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CIVIL & STRUCTURAL, APPROVED VALUER,
CMDA REGN NOS: SE / GR - I / 19 / 03 / 24 , QA / 19 / 04 / 21.
CORPORATION OF CHENNAI , REGN NO: RSE100172019.

FLAT NO:3B, RAMANIYAM GAURAVV 2
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI –107.
MOBILE : 98412 69154

**27.05.2024**

# CERTIFICATE

**IT IS CERTIFIED THAT THE PROPOSED CONSTRUCTION OF STILT + 5 FLOORS (18.30m HEIGHT) RESIDENTIAL BUILDING WITH 15 DWELLING UNITS AVAILING PREMIUM FSI RESIDENTIAL BUILDING AT NEW DOOR NO.26, OLD DOOR NO.16, NEW BANGARU COLONY FIRST STREET, K.K NAGAR WEST, CHENNAI-600 078, COMPRISED IN S.NO.217, 217/1 PART AS PER DOCUMENT AND T.S.NO.97, 98/1 AND 98/2 AS PER PATTA, BLOCK NO:35 OF VIRUGAMBAKKAM VILLAGE, MAMBALAM TALUK, WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION, ZONE: X, DIVISION NO-128, IS DESIGNED TO RESIST EARTHQUAKE. CHECK HAS BEEN MADE AND FOUND SAFE AND I HEREBY CERTIFY THAT,**

1. The minimum grade of concrete is M25.

2. The design and analysis using the code of practice for loading Standards as per IS-875 Part I to V and seismic force as per code IS 1893, is carried out.

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

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CORPORATION OF CHENNAI , REGN NO: RSE100172019.

FLAT NO:3B, RAMANIYAM GAURAVV 2
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI –107.
MOBILE : 98412 69154

# THE PROPOSED CONSTRUCTION OF STILT + 5 FLOORS (18.30m HEIGHT) RESIDENTIAL BUILDING WITH 15 DWELLING UNITS AVAILING PREMIUM FSI RESIDENTIAL BUILDING AT NEW DOOR NO.26, OLD DOOR NO.16, NEW BANGARU COLONY FIRST STREET, K.K. NAGAR WEST, CHENNAI-600 078, COMPRISED IN S.NO.217, 217/1 PART AS PER DOCUMENT AND T.S.NO.97, 98/1 AND 98/2 AS PER PATTA, BLOCK NO:35 OF VIRUGAMBAKKAM VILLAGE, MAMBALAM TALUK, WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION, ZONE: X, DIVISION NO-128.

## GENERAL NOTE ON STRUCTURAL DESIGN.

## 1.0 GENERAL.

### 1.1 DESIGN BASIS

Residential Building having Stilt + 5 Floors.
The design of this building is carried out based on frame analysis using STAAD PRO CONNECT EDITION.

### 1.2 CODES AND STANDARDS

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

1. I.S. 456 - 2000
2. I.S. 875 - Part I to V
3. I.S.1893 - Part -1: 2016.
4. I.S.13920 : 2016.

## 2.0 BASIC CIVIL DESIGN LOADS

### 2.1 DEAD LOADS & LIVE LOADS

Typical slab dead load is calculated as follows
**Residential Building**

| | | |
|---|---|---|
| Self weight of slab | = | 3 0kN/m² |
| Floor finish | = | 2.0kN/m² |
| Live load | = | 2.0kN/m² |
| | | 7.0kN/m² |

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## 3.0 SOIL DETAILS

Based on Soil Test Report Isolated Footing is adopted.

## 4.0 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. Ductile detailing of Reinforcement as per I.S.13920 - 2016 is considered.

**4.1**

| Load Combination | Ultimate Limit Load | Serviceability Limit State |
|---|---|---|
| DL+LL+WL<br>Or<br>DL+LL+EL | 1.2DL+1.2LL+1.2WL<br>Or<br>1.2DL+1.2LL+1.2EL | DL+LL+WL<br>Or<br>DL+LL+EL |

### 4.2.1 MINIMUM COVER

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

Structure will be sound and stable when used for the purpose for which it is designed.

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BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269154

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*          STAAD.Pro CONNECT Edition             *
*          Version  22.12.00.142                 *
*          Proprietary Program of                *
*          Bentley Systems, Inc.                 *
*          Date=    MAY 27, 2024                 *
*          Time=     9:27:31                     *
*                                                *
*  Licensed to: Ramaniyam Real Estates Pvt Ltd   *
**************************************************
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INPUT FILE: F:\Ramaniyam\Ramaniyam stadd\RRE STAAD 2024\Bangaru Colony-Purna Krishna\Bangaru Colony Se.. .STD
    2. START JOB INFORMATION
    3. ENGINEER DATE 07-MAY-24
    4. *PLAN SHOWING THE PROPOSED CONSTRUCTION OF STILT + 5 FLOORS(18.30M HEIGHT)
    5. *RESIDENTIAL BUILDING WITH 15 DWELLING UNITS AVAILING PREMIUM FSI RESIDENTIAL
    6. *BUILDING AT NEW DOOR NO.26,OLD DOOR NO.16,NEW BANGARU COLONY FIRST STREET,
    7. *K.K.NAGAR WEST, CHENNAI - 600 078, COMPRISED IN S.NO.217,217/1 PART AS PER
    8. *DOCUMENT AND T.S.NO.97,98/1 & 98/2 AS PER PATTA, BLOCK NO:35 OF VIRUGAMBAKKAM
    9. *VILLAGE, MAMBALAM TALUK WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION,
   10. *ZONE:X,DIVISION NO - 128.
   11. END JOB INFORMATION
   12. INPUT WIDTH 79
   13. UNIT METER KN
   14. JOINT COORDINATES
   15. 1 0 0 0; 2 5.44 0 0; 3 8.87 0 0; 4 13.33 0 0; 5 5.44 0 3.23; 6 8.87 0 3.23
   16. 7 13.33 0 3.83; 8 0 0 4.37; 9 4.23 0 4.37; 10 0 0 9.52; 11 3.68 0 9.52
   17. 12 8.87 0 9.52; 13 10.66 0 9.6; 14 13.33 0 9.6; 15 0 0 11.42; 16 3.22 0 11.42
   18. 17 8.87 0 11.42; 18 10.66 0 13.75; 19 13.33 0 13.75; 20 0 0 14.49
   19. 21 3.22 0 14.49; 22 11.1 0 16.71; 23 13.33 0 16.71; 24 0 0 17.87
   20. 25 3.37 0 17.87; 26 8.87 0 17.87; 27 11.1 0 19.38; 28 13.33 0 19.38
   21. 29 0 0 21.97; 30 3.37 0 21.97; 31 8.87 0 21.97; 32 11.1 0 21.97; 33 0 0 23.87
   22. 34 3.12 0 23.87; 35 0 0 27.3; 36 3.12 0 27.3; 37 8.26 0 27.3; 38 10.4 0 27.3
   23. 39 0 0 30.45; 40 3.12 0 30.45; 41 8.26 0 30.45; 42 0 0 34.27; 43 3.12 0 34.27
   24. 44 8.26 0 34.27; 45 10.4 0 34.27; 46 0 2.5 0; 47 5.44 2.5 0; 48 8.87 2.5 0
   25. 49 13.33 2.5 0; 50 5.44 2.5 3.23; 51 8.87 2.5 3.23; 52 13.33 2.5 3.83
   26. 53 0 2.5 4.37; 54 4.23 2.5 4.37; 55 0 2.5 9.52; 56 3.68 2.5 9.52
   27. 57 8.87 2.5 9.52; 58 10.66 2.5 9.6; 59 13.33 2.5 9.6; 60 0 2.5 11.42
   28. 61 3.22 2.5 11.42; 62 8.87 2.5 11.42; 63 10.66 2.5 13.75; 64 13.33 2.5 13.75
   29. 65 0 2.5 14.49; 66 3.22 2.5 14.49; 67 11.1 2.5 16.71; 68 13.33 2.5 16.71
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   32. 77 11.1 2.5 21.97; 78 0 2.5 23.87; 79 3.12 2.5 23.87; 80 0 2.5 27.3
   33. 81 3.12 2.5 27.3; 82 8.26 2.5 27.3; 83 10.4 2.5 27.3; 84 0 2.5 30.45
   34. 85 3.12 2.5 30.45; 86 8.26 2.5 30.45; 87 0 2.5 34.27; 88 3.12 2.5 34.27
   35. 89 8.26 2.5 34.27; 90 10.4 2.5 34.27; 91 0 5.6 0; 92 5.44 5.6 0; 93 8.87 5.6 0
   36. 94 13.33 5.6 0; 95 5.44 5.6 3.23; 96 8.87 5.6 3.23; 97 13.33 5.6 3.83
   37. 98 0 5.6 4.37; 99 4.23 5.6 4.37; 100 0 5.6 9.52; 101 3.68 5.6 9.52
   38. 102 8.87 5.6 9.52; 103 10.66 5.6 9.6; 104 13.33 5.6 9.6; 105 0 5.6 11.42
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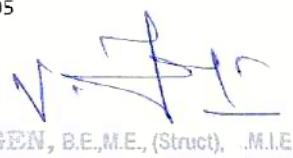
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MOBILE: 9841269154

39. 106 3.22 5.6 11.42; 107 8.87 5.6 11.42; 108 10.66 5.6 13.75
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137. 468 0 14.9 9.52; 469 3.68 14.9 9.52; 470 8.87 14.9 9.52; 471 10.66 14.9 9.6
138. 472 13.33 14.9 9.6; 473 0 14.9 11.42; 474 3.22 14.9 11.42; 475 8.87 14.9 11.42
139. 476 10.66 14.9 13.75; 477 13.33 14.9 13.75; 478 0 14.9 14.49
140. 479 3.22 14.9 14.49; 480 11.1 14.9 16.71; 481 13.33 14.9 16.71
141. 482 0 14.9 17.87; 483 3.37 14.9 17.87; 484 8.87 14.9 17.87
142. 485 11.1 14.9 19.38; 486 13.33 14.9 19.38; 487 0 14.9 21.97
143. 488 3.37 14.9 21.97; 489 8.87 14.9 21.97; 490 11.1 14.9 21.97
144. 491 0 14.9 23.87; 492 3.12 14.9 23.87; 493 0 14.9 27.3; 494 3.12 14.9 27.3
145. 495 8.26 14.9 27.3; 496 10.4 14.9 27.3; 497 0 14.9 30.45; 498 3.12 14.9 30.45
146. 499 8.26 14.9 30.45; 500 0 14.9 34.27; 501 3.12 14.9 34.27
147. 502 8.26 14.9 34.27; 503 10.4 14.9 34.27; 504 10.4 14.9 30.45
148. 505 10.4 14.9 21.97; 506 10.4 14.9 23.87; 507 4.14 14.9 34.27
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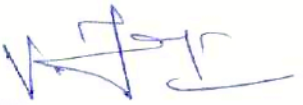


JAGEN, B.E.,M.E., (Struct), M.I.E.,A.I.V.,
CMDA REGN NOS-SE/GR-I/19/03/24, QA/19/04/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269154

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153. 520 7.02 14.9 30.45; 521 7.02 14.9 27.3; 522 4.14 14.9 27.3
154. 523 4.14 14.9 23.87; 524 5.9 14.9 27.3; 525 5.9 14.9 23.87
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159. 538 3.22 14.9 13.52; 539 5.13 14.9 13.52; 540 1.52 14.9 17.87
160. 541 1.52 14.9 14.49; 542 7.12 14.9 17.87; 543 7.12 14.9 14.49
161. 544 8.87 14.9 16.71; 545 10.66 14.9 16.71; 546 5.44 14.9 9.52
162. 547 5.44 14.9 4.37; 548 3.68 14.9 4.37; 549 3.68 14.9 0; 550 3.68 14.9 6.98
163. 551 5.44 14.9 6.98; 552 3.68 14.9 5.59; 553 5.44 14.9 5.59; 554 3.68 14.9 3.23
164. 555 3.68 14.9 0.6; 556 5.44 14.9 0.6; 557 5.44 14.9 1.83; 558 8.87 14.9 1.83
165. 559 8.87 14.9 7.93; 560 13.33 14.9 7.93; 561 10.66 14.9 7.93
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193. 666 3.68 18 0; 667 3.68 18 6.98; 668 5.44 18 6.98; 669 3.68 18 5.59
194. 670 5.44 18 5.59; 671 3.68 18 3.23; 672 3.68 18 0.6; 673 5.44 18 0.6
195. 674 5.44 18 1.83; 675 8.87 18 1.83; 676 8.87 18 7.93; 677 13.33 18 7.93
196. 678 10.66 18 7.93; 679 10.66 18 9.52; 680 8.87 18 5.51; 681 13.33 18 5.51
197. 682 8.87 18 3.83; 683 10.09 18 5.51; 684 10.09 18 3.83; 685 12.73 18 5.51
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199. 690 11.85 18 20.38; 691 11.1 18 21.18; 692 11.85 18 21.18; 693 0 21.1 0
200. 694 5.44 21.1 0; 695 8.87 21.1 0; 696 13.33 21.1 0; 697 5.44 21.1 3.23
201. 698 8.87 21.1 3.23; 699 13.33 21.1 3.83; 700 0 21.1 4.37; 701 4.23 21.1 4.37
202. 702 0 21.1 9.52; 703 3.68 21.1 9.52; 704 8.87 21.1 9.52; 705 10.66 21.1 9.6
203. 706 13.33 21.1 9.6; 707 0 21.1 11.42; 708 3.22 21.1 11.42; 709 8.87 21.1 11.42
204. 710 10.66 21.1 13.75; 711 13.33 21.1 13.75; 712 0 21.1 14.49
205. 713 3.22 21.1 14.49; 714 11.1 21.1 16.71; 715 13.33 21.1 16.71
206. 716 0 21.1 17.87; 717 3.37 21.1 17.87; 718 8.87 21.1 17.87

V. JAGEN, B.E.,M.E., (Struct), M.I.E.,A.I.
CMDA REGN NOS-SE/GR-I/19/03/24, QA/19/04/2
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269154

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209. 725 0 21.1 23.87; 726 3.12 21.1 23.87; 727 0 21.1 27.3; 728 3.12 21.1 27.3
210. 729 8.26 21.1 27.3; 730 10.4 21.1 27.3; 731 0 21.1 30.45; 732 3.12 21.1 30.45
211. 733 8.26 21.1 30.45; 734 0 21.1 34.27; 735 3.12 21.1 34.27
212. 736 8.26 21.1 34.27; 737 10.4 21.1 34.27; 738 10.4 21.1 30.45
213. 739 10.4 21.1 21.97; 740 10.4 21.1 23.87; 741 4.14 21.1 34.27
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224. 772 3.22 21.1 13.52; 773 5.13 21.1 13.52; 774 1.52 21.1 17.87
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226. 778 8.87 21.1 16.71; 779 10.66 21.1 16.71; 780 5.44 21.1 9.52
227. 781 5.44 21.1 4.37; 782 3.68 21.1 4.37; 783 3.68 21.1 0; 784 3.68 21.1 6.98
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229. 789 3.68 21.1 0.6; 790 5.44 21.1 0.6; 791 5.44 21.1 1.83; 792 8.87 21.1 1.83
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232. 799 8.87 21.1 3.83; 800 10.09 21.1 5.51; 801 10.09 21.1 3.83
233. 802 12.73 21.1 5.51; 803 12.73 21.1 3.83; 804 7.58 21.1 11.42
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238. 817 13.33 24.2 19.38; 818 11.85 24.2 19.38; 819 10.66 24.2 16.71
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246. MEMBER INCIDENCES
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262. 114 136 83; 115 86 136; 116 88 85; 117 85 81; 118 89 86; 119 86 82; 120 78 79



JAGEN, B.E.,M.E., (Struct), M.I.E.,A.I.V.
CMDA RECN NOS:SE/CR-I/19/03/24, QA/19/04/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269154

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266. 140 69 70; 141 70 71; 142 76 71; 143 75 70; 144 65 66; 145 70 66; 146 66 61
267. 147 60 148; 148 61 147; 149 63 150; 150 63 64; 151 55 149; 152 56 144
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318. 456 284 285; 457 286 278; 458 287 261; 459 286 287; 460 288 290; 461 289 291

V. JAGEN, B.E.,M.E., (Struct), ..M.I.E.,A.I.V.
CMDA REGN NOS-SE/CR-II/19/03/24, CAN/19/04/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841288154

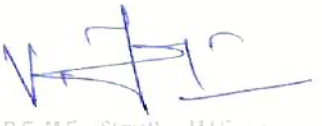
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349. 642 388 373; 643 379 389; 644 374 375; 645 389 388; 646 375 406; 647 373 457
350. 648 368 417; 649 368 363; 650 369 364; 651 363 364; 652 390 392; 653 391 393
351. 654 390 398; 655 392 394; 656 393 403; 657 392 399; 658 394 385; 659 395 382
352. 660 394 396; 661 396 400; 662 397 387; 663 396 397; 664 398 391; 665 398 399
353. 666 400 395; 667 399 400; 668 401 381; 669 402 377; 670 401 402; 671 403 395
354. 672 404 378; 673 403 404; 674 405 407; 675 406 408; 676 405 409; 677 407 404
355. 678 408 411; 679 407 410; 680 409 406; 681 410 408; 682 409 410; 683 411 389
356. 684 411 372; 685 365 423; 686 366 413; 687 371 414; 688 372 367; 689 412 372
357. 690 413 425; 691 412 415; 692 414 366; 693 415 413; 694 414 415; 695 373 416
358. 696 417 369; 697 416 458; 698 367 427; 699 358 353; 700 361 424; 701 418 358
359. 702 362 419; 703 356 357; 704 357 420; 705 362 421; 706 419 426; 707 420 453
360. 708 419 422; 709 421 357; 710 422 420; 711 421 422; 712 423 366; 713 424 362
361. 714 423 424; 715 425 367; 716 426 418; 717 425 426; 718 351 352; 719 352 429
362. 720 354 355; 721 359 354; 722 360 355; 723 359 360; 724 427 418; 725 427 428
363. 726 428 363; 727 428 359; 728 364 360; 729 355 443; 730 348 345; 731 353 442
364. 732 347 441; 733 349 431; 734 429 454; 735 429 434; 736 346 440; 737 430 346
365. 738 350 430; 739 431 350; 740 352 433; 741 432 343; 742 431 437; 743 433 435
366. 744 434 436; 745 433 434; 746 435 431; 747 436 430; 748 435 436; 749 437 438
367. 750 437 346; 751 438 432; 752 439 343; 753 438 439; 754 440 439; 755 441 344
368. 756 440 441; 757 442 446; 758 443 447; 759 442 444; 760 444 443; 761 354 445
369. 762 445 444; 763 353 445; 764 446 448; 765 447 348; 766 446 449; 767 448 347
370. 768 448 450; 769 449 451; 770 450 452; 771 449 450; 772 451 447; 773 452 348
371. 774 451 452; 775 453 358; 776 454 353; 777 453 454; 778 455 368; 779 456 417
372. 780 455 456; 781 457 455; 782 458 456; 783 457 458; 784 342 459; 785 343 460
373. 786 344 461; 787 345 462; 788 346 463; 789 347 464; 790 348 465; 791 349 466
374. 792 350 467; 793 351 468; 794 352 469; 795 353 470; 796 354 471; 797 355 472

JAGDISH, B.E.,M.E., (Struct), M.I.E.,A.I.V.
REGN.NO.S-6/GR-I/19/03/24, QA/19/04/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269154

375. 798 356 473; 799 357 474; 800 358 475; 801 359 476; 802 360 477; 803 361 478
376. 804 362 479; 805 363 480; 806 364 481; 807 365 482; 808 366 483; 809 367 484
377. 810 368 485; 811 369 486; 812 370 487; 813 371 488; 814 372 489; 815 373 490
378. 816 374 491; 817 375 492; 818 376 493; 819 377 494; 820 378 495; 821 379 496
379. 822 380 497; 823 381 498; 824 382 499; 825 383 500; 826 384 501; 827 385 502
380. 828 386 503; 829 459 549; 830 460 461; 831 461 462; 832 500 497; 833 497 493
381. 834 493 491; 835 491 487; 836 487 482; 837 482 478; 838 478 473; 839 473 468
382. 840 468 466; 841 466 459; 842 500 501; 843 501 507; 844 502 503; 845 503 514
383. 846 497 518; 847 498 508; 848 504 496; 849 499 504; 850 493 519; 851 494 522
384. 852 495 496; 853 487 488; 854 488 529; 855 489 505; 856 505 490; 857 496 506
385. 858 491 492; 859 506 505; 860 492 523; 861 490 574; 862 485 534; 863 485 480
386. 864 486 481; 865 480 481; 866 507 509; 867 508 510; 868 507 515; 869 509 511
387. 870 510 520; 871 509 516; 872 511 502; 873 512 499; 874 511 513; 875 513 517
388. 876 514 504; 877 513 514; 878 515 508; 879 515 516; 880 517 512; 881 516 517
389. 882 518 498; 883 519 494; 884 518 519; 885 520 512; 886 521 495; 887 520 521
390. 888 522 524; 889 523 525; 890 522 526; 891 524 521; 892 525 528; 893 524 527
391. 894 526 523; 895 527 525; 896 526 527; 897 528 506; 898 528 489; 899 482 540
392. 900 483 530; 901 488 531; 902 489 484; 903 529 489; 904 530 542; 905 529 532
393. 906 531 483; 907 532 530; 908 531 532; 909 490 533; 910 534 486; 911 533 575
394. 912 484 544; 913 475 470; 914 478 541; 915 535 475; 916 479 536; 917 473 474
395. 918 474 537; 919 479 538; 920 536 543; 921 537 570; 922 536 539; 923 538 474
396. 924 539 537; 925 538 539; 926 540 483; 927 541 479; 928 540 541; 929 542 484
397. 930 543 535; 931 542 543; 932 468 469; 933 469 546; 934 471 472; 935 476 471
398. 936 477 472; 937 476 477; 938 544 535; 939 544 545; 940 545 480; 941 545 476
399. 942 481 477; 943 472 560; 944 465 462; 945 470 559; 946 464 558; 947 466 548
400. 948 546 571; 949 546 551; 950 463 557; 951 547 463; 952 467 547; 953 548 467
401. 954 469 550; 955 549 460; 956 548 554; 957 550 552; 958 551 553; 959 550 551
402. 960 552 548; 961 553 547; 962 552 553; 963 554 555; 964 554 463; 965 555 549
403. 966 556 460; 967 555 556; 968 557 556; 969 558 461; 970 557 558; 971 559 563
404. 972 560 564; 973 559 561; 974 561 560; 975 471 562; 976 562 561; 977 470 562
405. 978 563 565; 979 564 465; 980 563 566; 981 565 464; 982 565 567; 983 566 568
406. 984 567 569; 985 566 567; 986 568 564; 987 569 465; 988 568 569; 989 570 475
407. 990 571 470; 991 570 571; 992 572 485; 993 573 534; 994 572 573; 995 574 572
408. 996 575 573; 997 574 575; 998 459 576; 999 460 577; 1000 461 578; 1001 462 579
409. 1002 463 580; 1003 464 581; 1004 465 582; 1005 466 583; 1006 467 584
410. 1007 468 585; 1008 469 586; 1009 470 587; 1010 471 588; 1011 472 589
411. 1012 473 590; 1013 474 591; 1014 475 592; 1015 476 593; 1016 477 594
412. 1017 478 595; 1018 479 596; 1019 480 597; 1020 481 598; 1021 482 599
413. 1022 483 600; 1023 484 601; 1024 485 602; 1025 486 603; 1026 487 604
414. 1027 488 605; 1028 489 606; 1029 490 607; 1030 491 608; 1031 492 609
415. 1032 493 610; 1033 494 611; 1034 495 612; 1035 496 613; 1036 497 614
416. 1037 498 615; 1038 499 616; 1039 500 617; 1040 501 618; 1041 502 619
417. 1042 503 620; 1043 576 666; 1044 577 578; 1045 578 579; 1046 617 614
418. 1047 614 610; 1048 610 608; 1049 608 604; 1050 604 599; 1051 599 595
419. 1052 595 590; 1053 590 585; 1054 585 583; 1055 583 576; 1056 617 618
420. 1057 618 624; 1058 619 620; 1059 620 631; 1060 614 635; 1061 615 625
421. 1062 621 613; 1063 616 621; 1064 610 636; 1065 611 639; 1066 612 613
422. 1067 604 605; 1068 605 646; 1069 606 622; 1070 622 607; 1071 613 623
423. 1072 608 609; 1073 623 622; 1074 609 640; 1075 607 691; 1076 602 651
424. 1077 602 597; 1078 603 598; 1079 597 598; 1080 624 626; 1081 625 627
425. 1082 624 632; 1083 626 628; 1084 627 637; 1085 626 633; 1086 628 619
426. 1087 629 616; 1088 628 630; 1089 630 634; 1090 631 621; 1091 630 631
427. 1092 632 625; 1093 632 633; 1094 634 629; 1095 633 634; 1096 635 615
428. 1097 636 611; 1098 635 636; 1099 637 629; 1100 638 612; 1101 637 638
429. 1102 639 641; 1103 640 642; 1104 639 643; 1105 641 638; 1106 642 645
430. 1107 641 644; 1108 643 640; 1109 644 642; 1110 643 644; 1111 645 623

V. JAGEN, B.E.,M.E., (Struct), M.I.E.,A.I.V.
CMDA REGN NOS-SE/GR-I/10/03/24, GA/19/04/91
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841209154

431. 1112 645 606; 1113 599 657; 1114 600 647; 1115 605 648; 1116 606 601
432. 1117 646 606; 1118 647 659; 1119 646 649; 1120 648 600; 1121 649 647
433. 1122 648 649; 1123 607 650; 1124 651 603; 1125 650 692; 1126 601 661
434. 1127 592 587; 1128 595 658; 1129 652 592; 1130 596 653; 1131 590 591
435. 1132 591 654; 1133 596 655; 1134 653 660; 1135 654 687; 1136 653 656
436. 1137 655 591; 1138 656 654; 1139 655 656; 1140 657 600; 1141 658 596
437. 1142 657 658; 1143 659 601; 1144 660 652; 1145 659 660; 1146 585 586
438. 1147 586 663; 1148 588 589; 1149 593 588; 1150 594 589; 1151 593 594
439. 1152 661 652; 1153 661 662; 1154 662 597; 1155 662 593; 1156 598 594
440. 1157 589 677; 1158 582 579; 1159 587 676; 1160 581 675; 1161 583 665
441. 1162 663 688; 1163 663 668; 1164 580 674; 1165 664 580; 1166 584 664
442. 1167 665 584; 1168 586 667; 1169 666 577; 1170 665 671; 1171 667 669
443. 1172 668 670; 1173 667 668; 1174 669 665; 1175 670 664; 1176 669 670
444. 1177 671 672; 1178 671 580; 1179 672 666; 1180 673 577; 1181 672 673
445. 1182 674 673; 1183 675 578; 1184 674 675; 1185 676 680; 1186 677 681
446. 1187 676 678; 1188 678 677; 1189 588 679; 1190 679 678; 1191 587 679
447. 1192 680 682; 1193 681 582; 1194 680 683; 1195 682 581; 1196 682 684
448. 1197 683 685; 1198 684 686; 1199 683 684; 1200 685 681; 1201 686 582
449. 1202 685 686; 1203 687 592; 1204 688 587; 1205 687 688; 1206 689 602
450. 1207 690 651; 1208 689 690; 1209 691 689; 1210 692 690; 1211 691 692
451. 1212 576 693; 1213 577 694; 1214 578 695; 1215 579 696; 1216 580 697
452. 1217 581 698; 1218 582 699; 1219 583 700; 1220 584 701; 1221 585 702
453. 1222 586 703; 1223 587 704; 1224 588 705; 1225 589 706; 1226 590 707
454. 1227 591 708; 1228 592 709; 1229 593 710; 1230 594 711; 1231 595 712
455. 1232 596 713; 1233 597 714; 1234 598 715; 1235 599 716; 1236 600 717
456. 1237 601 718; 1238 602 719; 1239 603 720; 1240 604 721; 1241 605 722
457. 1242 606 723; 1243 607 724; 1244 608 725; 1245 609 726; 1246 610 727
458. 1247 611 728; 1248 612 729; 1249 613 730; 1250 614 731; 1251 615 732
459. 1252 616 733; 1253 617 734; 1254 618 735; 1255 619 736; 1256 620 737
460. 1257 693 783; 1258 694 695; 1259 695 696; 1260 734 731; 1261 731 727
461. 1262 727 725; 1263 725 721; 1264 721 716; 1265 716 712; 1266 712 707
462. 1267 707 702; 1268 702 700; 1269 700 693; 1270 734 735; 1271 735 741
463. 1272 736 737; 1273 737 748; 1274 731 752; 1275 732 742; 1276 738 730
464. 1277 733 738; 1278 727 753; 1279 728 756; 1280 729 730; 1281 721 722
465. 1282 722 763; 1283 723 739; 1284 739 724; 1285 730 740; 1286 725 726
466. 1287 740 739; 1288 726 757; 1289 724 808; 1290 719 768; 1291 719 714
467. 1292 720 715; 1293 714 715; 1294 741 743; 1295 742 744; 1296 741 749
468. 1297 743 745; 1298 744 754; 1299 743 750; 1300 745 736; 1301 746 733
469. 1302 745 747; 1303 747 751; 1304 748 738; 1305 747 748; 1306 749 742
470. 1307 749 750; 1308 751 746; 1309 750 751; 1310 752 732; 1311 753 728
471. 1312 752 753; 1313 754 746; 1314 755 729; 1315 754 755; 1316 756 758
472. 1317 757 759; 1318 756 760; 1319 758 755; 1320 759 762; 1321 758 761
473. 1322 760 757; 1323 761 759; 1324 760 761; 1325 762 740; 1326 762 723
474. 1327 716 774; 1328 717 764; 1329 722 765; 1330 723 718; 1331 763 723
475. 1332 764 776; 1333 763 766; 1334 765 717; 1335 766 764; 1336 765 766
476. 1337 724 767; 1338 768 720; 1339 767 809; 1340 718 778; 1341 709 704
477. 1342 712 775; 1343 769 709; 1344 713 770; 1345 707 708; 1346 708 771
478. 1347 713 772; 1348 770 777; 1349 771 804; 1350 770 773; 1351 772 708
479. 1352 773 771; 1353 772 773; 1354 774 717; 1355 775 713; 1356 774 775
480. 1357 776 718; 1358 777 769; 1359 776 777; 1360 702 703; 1361 703 780
481. 1362 705 706; 1363 710 705; 1364 711 706; 1365 710 711; 1366 778 769
482. 1367 778 779; 1368 779 714; 1369 779 710; 1370 715 711; 1371 706 794
483. 1372 699 696; 1373 704 793; 1374 698 792; 1375 700 782; 1376 780 805
484. 1377 780 785; 1378 697 791; 1379 781 697; 1380 701 781; 1381 782 701
485. 1382 703 784; 1383 783 694; 1384 782 788; 1385 784 786; 1386 785 787
486. 1387 784 785; 1388 786 782; 1389 787 781; 1390 786 787; 1391 788 789



JAGEN, B.E.,M.E., (Struct), M.I.E.,A.I.
CMDA REGN NOS-SE/GR-I/19/03/24, GA/19/03/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269154

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487. 1392 788 697; 1393 789 783; 1394 790 694; 1395 789 790; 1396 791 790
488. 1397 792 695; 1398 791 792; 1399 793 797; 1400 794 798; 1401 793 795
489. 1402 795 794; 1403 705 796; 1404 796 795; 1405 704 796; 1406 797 799
490. 1407 798 699; 1408 797 800; 1409 799 698; 1410 799 801; 1411 800 802
491. 1412 801 803; 1413 800 801; 1414 802 798; 1415 803 699; 1416 802 803
492. 1417 804 709; 1418 805 704; 1419 804 805; 1420 806 719; 1421 807 768
493. 1422 806 807; 1423 808 806; 1424 809 807; 1425 808 809; 1426 705 810
494. 1427 706 811; 1428 710 812; 1429 711 813; 1430 714 814; 1431 715 815
495. 1432 719 816; 1433 720 817; 1434 816 818; 1435 816 814; 1436 817 815
496. 1437 814 815; 1438 818 817; 1439 810 811; 1440 812 810; 1441 813 811
497. 1442 812 813; 1443 819 814; 1444 819 833; 1445 815 832; 1446 814 820
498. 1447 815 821; 1448 816 822; 1449 817 823; 1451 822 824; 1452 822 820
499. 1453 823 821; 1454 820 821; 1455 824 823; 1456 707 825; 1457 708 826
500. 1458 712 827; 1459 713 828; 1462 827 825; 1463 827 830; 1464 825 826
501. 1465 828 829; 1466 829 826; 1467 830 828; 1468 832 813; 1469 831 832
502. 1470 833 812; 1471 833 831; 1472 834 67; 1473 834 63; 1475 836 73; 1476 838 72
503. 1477 840 838; 1478 77 837; 1479 837 841; 1480 839 836; 1481 838 839
504. 1482 841 839; 1483 840 841
505. START GROUP DEFINITION
506. FLOOR
507. _FIREWATERTANK 1439 TO 1441 1468 TO 1471
508. _WT 1462 TO 1467
509. END GROUP DEFINITION
510. DEFINE MATERIAL START
511. ISOTROPIC CONCRETE
512. E 2.17185E+07
513. POISSON 0.17
514. DENSITY 23.5616
515. ALPHA 1E-05
516. DAMP 0.05
517. G 9.28139E+06
518. TYPE CONCRETE
519. STRENGTH FCU 27579
520. END DEFINE MATERIAL
521. MEMBER PROPERTY
522. 11 16 20 24 25 29 TO 31 33 35 TO 37 39 TO 45 56 61 65 69 70 74 TO 76 78 80 -
523. 81 TO 82 84 TO 90 PRIS YD 0.45 ZD 0.3
524. 2 TO 5 12 17 47 TO 50 57 62 PRIS YD 0.3 ZD 0.45
525. 21 34 38 66 79 83 PRIS YD 0.6 ZD 0.3
526. 6 7 26 51 52 71 PRIS YD 0.3 ZD 0.6
527. 9 10 15 54 55 60 364 TO 366 370 371 375 379 380 384 TO 386 388 390 TO 392 -
528. 394 TO 400 578 TO 580 584 585 589 593 594 598 TO 600 602 604 TO 606 -
529. 608 TO 614 792 TO 794 798 799 803 807 808 812 TO 814 816 818 TO 820 -
530. 822 TO 828 1006 TO 1008 1012 1013 1017 1021 1022 1026 TO 1028 1030 -
531. 1032 TO 1034 1036 TO 1042 1220 TO 1222 1226 1227 1231 1235 1236 -
532. 1240 TO 1242 1244 1246 TO 1248 1250 TO 1256 1456 TO 1457 -
533. 1458 PRIS YD 0.45 ZD 0.23
534. 1 13 14 18 19 22 23 27 28 46 58 59 63 64 67 68 72 73 356 TO 360 367 TO 369 -
535. 372 TO 374 377 378 382 383 570 TO 574 581 TO 583 586 TO 588 591 592 596 597 -
536. 784 TO 788 795 TO 797 800 TO 802 805 806 810 811 998 TO 1002 1009 TO 1011 -
537. 1014 TO 1016 1019 1020 1024 1025 1212 TO 1216 1223 TO 1225 1228 TO 1230 -
538. 1233 1234 1238 1239 1426 TO 1433 1446 TO 1449 PRIS YD 0.23 ZD 0.45
539. 376 389 393 590 603 607 804 817 821 1018 1031 1035 1232 1245 1249 -
540. 1459 PRIS YD 0.6 ZD 0.23
541. 8 53 361 TO 363 381 575 TO 577 595 789 TO 791 809 1003 TO 1005 1023 -
542. 1217 TO 1219 1237 PRIS YD 0.23 ZD 0.6
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JAGEEN, B.E.,M.E., (Struct), M.I.E.,A.I.V.,
GNDA RECN NOS-SE/GR-I/19/03/24, GA/19/94/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.

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543. 32 77 PRIS YD 0.93 ZD 0.3
544. 387 601 815 1029 1243 PRIS YD 0.93 ZD 0.23
545. 91 TO 200 202 203 205 TO 212 214 216 TO 231 233 234 236 TO 245 247 248 250 -
546. 251 TO 253 255 TO 268 270 271 273 TO 289 291 TO 294 296 TO 299 301 303 304 -
547. 308 310 TO 315 317 318 320 TO 328 331 TO 335 338 340 TO 347 349 TO 355 401 -
548. 402 TO 416 418 419 421 TO 428 430 432 TO 447 449 TO 460 462 463 465 TO 468 -
549. 470 TO 483 485 486 488 TO 504 506 TO 509 511 TO 514 516 518 519 522 -
550. 524 TO 529 531 532 534 TO 542 545 TO 549 552 554 TO 561 563 TO 569 -
551. 615 TO 630 632 633 635 TO 642 644 646 TO 661 663 TO 674 676 677 679 TO 682 -
552. 684 TO 697 699 700 702 TO 718 720 TO 723 725 TO 728 730 732 733 736 -
553. 738 TO 743 745 746 748 TO 756 759 TO 763 766 768 TO 775 777 TO 783 -
554. 829 TO 844 846 847 849 TO 856 858 860 TO 875 877 TO 888 890 891 893 TO 896 -
555. 898 TO 911 913 914 916 TO 932 934 TO 937 939 TO 942 944 946 947 950 -
556. 952 TO 957 959 960 962 TO 970 973 TO 977 980 982 TO 989 991 TO 997 -
557. 1043 TO 1058 1060 1061 1063 TO 1070 1072 1074 TO 1089 1091 TO 1102 1104 -
558. 1105 1107 TO 1110 1112 TO 1125 1127 1128 1130 TO 1146 1148 TO 1151 -
559. 1153 TO 1156 1158 1160 1161 1164 1166 TO 1171 1173 1174 1176 TO 1184 1187 -
560. 1188 TO 1191 1194 1196 TO 1203 1205 PRIS YD 0.45 ZD 0.23
561. 1206 TO 1211 1257 TO 1272 1274 1275 1277 TO 1284 1286 1288 TO 1303 -
562. 1305 TO 1316 1318 1319 1321 TO 1324 1326 TO 1339 1341 1342 1344 TO 1360 -
563. 1362 TO 1365 1367 TO 1370 1372 1374 1375 1378 1380 TO 1385 1387 1388 1390 -
564. 1391 TO 1398 1401 TO 1405 1408 1410 TO 1417 1419 TO 1425 1434 TO 1445 1451 -
565. 1452 TO 1455 1462 TO 1473 1475 TO 1483 PRIS YD 0.45 ZD 0.23
566. 201 204 213 215 232 246 249 254 269 272 290 295 300 302 306 307 309 316 319 -
567. 329 330 336 337 339 348 417 420 429 431 448 461 464 469 484 487 505 510 515 -
568. 517 520 521 523 530 533 543 544 550 551 553 562 631 634 643 645 662 675 678 -
569. 683 698 701 719 724 729 731 734 735 737 744 747 757 758 764 765 767 776 845 -
570. 848 857 859 876 889 892 897 912 915 933 938 943 945 948 949 951 958 961 971 -
571. 972 978 979 981 990 1059 1062 1071 1073 1090 1103 1106 1111 1126 1129 1147 -
572. 1152 1157 1159 1162 1163 1165 1172 1175 1185 1186 1192 1193 1195 1204 1273 -
573. 1276 1285 1287 1304 1317 1320 1325 1340 1343 1361 1366 1371 1373 1376 1377 -
574. 1379 1386 1389 1399 1400 1406 1407 1409 1418 PRIS YD 0.6 ZD 0.23
575. CONSTANTS
576. MATERIAL CONCRETE ALL
577. SUPPORTS
578. 1 TO 45 FIXED
579. CUT OFF MODE SHAPE 15
580. DEFINE REFERENCE LOADS
581. LOAD R1 LOADTYPE MASS  TITLE REF MASS MODEL
582. MEMBER LOAD
583. 203 205 207 208 217 223 224 226 227 229 TO 231 233 236 238 TO 240 242 TO 245 -
584. 247 248 251 TO 253 257 258 261 TO 265 273 276 277 279 TO 284 286 TO 288 302 -
585. 303 TO 304 307 TO 312 314 TO 322 329 331 332 334 336 338 TO 343 350 352 353 -
586. 355 419 421 423 424 433 439 440 442 443 445 TO 447 449 451 453 TO 455 457 -
587. 458 TO 460 462 463 466 TO 468 472 473 476 TO 480 488 491 492 494 TO 499 501 -
588. 502 TO 503 517 TO 519 521 TO 526 528 TO 536 543 545 546 548 550 552 TO 557 -
589. 564 566 567 569 633 635 637 638 647 653 654 656 657 659 TO 661 663 665 667 -
590. 668 TO 669 671 TO 674 676 677 680 TO 682 686 687 690 TO 694 702 705 706 708 -
591. 709 TO 713 715 TO 717 731 TO 733 735 TO 740 742 TO 750 757 759 760 762 764 -
592. 766 TO 771 778 780 781 783 847 849 851 852 861 867 868 870 871 873 TO 875 -
593. 877 879 881 TO 883 885 TO 888 890 891 894 TO 896 900 901 904 TO 908 916 919 -
594. 920 922 TO 927 929 TO 931 945 TO 947 949 TO 954 956 TO 964 971 973 974 976 -
595. 978 980 TO 985 992 994 995 997 1061 1063 1065 1066 1075 1081 1082 1084 1085 -
596. 1087 TO 1089 1091 1093 1095 TO 1097 1099 TO 1102 1104 1105 1108 TO 1110 -
597. 1114 1115 1118 TO 1122 1130 1133 1134 1136 TO 1141 1143 TO 1145 -
598. 1159  UNI GX 5
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V. JAGEN, B.E.,M.E., (Struct), M.I.E.,A.I.V.
CM/DA REGN NOS-SE/GR-I/19/03/24, QA/19/04/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269154

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599. 203 205 207 208 217 223 224 226 227 229 TO 231 233 236 238 TO 240 242 TO 245 -
600. 247 248 251 TO 253 257 258 261 TO 265 273 276 277 279 TO 284 286 TO 288 302 -
601. 303 TO 304 307 TO 312 314 TO 322 329 331 332 334 336 338 TO 343 350 352 353 -
602. 355 419 421 423 424 433 439 440 442 443 445 TO 447 449 451 453 TO 455 457 -
603. 458 TO 460 462 463 466 TO 468 472 473 476 TO 480 488 491 492 494 TO 499 501 -
604. 502 TO 503 517 TO 519 521 TO 526 528 TO 536 543 545 546 548 550 552 TO 557 -
605. 564 566 567 569 633 635 637 638 647 653 654 656 657 659 TO 661 663 665 667 -
606. 668 TO 669 671 TO 674 676 677 680 TO 682 686 687 690 TO 694 702 705 706 708 -
607. 709 TO 713 715 TO 717 731 TO 733 735 TO 740 742 TO 750 757 759 760 762 764 -
608. 766 TO 771 778 780 781 783 847 849 851 852 861 867 868 870 871 873 TO 875 -
609. 877 879 881 TO 883 885 TO 888 890 891 894 TO 896 900 901 904 TO 908 916 919 -
610. 920 922 TO 927 929 TO 931 945 TO 947 949 TO 954 956 TO 964 971 973 974 976 -
611. 978 980 TO 985 992 994 995 997 1061 1063 1065 1066 1075 1081 1082 1084 1085 -
612. 1087 TO 1089 1091 1093 1095 TO 1097 1099 TO 1102 1104 1105 1108 TO 1110 -
613. 1114 1115 1118 TO 1122 1130 1133 1134 1136 TO 1141 1143 TO 1145 -
614. 1159  UNI GY 5
615. 203 205 207 208 217 223 224 226 227 229 TO 231 233 236 238 TO 240 242 TO 245 -
616. 247 248 251 TO 253 257 258 261 TO 265 273 276 277 279 TO 284 286 TO 288 302 -
617. 303 TO 304 307 TO 312 314 TO 322 329 331 332 334 336 338 TO 343 350 352 353 -
618. 355 419 421 423 424 433 439 440 442 443 445 TO 447 449 451 453 TO 455 457 -
619. 458 TO 460 462 463 466 TO 468 472 473 476 TO 480 488 491 492 494 TO 499 501 -
620. 502 TO 503 517 TO 519 521 TO 526 528 TO 536 543 545 546 548 550 552 TO 557 -
621. 564 566 567 569 633 635 637 638 647 653 654 656 657 659 TO 661 663 665 667 -
622. 668 TO 669 671 TO 674 676 677 680 TO 682 686 687 690 TO 694 702 705 706 708 -
623. 709 TO 713 715 TO 717 731 TO 733 735 TO 740 742 TO 750 757 759 760 762 764 -
624. 766 TO 771 778 780 781 783 847 849 851 852 861 867 868 870 871 873 TO 875 -
625. 877 879 881 TO 883 885 TO 888 890 891 894 TO 896 900 901 904 TO 908 916 919 -
626. 920 922 TO 927 929 TO 931 945 TO 947 949 TO 954 956 TO 964 971 973 974 976 -
627. 978 980 TO 985 992 994 995 997 1061 1063 1065 1066 1075 1081 1082 1084 1085 -
628. 1087 TO 1089 1091 1093 1095 TO 1097 1099 TO 1102 1104 1105 1108 TO 1110 -
629. 1114 1115 1118 TO 1122 1130 1133 1134 1136 TO 1141 1143 TO 1145 -
630. 1159  UNI GZ 5
631. MEMBER LOAD
632. 1160 1161 1163 TO 1168 1170 TO 1178 1185 1187 1188 1190 1192 1194 TO 1199 -
633. 1206 1208 1209 1211 1473 1481 1483 UNI GX 5
634. 1160 1161 1163 TO 1168 1170 TO 1178 1185 1187 1188 1190 1192 1194 TO 1199 -
635. 1206 1208 1209 1211 1473 1481 1483 UNI GY 5
636. 1160 1161 1163 TO 1168 1170 TO 1178 1185 1187 1188 1190 1192 1194 TO 1199 -
637. 1206 1208 1209 1211 1473 1481 1483 UNI GZ 5
638. MEMBER LOAD
639. 91 102 104 147 150 151 162 169 TO 171 176 185 187 188 190 192 194 196 TO 202 -
640. 204 206 209 210 212 TO 216 222 225 228 232 241 246 249 255 256 259 260 266 -
641. 269 TO 272 274 275 278 285 289 290 295 300 301 306 323 TO 328 330 335 344 -
642. 345 TO 348 401 403 404 406 408 410 412 TO 418 420 422 425 426 428 TO 432 438 -
643. 441 444 448 456 461 464 470 471 474 475 481 484 TO 487 489 490 493 500 504 -
644. 505 510 515 516 520 537 TO 542 544 549 558 TO 562 615 617 618 620 622 624 -
645. 626 TO 632 634 636 639 640 642 TO 646 652 655 658 662 670 675 678 684 685 -
646. 688 689 695 698 TO 701 703 704 707 714 718 719 724 729 730 734 751 TO 756 -
647. 758 763 772 TO 776 829 831 832 834 836 838 840 TO 846 848 850 853 854 856 -
648. 857 TO 860 866 869 872 876 884 889 892 898 899 902 903 909 912 TO 915 917 -
649. 918 921 928 932 933 938 943 944 948 965 TO 970 972 977 986 TO 990 1043 1045 -
650. 1046 1048 1050 1052 1054 TO 1060 1062 1064 1067 1068 1070 TO 1074 1080 1083 -
651. 1086 1090 1098 1103 1106 1112 1113 1116 1117 1123 1126 TO 1129 1131 1132 -
652. 1135 1142 1146 1147 1152 1157 1158 1162 1179 TO 1184 1186 1191 1200 TO 1204 -
653. 1365 1478 UNI GX 6
654. 91 102 104 147 150 151 162 169 TO 171 176 185 187 188 190 192 194 196 TO 202 -
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V. JAGEN, B.E.,M.E., (Struct), M.I.E.,A.I.V.
CMDA REGN NOS-SE/GR-I/19/03/24, QA/19/04/24 I
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269154

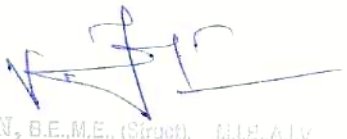
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655. 204 206 209 210 212 TO 216 222 225 228 232 241 246 249 255 256 259 260 266 -
656. 269 TO 272 274 275 278 285 289 290 295 300 301 306 323 TO 328 330 335 344 -
657. 345 TO 348 401 403 404 406 408 410 412 TO 418 420 422 425 426 428 TO 432 438 -
658. 441 444 448 456 461 464 470 471 474 475 481 484 TO 487 489 490 493 500 504 -
659. 505 510 515 516 520 537 TO 542 544 549 558 TO 562 615 617 618 620 622 624 -
660. 626 TO 632 634 636 639 640 642 TO 646 652 655 658 662 670 675 678 684 685 -
661. 688 689 695 698 TO 701 703 704 707 714 718 719 724 729 730 734 751 TO 756 -
662. 758 763 772 TO 776 829 831 832 834 836 838 840 TO 846 848 850 853 854 856 -
663. 857 TO 860 866 869 872 876 884 889 892 898 899 902 903 909 912 TO 915 917 -
664. 918 921 928 932 933 938 943 944 948 965 TO 970 972 977 986 TO 990 1043 1045 -
665. 1046 1048 1050 1052 1054 TO 1060 1062 1064 1067 1068 1070 TO 1074 1080 1083 -
666. 1086 1090 1098 1103 1106 1112 1113 1116 1117 1123 1126 TO 1129 1131 1132 -
667. 1135 1142 1146 1147 1152 1157 1158 1162 1179 TO 1184 1186 1191 1200 TO 1204 -
668. 1365 1478 UNI GY 6
669. 91 102 104 147 150 151 162 169 TO 171 176 185 187 188 190 192 194 196 TO 202 -
670. 204 206 209 210 212 TO 216 222 225 228 232 241 246 249 255 256 259 260 266 -
671. 269 TO 272 274 275 278 285 289 290 295 300 301 306 323 TO 328 330 335 344 -
672. 345 TO 348 401 403 404 406 408 410 412 TO 418 420 422 425 426 428 TO 432 438 -
673. 441 444 448 456 461 464 470 471 474 475 481 484 TO 487 489 490 493 500 504 -
674. 505 510 515 516 520 537 TO 542 544 549 558 TO 562 615 617 618 620 622 624 -
675. 626 TO 632 634 636 639 640 642 TO 646 652 655 658 662 670 675 678 684 685 -
676. 688 689 695 698 TO 701 703 704 707 714 718 719 724 729 730 734 751 TO 756 -
677. 758 763 772 TO 776 829 831 832 834 836 838 840 TO 846 848 850 853 854 856 -
678. 857 TO 860 866 869 872 876 884 889 892 898 899 902 903 909 912 TO 915 917 -
679. 918 921 928 932 933 938 943 944 948 965 TO 970 972 977 986 TO 990 1043 1045 -
680. 1046 1048 1050 1052 1054 TO 1060 1062 1064 1067 1068 1070 TO 1074 1080 1083 -
681. 1086 1090 1098 1103 1106 1112 1113 1116 1117 1123 1126 TO 1129 1131 1132 -
682. 1135 1142 1146 1147 1152 1157 1158 1162 1179 TO 1184 1186 1191 1200 TO 1204 -
683. 1365 1478 UNI GZ 6
684. MEMBER LOAD
685. 294 509 723 937 1151 UNI GX 7
686. 294 509 723 937 1151 UNI GY 7
687. 294 509 723 937 1151 UNI GZ 7
688. MEMBER LOAD
689. 132 TO 137 149 154 178 218 TO 221 267 268 291 TO 293 299 351 354 434 TO 437 -
690. 482 483 506 TO 508 514 565 568 648 TO 651 696 697 720 TO 722 728 779 782 -
691. 862 TO 865 910 911 934 TO 936 942 993 996 1076 TO 1079 1124 1125 -
692. 1148 TO 1150 1156 1207 1210 1290 TO 1293 1338 1339 1362 TO 1364 -
693. 1368 TO 1370 1421 1424 1472 1475 1479 1480 1482 UNI GX 13
694. 132 TO 137 149 154 178 218 TO 221 267 268 291 TO 293 299 351 354 434 TO 437 -
695. 482 483 506 TO 508 514 565 568 648 TO 651 696 697 720 TO 722 728 779 782 -
696. 862 TO 865 910 911 934 TO 936 942 993 996 1076 TO 1079 1124 1125 -
697. 1148 TO 1150 1156 1207 1210 1290 TO 1293 1338 1339 1362 TO 1364 -
698. 1368 TO 1370 1421 1424 1472 1475 1479 1480 1482 UNI GY 13
699. 132 TO 137 149 154 178 218 TO 221 267 268 291 TO 293 299 351 354 434 TO 437 -
700. 482 483 506 TO 508 514 565 568 648 TO 651 696 697 720 TO 722 728 779 782 -
701. 862 TO 865 910 911 934 TO 936 942 993 996 1076 TO 1079 1124 1125 -
702. 1148 TO 1150 1156 1207 1210 1290 TO 1293 1338 1339 1362 TO 1364 -
703. 1368 TO 1370 1421 1424 1472 1475 1479 1480 1482 UNI GZ 13
704. MEMBER LOAD
705. 131 186 189 193 349 402 405 409 563 616 619 623 777 830 833 837 991 1044 -
706. 1047 1051 1205 1257 TO 1273 1276 1281 1282 1284 TO 1289 1294 1297 1300 1304 -
707. 1317 1320 1326 1331 1337 1341 1345 1346 1349 1360 1361 1372 1376 1383 1400 -
708. 1407 1417 1418 1420 1423 1476 1477 UNI GX 3
709. 131 186 189 193 349 402 405 409 563 616 619 623 777 830 833 837 991 1044 -
710. 1047 1051 1205 1257 TO 1273 1276 1281 1282 1284 TO 1289 1294 1297 1300 1304 -
```

J. JAGEN, B.E.,M.E., (Struct), M.I.E.,A.I.V.
CMDA REGN NOS-SE/GR-II/19/03/24, CA/19/04/
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269154

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711. 1317 1320 1326 1331 1337 1341 1345 1346 1349 1360 1361 1372 1376 1383 1400 -
712. 1407 1417 1418 1420 1423 1476 1477 UNI GY 3
713. 131 186 189 193 349 402 405 409 563 616 619 623 777 830 833 837 991 1044 -
714. 1047 1051 1205 1257 TO 1273 1276 1281 1282 1284 TO 1289 1294 1297 1300 1304 -
715. 1317 1320 1326 1331 1337 1341 1345 1346 1349 1360 1361 1372 1376 1383 1400 -
716. 1407 1417 1418 1420 1423 1476 1477 UNI GZ 3
717. FLOOR LOAD
718. YRANGE 5.5 25.6 FLOAD 5.125 GX
719. YRANGE 5.5 25.6 FLOAD 5.125 GY
720. YRANGE 5.5 25.6 FLOAD 5.125 GZ
721. FLOOR LOAD
722. YRANGE 21 25.6 FLOAD 1.6 GX
723. YRANGE 21 25.6 FLOAD 1.6 GY
724. YRANGE 21 25.6 FLOAD 1.6 GZ
725. FLOOR LOAD
726. _FIREWATERTANK FLOAD 15 GX
727. _FIREWATERTANK FLOAD 15 GY
728. _FIREWATERTANK FLOAD 15 GZ
729. FLOOR LOAD
730. _WT FLOAD 15 GX
731. _WT FLOAD 15 GY
732. _WT FLOAD 15 GZ
733. SELFWEIGHT X 1
734. SELFWEIGHT Y 1
735. SELFWEIGHT Z 1
736. FLOOR LOAD
737. YRANGE 5.5 18.1 FLOAD 0.5 GX
738. YRANGE 5.5 18.1 FLOAD 0.5 GY
739. YRANGE 5.5 18.1 FLOAD 0.5 GZ
740. END DEFINE REFERENCE LOADS

*** NOTE: MASS MODEL FORMED WILL BE USED IN SEISMIC/RESPONSE/TIME HISTORY LOADING, IF ANY.
          IF MASS MODEL IS SEPARATELY PROVIDED IN INDIVIDUAL LOADING, THE GENERATED MASS
          WILL BE REPLACED BY THE MASS PROVIDED IN INDIVIDUAL LOADING.

741. FLOOR DIAPHRAGM
742. DIA 1 TYPE RIG HEI 5.6
743. DIA 2 TYPE RIG HEI 8.7
744. DIA 3 TYPE RIG HEI 11.8
745. DIA 4 TYPE RIG HEI 14.9
746. DIA 5 TYPE RIG HEI 18
747. DIA 6 TYPE RIG HEI 21.1
748. DIA 7 TYPE RIG HEI 24.2
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V. JAGEN, B.E.,M.E., (Struct), M.I.E.,A.I.V.
CMDA REGN NOS-SE/GR-I/19/03/24, GA/19/04/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269154

FLOOR DIAPHRAGM

**********

FLOOR DIAPHRAGM UNIT - KN METE

| NO. | TYPE | FL. LEVEL | FL. WT | CENTRE OF MASS X | Z | CONTROL JOINT NO. |
|---|---|---|---|---|---|---|
| 1 | RIGID | 5.600 | 5514.77 | 6.502 | 16.250 | 842 |
| 2 | RIGID | 8.700 | 5474.43 | 6.507 | 16.230 | 843 |
| 3 | RIGID | 11.800 | 5474.43 | 6.507 | 16.230 | 844 |
| 4 | RIGID | 14.900 | 5474.43 | 6.507 | 16.230 | 845 |
| 5 | RIGID | 18.000 | 5474.43 | 6.507 | 16.230 | 846 |
| 6 | RIGID | 21.100 | 4644.34 | 6.682 | 16.163 | 847 |
| 7 | RIGID | 24.200 | 544.19 | 12.024 | 13.750 | 848 |

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750. DEFINE IS1893 2016 LOAD
751. ZONE 0.16 RF 5 I 1 SS 2 ST 1 DM 0.05 PX 0.46 PZ 0.29
752. DEFINE WIND LOAD
753. TYPE 1 IS875 RECT CLAD (+X)
754. <! STAAD PRO GENERATED DATA DO NOT MODIFY !!!
755. IS875-2015:PARAMS 1 0 0 25.500 0.000 5.000 0 CHENNAI 50.000 0 1.000 3 7 -
756. 0.800 0.800 0.800 0.800 0.800 0.885 0.894 1.000 2 1.000 2.000 0 13.330 -
757. 34.270 25.500 1 1 1 0.200 0 3 4 0 4 1.000 0.000 0.000 0.000 NA NA 6 0.000 -
758. 0.000 25.500 5.600 0.000 0.000 1 1 4 0.000 1.000 0.000 0.000 NA NA 6 0.000 -
759. 0.000 25.500 5.600 0.000 0.000 1 2 4 0.000 0.000 1.000 0.000 NA NA 6 0.000 -
760. 0.000 25.500 5.600 0.000 0.000 1 3 4 0.000 0.000 0.000 1.000 NA NA 6 0.000 -
761. 0.000 25.500 5.600 0.000 0.000 1 1.000 1.000 1.000 TYPES 4 1 2 3 4 LOADS 4 -
762. 13 14 15 16
763. !> END GENERATED DATA BLOCK
764. INT 0.96 0.96 0.96 0.96 0.96 1.17484 1.19751 HEIG  0  5  10  15  20  25  25.5
765. TYPE 2 IS875 RECT CLAD (-X)
766. <! STAAD PRO GENERATED DATA DO NOT MODIFY !!!
767. IS875-2015:PARAMS 1  1
768. !> END GENERATED DATA BLOCK
769. INT 0.96 0.96 0.96 0.96 0.96 1.17484 1.19751 HEIG  0  5  10  15  20  25  25.5
770. TYPE 3 IS875 RECT CLAD (+Z)
771. <! STAAD PRO GENERATED DATA DO NOT MODIFY !!!
772. IS875-2015:PARAMS 1  1
773. !> END GENERATED DATA BLOCK
774. INT 0.96 0.96 0.96 0.96 0.96 1.17484 1.19751 HEIG  0  5  10  15  20  25  25.5
775. TYPE 4 IS875 RECT CLAD (-Z)
776. <! STAAD PRO GENERATED DATA DO NOT MODIFY !!!
777. IS875-2015:PARAMS 1  1
778. !> END GENERATED DATA BLOCK
779. INT 0.96 0.96 0.96 0.96 0.96 1.17484 1.19751 HEIG  0  5  10  15  20  25  25.5
780. LOAD 5 LOADTYPE SEISMIC-H  TITLE EQ+X
```

JAGEN, B.E.,M.E., (Struct), M.I.E.,A.M.I.E.,
CMDA REGN NOS-SE/CR-I/19/03/24, QA/19/04/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.

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781. 1893 LOAD X 1
782. LOAD 6 LOADTYPE SEISMIC-H  TITLE EQ-X
783. 1893 LOAD X -1.
784. LOAD 7 LOADTYPE SEISMIC-H  TITLE EQ+Z
785. 1893 LOAD Z 1
786. LOAD 8 LOADTYPE SEISMIC-H  TITLE EQ-Z
787. 1893 LOAD Z -1.
788. LOAD 1 LOADTYPE DEAD  TITLE DL
789. MEMBER LOAD
790. 203 205 207 208 217 223 224 226 227 229 TO 231 233 236 238 TO 240 242 TO 245 -
791. 247 248 251 TO 253 257 258 261 TO 265 273 276 277 279 TO 284 286 TO 288 302 -
792. 303 TO 304 307 TO 312 314 TO 322 329 331 332 334 336 338 TO 343 350 352 353 -
793. 355 419 421 423 424 433 439 440 442 443 445 TO 447 449 451 453 TO 455 457 -
794. 458 TO 460 462 463 466 TO 468 472 473 476 TO 480 488 491 492 494 TO 499 501 -
795. 502 TO 503 517 TO 519 521 TO 526 528 TO 536 543 545 546 548 550 552 TO 557 -
796. 564 566 567 569 633 635 637 638 647 653 654 656 657 659 TO 661 663 665 667 -
797. 668 TO 669 671 TO 674 676 677 680 TO 682 686 687 690 TO 694 702 705 706 708 -
798. 709 TO 713 715 TO 717 731 TO 733 735 TO 740 742 TO 750 757 759 760 762 764 -
799. 766 TO 771 778 780 781 783 847 849 851 852 861 867 868 870 871 873 TO 875 -
800. 877 879 881 TO 883 885 TO 888 890 891 894 TO 896 900 901 904 TO 908 916 919 -
801. 920 922 TO 927 929 TO 931 945 TO 947 949 TO 954 956 TO 964 971 973 974 976 -
802. 978 980 TO 985 992 994 995 997 1061 1063 1065 1066 1075 1081 1082 1084 1085 -
803. 1087 TO 1089 1091 1093 1095 TO 1097 1099 TO 1102 1104 1105 1108 TO 1110 -
804. 1114 1115 1118 TO 1122 1130 1133 1134 1136 TO 1141 1143 TO 1145 -
805. 1159  UNI GY -5
806. 1160 1161 1163 TO 1168 1170 TO 1178 1185 1187 1188 1190 1192 1194 TO 1199 -
807. 1206 1208 1209 1211 1473 1481 1483 UNI GY -5
808. 91 102 104 147 150 151 162 169 TO 171 176 185 187 188 190 192 194 196 TO 202 -
809. 204 206 209 210 212 TO 216 222 225 228 232 241 246 249 255 256 259 260 266 -
810. 269 TO 272 274 275 278 285 289 290 295 300 301 306 323 TO 328 330 335 344 -
811. 345 TO 348 401 403 404 406 408 410 412 TO 418 420 422 425 426 428 TO 432 438 -
812. 441 444 448 456 461 464 470 471 474 475 481 484 TO 487 489 490 493 500 504 -
813. 505 510 515 516 520 537 TO 542 544 549 558 TO 562 615 617 618 620 622 624 -
814. 626 TO 632 634 636 639 640 642 TO 646 652 655 658 662 670 675 678 684 685 -
815. 688 689 695 698 TO 701 703 704 707 714 718 719 724 729 730 734 751 TO 756 -
816. 758 763 772 TO 776 829 831 832 834 836 838 840 TO 846 848 850 853 854 856 -
817. 857 TO 860 866 869 872 876 884 889 892 898 899 902 903 909 912 TO 915 917 -
818. 918 921 928 932 933 938 943 944 948 965 TO 970 972 977 986 TO 990 1043 1045 -
819. 1046 1048 1050 1052 1054 TO 1060 1062 1064 1067 1068 1070 TO 1074 1080 1083 -
820. 1086 1090 1098 1103 1106 1112 1113 1116 1117 1123 1126 TO 1129 1131 1132 -
821. 1135 1142 1146 1147 1152 1157 1158 1162 1179 TO 1184 1186 1191 1200 TO 1204 -
822. 1365 1478 UNI GY -6
823. 294 509 723 937 1151 UNI GY -7
824. 132 TO 137 149 154 178 218 TO 221 267 268 291 TO 293 299 351 354 434 TO 437 -
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V. JAGEN, B.E.,M.E., (Struct), M.I.E.,A.I.V.
CMDA REGN NOS-SE/GR-II/19/03/24, QA/19/04/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
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  825. 482 483 506 TO 508 514 565 568 648 TO 651 696 697 720 TO 722 728 779 782 -
  826. 862 TO 865 910 911 934 TO 936 942 993 996 1076 TO 1079 1124 1125 -
  827. 1148 TO 1150 1156 1207 1210 1290 TO 1293 1338 1339 1362 TO 1364 -
  828. 1368 TO 1370 1421 1424 1472 1475 1479 1480 1482 UNI GY -13
  829. 131 186 189 193 349 402 405 409 563 616 619 623 777 830 833 837 991 1044 -
  830. 1047 1051 1205 1257 TO 1273 1276 1281 1282 1284 TO 1289 1294 1297 1300 1304 -
  831. 1317 1320 1326 1331 1337 1341 1345 1346 1349 1360 1361 1372 1376 1383 1400 -
  832. 1407 1417 1418 1420 1423 1476 1477 UNI GY -3
  833. FLOOR LOAD
  834. YRANGE 5.5 25.6 FLOAD -5.125 GY
**NOTE** about Floor/OneWay Loads/Weights.
  Please note that depending on the shape of the floor you may
  have to break up the FLOOR/ONEWAY LOAD into multiple commands.
  For details please refer to Technical Reference Manual
  Section 5.32.4.2 Note d and/or "5.32.4.3 Note f.

  835. YRANGE 21 25.6 FLOAD -1.6 GY
  836. _FIREWATERTANK FLOAD -15 GY
**NOTE** about FLOOR GROUP command
  All floor panels in a floor group should lie in a single plane.
  If not lying in a single plane break single FLOOR GROUP
  command into multiple FLOOR GROUP commands where each
  floor group lie in a single plane / height.

  837. _WT FLOAD -15 GY
  838. SELFWEIGHT Y -1
  839. LOAD 2 LOADTYPE LIVE  TITLE LL
  840. FLOOR LOAD
  841. YRANGE 5.5 18.1 FLOAD -2 GY
  842. YRANGE 21 21.2 FLOAD -1.5 GY
  843. LOAD 9 LOADTYPE SEISMIC-H  TITLE RS+X
  844. SPECTRUM CQC IS1893 2016 X 0.016 SCALE 4.108 DAMP 0.05
  845. SOIL TYPE 2
  846. LOAD 10 LOADTYPE SEISMIC-H  TITLE RS-X
  847. SPECTRUM CQC IS1893 2016 X -0.016 SCALE 4.108 DAMP 0.05
  848. SOIL TYPE 2
  849. LOAD 11 LOADTYPE SEISMIC-H  TITLE RS+Z
  850. SPECTRUM CQC IS1893 2016 Z 0.016 SCALE 3.1278 DAMP 0.05
  851. SOIL TYPE 2
  852. LOAD 12 LOADTYPE SEISMIC-H  TITLE RS-Z
  853. SPECTRUM CQC IS1893 2016 Z -0.016 SCALE 3.1278 DAMP 0.05
  854. SOIL TYPE 2
  855. LOAD 13 LOADTYPE WIND  TITLE WIND (+X) IS875 RECT CLAD
  856. WIND LOAD X 1 TYPE 1 YR 5.6 25.5
  857. LOAD 14 LOADTYPE WIND  TITLE WIND (-X) IS875 RECT CLAD
  858. WIND LOAD X -1 TYPE 2 YR 5.6 25.5
```

V. JAGEN, B.E.,M.E., (Struct), M.I.E.,A.I.V.
CMDA REGN NOS-SEJGR-I/19/03/24, QA/19/04/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269154

```
859. LOAD 15 LOADTYPE WIND  TITLE WIND (+Z) IS875 RECT CLAD
860. WIND LOAD Z 1 TYPE 3 YR 5.6 25.5
861. LOAD 16 LOADTYPE WIND  TITLE WIND (-Z) IS875 RECT CLAD
862. WIND LOAD Z -1 TYPE 4 YR 5.6 25.5
**WARNING-fx fy fz wind forces:  0.0000E+00  0.0000E+00 -4.0062E-01
         at coordinates:        1.1100E+01  2.1100E+01  1.3750E+01 ignored.
**WARNING-fx fy fz wind forces:  0.0000E+00  0.0000E+00 -4.0062E-01
         at coordinates:        1.1100E+01  2.4200E+01  1.3750E+01 ignored.
863. LOAD COMB 3 DL+LL
864. 1 1.0 2 1.0
865. LOAD COMB 4 1.5DL+1.5LL
866. 1 1.5 2 1.5
867. LOAD COMB 17 DL+RS(+X)
868. 1 1.0 9 1.0
869. LOAD COMB 18 DL+RS(-X)
870. 1 1.0 10 1.0
871. LOAD COMB 19 DL+RS(+Z)
872. 1 1.0 11 1.0
873. LOAD COMB 20 DL+RS(-Z)
874. 1 1.0 12 1.0
875. LOAD COMB 21 DL+WL(+X)
876. 1 1.0 13 1.0
877. LOAD COMB 22 DL+WL(-X)
878. 1 1.0 14 1.0
879. LOAD COMB 23 DL+WL(+Z)
880. 1 1.0 15 1.0
881. LOAD COMB 24 DL+WL(-Z)
882. 1 1.0 16 1.0
883. LOAD COMB 25 1.0DL+0.8LL+0.8RS(+X)
884. 1 1.0 9 0.8 2 0.8
885. LOAD COMB 26 1.0DL+0.8LL+0.8RS(-X)
886. 1 1.0 10 0.8 2 0.8
887. LOAD COMB 27 1.0DL+0.8LL+0.8RS(+Z)
888. 1 1.0 11 0.8 2 0.8
889. LOAD COMB 28 1.0DL+0.8LL+0.8RS(-Z)
890. 1 1.0 12 0.8 2 0.8
891. LOAD COMB 29 1.0DL+0.8LL+0.8WL(+X)
892. 1 1.0 13 0.8 2 0.8
893. LOAD COMB 30 1.0DL+0.8LL+0.8WL(-X)
894. 1 1.0 14 0.8 2 0.8
895. LOAD COMB 31 1.0DL+0.8LL+0.8WL(+Z)
896. 1 1.0 15 0.8 2 0.8
897. LOAD COMB 32 1.0DL+0.8LL+0.8WL(-Z)
898. 1 1.0 16 0.8 2 0.8
899. LOAD COMB 33 1.2DL+1.2LL+1.2RS(+X)
900. 1 1.2 2 1.2 9 1.2
901. LOAD COMB 34 1.2DL+1.2LL+1.2RS(-X)
```

V. JAGEN, B.E.,M.E., (Struct), M.I.E.,A.I.V.
CMDA REGN NOS-SE/CR-I/19/03/24. QA/19/04/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269154

902. 1 1.2 2 1.2 10 1.2
903. LOAD COMB 35 1.2DL+1.2LL+1.2RS(+Z)
904. 1 1.2 2 1.2 11 1.2
905. LOAD COMB 36 1.2DL+1.2LL+1.2RS(-Z)
906. 1 1.2 2 1.2 12 1.2
907. LOAD COMB 37 1.2DL+1.2LL+1.2WL(+X)
908. 1 1.2 2 1.2 13 1.2
909. LOAD COMB 38 1.2DL+1.2LL+1.2WL(-X)
910. 1 1.2 2 1.2 14 1.2
911. LOAD COMB 39 1.2DL+1.2LL+1.2WL(+Z)
912. 1 1.2 2 1.2 15 1.2
913. LOAD COMB 40 1.2DL+1.2LL+1.2WL(-Z)
914. 1 1.2 2 1.2 16 1.2
915. LOAD COMB 41 0.9DL+1.5RS(+X)
916. 1 0.9 9 1.5
917. LOAD COMB 42 0.9DL+1.5RS(-X)
918. 1 0.9 10 1.5
919. LOAD COMB 43 0.9DL+1.5RS(+Z)
920. 1 0.9 11 1.5
921. LOAD COMB 44 0.9DL+1.5RS(-Z)
922. 1 0.9 12 1.5
923. LOAD COMB 45 0.9DL+1.5WL(+X)
924. 1 0.9 13 1.5
925. LOAD COMB 46 0.9DL+1.5WL(-X)
926. 1 0.9 14 1.5
927. LOAD COMB 47 0.9DL+1.5WL(+Z)
928. 1 0.9 15 1.5
929. LOAD COMB 48 0.9DL+1.5WL(-Z)
930. 1 0.9 16 1.5
931. LOAD COMB 49 1.5DL+1.5RS(+X)
932. 1 1.5 9 1.5
933. LOAD COMB 50 1.5DL+1.5RS(-X)
934. 1 1.5 10 1.5
935. LOAD COMB 51 1.5DL+1.5RS(+Z)
936. 1 1.5 11 1.5
937. LOAD COMB 52 1.5DL+1.5RS(-Z)
938. 1 1.5 12 1.5
939. LOAD COMB 53 1.5DL+1.5WL(+X)
940. 1 1.5 13 1.5
941. LOAD COMB 54 1.5DL+1.5WL(-X)
942. 1 1.5 14 1.5
943. LOAD COMB 55 1.5DL+1.5WL(+Z)
944. 1 1.5 15 1.5
945. LOAD COMB 56 1.5DL+1.5WL(-Z)
946. 1 1.5 16 1.5
947. PERFORM ANALYSIS

V. JAGEN, B.E.,M.E., (Struct), M.I.E.,A.I.V.,
CMDA REGN NOS-SE/GR-I/19/03/24, CA/19/04/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841289154

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

| | | | |
|---|---|---|---|
| NUMBER OF JOINTS | 847 | NUMBER OF MEMBERS | 1477 |
| NUMBER OF PLATES | 0 | NUMBER OF SOLIDS | 0 |
| NUMBER OF SURFACES | 0 | NUMBER OF SUPPORTS | 45 |

Using 64-bit analysis engine.

SOLVER USED IS THE IN-CORE ADVANCED MATH SOLVER

TOTAL PRIMARY LOAD CASES = 14, TOTAL DEGREES OF FREEDOM = 2667
TOTAL LOAD COMBINATION CASES = 42 SO FAR.

***NOTE: MASSES DEFINED UNDER LOAD# 9 WILL FORM
THE FINAL MASS MATRIX FOR DYNAMIC ANALYSIS.

**WARNING: IF THIS UBC/IBC ANALYSIS HAS TENSION/COMPRESSION
OR REPEAT LOAD OR RE-ANALYSIS OR SELECT OPTIMIZE, THEN EACH
UBC/IBC CASE SHOULD BE FOLLOWED BY PERFORM ANALYSIS & CHANGE.

***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 =    0.46000 SEC       *
* SA/G PER 1893=    2.500, LOAD FACTOR= 1.000           *
* VB PER 1893=    0.0400 X    34772.76=    1390.91 KN   *
* VB Act Based on Clause 7.2.1 =     1390.91 KN         *
* VB Min based on Clause 7.2.2 =      382.50 KN         *
*                                                       *
*********************************************************
```

***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 =    0.46000 SEC       *
* SA/G PER 1893=    2.500, LOAD FACTOR=-1.000           *
* VB PER 1893=    0.0400 X    34772.76=   -1390.91 KN   *
* VB Act Based on Clause 7.2.1 =    -1390.91 KN         *
* VB Min based on Clause 7.2.2 =     -382.50 KN         *
*                                                       *
*********************************************************
```

***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



V. JAGEE, B.E.,M.E.,(Struct), M.I.E.,A.I.V.,
CIDA REGN NOS-SENGR-II13/03/24, CAT1/004/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.

BASE SHEAR AND TIME PERIOD IN Z

```
   *******************************************************
   * UNITS - KN    METE                                  *
   * TIME PERIOD FOR Z 1893 LOADING =    0.29000 SEC     *
   * SA/G PER 1893=    2.500, LOAD FACTOR= 1.000         *
   * VB PER 1893=    0.0400 X    34772.76=    1390.91 KN  *
   * VB Act Based on Clause 7.2.1 =     1390.91 KN       *
   * VB Min based on Clause 7.2.2 =      382.50 KN       *
   *                                                     *
   *******************************************************
```

***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 =    0.29000 SEC     *
   * SA/G PER 1893=    2.500, LOAD FACTOR=-1.000         *
   * VB PER 1893=    0.0400 X    34772.76=   -1390.91 KN  *
   * VB Act Based on Clause 7.2.1 =    -1390.91 KN       *
   * VB Min based on Clause 7.2.2 =     -382.50 KN       *
   *                                                     *
   *******************************************************

 EIGEN METHOD   : SUBSPACE
 -------------------------
 NUMBER OF MODES REQUESTED              =    15
 NUMBER OF EXISTING MASSES IN THE MODEL =   976
 NUMBER OF MODES THAT WILL BE USED      =    15

   *** EIGENSOLUTION: ADVANCED METHOD ***
```

V. JAGEN, B.E.,M.E., (Struct), M.I.E.,A.I.V.,
CMDA REGN NOS-SEIGR-I/19/03/24, QA/19/04/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269154

STAAD SPACE -- PAGE NO. 22

CALCULATED FREQUENCIES FOR LOAD CASE 9

| MODE | FREQUENCY(CYCLES/SEC) | PERIOD(SEC) |
|---|---|---|
| 1 | 0.620 | 1.61263 |
| 2 | 0.696 | 1.43646 |
| 3 | 0.829 | 1.20673 |
| 4 | 1.881 | 0.53177 |
| 5 | 2.125 | 0.47062 |
| 6 | 2.561 | 0.39048 |
| 7 | 3.004 | 0.33284 |
| 8 | 3.494 | 0.28622 |
| 9 | 3.669 | 0.27259 |
| 10 | 4.080 | 0.24510 |
| 11 | 4.654 | 0.21488 |
| 12 | 4.812 | 0.20782 |
| 13 | 5.125 | 0.19513 |
| 14 | 5.991 | 0.16691 |
| 15 | 6.209 | 0.16106 |

1893 RESPONSE SPECTRUM LOAD 9

RESPONSE LOAD CASE 9

| MODE | MODAL WEIGHT (MODAL MASS TIMES g) IN KN X | Y | Z | GENERALIZED WEIGHT |
|---|---|---|---|---|
| 1 | 1.906887E+04 | 2.072986E-01 | 5.043509E+02 | 6.261651E+03 |
| 2 | 1.199790E+03 | 3.949362E-02 | 2.764601E+04 | 1.691174E+04 |
| 3 | 8.444897E+03 | 4.301660E-01 | 8.391912E+02 | 4.517226E+03 |
| 4 | 2.308337E+03 | 1.064227E+00 | 7.193355E+01 | 5.090769E+03 |
| 5 | 1.450995E+02 | 9.881379E-02 | 3.170381E+03 | 1.169647E+04 |
| 6 | 9.109992E+02 | 1.647803E+00 | 5.657561E+01 | 4.939493E+03 |
| 7 | 6.540063E+02 | 8.851370E-01 | 7.025913E+00 | 6.428896E+02 |
| 8 | 1.767879E+02 | 1.512535E+00 | 2.133198E+02 | 2.154701E+03 |
| 9 | 9.391474E+01 | 5.047909E-02 | 7.762251E+02 | 3.812510E+03 |
| 10 | 2.530769E+01 | 6.906687E-01 | 1.507683E+01 | 2.023480E+02 |
| 11 | 4.208162E+02 | 7.477487E+00 | 5.125254E+00 | 3.372895E+03 |
| 12 | 1.602032E+02 | 7.999081E+00 | 3.982524E+01 | 7.102985E+03 |
| 13 | 3.478690E+00 | 4.856516E-01 | 3.183168E+02 | 1.580517E+03 |
| 14 | 9.302940E+01 | 1.294035E+02 | 1.100126E+02 | 1.326684E+03 |
| 15 | 5.295340E+01 | 1.057132E+02 | 2.688466E+01 | 6.825660E+03 |

V. JAGEN, B.E.,M.E., (Struct), M.I.E.,A.I.V.,
CMDA REGN NOS-SE/GR-I/19/03/24, QA/19/04/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269154

CQC MODAL COMBINATION METHOD USED.
DYNAMIC WEIGHT X Y Z 3.459269E+04 3.459269E+04 3.459269E+04 KN
MISSING WEIGHT X Y Z -8.342006E+02 -3.433499E+04 -7.924435E+02 KN
MODAL WEIGHT X Y Z 3.375849E+04 2.577055E+02 3.380025E+04 KN

RESPONSE LOAD CASE 9

| MODE | SPECTRAL ACCELERATION | DESIGN SEISMIC COEFFICIENT | | |
|---|---|---|---|---|
| | | X | Y | Z |
| 1 | 0.84334 | 0.0554 | 0.0000 | 0.0000 |
| 2 | 0.94677 | 0.0622 | 0.0000 | 0.0000 |
| 3 | 1.12701 | 0.0741 | 0.0000 | 0.0000 |
| 4 | 2.50000 | 0.1643 | 0.0000 | 0.0000 |
| 5 | 2.50000 | 0.1643 | 0.0000 | 0.0000 |
| 6 | 2.50000 | 0.1643 | 0.0000 | 0.0000 |
| 7 | 2.50000 | 0.1643 | 0.0000 | 0.0000 |
| 8 | 2.50000 | 0.1643 | 0.0000 | 0.0000 |
| 9 | 2.50000 | 0.1643 | 0.0000 | 0.0000 |
| 10 | 2.50000 | 0.1643 | 0.0000 | 0.0000 |
| 11 | 2.50000 | 0.1643 | 0.0000 | 0.0000 |
| 12 | 2.50000 | 0.1643 | 0.0000 | 0.0000 |
| 13 | 2.50000 | 0.1643 | 0.0000 | 0.0000 |
| 14 | 2.50000 | 0.1643 | 0.0000 | 0.0000 |
| 15 | 2.50000 | 0.1643 | 0.0000 | 0.0000 |

PEAK STORY SHEAR

| STORY | LEVEL IN METE | PEAK STORY SHEAR IN KN | | |
|---|---|---|---|---|
| | | X | Y | Z |
| 7 | 24.20 | 99.40 | 0.00 | 0.00 |
| 6 | 21.10 | 447.06 | 0.00 | 0.00 |
| 5 | 18.00 | 746.48 | 0.00 | 0.00 |
| 4 | 14.90 | 945.35 | 0.00 | 0.00 |
| 3 | 11.80 | 1103.79 | 0.00 | 0.00 |
| 2 | 8.70 | 1255.67 | 0.00 | 0.00 |
| 1 | 5.60 | 1389.87 | 0.00 | 0.00 |
| BASE | 0.00 | 1407.06 | 0.00 | 0.00 |

[illegible], B.E.,(C.E., (Struct), [illegible]
REGN NOS-SE/GR-II/19/93/21, Q.P.[illegible]
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841209154

| MODE | ACCELERATION-G | DAMPING |
|---|---|---|
| 1 | 3.46444 | 0.05000 |
| 2 | 3.88933 | 0.05000 |
| 3 | 4.62977 | 0.05000 |
| 4 | 10.27000 | 0.05000 |
| 5 | 10.27000 | 0.05000 |
| 6 | 10.27000 | 0.05000 |
| 7 | 10.27000 | 0.05000 |
| 8 | 10.27000 | 0.05000 |
| 9 | 10.27000 | 0.05000 |
| 10 | 10.27000 | 0.05000 |
| 11 | 10.27000 | 0.05000 |
| 12 | 10.27000 | 0.05000 |
| 13 | 10.27000 | 0.05000 |
| 14 | 10.27000 | 0.05000 |
| 15 | 10.27000 | 0.05000 |

MODAL BASE ACTIONS

MODAL BASE ACTIONS FORCES IN KN LENGTH IN METE

| MODE | PERIOD | FX | FY | FZ | MOMENTS ARE ABOUT THE ORIGIN MX | MY | MZ |
|---|---|---|---|---|---|---|---|
| 1 | 1.613 | 1057.01 | -3.49 | -171.90 | -2532.05 | 18033.12 | -16449.18 |
| 2 | 1.436 | 74.66 | -0.43 | 358.40 | 5532.60 | -1175.22 | -1157.59 |
| 3 | 1.207 | 625.57 | -4.46 | -197.20 | -3003.69 | 11578.18 | -9695.46 |
| 4 | 0.532 | 379.31 | 8.14 | -66.96 | -73.31 | 6676.11 | 620.66 |
| 5 | 0.471 | 23.84 | 0.62 | 111.45 | -253.92 | -279.97 | 30.28 |
| 6 | 0.390 | 149.70 | 6.37 | -37.30 | 71.37 | 2754.93 | 337.82 |
| 7 | 0.333 | 107.47 | 3.95 | -11.14 | -132.14 | 1574.13 | -357.82 |
| 8 | 0.286 | 29.05 | -2.69 | -31.91 | -114.08 | 649.68 | -125.08 |
| 9 | 0.273 | 15.43 | -0.36 | 44.37 | 252.48 | -124.60 | -59.06 |
| 10 | 0.245 | 4.16 | 0.69 | -3.21 | -27.35 | 100.64 | -13.85 |
| 11 | 0.215 | 69.15 | -9.22 | 7.63 | 66.30 | 1322.50 | -340.74 |
| 12 | 0.208 | 26.32 | 5.88 | -13.13 | -92.17 | 446.73 | 37.10 |
| 13 | 0.195 | 0.57 | 0.21 | -5.47 | 9.30 | 30.42 | -1.46 |
| 14 | 0.167 | 15.29 | 18.03 | 16.62 | -140.25 | 5.86 | 135.01 |
| 15 | 0.161 | 8.70 | -12.29 | -6.20 | 131.85 | 127.55 | -111.73 |

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GIDA REGN NOS-SE/GR-U19/03/24, CA/19/04/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269154

PARTICIPATION FACTORS

| MODE | MASS PARTICIPATION FACTORS IN PERCENT X | Y | Z | SUMM-X | SUMM-Y | SUMM-Z | BASE SHEAR IN KN X | Y | Z |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 55.12 | 0.00 | 1.46 | 55.124 | 0.001 | 1.458 | 1057.01 | 0.00 | 0.00 |
| 2 | 3.47 | 0.00 | 79.92 | 58.592 | 0.001 | 81.377 | 74.66 | 0.00 | 0.00 |
| 3 | 24.41 | 0.00 | 2.43 | 83.005 | 0.002 | 83.802 | 625.57 | 0.00 | 0.00 |
| 4 | 6.67 | 0.00 | 0.21 | 89.678 | 0.005 | 84.010 | 379.31 | 0.00 | 0.00 |
| 5 | 0.42 | 0.00 | 9.16 | 90.097 | 0.005 | 93.175 | 23.84 | 0.00 | 0.00 |
| 6 | 2.63 | 0.00 | 0.16 | 92.731 | 0.010 | 93.339 | 149.70 | 0.00 | 0.00 |
| 7 | 1.89 | 0.00 | 0.02 | 94.621 | 0.013 | 93.359 | 107.47 | 0.00 | 0.00 |
| 8 | 0.51 | 0.00 | 0.62 | 95.132 | 0.017 | 93.976 | 29.05 | 0.00 | 0.00 |
| 9 | 0.27 | 0.00 | 2.24 | 95.404 | 0.017 | 96.220 | 15.43 | 0.00 | 0.00 |
| 10 | 0.07 | 0.00 | 0.04 | 95.477 | 0.019 | 96.263 | 4.16 | 0.00 | 0.00 |
| 11 | 1.22 | 0.02 | 0.01 | 96.693 | 0.041 | 96.278 | 69.15 | 0.00 | 0.00 |
| 12 | 0.46 | 0.02 | 0.12 | 97.156 | 0.064 | 96.393 | 26.32 | 0.00 | 0.00 |
| 13 | 0.01 | 0.00 | 0.92 | 97.166 | 0.065 | 97.313 | 0.57 | 0.00 | 0.00 |
| 14 | 0.27 | 0.37 | 0.32 | 97.435 | 0.439 | 97.631 | 15.29 | 0.00 | 0.00 |
| 15 | 0.15 | 0.31 | 0.08 | 97.588 | 0.745 | 97.709 | 8.70 | 0.00 | 0.00 |
| | | | | | TOTAL SRSS SHEAR | | 1303.63 | 0.00 | 0.00 |
| | | | | | TOTAL 10PCT SHEAR | | 1305.49 | 0.00 | 0.00 |
| | | | | | TOTAL ABS SHEAR | | 2586.22 | 0.00 | 0.00 |
| | | | | | TOTAL CSM SHEAR | | 1311.36 | 0.00 | 0.00 |
| | | | | | TOTAL CQC SHEAR | | 1407.06 | 0.00 | 0.00 |

```
*********************************************************
* UNITS - KN     METE                                   *
* TIME PERIOD FOR X 1893 LOADING =     0.46000 SEC      *
* SA/G PER 1893=     2.500, LOAD FACTOR= 1.000          *
*       FACTOR V  PER 1893=     0.0400 X  34772.76      *
* VB Min based on Clause 7.2.2 =       382.50           *
*********************************************************
```

1893 RESPONSE SPECTRUM LOAD 10

RESPONSE LOAD CASE 10

| MODE | MODAL WEIGHT (MODAL MASS TIMES g) IN KN X | Y | Z | GENERALIZED WEIGHT |
|---|---|---|---|---|
| 1 | 1.906887E+04 | 2.072986E-01 | 5.043509E+02 | 6.261651E+03 |
| 2 | 1.199790E+03 | 3.949362E-02 | 2.764601E+04 | 1.691174E+04 |
| 3 | 8.444897E+03 | 4.301660E-01 | 8.391912E+02 | 4.517226E+03 |

V. JAGEN, B.E.,M.E.,(Struct), M.I.E.,A.M.,
CMDA REGN NOS-SE/GR-M1003/04, GA/1003/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
BHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269164

| | | | | |
|---|---|---|---|---|
| 4 | 2.308337E+03 | 1.064227E+00 | 7.193355E+01 | 5.090769E+03 |
| 5 | 1.450995E+02 | 9.881379E-02 | 3.170381E+03 | 1.169647E+04 |
| 6 | 9.109992E+02 | 1.647803E+00 | 5.657561E+01 | 4.939493E+03 |
| 7 | 6.540063E+02 | 8.851370E-01 | 7.025913E+00 | 6.428896E+02 |
| 8 | 1.767879E+02 | 1.512535E+00 | 2.133198E+02 | 2.154701E+03 |
| 9 | 9.391474E+01 | 5.047909E-02 | 7.762251E+02 | 3.812510E+03 |
| 10 | 2.530769E+01 | 6.906687E-01 | 1.507683E+01 | 2.023480E+02 |
| 11 | 4.208162E+02 | 7.477487E+00 | 5.125254E+00 | 3.372895E+03 |
| 12 | 1.602032E+02 | 7.999081E+00 | 3.982524E+01 | 7.102985E+03 |
| 13 | 3.478690E+00 | 4.856516E-01 | 3.183168E+02 | 1.580517E+03 |
| 14 | 9.302940E+01 | 1.294035E+02 | 1.100126E+02 | 1.326684E+03 |
| 15 | 5.295340E+01 | 1.057132E+02 | 2.688466E+01 | 6.825660E+03 |

CQC MODAL COMBINATION METHOD USED.

| | | | | |
|---|---|---|---|---|
| DYNAMIC WEIGHT X Y Z | 3.459269E+04 | 3.459269E+04 | 3.459269E+04 | KN |
| MISSING WEIGHT X Y Z | -8.342006E+02 | -3.433499E+04 | -7.924435E+02 | KN |
| MODAL WEIGHT X Y Z | 3.375849E+04 | 2.577055E+02 | 3.380025E+04 | KN |

RESPONSE LOAD CASE 10

| MODE | SPECTRAL ACCELERATION | DESIGN SEISMIC COEFFICIENT | | |
|---|---|---|---|---|
| | | X | Y | Z |
| 1 | 0.84334 | -0.0554 | 0.0000 | 0.0000 |
| 2 | 0.94677 | -0.0622 | 0.0000 | 0.0000 |
| 3 | 1.12701 | -0.0741 | 0.0000 | 0.0000 |
| 4 | 2.50000 | -0.1643 | 0.0000 | 0.0000 |
| 5 | 2.50000 | -0.1643 | 0.0000 | 0.0000 |
| 6 | 2.50000 | -0.1643 | 0.0000 | 0.0000 |
| 7 | 2.50000 | -0.1643 | 0.0000 | 0.0000 |
| 8 | 2.50000 | -0.1643 | 0.0000 | 0.0000 |
| 9 | 2.50000 | -0.1643 | 0.0000 | 0.0000 |
| 10 | 2.50000 | -0.1643 | 0.0000 | 0.0000 |
| 11 | 2.50000 | -0.1643 | 0.0000 | 0.0000 |
| 12 | 2.50000 | -0.1643 | 0.0000 | 0.0000 |
| 13 | 2.50000 | -0.1643 | 0.0000 | 0.0000 |
| 14 | 2.50000 | -0.1643 | 0.0000 | 0.0000 |
| 15 | 2.50000 | -0.1643 | 0.0000 | 0.0000 |

V. SANKARI, B.E.,M.E., (Struct), M.I.E.,M.I.V.,
CMDA REGN NOS-SENGR-V19/03/24, GNT/CE/
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269154

PEAK STORY SHEAR

| STORY | LEVEL IN METE | PEAK STORY SHEAR IN KN | | |
|---|---|---|---|---|
| | | X | Y | Z |
| 7 | 24.20 | 99.40 | 0.00 | 0.00 |
| 6 | 21.10 | 447.06 | 0.00 | 0.00 |
| 5 | 18.00 | 746.48 | 0.00 | 0.00 |
| 4 | 14.90 | 945.35 | 0.00 | 0.00 |
| 3 | 11.80 | 1103.79 | 0.00 | 0.00 |
| 2 | 8.70 | 1255.67 | 0.00 | 0.00 |
| 1 | 5.60 | 1389.87 | 0.00 | 0.00 |
| BASE | 0.00 | 1407.06 | 0.00 | 0.00 |

| MODE | ACCELERATION-G | DAMPING |
|---|---|---|
| 1 | 3.46444 | 0.05000 |
| 2 | 3.88933 | 0.05000 |
| 3 | 4.62977 | 0.05000 |
| 4 | 10.27000 | 0.05000 |
| 5 | 10.27000 | 0.05000 |
| 6 | 10.27000 | 0.05000 |
| 7 | 10.27000 | 0.05000 |
| 8 | 10.27000 | 0.05000 |
| 9 | 10.27000 | 0.05000 |
| 10 | 10.27000 | 0.05000 |
| 11 | 10.27000 | 0.05000 |
| 12 | 10.27000 | 0.05000 |
| 13 | 10.27000 | 0.05000 |
| 14 | 10.27000 | 0.05000 |
| 15 | 10.27000 | 0.05000 |

V. JAGADISH, B.E.,M.E.,(Struct), M.I.E.,M.I.V.,
CHARTERED ROC-SE/CR-81080/04, CATEGORY-I
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV-3,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841259154

MODAL BASE ACTIONS

MODAL BASE ACTIONS FORCES IN KN LENGTH IN METE

| MODE | PERIOD | FX | FY | FZ | MOMENTS ARE ABOUT THE ORIGIN MX | MY | MZ |
|---|---|---|---|---|---|---|---|
| 1 | 1.613 | -1057.01 | 3.49 | 171.90 | 2532.05 | -18033.12 | 16449.18 |
| 2 | 1.436 | -74.66 | 0.43 | -358.40 | -5532.60 | 1175.22 | 1157.59 |
| 3 | 1.207 | -625.57 | 4.46 | 197.20 | 3003.69 | -11578.18 | 9695.46 |
| 4 | 0.532 | -379.31 | -8.14 | 66.96 | 73.31 | -6676.11 | -620.66 |
| 5 | 0.471 | -23.84 | -0.62 | -111.45 | 253.92 | 279.97 | -30.28 |
| 6 | 0.390 | -149.70 | -6.37 | 37.30 | -71.37 | -2754.93 | -337.82 |
| 7 | 0.333 | -107.47 | -3.95 | 11.14 | 132.14 | -1574.13 | 357.82 |
| 8 | 0.286 | -29.05 | 2.69 | 31.91 | 114.08 | -649.68 | 125.08 |
| 9 | 0.273 | -15.43 | 0.36 | -44.37 | -252.48 | 124.60 | 59.06 |
| 10 | 0.245 | -4.16 | -0.69 | 3.21 | 27.35 | -100.64 | 13.85 |
| 11 | 0.215 | -69.15 | 9.22 | -7.63 | -66.30 | -1322.50 | 340.74 |
| 12 | 0.208 | -26.32 | -5.88 | 13.13 | 92.17 | -446.73 | -37.10 |
| 13 | 0.195 | -0.57 | -0.21 | 5.47 | -9.30 | -30.42 | 1.46 |
| 14 | 0.167 | -15.29 | -18.03 | -16.62 | 140.25 | -5.86 | -135.01 |
| 15 | 0.161 | -8.70 | 12.29 | 6.20 | -131.85 | -127.55 | 111.73 |

PARTICIPATION FACTORS

| MODE | MASS PARTICIPATION FACTORS IN PERCENT X | Y | Z | SUMM-X | SUMM-Y | SUMM-Z | BASE SHEAR IN KN X | Y | Z |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 55.12 | 0.00 | 1.46 | 55.124 | 0.001 | 1.458 | -1057.01 | 0.00 | 0.00 |
| 2 | 3.47 | 0.00 | 79.92 | 58.592 | 0.001 | 81.377 | -74.66 | 0.00 | 0.00 |
| 3 | 24.41 | 0.00 | 2.43 | 83.005 | 0.002 | 83.802 | -625.57 | 0.00 | 0.00 |
| 4 | 6.67 | 0.00 | 0.21 | 89.678 | 0.005 | 84.010 | -379.31 | 0.00 | 0.00 |
| 5 | 0.42 | 0.00 | 9.16 | 90.097 | 0.005 | 93.175 | -23.84 | 0.00 | 0.00 |
| 6 | 2.63 | 0.00 | 0.16 | 92.731 | 0.010 | 93.339 | -149.70 | 0.00 | 0.00 |
| 7 | 1.89 | 0.00 | 0.02 | 94.621 | 0.013 | 93.359 | -107.47 | 0.00 | 0.00 |
| 8 | 0.51 | 0.00 | 0.62 | 95.132 | 0.017 | 93.976 | -29.05 | 0.00 | 0.00 |
| 9 | 0.27 | 0.00 | 2.24 | 95.404 | 0.017 | 96.220 | -15.43 | 0.00 | 0.00 |
| 10 | 0.07 | 0.00 | 0.04 | 95.477 | 0.019 | 96.263 | -4.16 | 0.00 | 0.00 |
| 11 | 1.22 | 0.02 | 0.01 | 96.693 | 0.041 | 96.278 | -69.15 | 0.00 | 0.00 |
| 12 | 0.46 | 0.02 | 0.12 | 97.156 | 0.064 | 96.393 | -26.32 | 0.00 | 0.00 |
| 13 | 0.01 | 0.00 | 0.92 | 97.166 | 0.065 | 97.313 | -0.57 | 0.00 | 0.00 |
| 14 | 0.27 | 0.37 | 0.32 | 97.435 | 0.439 | 97.631 | -15.29 | 0.00 | 0.00 |
| 15 | 0.15 | 0.31 | 0.08 | 97.588 | 0.745 | 97.709 | -8.70 | 0.00 | 0.00 |
| | | | | | TOTAL SRSS SHEAR | | -1303.63 | 0.00 | 0.00 |
| | | | | | TOTAL 10PCT SHEAR | | -1305.49 | 0.00 | 0.00 |
| | | | | | TOTAL ABS SHEAR | | -2586.22 | 0.00 | 0.00 |
| | | | | | TOTAL CSM SHEAR | | -1311.36 | 0.00 | 0.00 |
| | | | | | TOTAL CQC SHEAR | | -1407.06 | 0.00 | 0.00 |

[illegible], B.E.,M.E.,(Struct), M.I.E.,A.I.V.
CERTIFIED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
PERUNGALATTUR, CHENNAI-600 119.
MOBILE: 9841269154

1893 RESPONSE SPECTRUM LOAD 11

RESPONSE LOAD CASE 11

| MODE | MODAL WEIGHT (MODAL MASS TIMES g) IN KN X | Y | Z | GENERALIZED WEIGHT |
|---|---|---|---|---|
| 1 | 1.906887E+04 | 2.072986E-01 | 5.043509E+02 | 6.261651E+03 |
| 2 | 1.199790E+03 | 3.949362E-02 | 2.764601E+04 | 1.691174E+04 |
| 3 | 8.444897E+03 | 4.301660E-01 | 8.391912E+02 | 4.517226E+03 |
| 4 | 2.308337E+03 | 1.064227E+00 | 7.193355E+01 | 5.090769E+03 |
| 5 | 1.450995E+02 | 9.881379E-02 | 3.170381E+03 | 1.169647E+04 |
| 6 | 9.109992E+02 | 1.647803E+00 | 5.657561E+01 | 4.939493E+03 |
| 7 | 6.540063E+02 | 8.851370E-01 | 7.025913E+00 | 6.428896E+02 |
| 8 | 1.767879E+02 | 1.512535E+00 | 2.133198E+02 | 2.154701E+03 |
| 9 | 9.391474E+01 | 5.047909E-02 | 7.762251E+02 | 3.812510E+03 |
| 10 | 2.530769E+01 | 6.906687E-01 | 1.507683E+01 | 2.023480E+02 |
| 11 | 4.208162E+02 | 7.477487E+00 | 5.125254E+00 | 3.372895E+03 |
| 12 | 1.602032E+02 | 7.999081E+00 | 3.982524E+01 | 7.102985E+03 |
| 13 | 3.478690E+00 | 4.856516E-01 | 3.183168E+02 | 1.580517E+03 |
| 14 | 9.302940E+01 | 1.294035E+02 | 1.100126E+02 | 1.326684E+03 |
| 15 | 5.295340E+01 | 1.057132E+02 | 2.688466E+01 | 6.825660E+03 |

CQC MODAL COMBINATION METHOD USED.
DYNAMIC WEIGHT X Y Z 3.459269E+04 3.459269E+04 3.459269E+04 KN
MISSING WEIGHT X Y Z -8.342006E+02 -3.433499E+04 -7.924435E+02 KN
MODAL WEIGHT X Y Z 3.375849E+04 2.577055E+02 3.380025E+04 KN

RESPONSE LOAD CASE 11

| MODE | SPECTRAL ACCELERATION | DESIGN SEISMIC COEFFICIENT X | Y | Z |
|---|---|---|---|---|
| 1 | 0.84334 | 0.0000 | 0.0000 | 0.0422 |
| 2 | 0.94677 | 0.0000 | 0.0000 | 0.0474 |
| 3 | 1.12701 | 0.0000 | 0.0000 | 0.0564 |
| 4 | 2.50000 | 0.0000 | 0.0000 | 0.1251 |
| 5 | 2.50000 | 0.0000 | 0.0000 | 0.1251 |
| 6 | 2.50000 | 0.0000 | 0.0000 | 0.1251 |
| 7 | 2.50000 | 0.0000 | 0.0000 | 0.1251 |
| 8 | 2.50000 | 0.0000 | 0.0000 | 0.1251 |
| 9 | 2.50000 | 0.0000 | 0.0000 | 0.1251 |
| 10 | 2.50000 | 0.0000 | 0.0000 | 0.1251 |
| 11 | 2.50000 | 0.0000 | 0.0000 | 0.1251 |
| 12 | 2.50000 | 0.0000 | 0.0000 | 0.1251 |

V. JAGEN, B.E.,M.E., (Struct), M.I.E.,A.I.V.
CMDA REGN NOS-SE/GR-I/19/03/24, GA/19/04/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841259151

| | | | | |
|---|---|---|---|---|
| 13 | 2.50000 | 0.0000 | 0.0000 | 0.1251 |
| 14 | 2.50000 | 0.0000 | 0.0000 | 0.1251 |
| 15 | 2.50000 | 0.0000 | 0.0000 | 0.1251 |

PEAK STORY SHEAR

| STORY | LEVEL IN METE | PEAK STORY SHEAR IN KN | | |
|---|---|---|---|---|
| | | X | Y | Z |
| 7 | 24.20 | 0.00 | 0.00 | 66.59 |
| 6 | 21.10 | 0.00 | 0.00 | 442.65 |
| 5 | 18.00 | 0.00 | 0.00 | 740.83 |
| 4 | 14.90 | 0.00 | 0.00 | 946.20 |
| 3 | 11.80 | 0.00 | 0.00 | 1108.27 |
| 2 | 8.70 | 0.00 | 0.00 | 1258.49 |
| 1 | 5.60 | 0.00 | 0.00 | 1384.15 |
| BASE | 0.00 | 0.00 | 0.00 | 1398.84 |

| MODE | ACCELERATION-G | DAMPING |
|---|---|---|
| 1 | 2.63780 | 0.05000 |
| 2 | 2.96131 | 0.05000 |
| 3 | 3.52508 | 0.05000 |
| 4 | 7.81950 | 0.05000 |
| 5 | 7.81950 | 0.05000 |
| 6 | 7.81950 | 0.05000 |
| 7 | 7.81950 | 0.05000 |
| 8 | 7.81950 | 0.05000 |
| 9 | 7.81950 | 0.05000 |
| 10 | 7.81950 | 0.05000 |
| 11 | 7.81950 | 0.05000 |
| 12 | 7.81950 | 0.05000 |
| 13 | 7.81950 | 0.05000 |
| 14 | 7.81950 | 0.05000 |
| 15 | 7.81950 | 0.05000 |

V. JAGDISH, B.E.,M.E., (Struct), M.I.E.,A.I.V.,
GIDA REGN NOS-SE/CR-I/10203/24, CAT(2)/04/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269154

MODAL BASE ACTIONS

MODAL BASE ACTIONS FORCES IN KN LENGTH IN METE

| MODE | PERIOD | FX | FY | FZ | MOMENTS ARE ABOUT THE ORIGIN MX | MY | MZ |
|---|---|---|---|---|---|---|---|
| 1 | 1.613 | -130.89 | 0.43 | 21.29 | 313.53 | -2232.97 | 2036.84 |
| 2 | 1.436 | 272.88 | -1.57 | 1309.89 | 20220.96 | -4295.28 | -4230.85 |
| 3 | 1.207 | -150.15 | 1.07 | 47.33 | 720.94 | -2778.96 | 2327.07 |
| 4 | 0.532 | -50.98 | -1.09 | 9.00 | 9.85 | -897.32 | -83.42 |
| 5 | 0.471 | 84.86 | 2.21 | 396.65 | -903.72 | -996.44 | 107.76 |
| 6 | 0.390 | -28.40 | -1.21 | 7.08 | -13.54 | -522.73 | -64.10 |
| 7 | 0.333 | -8.48 | -0.31 | 0.88 | 10.43 | -124.23 | 28.24 |
| 8 | 0.286 | -24.30 | 2.25 | 26.69 | 95.42 | -543.37 | 104.61 |
| 9 | 0.273 | 33.78 | -0.78 | 97.12 | 552.67 | -272.74 | -129.29 |
| 10 | 0.245 | -2.44 | -0.40 | 1.89 | 16.07 | -59.14 | 8.14 |
| 11 | 0.215 | 5.81 | -0.77 | 0.64 | 5.57 | 111.13 | -28.63 |
| 12 | 0.208 | -9.99 | -2.23 | 4.98 | 34.99 | -169.59 | -14.08 |
| 13 | 0.195 | -4.16 | -1.56 | 39.83 | -67.71 | -221.54 | 10.65 |
| 14 | 0.167 | 12.66 | 14.93 | 13.76 | -116.13 | 4.85 | 111.79 |
| 15 | 0.161 | -4.72 | 6.67 | 3.36 | -71.53 | -69.20 | 60.62 |

PARTICIPATION FACTORS

| MODE | MASS PARTICIPATION FACTORS IN PERCENT X | Y | Z | SUMM-X | SUMM-Y | SUMM-Z | BASE SHEAR IN KN X | Y | Z |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 55.12 | 0.00 | 1.46 | 55.124 | 0.001 | 1.458 | 0.00 | 0.00 | 21.29 |
| 2 | 3.47 | 0.00 | 79.92 | 58.592 | 0.001 | 81.377 | 0.00 | 0.00 | 1309.89 |
| 3 | 24.41 | 0.00 | 2.43 | 83.005 | 0.002 | 83.802 | 0.00 | 0.00 | 47.33 |
| 4 | 6.67 | 0.00 | 0.21 | 89.678 | 0.005 | 84.010 | 0.00 | 0.00 | 9.00 |
| 5 | 0.42 | 0.00 | 9.16 | 90.097 | 0.005 | 93.175 | 0.00 | 0.00 | 396.65 |
| 6 | 2.63 | 0.00 | 0.16 | 92.731 | 0.010 | 93.339 | 0.00 | 0.00 | 7.08 |
| 7 | 1.89 | 0.00 | 0.02 | 94.621 | 0.013 | 93.359 | 0.00 | 0.00 | 0.88 |
| 8 | 0.51 | 0.00 | 0.62 | 95.132 | 0.017 | 93.976 | 0.00 | 0.00 | 26.69 |
| 9 | 0.27 | 0.00 | 2.24 | 95.404 | 0.017 | 96.220 | 0.00 | 0.00 | 97.12 |
| 10 | 0.07 | 0.00 | 0.04 | 95.477 | 0.019 | 96.263 | 0.00 | 0.00 | 1.89 |
| 11 | 1.22 | 0.02 | 0.01 | 96.693 | 0.041 | 96.278 | 0.00 | 0.00 | 0.64 |
| 12 | 0.46 | 0.02 | 0.12 | 97.156 | 0.064 | 96.393 | 0.00 | 0.00 | 4.98 |
| 13 | 0.01 | 0.00 | 0.92 | 97.166 | 0.065 | 97.313 | 0.00 | 0.00 | 39.83 |
| 14 | 0.27 | 0.37 | 0.32 | 97.435 | 0.439 | 97.631 | 0.00 | 0.00 | 13.76 |
| 15 | 0.15 | 0.31 | 0.08 | 97.588 | 0.745 | 97.709 | 0.00 | 0.00 | 3.36 |
| | | | | | TOTAL SRSS SHEAR | | 0.00 | 0.00 | 1374.02 |
| | | | | | TOTAL 10PCT SHEAR | | 0.00 | 0.00 | 1376.09 |
| | | | | | TOTAL ABS SHEAR | | 0.00 | 0.00 | 1980.39 |
| | | | | | TOTAL CSM SHEAR | | 0.00 | 0.00 | 1382.29 |
| | | | | | TOTAL CQC SHEAR | | 0.00 | 0.00 | 1398.84 |

V. JAGEM, B.E.,M.E., (Struct), M.I.E.,M.I.V.
GNDA REGN NOS-SE/GR-I/19/03/24, QA/19/04/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269154

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*********************************************************
* UNITS - KN    METE                                    *
* TIME PERIOD FOR Z 1893 LOADING =    0.29000 SEC       *
* SA/G PER 1893=    2.500, LOAD FACTOR= 1.000           *
*      FACTOR V  PER 1893=    0.0400 X  34772.76        *
* VB Min based on Clause 7.2.2 =      382.50            *
*********************************************************
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1893 RESPONSE SPECTRUM LOAD 12

RESPONSE LOAD CASE 12

| MODE | MODAL WEIGHT (MODAL MASS TIMES g) IN KN X | Y | Z | GENERALIZED WEIGHT |
|---|---|---|---|---|
| 1 | 1.906887E+04 | 2.072986E-01 | 5.043509E+02 | 6.261651E+03 |
| 2 | 1.199790E+03 | 3.949362E-02 | 2.764601E+04 | 1.691174E+04 |
| 3 | 8.444897E+03 | 4.301660E-01 | 8.391912E+02 | 4.517226E+03 |
| 4 | 2.308337E+03 | 1.064227E+00 | 7.193355E+01 | 5.090769E+03 |
| 5 | 1.450995E+02 | 9.881379E-02 | 3.170381E+03 | 1.169647E+04 |
| 6 | 9.109992E+02 | 1.647803E+00 | 5.657561E+01 | 4.939493E+03 |
| 7 | 6.540063E+02 | 8.851370E-01 | 7.025913E+00 | 6.428896E+02 |
| 8 | 1.767879E+02 | 1.512535E+00 | 2.133198E+02 | 2.154701E+03 |
| 9 | 9.391474E+01 | 5.047909E-02 | 7.762251E+02 | 3.812510E+03 |
| 10 | 2.530769E+01 | 6.906687E-01 | 1.507683E+01 | 2.023480E+02 |
| 11 | 4.208162E+02 | 7.477487E+00 | 5.125254E+00 | 3.372895E+03 |
| 12 | 1.602032E+02 | 7.999081E+00 | 3.982524E+01 | 7.102985E+03 |
| 13 | 3.478690E+00 | 4.856516E-01 | 3.183168E+02 | 1.580517E+03 |
| 14 | 9.302940E+01 | 1.294035E+02 | 1.100126E+02 | 1.326684E+03 |
| 15 | 5.295340E+01 | 1.057132E+02 | 2.688466E+01 | 6.825660E+03 |

CQC MODAL COMBINATION METHOD USED.

| | | | |
|---|---|---|---|
| DYNAMIC WEIGHT X Y Z | 3.459269E+04 | 3.459269E+04 | 3.459269E+04 KN |
| MISSING WEIGHT X Y Z | -8.342006E+02 | -3.433499E+04 | -7.924435E+02 KN |
| MODAL WEIGHT X Y Z | 3.375849E+04 | 2.577055E+02 | 3.380025E+04 KN |

RESPONSE LOAD CASE 12

| MODE | SPECTRAL ACCELERATION | DESIGN SEISMIC COEFFICIENT X | Y | Z |
|---|---|---|---|---|
| 1 | 0.84334 | 0.0000 | 0.0000 | -0.0422 |
| 2 | 0.94677 | 0.0000 | 0.0000 | -0.0474 |

T. JAGDISH, B.E.,M.E.,(Struct.), M.I.E.,
M.I.A.E.(M.O.B-GEN)(R-1/0823/4, GOVT. OF TN)
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841050151

| | | | | |
|---|---|---|---|---|
| 3 | 1.12701 | 0.0000 | 0.0000 | -0.0564 |
| 4 | 2.50000 | 0.0000 | 0.0000 | -0.1251 |
| 5 | 2.50000 | 0.0000 | 0.0000 | -0.1251 |
| 6 | 2.50000 | 0.0000 | 0.0000 | -0.1251 |
| 7 | 2.50000 | 0.0000 | 0.0000 | -0.1251 |
| 8 | 2.50000 | 0.0000 | 0.0000 | -0.1251 |
| 9 | 2.50000 | 0.0000 | 0.0000 | -0.1251 |
| 10 | 2.50000 | 0.0000 | 0.0000 | -0.1251 |
| 11 | 2.50000 | 0.0000 | 0.0000 | -0.1251 |
| 12 | 2.50000 | 0.0000 | 0.0000 | -0.1251 |
| 13 | 2.50000 | 0.0000 | 0.0000 | -0.1251 |
| 14 | 2.50000 | 0.0000 | 0.0000 | -0.1251 |
| 15 | 2.50000 | 0.0000 | 0.0000 | -0.1251 |

PEAK STORY SHEAR

| STORY | LEVEL IN METE | PEAK STORY SHEAR IN KN | | |
|---|---|---|---|---|
| | | X | Y | Z |
| 7 | 24.20 | 0.00 | 0.00 | 66.59 |
| 6 | 21.10 | 0.00 | 0.00 | 442.65 |
| 5 | 18.00 | 0.00 | 0.00 | 740.83 |
| 4 | 14.90 | 0.00 | 0.00 | 946.20 |
| 3 | 11.80 | 0.00 | 0.00 | 1108.27 |
| 2 | 8.70 | 0.00 | 0.00 | 1258.49 |
| 1 | 5.60 | 0.00 | 0.00 | 1384.15 |
| BASE | 0.00 | 0.00 | 0.00 | 1398.84 |

| MODE | ACCELERATION-G | DAMPING |
|---|---|---|
| 1 | 2.63780 | 0.05000 |
| 2 | 2.96131 | 0.05000 |
| 3 | 3.52508 | 0.05000 |
| 4 | 7.81950 | 0.05000 |
| 5 | 7.81950 | 0.05000 |
| 6 | 7.81950 | 0.05000 |
| 7 | 7.81950 | 0.05000 |
| 8 | 7.81950 | 0.05000 |
| 9 | 7.81950 | 0.05000 |
| 10 | 7.81950 | 0.05000 |
| 11 | 7.81950 | 0.05000 |
| 12 | 7.81950 | 0.05000 |
| 13 | 7.81950 | 0.05000 |
| 14 | 7.81950 | 0.05000 |
| 15 | 7.81950 | 0.05000 |

V. JAGEEN, B.E.,M.E., (Struct), M.I.E.,A.M.I.
CIDA REGN NOS-SE/CR-II/19/03/24, CAT/19/04/2
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
PALLIKARANAI, CHENNAI-600 117.
MOBILE: 9841269154

MODAL BASE ACTIONS

MODAL BASE ACTIONS FORCES IN KN LENGTH IN METE

| MODE | PERIOD | FX | FY | FZ | MOMENTS ARE ABOUT THE ORIGIN MX | MY | MZ |
|---|---|---|---|---|---|---|---|
| 1 | 1.613 | 130.89 | -0.43 | -21.29 | -313.53 | 2232.97 | -2036.84 |
| 2 | 1.436 | -272.88 | 1.57 | -1309.89 | -20220.96 | 4295.28 | 4230.85 |
| 3 | 1.207 | 150.15 | -1.07 | -47.33 | -720.94 | 2778.96 | -2327.07 |
| 4 | 0.532 | 50.98 | 1.09 | -9.00 | -9.85 | 897.32 | 83.42 |
| 5 | 0.471 | -84.86 | -2.21 | -396.65 | 903.72 | 996.44 | -107.76 |
| 6 | 0.390 | 28.40 | 1.21 | -7.08 | 13.54 | 522.73 | 64.10 |
| 7 | 0.333 | 8.48 | 0.31 | -0.88 | -10.43 | 124.23 | -28.24 |
| 8 | 0.286 | 24.30 | -2.25 | -26.69 | -95.42 | 543.37 | -104.61 |
| 9 | 0.273 | -33.78 | 0.78 | -97.12 | -552.67 | 272.74 | 129.29 |
| 10 | 0.245 | 2.44 | 0.40 | -1.89 | -16.07 | 59.14 | -8.14 |
| 11 | 0.215 | -5.81 | 0.77 | -0.64 | -5.57 | -111.13 | 28.63 |
| 12 | 0.208 | 9.99 | 2.23 | -4.98 | -34.99 | 169.59 | 14.08 |
| 13 | 0.195 | 4.16 | 1.56 | -39.83 | 67.71 | 221.54 | -10.65 |
| 14 | 0.167 | -12.66 | -14.93 | -13.76 | 116.13 | -4.85 | -111.79 |
| 15 | 0.161 | 4.72 | -6.67 | -3.36 | 71.53 | 69.20 | -60.62 |

PARTICIPATION FACTORS

| MODE | MASS PARTICIPATION FACTORS IN PERCENT X | Y | Z | SUMM-X | SUMM-Y | SUMM-Z | BASE SHEAR IN KN X | Y | Z |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 55.12 | 0.00 | 1.46 | 55.124 | 0.001 | 1.458 | 0.00 | 0.00 | -21.29 |
| 2 | 3.47 | 0.00 | 79.92 | 58.592 | 0.001 | 81.377 | 0.00 | 0.00 | -1309.89 |
| 3 | 24.41 | 0.00 | 2.43 | 83.005 | 0.002 | 83.802 | 0.00 | 0.00 | -47.33 |
| 4 | 6.67 | 0.00 | 0.21 | 89.678 | 0.005 | 84.010 | 0.00 | 0.00 | -9.00 |
| 5 | 0.42 | 0.00 | 9.16 | 90.097 | 0.005 | 93.175 | 0.00 | 0.00 | -396.65 |
| 6 | 2.63 | 0.00 | 0.16 | 92.731 | 0.010 | 93.339 | 0.00 | 0.00 | -7.08 |
| 7 | 1.89 | 0.00 | 0.02 | 94.621 | 0.013 | 93.359 | 0.00 | 0.00 | -0.88 |
| 8 | 0.51 | 0.00 | 0.62 | 95.132 | 0.017 | 93.976 | 0.00 | 0.00 | -26.69 |
| 9 | 0.27 | 0.00 | 2.24 | 95.404 | 0.017 | 96.220 | 0.00 | 0.00 | -97.12 |
| 10 | 0.07 | 0.00 | 0.04 | 95.477 | 0.019 | 96.263 | 0.00 | 0.00 | -1.89 |
| 11 | 1.22 | 0.02 | 0.01 | 96.693 | 0.041 | 96.278 | 0.00 | 0.00 | -0.64 |
| 12 | 0.46 | 0.02 | 0.12 | 97.156 | 0.064 | 96.393 | 0.00 | 0.00 | -4.98 |
| 13 | 0.01 | 0.00 | 0.92 | 97.166 | 0.065 | 97.313 | 0.00 | 0.00 | -39.83 |
| 14 | 0.27 | 0.37 | 0.32 | 97.435 | 0.439 | 97.631 | 0.00 | 0.00 | -13.76 |
| 15 | 0.15 | 0.31 | 0.08 | 97.588 | 0.745 | 97.709 | 0.00 | 0.00 | -3.36 |
| | | | | | TOTAL SRSS SHEAR | | 0.00 | 0.00 | -1374.02 |
| | | | | | TOTAL 10PCT SHEAR | | 0.00 | 0.00 | -1376.09 |
| | | | | | TOTAL ABS SHEAR | | 0.00 | 0.00 | -1980.39 |
| | | | | | TOTAL CSM SHEAR | | 0.00 | 0.00 | -1382.29 |
| | | | | | TOTAL CQC SHEAR | | 0.00 | 0.00 | -1398.84 |

N. RAMAIYAM, B.E.,M.E., (Struct), M.I.E.,A.I.V.
A.P. & TELANGANA REGN. NOS-SE/GR-II/19/03/24, QA/19/04/21
CHARTERED ENGINEER & APPROVED VALUER
3-F, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269154

STAAD SPACE -- PAGE NO. 35

```
948. DEFINE ENVELOPE
949. 3 17 TO 32 ENVELOPE 1 TYPE SERVICEABILITY
950. 4 33 TO 56 ENVELOPE 2 TYPE STRENGTH
951. END DEFINE ENVELOPE
952. FINISH
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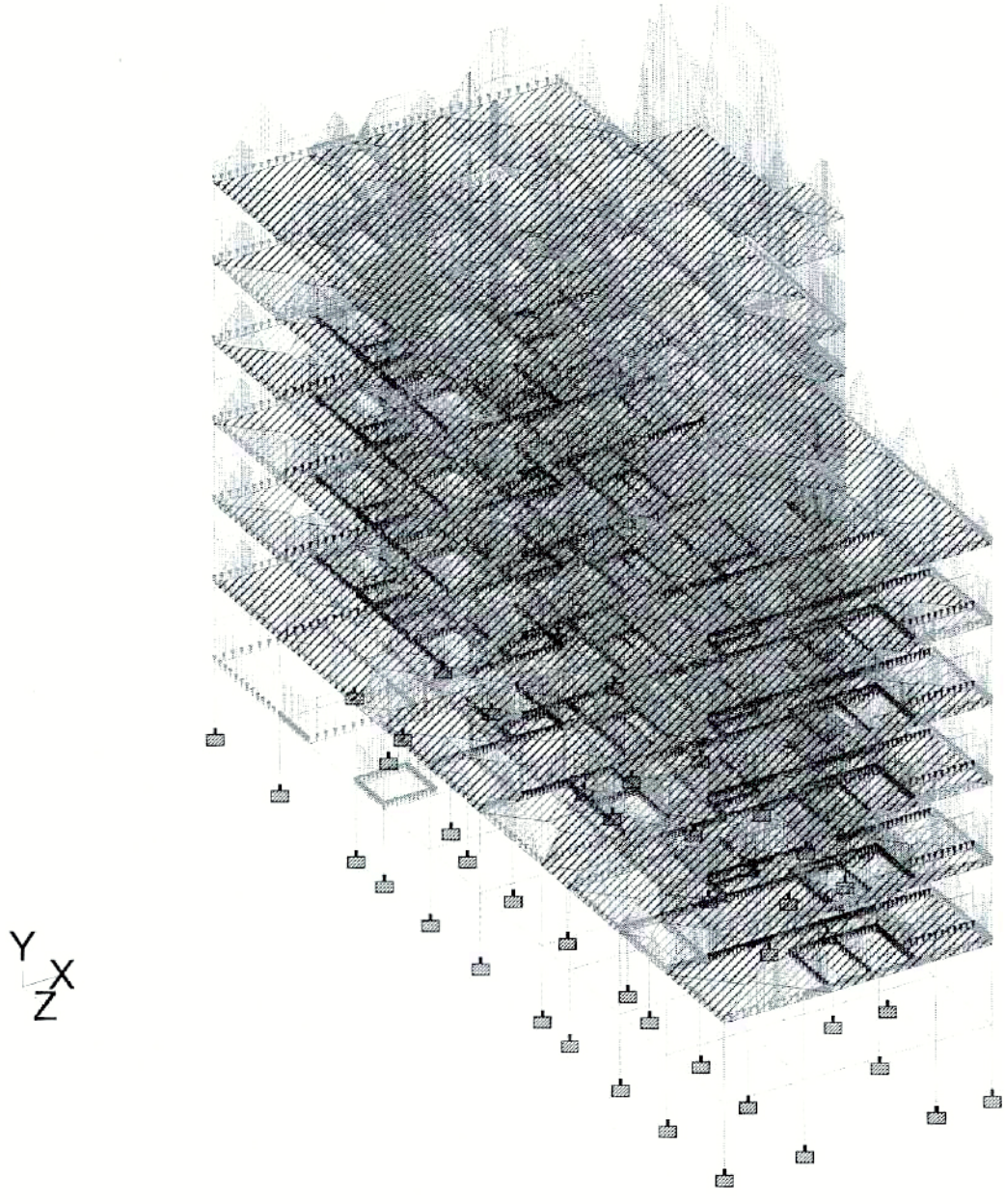
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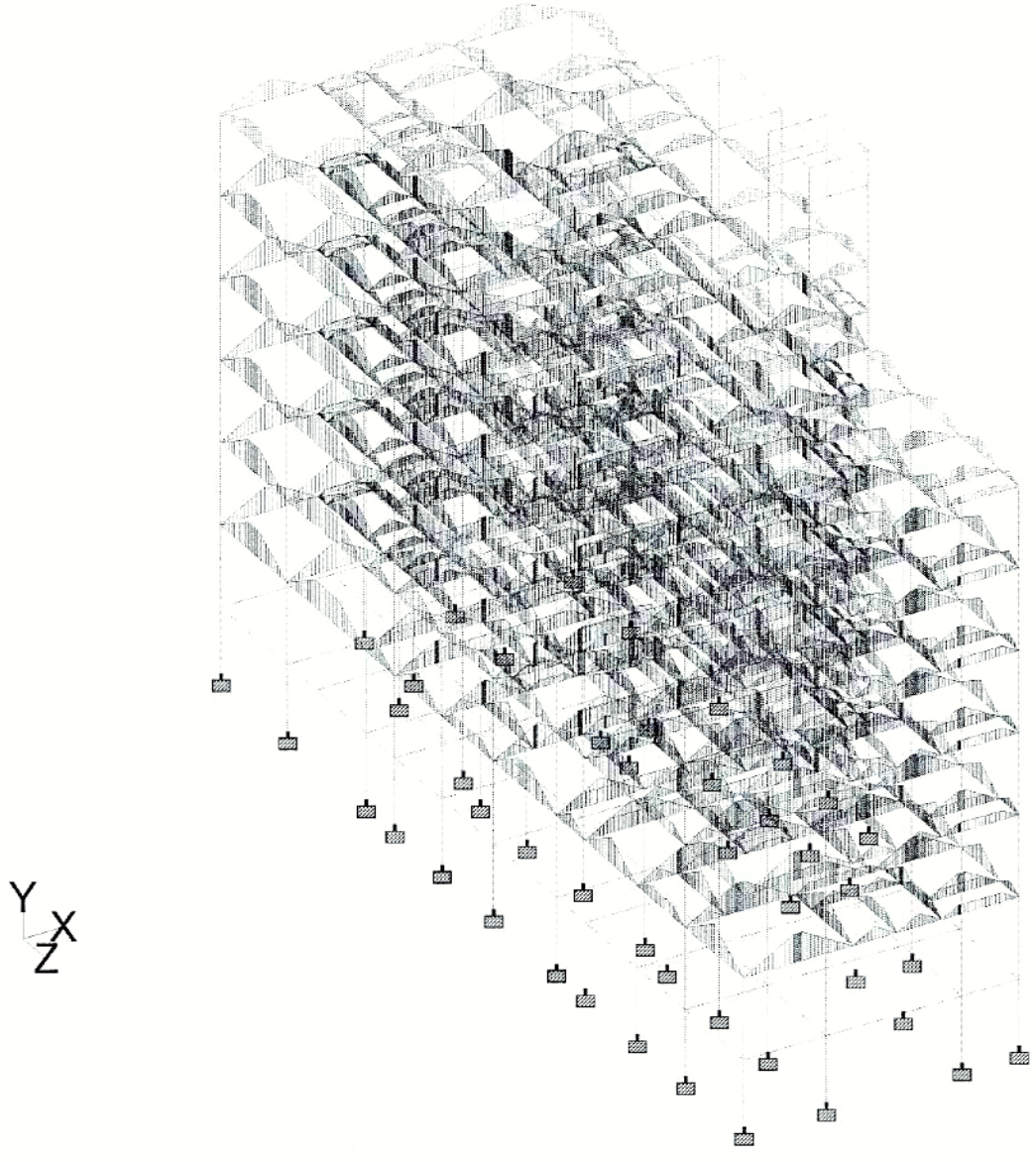
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*   For technical assistance on STAAD.Pro, please visit    *
*   http://www.bentley.com/en/support/                     *
*                                                          *
*   Details about additional assistance from               *
*   Bentley and Partners can be found at program menu      *
*   Help->Technical Support                                *
*                                                          *
*          Copyright (c) Bentley Systems, Inc.             *
*              http://www.bentley.com                      *
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...A.C.E.(I), B.E.,M.E., (Struct), M.I.E.,A.I...
...A REGN NOS-SE/CR-I/19/03/24, QA/10/04/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269154

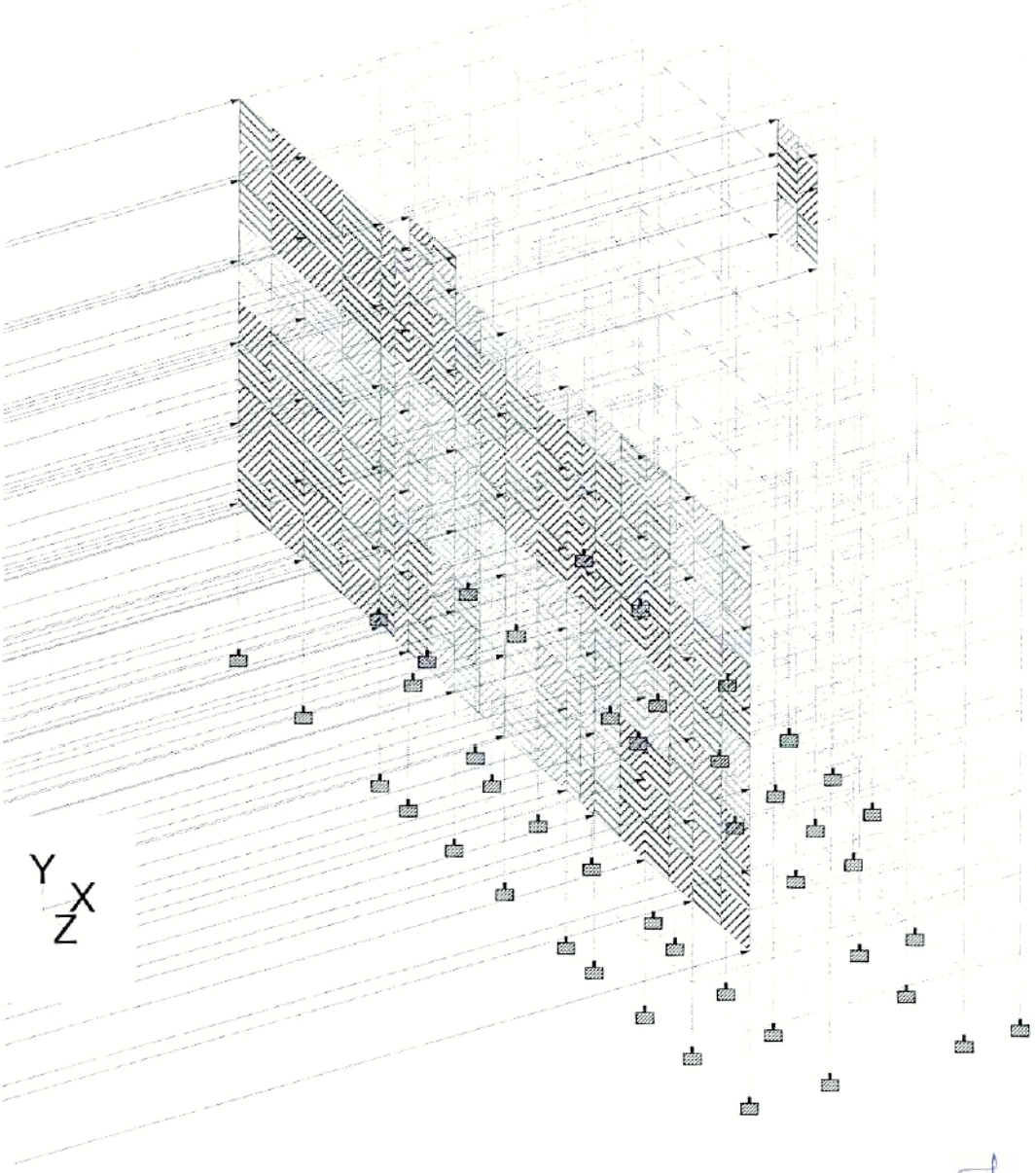
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|---|---|---|---|
| Software licensed to Ramaniyam Real Estates Pvt Ltd<br>CONNECTED User: Jagen V | Part | | |
| Job Title | Ref | | |
| | By | Date 07-May-24 | Chd |
| Client | File Bangaru Colony Seismic. | Date/Time 27-May-2024 09:27 | |




V. JAGEN, B.E.,M.E., (Struct), M.I.E.,A.I.V.,
CIDA REGN NOS-SE/GR-I/19/03/24, CA/19/04/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269154

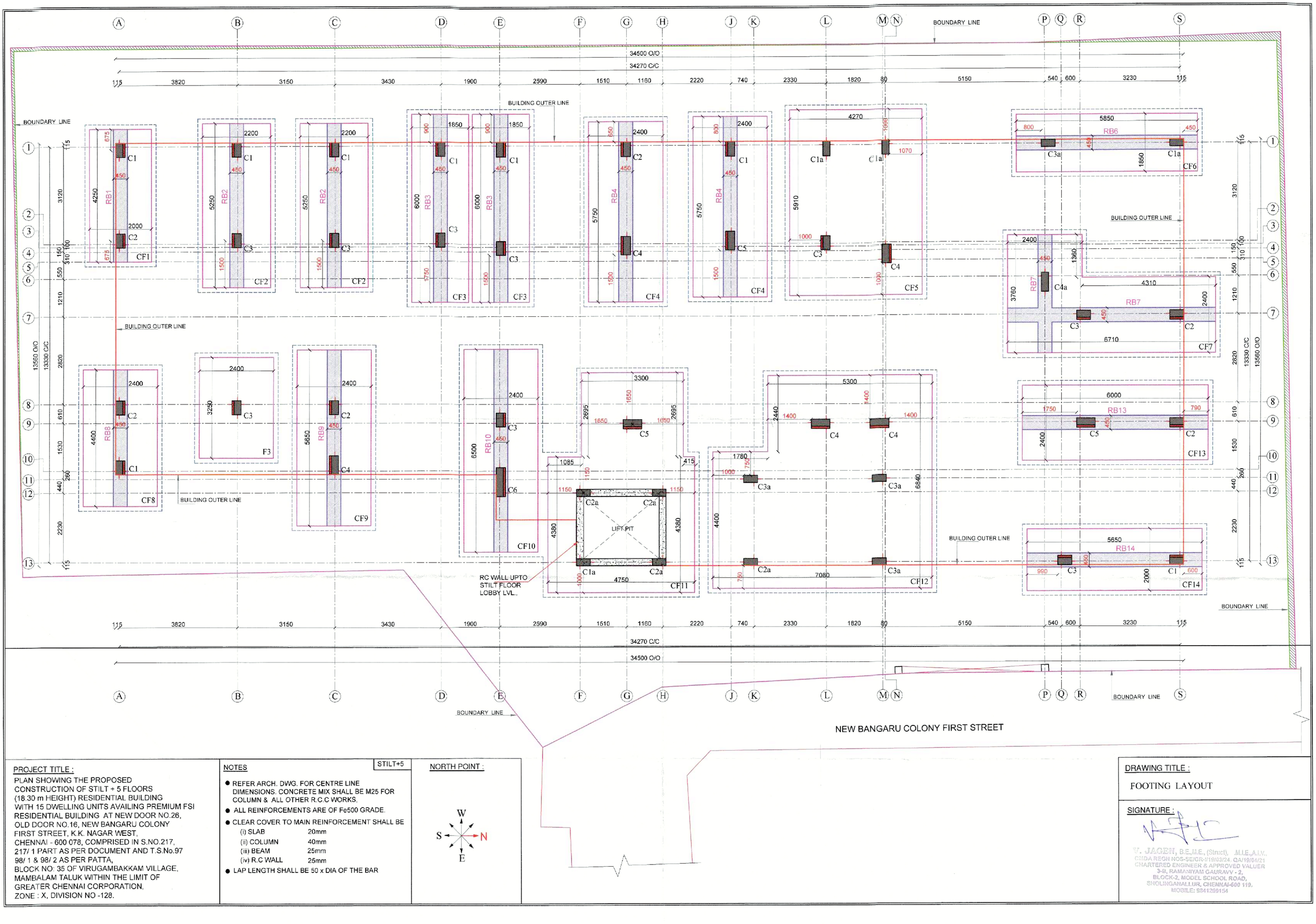



B.E.(CIVIL), M.E.(Struct), M.I.E.(I),
FIE, FIV, FIPE, MIOS-GEOR-MISTE, CAT(I)(II)
LICENSED ENGINEER & APPROVED VALUER
2-B, RAMANIYAM GAURAVV - 3,
BLOCK-2, MODEL SCHOOL ROAD,
THOLUDANALLUR, CHENNAI-600 119.
MOBILE: 9841269154





JAGEN, B.E.,M.E.,(Struct), M.I.E.,A.I.
CA REGN NOS-SC/GR-II/1983/24, GA/19/04/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269154




**PROJECT TITLE :**

PLAN SHOWING THE PROPOSED CONSTRUCTION OF STILT + 5 FLOORS (18.30 m HEIGHT) RESIDENTIAL BUILDING WITH 15 DWELLING UNITS AVAILING PREMIUM FSI RESIDENTIAL BUILDING AT NEW DOOR NO.26, OLD DOOR NO.16, NEW BANGARU COLONY FIRST STREET, K.K. NAGAR WEST, CHENNAI - 600 078, COMPRISED IN S.NO.217, 217/ 1 PART AS PER DOCUMENT AND T.S.No.97 98/ 1 & 98/ 2 AS PER PATTA, BLOCK NO: 35 OF VIRUGAMBAKKAM VILLAGE, MAMBALAM TALUK WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION, ZONE : X, DIVISION NO -128.

**NOTES** STILT+5

- REFER ARCH. DWG. FOR CENTRE LINE DIMENSIONS. CONCRETE MIX SHALL BE M25 FOR COLUMN & ALL OTHER R.C.C WORKS,
- ALL REINFORCEMENTS ARE OF Fe500 GRADE.
- CLEAR COVER TO MAIN REINFORCEMENT SHALL BE
  - (i) SLAB 20mm
  - (ii) COLUMN 40mm
  - (iii) BEAM 25mm
  - (iv) R.C WALL 25mm
- LAP LENGTH SHALL BE 50 x DIA OF THE BAR

**NORTH POINT :**

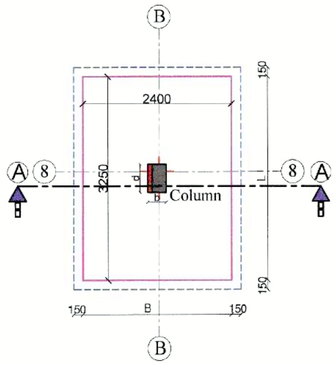
W S N E

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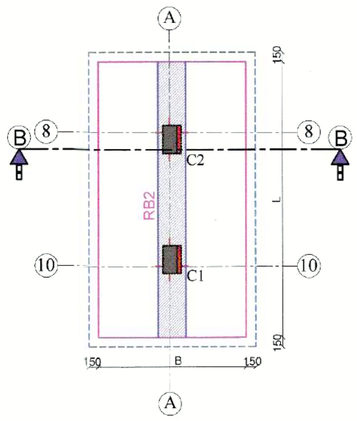
FOOTING LAYOUT

**SIGNATURE :**

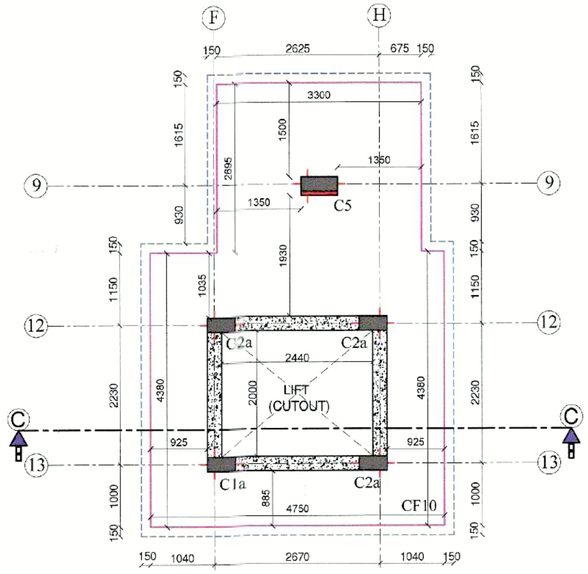
V. JAGEN, B.E.,M.E., (Struct), M.I.E.,A.I.V.,
CMDA REGN NOS-SE/GR-I/19/03/24. QA/19/04/21
CHARTERED ENGINEER & APPROVED VALUER
3-5, RAMAHYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841259154



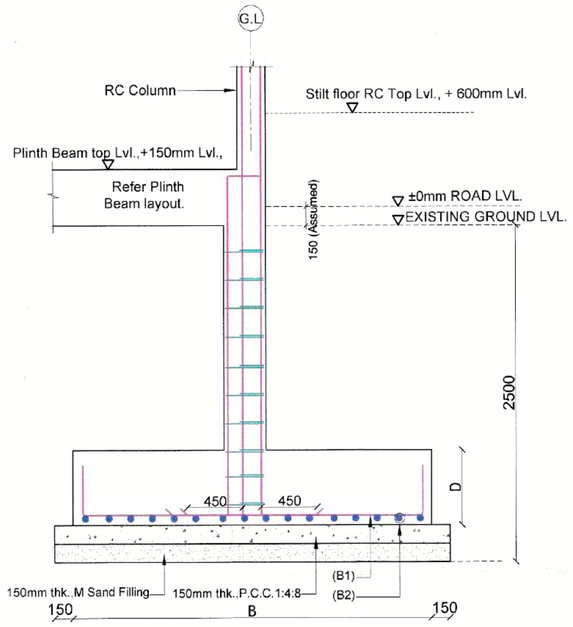

TYPICAL PLAN OF FOOTING



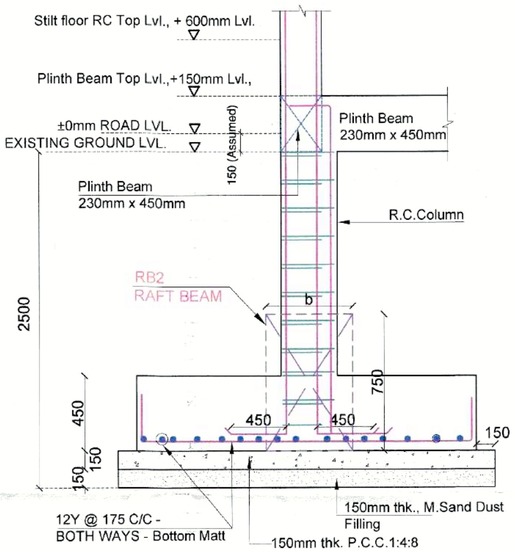

COMBINED FOOTING - CF2



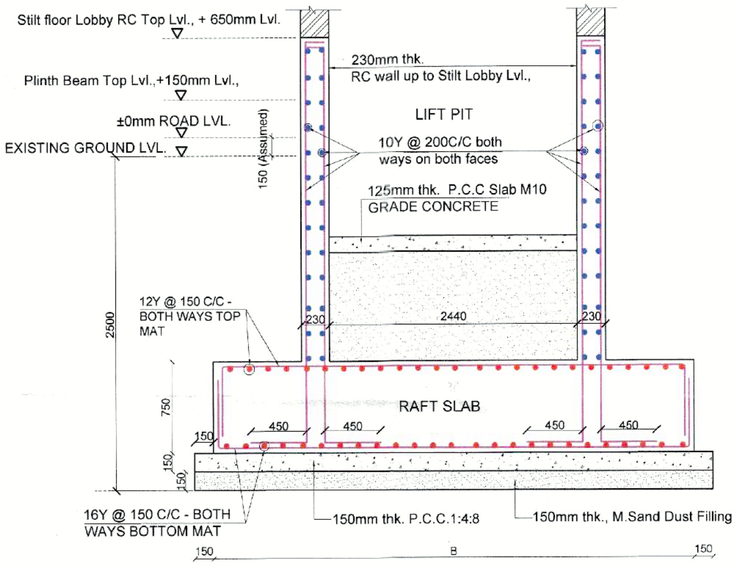

COMBINED FOOTING - CF10




SECTION - 'A-A' (TYPICAL SECTION OF FOOTING )




SECTION -'B - B' OF COMBINED FOOTING - CF2




SECTION - 'C-C' OF COMBINED FOOTING - CF10

SCHEDULE OF FOOTINGS AND RAFT BEAM DETAILS

| FOOTING NO. | L (mm) | B (mm) | D (mm) | REINFORCEMENT | | | | RAFT BEAM NO. | b (mm) | d (mm) | REINFORCEMENT | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | B1 | B2 | T1 | T2 | | | | BOTTOM | TOP | STIRRUPS |
| F3 | 3250 | 2400 | 675 | 12Y@125 C/C | 12Y@125 C/C | - | - | - | - | - | - | - | - |
| CF1 | 4550 | 2000 | 450 | 12Y@175 C/C | 12Y@175 C/C | - | - | RB1 | 450 | 750 | 4x16Y | 4x16Y | 4L - 10Y @140mm C/C |
| CF2 | 5250 | 2200 | 450 | 12Y@175 C/C | 12Y@175 C/C | - | - | RB2 | 450 | 750 | 4x20Y | 4x20Y | 4L - 10Y @140mm C/C |
| CF3 | 6000 | 1850 | 450 | 12Y@175 C/C | 12Y@175 C/C | - | - | RB3 | 450 | 750 | 6x25Y | 4x25Y | 4L - 10Y @150mm C/C |
| CF4 | 5750 | 2400 | 550 | 12Y@150 C/C | 12Y@150 C/C | - | - | RB4 | 450 | 900 | 4x25Y | 4x25Y | 4L - 10Y @150mm C/C |
| CF5 | 5910 | 4270 | 700 | 16Y@150 C/C | 16Y@150 C/C | 12Y@150 C/C | 12Y@150 C/C | - | - | - | - | - | - |
| CF6 | 5850 | 1850 | 450 | 12Y@175 C/C | 12Y@175 C/C | - | - | RB6 | 450 | 750 | 5x25Y | 5x25Y | 4L - 10Y @140mm C/C |
| CF7 | REFER PLAN | | 550 | 12Y@150 C/C | 12Y@150 C/C | - | - | RB7 | 450 | 750 | 5x25Y | 5x25Y | 4L - 10Y @140mm C/C |
| CF8 | 4400 | 2000 | 450 | 12Y@175 C/C | 12Y@175 C/C | - | - | RB8 | 450 | 750 | 3x20Y | 3x20Y | 3L - 10Y @150mm C/C |
| CF9 | 5650 | 2400 | 550 | 12Y@150 C/C | 12Y@150 C/C | - | - | RB9 | 450 | 900 | 5x25Y | 5x25Y | 4L - 10Y @150mm C/C |
| CF10 | 6500 | 2400 | 550 | 12Y@150 C/C | 12Y@150 C/C | - | - | RB10 | 450 | 900 | 7x25Y | 7x25Y | 4L - 10Y @150mm C/C |
| CF11 | REFER PLAN | | 750 | 16Y@150 C/C | 16Y@150 C/C | 12Y@150 C/C | 12Y@150 C/C | - | - | - | - | - | - |
| CF12 | REFER PLAN | | 750 | 16Y@150 C/C | 16Y@150 C/C | 12Y@150 C/C | 12Y@150 C/C | - | - | - | - | - | - |
| CF13 | 6000 | 2400 | 550 | 12Y@150 C/C | 12Y@150 C/C | - | - | RB13 | 450 | 900 | 5x25Y | 5x25Y | 4L - 10Y @140mm C/C |
| CF14 | 5650 | 2000 | 450 | 12Y@175 C/C | 12Y@175 C/C | - | - | RB14 | 450 | 750 | 4x25Y | 4x25Y | 4L - 10Y @125mm C/C |

PROJECT TITLE :

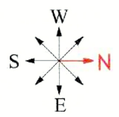
PLAN SHOWING THE PROPOSED CONSTRUCTION OF STILT + 5 FLOORS (18.30 m HEIGHT) RESIDENTIAL BUILDING WITH 15 DWELLING UNITS AVAILING PREMIUM FSI RESIDENTIAL BUILDING AT NEW DOOR NO.26, OLD DOOR NO.16, NEW BANGARU COLONY FIRST STREET, K.K. NAGAR WEST, CHENNAI - 600 078, COMPRISED IN S.NO.217, 217/ 1 PART AS PER DOCUMENT AND T.S.No.97 98/ 1 & 98/ 2 AS PER PATTA, BLOCK NO: 35 OF VIRUGAMBAKKAM VILLAGE, MAMBALAM TALUK WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION, ZONE : X, DIVISION NO -128.

STILT+5

NOTES

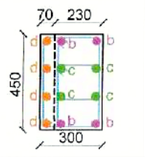
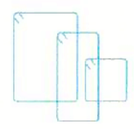
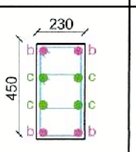
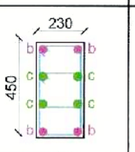
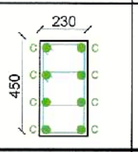
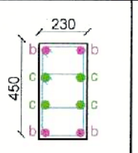
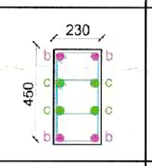
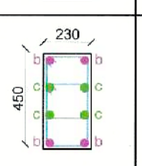
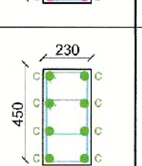
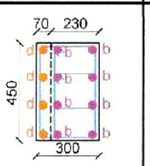
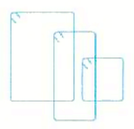
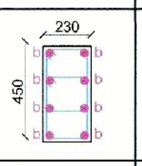
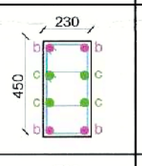
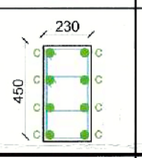
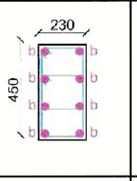
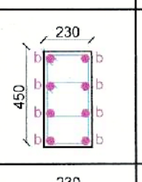
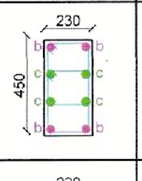
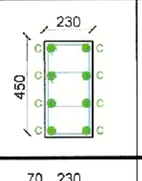
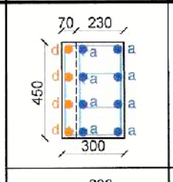
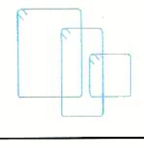
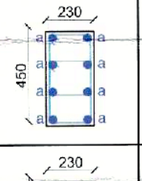
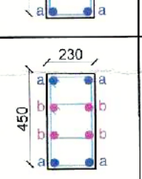
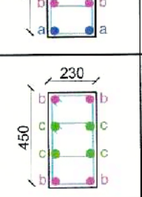
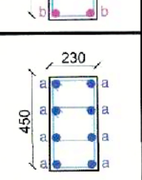
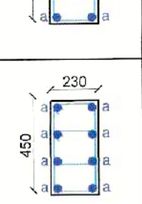
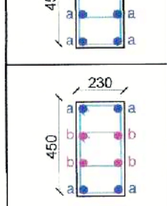
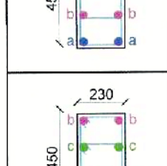
- REFER ARCH. DWG. FOR CENTRE LINE DIMENSIONS. CONCRETE MIX SHALL BE M25 FOR COLUMN & ALL OTHER R.C.C WORKS.
- ALL REINFORCEMENTS ARE OF Fe500 GRADE.
- CLEAR COVER TO MAIN REINFORCEMENT SHALL BE
  - (i) SLAB 20mm
  - (ii) COLUMN 40mm
  - (iii) BEAM 25mm
  - (iv) R.C WALL 25mm
  - (v) FOOTING 40mm
- LAP LENGTH SHALL BE 50 x DIA OF THE BAR

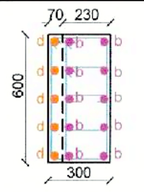
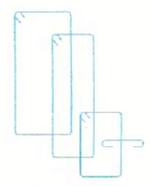
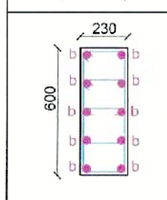
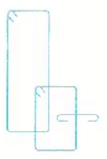
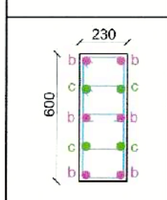
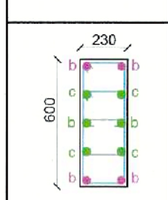
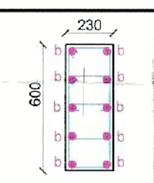
NORTH POINT :




SIGNATURE :

V. JAGEN, B.E.,M.E., (Struct), ,M.I.E.,A.I.V.,
CMDA REGN NOS-SE/CR-II/19/03/24, QA/19/04/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269154

| COLUMN TYPE | FLOORS | NO OF COLUMNS | COLUMN SIZE | REINFORCEMENT | SHAPE OF TIES |
|---|---|---|---|---|---|
| C1 | 300X450 STILT FLOOR | 08 Nos. |  | 4 Nos -20Y (b) + 4 Nos-16Y (c) + 4 Nos-12Y (d)<br>TIES<br>8Y @ 100C/C FOR L ONLY. (For 230mm width)<br>8Y @ 300C/C FOR L ONLY. (For 300mm width) |  |
| | 230X450 FIRST FLOOR | |  | 4 Nos -20Y (b) + 4 Nos-16Y (c)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 |  |
| | 230X450 SECOND& THIRD FLOOR | |  | 4 Nos -20Y (b) + 4 Nos-16Y (c)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 | |
| | 230X450 FOURTH & FIFTH FLOOR | |  | 8 Nos -16Y (c)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 | |
| C1a | 230X450 STILT FLOOR | 04 Nos. |  | 4 Nos -20Y (b) + 4 Nos-16Y (c)<br>TIES<br>8Y @ 100C/C FOR L ONLY. |  |
| | 230X450 FIRST FLOOR | |  | 4 Nos -20Y (b) + 4 Nos-16Y (c)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 | |
| | 230X450 SECOND& THIRD FLOOR | |  | 4 Nos -20Y (b) + 4 Nos-16Y (c)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 | |
| | 230X450 FOURTH & FIFTH FLOOR | |  | 8 Nos -16Y (c)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 | |
| C2 | 300X450 STILT FLOOR | 06 Nos. |  | 8 Nos -20Y (b) + 4 Nos-12Y (d)<br>TIES<br>8Y @ 100C/C FOR L ONLY. (For 230mm width)<br>8Y @ 300C/C FOR L ONLY. (For 300mm width) |  |
| | 230X450 FIRST FLOOR | |  | 8 Nos -20Y (b)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 | |
| | 230X450 SECOND& THIRD FLOOR | |  | 4 Nos -20Y (b) + 4 Nos-16Y (c)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 |  |
| | 230X450 FOURTH & FIFTH FLOOR | |  | 8 Nos -16Y (c)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 | |
| C2a | 230X450 STILT FLOOR | 04 Nos. |  | 8 Nos -20Y (b)<br>TIES<br>8Y @ 100C/C FOR L ONLY. |  |
| | 230X450 FIRST FLOOR | |  | 8 Nos -20Y (b)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 | |
| | 230X450 SECOND& THIRD FLOOR | |  | 4 Nos -20Y (b) + 4 Nos-16Y (c)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 | |
| | 230X450 FOURTH & FIFTH FLOOR | |  | 8 Nos -16Y (c)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 | |
| C3 | 300X450 STILT FLOOR | 09 Nos. |  | 8 Nos -25Y (a) + 4 Nos-12Y (d)<br>TIES<br>8Y @ 100C/C FOR L ONLY. (For 230mm width)<br>8Y @ 300C/C FOR L ONLY. (For 300mm width) |  |
| | 230X450 FIRST FLOOR | |  | 8 Nos -25Y (a)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 | |
| | 230X450 SECOND& THIRD FLOOR | |  | 4 Nos -25Y (a) + 4 Nos-20Y (b)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 |  |
| | 230X450 FOURTH & FIFTH FLOOR | |  | 4 Nos -20Y (b) + 4 Nos-16Y (c)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 | |
| C3a | 230X450 STILT FLOOR | 04 Nos. |  | 8 Nos -25Y (a)<br>TIES<br>8Y @ 100C/C FOR L ONLY. |  |
| | 230X450 FIRST FLOOR | |  | 8 Nos -25Y (a)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 | |
| | 230X450 SECOND& THIRD FLOOR | |  | 4 Nos -25Y (a) + 4 Nos-20Y (b)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 | |
| | 230X450 FOURTH & FIFTH FLOOR | |  | 4 Nos -20Y (b) + 4 Nos-16Y (c)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 | |

| COLUMN TYPE | NO.FLOORS | NO OF COLUMNS | COLUMN SIZE | REINFORCEMENT | SHAPE OF TIES |
|---|---|---|---|---|---|
| C4 | 300X600 STILT FLOOR | 05 Nos. |  | 10 Nos-20Y (b) + 5 Nos-12Y (d)<br>TIES<br>8Y @ 100C/C FOR L ONLY. (For 230mm width)<br>8Y @ 300C/C FOR L ONLY. (For 300mm width) |  |
| | 230X600 FIRST FLOOR | |  | 10 Nos-20Y (b)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 |  |
| | 230X600 SECOND & THIRD FLOOR | |  | 6 Nos-20Y (b) + 4 Nos-16Y (c)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 | |
| | 230X600 FOURTH & FIFTH FLOOR | |  | 4 Nos-20Y (b) + 6 Nos-16Y (c)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 | |
| C4a | 230X600 STILT FLOOR | 01 No. |  | 10 Nos-20Y (b)<br>TIES<br>8Y @ 100C/C FOR L ONLY. |  |
| | 230X600 FIRST FLOOR | |  | 10 Nos-20Y (b)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 | |
| | 230X600 SECOND & THIRD FLOOR | |  | 6 Nos-20Y (b) + 4 Nos-16Y (c)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 | |
| | 230X600 FOURTH & FIFTH FLOOR | |  | 4 Nos-20Y (b) + 6 Nos-16Y (c)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 | |
| C5 | 300X600 STILT FLOOR | 03 Nos. |  | 12 Nos-20Y (b) + 6 Nos-12Y (d)<br>TIES<br>8Y @ 100C/C FOR L ONLY. (For 230mm width)<br>8Y @ 300C/C FOR L ONLY. (For 300mm width) |  |
| | 230X600 FIRST FLOOR | |  | 12 Nos-20Y (b)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 | |
| | 230X600 SECOND & THIRD FLOOR | |  | 8 Nos-20Y (b) + 4 Nos-16Y (c)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 |  |
| | 230X600 FOURTH & FIFTH FLOOR | |  | 4 Nos-20Y (b) + 8 Nos-16Y (c)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 | |
| C6 | 300X930 STILT FLOOR | 01 No. |  | 14 Nos-16Y (c) + 7 Nos-12Y (d)<br>TIES<br>8Y @ 100C/C FOR L ONLY. (For 230mm width)<br>8Y @ 300C/C FOR L ONLY. (For 300mm width) |  |
| | 230X930 FIRST FLOOR | |  | 14 Nos-16Y (c)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 | |
| | 230X930 SECOND & THIRD FLOOR | |  | 8 Nos-16 (c) + 6 Nos-12Y (d)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 |  |
| | 230X930 FOURTH & FIFTH FLOOR | |  | 8 Nos-16 (c) + 6 Nos-12Y (d)<br>TIES<br>8Y @ 100C/C @ SUP.FOR L/4<br>8Y @ 200C/C @ MID.FOR L/2 | |

STILT+5




TYPICAL COLUMN REINFORCEMENT LAPPING DETAIL AT FLOOR LEVEL




TYPICAL COLUMN STIRRUPS DETAIL FOR OTHER FLOORS




SECTION "1-1"




TYPICAL COLUMN DETAIL




TYPICAL COLUMN TERMINATION DETAIL

NOTE: Avoid column reinforcement lapping in beam column joints.

NOTE:-
TOTAL NUMBER OF COLUMNS = 45 Nos.

| |
|---|
| 25mm ROD (a) |
| 20mm ROD (b) |
| 16mm ROD (c) |
| 12mm ROD (d) |

| SLUMP VALUE OF CONCRETE | |
|---|---|
| RC MEMBER | Slump Value |
| Column | 150 ±25mm |

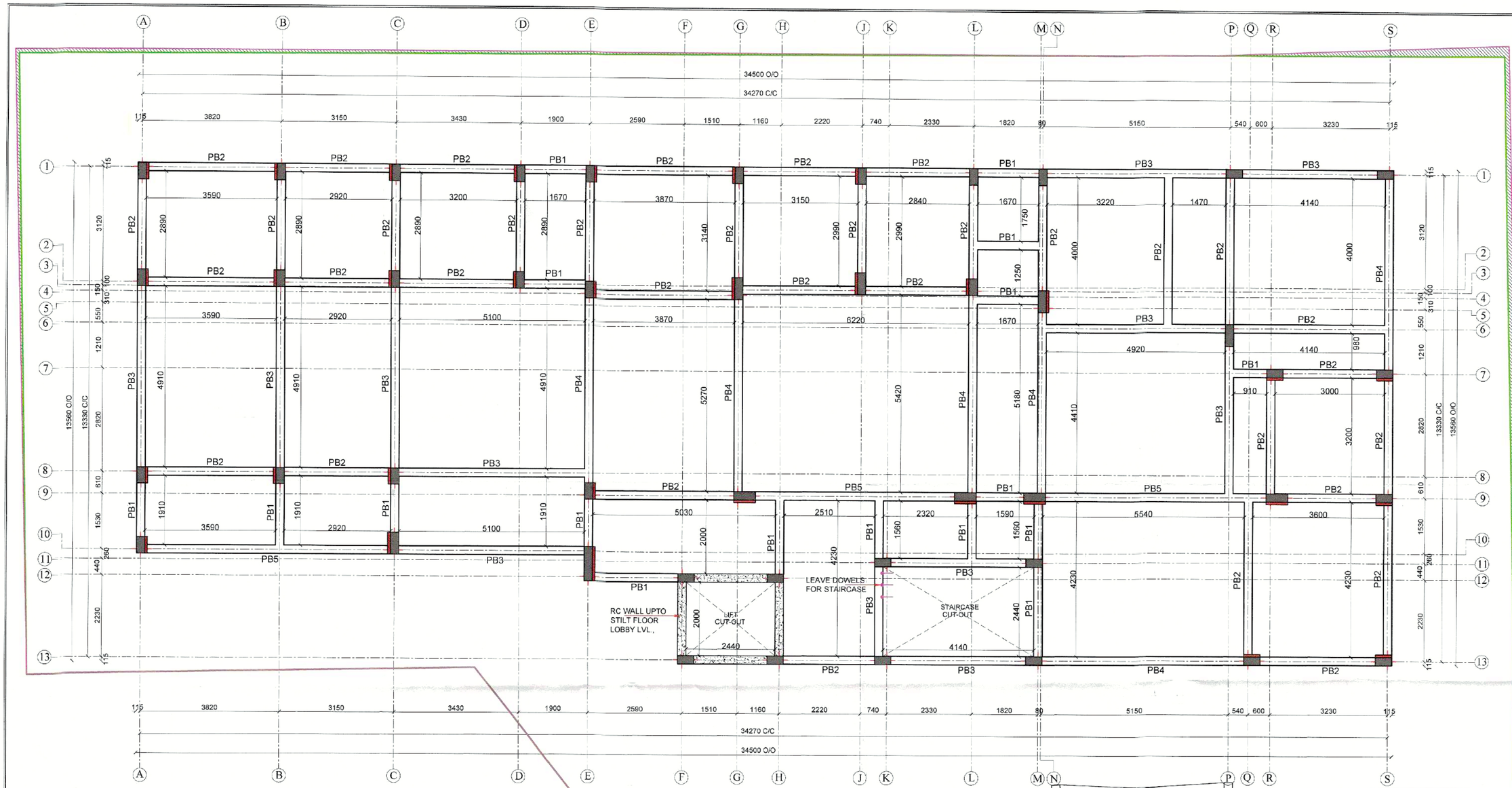
PROJECT TITLE :
PLAN SHOWING THE PROPOSED CONSTRUCTION OF STILT + 5 FLOORS (18.30 m HEIGHT) RESIDENTIAL BUILDING WITH 15 DWELLING UNITS AVAILING PREMIUM FSI RESIDENTIAL BUILDING AT NEW DOOR NO.26, OLD DOOR NO.16, NEW BANGARU COLONY FIRST STREET, K.K. NAGAR WEST, CHENNAI - 600 078, COMPRISED IN S.NO.217, 217/ 1 PART AS PER DOCUMENT AND T.S.No.97 98/ 1 & 98/ 2 AS PER PATTA, BLOCK NO: 35 OF VIRUGAMBAKKAM VILLAGE, MAMBALAM TALUK WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION, ZONE : X, DIVISION NO -128.

NOTES
- REFER ARCH. DWG. FOR CENTRE LINE DIMENSIONS. CONCRETE MIX SHALL BE M25 FOR COLUMN & ALL OTHER R.C.C WORKS,
- ALL REINFORCEMENTS ARE OF Fe500D GRADE.
- CLEAR COVER TO MAIN REINFORCEMENT SHALL BE
  - (i) SLAB 20mm
  - (ii) COLUMN 40mm
  - (iii) BEAM 25mm
  - (iv) R.C WALL 25mm
- LAP LENGTH SHALL BE 50 x DIA OF THE BAR

DRAWING TITLE:
COLUMN SCHEDULE

SIGNATURE :

V. JAGEN, B.E.,M.E., (Struct), ,M.I.E.,A.I.V.,
CMDA REGN NOS-SE/GR-II/19/03/24, QA/19/04/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269154




PB1 - 230 x 450
- 2x12Y
- 8Y@100mm C/C for L/4 dist.& 8Y@200mm C/C for mid span
- 2x16Y
- 75mm thk.P.C.C
- 75mmThk.M.Sand filling

PB2 - 230 x 450
- 2x16Y
- 8Y@100mm C/C for L/4 dist.& 8Y@200mm C/C for mid span
- 2x16Y
- 1x12Y
- 75mm thk.P.C.C
- 75mmThk.M.Sand filling

PB3 - 230 x 450
- 2x16Y
- 1x16Y for L/4 dist.
- 8Y@100mm C/C for L/4 dist.& 8Y@200mm C/C for mid span
- 3x16Y
- 75mm thk.P.C.C
- 75mmThk.M.Sand filling

PB4 - 230 x 450
- 2x16Y
- 1x20Y for L/4 dist.
- 8Y@100mm C/C for L/4 dist.& 8Y@200mm C/C for mid span
- 2x20Y
- 1x16Y
- 75mm thk.P.C.C
- 75mmThk.M.Sand filling

PB5 - 230 x 450
- 2x16Y+ 1x20Y
- 8Y@100mm C/C for L/4 dist.& 8Y@200mm C/C for mid span
- 3x20Y
- 75mm thk.P.C.C
- 75mmThk.M.Sand filling

**PROJECT TITLE :**

PLAN SHOWING THE PROPOSED CONSTRUCTION OF STILT + 5 FLOORS (18.30 m HEIGHT) RESIDENTIAL BUILDING WITH 15 DWELLING UNITS AVAILING PREMIUM FSI RESIDENTIAL BUILDING AT NEW DOOR NO.26, OLD DOOR NO.16, NEW BANGARU COLONY FIRST STREET, K.K. NAGAR WEST, CHENNAI - 600 078, COMPRISED IN S.NO.217, 217/ 1 PART AS PER DOCUMENT AND T.S.No.97 98/ 1 & 98/ 2 AS PER PATTA, BLOCK NO: 35 OF VIRUGAMBAKKAM VILLAGE, MAMBALAM TALUK WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION, ZONE : X, DIVISION NO -128.

**NOTES** — STILT+5

- REFER ARCH. DWG. FOR CENTRE LINE DIMENSIONS. CONCRETE MIX SHALL BE M25 FOR COLUMN & ALL OTHER R.C.C WORKS.
- ALL REINFORCEMENTS ARE OF Fe500 GRADE.
- CLEAR COVER TO MAIN REINFORCEMENT SHALL BE
  - (i) SLAB 20mm
  - (ii) COLUMN 40mm
  - (iii) BEAM 25mm
  - (iv) R.C WALL 25mm
- LAP LENGTH SHALL BE 50 x DIA OF THE BAR

**NORTH POINT :**

W S N E

**DRAWING TITLE :**

PLINTH BEAM LAYOUT

**SIGNATURE :**

V. JAGEN, B.E.,M.E., (Struct), ,M.I.E.,A.I.V.
SINDAREGN KOS-SE/GR-M/15/02/24. OA/19/04/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269156

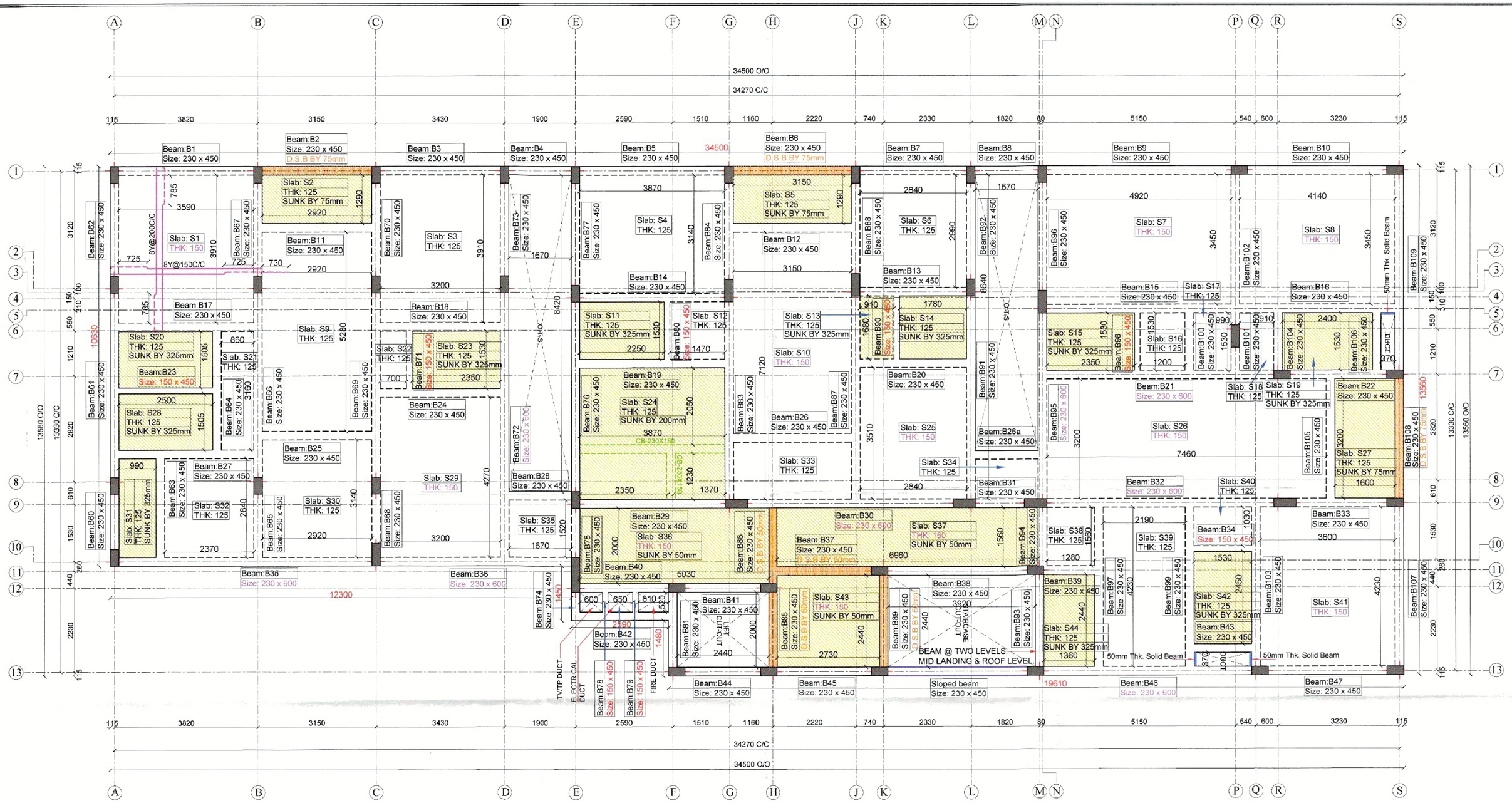
STILT FLOOR ROOF BEAM LAYOUT

| | | |
|---|---|---|
| PROJECT TITLE :<br>PLAN SHOWING THE PROPOSED CONSTRUCTION OF STILT + 5 FLOORS (18.30 m HEIGHT) RESIDENTIAL BUILDING WITH 15 DWELLING UNITS AVAILING PREMIUM FSI RESIDENTIAL BUILDING AT NEW DOOR NO.26, OLD DOOR NO.16, NEW BANGARU COLONY FIRST STREET, K.K. NAGAR WEST, CHENNAI - 600 078, COMPRISED IN S.NO.217, 217/ 1 PART AS PER DOCUMENT AND T.S.No.97 98/ 1 & 98/ 2 AS PER PATTA, BLOCK NO: 35 OF VIRUGAMBAKKAM VILLAGE, MAMBALAM TALUK WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION, ZONE : X, DIVISION NO -128. | NOTES<br>STILT+5<br>● REFER ARCH. DWG. FOR CENTRE LINE DIMENSIONS. CONCRETE MIX SHALL BE M25 FOR COLUMN & ALL OTHER R.C.C WORKS,<br>● ALL REINFORCEMENTS ARE OF Fe500 GRADE.<br>● CLEAR COVER TO MAIN REINFORCEMENT SHALL BE<br>(i) SLAB 20mm<br>(ii) COLUMN 40mm<br>(iii) BEAM 25mm<br>(iv) R.C WALL 25mm<br>● LAP LENGTH SHALL BE 50 x DIA OF THE BAR | NORTH POINT :<br>W S N E<br><br>1x12Y@L/4 dist from support<br>2x16Y<br>230<br>450<br>8Y@100C/C@L/4<br>8Y@200C/C Mid span<br>3x16Y<br>B3 - 230 X 450 |

DRAWING TITLE :
STILT FLOOR ROOF BEAM LAYOUT

SIGNATURE :

A. JAGEN, B.E.M.E., (Struct), M.I.E., A.I.V.
CHENNAI REGN NOS-SE/GR-V/1003/24, GA19/0421
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841299154




FIRST FLOOR ROOF BEAM LAYOUT

PROJECT TITLE :

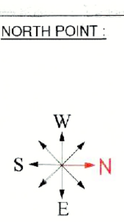
PLAN SHOWING THE PROPOSED CONSTRUCTION OF STILT + 5 FLOORS (18.30 m HEIGHT) RESIDENTIAL BUILDING WITH 15 DWELLING UNITS AVAILING PREMIUM FSI RESIDENTIAL BUILDING AT NEW DOOR NO.26, OLD DOOR NO.16, NEW BANGARU COLONY FIRST STREET, K.K. NAGAR WEST, CHENNAI - 600 078, COMPRISED IN S.NO.217, 217/ 1 PART AS PER DOCUMENT AND T.S.No.97 98/ 1 & 98/ 2 AS PER PATTA, BLOCK NO: 35 OF VIRUGAMBAKKAM VILLAGE, MAMBALAM TALUK WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION, ZONE : X, DIVISION NO -128.

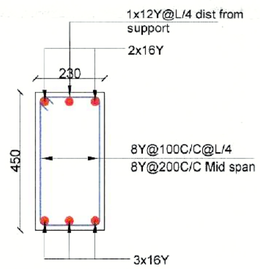
NOTES

STILT+5

- REFER ARCH. DWG. FOR CENTRE LINE DIMENSIONS. CONCRETE MIX SHALL BE M25 FOR COLUMN & ALL OTHER R.C.C WORKS.
- ALL REINFORCEMENTS ARE OF Fe500 GRADE.
- CLEAR COVER TO MAIN REINFORCEMENT SHALL BE
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  - (ii) COLUMN 40mm
  - (iii) BEAM 25mm
  - (iv) R.C WALL 25mm
- LAP LENGTH SHALL BE 50 x DIA OF THE BAR

NORTH POINT :



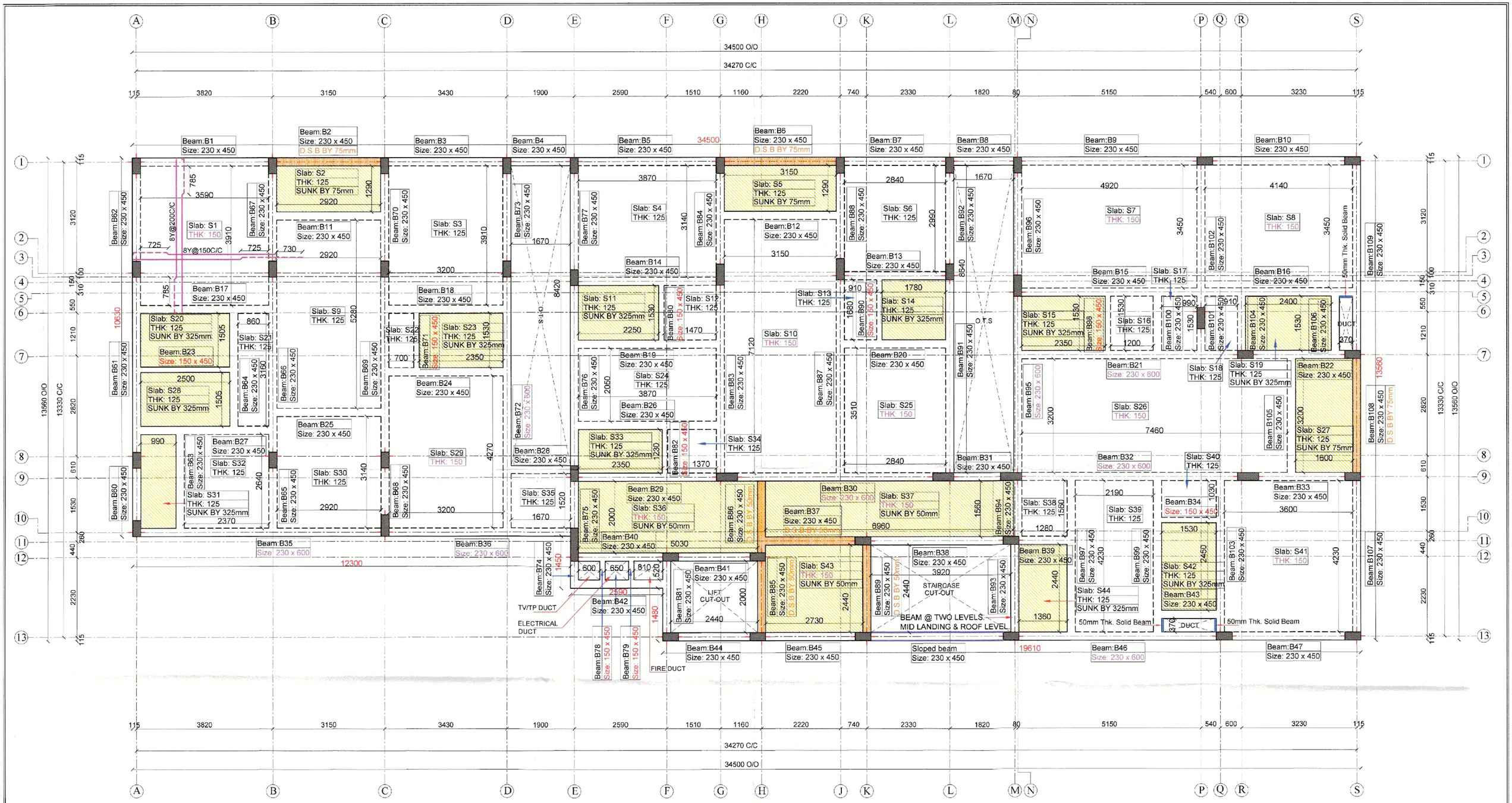

B3 - 230 X 450

DRAWING TITLE :

FIRST FLOOR ROOF BEAM LAYOUT

SIGNATURE :

V. JAGDEV, B.E.,M.E.,(Struct), M.I.E.,A.I.V.
G.../DA REGN NOS-SE/GR-II/10/03/24, GA/16/04/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841269154




TYPICAL FLOOR ROOF BEAM LAYOUT

PROJECT TITLE :

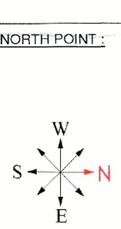
PLAN SHOWING THE PROPOSED CONSTRUCTION OF STILT + 5 FLOORS (18.30 m HEIGHT) RESIDENTIAL BUILDING WITH 15 DWELLING UNITS AVAILING PREMIUM FSI RESIDENTIAL BUILDING AT NEW DOOR NO.26, OLD DOOR NO.16, NEW BANGARU COLONY FIRST STREET, K.K. NAGAR WEST, CHENNAI - 600 078, COMPRISED IN S.NO.217, 217/ 1 PART AS PER DOCUMENT AND T.S.No.97 98/ 1 & 98/ 2 AS PER PATTA, BLOCK NO: 35 OF VIRUGAMBAKKAM VILLAGE, MAMBALAM TALUK WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION, ZONE : X, DIVISION NO -128.

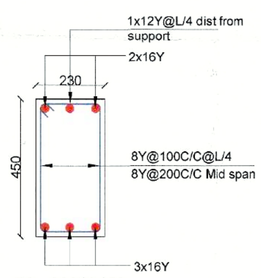
STILT+5

NOTES

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- ALL REINFORCEMENTS ARE OF Fe500 GRADE.
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  - (i) SLAB 20mm
  - (ii) COLUMN 40mm
  - (iii) BEAM 25mm
  - (iv) R.C WALL 25mm
- LAP LENGTH SHALL BE 50 x DIA OF THE BAR

NORTH POINT :



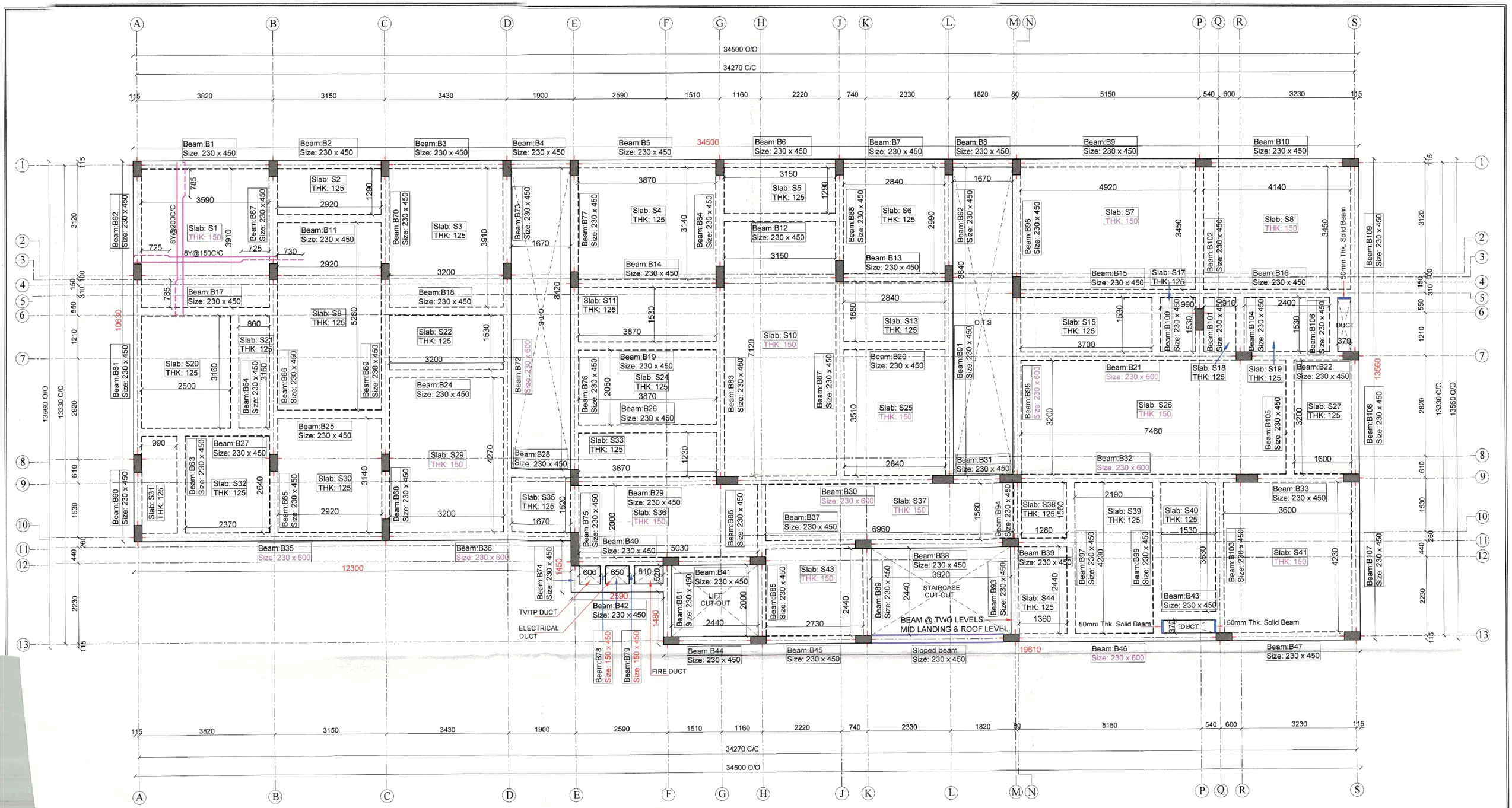

B3 - 230 X 450

DRAWING TITLE :

TYPICAL FLOOR ROOF BEAM LAYOUT ( SECOND, THIRD AND FOURTH )

SIGNATURE :


A. JAGAN, B.E.,M.E.,(Struct), M.I.E.,A.I.V.
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841259154




FIFTH FLOOR ROOF BEAM LAYOUT

PROJECT TITLE :

PLAN SHOWING THE PROPOSED CONSTRUCTION OF STILT + 5 FLOORS (18.30 m HEIGHT) RESIDENTIAL BUILDING WITH 15 DWELLING UNITS AVAILING PREMIUM FSI RESIDENTIAL BUILDING AT NEW DOOR NO.26, OLD DOOR NO.16, NEW BANGARU COLONY FIRST STREET, K.K. NAGAR WEST, CHENNAI - 600 078, COMPRISED IN S.NO.217, 217/ 1 PART AS PER DOCUMENT AND T.S.No.97 98/ 1 & 98/ 2 AS PER PATTA, BLOCK NO: 35 OF VIRUGAMBAKKAM VILLAGE, MAMBALAM TALUK WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION, ZONE : X, DIVISION NO -128.

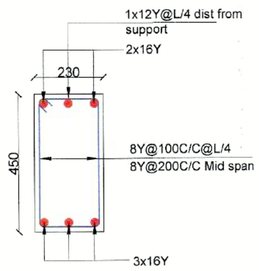
STILT+5

NOTES

- REFER ARCH. DWG. FOR CENTRE LINE DIMENSIONS. CONCRETE MIX SHALL BE M25 FOR COLUMN & ALL OTHER R.C.C WORKS.
- ALL REINFORCEMENTS ARE OF Fe500 GRADE.
- CLEAR COVER TO MAIN REINFORCEMENT SHALL BE
  - (i) SLAB 20mm
  - (ii) COLUMN 40mm
  - (iii) BEAM 25mm
  - (iv) R.C WALL 25mm
- LAP LENGTH SHALL BE 50 x DIA OF THE BAR

NORTH POINT :




B3 - 230 X 450

DRAWING TITLE :

FIFTH FLOOR ROOF BEAM LAYOUT

SIGNATURE :


..., B.E.,M.E., (Struct), M.I.E.,A.I.V.
CMDA REGN NOS-SE/CR-IN/93/24, DA/IN/94/21
CHARTERED ENGINEER & APPROVED VALUER
3-B, RAMANIYAM GAURAVV - 2,
BLOCK-2, MODEL SCHOOL ROAD,
SHOLINGANALLUR, CHENNAI-600 119.
MOBILE: 9841280154



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