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C.KANNAN, M.E. (Structure)
STRUCTURAL ENGINEER

Door .21, plot No. 257- W, Flat No. 2B
"Utopia Apartments" 2nd Floor,
4th Main Road, Indira Nagar,
Chennai- 600 020
Mobile: 9841249815
Email: kannankds2007@gmail.com

STRUCTURAL STABILITY CERTIFICATE

It is certified that the Proposed Construction Of Stilt Floor Plus Five Floors Residential Building With 10 Dwelling Units, PEARL ISHAAN to be set up at Door No: 2, Anna Main Road and 1st Sector 1st Street, K. K. Nagar, Chennai- 600 078, Comprised in S. No. 394/1 Part & T. S. No. 256/10, Block No: 104 Of Kodambakkam Village, Within The Limit Of Greater Chennai Corporation. Division No- 136, Zone No- 10. Having Stilt plus Five upper floors is designed to resist earthquake. Check has been made and found safe and I hereby certify that,

1. The minimum column width is 300 in stilt floor areas
2. The minimum grade of concrete is M25.
3. The design analysis using the code of practice for loading Standards as per IS-875 Part I to III and seismic force as per one code IS 1893, is carried out.

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


C. KANNAN, B.E., M.E. (Structure)
Structural Engineer,
CMDA Reg. No: SE/1/2024/2/0047
Door No: 21, 4th Main Road,
Indira Nagar, Chennai-600 020.

PROPOSED CONSTRUCTION OF STILT FLOOR PLUS FIVE FLOORS RESIDENTIAL BUILDING WITH 10 DWELLING UNITS, PEARL ISHAAN TO BE SET UP RESIDENTIAL BUILDING AT DOOR NO: 2, ANNA MAIN ROAD AND 1ST SECTOR 1ST STREET, K. K. NAGAR, CHENNAI- 600 078, COMPRISED IN S. NO. 394/1 PART & T. S. NO. 256/10, BLOCK NO: 104 OF KODAMBAKKAM VILLAGE, WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION, DIVISION NO- 136, ZONE NO- 10

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/m ²
Floor finish	=	2.0kN/m ²
Live load	=	2.0kN/m ²
		7.25kN/m ²


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3.0 SOIL DETAILS

Based on soil test report Pile 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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Door No: 21, 4th Main Road,
Indira Nagar, Chennai-600 020.

PAGE NO. 1

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*****
*
*      STAAD.Pro CONNECT Edition
*      Version 22.12.00.142
*      Proprietary Program of
*      Bentley Systems, Inc.
*      Date= JUL 1, 2024
*      Time= 16:25:19
*
*      Licensed to: C.Kannan
*****

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1. STAAD SPACE
INPUT FILE: D:\LOGESH\STABILITY CERTIFICATE\PEARL - KK NAGAR\PEARL - KK... .STD
2. START JOB INFORMATION
3. ENGINEER DATE 3/19/2024
4. JOB NAME PROPOSED CONSTRUCTION OF STILT FLOOR + 5 FLOORS RESIDENTIAL -
5. BUILDING WITH 10 DWELLING UNITS , PEARL ISHAAN TO BE SET UP AT DOOR NO.2, -
6. ANNA MAIN ROAD AND 1ST SECTOR 1ST STREET, K.K.NAGAR, CHENNAI-600 078 -
7. COMPRISED IN OLD S.NO. 394/1 PART, T.S. NO:256/10, BLOCK NO. 104 OF -
8. KODAMBAKKAM VILLAGE, WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION, -
9. DIVISION NO-136, ?ZONE?NO?-10
10. ENGINEER NAME KANNAN
11. CHECKER NAME KANNAN
12. APPROVED NAME KANNAN
13. CHECKER DATE 3/19/2024
14. APPROVED DATE 3/19/2024
15. END JOB INFORMATION
16. INPUT WIDTH 79
17. UNIT MMS KN
18. JOINT COORDINATES
19. 1 0 0 0; 2 6100 0 0; 3 8200 0 0; 4 10500 0 0; 5 16600 0 8.39331E-06
20. 6 0 3000 0; 7 6100 3000 0; 8 8200 3000 0; 9 10500 3000 0
21. 10 16600 3000 8.39331E-06; 11 0 6000 0; 12 6100 6000 0; 13 8200 6000 0
22. 14 10500 6000 0; 15 16600 6000 8.39331E-06; 16 0 9000 0; 17 6100 9000 0
23. 18 8200 9000 0; 19 10500 9000 0; 20 16600 9000 8.39331E-06; 21 0 12000 0
24. 22 6100 12000 0; 23 8200 12000 0; 24 10500 12000 0; 25 16600 12000 8.39331E-06
25. 26 0 15000 0; 27 6100 15000 0; 28 8200 15000 0; 29 10500 15000 0
26. 30 16600 15000 8.39331E-06; 31 0 18000 0; 32 6100 18000 0; 33 8200 18000 0
27. 34 10500 18000 0; 35 16600 18000 8.39331E-06; 36 0 -3000 0; 37 6100 -3000 0
28. 38 8200 -3000 0; 39 10500 -3000 0; 40 16600 -3000 8.39331E-06
29. MEMBER INCIDENCES
30. 1 1 2; 2 2 3; 3 3 4; 4 4 5; 5 1 6; 6 2 7; 7 3 8; 8 4 9; 9 5 10; 10 6 7; 11 7 8
31. 12 8 9; 13 9 10; 14 6 11; 15 7 12; 16 8 13; 17 9 14; 18 10 15; 19 11 12
32. 20 12 13; 21 13 14; 22 14 15; 23 11 16; 24 12 17; 25 13 18; 26 14 19; 27 15 20
33. 28 16 17; 29 17 18; 30 18 19; 31 19 20; 32 16 21; 33 17 22; 34 18 23; 35 19 24
34. 36 20 25; 37 21 22; 38 22 23; 39 23 24; 40 24 25; 41 21 26; 42 22 27; 43 23 28
35. 44 24 29; 45 25 30; 46 26 27; 47 27 28; 48 28 29; 49 29 30; 50 26 31; 51 27 32
36. 52 28 33; 53 29 34; 54 30 35; 55 31 32; 56 32 33; 57 33 34; 58 34 35; 59 36 1
37. 60 37 2; 61 38 3; 62 39 4; 63 40 5
38. DEFINE MATERIAL START

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 Door No: 21, 4th Main Road,
 Indira Nagar, Chennai-600 020.

STAAD SPACE

-- PAGE NO. 2

39. ISOTROPIC CONCRETE
 40. E 21.7185
 41. POISSON 0.17
 42. DENSITY 2.35616E-08
 43. ALPHA 1E-05
 44. DAMP 0.05
 45. G 9.28139
 46. TYPE CONCRETE
 47. STRENGTH FCU 0.027579
 48. END DEFINE MATERIAL
 49. MEMBER PROPERTY
 50. 5 TO 9 14 TO 18 23 TO 27 32 TO 36 41 TO 45 50 TO 54 59 TO 63 PRIS YD 500 ZD 230
 51. 1 TO 4 10 TO 13 19 TO 22 28 TO 31 37 TO 40 46 TO 49 55 TO 58 PRIS YD 500 ZD 230
 52. CONSTANTS
 53. MATERIAL CONCRETE ALL
 54. SUPPORTS
 55. 36 TO 40 FIXED
 56. UNIT METER KN
 57. DEFINE IS1893 2016 LOAD
 58. ZONE 0.16 RF 5 I 1.2 SS 1 ST 1 DM 0.05 DT 3
 59. SELFWEIGHT 1
 60. MEMBER WEIGHT
 61. 1 TO 4 10 TO 13 19 TO 22 28 TO 31 37 TO 40 46 TO 49 55 TO 58 UNI 12 0 0
 62. 1 TO 4 10 TO 13 19 TO 22 28 TO 31 37 TO 40 46 TO 49 55 TO 58 UNI 35 0 0
 63. 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.

64. TYPE 1 WIND 1
 65. INT 1.35 1.45 1.68 HEIG 10 15 18
 66. EXP 1 JOINT 1 TO 40
 67. LOAD 1 LOADTYPE SEISMIC-H TITLE EQ +X
 68. 1893 LOAD X 1
 69. LOAD 2 LOADTYPE SEISMIC-H TITLE EQ -X
 70. 1893 LOAD X -1.
 71. LOAD 3 LOADTYPE SEISMIC-H TITLE EQ +Z
 72. 1893 LOAD Z 1
 73. LOAD 4 LOADTYPE SEISMIC-H TITLE EQ -Z
 74. 1893 LOAD Z -1.
 75. LOAD 5 LOADTYPE WIND TITLE WIND +X
 76. WIND LOAD X 1 TYPE 1

STAAD SPACE

-- PAGE NO. 3

*WARNING- NO MEMBERS LOADED FOR A WIND LOAD GENERATION.

77. LOAD 6 LOADTYPE WIND TITLE WIND -X

78. WIND LOAD -X 1 TYPE 1

*WARNING- NO MEMBERS LOADED FOR A WIND LOAD GENERATION.

79. LOAD 7 LOADTYPE WIND TITLE WIND +Z

80. WIND LOAD Z 1 TYPE 1

81. LOAD 8 LOADTYPE WIND TITLE WIND -Z

82. WIND LOAD -Z 1 TYPE 1

83. LOAD 9 LOADTYPE LIVE TITLE LIVE LOAD

84. MEMBER LOAD

85. 1 TO 4 10 TO 13 19 TO 22 28 TO 31 37 TO 40 46 TO 49 55 TO 58 UNI GY -12

86. LOAD 10 LOADTYPE DEAD TITLE DEAD LOAD

87. SELFWEIGHT Y -1

88. MEMBER LOAD

89. 1 TO 4 10 TO 13 19 TO 22 28 TO 31 37 TO 40 46 TO 49 55 TO 58 UNI GY -35

90. LOAD COMB 11 1.5(DL+IL)

91. 9 1.5 10 1.5

92. LOAD COMB 12 1.2(DL+IL+ELX)

93. 9 1.5 10 1.2 1 1.2

94. LOAD COMB 13 1.2(DL+IL-ELX)

95. 9 1.2 10 1.2 2 1.2

96. LOAD COMB 14 1.2(DL+IL+ELZ)

97. 9 1.2 10 1.2 3 1.2

98. LOAD COMB 15 1.2(DL+IL-ELZ)

99. 9 1.2 10 1.2 4 1.2

100. LOAD COMB 16 1.2(DL+IL+WLX)

101. 9 1.2 10 1.2 5 1.2

102. LOAD COMB 17 1.2(DL+IL-WLX)

103. 10 1.2 6 1.2

104. LOAD COMB 18 1.2(DL+IL+WLZ)

105. 9 1.2 10 1.2 7 1.2

106. LOAD COMB 19 1.2(DL+IL-WLZ)

107. 9 1.2 10 1.2 8 1.2

108. LOAD COMB 20 1.5(DL+ELX)

109. 9 1.5 10 1.5 1 1.5

110. LOAD COMB 21 1.5(DL-ELX)

111. 9 1.5 10 1.5 2 1.5

112. LOAD COMB 22 1.5(DL+ELZ)

113. 9 1.5 10 1.5 3 1.5

114. LOAD COMB 23 1.5(DL-ELZ)

115. 10 1.5 4 1.5

116. LOAD COMB 24 1.5(DL+WLX)

117. 10 1.5 5 1.5

118. LOAD COMB 25 1.5(DL-WLX)

STAAD SPACE

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119. 10 1.5 6 1.5
 120. LOAD COMB 26 1.5(DL+WLZ)
 121. 10 1.5 7 1.5
 122. LOAD COMB 27 1.5(DL-WLZ)
 123. 10 1.5 8 1.5
 124. LOAD COMB 28 0.9 DL+ELX
 125. 10 0.9 1 1.5
 126. LOAD COMB 29 0.9 DL-ELX
 127. 10 0.9 2 1.5
 128. LOAD COMB 30 0.9 DL+ELZ
 129. 10 0.9 3 1.5
 130. LOAD COMB 31 0.9 DL-ELZ
 131. 10 0.9 4 1.5
 132. LOAD COMB 32 0.9 DL+WLX
 133. 10 0.9 5 1.5
 134. LOAD COMB 33 0.9 DL-WLX
 135. 10 0.9 6 1.5
 136. LOAD COMB 34 0.9 DL+WLZ
 137. 10 0.9 7 1.5
 138. LOAD COMB 35 0.9 DL-WLZ
 139. 10 0.9 8 1.5
 140. PERFORM ANALYSIS PRINT ALL

 PROBLEM STATISTICS

NUMBER OF JOINTS	40	NUMBER OF MEMBERS	63
NUMBER OF PLATES	0	NUMBER OF SOLIDS	0
NUMBER OF SURFACES	0	NUMBER OF SUPPORTS	5

Using 64-bit analysis engine.

SOLVER USED IS THE IN-CORE ADVANCED MATH SOLVER

TOTAL PRIMARY LOAD CASES = 10, TOTAL DEGREES OF FREEDOM = 210
 TOTAL LOAD COMBINATION CASES = 25 SO FAR.



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 Indira Nagar, Chennai-600 020.

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Job No

Sheet No

1

Rev

Part

Ref

By Kannan

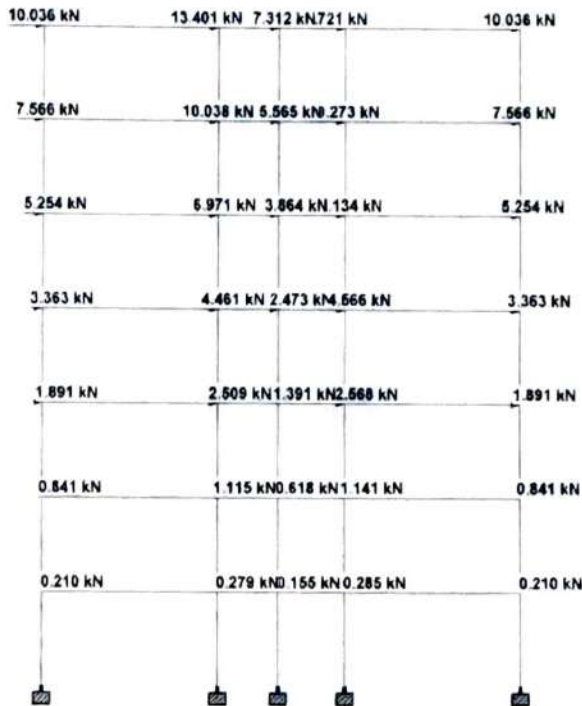
Date 3/19/2024

Chd Kannan

Client

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Date/Time 01-Jul-2024 16:25

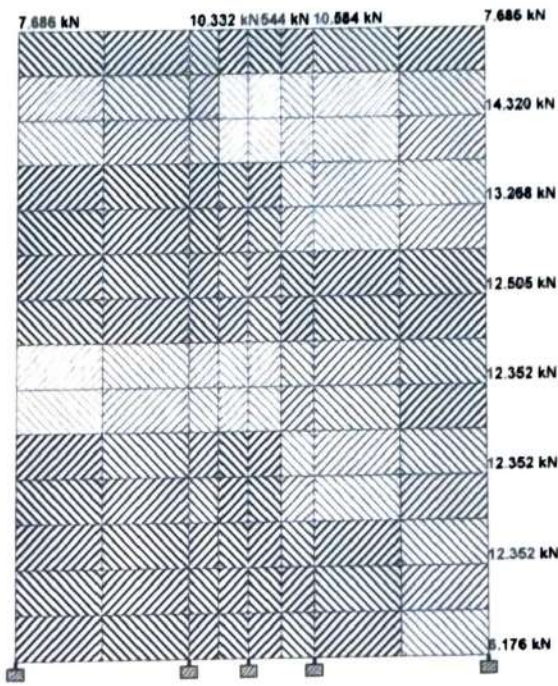


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CMDA Reg. No. SE/I/2024/2/0047
Door No. 21, 4th Main Road,
Indira Nagar, Chennai-600 020.

Job No	Sheet No	Rev
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Part		
Ref		
By Kannan	Date 3/19/2024	Chd Kannan
Client	File PEARL - KK NAGAR STI	Date/Time 01-Jul-2024 16:25

Job Title: Proposed construction of Still Floor + 5 Floors Residential Building with 10 Dwelling Units, PEARL ISHAAN to be set up at Door No.2, Anna Main road and

Y
Z-X



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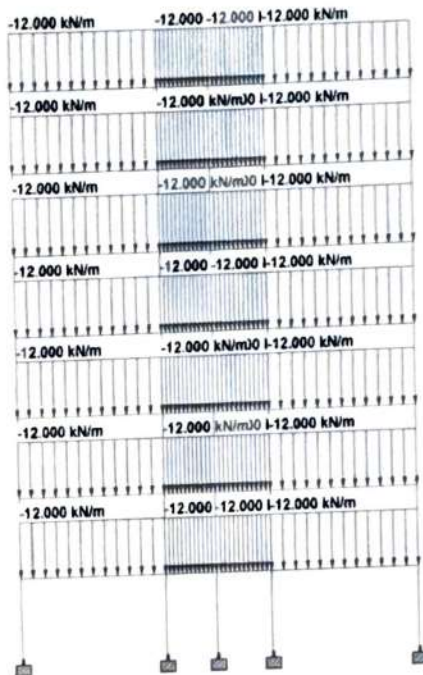
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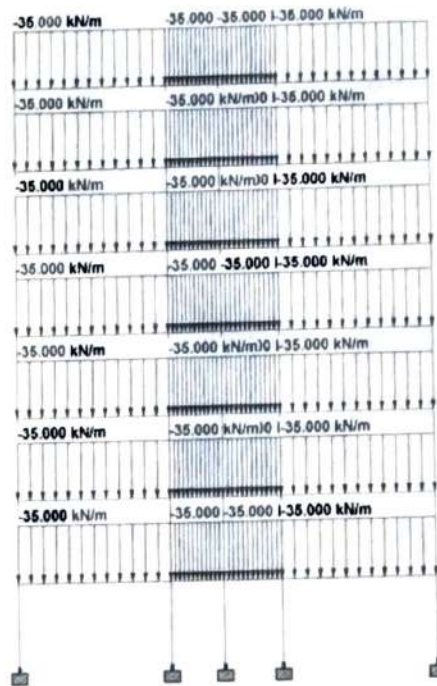
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Client

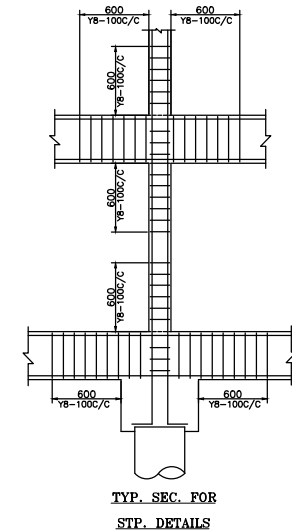
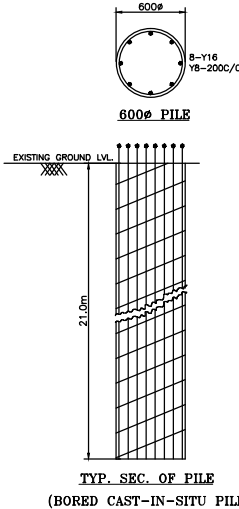
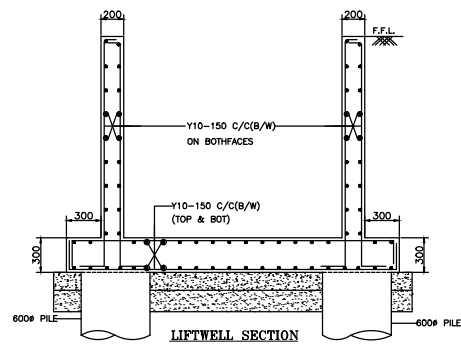
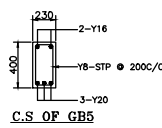
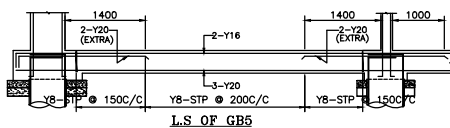
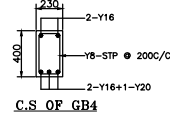
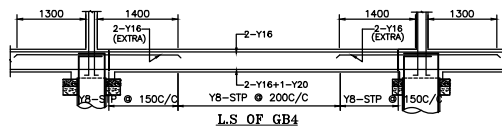
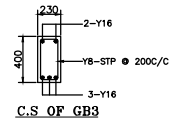
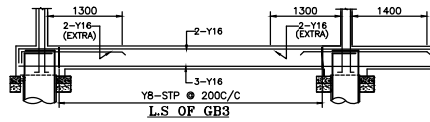
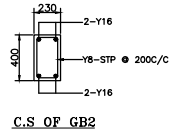
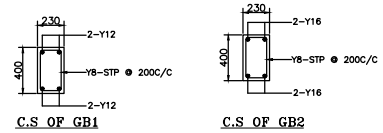
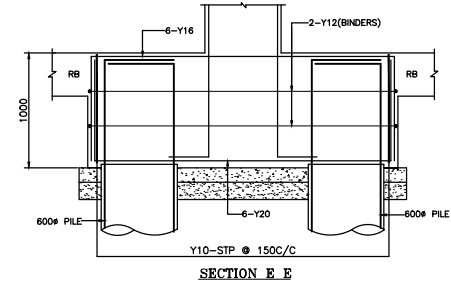
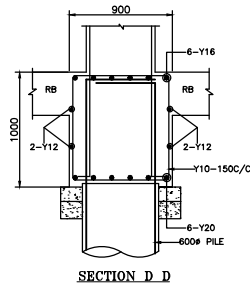
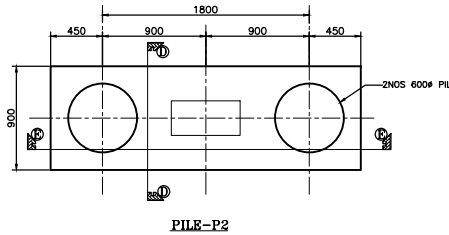
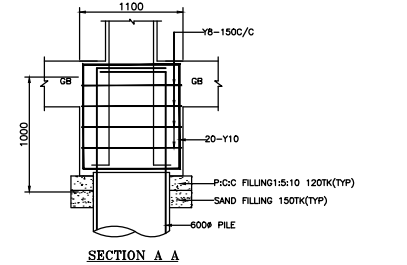
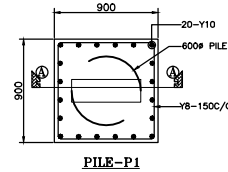
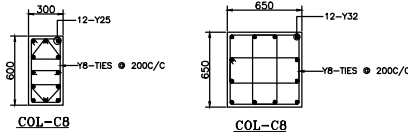
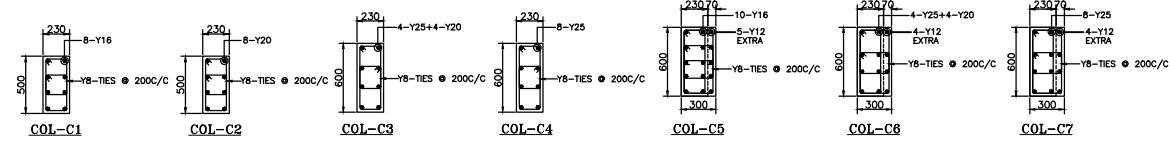
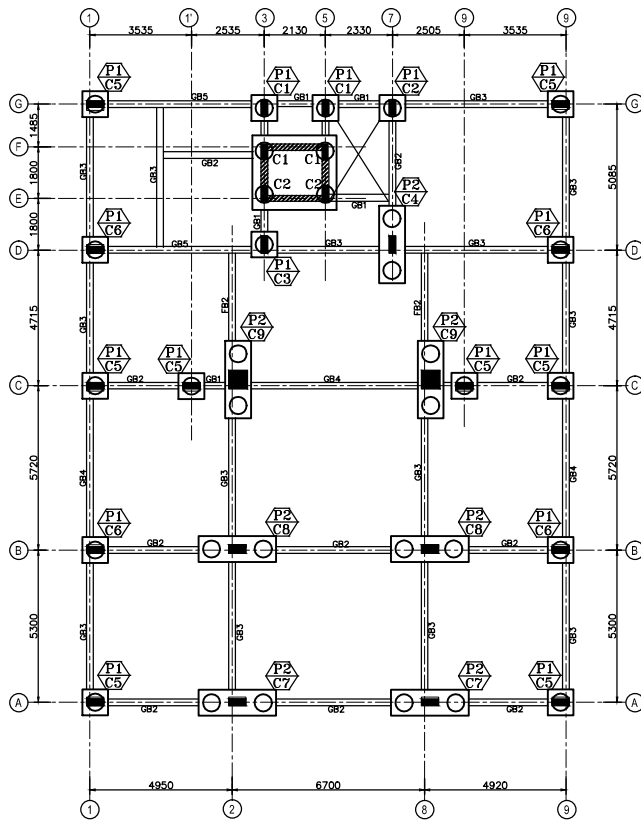
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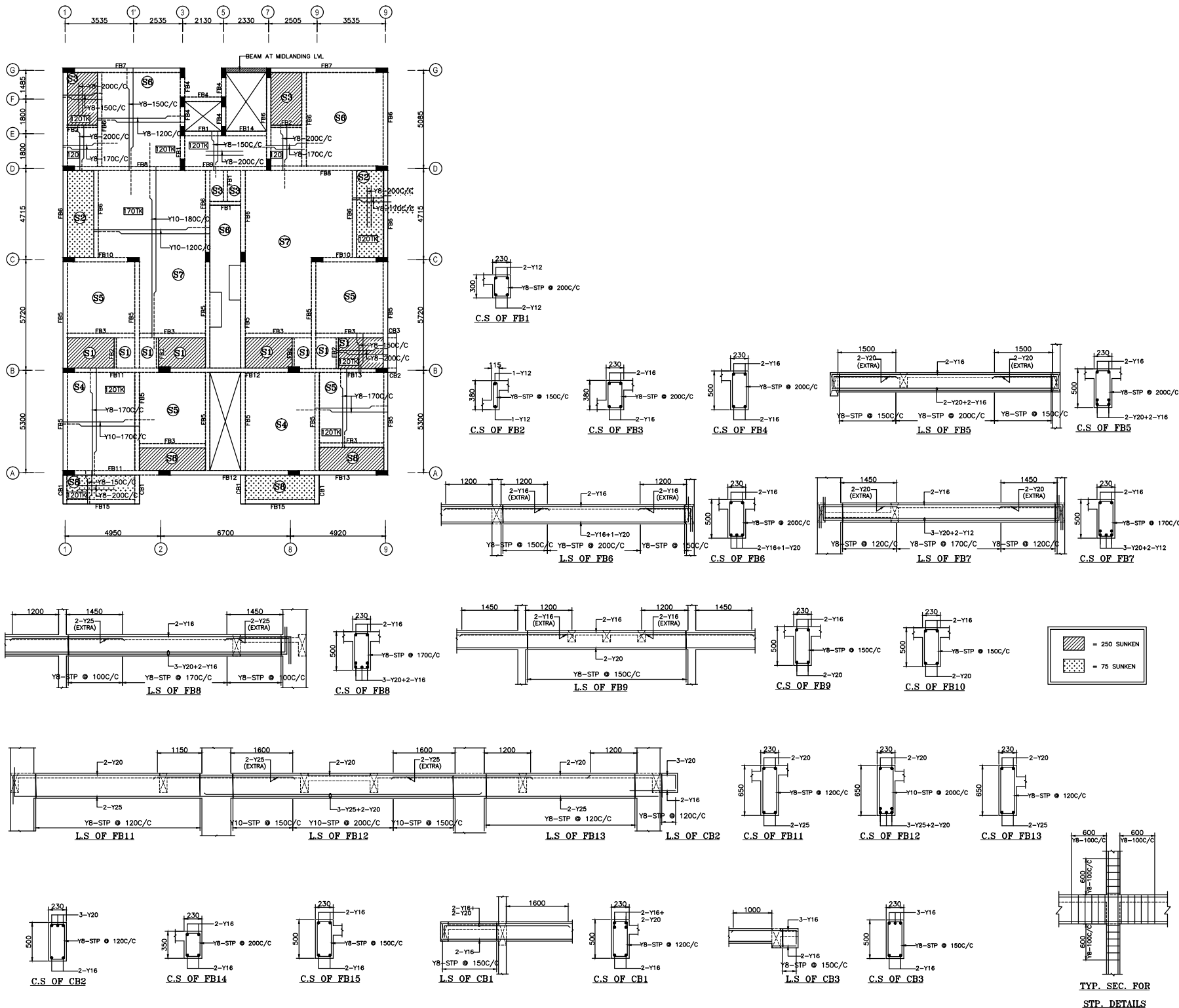
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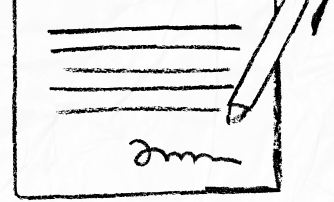
C. KANNAN, B.E., M.E. (Structure)
Structural Engineer,
CMDA Reg. No: SE/I/2024/2/0047
Door No: 21, 4th Main Road,
Indira Nagar, Chennai - 600 020.



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 TOR50 Steel conforming to I.S. 1786 - 2008. Grade - Fe 500	
4.	Clear cover to the main steel 50 for Footings, Raft Slabs & Raft Beams. 40 for Columns. 25 for Lintel & Beams. 20 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 CONSTRUCTION OF STILT FLOOR+5 FLOORS RESIDENTIAL BUILDING WITH 10 DWELLING UNITS, PEARL ISHAAN TO BE SET UP AT DOOR NO:2, ANNA MAIN ROAD AND 1ST SECTOR 1ST STREET, K.K.NAGAR, CHENNAI-600 078 COMPRISED IN OLD S.NO:394/1 PART, T.S NO:256/10, BLOCK NO: 104 OF KODAMBAKKAM VILLAGE, WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION, DIVISION NO-136,ZONE NO-10		
FOUNDATION DETAIL		
DESIGNED	KANNAN	SCALE 1 : 100
DRAWN	NASURTHEEN	DATE 07-06-2024
STRUCTURAL CONSULTANTS:		
C.KANNAN, B.E., M.E. (Structure) Civil Engineer CIDA Reg. No: SE/11/2024/12/6047 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:kannankds2007@gmail.com FILE NAME : D/NASURTHEEN/JUNE24/PEARL-KK NAGAR		



R.NO			DATE	DESCRIPTION
PROJECT				
PROPOSED CONSTRUCTION OF STILT FLOOR+5 FLOORS RESIDENTIAL BUILDING WITH 10 DWELLING UNITS, PEARL ISHAAN TO BE SET UP AT DOOR NO:2, ANNA MAIN ROAD AND 1ST SECTOR 1ST STREET, K.K.NAGAR, CHENNAI-600 078 COMPRISED IN OLD S.NO:394/1 PART, T.S NO:256/10, BLOCK NO: 104 OF KODAMBAKKAM VILLAGE, WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION, DIVISION NO-136,ZONE NO-10				
DESIGNED			SCALE	1 : 100
DRAWN			DATE	07-06-2024
STRUCTURAL CONSULTANTS:				
C. KANNAN, B.E., M.E. (Structural) Structural Engineer, CMDA Reg. No. 5816/2024/2/2047 Door No: 21, 4th Main Road, Indira Nagar, Chennai - 600 022.				
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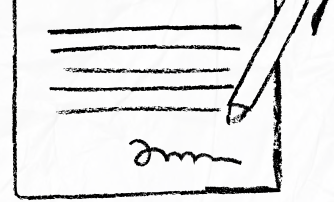
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