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Notes

THE BUILDING SYSTEM WILL BE CONSIDER AS SHEAR WALL BUILDING WITH COLUMNS AND THE SLAB WILL BE AS SOILD SLAB WITH BEAMS.THE SOFTWARE USED IN DESIGN (CSI ETABS2022, AND CSI SAFE2022+ PROKON) IS THE GENERAL PROGRAM USED IN THIS DESIGN

job title

Commercial building

Structural Drawings

DRWG. TITLE:

DESIGNED BY DR-Majid Albana

CHECKED BY

SCALE As Shown

DATE 12 /2022

SHEET NO. Str. 1

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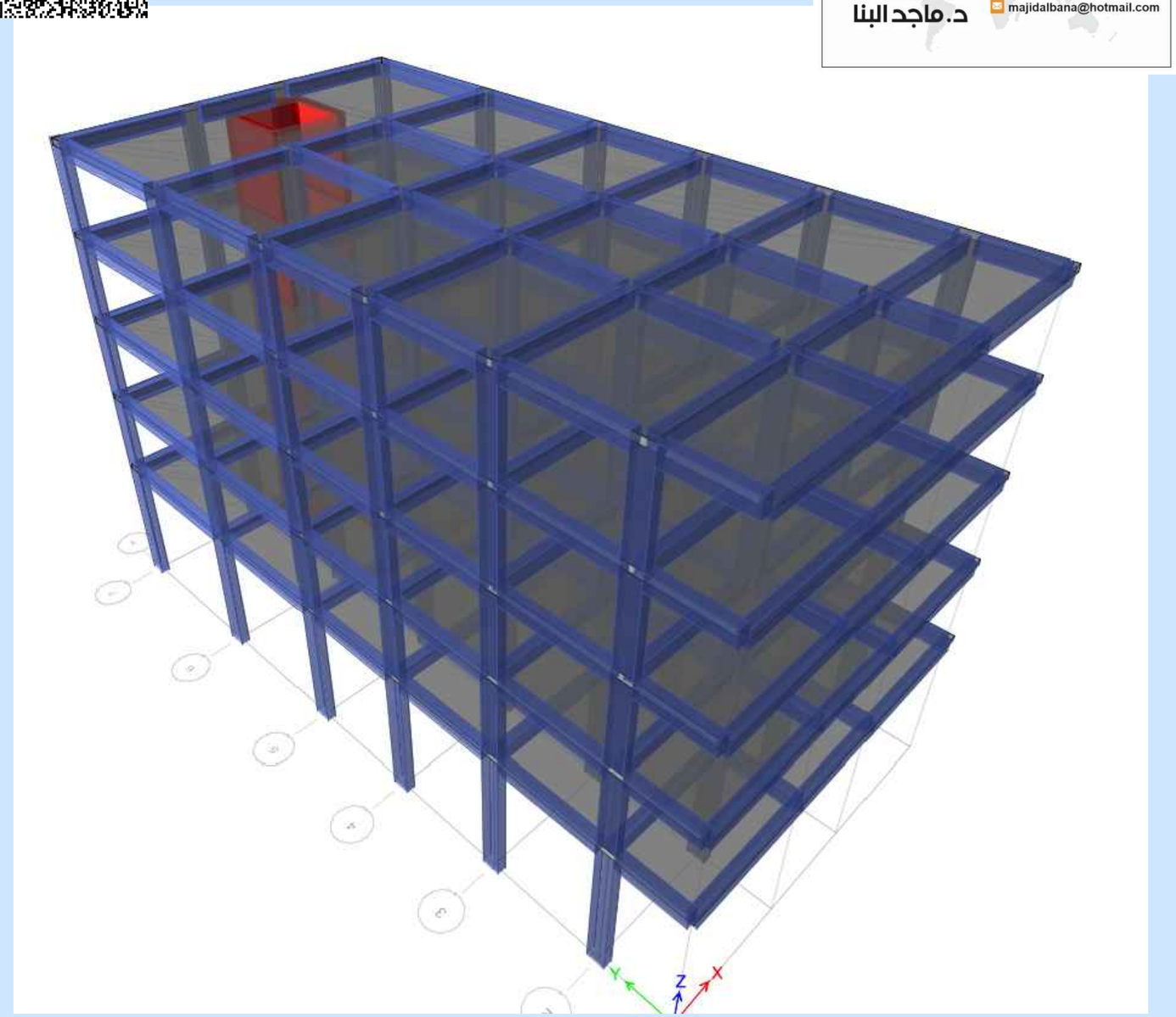

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GENERAL :-

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 STANDARED & LOADS :-
   - DESIGN & CONSTRUCTION OF REINFORCED CONCRETE STRUCTURES MEMBERS SHALL IN ACCORDANCE WITH ACI-318-95 (ULTIMATE STRENGTH DESIGN METHOD).
   - ALL RETANING WALL STRUCTURE SHOULD BE AS BRITISH 8 97- 110 or ACI - 93 - 318.
   - MASONARY 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.

FOUNDATION AND EARTH WORK :-

1. FOUNDATION DESIGN BASED ACCORDING TO THE SOIL REPORT
2. BEARING CAPACITY ACCORDING TO THE SOIL by assume IS (11K/m²) 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 ≤ 25%.
   - PLASTICITY INDEX ≤ 6%.
   - ORGANIC MATERIAL ≤ 2%.
   - SO_3 ≤ 5%.
   - TOTAL SOLUBLE SALTS ≤ 5%.
   - GYPSUM CONTENT ≤ 10.75%.
   - RELATIVE COMPACTION 95% (MODIFIED PROCTOR).
4. SULPHATE RESISTANT CEMENT TYPE 5 SHOULD BE USED IN ALL CONCERET WORK IN CONTACT WITH EARTH OR BELOW D.P.C. LEVEL.
5. BACKFILL AROUND FOOTINGS AND UTILITY TRENCH WITHIN THE BUILDING AREA SHOULD BE DONE WITH APPROVED SELECTED CLASSIFIED MATERIAL FREE OF CLAY AND SHOULD BE MECHANICALLY COMPACTED IN LAYERS, NOT EXCEEDING 250mm LOOSE THICKNESS TO 90% OF MAXIMUM PROCTOR DENSITY.

CONSTRUCTION JOINT AND WATERPROOFING :-

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.

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

REINFORCED CONCRETE :-

1. COMPRESIVE STRENGTH OF CONCRETE SHOULD BE DETERMIND BY THE TABLE BELOW :-

MEMBER TYPE \ LOCATIONS	MINIMUM 28 DAYS CUBE COMPRESSIVE STRENGTH (Fcu) (MPa)	AGGREGATE MAX. SIZE
SCREED	20	10 mm
BLINDING OR LEAN CONCRETE	20	20 mm
SLABS	35	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

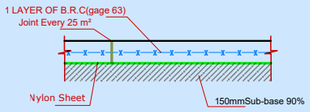
2. SULPHATE RESISTANT CEMENT TYPE 5 SHOULD BE USED IN ALL CONCERET WORK IN CONTACT WITH EARTH OR BELOW D.P.C LEVEL.
3. REINFORCMENT STEEL CONFORM TO ASTM A615 & A616 OR A617 BARS SHOULD BE GRADE 400 FY=410N/mm (60000psi).
4. PLACING OF REINFORCEMENT SHOULD BE ACCORDING TO ACI-315 DETAILING MANUAL.
5. MINIMUM BARS COVER :-

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

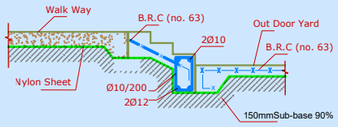
6. MINIMUM BARS SPACING :-
   - CLEAR SPACING BETWEEN PARALLEL BARS SHALL NOT BE LESS THAN BAR DIAMETER OR 4/3 OF MAXIMUM AGGREGATE SIZE BUT NOT LESS THAN 25mm.
   - CLEAR SPACING BETWEEN LAYERS OF BARS TO BE NOT LESS THAN 25mm AND THE UPPER BARS SHOULD BE OVER THE LOWER BARS .
   - IN COLUMNS CLEAR DISTANCE BETWEEN LONGITUDINAL BARS SHOULD BE NOT LESS THAN 1.5 BAR DIAMETER NOR LESS THAN 40mm.
7. 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

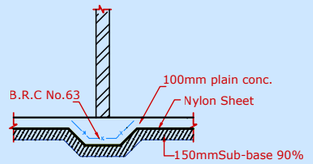
   - LAP LOCATION IN SLABS AND BEAMS :-
     * AT SUPPORT FOR BOTTOM BARS.
     * AT MID SPAN FOR TOP BARS.
   - LAP LOCATION IN FOUNDATION :-
     * AT SUPPORT FOR TOP BARS.
     * AT MID SPAN FOR BOTTOM BARS.
8. VERTICAL REINFORCEMENT IN COLUMN :-
   - WHERE COLUMN FACE ARE OFFSET 75mm OR MORE SPLICE 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 (HORIZANTAL: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 BEFOR THE POINT OF BEND.
   - WHERE LONGITUDINAL BARS OFFSET,PROVIDE 4TIES.
9. HOT & COLD WETHERING 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 SUBJECTED TO ENGINEER'S APPROVAL.



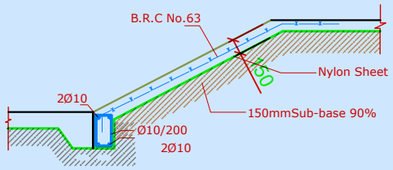
Typical Detail Of Out Door Yard



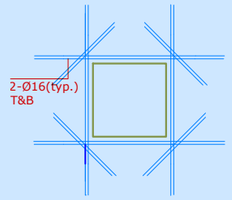
Typical Sec. For Stair On Earth



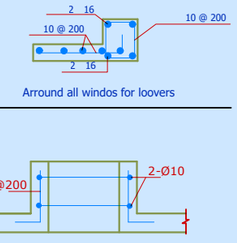
CONSTRUCTION OF PARTITION ON GROUND SLAB
provid construction joint for max.(5mx5m)



Typical Sec. Of Ramp



TYPICAL REINF. AROUND OPENNINGS UP TO 600



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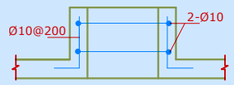
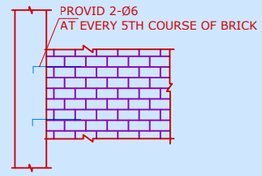
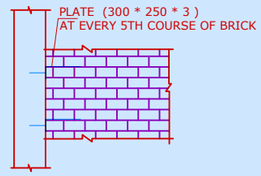


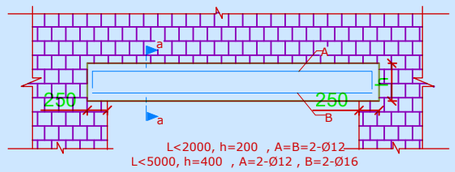
TYPICAL UP STAND DETAIL ROOF OPENNINGS



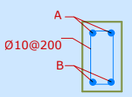
CONECTION BETWEEN BRICK WALL AND R.C. COLUMN
proposel 1



CONECTION BETWEEN BRICK WALL AND R.C. COLUMN
proposel 2



LINTEL REINFORCEMENT



SEC. (a - a)

ABBREVIATIONS :-

ADD	ADDITIONAL
ARCH	ARCHITECTURAL
B	BEAM
BOTT	BOTTOM
C1	COLUMN TYP C1
CANT	CANTILEVER
CJ	CONSTRUCTION JOIN
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

no	date	initials	revision

job title

(A)

drawing title

GENERAL NOTES

designed ENG : Majid Albana	project manager
checked	scale / date
drawn ENG : DR-Majid Albana	job no. / sheet no. 2
approved	

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 ASTMD-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/m²
TILES	0.20	KN/m²
False Ceiling & MECHANICAL DIVISIONS	0.50	KN/m²
EXTERNAL & INTERNAL PARTITION WALL Bricks	2.5	KN/m²
TOTAL ----------	4.00	KN/m²

2) LIVE LOADS:

RESIDENTIAL AREAS	3.0	KN/m²
STAIRCASE	4.0	KN/m²

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 (UnifiedFacilities 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.

Table 1.1

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.

Table 1.2

Seismic 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	Ω₀	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 a. span from 6-8 m	 14 days 20 days

no.	date	initials	revision

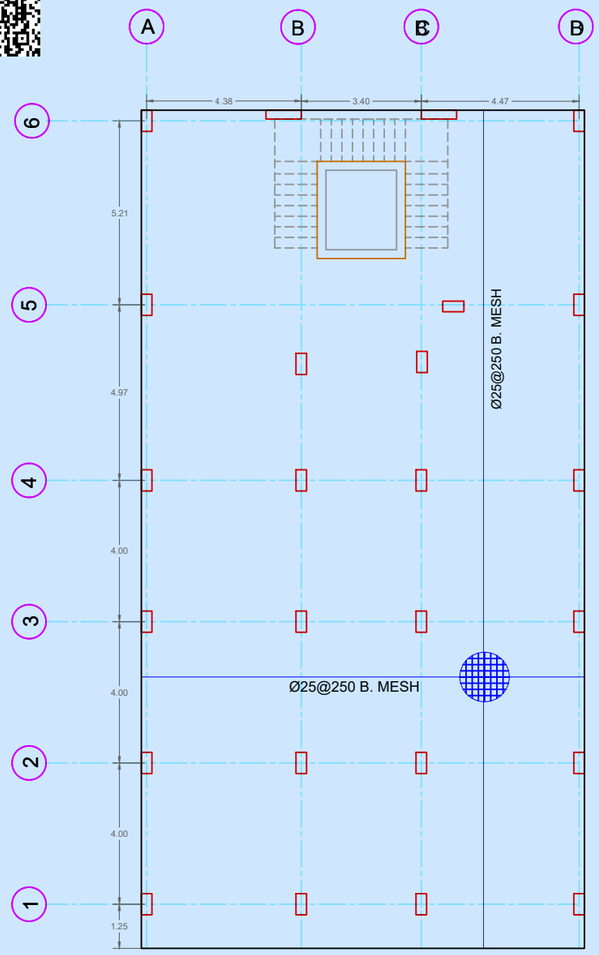
job title

(A)

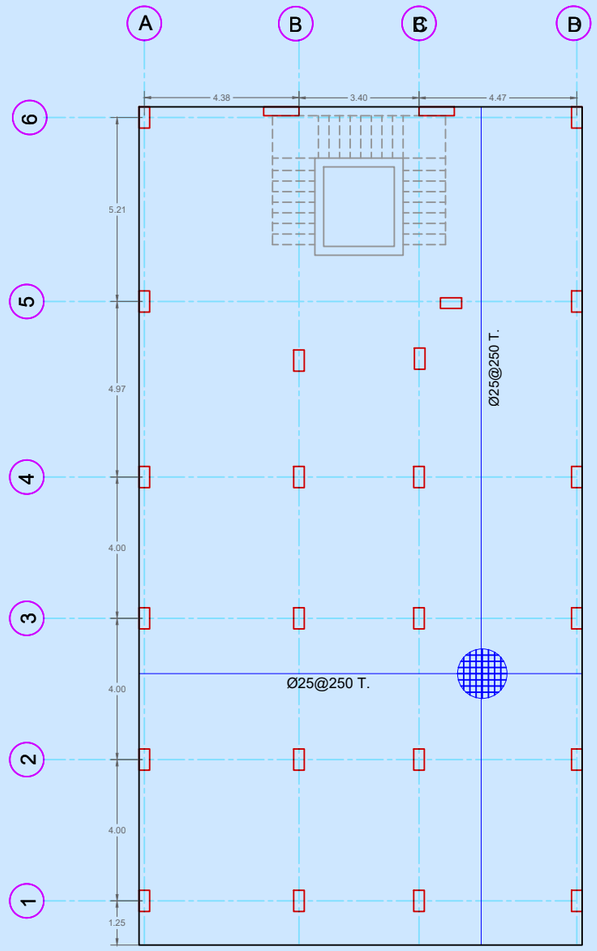
drawing title

THE DESIGN LOADS

designed ENG :DR- Majid Albana	**project manager**	
checked	**scale** 1-100	**date** 10 /2022
drawn	**job no.** 3	**sheet no.** ST/D/03
approved		



BOT. REINFORCEMENT



TOP REINFORCEMENT

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-Fcu = 40 N/mm2
-Fy = 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

-THE BUILDING IS DESIGNED FOR GROUND FLOOR + 2nd+3rd+4th FLOORS + PENT-HOUSE

Foundation Plan

THICK. = 800 mm

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

no.	date	initials	revision

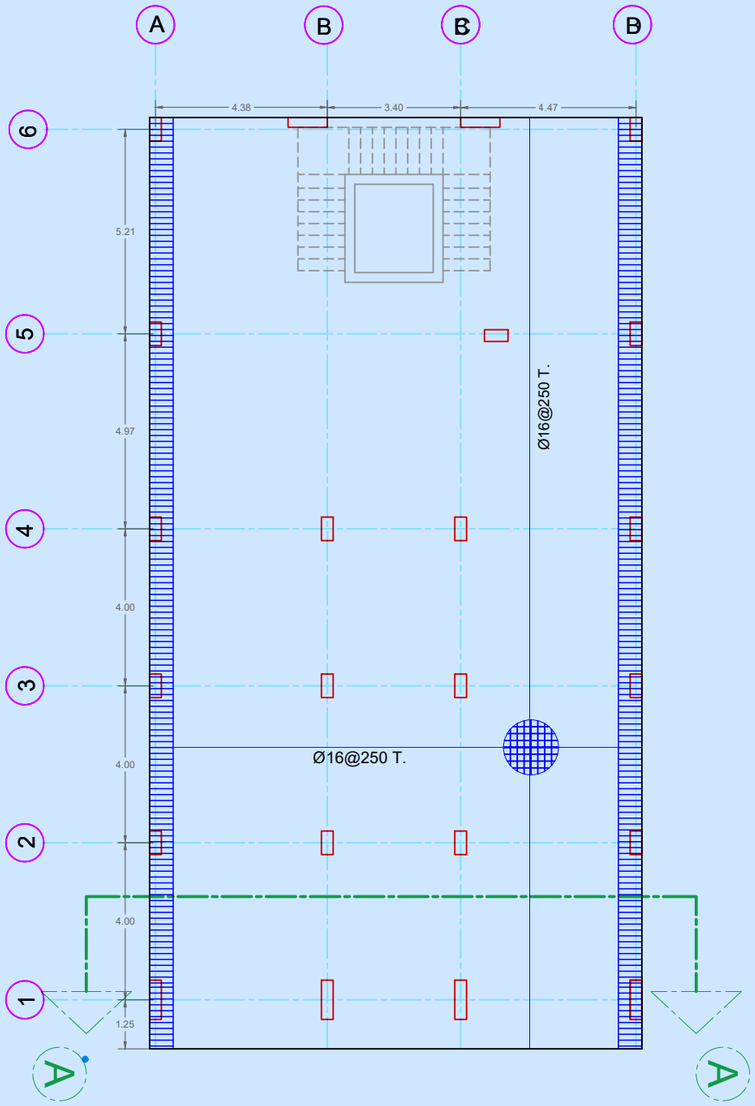
job title

(A)

drawing title

PLAN OF FOUNDATION REINFORCEMENT&SEC.

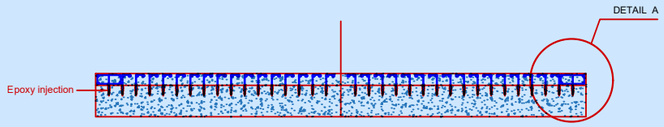
designed ENG : Majid Albana	project manager		
checked ENG : Majid Albana	scale 1-100	date 12 /2022	
drawn ENG : Majid Albana	job no. 4	sheet no. ST/D/04	
approved			



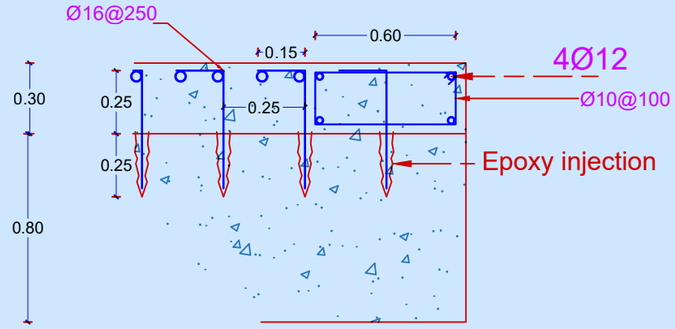
TOP REINFORCEMENT

Foundation Plan

THICK. = 800 mm



Section A-A



DETAIL A

H.B

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-Fcu = 40 N/mm2
-Fy = 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

-THE BUILDING IS DESIGNED FOR GROUND FLOOR + 2nd+3rd+4th FLOORS + PENT-HOUSE

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

no.	date	initials	revision

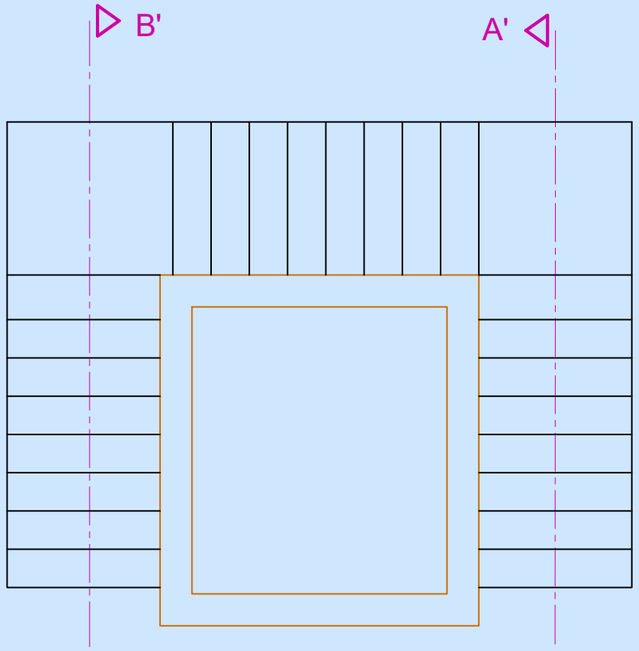
job title

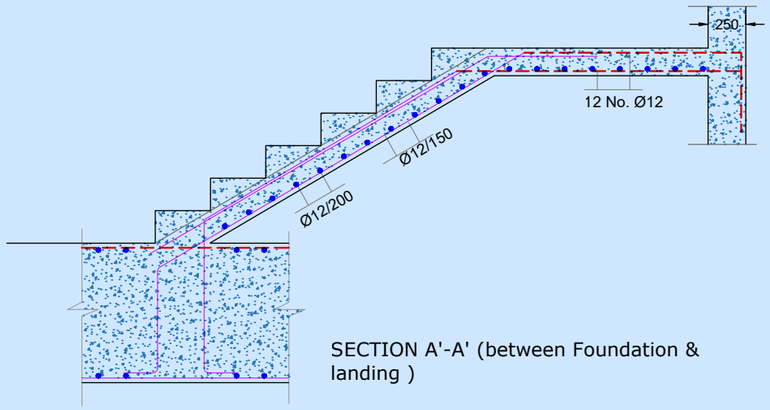
(A)

drawing title

PLAN OF FOUNDATION REINFORCEMENT&SEC.

designed ENG : Majid Albana		project manager	
checked ENG : Majid Albana		scale 1-100	date 12 /2022
drawn ENG : Majid Albana		job no. 5	sheet no. ST/D/04
approved			





SECTION A'-A' (between Foundation & landing)

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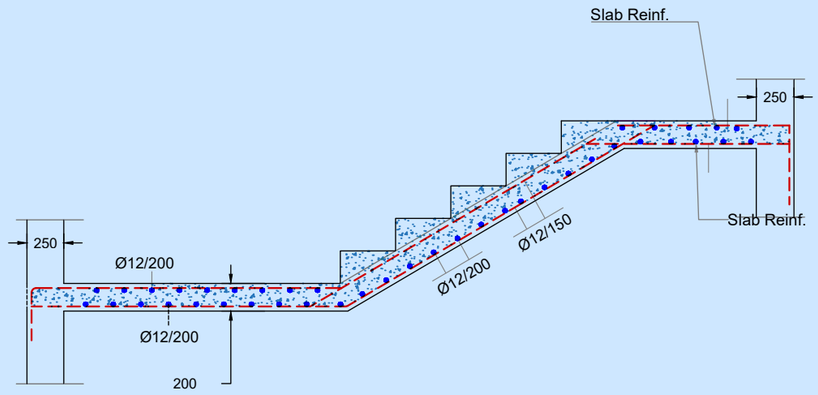
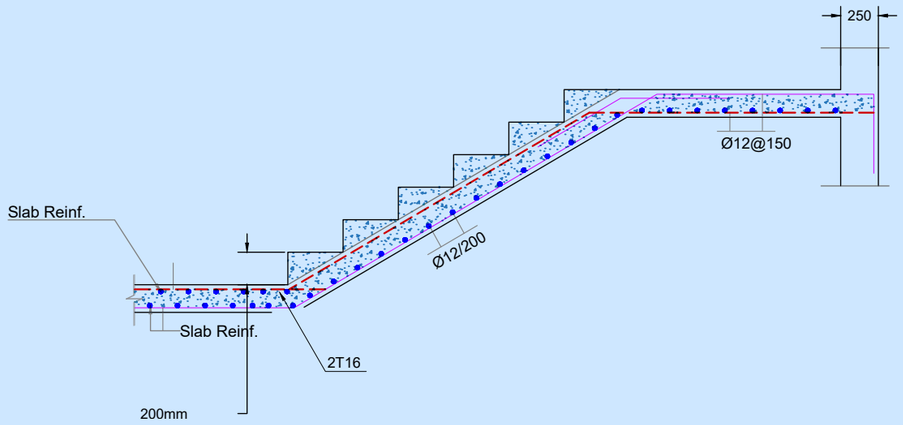


SECTION A'-A' (between slab & landing)



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

no.	date	initials	revision

job title

(A)

drawing title

Stairs detail

designed: ENG : DR-Majid Albana	project manager	
checked	scale: 1-100	date: 12 /2022
drawn	job no. 6	sheet no. ST/D/07
approved		

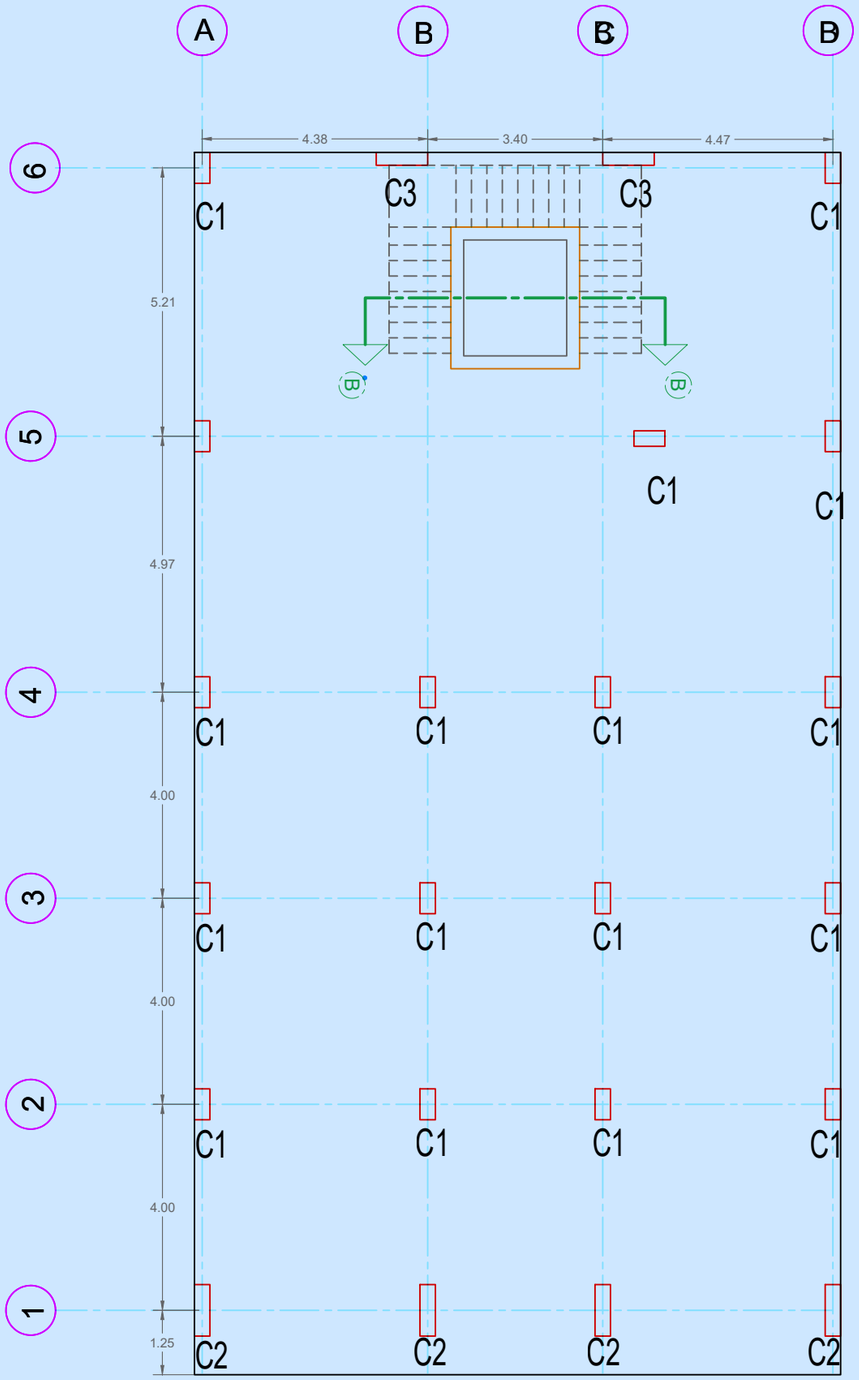
Notes

-Fcu = 50 N/mm2
-Fy = 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

-THE GEOTECHNICAL INVESTIGATION REPORT DIDN'T DONE BY THE CLIENT,AND ALL FOUNDATIONS SHOULD BE REDESIGNED AFTER FINISHING THE GEOTECHNICAL INVESTIGATION AND THE BEARING CAPACITY OF THE SOIL ASSUMED TO 110 kN/m2
-THE BUILDING IS DESIGNED FOR GROUND 1 ST+2nd+3rd& 4th FLOOR + PENT-HOUSE



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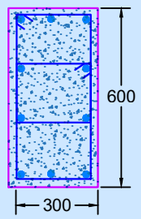
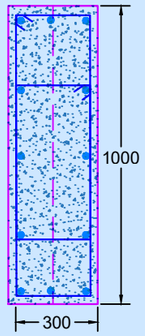
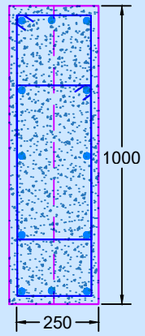
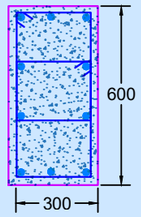
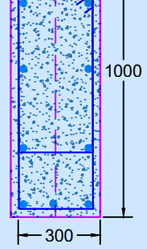
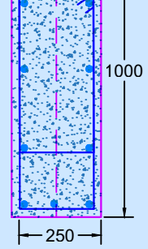
SCHEDULE OF COLUMNS AND WALLS

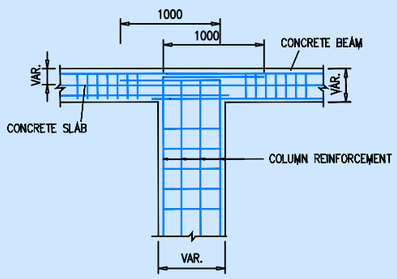
COLUMNS OR WALLS ID	SIZE		REMARK
	LENGTH (mm)	WIDTH (mm)	
C1	600	300	
C2	1000	300	

COLUMNS & WALL KEY PLAN

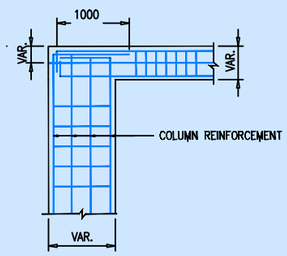
. all dim. from ARCH D.W.G.

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 12/2022
drawn		job no. 7	sheet no. ST/D/08
approved			

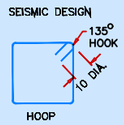
			10 - Ø25	12 - Ø25	12 - Ø25
Main Bar	Roof Floor		Ø10@200 2Ties/Set	Ø10@200 2Ties/Set	Ø10@200 2Ties/Set
Ties					
Section	2nd Floor	C 50			
Main Bar	1ST Floor		10 - Ø25	12 - Ø25	12 - Ø25
Ties			Ø10@200 2Ties/Set	Ø10@200 2Ties/Set	Ø10@200 2Ties/Set
Section	Ground Level foundation level	C50			
Dowels			10 - Ø25 C 1	12 - Ø25 C 2	12 - Ø25 C 3

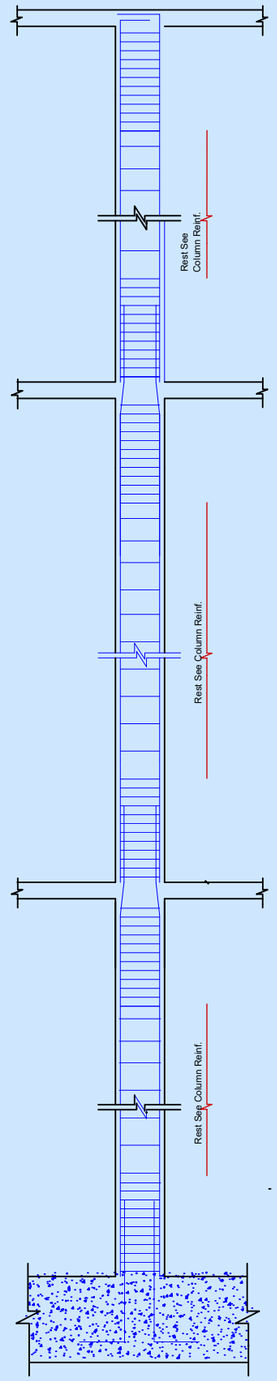


TYPICAL INTERNAL COLUMN TO BEAM DETAIL



TYPICAL EDGE COLUMN TO BEAM DETAIL





Typ. Sec. For Column

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

no.	date	initials	revision

job title

(A)

drawing title

SCHEDULE OF COLUMN

designed ENG : DR-Majid Albana	project manager	
checked	scale 1-100	date 12/2022
drawn	job no. 8	sheet no.
approved		

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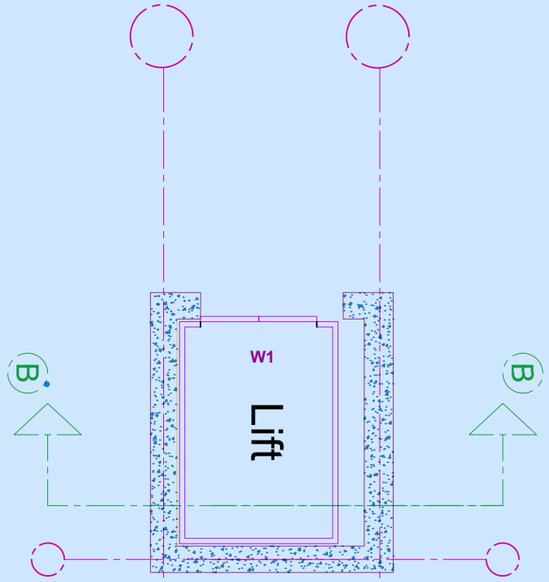
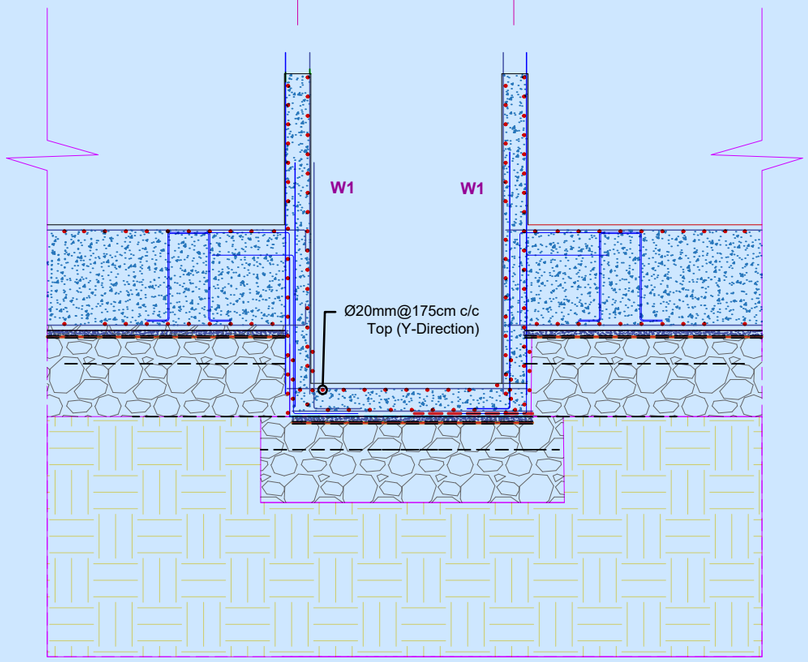
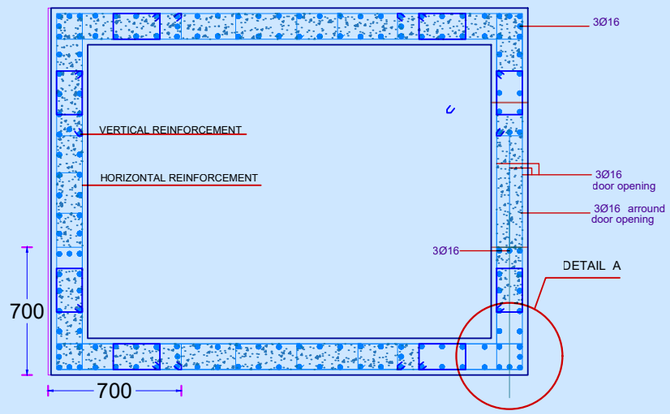
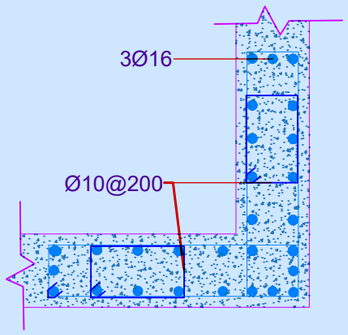




Section
B-B



W1 Reinf.



DETAIL A

no.	date	initials	revision

job title
(A)

drawing title
Section A'-A' lift detail

designed: ENG : Majid Albana	project manager
checked	scale: 1-100 / date: 10 /2022
drawn	job no.: 9 / sheet no.: ST/D/06
approved	

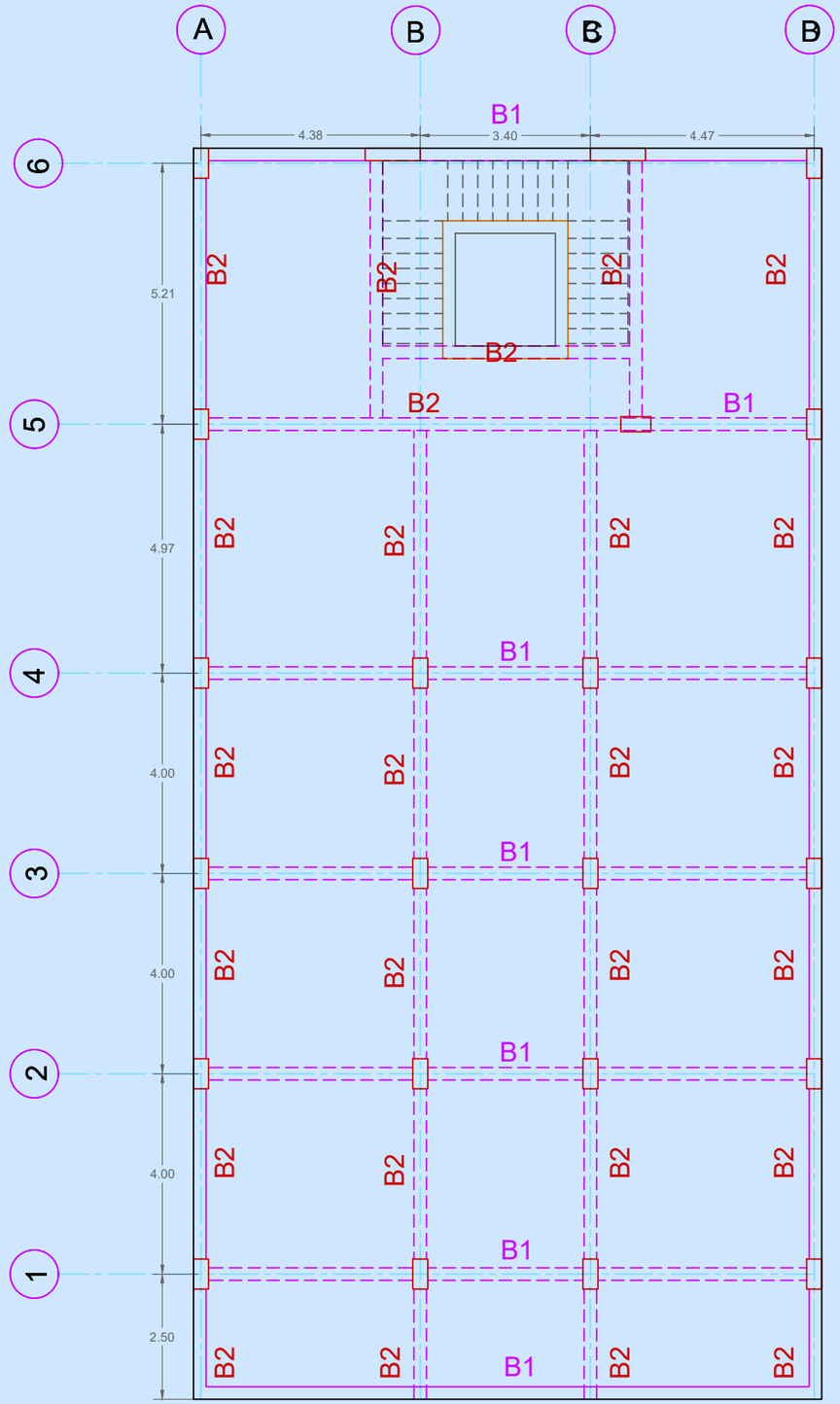
Notes

-Fcu = 50 N/mm2
-Fy = 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

-THE GEOTECHNICAL INVESTIGATION REPORT DIDN'T DONE BY THE CLIENT,AND ALL FOUNDATIONS SHOULD BE REDESIGNED AFTER FINISHING THE GEOTECHNICAL INVESTIGATION AND THE BEARING CAPACITY OF THE SOIL ASSUMED TO 110 kN/m2
-THE BUILDING IS DESIGNED FOR GROUND 1 ST+2nd+3rd& 4th FLOOR + PENT-HOUSE



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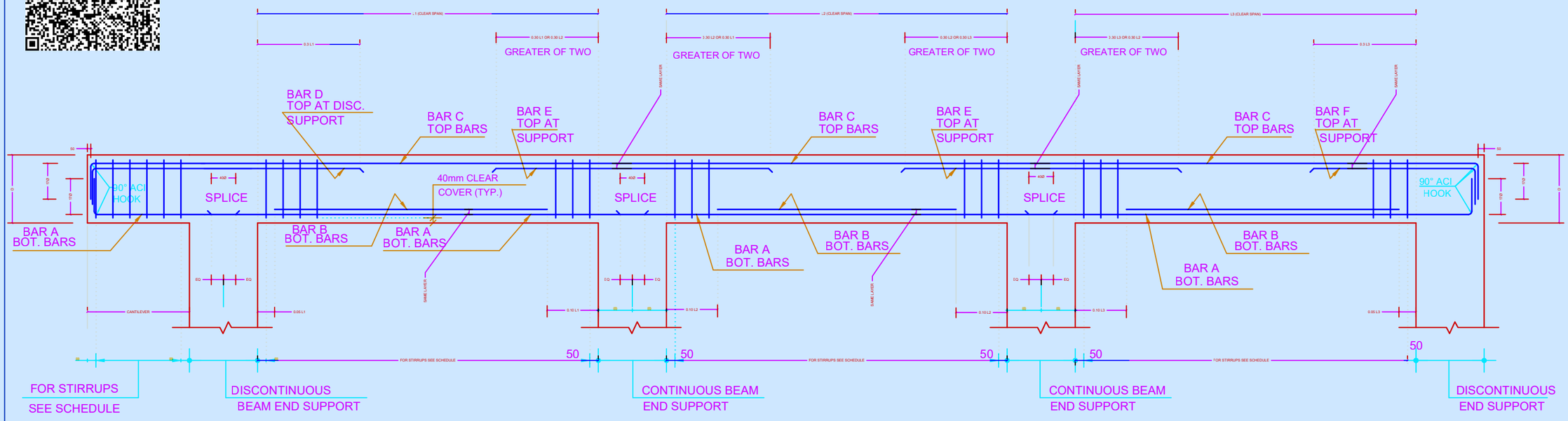
BEAM KEY PLAN

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

no.	date	initials	revision

job title
(A)
drawing title
BEAM KEY PLAN

designed ENG : DR-Majid Albana	project manager	
checked	scale 1-100	date 12/2022
drawn	job no. 10	sheet no. ST/D/08
approved		

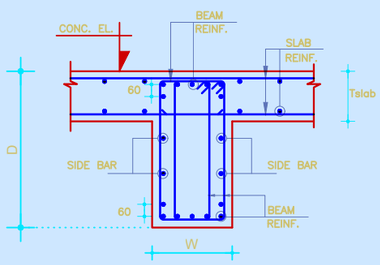


NOTES:

1. REFER TO BEAM SCHEDULE FOR No. AND SIZE OF TOP AND BOTTOM BARS REQUIRED PER BEAM.
2. PROVIDE 60mm CENTRE TO CENTRE WHEN SCHEDULES CALL FOR 2 LAYERS OF REBARS.
3. FOR CANTILEVER BEAMS OR RIBS, BARS SHOULD BE EXTENDED UP TO ONE HALF THE CANTILEVER SPAN.

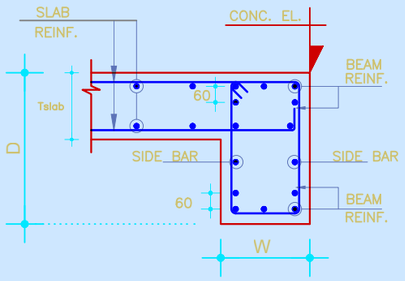
TYPICAL BEAM LONGITUDINAL SECTION

NOT TO SCALE



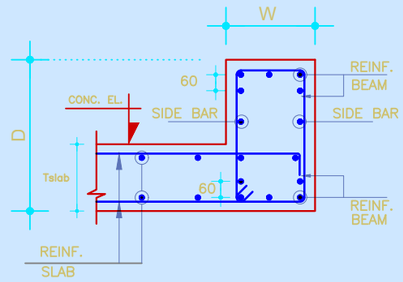
Type (1)

TYPICAL INTERNAL BEAM SECTION
N.T.S



Type (2)

TYPICAL EDGE BEAM SECTION
N.T.S



Type (4)

TYPICAL EDGE INV. BEAM SECTION
N.T.S

no.	date	initials	revision

job title
TYPICAL BEAM LONGITUDINAL SECTION
(A)

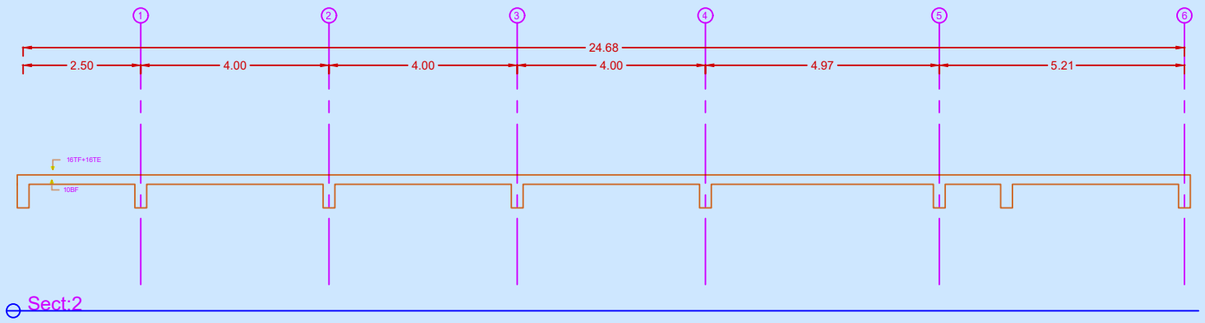
drawing title

designed ENG : DR-Majid Albana	project manager	
checked	scale 1-100	date 12/2022
drawn	job no. 11	sheet no.
approved		

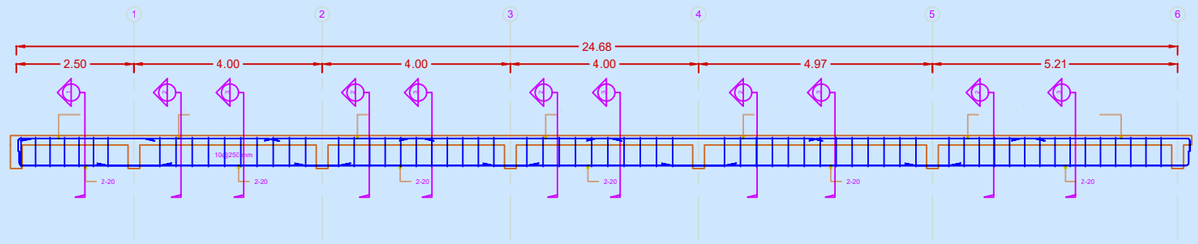
GROUND &FIRST FLOOR OF MAIN BUILDING PART A, C , D

BEAMS SCHEDULE

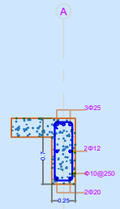
MARK	DIMENSIONS			Sec. Type	BOTTOM BARS		TOP BARS					SIDE BARS (PER SIDE)	STIRRUPS		REMARKS
	W	D	T slab		A	B	C	D	E END 1	E END 2	F		SHAPE	DIA. AND SPACING	
B1	250	700		1	2Ø20	2Ø20	2Ø20		2Ø20	2Ø20		2Ø12		Ø10@275 mm c/c	
B2	250	700		2	2Ø20	2Ø20	2Ø20		2Ø20	2Ø20				Ø10@275 mm c/c	



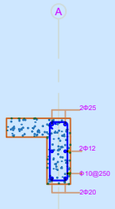
Sect:2



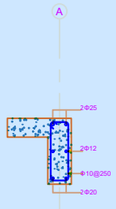
B1:Elevation
(Scale 1:50)



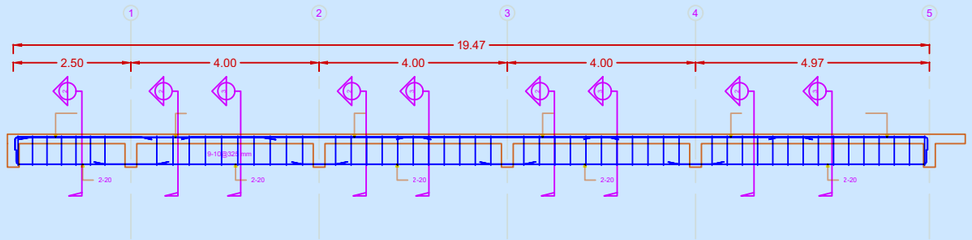
B1:Sect:1
(Scale 1:25)



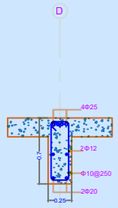
B1:Sect:2
(Scale 1:25)



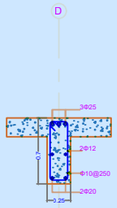
B1:Sect:3
(Scale 1:25)



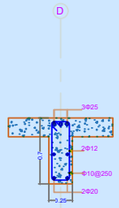
B2:Elevation
(Scale 1:50)



B2:Sect:1
(Scale 1:25)



B2:Sect:1
(Scale 1:25)



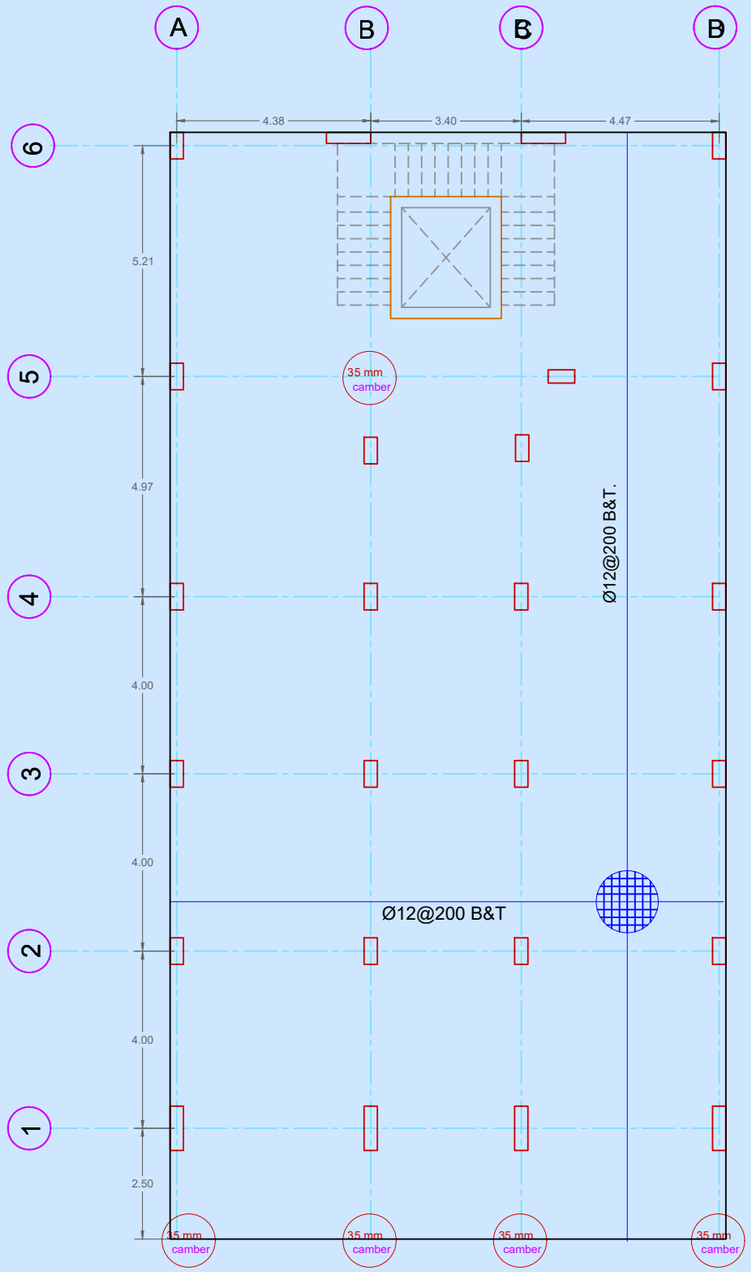
B2:Sect:1
(Scale 1:25)

no.	date	initials	revision

job title
TYPICAL BEAM LONGITUDINAL SECTION
(A)

drawing title

designed ENG : DR-Majid Albana	project manager	
checked	scale 1-100	date 12/2022
drawn	job no. 12	sheet no.
approved		



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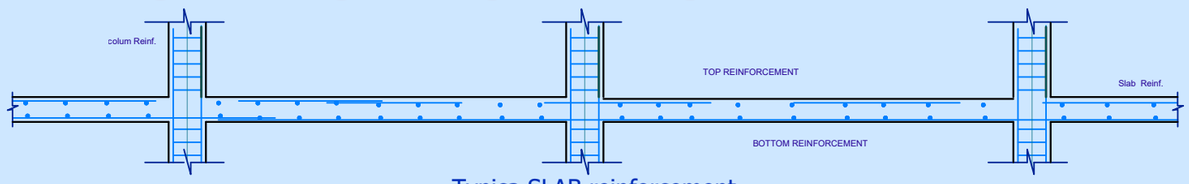
35 mm Camber

Slab Camber 35 mm

SLAB REINFORCEMENT (GROUN & 1ST FLOOR)

SLAB THICKNESS = 200 mm



Typica SLAB reinforcement

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 SLAB & BEAMS	400	600	700	800	900	1000	1250

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

no.	date	initials	revision

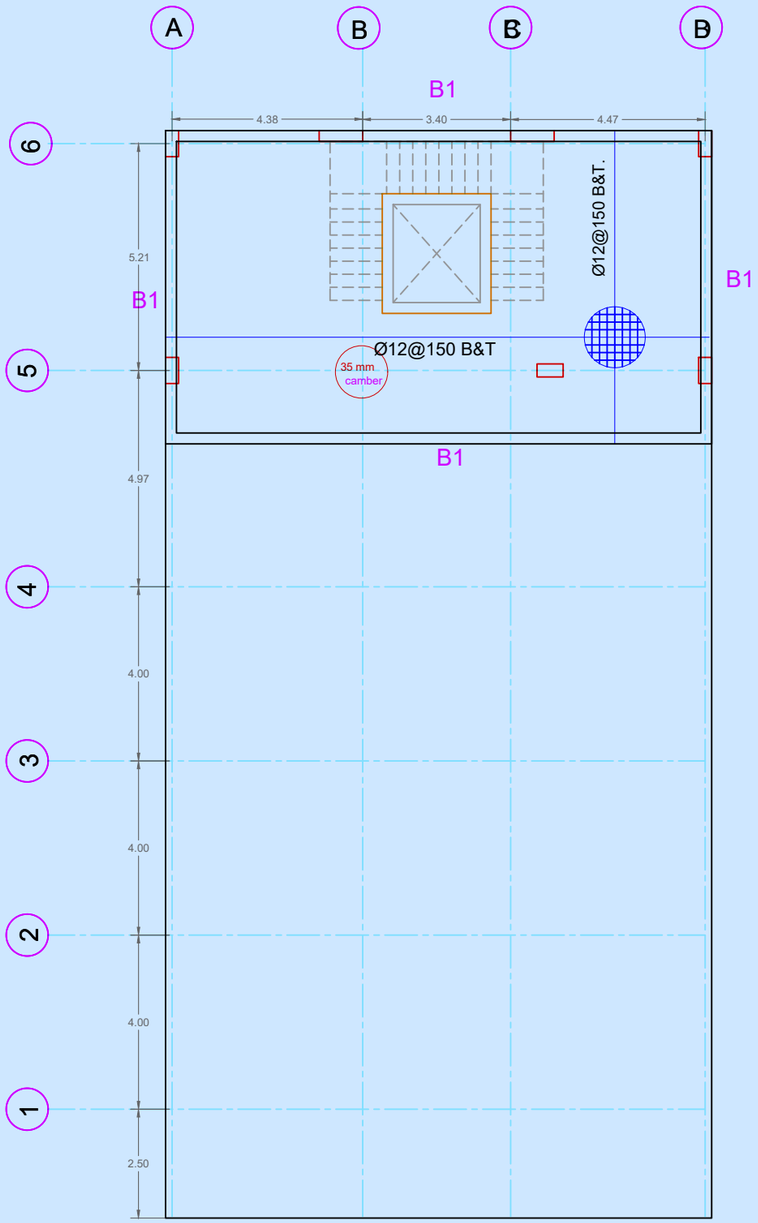
job title

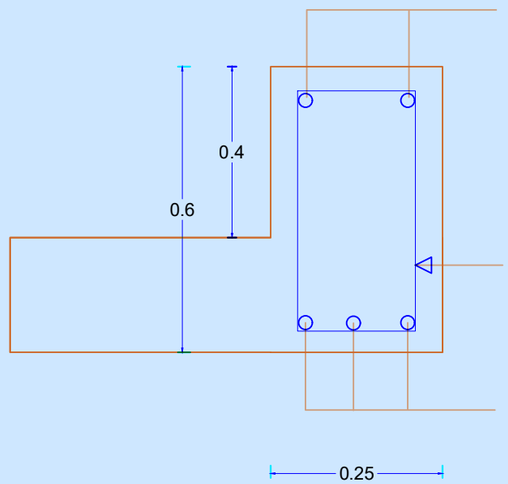
(A)

drawing title

PLAN OF SLAB REINFORCEMENT&SEC.

designed ENG : DR-Majid Albana		project manager	
checked		scale 1-100	date 12 /2022
drawn		job no. 13	sheet no. ST/D/11
approved			





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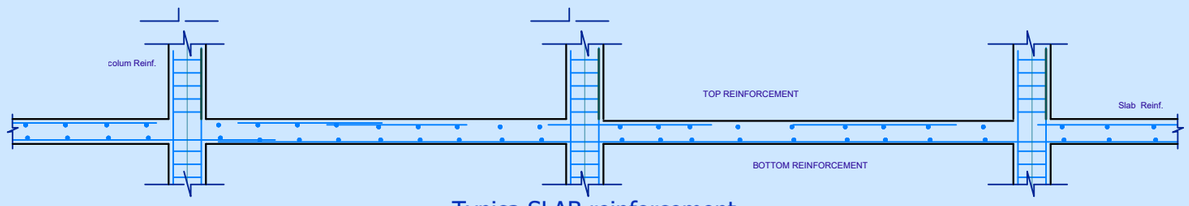
B1

35 mm Camber

Slab Camber 35 mm

SLAB REINFORCEMENT (PEN HOUSE)

SLAB THICKNESS = 200 mm



Typica SLAB reinforcement

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 SLAB & BEAMS	400	600	700	800	900	1000	1250

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

no.	date	initials	revision

job title

(A)

drawing title

PLAN OF SLAB REINFORCEMENT&SEC.

designed: ENG : DR-Majid Albana	project manager	
checked	scale: 1-100	date: 12 /2022
drawn	job no. 14	sheet no. ST/D/11
approved		