Dr. ALEX JACOB
B.E.,M.Tech (Str).,Ph.D (Hon).,Dip. Bdg.Sc (Aust)., M.I.E (Aust), M.I.E (Ind)
CONSULTING ENGINEER
Old No.41/A, New No.70, Beach Road,Kalakshetra Colony,
Besant Nagar, Chennai - 600 090.

044 - 24910945
+91-98401 59550
alexjacobuc@gmail.com
www.unitedconsultants.in

STABILITY CERTIFICATE

(To be furnished while filing application for registration building)

23.01.2026

The detailed engineering and structure design of the proposed building comprising of Plan showing the proposed construction of Stilt Floor + 4 Floors + 5th Floor Part (Height 18.30 m) Residential Building with 10 dwelling units availing Premium FSI with TOD benefit at New Door No. 13, Old Door No. 5, Nageswara Rao Road, Nungambakkam, Chennai – 600 034, comprised in R.S. No. 141, 142 & 143, New T.S. No. 142/4, Block No. 21 of Nungambakkam village within the limit of Greater Chennai Corporation has been done by me/us based on the report of geotechnical investigation (soil test) done by geo marine consultants (P)Ltd, Report Number:GT-2651, Date:20/09/2023 and considering the functional requirement of the building.

2. It is certified that among other factors, the proposed building has been designed to resist earthquake. I have checked various parameters and found that the proposed building would be safe.

3. I further certify that:

(i) The minimum grade of concrete is M25.

(ii) The design and analysis has been done using the code of practice for plain and reinforced concrete as Per IS 456, design loads as per IS-875 part I to V and design of earthquake resistant structure as per IS Code No1893 are carried out.

. The building will be safe and sound when used for the purpose for which it is designed.

(Dr. ALEX JACOB)

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STRUCTURAL ENINEER
70, BEACH ROAD, KALAKSHETRA COLONY,
Chennai - 600 090.
REG No. SE/GR-I/24/02/001
REG No. RSE100392025

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*                                                *
*          STAAD.Pro CONNECT Edition             *
*          Version  22.12.00.142                 *
*          Proprietary Program of                *
*          Bentley Systems, Inc.                 *
*          Date=    JAN 27, 2026                 *
*          Time=    11:36:13                     *
*                                                *
*  Licensed to: United Consultanta               *
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    1. STAAD SPACE
INPUT FILE: D:\MARIKRISHNAN\PROJECTS\STABILITY CERTIFICATE\AJ-3570-CHAITANYA-MANU REDDY-NUNGAMBAKKAM\A.. .STD
    2. START JOB INFORMATION
    3. ENGINEER DATE 1/27/2026
    4. JOB NO AJ 3570
    5. JOB NAME THE PROPOSED CONSTRUCTION OF STILT FLOOR + 4 FLOORS + 5TH FLOOR -
    6. PART (HEIGHT 18.30 M) RESIDENTIAL BUILDING WITH 10 DWELLING UNITS AVAILING -
    7. PREMIUM FSI WITH TOD BENEFIT AT NEW DOOR NO. 13, OLD DOOR NO. 5, NAGESWARA -
    8. RAO ROAD, NUNGAMBAKKAM, CHENNAI - 600 034, COMPRISED IN R.S. NO. 141, 142 & -
    9. 143, NEW T.S. NO. 142/4, BLOCK NO. 21 OF NUNGAMBAKKAM VILLAGE WITHIN THE -
   10. LIMIT OF GREATER CHENNAI CORPORATION
   11. END JOB INFORMATION
   12. INPUT WIDTH 79
   13. SET NL 50
   14. UNIT METER KN
   15. JOINT COORDINATES
   16. 1 0 0 0; 19 0 -3 0; 223 0 3.5 0; 378 3.497 -3 0; 422 0 6.75 0; 432 0 10 0
   17. 439 0 13.25 0; 475 0 16.5 0; 482 0 19.75 0; 489 3.497 16.5 0
   18. 490 3.497 19.75 0; 491 3.497 3.5 0; 492 3.497 10 0; 493 3.497 13.25 0
   19. 494 3.497 0 0; 495 3.497 6.75 0; 496 9.749 -3 0; 497 9.749 16.5 0
   20. 498 9.749 19.75 0; 499 9.749 3.5 0; 500 9.749 10 0; 501 9.749 13.25 0
   21. 502 9.749 0 0; 503 9.749 6.75 0; 504 15.349 -3 0; 505 15.349 16.5 0
   22. 506 15.349 19.75 0; 507 15.349 3.5 0; 508 15.349 10 0; 509 15.349 13.25 0
   23. 510 15.349 0 0; 511 15.349 6.75 0; 512 19.85 -3 0; 513 19.85 16.5 0
   24. 514 19.85 19.75 0; 515 19.85 3.5 0; 516 19.85 10 0; 517 19.85 13.25 0
   25. 518 19.85 0 0; 519 19.85 6.75 0; 520 27.995 -3 0; 521 27.995 16.5 0
   26. 522 27.995 19.75 0; 523 27.995 3.5 0; 524 27.995 10 0; 525 27.995 13.25 0
   27. 526 27.995 0 0; 527 27.995 6.75 0
   28. MEMBER INCIDENCES
   29. 1 1 494; 25 19 1; 43 223 491; 98 1 223; 127 223 422; 173 422 495; 234 422 432
   30. 254 432 492; 315 432 439; 335 439 493; 347 378 494; 348 494 491; 349 491 495
   31. 350 495 492; 351 492 493; 407 439 475; 408 493 489; 414 475 489; 420 475 482
   32. 421 489 490; 427 482 490; 429 489 497; 430 490 498; 431 491 499; 432 492 500
   33. 433 493 501; 434 494 502; 435 495 503; 436 496 502; 437 502 499; 438 499 503
   34. 439 503 500; 440 500 501; 441 501 497; 442 497 498; 444 497 505; 445 498 506
   35. 446 499 507; 447 500 508; 448 501 509; 449 502 510; 450 503 511; 451 504 510
   36. 452 510 507; 453 507 511; 454 511 508; 455 508 509; 456 509 505; 457 505 506
   37. 459 505 513; 460 506 514; 461 507 515; 462 508 516; 463 509 517; 464 510 518
   38. 465 511 519; 466 512 518; 467 518 515; 468 515 519; 469 519 516; 470 516 517
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39. 471 517 513; 472 513 514; 474 513 521; 475 514 522; 476 515 523; 477 516 524
40. 478 517 525; 479 518 526; 480 519 527; 481 520 526; 482 526 523; 483 523 527
41. 484 527 524; 485 524 525; 486 525 521; 487 521 522
42. DEFINE MATERIAL START
43. ISOTROPIC CONCRETE
44. E 2.17185E+07
45. POISSON 0.17
46. DENSITY 23.5616
47. ALPHA 1E-05
48. DAMP 0.05
49. G 9.28139E+06
50. TYPE CONCRETE
51. STRENGTH FCU 27579
52. END DEFINE MATERIAL
53. MEMBER PROPERTY
54. 1 43 173 254 335 414 427 459 TO 465 PRIS YD 0.38 ZD 0.23
55. 429 TO 435 444 TO 450 PRIS YD 0.45 ZD 0.23
56. 474 TO 480 PRIS YD 0.53 ZD 0.23
57. 25 98 127 234 315 347 TO 351 407 408 420 421 436 TO 442 451 TO 457 -
58. 466 TO 472 481 TO 487 PRIS YD 0.61 ZD 0.23
59. CONSTANTS
60. MATERIAL CONCRETE ALL
61. SUPPORTS
62. 19 378 496 504 512 520 FIXED
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. <! STAAD PRO GENERATED DATA DO NOT MODIFY !!!
66. IS875-2015:PARAMS 0 0 0 16.000 0.000 5.000 0 CHENNAI 50.000 0 1.000 0 5 -
67. 1.050 1.050 1.050 1.090 1.096 1.000 2 1.000 0.002 0 10.453 16.558 19.000 0 0 -
68. 0 1.000 0 0 0.200 1.000 0 1.000 1.000 1.000
69. !> END GENERATED DATA BLOCK
70. INT 1.654 1.654 1.654 1.782 1.802 HEIG  0  5  10  15  16
71. EXP 1 JOINT 1 19 223 378 422 432 439 496 504 512 520
72. DEFINE IS1893 2016 LOAD
73. ZONE 0.16 RF 2.5 I 1 SS 1 ST 1 DM 0.05 PX 0.5 PZ 0.5 DX 7.62 DZ 13.72
74. MEMBER WEIGHT
75. 25 98 127 234 315 347 TO 351 436 TO 440 451 TO 455 466 TO 470 481 TO 484 -
76. 485 UNI -15 0 0
77. LOAD 1 LOADTYPE SEISMIC-H  TITLE EQ X
78. 1893 LOAD X 1
79. PERFORM ANALYSIS
```

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

NUMBER OF JOINTS	48	NUMBER OF MEMBERS	77
NUMBER OF PLATES	0	NUMBER OF SOLIDS	0
NUMBER OF SURFACES	0	NUMBER OF SUPPORTS	6

Using 64-bit analysis engine.

SOLVER USED IS THE IN-CORE ADVANCED MATH SOLVER

TOTAL PRIMARY LOAD CASES = 1, TOTAL DEGREES OF FREEDOM = 252
TOTAL LOAD COMBINATION CASES = 0 SO FAR.

***NOTE: Equivalent Static Analysis should preferably be performed for regular structures with approximate natural time period less than 0.4s and regular structures with height less than 15m in Seismic Zone II. Ref Cl.6.4.3 and 7.6 BASE SHEAR AND TIME PERIOD IN X

```
*********************************************************
* UNITS - KN    METE                                    *
* TIME PERIOD FOR X 1893 LOADING =    0.50000 SEC       *
* SA/G PER 1893=    2.000, LOAD FACTOR= 1.000           *
* VB PER 1893=    0.0640 X     1462.50=      93.60 KN   *
* VB Act Based on Clause 7.2.1 =       93.60 KN         *
* VB Min based on Clause 7.2.2 =       16.09 KN         *
*                                                       *
*********************************************************
```

80. CHANGE
81. LOAD 2 LOADTYPE SEISMIC-H TITLE EQ -X
82. 1893 LOAD X -1.
83. PERFORM ANALYSIS

***NOTE: Equivalent Static Analysis should preferably be performed for regular structures with approximate natural time period less than 0.4s and regular structures with height less than 15m in Seismic Zone II. Ref Cl.6.4.3 and 7.6 BASE SHEAR AND TIME PERIOD IN X

```
*********************************************************
* UNITS - KN    METE                                    *
* TIME PERIOD FOR X 1893 LOADING =    0.50000 SEC       *
* SA/G PER 1893=    2.000, LOAD FACTOR=-1.000           *
* VB PER 1893=    0.0640 X     1462.50=     -93.60 KN   *
* VB Act Based on Clause 7.2.1 =      -93.60 KN         *
* VB Min based on Clause 7.2.2 =      -16.09 KN         *
*                                                       *
*********************************************************
```

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    84. CHANGE
    85. LOAD 3 LOADTYPE SEISMIC-H  TITLE EQ Z
    86. 1893 LOAD Z 1
    87. PERFORM ANALYSIS

   ***NOTE: Equivalent Static Analysis should preferably be performed for regular
structures with approximate natural time period less than 0.4s and regular
structures with height less than 15m in Seismic Zone II. Ref Cl.6.4.3 and 7.6
BASE SHEAR AND TIME PERIOD IN Z


   ********************************************************
   * UNITS - KN    METE                                   *
   * TIME PERIOD FOR Z 1893 LOADING =    0.50000 SEC      *
   * SA/G PER 1893=    2.000, LOAD FACTOR= 1.000          *
   * VB PER 1893=    0.0640 X     1462.50=      93.60 KN   *
   * VB Act Based on Clause 7.2.1 =       93.60 KN        *
   * VB Min based on Clause 7.2.2 =       16.09 KN        *
   *                                                      *
   ********************************************************



    88. CHANGE
    89. LOAD 4 LOADTYPE SEISMIC-H  TITLE EQ -Z
    90. 1893 LOAD Z -1.
    91. PERFORM ANALYSIS

   ***NOTE: Equivalent Static Analysis should preferably be performed for regular
structures with approximate natural time period less than 0.4s and regular
structures with height less than 15m in Seismic Zone II. Ref Cl.6.4.3 and 7.6
BASE SHEAR AND TIME PERIOD IN Z


   ********************************************************
   * UNITS - KN    METE                                   *
   * TIME PERIOD FOR Z 1893 LOADING =    0.50000 SEC      *
   * SA/G PER 1893=    2.000, LOAD FACTOR=-1.000          *
   * VB PER 1893=    0.0640 X     1462.50=     -93.60 KN   *
   * VB Act Based on Clause 7.2.1 =      -93.60 KN        *
   * VB Min based on Clause 7.2.2 =      -16.09 KN        *
   *                                                      *
   ********************************************************



    92. CHANGE
    93. LOAD 5 LOADTYPE DEAD  TITLE DL
    94. SELFWEIGHT Y -1 LIST ALL
    95. MEMBER LOAD
    96. 1 43 173 254 335 414 429 431 TO 435 444 446 TO 450 459 461 TO 465 474 476 -
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   97. 477 TO 480 UNI GY -16
   98. 427 430 445 460 475 UNI GY -8
   99. MEMBER LOAD
  100. 1 43 173 254 335 414 427 429 TO 435 444 TO 450 459 TO 465 474 TO 480 UNI GY -2
  101. LOAD 6 LOADTYPE LIVE  TITLE LL
  102. MEMBER LOAD
  103. 1 43 173 254 335 414 427 429 TO 435 444 TO 450 459 TO 465 474 TO 480 UNI GY -3
  104. LOAD 7 LOADTYPE WIND  TITLE WL Z
  105. WIND LOAD Z 1 TYPE 1
  106. LOAD 8 LOADTYPE WIND  TITLE WL -Z
  107. WIND LOAD Z -1 TYPE 1
  108. LOAD COMB 9 1 (DL+LL)
  109. 5 1.0 6 1.0
  110. LOAD COMB 10 1.5 (DL+LL)
  111. 5 1.5 6 1.5
  112. LOAD COMB 11 1.2 (DL+LL+EQX)
  113. 1 1.2 5 1.2 6 1.2
  114. LOAD COMB 12 1.2 (DL+LL-EQX)
  115. 2 1.2 5 1.2 6 1.2
  116. LOAD COMB 13 1.2 (DL+LL+EQZ)
  117. 3 1.2 5 1.2 6 1.2
  118. LOAD COMB 14 1.2 (DL+LL-EQZ)
  119. 4 1.2 5 1.2 6 1.2
  120. LOAD COMB 15 1.2 (DL+LL+WLZ)
  121. 5 1.2 6 1.2 7 1.2
  122. LOAD COMB 16 1.2 (DL+LL-WLZ)
  123. 5 1.2 6 1.2 8 1.2
  124. LOAD COMB 17 1.5 (DL+EQX)
  125. 1 1.5 5 1.5
  126. LOAD COMB 18 1.5 (DL-EQX)
  127. 2 1.5 5 1.5
  128. LOAD COMB 19 1.5 (DL+EQZ)
  129. 3 1.5 5 1.5
  130. LOAD COMB 20 1.5 (DL-EQZ)
  131. 4 1.5 5 1.5
  132. LOAD COMB 21 1.5 (DL+WLZ)
  133. 5 1.5 7 1.5
  134. LOAD COMB 22 1.5 (DL-WLZ)
  135. 5 1.5 8 1.5
  136. PERFORM ANALYSIS


  137. START CONCRETE DESIGN
CONCRETE DESIGN
  138. CODE INDIAN
  139. ENSH 1 ALL
  140. FC 25000 MEMB 1 43 173 254 335 414 427 429 TO 435 444 TO 450 459 TO 465 474 -
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141. 475 TO 480
142. FC 30000 MEMB 25 98 127 234 315 347 TO 351 407 408 420 421 436 TO 442 451 -
143. 452 TO 457 466 TO 472 481 TO 487
144. FYMAIN 500000 ALL
145. DESIGN BEAM 1 43 173 254 335 414 427 429 TO 435 444 TO 450 459 TO 465 474 -
146. 475 TO 480
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