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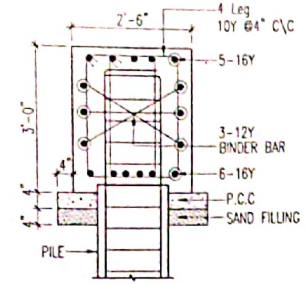


AKR CONSULTANTS
I.R.ARUNKUMAAR, M.E(Struct). M.I.E,
CONSULTING STRUCTURAL ENGINEER
E-mail : akr@akrconsultants.com
Mobile : +91 9994160046

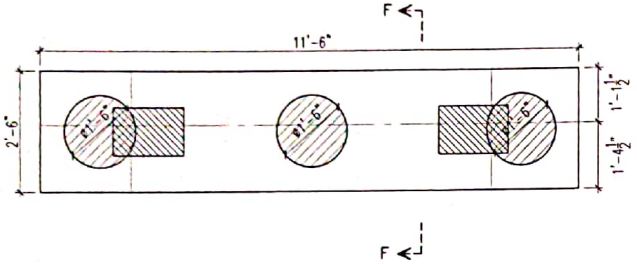
STRUCTURAL DESIGN STABILITY CERTIFICATE

I hereby certify that the Proposed Construction of Stilt + 5 Floors Residential Building with 10 Dwelling Units at Door No: 3/75A, Ashok Nagar 1st Avenue, Chennai - 600083, Comprised in Old S.No: 278/3 Part, T.S.No: 5/16, Block No: 71 of Kodambakkam Village, Greater Chennai Corporation Limit, that the building will with stand against the Earthquake, (Seismic Zone III as per IS 1893 (Part-I) - 2016) loading stress parameters are within limits of National building code and Bureau of Indian standards code of practice for concrete and loading. The R.C.C building frame of the structure is designed as per the Indian Standard code of practice for concrete and loadings. The structure will be constructed as per the structural design and detailing of reinforcements given in the drawing from foundation to roof slab and beam. For external and internal partition walls 230/115 thick Brick walls are used. The structure is sound and stable.

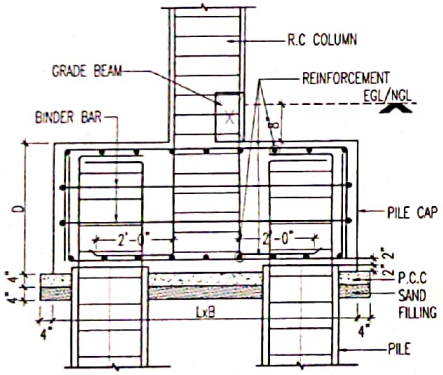
Er.I.R.ARUNKUMAAR, M.E., (Structural), M.I.E.,
Consulting Structural Engineer,
Chartered Civil Engineer (M-165213-8)
CMDA Regn. No. SE/GR-I/2024/03/013,
Greater Chennai Corporation, Regn, No.RSE100482019,
No:10, 9th St, 2nd Sector, K.K. Nagar, Chennai - 78



SECTION F-F



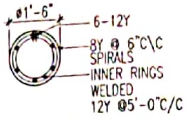
DETAIL OF PILE CAP - PC6/P1



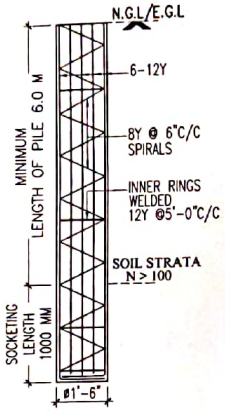
TYPICAL PILE CAP DETAIL

BORED PILE DETAILS (P1)

(1'-6" DIA)



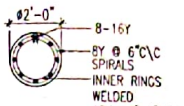
C.S DETAIL OF PILE - P1



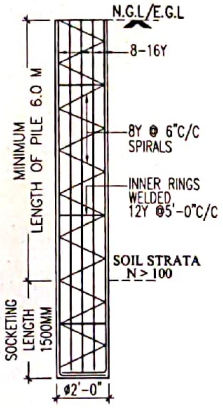
PILE DETAIL - P1

BORED PILE DETAILS (P3)

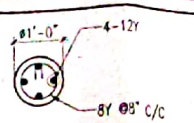
(2'-0" DIA)



C.S DETAIL OF PILE - P2

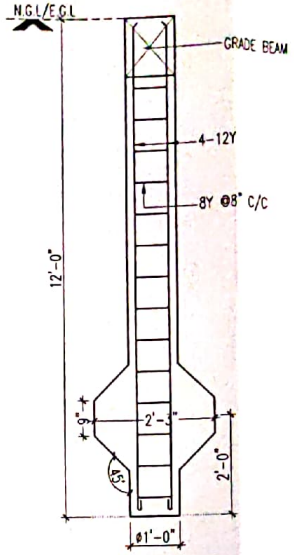


PILE DETAIL - P3



C.S DETAIL OF PILE - P3

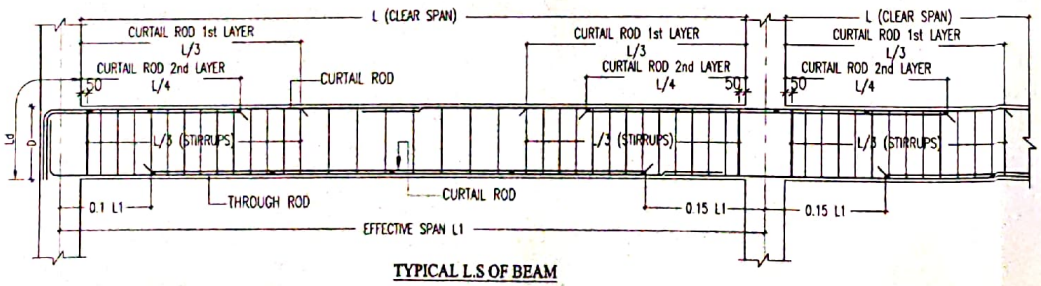
UP TO GRADE BEAM LEVEL



PILE DETAIL - P3

GRADE BEAM DETAILS

TYPE	SIZE BxD	AT MIDSPAN	AT SUPPORT
GB1	9"x1'-3"	9" / 1'-3" / 2-12Y+1-16Y / 8Y @8"C/C / 2-12Y+1-16Y	9" / 1'-3" / 2-12Y+1-16Y / 8Y @6"C/C / 2-12Y+1-16Y



TYPICAL L.S OF BEAM

PILE NOTES :-

* MINIMUM CEMENT CONTENT FOR PILE SHALL BE 400 Kg/m^3
* BORED CAST IN SITU END BEARING PILE DRIVEN BY DIRECT MUD CIRCULATION METHOD (DMC)
* BORING TERMINATED AT A DEPTH WHERE 'N' VALUE IN SPT TEST IS MORE THAN 50 AND AN EXTRA BORING FOR MINIMUM OF 1.5 TIMES DIA OF PILE BEYOND ABOVE LEVEL IN THE HARD STRATA. APPROXIMATE LENGTH OF PILE SHALL BE 7.0 M : CONCRETING FOR THE PILE SHALL BE DONE USING THE TREMIE PIPE IN THE SHAFT FOR PROPER PLACING AND COMPACTION OF CONCRETE. THE DESIGN SAFE LOADS FOR THE PILES ARE AS FOLLOW 450DIA - 469 KN, 600DIA - 752 KN.
* INTIAL LOAD TEST ON PILES SHALL BE DONE FOR 2.0 TIMES THE DESIGN SAFE LOAD AND ROUTINE LOAD TEST ON WORKING PILES SHALL BE DONE FOR 1.5 TIMES THE DESIGN SAFE LOAD OR FOR 12MM SETTLEMENT WHICH EVER IS MINIMUM AS PER THE IS 2911 (PART 4).

GENERAL NOTES :

1) All dimensions are in foot & inches.
2) Concrete Grade for Pile : M 30 (Minimum cement content for Pile - 400 kg/Cum)
3) Concrete Grade for Pile cap,Column, Beam & slab : M 25 (Minimum cement content for M 25 - 340 kg/Cum)
4) Steel Grade : Tor Fe-500
5) Clear cover : Footing =2",Column =1 1/2" Beam=1",Slab=3/4"
6) Lap length Compression (Column) : 45 Ø Tension (Beam & Slab) : 57 Ø
7) Provide spacer bar at every 3'0" intervals
8) The column center should coincide with center of footing.
9) The column & foundation are designed for Stilt +5 floors only.
10) Development length, Ld = 50Ø
11) Do not scale this drawing and follow architectural drawing dimensions only.
12) No changes shall be made without the Concern of the structural consultant.

FOR APPROVAL

I R ARUNKUMAAR

Er.I.R.ARUNKUMAAR, M.E., (Structural), M.I.E.,
Consulting Structural Engineer,
Chartered Civil Engineer (M-165213-8)
CMDA Regn. No. SE/GR-I/2024/03/013,
Greater Chennai Corporation, Regn. No.RSE100482019
No:10, 9th St, 2nd Sector, K.K. Nagar, Chennai - 78

REV	DESCRIPTION	BY	DATE
DRAWING NO : 1220-ST-S-07		DATE: 22-05-24	

CLIENT:
Mr.K. SUBBURAMAN

PROJECT TITLE:
PROPOSED APARTMENT AT
ASHOK NAGAR,CHENNAI.

DRAWING TITLE:
PILE CAP & GRADE BEAM DETAILS
[SHEET 2 OF 2]

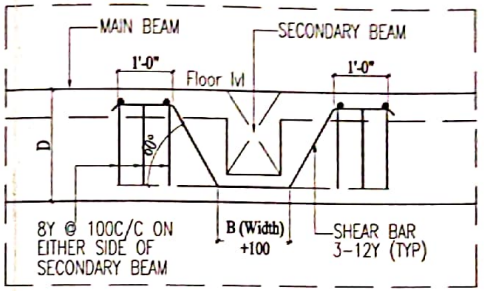
STRUCTURAL CONSULTANT:

AKR CONSULTANTS
Er.I.R.ARUNKUMAAR,M.E.,M.I.E.,
M/ s. AKR CONSULTANTS
NO.10, 9th STREET,
2nd SECTOR, K.K.NAGAR
CHENNAI - 600078.
email : akr@akrconsultants.com
Mob : +91 9994160046

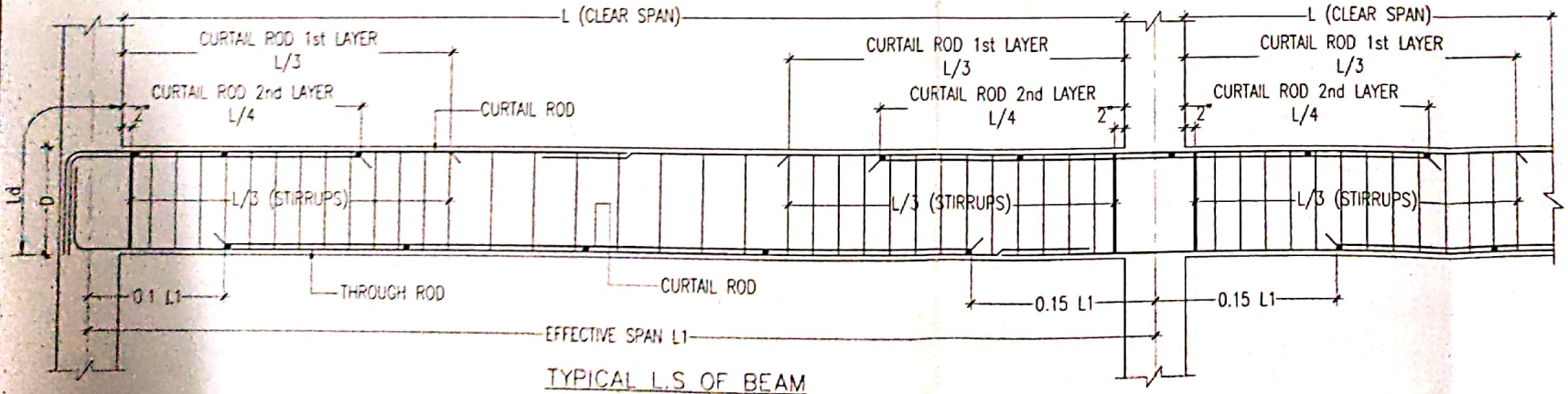
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SHEET SIZE	A3	CHECKED BY	AKR
DESIGNED BY		I R.ARUNKUMAAR	

TYPICAL FLOOR ROOF BEAM DETAILS

TYPE	SIZE BxD	AT MIDSPAN	AT SUPPORT
TRB25	9"x1'-6"	2-12Y 8Y @8"C/C 2-12Y+1-12Y	2-12Y 8Y @5"C/C 2-12Y
TRB26	9"x1'-6"	2-16Y 8Y @8"C/C 2-16Y+1-20Y	2-16Y+2-20Y 8Y @4"C/C 2-16Y
TRB27	9"x1'-3"	2-12Y 8Y @8"C/C 2-12Y+1-16Y	2-12Y 8Y @6"C/C 2-12Y



TYPICAL SHEAR REINFORCEMENT DETAILS



TYPICAL L.S OF BEAM

GENERAL NOTES :

1) All dimensions are in foot & inches.
2) Concrete Grade for Pile : M 30
(Minimum cement content for Pile - 400 kg/Cum)
3) Concrete Grade for Pile cap,Column, Beam & slab : M 25
(Minimum cement content for M 25 - 340 kg/Cum)
4) Steel Grade : Tor Fe-500
5) Clear cover : Footing =2",Column =1 1/2" Beam= 1",Slab=3/4"
6) Lap length
Compression (Column) : 45 Ø
Tension (Beam & Slab) : 57 Ø
7) Provide spacer bar at every 3'0" intervals
8) The column center should coincide with center of footing.
9) The columns & foundation are designed for Stilt +5 floors only
10) Development length, Ld = 50Ø
11) Do not scale this drawing and follow architectural drawing dimensions only.
12) No changes shall be made without the Concern of the structural consultant.

FOR APPROVAL

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CMDA Regn. No. SE/GR-I/2024/03/013,
Greater Chennai Corporation, Regn. No.RSE100482019
No:10, 9th St, 2nd Sector, K.K. Nagar, Chennai - 78

REV	DESCRIPTION	BY	DATE

DRAWING NO : 1220-ST-S-13 | DATE: 22-05-24

CLIENT:
Mr.K. SUBBURAMAN

PROJECT TITLE:
PROPOSED APARTMENT AT ASHOK NAGAR,CHENNAI.

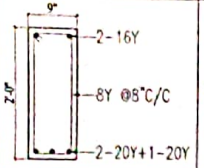
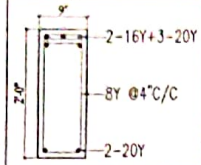
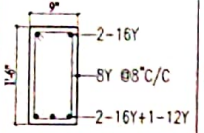
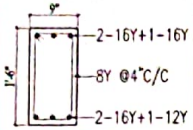
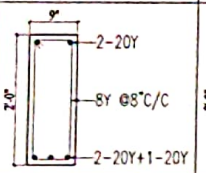
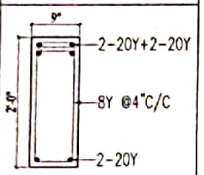
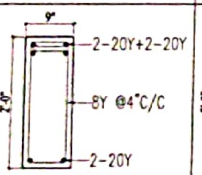
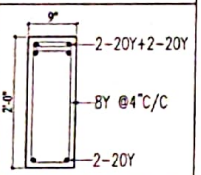
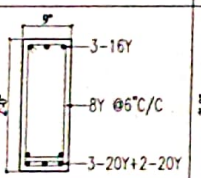
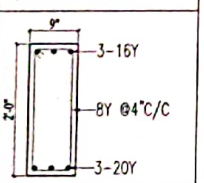
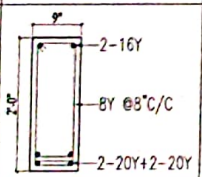
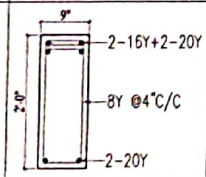
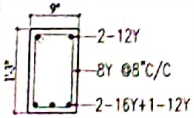
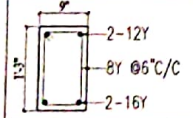
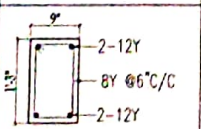
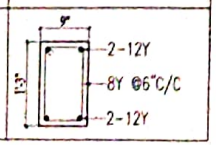
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TYPICAL FLOOR ROOF BEAM DETAILS (SHEET 2 OF 2)

STRUCTURAL CONSULTANT:

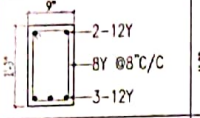
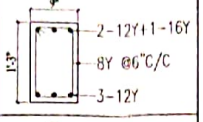
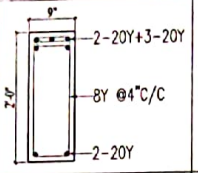
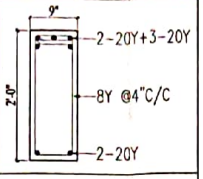
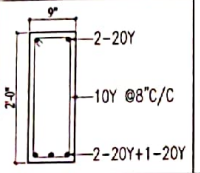
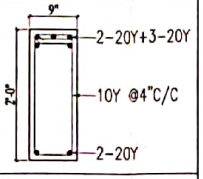
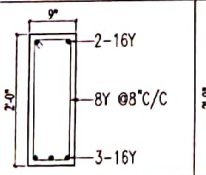
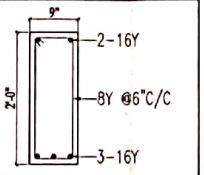
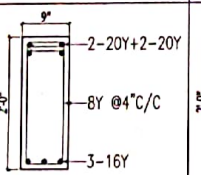
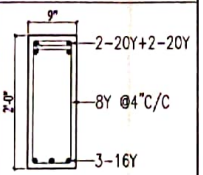
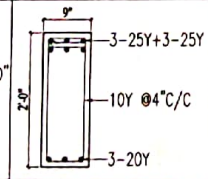
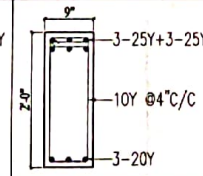
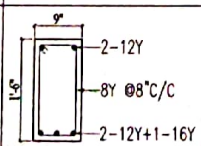
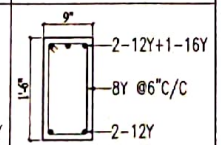
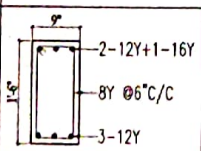
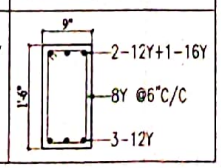
AKR CONSULTANTS
Er.I.R.ARUNKUMAAR,M.E.,M.I.E.,
M/s. AKR CONSULTANTS
NO.10, 9TH STREET,
2nd SECTOR, K.K.NAGAR
CHENNAI - 600078.
email : akr@akrconsultants.com
Mob : +91 9994160046

SCALE	1" = 3'6"	DRAWN BY	MKV
SHEET SIZE	A3	CHECKED BY	AKR
DESIGNED BY			I.R ARUNKUMAAR

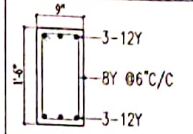
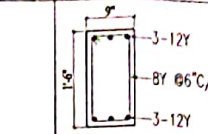
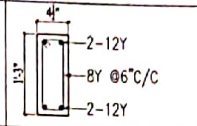
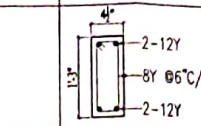
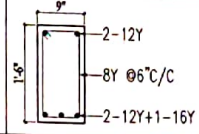
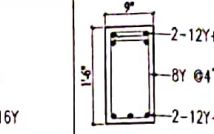
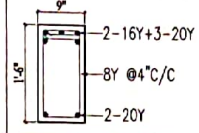
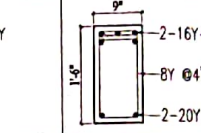
TYPICAL FLOOR ROOF BEAM DETAILS

TYPE	SIZE BxD	AT MIDSPAN	AT SUPPORT
TRB1	9"x2'-0"		
TRB2	9"x1'-6"		
TRB3	9"x2'-0"		
TRB4	9"x2'-0"		
TRB5	9"x2'-0"		
TRB6	9"x2'-0"		
TRB7	9"x1'-3"		
TRB8	9"x1'-3"		

TYPICAL FLOOR ROOF BEAM DETAILS

TYPE	SIZE BxD	AT MIDSPAN	AT SUPPORT
TRB9	9"x1'-3"		
TRB10	9"x2'-0"		
TRB11	9"x2'-0"		
TRB12	9"x2'-0"		
TRB13	9"x2'-0"		
TRB14	9"x2'-0"		
TRB15	9"x1'-6"		
TRB16	9"x1'-6"		

TYPICAL FLOOR ROOF BEAM DETAILS

TYPE	SIZE BxD	AT MIDSPAN	AT SUPPORT
TRB17	9"x1'-6"		
TRB18	4½"x1'-3"		
TRB19	9"x1'-6"		
TRB20	9"x1'-6"		
TRB21	9"x1'-6"		
TRB22	BEAM REMOVED		
TRB23	BEAM REMOVED		
TRB24	9"x1'-6"		

GENERAL NOTES :

1) All dimensions are in feet & inches.
2) Concrete Grade for Pile : M 30
   (Minimum cement content for Pile - 400 kg/Cum)
3) Concrete Grade for Pile cap,Column, Beam & slab : M 25
   (Minimum cement content for M 25 - 340 kg/Cum)
4) Steel Grade : For Fe-500
5) Clear cover : Footing =2",Column =1 1/2" Beam=1",Slab=3/4"
6) Lap length
   Compression (Column) : 45 Ø
   Tension (Beam & Slab) : 57 Ø
7) Provide spacer bar at every 3'0" intervals
8) The column center should coincide with center of footing.
9) The column & foundation are designed for Stilt +5 floors only.
10) Development length, Ld = 50Ø
11) Do not scale this drawing and follow architectural drawing dimensions only.
12) No changes shall be made without the Concern of the structural consultant.

FOR APPROVAL

Er.I.R.ARUNKUMAAR, M.E., (Structural), M.I.E.,
Consulting Structural Engineer,
Chartered Civil Engineer (M-165213-8)
CMDA Regn. No. SE/GR-I/2024/03/013,
Greater Chennai Corporation, Regn. No.RSE100482019
No:10, 9th St, 2nd Sector, K.K. Nagar, Chennai - 78

REV	DESCRIPTION	BY	DATE

DRAWING NO : 1220-ST-S-12 | DATE: 22-05-24

CLIENT:
Mr.K. SUBBURAMAN

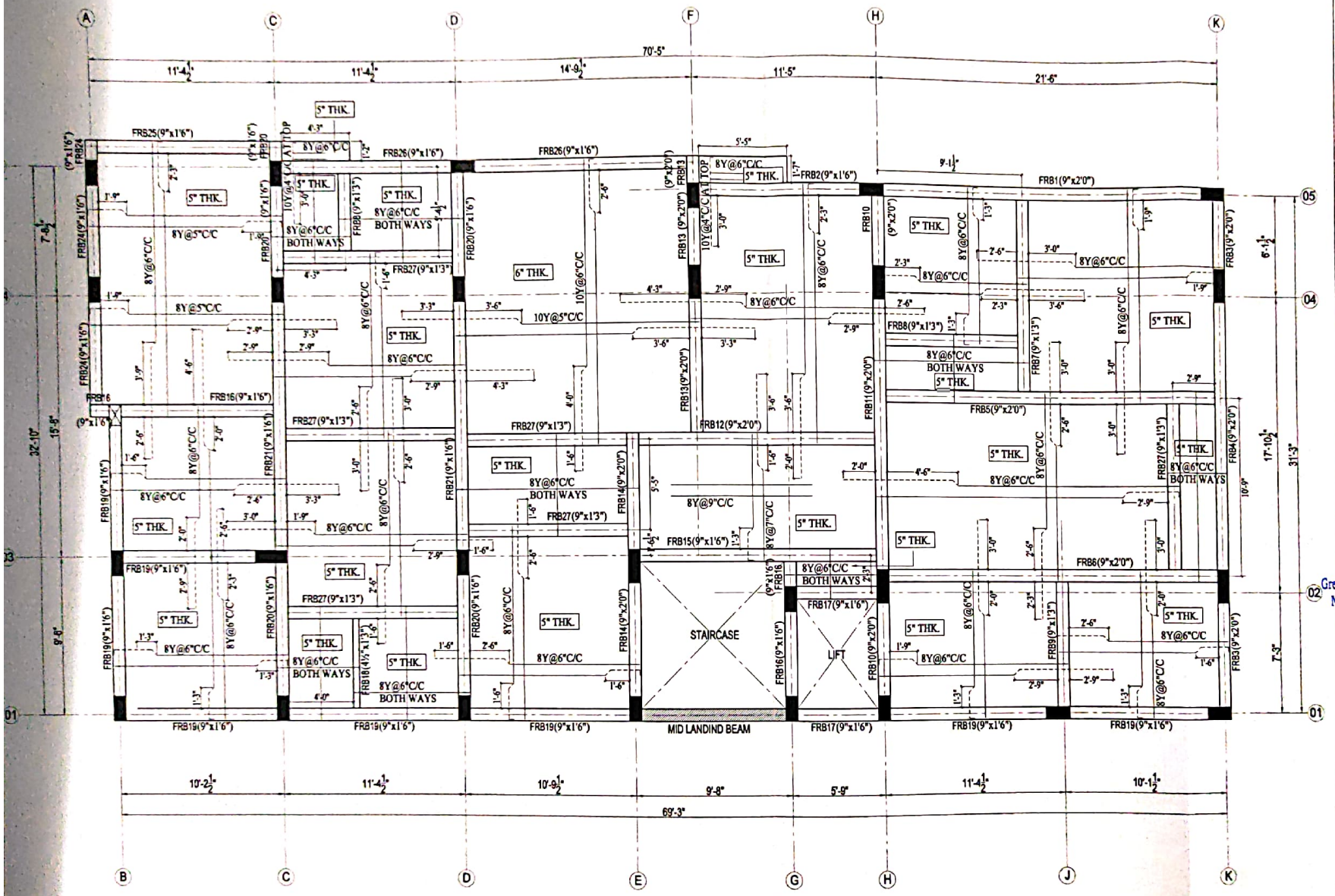
PROJECT TITLE:
PROPOSED APARTMENT AT
ASHOK NAGAR,CHENNAI.

DRAWING TITLE:
TYPICAL FLOOR ROOF BEAM DETAILS
(SHEET 1 OF 2)

STRUCTURAL CONSULTANT.

AKR CONSULTANTS
Er.I.R.ARUNKUMAAR,M.E.,M.I.E.,
M/s. AKR CONSULTANTS
NO.10, 9th STREET,
2nd SECTOR, K.K.NAGAR
CHENNAI - 600078.
email : akr@akrconsultants.com
Mob : +91 9994160046

SCALE	1" = 4'0"	DRAWN BY	MKV
SHEET SIZE	A3	CHECKED BY	AKR
DESIGNED BY		I.R.ARUNKUMAAR	



GENERAL NOTES :

1) All dimensions are in foot & inches.
2) Concrete Grade for Pile : M 30
(Minimum cement content for
Pile - 400 kg/Cum)
3) Concrete Grade for Pile cap,Column,
Beam & slab : M 25
(Minimum cement content for
M 25 - 340 kg/Cum)
4) Steel Grade : Tor Fe-500
5) Clear cover : Footing =2",Column =1 1/2"
Beam=1",Slab=3/4"
6) Lap length
Compression (Column) : 45 Ø
Tension (Beam & Slab) : 57 Ø
7) Provide spacer bar at every 3'0" intervals
8) The column center should coincide
with center of footing.
9) The column & foundation are designed for
Still +5 floors only.
10) Development length, Ld = 50Ø
11) Do not scale this drawing and follow
architectural drawing dimensions only.
12) No changes shall be made without the
Concern of the structural consultant.

FOR APPROVAL

Er.I.R.ARUNKUMAAR, M.E., (Structural), M.I.E.,
Consulting Structural Engineer,
Chartered Civil Engineer (M-165213-8)
CMDA Regn. No. SE/GR-I/2024/03/013,
Greater Chennai Corporation, Regn, No.RSE1004820/9,
No:10, 9th St, 2nd Sector, K.K. Nagar, Chennai - 78

REV	DESCRIPTION	BY	DATE
DRAWING NO : 1220-ST-5-14			DATE: 22-05-24

CLIENT:
Mr.K. SUBBURAMAN

PROJECT TITLE:
PROPOSED APARTMENT AT
ASHOK NAGAR,CHENNAI.

DRAWING TITLE:
FIFTH FLOOR ROOF BEAM
AND SLAB LAYOUT

N

STRUCTURAL CONSULTANT:

AKR CONSULTANTS
Er.I.R.ARUNKUMAAR,M.E.,M.I.E.,
M/s. AKR CONSULTANTS
NO.10, 9th STREET,
2nd SECTOR, K.K.NAGAR
CHENNAI - 600078.
email : akr@akrconsultants.com
Mob : +91 9994160046

SCALE	1" = 5'6"	DRAWN BY	MKV
SHEET SIZE	A3	CHECKED BY	AKR
DESIGNED BY		I.R.ARUNKUMAAR	

STILT FLOOR ROOF BEAM DETAILS

TYPE	SIZE BxD	AT MIDSPAN	AT SUPPORT
GRB1	9"x2'-0"	2-16Y 8Y @8"C/C 2-20Y+1-20Y	2-16Y+3-20Y 8Y @4"C/C 2-20Y
GRB2	9"x1'-6"	2-16Y 8Y @8"C/C 2-16Y+1-12Y	2-16Y+1-16Y 8Y @4"C/C 2-16Y+1-12Y
GRB3	9"x2'-0"	2-20Y 8Y @8"C/C 2-20Y+1-20Y	2-20Y+2-20Y 8Y @4"C/C 2-20Y
GRB4	9"x2'-0"	2-20Y+2-20Y 8Y @4"C/C 2-20Y	2-20Y+2-20Y 8Y @4"C/C 2-20Y
GRB5	9"x2'-0"	3-16Y 8Y @6"C/C 3-20Y+2-20Y	3-16Y 8Y @4"C/C 3-20Y
GRB6	9"x2'-0"	2-16Y 8Y @8"C/C 2-20Y+2-20Y	2-16Y+2-20Y 8Y @4"C/C 2-20Y
GRB7	9"x1'-3"	2-12Y 8Y @8"C/C 2-16Y+1-12Y	2-12Y 8Y @6"C/C 2-16Y
GRB8	9"x1'-3"	2-12Y 8Y @6"C/C 2-12Y	2-12Y 8Y @6"C/C 2-12Y

STILT FLOOR ROOF BEAM DETAILS

TYPE	SIZE BxD	AT MIDSPAN	AT SUPPORT
GRB9	9"x1'-3"	2-12Y 8Y @8"C/C 3-12Y	2-12Y+1-16Y 8Y @6"C/C 3-12Y
GRB10	9"x2'-0"	2-20Y+3-20Y 8Y @4"C/C 2-20Y	2-20Y+3-20Y 8Y @4"C/C 2-20Y
GRB11	9"x2'-0"	2-20Y 10Y @8"C/C 2-20Y+1-20Y	2-20Y+3-20Y 10Y @4"C/C 2-20Y
GRB12	9"x2'-0"	2-16Y 8Y @8"C/C 3-16Y	2-16Y 8Y @6"C/C 3-16Y
GRB13	9"x2'-0"	2-20Y+2-20Y 8Y @4"C/C 3-16Y	2-20Y+2-20Y 8Y @4"C/C 3-16Y
GRB14	9"x2'-0"	3-25Y+3-25Y 10Y @4"C/C 3-20Y	3-25Y+3-25Y 10Y @4"C/C 3-20Y
GRB15	9"x1'-6"	2-12Y 8Y @8"C/C 2-12Y+1-16Y	2-12Y+1-16Y 8Y @6"C/C 2-12Y
GRB16	9"x1'-6"	2-12Y+1-16Y 8Y @6"C/C 3-12Y	2-12Y+1-16Y 8Y @6"C/C 3-12Y

STILT FLOOR ROOF BEAM DETAILS

TYPE	SIZE BxD	AT MIDSPAN	AT SUPPORT
GRB17	9"x1'-6"	3-12Y 8Y @6"C/C 3-12Y	3-12Y 8Y @6"C/C 3-12Y
GRB18	4½"x1'-3"	2-12Y 8Y @6"C/C 2-12Y	2-12Y 8Y @6"C/C 2-12Y
GRB19	9"x1'-6"	2-12Y 8Y @6"C/C 2-12Y+1-16Y	2-12Y+2-16Y 8Y @4"C/C 2-12Y+1-16Y
GRB20	9"x1'-6"	2-16Y+3-20Y 8Y @4"C/C 2-20Y	2-16Y+3-20Y 8Y @4"C/C 2-20Y
GRB21	9"x1'-6"	2-16Y 10Y @8"C/C 2-20Y+1-20Y	2-16Y+3-20Y 10Y @4"C/C 2-20Y
GRB22	1'-6"x2'-6"	4-20Y 4LEG 10Y @8"C/C 4-12Y SKIN BAR 4-20Y+4-20Y	4-20Y 4LEG 10Y @4"C/C 4-12Y SKIN BAR 4-20Y+4-20Y
GRB23	1'-3"x2'-6"	5-20Y 4LEG 10Y @8"C/C 4-12Y SKIN BAR 5-20Y	5-20Y 4LEG 10Y @4"C/C 4-12Y SKIN BAR 5-20Y
GRB24	9"x1'-6"	2-12Y+1-16Y 8Y @8"C/C 3-12Y	2-12Y+1-16Y 8Y @4"C/C 3-12Y

GENERAL NOTES :

1) All dimensions are in feet & inches
2) Concrete Grade for Pile : M 30
(Minimum cement content for Pile : 400 kg/Cum)
3) Concrete Grade for Pile cap,Column, Beam & slab : M 25
(Minimum cement content for M 25 - 340 kg/Cum)
4) Steel Grade : Tor Fe-500
5) Clear cover : Footing =2",Column =1 1/2" Beam=1",Slab=3/4"
6) Lap length
Compression (Column) : 45 Ø
Tension (Beam & Slab) : 57 Ø
7) Provide spacer bar at every 3'0" intervals
8) The column center should coincide with center of footing.
9) The column & foundation are designed for Stilt +5 floors only.
10) Development length, Ld = 50Ø
11) Do not scale this drawing and follow architectural drawing dimensions only.
12) No changes shall be made without the Concern of the structural consultant.

FOR APPROVAL

Er.I.R.ARUNKUMAAR, M.E., (Structural), M.I.E.,
Consulting Structural Engineer,
Chartered Civil Engineer [M-165213-8]
CMDA Regn. No. SE/GR-I/2024/03/013,
Greater Chennai Corporation, Regn. No.RSE1004820 9,
No:10, 9th St, 2nd Sector, K.K. Nagar, Chennai - 78

REV	DESCRIPTION	BY	DATE

DRAWING NO : 1220-ST-S-09 | DATE: 22-05-24

CLIENT:
Mr.K. SUBBURAMAN

PROJECT TITLE:
PROPOSED APARTMENT AT
ASHOK NAGAR,CHENNAI

DRAWING TITLE:
STILT FLOOR ROOF BEAM DETAILS
[SHEET 1 OF 2]

STRUCTURAL CONSULTANT:

AKR CONSULTANTS
Er.I.R.ARUNKUMAAR,M.E.,M.I.E.
M/s. AKR CONSULTANTS
NO.10, 9th STREET,
2nd SECTOR, K.K.NAGAR
CHENNAI - 600078.
email : akr@akrconsultants.com
Mob : +91 9994160046

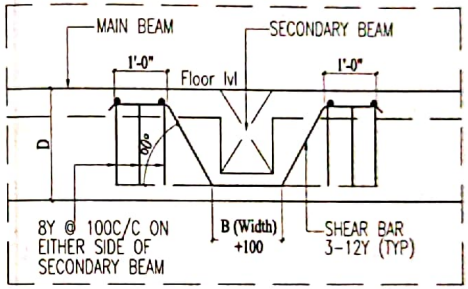
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SHEET SIZE	A3	CHECKED BY	AKR
DESIGNED BY			I.R.ARUNKUMAAR

STILT FLOOR ROOF BEAM DETAILS

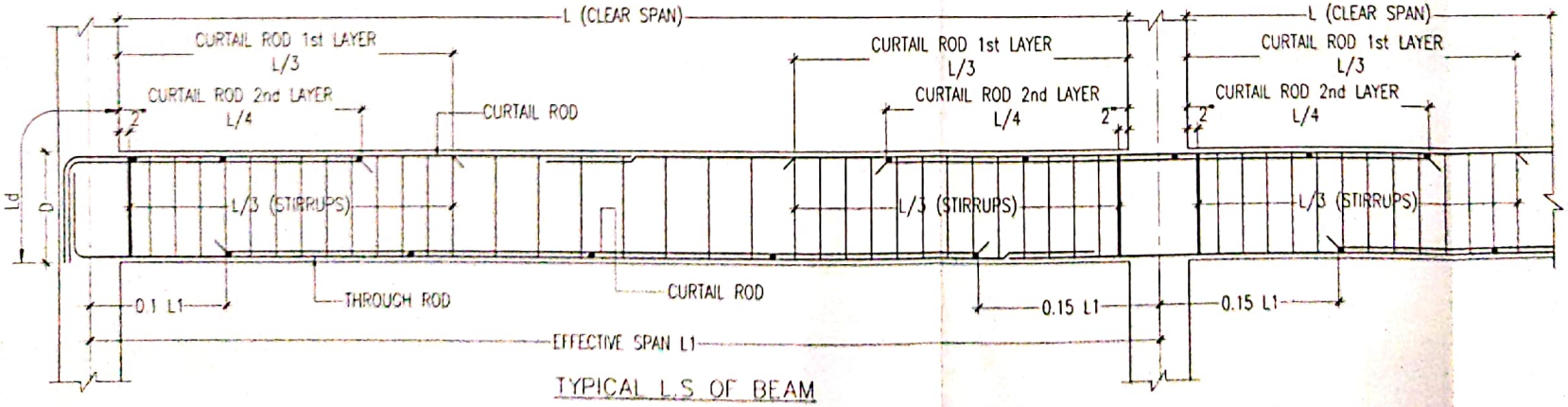
TYPE	SIZE BxD	AT MIDSPAN	AT SUPPORT
GRB25	9"x1'-6"	2-12Y 8Y @8"C/C 2-12Y+1-12Y	2-12Y 8Y @6"C/C 2-12Y
GRB26	9"x1'-6"	2-16Y 8Y @8"C/C 2-16Y+1-20Y	2-16Y+2-20Y 8Y @4"C/C 2-16Y
GRB27	9"x1'-3"	2-12Y 8Y @8"C/C 2-12Y+1-16Y	2-12Y 8Y @6"C/C 2-12Y

FLOATING COLUMN DETAILS

TYPE	SIZE	CROSS SECTION	MAIN ROD	TIES PROFILE	LATERAL TIES
FC	9" x 1'-3" All Floor	9" x 1'-3"	• 8-16Y		8Y @6"C/C



TYPICAL SHEAR REINFORCEMENT DETAILS



TYPICAL L.S OF BEAM

GENERAL NOTES :

1) All dimensions are in foot & inches.
2) Concrete Grade for Pile : M 30
   (Minimum cement content for Pile - 400 kg/Cum)
3) Concrete Grade for Pile cap,Column, Beam & slab : M 25
   (Minimum cement content for M 25 - 340 kg/Cum)
4) Steel Grade : Tor Fe-500
5) Clear cover : Footing =2",Column =1 1/2" Beam=1",Slab=3/4"
6) Lap length
   Compression (Column) : 45 Ø
   Tension (Beam & Slab) : 57 Ø
7) Provide spacer bar at every 3'0" intervals
8) The column center should coincide with center of footing.
9) The column & foundation are designed for Stilt +5 floors only.
10) Development length, Ld = 50Ø
11) Do not scale this drawing and follow architectural drawing dimensions only.
12) No changes shall be made without the Concern of the structural consultant.

FOR APPROVAL

Er.I.R.ARUNKUMAAR, M.E., (Structural), M.I.E.,
Consulting Structural Engineer,
Chartered Civil Engineer (M-165213-8)
CMDA Regn. No. SE/GR-I/2024/03/013,
Greater Chennai Corporation, Regn. No.RSE100482019,
No:10, 9th St, 2nd Sector, K.K. Nagar, Chennai - 78

REV	DESCRIPTION	BY	DATE

DRAWING NO. : 1220-ST-S-10 | DATE: 22-05-24

CLIENT:
Mr.K. SUBBURAMAN

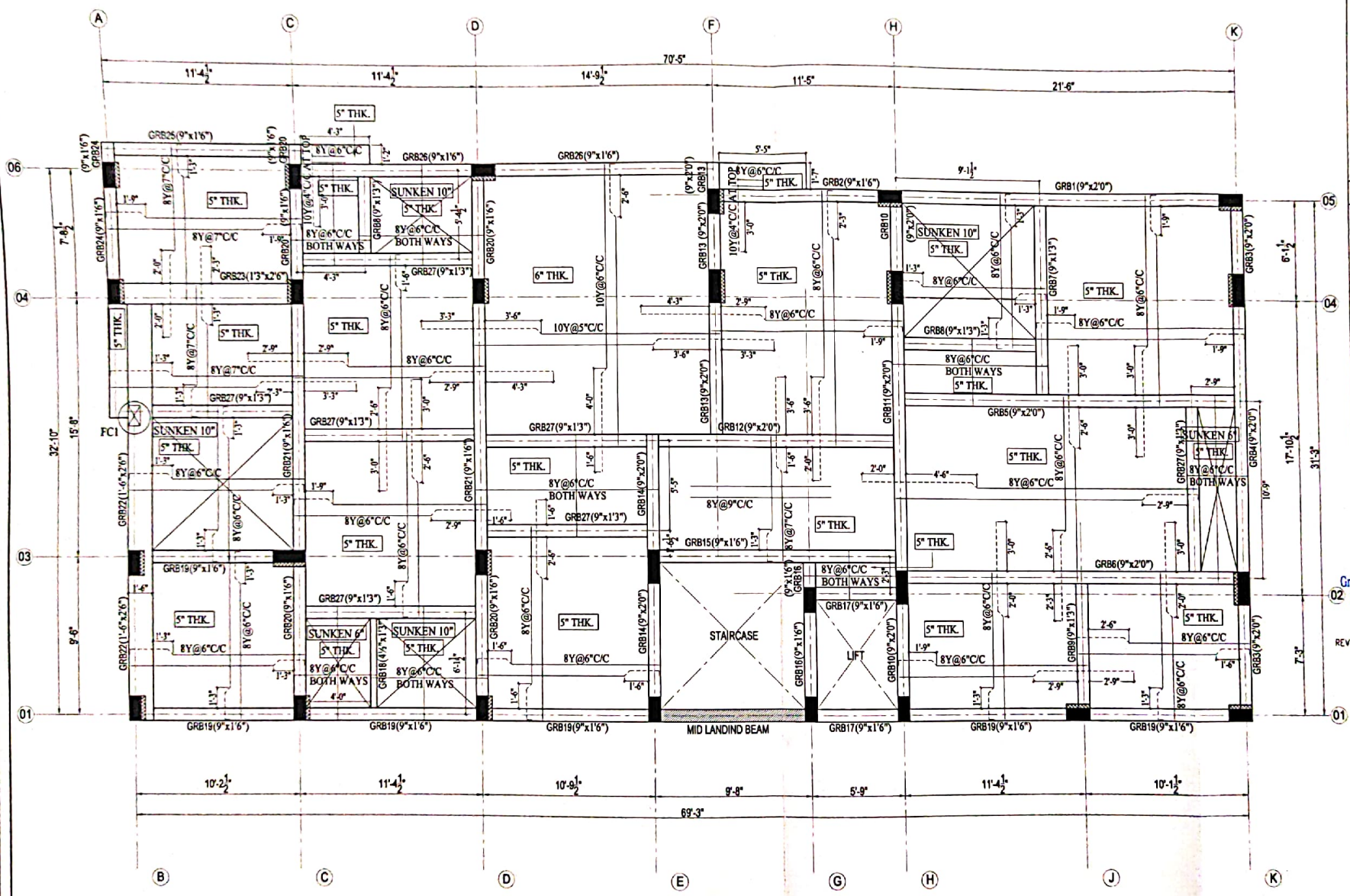
PROJECT TITLE:
PROPOSED APARTMENT AT ASHOK NAGAR,CHENNAI

DRAWING TITLE:
STILT FLOOR ROOF BEAM DETAILS (SHEET 2 OF 2)

STRUCTURAL CONSULTANT:

AKR CONSULTANTS
Er.I.R.ARUNKUMAAR,M.E.,M.I.E.
M/s. AKR CONSULTANTS
NO.10, 9th STREET,
2nd SECTOR, K.K.NAGAR
CHENNAI - 600078.
email : akr@akrconsultants.com
Mob : +91 9994160046

SCALE	1" = 6'0"	DRAWN BY	MKV
SHEET SIZE	A3	CHECKED BY	AKR
DESIGNED BY			I.R.ARUNKUMAAR



GENERAL NOTES :

1) All dimensions are in foot & inches.
2) Concrete Grade for Pile : M 30
(Minimum cement content for
Pile - 400 kg/Cum)
3) Concrete Grade for Pile cap,Column,
Beam & slab : M 25
(Minimum cement content for
M 25 - 340 kg/Cum)
4) Steel Grade : Tor Fe-500
5) Clear cover : Footing =2",Column =1 1/2"
Beam=1",Slab=3/4"
6) Lap length
Compression (Column) : 45 Ø
Tension (Beam & Slab) : 57 Ø
7) Provide spacer bar at every 3'0" intervals
8) The column center should coincide
with center of footing
9) The column & foundation are designed for
Stilt +5 floors only.
10) Development length, Ld = 50Ø
11) Do not scale this drawing and follow
architectural drawing dimensions only.
12) No changes shall be made without the
Concern of the structural consultant.

FOR APPROVAL

Er.I.R.ARUNKUMAAR, M.E., (Structural), M.I.E.,
Consulting Structural Engineer,
Chartered Civil Engineer (M-165213-8)
CMDA Regn. No. SE/GR-I/2024/03/013,
Greater Chennai Corporation, Regn. No.RSE100482019
No:10, 9th St, 2nd Sector, K.K. Nagar, Chennai - 78

REV	DESCRIPTION	BY	DATE

DRAWING NO : 1220-ST-S-08 | DATE: 22-05-24

CLIENT:
Mr K. SUBBURAMAN

PROJECT TITLE:
PROPOSED APARTMENT AT
ASHOK NAGAR,CHENNAI.

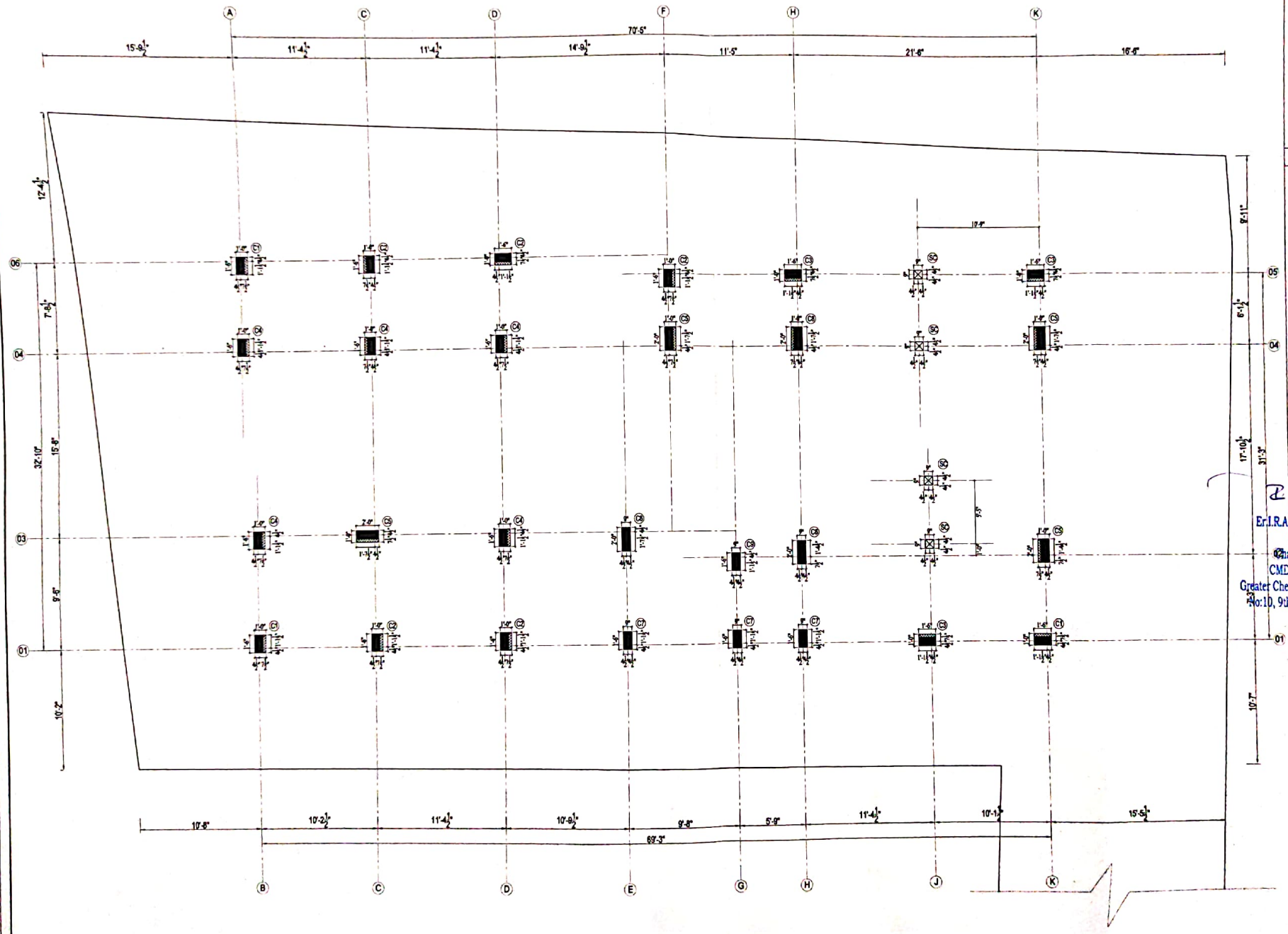
DRAWING TITLE:
STILT FLOOR ROOF BEAM
AND SLAB LAYOUT

N

STRUCTURAL CONSULTANT:

AKR CONSULTANTS
Er.I.R.ARUNKUMAAR,M.E.,M.I.E.,
M/s. AKR CONSULTANTS
NO.10, 9th STREET,
2nd SECTOR, K.K.NAGAR
CHENNAI - 600078.
email : akr@akrconsultants.com
Mob : +91 9994160046

SCALE	1" = 5'6"	DRAWN BY	MKV
SHEET SIZE	A3	CHECKED BY	AKR
DESIGNED BY			I.R.ARUNKUMAAR



GENERAL NOTES :

1) All dimensions are in foot & inches.
2) Concrete Grade for Pile : M 30
(Minimum cement content for
Pile - 400 kg/Cum)
3) Concrete Grade for Pile cap,Column,
Beam & slab : M 25
(Minimum cement content for
M 25 - 340 kg/Cum)
4) Steel Grade : Tor Fe-500
5) Clear cover : Footing =2",Column =1 1/2"
Beam=1",Slab=3/4"
6) Lap length
Compression (Column) : 45 Ø
Tension (Beam & Slab) : 57 Ø
7) Provide spacer bar at every 30" intervals
8) The column center should colincide
with center of footing.
9) The column & foundation are designed for
Stilt +5 floors only.
10) Development length, Ld = 50Ø
11) Do not scale this drawing and follow
architectural drawing dimensions only.
12) No changes shall be made without the
Concern of the structural consultant.

FOR APPROVAL

Er.I.R.ARUNKUMAAR, M.E., (Structural), M.I.E.
Consulting Structural Engineer,
Chartered Civil Engineer (M-165213-8)
CMDA Regn. No. SE/GR-I/2024/03/013,
Greater Chennai Corporation, Regn, No.RSE100482019,
No:10, 9th St, 2nd Sector, K.K. Nagar, Chennai - 78

REV	DESCRIPTION	BY	DATE

DRAWING NO 1220-ST-S-01 | DATE: 22-05-24

CLIENT.
MR.K. SUBBURAMAN

PROJECT TITLE:
PROPOSED APARTMENT AT
ASHOK NAGAR,CHENNAI.

DRAWING TITLE:
COLUMN CENTER LINE LAYOUT

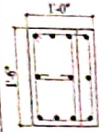
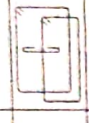
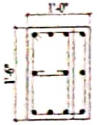
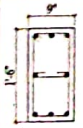
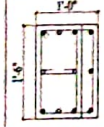
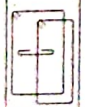
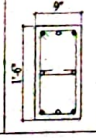
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STRUCTURAL CONSULTANT:

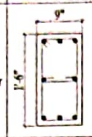
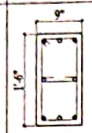
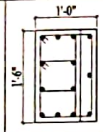
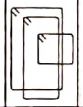
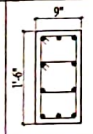
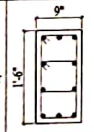
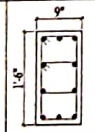
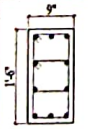
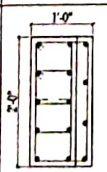
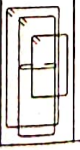
AKR CONSULTANTS
Er.I.R.ARUNKUMAAR.M.E.,M.I.E.,
M/s. AKR CONSULTANTS
NO.10, 9th STREET,
2nd SECTOR, K.K.NAGAR
CHENNAI - 600078.
email : akr@akrconsultants.com
Mob : +91 9994160046

SCALE	1" = 6'6"	DRAWN BY	MKV
SHEET SIZE	A3	CHECKED BY	AKR
DESIGNED BY			I.R.ARUNKUMAAR

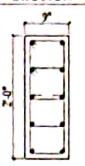
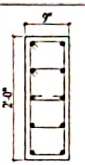
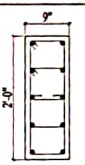
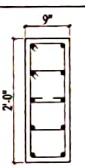
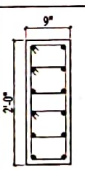
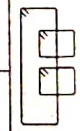
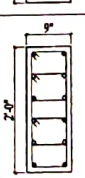
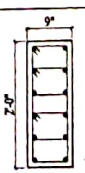
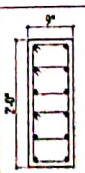
COLUMN DETAILS

TYPE	SIZE	CROSS SECTION	MAIN ROD	TIES PROFILE	LATERAL TIES
C1	1'-0" x 1'-6" Stilt floor		• 8-12Y+ • 3-12Y		8Y @6"C/C
	9" x 1'-6" First floor		• 8-12Y		8Y @6"C/C
	9" x 1'-6" Upper floors		• 8-12Y		
C2	1'-0" x 1'-6" Stilt floor		• 8-16Y+ • 3-12Y		8Y @6"C/C
	9" x 1'-6" First floor		• 8-16Y		8Y @6"C/C
	9" x 1'-6" Second floor		• 4-16Y+ ○ 4-12Y		
	9" x 1'-6" Third floor		• 8-12Y		
	9" x 1'-6" Upper floors		• 8-12Y		
C3	1'-0" x 1'-6" Stilt floor		• 4-20Y+ ○ 4-16Y+ • 3-16Y		8Y @6"C/C
	9" x 1'-6" First floor		• 4-20Y+ ○ 4-16Y		8Y @6"C/C

COLUMN DETAILS

TYPE	SIZE	CROSS SECTION	MAIN ROD	TIES PROFILE	LATERAL TIES
C3	9" x 1'-6" Second floor		• 8-16Y		8Y @6"C/C
	9" x 1'-6" Third floor		• 4-16Y+ ○ 4-12Y		
	9" x 1'-6" Upper floors		• 4-16Y+ ○ 4-12Y		
C4	1'-0" x 1'-6" Stilt floor		• 10-20Y+ • 3-16Y		8Y @6"C/C
	9" x 1'-6" First floor		• 10-20Y		8Y @6"C/C
	9" x 1'-6" Second floor		• 10-16Y		
	9" x 1'-6" Third floor		• 10-12Y		
	9" x 1'-6" Upper floors		• 10-12Y		
C5	1'-0" x 2'-0" Stilt floor		• 10-20Y+ • 4-16Y		8Y @6"C/C

COLUMN DETAILS

TYPE	SIZE	CROSS SECTION	MAIN ROD	TIES PROFILE	LATERAL TIES
C5	9" x 2'-0" First floor		• 10-20Y		8Y @6"C/C
	9" x 2'-0" Second floor		• 10-16Y		
	9" x 2'-0" Third floor		• 10-12Y		
	9" x 2'-0" Upper floors		• 10-12Y		
C6	9" x 2'-0" Stilt floor		• 12-20Y		8Y @6"C/C
	9" x 2'-0" First floor		• 6-20Y+ • 6-16Y		
	9" x 2'-0" Second floor		• 12-16Y		
	9" x 2'-0" Third floor		• 12-12Y		

GENERAL NOTES :

1) All dimensions are in foot & inches.
2) Concrete Grade for Pile : M 30 (Minimum cement content for Pile - 400 kg/Cum)
3) Concrete Grade for Pile cap,Column, Beam & slab : M 25 (Minimum cement content for M 25 - 340 kg/Cum)
4) Steel Grade : Tor Fe-500
5) Clear cover : Footing =2",Column =1 1/2" Beam=1",Slab=3/4"
6) Lap length Compression (Column) : 45 Ø Tension (Beam & Slab) : 57 Ø
7) Provide spacer bar at every 3'0" intervals
8) The column center should coincide with center of footing.
9) The column & foundation are designed for Stilt +5 floors only.
10) Development length, Ld = 50Ø
11) Do not scale this drawing and follow architectural drawing dimensions only.
12) No changes shall be made without the Concern of the structural consultant.

FOR APPROVAL

Er.I.R.ARUNKUMAAR, M.E., (Structural), M.I.E.,
Consulting Structural Engineer,
Chartered Civil Engineer (M-165213-8)
CMDA Regn. No. SE/CR-I/2024/03/013,
Greater Chennai Corporation, Regn. No.RSE100492019,
No:10, 9th St, 2nd Sector, K.K. Nagar, Chennai - 78

REV	DESCRIPTION	BY	DATE

DRAWING NO : 1220-ST-S-02 | DATE: 22-05-24

CLIENT:
Mr.K. SUBBURAMAN

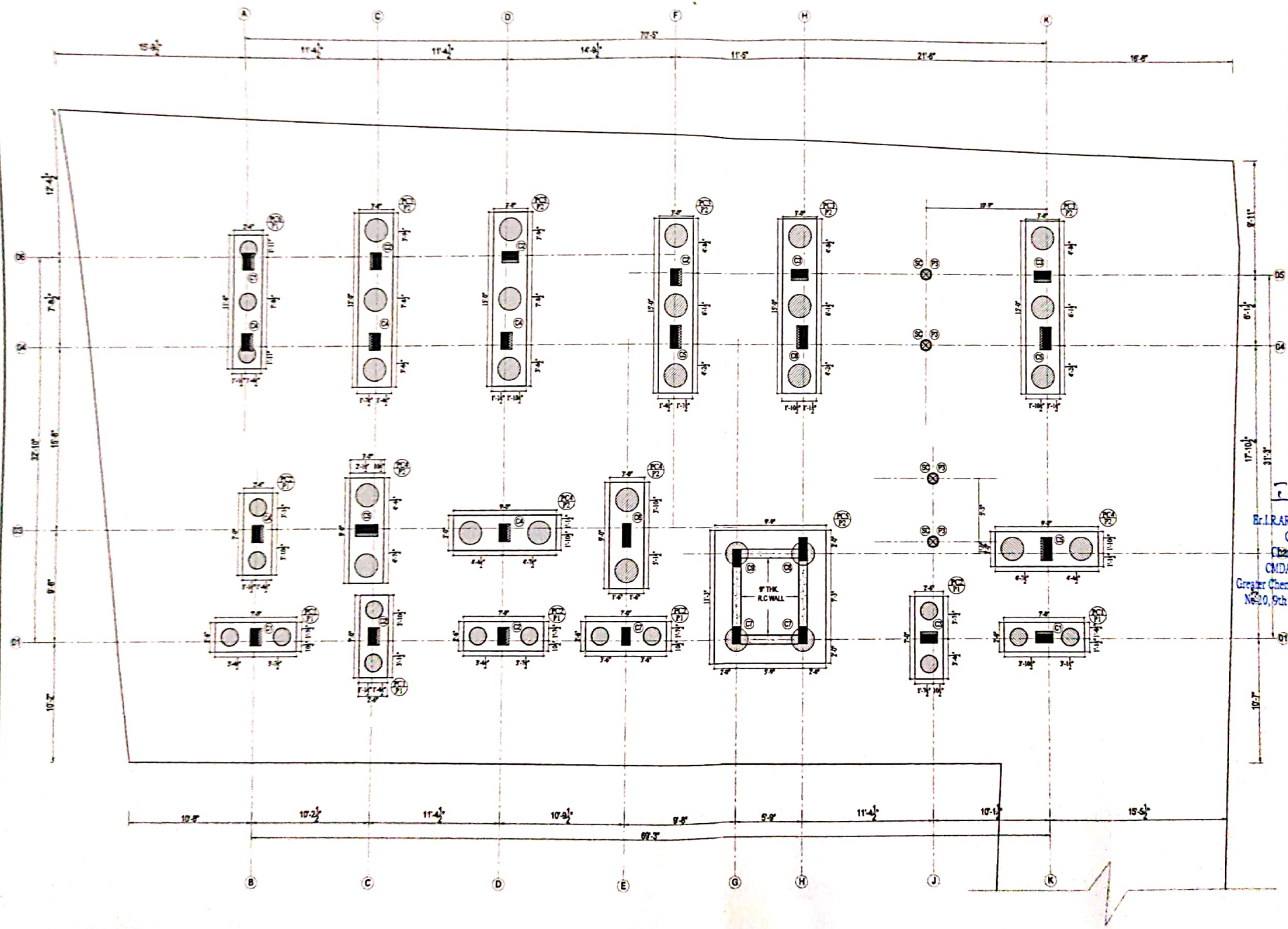
PROJECT TITLE:
PROPOSED APARTMENT AT
ASHOK NAGAR,CHENNAI

DRAWING TITLE:
COLUMN DETAILS
[SHEET 1 OF 2]

STRUCTURAL CONSULTANT:

AKR CONSULTANTS
Er.I.R.ARUNKUMAAR,M.E.,M.I.E.,
M/s. AKR CONSULTANTS
NO.10, 9th STREET,
2nd SECTOR, K.K.NAGAR
CHENNAI - 600078.
email : akr@akrconsultants.com
Mob : +91 9994160046

SCALE	1" = 5'0"	DRAWN BY	MKV
SHEET SIZE	A3	CHECKED BY	AKR
DESIGNED BY		I.R.ARUNKUMAAR	



GENERAL NOTES

1) All dimensions are in feet & inches.
2) Concrete Grade for Pile : M 30
(Minimum cement content for Pile - 400 kg/Cum)
3) Concrete Grade for Pile cap,Column, Beam & slab : M 25
(Minimum cement content for M 25 - 340 kg/Cum)
4) Steel Grade : Tor Fe-500
5) Clear cover : Footing =2",Column =1 1/2" Beam=1",Slab=3/4"
6) Lap length
Compression (Column) : 45 Ø
Tension (Beam & Slab) : 57 Ø
7) Provide spacer bar at every 10' intervals
8) The column center should coincide with center of footing.
9) The column & foundation are designed for Stilt +5 floors only.
10) Development length, Ld = 50D
11) Do not scale this drawing and follow architectural drawing dimensions only.
12) No changes shall be made without the Concern of the structural consultant.

FOR APPROVAL

Er.I.R.ARUNKUMAAR, M.E., (Structural), M.I.E.,
Consulting Structural Engineer,
Chartered Civil Engineer (M-165213-8)
CMDA Regn. No. SE/GR-I/2024/03/013,
Greater Chennai Corporation, Regn. No.PSE10048/2019,
No.20, 9th St, 2nd Sector, K.K. Nagar, Chennai - 78

REV	DESCRIPTION	BY	DATE
DRAWING NO 1220-ST-S-04			DATE: 22-05-24

CLIENT:
Mr.E. SUBBURAMAN

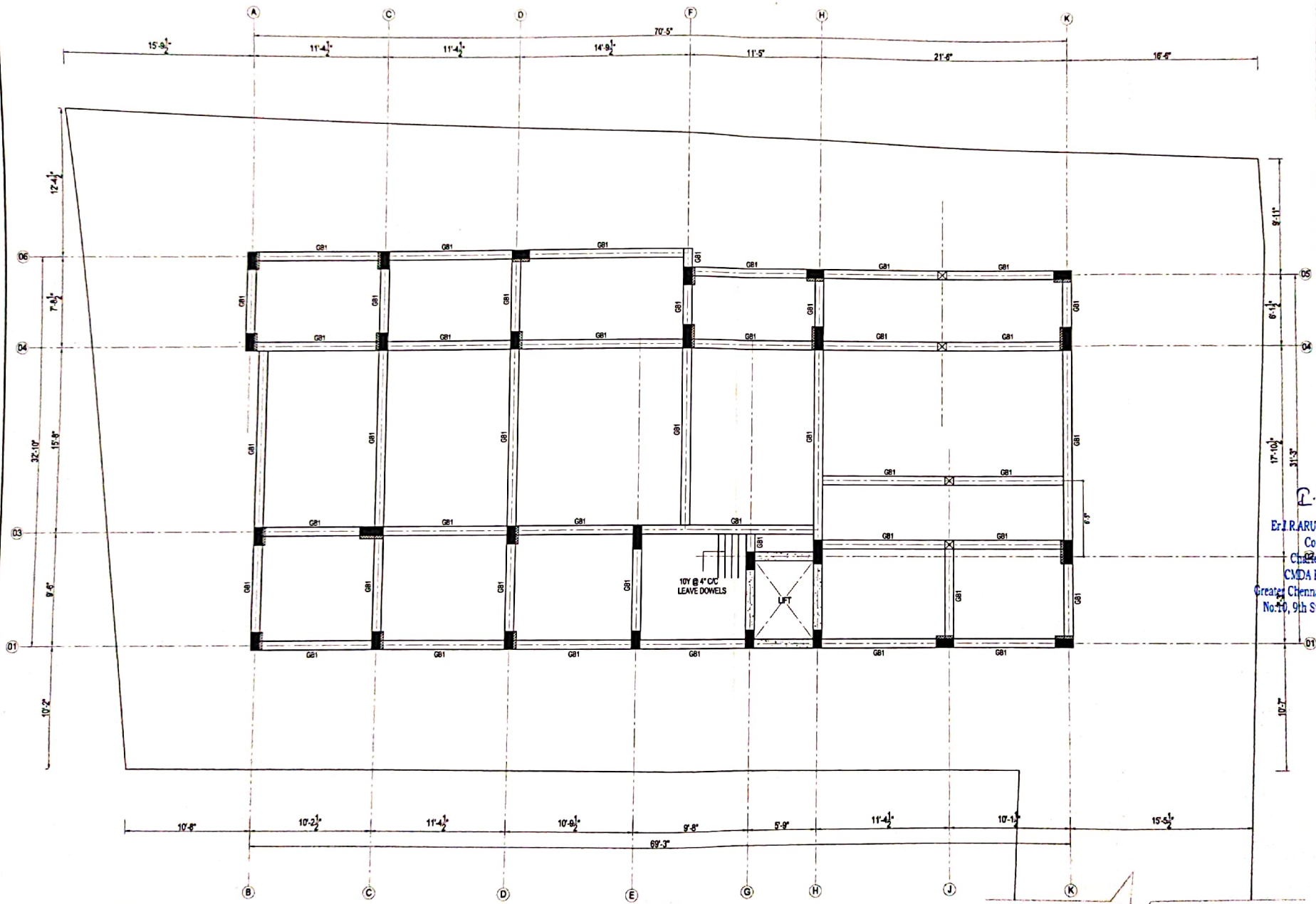
PROJECT TITLE:
PROPOSED APARTMENT AT
ASHOK NAGAR,CHENNAI

DRAWING TITLE:
FOUNDATION LAYOUT

N

STRUCTURAL CONSULTANT:
AKR CONSULTANTS
Er.I.R.ARUNKUMAAR,M.E.,M.I.E.,
M/s. AKR CONSULTANTS
NO.10, 9th STREET,
2nd SECTOR, K.K.NAGAR
CHENNAI - 600078.
email : akr@akrconsultants.com
Mob : +91 9994160046

SCALE	1" = 6'6"	DRAWN BY	MKV
SHEET SIZE	A3	CHECKED BY	AKR
DESIGNED BY			LR ARUNKUMAAR



GENERAL NOTES :

1) All dimensions are in feet & inches
2) Concrete Grade for Pile : M 30
(Minimum cement content for Pile - 400 kg/Cum)
3) Concrete Grade for Pile cap,Column, Beam & slab : M 25
(Minimum cement consent for M 25 - 340 kg/Cum)
4) Steel Grade : Tor Fe-500
5) Clear cover : Footing =2",Column =1 1/2"
Beam=1",Slab=3/4"
6) Lap length
Compression (Column) : 45 Ø
Tension (Beam & Slab) : 57 Ø
7) Provide spacer bar at every 30" intervals
8) The column center should coincide with center of footing.
9) The column & foundation are designed for Stilt +5 floors only.
10) Development length, Ld = 50Ø
11) Do not scale this drawing and follow architectural drawing dimensions only.
12) No changes shall be made without the Concern of the structural consultant.

FOR APPROVAL

Er.I.R.ARUNKUMAAR, M.E., (Structural), M.I.E.,
Consulting Structural Engineer,
Chartered Civil Engineer (M-165213-8)
CMDA Regn. No. SE/GR-I/2024/03/013,
Greater Chennai Corporation, Regn. No RSE100482019
No.10, 9th St, 2nd Sector, K.K. Nagar, Chennai - 78

REV	DESCRIPTION	BY	DATE

DRAWING NO : 1220-ST-S-05 DATE: 22-05-24

CLIENT:
Mr.K. SUBBURAMAN

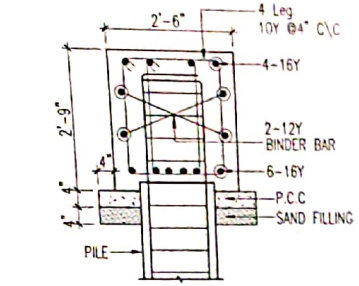
PROJECT TITLE:
PROPOSED APARTMENT AT
ASHOK NAGAR,CHENNAI

DRAWING TITLE:
GRADE BEAM LAYOUT

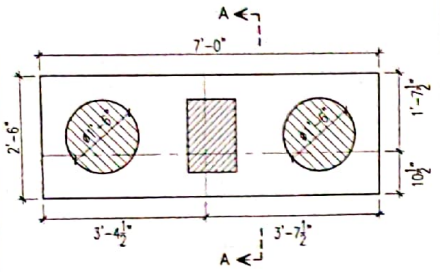
N

STRUCTURAL CONSULTANT:
AKR CONSULTANTS
Er.I.R.ARUNKUMAAR,M.E.,M.I.E.,
M/s. AKR CONSULTANTS
NO.10, 9th STREET,
2nd SECTOR, K.K.NAGAR
CHENNAI - 600078.
email : akr@akrconsultants.com
Mob : +91 9994160046

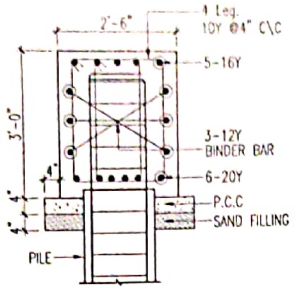
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SHEET SIZE	A3	CHECKED BY	AKR
DESIGNED BY			I.R ARUNKUMAAR



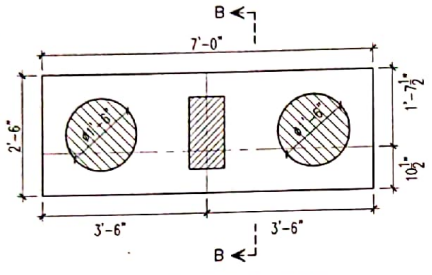
SECTION A-A



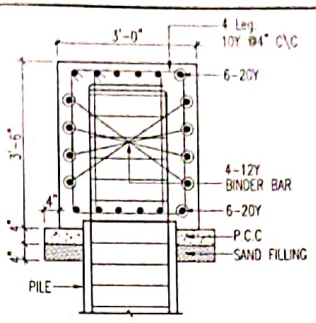
DETAIL OF PILE CAP - PC1/P1



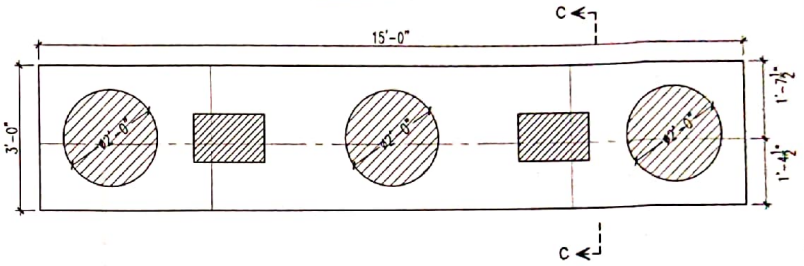
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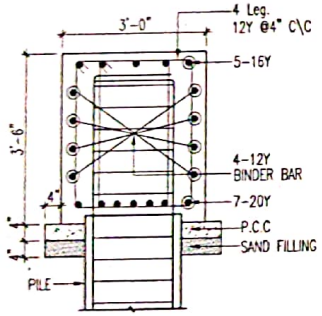
DETAIL OF PILE CAP - PC2/P1



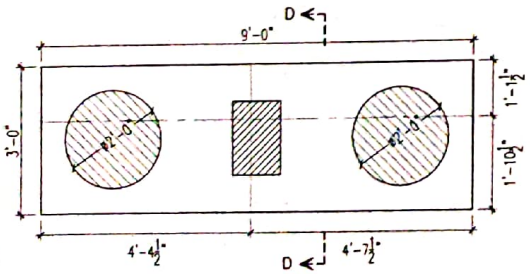
SECTION C-C



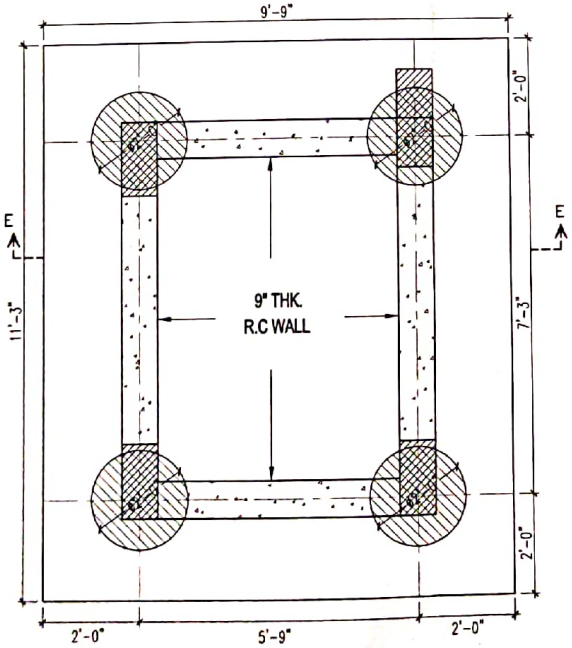
DETAIL OF PILE CAP - PC3/P2



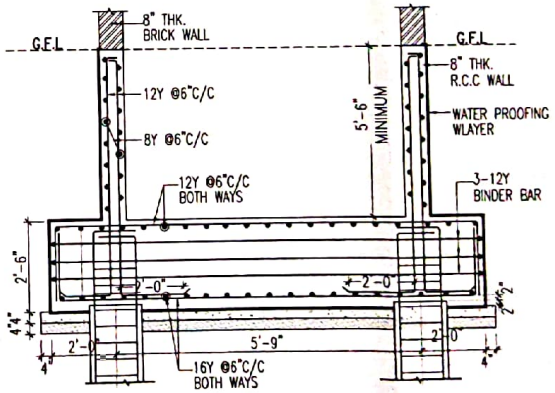
SECTION D-D



DETAIL OF PILE CAP - PC4/P2



DETAIL OF PILE CAP - PC5/P2



SECTION E-E

GENERAL NOTES :

1) All dimensions are in foot & inches.
2) Concrete Grade for Pile : M 30
(Minimum cement content for
Pile - 400 kg/Cum)
3) Concrete Grade for Pile cap,Column,
Beam & slab : M 25
(Minimum cement content for
M 25 - 340 kg/Cum)
4) Steel Grade : Tor Fe-500
5) Clear cover : Footing =2",Column =1 1/2"
Beam=1",Slab=3/4"
6) Lap length
Compression (Column) : 45 Ø
Tension (Beam & Slab) : 57 Ø
7) Provide spacer bar at every 3'0" intervals
8) The column center should coincide
with center of footing.
9) The column & foundation are designed for
Stilt +5 floors only.
10) Development length, Ld = 50Ø
11) Do not scale this drawing and follow
architectural drawing dimensions only.
12) No changes shall be made without the
Concern of the structural consultant.

FOR APPROVAL

Er.I.R.ARUNKUMAAR, M.E., (Structural), M.I.E.,
Consulting Structural Engineer,
Chartered Civil Engineer (M-165213-8)
CMDA Regn. No. SE/GR-I/2024/03/013,
Greater Chennai Corporation, Regn. No.RSE100482019
No:10, 9th St, 2nd Sector, K.K. Nagar, Chennai - 78

REV	DESCRIPTION	BY	DATE

DRAWING NO : 1220-ST-S-06 DATE: 22-05-24

CLIENT:
Mr.K. SUBBURAMAN

PROJECT TITLE:
PROPOSED APARTMENT AT
ASHOK NAGAR,CHENNAI.

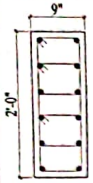
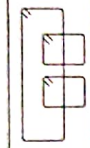
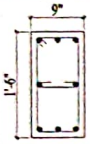
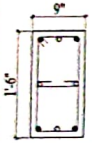
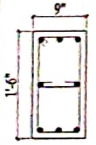
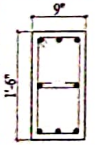
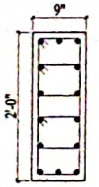
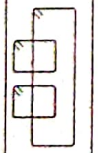
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PILE CAP & GRADE BEAM DETAILS
(SHEET 1 OF 2)

STRUCTURAL CONSULTANT:

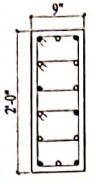
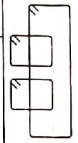
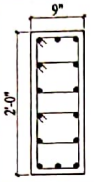
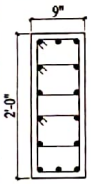
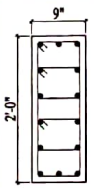
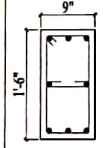
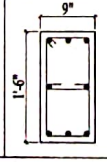
AKR CONSULTANTS
Er.I.R.ARUNKUMAAR,M.E.,M.I.E.,
M/ s. AKR CONSULTANTS
NO.10, 9th STREET,
2nd SECTOR, K.K.NAGAR
CHENNAI - 600078.
email : akr@akrconsultants.com
Mob : +91 9994160046

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SHEET SIZE	A3	CHECKED BY	AKR
DESIGNED BY		I.R.ARUNKUMAAR	

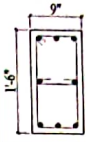
COLUMN DETAILS

TYPE	SIZE	CROSS SECTION	MAIN ROD	TIES PROFILE	LATERAL TIES
C6	9" x 2'-0" Upper floors		• 12-12Y		8Y @6"C/C
C7	9" x 1'-6" Stilt floor		• 8-20Y		8Y @6"C/C
	9" x 1'-6" First floor		• 8-16Y		
	9" x 1'-6" Second floor		• 4-16Y+ ○ 4-12Y		
	9" x 1'-6" Third floor		• 8-12Y		
	9" x 1'-6" Upper floors		• 8-12Y		
C8	9" x 2'-0" Stilt floor		• 14-20Y		8Y @6"C/C

COLUMN DETAILS

TYPE	SIZE	CROSS SECTION	MAIN ROD	TIES PROFILE	LATERAL TIES
C8	9" x 2'-0" First floor		• 6-20Y+ ○ 8-16Y		8Y @6"C/C
	9" x 2'-0" Second floor		• 14-16Y		
	9" x 2'-0" Third floor		• 14-12Y		
	9" x 2'-0" Upper floors		• 14-12Y		
C9	9" x 1'-6" Stilt floor		• 8-16Y		8Y @6"C/C
	9" x 1'-6" First floor		• 8-12Y		

COLUMN DETAILS

TYPE	SIZE	CROSS SECTION	MAIN ROD	TIES PROFILE	LATERAL TIES
C9	9" x 1'-6" Upper floors		• 8-12Y		8Y @6"C/C
SC	9" x 9" Upto Grade Beam		• 4-12Y		8Y @6"C/C

GENERAL NOTES :

1) All dimensions are in foot & inches.
2) Concrete Grade for Pile : M 30 (Minimum cement content for Pile - 400 kg/Cum)
3) Concrete Grade for Pile cap,Column, Beam & slab : M 25 (Minimum cement content for M 25 - 340 kg/Cum)
4) Steel Grade : Tor Fe-500
5) Clear cover : Footing =2",Column =1 1/2" Beam=1",Slab=3/4"
6) Lap length Compression (Column) : 45 Ø Tension (Beam & Slab) : 57 Ø
7) Provide spacer bar at every 3'0" intervals
8) The column center should coincide with center of footing.
9) The column & foundation are designed for Stilt +5 floors only.
10) Development length, Ld = 50Ø
11) Do not scale this drawing and follow architectural drawing dimensions only.
12) No changes shall be made without the Concern of the structural consultant.

FOR APPROVAL

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No:10, 9th St, 2nd Sector, K.K. Nagar, Chennai - 78

REV	DESCRIPTION	BY	DATE

DRAWING NO : 1220-ST-S-03 | DATE: 22-05-24

CLIENT:
Mr.K. SUBBURAMAN

PROJECT TITLE:
PROPOSED APARTMENT AT
ASHOK NAGAR,CHENNAI.

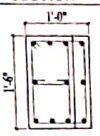
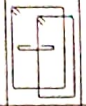
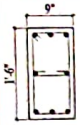
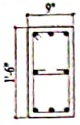
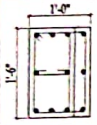
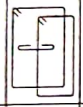
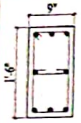
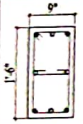
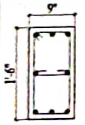
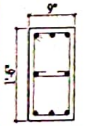
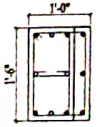
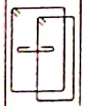
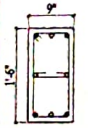
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COLUMN DETAILS
[SHEET 2 OF 2]

STRUCTURAL CONSULTANT:

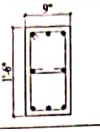
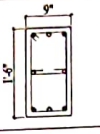
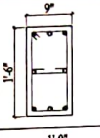
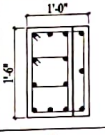
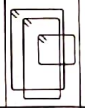
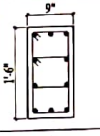
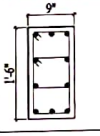
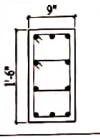
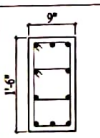
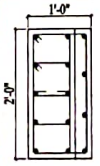
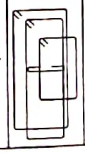
AKR CONSULTANTS
Er.I.R.ARUNKUMAAR,M.E.,M.I.E.,
M/s. AKR CONSULTANTS
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2nd SECTOR, K.K.NAGAR
CHENNAI - 600078.
email : akr@akrconsultants.com
Mob : +91 9994160046

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SHEET SIZE	A3	CHECKED BY	AKR
DESIGNED BY		I.R.ARUNKUMAAR	

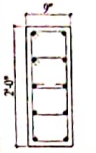
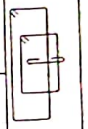
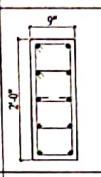
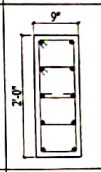
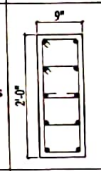
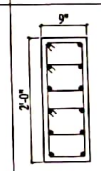
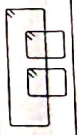
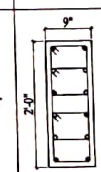
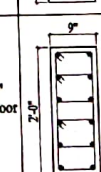
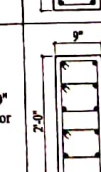
COLUMN DETAILS

TYPE	SIZE	CROSS SECTION	MAIN ROD	TIES PROFILE	LATERAL TIES
C1	1'-0" x 1'-6" Stilt floor		• 8-12Y+ • 3-12Y		8Y @6"C/C
	9" x 1'-6" First floor		• 8-12Y		8Y @6"C/C
	9" x 1'-6" Upper floors		• 8-12Y		
C2	1'-0" x 1'-6" Stilt floor		• 8-16Y+ • 3-12Y		8Y @6"C/C
	9" x 1'-6" First floor		• 8-16Y		8Y @6"C/C
	9" x 1'-6" Second floor		• 4-16Y+ ○ 4-12Y		
	9" x 1'-6" Third floor		• 8-12Y		
	9" x 1'-6" Upper floors		• 8-12Y		
C3	1'-0" x 1'-6" Stilt floor		• 4-20Y+ ○ 4-16Y+ • 3-16Y		8Y @6"C/C
	9" x 1'-6" First floor		• 4-20Y+ ○ 4-16Y		8Y @6"C/C

COLUMN DETAILS

TYPE	SIZE	CROSS SECTION	MAIN ROD	TIES PROFILE	LATERAL TIES
C3	9" x 1'-6" Second floor		• 8-16Y		8Y @6"C/C
	9" x 1'-6" Third floor		• 4-16Y+ ○ 4-12Y		
	9" x 1'-6" Upper floors		• 4-16Y+ ○ 4-12Y		
C4	1'-0" x 1'-6" Stilt floor		• 10-20Y+ • 3-16Y		8Y @6"C/C
	9" x 1'-6" First floor		• 10-20Y		8Y @6"C/C
	9" x 1'-6" Second floor		• 10-16Y		
	9" x 1'-6" Third floor		• 10-12Y		
	9" x 1'-6" Upper floors		• 10-12Y		
C5	1'-0" x 2'-0" Stilt floor		• 10-20Y+ • 4-16Y		8Y @6"C/C

COLUMN DETAILS

TYPE	SIZE	CROSS SECTION	MAIN ROD	TIES PROFILE	LATERAL TIES
C5	9" x 2'-0" First floor		• 10-20Y		8Y @6"C/C
	9" x 2'-0" Second floor		• 10-16Y		
	9" x 2'-0" Third floor		• 10-12Y		
	9" x 2'-0" Upper floors		• 10-12Y		
C6	9" x 2'-0" Stilt floor		• 12-20Y		8Y @6"C/C
	9" x 2'-0" First floor		• 6-20Y+ • 6-16Y		
	9" x 2'-0" Second floor		• 12-16Y		
	9" x 2'-0" Third floor		• 12-12Y		

GENERAL NOTES :

1) All dimensions are in foot & inches.
2) Concrete Grade for Pile : M 30
   (Minimum cement content for Pile - 400 kg/Cum)
3) Concrete Grade for Pile cap,Column, Beam & slab : M 25
   (Minimum cement content for M 25 - 340 kg/Cum)
4) Steel Grade : Tor Fe-500
5) Clear cover : Footing =2",Column =1 1/2" Beam=1",Slab=3/4"
6) Lap length
   Compression (Column) : 45 Ø
   Tension (Beam & Slab) : 57 Ø
7) Provide spacer bar at every 3'0" intervals
8) The column center should coincide with center of footing.
9) The column & foundation are designed for Stilt +5 floors only.
10) Development length, Ld = 50Ø
11) Do not scale this drawing and follow architectural drawing dimensions only.
12) No changes shall be made without the Concern of the structural consultant.

FOR APPROVAL

Er.I.R.ARUNKUMAAR, M.E., (Structural), M.I.E.,
Consulting Structural Engineer,
Chartered Civil Engineer (M-165213-8)
CMDA Regn. No. SE/GR-I/2024/03/013,
Greater Chennai Corporation, Regn, No.RSE100482019,
No:10, 9th St, 2nd Sector, K.K. Nagar, Chennai - 78

REV	DESCRIPTION	BY	DATE

DRAWING NO : 1220-ST-S-02 | DATE: 22-05-24

CLIENT:
Mr.K. SUBBURAMAN

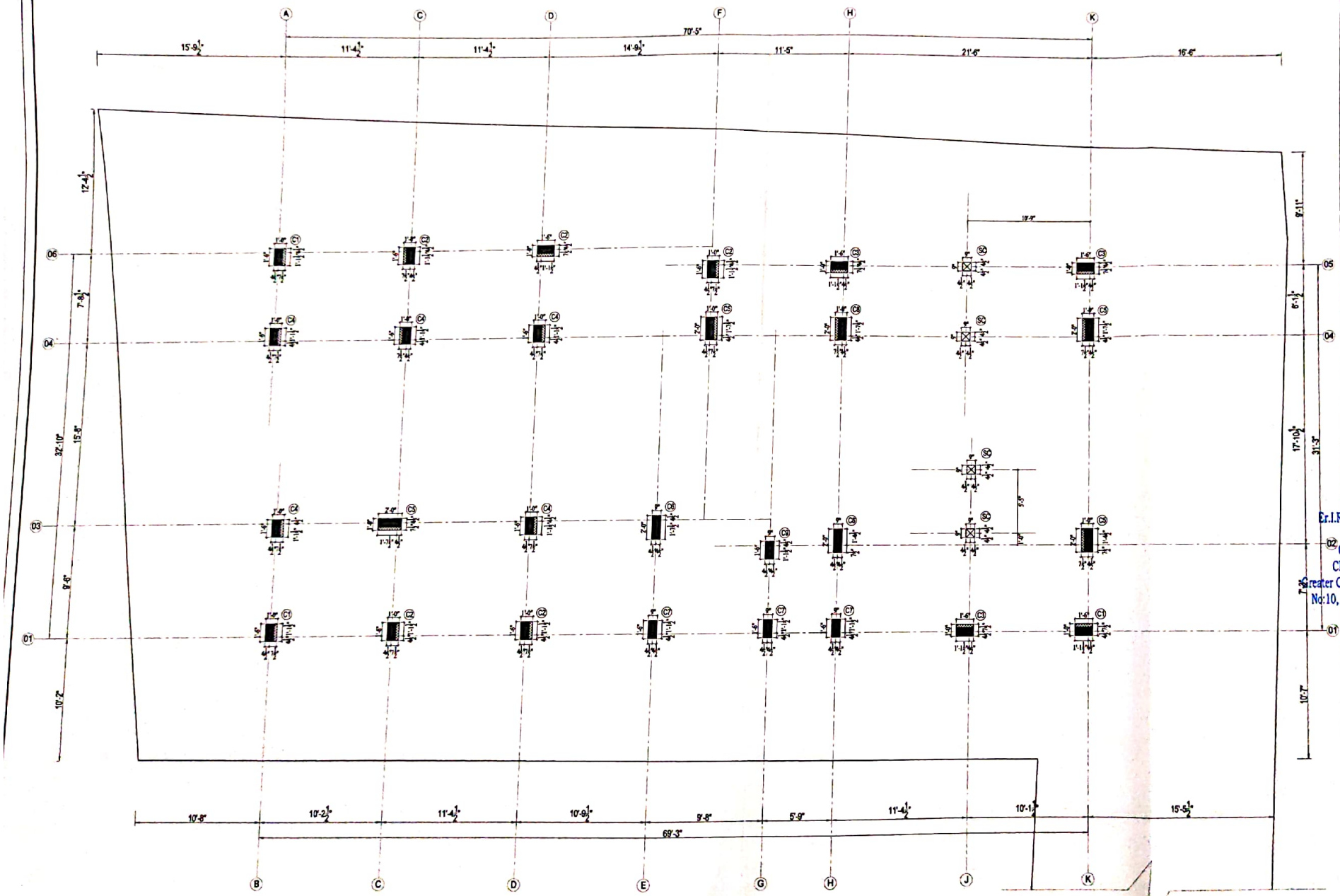
PROJECT TITLE:
PROPOSED APARTMENT AT
ASHOK NAGAR,CHENNAI.

DRAWING TITLE:
COLUMN DETAILS
[SHEET 1 OF 2]

STRUCTURAL CONSULTANT:

AKR CONSULTANTS
Er.I.R.ARUNKUMAAR,M.E.,M.I.E.,
M/s. AKR CONSULTANTS
NO.10, 9th STREET,
2nd SECTOR, K.K.NAGAR
CHENNAI - 600078.
email : akr@akrconsultants.com
Mob : +91 9994160046

SCALE	1" = 5'0"	DRAWN BY	MKV
SHEET SIZE	A3	CHECKED BY	AKR
DESIGNED BY		I.R.ARUNKUMAAR	



GENERAL NOTES:

1) All dimensions are in foot & inches.
2) Concrete Grade for Pile : M 30
(Minimum cement content for
Pile - 490 kg/Cum)
3) Concrete Grade for Pile cap,Column,
Beam & slab : M 25
(Minimum cement content for
M 25 - 340 kg/Cum)
4) Steel Grade : Tor Fe-500
5) Clear cover : Footing =2",Column =1 1/2"
Beam=1",Slab=3/4"
6) Lap length
Compression (Column) : 45 Ø
Tension (Beam & Slab) : 57 Ø
7) Provide spacer bar at every 3'0" intervals
8) The column center should coincide
with center of footing.
9) The column & foundation are designed for
Stilt +5 floors only.
10) Development length, Ld = 50Ø
11) Do not scale this drawing and follow
architectural drawing dimensions only.
12) No changes shall be made without the
Concern of the structural consultant.

FOR APPROVAL

Er.I.R.ARUNKUMAAR, M.E., (Structural), M.I.E.,
Consulting Structural Engineer,
Chartered Civil Engineer (M-165213-8)
CMDA Regn. No. SE/GR-I/2024/03/013,
Greater Chennai Corporation, Regn, No.RSE100482019,
No:10, 9th St, 2nd Sector, K.K. Nagar, Chennai - 78

REV	DESCRIPTION	BY	DATE
DRAWING NO 1220-ST-S-01			DATE: 22-05-24

CLIENT:
Mr.K. SUBBURAMAN

PROJECT TITLE:
PROPOSED APARTMENT AT
ASHOK NAGAR,CHENNAI

DRAWING TITLE:
COLUMN CENTER LINE LAYOUT

N

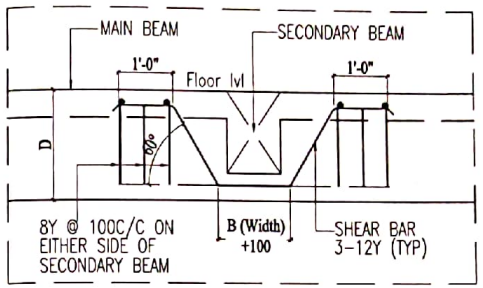
STRUCTURAL CONSULTANT:

AKR CONSULTANTS
Er.I.R.ARUNKUMAAR,M.E.,M.I.E.,
M/s. AKR CONSULTANTS
NO.10, 9th STREET,
2nd SECTOR, K.K.NAGAR
CHENNAI - 600078.
email : akr@akrconsultants.com
Mob : +91 9994160046

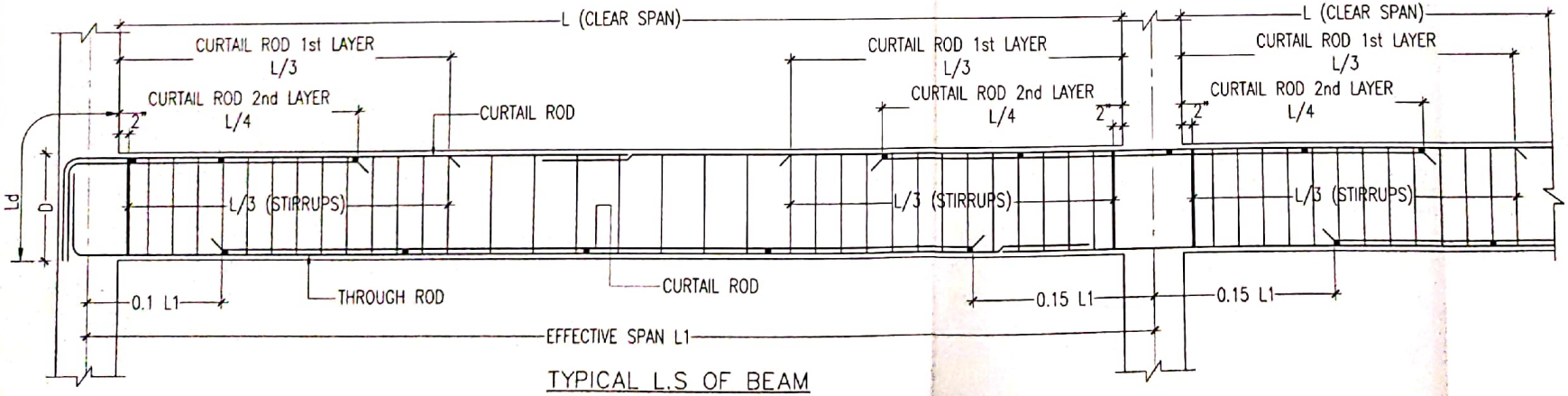
SCALE	1" = 6'6"	DRAWN BY	MKV
SHEET SIZE	A3	CHECKED BY	AKR
DESIGNED BY			I.R.ARUNKUMAAR

FIFTH FLOOR ROOF BEAM DETAILS

TYPE	SIZE BxD	AT MIDSPAN	AT SUPPORT
FRB25	9"x1'-6"	9" / 1'-6" / 2-12Y / 8Y @8"C/C / 2-12Y+1-12Y	9" / 1'-6" / 2-12Y / 8Y @6"C/C / 2-12Y
FRB26	9"x1'-6"	9" / 1'-6" / 2-16Y / 8Y @8"C/C / 2-16Y+1-20Y	9" / 1'-6" / 2-16Y+2-20Y / 8Y @4"C/C / 2-16Y
FRB27	9"x1'-3"	9" / 1'-3" / 2-12Y / 8Y @8"C/C / 2-12Y+1-16Y	9" / 1'-3" / 2-12Y / 8Y @6"C/C / 2-12Y



TYPICAL SHEAR REINFORCEMENT DETAILS



TYPICAL L.S OF BEAM

GENERAL NOTES :

1) All dimensions are in foot & inches.
2) Concrete Grade for Pile : M 30
   (Minimum cement content for Pile - 400 kg/Cum)
3) Concrete Grade for Pile cap,Column, Beam & slab : M 25
   (Minimum cement content for M 25 - 340 kg/Cum)
4) Steel Grade : For Fe-500
5) Clear cover : Footing =2",Column =1 1/2" Beam=1",Slab=3/4"
6) Lap length
   Compression (Column) : 45 Ø
   Tension (Beam & Slab) : 57 Ø
7) Provide spacer bar at every 3'0" intervals
8) The column center should coincide with center of footing.
9) The column & foundation are designed for Stilt +5 floors only.
10) Development length, Ld = 50Ø
11) Do not scale this drawing and follow architectural drawing dimensions only.
12) No changes shall be made without the Concern of the structural consultant.

FOR APPROVAL

Er.I.R.ARUNKUMAAR, M.E., (Structural), M.I.E.,
Consulting Structural Engineer,
Chartered Civil Engineer (M-165213-8)
CMDA Regn. No. SE/GR-I/2024/03/013,
Greater Chennai Corporation, Regn, No.RSE100482019,
No:10, 9th St, 2nd Sector, K.K. Nagar, Chennai - 78

REV	DESCRIPTION	BY	DATE
DRAWING NO : 1220-ST-S-16			DATE: 22-05-24

CLIENT:
Mr.K. SUBBURAMAN

PROJECT TITLE:
PROPOSED APARTMENT AT ASHOK NAGAR,CHENNAI

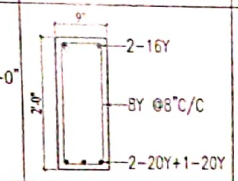
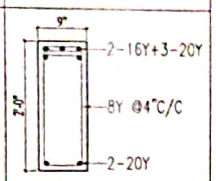
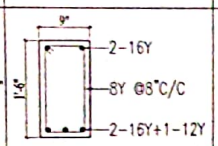
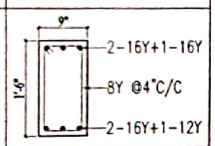
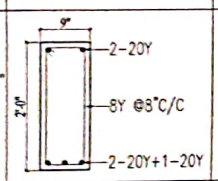
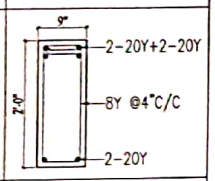
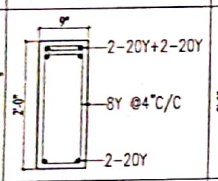
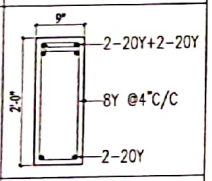
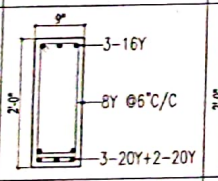
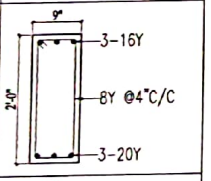
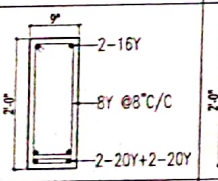
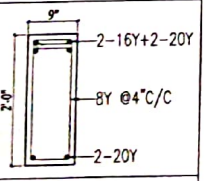
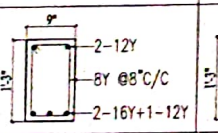
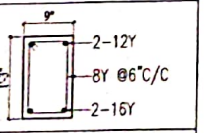
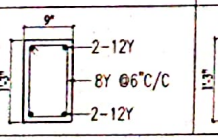
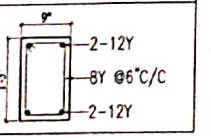
DRAWING TITLE:
FIFTH FLOOR ROOF BEAM DETAILS (SHEET 2 OF 2)

STRUCTURAL CONSULTANT:

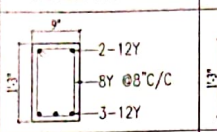
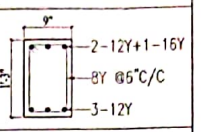
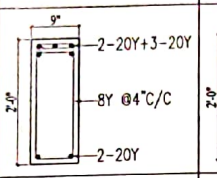
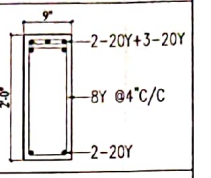
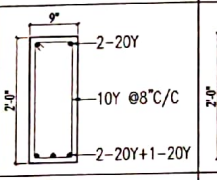
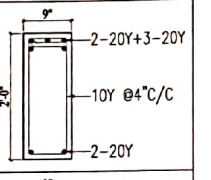
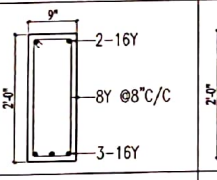
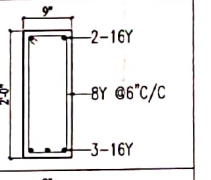
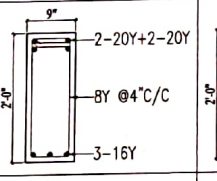
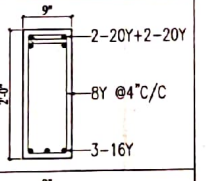
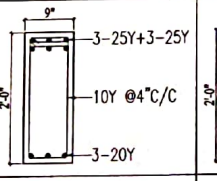
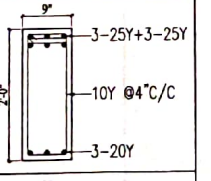
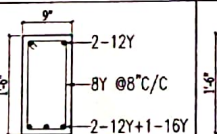
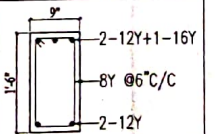
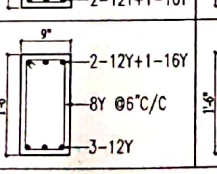
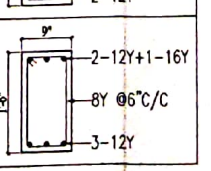
AKR CONSULTANTS
Er.I.R.ARUNKUMAAR,M.E.,M.I.E.,
M/s. AKR CONSULTANTS
NO.10, 9th STREET,
2nd SECTOR, K.K.NAGAR
CHENNAI - 600078.
email : akr@akrconsultants.com
Mob : +91 9994160046

SCALE	1" = 3'6"	DRAWN BY	MKV
SHEET SIZE	A3	CHECKED BY	AKR
DESIGNED BY			I.R.ARUNKUMAAR

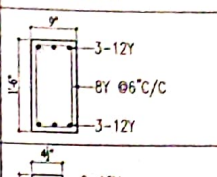
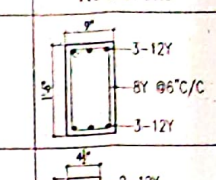
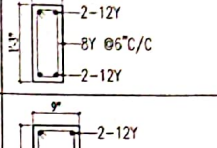
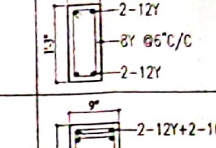
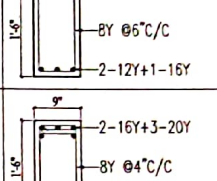
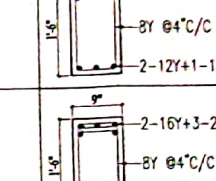
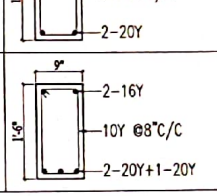
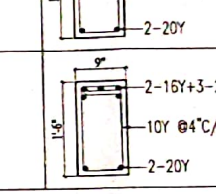
FIFTH FLOOR ROOF BEAM DETAILS

TYPE	SIZE BxD	AT MIDSPAN	AT SUPPORT
FRB1	9"x2'-0"	 2-16Y / 8Y @8"C/C / 2-20Y+1-20Y	 2-16Y+3-20Y / 8Y @4"C/C / 2-20Y
FRB2	9"x1'-6"	 2-16Y / 8Y @8"C/C / 2-16Y+1-12Y	 2-16Y+1-16Y / 8Y @4"C/C / 2-16Y+1-12Y
FRB3	9"x2'-0"	 2-20Y / 8Y @8"C/C / 2-20Y+1-20Y	 2-20Y+2-20Y / 8Y @4"C/C / 2-20Y
FRB4	9"x2'-0"	 2-20Y+2-20Y / 8Y @4"C/C / 2-20Y	 2-20Y+2-20Y / 8Y @4"C/C / 2-20Y
FRB5	9"x2'-0"	 3-16Y / 8Y @6"C/C / 3-20Y+2-20Y	 3-16Y / 8Y @4"C/C / 3-20Y
FRB6	9"x2'-0"	 2-16Y / 8Y @8"C/C / 2-20Y+2-20Y	 2-16Y+2-20Y / 8Y @4"C/C / 2-20Y
FRB7	9"x1'-3"	 2-12Y / 8Y @8"C/C / 2-16Y+1-12Y	 2-12Y / 8Y @6"C/C / 2-16Y
FRB8	9"x1'-3"	 2-12Y / 8Y @6"C/C / 2-12Y	 2-12Y / 8Y @6"C/C / 2-12Y

FIFTH FLOOR ROOF BEAM DETAILS

TYPE	SIZE BxD	AT MIDSPAN	AT SUPPORT
FRB9	9"x1'-3"	 2-12Y / 8Y @8"C/C / 3-12Y	 2-12Y+1-16Y / 8Y @6"C/C / 3-12Y
FRB10	9"x2'-0"	 2-20Y+3-20Y / 8Y @4"C/C / 2-20Y	 2-20Y+3-20Y / 8Y @4"C/C / 2-20Y
FRB11	9"x2'-0"	 2-20Y / 10Y @8"C/C / 2-20Y+1-20Y	 2-20Y+3-20Y / 10Y @4"C/C / 2-20Y
FRB12	9"x2'-0"	 2-16Y / 8Y @8"C/C / 3-16Y	 2-16Y / 8Y @6"C/C / 3-16Y
FRB13	9"x2'-0"	 2-20Y+2-20Y / 8Y @4"C/C / 3-16Y	 2-20Y+2-20Y / 8Y @4"C/C / 3-16Y
FRB14	9"x2'-0"	 3-25Y+3-25Y / 10Y @4"C/C / 3-20Y	 3-25Y+3-25Y / 10Y @4"C/C / 3-20Y
FRB15	9"x1'-6"	 2-12Y / 8Y @8"C/C / 2-12Y+1-16Y	 2-12Y+1-16Y / 8Y @6"C/C / 2-12Y
FRB16	9"x1'-6"	 2-12Y+1-16Y / 8Y @6"C/C / 3-12Y	 2-12Y+1-16Y / 8Y @6"C/C / 3-12Y

FIFTH FLOOR ROOF BEAM DETAILS

TYPE	SIZE BxD	AT MIDSPAN	AT SUPPORT
FRB17	9"x1'-6"	 3-12Y / 8Y @6"C/C / 3-12Y	 3-12Y / 8Y @6"C/C / 3-12Y
FRB18	4½"x1'-3"	 2-12Y / 8Y @6"C/C / 2-12Y	 2-12Y / 8Y @6"C/C / 2-12Y
FRB19	9"x1'-6"	 2-12Y / 8Y @6"C/C / 2-12Y+1-16Y	 2-12Y+2-16Y / 8Y @4"C/C / 2-12Y+1-16Y
FRB20	9"x1'-6"	 2-16Y+3-20Y / 8Y @4"C/C / 2-20Y	 2-16Y+3-20Y / 8Y @4"C/C / 2-20Y
FRB21	9"x1'-6"	2-16Y / 10Y @8"C/C / 2-20Y+1-20Y	2-16Y+3-20Y / 10Y @4"C/C / 2-20Y
FRB22	BEAM REMOVED		
FRB23	BEAM REMOVED		
FRB24	9"x1'-6"	2-12Y+1-16Y / 8Y @8"C/C / 3-12Y	2-12Y+1-16Y / 8Y @4"C/C / 3-12Y

GENERAL NOTES :

1) All dimensions are in feet & inches.
2) Concrete Grade for Pile : M 30
   (Minimum cement content for Pile - 400 kg/Cum)
3) Concrete Grade for Pile cap,Column, Beam & slab : M 25
   (Minimum cement content for M 25 - 340 kg/Cum)
4) Steel Grade : Tor Fe-500
5) Clear cover : Footing =2",Column =1 1/2" Beam=1",Slab=3/4"
6) Lap length
   Compression (Column) : 45 Ø
   Tension (Beam & Slab) : 57 Ø
7) Provide spacer bar at every 3'0" intervals
8) The column centre should coincide with center of footing.
9) The column & foundation are designed for Stilt +5 floors only.
10) Development length, Ld = 50Ø
11) Do not scale this drawing and follow architectural drawing dimensions only.
12) No changes shall be made without the Concern of the structural consultant.

FOR APPROVAL

Er.I.R.ARUNKUMAAR, M.E., (Structural), M.I.E.,
Consulting Structural Engineer,
Chartered Civil Engineer (M-165213-8)
CMDA Regn. No. SE/GR-I/2024/03/013,
Greater Chennai Corporation, Regn. No.RSE100482019,
No:10, 9th St, 2nd Sector, K.K. Nagar, Chennai - 78

REV	DESCRIPTION	BY	DATE

DRAWING NO : 1220-ST-S-15 | DATE: 22-05-24

CLIENT:
Mr.K. SUBBURAMAN

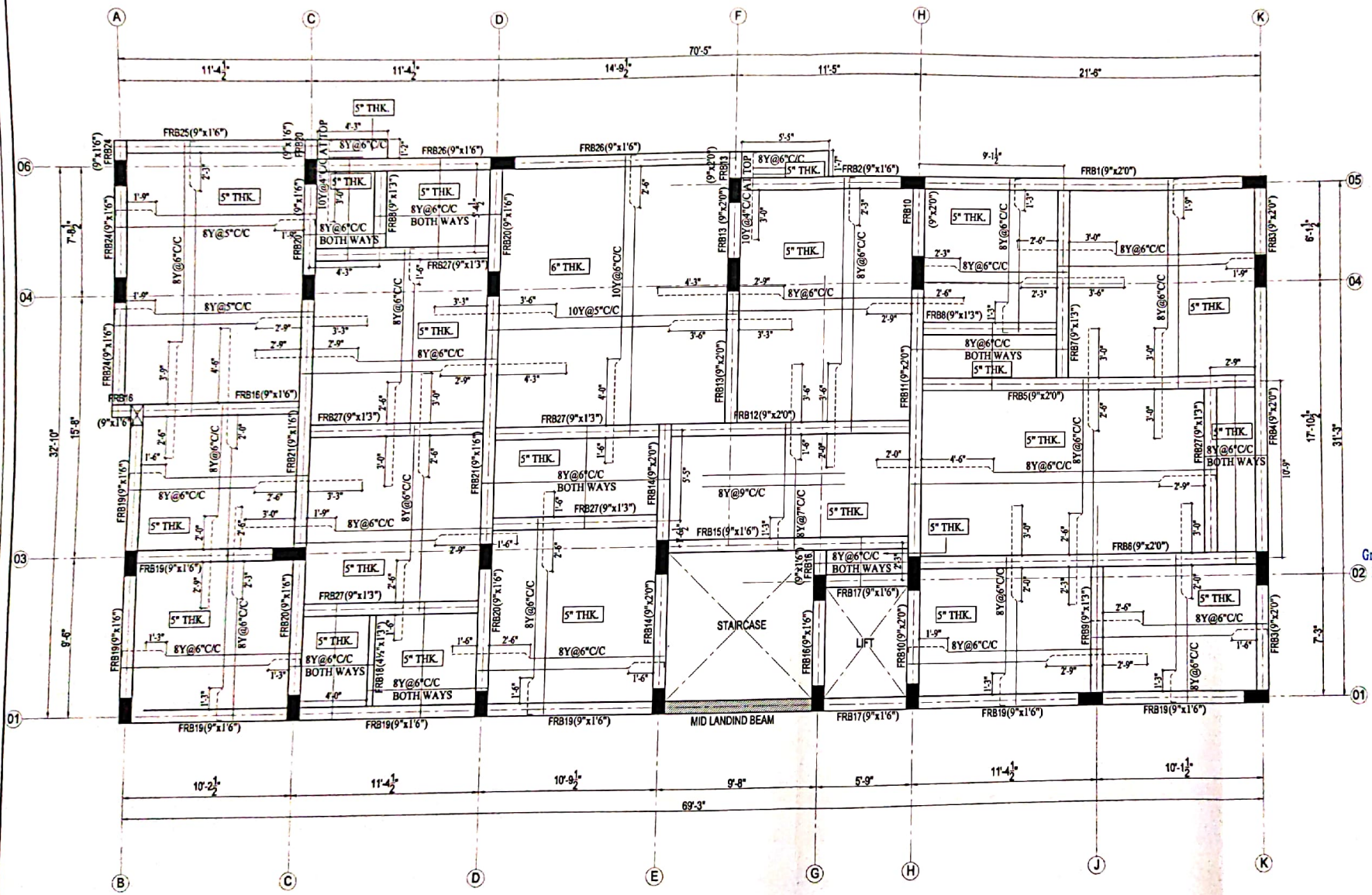
PROJECT TITLE:
PROPOSED APARTMENT AT ASHOK NAGAR,CHENNAI

DRAWING TITLE:
FIFTH FLOOR ROOF BEAM DETAILS (SHEET 1 OF 2)

STRUCTURAL CONSULTANT:

AKR CONSULTANTS
Er.I.R.ARUNKUMAAR,M.E.,M.I.E.,
M/s. AKR CONSULTANTS
NO.10, 9th STREET,
2nd SECTOR, K.K.NAGAR
CHENNAI - 600078.
email : akr@akrconsultants.com
Mob : +91 9994160046

SCALE	1" = 4'0"	DRAWN BY	MKV
SHEET SIZE	A3	CHECKED BY	AKR
DESIGNED BY		I.R ARUNKUMAAR	



GENERAL NOTES :

1) All dimensions are in foot & inches.
2) Concrete Grade for Pile : M 30
   (Minimum cement content for
   Pile - 400 kg/Cum)
3) Concrete Grade for Pile cap,Column,
   Beam & slab : M 25
   (Minimum cement content for
   M 25 - 340 kg/Cum)
4) Steel Grade : Tor Fe-500
5) Clear cover : Footing =2",Column =1 1/2"
   Beam=1",Slab=3/4"
6) Lap length
   Compression (Column) : 45 Ø
   Tension (Beam & Slab) : 57 Ø
7) Provide spacer bar at every 3'0" intervals
8) The column center should coincide
   with center of footing.
9) The column & foundation are designed for
   Stilt +5 floors only.
10) Development length, Ld = 50Ø
11) Do not scale this drawing and follow
    architectural drawing dimensions only
12) No changes shall be made without the
    Concern of the structural consultant.

FOR APPROVAL

Er.I.R.ARUNKUMAAR, M.E., (Structural), M.I.E.,
Consulting Structural Engineer,
Chartered Civil Engineer (M-165213-8)
CMDA Regn. No. SE/GR-I/2024/03/013,
Greater Chennai Corporation, Regn, No.RSE100482019,
No:10, 9th St, 2nd Sector, K.K. Nagar, Chennai - 78

REV	DESCRIPTION	BY	DATE

DRAWING NO : 1220-ST-S-14 | DATE: 22-05-24

CLIENT:
Mr.K. SUBBURAMAN

PROJECT TITLE:
PROPOSED APARTMENT AT
ASHOK NAGAR,CHENNAI.

DRAWING TITLE:
FIFTH FLOOR ROOF BEAM
AND SLAB LAYOUT

N

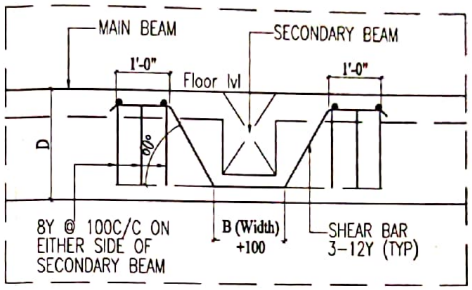
STRUCTURAL CONSULTANT:

AKR CONSULTANTS
Er.I.R.ARUNKUMAAR,M.E.,M.I.E.,
M/s. AKR CONSULTANTS
NO.10, 9th STREET,
2nd SECTOR, K.K.NAGAR
CHENNAI - 600078.
email : akr@akrconsultants.com
Mob : +91 9994160046

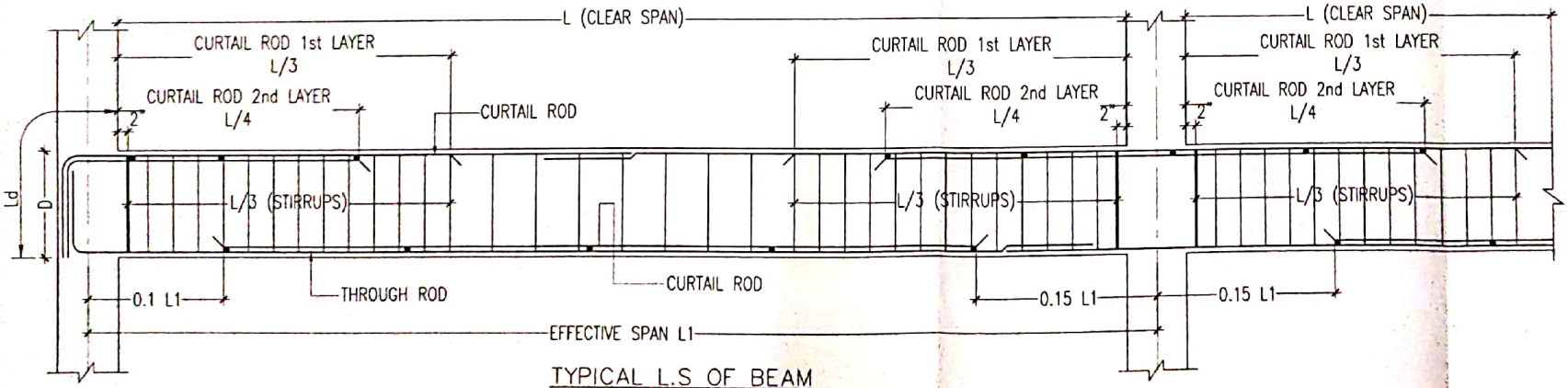
SCALE	1" = 5'6"	DRAWN BY	MKV
SHEET SIZE	A3	CHECKED BY	AKR
DESIGNED BY			I.R.ARUNKUMAAR

TYPICAL FLOOR ROOF BEAM DETAILS

TYPE	SIZE BxD	AT MIDSPAN	AT SUPPORT
TRB25	9"x1'-6"	9" / 1'-6" / 2-12Y / 8Y @8"C/C / 2-12Y+1-12Y	9" / 1'-6" / 2-12Y / 8Y @6"C/C / 2-12Y
TRB26	9"x1'-6"	9" / 1'-6" / 2-16Y / 8Y @8"C/C / 2-16Y+1-20Y	9" / 1'-6" / 2-16Y+2-20Y / 8Y @4"C/C / 2-16Y
TRB27	9"x1'-3"	9" / 1'-3" / 2-12Y / 8Y @8"C/C / 2-12Y+1-16Y	9" / 1'-3" / 2-12Y / 8Y @6"C/C / 2-12Y



TYPICAL SHEAR REINFORCEMENT DETAILS



TYPICAL L.S OF BEAM

GENERAL NOTES :

1) All dimensions are in foot & inches.
2) Concrete Grade for Pile : M 30
   (Minimum cement content for Pile - 400 kg/Cum)
3) Concrete Grade for Pile cap,Column, Beam & slab : M 25
   (Minimum cement content for M 25 - 340 kg/Cum)
4) Steel Grade : Tor Fe-500
5) Clear cover : Footing =2",Column =1 1/2" Beam=1",Slab=3/4"
6) Lap length
   Compression (Column) : 45 Ø
   Tension (Beam & Slab) : 57 Ø
7) Provide spacer bar at every 3'0" intervals
8) The column center should coincide with center of footing.
9) The column & foundation are designed for Stilt +5 floors only
10) Development length, Ld = 50Ø
11) Do not scale this drawing and follow architectural drawing dimensions only.
12) No changes shall be made without the Concern of the structural consultant.

FOR APPROVAL

Er.I.R.ARUNKUMAAR, M.E., (Structural), M.I.E.,
Consulting Structural Engineer,
Chartered Civil Engineer (M-165213-8)
CMDA Regn. No. SE/GR-I/2024/03/013,
Greater Chennai Corporation, Regn. No.RSE100482019,
No:10, 9th St, 2nd Sector, K.K. Nagar, Chennai - 78

REV	DESCRIPTION	BY	DATE
DRAWING NO : 1220-ST-S-13			DATE: 22-05-24

CLIENT:
Mr.K. SUBBURAMAN

PROJECT TITLE:
PROPOSED APARTMENT AT ASHOK NAGAR,CHENNAI.

DRAWING TITLE:
TYPICAL FLOOR ROOF BEAM DETAILS (SHEET 2 OF 2)

STRUCTURAL CONSULTANT:

AKR CONSULTANTS
Er.I.R.ARUNKUMAAR,M.E.,M.I.E.,
M/s. AKR CONSULTANTS
NO.10, 9th STREET,
2nd SECTOR, K.K.NAGAR
CHENNAI - 600078.
email : akr@akrconsultants.com
Mob : +91 9994160046

SCALE	1" = 3'6"	DRAWN BY	MKV
SHEET SIZE	A3	CHECKED BY	AKR
DESIGNED BY		I.R.ARUNKUMAAR	

TYPICAL FLOOR ROOF BEAM DETAILS

TYPE	SIZE BxD	AT MIDSPAN	AT SUPPORT
TRB1	9"x2'-0"	2-16Y 8Y @8"C/C 2-20Y+1-20Y	2-16Y+3-20Y 8Y @4"C/C 2-20Y
TRB2	9"x1'-6"	2-16Y 8Y @8"C/C 2-16Y+1-12Y	2-16Y+1-16Y 8Y @4"C/C 2-16Y+1-12Y
TRB3	9"x2'-0"	2-20Y 8Y @8"C/C 2-20Y+1-20Y	2-20Y+2-20Y 8Y @4"C/C 2-20Y
TRB4	9"x2'-0"	2-20Y+2-20Y 8Y @4"C/C 2-20Y	2-20Y+2-20Y 8Y @4"C/C 2-20Y
TRB5	9"x2'-0"	3-16Y 8Y @6"C/C 3-20Y+2-20Y	3-16Y 8Y @4"C/C 3-20Y
TRB6	9"x2'-0"	2-16Y 8Y @8"C/C 2-20Y+2-20Y	2-16Y+2-20Y 8Y @4"C/C 2-20Y
TRB7	9"x1'-3"	2-12Y 8Y @8"C/C 2-16Y+1-12Y	2-12Y 8Y @6"C/C 2-16Y
TRB8	9"x1'-3"	2-12Y 8Y @6"C/C 2-12Y	2-12Y 8Y @6"C/C 2-12Y

TYPICAL FLOOR ROOF BEAM DETAILS

TYPE	SIZE BxD	AT MIDSPAN	AT SUPPORT
TRB9	9"x1'-3"	2-12Y 8Y @8"C/C 3-12Y	2-12Y+1-16Y 8Y @6"C/C 3-12Y
TRB10	9"x2'-0"	2-20Y+3-20Y 8Y @4"C/C 2-20Y	2-20Y+3-20Y 8Y @4"C/C 2-20Y
TRB11	9"x2'-0"	2-20Y 10Y @8"C/C 2-20Y+1-20Y	2-20Y+3-20Y 10Y @4"C/C 2-20Y
TRB12	9"x2'-0"	2-16Y 8Y @8"C/C 3-16Y	2-16Y 8Y @6"C/C 3-16Y
TRB13	9"x2'-0"	2-20Y+2-20Y 8Y @4"C/C 3-16Y	2-20Y+2-20Y 8Y @4"C/C 3-16Y
TRB14	9"x2'-0"	3-25Y+3-25Y 10Y @4"C/C 3-20Y	3-25Y+3-25Y 10Y @4"C/C 3-20Y
TRB15	9"x1'-6"	2-12Y 8Y @8"C/C 2-12Y+1-16Y	2-12Y+1-16Y 8Y @6"C/C 2-12Y
TRB16	9"x1'-6"	2-12Y+1-16Y 8Y @6"C/C 3-12Y	2-12Y+1-16Y 8Y @6"C/C 3-12Y

TYPICAL FLOOR ROOF BEAM DETAILS

TYPE	SIZE BxD	AT MIDSPAN	AT SUPPORT
TRB17	9"x1'-6"	3-12Y 8Y @6"C/C 3-12Y	3-12Y 8Y @6"C/C 3-12Y
TRB18	4½"x1'-3"	2-12Y 8Y @6"C/C 2-12Y	2-12Y 8Y @6"C/C 2-12Y
TRB19	9"x1'-6"	2-12Y 8Y @6"C/C 2-12Y+1-16Y	2-12Y+2-16Y 8Y @4"C/C 2-12Y+1-16Y
TRB20	9"x1'-6"	2-16Y+3-20Y 8Y @4"C/C 2-20Y	2-16Y+3-20Y 8Y @4"C/C 2-20Y
TRB21	9"x1'-6"	2-16Y 10Y @8"C/C 2-20Y+1-20Y	2-16Y+3-20Y 10Y @4"C/C 2-20Y
TRB22	BEAM REMOVED		
TRB23	BEAM REMOVED		
TRB24	9"x1'-6"	2-12Y+1-16Y 8Y @8"C/C 3-12Y	2-12Y+1-16Y 8Y @4"C/C 3-12Y

GENERAL NOTES :

1) All dimensions are in foot & inches.
2) Concrete Grade for Pile : M 30
   (Minimum cement content for Pile - 400 kg/Cum)
3) Concrete Grade for Pile cap,Column, Beam & slab : M 25
   (Minimum cement content for M 25 - 340 kg/Cum)
4) Steel Grade : Tor Fe-500
5) Clear cover : Footing =2",Column =1 1/2" Beam=1",Slab=3/4"
6) Lap length
   Compression (Column) : 45 Ø
   Tension (Beam & Slab) : 57 Ø
7) Provide spacer bar at every 3'0" intervals
8) The column center should coincide with center of footing.
9) The column & foundation are designed for Stilt +5 floors only.
10) Development length, Ld = 50Ø
11) Do not scale this drawing and follow architectural drawing dimensions only.
12) No changes shall be made without the Concern of the structural consultant.

FOR APPROVAL

Er.I.R.ARUNKUMAAR, M.E., (Structural), M.I.E.,
Consulting Structural Engineer,
Chartered Civil Engineer (M-165213-8)
CMDA Regn. No. SE/GR-I/2024/03/013,
Greater Chennai Corporation, Regn, No.RSE100482019,
No:10, 9th St, 2nd Sector, K.K. Nagar, Chennai - 78

REV	DESCRIPTION	BY	DATE

DRAWING NO : 1220-ST-S-12 | DATE. 22-05-24

CLIENT:
Mr.K. SUBBURAMAN

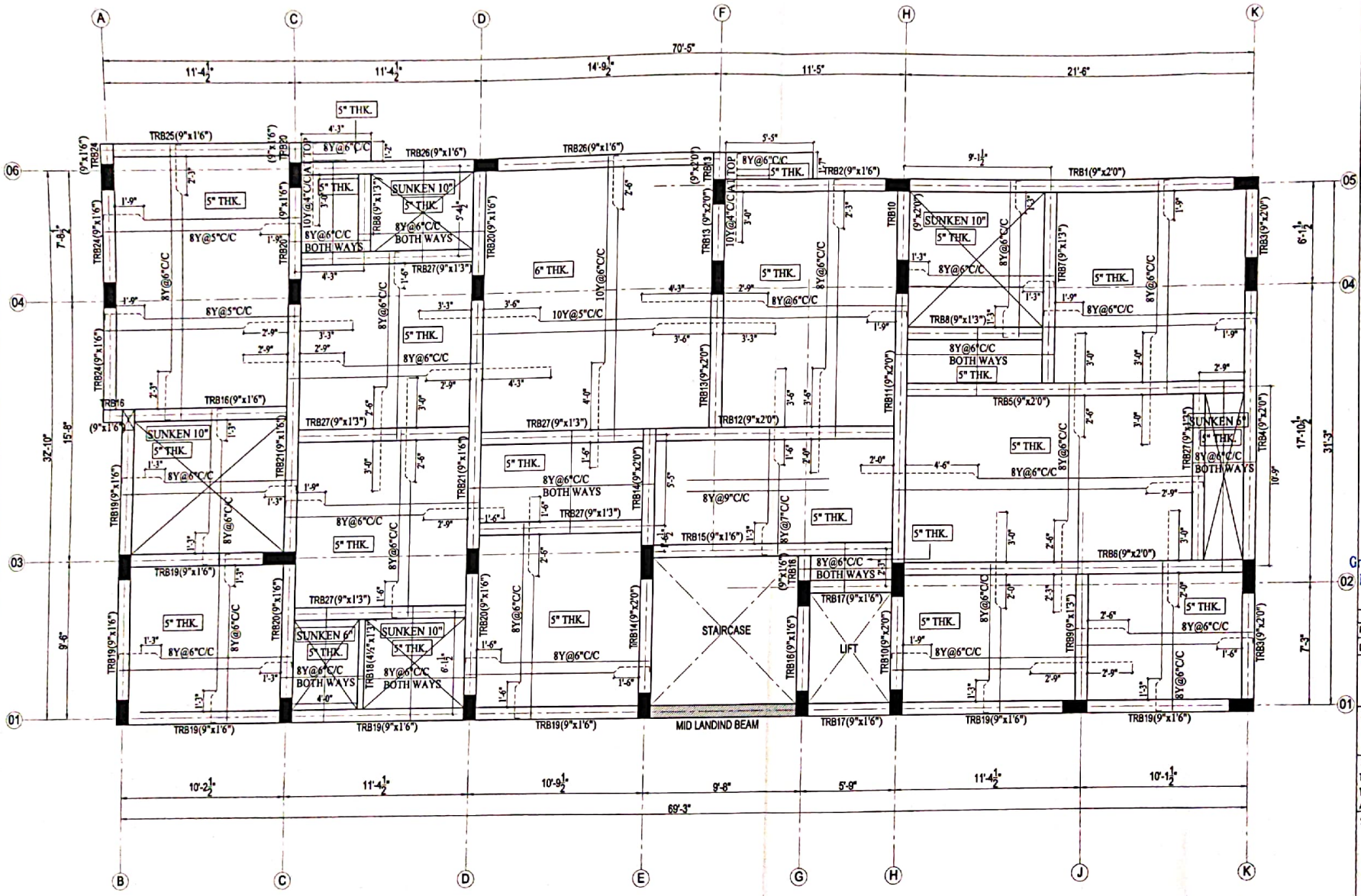
PROJECT TITLE:
PROPOSED APARTMENT AT
ASHOK NAGAR,CHENNAI

DRAWING TITLE:
TYPICAL FLOOR ROOF BEAM DETAILS
(SHEET 1 OF 2)

STRUCTURAL CONSULTANT:

AKR CONSULTANTS
Er.I.R.ARUNKUMAAR,M.E.,M.I.E.,
M/s. AKR CONSULTANTS
NO.10, 9TH STREET,
2nd SECTOR, K.K.NAGAR
CHENNAI - 600078.
email : akr@akrconsultants.com
Mob : +91 9994160046

SCALE	1" = 6'0"	DRAWN BY	MKV
SHEET SIZE	A3	CHECKED BY	AKR
DESIGNED BY		I.R.ARUNKUMAAR	



GENERAL NOTES :

1) All dimensions are in feet & inches.
2) Concrete Grade for Pile : M 30
(Minimum cement content for Pile - 400 kg/Cum)
3) Concrete Grade for Pile cap,Column, Beam & slab : M 25
(Minimum cement content for M 25 - 340 kg/Cum)
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5) Clear cover : Footing =2",Column =1 1/2" Beam=1",Slab=3/4"
6) Lap length
Compression (Column) : 45 Ø
Tension (Beam & Slab) : 57 Ø
7) Provide spacer bar at every 3'0" intervals
8) The column center should coincide with center of footing.
9) The column & foundation are designed for Stilt +5 floors only.
10) Development length, Ld = 50Ø
11) Do not scale this drawing and follow architectural drawing dimensions only.
12) No changes shall be made without the Concern of the structural consultant.

FOR APPROVAL

Er.I.R.ARUNKUMAAR, M.E., (Structural), M.I.E.,
Consulting Structural Engineer,
Chartered Civil Engineer (M-165213-8)
CMDA Regn. No. SE/GR-I/2024/03/013,
Greater Chennai Corporation, Regn, No.RSE100482019,
No:10, 9th St, 2nd Sector, K.K. Nagar, Chennai - 78

REV	DESCRIPTION	BY	DATE

DRAWING NO : 1220-ST-S-11 | DATE: 22-05-24

CLIENT:
Mr.K. SUBBURAMAN

PROJECT TITLE:
PROPOSED APARTMENT AT ASHOK NAGAR,CHENNAI.

DRAWING TITLE:
TYPICAL FLOOR(FIRST,SECOND, THIRD & FORTH) ROOF BEAM AND SLAB LAYOUT

N

STRUCTURAL CONSULTANT:

AKR CONSULTANTS
Er.I.R.ARUNKUMAAR,M.E.,M.I.E.,
M/ s. AKR CONSULTANTS
NO.10, 9th STREET,
2nd SECTOR, K.K.NAGAR
CHENNAI - 600078.
email : akr@akrconsultants.com
Mob : +91 9994160046

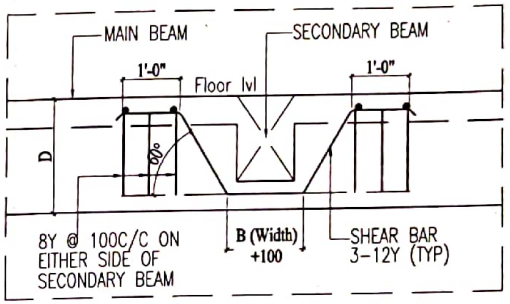
SCALE	1" = 5'6"	DRAWN BY	MKV
SHEET SIZE	A3	CHECKED BY	AKR
DESIGNED BY			I.R.ARUNKUMAAR

STILT FLOOR ROOF BEAM DETAILS

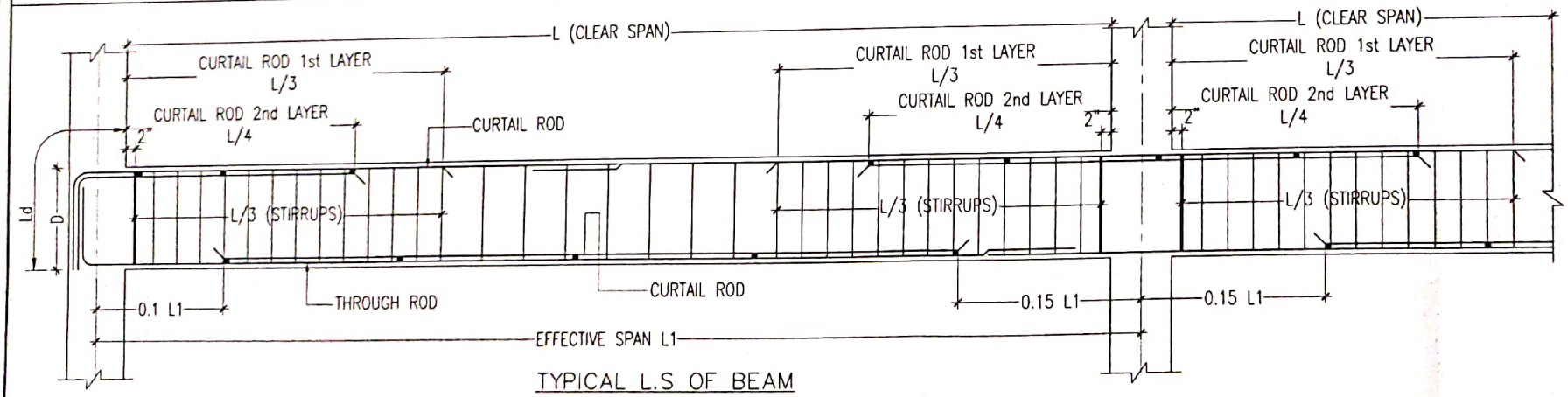
TYPE	SIZE BxD	AT MIDSPAN	AT SUPPORT
GRB25	9"x1'-6"	9" / 1'-6" / 2-12Y / 8Y @8"C/C / 2-12Y+1-12Y	9" / 1'-6" / 2-12Y / 8Y @6"C/C / 2-12Y
GRB26	9"x1'-6"	9" / 1'-6" / 2-16Y / 8Y @8"C/C / 2-16Y+1-20Y	9" / 1'-6" / 2-16Y+2-20Y / 8Y @4"C/C / 2-16Y
GRB27	9"x1'-3"	9" / 1'-3" / 2-12Y / 8Y @8"C/C / 2-12Y+1-16Y	9" / 1'-3" / 2-12Y / 8Y @6"C/C / 2-12Y

FLOATING COLUMN DETAILS

TYPE	SIZE	CROSS SECTION	MAIN ROD	TIES PROFILE	LATERAL TIES
FC	9" x 1'-3" All Floor	9" / 1'-3"	• 8-16Y		8Y @6"C/C

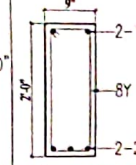
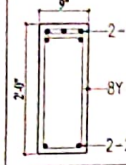
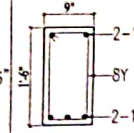
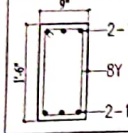
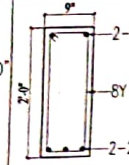
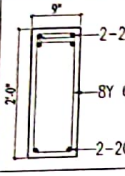
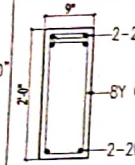
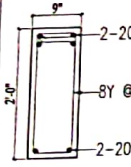
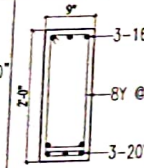
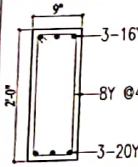
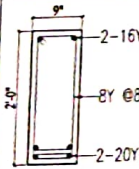
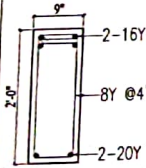
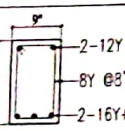
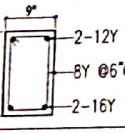
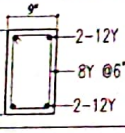
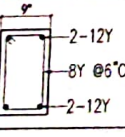


TYPICAL SHEAR REINFORCEMENT DETAILS

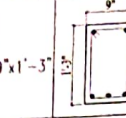
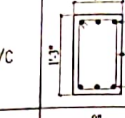
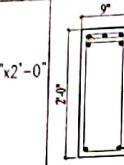
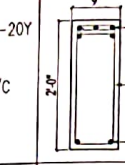
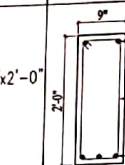
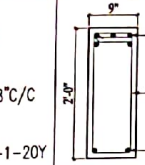
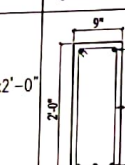
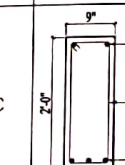
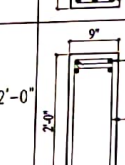
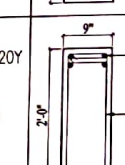
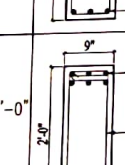
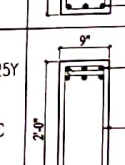
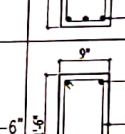
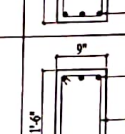
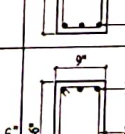
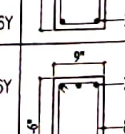


TYPICAL L.S OF BEAM

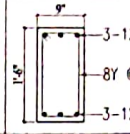
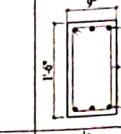
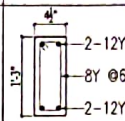
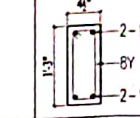
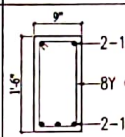
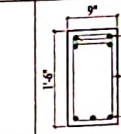
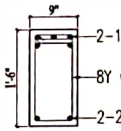
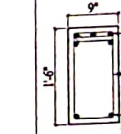
STILT FLOOR ROOF BEAM DETAILS

TYPE	SIZE BxD	AT MIDSPAN	AT SUPPORT
GRB1	9"x2'-0"	 2-16Y / 8Y @8"C/C / 2-20Y+1-20Y	 2-16Y+3-20Y / 8Y @4"C/C / 2-20Y
GRB2	9"x1'-6"	 2-16Y / 8Y @8"C/C / 2-16Y+1-12Y	 2-16Y+1-16Y / 8Y @4"C/C / 2-16Y+1-12Y
GRB3	9"x2'-0"	 2-20Y / 8Y @8"C/C / 2-20Y+1-20Y	 2-20Y+2-20Y / 8Y @4"C/C / 2-20Y
GRB4	9"x2'-0"	 2-20Y+2-20Y / 8Y @4"C/C / 2-20Y	 2-20Y+2-20Y / 8Y @4"C/C / 2-20Y
GRB5	9"x2'-0"	 3-16Y / 8Y @6"C/C / 3-20Y+2-20Y	 3-16Y / 8Y @4"C/C / 3-20Y
GRB6	9"x2'-0"	 2-16Y / 8Y @8"C/C / 2-20Y+2-20Y	 2-16Y+2-20Y / 8Y @4"C/C / 2-20Y
GRB7	9"x1'-3"	 2-12Y / 8Y @8"C/C / 2-16Y+1-12Y	 2-12Y / 8Y @6"C/C / 2-16Y
GRB8	9"x1'-3"	 2-12Y / 8Y @6"C/C / 2-12Y	 2-12Y / 8Y @6"C/C / 2-12Y

STILT FLOOR ROOF BEAM DETAILS

TYPE	SIZE BxD	AT MIDSPAN	AT SUPPORT
GRB9	9"x1'-3"	 2-12Y / 8Y @8"C/C / 3-12Y	 2-12Y+1-16Y / 8Y @6"C/C / 3-12Y
GRB10	9"x2'-0"	 2-20Y+3-20Y / 8Y @4"C/C / 2-20Y	 2-20Y+3-20Y / 8Y @4"C/C / 2-20Y
GRB11	9"x2'-0"	 2-20Y / 10Y @8"C/C / 2-20Y+1-20Y	 2-20Y+3-20Y / 10Y @4"C/C / 2-20Y
GRB12	9"x2'-0"	 2-16Y / 8Y @8"C/C / 3-16Y	 2-16Y / 8Y @6"C/C / 3-16Y
GRB13	9"x2'-0"	 2-20Y+2-20Y / 8Y @4"C/C / 3-16Y	 2-20Y+2-20Y / 8Y @4"C/C / 3-16Y
GRB14	9"x2'-0"	 3-25Y+3-25Y / 10Y @4"C/C / 3-20Y	 3-25Y+3-25Y / 10Y @4"C/C / 3-20Y
GRB15	9"x1'-6"	 2-12Y / 8Y @8"C/C / 2-12Y+1-16Y	 2-12Y+1-16Y / 8Y @6"C/C / 2-12Y
GRB16	9"x1'-6"	 2-12Y+1-16Y / 8Y @6"C/C / 3-12Y	 2-12Y+1-16Y / 8Y @6"C/C / 3-12Y

STILT FLOOR ROOF BEAM DETAILS

TYPE	SIZE BxD	AT MIDSPAN	AT SUPPORT
GRB17	9"x1'-6"	 3-12Y / 8Y @6"C/C / 3-12Y	 3-12Y / 8Y @6"C/C / 3-12Y
GRB18	4½"x1'-3"	 2-12Y / 8Y @6"C/C / 2-12Y	 2-12Y / 8Y @6"C/C / 2-12Y
GRB19	9"x1'-6"	 2-12Y / 8Y @6"C/C / 2-12Y+1-16Y	 2-12Y+2-16Y / 8Y @4"C/C / 2-12Y+1-16Y
GRB20	9"x1'-6"	 2-16Y+3-20Y / 8Y @4"C/C / 2-20Y	 2-16Y+3-20Y / 8Y @4"C/C / 2-20Y
GRB21	9"x1'-6"	2-16Y / 10Y @8"C/C / 2-20Y+1-20Y	2-16Y+3-20Y / 10Y @4"C/C / 2-20Y
GRB22	1'-6"x2'-6"	4-20Y / 4LEG 10Y @8"C/C / 4-12Y SKIN BAR / 4-20Y+4-20Y	4-20Y / 4LEG 10Y @4"C/C / 4-12Y SKIN BAR / 4-20Y+4-20Y
GRB23	1'-3"x2'-6"	5-20Y / 4LEG 10Y @8"C/C / 4-12Y SKIN BAR / 5-20Y	5-20Y / 4LEG 10Y @4"C/C / 4-12Y SKIN BAR / 5-20Y
GRB24	9"x1'-6"	2-12Y+1-16Y / 8Y @8"C/C / 3-12Y	2-12Y+1-16Y / 8Y @4"C/C / 3-12Y

GENERAL NOTES :

1) All dimensions are in foot & inches.
2) Concrete Grade for Pile - M 30 (Minimum cement content for Pile - 400 kg/Cum)
3) Concrete Grade for Pile cap,Column, Beam & slab : M 25 (Minimum cement content for M 25 - 340 kg/Cum)
4) Steel Grade : Tor Fe-500
5) Clear cover : Footing =2",Column =1 1/2" Beam=1",Slab=3/4"
6) Lap length
   Compression (Column) : 45 Ø
   Tension (Beam & Slab) : 57 Ø
7) Provide spacer bar at every 3'0" intervals
8) The column center should coincide with center of footing.
9) The column & foundation are designed for Stilt +5 floors only.
10) Development length, Ld = 50Ø
11) Do not scale this drawing and follow architectural drawing dimensions only.
12) No changes shall be made without the Concern of the structural consultant.

FOR APPROVAL

Er.I.R.ARUNKUMAAR, M.E., (Structural), M.I.E.,
Consulting Structural Engineer,
Chartered Civil Engineer (M-165213-8)
CMDA Regn. No. SE/GR-I/2024/03/013,
Greater Chennai Corporation, Regn, No.RSE10048/2019
No:10, 9th St, 2nd Sector, K.K. Nagar, Chennai - 78

REV	DESCRIPTION	BY	DATE

DRAWING NO : 1220-ST-S-09 | DATE: 22-05-24

CLIENT.
Mr.K. SUBBURAMAN

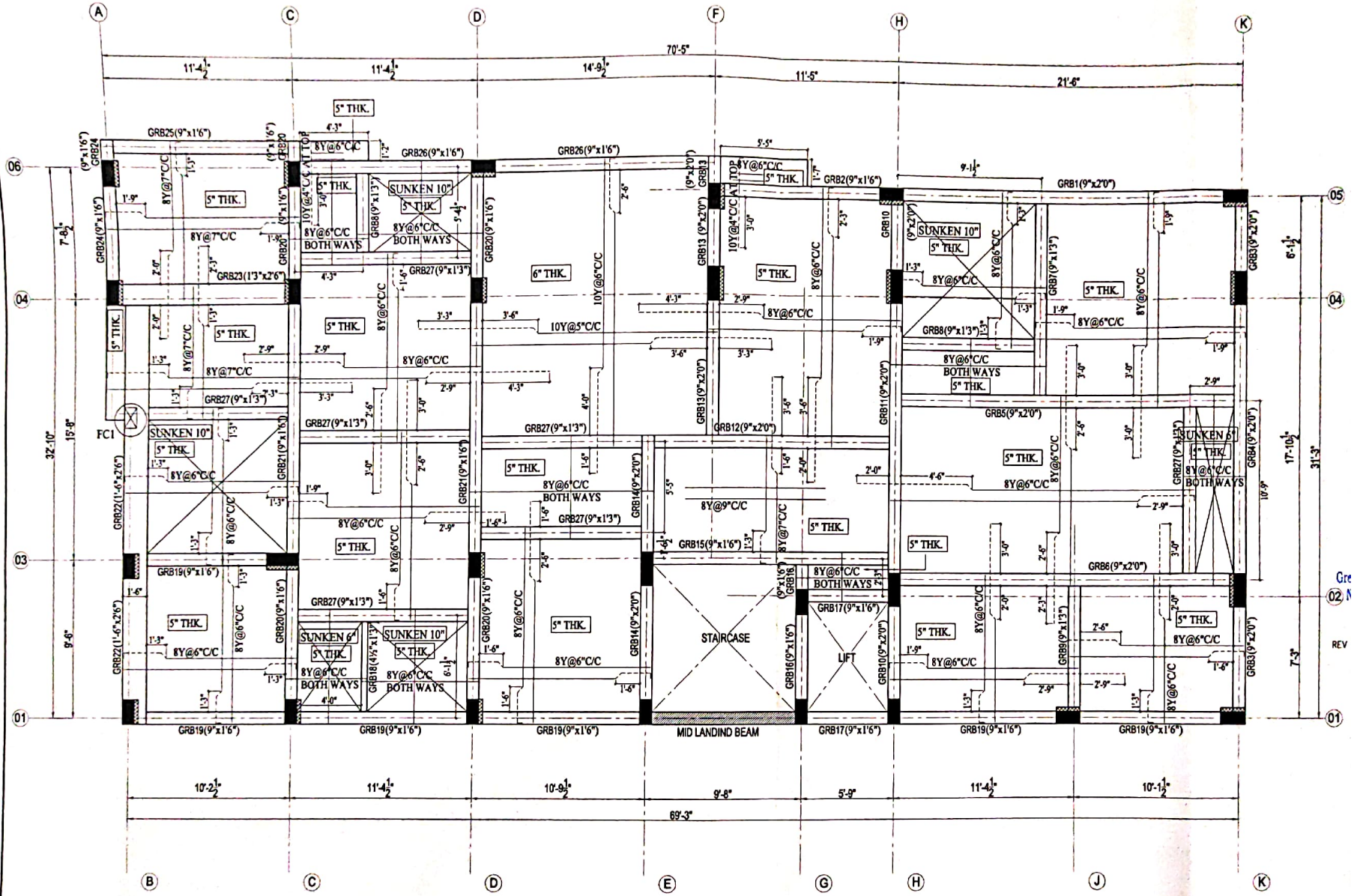
PROJECT TITLE:
PROPOSED APARTMENT AT ASHOK NAGAR,CHENNAI.

DRAWING TITLE:
STILT FLOOR ROOF BEAM DETAILS (SHEET 1 OF 2)

STRUCTURAL CONSULTANT:

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M/s. AKR CONSULTANTS
NO.10, 9th STREET,
2nd SECTOR, K.K.NAGAR
CHENNAI - 600078.
email : akr@akrconsultants.com
Mob : +91 9994160046

SCALE	1" = 6'0"	DRAWN BY	MKV
SHEET SIZE	A3	CHECKED BY	AKR
DESIGNED BY		I.R.ARUNKUMAAR.	


A
C
D
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H
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01
02
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05
06
70'-5"
11'-4½"
11'-4½"
14'-9½"
11'-5"
21'-6"
69'-3"
10'-2½"
11'-4½"
10'-9½"
9'-8"
5'-9"
11'-4½"
10'-1½"
32'-10"
15'-8"
9'-6"
7'-8½"
17'-10½"
31'-3"
6'-1½"
7'-3"
5" THK.
SUNKEN 10"
SUNKEN 6"
6" THK.
FC1
STAIRCASE
LIFT
MID LANDIND BEAM
8Y@6"C/C
8Y@6"C/C BOTH WAYS
8Y@7"C/C
8Y@9"C/C
10Y@5"C/C
10Y@4"C/C AT TOP
GRB1(9"x2'0")
GRB2(9"x1'6")
GRB3(9"x2'0")
GRB4(9"x2'0")
GRB5(9"x2'0")
GRB6(9"x2'0")
GRB7(9"x1'3")
GRB8(9"x1'3")
GRB9(9"x1'3")
GRB10(9"x2'0")
GRB11(9"x2'0")
GRB12(9"x2'0")
GRB13(9"x2'0")
GRB14(9"x2'0")
GRB15(9"x1'6")
GRB16(9"x1'6")
GRB17(9"x1'6")
GRB18(4½"x1'3")
GRB19(9"x1'6")
GRB20(9"x1'6")
GRB21(9"x1'6")
GRB22(1'-6"x2'6")
GRB23(1'3"x2'6")
GRB24(9"x1'6")
GRB25(9"x1'6")
GRB26(9"x1'6")
GRB27(9"x1'3")



our services doesn't just end there

Buying & Selling Services

Property Buying Assistance, Property Selling Support, Market Price Analysis, Owner Outreach and Negotiation.

Legal & Documentation Services

Certified EC, Patta, legal opinions, property verification, due diligence, litigation solutions, and legal heir certificates.

Property Development & Approvals

Building plan approvals, construction, layout and sub-division approvals, zone conversion, and occupancy certification.

NRI & Investment Services

Escrow Services, Rentals, Litigation Solutions, Property Valuation and Property Management

Compliance & Special Services

Demolition, Vaasthu checks, regularization of unauthorized buildings, and office space solutions.



empowering your real estate decisions with smart tools

Property Valuation & Cost Estimation

Guideline Value, Apartment Composite Value, Stamp Duty & Registration Fees Calculator, Building Value Calculator, Capital Gains Calculator, Area Unit Converter, Length Unit Converter

Ownership, Compliance & Legal Verification

Encumbrance Certificate (EC) Search, Find Your SRO, Temple Property Check, WAQF Property Check, View Patta/Chitta, View FMB, Patta Analyzer, EC Analyzer

Zoning & Land Use Analysis

Land Use Zone Finder, CRZ Zone Check, Aquifer Zone Check, CBA Check, EWS Check, Road Width Check, Proposed Road Widening Check, FSI Calculator

Property Documentation & Workflow Tools

Forms & Templates, Document Generator, Document Translation, Dictionary

Vastu & Property Management Tools

Home Vastu Shastra, Plot Vastu Shastra, Property Management

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