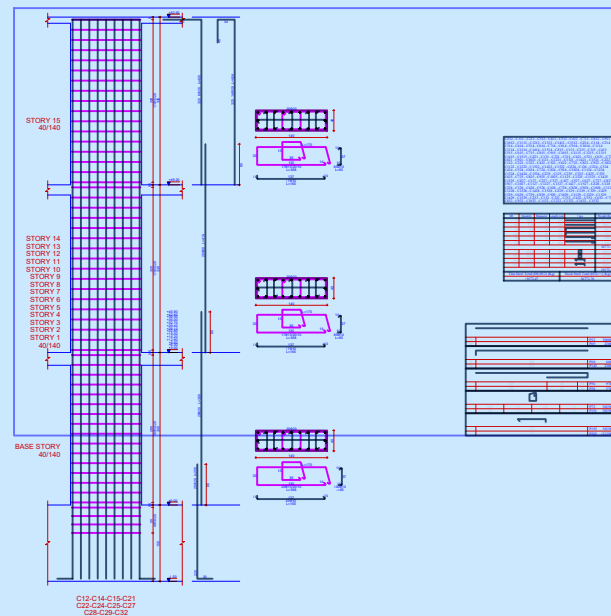
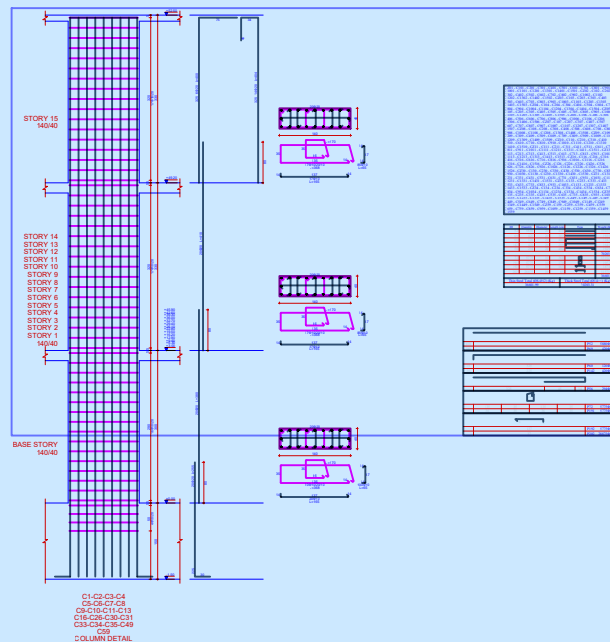
base vertical wall

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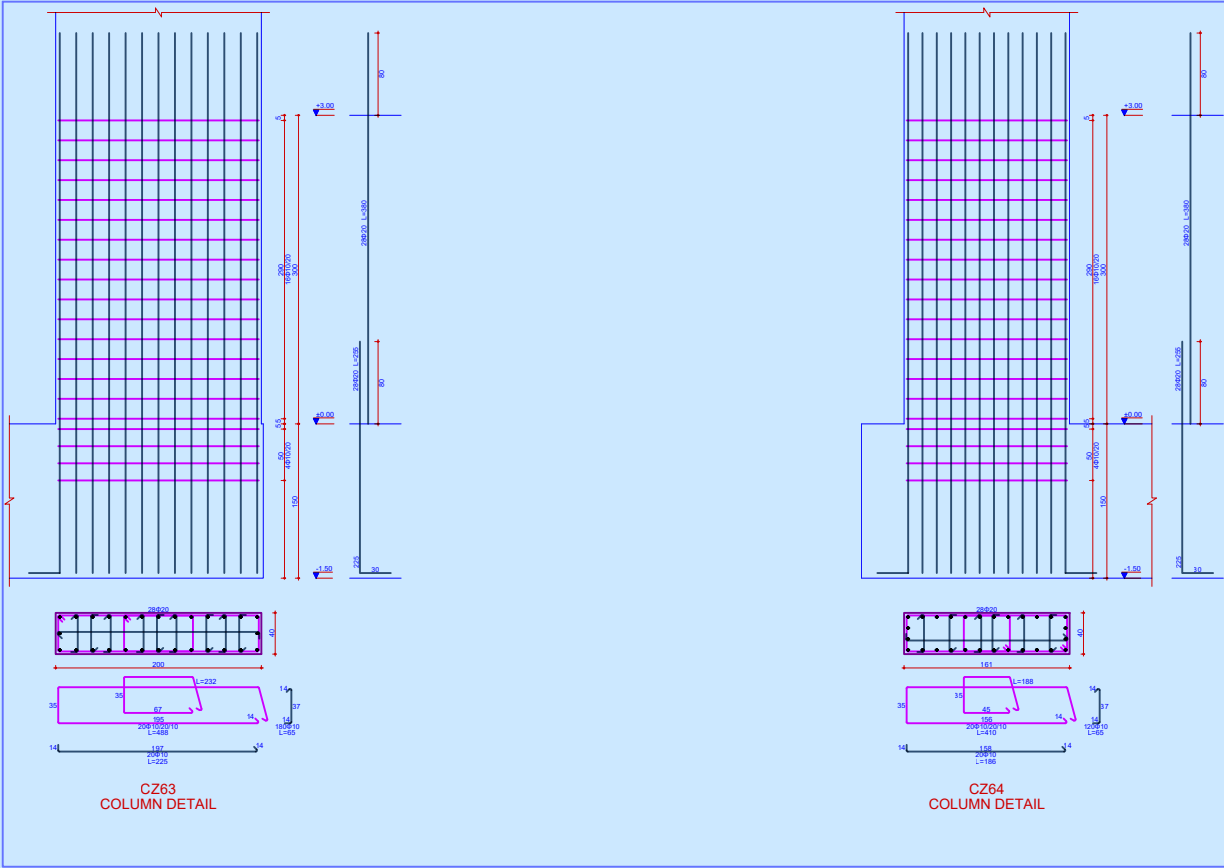
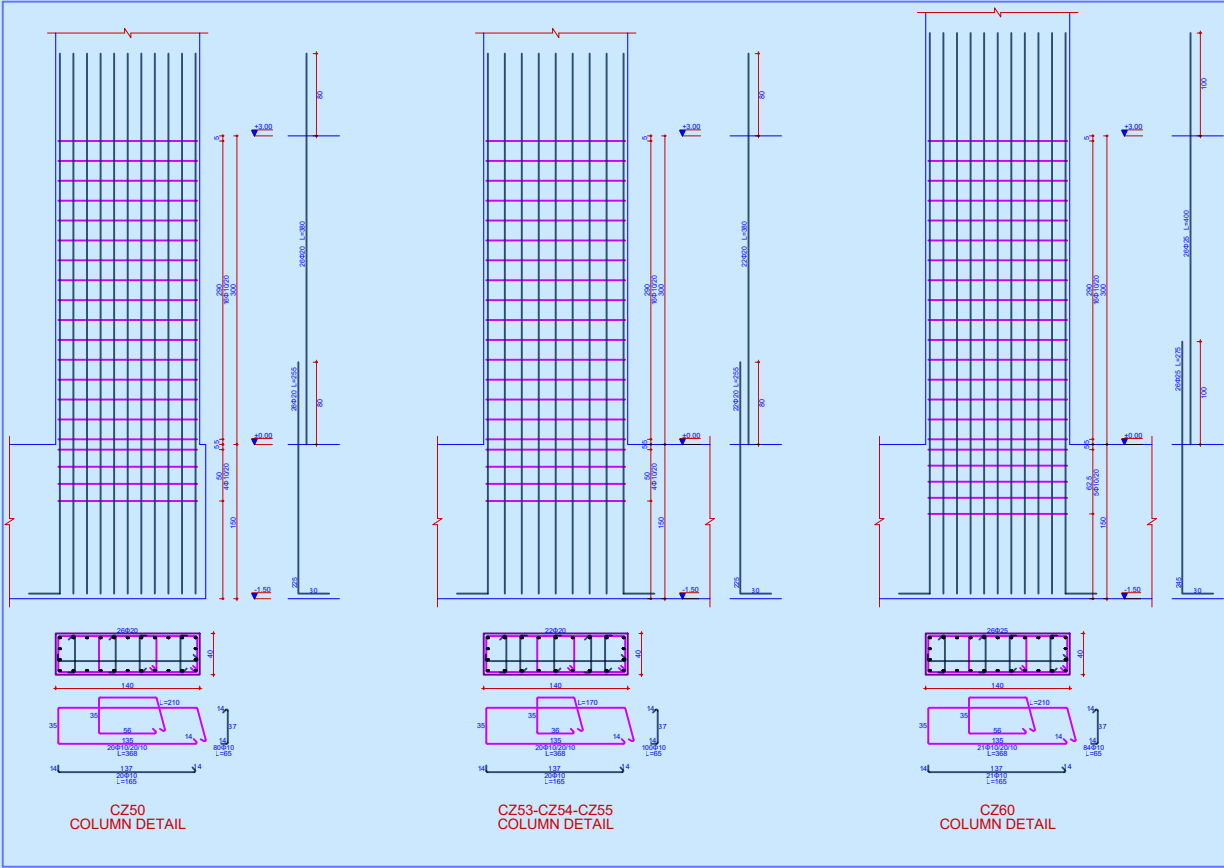
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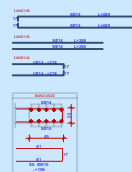
vertical column

no.	date	initials	revision
job title			
(A)			
drawing title			
SCHEDULE OF COLUMNS			
designed ENG : DR-Majid Albana		project manager	
checked	scale 1-100	date 9 / 2024	
drawn	job no. 28	sheet no.	
approved			



CZ50 - CZ53 - CZ54 - CZ55 - CZ60

ID	Quantity	Diameter	Length (cm)	Type	Weight (Kg)
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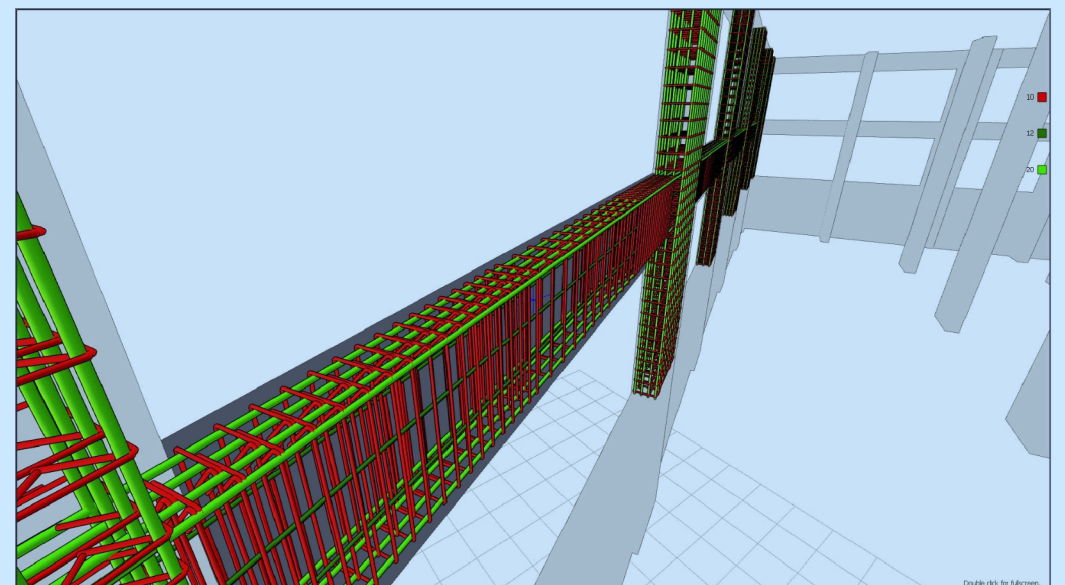
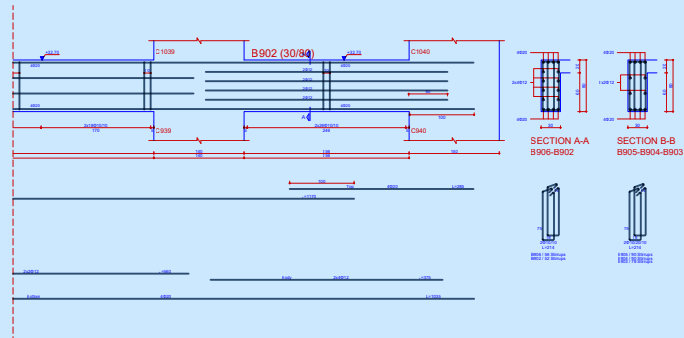
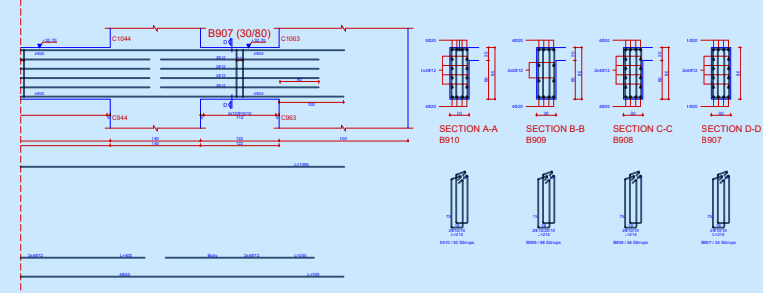
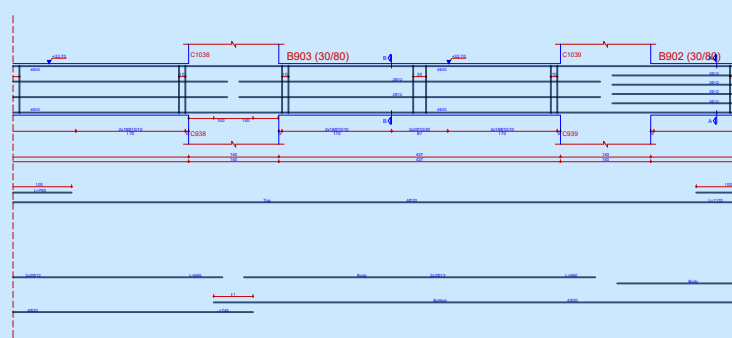
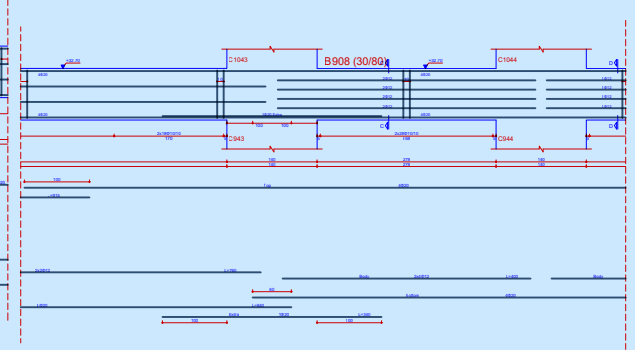
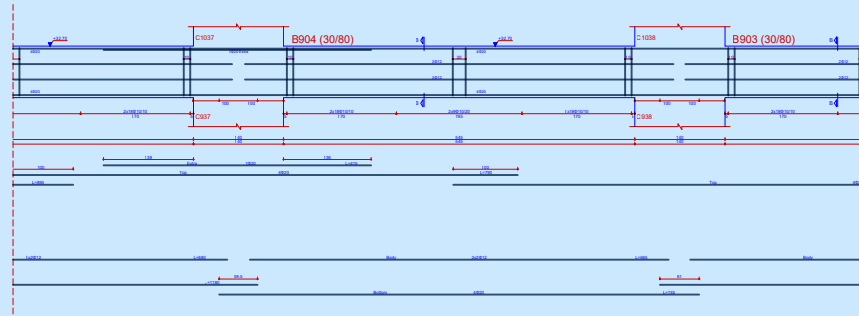
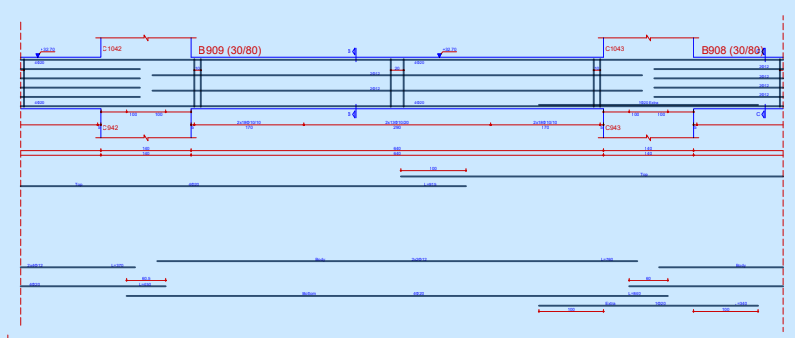
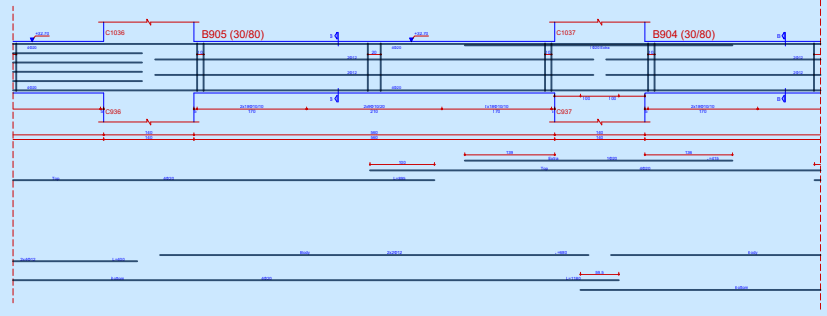
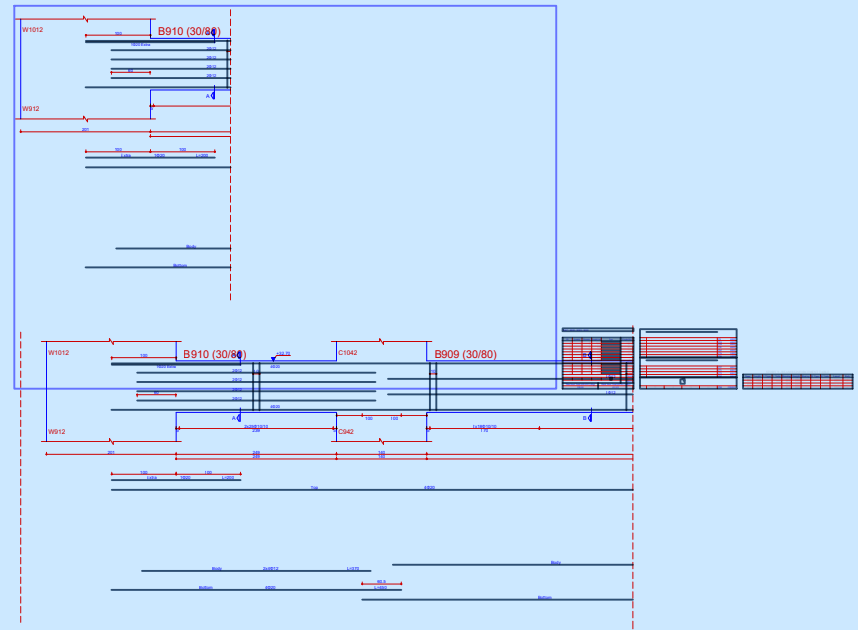
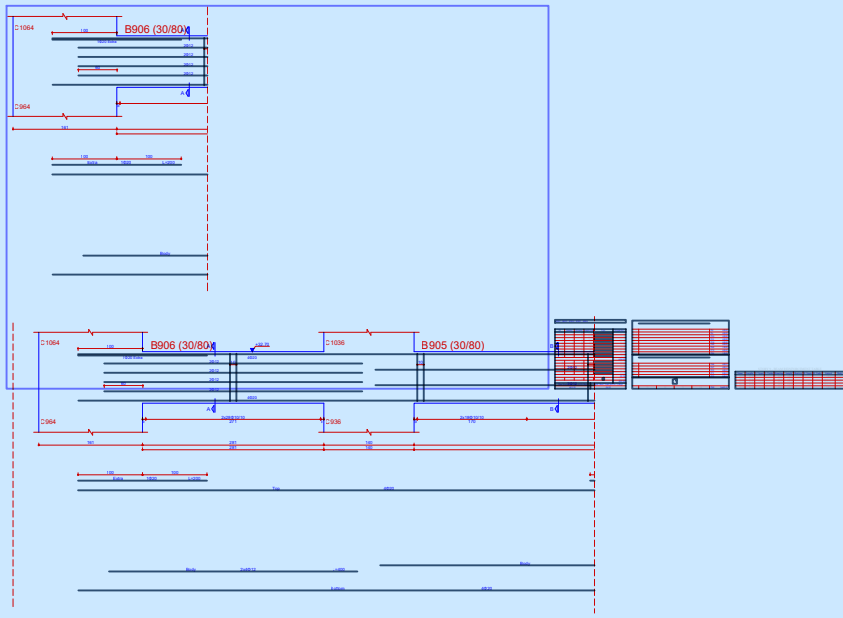


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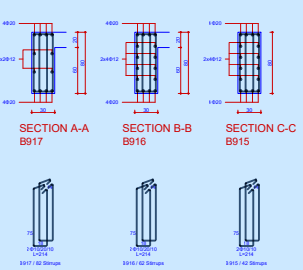
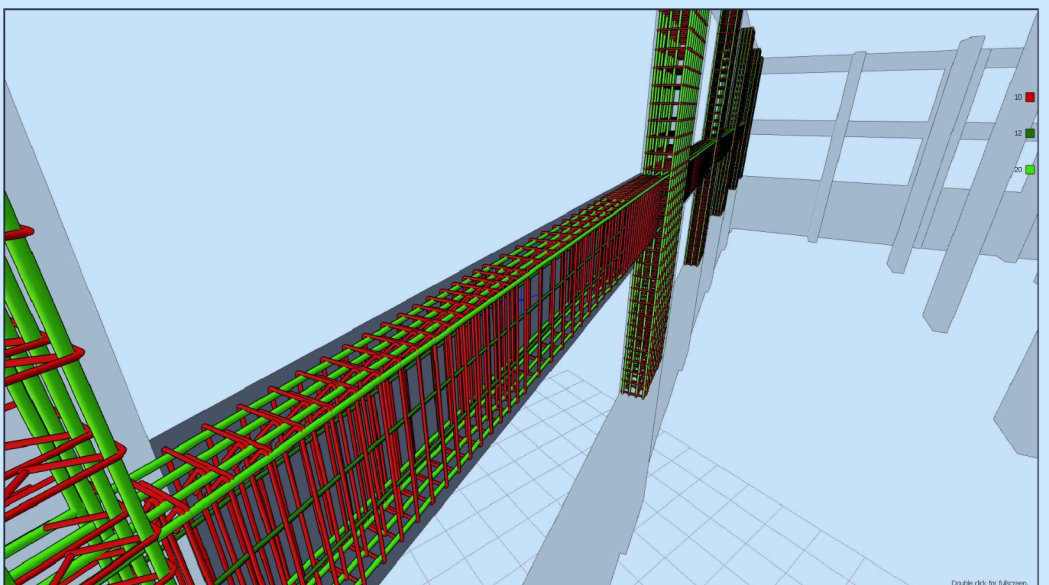
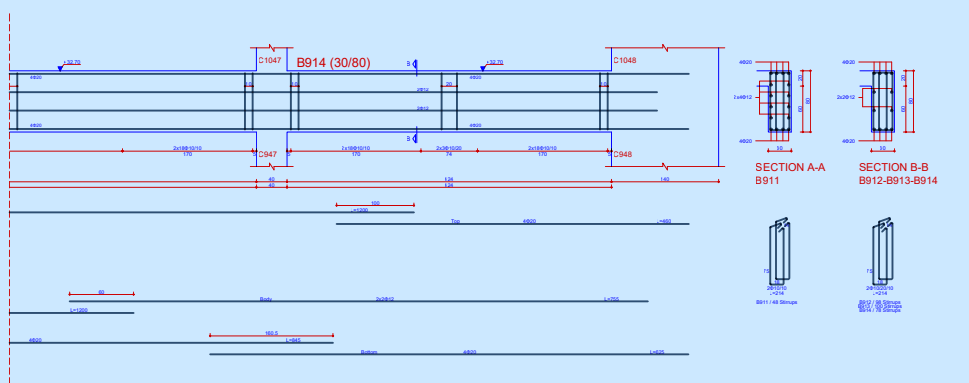
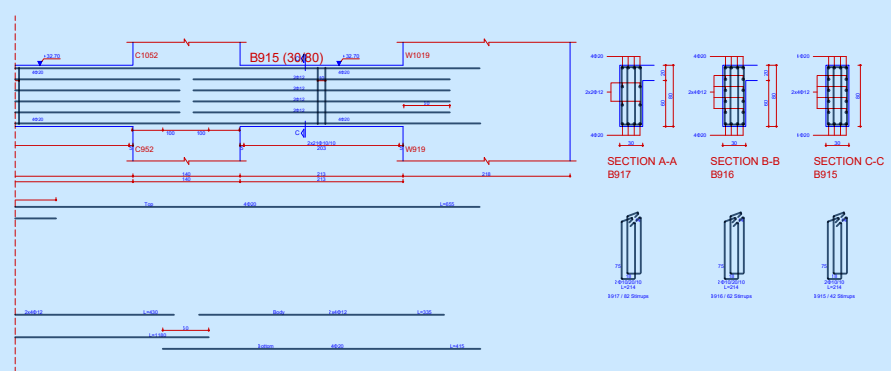
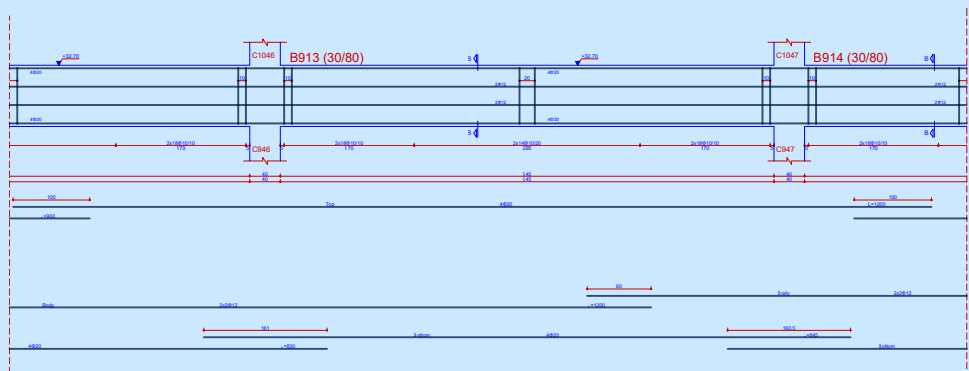
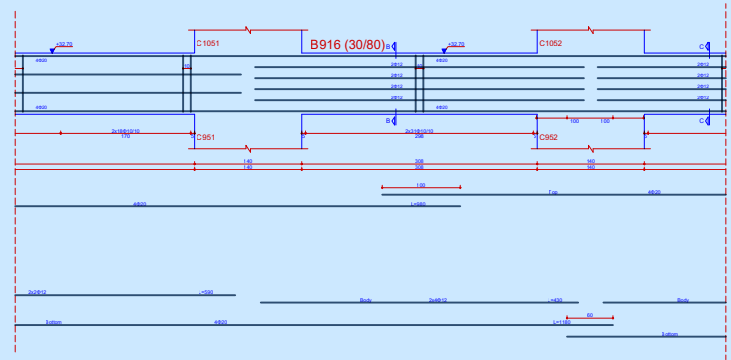
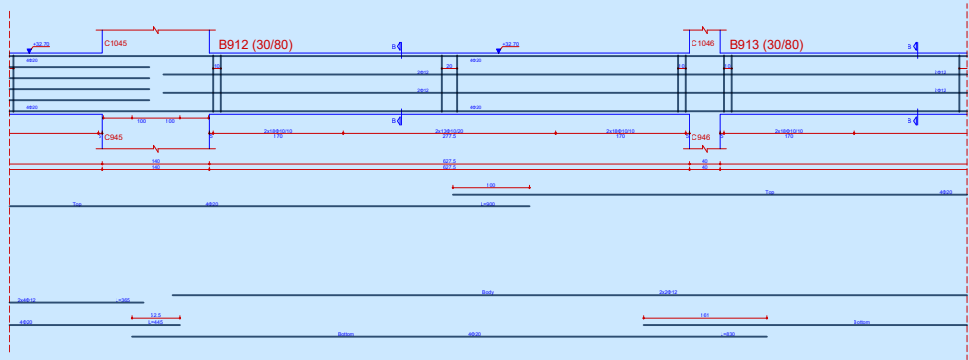
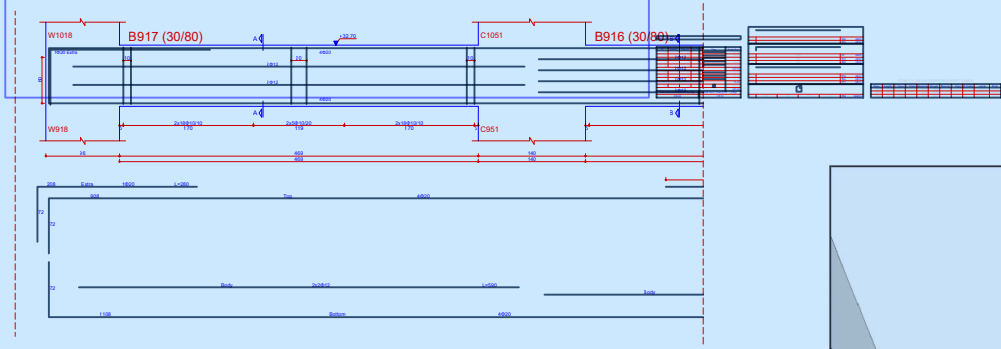
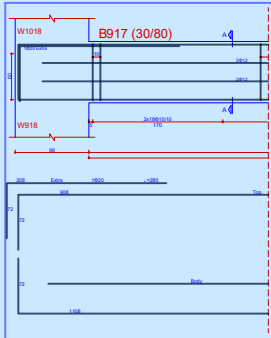
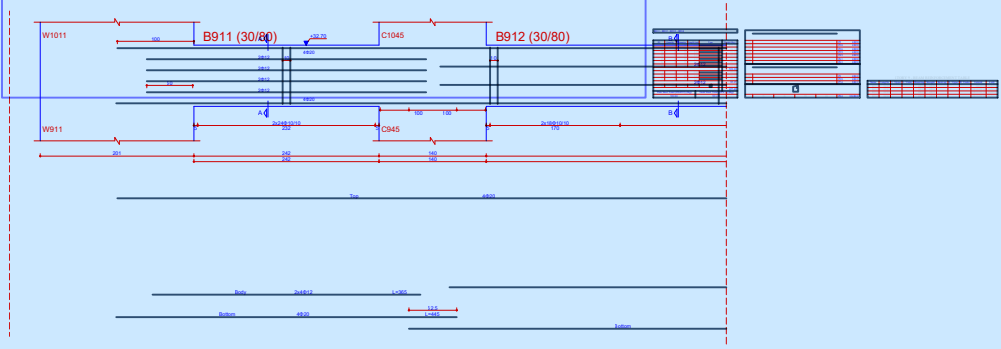
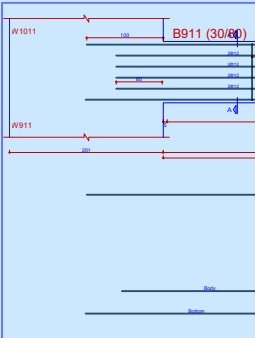
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drawing title			
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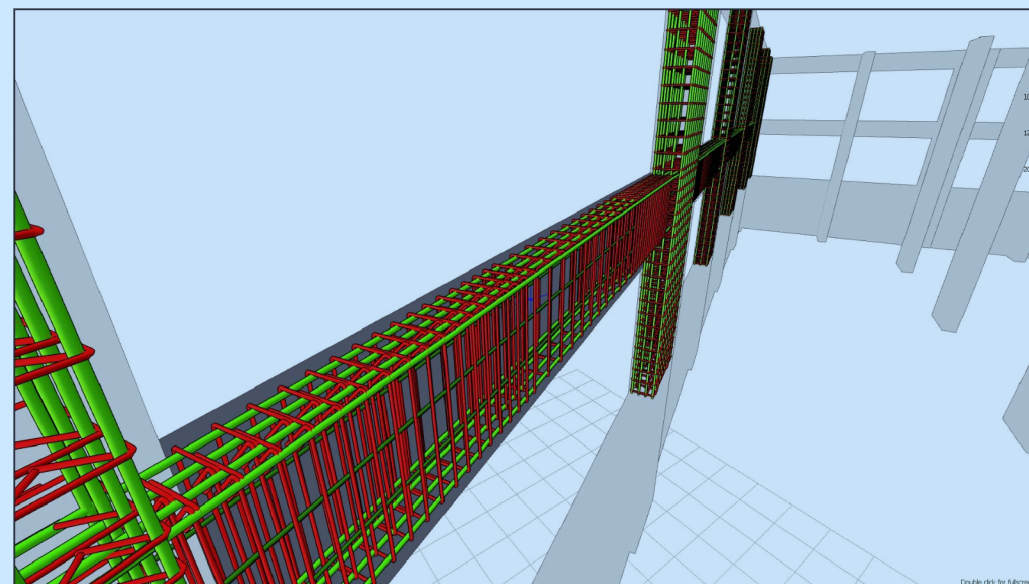
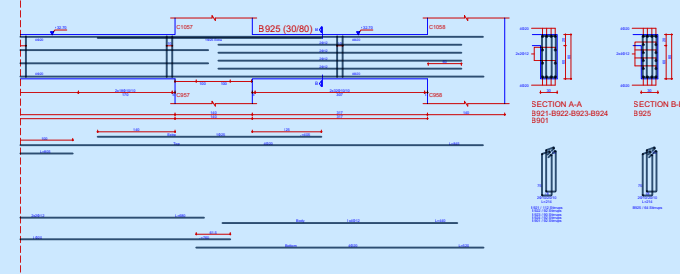
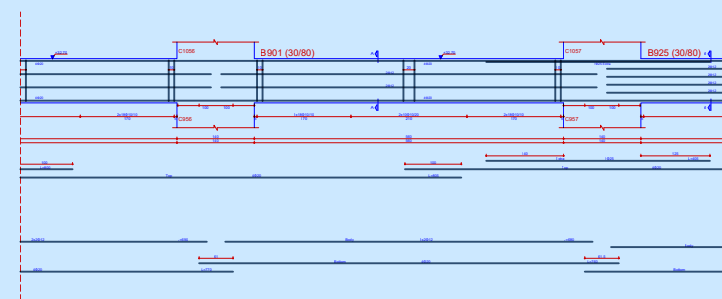
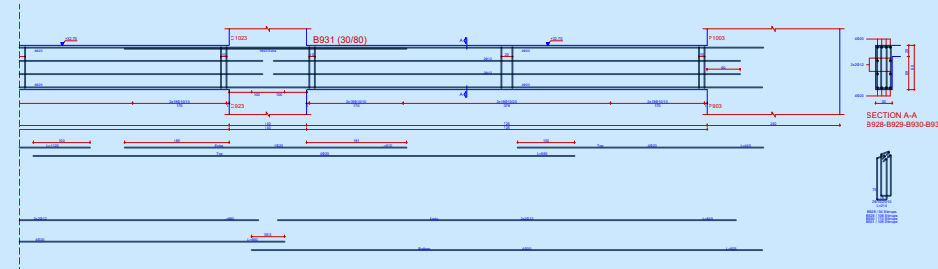
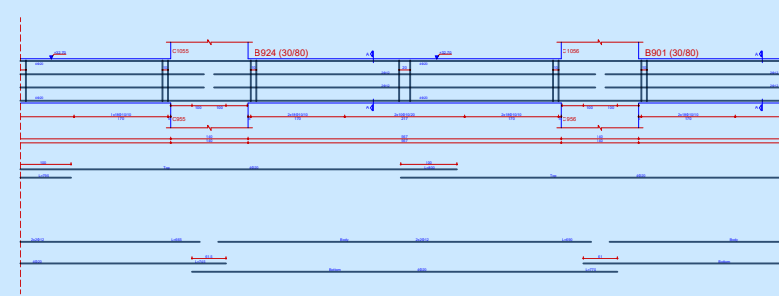
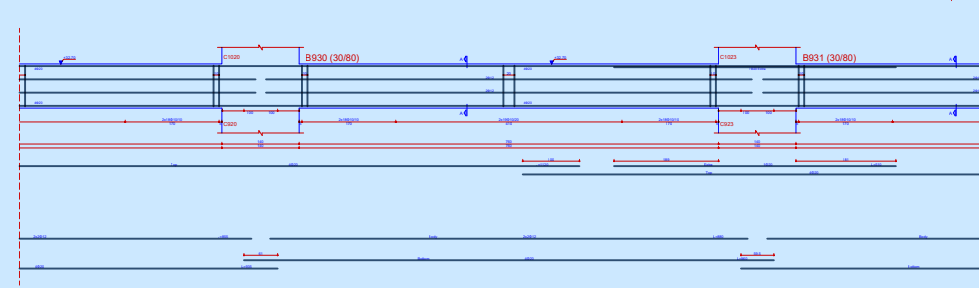
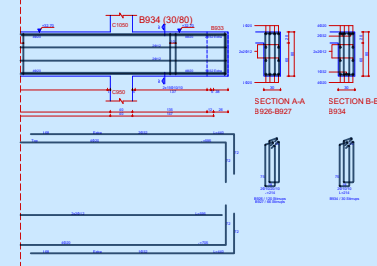
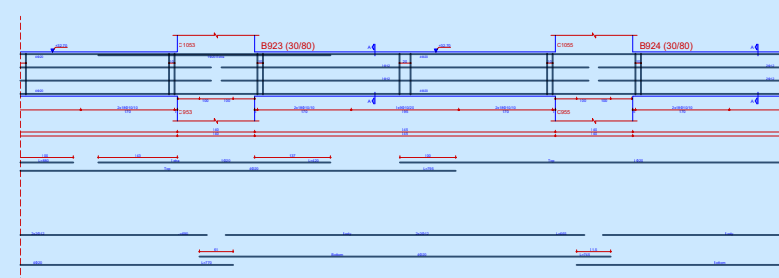
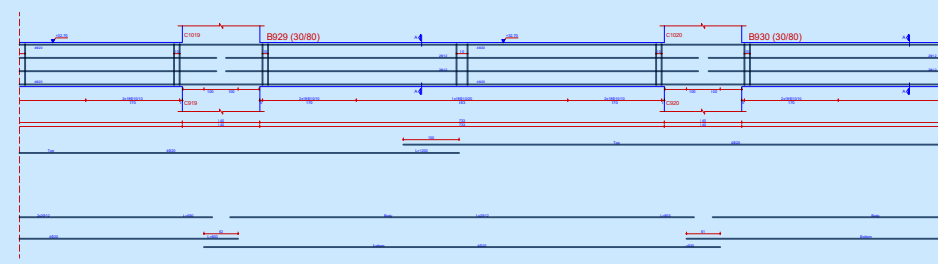
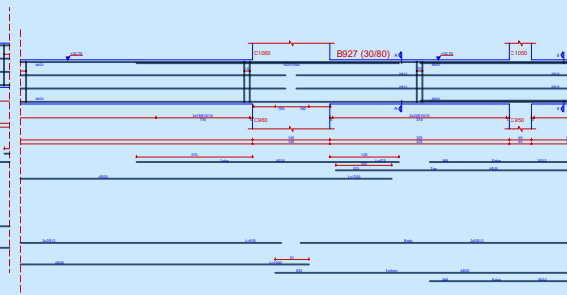
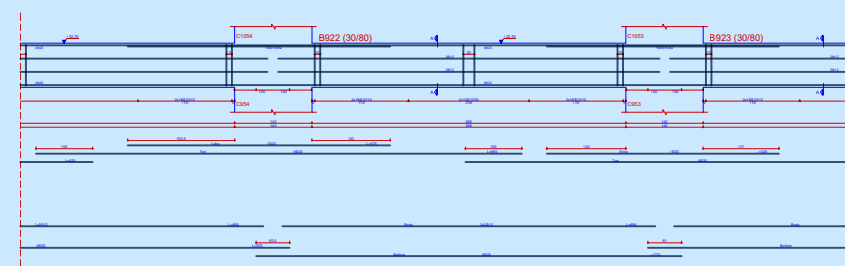
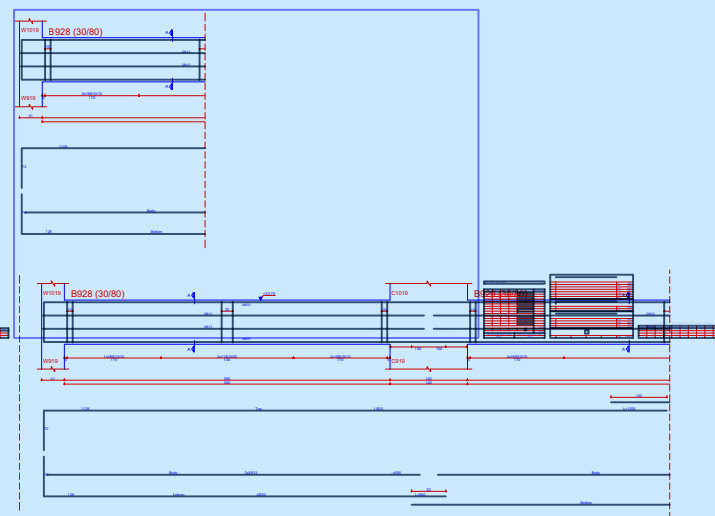
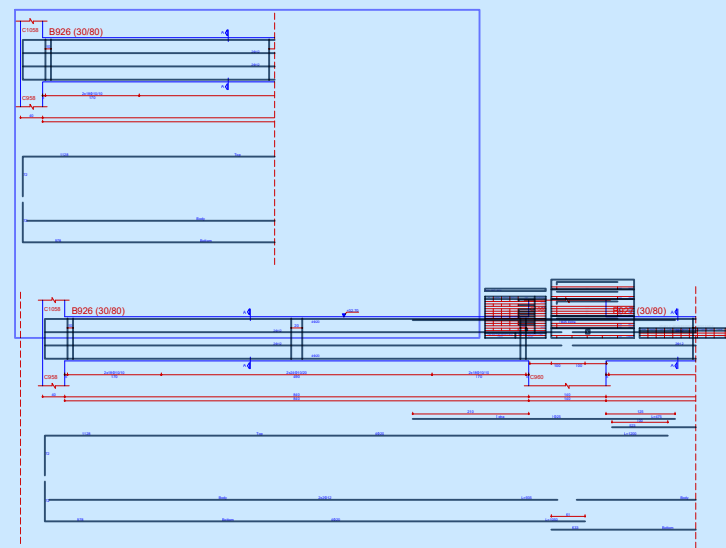
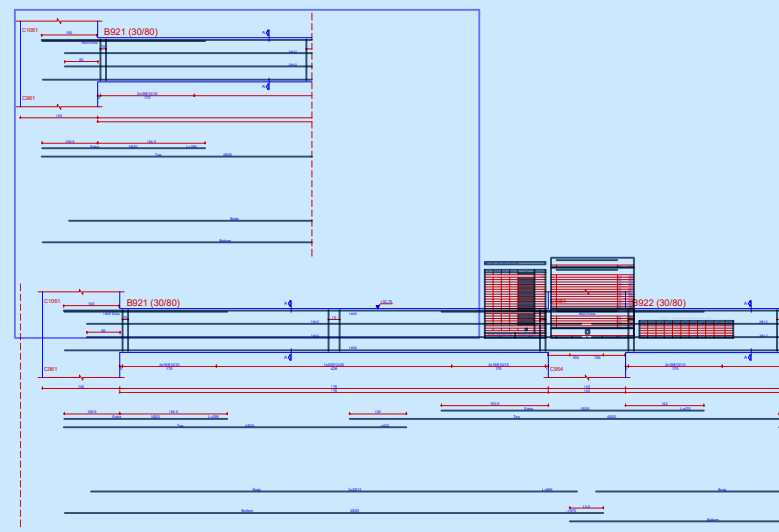
Diagram illustrating a square lattice structure. A central rectangle is highlighted, surrounded by a larger square lattice. A vector is shown pointing from the center of the rectangle towards the top right corner of the lattice. The diagram is labeled with "AD" and "Ø12" at the top, and "FOR" at the bottom right. A dimension line at the bottom indicates a width of 3.5.



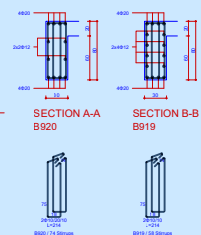
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(A)			
drawing title			
designed ENG : DR-Majid Albana		project manager	
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no.	date	initials	revision		
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drawing title					
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