```
**************************************************
*                                                *
*           STAAD.Pro V8i SELECTseries4          *
*           Version  20.07.09.31                 *
*           Proprietary Program of               *
*           Bentley Systems, Inc.                *
*           Date=    DEC 29, 2014                *
*           Time=    10:44: 9                    *
*                                                *
*      USER ID:                                  *
**************************************************
```

```
     1. STAAD SPACE DXF IMPORT OF DIBUJO1.DXF
INPUT FILE: Staad Administración.STD
     2. START JOB INFORMATION
     3. ENGINEER DATE 16-DEC-14
     4. ENGINEER NAME EMEL MULET
     5. END JOB INFORMATION
     6. INPUT WIDTH 79
     7. UNIT METER KN
     8. JOINT COORDINATES
     9. 40 -2.37543E-006 3.2 -8.13; 41 15.43 3.2 -8.13; 42 15.43 3.2 -1.
    10. 43 8.375 3.2 -1; 44 12.075 3.2 -1; 45 12.075 3.2 -8.13; 46 15.43 3.2 -5.14
    11. 47 12.075 3.2 -5.14; 48 -2.37543E-006 3.2 1.76197E-006
    12. 49 5.25135 3.2 1.76197E-006; 50 5.25135 3.2 -8.13; 51 -2.37543E-006 3.2 -5.42
    13. 52 5.25135 3.2 -5.14; 54 8.375 3.2 -8.13; 55 8.375 3.2 -5.14
    14. 56 8.375 3.2 -2.51445E-007; 58 -2.37543E-006 0 1.76197E-006
    15. 59 -2.37543E-006 0 -8.13; 60 5.25135 0 -5.14; 61 5.25135 0 -2.51446E-007
    16. 62 8.375 0 -5.14; 63 8.375 0 -8.13; 64 12.075 0 -8.13; 65 12.075 0 -5.14
    17. 66 12.075 0 -1; 67 15.43 0 -1; 68 15.43 0 -5.14; 69 15.43 0 -8.13
    18. 70 5.25135 0 -8.13; 71 -2.37543E-006 0 -5.42; 72 8.375 0 -2.51445E-007
    19. MEMBER INCIDENCES
    20. 44 40 50; 45 41 46; 46 42 44; 47 44 47; 48 46 47; 49 40 51; 50 48 49; 52 51 52
    21. 53 52 55; 54 54 55; 55 56 49; 56 55 43; 57 48 58; 58 40 59; 59 52 60; 60 49 61
    22. 61 55 62; 62 54 63; 63 45 64; 64 47 65; 65 44 66; 66 42 67; 67 46 68; 68 41 69
    23. 69 45 41; 70 54 45; 71 50 54; 72 46 42; 73 44 43; 75 51 48; 76 52 50; 77 55 47
    24. 78 43 56; 79 50 70; 80 51 71; 81 56 72; 82 47 45; 83 49 52
    25. DEFINE MATERIAL START
    26. ISOTROPIC CONCRETE
    27. E 2.17185E+007
    28. POISSON 0.17
    29. DENSITY 23.5616
    30. ALPHA 1E-005
    31. DAMP 0.05
    32. TYPE CONCRETE
    33. STRENGTH FCU 27579
    34. END DEFINE MATERIAL
    35. MEMBER PROPERTY AMERICAN
    36. 57 TO 60 62 TO 68 79 TO 81 PRIS YD 0.25 ZD 0.25
    37. 61 PRIS YD 0.12 ZD 0.3
    38. 44 TO 50 52 TO 56 69 TO 73 75 TO 78 82 83 PRIS YD 0.2 ZD 0.3
```

```
39. CONSTANTS
40. MATERIAL CONCRETE ALL
41. SUPPORTS
42. 58 TO 72 FIXED
43. DEFINE COLOMBIAN ACCIDENTAL LOAD
44. ZONE 0.19 I 1.25 S 1.6
45. SELFWEIGHT 1
46. MEMBER WEIGHT
47. 44 69 TO 71 UNI 3.24
48. 48 52 53 77 UNI 4.12
49. 46 50 55 73 UNI 2.68
50. LOAD 1 LOADTYPE NONE  TITLE SISMO X
51. COLOMBIAN LOAD X 1 ACC 1
52. LOAD 2 LOADTYPE NONE  TITLE SISMO Z
53. COLOMBIAN LOAD Z 1 ACC 1
54. LOAD 3 CARGA VIVA
55. MEMBER LOAD
56. 48 52 53 77 UNI GY -1.4
57. 46 50 55 73 UNI GY -1.12
58. 44 69 TO 71 UNI GY -0.53
59. LOAD 4 CARGA MUERTA
60. MEMBER LOAD
61. 44 69 TO 71 UNI GY -3.24
62. 48 52 53 77 UNI GY -4.12
63. 46 50 55 73 UNI GY -2.68
64. SELFWEIGHT Y -1
65. LOAD COMB 5 1.2 CM + 1.6 CV
66. 4 1.2 3 1.6
67. LOAD COMB 6 1.2 CM + CV + (SX/R + 0,30 SZ/R)
68. 4 1.2 3 1.0 1 0.222 2 0.067
69. LOAD COMB 7 1.2 CM + CV - (SX/R - 0,30 SZ/R)
70. 4 1.2 3 1.0 1 -0.222 2 0.067
71. LOAD COMB 8 1.2 CM + CV + (SX/R - 0,30 SZ/R)
72. 4 1.2 3 1.0 1 0.222 2 -0.067
73. LOAD COMB 9 1.2 CM + CV - (SX/R + 0,30 SZ/R)
74. 4 1.2 3 1.0 1 -0.222 2 -0.067
75. LOAD COMB 10 1.2 CM + CV + (0.3 SX/R + SZ/R)
76. 4 1.2 3 1.0 1 0.067 2 0.222
77. LOAD COMB 11 1.2 CM + CV - (0.3 SX/R - SZ/R)
78. 4 1.2 3 1.0 1 -0.067 2 0.222
79. LOAD COMB 12 1.2 CM + CV + (0.3 SX/R - SZ/R)
80. 4 1.2 3 1.0 1 0.067 2 -0.222
81. LOAD COMB 13 1.2 CM + CV - (0.3 SX/R + SZ/R)
82. 4 1.2 3 1.0 1 -0.067 2 -0.222
83. LOAD COMB 14 0.9 CM + (SX/R + 0,30 SZ/R)
84. 4 0.9 1 0.222 2 0.067
85. LOAD COMB 15 0.9 CM - (SX/R - 0,30 SZ/R)
86. 4 0.9 1 -0.222 2 0.067
87. LOAD COMB 16 0.9 CM + (SX/R - 0,30 SZ/R)
88. 4 0.9 1 0.222 2 -0.067
```

```
 89. LOAD COMB 17 0.9 CM - (SX/R + 0,30 SZ/R)
 90. 4 0.9 1 -0.222 2 -0.067
 91. LOAD COMB 18 0.9 CM + (0.3 SX/R + SZ/R)
 92. 4 0.9 1 0.067 2 0.222
 93. LOAD COMB 19 0.9 CM - (0.3 SX/R - SZ/R)
 94. 4 0.9 1 -0.067 2 0.222
 95. LOAD COMB 20 0.9 CM + (0.3 SX/R - SZ/R)
 96. 4 0.9 1 0.067 2 -0.222
 97. LOAD COMB 21 0.9 CM - (0.3 SX/R + SZ/R)
 98. 4 0.9 1 -0.067 2 -0.222
 99. *COMBINACIONES PARA DISEÑO DE CIMENTACION
100. *COMBINACIONES DE SERVICIO
101. LOAD COMB 22 CM + CV
102. 4 1.0 3 1.0
103. LOAD COMB 23 CM + 0,75 CV + 0.75 (0.7)(SX + 0,3 SZ)/R
104. 4 1.0 3 0.75 1 0.117 2 0.035
105. LOAD COMB 24 CM + 0,75 CV - 0.75 (0.7)(SX - 0,3 SZ)/R
106. 4 1.0 3 0.75 1 -0.117 2 0.035
107. LOAD COMB 25 CM + 0,75 CV + 0.75 (0.7)(SX - 0,3 SZ)/R
108. 4 1.0 3 0.75 1 0.117 2 -0.035
109. LOAD COMB 26 CM + 0,75 CV - 0.75 (0.7)(SX + 0,3 SZ)/R
110. 4 1.0 3 0.75 1 -0.117 2 -0.035
111. LOAD COMB 27 CM + 0,75 CV + 0.75 (0.7)(0,3 SX + SZ)/R
112. 4 1.0 3 0.75 1 0.035 2 0.117
113. LOAD COMB 28 CM + 0,75 CV - 0.75 (0.7)(0.3 SX - SZ)/R
114. 4 1.0 3 0.75 1 -0.035 2 0.117
115. LOAD COMB 29 CM + 0,75 CV + 0.75 (0.7)(0.3 SX - SZ)/R
116. 4 1.0 3 0.75 1 0.035 2 -0.117
117. LOAD COMB 30 CM + 0,75 CV - 0.75 (0.7)(0.3 SX + SZ)/R
118. 4 1.0 3 0.75 1 -0.035 2 -0.117
119. LOAD COMB 31 0.6 CM + 0.700 ( SX + 0.3 SZ)/R
120. 4 0.6 1 0.156 2 0.047
121. LOAD COMB 32 0.6 CM - 0.700 ( SX - 0.3 SZ)/R
122. 4 0.6 1 -0.156 2 0.047
123. LOAD COMB 33 0.6 CM + 0.700 ( SX - 0.3 SZ)/R
124. 4 0.6 1 0.156 2 -0.047
125. LOAD COMB 34 0.6 CM - 0.700 ( SX + 0.3 SZ)/R
126. 4 0.6 1 -0.156 2 -0.047
127. LOAD COMB 35 0.6 CM + 0.700 ( 0.3 SX + SZ)/R
128. 4 0.6 1 0.047 2 0.156
129. LOAD COMB 36 0.6 CM - 0.700 ( 0.3 SX - SZ)/R
130. 4 0.6 1 -0.047 2 0.156
131. LOAD COMB 37 0.6 CM - 0.700 ( 0.3 SX + SZ)/R
132. 4 0.6 1 -0.047 2 -0.156
133. LOAD COMB 38 0.6 CM + 0.700 ( 0.3 SX - SZ)/R
134. 4 0.6 1 0.047 2 -0.156
135. *COMBINACIONES MAYORADAS
136. LOAD COMB 39 1.2 CM + 1.6 CV
137. 4 1.2 3 1.6
138. LOAD COMB 40 1.2 CM + CV + (SX/R + 0,30 SZ/R)
139. 4 1.2 3 1.0 1 0.222 2 0.067
140. LOAD COMB 41 1.2 CM + CV - (SX/R - 0,30 SZ/R)
141. 4 1.2 3 1.0 1 -0.222 2 0.067
142. LOAD COMB 42 1.2 CM + CV + (SX/R - 0,30 SZ/R)
143. 4 1.2 3 1.0 1 0.222 2 -0.067
144. LOAD COMB 43 1.2 CM + CV - (SX/R + 0,30 SZ/R)
```

```
145. 4 1.2 3 1.0 1 -0.222 2 -0.067
146. LOAD COMB 44 1.2 CM + CV + (0.3 SX/R + SZ/R)
147. 4 1.2 3 1.0 1 0.067 2 0.222
148. LOAD COMB 45 1.2 CM + CV - (0.3 SX/R - SZ/R)
149. 4 1.2 3 1.0 1 -0.067 2 0.222
150. LOAD COMB 46 1.2 CM + CV + (0.3 SX/R - SZ/R)
151. 4 1.2 3 1.0 1 0.067 2 -0.222
152. LOAD COMB 47 1.2 CM + CV - (0.3 SX/R + SZ/R)
153. 4 1.2 3 1.0 1 -0.067 2 -0.222
154. LOAD COMB 48 0.9 CM + (SX/R + 0,30 SZ/R)
155. 4 0.9 1 0.222 2 0.067
156. LOAD COMB 49 0.9 CM - (SX/R - 0,30 SZ/R)
157. 4 0.9 1 -0.222 2 0.067
158. LOAD COMB 50 0.9 CM + (SX/R - 0,30 SZ/R)
159. 4 0.9 1 0.222 2 -0.067
160. LOAD COMB 51 0.9 CM - (SX/R + 0,30 SZ/R)
161. 4 0.9 1 -0.222 2 -0.067
162. LOAD COMB 52 0.9 CM + (0.3 SX/R + SZ/R)
163. 4 0.9 1 0.067 2 0.222
164. LOAD COMB 53 0.9 CM - (0.3 SX/R - SZ/R)
165. 4 0.9 1 -0.067 2 0.222
166. LOAD COMB 54 0.9 CM + (0.3 SX/R - SZ/R)
167. 4 0.9 1 0.067 2 -0.222
168. LOAD COMB 55 0.9 CM - (0.3 SX/R + SZ/R)
169. 4 0.9 1 -0.067 2 -0.222
170. PERFORM ANALYSIS
```

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

NUMBER OF JOINTS	**31**	**NUMBER OF MEMBERS**	**38**
NUMBER OF PLATES	**0**	**NUMBER OF SOLIDS**	**0**
NUMBER OF SURFACES	**0**	**NUMBER OF SUPPORTS**	**15**

SOLVER USED IS THE OUT-OF-CORE BASIC SOLVER

ORIGINAL/FINAL BAND-WIDTH= 26/ 7/ 30 DOF
TOTAL PRIMARY LOAD CASES = 4, TOTAL DEGREES OF FREEDOM = 96
SIZE OF STIFFNESS MATRIX = 3 DOUBLE KILO-WORDS
REQRD/AVAIL. DISK SPACE = 12.1/ 123560.2 MB

```
**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.
```

```
************************************************************
*                                                          *
*  COLOMBIAN SEISMIC LOAD :                                *
*                                                          *
*  TIME PERIODS FOR X DIRECTION:                           *
*   Ta =  0.175 Tb =  0.234 Tuser = 0.000                  *
*   TIME PERIOD USED (T)       =  0.234                    *
*  LOAD FACTOR                 =  1.000                    *
*  DESIGN BASE SHEAR =  0.516 X     343.72 =     177.28  KN  *
*                                                          *
************************************************************
```

```
************************************************************
*                                                          *
*  COLOMBIAN SEISMIC LOAD :                                *
*                                                          *
*  TIME PERIODS FOR Z DIRECTION:                           *
*   Ta =  0.175 Tb =  0.234 Tuser = 0.000                  *
*   TIME PERIOD USED (T)       =  0.234                    *
*  LOAD FACTOR                 =  1.000                    *
*  DESIGN BASE SHEAR =  0.516 X     343.72 =     177.34  KN  *
*                                                          *
************************************************************
```

```
171. LOAD LIST 1 2
172. PRINT STORY DRIFT 0.010000
```

STORY	HEIGHT (METE)	LOAD	AVG. DISP(CM) X	AVG. DISP(CM) Z	DRIFT(CM) X	DRIFT(CM) Z	RATIO	STATUS
BASE=	**0.00**						**ALLOW. DRIFT = L / 100**	
1	0.00	1	0.0000	0.0000	0.0000	0.0000	L /999999	PASS
		2	0.0000	0.0000	0.0000	0.0000	L /999999	PASS
2	3.20	1	0.7726	0.0021	0.7726	0.0021	L / 414	PASS
		2	-0.0009	0.7605	0.0009	0.7605	L / 421	PASS

```
173. LOAD LIST 5 TO 21
174. START CONCRETE DESIGN
175. CODE ACI
176. CLB 0.04 ALL
177. CLS 0.04 ALL
178. CLT 0.04 ALL
179. FC 21000 ALL
180. FYMAIN 420000 ALL
181. FYSEC 420000 ALL
182. DESIGN BEAM 44 TO 50 52 TO 56 69 TO 73 75 TO 78 82 83
```

==========

BEAM NO. 44 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

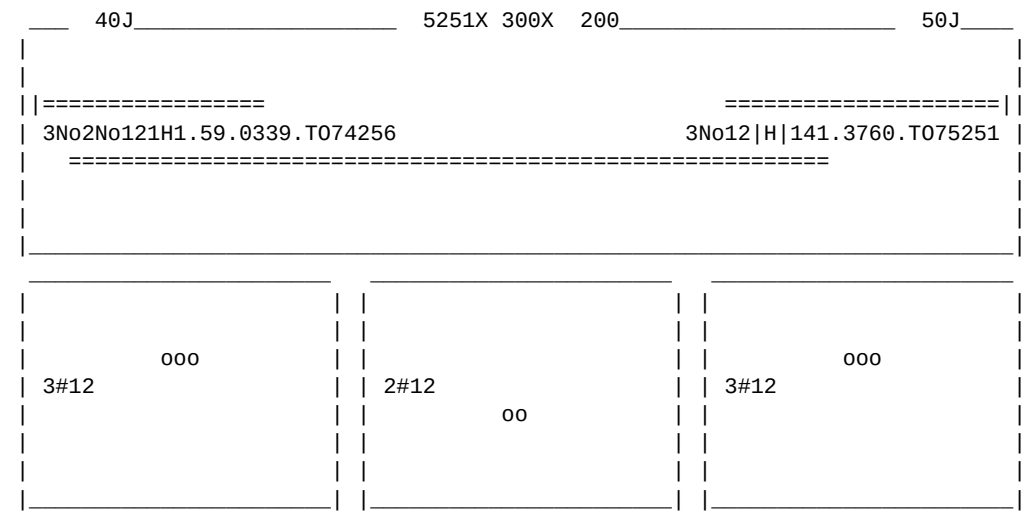
LEN - 5251. MM FY - 420. FC - 21. MPA, SIZE - 300. X 200. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 12MM	339.	4256.	NO	NO
2	141.	3 - 12MM	0.	1273.	YES	NO
3	141.	3 - 12MM	3760.	5251.	NO	YES

B E A M N O. 44 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 15.34 KNS Vc= 31.57 KNS Vs= 0.00 KNS
Tu= 0.03 KN-MET Tc= 1.1 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 2491. MM

AT END SUPPORT - Vu= 16.71 KNS Vc= 31.40 KNS Vs= 0.00 KNS
Tu= 0.03 KN-MET Tc= 1.1 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 2491. MM



BEAM NO. 45 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

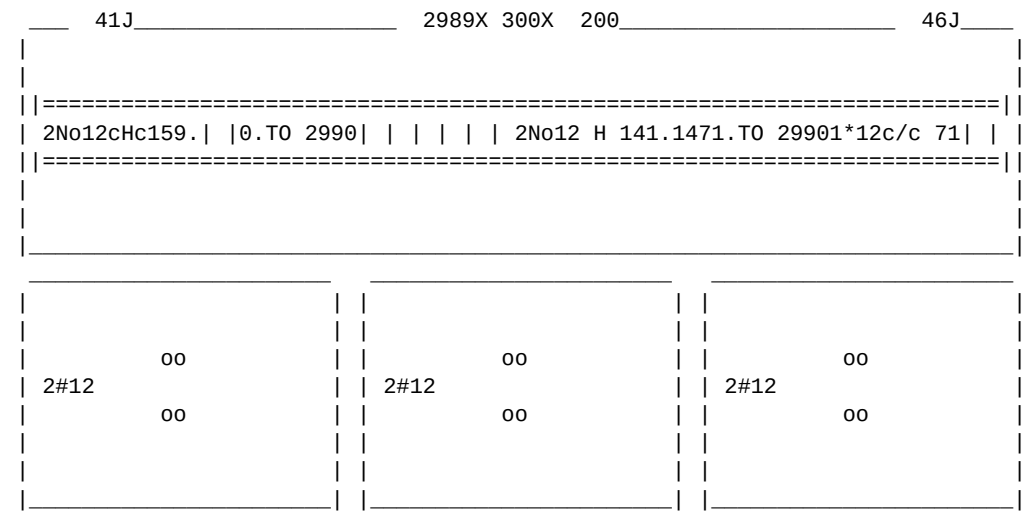
LEN - 2990. MM FY - 420. FC - 21. MPA, SIZE - 300. X 200. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 12MM	0.	2990.	YES	YES
2	141.	2 - 12MM	0.	1643.	YES	NO
3	141.	2 - 12MM	1471.	2990.	NO	YES

B E A M N O. 45 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 1.99 KNS Vc= 31.38 KNS Vs= 0.00 KNS
Tu= 0.20 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1360. MM

AT END SUPPORT - Vu= 2.63 KNS Vc= 31.08 KNS Vs= 0.00 KNS
Tu= 0.20 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1360. MM



==========

BEAM NO. 46 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

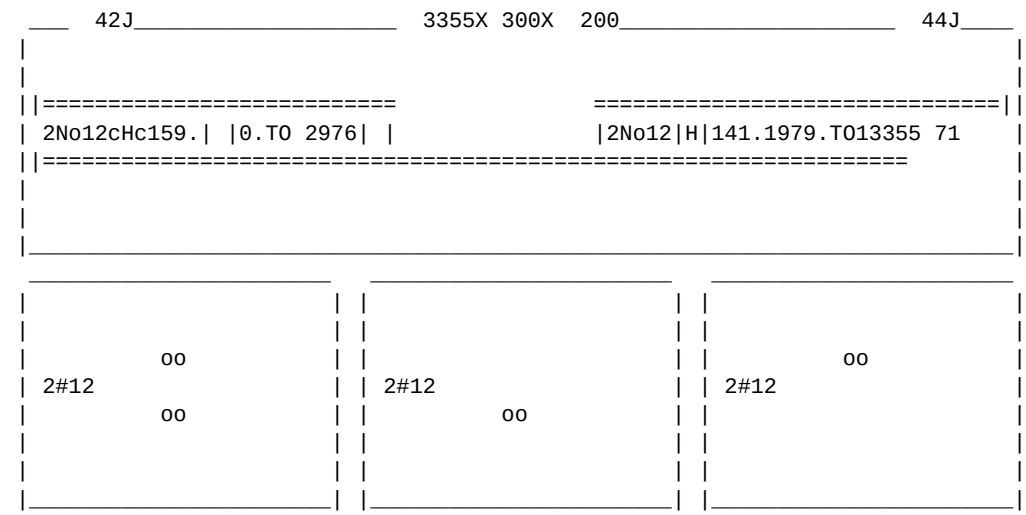
LEN - 3355. MM FY - 420. FC - 21. MPA, SIZE - 300. X 200. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 12MM	0.	2976.	YES	NO
2	141.	2 - 12MM	0.	1236.	YES	NO
3	141.	2 - 12MM	1979.	3355.	NO	YES

B E A M N O. 46 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 8.89 KNS Vc= 31.79 KNS Vs= 0.00 KNS
Tu= 0.12 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1543. MM

AT END SUPPORT - Vu= 11.80 KNS Vc= 31.24 KNS Vs= 0.00 KNS
Tu= 0.12 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1543. MM



==========

BEAM NO. 47 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

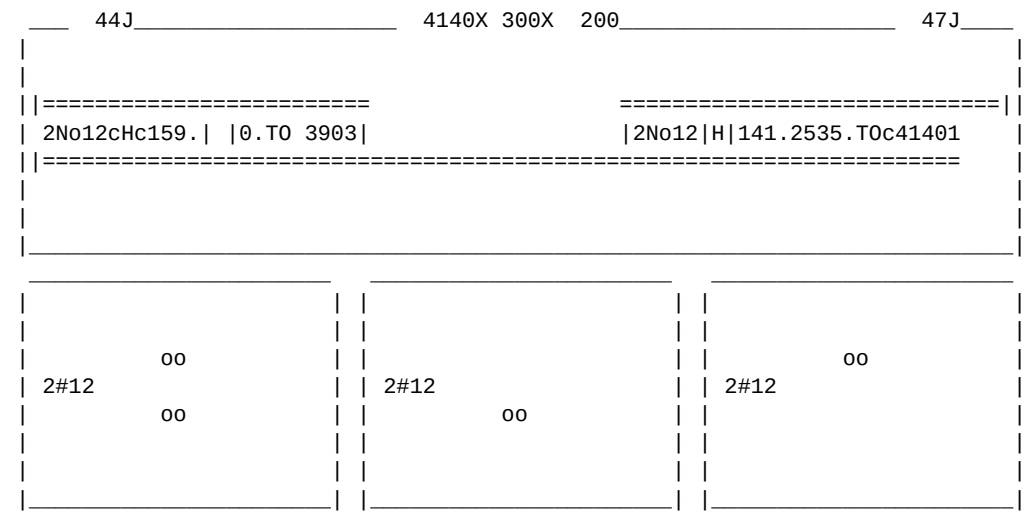
LEN - 4140. MM FY - 420. FC - 21. MPA, SIZE - 300. X 200. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 12MM	0.	3903.	YES	NO
2	141.	2 - 12MM	0.	1432.	YES	NO
3	141.	2 - 12MM	2535.	4140.	NO	YES

B E A M N O. 47 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 2.92 KNS Vc= 31.37 KNS Vs= 0.00 KNS
Tu= 0.15 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1935. MM

AT END SUPPORT - Vu= 3.65 KNS Vc= 31.05 KNS Vs= 0.00 KNS
Tu= 0.15 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1935. MM



==========

BEAM NO. 48 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

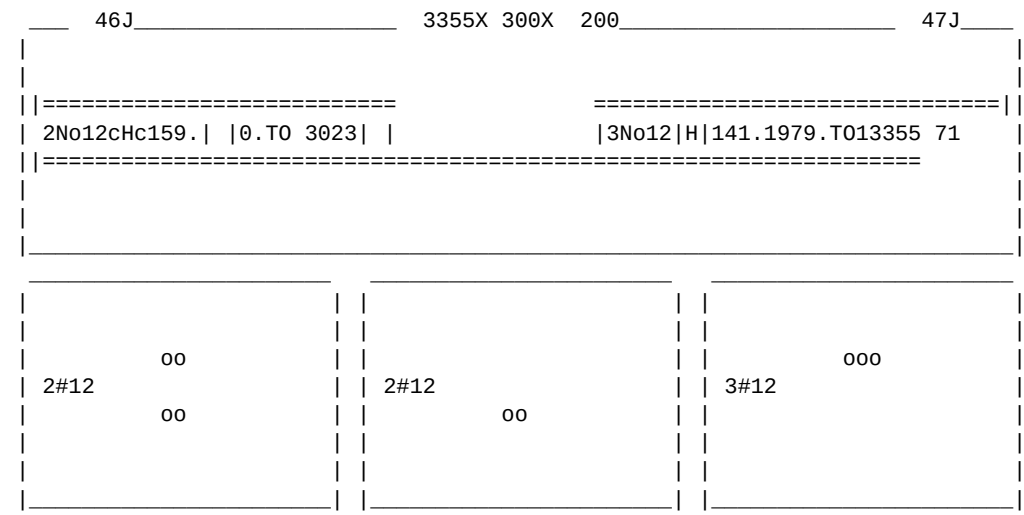
LEN - 3355. MM FY - 420. FC - 21. MPA, SIZE - 300. X 200. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 12MM	0.	3023.	YES	NO
2	141.	2 - 12MM	0.	1236.	YES	NO
3	141.	3 - 12MM	1979.	3355.	NO	YES

B E A M N O. 48 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 12.34 KNS Vc= 31.89 KNS Vs= 0.00 KNS
Tu= 0.01 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1543. MM

AT END SUPPORT - Vu= 15.06 KNS Vc= 31.41 KNS Vs= 0.00 KNS
Tu= 0.01 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1543. MM



BEAM NO. 49 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

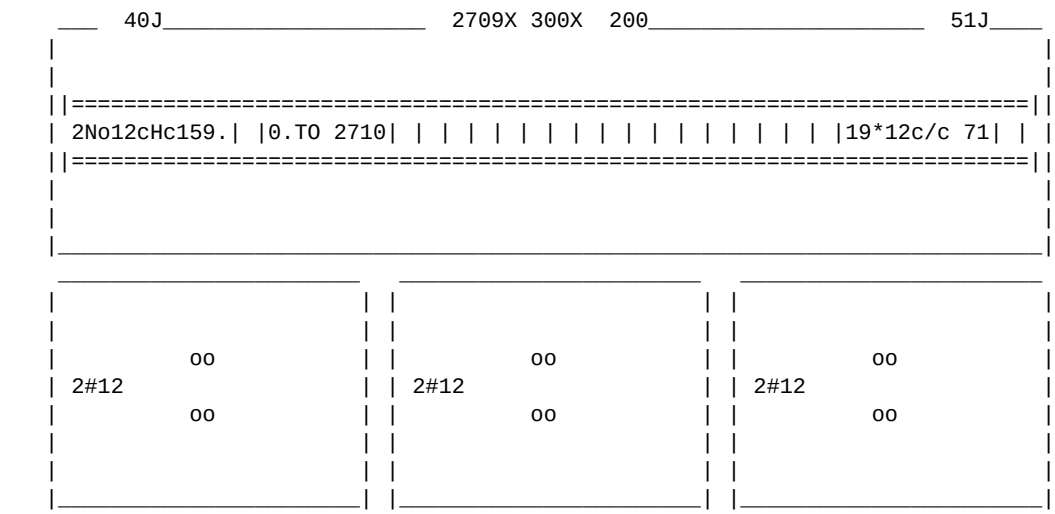
LEN - 2710. MM FY - 420. FC - 21. MPA, SIZE - 300. X 200. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 12MM	0.	2710.	YES	YES
2	141.	2 - 12MM	0.	2710.	YES	YES

B E A M N O. 49 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 1.42 KNS Vc= 31.51 KNS Vs= 0.00 KNS
Tu= 0.59 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1220. MM

AT END SUPPORT - Vu= 2.72 KNS Vc= 31.03 KNS Vs= 0.00 KNS
Tu= 0.59 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1220. MM



BEAM NO. 50 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

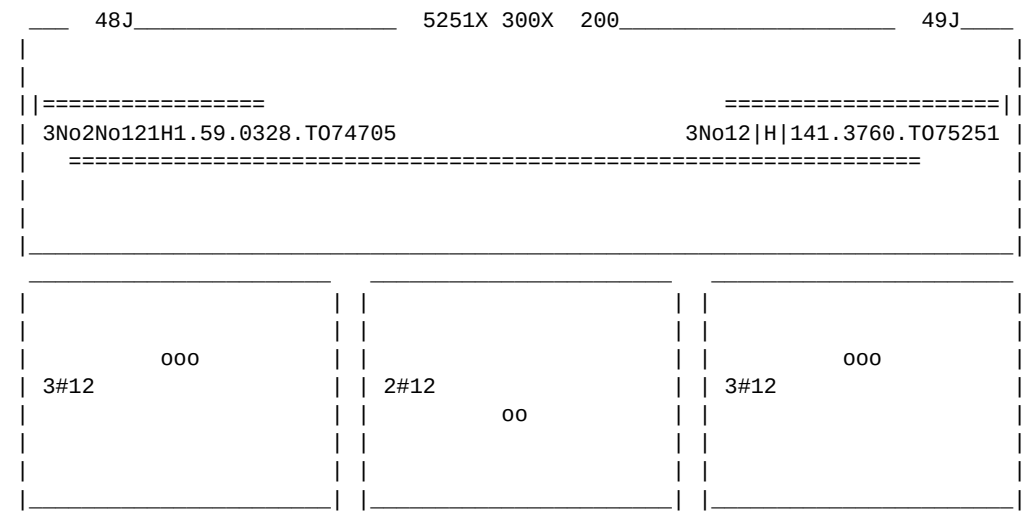
LEN - 5251. MM FY - 420. FC - 21. MPA, SIZE - 300. X 200. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 12MM	328.	4705.	NO	NO
2	141.	3 - 12MM	0.	1273.	YES	NO
3	141.	3 - 12MM	3760.	5251.	NO	YES

B E A M N O. 50 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 16.01 KNS Vc= 31.59 KNS Vs= 0.00 KNS
Tu= 0.00 KN-MET Tc= 1.1 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 2491. MM

AT END SUPPORT - Vu= 17.39 KNS Vc= 31.42 KNS Vs= 0.00 KNS
Tu= 0.00 KN-MET Tc= 1.1 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 2491. MM



==========

BEAM NO. 52 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

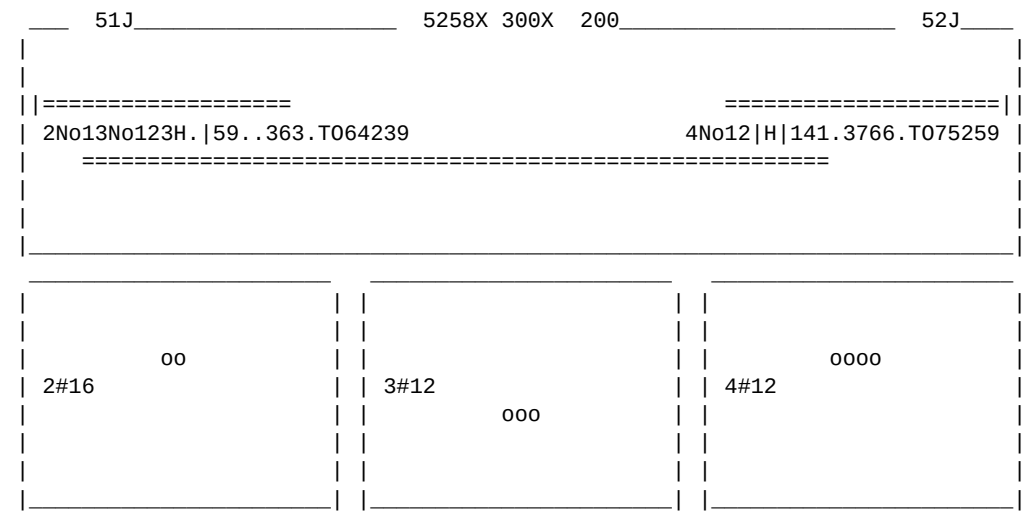
LEN - 5259. MM FY - 420. FC - 21. MPA, SIZE - 300. X 200. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	3 - 12MM	363.	4239.	NO	NO
2	139.	2 - 16MM	0.	1406.	YES	NO
3	141.	4 - 12MM	3766.	5259.	NO	YES

B E A M N O. 52 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 21.34 KNS Vc= 31.83 KNS Vs= 0.00 KNS
Tu= 0.01 KN-MET Tc= 1.1 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 2495. MM

AT END SUPPORT - Vu= 22.97 KNS Vc= 31.64 KNS Vs= 0.00 KNS
Tu= 0.01 KN-MET Tc= 1.1 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 2495. MM



==========

BEAM NO. 53 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

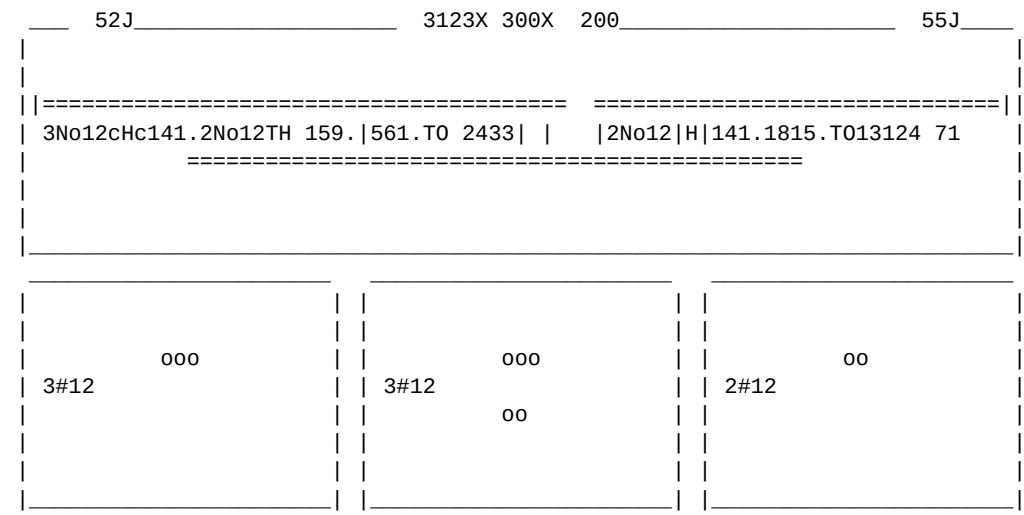
LEN - 3124. MM FY - 420. FC - 21. MPA, SIZE - 300. X 200. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 12MM	561.	2433.	NO	NO
2	141.	3 - 12MM	0.	1699.	YES	NO
3	141.	2 - 12MM	1815.	3124.	NO	YES

B E A M N O. 53 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 13.93 KNS Vc= 30.99 KNS Vs= 0.00 KNS
Tu= 0.23 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1427. MM

AT END SUPPORT - Vu= 11.42 KNS Vc= 31.06 KNS Vs= 0.00 KNS
Tu= 0.23 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1427. MM



BEAM NO. 54 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

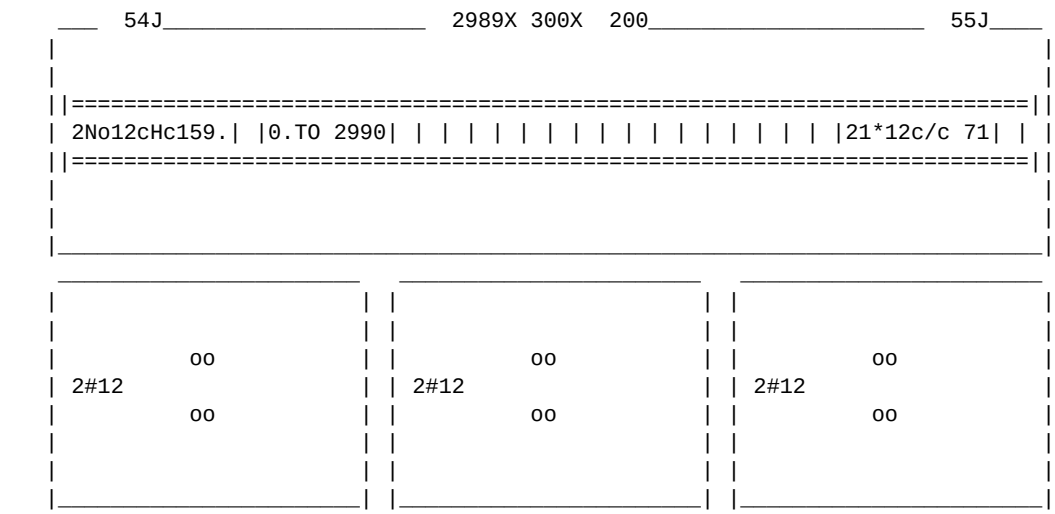
LEN - 2990. MM FY - 420. FC - 21. MPA, SIZE - 300. X 200. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 12MM	0.	2990.	YES	YES
2	141.	2 - 12MM	0.	2990.	YES	YES

B E A M N O. 54 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 1.79 KNS Vc= 31.35 KNS Vs= 0.00 KNS
Tu= 0.32 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1360. MM

AT END SUPPORT - Vu= 2.82 KNS Vc= 31.05 KNS Vs= 0.00 KNS
Tu= 0.32 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1360. MM



==========

BEAM NO. 55 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

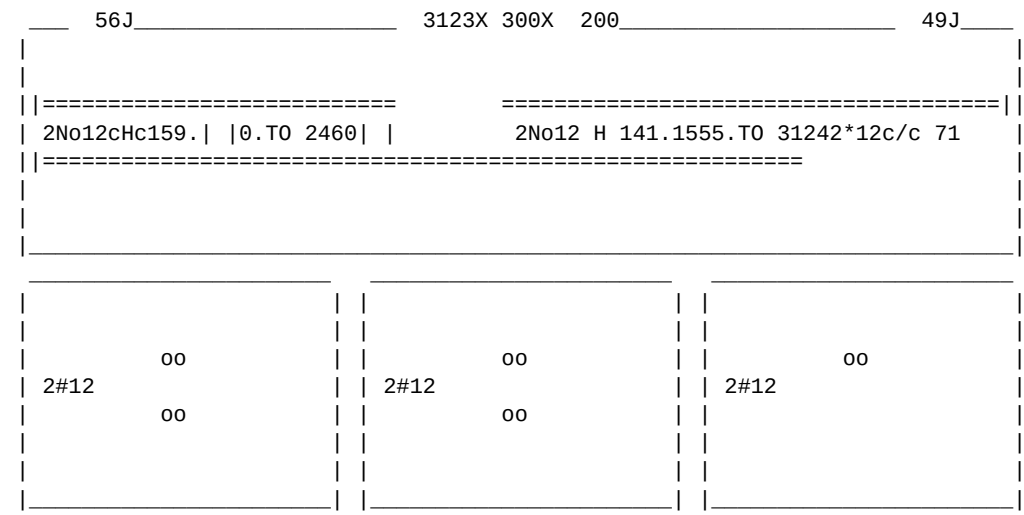
LEN - 3124. MM FY - 420. FC - 21. MPA, SIZE - 300. X 200. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 12MM	0.	2460.	YES	NO
2	141.	2 - 12MM	0.	1178.	YES	NO
3	141.	2 - 12MM	1555.	3124.	NO	YES

B E A M N O. 55 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 7.69 KNS Vc= 31.38 KNS Vs= 0.00 KNS
Tu= 0.66 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1427. MM

AT END SUPPORT - Vu= 11.44 KNS Vc= 31.05 KNS Vs= 0.00 KNS
Tu= 0.66 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1427. MM



==========

BEAM NO. 56 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

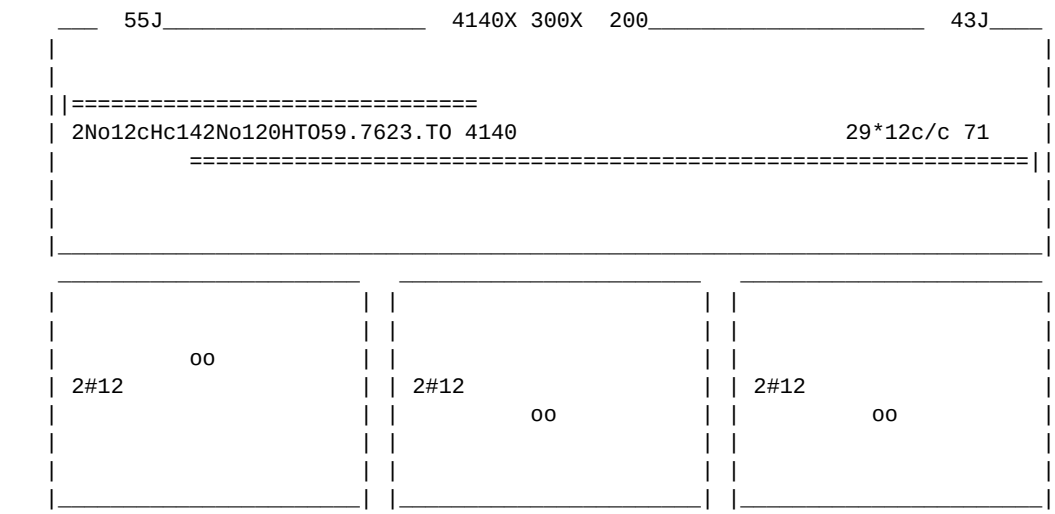
LEN - 4140. MM FY - 420. FC - 21. MPA, SIZE - 300. X 200. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 12MM	623.	4140.	NO	YES
2	141.	2 - 12MM	0.	1777.	YES	NO

B E A M N O. 56 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 5.58 KNS Vc= 31.20 KNS Vs= 0.00 KNS
Tu= 0.12 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1935. MM

AT END SUPPORT - Vu= 0.98 KNS Vc= 30.89 KNS Vs= 0.00 KNS
Tu= 0.12 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1935. MM



==========

BEAM NO. 69 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

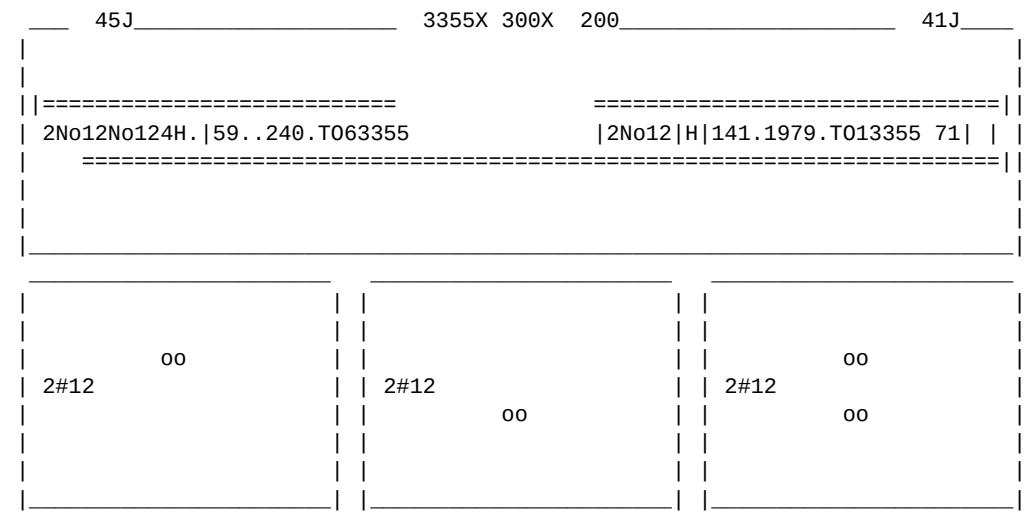
LEN - 3355. MM FY - 420. FC - 21. MPA, SIZE - 300. X 200. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 12MM	240.	3355.	NO	YES
2	141.	2 - 12MM	0.	1236.	YES	NO
3	141.	2 - 12MM	1979.	3355.	NO	YES

B E A M N O. 69 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 10.86 KNS Vc= 31.29 KNS Vs= 0.00 KNS
Tu= 0.03 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1543. MM

AT END SUPPORT - Vu= 8.99 KNS Vc= 31.67 KNS Vs= 0.00 KNS
Tu= 0.03 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1543. MM



==========

BEAM NO. 70 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

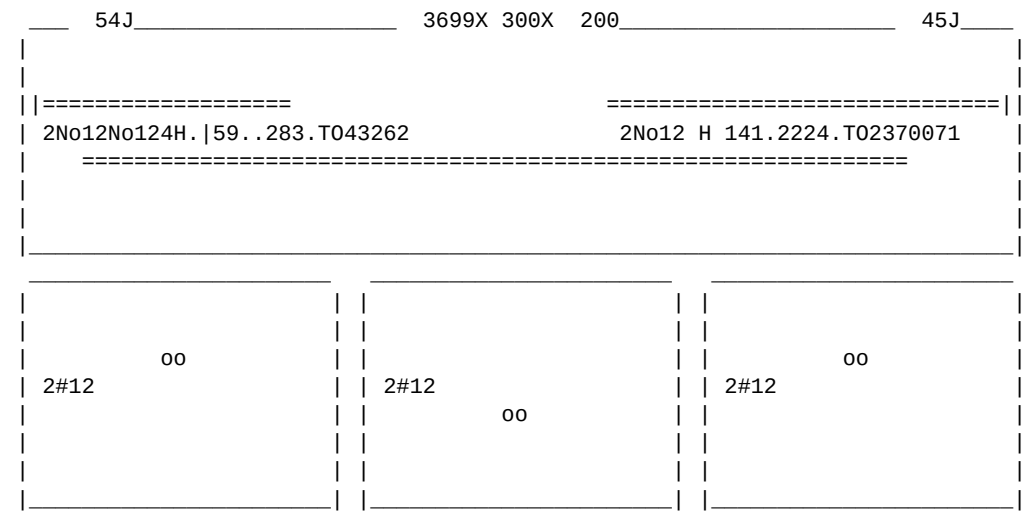
LEN - 3700. MM FY - 420. FC - 21. MPA, SIZE - 300. X 200. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 12MM	283.	3262.	NO	NO
2	141.	2 - 12MM	0.	1014.	YES	NO
3	141.	2 - 12MM	2224.	3700.	NO	YES

B E A M N O. 70 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 10.58 KNS Vc= 31.38 KNS Vs= 0.00 KNS
Tu= 0.05 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1715. MM

AT END SUPPORT - Vu= 11.49 KNS Vc= 31.27 KNS Vs= 0.00 KNS
Tu= 0.05 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1715. MM



BEAM NO. 71 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

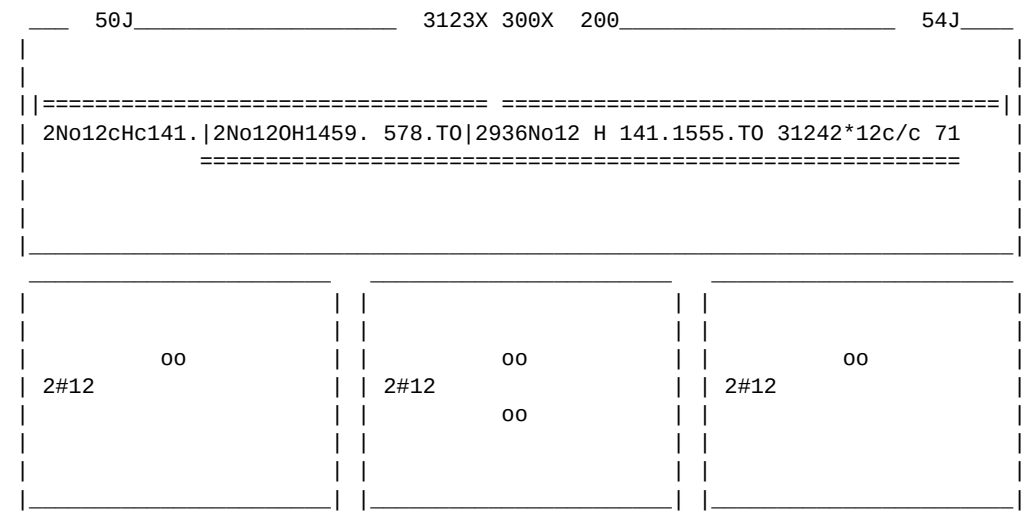
LEN - 3124. MM FY - 420. FC - 21. MPA, SIZE - 300. X 200. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 12MM	578.	2936.	NO	NO
2	141.	2 - 12MM	0.	1439.	YES	NO
3	141.	2 - 12MM	1555.	3124.	NO	YES

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

AT START SUPPORT - Vu= 10.30 KNS Vc= 30.95 KNS Vs= 0.00 KNS
Tu= 0.05 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1427. MM

AT END SUPPORT - Vu= 8.06 KNS Vc= 31.03 KNS Vs= 0.00 KNS
Tu= 0.05 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1427. MM



==========

BEAM NO. 72 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

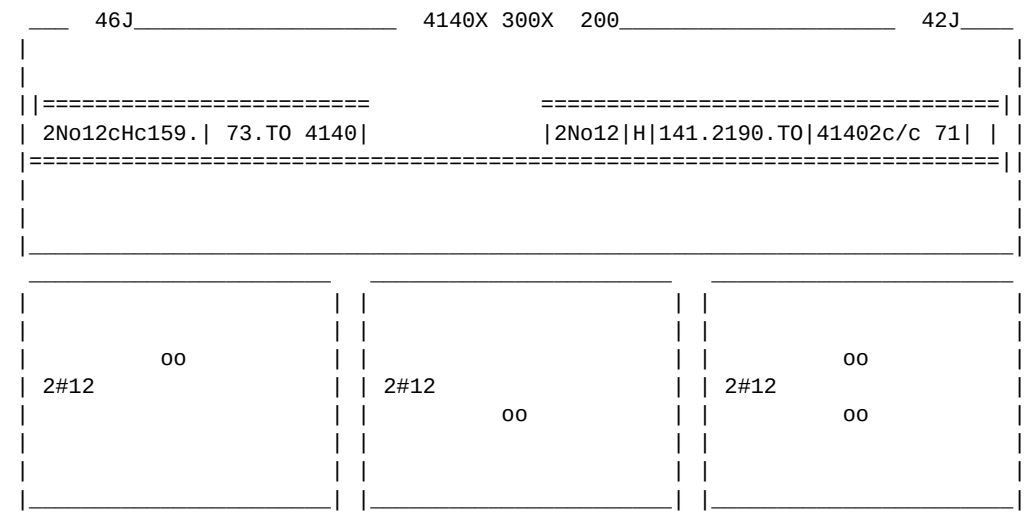
LEN - 4140. MM FY - 420. FC - 21. MPA, SIZE - 300. X 200. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 12MM	73.	4140.	NO	YES
2	141.	2 - 12MM	0.	1432.	YES	NO
3	141.	2 - 12MM	2190.	4140.	NO	YES

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

AT START SUPPORT - Vu= 3.52 KNS Vc= 31.03 KNS Vs= 0.00 KNS
Tu= 0.11 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1935. MM

AT END SUPPORT - Vu= 3.05 KNS Vc= 31.16 KNS Vs= 0.00 KNS
Tu= 0.11 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1935. MM



==========

BEAM NO. 73 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

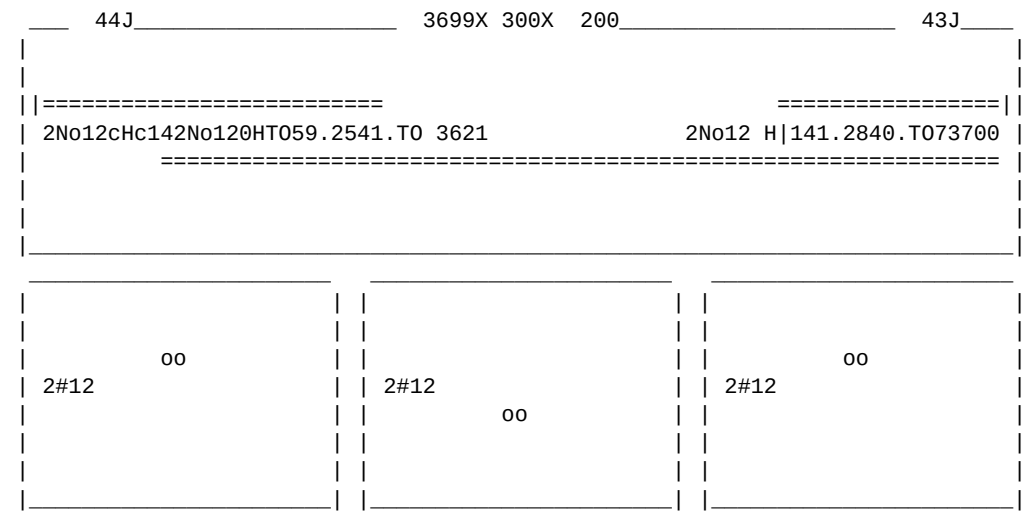
LEN - 3700. MM FY - 420. FC - 21. MPA, SIZE - 300. X 200. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 12MM	541.	3621.	NO	NO
2	141.	2 - 12MM	0.	1322.	YES	NO
3	141.	2 - 12MM	2840.	3700.	NO	YES

B E A M N O. 73 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 13.54 KNS Vc= 31.31 KNS Vs= 0.00 KNS
Tu= 1.02 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1715. MM

AT END SUPPORT - Vu= 9.46 KNS Vc= 32.90 KNS Vs= 0.00 KNS
Tu= 1.02 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1715. MM



==========

BEAM NO. 75 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

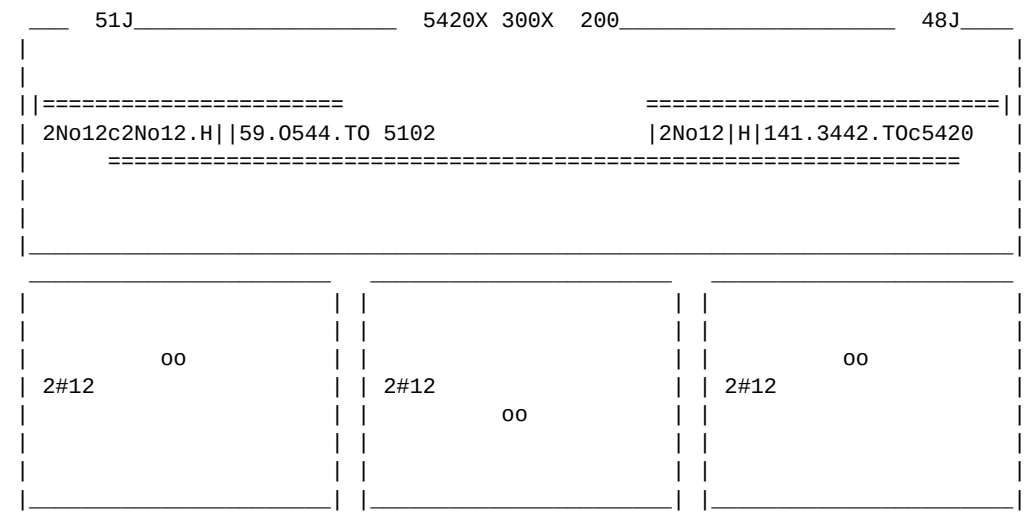
LEN - 5420. MM FY - 420. FC - 21. MPA, SIZE - 300. X 200. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 12MM	544.	5102.	NO	NO
2	141.	2 - 12MM	0.	1752.	YES	NO
3	141.	2 - 12MM	3442.	5420.	NO	YES

B E A M N O. 75 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 4.56 KNS Vc= 31.05 KNS Vs= 0.00 KNS
Tu= 0.29 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 2575. MM

AT END SUPPORT - Vu= 4.18 KNS Vc= 31.12 KNS Vs= 0.00 KNS
Tu= 0.29 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 2575. MM



BEAM NO. 76 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

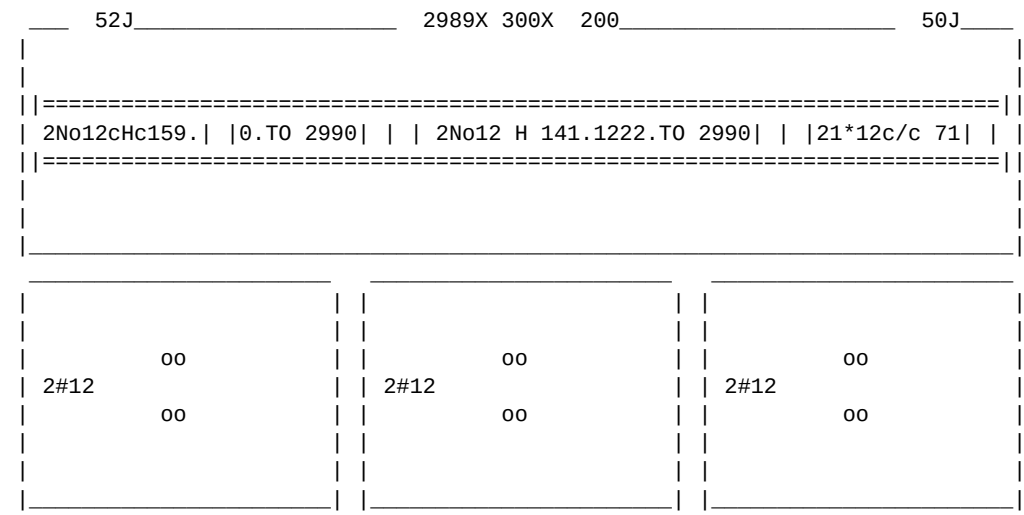
LEN - 2990. MM FY - 420. FC - 21. MPA, SIZE - 300. X 200. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 12MM	0.	2990.	YES	YES
2	141.	2 - 12MM	0.	1394.	YES	NO
3	141.	2 - 12MM	1222.	2990.	NO	YES

B E A M N O. 76 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 2.55 KNS Vc= 31.12 KNS Vs= 0.00 KNS
Tu= 0.34 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1360. MM

AT END SUPPORT - Vu= 2.06 KNS Vc= 31.30 KNS Vs= 0.00 KNS
Tu= 0.34 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1360. MM



==========

BEAM NO. 77 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

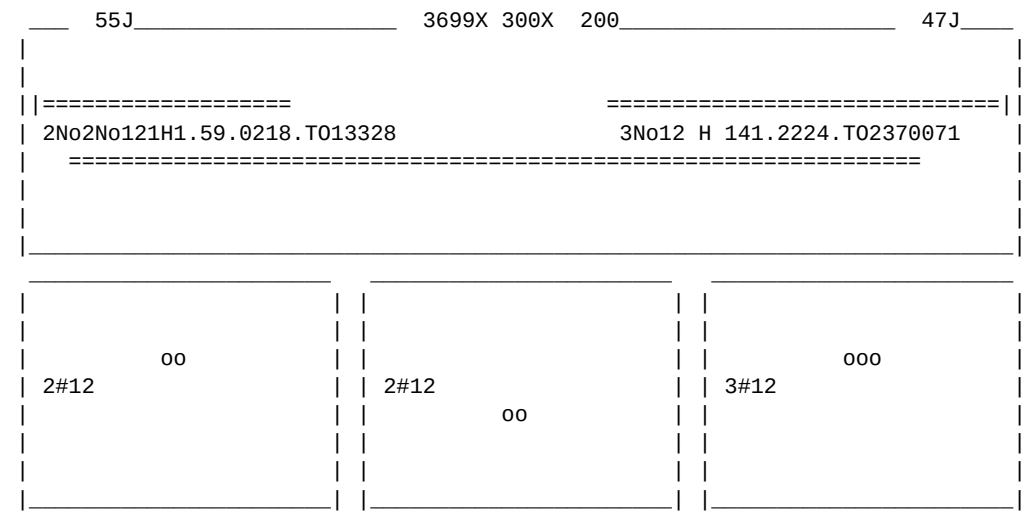
LEN - 3700. MM FY - 420. FC - 21. MPA, SIZE - 300. X 200. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 12MM	218.	3328.	NO	NO
2	141.	2 - 12MM	0.	1014.	YES	NO
3	141.	3 - 12MM	2224.	3700.	NO	YES

B E A M N O. 77 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 14.40 KNS Vc= 31.65 KNS Vs= 0.00 KNS
Tu= 0.22 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1715. MM

AT END SUPPORT - Vu= 16.06 KNS Vc= 31.43 KNS Vs= 0.00 KNS
Tu= 0.22 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1715. MM



==========

BEAM NO. 78 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

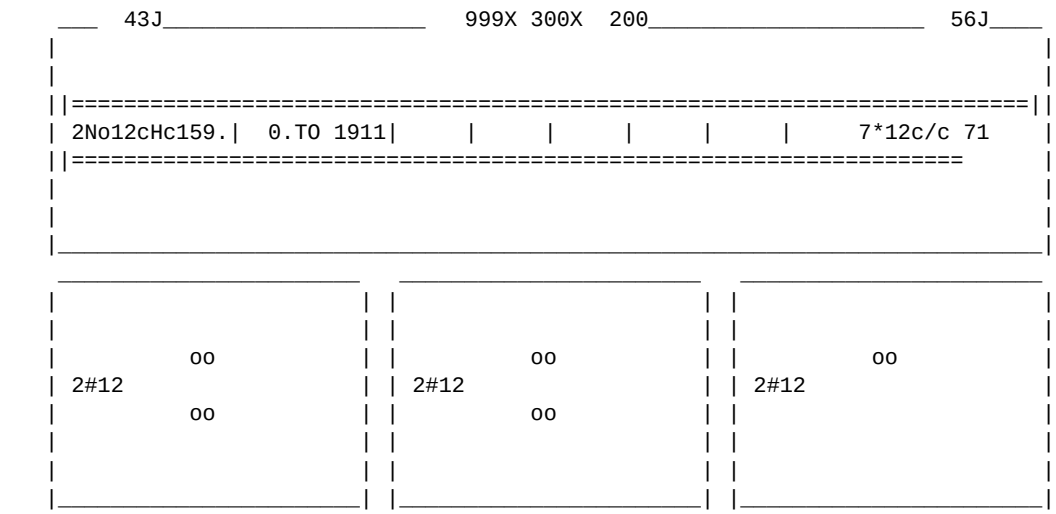
LEN - 1000. MM FY - 420. FC - 21. MPA, SIZE - 300. X 200. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 12MM	0.	911.	YES	NO
2	141.	2 - 12MM	0.	1000.	YES	YES

B E A M N O. 78 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 11.81 KNS Vc= 32.42 KNS Vs= 0.00 KNS
Tu= 3.70 KN-MET Tc= 1.0 KN-MET Ts= 4.9 KN-MET LOAD 7
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 365. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 1.94 SQ.CM.

AT END SUPPORT - Vu= 13.05 KNS Vc= 31.53 KNS Vs= 0.00 KNS
Tu= 3.70 KN-MET Tc= 1.0 KN-MET Ts= 4.9 KN-MET LOAD 7
STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 365. MM
ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 1.94 SQ.CM.



==========

BEAM NO. 82 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

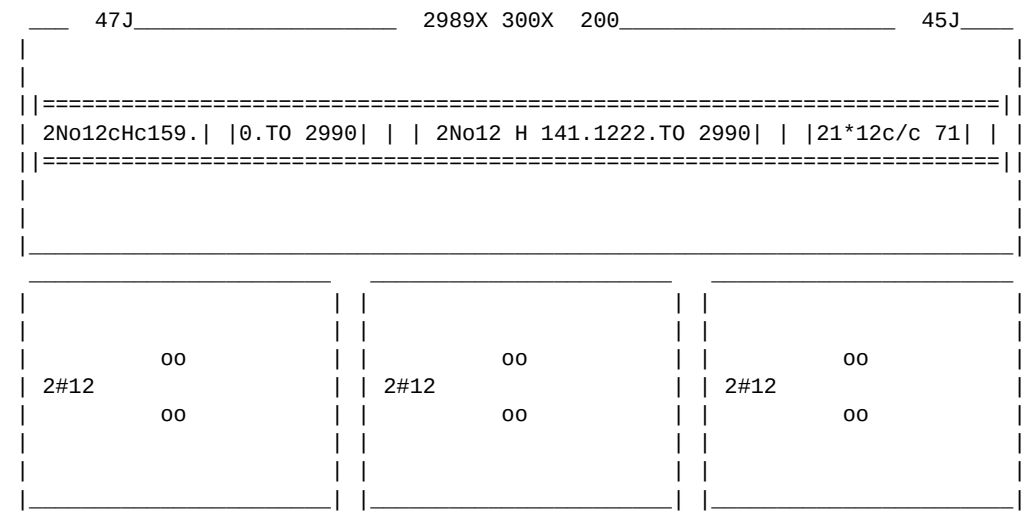
LEN - 2990. MM FY - 420. FC - 21. MPA, SIZE - 300. X 200. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 12MM	0.	2990.	YES	YES
2	141.	2 - 12MM	0.	1394.	YES	NO
3	141.	2 - 12MM	1222.	2990.	NO	YES

B E A M N O. 82 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 2.54 KNS Vc= 31.10 KNS Vs= 0.00 KNS
Tu= 0.08 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1360. MM

AT END SUPPORT - Vu= 2.07 KNS Vc= 31.29 KNS Vs= 0.00 KNS
Tu= 0.08 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 1360. MM



==========

BEAM NO. 83 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

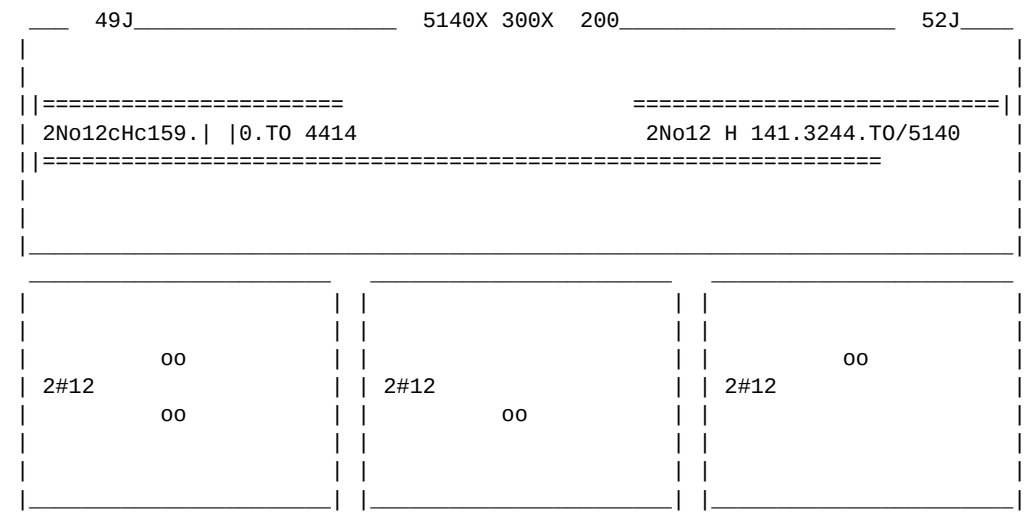
LEN - 5140. MM FY - 420. FC - 21. MPA, SIZE - 300. X 200. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA	ANCHOR END
1	59.	2 - 12MM	0.	4414.	YES	NO
2	141.	2 - 12MM	0.	1682.	YES	NO
3	141.	2 - 12MM	3244.	5140.	NO	YES

B E A M N O. 83 D E S I G N R E S U L T S - SHEAR

AT START SUPPORT - Vu= 3.80 KNS Vc= 31.18 KNS Vs= 0.00 KNS
Tu= 0.21 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 2435. MM

AT END SUPPORT - Vu= 4.47 KNS Vc= 31.03 KNS Vs= 0.00 KNS
Tu= 0.21 KN-MET Tc= 1.0 KN-MET Ts= 0.0 KN-MET LOAD 5
NO STIRRUPS ARE REQUIRED FOR TORSION.
REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.
PROVIDE 12 MM 2-LEGGED STIRRUPS AT 71. MM C/C FOR 2435. MM



**********END OF BEAM DESIGN**********

183. DESIGN COLUMN 57 TO 68 79 TO 81

==========

COLUMN NO. 57 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 250.0 X 250.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 625.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 16 MM	1.287	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 250.00 MM

==========

COLUMN NO. 58 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 250.0 X 250.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 625.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 16 MM	1.287	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 250.00 MM

==========

COLUMN NO. 59 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 250.0 X 250.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 625.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 16 MM	1.287	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 250.00 MM

==========

COLUMN NO. 60 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 250.0 X 250.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 625.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 16 MM	1.287	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 250.00 MM

==========

COLUMN NO. 61 DESIGN PER ACI 318-08 - AXIAL + BENDING

*** NO PROPER BAR ARRANGEMENT IS POSSIBLE.

AREA OF STEEL REQUIRED = 360.0 SQ. MM

==========

COLUMN NO. 62 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 250.0 X 250.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 625.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI

4 - 16 MM 1.287 5 END 0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 250.00 MM

==========

COLUMN NO. 63 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 250.0 X 250.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 625.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 16 MM	1.287	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 250.00 MM

==========

COLUMN NO. 64 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 250.0 X 250.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 625.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 16 MM	1.287	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 250.00 MM

==========

COLUMN NO. 65 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 250.0 X 250.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 625.0 SQ. MM

BAR CONFIGURATION REINF PCT. LOAD LOCATION PHI

4 - 16 MM 1.287 5 END 0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 250.00 MM

==========

COLUMN NO. 66 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 250.0 X 250.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 625.0 SQ. MM

BAR CONFIGURATION REINF PCT. LOAD LOCATION PHI

4 - 16 MM 1.287 5 END 0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 250.00 MM

==========

COLUMN NO. 67 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 250.0 X 250.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 625.0 SQ. MM

BAR CONFIGURATION REINF PCT. LOAD LOCATION PHI

4 - 16 MM 1.287 5 END 0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 250.00 MM

==========

COLUMN NO. 68 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 250.0 X 250.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 625.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 16 MM	1.287	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 250.00 MM

==========

COLUMN NO. 79 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 250.0 X 250.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 625.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 16 MM	1.287	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 250.00 MM

==========

COLUMN NO. 80 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 250.0 X 250.0 MMS, TIED
AREA OF STEEL REQUIRED = 668.8 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 16 MM	1.287	9	STA	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 250.00 MM

==========

COLUMN NO. 81 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 250.0 X 250.0 MMS, TIED
ONLY MINIMUM STEEL IS REQUIRED.
AREA OF STEEL REQUIRED = 625.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 16 MM	1.287	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)
TIE BAR NUMBER 12 SPACING 250.00 MM

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

184. END CONCRETE DESIGN
185. FINISH

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

**** DATE= DEC 29,2014 TIME= 10:44:19 ****

```
************************************************************
*        For questions on STAAD.Pro, please contact        *
*        Bentley Systems or Partner offices                *
*                                                          *
*            Telephone             Web / Email             *
*  USA       +1  (714) 974-2500                            *
*  UK        +44 (0) 808 101 9246                          *
*  SINGAPORE +65 6225-6158                                 *
*  FRANCE    +33 (0) 1 55238400                            *
*  GERMANY   +49 0931 40468                                *
*  INDIA     +91 (033) 4006-2021                           *
*  JAPAN     +81 (03)5952-6500    http://www.ctc-g.co.jp   *
*  CHINA     +86 21 6288 4040                              *
*  THAILAND  +66 (0)2645-1018/19 partha.p@reisoftwareth.com*
*                                                          *
*  Worldwide  http://selectservices.bentley.com/en-US/     *
*                                                          *
************************************************************
```