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*****
*
*          STAAD.Pro V8i SELECTseries5          *
*          Version  20.07.10.64                  *
*          Proprietary Program of                *
*          Bentley Systems, Inc.                 *
*          Date=    DEC 18, 2014                 *
*          Time=    15:32:49                     *
*
*          USER ID:                             *
*****

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1. STAAD SPACE DXF IMPORT OF 3D MODELO 3.DXF  
INPUT FILE: Penitenciaría Bloque 3.STD

- 2. START JOB INFORMATION
- 3. ENGINEER DATE 16-DEC-14
- 4. JOB NAME BLOQUE AULAS Y CARPINTERIA.

WARNING- One or more lines are too long and will be split into 2 lines.  
This may not work for all commands. Please check.

- 5. JOB COMMENT LOSA ENTREPISO ARMADA EN DOS DIRECCIONES Y CUBIERTA EN LOSA -
- 6. METALDECK
- 7. ENGINEER NAME EMEL MULET
- 8. END JOB INFORMATION
- 9. INPUT WIDTH 79

10. UNIT METER KN  
11. JOINT COORDINATES

- 12. 1 0.0854492 5.4 7.90723; 2 22.0854 5.4 7.90723; 3 11.0854 5.4 -1.01538
- 13. 4 5.58545 5.4 -1.01538; 5 0.0854492 5.4 -0.000366211
- 14. 6 22.0854 5.4 -0.000366211; 7 0.0854492 5.4 5.50061; 8 22.0854 5.4 5.50061
- 15. 9 5.58545 5.4 7.90723; 10 11.0854 5.4 7.90723; 12 20.2349 5.4 -0.000366211
- 16. 13 20.2349 5.4 7.90723; 14 18.4338 5.4 -0.000366211; 15 18.4338 5.4 7.90723
- 17. 16 22.0854 5.4 3.60425; 17 8.42041 5.4 3.60425; 18 5.58545 5.4 3.60425
- 18. 19 0.0854492 5.4 3.60425; 20 22.0854 5.4 1.80322; 21 0.0854492 5.4 1.80322
- 19. 22 14.7349 5.4 -0.000366211; 23 14.7349 5.4 7.90723
- 20. 24 12.9338 5.4 -0.000366211; 25 12.9338 5.4 7.90723
- 21. 26 3.73804 5.4 -0.000366211; 27 3.73804 5.4 7.90723
- 22. 28 1.93701 5.4 -0.000366211; 29 1.93701 5.4 7.90723; 31 9.23486 5.4 7.90723
- 23. 33 7.43384 5.4 1.80322; 34 7.43384 5.4 5.50061; 35 7.43384 5.4 7.90723
- 24. 36 8.42041 5.4 1.80322; 37 8.42041 5.4 5.50061; 38 0.0854492 8.2 7.90723
- 25. 39 22.0854 8.2 7.90723; 40 11.0854 8.2 -1.01538; 41 5.58545 8.2 -1.01538
- 26. 42 0.0854492 8.2 -0.000366211; 43 22.0854 8.2 -0.000366211
- 27. 44 0.0854492 8.2 5.50061; 45 22.0854 8.2 5.50061; 46 5.58545 8.2 7.90723
- 28. 47 11.0854 8.2 7.90723; 48 22.0854 8.2 2.75012; 49 0.0854492 8.2 2.75012
- 29. 50 2.83545 8.2 -0.000366211; 51 2.83545 8.2 7.90723; 52 8.33545 8.2 -1.01538
- 30. 53 8.33545 8.2 7.90723; 54 13.8354 8.2 -0.000366211; 55 13.8354 8.2 7.90723
- 31. 56 19.3354 8.2 -0.000366211; 57 19.3354 8.2 7.90723
- 32. 58 0.0854492 2 -0.000366211; 59 0.0854492 2 5.50061; 60 5.58545 5.4 5.50061
- 33. 61 5.58545 2 5.50061; 62 5.58545 8.2 5.50061; 63 5.58545 5.4 -0.000366211
- 34. 64 5.58545 2 -0.000366211; 65 5.58545 8.2 -0.000366211
- 35. 66 11.0854 5.4 -0.000366211; 67 11.0854 2 -0.000366211
- 36. 68 11.0854 8.2 -0.000366211; 69 11.0854 5.4 5.50061; 70 11.0854 2 5.50061

37. 71 11.0854 8.2 5.50061; 72 16.5854 5.4 5.50061; 73 16.5854 2 5.50061  
38. 74 16.5854 8.2 5.50061; 75 16.5854 5.4 -0.000366211; 76 16.5854 2 -0.000366211  
39. 77 16.5854 8.2 -0.000366211; 78 22.0854 2 -0.000366211; 79 22.0854 2 5.50061  
40. 80 16.5854 5.4 7.90723; 81 16.5854 8.2 7.90723; 82 9.23486 5.4 -0.000366211  
41. 83 7.43384 5.4 -0.000366211; 84 20.2349 5.4 5.50061; 85 18.4338 5.4 5.50061  
42. 86 14.7349 5.4 5.50061; 87 12.9338 5.4 5.50061; 88 9.23486 5.4 5.50061  
43. 89 3.73804 5.4 5.50061; 90 1.93701 5.4 5.50061; 91 5.58545 5.4 1.80322  
44. 92 11.0854 5.4 3.60425; 93 11.0854 5.4 1.80322; 94 20.2349 5.4 3.60425  
45. 95 20.2349 5.4 1.80322; 96 18.4338 5.4 3.60425; 97 18.4338 5.4 1.80322  
46. 98 9.23486 5.4 3.60425; 99 12.9338 5.4 3.60425; 100 14.7349 5.4 3.60425  
47. 101 16.5854 5.4 3.60425; 102 1.93701 5.4 3.60425; 103 3.73804 5.4 3.60425  
48. 104 1.93701 5.4 1.80322; 105 3.73804 5.4 1.80322; 106 9.23486 5.4 1.80322  
49. 107 12.9338 5.4 1.80322; 108 14.7349 5.4 1.80322; 109 16.5854 5.4 1.80322  
50. 110 8.33545 8.2 -0.000366211; 111 19.3354 8.2 5.50061; 112 13.8354 8.2 5.50061  
51. 113 8.33545 8.2 5.50061; 114 2.83545 8.2 5.50061; 115 5.58545 8.2 2.75012  
52. 116 11.0854 8.2 2.75012; 117 2.83545 8.2 2.75012; 118 8.33545 8.2 2.75012  
53. 119 13.8354 8.2 2.75012; 120 16.5854 8.2 2.75012; 121 19.3354 8.2 2.75012  
54. 122 7.43384 5.4 -1.01538; 123 9.23486 5.4 -1.01538  
55. 124 0.0854492 0 -0.000366211; 125 0.0854492 0 5.50061; 126 5.58545 0 5.50061  
56. 127 5.58545 0 -0.000366211; 128 11.0854 0 -0.000366211; 129 11.0854 0 5.50061  
57. 130 16.5854 0 5.50061; 131 16.5854 0 -0.000366211; 132 22.0854 0 -0.000366211  
58. 133 22.0854 0 5.50061  
59. MEMBER INCIDENCES  
60. 1 1 29; 2 3 123; 3 5 28; 4 7 90; 5 5 21; 6 4 63; 7 3 66; 9 6 20; 10 12 95  
61. 11 14 97; 12 16 94; 13 18 103; 14 20 95; 15 22 108; 16 24 107; 17 26 105  
62. 18 28 104; 21 34 35; 22 36 17; 23 38 51; 24 40 52; 25 42 50; 26 44 114  
63. 27 42 49; 28 41 65; 29 40 68; 30 43 48; 31 48 121; 32 50 117; 33 52 110  
64. 34 54 119; 35 56 121; 36 5 58; 37 5 42; 38 7 59; 39 7 44; 40 60 61; 41 60 62  
65. 42 63 64; 43 63 65; 44 66 67; 45 66 68; 46 69 70; 47 69 71; 48 72 73; 49 72 74  
66. 50 75 76; 51 75 77; 52 6 78; 53 6 43; 54 8 79; 55 8 45; 56 75 109; 57 77 120  
67. 58 13 2; 59 15 13; 60 80 15; 61 23 80; 62 25 23; 63 10 25; 64 31 10; 65 35 31  
68. 66 9 35; 67 27 9; 68 29 27; 69 12 6; 70 14 12; 71 75 14; 72 22 75; 73 24 22  
69. 74 66 24; 75 82 66; 76 83 82; 77 63 83; 78 26 63; 79 28 26; 80 84 8; 81 85 84  
70. 82 72 85; 83 86 72; 84 87 86; 85 69 87; 86 88 69; 87 37 88; 88 34 37; 89 60 34  
71. 90 89 60; 91 90 89; 92 7 1; 93 19 7; 94 21 19; 95 60 9; 96 18 60; 97 91 18  
72. 98 63 91; 99 69 10; 100 92 69; 101 93 92; 102 66 93; 103 8 2; 104 16 8  
73. 105 20 16; 106 84 13; 107 94 84; 108 95 94; 109 85 15; 110 96 85; 111 97 96  
74. 112 98 17; 113 92 98; 114 99 92; 115 100 99; 116 101 100; 117 96 101  
75. 118 94 96; 119 102 19; 120 103 102; 121 104 21; 122 105 104; 123 91 105  
76. 124 33 91; 125 36 33; 126 106 36; 127 93 106; 128 107 93; 129 108 107  
77. 130 109 108; 131 97 109; 132 95 97; 133 86 23; 134 100 86; 135 108 100  
78. 136 87 25; 137 99 87; 138 107 99; 139 89 27; 140 103 89; 141 105 103  
79. 142 90 29; 143 102 90; 144 104 102; 145 88 31; 146 98 88; 147 106 98  
80. 148 82 106; 149 83 33; 150 17 37; 151 57 39; 152 81 57; 153 55 81; 154 47 55  
81. 155 53 47; 156 46 53; 157 51 46; 158 52 41; 159 56 43; 160 77 56; 161 54 77  
82. 162 68 54; 163 110 68; 164 65 110; 165 50 65; 166 111 45; 167 74 111  
83. 168 112 74; 169 71 112; 170 113 71; 171 62 113; 172 114 62; 173 44 38  
84. 174 49 44; 175 62 46; 176 115 62; 177 65 115; 178 71 47; 179 116 71  
85. 180 68 116; 181 45 39; 182 48 45; 183 117 49; 184 115 117; 185 118 115  
86. 186 116 118; 187 119 116; 188 120 119; 189 121 120; 190 114 51; 191 117 114  
87. 192 113 53; 193 118 113; 194 110 118; 195 112 55; 196 119 112; 197 111 57  
88. 198 121 111; 199 72 80; 200 101 72; 201 109 101; 202 74 81; 203 120 74  
89. 204 122 4; 205 83 122; 206 123 122; 207 82 123; 208 58 124; 209 59 125  
90. 210 61 126; 211 70 129; 212 73 130; 213 79 133; 214 58 59; 215 59 61  
91. 216 61 70; 217 70 73; 218 73 79; 219 58 64; 220 64 67; 221 67 76; 222 76 78  
92. 223 78 79; 224 76 73; 225 67 70; 226 64 61; 227 64 127; 228 67 128; 229 76 131

93. 230 78 132  
94. DEFINE MATERIAL START  
95. ISOTROPIC CONCRETE  
96. E 1.7872E+007  
97. POISSON 0.17  
98. DENSITY 23.5616  
99. ALPHA 1E-005  
100. DAMP 0.05  
101. TYPE CONCRETE  
102. STRENGTH FCU 21000  
103. END DEFINE MATERIAL  
104. MEMBER PROPERTY AMERICAN  
105. 25 TO 30 159 TO 182 PRIS YD 0.3 ZD 0.3  
106. 23 31 151 TO 157 183 TO 189 PRIS YD 0.3 ZD 0.2  
107. 1 2 10 TO 18 21 22 24 32 TO 35 57 TO 68 106 TO 150 158 190 TO 198 202 TO 206 -  
108. 207 PRIS YD 0.3 ZD 0.12  
109. MEMBER PROPERTY AMERICAN  
110. 36 TO 55 208 TO 213 227 TO 230 PRIS YD 0.35 ZD 0.35  
111. MEMBER PROPERTY AMERICAN  
112. 3 TO 7 9 56 69 TO 105 199 TO 201 PRIS YD 0.4 ZD 0.3  
113. 214 TO 226 PRIS YD 0.35 ZD 0.35  
114. CONSTANTS  
115. MATERIAL CONCRETE ALL  
116. SUPPORTS  
117. 124 TO 133 FIXED  
118. DEFINE COLOMBIAN ACCIDENTAL LOAD  
119. ZONE 0.16 I 1 S 1.5  
120. SELFWEIGHT 1  
121. 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.

122. YRANGE 0 3.4 FLOAD 3.52  
123. ONEWAY LOAD  
124. YRANGE 6 6.5 ONE 4.32 TOWARDS 25  
**\*WARNING: NO PANEL FOUND FOR A ONE WAY LOAD GENERATION.**  
125. MEMBER WEIGHT  
126. 2 3 5 TO 7 9 56 69 TO 74 78 79 92 TO 94 96 TO 98 100 TO 105 200 201 204 206 -  
127. 214 TO 226 UNI 6.4  
128. LOAD 1 SISMO X  
129. COLOMBIAN LOAD X 1 ACC 1  
130. LOAD 2 SISMO Z  
131. COLOMBIAN LOAD Z 1 ACC 1  
132. LOAD 3 CV  
133. FLOOR LOAD

134. YRANGE 3 5.4 FLOAD -2 GY  
135. ONEWAY LOAD  
136. YRANGE 8 10.5 ONE -0.5 GY TOWARDS 162  
137. FLOOR LOAD  
138. YRANGE 3 3.4 FLOAD -3 XRANGE 0 23 ZRANGE 5.5 7.92 GY  
\*WARNING- NO MEMBERS LOADED FOR A FLOOR LOAD GENERATION.  
139. LOAD 4 CM  
140. FLOOR LOAD  
141. YRANGE 3 5.4 FLOAD -3.85 GY  
142. ONEWAY LOAD  
143. YRANGE 8 10.5 ONE -4.32 GY TOWARDS 162  
144. MEMBER LOAD  
145. 2 3 5 TO 7 9 56 69 TO 74 78 79 92 TO 94 96 TO 98 100 TO 105 200 201 204 206 -  
146. 214 TO 226 UNI GY -6.4  
147. SELFWEIGHT Y -1  
148. \*COEFICIENTE DE CAPACIDAD DE DISIPACION DE ENERGIA R= 3.375  
149. \*COMBINACIONES PARA DISEÑO DE LA ESTRUCTURA Y SUPERESTRUCTURA  
150. \*COMBINACIONES PARA DISEÑO DE VIGAS Y COLUMNAS  
151. LOAD COMB 5 1.2 CM + 1.600 CV  
152. 4 1.2 3 1.6  
153. LOAD COMB 6 1.2 CM + CV + (SX/R + 0,30 SZ/R)  
154. 4 1.2 3 1.0 1 0.296 2 0.089  
155. LOAD COMB 7 1.2 CM + CV - (SX/R - 0,30 SZ/R)  
156. 4 1.2 3 1.0 1 -0.296 2 0.089  
157. LOAD COMB 8 1.2 CM + CV + (SX/R - 0,30 SZ/R)  
158. 4 1.2 3 1.0 1 0.296 2 -0.089  
159. LOAD COMB 9 1.2 CM + CV - (SX/R + 0,30 SZ/R)  
160. 4 1.2 3 1.0 1 -0.296 2 -0.089  
161. LOAD COMB 10 1.2 CM + CV + (0.3 SX/R + SZ/R)  
162. 4 1.2 3 1.0 1 0.089 2 0.296  
163. LOAD COMB 11 1.2 CM + CV - (0.3 SX/R - SZ/R)  
164. 4 1.2 3 1.0 1 -0.089 2 0.296  
165. LOAD COMB 12 1.2 CM + CV + (0.3 SX/R - SZ/R)  
166. 4 1.2 3 1.0 1 0.089 2 -0.296  
167. LOAD COMB 13 1.2 CM + CV - (0.3 SX/R + SZ/R)  
168. 4 1.2 3 1.0 1 -0.089 2 -0.296  
169. LOAD COMB 14 0.9 CM + (SX/R + 0,30 SZ/R)  
170. 4 0.9 1 0.296 2 0.089  
171. LOAD COMB 15 0.9 CM - (SX/R - 0,30 SZ/R)  
172. 4 0.9 1 -0.296 2 0.089  
173. LOAD COMB 16 0.9 CM + (SX/R - 0,30 SZ/R)

174. 4 0.9 1 0.296 2 -0.089  
175. LOAD COMB 17 0.9 CM - (SX/R + 0,30 SZ/R)  
176. 4 0.9 1 -0.296 2 -0.089  
177. LOAD COMB 18 0.9 CM + (0.3 SX/R + SZ/R)  
178. 4 0.9 1 0.089 2 0.296  
179. LOAD COMB 19 0.9 CM - (0.3 SX/R - SZ/R)  
180. 4 0.9 1 -0.089 2 0.296  
181. LOAD COMB 20 0.9 CM + (0.3 SX/R - SZ/R)  
182. 4 0.9 1 0.089 2 -0.296  
183. LOAD COMB 21 0.9 CM - (0.3 SX/R + SZ/R)  
184. 4 0.9 1 -0.089 2 -0.296  
185. \*COMBINACIONES PARA DISEÑO DE CIMENTACION  
186. \*COMBINACIONES DE SERVICIO  
187. LOAD COMB 22 CM + CV  
188. 4 1.0 3 1.0  
189. LOAD COMB 23 CM + 0,75 CV + 0.75 (0.7)(SX + 0,3 SZ)/R  
190. 4 1.0 3 0.75 1 0.156 2 0.047  
191. LOAD COMB 24 CM + 0,75 CV - 0.75 (0.7)(SX - 0,3 SZ)/R  
192. 4 1.0 3 0.75 1 -0.156 2 0.047  
193. LOAD COMB 25 CM + 0,75 CV + 0.75 (0.7)(SX - 0,3 SZ)/R  
194. 4 1.0 3 0.75 1 0.156 2 -0.047  
195. LOAD COMB 26 CM + 0,75 CV - 0.75 (0.7)(SX + 0,3 SZ)/R  
196. 4 1.0 3 0.75 1 -0.156 2 -0.047  
197. LOAD COMB 27 CM + 0,75 CV + 0.75 (0.7)(0,3 SX + SZ)/R  
198. 4 1.0 3 0.75 1 0.047 2 0.13  
199. LOAD COMB 28 CM + 0,75 CV - 0.75 (0.7)(0.3 SX - SZ)/R  
200. 4 1.0 3 0.75 1 -0.047 2 0.156  
201. LOAD COMB 29 CM + 0,75 CV + 0.75 (0.7)(0.3 SX - SZ)/R  
202. 4 1.0 3 0.75 1 0.047 2 -0.156  
203. LOAD COMB 30 CM + 0,75 CV - 0.75 (0.7)(0.3 SX + SZ)/R  
204. 4 1.0 3 0.75 1 -0.047 2 -0.156  
205. LOAD COMB 31 0.6 CM + 0.700 ( SX + 0.3 SZ)/R  
206. 4 0.6 1 0.207 2 0.062  
207. LOAD COMB 32 0.6 CM - 0.700 ( SX - 0.3 SZ)/R  
208. 4 0.6 1 -0.207 2 0.062  
209. LOAD COMB 33 0.6 CM + 0.700 ( SX - 0.3 SZ)/R  
210. 4 0.6 1 0.207 2 -0.062  
211. LOAD COMB 34 0.6 CM - 0.700 ( SX + 0.3 SZ)/R  
212. 4 0.6 1 -0.207 2 -0.062  
213. LOAD COMB 35 0.6 CM + 0.700 ( 0.3 SX + SZ)/R  
214. 4 0.6 1 0.062 2 0.207  
215. LOAD COMB 36 0.6 CM - 0.700 ( 0.3 SX - SZ)/R  
216. 4 0.6 1 -0.062 2 0.207  
217. LOAD COMB 37 0.6 CM - 0.700 ( 0.3 SX + SZ)/R  
218. 4 0.6 1 -0.062 2 -0.207  
219. LOAD COMB 38 0.6 CM + 0.700 ( 0.3 SX - SZ)/R  
220. 4 0.6 1 0.062 2 -0.207  
221. PERFORM ANALYSIS

P R O B L E M   S T A T I S T I C S

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NUMBER OF JOINTS	130	NUMBER OF MEMBERS	227
NUMBER OF PLATES	0	NUMBER OF SOLIDS	0
NUMBER OF SURFACES	0	NUMBER OF SUPPORTS	10

SOLVER USED IS THE OUT-OF-CORE BASIC SOLVER

ORIGINAL/FINAL BAND-WIDTH= 117/ 21/ 114 DOF  
TOTAL PRIMARY LOAD CASES = 4, TOTAL DEGREES OF FREEDOM = 720  
TOTAL LOAD COMBINATION CASES = 34 SO FAR.  
SIZE OF STIFFNESS MATRIX = 83 DOUBLE KILO-WORDS  
REQRD/AVAIL. DISK SPACE = 13.3/ 285031.9 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.**

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*
* COLOMBIAN SEISMIC LOAD :
*
* TIME PERIODS FOR X DIRECTION:
* Ta = 0.354 Tb = 0.445 Tuser = 0.000
* TIME PERIOD USED (T) = 0.354
* LOAD FACTOR = 1.000
* DESIGN BASE SHEAR = 0.400 X 2308.82 = 923.53 KN
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*
* COLOMBIAN SEISMIC LOAD :
*
* TIME PERIODS FOR Z DIRECTION:
* Ta = 0.354 Tb = 0.497 Tuser = 0.000
* TIME PERIOD USED (T) = 0.354
* LOAD FACTOR = 1.000
* DESIGN BASE SHEAR = 0.400 X 2308.82 = 923.53 KN
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222. DEFINE ENVELOPE  
223. 5 TO 21 ENVELOPE 1 TYPE STRENGTH  
224. END DEFINE ENVELOPE  
225. LOAD LIST 1 2  
226. PRINT STORY DRIFT 0.010000

STORY	HEIGHT (METE)	LOAD	AVG. DISP(CM )		DRIFT(CM )		RATIO	STATUS
			X	Z	X	Z		
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	2.00	1	0.7151	-0.0001	0.7151	0.0001	L / 279	PASS
		2	0.0000	0.8694	0.0000	0.8694	L / 230	PASS
3	5.40	1	3.0425	0.0017	2.3274	0.0018	L / 146	PASS
		2	-0.0651	3.6971	0.0652	2.8276	L / 120	PASS
4	8.20	1	3.9635	0.0002	0.9210	0.0015	L / 304	PASS
		2	-0.0961	4.9702	0.0310	1.2732	L / 220	PASS

- 227. LOAD LIST 5 TO 21
- 228. START CONCRETE DESIGN
- 229. CODE ACI
- 230. CLB 0.04 MEMB 36 TO 55
- 231. CLS 0.04 MEMB 36 TO 55
- 232. CLT 0.04 MEMB 36 TO 55
- 233. FC 21000 MEMB 36 TO 55
- 234. FYMAIN 420000 MEMB 36 TO 55
- 235. FYSEC 420000 MEMB 36 TO 55
- 236. DESIGN COLUMN 36 TO 55



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**COLUMN NO. 36 DESIGN PER ACI 318-08 - AXIAL + BENDING**

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 350.0 X 350.0 MMS, TIED  
AREA OF STEEL REQUIRED = 1582.7 SQ. MM

BAR CONFIGURATION REINF PCT. LOAD LOCATION PHI  
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8 - 16 MM 1.313 9 STA 0.650  
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)  
TIE BAR NUMBER 12 SPACING 256.00 MM

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**COLUMN NO. 37 DESIGN PER ACI 318-08 - AXIAL + BENDING**

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 350.0 X 350.0 MMS, TIED  
ONLY MINIMUM STEEL IS REQUIRED.  
AREA OF STEEL REQUIRED = 1225.0 SQ. MM

BAR CONFIGURATION REINF PCT. LOAD LOCATION PHI  
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4 - 20 MM 1.026 5 END 0.650  
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)  
TIE BAR NUMBER 12 SPACING 320.00 MM

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**COLUMN NO. 38 DESIGN PER ACI 318-08 - AXIAL + BENDING**

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 350.0 X 350.0 MMS, TIED  
ONLY MINIMUM STEEL IS REQUIRED.  
AREA OF STEEL REQUIRED = 1225.0 SQ. MM

BAR CONFIGURATION REINF PCT. LOAD LOCATION PHI  
-----

DXF IMPORT OF 3D MODELO 3.DXF

-- PAGE NO. 10

4 - 20 MM                    1.026                    5                    END                    0.650  
 (PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)  
 TIE BAR NUMBER    12 SPACING 320.00 MM

=====

**COLUMN NO.    39    DESIGN PER ACI 318-08 - AXIAL + BENDING**

FY - 420.0    FC - 21.0 MPA,    SQRE SIZE - 350.0 X 350.0 MMS, TIED  
 AREA OF STEEL REQUIRED = 1678.2    SQ. MM

BAR CONFIGURATION            REINF PCT.    LOAD    LOCATION    PHI  
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16 - 12 MM                    1.477                    7                    END                    0.650  
 (PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)  
 TIE BAR NUMBER    12 SPACING 192.00 MM

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**COLUMN NO.    40    DESIGN PER ACI 318-08 - AXIAL + BENDING**

FY - 420.0    FC - 21.0 MPA,    SQRE SIZE - 350.0 X 350.0 MMS, TIED  
 ONLY MINIMUM STEEL IS REQUIRED.  
 AREA OF STEEL REQUIRED = 1225.0    SQ. MM

BAR CONFIGURATION            REINF PCT.    LOAD    LOCATION    PHI  
 -----

4 - 20 MM                    1.026                    5                    END                    0.650  
 (PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)  
 TIE BAR NUMBER    12 SPACING 320.00 MM

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**COLUMN NO.    41    DESIGN PER ACI 318-08 - AXIAL + BENDING**

FY - 420.0    FC - 21.0 MPA,    SQRE SIZE - 350.0 X 350.0 MMS, TIED  
 ONLY MINIMUM STEEL IS REQUIRED.  
 AREA OF STEEL REQUIRED = 1225.0    SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 20 MM	1.026	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)  
TIE BAR NUMBER 12 SPACING 320.00 MM

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**COLUMN NO. 42 DESIGN PER ACI 318-08 - AXIAL + BENDING**

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 350.0 X 350.0 MMS, TIED  
ONLY MINIMUM STEEL IS REQUIRED.  
AREA OF STEEL REQUIRED = 1225.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 20 MM	1.026	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)  
TIE BAR NUMBER 12 SPACING 320.00 MM

=====

**COLUMN NO. 43 DESIGN PER ACI 318-08 - AXIAL + BENDING**

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 350.0 X 350.0 MMS, TIED  
ONLY MINIMUM STEEL IS REQUIRED.  
AREA OF STEEL REQUIRED = 1225.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 20 MM	1.026	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)  
TIE BAR NUMBER 12 SPACING 320.00 MM

=====

**COLUMN NO. 44 DESIGN PER ACI 318-08 - AXIAL + BENDING**

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 350.0 X 350.0 MMS, TIED  
 ONLY MINIMUM STEEL IS REQUIRED.  
 AREA OF STEEL REQUIRED = 1225.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 20 MM	1.026	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)  
 TIE BAR NUMBER 12 SPACING 320.00 MM

=====

**COLUMN NO. 45 DESIGN PER ACI 318-08 - AXIAL + BENDING**

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 350.0 X 350.0 MMS, TIED  
 ONLY MINIMUM STEEL IS REQUIRED.  
 AREA OF STEEL REQUIRED = 1225.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 20 MM	1.026	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)  
 TIE BAR NUMBER 12 SPACING 320.00 MM

=====

**COLUMN NO. 46 DESIGN PER ACI 318-08 - AXIAL + BENDING**

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 350.0 X 350.0 MMS, TIED  
 ONLY MINIMUM STEEL IS REQUIRED.  
 AREA OF STEEL REQUIRED = 1225.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 20 MM	1.026	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)  
 TIE BAR NUMBER 12 SPACING 320.00 MM

=====

COLUMN NO. 47 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 350.0 X 350.0 MMS, TIED  
ONLY MINIMUM STEEL IS REQUIRED.  
AREA OF STEEL REQUIRED = 1225.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 20 MM	1.026	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)  
TIE BAR NUMBER 12 SPACING 320.00 MM

=====

COLUMN NO. 48 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 350.0 X 350.0 MMS, TIED  
ONLY MINIMUM STEEL IS REQUIRED.  
AREA OF STEEL REQUIRED = 1225.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 20 MM	1.026	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)  
TIE BAR NUMBER 12 SPACING 320.00 MM

=====

COLUMN NO. 49 DESIGN PER ACI 318-08 - AXIAL + BENDING

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 350.0 X 350.0 MMS, TIED  
ONLY MINIMUM STEEL IS REQUIRED.  
AREA OF STEEL REQUIRED = 1225.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 20 MM	1.026	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)  
TIE BAR NUMBER 12 SPACING 320.00 MM

=====

**COLUMN NO. 50 DESIGN PER ACI 318-08 - AXIAL + BENDING**

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 350.0 X 350.0 MMS, TIED  
AREA OF STEEL REQUIRED = 1487.1 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
8 - 16 MM	1.313	13	STA	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)  
TIE BAR NUMBER 12 SPACING 192.00 MM

=====

**COLUMN NO. 51 DESIGN PER ACI 318-08 - AXIAL + BENDING**

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 350.0 X 350.0 MMS, TIED  
ONLY MINIMUM STEEL IS REQUIRED.  
AREA OF STEEL REQUIRED = 1225.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 20 MM	1.026	5	END	0.650

(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)  
TIE BAR NUMBER 12 SPACING 320.00 MM

=====

**COLUMN NO. 52 DESIGN PER ACI 318-08 - AXIAL + BENDING**

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 350.0 X 350.0 MMS, TIED  
AREA OF STEEL REQUIRED = 1678.2 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
16 - 12 MM	1.477	12	STA	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 192.00 MM				

=====

**COLUMN NO. 53 DESIGN PER ACI 318-08 - AXIAL + BENDING**

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 350.0 X 350.0 MMS, TIED  
AREA OF STEEL REQUIRED = 1296.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
12 - 12 MM	1.108	8	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 192.00 MM				

=====

**COLUMN NO. 54 DESIGN PER ACI 318-08 - AXIAL + BENDING**

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 350.0 X 350.0 MMS, TIED  
ONLY MINIMUM STEEL IS REQUIRED.  
AREA OF STEEL REQUIRED = 1225.0 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
4 - 20 MM	1.026	5	END	0.650
(PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)				
TIE BAR NUMBER 12 SPACING 320.00 MM				

=====

**COLUMN NO. 55 DESIGN PER ACI 318-08 - AXIAL + BENDING**

FY - 420.0 FC - 21.0 MPA, SQRE SIZE - 350.0 X 350.0 MMS, TIED  
 AREA OF STEEL REQUIRED = 1964.9 SQ. MM

BAR CONFIGURATION	REINF PCT.	LOAD	LOCATION	PHI
20 - 12 MM (PROVIDE EQUAL NUMBER OF BARS ON EACH FACE)	1.846	8	END	0.650
TIE BAR NUMBER 12 SPACING 192.00 MM				

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

- 237. CLB 0.04 MEMB 5 9 56 75 TO 77 83 TO 85 92 TO 94 103 TO 105 199 TO 201
- 238. CLS 0.04 MEMB 5 9 56 75 TO 77 83 TO 85 92 TO 94 103 TO 105 199 TO 201
- 239. CLT 0.04 MEMB 5 9 56 75 TO 77 83 TO 85 92 TO 94 103 TO 105 199 TO 201
- 240. FC 21000 MEMB 5 9 56 75 TO 77 83 TO 85 92 TO 94 103 TO 105 199 TO 201
- 241. FYMAIN 420000 MEMB 5 9 56 75 TO 77 83 TO 85 92 TO 94 103 TO 105 199 TO 201
- 242. FYSEC 420000 MEMB 5 9 56 75 TO 77 83 TO 85 92 TO 94 103 TO 105 199 TO 201
- 243. DESIGN BEAM 5 9 56 75 TO 77 83 TO 85 92 TO 94 103 TO 105 199 TO 201



=====

BEAM NO. 5 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 1804. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END	
1	61.	2 - 16MM	0.	1804.	YES	YES
2	339.	2 - 16MM	0.	1804.	YES	YES

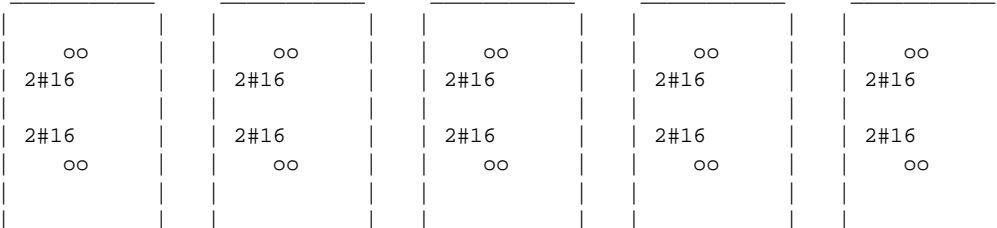
B E A M N O . 5 D E S I G N R E S U L T S - S H E A R

AT START SUPPORT - Vu= 44.15 KNS Vc= 81.33 KNS Vs= 0.00 KNS  
 Tu= 14.95 KN-MET Tc= 3.0 KN-MET Ts= 19.9 KN-MET LOAD 9  
 STIRRUPS ARE REQUIRED FOR TORSION.  
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.  
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 567. MM  
 ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 4.50 SQ.CM.

AT END SUPPORT - Vu= 27.10 KNS Vc= 76.22 KNS Vs= 0.00 KNS  
 Tu= 14.95 KN-MET Tc= 3.0 KN-MET Ts= 19.9 KN-MET LOAD 9  
 STIRRUPS ARE REQUIRED FOR TORSION.  
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.  
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 567. MM  
 ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 4.50 SQ.CM.

5J\_\_\_\_\_ 1803X 300X 400\_\_\_\_\_ 21J\_\_\_\_\_

=====					
2No16 H 339.	0.TO 1804				
6*12c/c129				6*12c/c129	
2No16 H 61.	0.TO 1804				
=====					



=====

**BEAM NO. 9 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08**

LEN - 1804. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END	
1	59.	4 - 12MM	0.	1804.	YES	YES
2	341.	5 - 12MM	0.	1804.	YES	YES

**B E A M N O . 9 D E S I G N R E S U L T S - S H E A R**

AT START SUPPORT - Vu= 34.54 KNS Vc= 84.65 KNS Vs= 0.00 KNS  
 Tu= 14.74 KN-MET Tc= 2.9 KN-MET Ts= 19.6 KN-MET LOAD 6  
 STIRRUPS ARE REQUIRED FOR TORSION.  
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.  
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 567. MM  
 ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 4.43 SQ.CM.

AT END SUPPORT - Vu= 17.49 KNS Vc= 75.38 KNS Vs= 0.00 KNS  
 Tu= 14.74 KN-MET Tc= 2.9 KN-MET Ts= 19.6 KN-MET LOAD 6  
 STIRRUPS ARE REQUIRED FOR TORSION.  
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.  
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 567. MM  
 ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 4.43 SQ.CM.

6J\_\_\_\_\_ 1803X 300X 400\_\_\_\_\_ 20J\_\_\_\_\_

=====					
5No12 H 341.	0.TO 1804				
6*12c/c129				6*12c/c129	
4No12 H 59.	0.TO 1804				
=====					

oooo 5#12	oooo 5#12	oooo 5#12	oooo 5#12	oooo 5#12
4#12 oooo	4#12 oooo	4#12 oooo	4#12 oooo	4#12 oooo

=====

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

LEN - 1804. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END	
1	63.	2 - 20MM	0.	1804.	YES	YES
2	339.	4 - 16MM	0.	1804.	YES	YES

B E A M N O . 5 6 D E S I G N R E S U L T S - S H E A R

AT START SUPPORT - Vu= 69.46 KNS Vc= 76.67 KNS Vs= 15.94 KNS  
 Tu= 3.91 KN-MET Tc= 2.9 KN-MET Ts= 5.2 KN-MET LOAD 9  
 STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.  
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 567. MM  
 ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 1.18 SQ.CM.

AT END SUPPORT - Vu= 49.10 KNS Vc= 76.42 KNS Vs= 0.00 KNS  
 Tu= 0.68 KN-MET Tc= 2.9 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 169. MM C/C FOR 567. MM

75J	1803X 300X 400	109J
=====		
4No16 H 339.	0.TO 1804	
6*12c/c129		5*12c/c169
2No20 H 63.	0.TO 1804	
=====		

oooo 4#16 2#20 oo	oooo 4#16 2#20 oo	oooo 4#16 2#20 oo	oooo 4#16 2#20 oo	oooo 4#16 2#20 oo
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**BEAM NO. 75 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08**

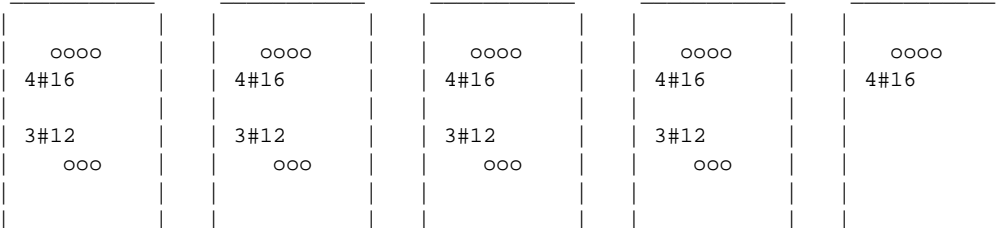
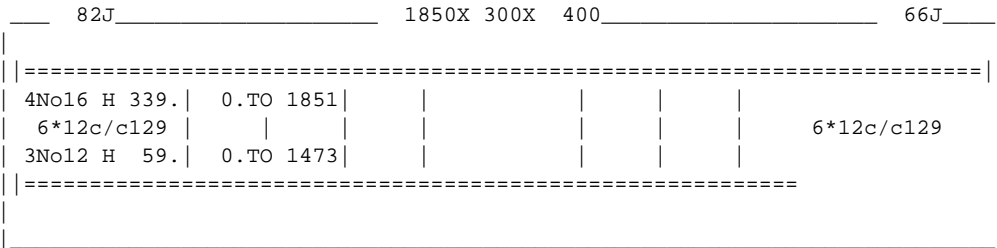
**LEN - 1851. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS**

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR	
					STA	END
1	59.	3 - 12MM	0.	1473.	YES	NO
2	339.	4 - 16MM	0.	1851.	YES	YES

**B E A M N O . 7 5 D E S I G N R E S U L T S - S H E A R**

AT START SUPPORT - Vu= 24.51 KNS Vc= 76.49 KNS Vs= 0.00 KNS  
 Tu= 4.70 KN-MET Tc= 2.9 KN-MET Ts= 6.3 KN-MET LOAD 19  
 STIRRUPS ARE REQUIRED FOR TORSION.  
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.  
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 591. MM  
 ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 1.41 SQ.CM.

AT END SUPPORT - Vu= 31.98 KNS Vc= 76.49 KNS Vs= 0.00 KNS  
 Tu= 4.70 KN-MET Tc= 2.9 KN-MET Ts= 6.3 KN-MET LOAD 19  
 STIRRUPS ARE REQUIRED FOR TORSION.  
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.  
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 591. MM  
 ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 1.41 SQ.CM.



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

LEN - 1801. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END
1	59.	3 - 12MM	0.	1801.	YES YES

BEAM NO. 76 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 9.25 KNS Vc= 75.19 KNS Vs= 0.00 KNS  
 Tu= 0.95 KN-MET Tc= 2.8 KN-MET Ts= 0.0 KN-MET LOAD 5  
 STIRRUPS ARE NOT REQUIRED.  
 AT END SUPPORT - Vu= 4.05 KNS Vc= 75.19 KNS Vs= 0.00 KNS  
 Tu= 0.95 KN-MET Tc= 2.8 KN-MET Ts= 0.0 KN-MET LOAD 5  
 STIRRUPS ARE NOT REQUIRED.

83J \_\_\_\_\_ 1801X 300X 400 \_\_\_\_\_ 82J \_\_\_\_\_

3No12 H 59. 0.TO 1801

3#12 ooo	3#12 ooo	3#12 ooo	3#12 ooo	3#12 ooo
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**BEAM NO. 77 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08**

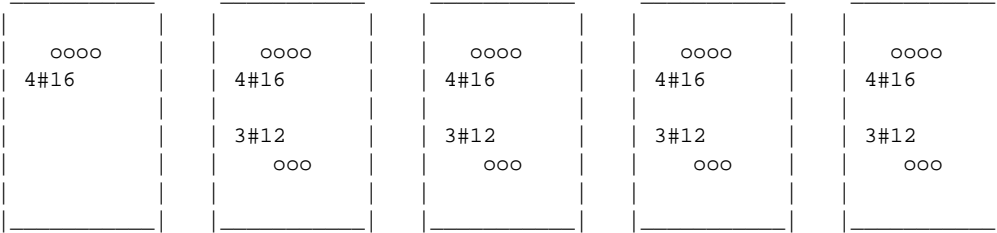
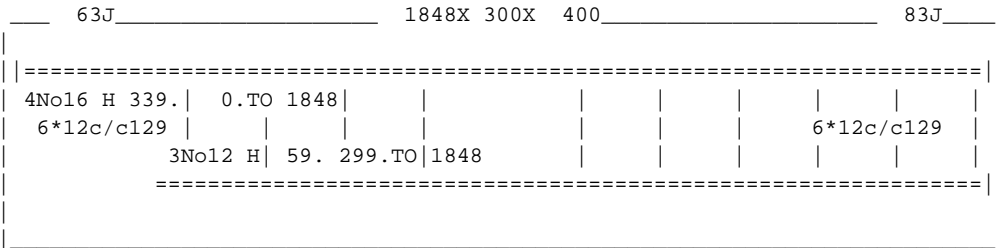
**LEN - 1848. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS**

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END	
1	59.	3 - 12MM	299.	1848.	NO	YES
2	339.	4 - 16MM	0.	1848.	YES	YES

**B E A M N O . 7 7 D E S I G N R E S U L T S - S H E A R**

AT START SUPPORT - Vu= 29.24 KNS Vc= 76.62 KNS Vs= 0.00 KNS  
 Tu= 4.27 KN-MET Tc= 2.9 KN-MET Ts= 5.7 KN-MET LOAD 18  
 STIRRUPS ARE REQUIRED FOR TORSION.  
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.  
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 590. MM  
 ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 1.28 SQ.CM.

AT END SUPPORT - Vu= 21.78 KNS Vc= 76.62 KNS Vs= 0.00 KNS  
 Tu= 4.27 KN-MET Tc= 2.9 KN-MET Ts= 5.7 KN-MET LOAD 18  
 STIRRUPS ARE REQUIRED FOR TORSION.  
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.  
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 590. MM  
 ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 1.28 SQ.CM.



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

LEN - 1850. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END	
1	59.	3 - 12MM	0.	1473.	YES	NO
2	337.	3 - 20MM	0.	1850.	YES	YES

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

AT START SUPPORT - Vu= 56.36 KNS Vc= 73.58 KNS Vs= 1.57 KNS  
 Tu= 5.70 KN-MET Tc= 2.7 KN-MET Ts= 7.6 KN-MET LOAD 10  
 STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.  
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 591. MM  
 ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 1.71 SQ.CM.

AT END SUPPORT - Vu= 69.90 KNS Vc= 73.58 KNS Vs= 19.62 KNS  
 Tu= 5.70 KN-MET Tc= 2.7 KN-MET Ts= 7.6 KN-MET LOAD 10  
 STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.  
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 591. MM  
 ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 1.71 SQ.CM.

86J	1850X 300X 400	72J
=====		
3No20 H 337.	0.TO 1850	
6*12c/c129		6*12c/c129
3No12 H 59.	0.TO 1473	
=====		

ooo 3#20	ooo 3#20	ooo 3#20	ooo 3#20	ooo 3#20
3#12 ooo	3#12 ooo	3#12 ooo	3#12 ooo	

=====

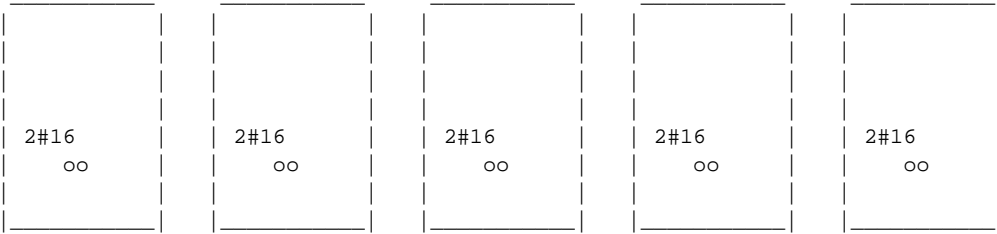
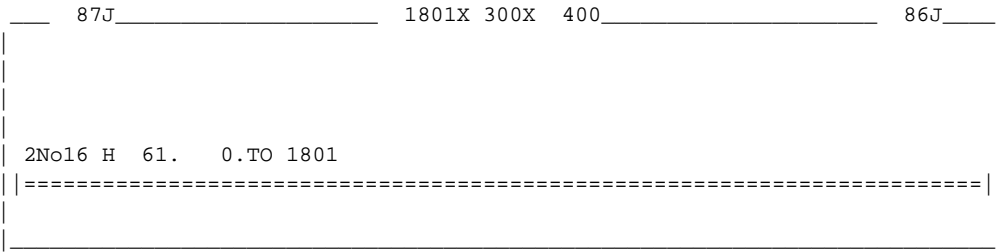
BEAM NO. 84 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 1801. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END
1	61.	2 - 16MM	0.	1801.	YES YES

BEAM NO. 84 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 7.42 KNS Vc= 72.85 KNS Vs= 0.00 KNS  
 Tu= 0.15 KN-MET Tc= 2.7 KN-MET Ts= 0.0 KN-MET LOAD 5  
 STIRRUPS ARE NOT REQUIRED.  
 AT END SUPPORT - Vu= 7.00 KNS Vc= 72.85 KNS Vs= 0.00 KNS  
 Tu= 0.15 KN-MET Tc= 2.7 KN-MET Ts= 0.0 KN-MET LOAD 5  
 STIRRUPS ARE NOT REQUIRED.





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**BEAM NO. 85 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08**

**LEN - 1848. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS**

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END	
1	59.	3 - 12MM	299.	1848.	NO	YES
2	337.	3 - 20MM	0.	1848.	YES	YES

**B E A M N O . 8 5 D E S I G N R E S U L T S - S H E A R**

AT START SUPPORT - Vu= 71.39 KNS Vc= 73.52 KNS Vs= 21.67 KNS  
 Tu= 5.25 KN-MET Tc= 2.7 KN-MET Ts= 7.0 KN-MET LOAD 11  
 STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.  
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 590. MM  
 ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 1.58 SQ.CM.

AT END SUPPORT - Vu= 57.88 KNS Vc= 73.52 KNS Vs= 3.66 KNS  
 Tu= 5.25 KN-MET Tc= 2.7 KN-MET Ts= 7.0 KN-MET LOAD 11  
 STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.  
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 590. MM  
 ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 1.58 SQ.CM.

69J 1848X 300X 400 87J

=====					
3No20 H 337.	0.TO 1848				
6*12c/c129				6*12c/c129	
3No12 H	59. 299.TO	1848			
=====					

ooo 3#20	ooo 3#20	ooo 3#20	ooo 3#20	ooo 3#20
	3#12 ooo	3#12 ooo	3#12 ooo	3#12 ooo

=====

BEAM NO. 92 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

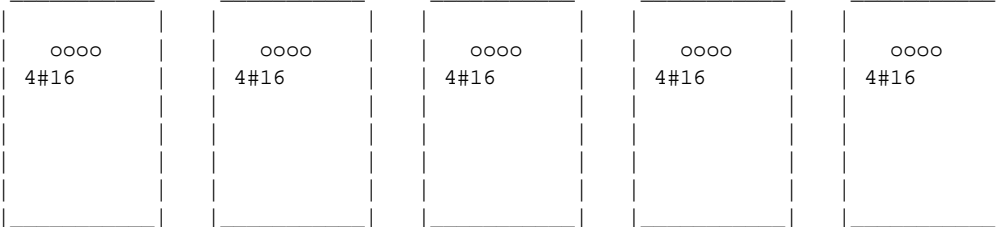
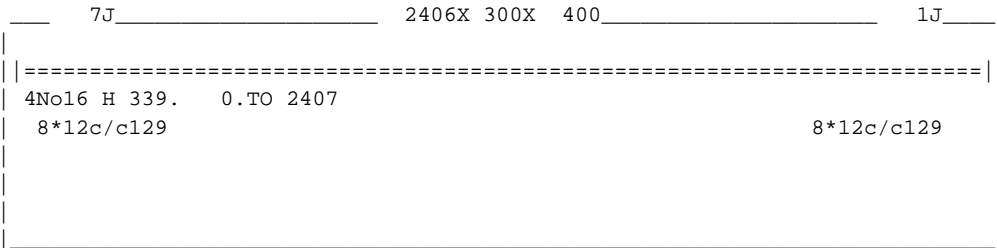
LEN - 2407. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END
1	339.	4 - 16MM	0.	2407.	YES YES

BEAM NO. 92 DESIGN RESULTS - SHEAR

AT START SUPPORT - Vu= 43.76 KNS Vc= 74.18 KNS Vs= 0.00 KNS  
 Tu= 9.59 KN-MET Tc= 2.9 KN-MET Ts= 12.8 KN-MET LOAD 9  
 STIRRUPS ARE REQUIRED FOR TORSION.  
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.  
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 869. MM  
 ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 2.88 SQ.CM.

AT END SUPPORT - Vu= 16.10 KNS Vc= 74.18 KNS Vs= 0.00 KNS  
 Tu= 9.59 KN-MET Tc= 2.9 KN-MET Ts= 12.8 KN-MET LOAD 9  
 STIRRUPS ARE REQUIRED FOR TORSION.  
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.  
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 869. MM  
 ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 2.88 SQ.CM.



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**BEAM NO. 93 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08**

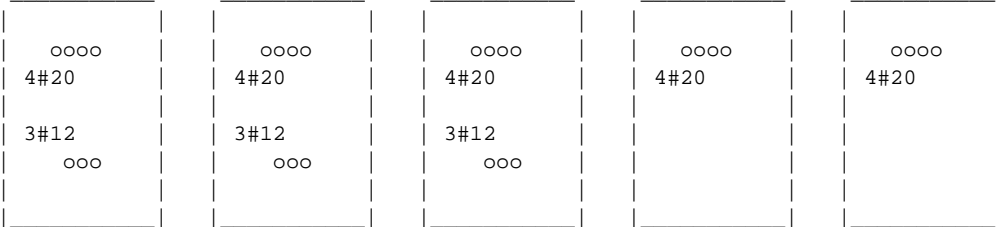
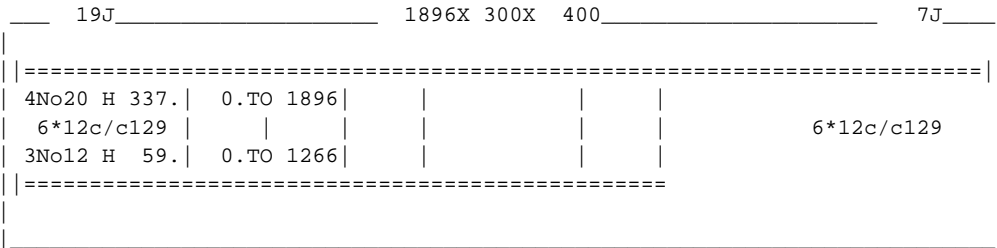
LEN - 1896. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END	
1	59.	3 - 12MM	0.	1266.	YES	NO
2	337.	4 - 20MM	0.	1896.	YES	YES

**B E A M N O . 9 3 D E S I G N R E S U L T S - S H E A R**

AT START SUPPORT - Vu= 50.11 KNS Vc= 125.68 KNS Vs= 0.00 KNS  
 Tu= 13.88 KN-MET Tc= 2.9 KN-MET Ts= 18.5 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 129. MM C/C FOR 614. MM  
 ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 4.17 SQ.CM.

AT END SUPPORT - Vu= 68.78 KNS Vc= 75.65 KNS Vs= 16.05 KNS  
 Tu= 13.88 KN-MET Tc= 2.9 KN-MET Ts= 18.5 KN-MET LOAD 7  
 STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.  
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 614. MM  
 ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 4.17 SQ.CM.



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BEAM NO. 94 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

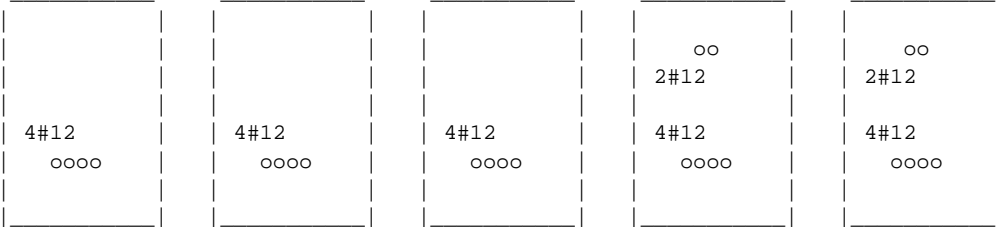
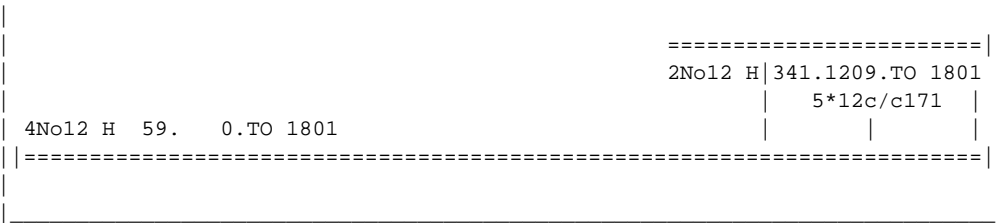
LEN - 1801. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END	
1	59.	4 - 12MM	0.	1801.	YES	YES
2	341.	2 - 12MM	1209.	1801.	NO	YES

B E A M N O . 9 4 D E S I G N R E S U L T S - S H E A R

AT START SUPPORT - Vu= 5.22 KNS Vc= 74.48 KNS Vs= 0.00 KNS  
 Tu= 1.13 KN-MET Tc= 2.9 KN-MET Ts= 0.0 KN-MET LOAD 5  
 STIRRUPS ARE NOT REQUIRED.  
 AT END SUPPORT - Vu= 33.12 KNS Vc= 78.71 KNS Vs= 0.00 KNS  
 Tu= 1.02 KN-MET Tc= 2.9 KN-MET Ts= 0.0 KN-MET LOAD 10  
 NO STIRRUPS ARE REQUIRED FOR TORSION.  
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.  
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 171. MM C/C FOR 566. MM

21J 1801X 300X 400 19J



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BEAM NO. 103 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

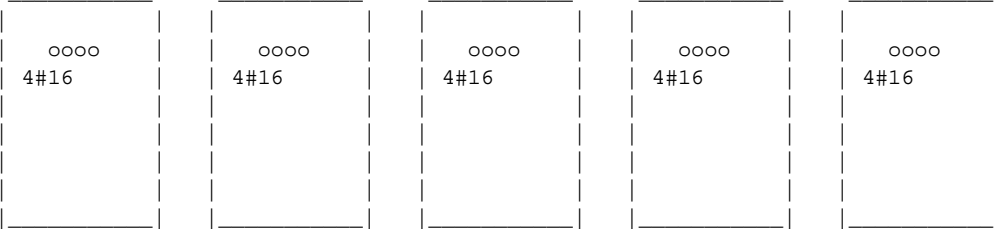
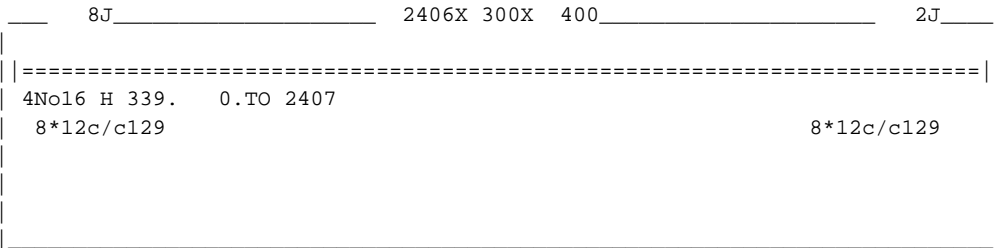
LEN - 2407. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END
1	339.	4 - 16MM	0.	2407.	YES YES

B E A M N O . 1 0 3 D E S I G N R E S U L T S - S H E A R

AT START SUPPORT - Vu= 43.74 KNS Vc= 74.18 KNS Vs= 0.00 KNS  
 Tu= 9.58 KN-MET Tc= 2.9 KN-MET Ts= 12.8 KN-MET LOAD 8  
 STIRRUPS ARE REQUIRED FOR TORSION.  
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.  
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 869. MM  
 ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 2.88 SQ.CM.

AT END SUPPORT - Vu= 16.08 KNS Vc= 74.18 KNS Vs= 0.00 KNS  
 Tu= 9.58 KN-MET Tc= 2.9 KN-MET Ts= 12.8 KN-MET LOAD 8  
 STIRRUPS ARE REQUIRED FOR TORSION.  
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.  
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 869. MM  
 ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 2.88 SQ.CM.



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**BEAM NO. 104 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08**

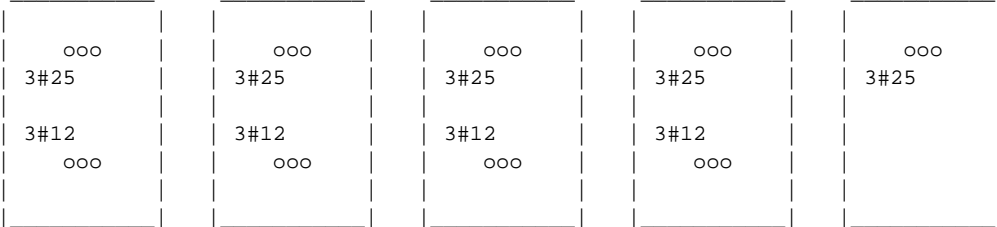
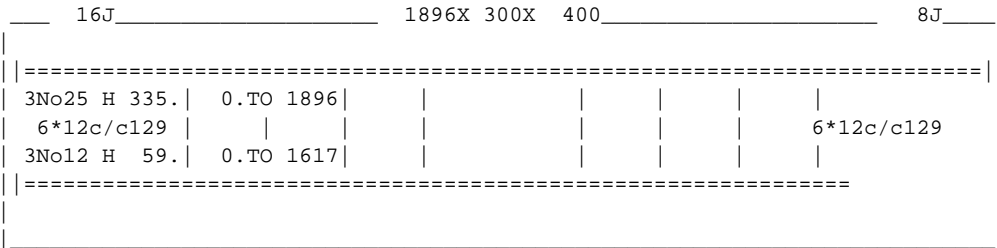
LEN - 1896. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END	
1	59.	3 - 12MM	0.	1617.	YES	NO
2	335.	3 - 25MM	0.	1896.	YES	YES

**B E A M N O . 1 0 4 D E S I G N R E S U L T S - S H E A R**

AT START SUPPORT - Vu= 42.89 KNS Vc= 85.88 KNS Vs= 0.00 KNS  
 Tu= 13.84 KN-MET Tc= 2.9 KN-MET Ts= 18.5 KN-MET LOAD 8  
 STIRRUPS ARE REQUIRED FOR TORSION.  
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.  
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 614. MM  
 ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 4.16 SQ.CM.

AT END SUPPORT - Vu= 71.15 KNS Vc= 75.76 KNS Vs= 19.11 KNS  
 Tu= 13.62 KN-MET Tc= 3.0 KN-MET Ts= 18.2 KN-MET LOAD 6  
 STIRRUPS ARE REQUIRED FOR SHEAR AND TORSION.  
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 129. MM C/C FOR 614. MM  
 ADDITIONAL LONGITUDINAL STEEL REQD. FOR TORSIONAL RESISTANCE = 4.10 SQ.CM.



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BEAM NO. 105 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

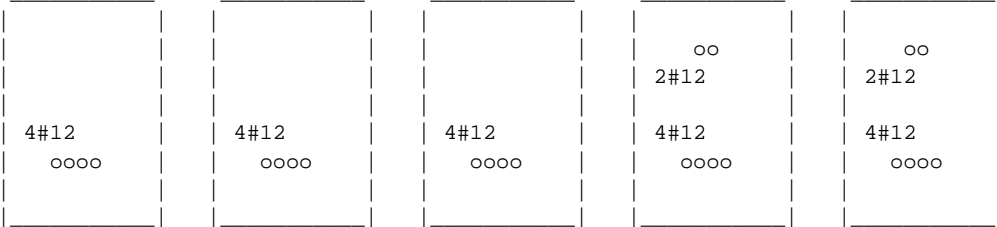
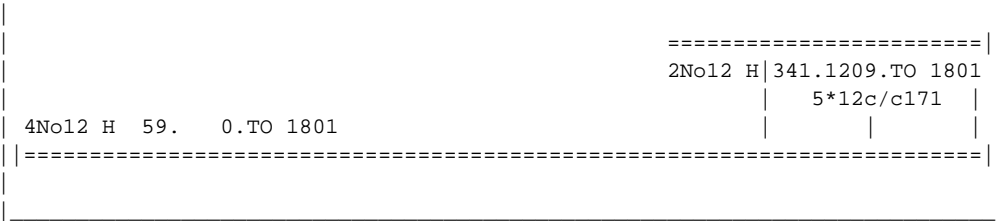
LEN - 1801. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END	
1	59.	4 - 12MM	0.	1801.	YES	YES
2	341.	2 - 12MM	1209.	1801.	NO	YES

B E A M N O . 1 0 5 D E S I G N R E S U L T S - S H E A R

AT START SUPPORT - Vu= 6.22 KNS Vc= 74.57 KNS Vs= 0.00 KNS  
 Tu= 1.05 KN-MET Tc= 3.0 KN-MET Ts= 0.0 KN-MET LOAD 5  
 STIRRUPS ARE NOT REQUIRED.  
 AT END SUPPORT - Vu= 37.38 KNS Vc= 80.48 KNS Vs= 0.00 KNS  
 Tu= 1.64 KN-MET Tc= 2.9 KN-MET Ts= 0.0 KN-MET LOAD 10  
 NO STIRRUPS ARE REQUIRED FOR TORSION.  
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.  
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 171. MM C/C FOR 566. MM

20J 1801X 300X 400 16J



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BEAM NO. 199 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

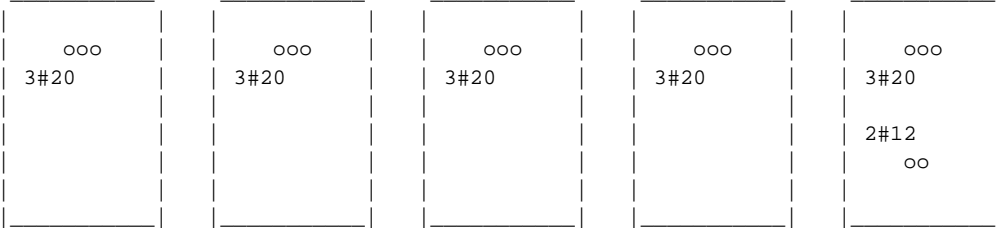
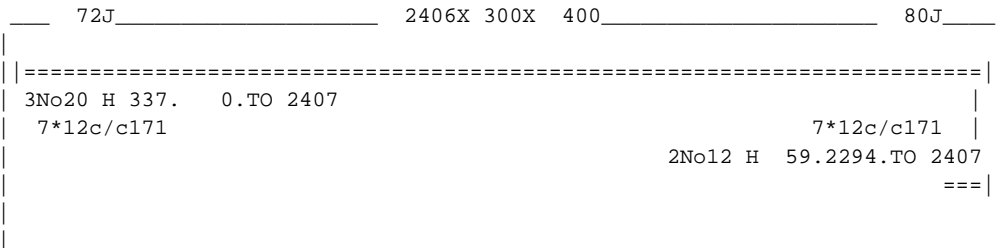
LEN - 2407. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END	
1	59.	2 - 12MM	2294.	2407.	NO	YES
2	337.	3 - 20MM	0.	2407.	YES	YES

B E A M N O . 1 9 9 D E S I G N R E S U L T S - S H E A R

AT START SUPPORT - Vu= 56.99 KNS Vc= 78.07 KNS Vs= 0.00 KNS  
 Tu= 0.68 KN-MET Tc= 2.9 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 171. MM C/C FOR 869. MM

AT END SUPPORT - Vu= 31.20 KNS Vc= 78.07 KNS Vs= 0.00 KNS  
 Tu= 0.68 KN-MET Tc= 2.9 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 171. MM C/C FOR 869. MM





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BEAM NO. 200 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 1896. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END
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1	61.	2 - 16MM	0.	1437.	YES NO
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\*\*\*MEMBER FAILS IN MAX REINFORCEMENT.

INCREASE MEMBER SIZE.

MAX NEG MOMENT = 173.65 KN-MET, LOADING 11

101J \_\_\_\_\_ 1896X 300X 400 \_\_\_\_\_ 72J \_\_\_\_\_

2No16 H 61. 0.TO 1437

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2#16 oo	2#16 oo	2#16 oo	2#16 oo	
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BEAM NO. 201 DESIGN RESULTS - FLEXURE PER CODE ACI 318-08

LEN - 1801. MM FY - 420. FC - 21. MPA, SIZE - 300. X 400. MMS

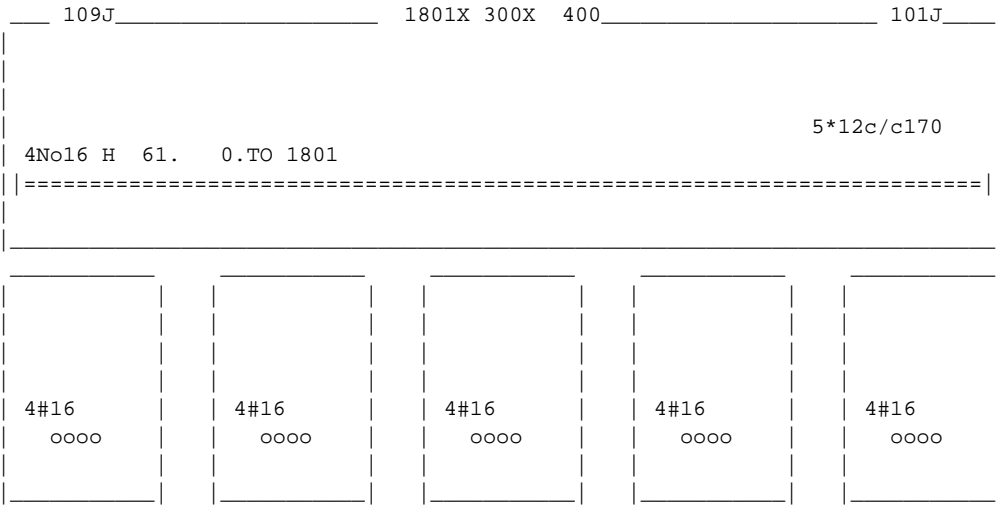
LEVEL	HEIGHT (MM)	BAR INFO	FROM (MM)	TO (MM)	ANCHOR STA END
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1	61.	4 - 16MM	0.	1801.	YES YES
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**B E A M N O . 2 0 1 D E S I G N R E S U L T S - S H E A R**

AT START SUPPORT - Vu= 5.60 KNS Vc= 76.89 KNS Vs= 0.00 KNS  
 Tu= 0.00 KN-MET Tc= 2.9 KN-MET Ts= 0.0 KN-MET LOAD 5  
 STIRRUPS ARE NOT REQUIRED.

AT END SUPPORT - Vu= 29.81 KNS Vc= 76.97 KNS Vs= 0.00 KNS  
 Tu= 0.01 KN-MET Tc= 2.9 KN-MET Ts= 0.0 KN-MET LOAD 6  
 NO STIRRUPS ARE REQUIRED FOR TORSION.  
 REINFORCEMENT FOR SHEAR IS PER CL.11.5.5.1.  
 PROVIDE 12 MM 2-LEGGED STIRRUPS AT 170. MM C/C FOR 566. MM



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

244. END CONCRETE DESIGN  
 245. FINISH

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

\*\*\*\* DATE= DEC 18,2014 TIME= 15:33: 2 \*\*\*\*

\*\*\*\*\*  
\* For technical assistance on STAAD.Pro, please visit \*  
\* <http://selectservices.bentley.com/en-US/> \*  
\* \* \* \* \*  
\* Details about additional assistance from \*  
\* Bentley and Partners can be found at program menu \*  
\* Help->Technical Support \*  
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