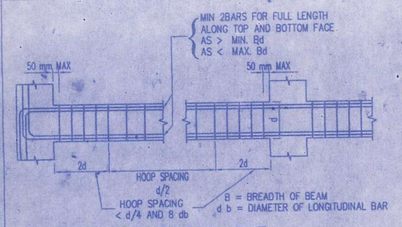
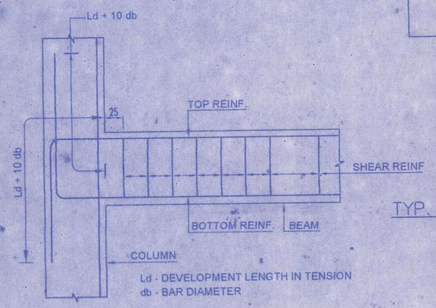
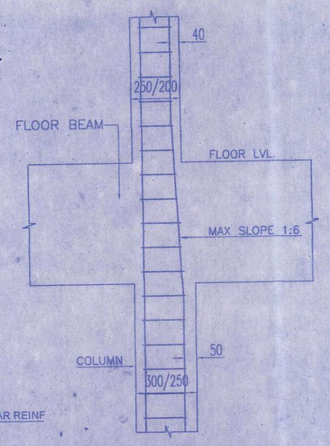


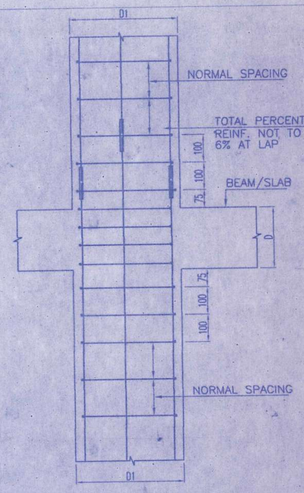
BEAM REINFORCEMENT



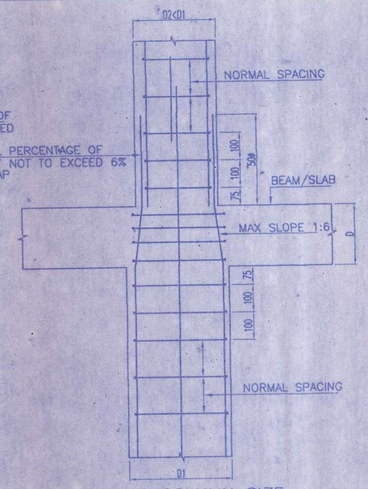
ANCHORAGE OF BEAM BARS IN AN EXTERNAL JOINT



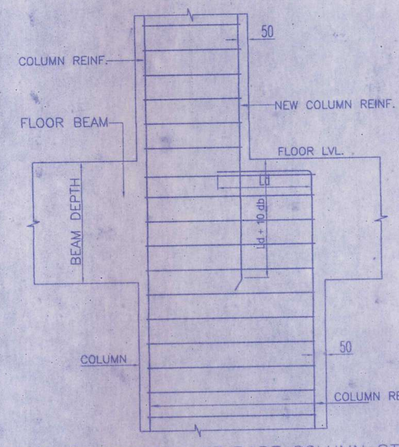
TYP. LONG SECTION OF COLUMN
SCALE-1:25



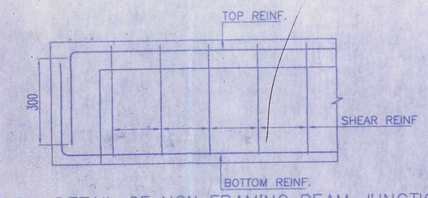
MECHANICAL SPLICING DETAIL
(FOR Y25 AND ABOVE)



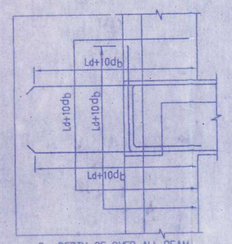
REDUCING COLUMN SIZE
TYPICAL COLUMN SPLICING DETAIL
AT FLOOR LEVEL



TYP. PART DETAIL OF PART COLUMN STOP
SCALE-1:25



TYP. DETAIL OF NON FRAMING BEAM JUNCTION



TYP. DETAIL OF FRAMING BEAM JUNCTION

1. GENERAL

1.1 ALL DIMENSIONS ARE IN S.I UNITS.
1.2 WORK TO FIGURED DIMENSIONS AND DO NOT SCALE THE DRAWING.
1.3 ALL STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH RELEVANT ARCHITECTURAL AND SERVICE DRAWINGS.
1.4 ANY DISCREPANCY IN THE DRAWING SHALL BE BROUGHT TO THE NOTICE OF CONSULTANTS BEFORE COMMENCING THE WORK.
1.5 THE ± 0.00 LEVEL OF THE PROJECT REFERS TO ARCHITECTURAL DRAWING.
1.6 USED AS CLAY BRICK

2. DESIGN CRITERIA

STANDARDS AND LOADS

2.1 THE CONCRETE DESIGN IS BASED ON IS: 456-2000.
2.2 LOADS ARE BASED ON IS : 875
I) DEAD LOAD
a) SELF WEIGHT: AS PER DRAWING.
b) FLOOR FINISH: 125Kg/Sqm
c) NO LANDSCAPE LOAD ON THE TERRACE.
d) EQUIPMENT LOADS: AS PER ARCHITECTURAL/SERVICES DRG.
II) LIVE LOAD - AS PER IS 875 (PART-2)
2.3 WIND LOADS ARE BASED ON IS:875 PART III AND ARE AS FOLLOWS:
BASIC WIND SPEED 50 M/SEC
2.4 SEISMIC LOAD
ZONE : III
ZONE FACTOR : 0.16
IMPORTANCE FACTOR : 1.20

3. CONCRETE

3.1 GRADE OF CONCRETE AS PER SCHEDULE
a) FOUNDATION -M25
b) COLUMN -M25
c) BEAM & SLAB -M25
d) STAIR -M25
3.2 MAXIMUM SIZE OF AGGREGATE SHALL PREFERABLY BE 20mm AND SHALL BE GRADED
3.3 PLAIN CEMENT CONCRETE SHALL HAVE CUBE STRENGTH OF 15 N/mm^2 AT 28 DAYS.
3.4 ALL CONCRETE SHALL BE OF DESIGN MIX AND ARE TO BE OBTAINED FROM REPUTED TESTING LABORATORIES AND APPROVED BY CONSULTANTS, THE MATERIALS THAT ARE PROPOSED TO BE USED IN THE PROJECT SHALL BE TESTED AND TEST CERTIFICATE FURNISHED BEFORE USE OF MATERIAL AT SITE.
3.5 PILE CONCRETE:
a) SLUMP VALUE FOR PILE CONCRETE SHOULD BE 150-180MM AS PER IS 2911-(PART I / SEC I)-2010 AS PER CLAUSE 7.3.2 PAGE 7.
b) MINIMUM GRADE OF CONCRETE M25 & MINIMUM CEMENT CONTENT 400 KG/CUM. AS PER CLAUSE 7.3.3 OF IS 2911-(PART I / SEC I)-2010 PAGE 7.

4. REINFORCING STEEL

4.1 ALL REINFORCING STEEL SHALL CONFIRM TO IS:1786-2008 HAVING MIN. YIELD STRENGTH OF 500 N/mm^2 DENOTED AS --- "Fe"

5. SOIL DATA

1) PILE CAPACITY AS PER SOIL REPORT

6. CONCRETE NOMINAL COVER FROM OUTMOST REINFORCEMENT

6.1 CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 75MM.

UNLESS OTHERWISE STATED CONCRETE COVER TO MAIN REINFORCEMENT SHALL BE AS FOLLOWS:

FOOTING (TOP/SIDE/BOTTOM)	: (50/50/50)MM
PILE CAP (TOP/SIDE/BOTTOM)	: (60/60/100)MM
RAFT (TOP/SIDE/BOTTOM)	: (50/50/75)MM
STRAP BEAM (TOP/SIDE/BOTTOM)	: (50/50/50)MM
GRADE SLAB	: 20MM
STITCHING SLAB (TOP/BOTTOM)	: (25/50)MM
COLUMNS/PEDESTAL	: 40MM (FROM THE STIRRUPS)
SHEAR WALL	: 25MM OR AS SPECIFIED IN DWG.
BEAMS	: 30MM
SLABS	: 25MM
FLAT SLABS	: 25MM
STAIR CASE	: 25MM
RETAINING WALL	: 45MM(EARTH WATER SIDE)25MM(IN SIDE)
WATER RETAINING STRUCTURE OVER GROUND	: 45MM(WATER SIDE) 25MM(OUT SIDE)
SEWERAGE TREATMENT PLANT (STP)/UGR	: 45MM (BOTH SIDE)

(IF BAR DIA IS <12MM) OTHERWISE 40MM

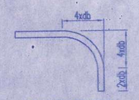
6.2 COVER BLOCKS (CONCRETE) OF APPROVED MAKE SHALL BE USED IN CONCRETE.

7. EXCAVATION

7.1 100THK BLINDING SHALL BE PROVIDED UNDER RAFT,INDEPENDENT AND COMBINED FOOTINGS.
7.2 EXCAVATION SHALL BE DONE BEYOND THE FOOTING/BASEMENT AS INDICATED IN THE DRAWINGS.
7.3 LOOSE POCKETS OF ENCOUNTERED SHALL BE REMOVED AND FILLED WITH PLUMB CONCRETE.
7.4 A LEVELING COURSE OF CONCRETE SHALL BE LAID USING P.C.C 1:2:4 PRIOR TO FOUNDATION S REQUIRED.
7.5 FOUNDATION SHALL BE LAID BELOW TOP WEAK ZONE IN WEATHERED ROCK STRATA.

8. DEVELOPMENT AND ANCHORAGE LENGTHS

8.1 DEVELOPMENT LENGTH (Ld) FOR REINFORCEMENT STEEL BARS SHALL BE
i) M25 , Fe500-500
(D IS DIA OF THE BAR)
(GENERALLY 500 FOLLOWED FOR SITE CONVENIENCE)



STANDARD 90° BEND

8.2 LAPS FOR REINFORCEMENT IN COMPRESSION SHALL BE ACCOUNTED ONLY AS STRAIGHT LENGTHS AND NO HOOKS OR BENDS ARE ACCOUNTED FOR COMPRESSION LAPS OR ANCHORAGES.
8.3 STANDARD HOOKS OR BENDS SHALL BE PROVIDED WHERE NECESSARY IN TENSION REINFORCEMENTS IN BEAMS, COLUMNS, SLABS, ETC.
8.4 MECHANICAL ANCHORAGES OF APPROVED MANUFACTURERS SHALL BE USED FOR COLUMN SPLICES FOR 25mm DIA AND ABOVE AND ARE TO BE AS PER DESIGN DRAWINGS AND SHALL HAVE YEILD STRENGTH OF 125% MORE THAN GRADE OF MAIN STEEL.
8.5 LAPS SHALL BE STAGGERED AS INDICATED IN DRAWINGS.

9. WATER PROOFING

9.1 WATER PROOFING SHALL BE DONE FOR : SUMP TANKS, OVERHEAD TANK, BASEMENT WALLS, TOILET SLABS, TERRACE, AS PER SPECIFICATIONS.

10. CURING

10.1 CURING COMPOUNDS SHALL BE USED FOR ALL VERTICAL ELEMENTS PROVIDED IT IS PIGMENTED.
10.2 CURING BY WATER SHALL BE DONE FOR THE OTHER ELEMENTS FOR A MINIMUM PERIOD OF 7 DAYS

11. DESHUTTERING TIME

11.1 TYPE OF FORM WORK FOR :	MINIMUM PERIOD BEFORE STRIKING (EXCLUDING THE DAY OF CASTING)
a. SLABS UPTO 4.5M :	7 DAYS
OVER 4.5M :	14 DAYS
b. BEAMS UPTO 6.0M :	14 DAYS
OVER 6.0M :	21 DAYS
c. WALL/BEAM/COLUMN VERTICAL FACES :	1 DAY

11.2 SHUTTERING CAN BE RELEASED EARLIER THAN SPECIFIED ABOVE PROVIDED THE PROPS ARE RETAINED AT REASONABLE SPACINGS AND CONCRETE ATTAINS THE FULL STRENGTH AT THE TIME OF DESHUTTERING AS PER IS 456 - 2000. DE SHUTTERING SHALL BE DONE BY PROVIDING DAMPENING MATERIAL BELOW IN ORDER TO REDUCE THE IMPACT AT THE LOWER LEVEL.
11.3 SIMPLY SUPPORTED AND CONTINUOUS SPANS SHALL BE DESHUTTERED FROM MID SPAN TOWARDS SUPPORTS.
CANTILEVERS SHALL BE DESHUTTERED FROM FREE END TOWARDS SUPPORTS
11.4 SLAB/BEAMS SHALL BE REPROPPED UNTIL THE NEXT LEVEL SLAB IS CAST AND DESHUTTERED.

12. CONSTRUCTION JOINTS

12.1 SLABS : AT MIDDLE ONE THIRD OF THE SPAN.
12.2 BEAMS : AT MIDDLE ONE THIRD OF THE SPAN. IF ANY CROSS BEAMS ARE LOCATED IN THIS REGION THE JOINT SHALL BE LOCATED TWO TIMES THE WIDTH OF THE BEAM* AWAY FROM THE BEAM.
12.3 RETAINING WALL : AT THE JUNCTION OF THE WALL AND FOOTING WITH A KEY JOINT AND AT MIDDLE OF VERTICAL SPAN, VERTICAL JOINTS TO BE AVOIDED.
12.4 RAFT SLAB : AT MIDDLE ONE THIRD OF THE SPAN.
12.5 CONSTRUCTION JOINTS SHALL BE STRAIGHT
12.6 CANTILEVERS : CONSTRUCTION JOINT SHALL NOT BE PROVIDED IN CANTILEVERS.

13. ADMIXTURE

13.1 CONCRETE ADMIXTURES OF APPROVED MAKE SHALL BE USED TO IMPROVE WORKABILITY AND STRENGTH AS PER TENDER SPECIFICATIONS.
13.2 CONCRETE ADMIXTURES OF APPROVED MAKE SHALL BE USED FOR WATER PROOFING AS PER TENDER SPECIFICATIONS.

14. CONSULTANTS APPROVAL

14.1 CONSULTANTS SHALL APPROVE THE CONCRETING SURFACE AFTER INSPECTION , AND REMEDIAL MEASURES IF ANY TO BE DONE BEFORE ANY PLASTERING WORK IS TAKEN UP ON CONCRETE SURFACE. HOWEVER THIS DOES NOT DEVOLVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR GETTING THE REQUIRED STRENGTH OF CONCRETE.

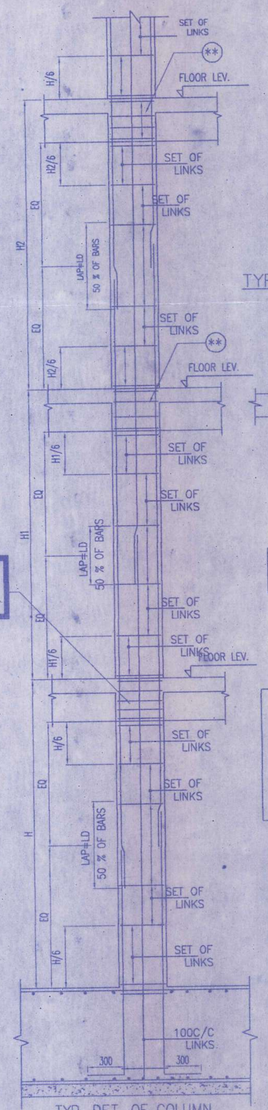
15. CAMBER FOR CANTILEVERS

FOR UP TO 1.5M CANTILEVERS --- 10MM
FROM 1.5M TO 2.5M CANTILEVERS -- 15MM

16. FLOOR SLAB :-

ALL SMALL CUTOUTS (SIZE MAXIMUM 200X200) ARE NOT SHOWN IN PLAN. COORDINATE WITH ARCH & SERVICES DWG. FOR THE SAME. TRIMMER BAR SHOULD BE PROVIDED AS SHOWN IN FOR CUTOUT GREATER THAN (200X200) SPECIFIC DETAIL TO BE FOLLOWED. (FIG-4)

(**) COLUMN BEAM JUNCTION TO BE CAST WITH THE SAME GRADE OF COLUMN. ANYTHING OTHER THAN THIS IS NOT ACCEPTABLE.



TYP. DET. OF COLUMN

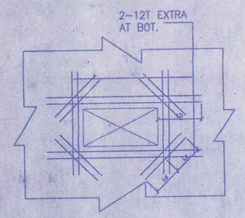
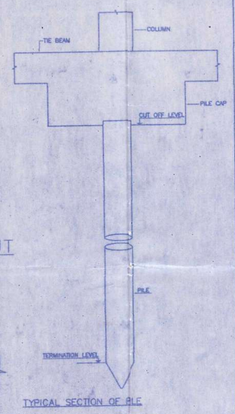
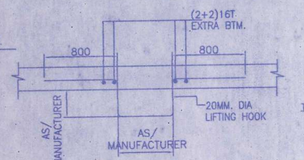


FIG.-4

TYP. DETAIL OF SLAB CUTOUT

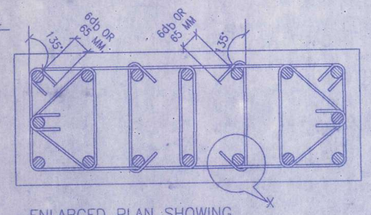


TYPICAL SECTION OF PILE

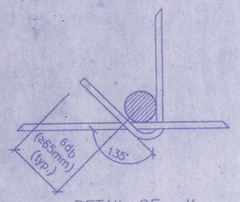


TYP. DETAIL OF LIFTING HOOK FOR NORMAL PASSENGER LIFT

POSITION OF LIFTING HOOK AS PER LIFT MANUFACTURERS SPECIFICATIONS.



ENLARGED PLAN SHOWING TYPICAL DETAILS OF LINKS



DETAIL OF -X

May be Approved
30/12/24
Sub Asstt Engineer
Midnapore Municipality
RECOMMENDED

30/12/24
Member
Chairman - in - Council
Midnapore Municipality

SIGNATURE OF OWNER

GRAND SPACE INFRA
Subrata Sarkar
Bhagan Kumar Das
Sudipta Bera
Bijoy K. Das
Partner

K.B. ENTERPRISE
Bijoy K. Das
PARTNER
K.B. ENTERPRISE
PARTNER

SIGNATURE OF ARCHITECT

Shilpi Ghatak
SHILPI GHATAK
ARCHITECT
Reg. No.: CA/2014/65632
SIGNATURE OF ARCHITECT

SIGNATURE OF STRUCTURAL ENGINEER

Mainak Majumdar
B.C.E., M.C.E. (Struct)
ESE-152/I of KMC
ESR-(I), 152/4
STRUC.Rev.-SMC/I
SIGNATURE OF STRUCTURAL ENGINEER

SIGNATURE OF GEO-TECHNICAL ENGINEER:

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B.E., M.E., M.I.G.S
Geotechnical Engineer
Enlisted of Urban Development & Municipal Affairs, Govt. of West Bengal
Rajpur-Sonarpur Municipality
Class-1, L.IC. No.- 005,GT.ENG.
Kolkata Municipal Corporation
Class-1, L.IC. No.-13,GTE
New Town Kolkata Development Authority
Class1, L.IC. No. HIDCO/10/0007
SIGNATURE OF GEO-TECH ENGINEER

SIGNATURE OF STRUCTURAL REVIEWER:

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B.Sc. (Hons), B.C.E., F.I.E.C. Eng.
MI Struct. E (Lond) M.A.S.C.E. (USA)
ESE- 68 of
The Calcutta Municipal Corporation
SIGNATURE OF STRUCTURAL REVIEWER

TYPE OF DRAWING - SANCTION DRAWING.

TITLE - GENERAL NOTES

PROJECT
PROPOSED EIGHTH TO ELEVENTH FLOOR OVER ALREADY SANCTIONED B+G+7 STORIED RESIDENTIAL CUM COMMERCIAL APARTMENT OF LAND OWNER K.B. ENTERPRISE AND DEVELOPER GRAND SPACE INFRA, AT MOUZA - CANTONMENT BARPATHAR, J.L. NO. - 168, L.R. PLOT NO.-544/867,544/869, HOLDING NO.- 950, P.W.D. ROAD, L.R. KHATIAN- 2483, P.O.- MIDNAPORE, P.S.- MIDNAPORE, DIST.- PASCHIM MEDINIPUR, PIN- 721101

STRUCTURAL CONSULTANT -
ADROIT CONSULTANT
10/3, PANCHANANTALA ROAD
KOLKATA 700029

APPROVED BY - MM	DRG. NO.- MIDNAPORE MUD/ MS/ S7-01	
DRAWN BY - SD	SCALE - 1:100,50,25	DATE - 28.12.24

APPROVAL FROM STATUTORY AUTHORITY