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PROPOSED RESIDENTIAL BUILDING AT NEW NO: 14, OLD DOOR NNO: 5, HANUMANTHA ROAD & BALAJI NAGAR 4TH STREET, ROYAPETTAH, CHENNAI- 600 014. COMPRISED IN R. S. NO: 629/4 (AS PER DOCUMENT), R.S. NO: 629/29 (AS PER PATTA) OF BLOCK NO: 11 IN MYLAPORE VILLAGE, MYLAPORE- TRIPLICANE TALUK, CHENNAI DISTRICT. GREATER CHENNAI CORPORATION. ZONE- 09, DIVISION- 119

GENERAL NOTE ON STRUCTURAL DESIGN.

1.0 GENERAL.

1.1 DESIGN BASIS

The proposed residential building consists of Stilt plus Five upper floors.

The design of this building is carried out based on frame analysis using STAAD CONNECT.

1.2 CODES AND STANDARDS

All structural design is carried out conforming to the provisions of National Building Code of India and other relevant Indian Codes and Standards.

1. I.S. 456 - 2000
2. I.S. 875 - Part I to III
3. I.S.1893 - 2016

2.0 BASIC CIVIL DESIGN LOADS

2.1 DEAD LOADS & LIVE LOADS

Typical slab dead load is calculated as follows

Self weight of slab	=	3.25kN/m²
Floor finish	=	2.0kN/m²
Live load	=	2.0kN/m²
		7.25kN/m²

C. KANNAN, B.E., M.E., (Structure)
Structural Engineer,
CMDA Reg. No: SE/GR-I/19/02/002.
Door No: 21, 4th Main Road,
Indira Nagar, Chennai-600 020.

3.0 SOIL DETAILS

Based on soil test report Shallow Foundation is adopted.

DESIGN METHODS

General design and detailing of concrete members/elements are done conforming to the provisions of I.S: 456 and other relevant I.S codes. Limit State method is followed for the design.

Seismic Zone III load is taken into account for the analysis. The predominant direction of vibration is horizontal. Relevant combination of forces has been taken into account.

4.1

Load Combination	Ultimate Limit Load	Serviceability Limit State
DL+LL+WL Or DL+LL+EL	1.2DL+1.2LL+1.2WL Or 1.2DL+1.2LL+1.2EL	DL+LL+WL or DL+LL+EL

4.3 **MINIMUM COVER**

Slab	15 mm
Beam	25 mm
Columns	40 mm
Foundations	50 mm

The Structure is safe and sound when used for the purpose for which it is designed.

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```
**************************************************
*                                                *
*          STAAD.Pro CONNECT Edition             *
*          Version  22.12.00.142                 *
*          Proprietary Program of                *
*          Bentley Systems, Inc.                 *
*          Date=    OCT 20, 2023                 *
*          Time=    13:25: 4                     *
*                                                *
*  Licensed to: C.Kannan                         *
**************************************************
```

```
     1. STAAD SPACE
INPUT FILE: D:\LOGESH\STABILITY CERTIFICATE\CHETTINAD\CHETTINAD - RPM -.. .STD
     2. START JOB INFORMATION
     3. ENGINEER DATE 20-OCT-23
     4. JOB NAME PROPOSED RESIDENTIAL BUILDING AT NEW NO: 14, OLD DOOR NNO: 5, -
     5. HANUMANTHA ROAD & BALAJI NAGAR 4TH STREET, ROYAPETTAH, CHENNAI- 600 014. -
     6. COMPRISED IN R. S. NO: 629/4 (AS PER DOCUMENT), R.S. NO: 629/29 (AS PER -
     7. PATTA) OF BLOCK NO: 11 IN MYLAPORE VILLAGE, MYLAPORE- TRIPLICANE TALUK, -
     8. CHENNAI DISTRICT. GREATER CHENNAI CORPORATION. ZONE- 09, DIVISION- 119
     9. ENGINEER NAME KANNAN
    10. CHECKER NAME KANNAN
    11. APPROVED NAME KANNAN
    12. CHECKER DATE 10/20/2023
    13. APPROVED DATE 10/20/2023
    14. END JOB INFORMATION
    15. INPUT WIDTH 79
    16. UNIT MMS KN
    17. JOINT COORDINATES
    18. 1 0 0 0; 2 -5650 0 0; 3 -11000 0 0.0448227; 4 0 3000 0; 5 -5650 3000 0
    19. 6 -11000 3000 0.0448227; 7 0 6000 0; 8 -5650 6000 0; 9 -11000 6000 0.0448227
    20. 10 0 9000 0; 11 -5650 9000 0; 12 -11000 9000 0.0448227; 13 0 12000 0
    21. 14 -5650 12000 0; 15 -11000 12000 0.0448227; 16 0 15000 0; 17 -5650 15000 0
    22. 18 -11000 15000 0.0448227; 19 0 18000 0; 20 -5650 18000 0
    23. 21 -11000 18000 0.0448227; 22 0 -3000 0; 23 -5650 -3000 0
    24. 24 -11000 -3000 0.0448227
    25. MEMBER INCIDENCES
    26. 1 1 2; 2 2 3; 3 1 4; 4 2 5; 5 3 6; 6 4 5; 7 5 6; 8 4 7; 9 5 8; 10 6 9; 11 7 8
    27. 12 8 9; 13 7 10; 14 8 11; 15 9 12; 16 10 11; 17 11 12; 18 10 13; 19 11 14
    28. 20 12 15; 21 13 14; 22 14 15; 23 13 16; 24 14 17; 25 15 18; 26 16 17; 27 17 18
    29. 28 16 19; 29 17 20; 30 18 21; 31 19 20; 32 20 21; 33 22 1; 34 23 2; 35 24 3
    30. DEFINE MATERIAL START
    31. ISOTROPIC CONCRETE
    32. E 21.7185
    33. POISSON 0.17
    34. DENSITY 2.35616E-08
    35. ALPHA 1E-05
    36. DAMP 0.05
    37. G 9.28139
    38. TYPE CONCRETE
```

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```
39. STRENGTH FCU 0.027579
40. END DEFINE MATERIAL
41. MEMBER PROPERTY
42. 3 TO 5 8 TO 10 13 TO 15 18 TO 20 23 TO 25 28 TO 30 33 TO 35 PRIS YD 500 ZD 200
43. 1 2 6 7 11 12 16 17 21 22 26 27 31 32 PRIS YD 500 ZD 200
44. CONSTANTS
45. MATERIAL CONCRETE ALL
46. SUPPORTS
47. 22 TO 24 FIXED
48. UNIT METER KN
49. DEFINE IS1893 2016 LOAD
50. ZONE 0.16 RF 5 I 1.2 SS 1 ST 1 DM 0.05 DT 3
51. SELFWEIGHT 1
52. MEMBER WEIGHT
53. 1 2 6 7 11 12 16 17 21 22 26 27 31 32 UNI 12 0 0
54. 1 2 6 7 11 12 16 17 21 22 26 27 31 32 UNI 30 0 0
55. DEFINE WIND LOAD

*** NOTE: If any floor diaphragm is present in the model Wind Load definition
          should be defined after Floor Diaphragm definition. Otherwise wind
          load generation may be unsuccessful during analysis.

56. TYPE 1 WIND 1
57. <! STAAD PRO GENERATED DATA DO NOT MODIFY !!!
58. CUSTOM:PARAMS
59. !> END GENERATED DATA BLOCK
60. INT 1.35 1.45 1.65 HEIG  10  15  18
61. EXP 1 JOINT 1 TO 24
62. LOAD 1 LOADTYPE SEISMIC-H  TITLE EQ +X
63. 1893 LOAD X 1
64. LOAD 2 LOADTYPE SEISMIC-H  TITLE EQ -X
65. 1893 LOAD X -1.
66. LOAD 3 LOADTYPE SEISMIC-H  TITLE EQ +Z
67. 1893 LOAD Z 1
68. LOAD 4 LOADTYPE SEISMIC-H  TITLE EQ -Z
69. 1893 LOAD Z -1.
70. LOAD 5 LOADTYPE SEISMIC-H  TITLE WIND +X
71. WIND LOAD X 1 TYPE 1
72. LOAD 6 LOADTYPE SEISMIC-H  TITLE WIND -X
73. WIND LOAD -X 1 TYPE 1
```

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 74. LOAD 7 LOADTYPE SEISMIC-H  TITLE WIND +Z
 75. WIND LOAD Z 1 TYPE 1
 76. LOAD 8 LOADTYPE SEISMIC-H  TITLE WIND -Z
 77. WIND LOAD -Z 1 TYPE 1
 78. LOAD 9 LOADTYPE LIVE  TITLE LIVE LOAD
 79. MEMBER LOAD
 80. 1 2 6 7 11 12 16 17 21 22 26 27 31 32 UNI GY -12
 81. LOAD 10 LOADTYPE DEAD  TITLE DEAD LOAD
 82. SELFWEIGHT Y -1
 83. MEMBER LOAD
 84. 1 2 6 7 11 12 16 17 21 22 26 27 31 32 UNI GY -30
 85. LOAD COMB 11 1.5(DL+IL)
 86. 9 1.5 10 1.5
 87. LOAD COMB 12 1.2(DL+IL+ELX)
 88. 9 1.5 10 1.2 1 1.2
 89. LOAD COMB 13 1.2(DL+IL-ELX)
 90. 9 1.2 10 1.2 2 1.2
 91. LOAD COMB 14 1.2(DL+IL+ELZ)
 92. 9 1.2 10 1.2 3 1.2
 93. LOAD COMB 15 1.2(DL+IL-ELZ)
 94. 9 1.2 10 1.2 4 1.2
 95. LOAD COMB 16 1.2(DL+IL+WLX)
 96. 9 1.2 10 1.2 5 1.2
 97. LOAD COMB 17 1.2(DL+IL-WLX)
 98. 10 1.2 6 1.2
 99. LOAD COMB 18 1.2(DL+IL+WLZ)
100. 9 1.2 10 1.2 7 1.2
101. LOAD COMB 19 1.2(DL+IL-WLZ)
102. 9 1.2 10 1.2 8 1.2
103. LOAD COMB 20 1.5(DL+ELX)
104. 9 1.5 10 1.5 1 1.5
105. LOAD COMB 21 1.5(DL-ELX)
106. 9 1.5 10 1.5 2 1.5
107. LOAD COMB 22 1.5(DL+ELZ)
108. 9 1.5 10 1.5 3 1.5
109. LOAD COMB 23 1.5(DL-ELZ)
110. 10 1.5 4 1.5
111. LOAD COMB 24 1.5(DL+WLX)
112. 10 1.5 5 1.5
113. LOAD COMB 25 1.5(DL-WLX)
114. 10 1.5 6 1.5
115. LOAD COMB 26 1.5(DL+WLZ)
116. 10 1.5 7 1.5
117. LOAD COMB 27 1.5(DL-WLZ)
118. 10 1.5 8 1.5
119. LOAD COMB 28 0.9 DL+ELX
120. 10 0.9 1 1.5
```

```
121. LOAD COMB 29 0.9 DL-ELX
122. 10 0.9 2 1.5
123. LOAD COMB 30 0.9 DL+ELZ
124. 10 0.9 3 1.5
125. LOAD COMB 31 0.9 DL-ELZ
126. 10 0.9 4 1.5
127. LOAD COMB 32 0.9 DL+WLX
128. 10 0.9 5 1.5
129. LOAD COMB 33 0.9 DL-WLX
130. 10 0.9 6 1.5
131. LOAD COMB 34 0.9 DL+WLZ
132. 10 0.9 7 1.5
133. LOAD COMB 35 0.9 DL-WLZ
134. 10 0.9 8 1.5
135. PERFORM ANALYSIS PRINT ALL
```

P R O B L E M S T A T I S T I C S

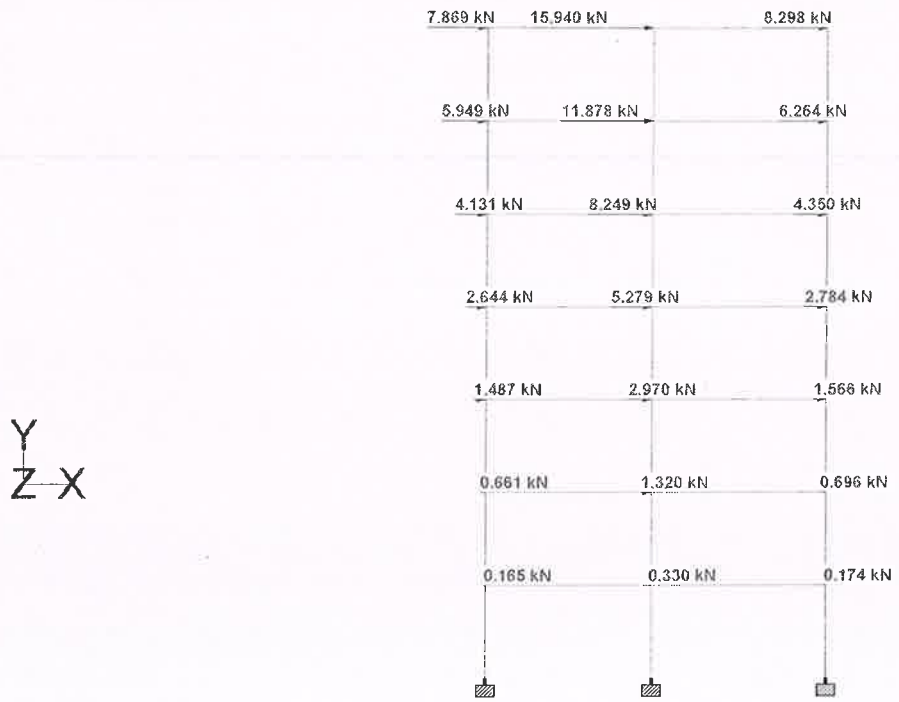
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NUMBER OF PLATES	0	NUMBER OF SOLIDS	0
NUMBER OF SURFACES	0	NUMBER OF SUPPORTS	3

Using 64-bit analysis engine.

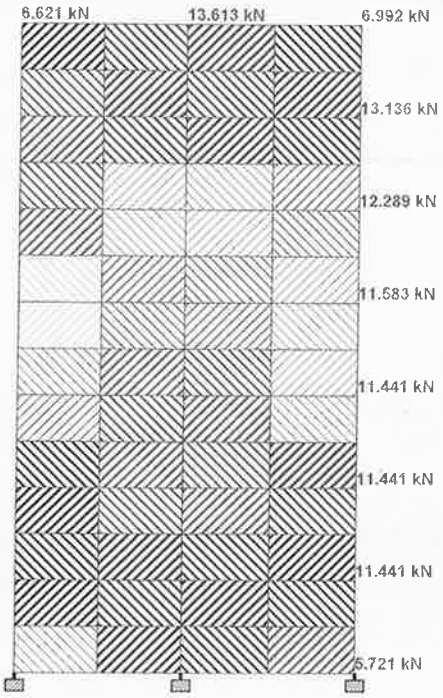
SOLVER USED IS THE IN-CORE ADVANCED MATH SOLVER

TOTAL PRIMARY LOAD CASES = 10, TOTAL DEGREES OF FREEDOM = 126
TOTAL LOAD COMBINATION CASES = 25 SO FAR.

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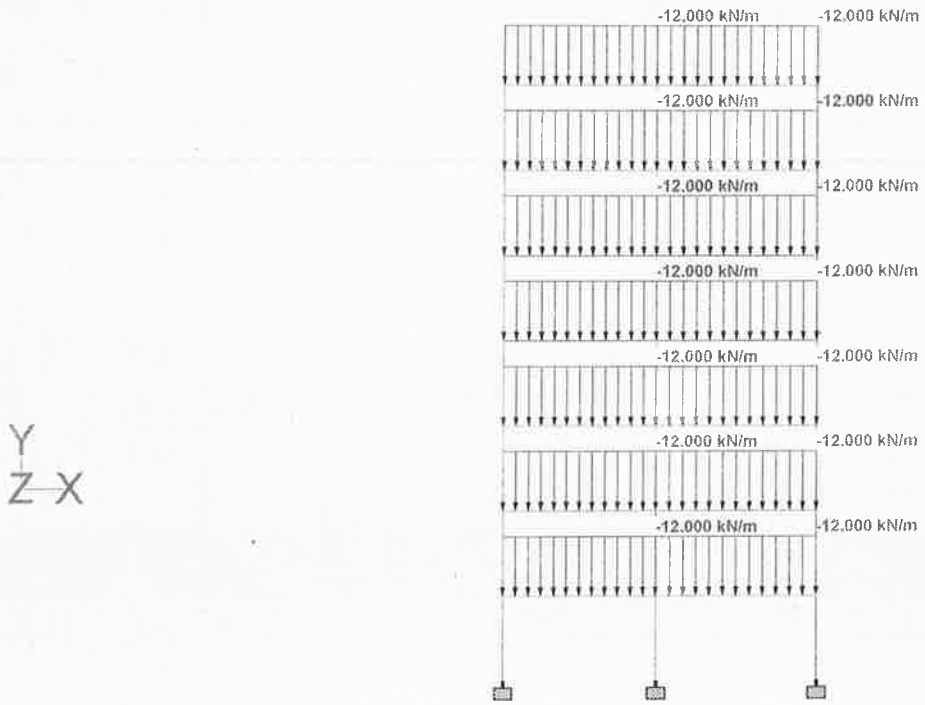


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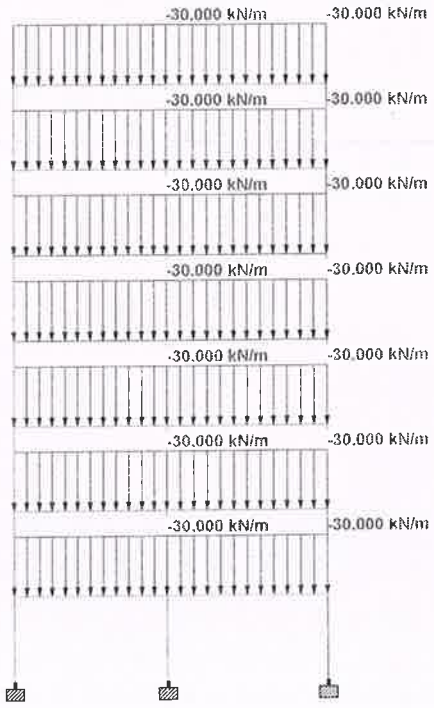

6.621 kN
13.613 kN
6.992 kN
13.136 kN
12.289 kN
11.583 kN
11.441 kN
11.441 kN
11.441 kN
5.721 kN

Y
Z X

Load 7

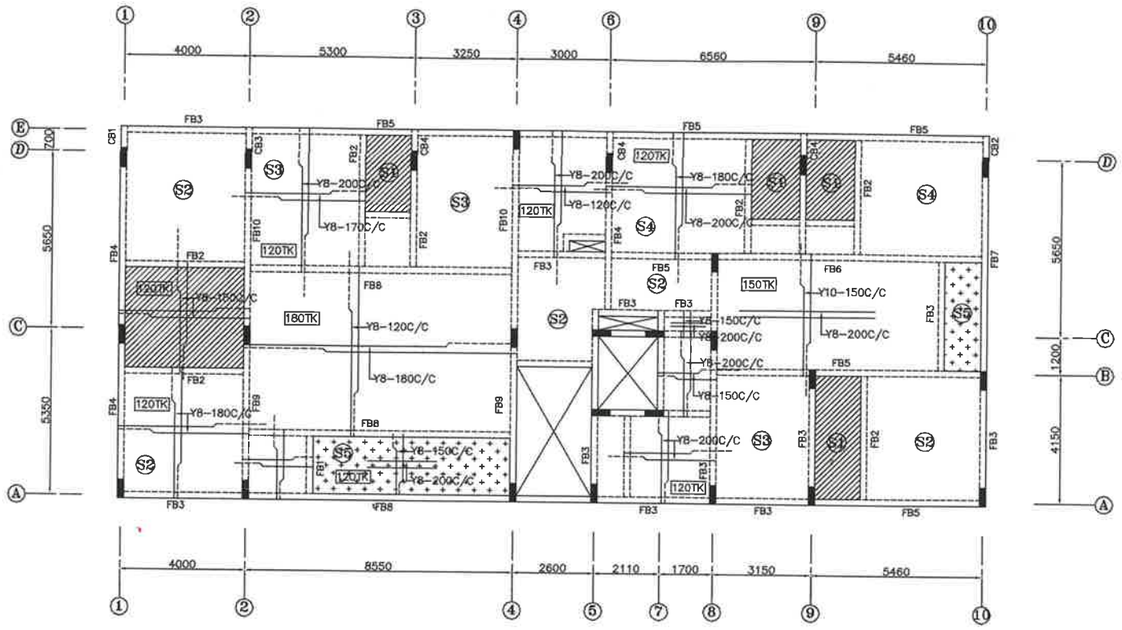

-12.000 kN/m
-12.000 kN/m
-12.000 kN/m
-12.000 kN/m
-12.000 kN/m
-12.000 kN/m
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Y
Z
X

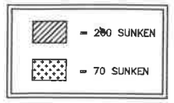
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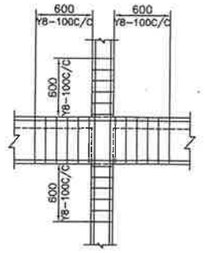


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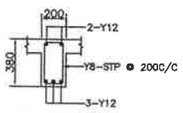
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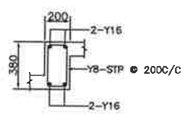




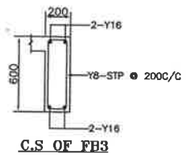
TYP. SEC. FOR STP. DETAILS



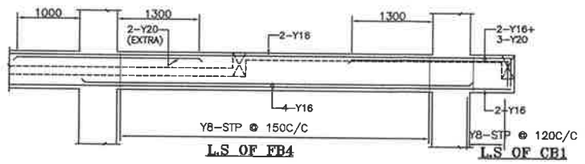
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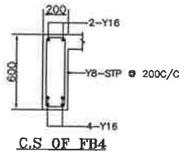
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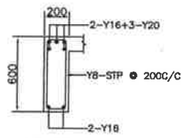
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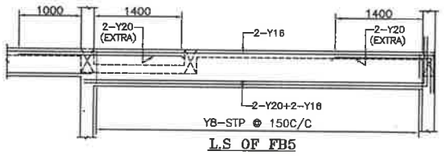
L.S OF FB4 L.S OF CB1



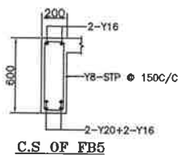
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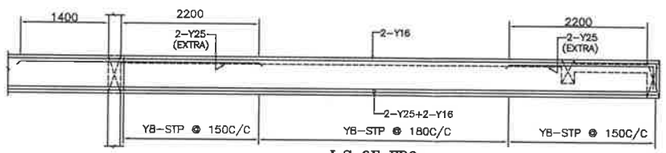
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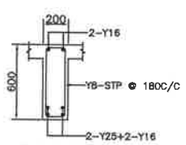
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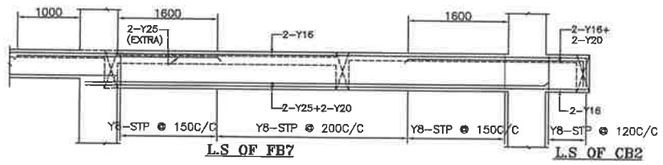
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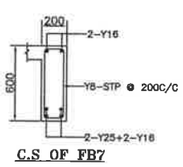
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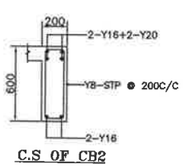
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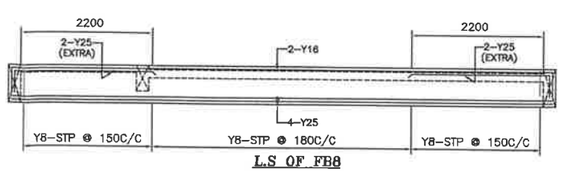
L.S OF FB7 L.S OF CB2



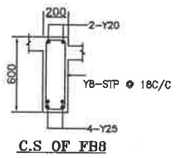
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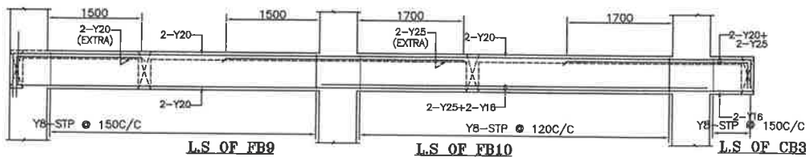
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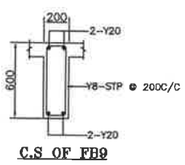
L.S OF FB8



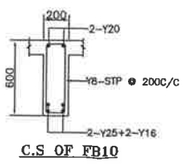
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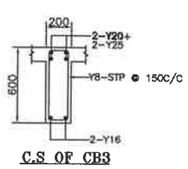
L.S OF FB9 L.S OF FB10 L.S OF CB3



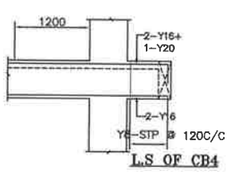
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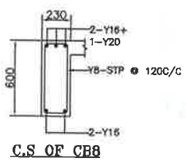
C.S OF FB10



C.S OF CB3



L.S OF CB4



C.S OF CB8

Notes:-

1. This drawing should be read along with architectural drawings.
2. Grade of R.C.C. items shall be M30 for column & M25 for all other R.C.C works
3. Y Denotes TOR40 Steel confirming to I.S. 1786 – 1985. Grade – Fe 500
4. Clear cover to the main steel
   50 for Footings , Raft Slabs & Raft Beams.
   40 for Columns.
   25 for Lintel & Beams.
   15 for Sunshade & Slab.
5. Lap length shall be 50 d (Max. dia) for all bars.
6. —— Bottom Reinforcement
7. ----- Top Reinforcement
8. Provide Continuous Chairs to keep the top Reinforcement in position
9. Provide Y 8 at 200 as Distribution steel for all top Reinforcement.
10. Spacer Bar to be Provided In Between Two Layers Of Reinforcement of Same Dia at Every 1000 C/ C.
11. Not more than 40% of Reinforcement shall be Lapped at any particular junction.
12. Cantilever props should not be released until the roof is concreted.
13. Foundation is designed for stilt plus five upper floor only.
14. For Earthquake analysis Zone III is taken as per IS : 1893–2016 code.
15. Removal of formworks :
    I) For Slabs :
    a. Slabs spanning upto 4.5 m (15'-0") – 7 days
    b. Slabs spanning over 4.5 m (15'-0") – 14 days
    II) For Beams and Arches :
    c. Beams and Arches spanning upto 6 m (20'-0") –14days
    d. Beams and Arches spanning over 6 m (20'-0") –21days

R.NO	DATE	DESCRIPTION

PROJECT

PROPOSED RESIDENTAL BUILDING AT NEW NO:14,OLD DOOR NO.5, HANUMANTHA ROAD & BALAJI NAGAR 4th STREET,ROYAPETTAH,CHENNAI–600014.COMPRISED IN R.S.NO:629/4 (AS PER DOCUMENT), R.S.NO:629/29 (AS PER PATTA) OF BLOCK NO:11 IN MYLAPORE VILLAGE, MYLAPORE TRIPLICANE TALUK,CHENNAI DISTRICT GREATER CHENNAI CORPORATION.ZONE –09,DIVISION 119

TYPICAL FLOOR ROOF DETAIL

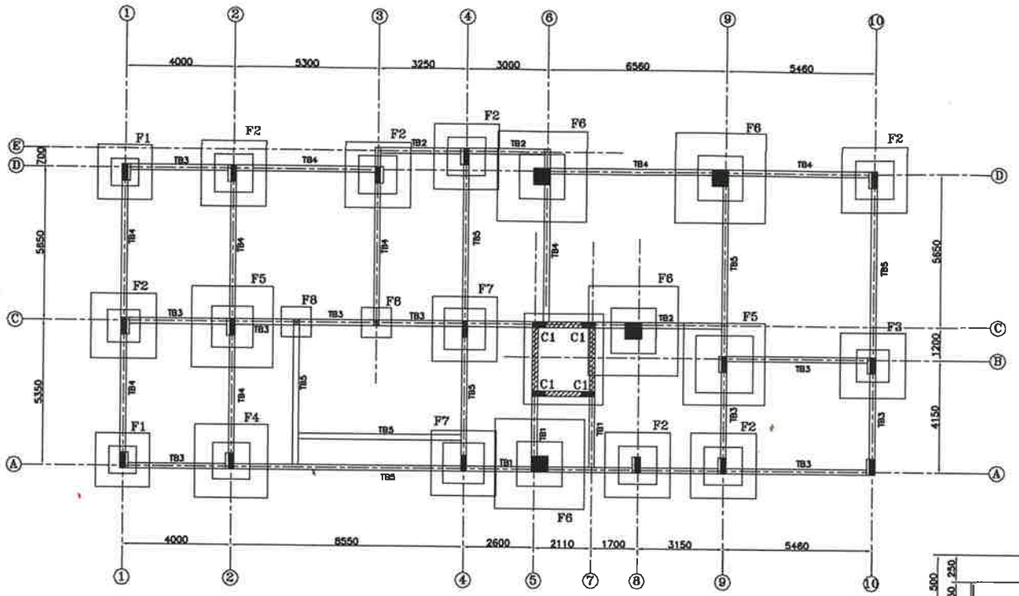
DESIGNED	KANNAN		SCALE	1 : 100
DRAWN	SEETHA		DATE	20-10-2023

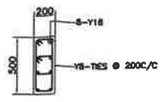
STRUCTURAL CONSULTANTS:

C. KANNAN, B.E., M.E., (Structure)
Structural Engineer,
CMDA Reg. No: SE/GR-I/19/02/002.
Door No: 21, 4th Main Road,
Indira Nagar, Chennai-600 020.

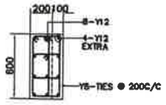
C.KANNAN B.E., M.E(STRUCTURE)
DOOR NO:21, PLOT NO:257–W,
FLAT NO:2B, "UTOPIA APARTMENTS",
2nd FLOOR, 4th MAIN ROAD,
INDIRA NAGAR, CHENNAI–20.
MOBILE NO: 098412 49815.
E–MAIL:kannanks2007@gmail.com

FILE NAME : D/SEETHA/OCT/CHETTINAD–RPN ROYAPETTAH

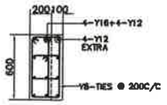




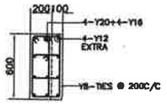
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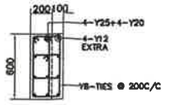
COL-F1



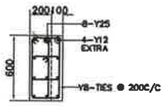
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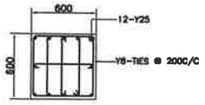
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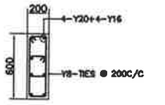
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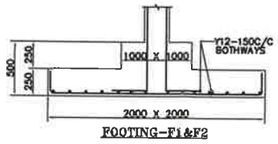
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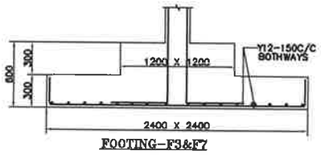
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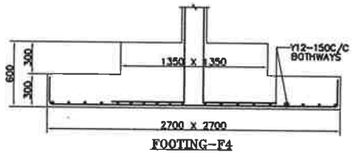
COL-F7



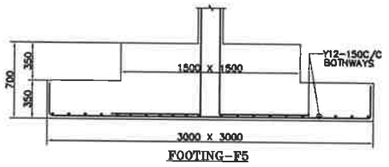
FOOTING-F1&F2



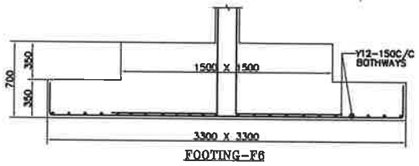
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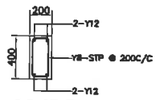
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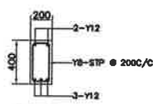
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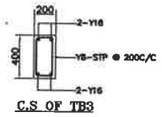
FOOTING-F6



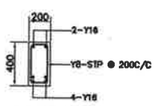
C.S OF TB1



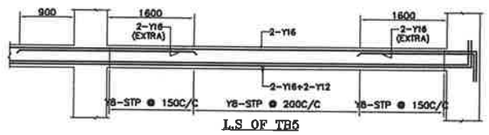
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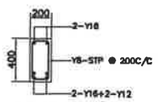
C.S OF TB3



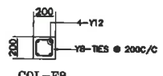
C.S OF TB4



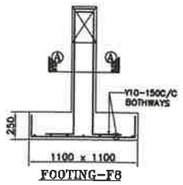
L.S OF TB5



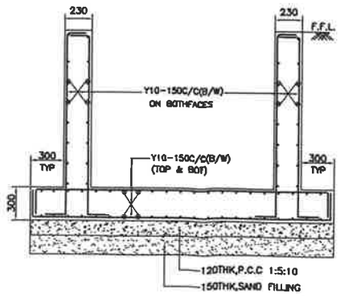
C.S OF TB5



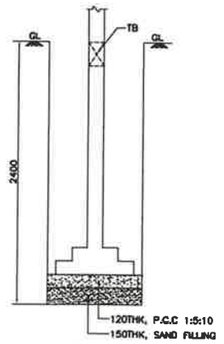
COL-F8
(SECTION A A)



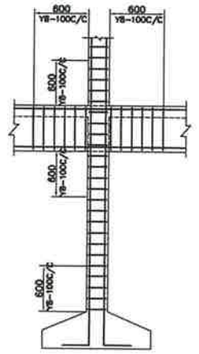
FOOTING-F8



LIFTWELL SECTION



TYP.FOUNDATION



TYP. SEC. FOR STP. DETAILS

Notes:-

1. This drawing should be read along with architectural drawings.
2. Grade of R.C.C. items shall be M30 for columns & M25 for all other R.C.C works
3. Y Denotes TORNO Steel conforming to I.S. 1786 – 1985. Grade – Fe 500
4. Clear cover to the main steel
   - 50 for Footings , Raft Slabs & Raft Beams.
   - 40 for Columns.
   - 25 for Lintel & Beams.
   - 15 for Sunshade & Slab.
5. Lap length shall be 50 d (dia. dia) for all bars.
6. —— Bottom Reinforcement
7. ----- Top Reinforcement
8. Provide Continuous Chairs to keep the top Reinforcement in position
9. Provide Y 8 at 200 cc Distribution steel for all top Reinforcement.
10. Spacer Bar to be Provided in Between Two Layers Of Reinforcement of Same Dia at Every 1000 C/ C.
11. Not more than 40% of Reinforcement shall be Lapped at any particular junction.
12. Cantilever props should not be released until the roof is concreted.
13. Foundation is designed for stilt plus five upper floor only.
14. For Earthquake analysis Zone III is taken as per IS : 1893-2002 code.
15. Removal of formworks :
    - i) For Slabs :
      - a. Slabs spanning upto 4.5 m (15'-0") – 7 days
      - b. Slabs spanning over 4.5 m (15'-0") – 14 days
    - ii) For Beams and Arches :
      - c. Beams and Arches spanning upto 6 m (20'-0") –14days
      - d. Beams and Arches spanning over 6 m (20'-0") –21days

NO	DATE	DESCRIPTION

PROJECT

PROPOSED RESIDENTAL BUILDING AT NEW NO:14,OLD DOOR NO.5, HANUMANTHA ROAD & BALAJI NAGAR 4th STREET,ROYAPETTAH,CHENNAI-600014.COMPRISED IN R.S.NO:629/4 (AS PER DOCUMENT), R.S.NO:629/29 (AS PER PATTA) OF BLOCK NO:11 IN MYLAPORE VILLAGE, MYLAPORE TRIPLICANE TALUK,CHENNAI DISTRICT GREATER CHENNAI CORPORATION.ZONE -09,DIVISION 119

FOUNDATION DETAIL

DESIGNED	KANNAN		SCALE	1 : 100
DRAWN	SWATHI		DATE	28-10-2013

STRUCTURAL CONSULTANTS:

C. KANNAN, B.E., M.E., (Structure)
Structural Engineer,
Regn. No: SE/GR-I/19/02/002.
No: 21, 4th Main Road,
Nagar, Chennai-600 020.

C.KANNAN B.E., M.E.(STRUCTURE)
DOOR NO:21, PLOT NO:287-B,
FLAT NO:2, VIJAYA APARTMENTS,
2nd FLOOR, 4th MAIN ROAD,
INDIRA NAGAR, CHENNAI-20.
MOBILE NO: 09841249015.
E-MAIL:kannan1001@yahoo.co.in

FILE NAME : D:\SWATHI\OCT\CHETTINAD-RPH ROYAPETTAH



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

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