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Chennai 600 097, India

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+91 9996 12 9996
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DIGITALLY VERIFIED RECORD

DETAILED STRUCTURAL DESIGN & DRAWINGS

THE PROPOSED CONSTRUCTION RESIDENTIAL (STILT+05) AT

NO.01, SHIVAJI STREET, T.NAGAR

CHENNAI-600017.

M. Tmi

Er.M.TAMILSELVAN, M Tech (Stru.)
(Structural Engineer Grade-I)
GCC REG NO: RSE100262026
Valid upto 28-08-2031 Mob: +91 98433 16508
SKC STRUCTURAL CONSULTANTS
No.6, 1st Floor, Kamarajar Salai, Ashok Nagar,
Chennai 600 083.

Designed By:

Er.M.TAMILSELVAN, M.Tech (Struct.)

SKC Structural Consultants,

No.6 First floor,

Kamarajar Salai,

Ashok Nagar, Chennai – 83.

S K C STRUCTURAL CONSULTANTS

No.6, FIRST FLOOR, KAMARAJAR SALAI. ASHOK NAGAR,
CHENNAI - 600 083

Email-tamilselvan.dc@gmail.com

Er.M.TAMIL. SELVAN,M.Tech (Stru.)
Mobile: 9843316508.

STRUCTURAL STABILITY CERTIFICATE

The Proposed Construction of Residential Building (Stilt+05) at NO.01, Shivaji Street, T.Nagar, Chennai-600017.

It is to be Proposed to construct Stilt +05 floors in the above site. The Stilt floor is proposed for parking and the other floor is used for residential purposes. The proposed Building is designed for Earth quake and wind load.

We will regularly inspect the site during construction and inspect all the material used and the quality of work done from foundation to the roof. The design is structurally sound and safe.

The building is designed as per IS codes.

IS 875	-	for loads calculation
IS: 456-2000	-	Concrete code
IS: 1893-2025	-	Earthquake Resistant Building.
IS: 13920-1993	-	Ductile Detailing for Earthquake Resistant
IS:800-2002	-	Steel Code.

Foundation: -

As per the soil investigation report, the top soil layers consist of very loose soil, with very low N-values. Considering the poor soil conditions, a deep pile foundation has been provided. The proposed pile depth is 30 m below the existing ground level.

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Chennai 600 083.

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CHENNAI - 600 083

Email-tamilselvan.dc@gmail.com

Er.M.TAMIL. SELVAN,M.Tech (Stru.)
Mobile: 9843316508.

DESIGN DATA

****

Name of Work	:	The Proposed Construction of Residential Building (Stilt+05) at NO.01, Shivaji Street, T.Nagar Chennai-600017.
Number of floors	:	Stilt + 5 floors.
Live Load:		
1. Floor	:	3KN / M^2
2. Roof	:	1.5KN / M^2
Concrete	:	M-30
Steel	:	Fe 550
Earth Quake Zone	:	III
Clear Cover:		
Footing	:	50mm
Columns	:	25mm on 230mm width 40mm on more than 230mm width
Beam	:	40mm
Floor Slab	:	20mm
Roof Slab	:	25mm
Development Length	:	40d + 10d
Type of Foundation	:	pile foundation at the depth of 30.0 m.

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SKC STRUCTURAL CONSULTANTS
No.6, 1st Floor, Kamarajar Salai, Ashok Nagar,
Chennai 600 083.

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1. STAAD SPACE
2. START JOB INFORMATION
3. ENGINEER DATE 29-AUG-26
4. END JOB INFORMATION
5. INPUT WIDTH 79
6. UNIT METER KN
7. JOINT COORDINATES
8. 1 0 0 0.75; 2 3.2 0 0; 5 14.8 0 0; 6 0 0 8.75; 7 3.8 0 8.75; 8
14.8 0 8.1
9. 9 10.95 0 8.1; 10 3.8 0 14.25; 11 10.95 0 13.6; 12 0 0 14.65; 13
14.8 0 13.6
10. 14 0 0 18.55; 15 2.8 0 18.55; 16 10.95 0 19.35; 17 14.8 0 19.35
11. 18 12.5 0 19.35; 19 10.95 0 21.35; 20 12.5 0 21.35; 21 13.6 0
21.35
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23.6
13. 26 14.6 0 24.6; 27 14.6 0 30; 28 14.6 0 33.3; 29 14.6 0 37.1; 30
10.95 0 30
14. 31 10.95 0 33.3; 32 10.95 0 37.1; 33 0 0 30; 35 0 0 38; 36 4.2 0
38
15. 37 4.2 0 30; 38 0 1.2 0.75; 39 3.2 1.2 0; 41 14.8 1.2 0; 42 0 1.2
8.75
16. 43 3.8 1.2 8.75; 44 14.8 1.2 8.1; 45 10.95 1.2 8.1; 46 3.8 1.2
14.25
17. 47 10.95 1.2 13.6; 48 0 1.2 14.65; 49 14.8 1.2 13.6; 50 0 1.2
18.55
18. 51 2.8 1.2 18.55; 52 10.95 1.2 19.35; 53 14.8 1.2 19.35; 54 12.5
1.2 19.35
19. 55 10.95 1.2 21.35; 56 12.5 1.2 21.35; 57 13.6 1.2 21.35; 58
10.95 1.2 23.6
20. 59 13.6 1.2 23.6; 60 4.2 1.2 23.6; 61 9.53674E-07 1.2 23.6; 62
14.6 1.2 24.6
21. 63 14.6 1.2 30; 64 14.6 1.2 33.3; 65 14.6 1.2 37.1; 66 10.95 1.2
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22. 67 10.95 1.2 33.3; 68 10.95 1.2 37.1; 69 0 1.2 30; 70 0 1.2 38;
71 4.2 1.2 38
23. 72 4.2 1.2 30; 73 0 4.2 0.75; 74 3.2 4.2 0; 76 14.8 4.2 0; 77 0
4.2 8.75
24. 78 3.8 4.2 8.75; 79 14.8 4.2 8.1; 80 10.95 4.2 8.1; 81 3.8 4.2
14.25
25. 82 10.95 4.2 13.6; 83 0 4.2 14.65; 84 14.8 4.2 13.6; 85 0 4.2
18.55
26. 86 2.8 4.2 18.55; 87 10.95 4.2 19.35; 88 14.8 4.2 19.35; 89 12.5
4.2 19.35
27. 90 10.95 4.2 21.35; 91 12.5 4.2 21.35; 92 13.6 4.2 21.35; 93
10.95 4.2 23.6
28. 94 13.6 4.2 23.6; 95 4.2 4.2 23.6; 96 9.53674E-07 4.2 23.6; 97
14.6 4.2 24.6
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4.2 30
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31. 106 4.2 4.2 38; 107 4.2 4.2 30; 108 4.2 4.2 33.3; 109 4.2 4.2
37.1
32. 110 0 4.2 4.65; 111 6.6 4.2 0; 112 6.6 4.2 4.65; 113 3.2 4.2 4.65
33. 114 3.2 4.2 0.75; 115 8.6 4.2 0; 116 10.95 4.2 8.75; 120 0 4.2
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38. 140 3.1 4.2 39.12; 141 3.1 4.2 38.6; 142 6.6 4.2 38.6; 143 6.6 4.2 37.1
39. 144 6.6 4.2 33.3; 145 6.6 4.2 30; 146 6.6 4.2 23.6; 147 10.95 4.2 18.55
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49. 182 8.6 4.2 24.6; 183 10.95 4.2 16.1; 184 14.8 4.2 16.1; 185 0 4.2 14.25
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105. 402 12 10.2 33.3; 403 8.6 10.2 4.2; 404 14.8 10.2 4.2; 405 10.95 10.2 4.2
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107. 410 8.6 10.2 7.2; 411 6.6 10.2 7.2; 412 10.95 10.2 10.8; 413 10.95 10.2 7.6
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116. 444 2 10.2 20.2; 445 4.2 10.2 34; 446 3.15 10.2 24.91; 447 3.15 10.2 30
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159. 607 12.4 13.2 28.35; 608 11.4 13.2 24.91; 609 11.4 13.2 23.6; 610 0 16.2 0.75

160. 611 3.2 16.2 0; 612 14.8 16.2 0; 613 0 16.2 8.75; 614 10.95 16.2 13.6
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901
   491. SUPPORTS
   492. 1 2 5 TO 33 35 TO 37 202 886 TO 894 896 TO 901 FIXED
   493. MEMBER RELEASE
   494. 409 411 TO 413 421 424 427 430 433 436 441 445 447 453 462 465
468 471 474 -
   495. 482 485 488 491 494 499 504 507 510 513 515 518 521 652 654 TO
656 664 667 -
   496. 670 673 676 679 684 688 690 696 705 708 711 714 717 724 727 730
733 736 741 -
   497. 746 749 752 755 757 760 763 894 896 TO 898 906 909 912 915 918
921 926 930 -
   498. 932 938 947 950 953 956 959 966 969 972 975 978 983 988 991 994
997 999 1002 -
   499. 1005 1136 1138 TO 1140 1148 1151 1154 1157 1160 1163 1168 1172
1174 1180 -
   500. 1189 1192 1195 1198 1201 1208 1211 1214 1217 1220 1225 1230 1233
1236 1239 -
   501. 1241 1244 1247 1382 1390 1396 1402 1410 1416 1422 1437 1450 1467
1472 1481 -
   502. 1483 START MX MY MZ
   503. 378 401 405 409 411 412 416 424 429 432 433 435 436 442 445 446
449 450 453 -
   504. 461 464 465 470 473 474 484 487 488 490 493 494 499 504 506 509
510 513 520 -
   505. 521 TO 522 527 529 625 644 648 652 654 655 659 667 672 675 676
678 679 685 -
   506. 688 689 692 693 696 704 707 708 713 716 717 726 729 730 732 735
736 741 746 -
   507. 748 751 752 755 762 TO 764 769 771 867 886 890 894 896 897 901
909 914 917 -
   508. 918 920 921 927 930 931 934 935 938 946 949 950 955 958 959 968
971 972 974 -
   509. 977 978 983 988 990 993 994 997 1004 TO 1006 1011 1013 1109 1128
1132 1136 -
   510. 1138 1139 1143 1151 1156 1159 1160 1162 1163 1169 1172 1173 1176
1177 1180 -
   511. 1188 1191 1192 1197 1200 1201 1210 1213 1214 1216 1219 1220 1225
1230 1232 -
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1374 1385 -
   513. 1390 1396 1401 1402 1411 1415 1418 1419 1422 1424 1437 1447 1450
1467 1472 -
   514. 1481 1490 1495 1497 END MX MY MZ
   515. DEFINE MATERIAL START
   516. ISOTROPIC CONCRETE
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   517. E 2.17185E+07
   518. POISSON 0.17
   519. DENSITY 23.5616
   520. ALPHA 1E-05
   521. DAMP 0.05
   522. TYPE CONCRETE
   523. STRENGTH FCU 27579
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   525. MEMBER PROPERTY AMERICAN
   526. 1 2 4 TO 12 14 15 21 23 24 28 TO 37 39 TO 47 49 50 56 58 59 63 TO
70 273 -
   527. 274 PRIS YD 0.9 ZD 0.6
   528. 13 25 27 48 60 62 76 79 81 82 84 TO 86 89 94 TO 103 112 117 TO
121 134 136 -
   529. 138 139 141 142 148 153 155 158 161 163 TO 167 169 173 179 183
185 193 194 -
   530. 197 199 TO 219 221 222 224 225 227 TO 235 237 239 240 242 TO 247
249 TO 251 -
   531. 253 254 261 TO 264 267 269 271 PRIS YD 0.75 ZD 0.3
   532. 276 328 336 350 352 356 357 375 380 381 383 388 TO 392 401 TO 404
408 414 -
   533. 416 417 422 425 426 434 441 444 446 452 454 457 458 463 466 476
TO 479 489 -
   534. 490 492 495 TO 498 500 TO 503 505 506 508 514 515 517 519 523 524
526 528 -
   535. 529 531 583 591 605 607 610 611 622 627 TO 629 631 TO 635 644 TO
647 651 -
   536. 657 659 660 665 668 669 677 684 687 689 695 697 700 701 706 709
719 TO 722 -
   537. 731 732 734 737 TO 740 742 TO 745 747 748 750 756 757 759 761 765
766 768 -
   538. 770 771 773 825 833 847 849 852 853 864 869 TO 871 873 TO 877 886
TO 889 -
   539. 893 899 901 902 907 910 911 919 926 929 931 937 939 942 943 948
951 -
   540. 961 TO 964 973 974 976 979 TO 982 984 TO 987 989 990 992 998 999
1001 1003 -
   541. 1007 1008 1010 1012 1013 1015 1067 1075 1089 1091 1094 1095 1106
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   542. 1111 TO 1113 1115 TO 1119 1128 TO 1131 1135 1141 1143 1144 1149
1152 -
   543. 1153 PRIS YD 0.6 ZD 0.3
   544. 1161 1168 1171 1173 1179 1181 1184 1185 1190 1193 1203 TO 1206
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   545. 1221 TO 1224 1226 TO 1229 1231 1232 1234 1240 1241 1243 1245 1249
1250 1252 -
   546. 1254 1255 1257 1309 1317 1331 1333 1336 1337 1348 1353 TO 1355
1357 TO 1361 -
   547. 1370 TO 1373 1383 1385 1386 1394 1395 1423 1426 1427 1435 1444 TO
1449 1463 -
   548. 1464 TO 1466 1468 TO 1471 1482 1483 1494 1497 PRIS YD 0.6 ZD 0.3
   549. 17 18 20 22 52 53 55 57 326 327 329 TO 335 337 TO 349 351 353 354
358 TO 361 -
   550. 369 376 TO 379 387 393 TO 400 405 TO 407 409 TO 413 415 418 TO
421 423 424 -
   551. 427 TO 433 435 TO 440 442 443 445 447 TO 451 453 455 456 459 TO
462 464 465 -
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552. 467 TO 475 481 TO 488 491 493 494 499 504 507 509 TO 513 516 518 520 TO 522 -
553. 525 527 581 582 584 TO 590 592 TO 604 606 608 609 612 TO 615 618 623 TO 626 -
554. 630 636 TO 643 648 TO 650 652 TO 656 658 661 TO 664 666 667 670 TO 676 678 -
555. 679 TO 683 685 686 688 690 TO 694 696 698 699 702 TO 705 707 708 710 TO 718 -
556. 723 TO 730 733 735 736 741 746 749 751 TO 755 758 760 762 TO 764 767 769 -
557. 823 824 826 TO 832 834 TO 846 848 850 851 854 TO 857 860 865 TO 868 872 878 -
558. 879 TO 885 890 TO 892 894 TO 898 900 903 TO 906 908 909 912 TO 918 -
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561. 1011 1065 1066 1068 TO 1074 1076 TO 1088 1090 1092 1093 1096 TO 1099 1102 -
562. 1107 TO 1110 1114 1120 TO 1127 1132 TO 1134 1136 TO 1137 -
563. 1138 PRIS YD 0.6 ZD 0.3
564. 1139 PRIS YD 0.6 ZD 0.3
565. 1140 1142 1145 TO 1148 1150 1151 1154 TO 1160 1162 TO 1167 1169 1170 1172 -
566. 1174 TO 1178 1180 1182 1183 1186 TO 1189 1191 1192 1194 TO 1202 1207 TO 1214 -
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568. 1307 1308 1310 TO 1316 1318 TO 1330 1332 1334 1335 1338 TO 1341 1344 1349 -
569. 1350 TO 1352 1356 1362 TO 1369 1374 1375 1382 1384 1387 TO 1390 1396 1400 -
570. 1401 TO 1402 1406 TO 1411 1413 1415 TO 1420 1422 1424 1425 1428 1436 1437 -
571. 1450 1467 1472 1479 TO 1481 1490 TO 1493 1495 1496 1498 TO 1503 1505 1507 -
572. 1508 TO 1517 1519 TO 1522 1524 TO 1592 PRIS YD 0.6 ZD 0.3
573. 16 26 51 61 PRIS YD 0.3 ZD 0.6
574. 19 54 PRIS YD 0.3 ZD 0.6
575. 71 72 75 77 78 80 83 87 88 90 TO 93 106 108 TO 111 113 TO 116 124 126 127 -
576. 130 132 133 135 140 143 145 147 154 156 157 159 160 162 168 170 TO 172 174 -
577. 175 TO 178 180 181 186 TO 191 195 196 198 220 223 226 236 238 241 252 255 -
578. 265 266 268 270 272 363 365 366 368 371 373 384 TO 386 PRIS YD 0.9 ZD 0.9
579. MEMBER PROPERTY
580. 275 277 278 280 281 284 286 TO 295 297 300 305 TO 307 309 312 318 320 TO 322 -
581. 367 374 530 532 533 535 536 539 541 TO 550 552 555 560 TO 562 564 567 573 -
582. 575 TO 577 617 621 772 774 775 777 778 781 783 TO 792 794 797 802 TO 804 -
583. 806 809 815 817 TO 819 859 863 1014 1016 1017 1019 1020 1023 1025 TO 1034 -

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   584. 1036 1039 1044 TO 1046 1048 1051 1057 1059 TO 1061 1101 1105 1256
1258 1259 -
   585. 1261 1262 1265 1267 TO 1276 1278 1281 1286 TO 1288 1290 1293 1299
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   586. 1301 TO 1303 1343 1347 PRIS YD 0.6 ZD 0.3
   587. 279 282 283 285 296 298 299 301 TO 304 308 310 311 313 TO 317 319
323 TO 325 -
   588. 362 370 372 534 537 538 540 551 553 554 556 TO 559 563 565 566
568 TO 572 -
   589. 574 578 TO 580 616 619 620 776 779 780 782 793 795 796 798 TO 801
805 807 -
   590. 808 810 TO 814 816 820 TO 822 858 861 862 1018 1021 1022 1024
1035 1037 1038 -
   591. 1040 TO 1043 1047 1049 1050 1052 TO 1056 1058 1062 TO 1064 1100
1103 1104 -
   592. 1260 1263 1264 1266 1277 1279 1280 1282 TO 1285 1289 1291 1292
1294 TO 1298 -
   593. 1300 1304 TO 1306 1342 1345 1346 PRIS YD 0.3 ZD 0.6
   594. CONSTANTS
   595. MATERIAL CONCRETE ALL
   596. DEFINE WIND LOAD
   597. TYPE 1 WIND 1
   598. INT 1.5 1.5 HEIG  4.1  19.3
   599. EXP 1 JOINT 73 74 76 77 83 85 96 104 105 110 111 114 115 120 122
134 136 138 -
   600. 172 174 178 185 191 196 201 204 TO 207 209 211 221 226 227 229
230 232 238 -
   601. 249 251 254 266 273 286 308 315 319 323 344 TO 347 349 351 361
366 367 369 -
   602. 370 372 378 388 390 393 400 406 419 441 448 452 456 477 TO 480
482 484 494 -
   603. 499 500 502 503 505 511 521 523 526 533 539 552 574 581 585 589
610 TO 613 -
   604. 615 617 627 632 633 635 636 638 644 654 656 659 666 672 685 707
714 718 722 -
   605. 743 TO 746 748 750 760 765 766 768 769 771 777 787 789 792 799
855
   606. DEFINE IS1893 2016 LOAD
   607. ZONE 0.16 RF 3 I 1.2 SS 2 ST 1 DM 0.05
   608. SELFWEIGHT 1
   609. MEMBER WEIGHT
   610. 71 75 77 78 81 86 94 TO 96 98 TO 101 103 106 108 TO 111 115 116
119 121 130 -
   611. 132 133 135 140 143 145 147 156 159 162 164 169 171 173 175 179
183 -
   612. 185 TO 187 189 193 TO 198 200 201 205 207 209 211 212 220 223 226
230 236 -
   613. 237 239 241 246 252 254 255 261 271 326 327 329 331 TO 337 340 TO
346 352 -
   614. 353 TO 354 357 TO 361 363 365 366 368 369 371 373 379 TO 381 383
384 -
   615. 392 TO 401 406 407 410 413 TO 419 422 426 428 431 TO 433 438 440
448 451 -
   616. 454 457 458 460 463 466 469 479 483 489 495 498 499 501 504 505
511 TO 513 -
   617. 522 TO 524 527 528 581 582 584 586 TO 592 595 TO 601 607 TO 609
611 TO 615 -
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618. 618 626 TO 629 635 TO 644 649 650 653 656 TO 662 665 669 671 674 TO 676 681 -
619. 683 691 694 697 700 701 703 706 709 712 722 725 731 737 740 741 743 746 747 -
620. 753 TO 755 764 TO 766 769 770 823 824 826 828 TO 834 837 TO 843 849 TO 851 -
621. 853 TO 857 860 868 TO 871 877 TO 886 891 892 895 898 TO 904 907 911 913 916 -
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624. 1070 TO 1076 1079 TO 1085 1091 TO 1093 1095 TO 1099 1102 1110 1111 UNI 11
625. 1112 UNI 11
626. 1113 1119 TO 1128 1133 1134 1137 1140 TO 1146 1149 1153 1155 1158 TO 1160 -
627. 1165 1167 1175 1178 1181 1184 1185 1187 1190 1193 1196 1206 1209 1215 1221 -
628. 1224 1225 1227 1230 1231 1237 TO 1239 1248 TO 1250 1253 1254 1321 TO 1326 -
629. 1365 1407 1409 1491 TO 1493 1496 1522 1524 1526 TO 1530 UNI 11
630. 72 76 79 80 82 TO 85 87 TO 93 97 102 112 TO 114 117 118 120 124 126 127 134 -
631. 136 138 139 141 142 148 153 TO 155 157 158 160 161 163 165 TO 168 170 172 -
632. 174 176 TO 178 180 181 188 190 191 199 202 TO 204 206 208 210 213 TO 219 -
633. 221 222 224 225 227 TO 229 231 TO 235 238 240 242 TO 245 247 249 TO 251 253 -
634. 262 TO 270 272 328 330 338 347 TO 351 356 375 TO 378 385 TO 391 402 TO 405 -
635. 408 409 411 412 420 421 423 TO 425 427 429 430 434 TO 437 439 441 TO 447 -
636. 449 450 452 453 455 456 459 461 462 464 465 467 468 470 TO 478 481 482 484 -
637. 485 TO 488 490 TO 494 496 497 500 502 503 506 TO 510 514 515 517 TO 521 526 -
638. 529 583 585 593 602 TO 606 610 622 TO 625 630 TO 634 645 TO 648 651 652 654 -
639. 655 663 664 666 TO 668 670 672 673 677 TO 680 682 684 TO 690 692 693 695 -
640. 696 698 699 702 704 705 707 708 710 711 713 TO 721 723 724 726 TO 730 732 -
641. 733 TO 736 738 739 742 744 745 748 TO 752 756 757 759 TO 763 768 771 825 827 -
642. 835 844 TO 848 852 864 TO 867 872 TO 876 887 TO 890 893 894 896 897 905 906 -
643. 908 TO 910 912 914 915 919 TO 922 924 926 TO 932 934 935 937 938 940 941 -
644. 944 946 947 949 950 952 953 UNI 5.5
645. 955 TO 963 965 966 968 TO 972 974 TO 978 980 981 984 986 987 990 TO 994 998 -
646. 999 1001 TO 1005 1010 1013 1067 1069 1077 1086 TO 1090 1094 1106 TO 1109 -
647. 1114 TO 1118 1129 TO 1132 1135 1136 1138 1139 1147 1148 1150 TO 1152 1154 -

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   648. 1156 1157 1161 TO 1164 1166 1168 TO 1174 1176 1177 1179 1180 1182
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   649. 1188 1189 1191 1192 1194 1195 1197 TO 1205 1207 1208 1210 TO 1214
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   650. 1216 TO 1220 1222 1223 1226 1228 1229 1232 TO 1236 1240 1241 1243
TO 1247 -
   651. 1252 1255 1307 1308 1310 TO 1320 1327 TO 1332 1334 1335 1337 1339
1344 1349 -
   652. 1351 TO 1356 1361 1362 1368 1370 1371 1375 1385 1389 1395 1423
1426 1427 -
   653. 1435 1448 1463 1465 TO 1472 1481 1490 1497 UNI 5.5
   654. FLOOR WEIGHT
 **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.

   655. YRANGE 4.1 16.3 FLOAD 4.12
   656. YRANGE 19.1 19.3 FLOAD 5.5
   657. YRANGE 4.1 16.3 FLOAD 0.5
   658. YRANGE 19.1 19.3 FLOAD 0.37
   659. LOAD 1 LOADTYPE SEISMIC  TITLE EQX
   660. 1893 LOAD X 1
   661. LOAD 2 LOADTYPE SEISMIC  TITLE EQZ
   662. 1893 LOAD Z 1
   663. LOAD 3 LOADTYPE WIND  TITLE WIND X
   664. WIND LOAD X 1 TYPE 1 XR -3 0 YR 4.1 19.3
   665. LOAD 4 LOADTYPE WIND  TITLE WIND Z
   666. WIND LOAD Z 1 TYPE 1 YR 4.1 19.3
   **WARNING-fxfy fz wind forces:  0.0000E+00  0.0000E+00  4.5000E+00
            at coordinates:        3.2000E+00  1.3200E+01  8.7500E+00
ignored.
   **WARNING-fxfy fz wind forces:  0.0000E+00  0.0000E+00  4.5000E+00
            at coordinates:        3.2000E+00  1.6200E+01  8.7500E+00
ignored.
   **WARNING-fxfy fz wind forces:  0.0000E+00  0.0000E+00  3.6000E+00
            at coordinates:        3.2000E+00  1.9200E+01  8.7500E+00
ignored.
   667. LOAD 5 LOADTYPE WIND  TITLE WIND -X
   668. WIND LOAD -X -1 TYPE 1 XR 12.4 14.9 YR 4.1 19.3
   669. LOAD 6 LOADTYPE WIND  TITLE WIND -Z
   670. WIND LOAD -Z -1 TYPE 1 YR 4.1 19.3 ZR 37 39.2
   671. LOAD 7 LOADTYPE DEAD  TITLE LOAD CASE 1
   672. SELFWEIGHT Y -1
   673. MEMBER LOAD
   674. 71 75 77 78 81 86 94 TO 96 98 TO 101 103 106 108 TO 111 115 116
119 121 130 -
   675. 132 133 135 140 143 145 147 156 159 162 164 169 171 173 175 179
183 -
   676. 185 TO 187 189 193 TO 198 200 201 205 207 209 211 212 220 223 226
230 236 -
   677. 237 239 241 246 252 254 255 261 271 326 327 329 331 TO 337 340 TO
346 352 -
   678. 353 TO 354 357 TO 361 363 365 366 368 369 371 373 379 TO 381 383
384 -
   679. 392 TO 401 406 407 410 413 TO 419 422 426 428 431 TO 433 438 440
448 451 -
```

680. 454 457 458 460 463 466 469 479 483 489 495 498 499 501 504 505
511 TO 513 -
681. 522 TO 524 527 528 581 582 584 586 TO 592 595 TO 601 607 TO 609
611 TO 615 -
682. 618 626 TO 629 635 TO 644 649 650 653 656 TO 662 665 669 671 674
TO 676 681 -
683. 683 691 694 697 700 701 703 706 709 712 722 725 731 737 740 741
743 746 747 -
684. 753 TO 755 764 TO 766 769 770 823 824 826 828 TO 834 837 TO 843
849 TO 851 -
685. 853 TO 857 860 868 TO 871 877 TO 886 891 892 895 898 TO 904 907
911 913 916 -
686. 917 TO 918 923 925 933 936 939 942 943 945 948 951 954 964 967
973 979 982 -
687. 983 985 988 989 995 TO 997 1006 TO 1008 1011 1012 1065 1066 1068
-
688. 1070 TO 1076 1079 TO 1085 1091 TO 1093 1095 TO 1099 1102 1110 -
689. 1111 UNI GY -11
690. 1112 UNI GY -11
691. 1113 1119 TO 1128 1133 1134 1137 1140 TO 1146 1149 1153 1155 1158
TO 1160 -
692. 1165 1167 1175 1178 1181 1184 1185 1187 1190 1193 1196 1206 1209
1215 1221 -
693. 1224 1225 1227 1230 1231 1237 TO 1239 1248 TO 1250 1253 1254 1321
TO 1326 -
694. 1365 1407 1409 1491 TO 1493 1496 1522 1524 1526 TO 1530 UNI GY -
11
695. 72 76 79 80 82 TO 85 87 TO 93 97 102 112 TO 114 117 118 120 124
126 127 134 -
696. 136 138 139 141 142 148 153 TO 155 157 158 160 161 163 165 TO 168
170 172 -
697. 174 176 TO 178 180 181 188 190 191 199 202 TO 204 206 208 210 213
TO 219 -
698. 221 222 224 225 227 TO 229 231 TO 235 238 240 242 TO 245 247 249
TO 251 253 -
699. 262 TO 270 272 328 330 338 347 TO 351 356 375 TO 378 385 TO 391
402 TO 405 -
700. 408 409 411 412 420 421 423 TO 425 427 429 430 434 TO 437 439 441
TO 447 -
701. 449 450 452 453 455 456 459 461 462 464 465 467 468 470 TO 478
481 482 484 -
702. 485 TO 488 490 TO 494 496 497 500 502 503 506 TO 510 514 515 517
TO 521 526 -
703. 529 583 585 593 602 TO 606 610 622 TO 625 630 TO 634 645 TO 648
651 652 654 -
704. 655 663 664 666 TO 668 670 672 673 677 TO 680 682 684 TO 690 692
693 695 -
705. 696 698 699 702 704 705 707 708 710 711 713 TO 721 723 724 726 TO
730 732 -
706. 733 TO 736 738 739 742 744 745 748 TO 752 756 757 759 TO 763 768
771 825 827 -
707. 835 844 TO 848 852 864 TO 867 872 TO 876 887 TO 890 893 894 896
897 905 906 -
708. 908 TO 910 912 914 915 919 TO 922 924 926 TO 932 934 935 937 938
940 941 -
709. 944 946 947 949 950 952 953 UNI GY -5.5
710. 955 TO 963 965 966 968 TO 972 974 TO 978 980 981 984 986 987 990
TO 994 998 -

```
   711. 999 1001 TO 1005 1010 1013 1067 1069 1077 1086 TO 1090 1094 1106
TO 1109 -
   712. 1114 TO 1118 1129 TO 1132 1135 1136 1138 1139 1147 1148 1150 TO
1152 1154 -
   713. 1156 1157 1161 TO 1164 1166 1168 TO 1174 1176 1177 1179 1180 1182
1183 1186 -
   714. 1188 1189 1191 1192 1194 1195 1197 TO 1205 1207 1208 1210 TO 1214
-
   715. 1216 TO 1220 1222 1223 1226 1228 1229 1232 TO 1236 1240 1241 1243
TO 1247 -
   716. 1252 1255 1307 1308 1310 TO 1320 1327 TO 1332 1334 1335 1337 1339
1344 1349 -
   717. 1351 TO 1356 1361 1362 1368 1370 1371 1375 1385 1389 1395 1423
1426 1427 -
   718. 1435 1448 1463 1465 TO 1472 1481 1490 1497 UNI GY -5.5
   719. FLOOR LOAD
   720. YRANGE 4.1 16.3 FLOAD -4.12 GY
   721. YRANGE 19.1 19.3 FLOAD -5.5 GY
   722. LOAD 8 LOADTYPE LIVE  TITLE LOAD CASE 2
   723. FLOOR LOAD
   724. YRANGE 4.1 16.3 FLOAD -2 GY
   725. YRANGE 19.1 19.3 FLOAD -1.5 GY
   726. LOAD COMB 9 1.5(DL+LL)
   727. 7 1.5 8 1.5
   728. LOAD COMB 10 1.5(DL+ELX)
   729. 7 1.5 1 1.5
   730. LOAD COMB 11 1.5(DL-ELX)
   731. 7 1.5 1 -1.5
   732. LOAD COMB 12 1.5(DL+ELZ)
   733. 7 1.5 2 1.5
   734. LOAD COMB 13 1.5(DL-ELZ)
   735. 7 1.5 2 -1.5
   736. LOAD COMB 14 1.5(DL+WLX)
   737. 7 1.5 3 1.5
   738. LOAD COMB 15 1.5(DL-WLX)
   739. 7 1.5 4 1.5
   740. LOAD COMB 16 1.5(DL+WLZ)
   741. 7 1.5 5 1.5
   742. LOAD COMB 17 1.5(DL-WLZ)
   743. 7 1.5 6 1.5
   744. LOAD COMB 18 1.2(DL+LL+ELX)
   745. 7 1.2 8 1.2 1 1.2
   746. LOAD COMB 19 1.2(DL+LL-ELX)
   747. 7 1.2 8 1.2 1 -1.2
   748. LOAD COMB 20 1.2(DL+LL+ELZ)
   749. 7 1.2 8 1.2 2 1.2
   750. LOAD COMB 21 1.2(DL+LL-ELZ)
   751. 7 1.2 8 1.2 2 -1.2
   752. LOAD COMB 22 1.2(DL+LL+WLX)
   753. 7 1.2 8 1.2 3 1.2
   754. LOAD COMB 23 1.2(DL+LL-WLX)
   755. 7 1.2 8 1.2 5 1.2
   756. LOAD COMB 24 1.2(DL+LL+WLZ)
   757. 7 1.2 8 1.2 4 1.2
   758. LOAD COMB 25 1.2(DL+LL-WLZ)
   759. 7 1.2 8 1.2 6 1.2
   760. LOAD COMB 26 (0.9 DL+ 1.5 ELX)
   761. 7 0.9 1 1.5
```

```
762. LOAD COMB 27 (0.9 DL- 1.5 ELX)
763. 7 0.9 1 -1.5
764. LOAD COMB 28 (0.9 DL+ 1.5 ELZ)
765. 7 0.9 2 1.5
766. LOAD COMB 29 (0.9 DL- 1.5 ELZ)
767. 7 0.9 2 -1.5
768. LOAD COMB 30 (0.9 DL+ 1.5 WLX)
769. 7 0.9 3 1.5
770. LOAD COMB 31 (0.9 DL- 1.5 WLX)
771. 7 0.9 5 1.5
772. LOAD COMB 32 (0.9 DL+ 1.5 WLZ)
773. 7 0.9 4 1.5
774. LOAD COMB 33 (0.9 DL- 1.5 WLZ)
775. 7 0.9 6 1.5
776. ** FOOTING DESIGN REACTION
777. LOAD COMB 34 1.0(DL+LL)
778. 7 1.0 8 1.0
779. LOAD COMB 35 1.0(DL+ELX)
780. 7 1.0 1 1.0
781. LOAD COMB 36 1.0(DL-ELX)
782. 7 1.0 1 -1.0
783. LOAD COMB 37 1.0(DL+ELZ)
784. 7 1.0 2 1.0
785. LOAD COMB 38 1.0(DL-ELZ)
786. 7 1.0 2 -1.0
787. LOAD COMB 39 1.0(DL+WLX)
788. 7 1.0 3 1.0
789. LOAD COMB 40 1.0(DL-WLX)
790. 7 1.0 5 1.0
791. LOAD COMB 41 1.0(DL+WLZ)
792. 7 1.0 4 1.0
793. LOAD COMB 42 1.0(DL-WLZ)
794. 7 1.0 6 1.0
795. LOAD COMB 43 (1.0 DL+ 0.8 LL+ 0.8 ELX)
796. 7 1.0 8 0.8 1 0.8
797. LOAD COMB 44 (1.0 DL+ 0.8 LL- 0.8 ELX)
798. 7 1.0 8 0.8 1 -0.8
799. LOAD COMB 45 (1.0 DL+ 0.8 LL+ 0.8 ELZ)
800. 7 1.0 8 0.8 2 0.8
801. LOAD COMB 46 (1.0 DL+ 0.8 LL- 0.8 ELZ)
802. 7 1.0 8 0.8 2 -0.8
803. LOAD COMB 47 (1.0 DL+ 0.8 LL+ 0.8 WLX)
804. 7 1.0 8 0.8 3 0.8
805. LOAD COMB 48 (1.0 DL+ 0.8 LL- 0.8 WLX)
806. 7 1.0 8 0.8 5 0.8
807. LOAD COMB 49 ( 1.0 DL+ 0.8 LL+ 0.8 WLZ)
808. 7 1.0 8 0.8 4 0.8
809. LOAD COMB 50 (1.0 DL+ 0.8 LL- 0.8 WLZ)
810. 7 1.0 8 0.8 6 0.8
811. PERFORM ANALYSIS PRINT ALL
```

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

NUMBER OF JOINTS	851	NUMBER OF MEMBERS	1501
NUMBER OF PLATES	0	NUMBER OF SOLIDS	0
NUMBER OF SURFACES	0	NUMBER OF SUPPORTS	50

```
            Using 64-bit analysis engine.

            SOLVER USED IS THE OUT-OF-CORE BASIC SOLVER

     ORIGINAL/FINAL BAND-WIDTH=   805/    68/    390 DOF
   TOTAL      PRIMARY LOAD CASES =      8, TOTAL DEGREES OF FREEDOM =
4806
   TOTAL LOAD COMBINATION  CASES =     42  SO FAR.
     SIZE OF STIFFNESS MATRIX =      1875 DOUBLE  KILO-WORDS
     REQRD/AVAIL. DISK SPACE  =      35.2/ 210242.9 MB

   LOADING     1  LOADTYPESEISMIC  TITLE EQX
   LOADING     2  LOADTYPESEISMIC  TITLE EQZ
LOADING     3  LOADTYPEWIND  TITLE WIND X


   LOAD COMBINATION NO.     9
   1.5(DL+LL)

 LOADING-     7.     8.
 FACTOR -   1.50   1.50

   LOAD COMBINATION NO.    10
   1.5(DL+ELX)

 LOADING-     7.     1.
 FACTOR -   1.50   1.50

   LOAD COMBINATION NO.    11
   1.5(DL-ELX)

 LOADING-     7.     1.
 FACTOR -   1.50  -1.50

   LOAD COMBINATION NO.    12
   1.5(DL+ELZ)

 LOADING-     7.     2.
 FACTOR -   1.50   1.50

   LOAD COMBINATION NO.    13
   1.5(DL-ELZ)

 LOADING-     7.     2.
 FACTOR -   1.50  -1.50

   LOAD COMBINATION NO.    14
   1.5(DL+WLX)

 LOADING-     7.     3.
 FACTOR -   1.50   1.50

   LOAD COMBINATION NO.    15
   1.5(DL-WLX)

 LOADING-     7.     4.
 FACTOR -   1.50   1.50
```

LOAD COMBINATION NO. 16
1.5(DL+WLZ)

LOADING-	7.	5.
FACTOR -	1.50	1.50

LOAD COMBINATION NO. 17
1.5(DL-WLZ)

LOADING-	7.	6.
FACTOR -	1.50	1.50

LOAD COMBINATION NO. 18
1.2(DL+LL+ELX)

LOADING-	7.	8.	1.
FACTOR -	1.20	1.20	1.20

LOAD COMBINATION NO. 19
1.2(DL+LL-ELX)

LOADING-	7.	8.	1.
FACTOR -	1.20	1.20	-1.20

LOAD COMBINATION NO. 20
1.2(DL+LL+ELZ)

LOADING-	7.	8.	2.
FACTOR -	1.20	1.20	1.20

LOAD COMBINATION NO. 21
1.2(DL+LL-ELZ)

LOADING-	7.	8.	2.
FACTOR -	1.20	1.20	-1.20

LOAD COMBINATION NO. 22
1.2(DL+LL+WLX)

LOADING-	7.	8.	3.
FACTOR -	1.20	1.20	1.20

LOAD COMBINATION NO. 23
1.2(DL+LL-WLX)

LOADING-	7.	8.	5.
FACTOR -	1.20	1.20	1.20

LOAD COMBINATION NO. 24
1.2(DL+LL+WLZ)

LOADING-	7.	8.	4.
FACTOR -	1.20	1.20	1.20

LOAD COMBINATION NO. 25
1.2(DL+LL-WLZ)

LOADING-	7.	8.	6.
FACTOR -	1.20	1.20	1.20

LOAD COMBINATION NO. 26
(0.9 DL+ 1.5 ELX)

LOADING-	7.	1.
FACTOR -	0.90	1.50

LOAD COMBINATION NO. 27
(0.9 DL- 1.5 ELX)

LOADING-	7.	1.
FACTOR -	0.90	-1.50

LOAD COMBINATION NO. 28
(0.9 DL+ 1.5 ELZ)

LOADING-	7.	2.
FACTOR -	0.90	1.50

LOAD COMBINATION NO. 29
(0.9 DL- 1.5 ELZ)

LOADING-	7.	2.
FACTOR -	0.90	-1.50

LOAD COMBINATION NO. 30
(0.9 DL+ 1.5 WLX)

LOADING-	7.	3.
FACTOR -	0.90	1.50

LOAD COMBINATION NO. 31
(0.9 DL- 1.5 WLX)

LOADING-	7.	5.
FACTOR -	0.90	1.50

LOAD COMBINATION NO. 32
(0.9 DL+ 1.5 WLZ)

LOADING-	7.	4.
FACTOR -	0.90	1.50

LOAD COMBINATION NO. 33
(0.9 DL- 1.5 WLZ)

LOADING-	7.	6.
FACTOR -	0.90	1.50

LOAD COMBINATION NO. 34
1.0(DL+LL)

LOADING-	7.	8.
FACTOR -	1.00	1.00

LOAD COMBINATION NO. 35
1.0(DL+ELX)

```
LOADING-     7.     1.
FACTOR -   1.00   1.00
  LOAD COMBINATION NO.    36
  1.0(DL-ELX)

LOADING-     7.     1.
FACTOR -   1.00  -1.00

  LOAD COMBINATION NO.    37
  1.0(DL+ELZ)

LOADING-     7.     2.
FACTOR -   1.00   1.00

  LOAD COMBINATION NO.    38
  1.0(DL-ELZ)

LOADING-     7.     2.
FACTOR -   1.00  -1.00

  LOAD COMBINATION NO.    39
  1.0(DL+WLX)

LOADING-     7.     3.
FACTOR -   1.00   1.00

  LOAD COMBINATION NO.    40
  1.0(DL-WLX)

LOADING-     7.     5.
FACTOR -   1.00   1.00

  LOAD COMBINATION NO.    41
  1.0(DL+WLZ)

LOADING-     7.     4.
FACTOR -   1.00   1.00

  LOAD COMBINATION NO.    42
  1.0(DL-WLZ)

LOADING-     7.     6.
FACTOR -   1.00   1.00

  LOAD COMBINATION NO.    43
  (1.0 DL+ 0.8 LL+ 0.8 ELX)

LOADING-     7.     8.     1.
FACTOR -   1.00   0.80   0.80

  LOAD COMBINATION NO.    44
  (1.0 DL+ 0.8 LL- 0.8 ELX)

LOADING-     7.     8.     1.
FACTOR -   1.00   0.80  -0.80
```

```
   LOAD COMBINATION NO.    45
   (1.0 DL+ 0.8 LL+ 0.8 ELZ)

 LOADING-     7.     8.     2.
 FACTOR -   1.00   0.80   0.80

   LOAD COMBINATION NO.    46
   (1.0 DL+ 0.8 LL- 0.8 ELZ)

 LOADING-     7.     8.     2.
 FACTOR -   1.00   0.80  -0.80

   LOAD COMBINATION NO.    47
   (1.0 DL+ 0.8 LL+ 0.8 WLX)

 LOADING-     7.     8.     3.
 FACTOR -   1.00   0.80   0.80

   LOAD COMBINATION NO.    48
   (1.0 DL+ 0.8 LL- 0.8 WLX)

 LOADING-     7.     8.     5.
 FACTOR -   1.00   0.80   0.80

   LOAD COMBINATION NO.    49
( 1.0 DL+ 0.8 LL+ 0.8 WLZ)

 LOADING-     7.     8.     4.
 FACTOR -   1.00   0.80   0.80

   LOAD COMBINATION NO.    50
   (1.0 DL+ 0.8 LL- 0.8 WLZ)

 LOADING-     7.     8.     6.
 FACTOR -   1.00   0.80   0.80


   ************ END OF DATA FROM INTERNAL STORAGE ************


   812. START CONCRETE DESIGN
-------------------------CONCRETE
DESIGN
-------------------------------------------------------------------------------
   813. CODE INDIAN
   814. CLEAR 0.025 MEMB 71 72 75 TO 103 106 108 TO 121 124 126 127 130
132 TO 136 -
   815. 138 TO 143 145 147 148 153 TO 181 183 185 TO 191 193 TO 247 249
TO 255 261 -
   816. 262 TO 272 326 TO 354 356 TO 361 363 365 366 368 369 371 373 375
TO 381 383 -
   817. 384 TO 479 481 TO 529 581 TO 615 618 622 TO 771 823 TO 857 860
864 TO 1013 -
   818. 1065 TO 1099 1102 1106 TO 1255 1307 TO 1341 1344 1348 TO 1375
1382 TO 1390 -
   819. 1394 TO 1396 1400 TO 1402 1406 TO 1411 1413 1415 TO 1420 1422 TO
1428 1435 -
```

820. 1436 TO 1437 1444 TO 1450 1463 TO 1472 1479 TO 1483 1490 TO 1503 1505 1507 -
821. 1508 TO 1517 1519 TO 1522 1524 TO 1592
822. CLEAR 0.04 MEMB 1 2 4 TO 37 39 TO 70 273 TO 325 362 367 370 372 374 -
823. 530 TO 580 616 617 619 TO 621 772 TO 822 858 859 861 TO 863 1014 TO 1064 -
824. 1100 1101 1103 TO 1105 1256 TO 1306 1342 1343 1345 TO 1347
825. ENSH 1 MEMB 71 72 75 TO 103 106 108 TO 121 124 126 127 130 132 TO 136 138 -
826. 139 TO 143 145 147 148 153 TO 181 183 185 TO 191 193 TO 247 249 TO 255 261 -

TO 272 326 TO 354 356 TO 361 363 365 366 368 369 371 373 375 TO 381 383 -
828. 384 TO 479 481 TO 529 581 TO 615 618 622 TO 771 823 TO 857 860 864 TO 1013 -
829. 1065 TO 1099 1102 1106 TO 1255 1307 TO 1341 1344 1348 TO 1375 1382 TO 1390 -
830. 1394 TO 1396 1400 TO 1402 1406 TO 1411 1413 1415 TO 1420 1422 TO 1428 1435 -
831. 1436 TO 1437 1444 TO 1450 1463 TO 1472 1479 TO 1483 1490 TO 1503 1505 1507 -
832. 1508 TO 1517 1519 TO 1522 1524 TO 1592
833. FC 30000 ALL
834. FYMAIN 550000 ALL
835. FYSEC 550000 ALL
836. MAXMAIN 25 ALL
837. MAXSEC 12 ALL
838. MINMAIN 10 ALL
839. MINSEC 8 ALL
840. RATIO 4 MEMB 1 2 4 TO 37 39 TO 70 273 TO 325 362 367 370 372 374 530 TO 580 -
841. 616 617 619 TO 621 772 TO 822 858 859 861 TO 863 1014 TO 1064 1100 1101 1103 -
842. 1104 TO 1105 1256 TO 1306 1342 1343 1345 TO 1347
843. DESIGN BEAM 71 72 75 TO 79 82 85 TO 91 93 TO 103 106 108 TO 112 114 TO 118 -
844. 120 121 127 130 132 TO 136 140 TO 143 145 147 148 153 TO 175 177 TO 181 183 -
845. 186 TO 191 193 TO 218 220 TO 247 249 TO 255 261 TO 267 269 TO 272 -
846. 326 TO 354 356 TO 361 363 365 366 368 369 371 373 375 TO 379 381 383 TO 401 -
847. 403 TO 419 421 TO 479 481 TO 495 497 TO 500 502 TO 529

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IS-456 L I M I T S T A T E D E S I G N
B E A M N O. 71 D E S I G N R E S U L T S

M30 Fe550 (Main) Fe550 (Sec.)

LENGTH: 3400.0 mm SIZE: 900.0 mm X 900.0 mm COVER: 30.0 mm

SUMMARY OF REINF. AREA (Sq.mm)

SECTION	0.0 mm	850.0 mm	1700.0 mm	2550.0 mm	3400.0 mm
TOP REINF.	5801.81 (Sq. mm)	2888.66 (Sq. mm)	1198.96 (Sq. mm)	1198.96 (Sq. mm)	1198.96 (Sq. mm)
BOTTOM REINF.	1198.96 (Sq. mm)	1198.96 (Sq. mm)	2237.82 (Sq. mm)	4745.87 (Sq. mm)	8107.83 (Sq. mm)

SUMMARY OF PROVIDED REINF. AREA

SECTION	0.0 mm	850.0 mm	1700.0 mm	2550.0 mm	3400.0 mm
TOP REINF.	29-16d 2 layer(s)	15-16d 1 layer(s)	6-16d 1 layer(s)	6-16d6-16d 1 layer(s)	1 layer(s)
BOTTOM REINF.	6-20d 1 layer(s)	6-20d 1 layer(s)	8-20d 1 layer(s)	16-20d 1 layer(s)	26-20d 2 layer(s)
SHEAR REINF.	2 legged 12d @ 50 mm c/c	2 legged 12d @ 30 mm c/c	2 legged 12d @ 70 mm c/c	2 legged 12d @ 55 mm c/c	2 legged 12d @ 60 mm c/c

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 1303.2 mm AWAY FROM START SUPPORT
VY = 1253.86 MX = -230.46 LD= 13
Provide 2 Legged 12d @ 65 mm c/c

Provide 2-20d along each face of the beam (Side face reinf.)

IS-456 L I M I T S T A T E D E S I G N
B E A M N O. 72 D E S I G N R E S U L T S

M30 Fe550 (Main) Fe550 (Sec.)

LENGTH: 3700.0 mm SIZE: 900.0 mm X 900.0 mm COVER: 30.0 mm

SUMMARY OF REINF. AREA (Sq.mm)

SECTION	0.0 mm	925.0 mm	1850.0 mm	2775.0 mm	3700.0 mm
TOP REINF.	1945.66 (Sq. mm)	1203.14 (Sq. mm)	1203.14 (Sq. mm)	1203.14 (Sq. mm)	1203.14 (Sq. mm)
BOTTOM REINF.	1201.75 (Sq. mm)	1201.75 (Sq. mm)	1352.97 (Sq. mm)	2140.70 (Sq. mm)	3164.02 (Sq. mm)

SUMMARY OF PROVIDED REINF. AREA

SECTION	0.0 mm	925.0 mm	1850.0 mm	2775.0 mm	3700.0 mm
TOP REINF.	25-10d 2 layer(s)	16-10d 1 layer(s)	16-10d16-10d16-10d 1 layer(s)	1 layer(s)	1 layer(s)
BOTTOM REINF.	11-12d 1 layer(s)	11-12d 1 layer(s)	12-12d 1 layer(s)	19-12d 1 layer(s)	28-12d 2 layer(s)
SHEAR REINF.	2 legged 12d @ 285 mm c/c	2 legged 12d @ 190 mm c/c	2 legged 12d @ 300 mm c/c	2 legged 12d @ 300 mm c/c	2 legged 12d @ 300 mm c/c

SHEAR DESIGN RESULTS AT DISTANCE d (EFFECTIVE DEPTH) FROM FACE OF THE SUPPORT

SHEAR DESIGN RESULTS AT 1164.0 mm AWAY FROM START SUPPORT
VY = 476.99 MX = 51.54 LD= 10
Provide 2 Legged 12d @ 280 mm c/c

Provide 2-20d along each face of the beam (Side face reinf.)

==========

SUMMARY OF PROVIDED REINF. AREA

SECTION	0.0 mm	400.0 mm	800.0 mm	1200.0 mm	1600.0 mm
TOP REINF.	6-16d 1 layer(s)	6-16d6-16d6-16d6-16d 1 layer(s)	1 layer(s)	1 layer(s)	1 layer(s)
BOTTOM REINF.	35-10d 2 layer(s)	30-10d 2 layer(s)	25-10d 2 layer(s)	19-10d 1 layer(s)	16-10d 1 layer(s)
SHEAR REINF.	2 legged 12d @ 90 mm c/c	2 legged 12d @ 130 mm c/c	2 legged 12d @ 120 mm c/c	2 legged 12d @ 110 mm c/c	2 legged 12d @ 65 mm c/c

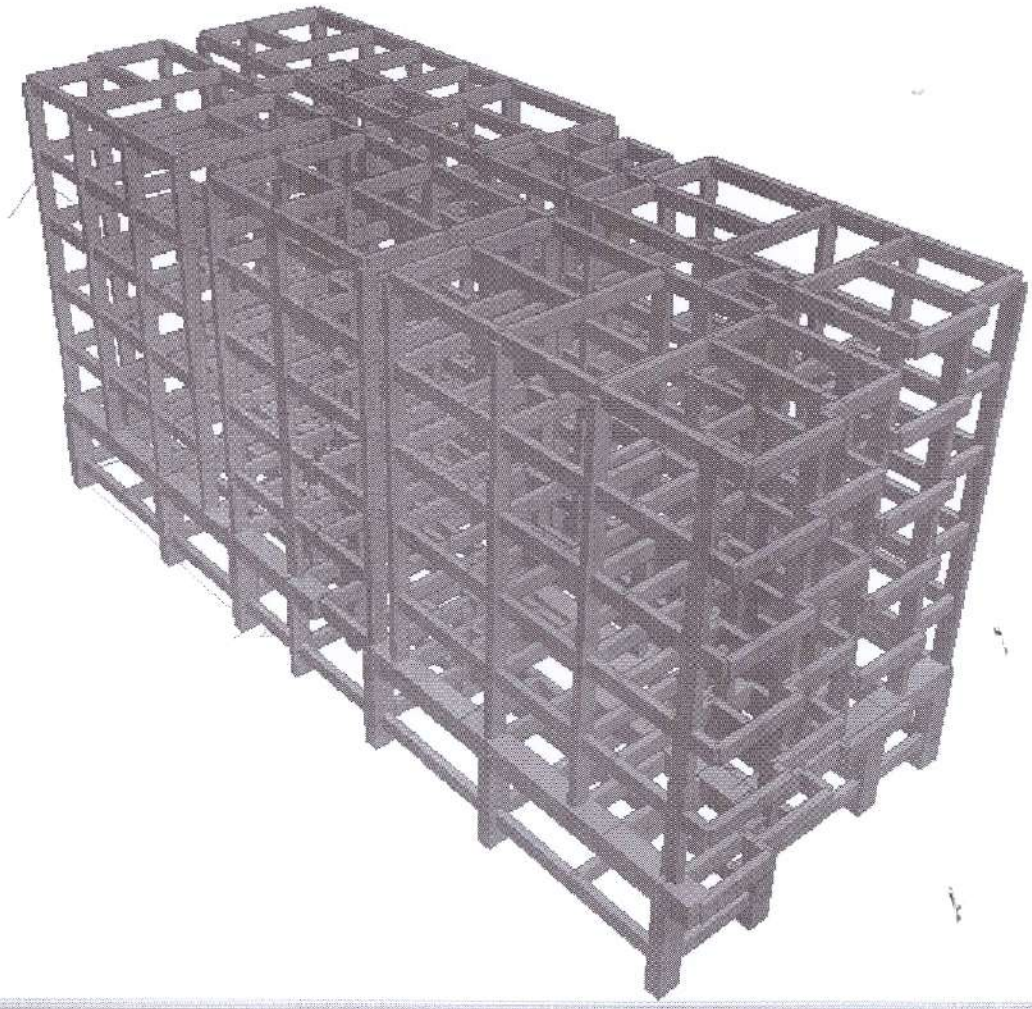
Provide 2-20d along each face of the beam (Side face reinf.)

**********END OF COLUMN DESIGN RESULTS**********

849. END CONCRETE DESIGN
850. FINISH

********** END OF THE STAAD.Pro RUN **********

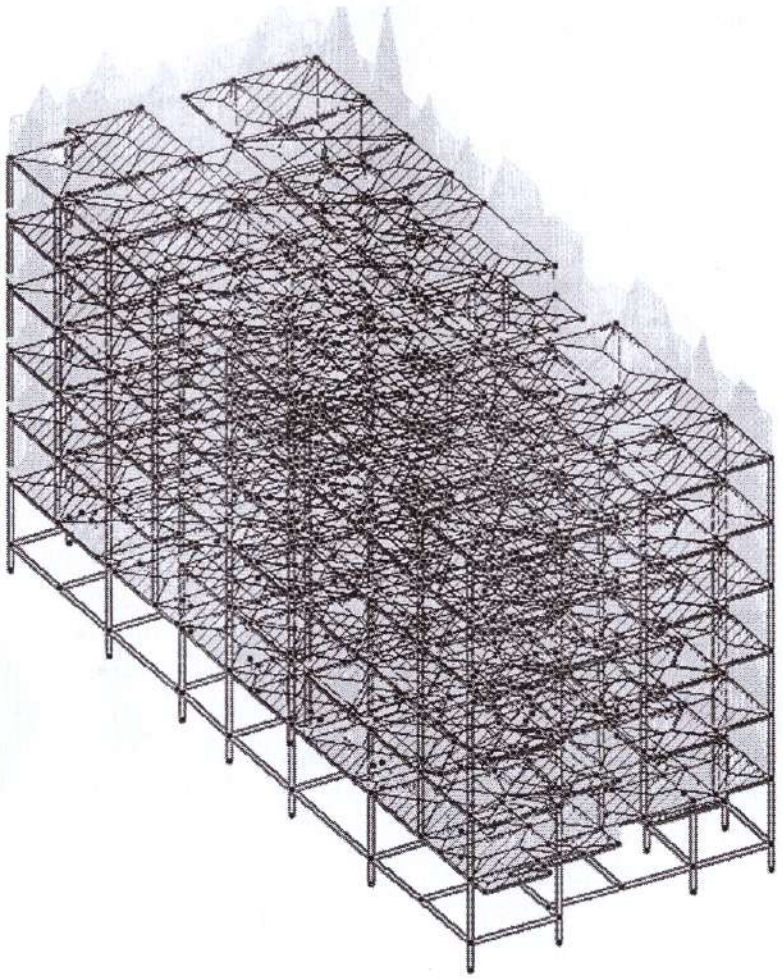
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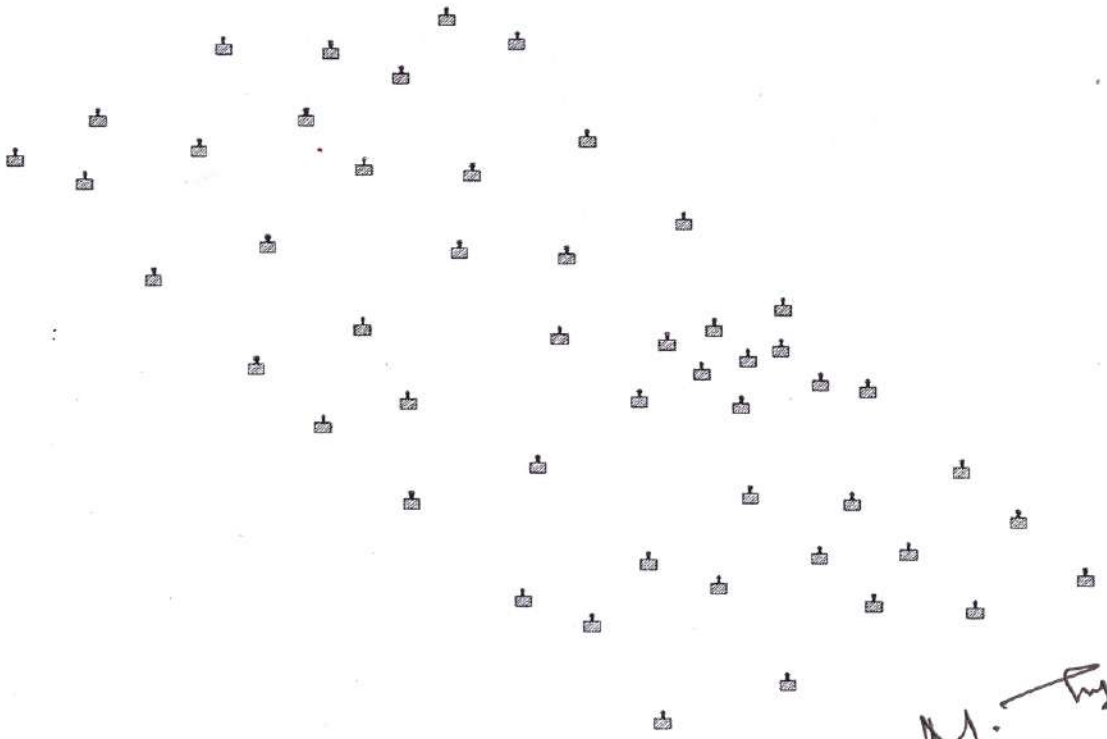


Structure1 - Support Reactions

All | Summary | Envelope

	Node	L/C	Horizontal Fx kN	Vertical Fy kN	Horizontal Fz kN	Moment Mx kN-m	My kN-m	Mz kN-m
Max Fx	898	11 1.5(DL-EL	**654.176**	19.158	0.286	-21.712	0.597	69.759
Min Fx	898	26 (0.9 DL+1.	**-651.858**	15.130	0.720	-12.653	1.121	-54.766
Max Fy	11	9 1.5(DL+LL)	-98.359	**5136.185**	-36.140	-9.187	-2.000	356.521
Min Fy	21	27 (0.9 DL- 1.	28.520	**-688.849**	4.077	1.343	-2.043	-63.823
Max Fz	886	13 1.5(DL-EL	3.023	54.702	**778.113**	-79.965	2.644	12.552
Min Fz	889	12 1.5(DL+EL	-0.497	42.642	**-797.643**	72.601	-5.910	-6.629
Max Mx	11	29 (0.9 DL- 1.	-50.873	2874.116	122.559	**294.705**	-1.166	186.983
Min Mx	16	12 1.5(DL+EL	-87.715	2842.528	-182.716	**-345.640**	12.818	199.257
Max My	10	11 1.5(DL-EL	399.837	2364.035	0.426	0.582	**60.440**	-811.806
Min My	12	11 1.5(DL-EL	199.076	2458.189	-12.942	-30.537	**-39.327**	-330.561
Max Mz	31	10 1.5(DL+EL	-342.082	1790.775	-23.233	-10.749	2.554	**644.215**
Min Mz	7	11 1.5(DL-EL	400.011	2596.021	11.211	-4.947	53.786	**-864.912**





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THE LANDLENS SUITE

Eight ways to know a piece of land before you pay for it.

This report covers one part of the picture. These cover the rest, drawn from the same government records, for any property in Tamil Nadu.

LandLens One
Ask anything about a property and get an answer grounded in live government records, with the sources shown.
/landlens/one

Verify My Land
Every record check run on one property and returned as a single report.
/landlens/verify-my-land

Legal Opinion
An advocate's written opinion on the title, built on the records we pull for it.
/landlens

One Map
Every layer on one map: the parcel, its boundary, zoning, water bodies and what sits around it.
/landlens/one/map

PriceMap
What land actually changed hands for around this plot, taken from the registered deeds.
/landlens/pricemap

Build Scope
What you are allowed to build here: floor space, height, coverage and setbacks.
/landlens/build-scope

Property Tracker
Watch a property and hear about it when something new is registered against it.
/landlens/property-tracker

Deal Room
Run the transaction in one place: documents, stamping, signatures and the parties.
/landlens/deal-room

FREE TOOLS · NO ACCOUNT NEEDED

Twenty-four checks you can run yourself, at no cost.

Records and verification

The registers themselves, read for you.

- Encumbrance Certificate
- Patta and Chitta
- Field Measurement Sketch
- EC Analyzer
- Bank charge check
- Court case search
- Seller background check
- Approval check by survey

Value and duty

What it is worth and what it costs to register.

- Guideline value by street
- Guideline value by survey
- Stamp duty and registration fees
- Capital gains
- Floor space index
- Area unit converter

Zoning and land use

What the plan says can happen on this land.

- Land use zone finder
- CMDA land use check
- Coastal regulation zone
- Master plan check
- Water bodies finder
- Airport height clearance

Registers and directories

Who holds it, and which office keeps the record.

- Find your registering office
- Temple property check
- Waqf property check
- RERA register

Every free tool
/tools

Services we run for you
/services

The LandLens suite
/landlens/one

Verified RealEstate™

Every claim in this document traces back to a government record.

- Legal opinions, due diligence and title verification
- Building plan, layout and sub-division approvals
- Completion and occupancy certificates, regularisation
- Escrow, negotiation and NRI property management
- Land survey, soil testing, architecture and construction

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+91 9996 12 9996

Prepared from the registers named on the page each finding sits on. Where a register could not be read, this document says so in its place rather than leaving the gap to be read as a clean result.