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Dated.....
F.No.

BELLIAPPA & ASSOCIATES
CONSULTING ENGINEERS & VALUERS

STRUCTURAL BASIS DESIGN REPORT

STRUCTURAL CONSULTANTS : M/s. Belliappa Associates

1. PREAMBLE

We have designed for proposed construction of residential building in stilt floor + 5 floors [18.30 m ht] with 50 dwelling units at s.no. 240 / 8a4a of Vilangadupakkam village, Ponneri taluk, Thiruvallur district.

We hereby certify that

BLOCK	BASEMENT FLOOR	STILT FLOOR	TYPICAL FLOOR	TOTAL SLABS
RESIDENTIAL	0	1	5	6

- The usage of the building is for Residential (S + 5 floors) purpose.
- This is RC frame structure with AAC Block walls used as partition walls.
- Foundations are designed as pile foundation with pile depth as 23m as per the geotechnical investigation report.
- Based on the design parameters the building is found to be ***"structurally safe & sound"***.

2. DESIGN LOADS

Super Imposed Dead Loads

The self-weight of the various elements are computed based on the built weight of materials as given below.

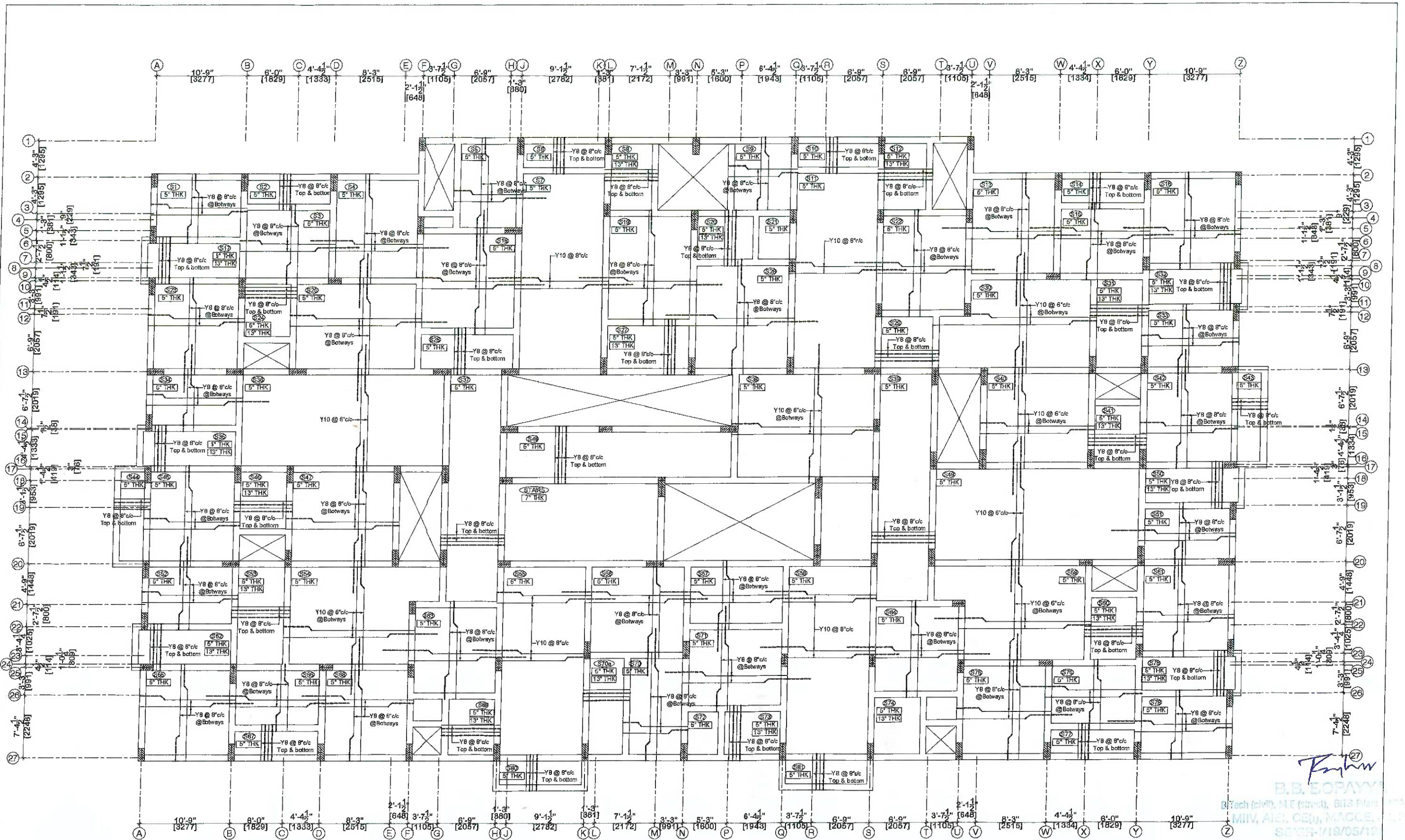
Materials	Unit Weight in KN/m^3
AAC Block	6.80
Steel	78.50
Plain Cement Concrete	24.00
Reinforced Concrete	25.00
Soil	18.00
Water	10.00

B.B. BOPAYYA
B.Tech (civil), M.E (struct), Bits Pilani, AMIA StructE,
MIIV, AIEI, CE(I), MACCE, AIET(UK)
SE/CR-V/19/05/125
F.SE100552019

66, HALLS ROAD, (Off. Taylors Road)
KILPAUK, CHENNAI - 600 010.
Off. :26450745 / 42857298
Off. Mob : 94440 47543
associates.belliappa@gmail.com

B . B . BOPAYYA
B-Tech (Civil), M.E (Struct.) Bits-Pilani,
AMIA Struct E, MIIV, AIEI, CE(I)
MACCE, AIET (UK), YPACI (USA), MICI
Govt. Registered Valuer
IBBI / RV / 04 / 2019 / 10690

B.B. BELLIAPPA
B.E., M.Tech., (Struct), M.I. Struct. (I)
C. Eng., M.I.E. M.I.A.H.S., (U.S.A.)
M.I.A.B.S.E., F.I.V, M.I.C.A.,
L.I.C. N.I.C. Panel Valuer
Gazetted Valuer-C.B.D.T. CI / 189 of 90



REV	DESCRIPTION	DATE	BY	CHK

PROJECT: CODE : ORG

PROPOSED RESIDENTIAL FLAT BUILDING
AT VILANGADUPAKKAM
BLOCK 1 & 2 (98 CENTS)

CLIENT : M/s. RAJARATHNAM CONSTRUCTION (P) LTD.

DRAWING TITLE:

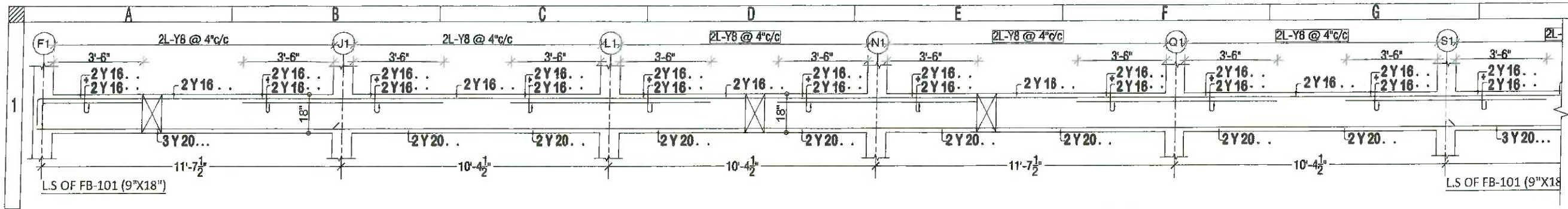
SLAB RCC DETAIL
TYPICAL FLOORS

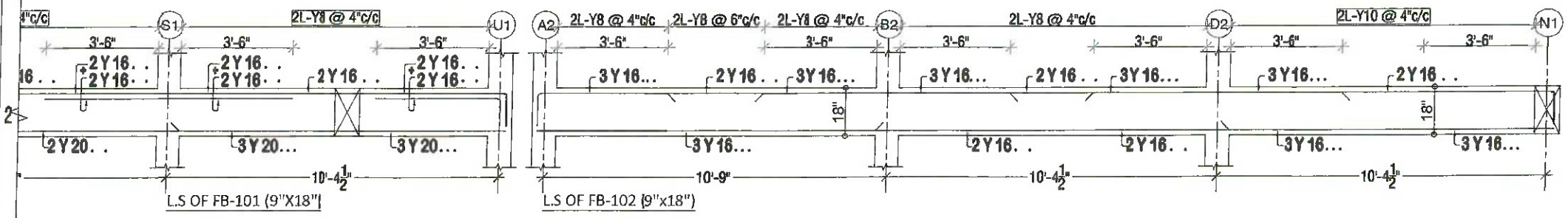
ISSUE DATE	16-03-2023	SHEET : 1
CHECK-3	BBB	SCALE : NTS
CHECK-2		JOB NO : 6454
CHECK-1	SAM	DATE : 13-03-2023
Design/Draw	SAM	SHEET SIZE : A3
DRAWING NO: 08		R0

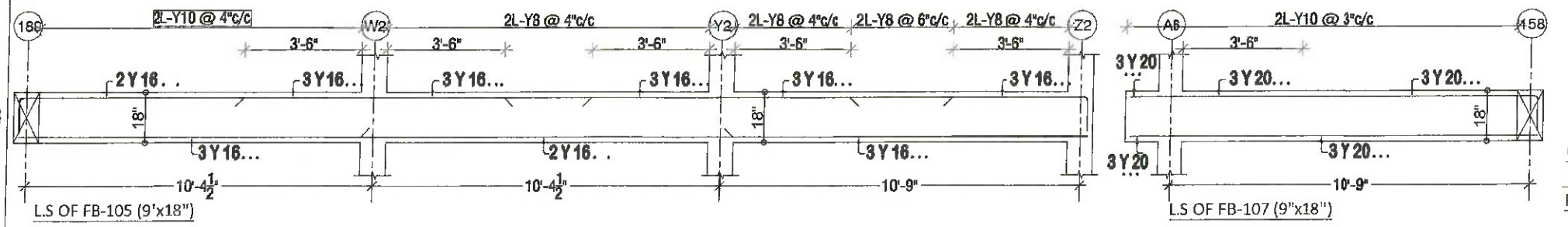
Belliappa & Associates
Consulting Engineers
66 Halls Road Kilpauk Chennai - 10.
26 45 07 45, 26 44 16 35.

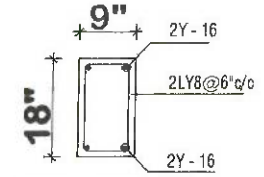
ISSUED FOR: PRELIMINARY ☑ APPROVAL ☐ TENDER ☐ CONSTRUCTION

B.B. BOPAYY
B.Tech (civil), M.E (struct), BITS Pilani
MIIV, AIE, CE(I), MAGUE, LEED(IGBC)
SCDCP-I/19/05/12
BSE100552019
CCLRGN/SE/Gr-I/2019/17048.

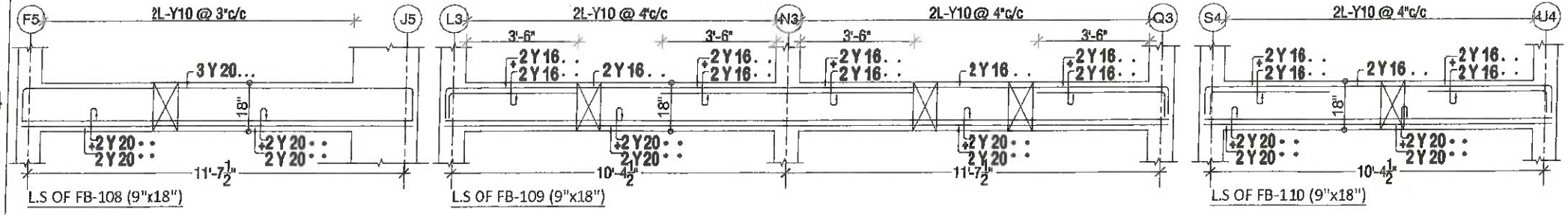


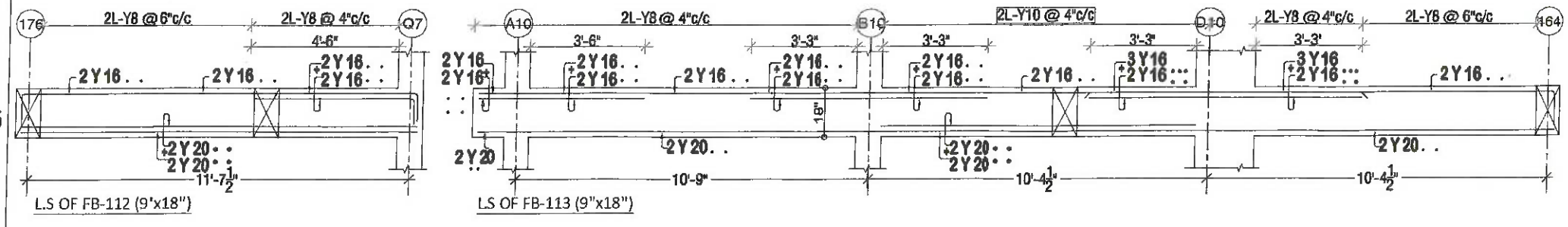




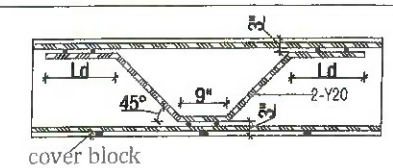


C.S OF FB103,FB104
FB106,FB 111,FB114
FB115A,FB119,121A



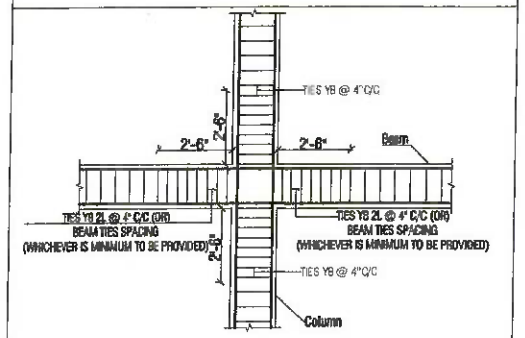


STRICTLY USE LIGHT WEIGHT AAC BLOCKS WALLS (DENSITY 680 Kg/m³)



cover block

WHERE CROSS BEAM SHEAR ROD SHOULD BE PROVIDE AT 2-Y20



COLUMN AND BEAM JUNCTION DETAILS
TO RESIST EARTH QUAKE FORCE
PROVIDE MINIMUM Y8 @ 4" C/C

GENERAL NOTES FOR BEAM:

USE MIX FOR CONCRETE M25

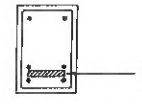
USE TOR STEEL FY500 N/mm2

CLEAR COVER 25mm

DEVELOPMENT LENGTH FOR STEEL 50XD

DEVELOPMENT LENGTH FOR SHEAR ROD 50XD

WHEREVER THE RODS ARE SHOWN IN 2 LAYERS,



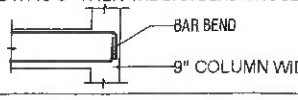
PROVIDE SPACER RODS Y25 @ 3' c/c.

WHERE THE CROSS BEAM, SHARE ROD SHOULD BE.



PROVIDE AT 2 - Y20.

IF COLUMN WIDTH IS 9" THEN THE BAR BEND SHOULD BE AS SHOWN



IMPORTANT NOTES :-
CONCRETE AND STEEL SPECIFICATION AND PLACEMENT IS THE RESPONSIBILITY OF THE SITE SUPERVISOR / OWNER AND NOT CONSULTANT'S RESPONSIBILITY.

REV	DESCRIPTION	DATE	BY	CHK

PROJECT: CODE : ORG

PROPOSED RESIDENTIAL FLAT BUILDING AT
VILANGADUPAKKAM
BLOCK 1 & 2 (98 CENTS)

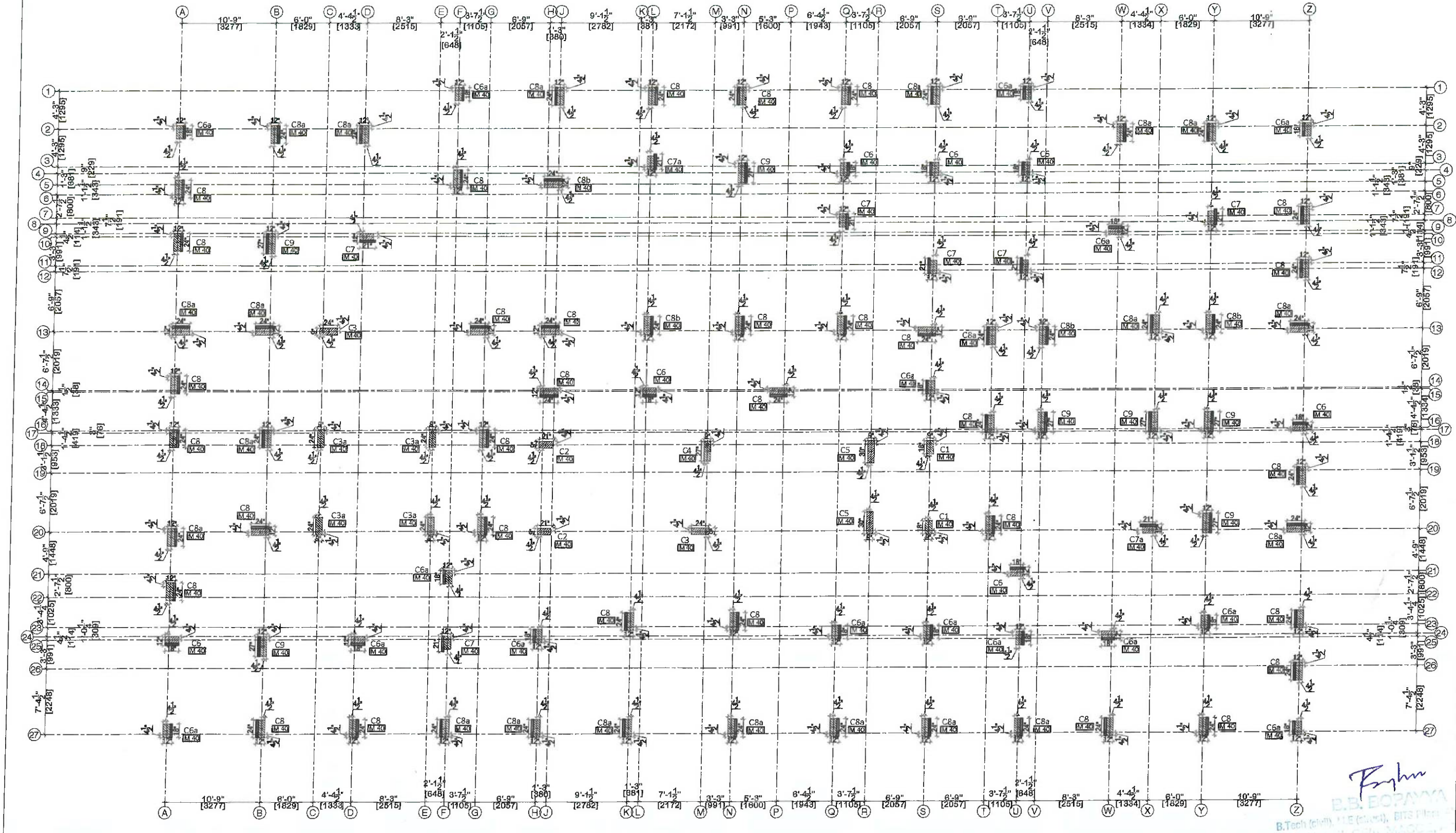
CLIENT : M/s. RAJARATHNAM CONSTRUCTION (P) LTD.

DRAWING TITLE:
R.C.C DETAILS OF BEAM
AT
TYPICAL FLOORS
(FIRST, SECOND, THIRD, FOURTH, FIFTH & TERRACE FLOOR LEVEL)
(FB - 101 - 114)

ISSUE DATE	18-03-2024	SHEET 1
CHECK-3	BBB	SCALE : ¼" = 1'-0"
CHECK-2		JOB NO : 6454
CHECK-1	SAM	DATE :14-03-2024
Design/Draw	SAM	SHEET SIZE : A2
DRAWING NO:	09 1/9	R0

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Consulting Engineers
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26 45 07 45, 26 44 16 35.

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REV	DESCRIPTION	DATE	BY	CHK

PROJECT: CODE : ORG

PROPOSED RESIDENTIAL FLAT BUILDING
AT VILANGADUPAKKAM
BLOCK 1 & 2 (98 CENTS)

CLIENT : M/s. RAJARATHNAM CONSTRUCTION (P) LTD.

DRAWING TITLE:

COLUMN MARKING

ISSUE DATE	16-03-2023	SHEET : 1
CHECK-3	BBB	SCALE : NTS
CHECK-2		JOB NO : 6454
CHECK-1	SAM	DATE : 13-03-2023
Design/Draw	SAM	SHEET SIZE : A3
DRAWING NO:	01	R0

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66 Halls Road Kilpauk Chennai - 10.
26 45 07 45, 26 44 16 35.

ISSUED FOR: ☐ PRELIMINARY ☑ APPROVAL ☐ TENDER ☐ CONSTRUCTION

B.P. POPAYYA
B.Tech (Civil), M.E (Struct), BITS Pilani

COLUMN SCHEDULE

GRID				
S18	S20			
H18	H20			
D13	M20			
E1	E3	A4	A9	E10
M18				
R18	R20			
Q4	S4	U4	L15	Z16
U21	A25			
F1	U1	A2	Z2	W9
F21	Y23	Q24	S24	U24
W24	D25	H25	A27	Z27
S15				
Q7	Y8	D10	S12	U12
F25				
L3	X20			
L1	N1	Q1	F5	A6
Z6	A10	Z11	G13	J13
N13	Q13	S13	A14	F15
T15	A17	G17	Z19	B20
C20	L20	A22	K23	N23
Y23	Z26	B27	D27	W27
Y27	H15			
J1	S1	B2	D2	W2
Y2	A13	B13	T13	W13
Z13	B17	A20	Z20	F27
H27	K27	N27	Q27	S27
U27				
J5	V13	Y13	L13	
N3	B10	V16	X18	Y16
Y20	B25			

COLUMN NAME / NO OF COLUMN	SIZE MIX	STILT FLOOR SHAPE	STILT FLOOR STEEL	STILT FLOOR TIES SHAPE	SIZE MIX	FIRST FLOOR SHAPE	FIRST FLOOR STEEL	FIRST FLOOR TIES SHAPE	SECOND FLOOR SHAPE	SECOND FLOOR STEEL	SECOND FLOOR TIES SHAPE	THIRD FLOOR SHAPE	THIRD FLOOR STEEL	THIRD FLOOR TIES SHAPE	FOURTH FLOOR SHAPE	FOURTH FLOOR STEEL	FOURTH FLOOR TIES SHAPE	FIFTH FLOOR SHAPE	FIFTH FLOOR STEEL	FIFTH FLOOR TIES SHAPE	TIES NORMAL PORTION	TIES LAPPING PORTION
C1	9" x 18"		8 - Y 20		9" x 18"		8 - Y 20			8 - Y 20			8 - Y 20			8 - Y 20			8 - Y 20		Y8 @ 6" c/c	Y8 @ 3" c/c
2	M 40				M 40																	
C2	9" x 21"		4 - Y 25 + 4 - Y 20		9" x 21"		4 - Y 25 + 4 - Y 20			4 - Y 25 + 4 - Y 20			4 - Y 25 + 4 - Y 20			4 - Y 25 + 4 - Y 20			4 - Y 25 + 4 - Y 20		Y8 @ 6" c/c	Y8 @ 3" c/c
2	M 40				M 40																	
C3	9" x 24"		12 - Y 20		9" x 24"		12 - Y 20			12 - Y 20			12 - Y 20			12 - Y 20			12 - Y 20		Y8 @ 6" c/c	Y8 @ 3" c/c
2	M 40				M 40																	
C3a	9" x 24"		10 - Y 25		9" x 24"		10 - Y 25			10 - Y 25			10 - Y 25			10 - Y 25			10 - Y 25		Y8 @ 5" c/c	Y8 @ 3" c/c
4	M 40				M 40																	
C4	9" x 27"		12 - Y 25		9" x 27"		12 - Y 25			12 - Y 25			12 - Y 25			12 - Y 25			12 - Y 25		Y8 @ 5" c/c	Y8 @ 3" c/c
1	M 40				M 40																	
C5	9" x 30"		12 - Y 25 + 2 - Y 16		9" x 30"		12 - Y 25 + 2 - Y 16			12 - Y 25 + 2 - Y 16			12 - Y 25 + 2 - Y 16			12 - Y 25 + 2 - Y 16			12 - Y 25 + 2 - Y 16		Y8 @ 6" c/c	Y8 @ 3" c/c
2	M 40				M 40																	
C6	12" x 18"		8 - Y 20 + 3 - Y 12		9" x 18"		8 - Y 20			8 - Y 20			8 - Y 20			8 - Y 20			8 - Y 20		Y8 @ 6" c/c	Y8 @ 3" c/c
7	M 40				M 40																	
C6a	12" x 18"		4 - Y 25 + 4 - Y 20 + 3 - Y 12		9" x 18"		4 - Y 25 + 4 - Y 20			4 - Y 25 + 4 - Y 20			4 - Y 25 + 4 - Y 20			4 - Y 25 + 4 - Y 20			4 - Y 25 + 4 - Y 20		Y8 @ 6" c/c	Y8 @ 3" c/c
15	M 40				M 40																	
C7	12" x 21"		4 - Y 25 + 4 - Y 20 + 3 - Y 12		9" x 21"		4 - Y 25 + 4 - Y 20			4 - Y 25 + 4 - Y 20			4 - Y 25 + 4 - Y 20			4 - Y 25 + 4 - Y 20			4 - Y 25 + 4 - Y 20		Y8 @ 6" c/c	Y8 @ 3" c/c
6	M 40				M 40																	
C7a	12" x 21"		8 - Y 25 + 3 - Y 12		9" x 21"		8 - Y 25			8 - Y 25			8 - Y 25			8 - Y 25			8 - Y 25		Y8 @ 6" c/c	Y8 @ 3" c/c
2	M 40				M 40																	
C8	12" x 24"		8 - Y 25 + 2 - Y 16 + 3 - Y 12		9" x 24"		8 - Y 25 + 2 - Y 16			8 - Y 25 + 2 - Y 16			8 - Y 25 + 2 - Y 16			8 - Y 25 + 2 - Y 16			8 - Y 25 + 2 - Y 16		Y8 @ 6" c/c	Y8 @ 3" c/c
32	M 40				M 40																	
C8a	12" x 24"		10 - Y 25 + 3 - Y 12		9" x 24"		10 - Y 25			10 - Y 25			10 - Y 25			10 - Y 25			10 - Y 25		Y8 @ 6" c/c	Y8 @ 3" c/c
21	M 40				M 40																	
C8b	12" x 24"		8 - Y 25 + 4 - Y 20 + 3 - Y 12		9" x 24"		8 - Y 25 + 4 - Y 20			8 - Y 25 + 4 - Y 20			8 - Y 25 + 4 - Y 20			8 - Y 25 + 4 - Y 20			8 - Y 25 + 4 - Y 20		Y8 @ 6" c/c	Y8 @ 3" c/c
4	M 40				M 40																	
C9	12" x 27"		12 - Y 25 + 3 - Y 12		9" x 27"		12 - Y 25			12 - Y 25			12 - Y 25			12 - Y 25			12 - Y 25		Y8 @ 6" c/c	Y8 @ 3" c/c
7	M 40				M 40																	

B.E. BOPAYYA
B.Tech (civil), M.E (struct), BITS (Pilani, AMIA StructE.
MIIV, AMEI, CE(I), MACCE, MIET(UK)
SE/CR-I/19/03/125
RSE100552019
CGLRCN/SE/Gr-I/2019/11/048.

REV	DESCRIPTION	DATE	BY	CHK

PROJECT: CODE : ORG

PROPOSED RESIDENTIAL FLAT BUILDING
AT VILANGADUPAKKAM
BLOCK 1 & 2 (98 CENTS)

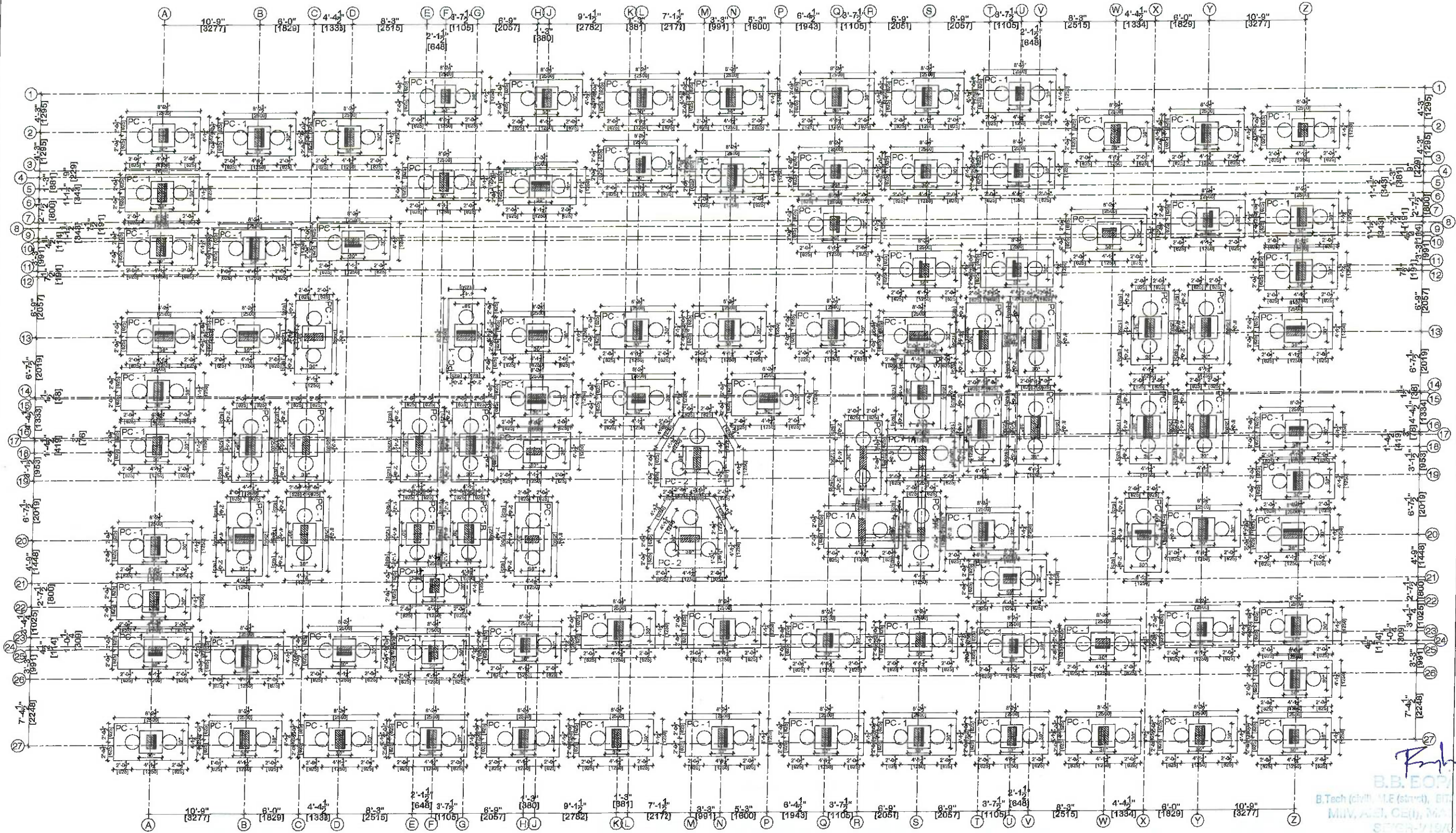
CLIENT : M/s. RAJARATHNAM CONSTRUCTION (P) LTD.

DRAWING TITLE: COLUMN SCHEDULE

ISSUE DATE	16-03-2023	SHEET : 1
CHECK-3	BBB	SCALE : NTS
CHECK-2		JOB NO : 6419
CHECK-1	SAM	DATE : 13-03-2023
Design/Draw	SAM	SHEET SIZE : A3
DRAWING NO:	02	R0

Belliappa & Associates
Consulting Engineers
66 Halls Road Kilpauk Chennai - 10.
26 45 07 45, 26 44 16 35.

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REV	DESCRIPTION	DATE	BY	CHK

PROJECT: CODE : ORG

PROPOSED RESIDENTIAL FLAT BUILDING
AT VILANGADUPAKKAM
BLOCK 1 & 2 (98 CENTS)

CLIENT : M/s. RAJARATHNAM CONSTRUCTION (P) LTD.

DRAWING TITLE:

PILE CAP LAYOUT

ISSUE DATE	16-03-2023	SHEET : 1
CHECK-3	BBB	SCALE : NTS
CHECK-2		JOB NO : 6454
CHECK-1	SAM	DATE : 13-03-2023
Design/Draw	SAM	SHEET SIZE : A3

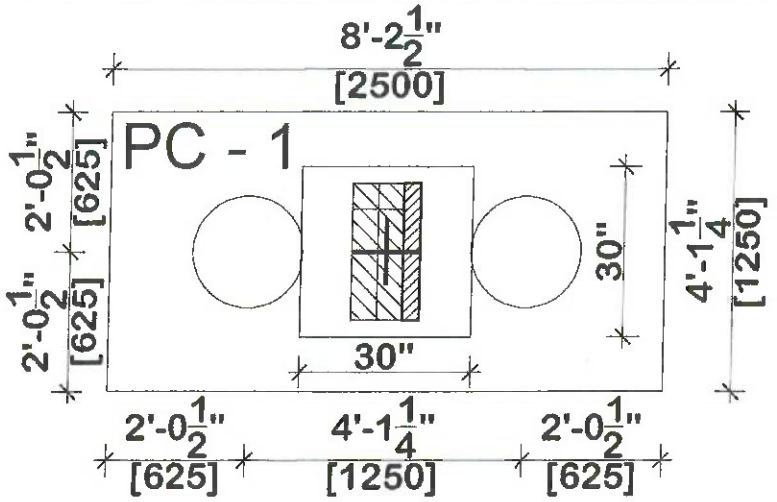
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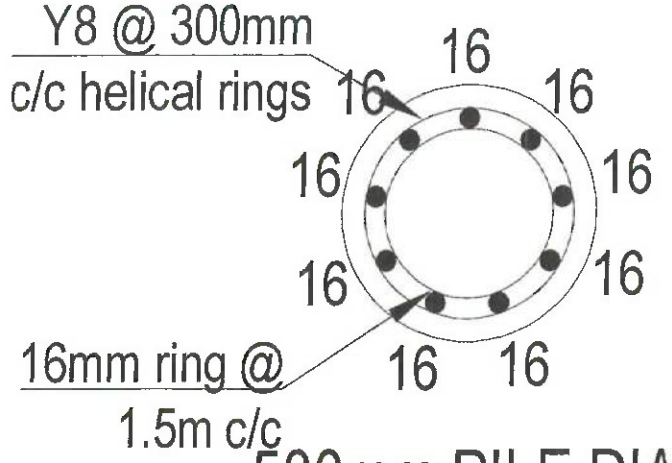
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26 45 07 45, 26 44 16 35.

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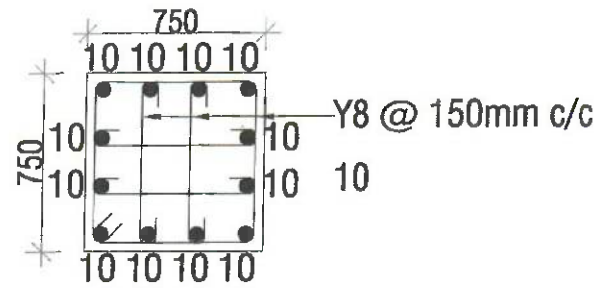
B.B. BOPAIYA
B.Tech (civil), M.E (struct), [illegible]

PC 1



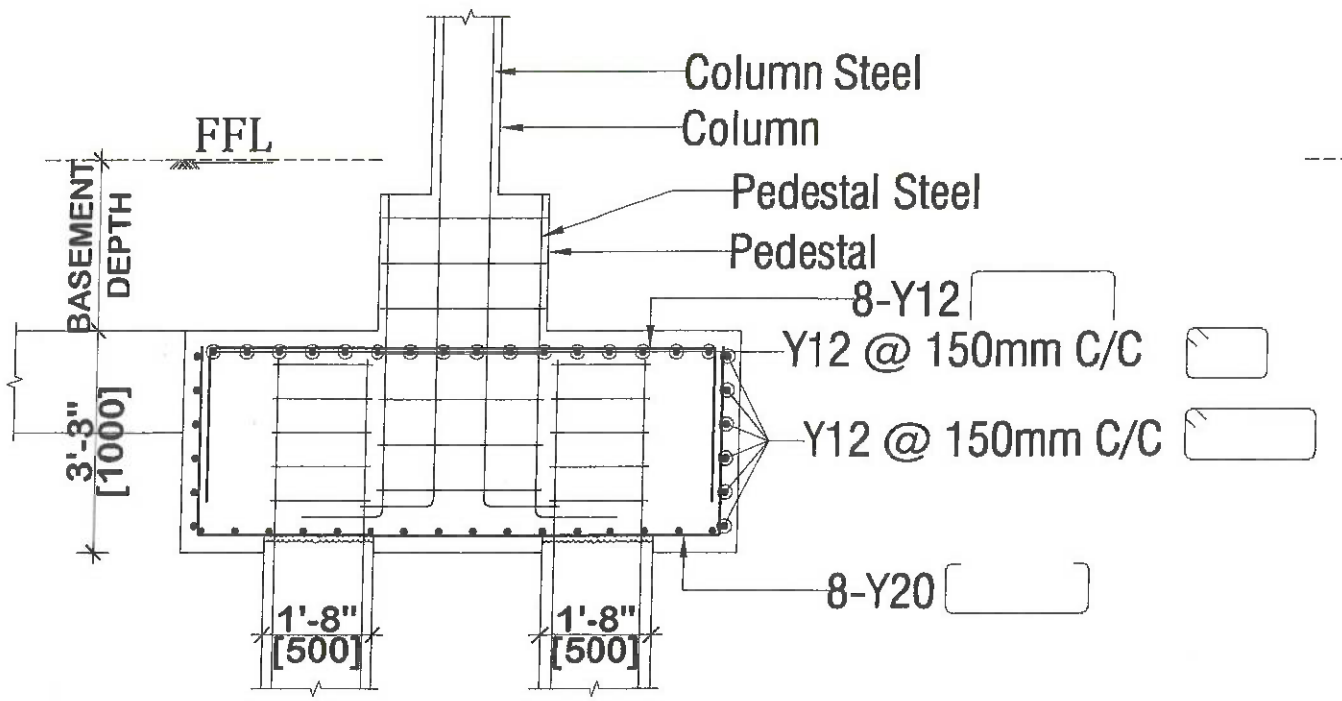


500mm PILE DIA

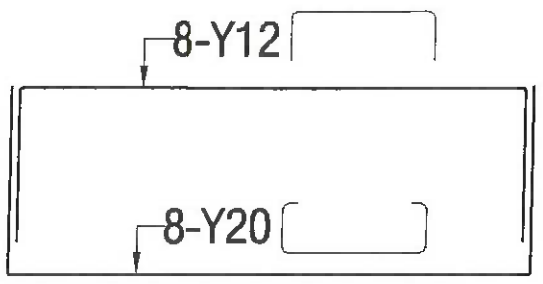


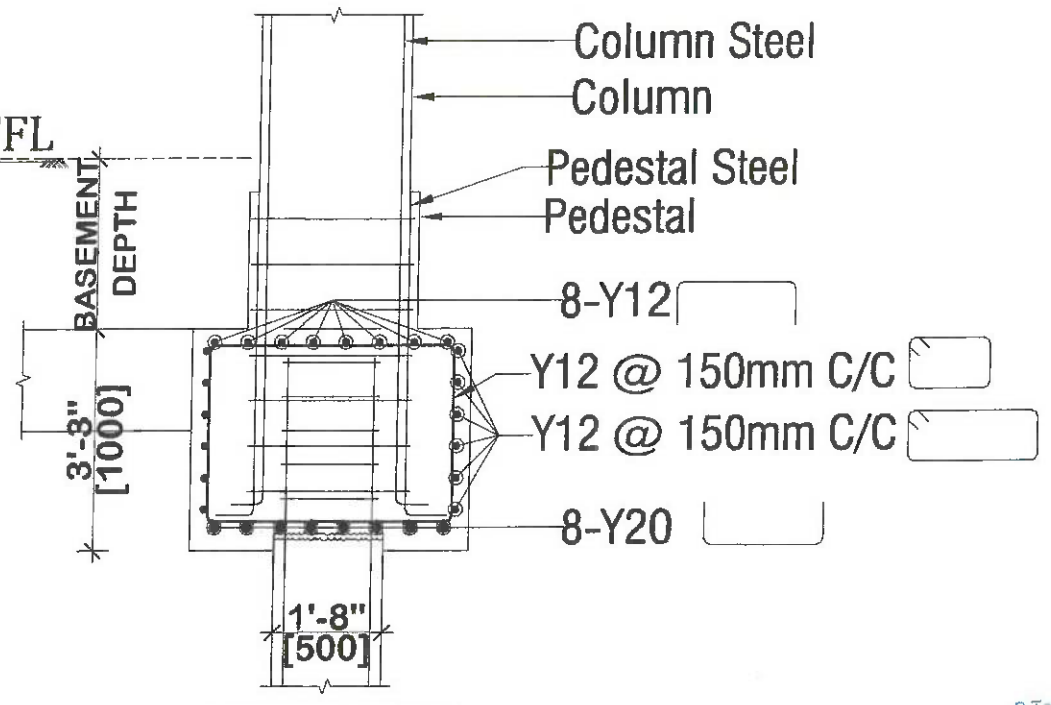
PEDESTAL DETAILS

12 - Y10

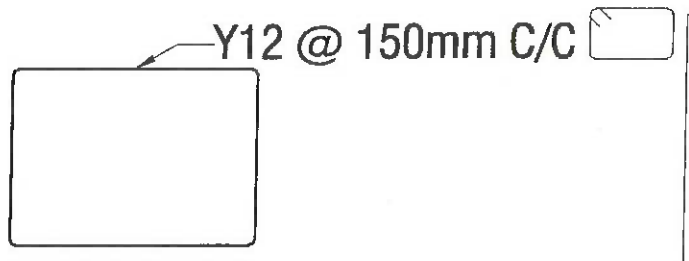


SECTION X-X





SECTION Y-Y



NOTE: -

The minimum spacing for the column ties must be 100mm for a minimum of 300mm from the pile cap top face.

REV	DESCRIPTION	DATE	BY	CHK

PROJECT: CODE : ORG

PROPOSED RESIDENTIAL FLAT BUILDING AT VILANGADUPAKKAM BLOCK 1 & 2 (98 CENTS)

CLIENT : M/s. RAJARATHNAM CONSTRUCTION (P) LTD.

DRAWING TITLE: PILE CAP DETAILS - PC 1

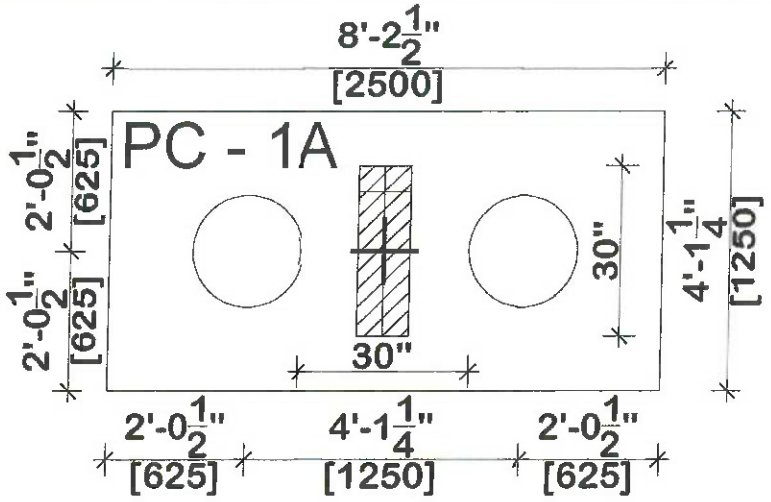
ISSUE DATE	16-03-2023	SHEET : 1
CHECK-3	BBB	SCALE : NTS
CHECK-2		JOB NO : 6454
CHECK-1	SAM	DATE : 13-03-2023
Design/Draw	SAM	SHEET SIZE : A3

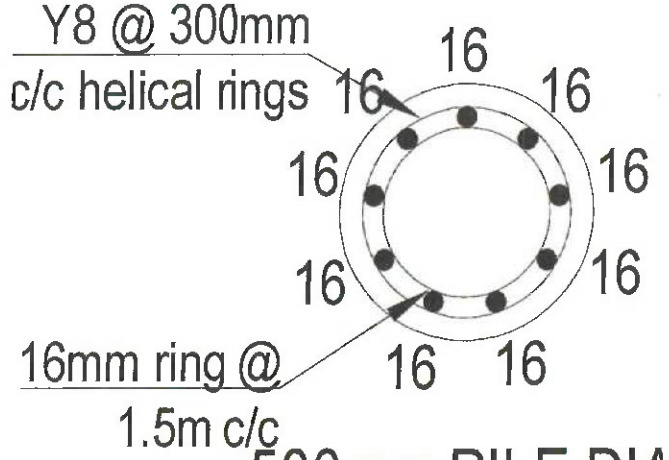
DRAWING NO: 04 1/5 R0

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26 45 07 45, 26 44 16 35.

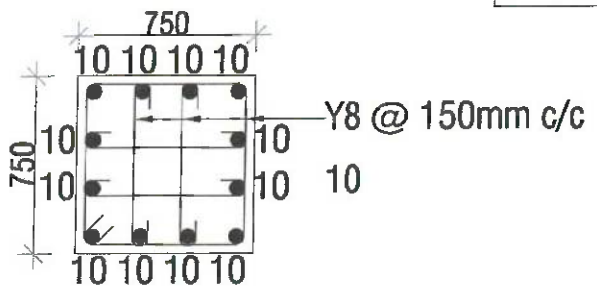
ISSUED FOR: ☐ PRELIMINARY ☑ APPROVAL ☐ TENDER ☐ CONSTRUCTION

PC 1A

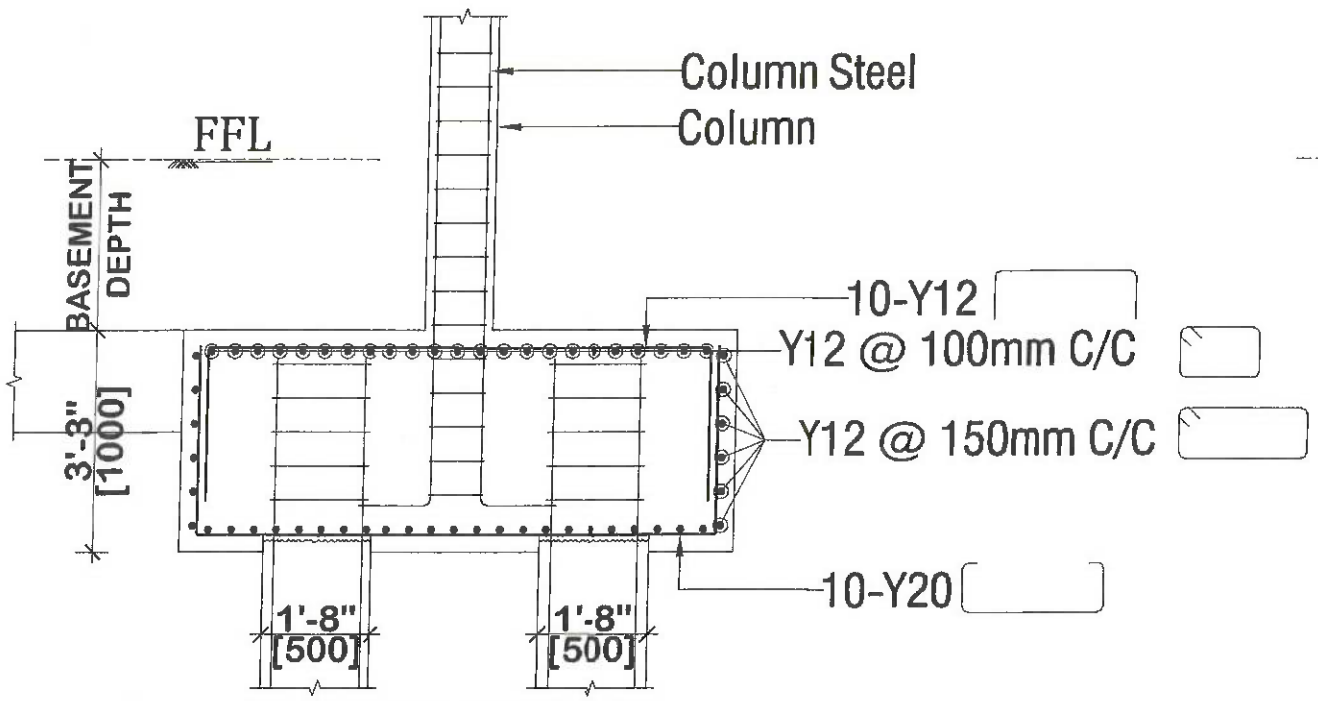




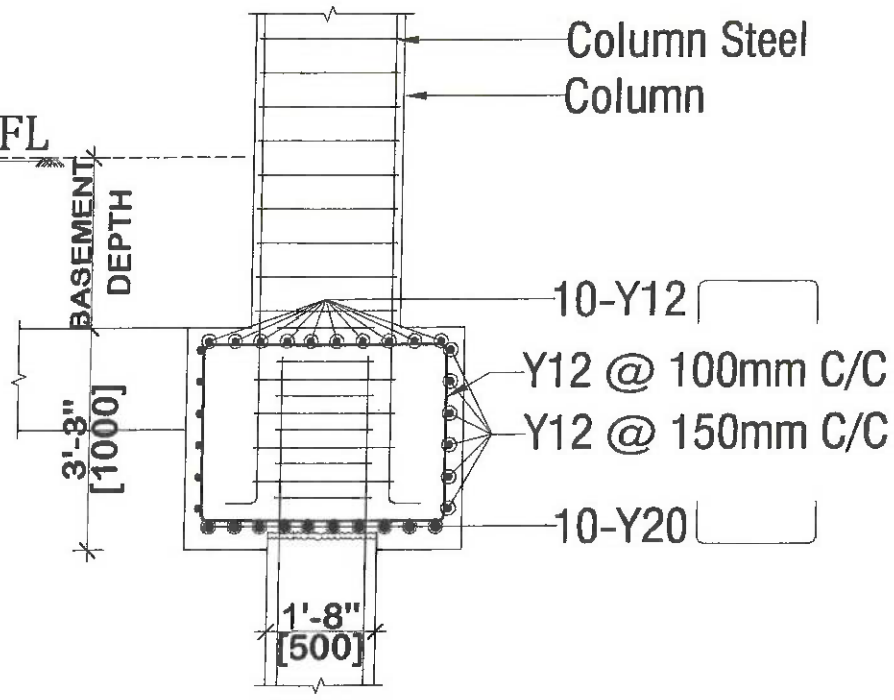
500mm PILE DIA



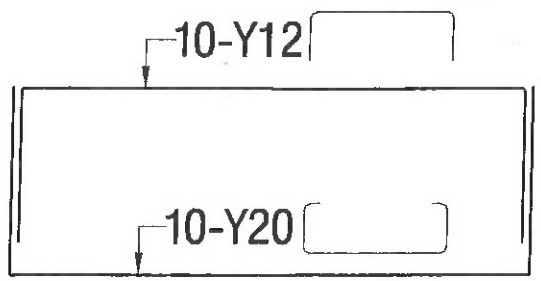
PEDESTAL DETAILS
12 - Y10

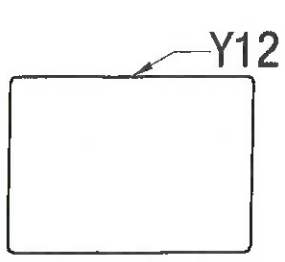


SECTION X-X



SECTION Y-Y





NOTE: -

The minimum spacing for the column ties must be 100mm for a minimum of 300mm from the pile cap top face.

B.E. B.L.
B.Tech (civil), M.E (struct), MIIV, AIEI, CE(I), SE/GR-I/13/05/125
RSE100552019
CCLRGN/SE/Gr-I/2019/11/0[illegible]

REV	DESCRIPTION	DATE	BY	CHK

PROJECT: CODE : ORG

PROPOSED RESIDENTIAL FLAT BUILDING AT VILANGADUPAKKAM BLOCK 1 & 2 (98 CENTS)

CLIENT : M/s. RAJARATHNAM CONSTRUCTION (P) LTD.

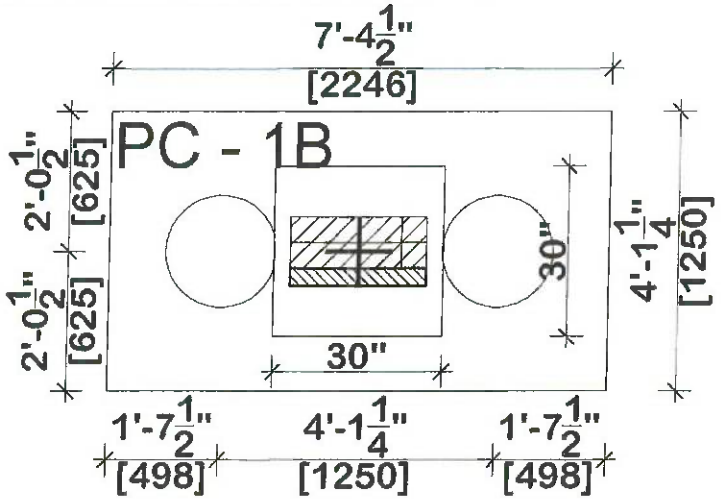
DRAWING TITLE: PILE CAP DETAILS - PC 1A

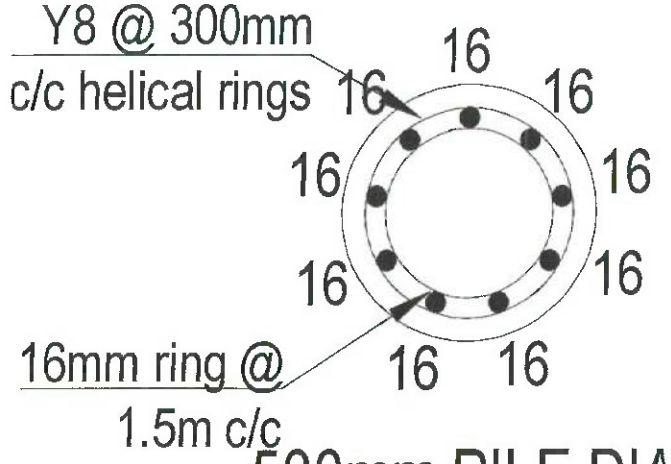
ISSUE DATE	16-03-2023	SHEET : 1
CHECK-3	BBB	SCALE : NIS
CHECK-2		JOB NO : 6454
CHECK-1	SAM	DATE : 13-03-2023
Design/Draw	SAM	SHEET SIZE : A3
DRAWING NO:	04 2/5	R0

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Consulting Engineers
66 Halls Road Kilpauk Chennai - 10.
26 45 07 45, 26 44 16 35.

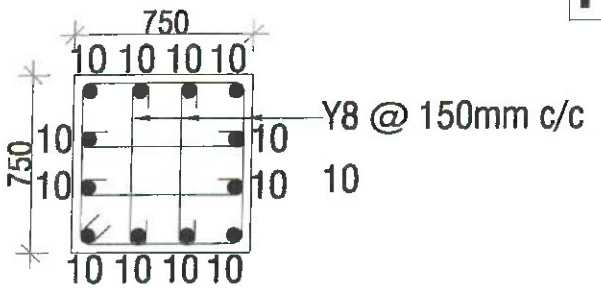
ISSUED FOR: ☐ PRELIMINARY ☑ APPROVAL ☐ TENDER ☐ CONSTRUCTION

PC 1B

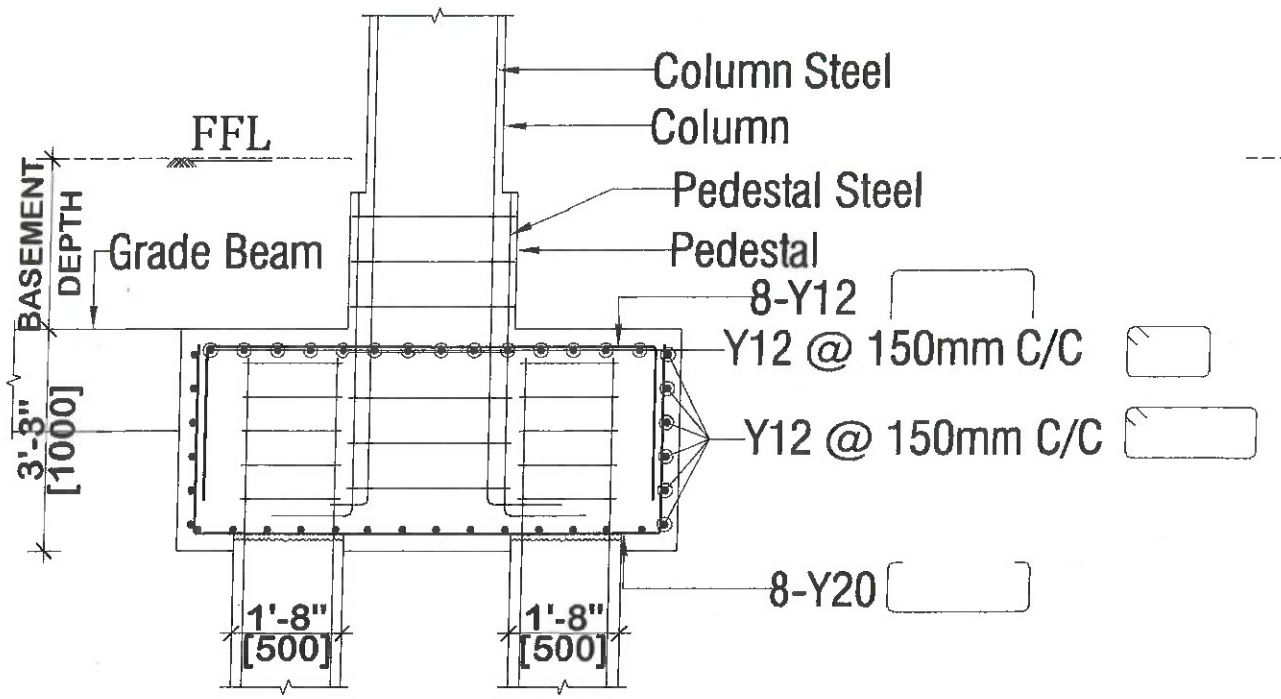




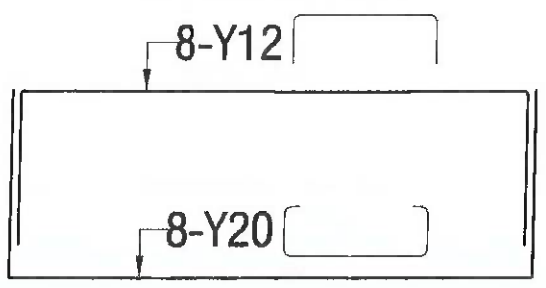
500mm PILE DIA

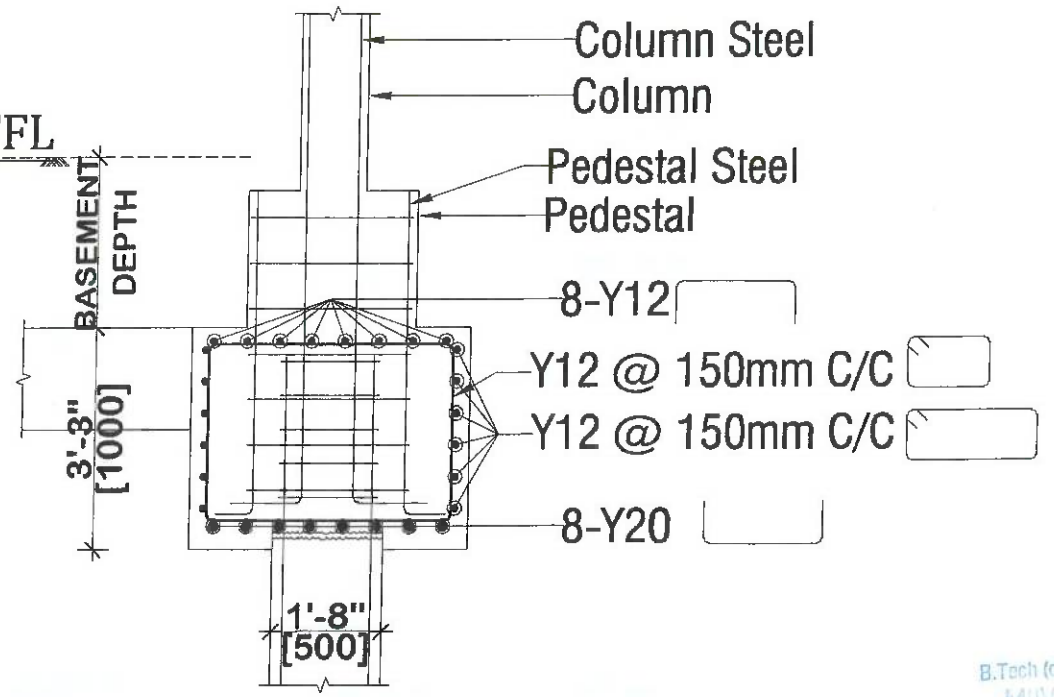


PEDESTAL DETAILS
12 - Y10

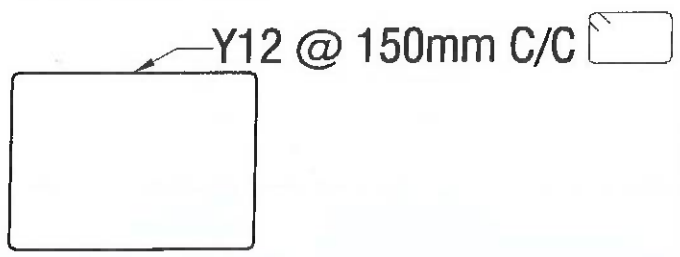


SECTION X-X





SECTION Y-Y



NOTE: -

The minimum spacing for the column ties must be 100mm for a minimum of 300mm from the pile cap top face.

REV	DESCRIPTION	DATE	BY	CHK

PROJECT: CODE : ORG

PROPOSED RESIDENTIAL FLAT BUILDING
AT VILANGADUPAKKAM
BLOCK 1 & 2 (98 CENTS)

CLIENT : M/s. RAJARATHNAM CONSTRUCTION (P) LTD.

DRAWING TITLE:

PILE CAP DETAILS - PC 1B
(Special Case - Grid - E20 & G20)

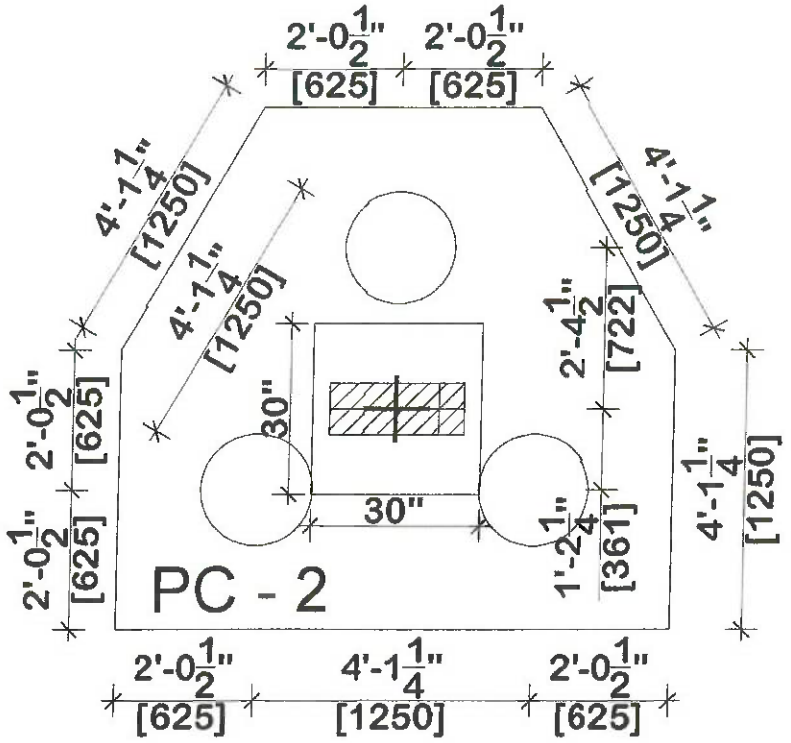
ISSUE DATE	16-03-2023	SHEET : 1
CHECK-3	BBB	SCALE : NTS
CHECK-2		JOB NO : 6454
CHECK-1	SAM	DATE : 13-03-2023
Design/Draw	SAM	SHEET SIZE : A3
DRAWING NO:	04 3/5	R0

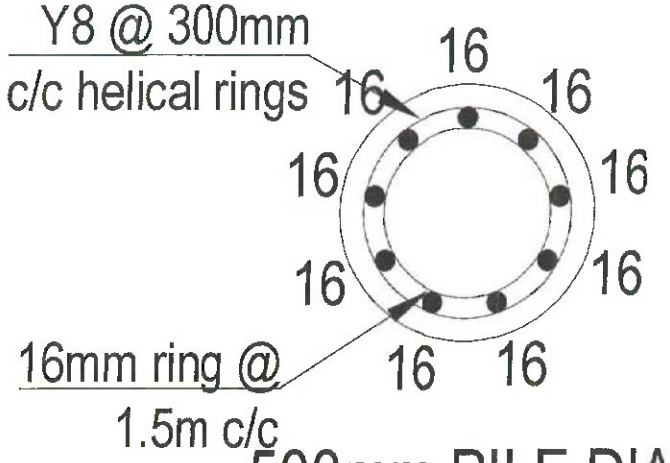
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Consulting Engineers
66 Halls Road Kilpauk Chennai - 10.
26 45 07 45, 26 44 16 35.

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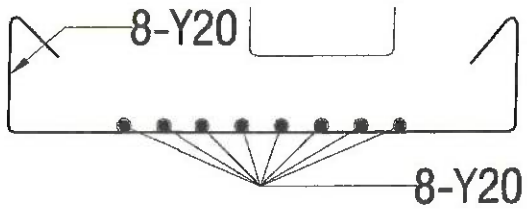
B.B. BOTAYYA
B.Tech (civil), ME (struct), BITS Pilani
MIIV, AMI, CE(I), MACCE, AM(ICI)

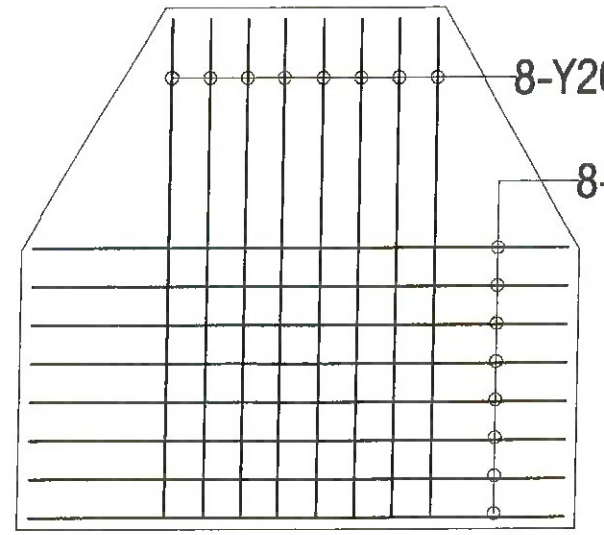
PC 2



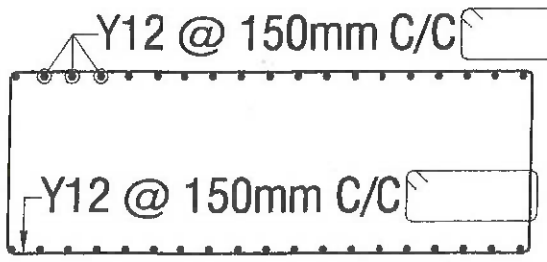


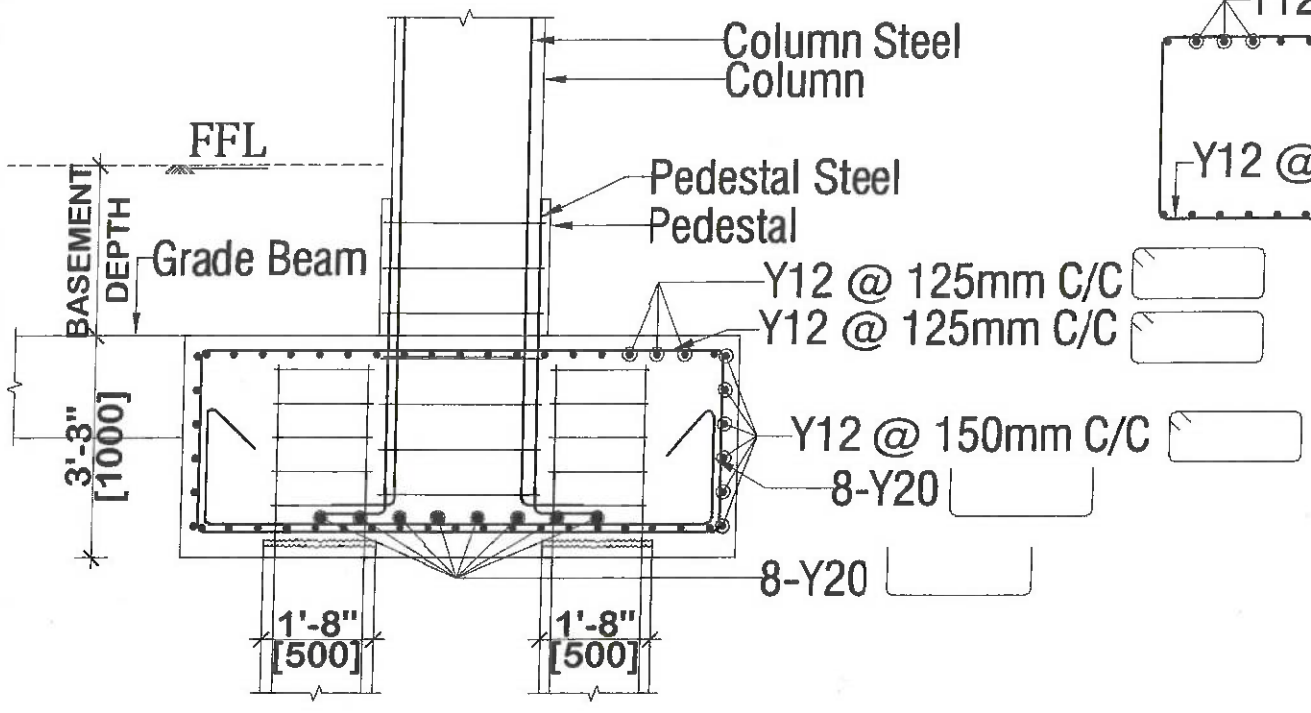
500mm PILE DIA



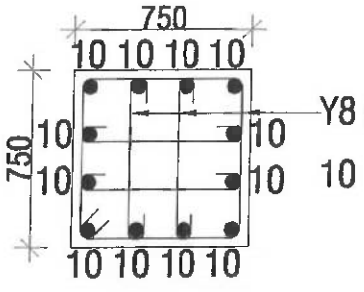


BOTTOM REINFORCEMENT @ BOTH WAYS

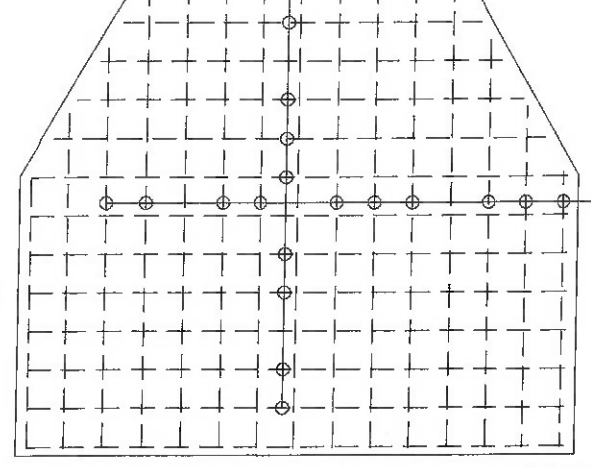




SECTION X-X



PEDESTAL DETAILS
12 - Y10



CLOSED STIRRUPS DETAILS @ BOTHWAYS

NOTE: -

The minimum spacing for the column ties must be 100mm for a minimum of 300mm from the pile cap top face.

REV	DESCRIPTION	DATE	BY	CHK

PROJECT: CODE : ORG

PROPOSED RESIDENTIAL FLAT BUILDING
AT VILANGADUPAKKAM
BLOCK 1 & 2 (98 CENTS)

CLIENT : M/s. RAJARATHNAM CONSTRUCTION (P) LTD.

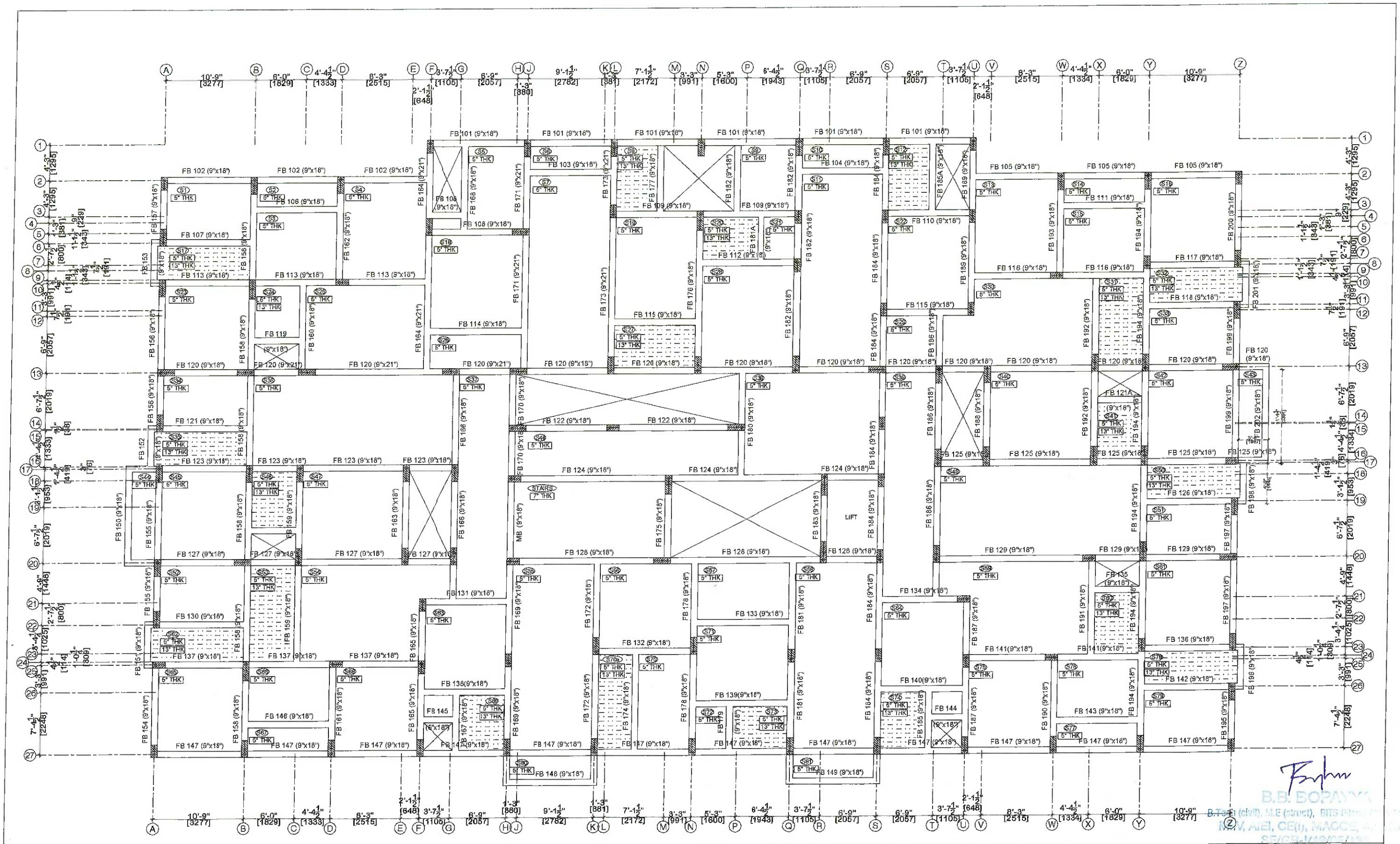
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PILE CAP DETAILS - PC 2

ISSUE DATE	16-03-2023	SHEET : 1	
CHECK-3	BBB	SCALE : NTS	
CHECK-2		JOB NO : 6454	
CHECK-1	SAM	DATE : 13-03-2023	
Design/Draw	SAM	SHEET SIZE : A3	
DRAWING NO:	04	4/5	R0

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Consulting Engineers
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B.Tech (civil), M.E (struct), BITS Pilani
MIV, AIEI, CE(I), MACCE, [illegible]
SE/CR-II/[illegible]
RSE100552019
CHE/[illegible]/2019/[illegible]

REV	DESCRIPTION	DATE	BY	CHK

PROJECT: CODE : ORG

PROPOSED RESIDENTIAL FLAT BUILDING
AT VILANGADUPAKKAM
BLOCK 1 & 2 (98 CENTS)

CLIENT : M/s. RAJARATHNAM CONSTRUCTION (P) LTD.

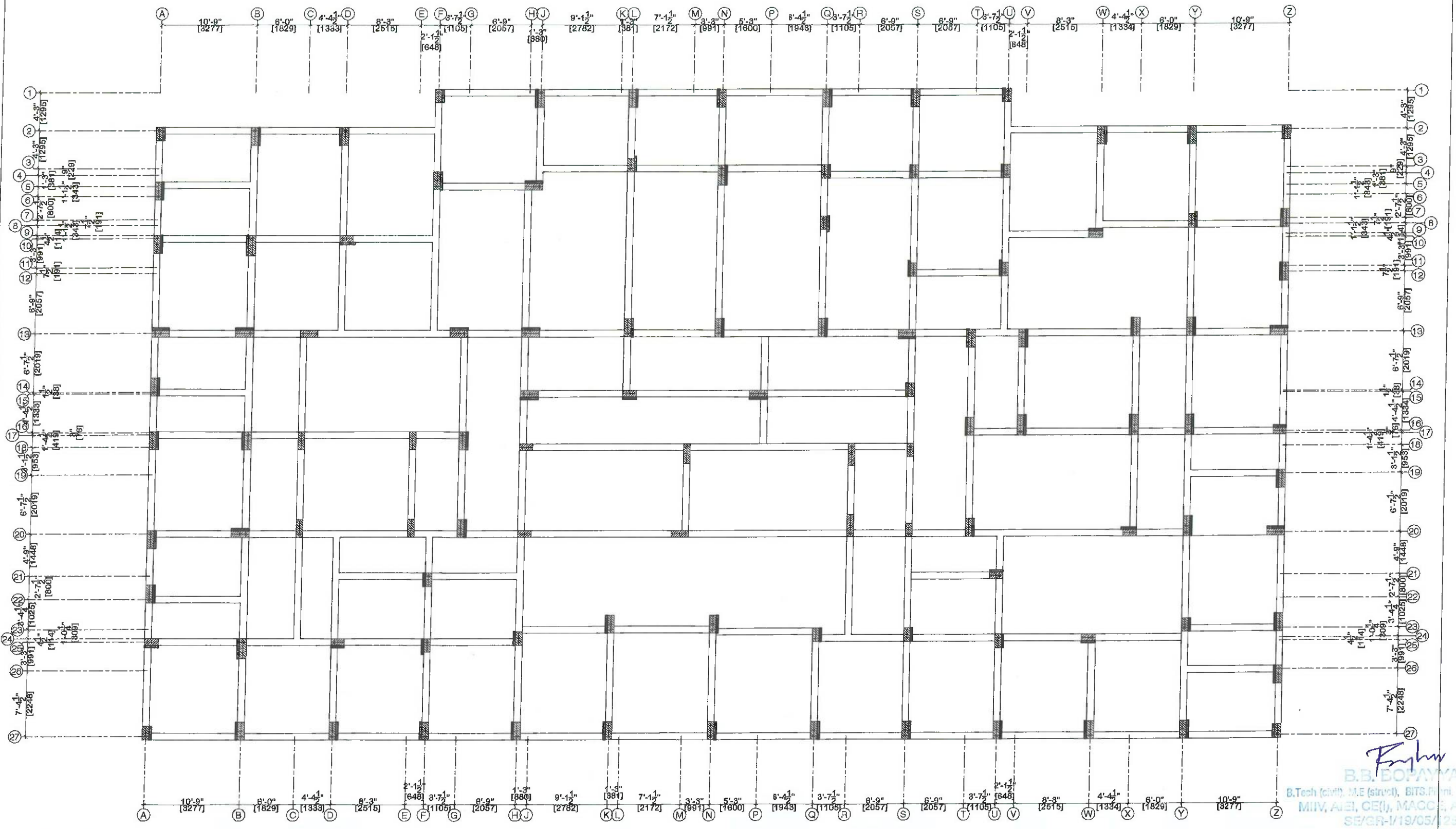
DRAWING TITLE:

BEAM & SLAB NUMERATTION
TYPICAL FLOORS

ISSUE DATE	16-03-2023	SHEET : 1
CHECK-3	BBB	SCALE : NTS
CHECK-2		JOB NO : 6454
CHECK-1	SAM	DATE : 13-03-2023
Design/Draw	SAM	SHEET SIZE : A3
DRAWING NO:	07	R0

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Consulting Engineers
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REV	DESCRIPTION	DATE	BY	CHK

PROJECT: CODE : ORG

PROPOSED RESIDENTIAL FLAT BUILDING
AT VILANGADUPAKKAM
BLOCK 1 & 2 (98 CENTS)

CLIENT : M/s. RAJARATHNAM CONSTRUCTION (P) LTD.

DRAWING TITLE:

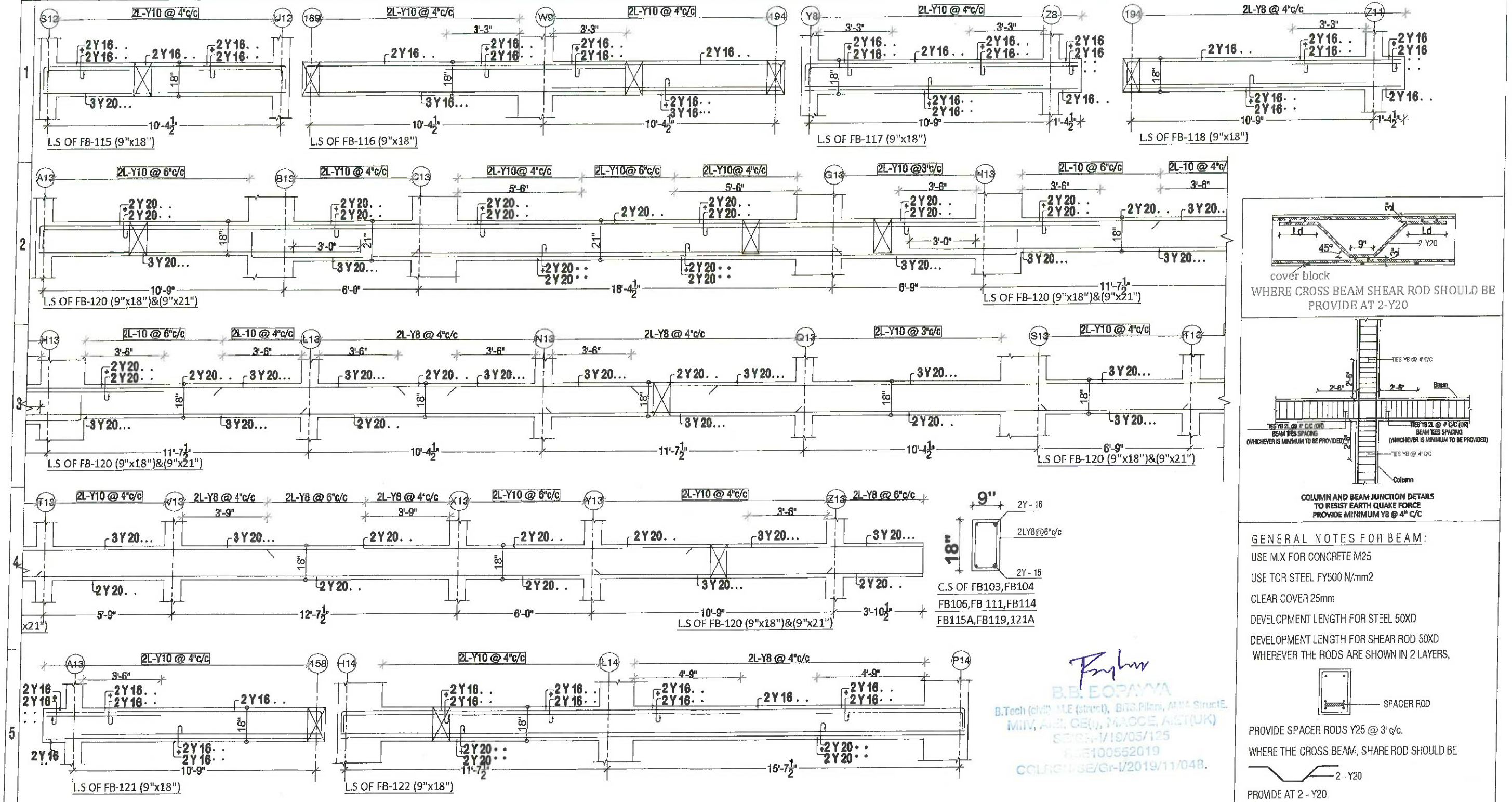
GRADE & PLINTH BEAM DETAILS

ISSUE DATE	16-03-2023	SHEET : 1
CHECK-3	BBB	SCALE : NTS
CHECK-2		JOB NO : 6454
CHECK-1	SAM	DATE : 13-03-2023
Design/Draw	SAM	SHEET SIZE : A3
DRAWING NO:	05	R0

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Consulting Engineers
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26 45 07 45, 26 44 16 35.

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B.B. BOPAYYA
B.Tech (civil), M.E (struct), BITS, Pilani, AMIStructE, MIIV, AIEI, CE(I), MAGCE, A (CBUK)
SE/GR-I/19/05/125
RRF100552019
CGLRGN/SE/Gr-I/2019/11/048.



STRICTLY USE LIGHT WEIGHT AAC BLOCKS WALLS (DENSITY 680 Kg/m³)

IMPORTANT NOTES : -
CONCRETE AND STEEL SPECIFICATION AND PLACEMENT IS THE RESPONSIBILITY OF THE SITE SUPERVISOR / OWNER AND NOT CONSULTANT'S RESPONSIBILITY.

B.B. BOPAYYA
B.Tech (civil) M.E (struct), BITS Pilani, AMIE StructE. MIIV, AIE, GE(I), MACCE, MIET(UK)
SRISH-I/19/05/125
RJ/E100552019
COL/CH/SE/Gr-I/2019/11/048.

REV	DESCRIPTION	DATE	BY	CHK

PROJECT: CODE : ORG

PROPOSED RESIDENTIAL FLAT BUILDING AT
VILANGADUPAKKAM
BLOCK 1 & 2 (98 CENTS)

CLIENT : M/s. RAJARATHNAM CONSTRUCTION (P) LTD.

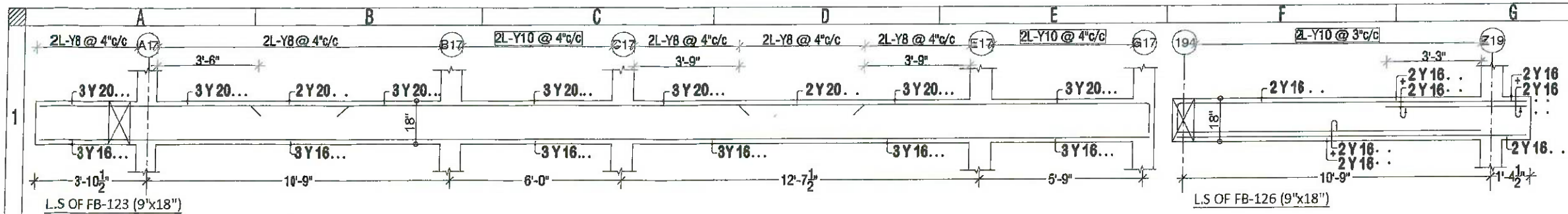
DRAWING TITLE:
R.C.C DETAILS OF BEAM
AT
TYPICAL FLOORS
(FIRST, SECOND, THIRD, FOURTH, FIFTH & TERRACE FLOOR LEVEL)
(FB - 115 - 122)

ISSUE DATE	18-03-2024	SHEET 1
CHECK-3	BBB	SCALE : ¼" = 1'-0"
CHECK-2		JOB NO : 6454
CHECK-1	SAM	DATE :14-03-2024
Design/Draw	SAM	SHEET SIZE : A2

DRAWING NO: 09 2/9 R0

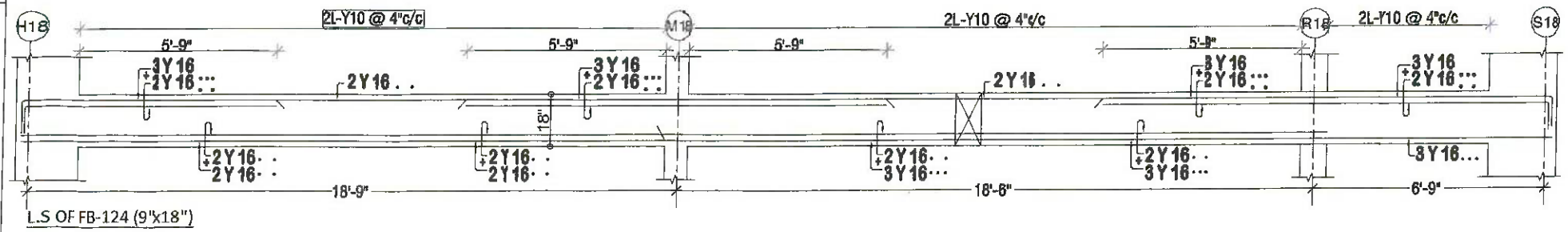
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66 Halls Road Kilpauk Chennai - 10.
26 45 07 45, 26 44 16 35.

ISSUED FOR: ☐ PRELIMINARY ☑ APPROVAL ☐ TENDER ☐ CONSTRUCTION

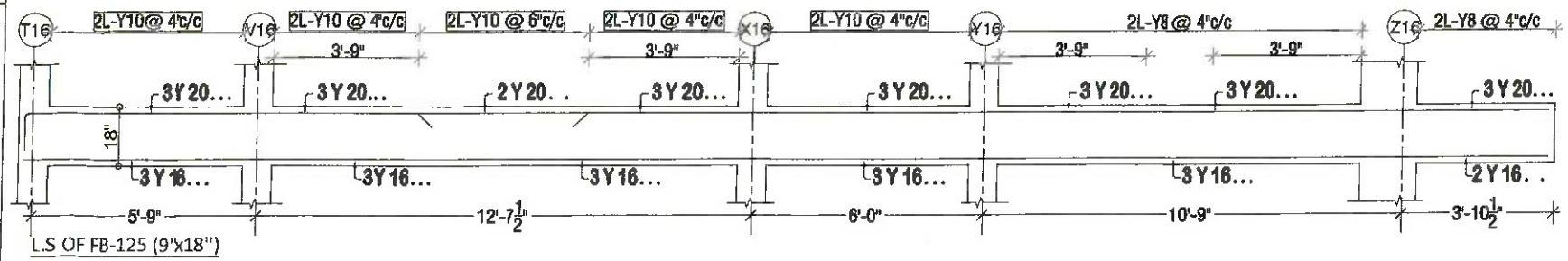


L.S OF FB-123 (9"x18")

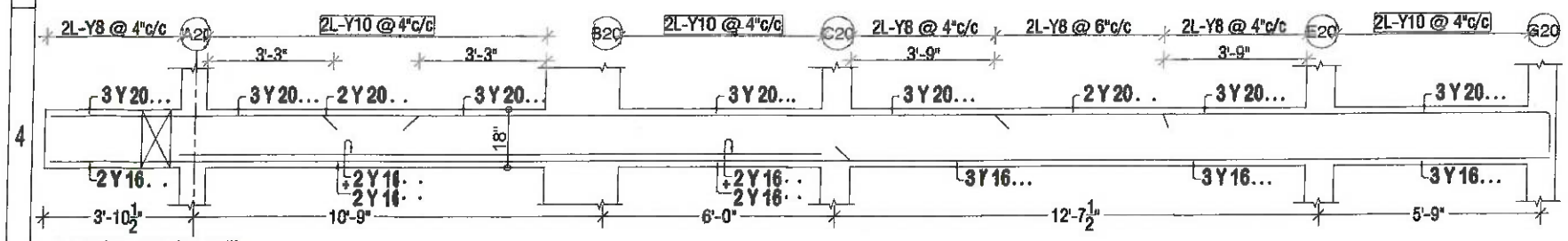
L.S OF FB-126 (9"x18")



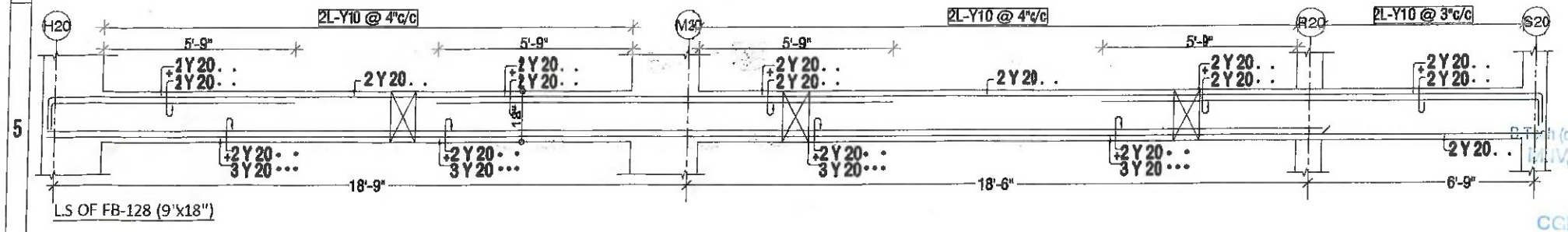
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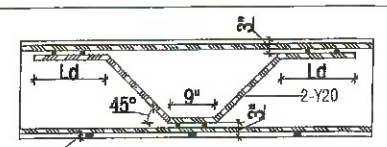
L.S OF FB-125 (9"x18")



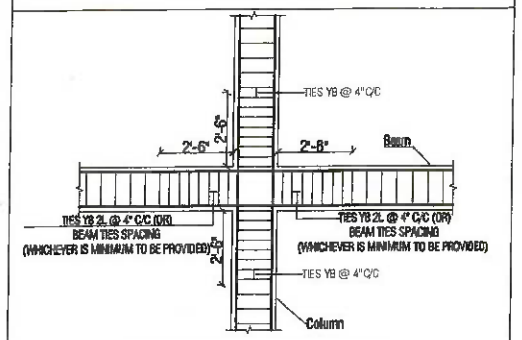
L.S OF FB-127 (9"x18")



L.S OF FB-128 (9"x18")



cover block
WHERE CROSS BEAM SHEAR ROD SHOULD BE PROVIDE AT 2-Y20



COLUMN AND BEAM JUNCTION DETAILS
TO RESIST EARTH QUAKE FORCE
PROVIDE MINIMUM Y8 @ 4" C/C

GENERAL NOTES FOR BEAM :

USE MIX FOR CONCRETE M25

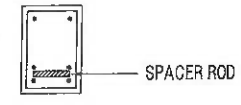
USE TOR STEEL FY500 N/mm2

CLEAR COVER 25mm

DEVELOPMENT LENGTH FOR STEEL 50XD

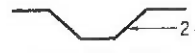
DEVELOPMENT LENGTH FOR SHEAR ROD 50XD

WHEREVER THE RODS ARE SHOWN IN 2 LAYERS,



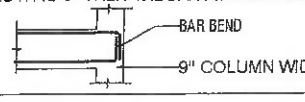
PROVIDE SPACER RODS Y25 @ 3' c/c.

WHERE THE CROSS BEAM, SHARE ROD SHOULD BE



PROVIDE AT 2 - Y20.

IF COLUMN WIDTH IS 9" THEN THE BAR BEND SHOULD BE AS SHOWN



B.B. BOPAYYA
B.E (civil), M.E (struct), BITS Pilani, AMIA Struct.E, MIV, AIEI, CE(I), MACCE, AIET(UK)
SE/GR-I/19/05/125
RGE100552019
CCLRGN/SE/Gr-I/2019/11/048.

STRICTLY USE LIGHT WEIGHT AAC BLOCKS WALLS (DENSITY 680 Kg/m³)

IMPORTANT NOTES : -
CONCRETE AND STEEL SPECIFICATION AND PLACEMENT IS THE RESPONSIBILITY OF THE SITE SUPERVISOR / OWNER AND NOT CONSULTANT'S RESPONSIBILITY.

REV	DESCRIPTION	DATE	BY	CHK

PROJECT: CODE : ORG

PROPOSED RESIDENTIAL FLAT BUILDING AT
VILANGADUPAKKAM
BLOCK 1 & 2 (98 CENTS)

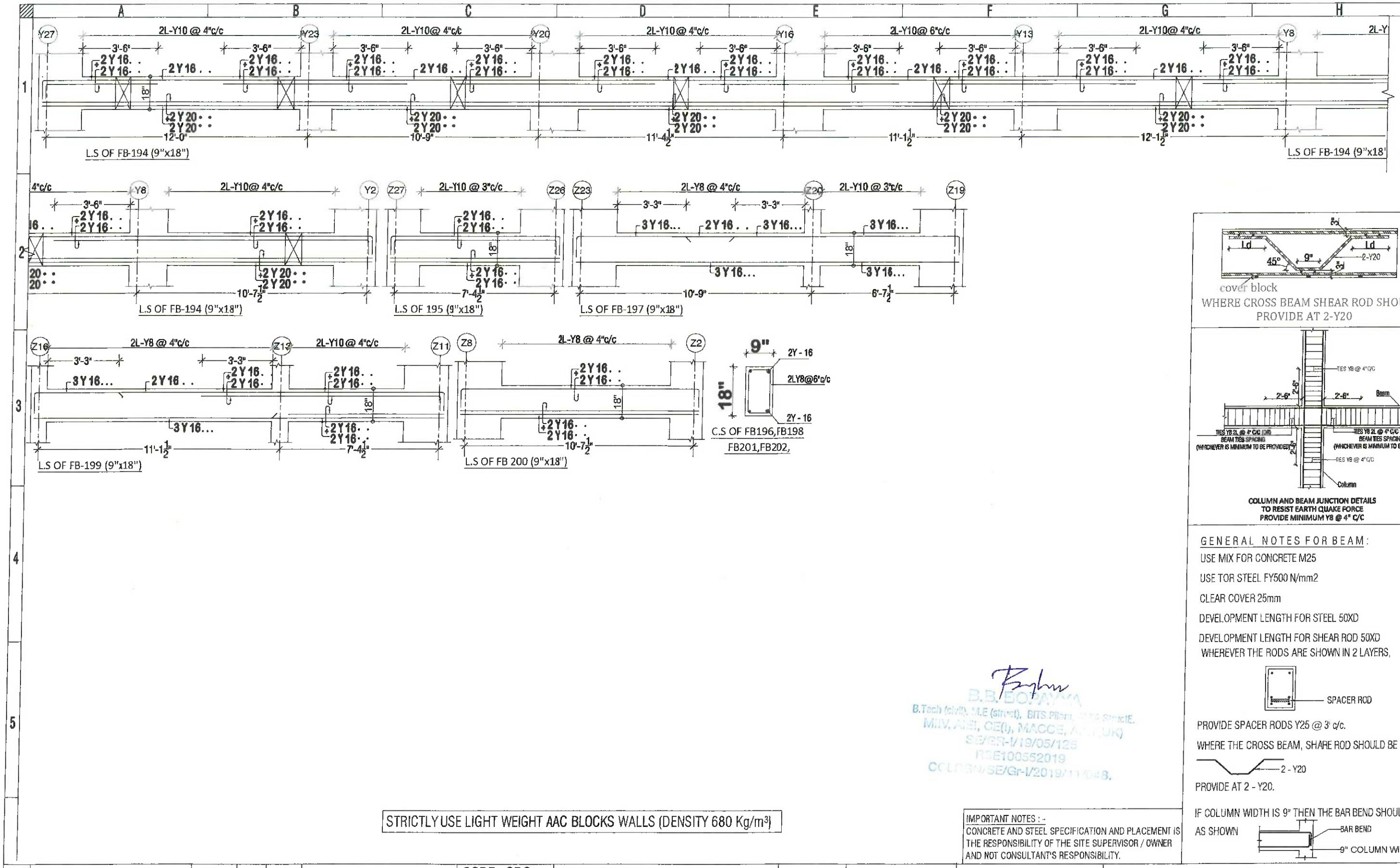
CLIENT : M/s. RAJARATHNAM CONSTRUCTION (P) LTD.

DRAWING TITLE:
R.C.C DETAILS OF BEAM
AT
TYPICAL FLOORS
(FIRST, SECOND, THIRD, FOURTH, FIFTH & TERRACE FLOOR LEVEL)
(FB - 123 - 128)

ISSUE DATE	18-03-2024	SHEET 1
CHECK-3	BBB	SCALE : ¼" = 1'-0"
CHECK-2		JOB NO : 6454
CHECK-1	SAM	DATE :14-03-2024
Design/Draw	SAM	SHEET SIZE : A2
DRAWING NO:	09 3/9	R0

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Consulting Engineers
66 Halls Road Kilpauk Chennai - 10.
26 45 07 45, 26 44 16 35.

ISSUED FOR: ☐ PRELIMINARY ☑ APPROVAL ☐ TENDER ☐ CONSTRUCTION



WHERE CROSS BEAM SHEAR ROD SHOULD BE PROVIDE AT 2-Y20

COLUMN AND BEAM JUNCTION DETAILS TO RESIST EARTH QUAKE FORCE PROVIDE MINIMUM Y8 @ 4" C/C

GENERAL NOTES FOR BEAM:

USE MIX FOR CONCRETE M25

USE TOR STEEL FY500 N/mm2

CLEAR COVER 25mm

DEVELOPMENT LENGTH FOR STEEL 50XD

DEVELOPMENT LENGTH FOR SHEAR ROD 50XD
WHEREVER THE RODS ARE SHOWN IN 2 LAYERS,

PROVIDE SPACER RODS Y25 @ 3' c/c.

WHERE THE CROSS BEAM, SHARE ROD SHOULD BE

PROVIDE AT 2 - Y20.

IF COLUMN WIDTH IS 9" THEN THE BAR BEND SHOULD BE AS SHOWN

B.B. BOBANKA
B.Tech (civil), M.E (struct), BITS Pilani, MBA Strucit.
MIIV, AIEI, CE(I), MACCE, A.S.T.(UK)
SE/GR-I/19/05/125
RSE100552019
CCL/GBM/SE/Gr-I/2019/11048.

STRICTLY USE LIGHT WEIGHT AAC BLOCKS WALLS (DENSITY 680 Kg/m³)

IMPORTANT NOTES : -
CONCRETE AND STEEL SPECIFICATION AND PLACEMENT IS THE RESPONSIBILITY OF THE SITE SUPERVISOR / OWNER AND NOT CONSULTANT'S RESPONSIBILITY.

REV	DESCRIPTION	DATE	BY	CHK

PROJECT: CODE : ORG

PROPOSED RESIDENTIAL FLAT BUILDING AT
VILANGADUPAKKAM
BLOCK 1 & 2 (98 CENTS)

CLIENT : M/s. RAJARATHINAM CONSTRUCTION (P) LTD.

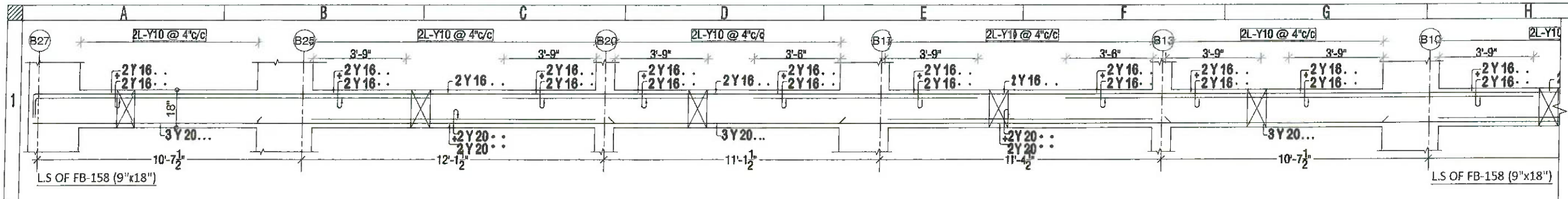
DRAWING TITLE:
R.C.C DETAILS OF BEAM
AT
TYPICAL FLOORS
(FIRST, SECOND, THIRD, FOURTH, FIFTH & TERRACE FLOOR LEVEL)
(FB - 194 - 202)

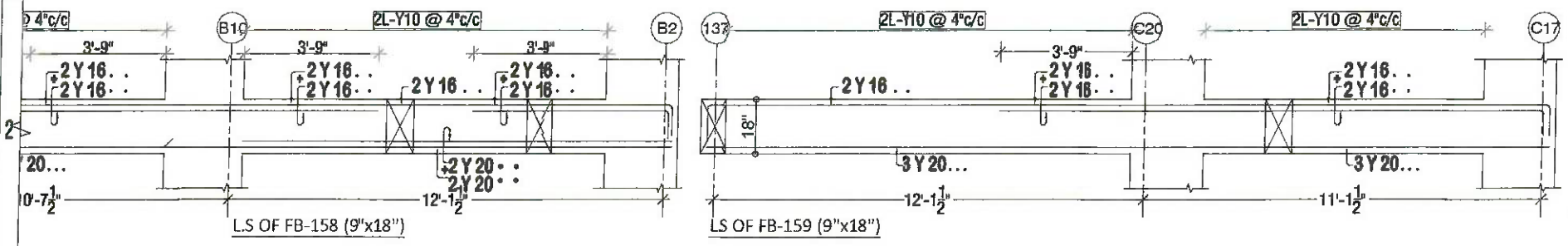
ISSUE DATE	18-03-2024	SHEET 1
CHECK-3	BBB	SCALE : ¼" = 1'-0"
CHECK-2		JOB NO : 6454
CHECK-1	SAM	DATE :14-03-2024
Design/Draw	SAM	SHEET SIZE : A2

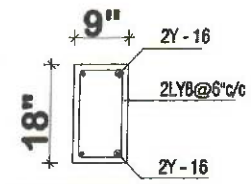
DRAWING NO: 09 9/9 R0

Belliappa & Associates
Consulting Engineers
66 Halls Road Kilpauk Chennai - 10.
26 45 07 45, 26 44 16 35.

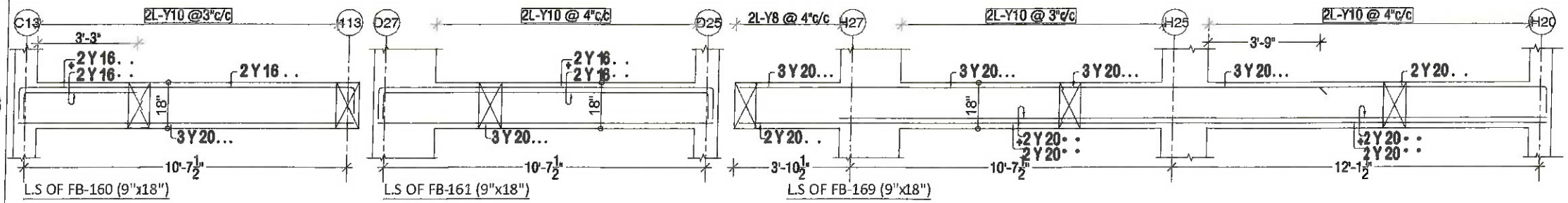
ISSUED FOR: ☐ PRELIMINARY ☑ APPROVAL ☐ TENDER ☐ CONSTRUCTION

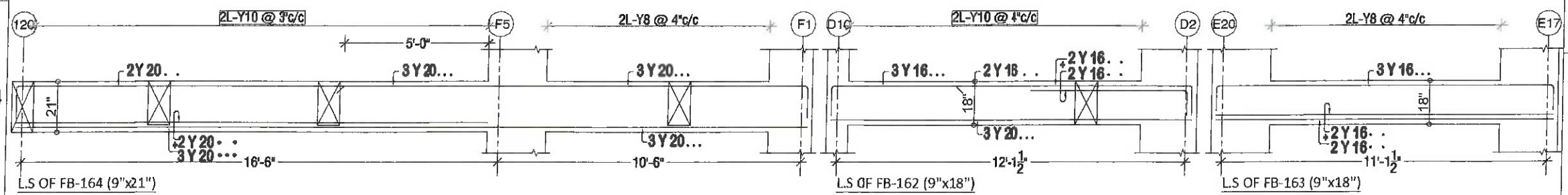


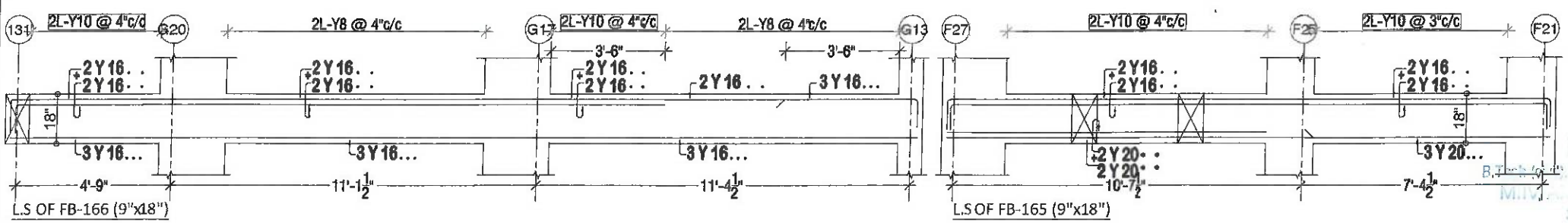


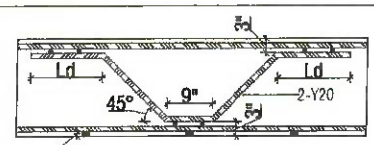


C.S OF FB167,FB168
FB174,FB177,FB179
FB185,FB185A,

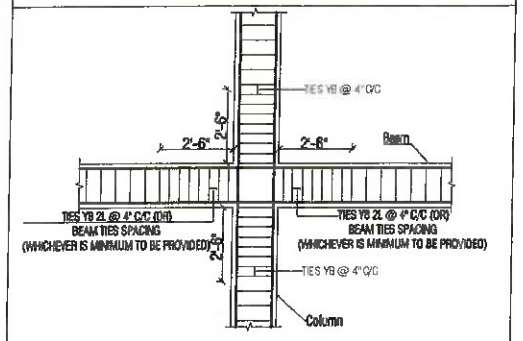








WHERE CROSS BEAM SHEAR ROD SHOULD BE PROVIDE AT 2-Y20



COLUMN AND BEAM JUNCTION DETAILS
TO RESIST EARTH QUAKE FORCE
PROVIDE MINIMUM Y8 @ 4" C/C

GENERAL NOTES FOR BEAM :

USE MIX FOR CONCRETE M25

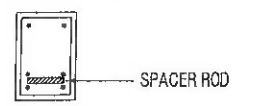
USE TOR STEEL FY500 N/mm2

CLEAR COVER 25mm

DEVELOPMENT LENGTH FOR STEEL 50XD

DEVELOPMENT LENGTH FOR SHEAR ROD 50XD

WHEREVER THE RODS ARE SHOWN IN 2 LAYERS,



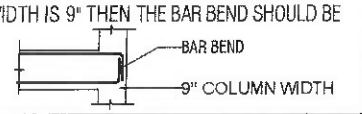
PROVIDE SPACER RODS Y25 @ 3' c/c.

WHERE THE CROSS BEAM, SHARE ROD SHOULD BE



PROVIDE AT 2 - Y20.

IF COLUMN WIDTH IS 9" THEN THE BAR BEND SHOULD BE AS SHOWN



STRICTLY USE LIGHT WEIGHT AAC BLOCKS WALLS (DENSITY 680 Kg/m³)

IMPORTANT NOTES : -
CONCRETE AND STEEL SPECIFICATION AND PLACEMENT IS THE RESPONSIBILITY OF THE SITE SUPERVISOR / OWNER AND NOT CONSULTANT'S RESPONSIBILITY.

REV	DESCRIPTION	DATE	BY	CHK

PROJECT: CODE : ORG

PROPOSED RESIDENTIAL FLAT BUILDING AT
VILANGADUPAKKAM
BLOCK 1 & 2 (98 CENTS)

CLIENT : M/s. RAJARATHNAM CONSTRUCTION (P) LTD.

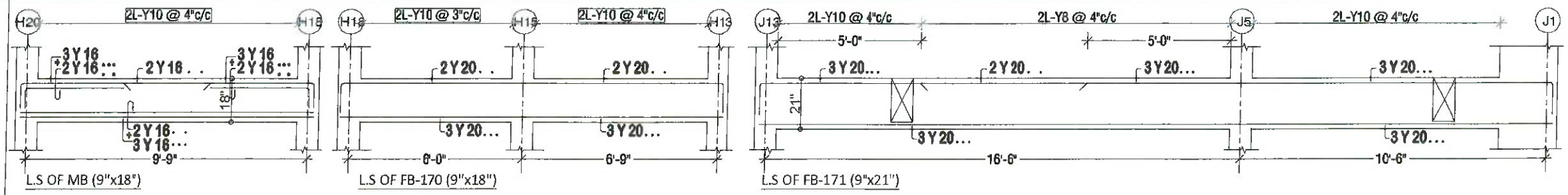
DRAWING TITLE:
R.C.C DETAILS OF BEAM
AT
TYPICAL FLOORS
(FIRST, SECOND, THIRD, FOURTH, FIFTH & TERRACE FLOOR LEVEL)
(FB - 158 - 169)

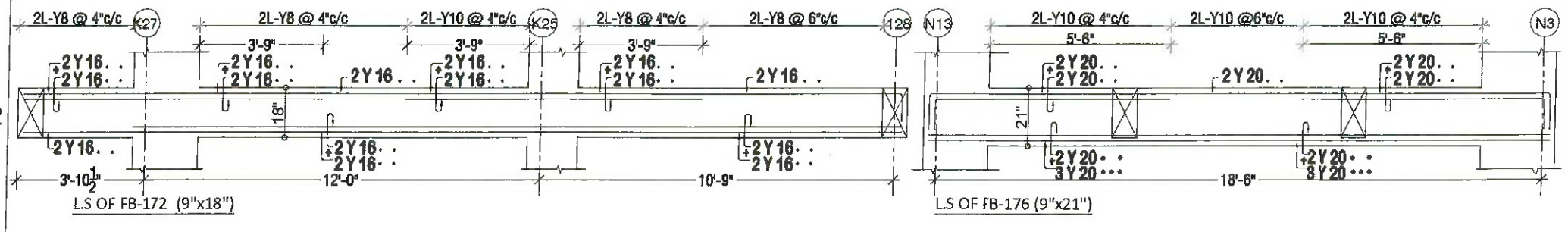
ISSUE DATE	18-03-2024	SHEET 1
CHECK-3	BBB	SCALE : ¼" = 1'-0"
CHECK-2		JOB NO : 6454
CHECK-1	SAM	DATE :14-03-2024
Design/Draw	SAM	SHEET SIZE : A2

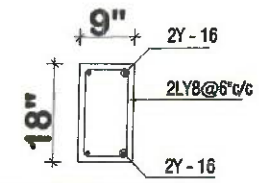
DRAWING NO: 09 6/9 R0

Belliappa & Associates
Consulting Engineers
66 Halls Road Kilpauk Chennai - 10.
26 45 07 45, 26 44 16 35.

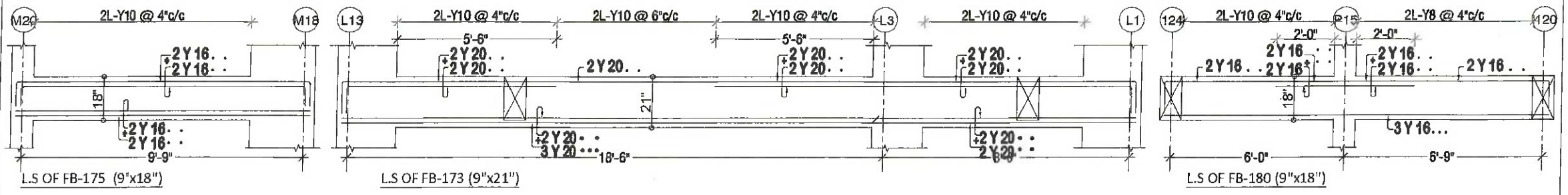
ISSUED FOR: ☐ PRELIMINARY ☑ APPROVAL ☐ TENDER ☐ CONSTRUCTION

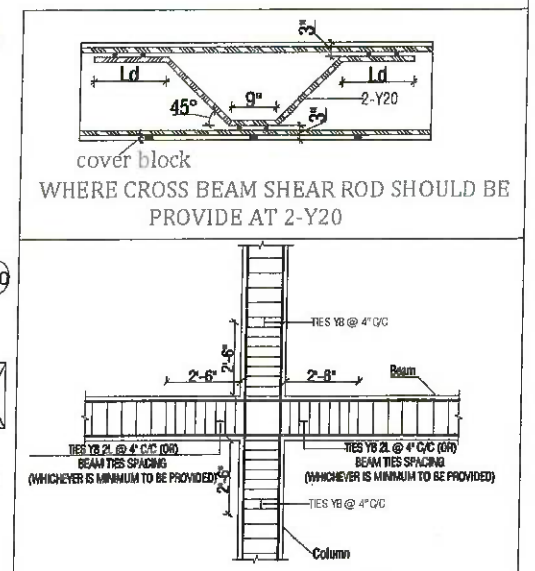


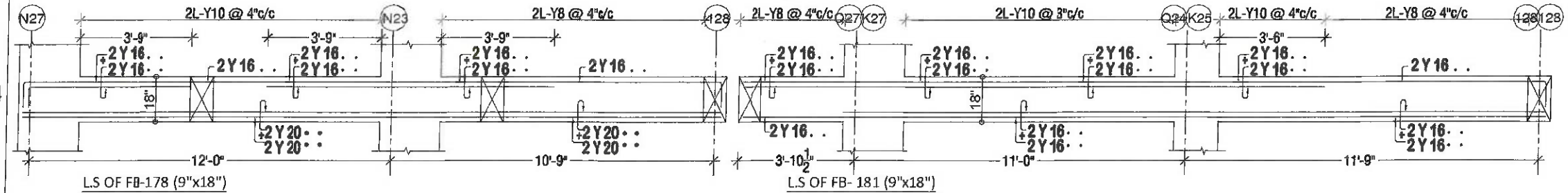


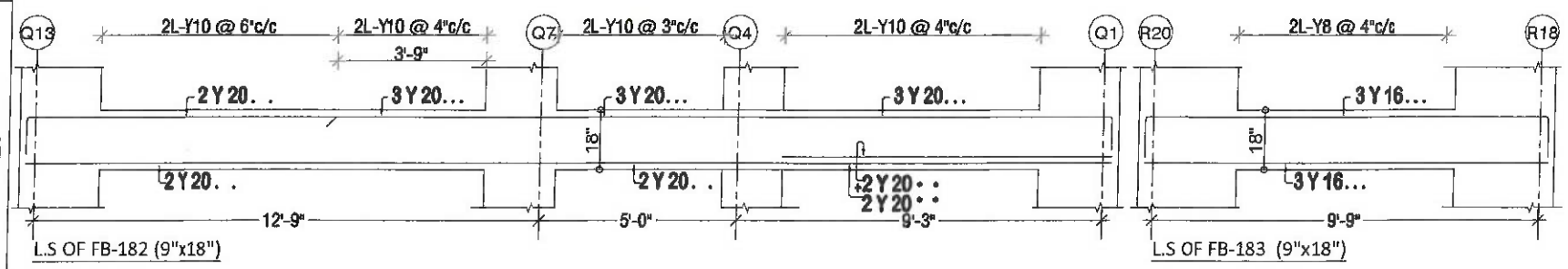


C.S OF FB167,FB168
FB174,FB177,FB179
FB185,FB185A,









STRICTLY USE LIGHT WEIGHT AAC BLOCKS WALLS (DENSITY 680 Kg/m³)

GENERAL NOTES FOR BEAM:

USE MIX FOR CONCRETE M25

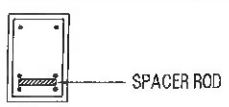
USE TOR STEEL FY500 N/mm2

CLEAR COVER 25mm

DEVELOPMENT LENGTH FOR STEEL 50XD

DEVELOPMENT LENGTH FOR SHEAR ROD 50XD

WHEREVER THE RODS ARE SHOWN IN 2 LAYERS,



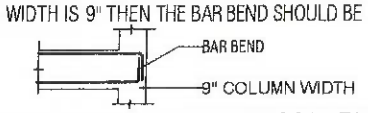
PROVIDE SPACER RODS Y25 @ 3' c/c.

WHERE THE CROSS BEAM, SHARE ROD SHOULD BE



PROVIDE AT 2 - Y20.

IF COLUMN WIDTH IS 9" THEN THE BAR BEND SHOULD BE AS SHOWN



IMPORTANT NOTES : -
CONCRETE AND STEEL SPECIFICATION AND PLACEMENT IS THE RESPONSIBILITY OF THE SITE SUPERVISOR / OWNER AND NOT CONSULTANT'S RESPONSIBILITY.

REV	DESCRIPTION	DATE	BY	CHK

PROJECT: CODE : ORG

PROPOSED RESIDENTIAL FLAT BUILDING AT
VILANGADUPAKKAM
BLOCK 1 & 2 (98 CENTS)

CLIENT : M/s. RAJARATHNAM CONSTRUCTION (P) LTD.

DRAWING TITLE:

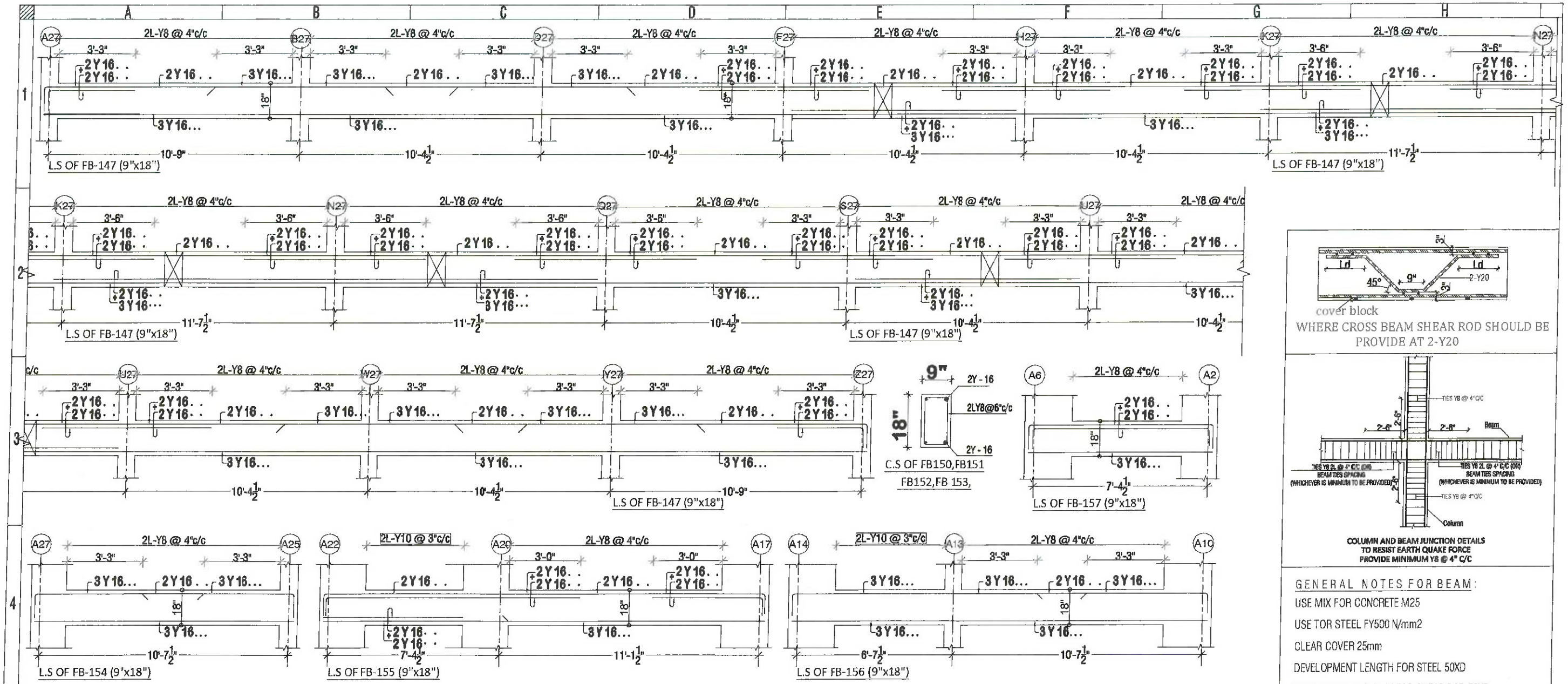
R.C.C DETAILS OF BEAM
AT
TYPICAL FLOORS
(FIRST, SECOND, THIRD, FOURTH, FIFTH & TERRACE FLOOR LEVEL)
(FB - 170 - 183)

ISSUE DATE	18-03-2024	SHEET 1
CHECK-3	BBB	SCALE : ¼" = 1'-0"
CHECK-2		JOB NO : 6464
CHECK-1	SAM	DATE :14-03-2024
Design/Draw	SAM	SHEET SIZE : A2

DRAWING NO: 09 7/7 R0

Belliappa & Associates
Consulting Engineers
66 Halls Road Kilpauk Chennai - 10.
26 45 07 45, 26 44 16 35.

ISSUED FOR: ☐ PRELIMINARY ☑ APPROVAL ☐ TENDER ☐ CONSTRUCTION



cover block

WHERE CROSS BEAM SHEAR ROD SHOULD BE PROVIDE AT 2-Y20

COLUMN AND BEAM JUNCTION DETAILS TO RESIST EARTH QUAKE FORCE PROVIDE MINIMUM Y8 @ 4" C/C

GENERAL NOTES FOR BEAM:

USE MIX FOR CONCRETE M25

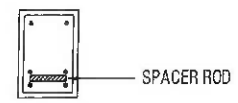
USE TOR STEEL FY500 N/mm2

CLEAR COVER 25mm

DEVELOPMENT LENGTH FOR STEEL 50XD

DEVELOPMENT LENGTH FOR SHEAR ROD 50XD

WHEREVER THE RODS ARE SHOWN IN 2 LAYERS,



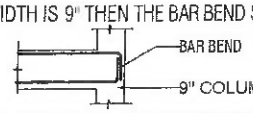
PROVIDE SPACER RODS Y25 @ 3' c/c.

WHERE THE CROSS BEAM, SHARE ROD SHOULD BE



PROVIDE AT 2 - Y20.

IF COLUMN WIDTH IS 9" THEN THE BAR BEND SHOULD BE AS SHOWN



STRICTLY USE LIGHT WEIGHT AAC BLOCKS WALLS (DENSITY 680 Kg/m³)

IMPORTANT NOTES :-
CONCRETE AND STEEL SPECIFICATION AND PLACEMENT IS THE RESPONSIBILITY OF THE SITE SUPERVISOR / OWNER AND NOT CONSULTANT'S RESPONSIBILITY.

B.B. BORAYYA
B.Tech (civil), M.E (struct), BITS, Pilani, [illegible]
M.I.V., A.I.[illegible], CE(I), MACCE, AE (UK)
SE/RS-V/19/05/125
F.E100552019
COI/[illegible]SE/Gr-I/2019/[illegible]

REV	DESCRIPTION	DATE	BY	CHK

PROJECT: CODE : ORG

PROPOSED RESIDENTIAL FLAT BUILDING AT
VILANGADUPAKKAM
BLOCK 1 & 2 (98 CENTS)

CLIENT : M/s. RAJARATHNAM CONSTRUCTION (P) LTD.

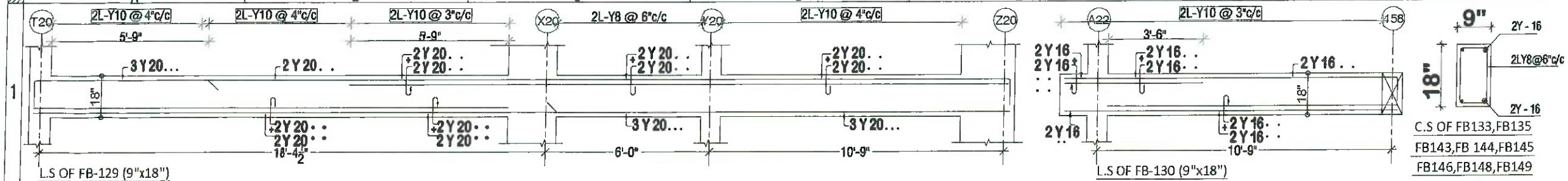
DRAWING TITLE:
R.C.C DETAILS OF BEAM
AT
TYPICAL FLOORS
(FIRST, SECOND, THIRD, FOURTH, FIFTH & TERRACE FLOOR LEVEL)
(FB - 147 & 150 - 157)

ISSUE DATE	18-03-2024	SHEET 1
CHECK-3	BBB	SCALE : ¼" = 1'-0"
CHECK-2		JOB NO : 6454
CHECK-1	SAM	DATE 14-03-2024
Design/Draw	SAM	SHEET SIZE A2

DRAWING NO: 09 5/9 R0

Belliappa & Associates
Consulting Engineers
66 Halls Road Kilpauk Chennai - 10.
26 45 07 45, 26 44 16 35.

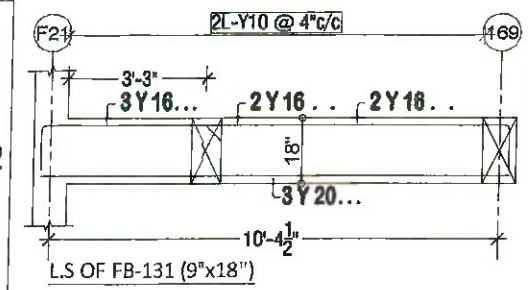
ISSUED FOR: ☐ PRELIMINARY ☑ APPROVAL ☐ TENDER ☐ CONSTRUCTION



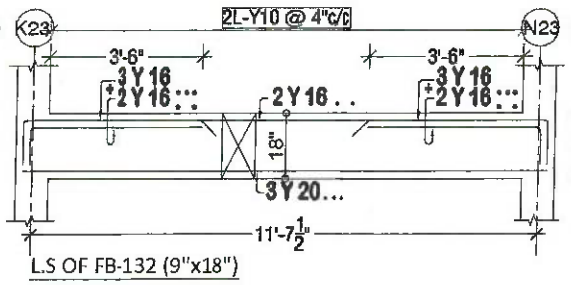
L.S OF FB-129 (9"x18")

L.S OF FB-130 (9"x18")

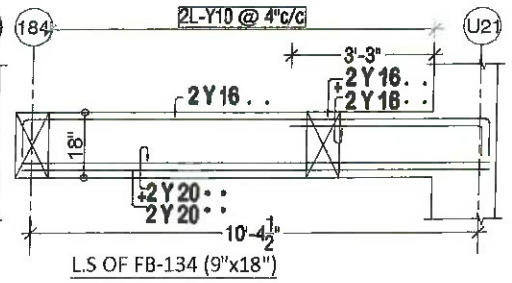
C.S OF FB133,FB135
FB143,FB 144,FB145
FB146,FB148,FB149



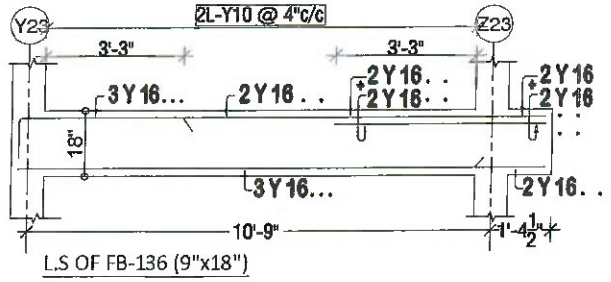
L.S OF FB-131 (9"x18")



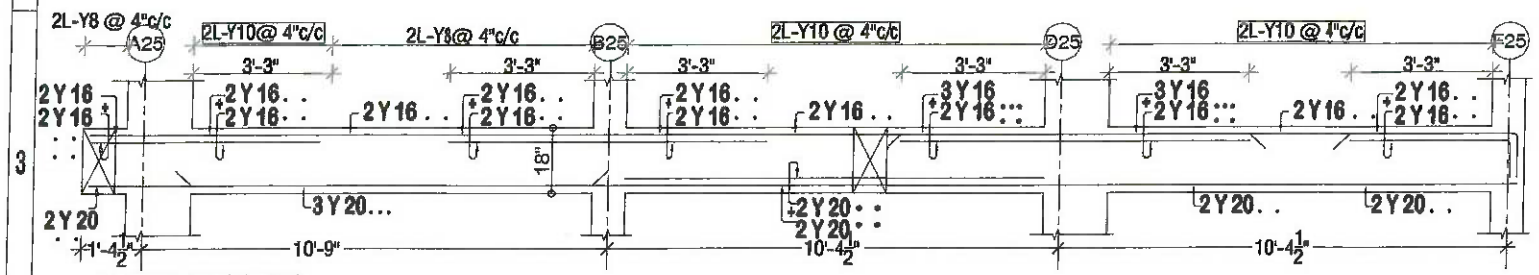
L.S OF FB-132 (9"x18")



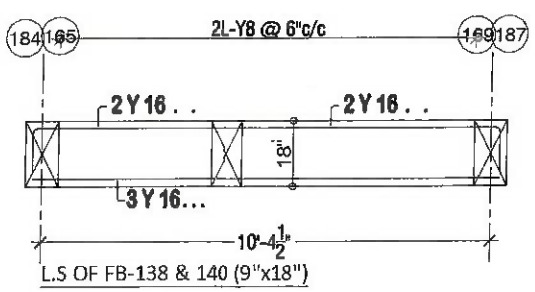
L.S OF FB-134 (9"x18")



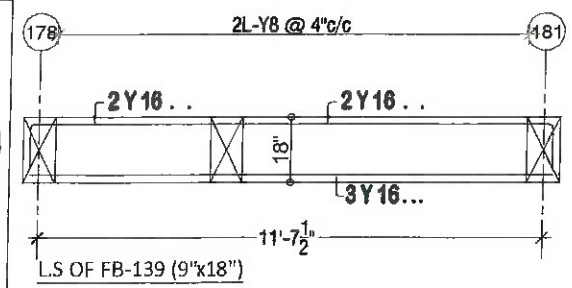
L.S OF FB-136 (9"x18")



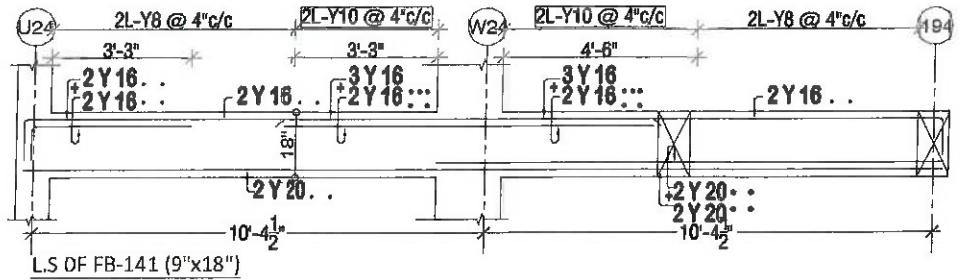
L.S OF FB-137 (9"x18")



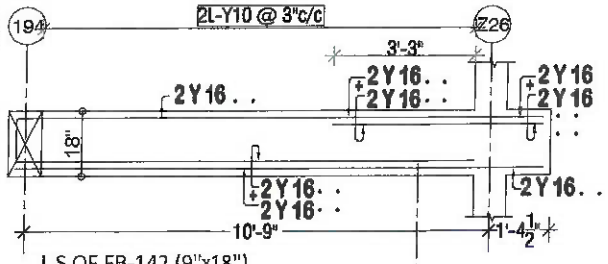
L.S OF FB-138 & 140 (9"x18")



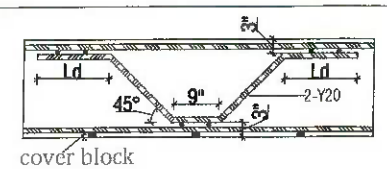
L.S OF FB-139 (9"x18")



L.S OF FB-141 (9"x18")

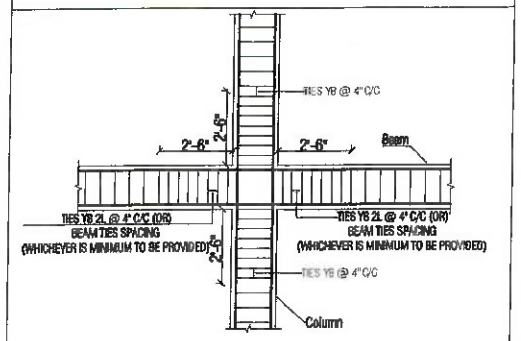


L.S OF FB-142 (9"x18")



cover block

WHERE CROSS BEAM SHEAR ROD SHOULD BE PROVIDE AT 2-Y20



COLUMN AND BEAM JUNCTION DETAILS TO RESIST EARTH QUAKE FORCE PROVIDE MINIMUM Y8 @ 4" C/C

GENERAL NOTES FOR BEAM:

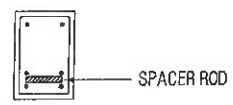
USE MIX FOR CONCRETE M25

USE TOR STEEL FY500 N/mm2

CLEAR COVER 25mm

DEVELOPMENT LENGTH FOR STEEL 50XD

DEVELOPMENT LENGTH FOR SHEAR ROD 50XD
WHEREVER THE RODS ARE SHOWN IN 2 LAYERS,



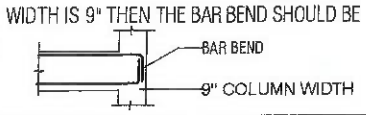
PROVIDE SPACER RODS Y25 @ 3' c/c.

WHERE THE CROSS BEAM, SHARE ROD SHOULD BE



PROVIDE AT 2 - Y20.

IF COLUMN WIDTH IS 9" THEN THE BAR BEND SHOULD BE AS SHOWN



STRICTLY USE LIGHT WEIGHT AAC BLOCKS WALLS (DENSITY 680 Kg/m³)

B.B. BOPAYYA
B.Tech (civil), M.E (struct), BITS,Pilani, AMIE, StructE.
MIIV, AIEI, CE(I), MACCE, AIET(UK)
SE/GR-I/19/05/125
RSE100552019
CGLRGN/SE/Gr-I/2019/11/048.

IMPORTANT NOTES :-
CONCRETE AND STEEL SPECIFICATION AND PLACEMENT IS THE RESPONSIBILITY OF THE SITE SUPERVISOR / OWNER AND NOT CONSULTANT'S RESPONSIBILITY.

REV	DESCRIPTION	DATE	BY	CHK

PROJECT: CODE : ORG

PROPOSED RESIDENTIAL FLAT BUILDING AT
VILANGADUPAKKAM
BLOCK 1 & 2 (98 CENTS)

CLIENT : M/s. RAJARATHNAM CONSTRUCTION (P) LTD.

DRAWING TITLE:
R.C.C DETAILS OF BEAM
AT
TYPICAL FLOORS
(FIRST, SECOND, THIRD, FOURTH, FIFTH & TERRACE FLOOR LEVEL)
(FB - 129 - 146 & 148 - 149)

ISSUE DATE	18-03-2024	SHEET 1
CHECK-3	BBB	SCALE : ¼" = 1'-0"
CHECK-2		JOB NO : 6454
CHECK-1	SAM	DATE :14-03-2024
Design/Draw	SAM	SHEET SIZE : A2

DRAWING NO: 09 4/7 R0

Belliappa & Associates
Consulting Engineers
66 Halls Road Kilpauk Chennai - 10.
26 45 07 45, 26 44 16 35.

ISSUED FOR: ☐ PRELIMINARY ☑ APPROVAL ☐ TENDER ☐ CONSTRUCTION



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

Verified RealEstate™

We're honored to be part of your real estate journey

3/350/2 Mettukuppam,
OMR Thoraipakkam,
Chennai, India

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+91 9996 12 9996
www.verified.realestate