

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
THE SOFTWARE USED IN DESIGN IDE
CAD2022&PROKON) IS THE GENERAL
PROGRAM USED IN THIS DESIGN

job title

Residential building
TYPE A

Structural
Drawings

DRWG. TITLE:

DESIGNED BY DR-Majid Albana

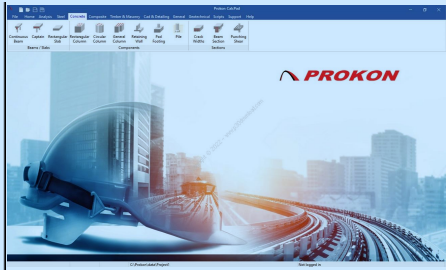
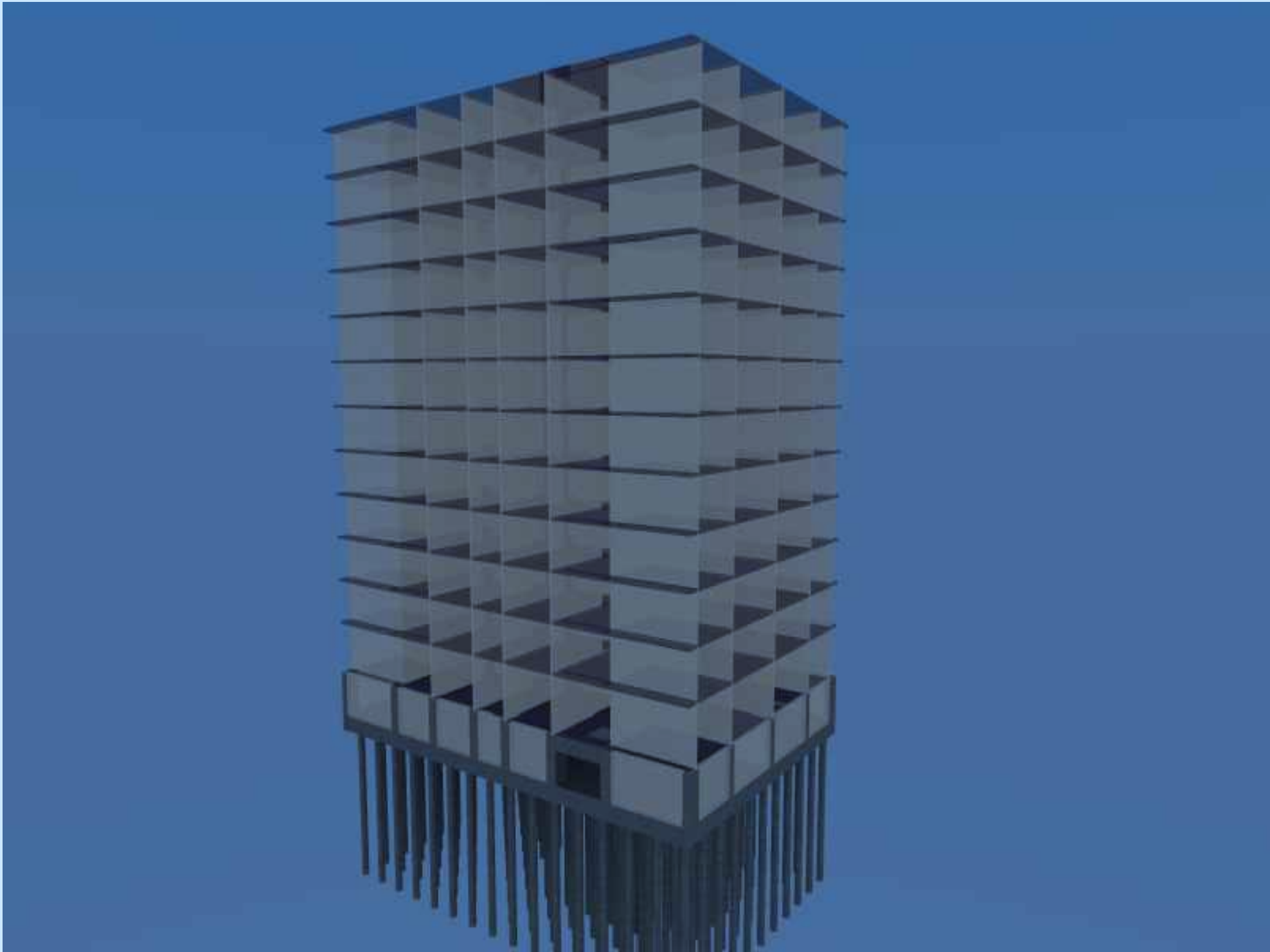
CHECKED BY

SCALE As Shown

DATE 5/2024

SHEET NO. Str.

1



1.0 GENERAL:

- 1.1 THE STRUCTURAL DRAWINGS ARE TO BE REFERRED FOR STRUCTURAL MEMBERS, SIZE AND REINFORCEMENT ARRANGEMENT, EXACT DIMENSIONS AND DETAILS AS PER ARCHITECTURAL DRAWINGS. IN CASE OF DISCREPANCIES, REFER TO THE ENGINEER FOR CLARIFICATIONS PRIOR TO TAKING UP OF RELATED WORKS.
- 1.2 STRUCTURAL DRAWINGS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS AND COORDINATED WITH ELECTRICAL, SANITARY AND A/C SHOP DRAWINGS. ANY POCKETS TO BE MADE IN CONCRETE TO BE REFERRED TO THE ENGINEER FOR APPROVAL.
- 1.3 NO DIMENSIONS ARE TO BE SCALED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
- 1.4 IN CASE OF DISCREPANCIES IN DETAILS OR MISSING DETAILS, THE ENGINEER MUST BE APPROACHED FOR DECISION PRIOR TO TAKING UP SUCH RELATED WORKS.
- 1.5 THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER SETTING OUT OF WORKS, FOR CORRECTNESS OF POSITION, LEVELS AND ALIGNMENTS OF ALL PARTS OF THE WORKS AND FOR QUALITY AND FINAL FINISHES. IF AT ANY TIME DURING THE PROGRESS OF WORKS ANY ERROR IS DETECTED AT ANY PART, THE CONTRACTOR SHALL RECTIFY THE SAME AT HIS OWN EXPENSE. THE CHECKING/APPROVAL BY THE ENGINEER SHALL NOT IN ANY WAY RELIEVE THE CONTRACTOR FROM HIS RESPONSIBILITY FOR THE SAFETY OF THE STRUCTURE.
- 1.6 ANY TEST REQUIRED BY THE ENGINEER ON MATERIALS, SOIL STRATA, WORKMANSHIP OR ON COMPLETE WORKS SHALL BE CARRIED OUT BY THE CONTRACTOR AS INSTRUCTED BY THE ENGINEER AT THE CONTRACTOR'S COST. ALL EQUIPMENT REQUIRED FOR SUCH TEST SHALL BE SUPPLIED BY THE CONTRACTOR ON DEMAND BY THE ENGINEER, FREE OF COST.
- 1.7 DESIGN CRITERIA TO COMPLY WITH
*ACI-318-2014,ASCE07-16
*IRAQI SEISMIC CODE 2017
*IRAQI STANDARD SPECIFICATIONS
- 1.8 THE SUPER IMPOSED LOAD ASSUMED IN DESIGN IS IN ACCORDANCE WITH ASCE-07
- 1.9 THE GEOTECHNICAL INVESTIGATION REPORT HAVE DONE BY THE CLIENT, AND THE BEARING CAPACITY OF THE SOIL BEARING CAPACITY = 55 KN/m2.
- 1.10 WHEREVER FILLING IS REQUIRED, IT SHALL BE FILLED WITH WELL-GRADED CLEAN SAND OF APPROVED QUALITY, IN LAYERS NOT MORE THAN 200mm. EACH COMPACTED LAYER SHALL ATTAIN A DRY DENSITY WHICH SHOULD BE A MINIMUM OF 95%
- 1.11 ALL DRAINAGE MANHOLES SHALL BE EXECUTED WITH R.C. AS DETAILED.
- 1.12 ALL SHUTTERING MATERIAL SHALL BE NEW AND UNUSED.
- 1.13 ALL SINGLE FOOTINGS, BLINDING, TIE BEAMS AND BLOCKWORKS IN CONTACT WITH SOIL SHALL BE COATED WITH TWO COATS OF BITUMEN PAINT TO ENGINEER'S APPROVAL.
- 1.14 A LAYER OF 1000 GAUGE POLYTHENE SHEET SHALL BE LAID ABOVE ALL BLINDING PLAIN CONCRETE.
- 1.15 A 100mm PLAIN CONCRETE LAYER SHALL BE LAID UNDER ALL FOUNDATIONS.
- 1.16 ALL ANALYSIS AND DESIGN HAS BEEN DONE BY "IDECAD STRUCTURAL" SOFTWARE V 10.20

2.0 CONCRETE:

- 2.1THE CONCRETE GRADE FOR R.C. WORKS SHALL BE AS FOLLOWS:

(b) C40 FOR SUPERSTRUCTURES WITH MINIMUM CONTENT OF ORDINARY PORTLAND CEMENT=370 KN/m² WITH 20mm DOWN GRADED AGGREGATES.

NOTE: C40 : 28 DAYS CHARACTERISTIC CUBE STRENGTH = 50 N/mm² WITH 20mm DOWN GRADED AGGREGATES.
- 2.2 MINIMUM SIX NUMBERS OF CONCRETE CUBES SHALL BE TAKEN FROM EACH DAY'S CONCRETING OR EACH 100m² CONCRETE AS DECIDED BY THE ENGINEER. CUBE TEST RESULTS MUST BE SUBMITTED TO THE ENGINEER IMMEDIATELY AFTER TESTING.
- 2.3 MAXIMUM PERCENTAGE (BY WEIGHT) OF SALT CONTENTS PERMISSIBLE IN AGGREGATES USED FOR CONCRETE, HOLLOW BLOCKS, & HOURDI BLOCKS, ETC.

(a) CHLORIDES AS CL-COURSE AGGREGATES-0.03% AND FINE AGGREGATES=0.06%.
(b) SULPHATES AS S04-COURSE AGGREGATES-0.2% AND FINE AGGREGATES 0.45%.

- 2.4 CLEAN AND WASHED SAND TO BE USED FOR ALL CONCRETE WORKS AND SHALL HAVE LOCAL APPROVED CERTIFICATE.
- 2.5 ALL CONCRETE WORKS TO BE CURED FOR AT LEAST SEVEN CONSECUTIVE DAYS.
- 2.6 THE CONTRACTOR SHALL SUBMIT FOR APPROVAL THE CONCRETING PLAN SHOWING DATE NUMBERS AND THE SUCCESSION OF CONCRETING, AT LEAST TWO WEEKS IN ADVANCE OF THE CONCRETING DATE.
- 2.7 CONCRETE COVER BLOCK – MINIMUM CRUSHING STRENGTH 5 N/mm².
- 2.8 PLAIN CONCRETE SHALL BE GRADE 20/10 WITH MINIMUM CEMENT CONTENT OF 250KN/m².

3.0 REINFORCEMENT:

- 3.1 THE REINFORCEMENT USED TO R.C. WORKS ARE AS FOLLOWS:

MARKED AS (Y) OR (T) HIGH YIELD STRENGTH DEFORMED BARS WITH MINIMUM CHARACTERISTIC STRENGTH OF 420 N/mm².
- 3.2 THE CLEAR COVER TO THE REINFORCEMENT INCLUDING LINKS SHALL BE AS FOLLOWS:

FOUNDATIONS, BASEMENT WALLS, TIE BEAMS & SUBSTRUCTURE COLUMNS = 75 MM
INTERIOR COLUMNS IN SUPERSTRUCTURE = 30 MM
EXTERIOR COLUMNS IN SUPERSTRUCTURE = 30 MM
BEAMS = 30 MM
SLABS = 25 MM
EXTERNAL EXPOSED R.C. SURFACE = 40 MM
- 3.3 NO ADDITIONAL LAP IN MAIN REINFORCEMENT SHALL BE PROVIDED WITHOUT PRIOR APPROVAL OF THE ENGINEER. THE MINIMUM LAP LENGTH SHALL BE 50d FOR TENSION AS WELL AS COMPRESSED BARS, EXCEPT WHERE SHOWN OTHERWISE.
- 3.4 BAR NOTATIONS:
4T16/M MEANS T16@25 CM C.C. SPACING
5T16/M MEANS T16@20 CM C.C. SPACING
6T16/M MEANS T16@16.7 CM C.C. SPACING
7T16/M MEANS T16@14.3 CM C.C. SPACING
8T16/M MEANS T16@12.5 CM C.C. SPACING
9T16/M MEANS T16@11.1 CM C.C. SPACING
10T16/M MEANS T16@10 CM C.C. SPACING
APPLICABLE TO ALL BAR SIZES.

4.0 CONCRETE MASONRY BLOCKS:

- 4.1 MASONRY BLOCKS FOR LOAD BEARING WALLS SHALL BE SOLID BLOCKS HAVING MINIMUM CRUSHING STRENGTH OF 12.5 N/mm². AND FOR NON LOAD BEARING WALLS SHALL BE HOLLOW BLOCKS WITH MINIMUM CRUSHING STRENGTH OF 7.5 N/mm²
- 4.2 ALL JOINTS BETWEEN COLUMNS AND BLOCKWORK TO BE PROVIDED WITH S/S ANCHORS AT 420mm (OR EVERY ALTERNATIVE LAYER). STRENGTH OF 7.5 N/mm².
- 4.3 MORTAR 1:3 CEMENT/SAND. MINIMUM CUBE STRENGTH 5 N/mm².
- 4.4 ALL CONCRETE AND BLOCK JOINTS TO HAVE 300mm WIDE EXPANDED METAL SECURED ON BOTH SIDES FOR PLASTERING. ALSO PVC COATED CORNER BEADS AND PLASTER STOPS TO BE PROVIDED AT ALL CORNERS AND PLASTER EDGE AS REQUIRED BY THE CONSULTANT.
- 4.5 ALL CONCRETE BLOCKS SUPPLIED TO SITE SHALL HAVE LOCAL MUNICIPALITY APPROVAL CERTIFICATE AND SHALL COMPLY WITH LOCAL ORDER NO. 44 & RELEVANT BRITISH STANDARDS.



no.	date	initials	revision		
job title					
Residential building					
(A) TYPE A					
drawing title					
GENERAL NOTES					
designed	project manager				
ENG : DR-Majid Albana					
checked	scale	1-100	date		
drawn	job no.	2	sheet no.		
approved					

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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:

RESIDENTIAL AREAS	3.0	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 Kirkuk that are Adopted in the Analysis.

Wind Parameter	NOTATION	NOTATION	Reference
Basic Wind Speed	V	120 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.

Wind Parameter	NOTATION	NOTATION	Reference
Seismic Design Category	D		ASCE (2016), the soil type has been Assumed
Response Modification Coefficient	R	3.5	ASCE (2016)
Topographic Factor	Kzt	1	ASCE (2016)
Overstrength Factor	Ω_w	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

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



no.	date	initials	revision
Job title			
Residential building			
(A) TYPE A			
drawing title			
GENERAL NOTES			
designed ENG : DR-Majid Albana		project manager	
checked	scale 1-100	date 5/2024	
drawn	job no.	sheet no.	
approved	3		

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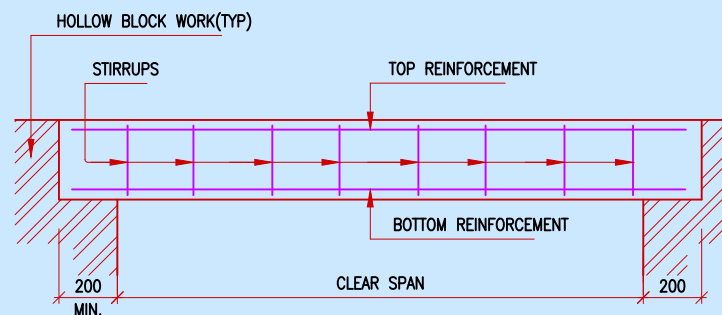
Diagram illustrating the reinforcement details for a square slab. The slab is square, with dimensions indicated as 100CM MAX. for both the side and diagonal. The slab is supported by four columns, with the reinforcement bars (2T16 (TYP.) (TOP & BOTTOM)) shown extending from the columns. The slab is labeled with dimensions: 60 CM MIN. for the slab thickness and 100CM MAX. for the slab side and diagonal. The reinforcement bars are labeled 2T16 (TYP.) (TOP & BOTTOM) and 1T16 (TOP & BOTTOM) L=100CM (TYP.).

Diagram illustrating the Lintel Elevation (Typ 2) showing reinforcement details. The diagram includes labels for:

- 50 Ø BARS (TYP)
- STIRRUPS
- TOP REINFORCEMENT
- BOTTOM REINFORCEMENT
- DEPTH

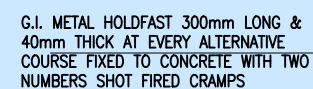
The diagram shows a cross-section of a lintel with reinforcement bars and stirrups. The title **LINTEL ELEVATION (TYP 2)** is displayed in blue text at the bottom.

LINTEL ELEVATION
(TYP 2)



SCHEDULE OF LINTELS REINFORCEMENT								
LINTEL WIDTH= CLEAR SPAN	B=100		B=150		B=200		DEPTH	STIRRUPS
	TOP REINF.	BOTTOM REINF.	TOP REINF.	BOTTOM REINF.	TOP REINF.	BOTTOM REINF.		
<2000	1T10	1T14	2T10	2T12	2T10	2T12	200	R8@100
2000-3000	1T10	1T16	2T10	2T14	2T10	2T14	250	R8@150
3000-4000	1T10	1T20	2T10	2T16	2T10	2T16	300	R8@175
4000-5000	1T10	1T20	2T10	2T16	2T10	2T16	400	R8@200
5000-6000	1T10	1T20	2T10	2T16	2T10	2T16	500	R8@200

FOR ALL SILLS AND LINTELS BETWEEN COLUMNS AND NOT SUPPORTED BY A WALL, PROVIDE DOWELS IN THE COLUMN OF SAME SIZE AND NUMBER AS THE REINFORCEMENT OF THE LINTEL OR SILL. THESE DOWELS SHALL EXTEND 50 BAR ϕ FROM THE FACE OF THE COLUMN AND SHALL BE EMBEDDED 50 BAR ϕ IN THE COLUMN.



R.C.C. COLUMN OR WALL

R.C.C. BEAM

FAST 300mm LONG & EVERY ALTERNATIVE O CONCRETE WITH TWO FIRED CRAMPS

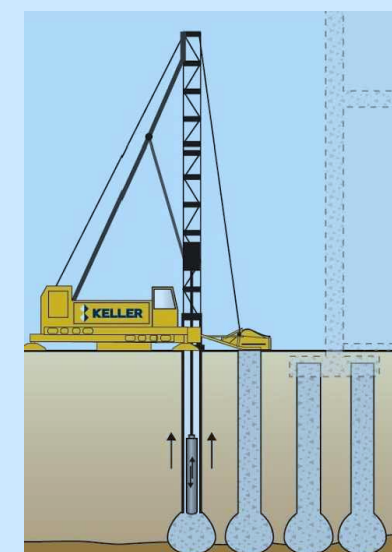
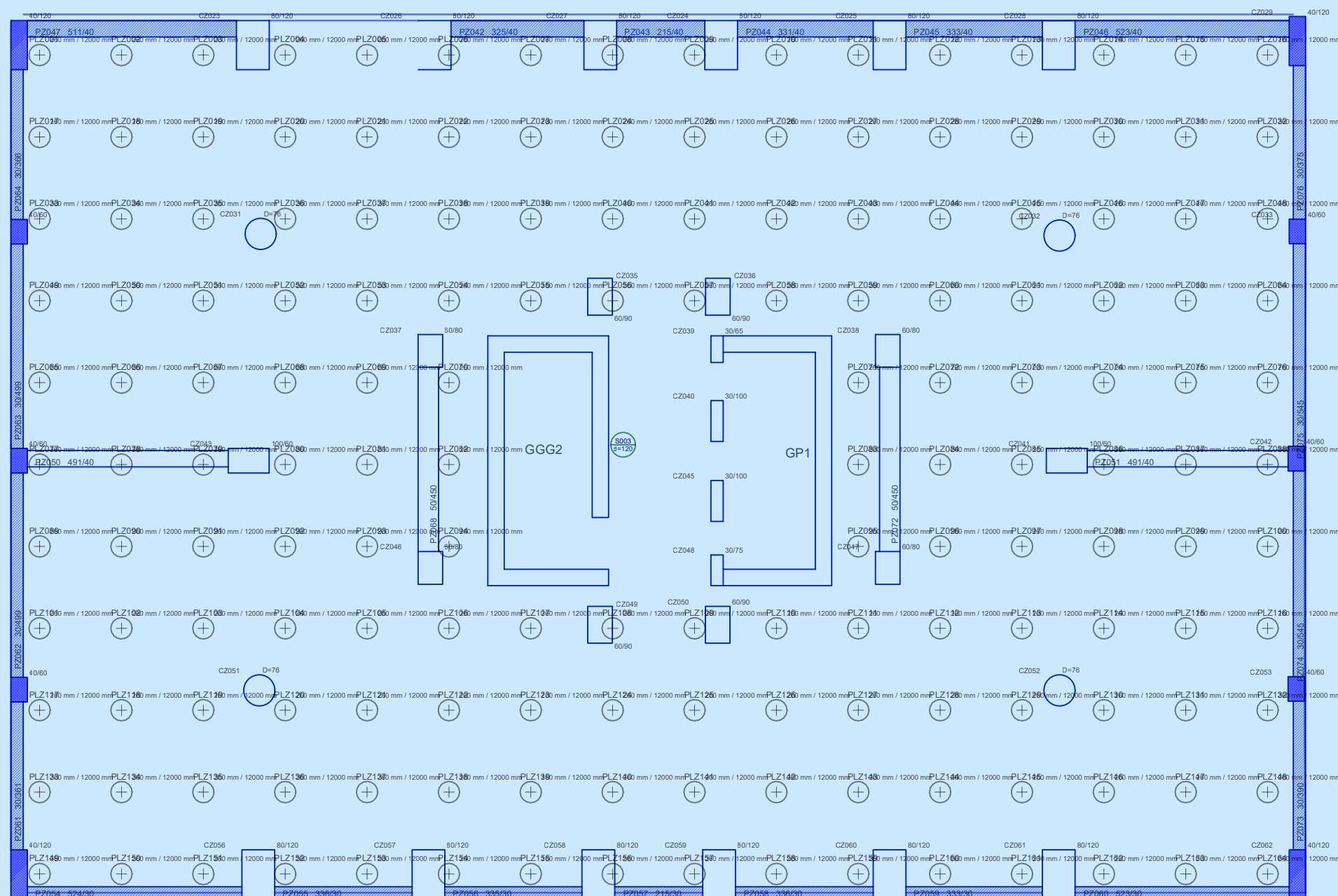


EXPANDED METAL MESH
REINFORCEMENT
(HORIZONTAL) AT EVERY 5th
COURSE

M
Eng MAJ D A bana
المصمم الاستشاري
د. ماحد البنا

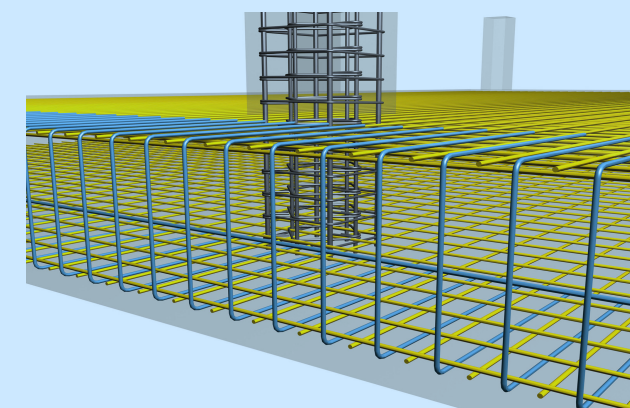
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no.	date	initials	revision
job title Residential building (A) TYPE A			
drawing title			
GENERAL NOTES			
designed ENG : DR-Majid Albana		project manager	
checked	scale 1-100	date 5/2024	
drawn	job no.	sheet no.	
approved	5		

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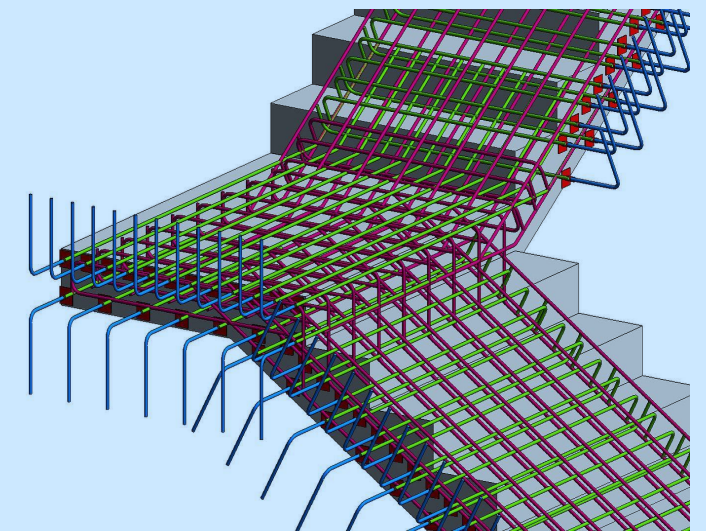
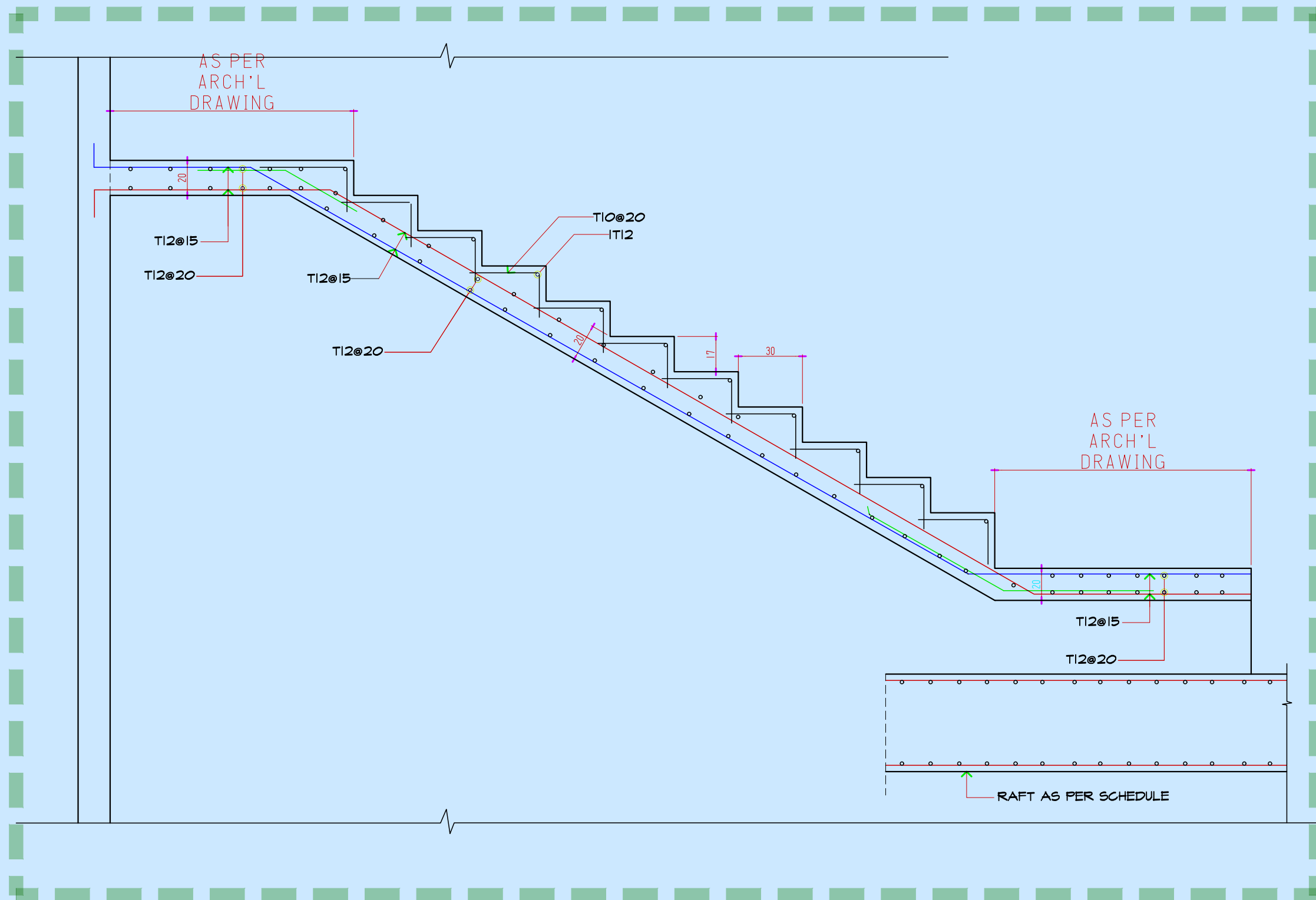
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A diagram showing a circle with a radius of 3.0. The circle is centered at the coordinates (-3.0, 3.0). The horizontal axis is labeled with -3.0 and the vertical axis is labeled with 3.0. A right triangle is drawn with its hypotenuse as the radius, and its legs are parallel to the axes, indicating the center coordinates.

no.	date	initials	revision
job title			
Residential building (A) TYPE A			
drawing title			
PLAN OF FOUNDATION REINFORCEMENT&SEC.			
designed ENG : DR-Majid Albana	project manager		
checked	scale 1-100	date 5/2024	
drawn	job no.	sheet no.	
approved	8		

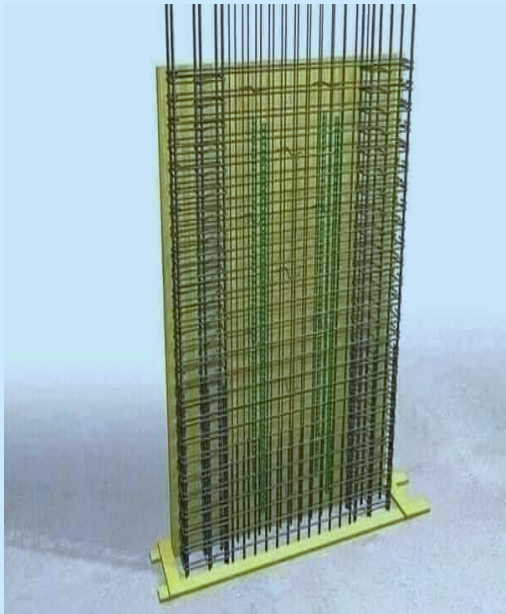
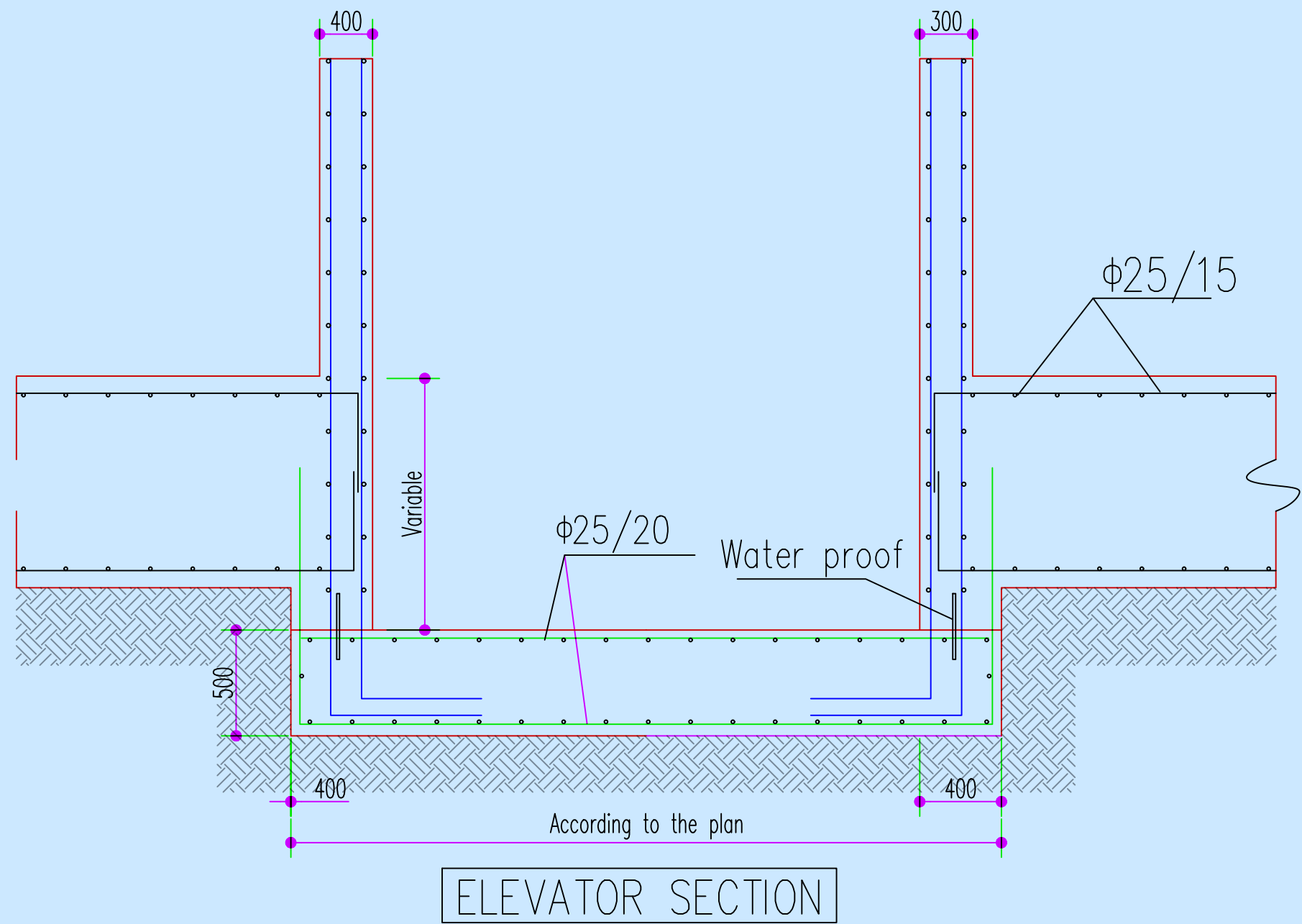
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2 SECTION C
SCALE 1:10

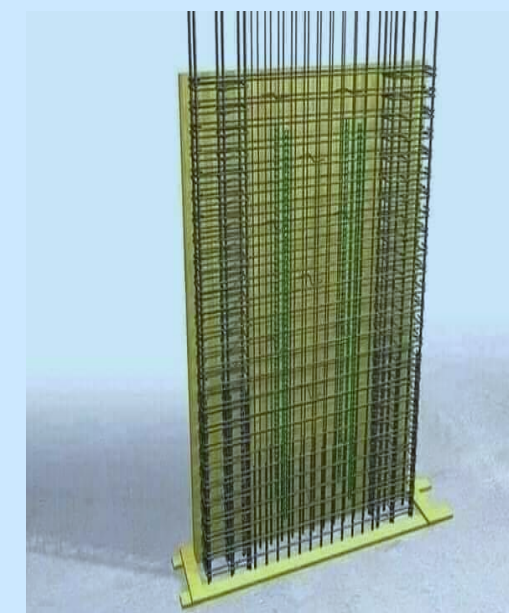
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no.	date	initials	revision		
job title					
Residential building (A) TYPE A					
drawing title					
TYPICAL SECTION IN STAIRS REINFORCEMENT&SEC.					
designed	ENG : DR-Majid Albana		project manager		
checked			scale	1-100	date 5/2024
drawn			job no.	9	sheet no.
approved					



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no.	date	initials	revision		
job title					
Residential building TYPE A					
drawing title					
PIT SECTION DETAILS REINFORCEMENT&SEC.					
designed	ENG : DR-Majid Albana		project manager		
checked			scale	1-100	date 5/2024
drawn			job no.	10	sheet no.
approved					

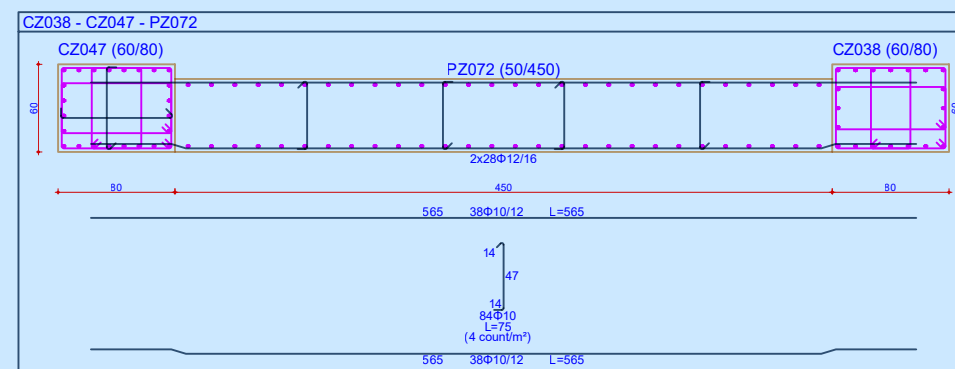
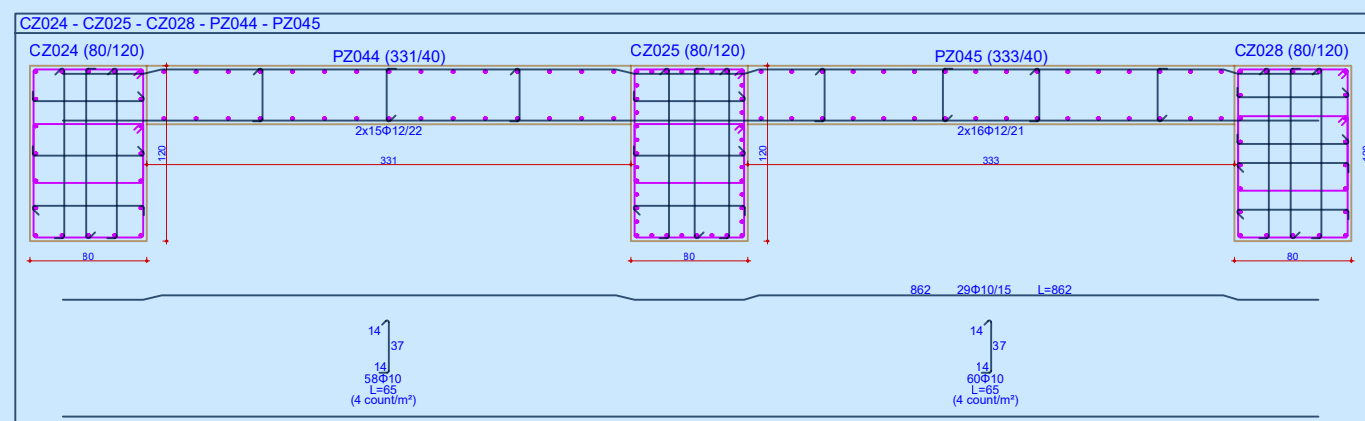
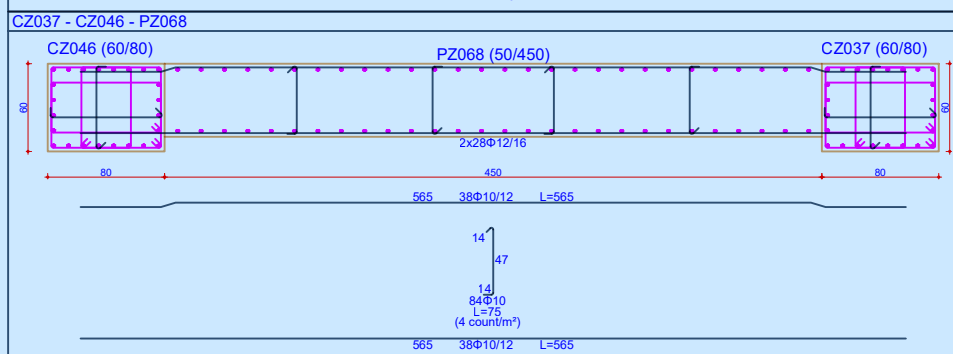


MINIMUM LAP LENGTH (UNLESS NOTED ON DRAWINGS) SHOULD BE AS TABLE BELWO :-

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

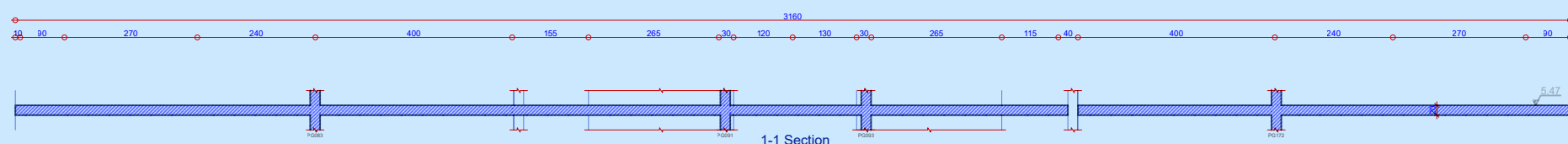
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no.	date	initials	revision
job title			
Residential building TYPE A			
drawing title			
BASE STORY SHEAR WALL Plan			
designed ENG : DR-Majid Albana	project manager		
checked	scale 1-100	date 6/2024	
drawn	job no. 11	sheet no.	
approved			



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no.	date	initials	revision
job title residential building (A) TYPE A			
drawing title			
BASE STORY SHEAR WALL Plan			
designed ENG : DR-Majid Albana		project manager	
checked		scale	date
		1-100	5/2024
drawn		job no.	sheet no.
approved		13	

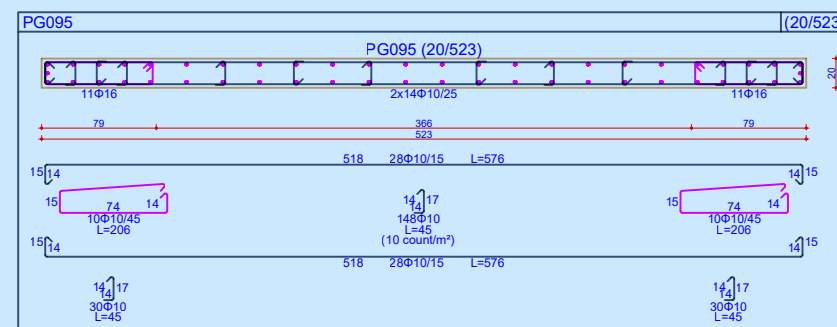
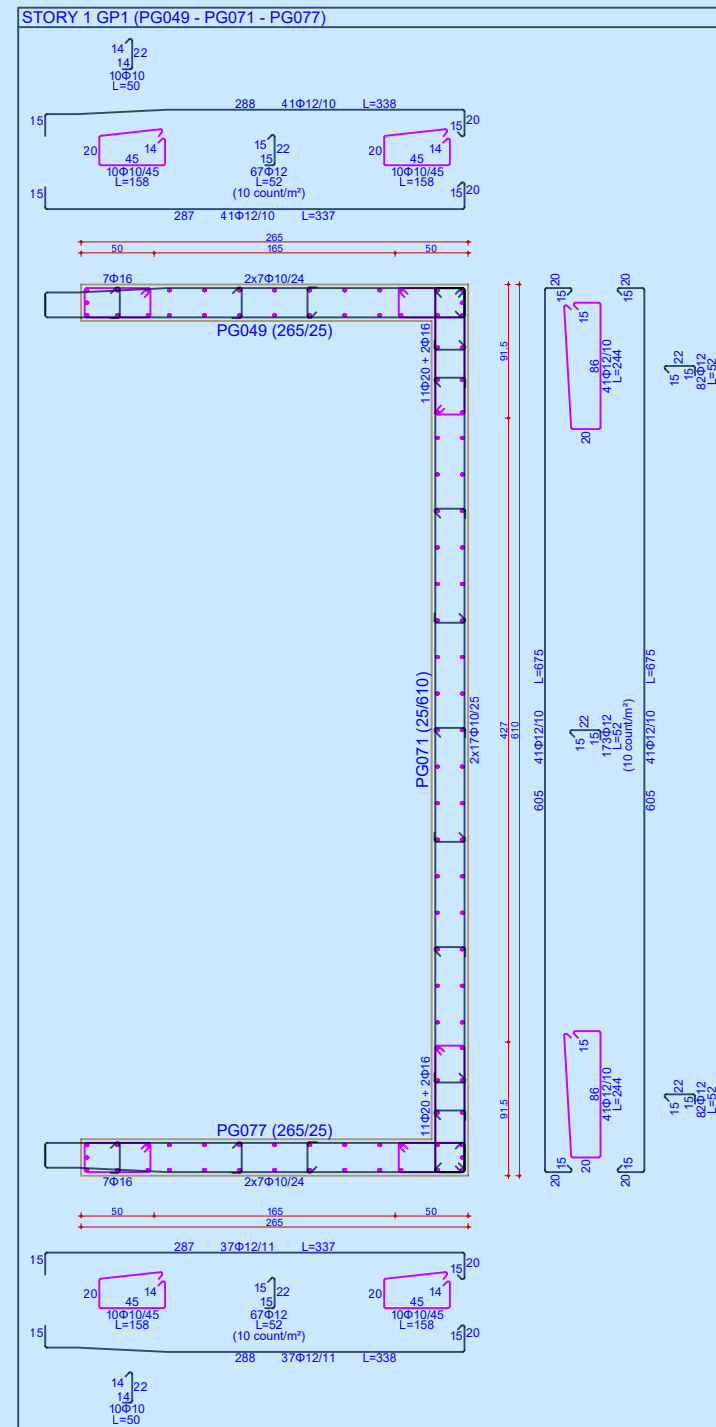
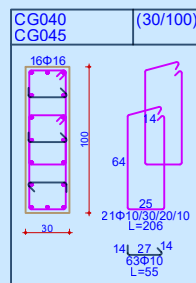
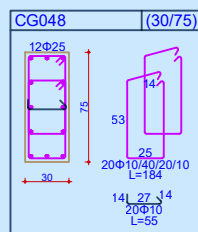
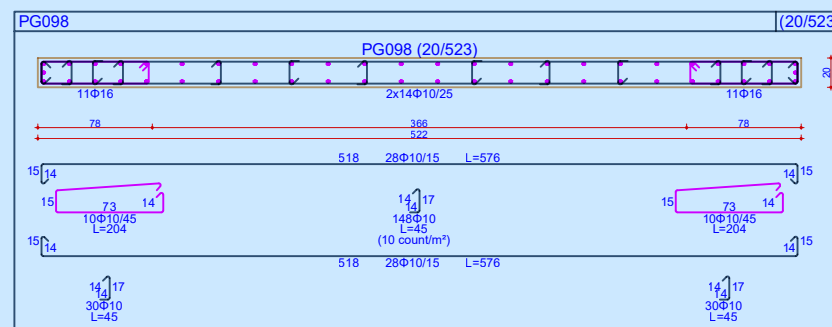
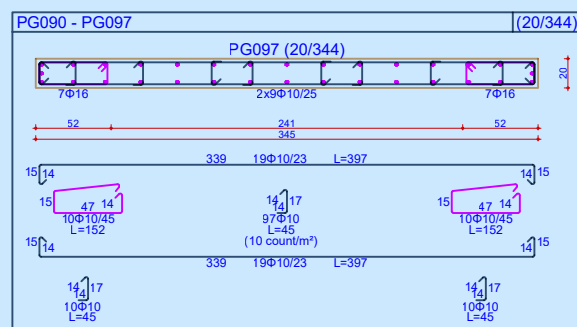
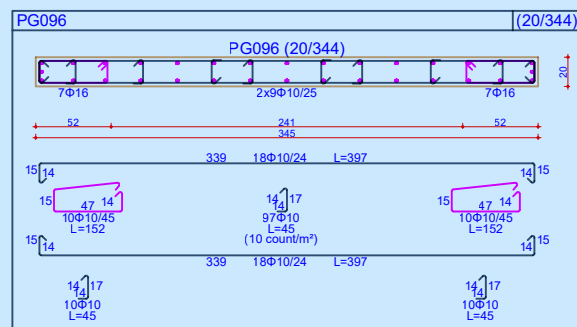
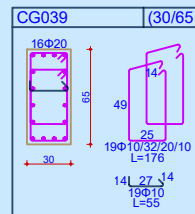
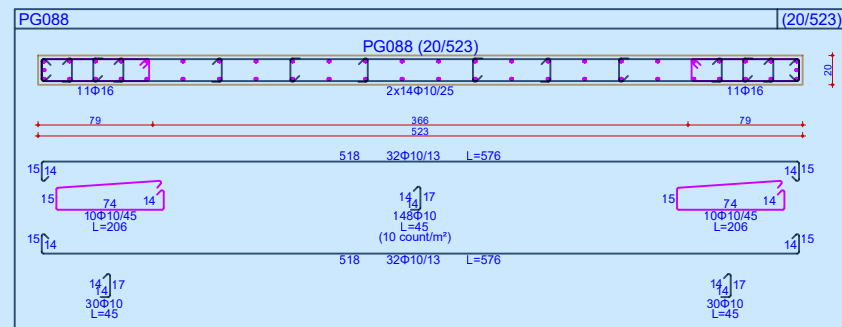


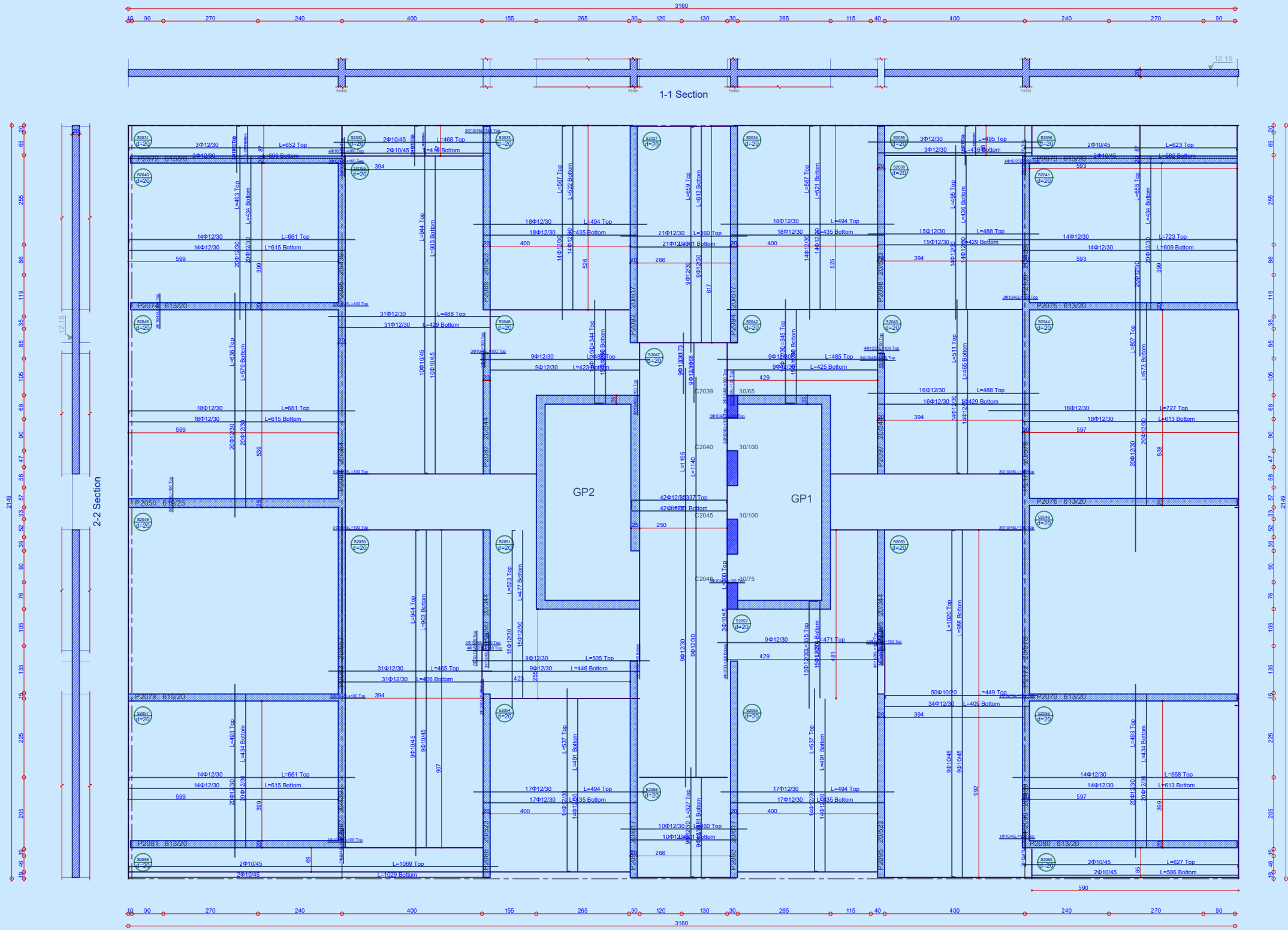
. all dim. from ARCH D.W.G.



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

16

[illegible]



MINIMUM LAP LENGTH (UNLESS NOTED ON DRAWINGS) SHOULD BE AS TABLE BELWO :-

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

GROUND +1TO11 STORY REINFORCEMENT PLAN

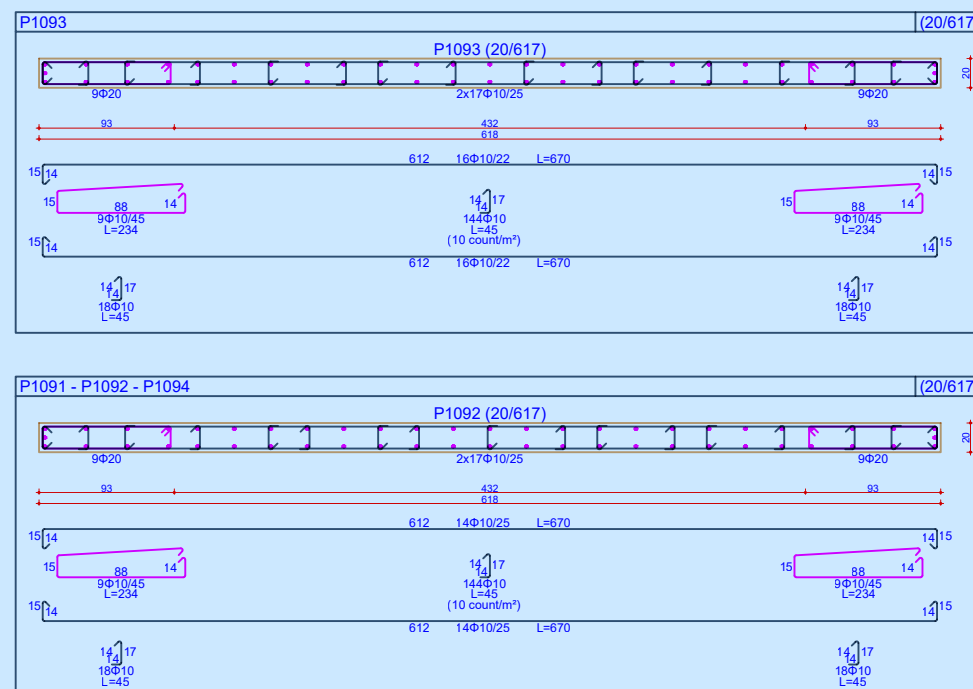
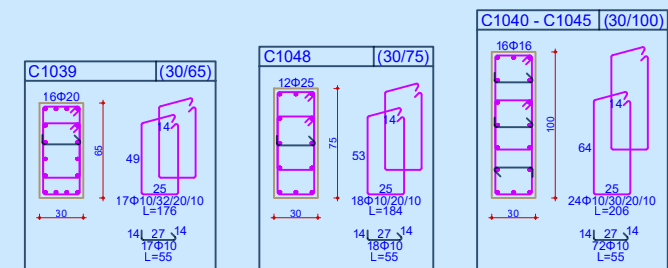
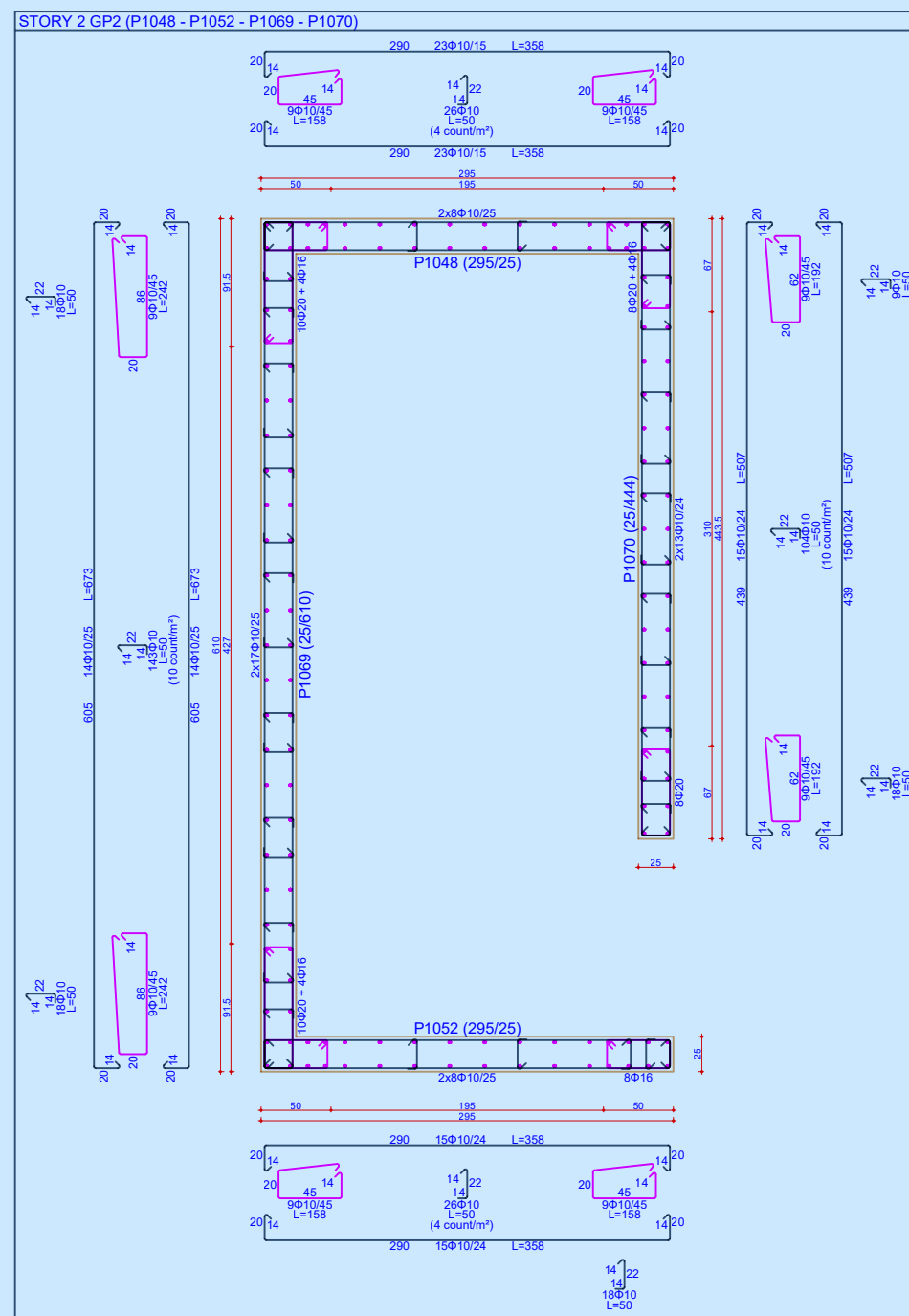
. all dim. from ARCH D.W.G.

no.	date	initials	revision
Job title			
Residential building (A) TYPE A			
drawing title			
G+1TO11 STORY REINFORCEMENT PLAN			
designed	ENG : DR-Majid Albana	project manager	
checked		scale	1-100
drawn		job no.	20
approved		date	3/2024



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

[illegible]

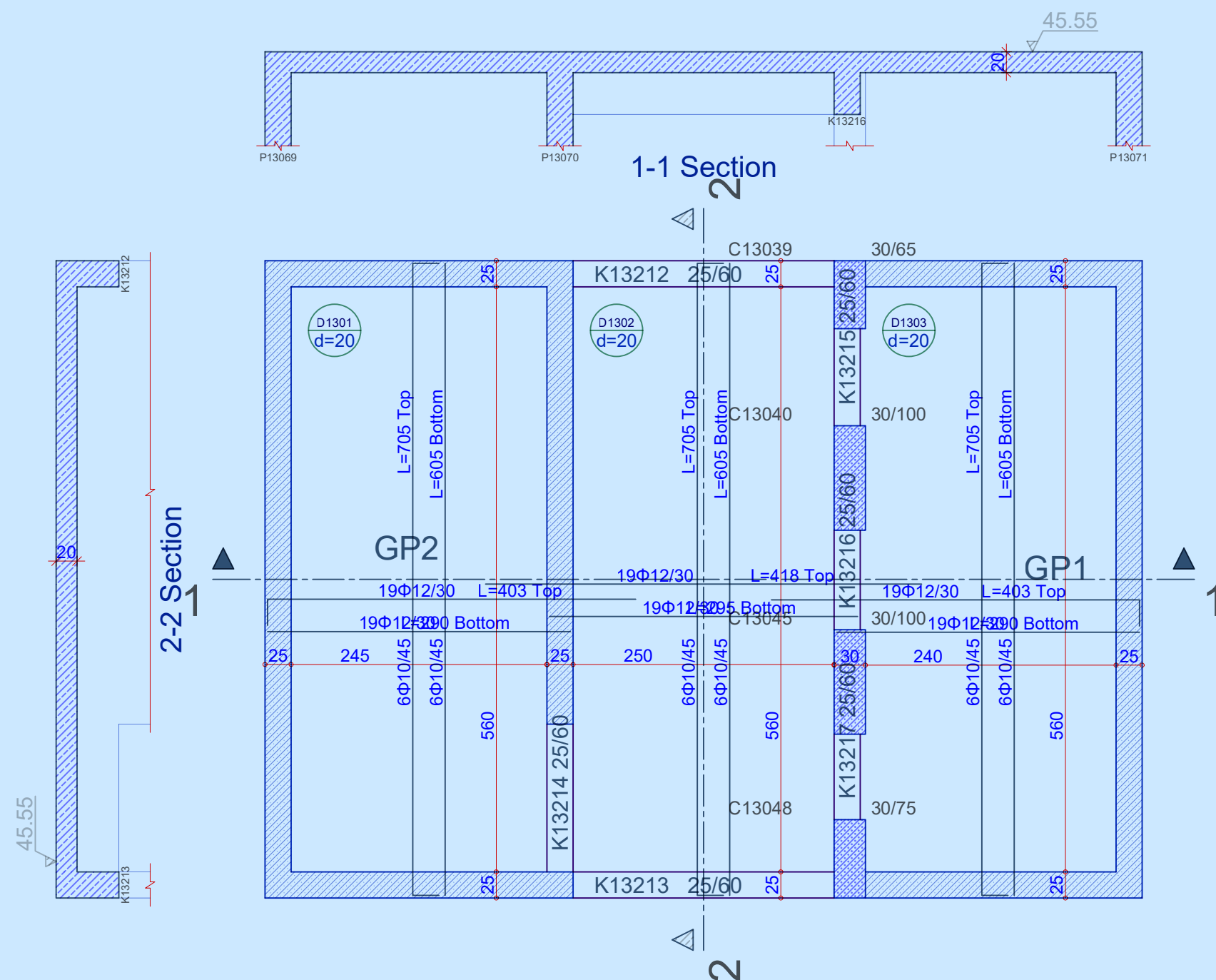
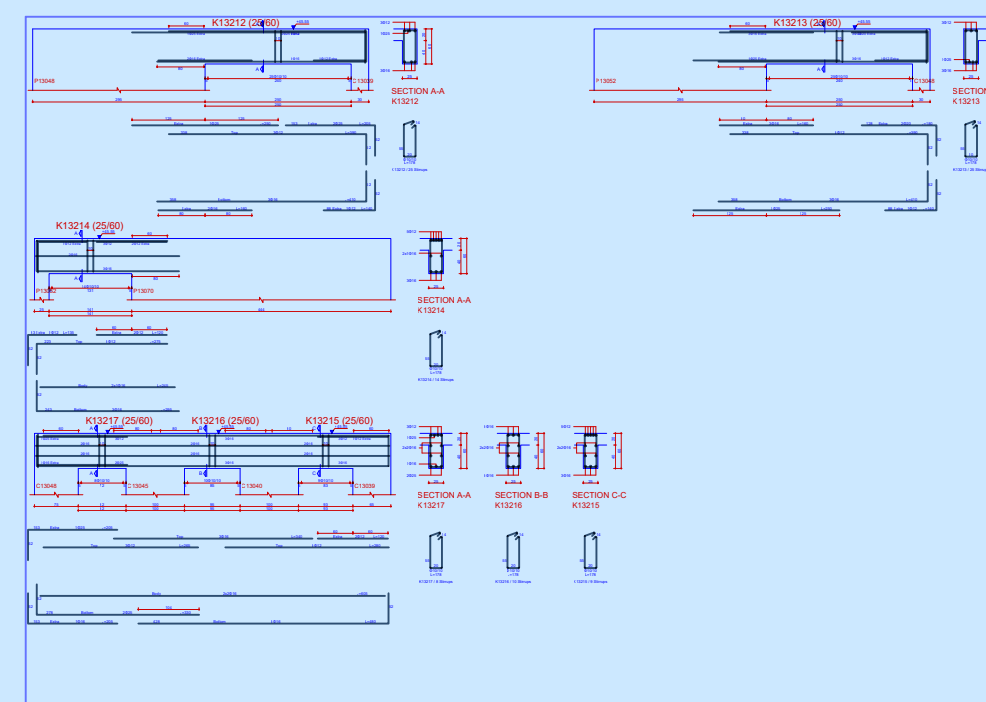
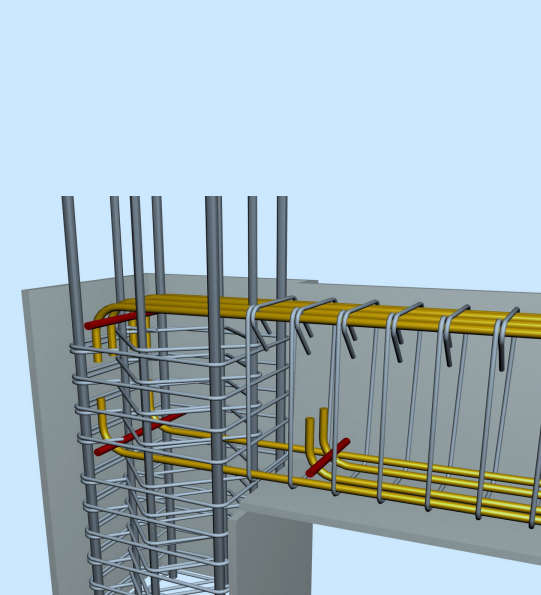


all dim. from ARCH D.W.G.

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

no.	date	initials	revision
job title Residential building (A) TYPE A			
drawing title			
1 TO 11 STORY SHEAR WALL Plan			
REINFORCEMENT&SEC.			
designed ENG : DR-Majid Albana		project manager	
checked	scale 1-100	date 5/2024	
drawn	job no.	sheet no.	
approved	22		

no. **23** sheet n



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

PENTHOUSE REINFORCEMENT

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

no.	date	initials	revision
job title Residential building TYPE A			
drawing title			
PENTHOUSE REINFORCEMENT			
designed ENG : DR-Majid Albana		project manager	
checked	scale 1-100	date 5/2024	
drawn	job no.		sheet no.
approved	25		